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To the Honorable Commissioner of Patents

100790448

checked original documents or copy thereof

1. Name of conveying party(ies):
Westinghouse Air Brake Company

2. Name and address of receiving party(ies):
Name: The Chase Manhattan Bank

Internal Address: Attn: Don Nelson

Additional name(s) of conveying party(ies) attached? Yes No

3. Nature of conveyance:

- Assignment Merger
- Security Agreement Change of Name
- Other _____

Street Address: 270 Park Avenue

City: New York State: NY ZIP: 10019

Execution Date: June 30, 1998

Additional name(s) & address(es) attached? Yes No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: _____

A. Patent Application No.(s)

B. Patent No.(s)

See attached Schedule I

Additional numbers attached? Yes No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Attn: James Sommer

Internal Address: Cravath Swaine & Moore

Street Address: 825 Eighth Ave.

City: New York State: NY ZIP: 10019

6. Total number of applications and patents involved: 283

7. Total fee (37 CFR 3.41): \$ 37,320.00

- Enclosed
- Authorized to be charged to deposit account

8. Deposit account number:

(Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

JAMES SOMMER

Name of Person Signing

James Sommer

Signature

7/31/98

Date

Total number of pages comprising cover sheet: 262

Schedule I

See attached list of patents owned by WABCO and its subsidiaries.

Case Number	Country	Status	Patent Number	Issue Date	Client	long:Title1	long:ti
22	US	ISSUED	85/3069	01/29/86	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE	
10R-29	AUSAL	ISSUED	594,323	02/21/86	VAPR	ELECTRODE CONFIGURATION FOR HIGH VOLTAGE	
10	TRANS	ISSUED	85/0012	02/28/86	NAFW	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL	
10R-29	UNITKN	ISSUED	2,172,480	02/28/86	VAPR	ELECTRODE CONFIGURATION FOR HIGH VOLTAGE	
85	TRANS	ISSUED	85/0011	02/28/86	PTDS	MANUALLY RELEASABLE PARKING BRAKE-DEVICE	
34	VENDA	ISSUED	85/0034	02/28/86	PTDS	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER / AIR RESERVOIR, ADJUSTER ARRANGEMENT	
24	UNITKN	ISSUED	2172678	03/19/86	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
47	NEWZL	ISSUED	215531	03/19/86	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
14	USA	ISSUED	4,577,910	03/25/86	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
10	USA	ISSUED	4,577,870	03/25/86	NAFW	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL	
34	TRANS	ISSUED	85/0040	04/11/86	PTDS	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER / AIR RESERVOIR, ADJUSTER ARRANGEMENT	
39	USA	ISSUED	4,583,790	04/22/86	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
10R-9	CANAD	ISSUED	1,203,624	04/22/86	VAPR	METHOD FOR AUTOMATED ANALYSIS OF VEHICLE PERFORMANCE	
10R-10	USA	ISSUED	4,583,466	04/22/86	VAPR	STEP LIFT FOR RAILWAY CARS	
104	VENDA	ISSUED	85/0052	04/25/86	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION	
272	SOFRC	ISSUED	85/6755	04/30/86	CARD	DRAFT GEAR ASSEMBLY	
348	USA	ISSUED	4,586,755	05/06/86	LPDW	RVH BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRK PRESS. DURING COMB. INDEP. AND AUTOMAT	
314	VENDA	ISSUED	85/0035	05/30/86	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
11SE-13	USA	ISSUED	4,592,217	06/03/86	PULS	MARKER ATTACHMENT FOR RAILROAD EQUIPMENT	

7135	AUSAL	ISSUED	549521	06/10/86	NAFU	IMPROVEMENTS IN COMBINED AIR RESERVOIR/RAKE CYLINDER DEVIC	E
8148	BOPHU	ISSUED	84/0132	06/20/86	PTDS	SOLENOID-OPERATED VALVE	
8103	CANAD	ISSUED	1206561	06/24/86	PTDS	VIGILANCE SAFETY CONTROL SYSTEM	
8179	TRANS	ISSUED	86/0118	07/04/86	NAFU	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8276	USA	ISSUED	4598953	07/08/86	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RRV TRANSIT VEHICLE	
PULSE-2	USA	ISSUED	4,599,723	07/08/86	PULS	METHOD OF ENCODING DATA FOR SERIAL TRANSMISSION	
8224	SOFRFC	ISSUED	85/8592	07/30/86	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8104	SOFRFC	ISSUED	85/4720	07/30/86	LPDM	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED	RELEASE OPERATION
8178	SOFRFC	ISSUED	85/8722	07/30/86	NAFU	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8222	VENDA	ISSUED	85/0033	08/01/86	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY	/PARKING BRAKE
8101	CANAD	ISSUED	1209059	08/05/86	WLTD	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8259	SOFRFC	ISSUED	85/9407	08/27/86	NAFU	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8243	UNIKN	ISSUED	2180319	08/28/86	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
VAPOR-30	USA	ISSUED	4,611,104	09/09/86	VAPR	ELECTROMECHANICAL SWITCH ACTUATOR HAVING HIGH SECURITY KEY	ACTUATOR
8243	FRANC	ISSUED	8612759	09/12/86	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8307	USA	ISSUED	4,613,016	09/23/86	NAFU	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8104	TRANS	ISSUED	85/0060	09/26/86	LPDM	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED	RELEASE OPERATION
7092	CANAD	ISSUED	1212402	10/07/86	PTDS	ADJUSTABLE VARIABLE LOAD CONTROL VALVE DEVICE	
8189	BOPHU	ISSUED	85/0015	10/14/86	PTDS	MANUALLY RELEASABLE PARKING BRAKE DEVICE	
8269	VENDA	ISSUED	85/0109	10/17/86	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRA
8269	SOFRFC	ISSUED	85/9835	10/29/86	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRA
8299	UNIKN	ISSUED	2182742	10/30/86	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA

8259	VENDA	ISSUED	85/0108	10/31/86	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8247	VENDA	ISSUED	86/0013	10/31/86	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8319	USA	ISSUED	4620567	11/04/86	PTDS	SOLENOID OPERATED VALVE	
7144	CANAD	ISSUED	1213634	11/04/86	NAFW	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE	
8117	CANAD	ISSUED	1213633	11/04/86	PTDS	VIGILANCE SAFETY CONTROL SYSTEM	
8292	USA	ISSUED	4,624,506	11/25/86	PTDS	COMPOUND ELECTROPNEUMATIC BRAKE CONTROL SYSTEM	
8247	SOFRC	ISSUED	86/1248	11/26/86	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8285	SOFRC	ISSUED	86/1651	11/26/86	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8138	PCT	ISSUED	50573	12/03/86	WFRB	BRAKE CYLINDER WITH TWO PISTONS	
VAPOR-31	USA	ISSUED	4,627,242	12/09/86	VAPR	THERMOELECTRIC COOLER	
8179	BOPHU	ISSUED	84/0181	12/11/86	NAFW	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8269	BOPHU	ISSUED	85/0183	12/11/86	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRA
KF 8214	BOPHU	ISSUED	85/0057	12/11/86	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
8222	BOPHU	ISSUED	85/0056	12/11/86	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRIN G-APPLIED EMERGENCY	/PARKING BRAKE
8104	BOPHU	ISSUED	85/0091	12/11/86	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED	RELEASE OPERATION
7122	JAPAN	ISSUED	1351664	12/11/86	PTDS	HYDRAULIC BRAKE ACTUATOR HAVING SPRING-A PPLIED BACK-UP WITH	MANUAL RELEASE MEANS
VAPOR-32	USA	ISSUED	4,628,835	12/16/86	VAPR	WASTE FLUID INCINERATOR HAVING HEAT RECOVERY MEANS	
8291	USA	ISSUED	4631514	12/23/86	PTDS	MAJFUNCTION DETECTION ARRANGEMENT FOR JE RK CONTROLLED BRAKE	COMMAND SYSTEM
8178	VENDA	ISSUED	85/0093	12/23/86	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
PULSE-11	USA	ISSUED	4,638,237	01/20/87	PULS	BATTERY CONDIDITION INDICATOR	
8290	USA	ISSUED	4639047	01/27/87	PTDS	RYM VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF	PNEUMATIC & ELEC. BRAKES
6986	JAPAN	ISSUED	1364209	02/09/87	NAFW	VARIABLE LOAD VALVE DEVICE	
8272	USA	ISSUED	4,645,187	02/24/87	CARD	DRAFT GEAR ASSEMBLY	

8276	SOFRC	ISSUED	86/4519	02/25/87	PTDS	JECTROPNEUMATIC BRK CONTROL SYS FOR Rwy TRANSIT VEHICLE	
8182	USA	ISSUED	4,647,024	03/03/87	CARD	FRICTIONAL SHOCK-ABSORBING METHOD AND APPARATUS	
8269	TRANS	ISSUED	85/0120	03/13/87	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRA
8222	TRANS	ISSUED	85/0041	03/13/87	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRIN G-APPLIED EMERGENCY	/PARKING BRAKE
8214	TRANS	ISSUED	85/0037	03/13/87	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
8261	USA	ISSUED	4,649,805	03/17/87	PTDS	VEHICLE BRAKE APPLICATION APPARATUS	
8370	USA	ISSUED	4,651,071	03/17/87	NABC	BRAKE CONTROL SYSTEM FOR SUPPLEMENTING E LECTRIC BRAKE WITH	FRICTION BRAKE
8148	CANAD	ISSUED	1219513	03/24/87	PTDS	SOLENOID-OPERATED VALVE	
8243	SOFRC	ISSUED	86/6027	03/25/87	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8307	SOFRC	ISSUED	86/5988	03/25/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
PULSE-14	USA	ISSUED	4,654,629	03/31/87	PULS	VEHICLE MARKER LIGHT	
VAPOR-33	USA	ISSUED	4,653,227	03/31/87	VAPR	DOOR OPERATING ASSEMBLY	
VAPOR-10	CANAD	ISSUED	1,220,089	04/07/87	VAPR	STEP LIFT FOR RAILWAY CARS	
8126	USA	ISSUED	4,657,230	04/14/87	CARD	OVERTRAVEL SPRING ASSEMBLY FOR SLACK ADJUSTER	
8299	USA	ISSUED	4659149	04/21/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA
8299	SOFRC	ISSUED	86/6140	04/29/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA
8259	TRANS	ISSUED	85/0114	05/01/87	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8178	TRANS	ISSUED	85/0106	05/01/87	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8247	TRANS	ISSUED	86/0012	05/01/87	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8224	USA	ISSUED	4,662,485	05/05/87	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8307	VENDA	ISSUED	86/0054	05/29/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8276	VENDA	ISSUED	86/0048	05/29/87	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR Rwy TRANSIT VEHICLE	

6963	JAPAN	ISSUED	1381770	06/09/87	PTDS	ADJUSTABLE VARIABLE LOAD VALVE DEVICE
8361	USA	ISSUED	4671576	06/09/87	PTDS	DECELERATION CONTROL SYSTEM
8190	BOPHU	ISSUED	84/0081	06/11/87	NAFW	EMPTY/LOAD BRAKE CONTROL ARRANGEMENT
8243	USA	ISSUED	4,674,729	06/23/87	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING
8220	NEWZL	ISSUED	213583	06/24/87	LPDW	PISTON ASSEMBLY
8253	USA	ISSUED	4676346	06/30/87	PTDS	BRAKE SLACK ADJUSTING APPARATUS
8247	BOPHU	ISSUED	86/0020	07/03/87	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8362	USA	ISSUED	4678241	07/07/87	PTDS	EQUALIZER DISCHARGE VALVE FOR A RAILROAD CAR AIR BRAKE SYSTEM
8369	USA	ISSUED	4679863	07/14/87	NABC	EMERGENCY BRAKE COMMAND READ-CONVERT DEVICE...CARS WITH ELECTRICAL BRAKE CONTROL
8299	VENDA	ISSUED	86/0056	07/24/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR
8190	CANAD	ISSUED	1225112	08/04/87	NAFW	EMPTY/LOAD BRAKE CONTROL ARRANGEMENT
8247	USA	ISSUED	4685052	08/04/87	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8285	USA	ISSUED	4,683,991	08/04/87	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8290	USA	ISSUED	4685750	08/11/87	PTDS	RAILROAD CAR AIR COMPRESSOR UNIT
6829	USA	ISSUED	4,690,463	09/01/87	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION
8357	USA	ISSUED	4696626	09/29/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR
8299	TRANS	ISSUED	86/0064	10/12/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR
8276	TRANS	ISSUED	86/0052	10/12/87	PTDS	ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE
8307	TRANS	ISSUED	86/0061	10/12/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
VAPOR-34	USA	ISSUED	4,704,870	11/10/87	VAPR	THERMOELECTRIC COOLER
8409	USA	ISSUED	4706791	11/17/87	USSD	IRREVERSIBLE FREE WHEELING CLUTCH
8234	BOPHU	ISSUED	85/0055	11/19/87	PTDS	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/AIR RESERVOIR...ADJUSTER ARRANGEMENT
829	BOPHU	ISSUED	86/0100	11/19/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR

8307	BOPHU	ISSUED	86/0094	11/19/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8276	BOPHU	ISSUED	86/0078	11/19/87	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
6829	SOFRC	ISSUED	87/2764	11/25/87	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8343	SOFRC	ISSUED	87/1941	12/30/87	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8394	USA	ISSUED	4721515	01/26/88	LPDW	CONTROL SYSTEM OF A DUAL CYLINDER TYPE D HUMIDIFIER	
8116	CANAD	ISSUED	1232523	02/09/88	PTDS	METHOD OF BONDING A LAMINATED ASSEMBLY	
8285	ITALY	ISSUED	1191280	02/24/88	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
6829	VENDA	ISSUED	87/0038	02/26/88	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8110	BOPHU	ISSUED	85/0016	03/01/88	NAFW	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8259	BOPHU	ISSUED	85/0179	03/01/88	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8276	NEUZL	ISSUED	216538	03/04/88	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8343	BOPHU	ISSUED	87/0040	03/14/88	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8343	USA	ISSUED	4,733,602	03/29/88	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8214	CANAD	ISSUED	1234849	04/05/88	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
8307	NEUZL	ISSUED	217149	04/18/88	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8396	SOFRC	ISSUED	87/6327	04/27/88	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
8396	ACCELER BRK APPL FUNCTION	ISSUED	4,744,609	05/17/88	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
8189	ACCELER BRK APPL FUNCTION	ISSUED	1237680	06/07/88	PTDS	MANUALLY RELEASABLE PARKING BRAKE DEVICE	
8179	CANAD	ISSUED	1237749	06/07/88	NAFW	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8392	USA	ISSUED	4,750,787	06/14/88	LPDW	RELAY VALVE FOR AN AIR BRAKE SYSTEM	
8361	UNIKN	ISSUED	2172355	06/15/88	PTDS	DECELERATION CONTROL SYSTEM	
8150	CANAD	ISSUED	1238899	07/05/88	NAFW	SPRING LOCKING HANDLE MECHANISM	

8431	USA	ISSUED	4,755,692	07/05/88	USSD	VITAL SAFETY MONITORING CIRCUIT
8428	USA	ISSUED	4,756,669	07/12/88	PTDS	AIR COMPRESSOR CONTROL APPARATUS AND MET HOD
8178	BOPHU	ISSUED	85/0160	07/14/88	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON
8446	USA	ISSUED	4,758,254	07/19/88	PTDS	MOISTURE REMOVAL APPARATUS
8410	SOFRC	ISSUED	87/9026	07/27/88	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
8368	USA	ISSUED	4,763,261	08/09/88	PTDS	WHEEL-SPEED DETECTING ARRANGEMENT
8445	USA	ISSUED	4,765,806	08/23/88	PTDS	CONTROL METHOD FOR DUAL CYLINDER MOISTURE REMOVAL APPARATUS
8396	VENDA	ISSUED	87/0086	08/26/88	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE & GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION						
8389	USA	ISSUED	4,770,472	09/13/88	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8374	USA	ISSUED	4,771,868	09/20/88	NAFW	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RLY CAR BRAKE ASSEMBLY
8104	CANAD	ISSUED	1242232	09/20/88	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION
8426	USA	ISSUED	4,773,447	09/27/88	PTDS	ELECTROMAGNETIC VALVE
8455	USA	ISSUED	4,776,642	10/11/88	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION
8389	SOFRC	ISSUED	88/1846	10/26/88	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8454	USA	ISSUED	4,783,124	11/08/88	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION
8148	JAPAN	ISSUED	1466862	11/10/88	PTDS	SOLENOID-OPERATED VALVE
PULSE-12	USA	ISSUED	4,785,197	11/15/88	PULS	TILT SWITCH
VAPOR-29	CANAD	ISSUED	1,244,864	11/15/88	VAPR	ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
8429	USA	ISSUED	4,784,585	11/15/88	PTDS	ELECTRIC AIR COMPRESSOR
8285	UNKN	ISSUED	2172351	11/16/88	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8415	USA	ISSUED	4,786,117	11/22/88	NAFW	VARIABLE LOAD VALVE
8247	AUSAL	ISSUED	576066	12/06/88	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8465	USA	ISSUED	4,790,415	12/13/88	PTDS	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE

8224	CANAD	ISSUED	1246467	12/13/88	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8234	CANAD	ISSUED	1246641	12/13/88	WLTD	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR ADJUSTMENT ARRANGEMENT	
8276	UNIKN	ISSUED	2176857	12/14/88	PTDS	ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE	
8410	USA	ISSUED	4,793,446	12/27/88	NAFM	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8452	USA	ISSUED	4,793,720	12/27/88	CARD	RAILWAY CAR RESILIENT SIDE BEARING	
8430	USA	ISSUED	4,795,902	01/03/89	PTDS	OPTICAL MASTER CONTROLLER	
8396	BOPHU	ISSUED	87/0147	01/09/89	NAFM	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE & GRADUATING VALV ARRANGED PROVID	
E ACCELER BRK APPL FUNCTION							
8400	USA	ISSUED	4,796,513	01/10/89	PTDS	SPRING BRAKE CYLINDER	
8440	USA	ISSUED	4,799,740	01/24/89	PTDS	ELECTRO-PNEUMATIC MASTER CONTROLLER FOR A N AIR BRAKE SYSTEM	
8460	USA	ISSUED	4,802,559	02/07/89	PTDS	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
8343	VENDA	ISSUED	87/0029	02/09/89	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE	
8343	TRANS	ISSUED	87/0029	02/09/89	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE	
8396	TRANS	ISSUED	87/0086	02/09/89	NAFM	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE & GRADUATING VALV ARRANGED PROVID	
E ACCELER BRK APPL FUNCTION							
8285	AUSAL	ISSUED	577930	02/22/89	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM	
8415	SOFRC	ISSUED	88/4948	02/22/89	NAFM	VARIABLE LOAD VALVE	
8224	ITALY	ISSUED	1203729	02/23/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8433	USA	ISSUED	4,809,419	03/07/89	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS	
8397	USA	ISSUED	4,811,651	03/14/89	PTDS	SPRING BRAKE CYLINDER	
8447	USA	ISSUED	4,812,148	03/14/89	PTDS	ARRANGEMENT FOR CONTROLLING REMOVAL OF MOISTURE CYLINDER TYPE PE MOISTURE REMOVER	
8421	SOFRC	ISSUED	88/5228	03/29/89	NAFM	TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8437	USA	ISSUED	4,819,123	04/04/89	PTDS	COMPRESSED AIR SUPPLY SYSTEM	
VAPOR-26	CANAD	ISSUED	1,252,351	04/11/89	VAPR	DOOR SEAL	

8451	USA	ISSUED	4,819,993	04/11/89	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8473	USA	ISSUED	4821518	04/18/89	CLDW	CLUTCH BOOSTER	
8272	AUSAL	ISSUED	579891	05/10/89	CARD	DRAFT GEAR ASSEMBLY	
8424	USA	ISSUED	4,830,437	05/16/89	PTDS	BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8421	USA	ISSUED	4,830,148	05/16/89	NAFW	TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8220	CANAD	ISSUED	1254157	05/16/89	LPDW	PISTON ASSEMBLY	
8453	USA	ISSUED	4,830,438	05/16/89	NAFW	FREIGHT BRAKE EMERGENCY VALVE	
8469	USA	ISSUED	4,830,580	05/16/89	LPDW	TWO STAGE AIR COMPRESSOR UNIT	
8276	AUSAL	ISSUED	584211	05/18/89	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE	
8272	CANAD	ISSUED	1254535	05/23/89	CARD	DRAFT GEAR ASSEMBLY	
8182	CANAD	ISSUED	1254534	05/23/89	CARD	FRICTIONAL SHOCK-ABSORBING METHOD AND APPARATUS	
8247	CANAD	ISSUED	1254644	05/23/89	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8220	AUSAL	ISSUED	581248	05/26/89	LPDW	PISTON ASSEMBLY	
8299	NEWZL	ISSUED	218191	06/06/89	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA
8391	USA	ISSUED	4,836,093	06/06/89	LPDW	PISTON ASSEMBLY	
8307	AUSAL	ISSUED	764047	06/08/89	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8415	BOPHU	ISSUED	88/0100	06/09/89	NAFW	VARIABLE LOAD VALVE	
8259	CANAD	ISSUED	1255720	06/13/89	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8244	CANAD	ISSUED	1255721	06/13/89	LPDW	BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT	
8122	CANAD	ISSUED	1256039	06/20/89	MLTD	BRAKE ACTUATOR DEVICE HAVING A HYDRAULIC SLACK ADJUSTING ARRANGEMENT	
PULSE-33	USA	ISSUED	4,840,056	06/20/89	PULS	FUEL MEASURING SYSTEM	
VAPOR-32	CANAD	ISSUED	1,256,321	06/27/89	VAPR	WASTE FLUID INCINERATOR HAVING HEAT RECOVERY MEANS	
8466	USA	ISSUED	4845428	07/04/89	PTDS	MAGNETIC ROTATIONAL DETECTING ARRANGEMENT FOR SENSING SPEED OF RAILWAY VEHICLE	

PULSE-4	USA	ISSUED	4,847,770	07/11/89	PULS	INITIAL TERMINAL TESTER	
8178	CANAD	ISSUED	1257579	07/18/89	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8454	SOFCRC	ISSUED	88/8255	07/25/89	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8468	USA	ISSUED	4,850,654	07/25/89	NAFW	FREIGHT BRAKE EMERGENCY VALVE	
8451	SOFCRC	ISSUED	88/8296	07/26/89	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8455	SOFCRC	ISSUED	88/8290	07/26/89	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
6829	ARGNT	ISSUED	239228	07/31/89	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION	
6829	TRANS	ISSUED	87/0040	08/03/89	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION	
8299	AUSAL	ISSUED	587295	08/10/89	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CA	
8224	AUSAL	ISSUED	583072	08/11/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8259	CHINA	ISSUED	85109613.1	08/23/89	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
PULSE-30	USA	ISSUED	4,862,433	08/29/89	PULS	TIMER CIRCUIT FOR DRAG OPERATION IN AN ENGINEMAN MONITORING DEVICE	
8458	USA	ISSUED	4865278	09/12/89	PTDS	CONTROL COMMAND SYSTEM FOR RAILWAY VEHICLES	
8243	CANAD	ISSUED	1259343	09/12/89	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8472	USA	ISSUED	4866938	09/19/89	CLDW	CYLINDER SEALING (CONT. OF 8342)	
8415	VENDA	ISSUED	88/0067	09/21/89	NAFW	VARIABLE LOAD VALVE	
8269	CANAD	ISSUED	1260515	09/26/89	WLTD	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRA	
8487	USA	ISSUED	4875742	10/24/89	CLDW	SOLENOID OPERATED HYD. CTRL. VAL.	
8351	USA	ISSUED	4,875,739	10/24/89	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8433	SOFCRC	ISSUED	89/0026	10/25/89	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS	
8415	TRANS	ISSUED	88/0064	11/16/89	NAFW	VARIABLE LOAD VALVE	
8224	FRANC	ISSUED	8602246	11/17/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	

8224	BRAZL	ISSUED	P18505798	11/28/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8272	BRAZL	ISSUED	P18504464	11/28/89	CARD	DRAFT GEAR ASSEMBLY	
VAPOR-35	USA	ISSUED	4,882,876	11/28/89	VAPR	DOOR OPERATOR WITH LOCKING MECHANISM	
8507	USA	ISSUED	4883089	11/28/89	PTDS	RAILWAY CAR PRESSURE CONTROL VALVES	
6829	UNIKN	ISSUED	2189299	11/29/89	NAFM	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
PULSE-18	USA	ISSUED	4,885,689	12/05/89	PULS	MULTILINGUAL CODE RECEIVER	
PULSE-15	USA	ISSUED	305,122	12/19/89	PULS	FRONT PANEL FOR DATA RECORDER	
8506	USA	ISSUED	4,887,516	12/19/89	NAFM	CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8454	VENDA	ISSUED	88/0110	01/08/90	NAFM	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8451	VENDA	ISSUED	88/0108	01/19/90	NAFM	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	VENDA	ISSUED	88/0109	01/19/90	NAFM	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SE	RVICE FUNCTION
8383	SORFC	ISSUED	89/3654	01/31/90	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
VAPOR-33	CANAD	ISSUED	1,265,387	02/06/90	VAPR	DOOR OPERATING ASSEMBLY	
8243	AUSAL	ISSUED	589439	02/08/90	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
VAPOR-34	CANAD	ISSUED	1,266,093	02/20/90	VAPR	THERMOELECTRIC COOLER	
VAPOR-36	USA	ISSUED	4,901,474	02/20/90	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND	LOCK
8457	USA	ISSUED	4901953	02/20/90	PTDS	CONTROLLER FOR RAILWAY VEHICLES	
8451	TRANS	ISSUED	88/0117	02/22/90	NAFM	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8489	USA	ISSUED	4,904,027	02/27/90	REPD	DIGITAL AIR BRAKE CONTROL SYSTEM	
8525	USA	ISSUED	4911615	03/27/90	CLDW	HYDRAULIC PUMP UNLOADER	
8470	USA	ISSUED	4,915,018	04/10/90	NAFM	IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8433	USA	ISSUED	4,916,794	04/17/90	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8451	BOPHU	ISSUED	88/0184	05/01/90	NAFM	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION

8454	BOPHU	ISSUED	88/0182	05/01/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	BOPHU	ISSUED	88/0183	05/01/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8453	SOFRC	ISSUED	89/5980	05/30/90	NAFW	FREIGHT BRAKE EMERGENCY VALVE	
8307	CANAD	ISSUED	1270211	06/12/90	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8383	USA	ISSUED	4941099	07/10/90	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
PULSE-20	USA	ISSUED	4,940,292	07/10/90	PULS	RAPID RELEASE VALVE MECHANISM	
8361	CANAD	ISSUED	1271972	07/24/90	PTDS	DECELERATION CONTROL SYSTEM	
8489	SOFRC	ISSUED	89/7261	07/25/90	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8502	USA	ISSUED	4,944,964	07/31/90	REPD	BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8509	USA	ISSUED	4,949,754	08/21/90	PTDS	PRESSURE CONTROL VALVE FOR RAILWAY VEHICLE LES	
8300	USA	ISSUED	4,951,554	08/28/90	NAFW	LOW STRESS DIAPHRAGM	
8550	USA	ISSUED	4,951,516	08/28/90	PTDS	FORCE MULTIPLICATION MECHANISM	
6829	BOPHU	ISSUED	87/0058	09/05/90	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
PULSE-29	USA	ISSUED	310,510	09/11/90	PULS	DEFAULT CONTROLLER FOR RAILWAY VEHICLES	
8488	USA	ISSUED	4,957,208	09/18/90	PTDS	MULTI-CONTACT ELECTRICAL CONNECTOR PORTION FOR AUTO RMY CPLR	
8396	AUSAL	ISSUED	597,103	09/18/90	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION							
8551	USA	ISSUED	4957193	09/18/90	PTDS	ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE	
8276	CANAD	ISSUED	1,275,136	10/09/90	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
7091	JAPAN	ISSUED	1582983	10/22/90	NAFW	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8351	SOFRC	ISSUED	90/0338	10/31/90	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
6522	CANAD	ISSUED	1,276,211	11/13/90	NAFW	EMPTY-LOAD CHANGEVER APPARATUS	
8389	AUSAL	ISSUED	600,104	11/20/90	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION	

8510	USA	ISSUED	4972145	11/20/90	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE	AXLE RAIL VEHICLES
8566	USA	ISSUED	4971399	11/20/90	LPDW	SYSTEM FOR ASSURING RECHARGE OF BRAKE PIPE	PRESSURE...LOCOMOTIVE BRAKE VALV
F							
VAPOR-36	TAIWAN	ISSUED	42,921	12/01/90	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND	LOCK
8410	AUSAL	ISSUED	600,538	12/03/90	MAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSE MBLV	
8535	USA	ISSUED	4,974,910	12/04/90	MAFW	FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE	FUNCTION
6961	USA	ISSUED	4,974,911	12/04/90	MAFW	VENT VALVE DEVICE	
8539	USA	ISSUED	4979391	12/25/90	PTDS	TRANSDUCEDR OPERATIONAL FAULT DETERMINATION SYSTEM	
8531	USA	ISSUED	4,986,500	01/22/91	LPDW	ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES	
8427	USA	ISSUED	4987543	01/22/91	PTDS	WHEEL SPIN CONTROL SYSTEM	
8427	SOFRC	ISSUED	90/1322	01/30/91	PTDS	WHEEL SPIN CONTROL SYSTEM	
8552	USA	ISSUED	4993521	02/19/91	PTDS	IMPROVED TREAD BRAKE UNIT	
8488	SOFRC	ISSUED	90/3253	02/27/91	PTDS	MULTI CONTACT ELECTRICAL CONNECTOR PORTION FOR AUTO RUV CPLR	
8502	SOFRC	ISSUED	90/3254	02/27/91	LPDW	BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8531	SOFRC	ISSUED	90/3201	02/27/91	LPDW	ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES	
8519	SOFRC	ISSUED	90/3199	02/27/91	LPDW	BRAKE ASSURANCE CIRCUIT OPERATIVE IN RES PONSE TO A LOW BRAK	E PIPE PRESSURE
PULSE-6							
	USA	ISSUED	315,114	03/05/91	PULS	END OF TRAIN MARKER LIGHT	
8504	USA	ISSUED	4999779	03/12/91	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8528	SOFRC	ISSUED	90/3961	03/27/91	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
6961	SOFRC	ISSUED	90/3963	03/27/91	MAFW	VENT VALVE DEVICE	
8532	USA	ISSUED	5,005,915	04/09/91	MAFW	EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8299	CANAD	ISSUED	1283148	04/16/91	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA
3S							
6829	CANAD	ISSUED	1283149	04/16/91	MAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8427	TAIWAN	ISSUED	NI-44301	05/15/91	PTDS	WHEEL SPIN CONTROL SYSTEM	

8383	TAIWAN	ISSUED	44299	05/15/91	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
PULSE-22	USA	ISSUED	5,016,840	05/21/91	PULS	METHOD TO AUTHORIZE H.O.T. UNIT TO TRANSMIT EMERGENCY	COMMDNS TO ASSOC. REAR UNIT
6973	JAPAN	ISSUED	UM1854566	06/10/91	PTDS	FOUR-WAY BALL VALVE	
8433	UNIKN	ISSUED	2214267	07/03/91	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8592	USA	ISSUED	5031731	07/16/91	PTDS	BRAKE ACTUATOR WITH SLACK ADJUSTER DISABLING MECHANISM	
8390	USA	ISSUED	5035582	07/30/91	PTDS	ELECTRO PNEUMATIC GOVERNOR FOR A COMPRESSED AIR SYSTEM	
8588	USA	ISSUED	5,036,468	07/30/91	LPDW	ARRANGEMENT FOR READING AN ABSOLUTE POSITION ENCODER ... POSITION OF BRAKE HANDLE	
8504	SOFRFC	ISSUED	90/7232	07/31/91	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8523	USA	ISSUED	D319039	08/13/91	LPDW	LOCOMOTIVE BRAKE CONSOLE	
8611	USA	ISSUED	5,042,393	08/27/91	CARD	LOCKING ASSEMBLY TO SECURE BEARING ASSEMBLY ... PAIR OF RAILWAY CARS	
8522	USA	ISSUED	D319423	08/27/91	LPDW	LOCOMOTIVE BRAKE CONSOLE	
8630	USA	ISSUED	5,044,698	09/03/91	NAFW	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAMP LEAKAGE PROTECTION	
8606	USA	ISSUED	5046921	09/10/91	PTDS	MOISTURE REMOVAL DEVICE FOR A COMPRESSED AIR SYSTEM	
8528	USA	ISSUED	5,058,712	10/22/91	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE ASSEMBLY	
8454	TRANS	ISSUED	88/0120	10/29/91	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8582	USA	ISSUED	5,064,251	11/12/91	LPDW	ELECTROPNEUMATIC AIR BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES	
8608	USA	ISSUED	5,065,679	11/19/91	CARD	ARTICULATED P.L.G. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RYR CARS TOGETHER IN A SEMIPERMANENT MANNER	
8616	USA	ISSUED	5,069,312	12/03/91	NAFW	HANDBRAKE FOR SINGLE-CYLINDER TRUCK-MOUNTED RAILWAY CAR BRAKE	
8556	USA	ISSUED	5,071,198	12/10/91	NAFW	EMER. VAL FOR ABD FR. BRAKE CONTROL VALVE DEVICE	
8633	USA	ISSUED	5,072,913	12/17/91	NAFW	SPRING LOADED LOCKING HANDLE FOR ANGLE COCK OR THE LIKE	
8583	ITALY	ISSUED	1231593	12/18/91	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8578	USA	ISSUED	5,076,401	12/31/91	PTDS	SPRING APPLIED HYDRAULICALLY RELEASED ... POSITIVE CLEARANCE SLACK ADJ. MECHANISM	

8276	BRAZL	ISSUED	8603163	12/31/91	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RYV TRANSIT VEHICLE	
8620	USA	ISSUED	5,080,243	01/14/92	CARD	ASSEMBLY MECHANISM FOR AN ARTICULATED COUPLING SYSTEM	
8421	AUSAL	ISSUED	613648	01/17/92	NAFW	TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICL TRUCK-MOUNTED BRAKE ASSEMBLY	
PULSE-31	USA	ISSUED	5,083,274	01/21/92	PULS	RAILRAOD BRAKE PRESSURE RECORDING	
8489	ITALY	ISSUED	1231980	01/22/92	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8433	AUSAL	ISSUED	613,138	01/28/92	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8652	USA	ISSUED	5,083,586	01/28/92	LPDW	MTG. ARRANGE FOR CONN. A FLUID PRESS. VAL TO A PIPE BRKT. BY A	HOLLOW ADAPT. MEMBER
8178	JAPAN	ISSUED	1637432	01/31/92	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8638	USA	ISSUED	5,085,243	02/04/92	PTDS	HYDRAULIC ISOLATION VAL FOR RYV VEHICLE NOTE: ALSO A C.I.P.	CASE
8587	USA	ISSUED	5,086,641	02/11/92	LPDW	ARRANGEMENT FOR DYNAMIC CALIBRATING AN A BSOLUTE POSITION EN	COOER
8594	USA	ISSUED	5090780	02/25/92	PTDS	BINARY WEIGHTED DIGITAL FLOW REGULATING SYSTEM	
8575	USA	ISSUED	5,092,204	03/03/92	CARD	APPAR. FOR ALIGNING SPHERICAL MEMBER DURIN G ASSEMBLY OF ARTIC	ULATED CPLG SYSTEM
8541	USA	ISSUED	5,096,266	03/17/92	LPDW	DUAL-RESPONSE VENT VALVE DEVICE	
8584	USA	ISSUED	5098169	03/24/92	PTDS	MAGNET VALVE SAFETY CHECK & FAULT INDICATOR INTEGRATOR	
8101	JAPAN	ISSUED	1649364	03/30/92	PTDS	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8619	USA	ISSUED	5,100,207	03/31/92	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8622	USA	ISSUED	5,104,203	04/14/92	LPDW	ARRANGMT FOR EMULATING A J-TYPE RELAY AIR VALVE USABLE IN A	RYV BRAKING SYSTEM
8637	USA	ISSUED	5,106,270	04/21/92	LPDW	AIR-COOLED AIR COMPRESSOR	
8593	USA	ISSUED	5,106,168	04/21/92	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8530	USA	ISSUED	5,105,955	04/21/92	CARD	SPHERICAL CONNECTOR APPARATUS IN AN ARTI CULATED SLACKLESS-T	YPE...RYV APPLICATION
8396	CANAD	ISSUED	1300208	05/05/92	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION							
8389	CANAD	ISSUED	1300209	05/05/92	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION
8446	CANAD	ISSUED	1300038	05/05/92	PTDS	MOISTURE REMOVAL APPARATUS	

8458	CANAD	ISSUED	1300723	05/12/92	PTDS	CONTROL COMMAND SYSTEM FOR RAILWAY VEHICLES	
8440	CANAD	ISSUED	1300724	05/12/92	PTDS	ELECTROPNEUMATIC MASTER CONTROLLER FOR A N AIR BRAKE SYSTEM	
8259	JAPAN	ISSUED	UM1904780	05/13/92	NAFM	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8661	USA	ISSUED	5,113,694	05/19/92	NAFM	MODIFIED PRESS. REGULATOR VAL FOR SINGLE CAR TESTING DEVICE	
8410	CANAD	ISSUED	1301079	05/19/92	NAFM	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8374	CANAD	ISSUED	1301078	05/19/92	NAFM	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RLY	CAR BRAKE ASSEMBLY
8627	USA	ISSUED	5,115,927	05/26/92	CARD	STRENGTHENING MECHANISM FOR A FEMALE ARTICULATED COUPLING	MEMBER
8110	JAPAN	ISSUED	1909081	05/26/92	NAFM	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8383	AUSAL	ISSUED	617457	05/28/92	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8607	USA	ISSUED	5,118,166	06/02/92	NAFM	QUICK SER. FUNCTION FOR RLY. FREIGHT BRAKE CONTROL VALVE	DEVICE
PULSE-1	USA	ISSUED	5,117,866	06/02/92	PULS	AIR FLOW REGULATOR FOR FUEL MEASURING SYSTEMS	
8569	USA	ISSUED	5124988	06/23/92	PTDS	DUMP VALVE OPERATIONAL FAULT DETERMINATION SYSTEM	
7092	JAPAN	ISSUED	1675356	06/26/92	PTDS	ADJUSTABLE VARIABLE LOAD CONTROL VALVE DEVICE	
8374	BRAZL	ISSUED	8706703-0	06/30/92	NAFM	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RLY	CAR BRAKE ASSEMBLY
8621	USA	ISSUED	5,125,722	06/30/92	PTDS	LOAD COMPENSATION CONTROL VALVE	
8646	USA	ISSUED	5,127,283	07/07/92	CARD	HAND BRAKE MECHANISM FOR RAILWAY CARS	
8117	JAPAN	ISSUED	1680618	07/13/92	PTDS	VIGILANCE SAFETY CONTROL SYSTEM	
8190	JAPAN	ISSUED	1679851	07/13/92	NAFM	EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
VAPOR-37	USA	ISSUED	5,130,503	07/14/92	VAPR	PRESSURE WAVE SWITCH HAVING IMPROVED CONTACT STRUCTURE AND	PRESSURE EQUALIZATION
8665	USA	ISSUED	5,129,145	07/14/92	LPDW	VALVE RECONDITIONING PROCESS	
8383	UNIKN	ISSUED	2218763	07/15/92	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8609	USA	ISSUED	5,131,331	07/21/92	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RAILWAY CARS

8521	USA	ISSUED	5,131,612	07/21/92	LPDM	ARRANGMENT FOR POSITIVELY DETERMINING ACTUAL SOUNDING OF WARNING HORN ON RAIL VEHICLE
8632	USA	ISSUED	5,131,667	07/21/92	NAFW	HOSE COUPLING GASKET
8276	JAPAN	ISSUED	1919239	07/22/92	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE
8415	CANAD	ISSUED	1305740	07/28/92	NAFW	VARIABLE LOAD VALVE
8269	JAPAN	ISSUED	1688343	08/11/92	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRAKE
8189	JAPAN	ISSUED	1688332	08/11/92	PTDS	MANUALLY RELEASABLE PARKING BRAKE DEVICE
8640	USA	ISSUED	5,139,159	08/18/92	CARD	CONNECTING PIN FOR ARTICULATED COUPLING ARRANGEMENT
8489	AUSAL	ISSUED	620,442	08/20/92	LPDM	DIGITAL AIR BRAKE CONTROL SYSTEM
8596	USA	ISSUED	5,141,293	08/25/92	PTDS	HYDRAULIC ISOLATION VALVE FOR RAILWAY VEHICLE
8175	JAPAN	ISSUED	1691519	08/27/92	PTDS	PENALTY BRAKE APPLICATION NULLIFICATION- PREVENTION SYSTEM
6829	MEXIC	ISSUED	164579	09/03/92	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION
8674	USA	ISSUED	5,144,985	09/08/92	PTDS	VARIABLE LOAD VALVE FOR RAILWAY VEHICLES
8482	JAPAN	ISSUED	1307572	09/15/92	NABC	VITAL PRESSURE REGULATING SYSTEM FOR RAILROAD CARS
8675	USA	ISSUED	5,146,952	09/15/92	PTDS	FLUID PRESSURE CONTROL VALVE DEVICE FOR A RAILWAY CAR
8642	USA	ISSUED	5,146,939	09/15/92	LPDM	VALVE BUSHING CLEANING DEVICE & METHOD OF CLEANING VALVE BUSHINGS
VAPOR-36	USA	ISSUED	5,148,631	09/22/92	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
8389	BRAZL	ISSUED	8801207	09/29/92	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8656	USA	ISSUED	5,152,410	10/06/92	PTDS	ELECTRO-PNEUMATIC COUPLER CONTROL SYS. . . UNCOUPLING OF RAILWAY VEHICLES
8562	USA	ISSUED	5,152,409	10/06/92	CARD	DRAFT GEAR ASSEMBLY
8623	USA	ISSUED	5,154,204	10/13/92	PTDS	AUTOMATIC DRAIN VALVE FOR A COMPRESSED AIR SYSTEM
8282	JAPAN	ISSUED	1703083	10/14/92	NAWD	RAILWAY VEHICLE PENALTY BRAKE CONTROL SYSTEM
8299	BRAZL	ISSUED	8605110	10/27/92	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CONTROL
8276	JAPAN	ISSUED	1705205	10/27/92	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE

8276	JAPAN	ISSUED	1705205	10/27/92	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE
8415	BRAZL	ISSUED	8903450	11/24/92	NAFU	VARIABLE LOAD VALVE
8659	USA	ISSUED	5,165,962	11/24/92	NAFU	MASKING FILM FOR COATING PROCESS
PULSE-7	USA	ISSUED	5,166,610	11/24/92	PULS	DUAL RANGE SPEED INDICATOR WITH ACCELERATION DISPLAY
8410	BRAZL	ISSUED	8706702-1	11/24/92	NAFU	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
8214	JAPAN	ISSUED	1716111	11/27/92	LPDW	QUICK RELEASE VALVE ARRANGEMENT
8576	USA	ISSUED	5,167,334	12/01/92	CARD	APPAR TO ENABLE VERSATILITY ATTACHING CPLR TO SEAL ON A RAILWAY CAR
8641	USA	ISSUED	5,167,333	12/01/92	CARD	APPARATUS PREVENT DETRIMENTAL EXTRANEOUS FOREIGN MATTER ... ARTICULATED COUPLING
8653	USA	ISSUED	5,170,818	12/15/92	PTDS	SAFETY VALVE
8698	USA	ISSUED	5,172,819	12/22/92	CARD	BEARING ASSEMBLY FOR AN ARTICULATED COUPLING APPARATUS WHICH CONNECTS ADJACENT ENDS OF
A PAIR OF RMY CARS TOGETHER.						
8669	USA	ISSUED	5,172,820	12/22/92	CARD	IMPROVED FEMALE CONNECTION MEMBER USED IN AN ARTICULATED COUPLING ARRANGEMENT
8630	SOFRFC	ISSUED	91/6850	12/30/92	NAFU	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION
8532	SOFRFC	ISSUED	91/1245A	12/30/92	NAFU	EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR
8539	SOFRFC	ISSUED	91/1245	12/30/92	PTDS	TRANSDUCEDR OPERATIONAL FAULT DETERMINATION SYSTEM
8234	JAPAN	ISSUED	1725600	01/19/93	PTDS	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR..ADJUSTER ARRANGEMENT
8285	FRANC	ISSUED	2578932-81	01/22/93	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8351	AUSAL	ISSUED	627535	01/29/93	NAFU	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE
8104	JAPAN	ISSUED	1729861	01/29/93	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION
8244	JAPAN	ISSUED	1729859	01/29/93	LPDW	BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT
8222	JAPAN	ISSUED	1729856	01/29/93	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE
8179	JAPAN	ISSUED	1729847	01/29/93	NAFU	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE
8455	CANAD	ISSUED	1313392	02/02/93	NAFU	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION

8451	CANAD	ISSUED	1313390	02/02/93	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8454	CANAD	ISSUED	1313391	02/02/93	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8465	CANAD	ISSUED	1313353	02/02/93	PTDS	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8427	AUSAL	ISSUED	627838	02/05/93	PTDS	WHEEL SPIN CONTROL SYSTEM	
PULSE-10	USA	ISSUED	5,185,700	02/09/93	PULS	SOLID STATE EVEN, RECORDER	
8445	CANAD	ISSUED	1313505	02/09/93	PTDS	CONTROL METHOD FOR DUAL CYLINDER MOISTURE REMOVAL APPARATUS	
8396	JAPAN	ISSUED	1953405	02/12/93	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION							
8508	CANAD	ISSUED	1313686	02/16/93	PTDS	LOAD DEPENDENT VALVE FOR RAILWAY VEHICLES	
PULSE-25	USA	ISSUED	5,190,359	03/02/93	PULS	PRESSURE RELIEF VALVE FOR RAILWAY BRAKE EMERGENCY SYSTEMS	
8639	USA	ISSUED	5,192,118	03/09/93	LPDW	ELECTRO-PNEUMATIC LOCOMOTIVE BRAKE CONTROL SYSTEM	
8433	MEXIC	ISSUED	167,240	03/11/93	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
VAPOR-35	CANAD	ISSUED	1,315,812	04/06/93	VAPR	DOOR OPERATOR WITH LOCKING MECHANISM	
8122	JAPAN	ISSUED	1755824	04/23/93	PTDS	BRAKE ACTUATOR DEVICE HAVING A HYDRAULIC STACK ADJUSTING ARR	ANGEMENT
8374	JAPAN	ISSUED	1755853	04/23/93	NAFW	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RMY	CAR BRAKE ASSEMBLY
8462	CANAD	ISSUED	1316707	04/27/93	PTDS	MAGNETIC ROTATIONAL DETECTING ARRANGEMENT FOR SENSING SPEED	OF RAILWAY VEHICLE
8489	UNITKN	ISSUED	2224322	04/28/93	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8645	USA	ISSUED	5,207,482	05/04/93	NAFW	VENT VALVE DEVICE HAVING DISABLING MEANS	
8514	USA	ISSUED	5,209,551	05/11/93	PTDS	ANALOG SERVICE BRAKE RESPONSE ENHANCING CIRCUIT FOR RAILWAY	VEHICLES
8706	USA	ISSUED	5,211,451	05/18/93	LPDW	ADJUSTABLE REGULATING DEVICE FOR A RAILWAY LOCOMOTIVE	BRAKE VALVE APPARATUS
8564	USA	ISSUED	5,213,397	05/25/93	NAFW	FREIGHT BRAKE CONTROL VALVE FOR RAILWAY CAR.	
8678	USA	ISSUED	5,213,749	05/25/93	LPDW	A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT &	SEAL SO PRODUCED
8629	USA	ISSUED	5,219,082	06/15/93	CARD	A MALE CONNECTION MEMBER FOR AN ARTICULATED COUPLING	ARRANGEMENT
8550	CANAD	ISSUED	1,319,033	06/15/93	PTDS	FORCE MULTIPLICATION MECHANISM	

8682	USA	ISSUED	5,220,863	06/22/93	NAFW	CONICAL DIAPHRAGM AND METHOD OF MAKING	
8644	USA	ISSUED	5,222,788	06/29/93	LPDW	MICROPROCESSOR BASED ELECTRO-PNEU. LOCOMOTIVE BRAKE CONTROL	SYSTEM HAVING BRAKE ASSURANCE C
8643	USA	ISSUED	5,224,994	07/06/93	NAFW	APPARATUS & METHOD FOR LIQUID TREATMENT OF ARTICLE SURFACES	
8343	JAPAN	ISSUED	1771682	07/14/93	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE	
8600	USA	ISSUED	5,228,648	07/20/93	NAFW	RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8433	BRAZL	ISSUED	8900266	07/27/93	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
VAPOR-36	CANAD	ISSUED	1,321,219	08/10/93	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND	LOCK
PULSE-26	USA	ISSUED	5,235,849	08/17/93	PULS	RAILROAD COUPLER MOUNT	
8604	USA	ISSUED	5,244,171	09/14/93	PTDS	INTERSLIP SEQUENCE SPEED ALGORITHM	
6829	INDIA	ISSUED	169289	09/18/93	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8696	USA	ISSUED	5,246,030	09/21/93	LPDW	SAFETY VALVE ARRANGEMENT	
8460	CANAD	ISSUED	1322567	09/28/93	PTDS	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8421	CANAD	ISSUED	1,322,729	10/05/93	NAFW	TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE	ASSEMBLY
8453	CANAD	ISSUED	1,323,063	10/12/93	NAFW	FREIGHT BRAKE EMERGENCY VALVE	
8506	CANAD	ISSUED	1,323,062	10/12/93	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8427	FRANC	ISSUED	2644742-B1	10/15/93	PTDS	WHEEL SPIN CONTROL SYSTEM	
8383	FRANC	ISSUED	89 06362	10/15/93	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8673	USA	ISSUED	5,253,930	10/19/93	PTDS	AIR BRAKE CONTROL SYS. HAVING ELECTROMAGNETIC VAL DEVICE	WHICH HAS 2 SET POINTS FOR ESTA
8433	CANAD	ISSUED	1,323,487	10/26/93	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8247	BRAZL	ISSUED	8600648-7	10/26/93	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
VAPOR-38	USA	ISSUED	5,259,342	11/09/93	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
8120	JAPAN	ISSUED	UM1994612	11/26/93	PTDS	DIFFERENTIAL FLUID PRESSURE SWITCH	

8120	JAPAN	ISSUED	1994612	11/26/93	PTDS	DIFFERENTIAL FLUID PRESSURE SWITCH	
8470	CANAD	ISSUED	1,324,809	11/30/93	NAFW	IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8421-N	BRAZL	ISSUED	8803666	11/30/93	NAFW		
8551	CANAD	ISSUED	1,324,810	11/30/93	PTDS	ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE	
PULSE-23	USA	ISSUED	5,267,473	12/07/93	PULS	SELF POWERED END OF TRAIN UNIT	
8552	CANAD	ISSUED	1,324,964	12/07/93	PTDS	IMPROVED TREAD BRAKE UNIT	
8383	CANAD	ISSUED	1,325,054	12/07/93	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	
8504	AUSAL	ISSUED	639,480	12/13/93	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8424	CANAD	ISSUED	1,325,264	12/14/93	PTDS	BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8677	USA	ISSUED	5,269,595	12/14/93	NAFW	EMPTY/LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8510	AUSAL	ISSUED	637660	12/19/93	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8711	USA	ISSUED	5,271,511	12/21/93	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
8504	UNIKN	ISSUED	2,236,155	12/22/93	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8650	USA	ISSUED	5,277,323	01/11/94	CARD	LOCKING WEDGE ASSEMBLY... ARTICULATED TYPE CPLG ARRANGEMENT	
8630	AUSAL	ISSUED	641272	01/17/94	NAFW	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION	
8605	USA	ISSUED	5,280,718	01/25/94	PTDS	TRANSUDGER HEALTH AND OFFSET CALIBRATION PROCESSING SYSTEM	
VAPOR-39	USA	ISSUED	5,280,754	01/25/94	VAPR	TRANSIT CAR POWER DOOR OBSTRUCTION SENSING SYSTEM AND DEVICE	
8600	SOFRC	ISSUED	93/2917	01/26/94	NAFW	RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8433	AUSAL	ISSUED	641,287	02/01/94	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS	
8704	USA	ISSUED	5,286,096	02/15/94	REPD	ARRANGEMENT FOR ENHANCING THE BAIL-OFF FUNCTION OF BRAKE CYLINDER PRESSURES ON A RAILROAD	
8510	SOFRC	ISSUED	90/9952	02/23/94	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8618	USA	ISSUED	5,290,095	03/01/94	PTDS	WHEEL LOCK DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAILWAY VEHICLES	
PULSE-33	CANAD	ISSUED	1,327,714	03/15/94	PULS	FUEL MEASURING SYSTEM	

8702	USA	ISSUED	5,293,777	03/15/94	NAFU	HINGED ASSEMBLY FOR AIR BRAKE VALVE TEST FIXTURE	
8427	ITALY	ISSUED	1242483	03/17/94	PTDS	WHEEL SPIN CONTROL SYSTEM	
8719	USA	ISSUED	5,297,856	03/29/94	PTDS	TWO SEPARATE HIGH SPEED AND LOW SPEED DISC BRAKE UNITS FOR RAILWAY VEHICLES	
8539	UNITKN	ISSUED	2242980	04/06/94	PTDS	TRANSDUCED OPERATIONAL FAULT DETERMINATION SYSTEM	
8678	USA	ISSUED	5,303,937	04/19/94	LPDW	A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT & SEAL SO PRODUCED	
8718	USA	ISSUED	5,303,987	04/19/94	NAFU	EMPTY/LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8510	UNITKN	ISSUED	2240848	04/20/94	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
PULSE-34	USA	ISSUED	5,309,315	05/03/94	PULS	COMPUTER CHASSIS CONSTRUCTION	
8489	FRANC	ISSUED	2645818	05/06/94	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8602	USA	ISSUED	5,315,520	05/24/94	PTDS	FRICTION BRAKE INTERFACE HEALTH CHECK SYSTEM FOR MULTIPLE-AXLE RAILWAY VEHICLES	
8711	SOFRC	ISSUED	92/9009	06/29/94	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
8694	USA	ISSUED	5,326,159	07/05/94	NAFU	QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL VALVE DEVICE	
8725	USA	ISSUED	5,332,297	07/26/94	REPD	CHARGING CUT-OFF VALVE ARRANGEMENT FOR MICROPROCESSOR BASED ELECTROPNEUMATIC LOCOMOTIVE BRA	
KE CONTROL SYSTEM VAPOR-40	USA	ISSUED	5,332,279	07/26/94	VAPR	POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT VEHICLES (electric bus door ope	
8692	USA	ISSUED	5,333,941	08/02/94	NAFU	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE	
VAPOR-38	USA	ISSUED	5,333,574	08/02/94	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS FUELS (parent)	
8685	USA	ISSUED	5,339,930	08/23/94	CARD	CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	
8608	AUSAL	ISSUED	648,306	08/23/94	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RAY CARS TOGETHER IN A	
SEMI-PERMANENT MANNER 8728	USA	ISSUED	5,340,203	08/23/94	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE	
VAPOR-41	USA	ISSUED	5,341,598	08/30/94	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED LOCKS (R110)	
8506	BRAZL	ISSUED	8904266-2	08/30/94	NAFU	CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8714	USA	ISSUED	5,350,222	09/27/94	NAFU	AUXILIARY STABILIZER VALVE FOR VX VENT VALVE	

8489	AUSAL	ISSUED	649,535	10/18/94	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8532	AUSAL	ISSUED	650862	10/25/94	NAFW	EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8351	BRAZL	ISSUED	9000169-9	10/25/94	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8701 BACKUP BRAKE CONTROL	USA	ISSUED	5,358,315	10/25/94	REPD	MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC
8539	AUSAL	ISSUED	650861	10/31/94	PTDS	TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	
8502	CANAD	ISSUED	2014423	11/01/94	LPDW	BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8351	CANAD	ISSUED	2,005,295	11/08/94	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
PULSE-8	USA	ISSUED	5,365,550	11/15/94	PULS	INITIAL SYNCHRONIZATION & TRACKING CIRCUITS FOR SPREAD	SPECTRUM RECEIVERS
8433	INDIA	ISSUED	172823	11/21/94	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8625	SOFRC	ISSUED	93/2880	11/30/94	LPDW	AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8610 GETHER	AUSAL	ISSUED	651820	12/06/94	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RYV CARS TO
PULSE-28	USA	ISSUED	5,374,015	12/20/94	PULS	RAILROAD TELEMETRY AND CONTROL SYSTEMS	
PULSE-24	USA	ISSUED	5,376,925	12/27/94	PULS	MOTION AND DIRECTION SENSORS	
8613	SOFRC	ISSUED	93/3107	12/28/94	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
PULSE-27	USA	ISSUED	5,377,938	01/03/95	PULS	RAILROAD TELEMETRY AND CONTROL SYSTEMS	
8504	CANAD	ISSUED	2,025,196	01/17/95	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8489	JAPAN	ISSUED	06-24924	01/23/95	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
PULSE-3	USA	ISSUED	5,383,717	01/24/95	PULS	BRAKE CONTROL OF HELPER LOCOMOTIVE	
8705 use on a RR Vehicle	USA	ISSUED	5,385,392	01/31/95	LPDW	Recoverable and a Direct Release and Non-Recoverable	Ball-Off Logic Arrangement for
8770	USA	ISSUED	5,388,675	02/14/95	RFPD	BACKING PLATE FOR DISC BRAKE PADS	
8711	AUSAL	ISSUED	654063	02/15/95	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN	ARTICULATED BEARING ASSEMBLY
8709	USA	ISSUED	5,390,772	02/21/95	PTDS	SWITCHABLE HIGH SPEED FROG MECHANISM	
8737	USA	ISSUED	5,393,129	02/28/95	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	

8608	ITALY	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RYV CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	UNIKN	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RYV CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	EPO	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RYV CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	GERME	ISSUED	69108769.5	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RYV CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	FRANC	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RYV CARS TOGETHER IN A
EMIPERMANENT MANNER							
8610	EPO	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RYV CARS TO
ETHER							
8610	UNIKN	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RYV CARS TO
ETHER							
8610	GERME	ISSUED	69108977.9	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RYV CARS TO
ETHER							
8610	FRANC	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RYV CARS TO
ETHER							
8610	ITALY	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RYV CARS TO
ETHER							
8692	SOFRG	ISSUED	93/7828	04/26/95	NAFM	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	DEVICE
8590	USA	ISSUED	5,415,465	05/16/95	LPDW	APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	PRESSURE ON A LOCOMOTIVE CONSTS
8739	USA	ISSUED	5,417,143	05/23/95	NAFM	LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEVER VALVE	
8465	JAPAN	ISSUED	1936194	05/26/95	PTDS	HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8424	JAPAN	ISSUED	1936195	05/26/95	PTDS	BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERA	TING STATUS
VAPOR-36	UNIKN	ISSUED	0435874	05/31/95	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND	LOCK
8427	CANAD	ISSUED	2,005,293	06/06/95	PTDS	WHEEL SPIN CONTROL SYSTEM	
8722	USA	ISSUED	5,423,401	06/13/95	PTDS	BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8691	USA	ISSUED	5,423,129	06/13/95	PTDS	DESICCANT CARTRIDGE OF AN AIR DRYER	
8745	USA	ISSUED	5,423,275	06/13/95	CARD	COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY	CAR TRUCK BOLSTER BOWL
8460	JAPAN	ISSUED	1942647	06/23/95	PTDS	HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8626	USA	ISSUED	5,428,538	06/27/95	LPDW	SANDING CONTROL SYSTEM FOR RAILWAY VEHICLES	

8746	SOFRC	ISSUED	94/4302	06/28/95	CARD	LUBRICATING APPARATUS FOR ARTICULATED COUPLING	ARRANGEMENT
VAPOR-38	MEXIC	ISSUED	178,516	06/30/95	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
8755	USA	ISSUED	5,429,426	07/04/95	NAFM	BRAKE CYLINDER PRESSURE RELAY VALVE FOR RAILROAD	FREIGHT CAR
VAPOR-38	USA	ISSUED	5,433,174	07/18/95	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-43	USA	ISSUED	5,433,031	07/18/95	VAPR	RESILIENT EDGES FOR POWER OPERATED DOORS (biparting doors)	
8737	SOFRC	ISSUED	94/4300	07/26/95	NAFM	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8783	SOFRC	ISSUED	94/6566	07/26/95	CARD	A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR	ASSEMBLY USING A BALL AND RACE
ASSEMBLY							
8758	SOFRC	ISSUED	94/4301	07/26/95	CARD	HIGH CAPACITY DRAFT GEAR ASSEMBLY	
8519	JAPAN	ISSUED	1956479	07/28/95	LPDW	BRAKE ASSURANCE CIRCUIT OPERATIVE IN RES PONSE TO A LOW BRAK	E PIPE PRESSURE
8681	USA	ISSUED	5,437,219	08/01/95	NAFM	LOW STRESS CONICAL TYPE DIAPHRAGM	
8735	USA	ISSUED	5,439,276	08/08/95	LPDW	TAMPER-RESISTANT INDEPENDENT BRAKE VALVE DEVICE FOR	LOCOMOTIVE AIR BRAKE EQUIPMENT
VAPOR-44	USA	ISSUED	5,438,800	08/08/95	VAPR	STABILIZER FOR OUTSIDE SLIDING PLUG DOORS (door leaf)	
6829	JAPAN	ISSUED	1958162	08/10/95	NAFM	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8600	AUSAL	ISSUED	658754	08/15/95	NAFM	RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8613	USA	ISSUED	5,443,170	08/22/95	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8510	BRAZL	ISSUED	9006339-2	08/29/95	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE	AXLE RAIL VEHICLES
8766	SOFRC	ISSUED	94/6617	08/30/95	CARD	SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT	EACH END OF THE DRAWBAR
8740	USA	ISSUED	5,449,295	09/12/95	PTDS	AUTOMATIC ELECTRIC COUPLING MECHANISM FOR A PASSENGER	TRANSIT TYPE VEHICLE
8787	USA	ISSUED	5,451,099	09/19/95	NAFM	RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8788	USA	ISSUED	5,450,782	09/19/95	NAFM	VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR	CONTROL VALVE
8614	USA	ISSUED	5,453,942	09/26/95	PTDS	WHEEL SPIN SPEED PROCESSING SYSTEM FOR MULTIPLE-AXLE	RAILWAY VEHICLES
8613	USA	ISSUED	5,452,814	09/26/95	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8539	BRAZL	ISSUED	P19100678	09/26/95	PTDS	TRANSDUCEDR OPERATIONAL FAULT DETERMINATION SYSTEM	

8712	USA	ISSUED	5,454,399	10/03/95	PTDS	APPLICATION & RELEASE MAGNET VALVE	
8782	USA	ISSUED	5,456,504	10/10/95	PTDS	LOCKING AND UNLOCKING APPARATUS FOR ACCESS DOOR ON A PASSENGER RAILWAY VEHICLE	
8781	USA	ISSUED	5,460,100	10/24/95	PTDS	SERVICE BYPASS APPARATUS FOR AUTOMATIC DOOR OPERATOR ON A PASSENGER RAILWAY VEHICLE	
8766	USA	ISSUED	5,462,179	10/31/95	CARD	SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR	
8727	USA	ISSUED	5,467,246	11/14/95	LPDW	ARRANGEMENT FOR EMULATING AN H-TYPE RELAY AIR VALVE WHICH IS UTILIZED IN A RAILWAY BRAKING SYSTEM	
8768	USA	ISSUED	5,465,816	11/14/95	PTDS	SLACK ADJUSTING BRAKE CYLINDER FOR A BRAKE UNIT ON A RAILWAY TRANSIT VEHICLE.	
8748	USA	ISSUED	5,466,105	11/14/95	NAFW	FASTENER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE	
8528	JAPAN	ISSUED	1995288	11/22/95	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE ASSEMBLY	
8720	USA	ISSUED	5,471,387	11/28/95	PTDS	SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND SLIP INTENSITY DETERMINATION PROCESS	
VAPOR-38	USA	ISSUED	5,471,957	12/05/95	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS FUELS (parent)	
VAPOR-41	MEXIC	ISSUED	180,346	12/07/95	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED LOCKS (R110)	
8694	AUSAL	ISSUED	662,264	12/12/95	NAFW	QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL VALVE DEVICE	
8248	JAPAN	ISSUED	2003892	12/20/95	LPDW	RAILWAY BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRK PRESS. DURING COMB. INDEP. AND AUTOMATIC BRAKE OPERATION	
8427	JAPAN	ISSUED	2000587	12/20/95	PTDS	WHEEL SPIN CONTROL SYSTEM	
8754	USA	ISSUED	5,480,218	01/02/96	NAFW	RAILWAY BRAKE PIPE WITH ACCESS PORTS	
8468	CANAD	ISSUED	2,005,296	01/09/96	WLTD	FREIGHT BRAKE EMERGENCY VALVE	
8489	CANAD	ISSUED	1,337,947	01/16/96	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
VAPOR-46	USA	ISSUED	5,483,769	01/16/96	VAPR	DOOR DRIVE EQUIPMENT FOR MASS TRANSIT VEHICLE (sliding outside plug door)	
8737	AUSAL	ISSUED	663443	01/23/96	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8745	SOFRC	ISSUED	94/4257	01/31/96	CARD	COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8625	USA	ISSUED	5,491,830	02/13/96	LPDW	AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8847	USA	ISSUED	5,492,511	02/20/96	REPD	APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND REVERSER HANDLES ON A CONTROL STATION OF A RAILWAY LOCOMOTIVE	

8841	USA	ISSUED	5,492,203	02/20/96	NAFW	RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND MOUNT THEREFOR
VAPOR-48	UNIKN	ISSUED	2,271,331	02/28/96	VAPR	IMPROVED DOOR HANGER SYSTEM FOR MASS TRANSIT VEHICLES
8747	SOFRC	ISSUED	95/2063	02/28/96	NAFW	IMBEDDED ELECTRICAL CONNECTOR
8792	SOFRC	ISSUED	95/2066	02/28/96	CARD	SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY
8613	USA	ISSUED	5,495,957	03/05/96	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8696	CANAD	ISSUED	2,109,381	03/12/96	LPDW	SAFETY VALVE ARRANGEMENT
8704	JAPAN	ISSUED	2503195	03/13/96	LPDW	ARRANGEMENT FOR ENHANCING THE BAIL-OFF FUNCTION OF BRAKE CYLINDER PRESSURES ON A RAILROA
D LOCOMOTIVE						
8849	USA	ISSUED	5,500,799	03/19/96	REPD	METHOD OPERATING LOCO.MOUNTED THROTTLE CONTROLLER BETWEEN 2 MODES OF OPERATION INC.A TRANSI
TION BETWEEN SUCH TWO MODES						
8759	USA	ISSUED	5,499,728	03/19/96	PTDS	ELECTRICALLY OPERATED HOOK COUPLER WITH MANUAL OVER RIDE
8613	USA	ISSUED	5,501,347	03/26/96	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8625	AUSAL	ISSUED	664889	03/26/96	LPDW	AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM
8810	USA	ISSUED	5,501,512	03/26/96	NAFW	SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANS- DUCERS IN ELECTRO-PNEUMATIC FRE
IGHT BRAKE CONTROL SYSTEMS						
8767	SOFRC	ISSUED	95/3929	03/27/96	NAFW	RAILWAY BRAKE PIPE BRACKET ACCESS PLATE
8816	USA	ISSUED	5,503,469	04/02/96	LPDW	APPARATUS TO PREVENT INADVERTENT DISCHARGE AND TRAPPING OF PIPE PRESS. IN AN ELECTRO-PNEU.
LOCO. BRAKE CONTROL SYSTEM						
8809	USA	ISSUED	5,503,011	04/02/96	NAFW	TEST CONNECTOR FOR AUTOMATIC TEST DEVICE
8877	CANAD	ISSUED	2,090,307	04/02/96	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR
8813	USA	ISSUED	5,503,467	04/02/96	NAFW	PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT BRAKE
8749	USA	ISSUED	5,503,280	04/02/96	PTDS	TIMED THRUST UNCOUPLING MECHANISM FOR PASSENGER TRANSIT TYPE RAILWAY CARS
8858	USA	ISSUED	5,505,283	04/09/96	PTDS	HIGH CURRENT HARP FOR AN ELECTRIC TROLLEY BUS
8853	INDIA	ISSUED	175539	04/09/96	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
PULSE-35						
8767	USA	ISSUED	5,507,457	04/16/96	PULS	TRAIN INTEGRITY DETECTION SYSTEM
8786	USA	ISSUED	5,509,727	04/23/96	NAFW	Railway Automatic Brake Control Valve Test Unit
8786	SOFRC	ISSUED	95/3512	04/24/96	NAFW	Railway Automatic Brake Control Valve Test Unit

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8809	SOFRC	ISSUED	95/4705	04/24/96	NAFW	TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8794	SOFRC	ISSUED	94/8645	04/24/96	CARD	A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8844	USA	ISSUED	5,519,299	05/21/96	REPD	METHOD AND APPARATUS FOR DETERMINING AND ENCODING THE POSITION OF A REVERSER HANDLE ON A	
8772	USA	ISSUED	5,518,304	05/21/96	NAFW	FILTER ARRANGEMENT AND MOUNTING IN RAILWAY BRAKE PIPE BRACKET.	
8389	ARGNT	ISSUED	249,654	05/24/96	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION	
8739	AUSAL	ISSUED	666438	05/28/96	NAFW	LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE	
8692	AUSAL	ISSUED	666408	05/28/96	NAFW	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE	
8630	BRAZL	ISSUED	9103727-1	05/28/96	NAFW	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION	
8361	KORSO	ISSUED	100493	06/10/96	PTDS	DECELERATION CONTROL SYSTEM	
8383	JAPAN	ISSUED	2064840	06/24/96	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION	
8677	JAPAN	ISSUED	2064957	06/24/96	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
PULSE-37	USA	ISSUED	5,530,328	06/25/96	PULS	CONSIST POWER MONITOR	
8673	USA	ISSUED	5,529,194	06/25/96	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY	
8751	SOFRC	ISSUED	95/7080	06/26/96	NAFW	ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8803	SOFRC	ISSUED	95/7998	06/26/96	CARD	FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8813	SOFRC	ISSUED	95/7996	06/26/96	NAFW	PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT BRAKE	
8752	SOFRC	ISSUED	95/6931	06/26/96	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8726	USA	ISSUED	5,535,122	07/09/96	PTDS	A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK OF THE BRAKE RETARDATION...ON A	
8651	USA	ISSUED	5,537,014	07/16/96	REPD	AN APPARATUS FOR FEEDBACK OF AN ANALOG SIGNAL USED TO MONITOR &/OR CONTROL DYNAMIC BR	
8605	USA	ISSUED	5,537,285	07/16/96	REPD	DIGITAL OUTPUT CONTROL DEVICE AND METHOD FOR OPERATING	
8811	USA	ISSUED	5,538,331	07/23/96	LPDW	APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-PNEUMATIC SYSTEMS	
8789	USA	ISSUED	5,538,332	07/23/96	NAFW	VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY	

LOCOMOTIVE CONTROL STAND

VEHICLE

AKING & METHOD OF OPERATING

PATENT REFERENCE

8796	USA	ISSUED	5,584,407	12/17/96	CARD	INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RMY FRT CAR AND AN	INTERLOCKING MECHANISM THEREFOR
8747	USA	ISSUED	5,586,668	12/24/96	NAFW	IMBEDDED ELECTRICAL CONNECTOR	
8651	USA	ISSUED	5,586,812	12/24/96	CARD	MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = inv	RAILWAY BRAKING APPARATUS
8752	USA	ISSUED	5,586,813	12/24/96	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8779	USA	ISSUED	5,589,767	12/31/96	PTDS	MECHANISM FOR THE ATTACHMENT OF A SPEED SENSOR	
8891	USA	ISSUED	5,590,797	01/07/97	CARD	FRICTION CLUTCH MECHANISM FOR HIGH CAPACITY DRAFT GEAR	ASSEMBLY AND METHOD OF RECONDIT
8880	USA	ISSUED	5,592,384	01/07/97	LPDW	RAILWAY BRAKE SYSTEM TESTER	
8651	USA	ISSUED	5,593,214	01/14/97	CARD	MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = inv	RAILWAY BRAKING APPARATUS
8535	CANAD	ISSUED	2,014,685	01/21/97	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE	FUNCTION
6961	CANAD	ISSUED	2,014,686	01/21/97	NAFW	VENT VALVE DEVICE	
8972	USA	ISSUED	5,595,267	01/21/97	RFPC	BRAKE SHOE HAVING FATIGUE RESISTANT BACKING PLATE	
8528	CANAD	ISSUED	2,015,689	01/21/97	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8977	USA	ISSUED	5,604,991	02/25/97	PTDS	SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8665	SOFRC	ISSUED	96/4015	02/26/97	NAFW	FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO	
8838	SOFRC	ISSUED	96/3750	02/26/97	NAFW	PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC	BRAKE
8773	USA	ISSUED	5,613,579	03/25/97	PTDS	LATCH LOCKING SPRING CLIP FOR RETAINING AN INSERTABLE BRAKE	SHOE LINING ON A DISC BRAKE HEA
8926	SOFRC	ISSUED	96/5105	03/26/97	CARD	ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8927	POLND	ISSUED	172628	04/04/97	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
8895	USA	ISSUED	5,617,965	04/08/97	CARD	AN INTERLOCKING TYPE MECHANISM FOR A SLACKLESS DRAWBAR	ASSEMBLY USED ON A RAILWAY FREI
8987	USA	ISSUED	5,621,657	04/15/97	LPDW	AUTOMATIC DETECTION OF AIR FLOW TRANSDUCER TYPE UNDER	SOFTWARE CONTROL
8788	AUSAL	ISSUED	674618	04/22/97	NAFW	VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR	CONTROL VALVE
8939	USA	ISSUED	5,630,354	05/20/97	LPDW	EXTENDED LIFE BRAKE CYLINDER HOLDER	
8884	SOFRC	ISSUED	96/7296	05/28/97	NAFW	TWO-PIECE CHECK VALVE ASSEMBLY	

PATENT
 FRAME
 VAPOR
 LIGHT CAR
 8987

8919	SOFRC	ISSUED	96/7297	05/28/97	NAFW	TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8928	USA	ISSUED	5,634,696	06/03/97	NAFW	RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8992	USA	ISSUED	5,634,391	06/03/97	LPDW	INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR PUMP	APPLICATION IN A SANITARY TYPE
8722	JAPAN	ISSUED	2659175	06/06/97	PTDS	BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8790	USA	ISSUED	5,638,276	06/10/97	NAFW	MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSUR	
8858	CANAD	ISSUED	2,147,097	06/17/97	PTDS	HIGH CURRENT HARP FOR AN ELECTRIC TROLLEY BUS	
8928	SOFRC	ISSUED	96/6437	06/25/97	NAFW	RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8900	SOFRC	ISSUED	96/6215	06/25/97	NAFW	RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8799	USA	ISSUED	5,644,461	07/01/97	LPDW	HIGH VOLTAGE D-C CURRENT LIMITER	
8701	JAPAN	ISSUED	2670425	07/04/97	LPDW	MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC
8728	JAPAN	ISSUED	2672779	07/11/97	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE	
8932	USA	ISSUED	5,647,460	07/15/97	RFPC	SPRING-TYPE RAILROAD BRAKE SHOE LOCKING KEY	
8924	USA	ISSUED	5,650,933	07/22/97	PTDS	TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS	
8950	USA	ISSUED	5,650,561	07/22/97	PULS	DIAGNOSTIC DEVICE FOR DETERMINING THE PNEUMATIC INTEGRITY OF A BUBBLE-TYPE FUEL MEASURING	
8963	USA	ISSUED	5,654,889	08/05/97	PTDS	SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION	
8758	AUSAL	ISSUED	677285	08/07/97	CARD	HIGH CAPACITY DRAFT GEAR ASSEMBLY	
8715	USA	ISSUED	5,657,839	08/19/97	RFPC	IMPROVED RAILWAY TYPE BRAKE SHOE	
8950	USA	ISSUED	5,659,204	08/19/97	REPD	AN APPARATUS FOR AND A METHOD OF GENERATING AN ANALOG SIGNAL FOR CONTROL OF DYNAMIC B	
8922	USA	ISSUED	RE35590	08/19/97	PULS	SOLID STATE EVENT RECORDER	
8922	SOFRC	ISSUED	96,8800	08/27/97	PTDS	SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8924	SOFRC	ISSUED	96/8801	08/27/97	PTDS	TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8921	SOFRC	ISSUED	96/8802	08/27/97	PTDS	LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER	

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RAILWAY PIPE BRACKET WITH ACCESS PORTS PATENT 23 FRAM 27

Patent No.	Country	Issued	Pub. No.	Date	Class.	Description	Notes
8685	JAPAN	ISSUED	2690674	08/29/97	NAFW	CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	
8590	JAPAN	ISSUED	2690270	08/29/97	LPDW	APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	PRESSURE ON A LOCOMOTIVE CONSISTS
8828	USA	ISSUED	5,662,391	09/02/97	NAFW	PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE	
8924	USA	ISSUED	5,662,727	09/02/97	PTDS	TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8752	USA	ISSUED	5,669,674	09/23/97	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8987	SOFRC	ISSUED	97/0031	09/23/97	CARD	A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8884	USA	ISSUED	5,669,412	09/23/97	NAFW	TWO-PIECE CHECK VALVE ASSEMBLY	
8894	USA	ISSUED	5,673,774	10/07/97	PTDS	AUXILIARY VEHICLE CURRENT COLLECTOR	
8910	USA	ISSUED	5,673,493	10/07/97	PTDS	TELESCOPING DESICCANT CARTRIDGE FOR AN AIR DRYER DISPOSED IN AN AIR SYSTEM	
8839	USA	ISSUED	5,677,608	10/14/97	PTDS	EMBEDDED DUPLEX LOCAL CONTROL PANEL	
8789	JAPAN	ISSUED	2709046	10/17/97	NAFW	VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY	
8841	JAPAN	ISSUED	2709293	10/17/97	NAFW	RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND MOUNT THEREFOR	
8999	USA	ISSUED	5,681,015	10/28/97	PULS	RADIO-BASED ELECTRO-PNEUMATIC CONTROL COMMUNICATIONS SYSTEM	
8921	USA	ISSUED	5,685,896	11/11/97	PTDS	LINEAR CHOKE SHUTTLE/DRIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER	
8991	USA	ISSUED	5,687,633	11/18/97	LPDW	IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP DIAPHRAGM	
8938	USA	ISSUED	5,691,888	11/25/97	PTDS	POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER	* inventor's full name: CHARLE
9013	USA	ISSUED	5,689,893	11/25/97	LPDW	DESICCANT CANISTER WITH POSITIONING BORE	
8983	KORSO	ISSUED	131073	11/26/97	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION	
8829	SOFRC	ISSUED	97/2409	11/26/97	CARD	A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
8943	JAPAN	ISSUED	2723492	11/28/97	NAFW	REMOTE CONTROL OF CUT-OUT COCK	
8701	USA	ISSUED	5,692,586	12/02/97	PTDS	BRAKE DEVICE	
BACKUP BRAKE CONTROL	CANAD	ISSUED	2,105,152	12/02/97	LPDW	MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC
8224	GERWE	ISSUED	P3609268.1	12/04/97	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	

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8900	USA	ISSUED	5,695,258	12/09/97	NAFW	RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8711	EPO	ISSUED	0582035	12/10/97	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
VAPOR-41	JAPAN	ISSUED	2727397	12/12/97	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED LOCKS (R110)	
8792	AUSAL	ISSUED	680970	12/18/97	CARD	SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY	
9010	USA	ISSUED	5,700,065	12/23/97	PTDS	PENALTY BRAKE SCHEME FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
9012	USA	ISSUED	5,700,066	12/23/97	PTDS	PENALTY BRAKE DESIGN FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
8985	USA	ISSUED	5,701,975	12/30/97	CARD	RAILWAY VEHICLE BRAKE SYSTEM	
8635	USA	ISSUED	5,702,774	12/30/97	PTDS	REUSABLE PAINT MASKING MEMBER	
8983	USA	ISSUED	5,702,012	12/30/97	CARD	A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
8651	USA	ISSUED	5,701,974	12/30/97	CARD	MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS	
8741	USA	ISSUED	5,704,770	01/06/98	LPDW	AIR PASSAGE INSERT FOR OIL FILL SPOUT	
8882	USA	ISSUED	5,704,454	01/06/98	RFPC	FATIGUE AND IMPACT RESISTANT RAILWAY BRAKE SHOE	
8927	USA	ISSUED	5,704,396	01/06/98	PTDS	MODULATION ROTARY VALVE	
8272	JAPAN	ISSUED	2736054	01/09/98	CARD	DRAFT GEAR ASSEMBLY	
8624	JAPAN	ISSUED	2739046	01/16/98	PTDS	TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS	
8692	CANAD	ISSUED	2,109,379	01/20/98	NAFW	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE	
8774	CANAD	ISSUED	2,109,378	01/20/98	NAFW	AUXILIARY STABILIZER VALVE FOR VX VENT VALVE	
8889	USA	ISSUED	5,709,436	01/20/98	NAFW	ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALV	
8905	USA	ISSUED	5,711,206	01/27/98	LPDW	PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY IN AN AIR COMPRESSOR	
8788	EPO	ISSUED	0628458	01/28/98	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE	
8847	JAPAN	ISSUED	2742525	01/30/98	LPDW	APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND RE-VERSER HANDLES ON A CONTROL STA	
8853	JAPAN	ISSUED	2742526	01/30/98	LPDW	APPARATUS FOR INTERLOCKING REVERSER HANDLE ON A CONTROL STAND OF A RAILWAY LOCOMOTIVE	

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8949	USA	ISSUED	5,713,639	02/03/98	PTDS	BRAKE CONTROL DEVICE FOR RAILROAD ROLLING STOCK	
8987	USA	ISSUED	5,713,261	02/03/98	CARD	A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8919	USA	ISSUED	5,714,684	02/03/98	NAFW	TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
9016	USA	ISSUED	5,715,621	02/10/98	LPDW	REGENERATIVE DESICCANT AIR DRYER	
8930	USA	ISSUED	5,718,487	02/17/98	REPD	BRAKE CONTROL SYSTEM FOR DOUBLED ENDED LOCOMOTIVE	
8912	USA	ISSUED	5,721,683	02/24/98	REPD	IMMEDIATE COMMUNICATION DESIGN FOR DISCRETE CONTROL SYSTEM	
8997	USA	ISSUED	5,720,455	02/24/98	PULS	INTRA-TRAIN RADIO COMMUNICATION SYSTEM	
8986	SOFRC	ISSUED	97/3994	02/25/98	CARD	PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8951	SOFRC	ISSUED	97/2348	02/25/98	CARD	END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
9014	SOFRC	ISSUED	97/3997	02/25/98	LPDW	Molded Rubber Val Seal for use in Predetermined type Valves	such as, a Ck Val in a Regenera
8988	SOFRC	ISSUED	97/3989	02/25/98	CARD	AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8737	JAPAN	ISSUED	2753457	02/27/98	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
VAPOR-40	MEXIC	ISSUED	188149	03/05/98	VAPR	POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT	VEHICLES (electric bus door ope
8781	AUSAL	ISSUED	683498	03/19/98	CARD	A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR	ASSEMBLY USING A BALL AND RACE
ASSEMBLY	USA	ISSUED	5,730,504	03/24/98	NAFW	Release Assuring Arrangement for Comb. Electro-Pneu./Auto.	Pneumatic Brake
9003	SOFRC	ISSUED	97/4626	03/25/98	LPDW	DESICCANT CANISTER WITH POSITIONING BORE	
8804	SOFRC	ISSUED	97/6436	03/25/98	NAFW	SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR	RAILWAY FREIGHT VEHICLE
9006	SOFRC	ISSUED	97/5963	03/25/98	NAFW	ELECTRO-PNEUMATIC VALVE CONTROL	
8985	SOFRC	ISSUED	97/4586	03/25/98	CARD	RAILWAY VEHICLE BRAKE SYSTEM	
8982	SOFRC	ISSUED	97/4891	03/25/98	LPDW	THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND M
ETH091	JAPAN	ISSUED	2763284	03/27/98	LPDW	SOFTWARE NULLIFICATION OF TRANSDUCER INDUCED OFFSET	ERRORS WITHIN A FLOW RATE MEASU
REMENT SYSTEM	JAPAN	ISSUED	2766631	04/03/98	LPDW	APPARATUS TO PREVENT INADVERTENT DISCHARGE AND TRAPPING OF	PIPE PRESS. IN AN ELECTRO-PNEU.
9004	USA	ISSUED	5,735,579	04/07/98	PTDS	BRAKE ASSURANCE MODULE	

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9033	USA	ISSUED	5,738,417	04/14/98	PTDS	BRAKE PIPE SENSING UNIT	
8929	USA	ISSUED	5,740,043	04/14/98	PTDS	RELATIVE SPIN SPEED TRACTION CONTROL	
9058	USA	ISSUED	5,738,311	04/14/98	PULS	DISTRIBUTED POWER TRAIN SEPARATION DETECTION	
8906	USA	ISSUED	5,740,029	04/14/98	REPD	SOFTWARE ALGORITHM PROVIDING DYNAMIC CONFIGURATION OF DEAD	BAND CONTROL CRITERIA WITHIN A
8936	USA	ISSUED	5,740,025	04/14/98	PTDS	ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM	* inventor's full name: CHARLE
8903	USA	ISSUED	5,740,547	04/14/98	PULS	RAIL NAVIGATION SYSTEM	
8651	USA	ISSUED	5,738,416	04/14/98	CARD	MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8904	USA	ISSUED	5,744,707	04/28/98	PULS	TRAIN BRAKE PERFORMANCE MONITOR	
8976	SOFRFC	ISSUED	97/6934	04/29/98	NAFW	ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
8877	USA	ISSUED	5,747,685	05/05/98	REPD	AUTOMATED TERMINAL TEST PROCEDURE	
9011	USA	ISSUED	5,746,485	05/05/98	PTDS	PENALTY BRAKE CIRCUIT FOR STRAIGHT AIR PIPE BRAKE CONTROL	EQUIPMENT
8899	USA	ISSUED	5,746,484	05/05/98	NAFW	E/P INTERFACE WITH PNEUMATIC CONTROL VALVE FOR BACK-UP	BRAKE ARRANGEMENT
8988	USA	ISSUED	5,746,293	05/05/98	CARD	AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8998	USA	ISSUED	5,748,269	05/05/98	PULS	ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
8879	USA	ISSUED	5,752,212	05/12/98	PTDS	PROPORTIONAL POLARITY SHIFT WHEEL SLIDE PROTECTION	
	USA	ISSUED	5,757,291	05/26/98	PULS	INTEGRATED PROXIMITY WARNING SYSTEM AND END-OF-TRAIN COMMUNICATION SYSTEM	
VAPOR-49	USA	ISSUED	5,755,060	05/26/98	VAPR	COMPACT PANEL LOCK FOR AN OVERHEAD MOUNTED DOOR PANEL	OPERATOR (filed orig as provisi
8857	CANAD	ISSUED	2,150,882	06/09/98	LPDW	DIPSTICK ASSEMBLY	
9047	USA	ISSUED	5,771,933	06/30/98	PTDS	A Three-Position Solenoid Valve	
VAPOR-52	USA	ISSUED	5,775,232	07/07/98	VAPR	BRIDGE PLATE FOR A MASS TRANSIT VEHICLE	
9046	USA	ISSUED	5,775,367	07/07/98	PTDS	A SOLENOID VALVE CONTROL DEVICE	

Case Number	Count	Sub	Start	Patent Number	Issue Date	Client	Long:Title1	Long:Title2
7006	USA		ISSUED 579	4,236,424	12/02/80	CARD HAND BRAKE FOR RAILWAY VEHICLES		
7048	USA		ISSUED 280	4,292,721	10/06/81	CARD CRIMPING DEVICE FOR USE IN ASSEMBLING OF EXTRAVEL SPRING ASSEMBLY...ADJUSTER		
7059	USA		ISSUED 281	4,296,868	10/27/81	CARD HOUSING FOR DRAFT GEAR		
6931	CANAD		ISSUED	1115239	12/29/81	CARD HOUSING FOR DRAFT GEAR		
7006	CANAD		ISSUED	1121744	04/13/82	CARD HAND BRAKE FOR RAILWAY VEHICLES		
7061	SOFRC		ISSUED	81/6066	07/28/82	CARD HAND BRAKE FOR RAILROAD CAR		
7047	USA		ISSUED 282	4,354,302	10/19/82	CARD JACKING TOOL FOR INSTALLING AND REMOVING DRAFT GEARS ON RAILWAY CARS		
7061	USA		ISSUED 283	4,368,648	01/18/83	CARD HAND BRAKE FOR RAILROAD CAR		
7047	AUSAL		ISSUED	537077	09/27/84	CARD JACKING TOOL FOR INSTALLING AND REMOVING DRAFT GEARS ON RAILWAY CARS		
7061	AUSAL		ISSUED	541155	05/22/85	CARD HAND BRAKE FOR RAILROAD CAR		
8224	UNIKN		ISSUED	2172678	03/19/86	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER		
8272	SOFRC		ISSUED	85/6755	04/30/86	CARD DRAFT GEAR ASSEMBLY		
8224	SOFRC		ISSUED	85/8592	07/30/86	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER		
8243	UNIKN		ISSUED	2180319	08/28/86	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING		
8243	FRANC		ISSUED	8612759	09/12/86	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING		
8285	SOFRC		ISSUED	86/1651	11/26/86	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM		
8272	USA		ISSUED 284	4,645,187	02/24/87	CARD DRAFT GEAR ASSEMBLY		
8182	USA		ISSUED 285	4,647,024	03/03/87	CARD FRICTIONAL SHOCK-ABSORBING METHOD AND APPARATUS		
8213	SOFRC		ISSUED	86/6027	03/23/87	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING		

8126	USA	ISSUED	4,657,230	06/14/87	CARD OVERTRAVEL SPRING ASSEMBLY FOR SLACK ADJUSTER	
8224	USA	ISSUED	4,662,485	05/05/87	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8243	USA	ISSUED	4,674,729	06/23/87	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8285	USA	ISSUED	4,683,991	08/04/87	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8285	ITALY	ISSUED	1191280	02/24/88	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8285	UNITK	ISSUED	2172351	11/16/88	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8224	CANAD	ISSUED	1244467	12/13/88	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8452	USA	ISSUED	4,793,720	12/27/88	CARD RAILWAY CAR RESILIENT SIDE BEARING	
8285	AUSAL	ISSUED	577930	02/22/89	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8224	ITALY	ISSUED	1203729	02/23/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8433	USA	ISSUED	4,809,419	03/07/89	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8272	AUSAL	ISSUED	579891	05/10/89	CARD DRAFT GEAR ASSEMBLY	
8272	CANAD	ISSUED	1254535	05/23/89	CARD DRAFT GEAR ASSEMBLY	
8182	CANAD	ISSUED	1254534	05/23/89	CARD FRICTIONAL SHOCK-ABSORBING METHOD AND APPARATUS	
8224	AUSAL	ISSUED	583072	08/11/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8243	CANAD	ISSUED	1259343	09/12/89	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8433	SOFRC	ISSUED	89/0026	10/25/89	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8224	FRANC	ISSUED	8602246	11/17/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8272	BRAZL	ISSUED	PI8504464	11/28/89	CARD DRAFT GEAR ASSEMBLY	
8224	BRAZL	ISSUED	PI8505798	11/28/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8243	AUSAL	ISSUED	589439	02/08/90	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8433	USA	ISSUED	4,916,794	04/17/90	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8433	UNIKN	ISSUED	2214267	07/03/91	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS

8611	USA	ISSUED	5,042,393	08/27/91	CARD LOCKING ASSEMBLY TO SECURE BEARING ASSEMBLY...PAIR OF RAILWAY CARS
8608	USA	ISSUED	5,065,679	11/19/91	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RY CARS TOGETHER IN A SEMIPERMANENT MANNER
8620	USA	ISSUED	5,080,243	01/14/92	CARD ASSEMBLY MECHANISM FOR AN ARTICULATED COUPLING SYSTEM
8433	AUSAL	ISSUED	613,138	01/28/92	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8575	USA	ISSUED	5,092,204	03/03/92	CARD APPAR. FOR ALIGNING SPHERICAL MEMBER DURING ASSEMBLY OF ARTICULATED CPLG SYSTEM
8530	USA	ISSUED	5,105,955	04/21/92	CARD SPHERICAL CONNECTOR APPARATUS IN AN ARTICULATED SLACKLESS-TYPE... RY APPLICATION
8627	USA	ISSUED	5,115,927	05/26/92	CARD STRENGTHENING MECHANISM FOR A FEMALE ARTICULATED COUPLING MEMBER
8646	USA	ISSUED	5,127,283	07/07/92	CARD HAND BRAKE MECHANISM FOR RAILWAY CARS
8609	USA	ISSUED	5,131,331	07/21/92	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RAILWAY CARS
8640	USA	ISSUED	5,139,159	08/18/92	CARD CONNECTING PIN FOR ARTICULATED COUPLING ARRANGEMENT
8562	USA	ISSUED	5,152,409	10/06/92	CARD DRAFT GEAR ASSEMBLY
8641	USA	ISSUED	5,167,333	12/01/92	CARD APPARATUS PREVENT DETRIMENTAL EXTRANEOUS FOREIGN MATTER ... ARTICULATED COUPLING
8576	USA	ISSUED	5,167,334	12/01/92	CARD APPAR TO ENABLE VERSATILITY ATTACHING CPLR TO SEAL ON A RAILWAY CAR
8669	USA	ISSUED	5,172,820	12/22/92	CARD IMPROVED FEMALE CONNECTION MEMBER USED IN AN ARTICULATED COUPLING ARRANGEMENT
8698	USA	ISSUED	5,172,819	12/22/92	CARD BEARING ASSEMBLY FOR AN ARTICULATED COUPLING APPARATUS WHICH CONNECTS ADJACENT ENDS OF A PAIR OF RY CARS TOGETHER.
8285	FRANC	ISSUED	2578932-81	01/22/93	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8433	MEXIC	ISSUED	167,240	03/11/93	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8629	USA	ISSUED	5,219,082	06/15/93	CARD A MALE CONNECTION MEMBER FOR AN ARTICULATED COUPLING ARRANGEMENT
8433	BRAZL	ISSUED	8900266	07/27/93	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8433	CANAD	ISSUED	1,323,487	10/26/93	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8711	USA	ISSUED	5,271,511	12/21/93	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY
8650	USA	ISSUED	5,277,323	01/11/94	CARD LOCKING WEDGE ASSEMBLY...ARTICULATED TYPE CPLG ARRANGEMENT

8633	AUSAL 1	ISSUED	661,287	02/01/94	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8711	SOFRC	ISSUED	92/9009	06/29/94	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	ARTICULATED BEARING ASSEMBLY
8608 MANHNER	AUSAL	ISSUED	648,306	08/23/94	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT
8685	USA	ISSUED	5,339,930	08/23/94	CARD CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	
8433	INDIA	ISSUED	172823	11/21/94	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8610	AUSAL	ISSUED	651820	12/06/94	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8613	SOFRC	ISSUED	93/3107	12/28/94	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8711	AUSAL	ISSUED	654063	02/15/95	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	ARTICULATED BEARING ASSEMBLY
8608 MANHNER	ITALY	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT
8608 MANHNER	EPO	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT
8608 MANHNER	GERMIE	ISSUED	69108769.5	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT
8608 MANHNER	UNITN	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT
8608 MANHNER	FRANC	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT
8610	ITALY	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8610	GERMIE	ISSUED	69108977.9	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8610	FRANC	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8610	UNITN	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8610	EPO	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8745	USA	ISSUED	5,423,275	06/13/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	ARRANGEMENT
8746	SOFRC	ISSUED	94/4302	06/28/95	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING	ARRANGEMENT
8758	SOFRC	ISSUED	94/4301	07/26/95	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY	
8783	SOFRC	ISSUED	94/6566	07/26/95	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY	ASSEMBLY USING A BALL AND RACE ASSEMBLY
8613	USA	ISSUED	5,443,170	08/22/95	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY	GEAR ASSEMBLY

8766	SOFR	ISSUED	94/6617	08/30/95	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT	EACH END OF THE DRAWBAR
8613	USA C2	ISSUED	5,452,814	09/26/95	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8766	USA D4	ISSUED	5,462,179	10/31/95	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT	EACH END OF THE DRAWBAR
8745	SOFR	ISSUED	94/4257	01/31/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8792	SOFR	ISSUED	95/2066	02/28/96	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8613	USA D4	ISSUED	5,495,957	03/05/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8613	USA D5	ISSUED	5,501,347	03/26/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8433	INDIA D1	ISSUED	175539	04/09/96	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8794	SOFR	ISSUED	94/8645	04/24/96	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8613	USA D3	ISSUED	5,529,194	06/25/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8893	SOFR	ISSUED	95/7998	06/26/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8224	JAPAN	ISSUED	2080831	08/09/96	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8893	USA	ISSUED	5,544,767	08/13/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8792	USA	ISSUED	5,547,089	08/20/96	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8651	USA D6	ISSUED	5,549,363	08/27/96	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & WATSCHE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8745	USA CP	ISSUED	5,558,025	09/24/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8911	USA	ISSUED	5,558,238	09/24/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8651	USA D3	ISSUED	5,558,411	09/24/96	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & WATSCHE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8651	USA D7	ISSUED	5,558,412	09/24/96	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & WATSCHE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8651	USA D1	ISSUED	5,558,410	09/24/96	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & WATSCHE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8796	SOFR	ISSUED	95/8002	09/25/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RUY FRI CAR AND AN	INTERLOCKING MECHANISM THEREFOR
8746	USA C	ISSUED	5,560,503	10/01/96	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING	ARRANGEMENT

8745	CANAD	ISSUED	2,119,850	10/08/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL
8613	AUSAL	ISSUED	670275	10/29/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8794	AUSAL	ISSUED	670521	11/05/96	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY
8766	AUSAL	ISSUED	670714	11/12/96	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8745	JAPAN	ISSUED	2581524	11/21/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL
8796	USA	ISSUED	5,584,407	12/17/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RY FRI CAR AND AN INTERLOCKING MECHANISM THEREFOR
8651	USA	ISSUED	5,586,812	12/24/96	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8891	USA	ISSUED	5,590,797	01/07/97	CARD FRICTION CLUTCH MECHANISM FOR HIGH CAPACITY DRAFT GEAR ASSEMBLY AND METHOD OF RECONDITIONING DRAFT G
8651	USA	ISSUED	5,593,214	01/14/97	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8875	SOFRFC	ISSUED	96/5105	03/26/97	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8895	USA	ISSUED	5,617,965	04/08/97	CARD AN INTERLOCKING TYPE MECHANISM FOR A SLACKLESS DRAWBAR ASSEMBLY USED ON A RAILWAY FREIGHT CAR
8758	AUSAL	ISSUED	677285	08/07/97	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY
8987	SOFRFC	ISSUED	97/0031	09/23/97	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER
8983	SOFRFC	ISSUED	97/2409	11/26/97	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR
8224	GERVE	ISSUED	P3609268.1	12/04/97	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER
8711	EPO	ISSUED	0582035	12/10/97	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY
8792	AUSAL	ISSUED	680970	12/18/97	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY
8985	USA	ISSUED	5,701,975	12/30/97	CARD RAILWAY VEHICLE BRAKE SYSTEM
8651	USA	ISSUED	5,701,974	12/30/97	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8983	USA	ISSUED	5,702,012	12/30/97	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR
8272	JAPAN	ISSUED	2736054	01/09/98	CARD DRAFT GEAR ASSEMBLY
8987	USA	ISSUED	5,713,261	02/03/98	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER
8988	SOFRFC	ISSUED	97/3989	02/25/98	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE INTENSIFIER MECHANISM

8986	SOFRIC	ISSUED	97/3994	02/25/98	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8951	SOFRIC	ISSUED	97/2348	02/25/98	CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8783	AUSAL	ISSUED	683498	03/19/98	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR	ASSEMBLY USING A BALL AND RACE ASSEMBLY
8985	SOFRIC	ISSUED	97/4586	03/25/98	CARD RAILWAY VEHICLE BRAKE SYSTEM	
8651	USA	ISSUED	5,738,416	04/14/98	CARD McCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8988	USA	ISSUED	5,746,293	05/05/98	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM

Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Class	Title	Long Title 1	Long Title 2
7000	USA		ISSUED	4,181,369	01/01/80	LPD	PNEUMATIC/ELECTRO-PNEUMATIC BRAKE ... CIRCUITRY FOR		PUSH/PULL TRAIN OPERATION
6426	JAPAN		ISSUED	1009772	08/26/80	LPD	PNEUMATIC-ELECTRIC SELF-LAPPING BRAKE CONTROL APPARATUS		
7050	USA		ISSUED	4,309,018	01/05/82	LPD	CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7000	CANAD		ISSUED	1116659	01/19/82	LPD	PNEUMATIC/ELECTRO-PNEUMATIC BRAKE ... CIRCUITRY FOR		PUSH/PULL TRAIN OPERATION
7050	SOFR		ISSUED	81/0244	02/24/82	LPD	CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7050	VENDA		ISSUED	81/0005	03/19/82	LPD	CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7050	CANAD		ISSUED	1136597	11/30/82	LPD	CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7000	JAPAN		ISSUED	1210664	06/12/84	LPD	PNEUMATIC/ELECTRO-PNEUMATIC BRAKE ... CIRCUITRY FOR		PUSH/PULL TRAIN OPERATION
8244	USA		ISSUED	4,552,412	11/12/85	LPD	BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT		
8104	USA		ISSUED	4,558,907	12/17/85	LPD	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8214	SOFR		ISSUED	85/3348	12/24/85	LPD	QUICK RELEASE VALVE ARRANGEMENT		
8214	USA		ISSUED	4,577,910	03/23/86	LPD	QUICK RELEASE VALVE ARRANGEMENT		
8104	VENDA		ISSUED	85/0052	04/23/86	LPD	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8248	USA		ISSUED	4,586,755	05/06/86	LPD	RYE BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRK PRESS. DURING COMB. INDEP. AND AUTOMATIC BRAKE OPERA		
8214	VENDA		ISSUED	85/0035	05/30/86	LPD	QUICK RELEASE VALVE ARRANGEMENT		
8104	SOFR		ISSUED	85/4720	07/30/86	LPD	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8104	TRANS		ISSUED	85/0060	09/26/86	LPD	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8214	SOFR		ISSUED	85/0057	12/11/86	LPD	QUICK RELEASE VALVE ARRANGEMENT		
8104	SOFR		ISSUED	85/0091	12/11/86	LPD	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION

8214	TRANS	ISSUED	85/0037	03/13/87	LPDW QUICK RELEASE VALVE ARRANGEMENT
8220	HEWZL	ISSUED	213583	06/24/87	LPDW PISTON ASSEMBLY
8394	USA	ISSUED	4721515	01/26/88	LPDW CONTROL SYSTEM OF A DUAL CYLINDER TYPE D HUMIDIFIER
8214	CANAD	ISSUED	1234849	04/05/88	LPDW QUICK RELEASE VALVE ARRANGEMENT
8392	USA	ISSUED	4,750,787	06/14/88	LPDW RELAY VALVE FOR AN AIR BRAKE SYSTEM
8104	CANAD	ISSUED	1242232	09/20/88	LPDW CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION
8469	USA	ISSUED	4,830,580	05/16/89	LPDW TWO STAGE AIR COMPRESSOR UNIT
8220	CANAD	ISSUED	1254157	05/16/89	LPDW PISTON ASSEMBLY
8220	AUSAL	ISSUED	581248	05/26/89	LPDW PISTON ASSEMBLY
8391	USA	ISSUED	4,836,093	06/06/89	LPDW PISTON ASSEMBLY
8244	CANAD	ISSUED	1255721	06/13/89	LPDW BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT
8489	SOFRAC	ISSUED	89/7261	07/25/90	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM
8566	USA	ISSUED	4971399	11/20/90	LPDW SYSTEM FOR ASSURING RECHARGE OF BRAKE PIPE PRESSURE.. LOCOMOTIVE BRAKE VALVE
8531	USA	ISSUED	4,986,500	01/22/91	LPDW ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES
8502	SOFRAC	ISSUED	90/3254	02/27/91	LPDW BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL
8531	SOFRAC	ISSUED	90/3201	02/27/91	LPDW ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES
8519	SOFRAC	ISSUED	90/3199	02/27/91	LPDW BRAKE ASSURANCE CIRCUIT OPERATIVE IN RESPONSE TO A LOW BRAKE PIPE PRESSURE
8588	USA	ISSUED	5,036,468	07/30/91	LPDW ARRANGEMENT FOR READING AN ABSOLUTE POSITION ENCODER ... POSITION OF BRAKE HANDLE
8523	USA	ISSUED	D319039	08/13/91	LPDW LOCOMOTIVE BRAKE CONSOLE
8522	USA	ISSUED	D319423	08/27/91	LPDW LOCOMOTIVE BRAKE CONSOLE
8582	USA	ISSUED	5,064,251	11/12/91	LPDW ELECTRO-PNEUMATIC AIR BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES
8489	ITALY	ISSUED	1231980	01/22/92	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM
8652	USA	ISSUED	5,083,586	01/28/92	LPDW MTG. ARRANGE FOR CONN. A FLUID PRESS. VAL TO A PIPE BRKT. BY A HOLLOW ADAPT. MEMBER

8587	USA	ISSUED	5,086,641	02/11/92	LPDM ARRANGEMENT FOR DYNAMIC CALIBRATING AN ABSOLUTE POSITION ENCODER
8541	USA	ISSUED	5,096,266	03/17/92	LPDM DUAL-RESPONSE VENT VALVE DEVICE
8622	USA	ISSUED	5,104,203	04/14/92	LPDM ARRANGMT FOR EMULATING A J-TYPE RELAY AIR VALVE USABLE IN A RAIL BRAKING SYSTEM
8637	USA	ISSUED	5,106,270	04/21/92	LPDM AIR-COOLED AIR COMPRESSOR
8665	USA	ISSUED	5,129,145	07/14/92	LPDM VALVE RECONDITIONING PROCESS
8521	USA	ISSUED	5,131,612	07/21/92	LPDM ARRANGMT FOR POSITIVELY DETERMINING ACTUAL SOUNDING OF WARNING HORN ON RAIL VEHICLE
8489	AUSAL	ISSUED	620,442	08/20/92	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM
8642	USA	ISSUED	5,146,939	09/15/92	LPDM VALVE BUSHING CLEANING DEVICE & METHOD OF CLEANING VALVE BUSHINGS
8214	JAPAN	ISSUED	1716111	11/27/92	LPDM QUICK RELEASE VALVE ARRANGEMENT
8104	JAPAN	ISSUED	1729861	01/29/93	LPDM CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION
8244	JAPAN	ISSUED	1729859	01/29/93	LPDM BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT
8639	USA	ISSUED	5,192,118	03/09/93	LPDM ELECTRO-PNEUMATIC LOCOMOTIVE BRAKE CONTROL SYSTEM
8489	UNIKM	ISSUED	2224322	04/28/93	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM
8706	USA	ISSUED	5,211,451	05/18/93	LPDM ADJUSTABLE REGULATING DEVICE FOR A RAILWAY LOCOMOTIVE BRAKE VALVE APPARATUS
8678	USA	ISSUED	5,213,749	05/25/93	LPDM A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT & SEAL SO PRODUCED
8644	USA	ISSUED	5,222,788	06/29/93	LPDM MICROPROCESSOR BASED ELECTRO-PNEU. LOCOMOTIVE BRAKE CONTROL SYSTEM HAVING BRAKE ASSURANCE CIRCUIT
8696	USA	ISSUED	5,246,030	09/21/93	LPDM SAFETY VALVE ARRANGEMENT
8678	USA	ISSUED	5,303,937	04/19/94	LPDM A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT & SEAL SO PRODUCED
8489	FRANM	ISSUED	2645818	05/06/94	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM
8489	AUSAL 1	ISSUED	649,535	10/18/94	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM
8502	CANAD	ISSUED	2014423	11/01/94	LPDM BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL
8625	SOFRM	ISSUED	93/2880	11/30/94	LPDM AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM

8489	JAPAN	ISSUED	06-24/94	01/23/95	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM	
8705	USA	ISSUED	5,385,392	01/31/95	LPDM Recoverable and a Direct Release and Non-Recoverable	Bail-Off Logic Arrangement for use on a RR ve
8590	USA	ISSUED	5,415,465	05/16/95	LPDM APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	PRESSURE ON A LOCOMOTIVE CONSIST.
8626	USA	ISSUED	5,428,538	06/27/95	LPDM SANDING CONTROL SYSTEM FOR RAILWAY VEHICLES	
8519	JAPAN	ISSUED	1956479	07/28/95	LPDM BRAKE ASSURANCE CIRCUIT OPERATIVE IN RES PONSE TO A LOW BRAK E PIPE PRESSURE	
8735	USA	ISSUED	5,439,276	08/08/95	LPDM TAMPER-RESISTANT INDEPENDENT BRAKE VALVE DEVICE FOR	LOCOMOTIVE AIR BRAKE EQUIPMENT
8727	USA	ISSUED	5,467,246	11/14/95	LPDM ARRANGEMENT FOR EMULATING AN H-TYPE RELAY AIR VALVE WHICH	IS UTILIZED IN A RAILWAY BRAKING SYSTEM
8248	JAPAN	ISSUED	2003892	12/20/95	LPDM RHY BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRAK PRESS.	DURING COMB. INDEP. AND AUTOMATIC BRAKE OPERA
8489	CANAD	ISSUED	1,337,947	01/16/96	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM	
8625	USA	ISSUED	5,491,830	02/13/96	LPDM AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8696	CANAD	ISSUED	2,109,381	03/12/96	LPDM SAFETY VALVE ARRANGEMENT	
8704	JAPAN	ISSUED	2503195	03/13/96	LPDM ARRANGEMENT FOR ENHANCING THE BAIL-OFF FUNCTION OF BRAKE	CYLINDER PRESSURES ON A RAILROAD LOCOMOTIVE
8625	AUSAL	ISSUED	664889	03/26/96	LPDM AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8816	USA	ISSUED	5,503,469	04/02/96	LPDM APPARATUS TO PREVENT UNADVERTENT DISCHARGE AND TRAPPING OF	PIPE PRESS. IN AN ELECTRO-PNEU. LOCO. BRAKE C
8811	USA	ISSUED	5,538,331	07/23/96	LPDM APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-	PNEUMATIC SYSTEMS
8857	USA	ISSUED	5,544,419	08/13/96	LPDM DIPSTICK ASSEMBLY	
8502	JAPAN	ISSUED	2106812	11/06/96	LPDM BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8725	JAPAN	ISSUED	2576834	11/07/96	LPDM CHARGING CUT-OFF VALVE ARRANGEMENT FOR MICROPROCESSOR-BASED	ELECTROPNEUMATIC LOCOMOTIVE BRAKE CONTROL SYS
8880	USA	ISSUED	5,592,384	01/07/97	LPDM RAILWAY BRAKE SYSTEM TESTER	
8907	USA	ISSUED	5,621,657	04/15/97	LPDM AUTOMATIC DETECTION OF AIR FLOW TRANSDUCER TYPE UNDER	SOFTWARE CONTROL
8939	USA	ISSUED	5,630,354	05/20/97	LPDM EXTENDED LIFE BRAKE CYLINDER HOLDER	
8992	USA	ISSUED	5,634,391	06/03/97	LPDM INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR	APPLICATION IN A SANITARY TYPE PUMP
8799	USA	ISSUED	5,644,461	07/01/97	LPDM HIGH VOLTAGE D-C CURRENT LIMITER	

PATENT

REEL: 9423 FRAME: 0287

8701	JAPAN	ISSUED	2670425	07/04/97	LPDM MICROPROCESSOR-BASED ELECTRO-PNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC BACKUP BRAKE
8590	JAPAN	ISSUED	2690220	08/29/97	LPDM APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	PRESSURE ON A LOCOMOTIVE CONSIST.
8991	USA	ISSUED	5,687,633	11/18/97	LPDM IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP	DIAPHRAGM
9013	USA	ISSUED	5,689,893	11/25/97	LPDM DESICCANT CANISTER WITH POSITIONING BORE	
8701	CANAD	ISSUED	2,105,152	12/02/97	LPDM MICROPROCESSOR-BASED ELECTRO-PNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC BACKUP BRAKE
8741	USA	ISSUED	5,704,770	01/06/98	LPDM AIR PASSAGE INSERT FOR OIL FILL SPDM	
8905	USA	ISSUED	5,711,206	01/27/98	LPDM PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY	IN AN AIR COMPRESSOR
8847	JAPAN	ISSUED	2742525	01/30/98	LPDM APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND RE-	VERSER HANDLES ON A CONTROL STAND OF A RAILWAY
8853	JAPAN	ISSUED	2742526	01/30/98	LPDM APPARATUS FOR INTERLOCKING REVERSE HANDLE ON A CONTROL	STAND OF A RAILWAY LOCOMOTIVE
9016	USA	ISSUED	5,715,621	02/10/98	LPDM REGENERATIVE DESICCANT AIR DRYER	
9014	SOFR	ISSUED	97/3997	02/25/98	LPDM Molded Rubber Val Seal for use in Predetermined type Valves	such as, a Ck Val in a Regenerative Desiccant
9013	SOFR	ISSUED	97/4626	03/25/98	LPDM DESICCANT CANISTER WITH POSITIONING BORE	
8982	SOFR	ISSUED	97/4891	03/25/98	LPDM THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8812	JAPAN	ISSUED	2763284	03/27/98	LPDM SOFTWARE NULLIFICATION OF TRANSDUCER INDUCED OFFSET	ERRORS WITHIN A FLOW RATE MEASUREMENT SYSTEM
8816	JAPAN	ISSUED	2766631	04/03/98	LPDM APPARATUS TO PREVENT INADVERTENT DISCHARGE AND TRAPPING OF	PIPE PRESS. IN AN ELECTRO-PNEU. LOCO. BRAKE C
8957	CANAD	ISSUED	2,150,882	06/09/98	LPDM DIPSTICK ASSEMBLY	

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Case Number	Country	Count	Sub Case	Status	Patent Number	Issue Date	Client	Long: Title 1	Long: Title 2
6821	USA	1		ISSUED	4,175,792	11/27/79	NAFV	CONTINUAL QUICK SERVICE VALVE DEVICE	
6975	SOFRC			ISSUED	79/1232	03/26/80	NAFV	RAILWAY VEHICLE BRAKE APPARATUS ARRANGED . . . REDUCED EMERGENCY RESERVOIR VOLUME	
6982	SOFRC			ISSUED	79/1200	03/26/80	NAFV	NEW POPPET VALVE TYPE BRAKE CONTROL VALVE DEVICE	
7005	SOFRC			ISSUED	79/3204	06/25/80	NAFV	IMPROVED HOSE COUPLING	
6986	SOFRC			ISSUED	79/3203	06/25/80	NAFV	VARIABLE LOAD VALVE DEVICE	
7005	USA			ISSUED	4,215,881	08/05/80	NAFV	IMPROVED HOSE COUPLING	
7020	SOFRC			ISSUED	79/4008	08/27/80	NAFV	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND R ESERVOIR	
7020	USA			ISSUED	4,225,193	09/30/80	NAFV	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND R ESERVOIR	
7023	USA			ISSUED	RE30408	09/30/80	NAFV	BRAKE APPARATUS WITH COMBINED BRAKE CYLINDER AND RESERVOIR	
6986	USA			ISSUED	4,235,477	11/25/80	NAFV	VARIABLE LOAD VALVE DEVICE	
7027	SOFRC			ISSUED	80/3282	05/27/81	NAFV	IMPROVED CORE FOR FORMING PASSAGEWAYS IN CASTINGS	
6982	CANAD			ISSUED	1111466	10/27/81	NAFV	NEW POPPET VALVE TYPE BRAKE CONTROL VALVE DEVICE	
6975	CANAD			ISSUED	1111465	10/27/81	NAFV	RAILWAY VEHICLE BRAKE APPARATUS ARRANGED . . . REDUCED EMERGENCY RESERVOIR VOLUME	
7005	CANAD			ISSUED	1115308	12/29/81	NAFV	IMPROVED HOSE COUPLING	
7020	CANAD			ISSUED	1116660	01/19/82	NAFV	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND R ESERVOIR	
8123	TRANS			ISSUED	83/0042	04/28/82	NAFV	UNIVERSAL GASKET	
8006	VENDA			ISSUED	81/0071	06/04/82	NAFV	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE	
7027	VENDA			ISSUED	80/0545	06/12/82	NAFV	IMPROVED CORE FOR FORMING PASSAGEWAYS IN CASTINGS	
8006	SOFRC			ISSUED	81/3958	06/30/82	NAFV	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE	

8006	USA	ISSUED	4,339,155	07/13/82	RAILWAY BRAKE CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
7100	SOFRC	ISSUED	81/5775	09/29/82	RAILWAY BRAKE VALVE ARRANGEMENT. RAILWAY BRAKE APPARATUS. BRAKE CYLINDER DEVICE
7098	USA	ISSUED	RE31059	10/19/82	EMERGENCY PORTION FOR A BRAKE CONTROL VALVE
7135	VENDA	ISSUED	82/0070	06/24/83	RAILWAY BRAKE CONTROL VALVE ARRANGEMENTS IN COMBINED AIR RESERVOIR/BRAKE CYLINDER DEVICE
7144	VENDA	ISSUED	82/0074	06/24/83	RAILWAY BRAKE CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
7135	SOFRC	ISSUED	82/5862	06/29/83	RAILWAY BRAKE IMPROVEMENTS IN COMBINED AIR RESERVOIR/BRAKE CYLINDER DEVICE
7144	SOFRC	ISSUED	82/6590	07/27/83	RAILWAY BRAKE CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
7144	USA	ISSUED	4,405,182	09/20/83	RAILWAY BRAKE CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
7081	CANAD	ISSUED	1154386	09/27/83	RAILWAY BRAKE CYLINDER DEVICE
7080	CANAD	ISSUED	1154387	09/27/83	RAILWAY BRAKE CYLINDER DEVICE
7135	USA	ISSUED	4,418,799	12/06/83	RAILWAY BRAKE IMPROVEMENTS IN COMBINED AIR RESERVOIR/BRAKE CYLINDER DEVICE
7144	BOPHU	ISSUED	82/0127	12/28/83	RAILWAY BRAKE CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
8123	VENDA	ISSUED	83/0031	01/13/84	RAILWAY BRAKE UNIVERSAL GASKET
8123	SOFRC	ISSUED	83/3265	01/25/84	RAILWAY BRAKE UNIVERSAL GASKET
7144	FRANS	ISSUED	82/0079	02/09/84	RAILWAY BRAKE CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
7135	FRANS	ISSUED	82/0077	02/09/84	RAILWAY BRAKE IMPROVEMENTS IN COMBINED AIR RESERVOIR/BRAKE CYLINDER DEVICE
6975	JAPAN	ISSUED	1195608	03/12/84	RAILWAY VEHICLE BRAKE APPARATUS ARRANGED TO REDUCE EMERGENCY RESERVOIR VOLUME
7135	BOPHU	ISSUED	82/0121	04/13/84	RAILWAY BRAKE IMPROVEMENTS IN COMBINED AIR RESERVOIR/BRAKE CYLINDER DEVICE
8123	BOPHU	ISSUED	83/0050	05/24/84	RAILWAY BRAKE UNIVERSAL GASKET
8150	USA	ISSUED	4,456,219	06/26/84	RAILWAY BRAKE SPRING LOCKING HANDLE MECHANISM
8101	USA	ISSUED	4,467,605	08/28/84	RAILWAY BRAKE HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
7100	CANAD	ISSUED	1178992	12/04/84	RAILWAY BRAKE VALVE ARRANGEMENT. RAILWAY BRAKE APPARATUS. BRAKE CYLINDER DEVICE
8006	CANAD	ISSUED	1178993	12/04/84	RAILWAY BRAKE CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE

5982	JAPAN	ISSUED	1247151	07/16/85	NAFW NEW POPPET VALVE TYPE BRAKE CONTROL VALVE DEVICE
8190	SOFRC	ISSUED	84/4369	03/27/85	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT
8190	VENDA	ISSUED	84/0054	06/21/85	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT
8179	SOFRC	ISSUED	84/9082	07/31/85	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE
8179	VENDA	ISSUED	84/0109	08/30/85	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE
8190	TRANS	ISSUED	84/0055	09/02/85	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT
6986	CANAD	ISSUED	1193300	09/10/85	NAFW VARIABLE LOAD VALVE DEVICE
8110	SOFRC	ISSUED	85/0671	10/30/85	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL
8110	VENDA	ISSUED	85/0010	12/06/85	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL
8179	USA	ISSUED	4,557,181	12/10/85	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE
7135	CANAD	ISSUED	1198758	12/31/85	NAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/BRAKE CYLINDER DEVICE
8110	TRANS	ISSUED	85/0012	02/28/86	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL
8110	USA	ISSUED	4,577,870	03/25/86	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL
8259	USA	ISSUED	4,583,790	04/22/86	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM
7135	AUSAL	ISSUED	549521	06/10/86	NAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/BRAKE CYLINDER DEVICE
8179	TRANS	ISSUED	84/0118	07/04/86	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE
8178	SOFRC	ISSUED	85/8722	07/30/86	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON
8259	SOFRC	ISSUED	85/9407	08/27/86	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM
8307	USA	ISSUED	4,613,016	09/23/86	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
8259	VENDA	ISSUED	85/0108	10/31/86	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM
7144	CANAD	ISSUED	1213634	11/04/86	NAFW CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
8179	BOPHU	ISSUED	86/0181	12/11/86	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE

8178	VENDA	ISSUED	85/0093	12/23/86	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
6986	JAPAN	ISSUED	1364209	02/09/87	NAFW VARIABLE LOAD VALVE DEVICE	
8307	SOFRIC	ISSUED	86/5988	03/25/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8259	TRAHS	ISSUED	85/0114	05/01/87	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8178	TRAHS	ISSUED	85/0106	05/01/87	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8307	VENDA	ISSUED	86/0054	05/29/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8190	BOPHU	ISSUED	84/0081	06/11/87	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
8190	CANAD	ISSUED	1225112	08/04/87	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
6829	USA	ISSUED	4,690,463	09/01/87	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8307	TRANS	ISSUED	86/0061	10/12/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8307	BOPHU	ISSUED	86/0094	11/19/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
6829	SOFRIC	ISSUED	87/2764	11/25/87	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
6829	VENDA	ISSUED	87/0038	02/26/88	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8259	BOPHU	ISSUED	85/0179	03/01/88	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8110	BOPHU	ISSUED	85/0016	03/01/88	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8307	NEWZL	ISSUED	217149	04/18/88	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8396	SOFRIC	ISSUED	87/6327	04/27/88	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8396	USA	ISSUED	4,744,609	05/17/88	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8179	CANAD	ISSUED	1237749	06/07/88	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8150	CANAD	ISSUED	1238889	07/05/88	NAFW SPRING LOCKING HANDLE MECHANISM	
8178	BOPHU	ISSUED	85/0160	07/14/88	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8410	SOFRIC	ISSUED	87/9026	07/27/88	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8396	VENDA	ISSUED	87/0086	08/26/88	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK

APPL FUNCTION	ISSUED	4,770,472	09/13/88	MAFV FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION
8389 USA	ISSUED	4,771,868	09/20/88	MAFV MANDRAME MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RHY	CAR BRAKE ASSEMBLY
8374 USA	ISSUED	4,776,642	10/11/88	MAFV FREIGHT BRAKE CONTROL VALVE DEVICE HAVIN G IMPROVED QUICK SE RVICE FUNCTION	
8455 USA	ISSUED	88/1846	10/26/88	MAFV FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION
8389 SOFRC	ISSUED	4,783,124	11/08/88	MAFV FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8454 USA	ISSUED	4,786,117	11/22/88	MAFV VARIABLE LOAD VALVE	
8415 USA	ISSUED	4,793,446	12/27/88	MAFV SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSE MBLY	
8410 USA	ISSUED	87/0147	01/09/89	MAFV FRI BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8396 BOPHU	ISSUED	87/0086	02/09/89	MAFV FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
APPL FUNCTION	ISSUED	88/4948	02/22/89	MAFV VARIABLE LOAD VALVE	
8415 SOFRC	ISSUED	88/5228	03/29/89	MAFV TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8421 SOFRC	ISSUED	4,819,993	04/11/89	MAFV FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8451 USA	ISSUED	4,830,148	05/16/89	MAFV TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8421 USA	ISSUED	4,830,438	05/16/89	MAFV FREIGHT BRAKE EMERGENCY VALVE	
8453 USA	ISSUED	764047	06/08/89	MAFV SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8307 AUSAL	ISSUED	88/0100	06/09/89	MAFV VARIABLE LOAD VALVE	
8415 BOPHU	ISSUED	1255720	06/13/89	MAFV IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8259 CANAD	ISSUED	1257579	07/18/89	MAFV CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8178 CANAD	ISSUED	4,850,654	07/25/89	MAFV FREIGHT BRAKE EMERGENCY VALVE	
8448 USA	ISSUED	88/8255	07/25/89	MAFV FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8454 SOFRC	ISSUED	88/8296	07/26/89	MAFV FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8451 SOFRC	ISSUED	88/8290	07/26/89	MAFV FREIGHT BRAKE CONTROL VALVE DEVICE HAVIN G IMPROVED QUICK SE RVICE FUNCTION	
8455 SOFRC	ISSUED				

6829	ARGENT	ISSUED	239228	07/31/89	NAFW FRI BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
6829	TRANS	ISSUED	87/0040	08/03/89	NAFW FRI BRAKE CONTROL VALVE...PISTON ¹ SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8259	CHINA	ISSUED	85109613.1	08/23/89	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8415	VENDA	ISSUED	88/0067	09/21/89	NAFW VARIABLE LOAD VALVE	
8351	USA	ISSUED	4,875,739	10/26/89	NAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8415	TRANS	ISSUED	88/0064	11/16/89	NAFW VARIABLE LOAD VALVE	
6829	UNIKN	ISSUED	2189299	11/29/89	NAFW FRI BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8506	USA	ISSUED	4,887,516	12/19/89	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8454	VENDA	ISSUED	88/0110	01/08/90	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	VENDA	ISSUED	88/0109	01/19/90	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8451	VENDA	ISSUED	88/0108	01/19/90	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8451	TRANS	ISSUED	88/0117	02/22/90	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8470	USA	ISSUED	4,915,018	04/10/90	NAFW IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8451	BOPHU	ISSUED	88/0184	05/01/90	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	BOPHU	ISSUED	88/0183	05/01/90	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8454	BOPHU	ISSUED	88/0182	05/01/90	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8453	SOFRG	ISSUED	89/5980	05/30/90	NAFW FREIGHT BRAKE EMERGENCY VALVE	
8307	CANAD	ISSUED	1270211	06/12/90	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8300	USA	ISSUED	4,951,534	08/28/90	NAFW LOW STRESS DIAPHRAGM	
6829	BOPHU	ISSUED	87/0058	09/05/90	NAFW FRI BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8396	AUSAL	ISSUED	597,103	09/18/90	NAFW FRI BRAKE CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
7091	JAPAN	ISSUED	1582983	10/22/90	NAFW HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8351	SOFRG	ISSUED	90/0338	10/31/90	NAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	

6522	CANAD	ISSUED	1,276,211	11/13/90	NAFW EMPTY-LOAD CHANGEVER APPARATUS	
8389	AUSAL	ISSUED	600,104	11/20/90	NAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION
8410	AUSAL	ISSUED	600,538	12/03/90	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
6961	USA	ISSUED	4,974,911	12/04/90	NAFW VENT VALVE DEVICE	
8535	USA	ISSUED	4,974,910	12/04/90	NAFW FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE	FUNCTION
6961	SOFRC	ISSUED	90/3963	03/27/91	NAFW VENT VALVE DEVICE	
8532	USA	ISSUED	5,005,915	04/09/91	NAFW EMPTY LOAD CHANGEVER VALVE FOR RAILWAY CAR	
6829	CANAD	ISSUED	1283149	04/16/91	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8630	USA	ISSUED	5,044,698	09/03/91	NAFW IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE	PROTECTION
8454	TRANS	ISSUED	88/0120	10/29/91	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8616	USA	ISSUED	5,069,312	12/03/91	NAFW HANDBRAKE FOR SINGLE-CYLINDER TRUCK-MOUNTED RAILWAY CAR	BRAKE
8656	USA	ISSUED	5,071,198	12/10/91	NAFW EMER. VAL FOR ABD. BRAKE CONTROL VALVE DEVICE	
8633	USA	ISSUED	5,072,913	12/17/91	NAFW SPRING LOADED LOCKING HANDLE FOR ANGLE COCK OR THE LIKE	
8421	AUSAL	ISSUED	613648	01/17/92	NAFW TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8178	JAPAN	ISSUED	1637432	01/31/92	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8619	USA	ISSUED	5,100,207	03/31/92	NAFW EMPTY/LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8593	USA	ISSUED	5,106,168	04/21/92	NAFW EMPTY/LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8396	CANAD	ISSUED	1300208	05/05/92	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8389	CANAD	ISSUED	1300209	05/05/92	NAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION
8239	JAPAN	ISSUED	UM1904780	05/13/92	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8661	USA	ISSUED	5,113,694	05/19/92	NAFW MODIFIED PRESS. REGULATOR VAL FOR SINGLE CAR TESTING DEVICE	
8374	CANAD	ISSUED	1301078	05/19/92	NAFW HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RLY	CAR BRAKE ASSEMBLY

8410	CANAD	ISSUED	1301079	05/19/92	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8110	JAPAN	ISSUED	1909081	05/26/92	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL	
8607	USA	ISSUED	5,118,166	06/02/92	NAFW QUICK SER. FUNCTION FOR RRV. FREIGHT BRAKE CONTROL VALVE DEVICE	
8374	BRAZL	ISSUED	8706703-0	06/30/92	NAFW HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RRV	CAR BRAKE ASSEMBLY
8190	JAPAN	ISSUED	1679851	07/13/92	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
8632	USA	ISSUED	5,131,667	07/21/92	NAFW HOSE COUPLING GASKET	
8415	CANAD	ISSUED	1305740	07/28/92	NAFW VARIABLE LOAD VALVE	
8629	MEXIC	ISSUED	164579	09/03/92	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION	
8389	BRAZL	ISSUED	8801207	09/29/92	NAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION	
8415	BRAZL	ISSUED	8803450	11/24/92	NAFW VARIABLE LOAD VALVE	
8410	BRAZL	ISSUED	8706702-1	11/24/92	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8659	USA	ISSUED	5,165,962	11/24/92	NAFW MASKING FILM FOR COATING PROCESS	
8532	SOFRC	ISSUED	91/1245A	12/30/92	NAFW EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8630	SOFRC	ISSUED	91/6850	12/30/92	NAFW IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION	
8179	JAPAN	ISSUED	1729847	01/29/93	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8351	AUSAL	ISSUED	627535	01/29/93	NAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8454	CANAD	ISSUED	1313391	02/02/93	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8455	CANAD	ISSUED	1313392	02/02/93	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8451	CANAD	ISSUED	1313390	02/02/93	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8396	JAPAN	ISSUED	1953405	02/12/93	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE & GRADUATING VALV ARRANGED PROVIDE ACCELER BRK APPL FUNCTION	
8374	JAPAN	ISSUED	1755853	04/23/93	NAFW HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RRV	CAR BRAKE ASSEMBLY
8645	USA	ISSUED	5,207,482	05/04/93	NAFW VENT VALVE DEVICE HAVING DISABLING MEANS	
8564	USA	ISSUED	5,213,397	05/25/93	NAFW FREIGHT BRAKE CONTROL VALVE FOR RAILWAY CAR.	

8682	USA	ISSUED	5,220,863	06/22/93	NAFV CONICAL DIAPHRAGM AND METHOD OF MAKING	
8663	USA	ISSUED	5,224,994	07/06/93	NAFV APPARATUS & METHOD FOR LIQUID TREATMENT OF ARTICLE SURFACES	
8600	USA	ISSUED	5,228,648	07/20/93	NAFV RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
6829	INDIA	ISSUED	169289	09/18/93	NAFV FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8421	CANAD	ISSUED	1,322,729	10/05/93	NAFV TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICL TRUCK-MOUNTED BRAKE ASSEMBLY	
8453	CANAD	ISSUED	1,323,063	10/12/93	NAFV FREIGHT BRAKE EMERGENCY VALVE	
8506	CANAD	ISSUED	1,323,062	10/12/93	NAFV CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8421-W	BRAZL	ISSUED	8803666	11/30/93	NAFV	
8470	CANAD	ISSUED	1,324,809	11/30/93	NAFV IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8677	USA	ISSUED	5,269,595	12/14/93	NAFV EMPTY/LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8630	AUSAL	ISSUED	641272	01/17/94	NAFV IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE	PROTECTION
8600	SOFRC	ISSUED	93/2917	01/26/94	NAFV RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8702	USA	ISSUED	5,293,777	03/15/94	NAFV WINGED ASSEMBLY FOR AIR BRAKE VALVE TEST FIXTURE	
8718	USA	ISSUED	5,303,987	04/19/94	NAFV EMPTY/LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8694	USA	ISSUED	5,326,159	07/05/94	NAFV QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL	VALVE DEVICE
8692	USA	ISSUED	5,333,941	08/02/94	NAFV HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	DEVICE
8506	BRAZL	ISSUED	8904266-2	08/30/94	NAFV CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8714	USA	ISSUED	5,350,222	09/27/94	NAFV AUXILIARY STABILIZER VALVE FOR VX VENT VALVE	
8351	BRAZL	ISSUED	9000169-9	10/25/94	NAFV INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8532	AUSAL	ISSUED	650862	10/25/94	NAFV EMPTY LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8351	CANAD	ISSUED	2,005,295	11/08/94	NAFV INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8737	USA	ISSUED	5,393,129	02/28/95	NAFV ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	

8692	SOFRC	ISSUED	93/7828	04/26/95	MAFW HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	DEVICE
8739	USA ^{SHU}	ISSUED	5,417,163	05/23/95	MAFW LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGOVER VALVE	
8755	USA	ISSUED	5,429,426	07/04/95	MAFW BRAKE CYLINDER PRESSURE RELAY VALVE FOR RAILROAD	FREIGHT CAR
8737	SOFRC	ISSUED	94/4300	07/26/95	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8681	USA	ISSUED	5,437,219	08/01/95	MAFW LOW STRESS CONICAL TYPE DIAPHRAGM	
6829	JAPAN	ISSUED	1958162	08/10/95	MAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8600	AUSAL	ISSUED	658754	08/15/95	MAFW RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8787	USA	ISSUED	5,451,099	09/19/95	MAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8788	USA	ISSUED	5,450,782	09/19/95	MAFW VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR	CONTROL VALVE
8748	USA	ISSUED	5,466,105	11/14/95	MAFW FASTENER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE	
8694	AUSAL	ISSUED	662,264	12/12/95	MAFW QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL	VALVE DEVICE
8754	USA	ISSUED	5,480,218	01/02/96	MAFW RAILWAY BRAKE PIPE WITH ACCESS PORTS	
8737	AUSAL	ISSUED	663443	01/23/96	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8841	USA	ISSUED	5,492,203	02/20/96	MAFW RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND	HOULT THEREFOR
8747	SOFRC	ISSUED	95/2063	02/28/96	MAFW IMBEDDED ELECTRICAL CONNECTOR	
8810	USA	ISSUED	5,501,512	03/26/96	MAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRAMS-	DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE COM
TROL SYSTEMS						
8787	SOFRC	ISSUED	95/3929	03/27/96	MAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8677	CANAD	ISSUED	2,090,307	04/02/96	MAFW EMPTY/LOAD CHANGOVER VALVE FOR RAILWAY CAR	
8613	USA	ISSUED	5,503,467	04/02/96	MAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8809	USA	ISSUED	5,503,011	04/02/96	MAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8786	USA CP	ISSUED	5,509,727	04/23/96	MAFW Railway Automatic Brake Control Valve Test Unit	
8809	SOFRC	ISSUED	95/4705	04/24/96	MAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8786	SOFRC	ISSUED	95/3512	04/24/96	MAFW Railway Automatic Brake Control Valve Test Unit	

8772	USA	ISSUED	5,518,304	05/21/96	NAFW FILTER ARRANGEMENT AND MOUNTING IN RAILWAY BRAKE PIPE BRACKET.
8389	ARGENT	ISSUED	249,654	05/24/96	NAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8739	AUSAL	ISSUED	666438	05/28/96	NAFW LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE
8692	AUSAL	ISSUED	666408	05/28/96	NAFW HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE
8630	BRAZL	ISSUED	9103727-1	05/28/96	NAFW IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION
8677	JAPAM	ISSUED	2064957	06/24/96	NAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR
8752	SOFRG	ISSUED	95/6931	06/26/96	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM
8813	SOFRG	ISSUED	95/7996	06/26/96	NAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT BRAKE
8751	SOFRG	ISSUED	95/7080	06/26/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR
8789	USA	ISSUED	5,538,332	07/23/96	NAFW VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY
8829	USA	ISSUED	5,544,854	08/13/96	NAFW REMOTE CONTROL OF CUT-OUT COCK
8751	USA	ISSUED	5,551,765	09/03/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR
8718	JAPAN	ISSUED	2564100	09/19/96	NAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR
8885	USA	ISSUED	5,559,281	09/24/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAMMER - U. THOMAS DIGNED (8 INVENTORS)
8861	USA	ISSUED	5,564,794	10/15/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR
8885	SOFRG	ISSUED	96/0335	10/30/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAMMER - U. THOMAS DIGNED (8 INVENTORS)
8790	SOFRG	ISSUED	96/0266	10/30/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE
8714	JAPAN	ISSUED	2576835	11/07/96	NAFW AUXILIARY STABILIZER VALVE FOR VV VENT VALVE
8600	CANAD	ISSUED	2,090,383	11/12/96	NAFW RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE
8692	JAPAN	ISSUED	2583393	11/21/96	NAFW HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE
8861	SOFRG	ISSUED	96/1847	11/27/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR
8752	USA	ISSUED	5,586,813	12/24/96	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM

8747	USA	ISSUED	5,586,668	12/24/96	NAFV IMBEDDED ELECTRICAL CONNECTOR	
8535	CANAD	ISSUED	2,014,685	01/21/97	NAFV FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE FUNCTION	
6961	CANAD	ISSUED	2,014,686	01/21/97	NAFV VENT VALVE DEVICE	
8865	SOFRIC	ISSUED	96/4015	02/26/97	NAFV FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO	
8828	SOFRIC	ISSUED	96/3750	02/26/97	NAFV PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE	
8788	AUSAL	ISSUED	674618	04/22/97	NAFV VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR CONTROL VALVE	
8884	SOFRIC	ISSUED	96/7296	05/28/97	NAFV TWO-PIECE CHECK VALVE ASSEMBLY	
8919	SOFRIC	ISSUED	96/7297	05/28/97	NAFV TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8928	USA	ISSUED	5,634,696	06/03/97	NAFV RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8790	USA	ISSUED	5,638,276	06/10/97	NAFV MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE	
8900	SOFRIC	ISSUED	96/8215	06/25/97	NAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8928	SOFRIC	ISSUED	96/6437	06/25/97	NAFV RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8685	JAPAN	ISSUED	2690674	08/29/97	NAFV CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	
8828	USA	ISSUED	5,662,391	09/02/97	NAFV PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE	
8884	USA	ISSUED	5,669,412	09/23/97	NAFV TWO-PIECE CHECK VALVE ASSEMBLY	
8752	USA	ISSUED	5,669,674	09/23/97	NAFV ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8789	JAPAN	ISSUED	2709046	10/17/97	NAFV VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY	
8841	JAPAN	ISSUED	2709293	10/17/97	NAFV RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND MOUNT THEREFOR	
8829	JAPAN	ISSUED	2723492	11/28/97	NAFV REMOTE CONTROL OF CUT-OUT COCK	
8900	USA	ISSUED	5,695,258	12/09/97	NAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8692	CANAD	ISSUED	2,109,379	01/20/98	NAFV HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE	
8714	CANAD	ISSUED	2,109,378	01/20/98	NAFV AUXILIARY STABILIZER VALVE FOR VENT VALVE	
8889	USA	ISSUED	5,709,436	01/20/98	NAFV ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE	

8919	USA <i>5/84</i>	ISSUED	5,714,684	02/03/98	MAFW TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8737	JAPAN	ISSUED	2753457	02/27/98	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
9031	USA <i>5/84</i>	ISSUED	5,730,504	03/24/98	MAFW Release Assuring Arrangement for Comb. Electro-Pneu./Auto. Pneumatic Brake	
9008	SOERC	ISSUED	97/5963	03/25/98	MAFW ELECTRO-PNEUMATIC VALVE CONTROL	
8864	SOERC	ISSUED	97/6436	03/25/98	MAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE	
8976	SOERC	ISSUED	97/6934	04/29/98	MAFW ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
8899	USA <i>5/84</i>	ISSUED	5,746,484	05/05/98	MAFW E/P INTERFACE WITH PNEUMATIC CONTROL VALVE FOR BACK-UP BRAKE ARRANGEMENT	

Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Client	long:title1	long:title2
6968	USA		ISSUED	4175793	11/27/79	PTDS PARKING BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES		
6771	JAPAN		ISSUED	993518	04/22/80	PTDS APPARATUS FOR PREVENTING RELEASE OF AN E EMERGENCY... COMPLETE STOP OF THE TRAIN		
7001	USA		ISSUED	4,199,195	04/22/80	PTDS DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM		
7001	SOFRIC		ISSUED	79/1921	05/28/80	PTDS DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM		
6973	SOFRIC		ISSUED	79/1991	05/28/80	PTDS FOUR-WAY BALL VALVE		
6965	USA		ISSUED	4215767	08/05/80	PTDS PARKING BRAKE DEVICE		
6973	USA		ISSUED	4232709	11/11/80	PTDS FOUR-WAY BALL VALVE		
7012	USA		ISSUED	4,239,292	12/16/80	PTDS BRAKE GEAR FOR VEHICLES		
6963	USA		ISSUED	4243273	01/06/81	PTDS ADJUSTABLE VARIABLE LOAD VALVE DEVICE		
7042	SOFRIC		ISSUED	80/3283	05/27/81	PTDS MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE		
7042	VENDA		ISSUED	80/0544	06/12/81	PTDS MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE		
6952	USA		ISSUED	4273218	06/16/81	PTDS FLEXIBLE MOUNTING HUB FOR DISC MEMBER		
7001	CANAD		ISSUED	1105067	07/14/81	PTDS DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM		
7042	USA		ISSUED	4,279,332	07/21/81	PTDS MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE		
6950	USA		ISSUED	4290368	09/22/81	PTDS MANUALLY OPERATED SLIDING DOORS FOR RAIL ROAD CAR... CLOSING BY REMOTE CONTROL		
7086	SOFRIC		ISSUED	80/6838	09/30/81	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE		
6973	CANAD		ISSUED	1111327	10/27/81	PTDS FOUR-WAY BALL VALVE		
7012	CANAD		ISSUED	1111464	10/27/81	PTDS BRAKE GEAR FOR VEHICLES		
7063	USA		ISSUED	4,302,058	11/24/81	PTDS VARIABLE LOAD VALVE DEVICE		

7085	SOFRFC	ISSUED	80/7139	11/25/81	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
6968	CANAD	ISSUED	1116661	01/19/82	PTDS PARKING BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES
6965	CANAD	ISSUED	1116538	01/19/82	PTDS PARKING BRAKE DEVICE
7085	VENDA	ISSUED	80/0597	02/12/82	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7079	USA	ISSUED	4319671	03/16/82	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7079	SOFRFC	ISSUED	81/1411	03/31/82	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
7086	USA	ISSUED	4323144	04/06/82	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
6952	CANAD	ISSUED	1121745	04/13/82	PTDS FLEXIBLE MOUNTING HUB FOR DISC MEMBER
7078	VENDA	ISSUED	81/0093	06/04/82	PTDS SEGMENTED FLEXIBLE HUB
7122	VENDA	ISSUED	81/0072	06/04/82	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7079	VENDA	ISSUED	81/0023	06/04/82	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
7056	USA	ISSUED	4,334,711	06/15/82	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION OF A SHOE BRAKE FOR A RAILWAY VEHICLE
7122	SOFRFC	ISSUED	81/3983	06/30/82	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7086	VENDA	ISSUED	80/0593	08/20/82	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7078	SOFRFC	ISSUED	81/5739	08/25/82	PTDS SEGMENTED FLEXIBLE HUB
7083	USA	ISSUED	4354518	10/19/82	PTDS DIAPHRAGM PISTON OPERATED VALVE DEVICE
7122	USA	ISSUED	4361078	11/30/82	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7057	USA	ISSUED	4,367,903	01/11/83	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION OF SHOE BRAKE FOR RAILWAY VEHICLES
7075	USA	ISSUED	4368752	01/18/83	PTDS COMPOUND CHECK VALVE
8002	USA	ISSUED	4375303	03/01/83	PTDS CHANGE-OVER VALVE DEVICE UTILIZING LOWER PRESSURE... DELIVERED OPERATING PRESSURE
7122	TRANS	ISSUED	81/0085	04/08/83	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7042	CANAD	ISSUED	1145689	05/03/83	PTDS MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE
7086	CANAD	ISSUED	1149760	07/12/83	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE

7137	USA	ISSUED	4404987	09/20/83	PTDS CAP NUT FOR A TRIP COCK DEVICE ... FOR OVERRIDING AUTOMATIC RESET
7079	JAPAN	ISSUED	1193797	03/12/84	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
7085	JAPAN	ISSUED	1193796	03/12/84	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7079	CANAD	ISSUED	1166171	04/24/84	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
8117	SOFR	ISSUED	83/5785	04/25/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8117	VENDA	ISSUED	83/0063	04/27/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
7057	CANAD	ISSUED	1167087	05/08/84	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION OF A SNOW BRAKE FOR RAILWAY VEHICLES
7056	CANAD	ISSUED	1166277	05/29/84	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION OF A SNOW BRAKE FOR A RAILWAY VEHICLE
8103	SOFR	ISSUED	83/70014	05/30/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8101	SOFR	ISSUED	83/7205	05/30/84	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
8116	VENDA	ISSUED	83/0083	06/22/84	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
8101	VENDA	ISSUED	83/0077	06/22/84	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
8116	SOFR	ISSUED	83/7867	06/27/84	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
8117	BOPHU	ISSUED	83/0105	09/06/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
7001	JAPAN	ISSUED	1233437	09/26/84	PTDS DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM
8154	USA	ISSUED	4478319	10/23/84	PTDS SPRING-APPLIED BRAKE UNIT FOR RAILWAY VEHICLE WITH MANUAL RELEASE ARRANGEMENT
8103	BOPHU	ISSUED	83/0123	11/21/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8103	TRAHS	ISSUED	83/0086	11/28/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8117	TRAHS	ISSUED	83/0078	11/28/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
7078	CANAD	ISSUED	1178901	12/04/84	PTDS SEGMENTED FLEXIBLE HUB
7116	USA	ISSUED	4,486,839	12/04/84	PTDS SYNCHRONOUS WHEEL-SLIP PROTECTION SYSTEM
8101	BOPHU	ISSUED	83/0133	12/12/84	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER

7117	USA	ISSUED	4,491,920	01/01/85	PTDS RATE POLARITY SHIFT WHEEL-SLIP CONTROL SYSTEM
6963	CANAD	ISSUED	1180740	01/08/85	PTDS ADJUSTABLE VARIABLE LOAD VALVE DEVICE
8103	USA	ISSUED	4,496,193	01/29/85	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8120	USA	ISSUED	4,503,301	03/05/85	PTDS DIFFERENTIAL FLUID PRESSURE SWITCH
8148	SOFRFC	ISSUED	84/5847	03/27/85	PTDS SOLENOID-OPERATED VALVE
7042	JAPAN	ISSUED	1257507	03/29/85	PTDS MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE
8116	BOPHU	ISSUED	83/0143	04/15/85	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
7141	CANAD	ISSUED	1185904	04/23/85	PTDS MAGNETIC BRAKE SHOE
8116	TRANS	ISSUED	83/0101	05/24/85	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
7057	JAPAN	ISSUED	1265184	05/27/85	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION...SNOW BRAKE FOR RAILWAY VEHICLES
8101	TRANS	ISSUED	83/0091	07/21/85	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
8148	VENDA	ISSUED	84/0088	08/30/85	PTDS SOLENOID-OPERATED VALVE
7137	CANAD	ISSUED	1193299	09/10/85	PTDS CAP NUT FOR A TRIP COCK DEVICE ... FOR OVERRIDING AUTOMATIC RESET
7116	CANAD	ISSUED	1193695	09/17/85	PTDS SYNCHRONOUS WHEEL-SLIP PROTECTION SYSTEM
8184	USA CP	ISSUED	4544047	10/01/85	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
8148	TRANS	ISSUED	84/0080	11/01/85	PTDS SOLENOID-OPERATED VALVE
8189	USA	ISSUED	4550811	11/05/85	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8269	USA	ISSUED	4552056	11/12/85	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRAKE
8189	SOFRFC	ISSUED	85/0870	11/27/85	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8189	VENDA	ISSUED	85/0008	12/06/85	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8234	SOFRFC	ISSUED	85/3064	12/24/85	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR..ADJUSTER ARRANGEMENT
8222	SOFRFC	ISSUED	85/3069	01/29/86	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE
8234	VENDA	ISSUED	85/0034	02/28/86	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR..ADJUSTER ARRANGEMENT

8276	SOFARC	ISSUED	86/4519	02/25/87	PIDS ELECTRIC	8189	TRANS	ISSUED	85/0011	02/28/86	PIDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8222	TRANS	ISSUED	85/0041	03/13/87	PIDS FLUID F	8247	MEUZI	ISSUED	275331	03/19/86	PIDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8269	TRANS	ISSUED	85/0120	03/13/87	PIDS MANUAL	8234	TRANS	ISSUED	85/0040	04/11/86	PIDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR - ADJUSTER ARRANGEMENT
8261	USA	ISSUED	4,649,805	03/17/87	PIDS VEHICLE	8148	BOPHU	ISSUED	84/0132	06/20/86	PIDS SOLENOID-OPERATED VALVE
8148	CANAD	ISSUED	1219513	03/24/87	PIDS SOLENOI	8103	CANAD	ISSUED	1200561	06/24/86	PIDS VIGILANCE SAFETY CONTROL SYSTEM
8299	USA	ISSUED	4,659,149	04/21/87	PIDS CROSS I	8276	USA	ISSUED	4,596,953	07/08/86	PIDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RVT TRANSIT VEHICLE
8299	SOFARC	ISSUED	86/6140	04/29/87	PIDS CROSS I	8222	VENDA	ISSUED	85/0033	08/01/86	PIDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY / PARKING BRAKE
8247	TRANS	ISSUED	86/0012	05/01/87	PIDS FAIL-SI	7092	CANAD	ISSUED	1212402	10/07/86	PIDS ADJUSTABLE VARIABLE LOAD CONTROL VALVE DEVICE
8276	VENDA	ISSUED	86/0048	05/29/87	PIDS ELECTRI	8189	BOPHU	ISSUED	85/0015	10/14/86	PIDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8361	USA	ISSUED	4,671,576	06/09/87	PIDS DECELEI	8269	VENDA	ISSUED	85/0109	10/17/86	PIDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
6963	JAPAN	ISSUED	1301770	06/09/87	PIDS ADJUST.	8269	SOFARC	ISSUED	85/0835	10/29/86	PIDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
8293	USA	ISSUED	4,676,346	06/30/87	PIDS BRAKE	8299	UNIKW	ISSUED	2182742	10/30/86	PIDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE
8247	BOPHU	ISSUED	86/0020	07/03/87	PIDS FAIL-S	8247	VENDA	ISSUED	86/0013	10/31/86	PIDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8362	USA	ISSUED	4,678,241	07/07/87	PIDS EQUALI	8117	CANAD	ISSUED	1213633	11/04/86	PIDS VIGILANCE SAFETY CONTROL SYSTEM
8299	VENDA	ISSUED	86/0056	07/24/87	PIDS CROSS	8319	USA	ISSUED	4,620,567	11/04/86	PIDS SOLENOID OPERATED VALVE
8247	USA	ISSUED	4,685,052	08/04/87	PIDS FAIL-S	8292	USA	ISSUED	4,624,506	11/25/86	PIDS COMPOUND ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM
8290	USA	ISSUED	4,685,750	08/11/87	PIDS RMT VE	8247	SOFARC	ISSUED	86/1248	11/26/86	PIDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8337	USA	ISSUED	4,686,626	09/29/87	PIDS MALFRC	7122	JAPAN	ISSUED	1351664	12/11/86	PIDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
8299	TRANS	ISSUED	86/0064	10/12/87	PIDS CROSS	8222	BOPHU	ISSUED	85/0056	12/11/86	PIDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY / PARKING BRAKE
8276	TRANS	ISSUED	86/0052	10/12/87	PIDS ELECTI	8269	BOPHU	ISSUED	85/0183	12/11/86	PIDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
8234	BOPHU	ISSUED	85/0055	11/19/87	PIDS COMB1	8291	USA	ISSUED	4,631,514	12/23/86	PIDS MALFUNCTION DETECTION ARRANGEMENT FOR JET ENGINE CONTROLLED BRAKE COMMAND SYSTEM
8276	BOPHU	ISSUED	86/0078	11/19/87	PIDS ELECTI	8290	USA	ISSUED	4,630,047	01/27/87	PIDS RVT VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF PNEUMATIC & ELEC. BRAKES
8299	BOPHU	ISSUED	86/0100	11/19/87	PIDS CROSS						

8276	SOFRC	ISSUED	86/4519	02/25/87	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RRV TRANSIT VEHICLE	
8222	TRANS	ISSUED	85/0041	03/13/87	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY/PARKING BRAKE	
8269	TRANS	ISSUED	85/0120	03/13/87	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRAKE	
8261	USA	ISSUED	4,649,805	03/17/87	PTDS VEHICLE BRAKE APPLICATION APPARATUS	
8148	CANAD	ISSUED	1219513	03/24/87	PTDS SOLENOID-OPERATED VALVE	
8299	USA	ISSUED	4,659,149	04/21/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CARS	
8299	SOFRC	ISSUED	86/6140	04/29/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CARS	
8247	TRANS	ISSUED	86/0012	05/01/87	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8276	VENDA	ISSUED	86/0048	05/29/87	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RRV TRANSIT VEHICLE	
8361	USA	ISSUED	4,671,576	06/09/87	PTDS DECELERATION CONTROL SYSTEM	
6963	JAPAN	ISSUED	1,381,770	06/09/87	PTDS ADJUSTABLE VARIABLE LOAD VALVE DEVICE	
8253	USA	ISSUED	4,676,346	06/30/87	PTDS BRAKE SLACK ADJUSTING APPARATUS	
8247	BOPHU	ISSUED	86/0020	07/03/87	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8362	USA	ISSUED	4,678,241	07/07/87	PTDS EQUALIZER DISCHARGE VALVE FOR A RAILROAD CAR AIR BRAKE SYSTEM	
8299	VENDA	ISSUED	86/0056	07/24/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CARS	
8247	USA	ISSUED	4,685,052	08/04/87	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8290	USA	ISSUED	4,685,750	08/11/87	PTDS RRV VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF PNEUMATIC & ELEC. BRAKES	
8357	USA	ISSUED	4,696,626	09/29/87	PTDS RAILROAD CAR AIR COMPRESSOR UNIT	
8299	TRANS	ISSUED	86/0064	10/12/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CARS	
8276	TRANS	ISSUED	86/0052	10/12/87	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RRV TRANSIT VEHICLE	
8234	BOPHU	ISSUED	85/0055	11/19/87	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/AIR RESERVOIR..ADJUSTER ARRANGEMENT	
8276	BOPHU	ISSUED	86/0078	11/19/87	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RRV TRANSIT VEHICLE	
8299	BOPHU	ISSUED	86/0100	11/19/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CARS	

8343	SOFRIC	ISSUED	87/1941	12/30/87	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE
8116	CANAD	ISSUED	1232523	02/09/88	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
8276	WEUZI	ISSUED	216538	03/04/88	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RLY TRANSIT VEHICLE
8343	BOPKU	ISSUED	87/0040	03/14/88	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE
8343	USA	ISSUED	4,733,602	03/29/88	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE
8189	CANAD	ISSUED	1237680	06/07/88	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8361	UNITK	ISSUED	2172355	06/15/88	PTDS DECELERATION CONTROL SYSTEM
8428	USA	ISSUED	4,756,669	07/12/88	PTDS AIR COMPRESSOR CONTROL APPARATUS AND METHOD
8446	USA	ISSUED	4,758,254	07/19/88	PTDS MOISTURE REMOVAL APPARATUS
8368	USA	ISSUED	4,763,261	08/09/88	PTDS WHEEL-SPEED DETECTING ARRANGEMENT
8445	USA	ISSUED	4,765,806	08/23/88	PTDS CONTROL METHOD FOR DUAL CYLINDER MOISTURE REMOVAL APPARATUS
8426	USA	ISSUED	4,773,447	09/27/88	PTDS ELECTROMAGNETIC VALVE
8148	JAPAN	ISSUED	1466862	11/10/88	PTDS SOLENOID-OPERATED VALVE
8429	USA	ISSUED	4,784,585	11/15/88	PTDS ELECTRIC AIR COMPRESSOR
8247	AUSAL	ISSUED	576066	12/06/88	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8465	USA	ISSUED	4,790,415	12/13/88	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
8276	UNITK	ISSUED	2176857	12/14/88	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RLY TRANSIT VEHICLE
8430	USA	ISSUED	4,795,902	01/03/89	PTDS OPTICAL MASTER CONTROLLER
8400	USA	ISSUED	4,796,513	01/10/89	PTDS SPRING BRAKE CYLINDER
8440	USA	ISSUED	4,799,740	01/24/89	PTDS ELECTROPNEUMATIC MASTER CONTROLLER FOR A N AIR BRAKE SYSTEM
8460	USA	ISSUED	4,802,559	02/07/89	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
8343	TRANS	ISSUED	87/0029	02/09/89	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE

8343	VENDA	ISSUED	87/0029	02/09/89	PIDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE	
8447	USA	ISSUED	4,812,148	03/14/89	PIDS ARRANGEMENT FOR CONTROLLING REMOVAL OF MOISTURE CYLINDER TYPE MOISTURE REMOVER	
8397	USA	ISSUED	4,811,651	03/14/89	PIDS SPRING BRAKE CYLINDER	
8437	USA	ISSUED	4,819,123	04/04/89	PIDS COMPRESSED AIR SUPPLY SYSTEM	
8424	USA	ISSUED	4,830,437	05/16/89	PIDS BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8276	AUSAL	ISSUED	584211	05/18/89	PIDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE	
8247	CANAD	ISSUED	1254644	05/23/89	PIDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8299	NEWZL	ISSUED	218191	06/06/89	PIDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CARS	
8462	USA	ISSUED	4845428	07/04/89	PIDS MAGNETIC ROTATIONAL DETECTING ARRANGEMENT FOR SENSING SPEED OF RAILWAY VEHICLE	
8299	AUSAL	ISSUED	587295	08/10/89	PIDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CARS	
8458	USA	ISSUED	4865278	09/12/89	PIDS COMMAND SYSTEM FOR RAILWAY VEHICLES	
8507	USA	ISSUED	4883089	11/28/89	PIDS RAILWAY CAR PRESSURE CONTROL VALVES	
8383	SOFRIC	ISSUED	8973654	01/31/90	PIDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION	
8457	USA	ISSUED	4901953	02/20/90	PIDS CONTROLLER FOR RAILWAY VEHICLES	
8383	USA	ISSUED	4941099	07/10/90	PIDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION	
8361	CANAD	ISSUED	1271972	07/24/90	PIDS DECELERATION CONTROL SYSTEM	
8509	USA	ISSUED	4,949,754	08/21/90	PIDS PRESSURE CONTROL VALVE FOR RAILWAY VEHICLES	
8550	USA	ISSUED	4,951,516	08/28/90	PIDS FORCE MULTIPLICATION MECHANISM	
8488	USA	ISSUED	4,957,208	09/18/90	PIDS MULTI-CONTACT ELECTRICAL CONNECTOR PORTION FOR AUTO RAIL CAR	
8551	USA	ISSUED	4957193	09/18/90	PIDS ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE	
8276	CANAD	ISSUED	1,275,136	10/09/90	PIDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE	
8510	USA	ISSUED	4972145	11/20/90	PIDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8539	USA	ISSUED	4979391	12/25/90	PIDS TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	

8427	USA	ISSUED	4987543	01/22/91	PTDS WHEEL SPIN CONTROL SYSTEM	
8427	SOFR	ISSUED	90/1322	01/30/91	PTDS WHEEL SPIN CONTROL SYSTEM	
8552	USA	ISSUED	4993521	02/19/91	PTDS IMPROVED TREAD BRAKE UNIT	
8488	SOFR	ISSUED	90/3253	02/27/91	PTDS MULT. CONTACT ELECTRICAL CONNECTOR POSITION FOR AUTO RLY CLR	
8504	USA	ISSUED	4999779	03/12/91	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8528	SOFR	ISSUED	90/3961	03/27/91	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8299	CANAD	ISSUED	1283148	04/16/91	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8427	TAIWAN	ISSUED	HI-44301	05/15/91	PTDS WHEEL SPIN CONTROL SYSTEM	
8383	TAIWAN	ISSUED	44299	05/15/91	PTDS ELECTROMIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
6973	JAPAN	ISSUED	UM1854566	06/10/91	PTDS FOUR-WAY BALL VALVE	
8592	USA	ISSUED	5031731	07/16/91	PTDS BRAKE ACTUATOR WITH SLACK ADJUSTER DISABLING MECHANISM	
8390	USA	ISSUED	5035582	07/30/91	PTDS ELECTRO PNEUMATIC GOVERNOR FOR A COMPRESSED AIR SYSTEM	
8504	SOFR	ISSUED	90/7232	07/31/91	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8606	USA	ISSUED	5046921	09/10/91	PTDS MOISTURE REMOVAL DEVICE FOR A COMPRESSED AIR SYSTEM	
8528	USA	ISSUED	5,058,712	10/22/91	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8383	ITALY	ISSUED	1231593	12/18/91	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8578	USA	ISSUED	5,076,401	12/31/91	PTDS SPRING APPLIED HYDRAULICALLY RELEASED ... POSITIVE CLEARANCE SLACK ADJ. MECHANISM	
8276	BRAZL	ISSUED	8603163	12/31/91	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RLY TRANSIT VEHICLE	
8638	USA	ISSUED	5,085,243	02/04/92	PTDS HYDRAULIC ISOLATION VAL FOR RLY VEHICLE NOTE: ALSO A C.I.P. CASE	
8594	USA	ISSUED	5090780	02/25/92	PTDS BINARY WEIGHTED DIGITAL FLOW REGULATING SYSTEM	
8584	USA	ISSUED	5098189	03/24/92	PTDS MAGNET VALVE SAFETY CHECK & FAULT INDICATOR INTEGRATOR	
8101	JAPAN	ISSUED	1649364	03/30/92	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	

8444	CANAD	ISSUED	1300038	05/05/92	PTDS MOISTURE REMOVAL APPARATUS	
8452	CANAD	ISSUED	1300723	05/12/92	PTDS CONTROL COMMAND SYSTEM FOR RAILWAY VEHICLES	
8460	CANAD	ISSUED	1300724	05/12/92	PTDS ELECTRO-PNEUMATIC MASTER CONTROLLER FOR A H AIR BRAKE SYSTEM	
8383	AUSAL	ISSUED	617457	05/28/92	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8549	USA	ISSUED	5124988	06/23/92	PTDS DUMP VALVE OPERATIONAL FAULT DETERMINATION SYSTEM	
7092	JAPAN	ISSUED	1675356	06/26/92	PTDS ADJUSTABLE VARIABLE LOAD CONTROL VALVE DEVICE	
8621	USA	ISSUED	5,125,722	06/30/92	PTDS LOAD COMPENSATION CONTROL VALVE	
8117	JAPAN	ISSUED	1680618	07/13/92	PTDS VIGILANCE SAFETY CONTROL SYSTEM	
8383	UNIKN	ISSUED	2218763	07/15/92	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8276	JAPAN	ISSUED	1919239	07/22/92	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8269	JAPAN	ISSUED	1688343	08/11/92	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRAKE
8189	JAPAN	ISSUED	1688332	08/11/92	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE	
8596	USA	ISSUED	5,141,293	08/25/92	PTDS HYDRAULIC ISOLATION VALVE FOR RAILWAY VEHICLE	
8175	JAPAN	ISSUED	1691519	08/27/92	PTDS PENALTY BRAKE APPLICATION NULLIFICATION-PREVENTION SYSTEM	
8674	USA	ISSUED	5,144,985	09/08/92	PTDS VARIABLE LOAD VALVE FOR RAILWAY VEHICLES	
8675	USA	ISSUED	5,146,952	09/15/92	PTDS FLUID PRESSURE CONTROL VALVE DEVICE FOR A RAILWAY CAR	
8656	USA	ISSUED	5,152,410	10/06/92	PTDS ELECTRO-PNEUMATIC COUPLER CONTROL SYS. . . . UNCOUPLING OF RAILWAY VEHICLES	
8623	USA	ISSUED	5,154,204	10/13/92	PTDS AUTOMATIC DRAIN VALVE FOR A COMPRESSED AIR SYSTEM	
8299	BRAZL	ISSUED	8605510	10/27/92	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM. . . POWER AND NON-POWER CARS
8276	JAPAN WA	ISSUED	1705205	10/27/92	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8276	JAPAN A	ISSUED	1705205	10/27/92	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8653	USA	ISSUED	5,170,818	12/15/92	PTDS SAFETY VALVE	
8539	SOFRC	ISSUED	911245	12/30/92	PTDS TRANSDUCED OPERATIONAL FAULT DETERMINATION SYSTEM	

8234	JAPAN	ISSUED	1725600	01/19/93	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR..ADJUSTER ARRANGEMENT
8222	JAPAN	ISSUED	1729856	01/29/93	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE
8465	CANAD	ISSUED	1313353	02/02/93	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
8427	AUSAL	ISSUED	627838	02/05/93	PTDS WHEEL SPIN CONTROL SYSTEM
8445	CANAD	ISSUED	1313505	02/09/93	PTDS CONTROL METHOD FOR DUAL CYLINDER MOISTURE REMOVAL APPARATUS
8508	CANAD	ISSUED	1313686	02/16/93	PTDS LOAD DEPENDENT VALVE FOR RAILWAY VEHICLES
8122	JAPAN	ISSUED	1755824	04/23/93	PTDS BRAKE ACTUATOR DEVICE HAVING A HYDRAULIC SLACK ADJUSTING ARRANGEMENT
8462	CANAD	ISSUED	1316707	04/27/93	PTDS MAGNETIC ROTATIONAL DETECTING ARRANGEMENT FOR SENSING SPEED OF RAILWAY VEHICLE
8514	USA	ISSUED	5,209,551	05/11/93	PTDS ANALOG SERVICE BRAKE RESPONSE ENHANCING CIRCUIT FOR RAILWAY VEHICLES
8550	CANAD	ISSUED	1,319,033	06/15/93	PTDS FORCE MULTIPLICATION MECHANISM
8363	JAPAN	ISSUED	1771682	07/14/93	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE
8604	USA	ISSUED	5,244,171	09/14/93	PTDS INTERSLIP SEQUENCE SPEED ALGORITHM
8460	CANAD	ISSUED	1322567	09/28/93	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
8427	FRANC	ISSUED	2644742-B1	10/15/93	PTDS WHEEL SPIN CONTROL SYSTEM
8383	FRANC	ISSUED	89 06362	10/15/93	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION
8673	USA	ISSUED	5,253,930	10/19/93	PTDS AIR BRAKE CONTROL SYS. HAVING ELECTROMAGNETIC VALVE DEVICE WHICH HAS 2 SET POINTS FOR ESTABLISHING A LAP POSITION
8247	BRAZL	ISSUED	8600648-7	10/26/93	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8120	JAPAN	ISSUED	UM1994612	11/26/93	PTDS DIFFERENTIAL FLUID PRESSURE SWITCH
8120	JAPAN	ISSUED	1994612	11/26/93	PTDS DIFFERENTIAL FLUID PRESSURE SWITCH
8551	CANAD	ISSUED	1,324,810	11/30/93	PTDS ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE
8383	CANAD	ISSUED	1,325,054	12/07/93	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION
8552	CANAD	ISSUED	1,324,964	12/07/93	PTDS IMPROVED TREAD BRAKE UNIT

8504	AUSAL	ISSUED	639,480	12/13/93	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8424	CANAD	ISSUED	1,325,264	12/14/93	PTDS BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8510	AUSAL	ISSUED	637660	12/19/93	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8504	UNIKN	ISSUED	2,236,155	12/22/93	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8605	USA	ISSUED	5,280,718	01/25/94	PTDS TRANSDUCER HEALTH AND OFFSET CALIBRATION PROCESSING SYSTEM	
8510	SORFC	ISSUED	90/9952	02/23/94	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8618	USA	ISSUED	5,290,095	03/01/94	PTDS WHEEL LOCK DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAILWAY VEHICLES	
8427	ITALY	ISSUED	1242483	03/17/94	PTDS WHEEL SPIH CONTROL SYSTEM	
8719	USA	ISSUED	5,297,856	03/29/94	PTDS TWO SEPARATE HIGH SPEED AND LOW SPEED DISC BRAKE UNITS FOR RAILWAY VEHICLES	
8539	UNIKN	ISSUED	2242980	04/06/94	PTDS TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	
8510	UNIKN	ISSUED	2240848	04/20/94	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8602	USA	ISSUED	5,315,520	05/24/94	PTDS FRICTION BRAKE INTERFACE HEALTH CHECK SYSTEM FOR MULTIPLE-AXLE RAILWAY VEHICLES	
8728	USA	ISSUED	5,340,203	08/23/94	PTDS VARIABLE LOAD CONTROL VALVE DEVICE	
8539	AUSAL	ISSUED	650861	10/31/94	PTDS TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	
8504	CANAD	ISSUED	2,025,196	01/17/95	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8709	USA	ISSUED	5,390,772	02/21/95	PTDS SWITCHABLE HIGH SPEED FROG MECHANISM	
8424	JAPAN	ISSUED	1936195	05/26/95	PTDS BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8465	JAPAN	ISSUED	1936194	05/26/95	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
8427	CANAD	ISSUED	2,005,293	06/06/95	PTDS WHEEL SPIH CONTROL SYSTEM	
8722	USA	ISSUED	5,423,401	06/13/95	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8691	USA	ISSUED	5,423,129	06/13/95	PTDS DESICCANT CARTRIDGE OF AN AIR DRYER	
8460	JAPAN	ISSUED	1942647	06/23/95	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
8510	BRAZL	ISSUED	9006339-2	08/29/95	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	

8740	USA	ISSUED	5,449,295	09/12/95	PTDS AUTOMATIC ELECTRIC COUPLING MECHANISM FOR A PASSENGER	TRANSIT TYPE VEHICLE
8539	BRAZL	ISSUED	P19108678	09/26/95	PTDS TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	
8614	USA	ISSUED	5,453,942	09/26/95	PTDS WHEEL SPIN SPEED PROCESSING SYSTEM FOR MULTIPLE-AXLE	RAILWAY VEHICLES
8712	USA	ISSUED	5,454,399	10/03/95	PTDS APPLICATION & RELEASE MAGNET VALVE	
8782	USA	ISSUED	5,456,504	10/10/95	PTDS LOCKING AND UNLOCKING APPARATUS FOR ACCESS DOOR ON A	PASSENGER RAILWAY VEHICLE
8781	USA	ISSUED	5,460,100	10/24/95	PTDS SERVICE BYPASS APPARATUS FOR AUTOMATIC DOOR OPERATOR ON A	PASSENGER RAILWAY VEHICLE
8768	USA	ISSUED	5,465,816	11/14/95	PTDS SLACK ADJUSTING BRAKE CYLINDER FOR A BRAKE UNIT ON A	RAILWAY TRANSIT VEHICLE.
8528	JAPAN	ISSUED	1995288	11/22/95	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8720	USA	ISSUED	5,471,387	11/28/95	PTDS SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND	SLIP INTENSITY DETERMINATION PROCESS
8427	JAPAN	ISSUED	2000587	12/20/95	PTDS WHEEL SPIN CONTROL SYSTEM	
8759	USA	ISSUED	5,499,728	03/19/96	PTDS ELECTRICALLY OPERATED HOOK COUPLER WITH MANUAL OVER RIDE	
8749	USA	ISSUED	5,503,280	04/02/96	PTDS THRUST UNCOUPLING MECHANISM FOR PASSENGER TRANSIT	TYPE RAILWAY CARS
8858	USA	ISSUED	5,505,283	04/09/96	PTDS HIGH CURRENT HARP FOR AN ELECTRIC TROLLEY BUS	
8361	KORSO	ISSUED	100493	06/10/96	PTDS DECELERATION CONTROL SYSTEM	
8383	JAPAN	ISSUED	2064840	06/24/96	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8726	USA	ISSUED	5,535,122	07/09/96	PTDS A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK	OF THE BRAKE RETARDATION... ON A VEHICLE
8757	USA	ISSUED	5,544,057	08/06/96	PTDS LOAD SETTING DEVICE FOR RAILWAY CARS	
8722	AUSAL	ISSUED	668839	09/04/96	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8815	USA	ISSUED	5,582,206	12/10/96	PTDS ROTARY MAGNET VALVE	
8779	USA	ISSUED	5,589,767	12/31/96	PTDS MECHANISM FOR THE ATTACHMENT OF A SPEED SENSOR	
8528	CANAD	ISSUED	2,015,689	01/21/97	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8922	USA	ISSUED	5,604,991	02/25/97	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	

8707	USA	ISSUED	5,613,579	03/25/97	PTDS LATCH LOCKING SPRING CLIP FOR RETAINING AN INSERTABLE BRAKE SHOE LINING ON A DISC BRAKE HEAD
8722	JAPAN	ISSUED	2659175	06/06/97	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER
8858	CANAD	ISSUED	2,147,097	06/17/97	PTDS HIGH CURRENT HARP FOR AN ELECTRIC TROLLEY BUS
8728	JAPAN	ISSUED	2672779	07/11/97	PTDS VARIABLE LOAD CONTROL VALVE DEVICE
8624	USA	ISSUED	5,650,933	07/22/97	PTDS TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS
8863	USA	ISSUED	5,654,889	08/05/97	PTDS SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION
8922	SOFRC	ISSUED	96,8800	08/27/97	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER
8921	SOFRC	ISSUED	96/8802	08/27/97	PTDS LINEAR CHOKE SHUTTLE/DRIFT CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER
8924	SOFRC	ISSUED	96/8801	08/27/97	PTDS TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT
8924	USA	ISSUED	5,662,727	09/02/97	PTDS TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT
8910	USA	ISSUED	5,673,493	10/07/97	PTDS TELESCOPING DESIGN CARTRIDGE FOR AN AIR DRYER DISPOSED IN AN AIR SYSTEM
8894	USA	ISSUED	5,673,774	10/07/97	PTDS AUXILIARY VEHICLE CURRENT COLLECTOR
8839	USA	ISSUED	5,677,608	10/14/97	PTDS EMBEDDED DUPLEX LOCAL CONTROL PANEL
8921	USA	ISSUED	5,685,896	11/11/97	PTDS LINEAR CHOKE SHUTTLE/DRIFT CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER
8938	USA	ISSUED	5,691,888	11/25/97	PTDS POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER * INVENTOR'S FULL NAME: CHARLES C. STEGLING
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8383	KORSO	ISSUED	131073	11/26/97	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION
8943	USA	ISSUED	5,692,586	12/02/97	PTDS BRAKE DEVICE
9010	USA	ISSUED	5,700,065	12/23/97	PTDS PENALTY BRAKE SCHEME FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT
9012	USA	ISSUED	5,700,066	12/23/97	PTDS PENALTY BRAKE DESIGN FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT
8635	USA	ISSUED	5,702,774	12/30/97	PTDS REUSABLE PAINT MASKING MEMBER
8927	USA	ISSUED	5,704,396	01/06/98	PTDS MODULATION ROTARY VALVE
8624	JAPAN	ISSUED	2739046	01/16/98	PTDS TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS
8728	EPO	ISSUED	0628458	01/28/98	PTDS VARIABLE LOAD CONTROL VALVE DEVICE

8949	USA	ISSUED	5,713,639	02/03/98	PTDS BRAKE CONTROL DEVICE FOR RAILROAD ROLLING STOCK
9004	USA	ISSUED	5,735,579	04/07/98	PTDS BRAKE ASSURANCE MODULE
8929	USA	ISSUED	5,740,043	04/14/98	PTDS RELATIVE SPIN SPEED TRACTION CONTROL
8936	USA	ISSUED	5,740,025	04/14/98	PTDS ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM
9033	USA	ISSUED	5,738,417	04/14/98	PTDS BRAKE PIPE SENSING UNIT
9011	USA	ISSUED	5,746,485	05/05/98	PTDS PENALTY BRAKE CIRCUIT FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT
8879	USA	ISSUED	5,752,212	05/12/98	PTDS PROPORTIONAL POLARITY SHIFT WHEEL SLIDE PROTECTION
9047	USA	ISSUED	5,771,933	06/30/98	PTDS A Three-Position Solenoid Valve
9046	USA	ISSUED	5,775,367	07/07/98	PTDS A SOLENOID VALVE CONTROL DEVICE

Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Title	Long:Title1	Long:Title2
PULSE-32	USA		ISSUED	4,353,068	10/05/82	PULS METHOD FOR CALIBRATING BEAM Emitter TYPE SPEED SENSOR		FOR RR ROLLING STOCK
PULSE-40	USA		ISSUED	4,487,060	12/11/84	PULS		
PULSE-40A	USA		ISSUED	4,520,662	06/04/85	PULS		
PULSE-40B	USA		ISSUED	4,554,221	11/19/85	PULS		
PULSE-13	USA		ISSUED	4,592,217	06/03/86	PULS MARKER ATTACHMENT FOR RAILROAD EQUIPMENT		
PULSE-2	USA		ISSUED	4,599,723	07/08/86	PULS METHOD OF ENCODING DATA FOR SERIAL TRANSMISSION		
PULSE-11	USA		ISSUED	4,638,237	01/20/87	PULS BATTERY CONDITION INDICATOR		
PULSE-14	USA		ISSUED	4,654,629	03/31/87	PULS VEHICLE MARKER LIGHT		
PULSE-12	USA		ISSUED	4,785,197	11/15/88	PULS TILT SWITCH		
PULSE-33	USA		ISSUED	4,840,056	06/20/89	PULS FUEL MEASURING SYSTEM		
PULSE-4	USA		ISSUED	4,847,770	07/11/89	PULS INITIAL TERMINAL TESTER		
PULSE-30	USA		ISSUED	4,862,433	08/29/89	PULS TIMER CIRCUIT FOR DRAG OPERATION IN AN ENGINEMAN		MONITORING DEVICE
PULSE-18	USA		ISSUED	4,885,689	12/05/89	PULS MULTILINGUAL CODE RECEIVER		
PULSE-15	USA		ISSUED	3,05,122	12/19/89	PULS FRONT PANEL FOR DATA RECORDER		
PULSE-20	USA		ISSUED	4,940,292	07/10/90	PULS RAPID RELEASE VALVE MECHANISM		
PULSE-29	USA		ISSUED	3,10,510	09/11/90	PULS DEFAULT CONTROLLER FOR RAILWAY VEHICLES		
PULSE-6	USA		ISSUED	3,15,114	03/05/91	PULS END OF TRAIN MARKER LIGHT		
PULSE-22	USA		ISSUED	5,016,840	05/21/91	PULS METHOD TO AUTHORIZE H.O.T. UNIT TO TRANSMIT EMERGENCY		COMMUNDS TO ASSOC. REAR UNIT
PULSE-31	USA		ISSUED	5,083,274	01/21/92	PULS RAILROAD BRAKE PRESSURE RECORDING		

PULSE-1	USA	ISSUED	5,117,866	06/02/92	PULS AIR FLOW REGULATOR FOR FUEL MEASURING SYSTEMS
PULSE-7	USA	ISSUED	5,166,610	11/26/92	PULS DUAL RANGE SPEED INDICATOR WITH ACCELERATION DISPLAY
PULSE-10	USA	ISSUED	5,185,700	02/09/93	PULS SOLID STATE EVENT RECORDER
PULSE-25	USA	ISSUED	5,190,359	03/02/93	PULS PRESSURE RELIEF VALVE FOR RAILWAY BRAKE EMERGENCY SYSTEMS
PULSE-26	USA	ISSUED	5,235,849	08/17/93	PULS RAILROAD COUPLER MOUNT
PULSE-23	USA	ISSUED	5,267,473	12/07/93	PULS SELF POWERED END OF TRAIN UNIT
PULSE-33	CANAD	ISSUED	1,327,714	03/15/94	PULS FUEL MEASURING SYSTEM
PULSE-34	USA	ISSUED	5,309,315	05/03/94	PULS COMPUTER CHASSIS CONSTRUCTION
PULSE-8	USA	ISSUED	5,365,550	11/15/94	PULS INITIAL SYNCHRONIZATION & TRACKING CIRCUITS FOR SPREAD SPECTRUM RECEIVERS
PULSE-28	USA	ISSUED	5,374,015	12/20/94	PULS RAILROAD TELEMETRY AND CONTROL SYSTEMS
PULSE-24	USA	ISSUED	5,376,925	12/27/94	PULS MOTION AND DIRECTION SENSORS
PULSE-27	USA	ISSUED	5,377,938	01/03/95	PULS RAILROAD TELEMETRY AND CONTROL SYSTEMS
PULSE-3	USA	ISSUED	5,383,717	01/24/95	PULS BRAKE CONTROL OF HELPER LOCOMOTIVE
PULSE-35	USA	ISSUED	5,507,457	04/16/96	PULS TRAIN INTEGRITY DETECTION SYSTEM
PULSE-37	USA	ISSUED	5,510,328	06/25/96	PULS CONSIST POWER MONITOR
PULSE-38	USA	ISSUED	5,570,270	10/29/96	PULS CHASSIS AND PERSONAL COMPUTER FOR SEVERE ENVIRONMENT EM-BEDDED APPLICATIONS
PULSE-36	USA	ISSUED	5,650,561	07/22/97	PULS DIAGNOSTIC DEVICE FOR DETERMINING THE PNEUMATIC INTEGRITY OF A BUBBLE-TYPE FUEL MEASURING SYSTEM
PULSE-39	USA	ISSUED	RE33590	08/19/97	PULS SOLID STATE EVENT RECORDER
8999	USA	ISSUED	5,681,015	10/28/97	PULS RADIO-BASED ELECTRO-PNEUMATIC CONTROL COMMUNICATIONS SYSTEM
8997	USA	ISSUED	5,720,455	02/24/98	PULS INTRA-TRAIN RADIO COMMUNICATION SYSTEM
9058	USA	ISSUED	5,738,311	04/14/98	PULS DISTRIBUTED POWER TRAIN SEPARATION DETECTION
8903	USA	ISSUED	5,740,547	04/16/98	PULS RAIL NAVIGATION SYSTEM
8904	USA	ISSUED	5,744,707	04/29/98	PULS TRAIN BRAKE PERFORMANCE MONITOR

8998 USA ISSUED 5,748,269 05/05/98 PULS ENVIRONMENTALLY-SEALED CONVECTIVELY-COOLED ACTIVE MATRIX LIQUID CRYSTAL DISPLAY (LCD)
PULSE-41 USA ISSUED 5,757,291 05/26/98 PULS INTEGRATED PROXIMITY WARNING SYSTEM AND END-OF-TRAIN COM- MUNICATION SYSTEM

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Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Client	Long:Title1	Long:Title2
8770	USA		ISSUED	5,388,675	02/14/95	RFPC	BACKING PLATE FOR DISC BRAKE PADS	
8785	USA		ISSUED	5,560,453	10/01/96	RFPC	KEY FOR RAILROAD BRAKE SHOE ASSEMBLY	
8715	USA		ISSUED	5,566,793	10/22/96	RFPC	IMPROVED RAILWAY TYPE BRAKE SHOE	
8972	USA	CP	ISSUED	5,595,267	01/21/97	RFPC	BRAKE SHOE HAVING FATIGUE RESISTANT BACKING PLATE	
8932	USA		ISSUED	5,647,460	07/15/97	RFPC	SPRING-TYPE RAILROAD BRAKE SHOE LOCKING KEY	
8715	USA	C	ISSUED	5,657,839	08/19/97	RFPC	IMPROVED RAILWAY TYPE BRAKE SHOE	
8882	USA		ISSUED	5,704,454	01/06/98	RFPC	FATIGUE AND IMPACT RESISTANT RAILWAY BRAKE SHOE	

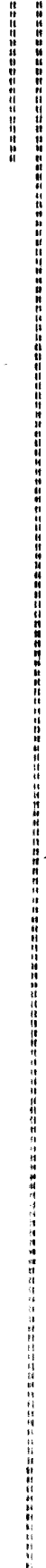
Case Number	Count	Sub Case	Stat	Patent Number	Issue Date	Client	long:title1	long:title2
VAPOR-16	CANAD	01	ISSUED	1,076,165	04/22/80	VAPR HEAVY FUEL OIL NOZZLE		
VAPOR-15	USA		ISSUED	4,247,266	01/27/81	VAPR FLUID PUMP DRIVE SYSTEM		
VAPOR-16	USA	01	ISSUED	4,249,885	02/10/81	VAPR HEAVY FUEL OIL NOZZLE		
VAPOR-17	USA		ISSUED	4,266,485	05/12/81	VAPR Control Sys. for Economic Operation of Multiple Locomotive	Trains (Note: Inventors = outsiders)	
VAPOR-18	USA		ISSUED	4,275,664	06/30/81	VAPR STEP/PLATFORM OPERATOR		
VAPOR-7	CANAD		ISSUED	1,109,900	09/29/81	VAPR PACKING ASSEMBLY		
VAPOR-8	CANAD		ISSUED	1,116,018	01/12/82	VAPR MOVABLE HANGERS FOR PLUG DOORS		
VAPOR-19	USA		ISSUED	4,341,398	07/27/82	VAPR Sys for Controlling the Kneeling Operation of Air	Suspension Equipped Transit Vehicles	
VAPOR-14	CANAD		ISSUED	1,126,276	11/23/82	VAPR VENTILATOR DATA HANDLING AND CONTROL SYSTEM		
VAPOR-21	CANAD		ISSUED	1,136,015	11/23/82	VAPR CONTACTLESS PRESSURE SENSITIVE SWITCH		
VAPOR-20	USA		ISSUED	4,369,344	01/18/83	VAPR SENSITIVE DOOR EDGE WIEGAND MODULE SWITCH ASSEMBLY		
VAPOR-21	USA		ISSUED	4,371,762	02/01/83	VAPR CONTACTLESS PRESSURE SENSITIVE SWITCH		
VAPOR-20	CANAD		ISSUED	1,148,589	06/21/83	VAPR SENSITIVE DOOR EDGE WIEGAND MODULE SWITCH ASSEMBLY		
VAPOR-22	USA		ISSUED	4,407,623	10/04/83	VAPR LIFT ASSEMBLY INCLUDING A REACTION SWITCH		
VAPOR-18	CANAD		ISSUED	1,156,875	11/15/83	VAPR STEP/PLATFORM OPERATOR		
VAPOR-26	USA		ISSUED	4,422,387	12/27/83	VAPR DOOR SEAL		
VAPOR-23	CANAD		ISSUED	1,173,407	08/28/84	VAPR		
VAPOR-24	CANAD		ISSUED	1,178,302	11/20/84	VAPR		
VAPOR-27	USA		ISSUED	4,491,917	01/01/85	VAPR DOOR CONTROL SYSTEM (CTA zero speed sensor)		

VAPOR-25	CANAD	ISSUED	1,183,558	03/05/85	VAPR SPINDLE DOOR OPERATOR
VAPOR-26	CANAD	ISSUED	1,183,730	03/12/85	VAPR DOOR SEAL
VAPOR-29	AUSAL	ISSUED	594,323	02/21/86	VAPR ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
VAPOR-29	UNJKN	ISSUED	2,172,480	02/28/86	VAPR ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
VAPOR-9	CANAD	ISSUED	1,203,624	04/22/86	VAPR METHOD FOR AUTOMATED ANALYSIS OF VEHICLE PERFORMANCE
VAPOR-10	USA	ISSUED	4,583,466	04/22/86	VAPR STEP LIFT FOR RAILWAY CARS
VAPOR-30	USA	ISSUED	4,611,104	09/09/86	VAPR ELECTROMECHANICAL SWITCH ACTUATOR HAVING HIGH SECURITY KEY ACTUATOR
VAPOR-31	USA	ISSUED	4,627,242	12/09/86	VAPR THERMOELECTRIC COOLER
VAPOR-32	USA	ISSUED	4,628,835	12/16/86	VAPR WASTE FLUID INCINERATOR HAVING HEAT RECOVERY MEANS
VAPOR-33	USA	ISSUED	4,653,227	03/31/87	VAPR DOOR OPERATING ASSEMBLY
VAPOR-10	CANAD	ISSUED	1,220,089	04/07/87	VAPR STEP LIFT FOR RAILWAY CARS
VAPOR-34	USA	ISSUED	4,704,870	11/10/87	VAPR THERMOELECTRIC COOLER
VAPOR-29	CANAD	ISSUED	1,244,864	11/15/88	VAPR ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
VAPOR-26	CANAD 01	ISSUED	1,252,351	04/11/89	VAPR DOOR SEAL
VAPOR-32	CANAD	ISSUED	1,256,321	06/27/89	VAPR WASTE FLUID INCINERATOR HAVING HEAT RECOVERY MEANS
VAPOR-35	USA C	ISSUED	4,882,876	11/28/89	VAPR DOOR OPERATOR WITH LOCKING MECHANISM
VAPOR-33	CANAD	ISSUED	1,265,387	02/06/90	VAPR DOOR OPERATING ASSEMBLY
VAPOR-34	CANAD	ISSUED	1,266,093	02/20/90	VAPR THERMOELECTRIC COOLER
VAPOR-36	USA	ISSUED	4,901,474	02/20/90	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
VAPOR-36	TAIWN	ISSUED	42,921	12/01/90	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
VAPOR-37	USA	ISSUED	5,130,503	07/14/92	VAPR PRESSURE WAVE SWITCH HAVING IMPROVED CONTACT STRUCTURE AND PRESSURE EQUALIZATION
VAPOR-36	USA EP	ISSUED	5,148,631	09/22/92	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
VAPOR-35	CANAD	ISSUED	1,315,812	04/06/93	VAPR DOOR OPERATOR WITH LOCKING MECHANISM

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VAPOR-36	CANAD	ISSUED	1,321,219	08/10/93	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK	LOCKS
VAPOR-38	USA	ISSUED	5,259,342	11/09/93	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-39	USA	ISSUED	5,280,754	01/25/94	VAPR TRANSIT CAR POWER DOOR OBSTRUCTION SENSING SYSTEM AND DEVICE	DEVICE
VAPOR-40	USA	ISSUED	5,332,279	07/26/94	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT VEHICLES (electric bus door operator)	VEHICLES (electric bus door operator)
VAPOR-38	USA	ISSUED	5,333,574	08/02/94	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-41	USA	ISSUED	5,361,598	08/30/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-36	UNITED KINGDOM	ISSUED	0,635,874	05/31/95	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK	LOCK
VAPOR-38	MEXIC	ISSUED	178,516	06/30/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-38	USA	ISSUED	5,433,174	07/18/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-43	USA	ISSUED	5,433,031	07/18/95	VAPR RESILIENT EDGES FOR POWER OPERATED DOORS (biparting doors)	FUELS (parent)
VAPOR-44	USA	ISSUED	5,438,800	08/08/95	VAPR STABILIZER FOR OUTSIDE SLIDING PLUG DOORS (door leaf)	LOCKS (R110)
VAPOR-38	USA	ISSUED	5,471,957	12/05/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-41	MEXIC	ISSUED	180,346	12/07/95	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-46	USA	ISSUED	5,483,769	01/16/96	VAPR DOOR DRIVE EQUIPMENT FOR MASS TRANSIT VEHICLE (sliding outside plug door)	outside plug door
VAPOR-48	UNITED KINGDOM	ISSUED	2,271,331	02/28/96	VAPR IMPROVED DOOR HANGER SYSTEM FOR MASS TRANSIT VEHICLES	LOCKS (R110)
VAPOR-41	AUSAL	ISSUED	670,079	10/22/96	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-37	CANAD	ISSUED	2,062,901	10/29/96	VAPR PRESSURE WAVE SWITCH HAVING IMPROVED CONTACT STRUCTURE AND PRESSURE EQUALIZATION	PRESSURE EQUALIZATION
VAPOR-38	USA	ISSUED	5,582,137	12/10/96	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-41	POLND	ISSUED	172,628	06/04/97	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	JAPAN	ISSUED	272,737	12/12/97	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-40	MEXIC	ISSUED	188,149	03/05/98	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT VEHICLES (electric bus door operator)	VEHICLES (electric bus door operator)
VAPOR-49	USA	ISSUED	5,755,060	05/26/98	VAPR COMPACT PANEL LOCK FOR AN OVERHEAD MOUNTED DOOR PANEL OPERATOR (filed orig as provisional ap 60/000	OPERATOR (filed orig as provisional ap 60/000

VAPOR-52 USA ^{96/1} ISSUED 5,775,232 07/07/98 VAPR BRIDGE PLATE FOR A MASS TRANSIT VEHICLE



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Case Number	Count	Sub Case	Stat	Patent Number	Issue Date	Client	long:title1	long:title2
7085		CANAD	ISSUED	1149759	07/12/83	WLTD	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
7122		CANAD	ISSUED	1166977	05/08/84	WLTD	HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS	
8101		CANAD	ISSUED	1209059	08/05/86	WLTD	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8234		CANAD	ISSUED	1266641	12/13/88	WLTD	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/AIR RESERVOIR .ADJUSTER ARRANGEMENT	
8122		CANAD	ISSUED	1256039	06/20/89	WLTD	BRAKE ACTUATOR DEVICE HAVING A HYDRAULIC SLACK ADJUSTING ARRANGEMENT	
8269		CANAD	ISSUED	1260515	09/26/89	WLTD	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRAKE	
8468		CANAD	ISSUED	2,005,296	01/09/96	WLTD	FREIGHT BRAKE EMERGENCY VALVE	

HARCO ALLOWED APPLICATIONS

Case Number	Count	Sub Case	Stat	Application Number	Filing Date	Clie nt	long:title1	long:title2
8715	AUSAL		ALLOWED	53919/94	01/21/94	RFPIC IMPROVED RAILWAY TYPE BRAKE SHOE		
8694	CANAD		ALLOWED	2,119,546	03/21/94	NAFV QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL	VALVE DEVICE	
8739	CANAD		ALLOWED	2,119,607	03/22/94	NAFV LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE		
8745	BRAZL		ALLOWED	PI-9403702	10/13/94	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL		
8694	BRAZL		ALLOWED	PI-9403670-5	10/04/94	NAFV QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL	VALVE DEVICE	
8758	BRAZL		ALLOWED	PI-9403704	10/13/94	CARD HIGH CAPACITY DRAFI GEAR ASSEMBLY		
8737	BRAZL		ALLOWED	PI-9403705	10/13/94	NAFV ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM		
8737	CANAD		ALLOWED	2,123,040	05/06/94	NAFV ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM		
8739	BRAZL		ALLOWED	PI-9403703-5	10/13/94	NAFV LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE		
8720	CANAD		ALLOWED	2,123,754	05/17/94	PTDS SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND	SLIP INTENSITY DETERMINATION PROCESS	
8740	CANAD		ALLOWED	2,124,303	05/23/94	PTDS AUTOMATIC ELECTRIC COUPLING MECHANISM FOR A PASSENGER	TRANSIT TYPE VEHICLE	
8735	CANAD		ALLOWED	2,116,312	02/23/94	LPOW TAMPER-RESISTANT INDEPENDENT BRAKE VALVE DEVICE FOR	LOCOMOTIVE AIR BRAKE EQUIPMENT	
8614	CANAD		ALLOWED	2,129,402	08/03/94	PTDS WHEEL SPIN SPEED PROCESSING SYSTEM FOR MULTIPLE-AXLE	RAILWAY VEHICLES	
8748	CANAD		ALLOWED	2,129,401	08/03/94	NAFV FASTENER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE		
8722	EPO		ALLOWED	94115927.9	10/10/94	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER		
8644	CANAD		ALLOWED	2,140,112	01/12/95	LPOW METHOD AND APPARATUS FOR DETERMINING AND ENCODING THE POSI-	TION OF A REVERSER HANDLE ON A LOCOMOTIVE	
8653	CANAD		ALLOWED	2,140,113	01/12/95	LPOW APPARATUS FOR INTERLOCKING REVERSER HANDLE ON A CONTROL	STAND OF A RAILWAY LOCOMOTIVE	
8789	CANAD		ALLOWED	2,140,115	01/12/95	NAFV VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY		
8654	CANAD		ALLOWED	2,140,401	01/17/95	LPOW APPARATUS FOR DETERMINING THE ABSOLUTE POSITION OF THROTTLE	DYNAMIC BRAKE & REVERSER HANDLES ON A LOCO	

- CONTROL STAND

8912	CANAD	ALLOWED	2,144,813	03/16/95	LPDV SOFTWARE NULLIFICATION OF TRANSDUCER INDUCED OFFSET	ERRORS WITHIN A FLOW RATE MEASUREMENT SYST
8787	AUSAL	ALLOWED	17830/95	05/02/95	NAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8787	CANAD	ALLOWED	2,144,932	03/17/95	NAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8745	CANAD CP	ALLOWED	2,146,626	04/07/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8745	SOFRIC CP	ALLOWED	954706	06/07/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8847	CANAD	ALLOWED	2,148,867	05/08/95	LPDV APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND REVERSER HANDLES ON A CONTROL STAND OF A RAILWAY LOCOMOTIVE	
8860	USA	ALLOWED	08/520,464	08/28/95	PTDS EVENT HISTORY DATA ACQUISITION	
8796	CANAD	ALLOWED	2,157,735	09/07/95	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR KVT FRI CAR AND AN INTERLOCKING MECHANISM THEREFOR	
8894	CANAD	ALLOWED	2,158,819	09/21/95	PTDS AUXILIARY VEHICLE CURRENT COLLECTOR	
8877	CANAD	ALLOWED	2,160,413	10/12/95	REPD AUTOMATED TERMINAL TEST PROCEDURE	
8815	CANAD	ALLOWED	2,160,970	10/19/95	PTDS ROTARY MAGNET VALVE	
8810	SOFRIC CONTROL SYSTEMS	ALLOWED	96/0366	01/17/96	NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANSDUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE	
8975	USA	ALLOWED	08/602,492	02/20/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8949	CANAD	ALLOWED	2,170,857	03/01/96	PTDS BRAKE CONTROL DEVICE FOR RAILROAD ROLLING STOCK	
8940	USA	ALLOWED	08/594,517	01/31/96	PTDS BRAKE DEVICE	
8962	USA	ALLOWED	08/653,076	05/21/96	PTDS A BRAKE MONITORING DEVICE FOR RAILROAD CARS	
8986	USA	ALLOWED	08/664,391	06/14/96	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY VEHICLE BRAKE SYSTEM	
8951	USA	ALLOWED	08/670,778	06/20/96	CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8933	USA	ALLOWED	08/677,584	07/09/96	NAFW TRAIN BRAKE PIPE REMOTE PRESSURE CONTROL SYSTEM & MOTOR-DRIVEN REGULATING VALVE THEREFOR	
8840	USA	ALLOWED	08/642,569	05/03/96	NAFW BRAKE CONTROL FOR MULTI-PLATFORM FREIGHT CAR	
8964	USA CP	ALLOWED	08/637,873	04/25/96	NAFW FREIGHT BRAKE CONTROL FOR UNIFORM CAR DECELERATION	
8746	AUSAL D1	ALLOWED	58369/96	07/04/96	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING ARRANGEMENT	
9015	USA	ALLOWED	08/709,197	08/23/96	FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM	

8958	USA	ALLOWED	08/745,429	11/12/96	NAFW COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC
8957	USA	ALLOWED	08/748,241	11/12/96	NAFW OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION LEVER
8991	CANAD	ALLOWED	2,195,274	01/16/97	LPDW IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP DIAPHRAGM
8973	USA	ALLOWED	08/790,574	01/28/97	PTDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT
8977	USA	ALLOWED	08/759,411	12/04/96	PTDS PULSE WIDTH MODULATED DRIVE FOR AN INFINITELY VARIABLE SOLENOID OPERATED BRAKE CYLINDER PRESSURE CONTROL VALVE
8877	USA	ALLOWED	08/807,795	02/28/97	REPD AUTOMATED TERMINAL TEST PROCEDURE
8960	USA	ALLOWED	08/772,326	12/23/96	NAFW MICROPROCESSOR CONTROLLED RAILWAY CAR ACCOUNTING AND COMMUNICATION SYSTEM
9055	USA	ALLOWED	08/835,859	04/08/97	PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYSTEM
9014	EPO	ALLOWED	97108004.9	05/16/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a CK Val in a Regenerative Desiccant Air Dryer
9016	SOFRC	ALLOWED	97/5048	06/06/97	LPDW REGENERATIVE DESICCANT AIR DRYER
8970	SOFRC	ALLOWED	97/5038	06/06/97	LPDW Pneumatic Emergency Brake Application Valve and an Associated Electrical Signalling Switch
8961	USA	ALLOWED	08/831,076	04/01/97	ELECTRONIC BLUE FLAG SAFETY EQUIPMENT
9085	USA	ALLOWED	08/870,877	06/06/97	RFFC TRIM SHOE
8852	USA	ALLOWED	08/920,207	08/15/97	REPD AN APPARATUS TO ENABLE CONTROLLING A THROTTLE CONTROLLER FROM A REMOTE HOST
8889	SOFRC	ALLOWED	97/6835	07/31/97	NAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE
9030	USA	ALLOWED	08/907,936	08/12/97	LPDW COMPRESSOR INLET VALVE
9085	SOFRC	ALLOWED	97/8930	10/06/97	RFFC TRIM SHOE
9055	SOFRC	ALLOWED	97/8670	09/26/97	PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYSTEM
8942	SOFRC	ALLOWED	97/9421	10/21/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE
8998	SOFRC	ALLOWED	979620	10/27/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX LIQUID CRYSTAL DISPLAY (LCD)
8908	USA	ALLOWED	08/642,954	05/06/96	PTDS RAILWAY BRAKE VALVE ASSEMBLY

n. Greenville, SC)

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UABCO ALLOWED APPLICATIONS

Case Number	Count	Sub Case	Stat	Application Number	Filing Date	Class	long:title1	long:title2
8712		JAPAN	PENDING	06-065869	04/04/94	PTDS APPLICATION & RELEASE MAGNET VALVE		
8681		CANAD	PENDING	2,119,608	03/22/94	NAFM LOW STRESS CONICAL TYPE DIAPHRAGM		
8745		INDIA	PENDING	368/0e1/94	03/30/94	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL		
8746		INDIA	PENDING	369/0e1/94	03/30/94	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING		ARRANGEMENT
8758		CHINA	PENDING	94115049.6	08/18/94	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY		
8758		INDIA	PENDING	422/0e1/94	04/12/94	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY		
8694		SOFR	PENDING	94/2049	03/23/94	NAFM QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL		VALVE DEVICE
8746		CANAD	PENDING	2,120,314	03/30/94	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING		ARRANGEMENT
8758		CANAD	PENDING	2,121,007	04/11/94	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY		
8783		USA	PENDING	08/238,264	05/04/94	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR		ASSEMBLY USING A BALL AND RACE ASSEMBLY
8784		USA	PENDING	08/238,263	05/04/94	CARD A MALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY		USING A BALL AND RACE ASSEMBLY
8722		CANAD	PENDING	2,123,767	05/17/94	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER		
8726		CANAD	PENDING	2,123,952	05/19/94	PTDS A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK		OF THE BRAKE RETARDATION...ON A VEHICLE
8755		CANAD	PENDING	2,124,921	06/01/94	NAFM BRAKE CYLINDER PRESSURE RELAY VALVE FOR RAILROAD		FREIGHT CAR
8766		CANAD	PENDING	2,125,438	06/08/94	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT		EACH END OF THE DRAWBAR
8783		CANAD	PENDING	2,125,439	06/08/94	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR		ASSEMBLY USING A BALL AND RACE ASSEMBLY
8784		CANAD	PENDING	2,125,437	06/08/94	CARD A MALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY		USING A BALL AND RACE ASSEMBLY
8749		CANAD	PENDING	2,125,746	06/13/94	PTDS TIMED THRUST UNCOUPLING MECHANISM FOR PASSENGER TRANSIT		TYPE RAILWAY CARS
8745		EPO	PENDING	94107183.9	05/07/94	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL		

8624	CANAD	PENDING	2,130,146	08/15/94	PTDS TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS
8770	CANAD	PENDING	2,117,663	09/02/94	RFFC BACKING PLATE FOR DISC BRAKE PADS
8768	CANAD	PENDING	2,131,493	09/06/94	PTDS SLACK ADJUSTING BRAKE CYLINDER FOR A BRAKE UNIT ON A RAILWAY TRANSIT VEHICLE.
8624	BRAZL	PENDING	PJ 9502200	06/07/95	PTDS TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS
8624	EPO	PENDING	94114192.1	09/09/94	PTDS TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS
8766	BRAZL	PENDING	PI 9501633	04/28/95	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8766	EPO	PENDING	94114191.3	09/09/94	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8766	INDIA	PENDING	1079/DEL/94	08/26/94	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8766	JAPAN	PENDING	06-291552	11/25/94	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8783	BRAZL	PENDING	PI 9501333	04/06/95	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY
8783	EPO	PENDING	94113394.1	09/07/94	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY
8783	INDIA	PENDING	1080/DEL/94	08/26/94	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY
8783	JAPAN	PENDING	06-291553	11/25/94	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY
8651	CANAD	PENDING	2,131,105	08/30/94	CARD MCGABE, THOMAS, FESSLER, CHARLES B. & HATSCHE, SCOTT - TWO RAILWAY BRAKING APPARATUS
8722	BRAZL	PENDING	PI 9501334-2	04/06/95	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER
8788	CANAD	PENDING	2,132,261	09/16/94	MATW VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR CONTROL VALVE
8794	USA	PENDING	08/308,609	09/19/94	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY
8635	USA	PENDING	08/288,649	08/09/94	PTDS REUSABLE PAINT MASKING MEMBER
8754	CANAD	PENDING	2,137,871	12/12/94	MATW RAILWAY BRAKE PIPE WITH ACCESS PORTS
8772	CANAD	PENDING	2,117,876	10/11/94	MATW FILTER ARRANGEMENT AND MOUNTING IN RAILWAY BRAKE PIPE BRACKET.
8741	CANAD	PENDING	2,134,401	10/26/94	LPDW AIR PASSAGE INSERT FOR OIL FILL SPOUT
8794	INDIA	PENDING	1407/DEL/94	11/02/94	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY
8794	CANAD	PENDING	2,134,859	11/01/94	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY

8794	JAPAN	PENDING	07-013066	01/30/95	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8794	EPO	PENDING	94117804.8	11/11/94	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8794	BRAZL	PENDING	PI 9500580	02/15/95	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8792	CANAD	PENDING	2,141,096	01/25/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8792	BRAZL	PENDING	PI 9500921-3	03/09/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8792	INDIA	PENDING	103/DEL/95	01/25/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8792	JAPAN	PENDING	07-013065	01/30/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8720	JAPAN	PENDING	07-088053	04/13/95	PIDS SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND	SLIP INTENSITY DETERMINATION PROCESS
8726	JAPAN	PENDING	07-054181	03/14/95	PIDS A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK	OF THE BRAKE RETARDATION...ON A VEHICLE
8748	JAPAN	PENDING	07-143084	06/09/95	MAFW FASTENER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE	
8792	EPO	PENDING	95101392.9	02/02/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8843	CANAD	PENDING	2,141,087	01/25/95	LPDW ELECTRONICALLY CONTROLLED LOCO THROTTLE CONTROLLER	INCLUDING REMOTE MULTIPLE UNIT THROTTLE CO
8769	CANAD	PENDING	2,141,720	02/02/95	RFPD WHEEL TREAD CONDITIONING BRAKE SHOE	
8856	CANAD	PENDING	2,141,513	01/31/95	LPDW A METHOD AND APPARATUS FOR REMOTE CONTROL OF A LOCOMOTIVE	THROTTLE CONTROLLER
8747	CANAD	PENDING	2,142,175	02/09/95	MAFW IMBEDDED ELECTRICAL CONNECTOR	
8856	AUSAL	PENDING	14934/95	03/20/95	LPDW A METHOD AND APPARATUS FOR REMOTE CONTROL OF A LOCOMOTIVE	THROTTLE CONTROLLER
8613	USA	PENDING	08/393,419	02/23/95	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8786	AUSAL	PENDING	17842/95	05/03/95	MAFW Railway Automatic Brake Control Valve Test Unit	
8786	BRAZL	PENDING	PI 9504899-5	10/30/95	MAFW Railway Automatic Brake Control Valve Test Unit	
8786	CANAD	PENDING	2,148,424	05/02/95	MAFW Railway Automatic Brake Control Valve Test Unit	
8786	EPO	PENDING	95106957.4	05/09/95	MAFW Railway Automatic Brake Control Valve Test Unit	
8811	CANAD	PENDING	2,144,812	03/16/95	LPDW APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-	PNEUMATIC SYSTEMS

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8787	BRAZL	PENDING	PI 9503145-6	08/14/95	NAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8809	AUSAL	PENDING	16589/95	04/24/95	NAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8809	BRAZL	PENDING	PI 9504806-5	10/10/95	NAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8809	CANAD	PENDING	2,144,931	03/17/95	NAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8816	CANAD	PENDING	2,145,381	03/23/95	LPDW APPARATUS TO PREVENT UNADVERTENT DISCHARGE AND TRAPPING OF PIPE PRESS. IN AN ELECTRO-PNEU. LOCO. BRAK	
8759	CANAD	PENDING	2,149,181	05/11/95	PTDS ELECTRICALLY OPERATED HOOK COUPLER WITH MANUAL OVER RIDE	
8745	AUSAL CP	PENDING	20331/95	05/26/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8745	BRAZL CP	PENDING	PI 9504805-7	10/10/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8745	INDIA CP	PENDING	681/Del/95	04/17/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8745	JAPAN CP	PENDING	08-005193	01/16/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8880	CANAD	PENDING	2,147,096	04/19/95	LPDW RAILWAY BRAKE SYSTEM TESTER	
8747	AUSAL	PENDING	14935/95	03/20/95	NAFW IMBEDDED ELECTRICAL CONNECTOR	
8747	BRAZL	PENDING	PI 9503146-4	08/14/95	NAFW IMBEDDED ELECTRICAL CONNECTOR	
8785	CANAD	PENDING	2,149,964	05/23/95	REFC KEY FOR RAILROAD BRAKE SHOE ASSEMBLY	
8829	CANAD	PENDING	2,151,665	06/13/95	NAFW REMOTE CONTROL OF CUT-OUT COCK	
8879	CANAD	PENDING	2,152,739	06/27/95	PTDS PROPORTIONAL POLARITY SHIFT WHEEL SLIDE PROTECTION	
8885	CANAD	PENDING	2,153,854	07/13/95	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAHRER - W. THOMAS DINGEED (8 INVENTORS)	
8752	JAPAN	PENDING	08-102733	04/24/96	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8863	CANAD	PENDING	2,154,540	07/24/95	PTDS SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION	
8752	AUSAL	PENDING	34214/95	10/12/95	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8752	BRAZL	PENDING	PI 9601530-6	04/11/96	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8796	AUSAL	PENDING	45519/96	02/13/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RYV FRT CAR AND AN INTERLOCKING MECHANISM THEREFOR	
8796	EPO	PENDING	96103045.9	02/29/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RYV FRT CAR AND AN INTERLOCKING MECHANISM THEREFOR	

8813	CANAD	PENDING	2,157,351	08/31/95	NAFV PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8893	CANAD	PENDING	2,157,734	09/07/95	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8751	CANAD	PENDING	2,156,587	08/21/95	NAFV ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8895	CANAD	PENDING	2,157,724	09/07/95	CARD AN INTERLOCKING TYPE MECHANISM FOR A SLACKLESS DRAWBAR ASSEMBLY USED ON A RAILWAY FREIGHT CAR	
8751	AUSAL	PENDING	40841/96	01/05/96	NAFV ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8751	BRAZI	PENDING	P1 9601672-8	05/14/96	NAFV ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8813	AUSAL	PENDING	34436/95	10/24/95	NAFV PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8813	BRAZI	PENDING	P1 9600319	02/05/96	NAFV PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8893	AUSAL	PENDING	34579/95	10/31/95	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8893	EPO	PENDING	95117368.1	11/04/95	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8635	USA	PENDING	08/504,605	07/20/95	PTDS REUSABLE PAINT MASKING MEMBER	
PULBE-36	CANAD	PENDING	2,160,414	10/12/95	PULS DIAGNOSTIC DEVICE FOR DETERMINING THE PNEUMATIC INTEGRITY OF A BUBBLE-TYPE FUEL MEASURING SYSTEM	
8747	JAPAN	PENDING	07-325529	12/14/95	NAFV IMBEDDED ELECTRICAL CONNECTOR	
8843	JAPAN	PENDING	07-298695	11/16/95	LPDW ELECTRONICALLY CONTROLLED LOCO THROTTLE CONTROLLER INCLUDING REMOTE MULTIPLE UNIT THROTTLE CONTROL	
8844	JAPAN	PENDING	07-297169	11/15/95	LPDW METHOD AND APPARATUS FOR DETERMINING AND ENCODING THE POSITION OF A REVERSER HANDLE ON A LOCOMOTIVE INCLUDING REMOTE MULTIPLE UNIT THROTTLE CONTROL	
8846	JAPAN	PENDING	07-298474	11/16/95	LPDW METHOD AND APPARATUS FOR FEEDBACK OF TRAINLINE STATUS TO THE CENTRALPROCESSOR OF A LOCOMOTIVE THROTTLE CONTROLLER	
8849	JAPAN	PENDING	07-298154	11/16/95	LPDW METHOD OPERATING LOCO.MOUNTED THROTTLE CONTROLLER BETWEEN 2 MODES OF OPERATION INC.A TRANSITION BETWEEN SUCH TWO MODES	
8850	JAPAN	PENDING	07-298475	11/16/95	LPDW AN APPARATUS FOR AND A METHOD OF GENERATING AN ANALOG SIGNAL FOR CONTROL OF DYNAMIC BRAKING	
8851	JAPAN	PENDING	07-295444	11/14/95	LPDW AN APPARATUS FOR FEEDBACK OF AN ANALOG SIGNAL USED TO MONITOR &/OR CONTROL DYNAMIC BRAKING & METHOD OF OPERATING	
8860	CANAD	PENDING	2,161,383	10/25/95	PTDS EVENT HISTORY DATA ACQUISITION	
8894	FRANC	PENDING	96 05227	06/25/96	PTDS AUXILIARY VEHICLE CURRENT COLLECTOR	
8926	USA	PENDING	08/548,874	10/26/95	RPPC SELF LUBRICATING BRAKE SHOE MATERIAL	

8856	JAPAN	PENDING	07-316696	12/05/95	LPDU A METHOD AND APPARATUS FOR REMOTE CONTROL OF A LOCOMOTIVE THROTTLE CONTROLLER
8811	JAPAN	PENDING	08-012695	01/29/96	LPDU APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-PNEUMATIC SYSTEMS
8852	JAPAN	PENDING	07-298696	11/16/95	LPDU AN APPARATUS TO ENABLE CONTROLLING A THROTTLE CONTROLLER FROM A REMOTE HOST
8790	AUSAL	PENDING	48236/96	03/22/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE
8790	BRAZL	PENDING	PI 9602697-9	06/07/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE
8790	CANAD	PENDING	2,162,980	11/15/95	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE
8810	CANAD	PENDING	2,162,971	11/15/95	NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANS- DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8810	BRAZL	PENDING	9601187	03/29/96	NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANS- DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8885	AUSAL	PENDING	48238/96	03/22/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAMMER - M. THOMAS DIQUEED (8 INVENTORS)
8885	BRAZL	PENDING	9600318	02/05/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAMMER - M. THOMAS DIQUEED (8 INVENTORS)
8839	CANAD	PENDING	2,175,518	05/01/96	PIDS EMBEDDED DUPLEX LOCAL CONTROL PANEL SOFTWARE CONTROL
8907	CANAD	PENDING	2,164,159	11/30/95	LPDU AUTOMATIC DETECTION OF AIR FLOW TRANSDUCER TYPE UNDER
8910	CANAD	PENDING	2,164,475	12/05/95	PIDS TELESCOPING DESICCANT CARRIDGE FOR AN AIR DRYER DISPOSED IN AN AIR SYSTEM
8911	CANAD	PENDING	2,166,594	01/04/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY
8810	AUSAL	PENDING	47989/96	03/04/96	NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANS- DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8926	CANAD	PENDING	2,168,408	01/30/96	RFPIC SELF LUBRICATING BRAKE SHOE MATERIAL
8898	USA	PENDING	08/556,198	11/09/95	REPO LIMP-IN CONTROL ARRANGEMENT FOR AN ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM
8898	CANAD	PENDING	2,169,038	02/07/96	REPO LIMP-IN CONTROL ARRANGEMENT FOR AN ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM
8751	JAPAN	PENDING	08-163216	06/24/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR
8790	JAPAN	PENDING	08-147296	06/10/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE
8813	JAPAN	PENDING	08-126952	05/22/96	NAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT BRAKE
8879	JAPAN	PENDING	08-113876	05/08/96	PIDS PROPORTIONAL POLARITY SHIFT WHEEL SLIDE PROTECTION
8861	BRAZL	PENDING	9602742	06/12/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR

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8861	CANAD	PENDING	2,170,854	03/01/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR
8861	INDIA	PENDING	514/De1/96	03/12/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR
8861	AUSAL	PENDING	48237/96	03/22/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR
8940	CANAD	PENDING	2,170,855	03/01/96	PTDS BRAKE DEVICE
8943	CANAD	PENDING	2,170,852	03/01/96	PTDS BRAKE DEVICE
8861	CHINA	PENDING	96108533.9	07/30/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR
8927	CANAD	PENDING	2,172,901	03/28/96	PTDS MODULATION ROTARY VALVE
8927	EPO	PENDING	96113466.5	08/22/96	PTDS MODULATION ROTARY VALVE
8865	USA	PENDING	08/597,277	02/06/96	NAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO
8884	CANAD	PENDING	2,172,785	03/27/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY
8921	CANAD	PENDING	2,173,518	04/04/96	PTDS LINEAR CHOKE SHUTTLE/ORFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER
8922	CANAD	PENDING	2,174,301	04/16/96	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER
8930	CANAD	PENDING	2,174,702	04/22/96	REPD BRAKE CONTROL SYSTEM FOR DOUBLED ENDED LOCOMOTIVE
8828	CANAD	PENDING	2,174,910	04/24/96	NAFW PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE
8828	AUSAL	PENDING	54709/96	06/03/96	NAFW PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE
8828	BRAZL	PENDING	9603231	07/30/96	NAFW PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE
8865	CANAD	PENDING	2,175,419	04/30/96	NAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO
8865	AUSAL	PENDING	55899/96	06/12/96	NAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO
8865	BRAZL	PENDING	PI 9603059-3	07/11/96	NAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO
8903	CANAD	PENDING	2,175,776	05/03/96	PULS RAIL NAVIGATION SYSTEM
8929	CANAD	PENDING	2,176,547	05/14/96	PTDS RELATIVE SPIN SPEED TRACTION CONTROL
8937	CANAD	PENDING	2,183,222	08/13/96	PTDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER (#3 ABOVE IS CHARLES C. STEGLIN G 1111)

8971	USA <i>003</i>	PENDING	08/643,604	05/06/96	LPDM ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM
8863	JAPAN	PENDING	08-140500	06/03/96	PTDS SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION
8900	AUSAL	PENDING	55876/96	06/07/96	MAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT
8900	BRAZL	PENDING	9603277	08/05/96	MAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT
8900	CANAD	PENDING	2,177,130	05/22/96	MAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT
8898	JAPAN	PENDING	08-295,348	11/07/96	REPD LIMP-IN CONTROL ARRANGEMENT FOR AN ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM
8875	CANAD	PENDING	2,177,460	05/27/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8875	AUSAL	PENDING	55877/96	06/07/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8875	BRAZL	PENDING	9603552	08/23/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8875	CHINA	PENDING	96107134.6	06/21/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8875	EPO	PENDING	96113233.9	08/19/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8875	JAPAN	PENDING	09-008546	01/21/97	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8924	CANAD	PENDING	2,178,058	06/03/96	PTDS TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT
8875	INDIA	PENDING	1294/Del/96	06/12/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8926	FRANC	PENDING	96/12983	10/24/96	RFFC SELF LUBRICATING BRAKE SHOE MATERIAL
8926	MEXIC	PENDING	965113	10/25/96	RFFC SELF LUBRICATING BRAKE SHOE MATERIAL
8864	USA <i>CP</i>	PENDING	08/630,075	04/15/96	MAFV SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE
8982	USA <i>CP</i>	PENDING	08/657,651	06/03/96	LPDM THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD
8963	USA <i>CP</i>	PENDING	08/651,919	05/21/96	PTDS A BRAKE CONTROL DEVICE FOR RAILROAD CARS
8901	USA <i>CP</i>	PENDING	08/653,153	05/24/96	PULS METHOD OF DETERMINING CAR POSITION
8828	JAPAN	PENDING	09-005690	01/16/97	MAFV PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE
8884	JAPAN	PENDING	09-005691	01/16/97	MAFV TWO-PIECE CHECK VALVE ASSEMBLY
8815	JAPAN	PENDING	08-208333	08/07/96	PTDS ROTARY MAGNET VALVE

*note: filed Non-Convention

8927	JAPAN	PENDING	09-000433	01/06/97	PTDS MODULATION ROTARY VALVE	
8930	AUSAL	PENDING	68008/96	10/09/96	REPD BRAKE CONTROL SYSTEM FOR DOUBLED ENDED LOCOMOTIVE	
8882	CANAD	PENDING	2,180,422	07/03/96	RFFC FATIGUE AND IMPACT RESISTANT RAILWAY BRAKE SHOE	
8919	CANAD	PENDING	2,180,415	07/03/96	MAFW TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8932	CANAD	PENDING	2,180,401	07/03/96	RFFC SPRING-TYPE RAILROAD BRAKE SHOE LOCKING KEY	
8971	CANAD	PENDING	2,180,413	07/03/96	LPDW ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	
8963	CANAD	PENDING	2,181,405	07/17/96	PTDS A BRAKE CONTROL DEVICE FOR RAILROAD CARS	*note: filed Non-Convention
8840	CANAD	PENDING	2,181,871	07/23/96	MAFW BRAKE CONTROL FOR MULTI-PLATFORM FREIGHT CAR	
8928	ARGHT	PENDING	338,610	10/22/96	MAFW RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8901	CANAD	PENDING	2,182,869	07/23/96	PULS METHOD OF DETERMINING CAR POSITION	
8901	EPO	PENDING	96132218.0	08/17/96	PULS METHOD OF DETERMINING CAR POSITION	
8904	CANAD	PENDING	2,192,151	12/05/96	PULS TRAIN BRAKE PERFORMANCE MONITOR	
8928	CANAD	PENDING	2,181,977	07/24/96	MAFW RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8928	BRAZL	PENDING	9603780	09/17/96	MAFW RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8864	CANAD	PENDING	2,181,872	07/23/96	MAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE	
8864	BRAZL	PENDING	9603792	09/18/96	MAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE	
8964	CANAD	PENDING	2,189,838	11/07/96	MAFW FREIGHT BRAKE CONTROL FOR UNIFORM CAR DECELERATION	
8928	TURKE	PENDING	961793	10/03/96	MAFW RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8962	CANAD	PENDING	2,182,338	07/30/96	PTDS A BRAKE MONITORING DEVICE FOR RAILROAD CARS	
8982	CANAD	PENDING	2,182,339	07/30/96	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD	
8908	CANAD	PENDING	2,182,462	07/31/96	PTDS RAILWAY BRAKE VALVE ASSEMBLY	(filed by Dority & Manning, Craig H. Kille
8936	CANAD	PENDING	2,183,207	08/13/96	PTDS ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM	* inventor's full name: CHARLES C. SIEGLI

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8938	CANAD	PENDING	2,182,929	08/08/96	PIDS POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER	* inventor's full name: CHARLES C. STEGLI
MG 111						
8984	CANAD	PENDING	2,182,928	08/08/96	LPDU IMPROVED RESILIENT TYPE SEALING MEMBER FOR SEALING A PUSH	ROD MEMBER OF A RAILWAY TYPE VEHICLE BRAKE
CYLINDER						
8937	USA	PENDING	08/641,439	05/01/96	PIDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH	CONTROLLER (#3 ABOVE IS CHARLES C. STEGLI)
G 111)						
8982	USA CP	PENDING	08/686,433	07/26/96	LPDU THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8747	USA D1	PENDING	08/688,436	07/30/96	NAFW IMBEDDED ELECTRICAL CONNECTOR	
8884	AUSAL	PENDING	65672/96	09/17/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	BRAZL	PENDING	P1 9605139	10/15/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	CHINA	PENDING	96113418.6	09/16/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	ERO	PENDING	96114694.1	09/13/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	INDIA	PENDING	1925/del/96	08/29/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8901	AUSAL	PENDING	65784/96	09/20/96	PULS METHOD OF DETERMINING CAR POSITION	
8901	BRAZL	PENDING	P1 9605338	10/29/96	PULS METHOD OF DETERMINING C/ ? POSITION	
8901	JAPAN	PENDING	09-095761	04/14/97	PULS METHOD OF DETERMINING CAR POSITION	
8919	AUSAL	PENDING	67975/96	10/02/96	MATV TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8919	BRAZL	PENDING	9605341-0	10/29/96	MATV TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8903	AUSAL	PENDING	67972/96	10/02/96	PULS RAIL NAVIGATION SYSTEM	
8903	BRAZL	PENDING	P1 9605340	10/29/96	PULS RAIL NAVIGATION SYSTEM	
8903	CHINA	PENDING	96108265.8	09/20/96	PULS RAIL NAVIGATION SYSTEM	
8903	JAPAN	PENDING	09-036206	02/20/97	PULS RAIL NAVIGATION SYSTEM	
8903	SOFRC	PENDING	96/7423	09/02/96	PULS RAIL NAVIGATION SYSTEM	
8992	CANAD	PENDING	2,184,568	08/30/96	LPDU INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR	APPLICATION IN A SANITARY TYPE PUMP
8992	JAPAN	PENDING	9-182576	07/08/97	LPDU INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR	APPLICATION IN A SANITARY TYPE PUMP
8985	CANAD	PENDING	2,184,867	09/05/96	CARD RAILWAY VEHICLE BRAKE SYSTEM	

8940	JAPAN	PENDING	09-114021	05/01/97	WAFV BRAKE CONTROL FOR MULTI-PLATFORM FREIGHT CAR	
8905	JAPAN	PENDING		05/23/97	LPDW PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY	IN AN AIR COMPRESSOR
8921	JAPAN	PENDING	09-023874	02/06/97	PTDS LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A	TWIN TOWER AIR DRYER
8922	JAPAN	PENDING	09-023875	02/06/97	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8924	JAPAN	PENDING	09-023873	02/06/97	PTDS TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8929	JAPAN	PENDING	09-049382	03/04/97	PTDS RELATIVE SPIN SPEED TRACTION CONTROL	
8982	JAPAN	PENDING	09-127210	05/16/97	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8984	JAPAN	PENDING	9-138296	05/28/97	LPDW IMPROVED RESILIENT TYPE SEALING MEMBER FOR SEALING A PUSH	ROD MEMBER OF A RAILWAY TYPE VEHICLE BRAKE
8903	EPO	PENDING	96114693.3	09/13/96	PULS RAIL NAVIGATION SYSTEM	
8939	CANAD	PENDING	2,185,509	09/13/96	LPDW EXTENDED LIFE BRAKE CYLINDER HOLDER	
8951	CANAD	PENDING	2,185,775	09/17/96	CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8987	AUSAL	PENDING	75444/96	12/18/96	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8988	CANAD	PENDING	2,187,001	10/02/96	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8983	CANAD	PENDING	2,188,232	10/18/96	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
8986	CANAD	PENDING	2,188,107	10/17/96	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8921	AUSAL	PENDING	10064/97	01/07/97	PTDS LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A	TWIN TOWER AIR DRYER
8922	AUSAL	PENDING	70237/96	10/16/96	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8924	AUSAL	PENDING	71791/96	11/15/96	PTDS TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8915	CANAD	PENDING	2,160,415	10/12/96	PULS Train Integrity Detection System	
8916	CANAD	PENDING	2,160,414	10/12/96	Diagnostic Device for Determining The Pneumatic Integrity	Of A Bubble-Type Fuel Measuring System
8905	CANAD	PENDING	2,190,421	11/15/96	LPDW PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY	IN AN AIR COMPRESSOR
8959	USA	PENDING	08/748,200	11/12/96	WAFV WEDGE-SHAPED DISC BRAKE SHOE	

8922	USA	PENDING	08/748,199	11/12/96	NAFW TREAD-DISC ASSIST DUAL TRUCK MOUNTED BRAKE ASSEMBLY	
9013	CANAD	PENDING	2,193,561	12/20/96	LPDW DESICCANT CANISTER WITH POSITIONING BORE	
8987	CANAD	PENDING	2,185,763	09/17/96	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8987	EPO	PENDING	9612071.5	12/21/96	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
9015	CANAD	PENDING	2,194,042	12/27/96	FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM	
8929	EPO	PENDING	97101207.5	01/27/97	PTDS RELATIVE SPIN SPEED TRACTION CONTROL	
8976	GERNE	PENDING	19718431.6	04/03/97	PTDS ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM	* inventor's full name: CHARLES C. STEGLI
MG 111	MEXIC	PENDING	973207	04/30/97	PTDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH	CONTROLLER (#3 ABOVE IS CHARLES C. STEGLI
8937	GERNE	PENDING	197183568.3	04/03/97	PTDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH	CONTROLLER (#3 ABOVE IS CHARLES C. STEGLI
G 111)	MEXIC	PENDING	973206	04/30/97	PTDS ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM	* inventor's full name: CHARLES C. STEGLI
8935	GERNE	PENDING	19718428.6	04/03/97	PTDS POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER	* inventor's full name: CHARLES C. STEGLI
MG 111	HEXIC	PENDING	973205	04/30/97	PTDS POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER	* inventor's full name: CHARLES C. STEGLI
8938	AUSAL	PENDING	15079/97	03/04/97	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
MG 111	AUSAL	PENDING	12584/97	02/07/97	REPU SOFTWARE ALGORITHM PROVIDING DYNAMIC CONFIGURATION OF DEAD BAND CONTROL CRITERIA WITHIN A MICRO BASED	
8906	CANAD	PENDING	2,203,604	04/24/97	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
9044	USA	PENDING	08/789,754	01/28/97	PTDS DUAL PNEUMATIC TRAINLINE CONTROL UNIT	
9037	USA	PENDING	08/798,774	02/11/97	LPDW CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
9057	USA	PENDING	08/774,302	02/03/97	NAFW PRECISION FILTERED CHOKE	
9005	USA	PENDING	08/747,979	11/12/96	LPDW Pneumatic Emergency Brake Application Valve and an associated Electrical Signalling Switch	
8970	AUSAL	PENDING	19122/97	04/28/97	CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8951	USA	PENDING	08/808,794	02/28/97	REPO AUTOMATED TERMINAL TEST PROCEDURE	
8877	USA	PENDING	08/803,261	02/20/97	NAFW HOSE COUPLING WITH ELECTRICAL CONTACTS	
8953	USA	PENDING	08/803,415	02/20/97	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN	

9009	USA	PENDING	08/803,262	02/20/97	NAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING	
9014	USA	PENDING	09/710,209	09/13/96	LPDV Molded Rubber Val Seal for use in Predetermined type Valves such as, a CK Val in a Regenerative Desiccant Air Dryer	
8976	USA	PENDING	08/770,584	12/19/96	NAFW ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
8941	USA	PENDING	08/815,422	03/11/97	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE	
8841	CANAD	PENDING	2149963	05/23/95	NAFW RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND MOUNT THEREFOR	
9008	USA	PENDING	08/772,327	12/23/96	NAFW ELECTRO-PNEUMATIC VALVE CONTROL	
9014	JAPAN	PENDING	09-251067	09/16/97	LPDV Molded Rubber Val Seal for use in Predetermined type Valves such as, a CK Val in a Regenerative Desiccant Air Dryer	
8982	CANAD CP	PENDING	2,202,818	04/16/97	LPDV THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD	
8892	CANAD	PENDING	2,202,570	04/14/97	NAFW TREAD-DISC ASSIST DUAL TRUCK MOUNTED BRAKE ASSEMBLY	
9011	CANAD	PENDING	2,203,047	04/18/97	PTDS PENALTY BRAKE CIRCUIT FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
9012	CANAD	PENDING	2,203,048	04/18/97	PTDS PENALTY BRAKE DESIGN FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
8977	CANAD	PENDING	2,202,937	04/17/97	PTDS PULSE WIDTH MODULATED DRIVE FOR AN INFINITELY VARIABLE SOLENOID OPERATED BRAKE CYLINDER PRESSURE CONTROL VALVE	
9010	CANAD	PENDING	2,202,938	04/17/97	PTDS PENALTY BRAKE SCHEME FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
8965	USA	PENDING	08/831,576	04/09/97	REPD Modified Airflow Algorithm With Compensation for Variations in Main Reservoir Air Pressure and Ambient Airflow.	
8958	CANAD	PENDING	2,203,197	04/21/97	NAFW COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC	
8959	CANAD	PENDING	2,203,196	04/21/97	NAFW WEDGE-SWAPPED DISC BRAKE SHOE	
8968	USA OR	PENDING	08/826,897	04/09/97	REPD EQUALIZING RESERVOIR COMPENSATION	
8902	USA	PENDING	08/835,860	04/08/97	DUAL CONNECTION EP BRAKE SYSTEM	
9056	USA	PENDING	08/842,685	04/15/97	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
9014	CANAD	PENDING	2,203,304	04/22/97	LPDV Molded Rubber Val Seal for use in Predetermined type Valves such as, a CK Val in a Regenerative Desiccant Air Dryer	
9016	CANAD	PENDING	2,203,305	04/22/97	LPDV REGENERATIVE DESICCANT AIR DRYER	
8957	CANAD	PENDING	2,203,607	04/24/97	NAFW OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION LEVER	

8973	CANAD	PENDING	2,203,603	04/24/97	PTDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT	
9004	CANAD	PENDING	2,203,606	04/24/97	PTDS BRAKE ASSURANCE MODULE	
9033	CANAD	PENDING	2,203,605	04/24/97	PTDS BRAKE PIPE SENSING UNIT	
8988	BRAZL	PENDING	P19703647-1	06/20/97	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8988	AUSAL	PENDING	28673/97	07/15/97	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8988	CHINA	PENDING	97116115.1	08/01/97	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
9014	AUSAL	PENDING	28619/97	07/11/97	LPDV Molded Rubber Val Seal for use in Predetermined type Valves	such as, a CK Val in a Regenerative Desicc
9014	BRAZL	PENDING	970193	08/25/97	LPDV Molded Rubber Val Seal for use in Predetermined type Valves	such as, a CK Val in a Regenerative Desicc
9014	CHINA	PENDING	97118527.1	09/09/97	LPDV Molded Rubber Val Seal for use in Predetermined type Valves	such as, a CK Val in a Regenerative Desicc
9014	INDIA	PENDING	1283/DEL/1997	05/15/97	LPDV Molded Rubber Val Seal for use in Predetermined type Valves	such as, a CK Val in a Regenerative Desicc
8899	CANAD	PENDING	2,204,325	05/02/97	NAFV E/P INTERFACE WITH PNEUMATIC CONTROL VALVE FOR BACK-UP	BRAKE ARRANGEMENT
8933	CANAD	PENDING	2,204,324	05/02/97	NAFV TRAIN BRAKE PIPE REMOTE PRESSURE CONTROL SYSTEM &	MOTOR-DRIVER REGULATING VALVE THEREFOR
9031	CANAD	PENDING	2,204,323	05/02/97	NAFV Release Assuring Arrangement for Comb. Electro-Pneu./Auto.	Pneumatic Brake
9044	USA	PENDING	08/789,920	01/28/97	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
8986	AUSAL	PENDING	24782/97	06/06/97	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8986	BRAZL	PENDING	9703560	06/13/97	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8986	CHINA	PENDING	97113619.X	06/12/97	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
9013	INDIA	PENDING	1450/DEL/97	05/30/97	LPDV DESICCANT CANISTER WITH POSITIONING BORE	
9013	AUSAL	PENDING	28672/97	07/15/97	LPDV DESICCANT CANISTER WITH POSITIONING BORE	
9057	CANAD	PENDING	2,204,944	05/09/97	LPDV CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
8970	CANAD	PENDING	2,204,943	05/09/97	LPDV Pneumatic Emergency Brake Application Valve and an Assoc-	ated Electrical Signaling Switch
8993	USA	PENDING	08/850,600	05/02/97	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
8990	USA	PENDING	08/850,599	05/02/97	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE	SLACK ADJUSTER (note: Inventor is Christo

phier A. Cathcart)

9040	USA	PENDING	08/852,799	05/07/97	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
8985	AUSAL	PENDING	23760/97	05/30/97	CARD RAILWAY VEHICLE BRAKE SYSTEM	
9023	CANAD	PENDING	2,206,111	05/26/97	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN	
8908	BRAZL	PENDING	P19703402-9	05/26/97	PTDS RAILWAY BRAKE VALVE ASSEMBLY	(filed by Dority & Manning, Craig N. Kille
8908	EPO	PENDING	97108106.2	05/20/97	PTDS RAILWAY BRAKE VALVE ASSEMBLY	(filed by Dority & Manning, Craig N. Kille
8889	JAPAN	PENDING	09-348277	12/17/97	NAFU ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE	
8957	JAPAN	PENDING	09-310913	11/12/97	NAFU OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION	LEVER
8958	JAPAN	PENDING	09-310912	11/12/97	NAFU COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC	
8976	JAPAN	PENDING	09-351429	12/19/97	NAFU ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
8977	JAPAN	PENDING	09-334500	12/04/97	PTDS PULSE WIDTH MODULATED DRIVE FOR AN INFINITELY VARIABLE	SOLENOID OPERATED BRAKE CYLINDER PRESSURE
CONTROL VALVE						
9016	AUSAL	PENDING	28737/97	07/18/97	LPDU REGENERATIVE DESICCANT AIR DRYER	
9016	CHINA	PENDING	97118294.9	09/12/97	LPDU REGENERATIVE DESICCANT AIR DRYER	
9016	EPO	PENDING	97109339.8	06/10/97	LPDU REGENERATIVE DESICCANT AIR DRYER	
9016	INDIA	PENDING	164B/D/EL/1997	06/19/97	LPDU REGENERATIVE DESICCANT AIR DRYER	
9087	USA	PENDING	08/870,943	06/06/97	LPDU ABRASION RESISTANT DIAPHRAGM	
8982	CHINA	PENDING	97115514.3	06/03/97	LPDU THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8982	AUSAL	PENDING	24659/97	06/02/97	LPDU THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8982	EPO	PENDING	97108893.5	06/03/97	LPDU THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8982	INDIA	PENDING	1484/Del/97	06/03/97	LPDU THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8970	AUSAL	PENDING	28736/97	07/18/97	LPDU Pneumatic Emergency Brake Application Valve and an Associated Electrical Signaling Switch	
8971	JAPAN	PENDING	09-216499	08/11/97	LPDU ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	
8971	EPO	PENDING	9711427B.1	08/19/97	LPDU ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	

8953	CANAD	PENDING	2,225,105	12/17/97	NAFW HOSE COUPLING WITH ELECTRICAL CONTACTS
9009	CANAD	PENDING	2,207,640	06/12/97	NAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING
8958	AUSAL	PENDING	30126/97	07/23/97	NAFW COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC
8959	AUSAL	PENDING	30134/97	07/23/97	NAFW WEDGE-SHAPED DISC BRAKE SHOE
8957	AUSAL	PENDING	30128/97	07/23/97	NAFW OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION LEVER
8992	AUSAL	PENDING	30127/97	07/23/97	NAFW TREAD-DISC ASSIST DUAL TRUCK MOUNTED BRAKE ASSEMBLY
8991	EPO	PENDING	97202026.7	07/02/97	LPDW IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP DIAPHRAGM
8992	EPO	PENDING	9720207.5	07/02/97	LPDW INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR APPLICATION IN A SANITARY TYPE PUMP
9008	CANAD	PENDING	2,209,405	07/02/97	NAFW ELECTRO-PNEUMATIC VALVE CONTROL
9008	AUSAL	PENDING	30129/97	07/23/97	NAFW ELECTRO-PNEUMATIC VALVE CONTROL
9008	CHINA	PENDING	97109499.3	12/19/97	NAFW ELECTRO-PNEUMATIC VALVE CONTROL
8854	USA	PENDING	08/879,454	06/20/97	REPO APPARATUS FOR DETERMINING THE ABSOLUTE POSITION OF THROTTLE DYNAMIC BRAKE & REVERSE HANDLES ON A LOCO
9093	USA	PENDING	08/886,734	07/01/97	RFPD Disc Brake Shoe Assembly
9082	USA	PENDING	08/886,614	07/01/97	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER
9045	USA	PENDING	08/891,357	07/10/97	PTDS FLUID PRESSURE CONTROL DEVICE
9048	USA	PENDING	08/891,217	07/10/97	PTDS Pressure Control Valve Equipped with a Solenoid Valve
8941	CANAD	PENDING	2,209,401	07/02/97	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE
9094	USA	PENDING	08/896,464	07/18/97	LPDW DISC DIAPHRAGM FOR AN INTEGRATED COCK VALVE
9063	USA	PENDING	08/897,277	07/21/97	LPDW AFTERCOOLER BYPASS MEANS FOR A LOCOMOTIVE COMPRESSED AIR SYSTEM
9052	USA	PENDING	08/898,373	07/22/97	PULS INTEGRATED CAB SIGNAL PAUL NAVIGATION SYSTEM
9051	USA	PENDING	08/898,648	07/22/97	PULS RAIL VISION SYSTEM
8891	JAPAN	PENDING	9-177324	07/02/97	CARD FRICTION CLUTCH MECHANISM FOR HIGH CAPACITY DRAFT GEAR ASSEMBLY AND METHOD OF RECONDITIONING DRAFT GEAR WITH SUCH
9100	USA	PENDING	08/901,606	07/28/97	NAFW DUAL SEAL COUPLING APPARATUS FOR ENABLING QUICK MEASUREMENT OF BRAKE CYLINDER PRESSURE

9102	USA	PENDING	08/901,096	07/28/97	MANV Dual Seal Fitting for Enabling Quick Measurement of Brake	Cylinder Pressure
8912	USA	PENDING	08/906,219	08/04/97	REPD IMMEDIATE COMMUNICATION DESIGN FOR DISCRETE CONTROL SYSTEM	
8950	USA	PENDING	08/906,504	08/05/97	REPD Method for Limiting Brk Cyl Press on Loco Equipped with	Distributed Power and Electronic Brake Sys
9046	CANAD	PENDING	2,212,308	08/01/97	PTDS A SOLENOID VALVE CONTROL DEVICE	
9047	CANAD	PENDING	2,212,321	08/01/97	PTDS A Three-Position Solenoid Valve	
9037	CANAD	PENDING	2,212,105	07/31/97	PTDS DUAL PNEUMATIC TRAINLINE CONTROL UNIT	
8942	USA	PENDING	08/831,485	03/31/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE	PRESSURE EXHAUST VALVE
8881	USA	PENDING	08/831,461	03/31/97	REPD BACKUP CONTROL TECHNIQUE FOR 20 PIPE BRAKING SYSTEM	
8967	USA	PENDING	08/831,499	03/31/97	LPDV LOCOMOTIVE COMPRESSED AIR AFTERCOOLER UNIT	
9049	USA	PENDING	08/831,498	03/31/97	LPDV Fan Powered Aftercooler & Control Circuit for Locomotive	Compressors having no Integral Aftercooler
8966	USA	PENDING	08/870,875	06/06/97	PTDS COUPLER HOOK FORCE GAGE	
9059	USA	PENDING	08/816,527	03/13/97	PULS DUAL PURPOSE END OF TRAIN DEVICE FOR ELECTRICALLY CON	TROLLED PNEUMATIC FREIGHT BRAKE SYSTEMS
8877	USA	PENDING	08/915,623	08/21/97	REPD AUTOMATED TERMINAL TEST PROCEDURE	
9041	USA	PENDING	08/912,105	08/18/97	PTDS UNIVERSAL WHEEL SLIP FORCE CONTROL LOGIC	
8996	USA	PENDING	08/829,819	03/25/97	PULS ELECTRONIC FAIL-SAFE CIRCUIT FOR ELECTRO-PNEUMATIC BRAKE	CONTROL
8956	USA	PENDING	08/922,470	09/02/97	REPD EMERGENCY BRAKE READBACK HARDWARE AND FAULT DIAGNOSTICS	ROUTINE
8948	USA	PENDING	08/922,426	09/03/97	PULS DUAL STATION AIR BRAKE CONTROL	
8997	CANAD	PENDING	2,213,764	08/20/97	PULS INTRA-TRAIN RADIO COMMUNICATION SYSTEM	
8999	CANAD	PENDING	2,214,682	09/05/97	PULS RADIO-BASED ELECTRO-PNEUMATIC CONTROL COMMUNICATIONS SYSTEM	
8889	CANAD	PENDING	2,211,773	07/30/97	MANV ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A	RAILROAD CAR BRAKE CONTROL VALVE DEVICE
8976	CANAD	PENDING	2,212,155	07/30/97	MANV ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
9060	USA	PENDING	08/888,134	07/03/97	PULS APPLN OF GPS TO RR DISTRIBUTED POWER CONTROL SYSTEMS	

VAPOR-47	USA	PENDING	08/744,342	11/07/96	VAPR POWER DOOR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED	DIRECT PANEL LOCK (door panel lock overhea
VAPOR-47	EPO	PENDING	97116312.6	09/19/97	VAPR POWER DOOR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED	DIRECT PANEL LOCK (door panel lock overhea
VAPOR-52	CANAD	PENDING	2,215,086	09/10/97	VAPR BRIDGE PLATE FOR A MASS TRANSIT VEHICLE	
8968	CANAD	PENDING	2,215,085	09/10/97	REPD EQUALIZING RESERVOIR COMPENSATION	
8965	CANAD	PENDING	2,213,349	08/19/97	REPD Modified Airflow Algorithm With Compensation for Variations	In Main Reservoir Air Pressure and Ambient
VAPOR-53	CANAD	PENDING	2,214,683	09/05/97	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-53	USA	PENDING	08/804,779	02/24/97	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-53	EPO	PENDING	97117648.2	10/11/97	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-53	MEXIC	PENDING	98 1452	02/23/98	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-38	USA	PENDING	08/503,581	07/17/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-40	BRAZL	PENDING	P19401184-2	03/16/94	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT	VEHICLES (electric bus door operator)
VAPOR-40	CANAD	PENDING	2,114,096	01/24/94	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT	VEHICLES (electric bus door operator)
VAPOR-41	EPO	PENDING	93/909332.5	01/12/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	BRAZL	PENDING	P19305591	04/28/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	CZECH	PENDING	PV 0098-94	01/28/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	FINLN	PENDING	940,104	01/10/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	HEWZL	PENDING	251,854	01/06/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	RUMAN	PENDING	94-01738	10/28/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	RUSSA	PENDING	94-033350	02/21/94	VAPR	
VAPOR-41	KORSO	PENDING	94-700833	03/14/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-42	CANAD	PENDING	2,134,162	10/24/94	VAPR TRANSPONDER HAVING MICROPROCESSOR GENERATED FREQUENCY SHIFT	SIGNALS
VAPOR-43	CANAD	PENDING	2,135,343	11/08/94	VAPR RESILIENT EDGES FOR POWER OPERATED DOORS (biparting doors)	
VAPOR-44	CANAD	PENDING	2,136,397	11/22/94	VAPR STABILIZER FOR OUTSIDE SLIDING PLUG DOORS (door leaf)	

VAPOR-45	USA	PENDING	08/238,116	05/04/94	VAPR SYSTEM AND APPARATUS FOR CONTROL OF A PNEUMATIC DOOR	OPERATOR (obstruction sensing pneumatic do
or operator)						
VAPOR-45	CANAD	PENDING	2,148,036	04/27/95	VAPR SYSTEM AND APPARATUS FOR CONTROL OF A PNEUMATIC DOOR	OPERATOR (obstruction sensing pneumatic do
or operator)						
VAPOR-45	MEXIC	PENDING	94-9268	11/30/94	VAPR SYSTEM AND APPARATUS FOR CONTROL OF A PNEUMATIC DOOR	OPERATOR (obstruction sensing pneumatic do
or operator)						
VAPOR-46	CANAD	PENDING	2,135,344	11/08/94	VAPR DOOR DRIVE EQUIPMENT FOR MASS TRANSIT VEHICLE (sliding	outside plug door)
VAPOR-50	USA	PENDING	60/011887	02/20/96	VAPR APPARATUS AND METHOD FOR DIFFERENTIAL MODE PRESSURE	MEASUREMENT
VAPOR-51	USA	PENDING	08/744,341	11/07/96	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
973001	USA	PENDING	08/926,635	09/10/97	PTDS ROLLER EQUIPPED UNCOUPLING CAM	
8994	USA	PENDING	08/953,800	09/24/97	LPDW IMPROVED RESILIENT TYPE SEALING MEMBER FOR SEALING A PUSH	ROD MEMBER OF A RAILWAY TYPE VEHICLE BRAKE
CYLINDER						
VAPOR-51	EPO	PENDING	97116040.3	09/16/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
9077	USA	PENDING	08/855,418	05/13/97	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	(9077-VI)
9077	CANAD	PENDING	2,217,078	10/01/97	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	(9077-VI)
8990	CANAD	PENDING	2,217,245	10/02/97	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE	SLACK ADJUSTER (note: Inventor is Christo
pher A. Cathcart)						
8993	CANAD	PENDING	2,217,242	10/02/97	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS CHRISTOPHER A.
Cathcart						
9085	AUSAL	PENDING	45334/97	11/21/97	RFFC TRIM SHOE	
9085	INDIA	PENDING	2926/DEL/97	10/13/97	RFFC TRIM SHOE	
9085	BRAZL	PENDING	9705490	11/18/97	RFFC TRIM SHOE	
9085	CHILE	PENDING	2196-97	10/17/97	RFFC TRIM SHOE	
9085	EPO	PENDING	98101793.2	02/03/98	RFFC TRIM SHOE	
9056	CANAD	PENDING	2,216,506	09/26/97	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	(9077-VI)
9077	EPO	PENDING	98101774.2	02/03/98	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	
8902	CANAD	PENDING	2,216,673	09/24/97	PULS DUAL CONNECTION EP BRAKE SYSTEM	
9055	CANAD	PENDING	2,216,680	09/24/97	PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYSTEM	

8902	AUSAL	PENDING	44428/97	11/07/97 PULS DUAL CONNECTION EP BRAKE SYSTEM	
8902	SOFRIC	PENDING	97/8674	09/26/97 PULS DUAL CONNECTION EP BRAKE SYSTEM	
9055	AUSAL	PENDING	44430/97	11/07/97 PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYSTEM	
9017	USA	PENDING	08/947,799	10/08/97 MAFV ANGLE COCK WITH JUNCTION BOX	
8752	CANAD	PENDING	2,153,853	07/13/95 MAFV ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8971	USA	PENDING	08/951,682	10/16/97 LPDM ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	
9085	CANAD	PENDING	2,219,694	10/30/97 RFPIC TRIM SHOE	
9057	JAPAN	PENDING	10-028456	02/10/98 LPDV CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
9044	JAPAN	PENDING	10-016227	01/28/98 PIDS PNEUMATIC TRAINLINE CONTROL UNIT	
8973	JAPAN	PENDING	10-016225	01/28/98 PIDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT	
9049	JAPAN	PENDING	10-079706	03/26/98 LPDV Fan Powered Aftercooler & Control Circuit for Locomotive	Compressors having no Integral Aftercooler
8967	JAPAN	PENDING	10-079705	03/26/98 LPDV LOCOMOTIVE COMPRESSED AIR AFTERCOOLER UNIT	
9004	JAPAN	PENDING	10-016226	01/28/98 PIDS BRAKE ASSURANCE MODULE	
9056	JAPAN	PENDING	10-104541	04/15/98 PIDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
8990	JAPAN	PENDING	10-122335	05/01/98 PIDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE SLACK ADJUSTER (note: Inventor is Christopher A. Cathcart)	
9040	JAPAN	PENDING	10-124652	05/07/98 PIDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
8993	JAPAN	PENDING	10-122334	05/01/98 PIDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A. Cathcart
8942	AUSAL	PENDING	44431/97	11/07/97 PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE	PRESSURE EXHAUST VALVE
8942	BRAZL	PENDING	9706449	12/22/97 PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE	PRESSURE EXHAUST VALVE
9040	CANAD	PENDING	2,218,574	10/16/97 PIDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
8976	AUSAL	PENDING	33144/97	08/04/97 MAFV ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
9038	USA	PENDING	08/958,493	10/27/97 PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON TRAINS USING AN EXISTING LOCOMOTIVE ELECTRIC AIR BRAKE	
8971	USA	PENDING	08/950,845	10/15/97 LPDV ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	

8998	CANAD	PENDING	2,219,476	10/28/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
8998	EPO	PENDING	97120080.3	11/17/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
8998	INDIA	PENDING	3186/DEL/1997	11/06/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
8998	AUSAL	PENDING	44429/97	11/07/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
VAPOR-51	HEXIC	PENDING	978371	10/30/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
8889	AUSAL	PENDING	37560/97	09/12/97	NAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE	
972005	USA	PENDING	08/968,271	11/12/97	NAFW DUAL VALVE FITTING FOR ENABLING QUICK MEASUREMENT OF PRESS. INVS: LI, MET; DIMSA, ROBER T.; VELLRI, M.	
J. SCOTT, D. G.						
8889	EPO	PENDING	97117647.4	10/11/97	NAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE	
8881	CANAD	PENDING	2,212,911	08/13/97	PULS BACKUP CONTROL TECHNIQUE FOR 20 PIPE BRAKING SYSTEM	
8942	CANAD	PENDING	2,213,013	08/13/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE	
8967	CANAD	PENDING	2,213,077	08/14/97	LPDM LOCOMOTIVE COMPRESSED AIR AFTERCOOLER UNIT	
VAPOR-51	CANAD	PENDING	2,204,556	05/06/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
VAPOR-51	UNIKM	PENDING	9715229.2	07/18/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
VAPOR-51	ITALY	PENDING	1097A000793	09/08/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
9058	USA	PENDING	08/979,310	11/26/97	PULS DISTRIBUTED POWER TRAIN SEPARATION DETECTION	
9051	SOFRC	PENDING	98/2016	03/10/98	PULS RAIL VISION SYSTEM	
9051	CANAD	PENDING	2,226,435	01/07/98	PULS RAIL VISION SYSTEM	
9051	EPO	PENDING	98102039.9	02/06/98	PULS RAIL VISION SYSTEM	
9052	CANAD	PENDING	2,226,433	01/07/98	PULS INTEGRATED CAB SIGNAL RAIL NAVIGATION SYSTEM	
8993	AUSAL	PENDING	56304/98	02/24/98	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
Cathcart	EPO	PENDING	98101665.2	01/31/98	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
Cathcart	USA	PENDING	08/978,551	11/26/97	PTDS CONTROL VALVE WITH AXIAL SEALING	

8978	USA	PENDING	08/978,796	11/26/97	PTDS E-1 AIR DRYER LIQUID SEPARATOR WITH BUBBLE	
9001	USA	PENDING	08/979,649	11/26/97	PTDS E-1 TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
971006	USA	PENDING	08/972,581	11/18/97	LPOW WEAR RING FOR DIAPHRAGM AND FLANGE	
976001	USA	PENDING	08/993,069	12/18/97	RFPD RAILWAY BRAKE SHOE BACKING PLATE WITH IMPROVED MOUNTING	ALIGNMENT FEATURE
9018	USA	PENDING	08/989,456	12/12/97	LPOW COMBINATION MAIN RESERVOIR AND AIR SYSTEM	
8980	USA	PENDING	08/979,198	11/26/97	PTDS SHUTTLE MECHANISM FOR TWIN TOWER AIR DRYER SYSTEM	
8981	USA	PENDING	08/979,197	11/26/97	PTDS PURGE TUBE WITH FLAPPER VALVE FOR DESICCANT CONTAINING AIR DRYER	
9080	USA	PENDING	08/865,119	05/29/97	VAPR IMPROVEMENTS IN BOILER COIL DESIGN (Bifilar coil design)	(9080-VF)
9044	AUSAL	PENDING	52726/98	01/23/98	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
9044	EPO	PENDING	98100800.6	01/19/98	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
9040	EPO	PENDING	98101935.9	02/05/98	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
9004	AUSAL	PENDING	52722/98	01/23/98	PTDS BRAKE ASSURANCE MODULE	
9045	CANAD	PENDING	2,224,763	12/12/97	PTDS FLUID PRESSURE CONTROL DEVICE	
VAPOR-53	KORSO	PENDING	1998-2116	01/23/98	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
9023	EPO	PENDING	98101132.3	01/23/98	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN	
9023	AUSAL	PENDING	52724/98	01/23/98	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN	
9077	KORSO	PENDING	1998-2117	01/23/98	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	(9077-VT)
9040	AUSAL	PENDING	52727/98	01/23/98	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
8990	EPO	PENDING	98101664.5	01/31/98	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE	SLACK ADJUSTER (note: Inventor is Christo
8990	AUSAL	PENDING	52825/98	01/28/98	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE	SLACK ADJUSTER (note: Inventor is Christo
9033	EPO	PENDING	98100799.0	01/19/98	PTDS BRAKE PIPE SENSING UNIT	
9033	AUSAL	PENDING	52725/98	01/23/98	PTDS BRAKE PIPE SENSING UNIT	
VAPOR-53	JAPAN	PENDING	10-042196	02/24/98	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	

VAPOR-47	KORSO	PENDING	1998-2118	01/23/98	VAPR POWER DODR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED	DIRECT PANEL LOCK (door panel lock overhee
d power door driv	CANAD	PENDING	2,226,030	12/31/97	LPDU DISC DIAPHRAGM FOR AN INTEGRATED COCK VALVE	
9094	CANAD	PENDING	2,213,074	08/14/97	LPDU fan Powered Aftercooler & Control Circuit for Locomotive	Compressors having no Integral Aftercooler
9049	CANAD	PENDING	97121337.2	10/17/97	MAFU ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
8976	CHINA	PENDING	52723/98	01/23/98	PULS ELECTRONIC BLUE FLAG SAFETY EQUIPMENT	
8961	AUSAL	PENDING	98/2410	03/20/98	PULS ELECTRONIC BLUE FLAG SAFETY EQUIPMENT	
8961	SOFRG	PENDING	2,212,902	08/12/97	PULS ELECTRONIC BLUE FLAG SAFETY EQUIPMENT	
8961	CANAD	PENDING	98101254.5	01/26/98	PTDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT	
8973	EPO	PENDING	2,227,389	01/20/98	MATV Dual Seal fitting for Enabling Quick Measurement of Brake	Cylinder Pressure
9102	CANAD	PENDING	52860/98	01/30/98	PTDS UNIVERSAL WHEEL SLIP FORCE CONTROL LOGIC	
9041	AUSAL	PENDING	98102257.7	02/10/98	PTDS UNIVERSAL WHEEL SLIP FORCE CONTROL LOGIC	
9041	CANAD	PENDING	96105522.2	03/09/98	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
9056	CHINA	PENDING	98101497.0	01/29/98	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
9056	EPO	PENDING	97123013.7	11/26/97	MAFU ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A	RAILROAD CAR BRAKE CONTROL VALVE DEVICE
8869	CHINA	PENDING	52063/98	01/14/98	MAFU Release Assuring Arrangement for Comb. Electro-Pneu./Auto.	Pneumatic Brake
9031	AUSAL	PENDING	980274	01/13/98	MAFU Release Assuring Arrangement for Comb. Electro-Pneu./Auto.	Pneumatic Brake
9031	SOFRG	PENDING	52824/98	01/29/98	Modified Airflow Algorithm With Compensation For Variations	In Main Reservoir Air Pressure and Ambient
8965	AUSAL	PENDING	98/2826	04/02/98	PULS Modified Airflow Algorithm With Compensation For Variations	In Main Reservoir Air Pressure and Ambient
Airflow.	SOFRG	PENDING	09/005,452	01/12/98	AXIAL VIBRATION DAMPING MEANS IN A BRAKE ACTUATOR	
8965	USA	PENDING	0582035	03/06/98	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN	ARTICULATED BEARING ASSEMBLY
Airflow.	ITALY	PENDING	08/903,960	07/31/97	MAFU APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9000	USA	PENDING				

9100	CANAD	PENDING	2,227,109	01/16/98	NAFW DUAL SEAL COUPLING APPARATUS FOR ENABLING QUICK MEASUREMENT OF BRAKE CYLINDER PRESSURE	
9037	EPO	PENDING	98101261.0	01/26/98	PTDS DUAL PNEUMATIC TRAINLINE CONTROL UNIT	
9005	SOFR	PENDING	98/0663	01/27/98	NAFW PRECISION FILTERED CHOKE	
9005	AUSAL	PENDING	52879/98	02/02/98	NAFW PRECISION FILTERED CHOKE	
8966	CANAD	PENDING	2,227,164	01/16/98	PTDS COUPLER HOOK FORCE GAGE	
983001	USA ⁹⁰⁵	PENDING	09/017,247	02/02/98	PTDS LOW PROFILE DISCHARGE CHECK VALVE	
983002	USA ⁹⁰⁵	PENDING	09/017,245	02/22/98	PTDS TWIN TOWER AIR DRYER	
973003	USA ⁹⁰⁵	PENDING	09/017,126	02/02/98	PTDS SKUTLE VALVE FOR TWIN TOWER AIR DRYER	
9000	AUSAL	PENDING	56387/98	02/24/98	APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9000	EPO	PENDING	98103421.8	02/27/98	APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9000	SOFR	PENDING	98/1256	02/16/98	APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9057	AUSAL	PENDING	52823/98	01/29/98	LPDW CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
8966	EPO	PENDING	98102198.3	02/07/98	PTDS COUPLER HOOK FORCE GAGE	
9009	AUSAL	PENDING	55391/98	02/19/98	NAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING	
9009	SOFR	PENDING	98/1297	02/17/98	NAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING	
8953	AUSAL	PENDING	53870/98	02/05/98	NAFW HOSE COUPLING WITH ELECTRICAL CONTACTS	
8953	SOFR	PENDING	98/1299	02/17/98	HOSE COUPLING WITH ELECTRICAL CONTACTS	
9004	GERIE	PENDING	19803044.4	01/27/98	PTDS BRAKE ASSURANCE MODULE	
9030	CANAD	PENDING	2,229,498	02/13/98	LPDW COMPRESSOR INLET VALVE	
9000	CANAD	PENDING	2,229,501	02/13/98	NAFW APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9069	USA ⁹⁰⁶	PENDING	09/044,295	03/19/98	PULS INDEPENDENT BRAKE HANDLE ASSEMBLY	
9062	USA ⁹⁰⁷	PENDING	09/038,071	03/11/98	PULS IMPROVED METHOD OF CONTROLLING BRAKE PIPE PRESSURE	
9061	USA ⁹⁰⁷	PENDING	09/034,592	03/04/98	PULS IMPROVED METHOD OF CONTROLLING 20 PIPE PRESSURE	

9053	USA	PENDING	09/044,352	03/19/98	PULS IMPROVED R.A.R. COMPLIANT ELECTRONIC BRAKING SYSTEM	
PULSE-41	CANAD	PENDING	2,185,084	09/09/96	PULS INTEGRATED PROXIMITY WARNING SYSTEM AND END-OF-TRAIN COMMUNICATION SYSTEM	
9096	USA	PENDING	08/886,802	07/02/97	VAPR RESILIENT EDGES FOR POWER OPERATED DOORS	
8995	USA	PENDING	09/038,175	03/10/98	PULS COMPUTER CONTROL OF RAILROAD TRAIN BRAKE SYSTEM OPERATION	
972002	USA	PENDING	60/075,036	02/18/98	MAFW ELECTRONIC EMULATION OF PNEUMATIC CONTROL VALVE	
9025	USA	PENDING	09/036,823	03/09/98	MAFW LOW VOLTAGE, HIGH FLOW ELECTRICAL CONTROL VALVE	
9029	USA	PENDING	09/037,613	03/10/98	MAFW RIBBED DIAPHRAGM	
8941	AUSAL	PENDING	58343/98	03/10/98	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE	
981001	USA	PENDING	09/050,690	03/30/98	LPDM BALL COCK FOR RAILWAY VEHICLE	
974001	USA	PENDING	09/049,519	03/27/98	CARD METHOD FOR INSTALLING A LOCKING WEDGE CARRIER PLATE ASSEMBLY	
974011	USA	PENDING	09/049,553	03/27/98	CARD A LOCKING WEDGE ASSEMBLY FOR A SLACKLESS DRAWBAR ASSEMBLY	
974012	USA	PENDING	09/049,262	03/27/98	CARD A CARRIER PLATE ASSEMBLY FOR A SLACKLESS DRAWBAR ASSEMBLY	
VAPOR-43	USA	PENDING	08/886,802	07/02/97	VAPR RESILIENT EDGES FOR POWER OPERATED DOORS (Departing doors)	
9049	AUSAL	PENDING	59717/98	03/30/98	LPDM Fan Powered Aftercooler & Control Circuit for Locomotive Compressors having no Integral Aftercooler	
8950	EPO	PENDING	98108155.7	04/30/98	REPD Method for Limiting Brk Cyl Press on Loco Equipped with Distributed Power and Electronic Brake Sys	
8950	SOFRFC	PENDING	98/4000	05/12/98	REPD Method for Limiting Brk Cyl Press on Loco Equipped with Distributed Power and Electronic Brake Sys	
9052	EPO	PENDING	98108021.1	05/02/98	PULS INTEGRATED CAB SIGNAL RAIL NAVIGATION SYSTEM	
9052	SOFRFC	PENDING	98/4124	05/15/98	PULS INTEGRATED CAB SIGNAL RAIL NAVIGATION SYSTEM	
9102	SOFRFC	PENDING	98/4583	05/28/98	MAFW Dual Seal Fitting for Enabling Quick Measurement of Brake Cylinder Pressure	
9100	SOFRFC	PENDING	98/4081	05/14/98	MAFW DUAL SEAL COUPLING APPARATUS FOR ENABLING QUICK MEASUREMENT OF BRAKE CYLINDER PRESSURE	
973002	USA	PENDING	09/056,925	04/08/98	PTDS CONDUIT COMPRESSION FIXTURE	
983007	USA	PENDING	09/057,673	04/09/98	PTDS ELECTRONIC EMERGENCY BRAKE LOAD WEIGH DEVICE	

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8728	ITALY	PENDING	21011 BE/98	03/20/98	PIDS VARIABLE LOAD CONTROL VALVE DEVICE
9017	SOFRIC	PENDING	98/4170	05/18/98	NAFV ANGLE COCK WITH JUNCTION BOX
VAPOR-47	JAPAN	PENDING	9-9405	01/22/97	VAPR POWER DOOR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED
d power door driv					DIRECT PANEL LOCK (door panel lock overhea
9082	SOFRIC	PENDING	98/4082	05/14/98	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER
9082	EPO	PENDING	98107243.2	04/21/98	AIR COOLED AIR COMPRESSOR AND AFTERCOOLER
9082	CANAD	PENDING	2,231,744	03/11/98	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER
9063	CANAD	PENDING	2,231,712	03/11/98	LPDW AFTERCOOLER BYPASS MEANS FOR A LOCOMOTIVE COMPRESSED AIR
8941	SOFRIC	PENDING	98/1939	03/06/98	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST
9038	CANAD	PENDING	2,231,212	03/03/98	PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON
OMIC AIR BRAKE					TRAINS USING AN EXISTING LOCOMOTIVE ELECTR
9017	CANAD	PENDING	2,231,075	03/04/98	NAFV ANGLE COCK WITH JUNCTION BOX
9082	AUSAL	PENDING	63547/98	04/22/98	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER
973001	EPO	PENDING	98106554.3	04/09/98	PTDS ROLLER EQUIPPED UNCOUPLIN ^g CAM
984006	USA	PENDING	09/061,314	04/16/98	CARD JOINTED HAND BRAKE RELEASE HANDLE
984001	USA	PENDING	09/061,313	04/16/98	CARD TWO PIECE HAND BRAKE RELEASE HANDLE
981002	USA	PENDING	09/069,356	04/29/98	LPDW BRAKE VALVE LATCH WITH ENHANCED LUBRICITY
9071	USA	PENDING	09/069,373	04/29/98	MAFV FILTER FOR RAILROAD CAR CONTROL VALVE PIPE BRACKET AND
9038	EPO	PENDING	98109885.8	05/29/98	PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON
OMIC AIR BRAKE					TRAINS USING AN EXISTING LOCOMOTIVE ELECTR
9038	SOFRIC	PENDING	98/4228	05/19/98	PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON
OMIC AIR BRAKE					TRAINS USING AN EXISTING LOCOMOTIVE ELECTR
8948	EPO	PENDING	98109913.8	05/29/98	PULS DUAL STATION AIR BRAKE CONTROL
8948	SOFRIC	PENDING	98/4173	05/18/98	PULS DUAL STATION AIR BRAKE CONTROL
8941	USA	PENDING	09/084,610	05/26/98	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST
9015	SOFRIC	PENDING	098/3925	05/08/98	FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED
S					FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM
8942	USA	PENDING	09/084,330	05/26/98	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE
					PRESSURE EXHAUST VALVE

PATENT

REEL: 9423 FRAME: 0354

984008	USA	⁶³⁰ PENDING	09/059,235	04/13/98	CARD BRAKE VALVE SYSTEM FOR DEDICATED FREIGHT CARS
8962	USA	⁵⁸ D1 PENDING	09/062,842	04/20/98	PTDS A BRAKE MONITORING DEVICE FOR RAILROAD CARS
9043	USA	⁵³ PENDING	09/080,858	05/18/98	LPDW COMPRESSOR INTERCOOLER UNLOADER ARRANGEMENT
9015	EPO	PENDING	98109904.7	05/29/98	FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM

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USPTO ALLOWED APPLICATIONS

Case Number	Country	Sub Case	Status	Application Number	Filing Date	Class	long:title1	long:title2
8901	SOFR		ACTIVE	96/7295	08/28/96	PULS METHOD OF DETERMINING CAR POSITION		
8903	INDIA		ACTIVE	1927/Del/96	08/29/96	PULS RAIL NAVIGATION SYSTEM		
8864	JAPAN		ACTIVE	09-088195	04/07/97	MAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE		
9005	CANAD		ACTIVE	2,209,398	07/02/97	MAFW PRECISION FILTERED CHOKE		
9087	CANAD		ACTIVE	2,220,363	11/06/97	LPDW ABRASION RESISTANT DIAPHRAGM		
972017	USA		ACTIVE	60/075,579	02/23/98	MAFW INTEGRAL INTERMODAL TRAIN		
8950	AUSAL		ACTIVE		05/11/98	REPD Method for Limiting Brk Cyl Press on Loco Equipped with Distributed Power and Electronic Brake Sys		
8948	AUSAL		ACTIVE		05/29/98	PULS DUAL STATION AIR BRAKE CONTROL		
8421	INDIA		ACTIVE		05/12/98	MAFW TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICL TRUCK-MOUNTED BRAKE ASSEMBLY		

INTELLECTUAL PROPERTY SECURITY AGREEMENT dated as of June 30, 1998, among WESTINGHOUSE AIR BRAKE COMPANY, a Delaware corporation (the "Borrower"), each Domestic Subsidiary of the Borrower party hereto (the "Subsidiary Grantors" and, together with the Borrower, the "Grantors") and THE CHASE MANHATTAN BANK, a New York banking corporation, as collateral agent (in such capacity, the "Collateral Agent") for the Secured Parties (as defined herein).

Reference is made to the Credit Agreement dated as of June 30, 1998 (as amended or modified from time to time, the "Credit Agreement"), among the Borrower, the financial institutions party thereto, as lenders (together with the Swingline Lender (as defined below), the "Lenders"), The Chase Manhattan Bank, a New York banking corporation, as agent (in such capacity, the "Administrative Agent") and as collateral agent (in such capacity, the "Collateral Agent") for the Lenders, as swingline lender (in such capacity, the "Swingline Lender"), Chase Manhattan Bank Delaware, a Delaware banking corporation, as issuing bank (in such capacity, the "Issuing Bank"), and The Bank of New York, as documentation agent (in such capacity, the "Documentation Agent"). Capitalized terms used herein but not defined herein shall have the meanings assigned to such terms in the Credit Agreement.

The Lenders, the Swingline Lender and the Issuing Bank, respectively, have agreed to make Loans and Swingline Loans to the Borrower and to issue Letters of Credit for the account of the Borrower, pursuant to, and on the terms and subject to the conditions specified in, the Credit Agreement.

The obligations of the Lenders to make Loans and of the Swingline Lender to make Swingline Loans and of the Issuing Bank to issue Letters of Credit under the Credit Agreement are conditioned upon, among other things, the execution and delivery by the Grantors of an intellectual property security agreement in the form hereof to secure the due and punctual payment of (a) the principal of and premium, if any, and interest (including interest accruing during the pendency of any bankruptcy, insolvency, receivership or other similar proceeding, regardless of whether allowed or allowable in such proceeding) on the Loans and the Swingline Loans, when and as due, whether at maturity, by acceleration, upon one or more dates set for prepayment or otherwise, (b) each payment required to be made by the Borrower under the Credit Agreement in respect of any Letter of Credit, when and as due, including payments in respect of reimbursement of disbursements, interest thereon and obligations to provide cash collateral, (c) all other monetary obligations, including fees, costs, expenses and indemnities, whether primary, secondary, direct, contingent, fixed or otherwise (including monetary obligations incurred during the pendency of any bankruptcy, insolvency, receivership or other similar proceeding, regardless of whether allowed or allowable in such proceeding), of each Loan Party to the Secured Parties under the Credit Agreement, this Intellectual Property Security Agreement and the other Loan Documents (as defined in the Credit Agreement) to which such Loan Party is or is to be a party and (d) all obligations of the Borrower under each Rate Protection Agreement entered into with any Lender or any Affiliate thereof (all the foregoing obligations being referred to collectively as the "Obligations").

Accordingly, the Grantors and the Collateral Agent, on behalf of itself and each other Secured Party (and each of their successors and assigns), hereby agree as follows:

ARTICLE I

Definitions

SECTION 1.01. Definition of Certain Terms Used Herein. As used herein, the following terms shall have the following meanings:

"Collateral" shall mean all of the following, whether now owned or hereafter acquired by the Grantors: (a) Patents, including all granted Patents, recordings and pending applications, including those listed on Schedule I attached hereto, (b) Trademarks, including all registered Trademarks, registrations, recordings, and pending applications, including those listed on Schedule II attached hereto, (c) Copyrights, including all registered Copyrights, registrations, recordings, supplemental registrations and pending applications, including those listed on Schedule III attached hereto, (d) Licenses, (e) General Intangibles, and (f) all products and Proceeds (including insurance proceeds) of, and additions, improvements and accessions to, and books and records describing or used in connection with, any and all of the property described above.

"Copyrights" shall mean all of the following now or hereafter owned: (i) all copyright rights in any work subject to the copyright laws of the United States or any other country, whether as author, assignee, transferee or otherwise, and (ii) all registrations and applications for registration of any such copyright in the United States or any other country, including registrations, recordings, supplemental registrations and pending applications for registration in the United States Copyright Office.

"Copyright License" shall mean any written agreement, now or hereafter in effect, granting any right to any third party under any Copyright now or hereafter owned by any Grantor or which such Grantor otherwise has the right to license, or granting any right to such Grantor under any Copyright now or hereafter owned by any third party, and all rights of such Grantor under any such agreement.

"General Intangibles" shall mean all intangible, intellectual or other similar property of the Grantors of any kind or nature now owned or hereafter acquired by any Grantor, including inventions, designs, Patents, Copyrights, Licenses, Trademarks, trade secrets, confidential or proprietary technical and business information, know-how, show-how or other data or information, software and databases and all embodiments or fixations thereof and related documentation, registrations, franchises, and all other intellectual or other similar property rights not otherwise described above.

"License" shall mean any Patent License, Trademark License, Copyright License or other license or sublicense as to which any Grantor is a party (other than those license agreements in existence as of the date hereof and those license agreements entered into after the date hereof, which by their terms prohibit assignment or a grant of a security interest by such Grantor as licensee thereunder).

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"Patent License" shall mean any written agreement, now or hereafter in effect, granting to any third party any right to make, use or sell any invention on which a Patent, now or hereafter owned by any Grantor or which such Grantor otherwise has the right to license, is in existence, or granting to such Grantor any right to make, use or sell any invention on which a Patent, now or hereafter owned by any third party, is in existence, and all rights of such Grantor under any such agreement.

"Patents" shall mean all the following now or hereafter owned: (a) all letters patent of the United States or any other country, including patents, design patents or utility models, all registrations and recordings thereof, and all applications for letters patent of the United States or any other country, including registrations, recordings and pending applications in the United States Patent and Trademark Office or any similar offices in any other country, and (b) all reissues, continuations, divisions, continuations-in-part, renewals or extensions thereof, and the inventions disclosed or claimed therein, including the right to make, use and/or sell the inventions disclosed or claimed therein.

"Proceeds" shall mean any consideration received from the sale, exchange, license, lease or other disposition of any asset or property that constitutes Collateral, any value received as a consequence of the possession of any Collateral and any payment received from any insurer or other person or entity as a result of the destruction, loss, theft or other involuntary conversion of whatever nature of any asset or property that constitutes Collateral, any claim of any Grantor against third parties for (and the right to sue and recover for and the rights to damages or profits due or accrued arising out of or in connection with) (a) past, present or future infringement of any Patent now or hereafter owned by any Grantor or licensed under a Patent License, (b) past, present or future infringement or dilution of any Trademark now or hereafter owned by any Grantor or licensed under a Trademark License or injury to the goodwill associated with or symbolized by any Trademark now or hereafter owned by any Grantor, (c) past, present or future breach of any License, (d) past, present or future infringement of any Copyright now or hereafter owned by any Grantor or licensed under a Copyright License, and (e) any and all other amounts from time to time paid or payable under or in connection with any of the Collateral.

"Trademark License" shall mean any written agreement, now or hereafter in effect, granting to any third party any right to use any Trademark now or hereafter owned by any Grantor or that such Grantor otherwise has the right to license, or granting to such Grantor any right to use any Trademark now or hereafter owned by any third party, and all rights of such Grantor under any such agreement.

"Trademarks" shall mean all of the following now or hereafter owned: (a) all trademarks, service marks, trade names, corporate names, company names, business names, fictitious business names trade styles, trade dress, logos, other source or business identifiers, prints and labels on which any of the foregoing have appeared or appear, and all designs and general intangibles of like nature, now existing or hereafter adopted or acquired, all registrations and recordings thereof, and all registration and recording applications filed in connection therewith, including registrations, recordings and applications in the United States Patent and Trademark Office, any State of the United States or any similar offices in any other country or any political subdivision thereof, and all extensions or renewals thereof, (b) all goodwill associated therewith or symbolized thereby, and (c) all other assets, rights and interests that uniquely reflect or embody such goodwill.

SECTION 1.02. Rules of Interpretation. The rules of interpretation specified in Section 1.02 of the Credit Agreement shall be applicable to this Agreement.

ARTICLE II

Security Interest

SECTION 2.01. Security Interest. As security for the payment or performance, as the case may be, of its obligations in respect of the Obligations, each Grantor hereby creates, bargains, sells, conveys, assigns, sets over, mortgages, pledges, hypothecates and transfers to the Collateral Agent, its successors and assigns, for the ratable benefit of the Secured Parties, and hereby grants to the Collateral Agent, its successors and assigns, for the ratable benefit of the Secured Parties, a continuing first priority security interest in all such Grantor's right, title and interest in, to and under the Collateral (the "Security Interest"). Without limiting the foregoing, the Collateral Agent is hereby authorized to file one or more financing statements, continuation statements, filings with the United States Patent and Trademark Office or United States Copyright Office (or similar office in any other country), or other documents for the purpose of perfecting, confirming, continuing, enforcing or protecting the Security Interest granted by each Grantor, without the signature of any Grantor, naming any Grantor as debtor and the Collateral Agent as secured party.

Each Grantor agrees at all times to keep accurate and complete accounting records with respect to the Collateral, including a record of all payments and Proceeds received in respect thereof.

SECTION 2.02. Further Assurances. Each Grantor agrees, at its own cost and expense, promptly to execute, acknowledge, deliver and cause to be duly filed all such further instruments and documents and take all such actions as the Collateral Agent or any of the Secured Parties may from time to time reasonably request for better assuring, preserving and perfecting the Security Interest and the rights and remedies created hereby, including the payment of any fees and taxes required in connection with the execution and delivery of this Agreement, the granting of the Security Interest created hereby, the filing of any financing statements or other documents (including filings with the United States Patent and Trademark Office and the United States Copyright Office or similar offices in any other country) in connection herewith, and the execution and delivery of any document required to supplement this Agreement with respect to any Patents, Trademarks and/or Copyrights applied for, acquired, registered (or for which registration applications are filed) or issued after the date hereof. If any amount payable under or in connection with any of the Collateral shall be or become evidenced by any promissory note or other instrument, such note or instrument shall (to the extent not previously pledged and delivered pursuant to the Pledge Agreement) be immediately pledged and delivered to the Collateral Agent, duly endorsed in a manner satisfactory to the Collateral Agent. Each Grantor agrees promptly to notify the Collateral Agent of any change (a) in its corporate name, (b) in the location of its chief executive office and (c) in its chief place of business. Each Grantor agrees promptly to notify the Collateral Agent if any material portion of the Collateral is canceled or overturned, opposed, misappropriated, injured, infringed, lost (other than due to expiration of any issued Payment or any Copyright) or, if applicable, diluted.

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SECTION 2.03. Inspection and Verification. Without limiting the scope of Section 5.07 of the Credit Agreement, the Collateral Agent and such representatives as the Collateral Agent may reasonably designate shall have the right to inspect, at any reasonable time or times, the Collateral, all records related thereto (and to make extracts and copies from such records) and the premises upon which any of the Collateral is located, to discuss any Grantor's affairs with the officers of such Grantor and its independent accountants and to verify under reasonable procedures the validity, amount, quality, quantity, value, conditions, and status of or any other matter relating to, such Collateral, including, in the case of Collateral in the possession of any third party (with, except after an Event of Default shall have occurred and during the continuance thereof, the consent of such Grantor, which consent shall not be unreasonably withheld), by contacting such person possessing such Collateral for the purpose of making such a verification. The Collateral Agent shall have the absolute right to share any information it gains from such inspection or verification with any or all of the Secured Parties.

SECTION 2.04. Taxes; Encumbrances. At its option, the Collateral Agent may discharge past due taxes, assessments, charges, fees, liens, security interests or other encumbrances at any time levied or placed on the Collateral and not permitted under this Agreement or other Loan Documents, and may pay for the maintenance and preservation of the Collateral to the extent any Grantor fails to do so as required by this Agreement or the other Loan Documents, and such Grantor agrees to reimburse the Collateral Agent on demand for any payment made or any expense incurred by the Collateral Agent pursuant to the foregoing authorization; provided, however, that nothing in this Section 2.04 shall be interpreted as excusing any Grantor from the performance of, or imposing any obligation on the Collateral Agent or any other Secured Party to cure or perform, any covenants or other promises of any Grantor with respect to taxes, assessments, charges, fees, liens, security interests or other encumbrances and maintenance as set forth herein or in the other Loan Documents.

SECTION 2.05. Amendment of Schedules. Each Grantor hereby authorizes the Collateral Agent, with prompt notice thereof to the Grantors, to modify this Agreement by amending Schedules I, II, or III hereto or to add additional schedules hereto to include any asset or item that may be Copyrights, Patents, Trademarks, or any other type of Collateral, as the case may be, under this Agreement; provided, however, that any Grantor shall have the right, exercisable within 20 days after it has been notified by the Collateral Agent of the addition of such Collateral to the applicable Schedule hereto, to advise the Collateral Agent in writing of such Collateral's deviation from or failure to meet the representations and warranties made by such Grantor hereunder. Each Grantor covenants and agrees with the Collateral Agent that such Grantor will use its best efforts to make such representations and warranties true and correct with respect to such Collateral within 30 days after the date it has been notified by the Collateral Agent of the addition of such Collateral to a Schedule hereto.

SECTION 2.06. Security Agreement. Each Grantor and the Collateral Agent acknowledge and agree that, contemporaneously with the execution and delivery of this Agreement, they are executing and delivering the Security Agreement, pursuant to which each Grantor unconditionally grants to the Collateral Agent and its successors and assigns, for the benefit of the Secured Parties and their successors and assigns, a continuing security interest in all property, assets, rights and interests of each Grantor (including the Collateral). This Agreement is supplemental to the Security Agreement, and the Security Agreement, and all rights and interests of the Collateral Agent in and to

the Collateral thereunder, are hereby ratified, confirmed and approved. Any and all rights and interests of the Collateral Agent in and to the Collateral hereunder, and any and all obligations of the Grantors with respect to the Collateral hereunder, shall only supplement and be cumulative to the rights and interests of the Collateral Agent, and the obligations of the Grantors, in, to or with respect to the Collateral as provided in or arising under the Security Agreement.

SECTION 2.07. No Assumption of Liability. The Security Interest is granted as security only and shall not subject the Collateral Agent or any other Secured Party to, or in any way alter or modify, any obligation or liability of any Grantor with respect to or arising out of any of the Collateral.

ARTICLE III

Representations And Warranties

The Grantors jointly and severally represent and warrant to the Collateral Agent that:

SECTION 3.01. Validity of Patents, Trademarks and Copyrights. Each of the Patents, Trademarks and Copyrights material to the conduct of the Borrower's business are subsisting, as of the date hereof, and have not been adjudged invalid or unenforceable, in whole or in material part.

SECTION 3.02. Title and Authority. Each Grantor has good and valid rights in and title to the Collateral with respect to which it has purported to grant a Security Interest hereunder and has full power and authority to grant to the Collateral Agent the Security Interest in such Collateral pursuant hereto and to execute, deliver and perform its obligations in accordance with the terms of this Agreement, without the consent or approval of any other person other than any consent or approval that has been obtained.

SECTION 3.03. Filings. (a) Fully executed financing statements containing a description of the Collateral have been delivered to the Collateral Agent for filing in each governmental, municipal or other office in each jurisdiction located within the United States as are necessary to publish notice of and protect the validity of and to establish a valid and perfected security interest in favor of the Collateral Agent (for the benefit of the Secured Parties) in respect of the Collateral in which a security interest may be perfected by filing a financing statement or analogous document in the United States and its political subdivisions pursuant to the Uniform Commercial Code or other applicable law in such jurisdictions, and no further or subsequent filing, refile, recording, rerecording, registration or reregistration is necessary in any such jurisdiction, except as provided under applicable law with respect to the filing of continuation statements or other documents of similar effect.

(b) Each Grantor shall ensure and warrant that fully executed security agreements in the form hereof and containing a description of the Collateral shall have been received and recorded within three months after the execution of this Agreement with respect to United States Patents and United States registered Trademarks (and Trademarks for which United States registration applications are pending) and within one

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month after the execution of this Agreement with respect to United States registered Copyrights by the United States Patent and Trademark Office and the United States Copyright Office pursuant to 35 U.S.C. § 261, 15 U.S.C. § 1060 or 17 U.S.C. § 205 and the regulations thereunder, as applicable, to protect the validity and first priority of and to perfect a valid first priority security interest in favor of the Collateral Agent (for the benefit of the Secured Parties) in respect of the Collateral in which a security interest may be perfected by filing in such offices and no further or subsequent filing, refiling, recording, rerecording, registration or reregistration is necessary in any such jurisdiction, except as provided under applicable law with respect to the filing of continuation statements (other than such actions as are necessary to perfect the Collateral Agent's first priority security interest with respect to any Collateral (or registration or application for registration thereof) acquired or developed after the date hereof).

SECTION 3.04. Validity of Security Interests. The Security Interest constitutes (a) a legal and valid security interest in all the Collateral securing the payment and performance of the Obligations and (b) upon filing the financing statements and making the filings with the United States Copyright Office, United States Patent and Trademark Office and appropriate state offices with respect to state registered trademarks, in each case as referred to in Section 3.03 above, a perfected security interest in all such Collateral in which a security interest may be perfected by filing in the United States and its territories and possessions. The Security Interest is and shall be prior to any other Lien on any of the Collateral, other than Liens expressly permitted pursuant to Section 3.06 of this Agreement.

SECTION 3.05. Information Regarding Names and Locations. Each Grantor has disclosed in writing to the Collateral Agent on Schedule IV any material trade names used to identify it in its business or in the ownership of its properties during the five years prior to the Closing Date.

SECTION 3.06. Absence of Other Liens. The Collateral is owned by the Grantors free and clear of any Lien of any nature whatsoever (except for Liens expressly permitted by Section 6.02 of the Credit Agreement or hereby and any liens on licenses listed on Schedule V). Other than as contemplated hereby or by the Security Agreement, the Grantors have not filed (a) any financing statement or analogous document under the Uniform Commercial Code, (b) any assignment in which any Grantor assigns the Collateral, any security agreement or any similar instrument covering any Collateral with the United States Patent and Trademark Office, the United States Copyright Office of any similar office in any other country or political subdivision thereof and (c) any assignment in which any Grantor assigns the Collateral or any security agreement or similar instrument covering any Collateral with any foreign governmental, municipal or other office.

SECTION 3.07. Licenses. To each Grantor's best knowledge, on the date hereof, there is no material default by any Licensee under any material License.

ARTICLE IV

Covenants

SECTION 4.01. Covenants Regarding Patent, Trademark and Copyright Collateral. (a) Each Grantor (either itself or through licensees) will, for each Patent, not do any act, or omit to do any act, whereby any Patent that is material to the conduct of the business of the Borrower and the Subsidiaries taken as a whole may become invalidated or dedicated to the public, and shall continue to mark any products covered by any such Patent with the relevant patent number as necessary and sufficient to establish and preserve such Grantor's maximum rights under applicable patent laws.

(b) Each Grantor (either itself or through licensees) will, for each Trademark material to the conduct of the business of the Borrower and the Subsidiaries taken as a whole, (i) maintain such Trademark in full force free from any claim of abandonment or invalidity for nonuse, (ii) maintain the quality of products and services offered under such Trademark, (iii) display such Trademark with notice of Federal or foreign registration to the extent necessary and sufficient to establish and preserve such Grantor's maximum rights under applicable law and (iv) not knowingly use or knowingly permit the use of such Trademark in violation of any third party rights.

(c) Each Grantor (either itself or through licensees) will, for each work covered by a Copyright material to the business of the Borrower and its Subsidiaries taken as a whole, continue to publish, reproduce, display, adopt and distribute the work with appropriate copyright notice as necessary and sufficient to establish and preserve such Grantor's maximum rights under applicable copyright laws.

(d) Each Grantor will notify the Collateral Agent immediately if it knows or has reason to know that any Patent, Trademark or Copyright material to the conduct of the business of the Borrower and the Subsidiaries taken as a whole may become abandoned, lost or dedicated to the public, or of any adverse determination or development (including the institution of, or any such determination or development in, any proceeding in the United States Patent and Trademark Office, United States Copyright Office or any court or similar office of any country) regarding such Grantor's ownership of any Patent, Trademark or Copyright, its right to register the same, or to keep and maintain the same.

(e) In no event shall any Grantor, either itself or through any agent, employee, licensee or designee, file an application for any Patent, Trademark or Copyright (or for the registration of any Trademark or Copyright) with the United States Patent and Trademark Office, United States Copyright Office or any office or agency in any political subdivision of the United States, unless it promptly informs the Collateral Agent, and, upon request of the Collateral Agent, executes and delivers any and all agreements, instruments, documents and papers as the Collateral Agent may request to evidence (and, in the case of applications for Patents with the United States Patent and Trademark Office, perfect) the Collateral Agent's security interest in such Patent, Trademark or Copyright of any Grantor and the goodwill and general intangibles of such Grantor relating thereto or represented thereby, and such Grantor hereby appoints the Collateral Agent its attorney-in-fact to execute and file such writings for the foregoing purposes, all acts of such attorney being hereby ratified and confirmed; such power, being coupled with an interest, is irrevocable until the Obligations are paid in full.

(f) Each Grantor will take all necessary steps that are consistent with customary practice in any proceeding before the United States Patent and Trademark Office, United States Copyright Office or any office or agency in any political subdivision of the United States or in any other country or any political subdivision thereof, to maintain and pursue each material application relating to the Patents, Trademarks and/or Copyrights (and to obtain the relevant grant or registration) and to maintain each issued Patent and each registration of the Trademarks and Copyrights that is material to the conduct of the business of the Borrower and the Subsidiaries taken as a whole, including timely filings of applications for renewal, affidavits of use, affidavits of incontestability and payment of maintenance fees, and, if consistent with good business judgment, to initiate opposition, interference and cancellation proceedings against third parties.

(g) In the event that any Collateral consisting of a Patent, Trademark or Copyright material to the conduct of the business of the Borrower and the Subsidiaries taken as a whole is believed by such Grantor to have been infringed, misappropriated or diluted by a third party, the Grantor that shall have granted a security interest therein hereunder promptly will notify the Collateral Agent within ten days after it learns thereof and shall, if consistent with good business judgment, promptly sue for infringement, misappropriation, or dilution and to recover any and all damages for such infringement, misappropriation or dilution, and take such other actions as are appropriate under the circumstances to protect such Collateral.

SECTION 4.02. Protection of Security. Each Grantor will, at its own cost and expense, take any and all reasonable actions necessary to defend title to the Collateral against all persons, properly to maintain, protect and preserve the Collateral and to defend the Security Interest of the Collateral Agent in the Collateral and the priority thereof against any Lien not permitted hereunder or under the Credit Agreement.

SECTION 4.03. Continuing Obligations of the Grantors. Each Grantor shall remain liable to observe and perform all the conditions and obligations to be observed and performed by it under each License, contract, agreement, interest or obligation relating to the Collateral, all in accordance with the terms and conditions thereof, and shall indemnify and hold harmless the Collateral Agent and the other Secured Parties and each of them severally, from any and all liabilities arising from the failure of any Grantor to observe and perform all the conditions and obligations to be observed and performed by it under each License, contract, agreement, interest or obligation relating to the Collateral. Without limiting the foregoing, the Collateral Agent shall have no obligation or liability under any License by reason of or arising out of this Agreement or the granting or the assignment to the Collateral Agent of the Security Interest or the receipt by the Collateral Agent of any payment related to any License pursuant hereto, nor shall the Collateral Agent be required or obligated in any manner to perform or fulfill any of the obligations of any Grantor under or pursuant to any License, or to make any payment, or to make any inquiry as to the nature or the sufficiency of any payment received by it or the sufficiency of any performance by any party under any License, or to present or file any claim, or to take any action to collect or enforce any performance of the payment of any amounts that may have been assigned to it or to which it may be entitled at any time or times.

SECTION 4.04. Use and Disposition of Collateral. None of the Grantors shall make or permit to be made any assignment for security, pledge or hypothecation of

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the Collateral owned by it, or grant any other security interest in such Collateral except to the extent permitted hereunder or under Section 6.02 of the Credit Agreement. None of the Grantors shall make or permit to be made any transfer of the Collateral owned by it, and each Grantor shall remain at all times in possession thereof other than transfers to the Collateral Agent pursuant to the provisions hereof or of the Security Agreement, except as expressly permitted under the Credit Agreement and except that so long as no Event of Default shall have occurred and be continuing, each Grantor may use or license the Collateral owned by it in any lawful manner that is in the ordinary course of its business and is not inconsistent with the provisions of this Agreement, the Security Agreement and the Credit Agreement.

SECTION 4.05. Place of Business. Each Grantor agrees not to change, or permit to be changed, the location of its chief executive office or the name or names used to identify it in its business or in the ownership of its properties unless all filings under the Uniform Commercial Code or under other applicable United States laws that are required to be made with respect to the Collateral have been made and the Collateral Agent has a valid, legal and perfected security interest in the Collateral, subject to no liens, other than Liens permitted by Section 3.06 of this Agreement and any liens or licenses listed on Schedule V, and prior notice thereof has been given to the Collateral Agent along with copies of all such filings to be made.

SECTION 4.06. Future Rights. (a) If any Grantor shall obtain rights to any material asset or item that may be considered Collateral, the provisions of Section 2.01 shall automatically apply thereto and each Grantor will give to the Collateral Agent prompt notice thereof in writing.

(b) With respect to any such material asset or item that may be considered Collateral as set forth in paragraph (a) above, each Grantor will follow the procedures set forth in Section 3.03, as applicable, to ensure that the Collateral Agent's security interest therein is perfected.

SECTION 4.07 Assignment of Licenses. Upon and during the continuance of an Event of Default, each Grantor will use its best efforts to obtain all requisite consents or approvals by the licensor of each Copyright License, Patent License or Trademark License to effect the assignment of all of the Grantors' rights, title and interest thereunder to the Collateral Agent or its designee.

SECTION 4.08. Liabilities and Indemnification. (a) Notwithstanding anything to the contrary provided herein, the Collateral Agent assumes no liabilities with respect to any claims regarding any Grantor's ownership (or purported ownership) of, or rights or obligations (or purported rights or obligations) arising from, the Collateral or any use (or actual or alleged misuse), license or sublicense thereof by any Grantor or any licensee of such Grantor, whether arising out of any past, current or future event, circumstance, act or omission or otherwise, or any claim, suit, loss, damage, expense or liability of any kind or nature arising out of or in connection with the Collateral or the production, marketing, delivery, sale or provision of goods or services under or in connection with any of the Collateral. All such liabilities shall be borne exclusively by the Grantors.

(b) The Grantors jointly and severally agree to indemnify and hold harmless the Collateral Agent from and against, and on demand shall pay to the

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Collateral Agent the amount of, any and all claims, actions, suits, judgments, penalties, losses, damages, costs, disbursements, expenses, obligations or liabilities of any kind or nature (except those directly caused by the Collateral Agent's gross negligence or intentional misconduct) specified in Sections 4.03 and 4.08(a), or arising in any way out of or in connection with this Agreement, the Collateral, custody, preservation, use or operation of the Collateral, any actual or alleged infringement or misappropriation of the rights or property of any third party, the production, marketing, delivery, sale and provision of goods or services under or in connection with the Collateral, the sale, transfer or other disposition of or collection from or other realization upon any of the Collateral, the exercise or enforcement by the Collateral Agent of any right or remedy granted to it hereunder, any action taken or omitted to be taken by the Collateral Agent hereunder, the failure of any Grantor to perform or observe any of the provisions hereof, or matters relating to any of the foregoing.

ARTICLE V

Remedies

SECTION 5.01. **Collections.** Upon the occurrence and during the continuance of any Event of Default, the Collateral Agent shall have the right, as the true and lawful agent of the Grantors, with power of substitution for the Grantors and in the Grantors' names, the Collateral Agent's name or otherwise, for the use and benefit of the Agent and the Secured Parties (a) upon notice from the Collateral Agent, to receive, endorse, assign and/or deliver any and all notes, acceptances, checks, drafts, money orders or other evidences of payment relating to the Collateral or any part thereof; (b) to demand, collect, receive payment of, give receipt for and give discharges and releases of all or any of the Collateral; (c) to sign the name of any Grantor on any invoice relating to any of the Collateral; (d) to commence and prosecute any and all suits, actions or proceedings at law or in equity in any court of competent jurisdiction to collect or otherwise realize on all or any of the Collateral or to enforce any rights in respect of any Collateral; (e) to settle, compromise, compound, adjust or defend any actions, suits or proceedings relating to or pertaining to all or any of the Collateral; (f) to license or, to the extent permitted by any applicable law, sublicense, whether general, special or otherwise, and whether on an exclusive or nonexclusive basis, any of the Collateral throughout the world for such term or terms, on such conditions, and in such manner, as the Collateral Agent shall determine (other than in violation of any then existing licensing arrangements to the extent that waivers or other adequate provision cannot be secured therefor); and (g) generally to use, sell, assign, transfer, pledge, make any agreement with respect to or otherwise deal with all or any of the Collateral, and to do all other acts and things necessary to carry out the purposes of this Agreement, as fully and completely as though the Collateral Agent were the absolute owner of the Collateral for all purposes; provided, however, that except as provided for by law or the Uniform Commercial Code as in effect in the State of New York or its equivalent in other jurisdictions, nothing herein contained shall be construed as requiring or obligating the Collateral Agent to make any commitment or to make any inquiry as to the nature or sufficiency of any payment received by the Collateral Agent, or to present or file any claim or notice, or to take any action with respect to the Collateral or any part thereof or the moneys due or to become due in respect thereof or any property covered thereby, and no action taken by the Collateral Agent or omitted to be taken with respect to the Collateral or any part thereof shall give rise to any defense, counterclaim or offset in favor of any Grantor or to

any claim or action against the Collateral Agent. It is understood and agreed that the appointment of the Collateral Agent as the agent of the Grantors for the purposes set forth above in this Section 5.01 is coupled with an interest and is irrevocable. The provisions of this Section 5.01 shall in no event relieve the Grantors of any of their obligations hereunder or under the Credit Agreement or any other Loan Document with respect to the Collateral or any part thereof or impose any obligation on the Collateral Agent or the Secured Parties to proceed in any particular manner with respect to the Collateral or any part thereof, or in any way limit the exercise by the Collateral Agent or any Secured Party of any other or further right that it may have on the date of this Agreement or hereafter, whether hereunder or by law or by the Security Agreement, or otherwise.

SECTION 5.02. Other Remedies Upon Default. Upon the occurrence and during the continuance of an Event of Default, each Grantor expressly agrees that, to the fullest extent permitted under applicable law, (a) the Security Interest on demand shall become an assignment, transfer and conveyance of the Collateral by such Grantor to the Collateral Agent and (b) the Collateral Agent on demand shall have the right to take any or all of the following actions at the same or different times: with or without legal process and with or without previous notice or demand for performance, to take possession of all tangible manifestations or embodiments of the Collateral and documentation relating thereto and all business records, documents, files, prints and labels with respect to the Collateral, and without liability for trespass and without breach of the peace, to enter any premises where such tangible manifestations or embodiments, business records, documents, files, prints and labels with respect to the Collateral may be located for the purpose of taking possession of or removing such tangible manifestations or embodiments, business records, documents, files, prints and labels with respect to the Collateral, and, generally, to exercise any and all rights afforded to a secured party under the Uniform Commercial Code or other law applicable to any part of the Collateral. Subject to and without limiting the generality of the foregoing, each Grantor agrees that the Collateral Agent shall have the immediate right, with or without legal process and with or without previous notice or demand for performance, all of which are hereby expressly waived, subject to the mandatory requirements of applicable law, to sell or otherwise dispose of all or any part of the Collateral, at public or private sale, for cash, upon credit or for future delivery as the Collateral Agent shall deem appropriate. The Collateral Agent shall be authorized at any such sale (if it deems it advisable to do so) to restrict the prospective bidders or purchasers to persons who will represent and agree that they are purchasing the Collateral for their own account for investment and not with a view to the distribution or sale thereof where the failure to obtain such a representation and agreement could result in a violation of any applicable securities laws, and upon consummation of any such sale the Collateral Agent shall have the right to assign, transfer and deliver to the purchaser or purchasers thereof the Collateral so sold. Each such purchaser at any such sale shall hold the property sold absolutely, free from any claim or right on the part of any Grantor, and each Grantor hereby waives (to the extent permitted by law) all rights of redemption, stay and appraisal that such Grantor now has or may at any time in the future have under any rule of law or statute now existing or hereafter enacted.

The Collateral Agent shall give the Grantors at least 10 days' written notice (which each Grantor agrees is reasonable notice within the meaning of Section 9-504(3) of the Uniform Commercial Code as in effect in the State of New York or its equivalent in other jurisdictions) of the Collateral Agent's intention to make any

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sale of Collateral. Such notice, in the case of a public sale, shall state the time and place for such sale. Any such public sale shall be held at such time or times within ordinary business hours and at such place or places as the Collateral Agent may fix and state in the notice (if any) of such sale. At any such sale, the Collateral, or portion thereof, to be sold may be sold in one lot as an entirety or in separate parcels, as the Collateral Agent may (in its sole and absolute discretion) determine. The Collateral Agent shall not be obligated to make any sale of any Collateral if it shall determine not to do so, regardless of the fact that notice of sale of such Collateral shall have been given. The Collateral Agent may, without notice or publication, adjourn any public or private sale or cause the same to be adjourned from time to time by announcement at the time and place fixed for sale, and such sale may, without further notice, be made at the time and place to which the same was so adjourned. In case any sale of all or any part of the Collateral is made on credit or for future delivery, the Collateral so sold may be retained by the Collateral Agent until the sale price is paid by the purchaser or purchasers thereof, but the Collateral Agent shall not incur any liability in case any such purchaser or purchasers shall fail to take up and pay for the Collateral so sold and, in case of any such failure, such Collateral may be sold again upon like notice to the Grantors. At any public sale made pursuant to this Section 5.02, the Collateral Agent or any Secured Party may bid for or purchase, free from any right of redemption, stay, valuation or appraisal on the part of any Grantor (all said rights being also hereby waived and released to the extent permitted by law), the Collateral or any part thereof offered for sale and may make payment on account thereof by using any claim then due and payable to the Collateral Agent or such Secured Party from any Grantor as a credit against the purchase price, and the Collateral Agent or such Secured Party may, upon compliance with the terms of sale, hold, retain and dispose of such property without further accountability to such Grantor therefor. For purposes hereof, a written agreement to purchase the Collateral or any portion thereof shall be treated as a sale thereof; the Collateral Agent shall be free to carry out such sale pursuant to such agreement, and no Grantor shall be entitled to the return of the Collateral or any portion thereof subject thereto, notwithstanding that after the Collateral Agent shall have entered into such an agreement all Events of Default shall have been remedied and the Obligations paid in full; **provided, however**, that in the event the Obligations shall have been paid in full, the Grantors shall be entitled to the return of the proceeds of the sale of any such Collateral to the extent not applied to payment of the Obligations. As an alternative to exercising the power of sale herein conferred upon it, the Collateral Agent may proceed by a suit or suits at law or in equity to foreclose this Agreement and to sell the Collateral or any portion thereof pursuant to a judgment or decree of a court or courts having competent jurisdiction or pursuant to a proceeding by a court-appointed receiver.

SECTION 5.03. Application of Proceeds of Sale. The Collateral Agent shall apply the proceeds of any sale of the Collateral, as well as any Collateral consisting of cash, as follows:

First, to the payment of all costs and expenses incurred by the Collateral Agent (in its capacity as such hereunder or under any other Loan Document) in connection with such collection or sale or otherwise in connection with this Agreement or any of the Obligations, including all court costs and the fees, other charges and expenses of its agents and legal counsel, the repayment of all advances made by the Collateral Agent hereunder or under any other Loan Document on behalf of the Grantors and any other costs or expenses incurred in

connection with the exercise of any right or remedy hereunder or under any other Loan Document;

Second, to the Collateral Agent for distribution to the Secured Parties for the satisfaction of the Obligations owed to the Secured Parties; and

Third, to the Grantors, their successors or assigns, or as a court of competent jurisdiction may otherwise direct.

The Collateral Agent shall have absolute discretion as to the time of application of any such proceeds, moneys or balances in accordance with this Agreement. Upon any sale of the Collateral by the Collateral Agent (including pursuant to a power of sale granted by statute or under a judicial proceeding), the receipt of the Collateral Agent or of the officer making the sale shall be a sufficient discharge to the purchaser or purchasers of the Collateral so sold and such purchaser or purchasers shall not be obligated to see to the application of any part of the purchase money paid over to the Collateral Agent or such officer or be answerable in any way for the misapplication thereof.

SECTION 5.04. Grant of License to Use Patent, Trademark and Copyright Collateral. For the purpose of enabling the Collateral Agent to exercise rights and remedies under Article V hereof at such time as the Collateral Agent shall be lawfully entitled to exercise such rights and remedies, each Grantor hereby grants to the Collateral Agent an irrevocable, nonexclusive license (exercisable without payment of royalty or other compensation to such Grantor) to use, license or sublicense any of the Collateral now owned or hereafter acquired by such Grantor, and wherever the same may be located, and including in such license reasonable access to all media in which any of the licensed items may be recorded or stored. The use of such license by the Collateral Agent shall be exercised, at the option of the Collateral Agent, upon the occurrence and during the continuance of an Event of Default; provided, however, that any license, sublicense or other transaction entered into by the Collateral Agent in accordance herewith shall be binding upon such Grantor notwithstanding any subsequent cure of an Event of Default. The Collateral Agent agrees to apply the net proceeds received from any license as provided in Section 5.03.

ARTICLE VI

Miscellaneous

SECTION 6.01. The Collateral Agent Appointed Attorney-in-Fact. Except as otherwise provided herein, each Grantor hereby appoints the Collateral Agent the attorney-in-fact of such Grantor, effective upon the occurrence and during the continuance of an Event of Default, for the purposes of carrying out the provisions of this Agreement, taking any action and executing any instrument that the Collateral Agent may deem necessary or advisable to accomplish the purposes hereof, and doing all other acts that such Grantor is obligated to do hereunder. Such appointment is in each case irrevocable and coupled with an interest. Each Grantor hereby ratifies all that such attorney shall lawfully do or cause to be done by virtue hereof.

SECTION 6.02. Collateral Agent's Fees and Expenses; Indemnification.
(a) The Grantors jointly and severally agree to pay upon demand to the Collateral Agent

the amount of any and all reasonable expenses, including the reasonable fees and expenses of its counsel and of any experts or agents, that the Collateral Agent may incur in connection with (i) the administration of this Agreement, (ii) the custody or preservation of, or the sale of, collection from or other realization upon any of the Collateral, (iii) the exercise, enforcement or protection of any of the rights of the Collateral Agent hereunder or (iv) the failure of any Grantor to perform or observe any of the provisions hereof. If the Grantors shall fail to do any act or thing that they have covenanted to do hereunder or any representation or warranty of the Grantors hereunder shall be breached, the Collateral Agent may (but shall not be obligated to) do the same or cause it to be done or remedy any such breach and there shall be added to the Obligations the cost or expense incurred by the Collateral Agent in so doing.

(b) Without limitation of their indemnification obligations under the other Loan Documents, the Grantors jointly and severally agree to indemnify the Collateral Agent and the Indemnitees against, and hold each of them harmless from, any and all losses, claims, damages, liabilities and related expenses, including reasonable counsel fees and expenses, incurred by or asserted against any of them arising out of, in any way connected with, or as a result of, the execution, delivery or performance of this Agreement or any claim, litigation, investigation or proceeding relating hereto or to the Collateral, whether or not any Indemnitee is a party thereto, provided that such indemnity shall not, as to any Indemnitee, be available to the extent that such losses, claims, damages, liabilities or related expenses are determined by a court of competent jurisdiction by final and nonappealable judgment to have resulted from the gross negligence or wilful misconduct of such Indemnitee.

(c) Any amounts payable as provided hereunder shall be additional Obligations secured hereby and by the other Security Documents. The provisions of this Section 6.02 shall remain operative and in full force and effect regardless of the termination of this Agreement, the consummation of the transactions contemplated hereby, the repayment of any of the Obligations, the invalidity or unenforceability of any term or provision of this Agreement or any other Loan Document or any investigation made by or on behalf of the Collateral Agent or any other Secured Party. All amounts due under this Section 6.02 shall be payable on written demand therefor.

SECTION 6.03. Notices. Notices and other communications provided for herein shall be in writing and given (i) in the case of communications and notices to the Borrower, the Collateral Agent or any Lender, as provided in the Credit Agreement and (ii) in the case of communications and notices to any other Grantor, as provided in the Guarantee Agreement.

SECTION 6.04. Successors and Assigns. (a) Whenever in this Agreement any of the parties hereto is referred to, such reference shall be deemed to include the successors and permitted assigns of such party, and all covenants, promises and agreements by or on behalf of the Grantors or the Collateral Agent or that are contained in this Agreement shall bind and inure to the benefit of their respective successors and permitted assigns referred to above.

(b) No Grantor shall assign or delegate any of its rights and duties hereunder.

(c) The covenants, promises and agreements by the Grantors shall inure to the benefit of each Secured Party and each assignee of any Secured Party permitted under Section 9.04 of the Credit Agreement.

SECTION 6.05. Applicable Law. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK, EXCEPT TO THE EXTENT THAT FEDERAL LAW OR LAWS OF ANOTHER STATE OR FOREIGN JURISDICTION MAY APPLY TO PATENTS, TRADEMARKS, COPYRIGHTS OR REMEDIES.

SECTION 6.06. Waivers; Amendment. (a) No failure or delay of the Collateral Agent in exercising any power or right hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such right or power, or any abandonment or discontinuance of steps to enforce such a right or power, preclude any other right or power. The rights and remedies of the Collateral Agent hereunder and of other Secured Parties under the Loan Documents are cumulative and are not exclusive of any rights or remedies that they would otherwise have. No waiver of any provisions of this Agreement or any other Loan Document or consent to any departure by any Grantor therefrom shall in any event be effective unless the same shall be permitted by paragraph (b) below, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on any Grantor in any case shall entitle such Grantor to any other or further notice or demand in similar or other circumstances.

(b) Neither this Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into between any Grantor and, the Collateral Agent, with the prior written consent of the Required Lenders; provided, however, that except as provided herein or in the other Loan Documents, no such agreement shall amend, modify, waive or otherwise affect the rights or duties of the Collateral Agent hereunder without the prior written consent of the Collateral Agent.

SECTION 6.07. Security Interest Absolute. All rights of the Collateral Agent hereunder, the security interests granted hereunder and all obligations of the Grantors hereunder shall be absolute and unconditional irrespective of (a) any lack of validity or enforceability of the Credit Agreement or any other Loan Document, any agreement with respect to any of the Obligations or any other agreement or instrument relating to any of the foregoing, (b) any change in the time, manner or place of payment of, or in any other term of, all or any of the Obligations, or any other amendment or waiver of or any consent to any departure from the Credit Agreement, any other Loan Document or any other agreement or instrument, (c) any exchange, release or nonperfection of any Lien on other Collateral, or any release or amendment or waiver of or consent under or departure from any guarantee, securing or guaranteeing all or any of the Obligations or (d) any other circumstance that might otherwise constitute a defense available to, or a discharge of, any Grantor in respect of the Obligations or this Agreement (other than the indefeasible payment in full of all the Obligations).

SECTION 6.08. Survival of Agreement. All covenants, agreements, representations and warranties made by any Grantor herein and in the certificates or other instruments prepared or delivered in connection with or pursuant to this Agreement or any other Loan Document shall be considered to have been relied upon by the Secured

Parties and the Collateral Agent and shall survive the making by the Lenders of the Loans, the making by the Swingline Lender of the Swingline Loans and the issuance by the Issuing Bank of any Letter of Credit regardless of any investigation made by the Secured Parties or the Collateral Agent or on their behalf, and shall continue in full force and effect as long as the principal of or any accrued interest on, or any other fee or amount payable under or in respect of, any Letter of Credit or this Agreement or, without duplication of the foregoing, under any of the other Loan Documents is outstanding and unpaid and so long as the Commitments and the L/C Commitment have not been terminated.

SECTION 6.09. Binding Effect; Assignments. This Agreement shall become effective as to any Grantor when a counterpart hereof executed on behalf of such Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon such Grantor and the Collateral Agent and their respective successors and assigns, and shall inure to the benefit of such Grantor, the Collateral Agent and the other Secured Parties and their respective successors and assigns, except that no Grantor shall have the right to assign its rights hereunder or any interest herein or in the Collateral (and any such attempted assignment shall be void) except as expressly contemplated by this Agreement or the other Loan Documents.

SECTION 6.10. Termination; Release. (a) This Agreement and the security interests granted hereby shall terminate when all the Obligations have been indefeasibly paid in full and the Lenders and the Swingline Lender have no further commitment to lend under the Credit Agreement, no Letters of Credit are outstanding and the Issuing Bank has no further obligation to issue Letters of Credit under the Credit Agreement.

(b) Upon (i) any sale by any Grantor of any Collateral that is permitted under the Credit Agreement and, if required, the application of the Net Cash Proceeds of such sale in accordance with Section 2.12 of the Credit Agreement or (ii) the effectiveness of any written consent to the release of the Security Interest in any Collateral pursuant to Section 9.08 of the Credit Agreement, the Security Interest in such Collateral shall be automatically released.

(c) Upon the achievement by the Borrower of an investment grade rating from each of Standard & Poor's Corporation and Moody's Investor Service, Inc. with respect to its senior unsecured non-credit-enhanced long-term debt, the security interest in the Collateral shall be automatically terminated.

(d) In connection with any termination or release pursuant to preceding paragraphs (a), (b) or (c) above, the Collateral Agent shall execute and deliver to such Grantor, at such Grantor's expense, all Uniform Commercial Code termination statements, documents in order to terminate any United States Patent and Trademark Office filings and similar documents that such Grantor shall reasonably request to evidence such termination or release. Any execution and delivery of termination statements or documents pursuant to this Section 6.10 shall be without recourse to or warranty by the Collateral Agent.

SECTION 6.11. WAIVER OF JURY TRIAL. EACH PARTY HERETO HEREBY WAIVES, TO THE FULLEST EXTENT PERMITTED BY

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APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ANY OF THE OTHER LOAN DOCUMENTS. EACH PARTY HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, ADMINISTRATIVE AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS, AS APPLICABLE, BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION 6.11.

SECTION 6.12. Severability. In the event any one or more of the provisions contained in this Agreement or in any other Loan Document should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The parties shall endeavor in good faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

SECTION 6.13 Jurisdiction; Consent to Service of Process. (a) Each Grantor hereby irrevocably and unconditionally submits, for itself and its property, to the nonexclusive jurisdiction of any New York State court or Federal court of the United States of America sitting in New York City, and any appellate court from any thereof, in any action or proceeding arising out of or relating to this Agreement or the other Loan Documents, or for recognition or enforcement of any judgment, and each of the parties hereto hereby irrevocably and unconditionally agrees that all claims in respect of any such action or proceeding may be heard and determined in such New York State or, to the extent permitted by law, in such Federal court. Each of the parties hereto agrees that a final judgment in any such action or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law. Nothing in this Agreement shall affect any right that the Collateral Agent or any other Secured Party may otherwise have to bring any action or proceeding relating to this Agreement or the other Loan Documents against any Grantor or its properties in the courts of any jurisdiction.

(b) Each Grantor hereby irrevocably and unconditionally waives, to the fullest extent it may legally and effectively do so, any objection that it may now or hereafter have to the laying of venue of any suit, action or proceeding arising out of or relating to this Agreement or the other Loan Documents in any New York State or Federal court. Each of the parties hereto hereby irrevocably waives, to the fullest extent permitted by law, the defense of an inconvenient forum to the maintenance of such action or proceeding in any such court.

(c) Each party to this Agreement irrevocably consents to service of process in the manner provided for notices in Section 6.03. Nothing in this Agreement will affect the right of any party to this Agreement to serve process in any other manner permitted by law.

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SECTION 6.14. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall constitute an original, but all of which, when taken together shall constitute but one instrument, and shall become effective as provided in Section 6.09.

SECTION 6.15. Headings. Article and Section headings used herein are for convenience of reference only, are not part of this Agreement and are not to affect the construction of, or to be taken into consideration in interpreting, this Agreement.

SECTION 6.16. Additional Grantors. Pursuant to Section 5.11 of the Credit Agreement, each Domestic Subsidiary that was not in existence or not a Domestic Subsidiary on the date thereof is required to enter into this Agreement as a Grantor upon becoming a Domestic Subsidiary. Upon execution and delivery, after the date hereof, by the Collateral Agent and a Domestic Subsidiary of an instrument in the form of Annex 1, such Domestic Subsidiary shall become a Grantor hereunder with the same force and effect as if originally named as a Grantor hereunder. The execution and delivery of any such instrument shall not require the consent of any Grantor hereunder. The rights and obligations of each Grantor hereunder shall remain in full force and effect notwithstanding the addition of any new Grantor as a party to this Agreement.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

WESTINGHOUSE AIR BRAKE COMPANY,

by

A. Garcia-Tunon
Name: ALVARO GARCIA-TUNON
Title: VICE PRESIDENT

RFI PROPERTIES, INC.

by

A. Garcia-Tunon
Name: Alvaro Garcia-Tunon
Title: V.P.

VAPOR CORPORATION,

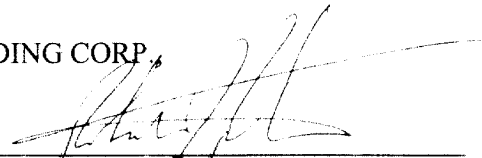
by

A. Garcia-Tunon
Name: Alvaro Garcia-Tunon
Title: V.P.

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RFPC HOLDING CORP.

by



Name: Robert Brooks
Title:

RAILROAD FRICTION PRODUCTS CORPORATION,

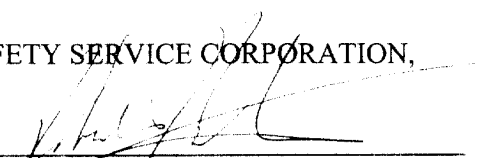
by



Name: Robert Brooks
Title: Treasurer

STONE SAFETY SERVICE CORPORATION,

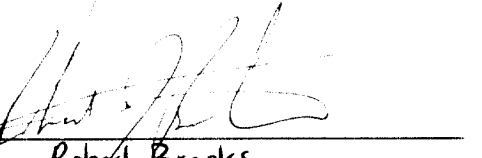
by



Name: Robert Brooks
Title:

TFL, INC.,

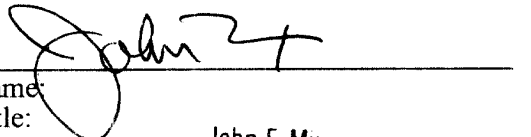
by



Name: Robert Brooks
Title:

THE CHASE MANHATTAN BANK, as Collateral Agent,

by



Name:
Title: John F. Mix
Vice President

PATENT

REEL: 9423 FRAME: 0376

Schedule I

See attached list of patents owned by WABCO and its subsidiaries.

Case Number	Country	Stat	Patent Number	Issue Date	Client	Long Title	Long Title
22	SOFRC	ISSUED	85/3069	01/29/86	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY / PARKING BRAKE	
POR-29	AUSAL	ISSUED	594,323	02/21/86	VAPR	ELECTRODE CONFIGURATION FOR HIGH VOLTAGE	
10	TRANS	ISSUED	85/0012	02/28/86	NAFW	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL	
POR-29	UNIKN	ISSUED	2,172,480	02/28/86	VAPR	ELECTRODE CONFIGURATION FOR HIGH VOLTAGE	
89	TRANS	ISSUED	85/0011	02/28/86	PTDS	MANUALLY RELEASABLE PARKING BRAKE DEVICE	
34	VENDA	ISSUED	85/0034	02/28/86	PTDS	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR...ADJUSTER ARRANGEMENT	
24	UNIKN	ISSUED	2172678	03/19/86	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
47	NEWZL	ISSUED	215531	03/19/86	PTDS	FAIL-SAFE PULSE TRAIL PRESENCE DETECTOR	
14	USA	ISSUED	4,577,910	03/25/86	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
10	USA	ISSUED	4,577,870	03/25/86	NAFW	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING CAPABILITIES OF A SEAL	
34	TRANS	ISSUED	85/0040	04/11/86	PTDS	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR...ADJUSTER ARRANGEMENT	
59	USA	ISSUED	4,583,790	04/22/86	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
POR-29	CANAD	ISSUED	1,203,624	04/22/86	VAPR	METHOD FOR AUTOMATED ANALYSIS OF VEHICLE PERFORMANCE	
POR-29	USA	ISSUED	4,583,466	04/22/86	VAPR	STEP LIFT FOR RAILWAY CARS	
104	VENDA	ISSUED	85/0052	04/25/86	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION	
72	SOFRC	ISSUED	85/6755	04/30/86	CARD	DRAFT GEAR ASSEMBLY	
48	USA	ISSUED	4,586,755	05/06/86	LPDW	RAILWAY BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRK PRESS. DURING COMB. INDEP. AND AUTOMAT	
34	VENDA	ISSUED	85/0035	05/30/86	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
13	USA	ISSUED	4,592,217	06/03/86	PULS	MARKER ATTACHMENT FOR RAILROAD EQUIPMENT	

PATENT REEL: 9423 FRAME: 0378

7135	AUSAL	ISSUED	549521	06/10/86	NAFW	IMPROVEMENTS IN COMBINED AIR RESERVOIR/B RAKE CYLINDER DEVIC	E
8148	BOPHU	ISSUED	84/0132	06/20/86	PTDS	SOLENOID-OPERATED VALVE	
8103	CANAD	ISSUED	1206561	06/24/86	PTDS	VIGILANCE SAFETY CONTROL SYSTEM	
8179	TRANS	ISSUED	84/0118	07/04/86	NAFW	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8276	USA	ISSUED	4598953	07/08/86	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
PULSE-2	USA	ISSUED	4,599,723	07/08/86	PULS	METHOD OF ENCODING DATA FOR SERIAL TRANSMISSION	
8224	SOFRC	ISSUED	85/8592	07/30/86	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8104	SOFRC	ISSUED	85/4720	07/30/86	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED	RELEASE OPERATION
8178	SOFRC	ISSUED	85/8722	07/30/86	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8222	VENDA	ISSUED	85/0033	08/01/86	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRIN G-APPLIED EMERGENCY	/PARKING BRAKE
8101	CANAD	ISSUED	1209059	08/05/86	WLTD	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8259	SOFRC	ISSUED	85/9407	08/27/86	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8269	UNIKN	ISSUED	2180319	08/28/86	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
VAPER-30	USA	ISSUED	4,611,104	09/09/86	VAPR	ELECTROMECHANICAL SWITCH ACTUATOR HAVING HIGH SECURITY KEY	ACTUATOR
8268	FRANC	ISSUED	8612759	09/12/86	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8359	USA	ISSUED	4,613,016	09/23/86	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8104	TRANS	ISSUED	85/0060	09/26/86	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED	RELEASE OPERATION
7062	CANAD	ISSUED	1212402	10/07/86	PTDS	ADJUSTABLE VARIABLE LOAD CONTROL VALVE D EVICE	
8189	BOPHU	ISSUED	85/0015	10/14/86	PTDS	MANUALLY RELEASABLE PARKING BRAKE DEVICE	
8264	VENDA	ISSUED	85/0109	10/17/86	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRA
8269	SOFRC	ISSUED	85/9835	10/29/86	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRA
8299	UNIKN	ISSUED	2182742	10/30/86	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA

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 842 FRAME 3039

8259	VENDA	ISSUED	85/0108	10/31/86	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM
8247	VENDA	ISSUED	86/0013	10/31/86	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8319	USA	ISSUED	4620567	11/04/86	PTDS	SOLENOID OPERATED VALVE
7144	CANAD	ISSUED	1213634	11/04/86	NAFW	CONTROL VALVE ARRANGEMENT FOR COMBINED BRAKE CYLINDER AND AIR RESERVOIR DEVICE
8117	CANAD	ISSUED	1213633	11/04/86	PTDS	VIGILANCE SAFETY CONTROL SYSTEM
8292	USA	ISSUED	4,624,506	11/25/86	PTDS	COMPOUND ELECTROPNEUMATIC BRAKE CONTROL SYSTEM
8247	SOFRC	ISSUED	86/1248	11/26/86	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8285	SOFRC	ISSUED	86/1651	11/26/86	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8138	PCT	ISSUED	50573	12/03/86	WFRB	BRAKE CYLINDER WITH TWO PISTONS
VAPOR-31	USA	ISSUED	4,627,242	12/09/86	VAPR	THERMOELECTRIC COOLER
8179	BOPHU	ISSUED	84/0181	12/11/86	NAFW	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE
8269	BOPHU	ISSUED	85/0183	12/11/86	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRAKE
8274	BOPHU	ISSUED	85/0057	12/11/86	LPDW	QUICK RELEASE VALVE ARRANGEMENT
8222	BOPHU	ISSUED	85/0056	12/11/86	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY RELEASE OPERATION
8104	BOPHU	ISSUED	85/0091	12/11/86	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION
7122	JAPAN	ISSUED	1351664	12/11/86	PTDS	HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
VAPOR-12	USA	ISSUED	4,628,835	12/16/86	VAPR	WASTE FLUID INCINERATOR HAVING HEAT RECOVERY MEANS
8261	USA	ISSUED	4631514	12/23/86	PTDS	MAJUNCTION DETECTION ARRANGEMENT FOR JERK CONTROLLED BRAKE COMMAND SYSTEM
8178	VENDA	ISSUED	85/0093	12/23/86	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON
PULSE-11	USA	ISSUED	4,638,237	01/20/87	PULS	BATTERY CONDITION INDICATOR
8290	USA	ISSUED	4639047	01/27/87	PTDS	Rail Vehicle Brake System w/Improved Blending Control of Pneumatic & Elec. Brakes
6986	JAPAN	ISSUED	1364209	02/09/87	NAFW	VARIABLE LOAD VALVE DEVICE
8272	USA	ISSUED	4,645,187	02/24/87	CARD	DRAFT GEAR ASSEMBLY

WELLS 443 PATENT FRAME 080

8276	SOFR	ISSUED	86/4519	02/25/87	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RHY TRANSIT VEHICLE
8182	USA	ISSUED	4,647,024	03/03/87	CARD	FRICTIONAL SHOCK-ABSORBING METHOD AND APPARATUS
8269	TRANS	ISSUED	85/0120	03/13/87	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
8222	TRANS	ISSUED	85/0041	03/13/87	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRIN G-APPLIED EMERGENCY
8214	TRANS	ISSUED	85/0037	03/13/87	LPDW	QUICK RELEASE VALVE ARRANGEMENT
8261	USA	ISSUED	4,649,805	03/17/87	PTDS	VEHICLE BRAKE APPLICATION APPARATUS
8370	USA	ISSUED	4,651,071	03/17/87	NABC	BRAKE CONTROL SYSTEM FOR SUPPLEMENTING E LECTRIC BRAKE WITH
8148	CANAD	ISSUED	1219513	03/24/87	PTDS	SOLENOID-OPERATED VALVE
8243	SOFR	ISSUED	86/6027	03/25/87	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING
8307	SOFR	ISSUED	86/5988	03/25/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
PULSE-14	USA	ISSUED	4,654,629	03/31/87	PULS	VEHICLE MARKER LIGHT
VAPOR-33	USA	ISSUED	4,653,227	03/31/87	VAPR	DOOR OPERATING ASSEMBLY
VAPOR-10	CANAD	ISSUED	1,220,089	04/07/87	VAPR	STEP LIFT FOR RAILWAY CARS
8176	USA	ISSUED	4,657,230	04/14/87	CARD	OVERTRAVEL SPRING ASSEMBLY FOR SLACK ADJUSTER
8289	USA	ISSUED	4659149	04/21/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE
8299	SOFR	ISSUED	86/6140	04/29/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE
8259	TRANS	ISSUED	85/0114	05/01/87	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM
8188	TRANS	ISSUED	85/0106	05/01/87	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON
8247	TRANS	ISSUED	86/0012	05/01/87	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8284	USA	ISSUED	4,662,485	05/05/87	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER
8307	VENDA	ISSUED	86/0054	05/29/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
8276	VENDA	ISSUED	86/0048	05/29/87	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RHY TRANSIT VEHICLE

PATENT
 REEVE & CO. INC.
 42 N. FRANKLIN ST.
 CHICAGO, ILL. 60611

6963	JAPAN	ISSUED	1381770	06/09/87	PTDS	ADJUSTABLE VARIABLE LOAD VALVE DEVICE
8361	USA	ISSUED	4671576	06/09/87	PTDS	DECELERATION CONTROL SYSTEM
8190	BOPHU	ISSUED	84/0081	06/11/87	NAFW	EMPTY/LOAD BRAKE CONTROL ARRANGEMENT
8243	USA	ISSUED	4,674,729	06/23/87	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING
8220	NEWZL	ISSUED	213583	06/24/87	LPDW	PISTON ASSEMBLY
8253	USA	ISSUED	4676346	06/30/87	PTDS	BRAKE SLACK ADJUSTING APPARATUS
8247	BOPHU	ISSUED	86/0020	07/03/87	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8362	USA	ISSUED	4678241	07/07/87	PTDS	EQUALIZER DISCHARGE VALVE FOR A RAILROAD CAR AIR BRAKE SYSTEM
8369	USA	ISSUED	4679863	07/14/87	NABC	EMERGENCY BRAKE COMMAND READ-CONVERT DEVICE...CARS WITH ELECTRIC BRAKE CONTROL
8299	VENDA	ISSUED	86/0056	07/24/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR
8190	CANAD	ISSUED	1225112	08/04/87	NAFW	EMPTY/LOAD BRAKE CONTROL ARRANGEMENT
8247	USA	ISSUED	4685052	08/04/87	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8295	USA	ISSUED	4,683,991	08/04/87	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8290	USA	ISSUED	4685750	08/11/87	PTDS	RWY VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF PNEUMATIC & ELEC. BRAKES
6829	USA	ISSUED	4,690,463	09/01/87	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION
8397	USA	ISSUED	4696626	09/29/87	PTDS	RAILROAD CAR AIR COMPRESSOR UNIT
8299	TRANS	ISSUED	86/0064	10/12/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR
8296	TRANS	ISSUED	86/0052	10/12/87	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RWY TRANSIT VEHICLE
8307	TRANS	ISSUED	86/0061	10/12/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
8299	USA	ISSUED	4,704,870	11/10/87	VAPR	THERMOELECTRIC COOLER
8409	USA	ISSUED	4706791	11/17/87	USSD	IRREVERSIBLE FREE WHEELING CLUTCH
8234	BOPHU	ISSUED	85/0055	11/19/87	PTDS	COMBINED HYDROPNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR...ADJUSTABLE ARRANGEMENT
8299	BOPHU	ISSUED	86/0100	11/19/87	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR

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8307	BOPHU	ISSUED	86/0094	11/19/87	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8276	BOPHU	ISSUED	86/0078	11/19/87	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RWY TRANSIT VEHICLE	
6829	SOFRC	ISSUED	87/2764	11/25/87	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8343	SOFRC	ISSUED	87/1941	12/30/87	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8394	USA	ISSUED	4721515	01/26/88	LPDW	CONTROL SYSTEM OF A DUAL CYLINDER TYPE D EHUMIDIFIER	
8116	CANAD	ISSUED	1232523	02/09/88	PTDS	METHOD OF BONDING A LAMINATED ASSEMBLY	
8285	ITALY	ISSUED	1191280	02/24/88	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA	NISM
6829	VENDA	ISSUED	87/0038	02/26/88	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8110	BOPHU	ISSUED	85/0016	03/01/88	NAFW	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8259	BOPHU	ISSUED	85/0179	03/01/88	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8276	NEWZL	ISSUED	216538	03/04/88	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RWY TRANSIT VEHICLE	
8343	BOPHU	ISSUED	87/0040	03/14/88	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8343	USA	ISSUED	4,733,602	03/29/88	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8276	CANAD	ISSUED	1234849	04/05/88	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
8307	NEWZL	ISSUED	217149	04/18/88	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8394	SOFRC	ISSUED	87/6327	04/27/88	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
8394	USA	ISSUED	4,744,609	05/17/88	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
8168	CANAD	ISSUED	1237680	06/07/88	PTDS	MANUALLY RELEASABLE PARKING BRAKE DEVICE	
8179	CANAD	ISSUED	1237749	06/07/88	NAFW	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8394	USA	ISSUED	4,750,787	06/14/88	LPDW	RELAY VALVE FOR AN AIR BRAKE SYSTEM	
8361	UNIKN	ISSUED	2172355	06/15/88	PTDS	DECELERATION CONTROL SYSTEM	
8150	CANAD	ISSUED	1238889	07/05/88	NAFW	SPRING LOCKING HANDLE MECHANISM	

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8431	USA	ISSUED	4755692	07/05/88	USSD	VITAL SAFETY MONITORING CIRCUIT
8428	USA	ISSUED	4,756,669	07/12/88	PTDS	AIR COMPRESSOR CONTROL APPARATUS AND MET HOD
8178	BOPHU	ISSUED	85/0160	07/14/88	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON
8446	USA	ISSUED	4,758,254	07/19/88	PTDS	MOISTURE REMOVAL APPARATUS
8410	SOFRC	ISSUED	87/9026	07/27/88	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY
8368	USA	ISSUED	4,763,261	08/09/88	PTDS	WHEEL-SPEED DETECTING ARRANGEMENT
8445	USA	ISSUED	4,765,806	08/23/88	PTDS	CONTROL METHOD FOR DUAL CYLINDER MOISTURE REMOVAL APPARATUS
8396	VENDA	ISSUED	87/0086	08/26/88	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE & GRADUATING VALV ARRANGED PROVID
8389	USA	ISSUED	4,770,472	09/13/88	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8374	USA	ISSUED	4,771,868	09/20/88	NAFW	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RWY CAR BRAKE ASSEMBLY
8104	CANAD	ISSUED	1242232	09/20/88	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION
8426	USA	ISSUED	4,773,447	09/27/88	PTDS	ELECTROMAGNETIC VALVE
8455	USA	ISSUED	4,776,642	10/11/88	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION
8389	SOFRC	ISSUED	88/1846	10/26/88	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8454	USA	ISSUED	4,783,124	11/08/88	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION
8348	JAPAN	ISSUED	1466862	11/10/88	PTDS	SOLENOID-OPERATED VALVE
8348	USA	ISSUED	4,785,197	11/15/88	PULS	TILT SWITCH
8348	CANAD	ISSUED	1,244,864	11/15/88	VAPR	ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
8329	USA	ISSUED	4,784,585	11/15/88	PTDS	ELECTRIC AIR COMPRESSOR
8385	UNIKN	ISSUED	2172351	11/16/88	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8415	USA	ISSUED	4,786,117	11/22/88	NAFW	VARIABLE LOAD VALVE
8247	AUSAL	ISSUED	576066	12/06/88	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8465	USA	ISSUED	4,790,415	12/13/88	PTDS	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE

PATENT
 REEL 9433
 FRAME 29

8224	CANAD	ISSUED	1246467	12/13/88	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8234	CANAD	ISSUED	1246641	12/13/88	WLTD	COMBINED HYDROPNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR ..ADJU	STER ARRANGEMENT
8276	UNIKN	ISSUED	2176857	12/14/88	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8410	USA	ISSUED	4,793,446	12/27/88	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSE MBLV	
8452	USA	ISSUED	4,793,720	12/27/88	CARD	RAILWAY CAR RESILIENT SIDE BEARING	
8430	USA	ISSUED	4,795,902	01/03/89	PTDS	OPTICAL MASTER CONTROLLER	
8396	BOPHU	ISSUED	87/0147	01/09/89	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION							
8400	USA	ISSUED	4,796,513	01/10/89	PTDS	SPRING BRAKE CYLINDER	
8440	USA	ISSUED	4,799,740	01/24/89	PTDS	ELECTROPNEUMATIC MASTER CONTROLLER FOR A N AIR BRAKE SYSTEM	
8460	USA	ISSUED	4,802,559	02/07/89	PTDS	HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8343	VENDA	ISSUED	87/0029	02/09/89	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8343	TRANS	ISSUED	87/0029	02/09/89	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE	
8396	TRANS	ISSUED	87/0086	02/09/89	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION							
8285	AUSAL	ISSUED	577930	02/22/89	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA	NISM
8405	SOFRC	ISSUED	88/4948	02/22/89	NAFW	VARIABLE LOAD VALVE	
8024	ITALY	ISSUED	1203729	02/23/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8403	USA	ISSUED	4,809,419	03/07/89	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8407	USA	ISSUED	4,811,651	03/14/89	PTDS	SPRING BRAKE CYLINDER	
8447	USA	ISSUED	4,812,148	03/14/89	PTDS	ARRANGEMENT FOR CONTROLLING REMOVAL . MO ISTURE .CYLINDER TY	PE MOLLISTURE REMOVER
8401	SOFRC	ISSUED	88/5228	03/29/89	NAFW	TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICL TRUCK-MOUNTED BRAKE	ASSEMBLY
8437	USA	ISSUED	4,819,123	04/04/89	PTDS	COMPRESSED AIR SUPPLY SYSTEM	
VAPOR-26	CANAD	ISSUED	1,252,351	04/11/89	VAPR	DOOR SEAL	

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PULSE-4	ISSUED	4,847,770	07/11/89	PULS	INITIAL TERMINAL TESTER	SERVICE FUNCTION
8178	ISSUED	1257579	07/18/89	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8454	ISSUED	88/8255	07/25/89	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8468	ISSUED	4,850,654	07/25/89	NAFW	FREIGHT BRAKE EMERGENCY VALVE	
8451	ISSUED	88/8296	07/26/89	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	ISSUED	88/8290	07/26/89	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SE	SERVICE FUNCTION
6829	ISSUED	239228	07/31/89	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
6829	ISSUED	87/0040	08/03/89	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8299	ISSUED	587295	08/10/89	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA
8224	ISSUED	583072	08/11/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8259	ISSUED	85109613.1	08/23/89	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
PULSE-30	ISSUED	4,862,433	08/29/89	PULS	TIMER CIRCUIT FOR DRAG OPERATION IN AN ENGINEMAN	MONITORING DEVICE
8458	ISSUED	4865278	09/12/89	PTDS	CONTROL COMMAND SYSTEM FOR RAILWAY VEHIC LES	
8453	ISSUED	1259343	09/12/89	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8452	ISSUED	4866938	09/19/89	CLDW	CYLINDER SEALING (CONT. OF 8342)	
8445	ISSUED	88/0067	09/21/89	NAFW	VARIABLE LOAD VALVE	
8449	ISSUED	1260515	09/26/89	WLTD	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRA
8447	ISSUED	4875742	10/24/89	CLDW	SOLENOID OPERATED HYD. CTRL. VAL.	
8351	ISSUED	4,875,739	10/24/89	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8433	ISSUED	89/0026	10/25/89	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8415	ISSUED	88/0064	11/16/89	NAFW	VARIABLE LOAD VALVE	
8224	ISSUED	8602246	11/17/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	

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8224	BRAZL	ISSUED	P18505798	11/28/89	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8272	BRAZL	ISSUED	P18504464	11/28/89	CARD	DRAFT GEAR ASSEMBLY	
VAPOR-35	USA	ISSUED	4,882,876	11/28/89	VAPR	DOOR OPERATOR WITH LOCKING MECHANISM	
8507	USA	ISSUED	4,883,089	11/28/89	PTDS	RAILWAY CAR PRESSURE CONTROL VALVES	
6829	UNIKN	ISSUED	2189299	11/29/89	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
PULSE-18	USA	ISSUED	4,885,689	12/05/89	PULS	MULTILINGUAL CODE RECEIVER	
PULSE-15	USA	ISSUED	305,122	12/19/89	PULS	FRONT PANEL FOR DATA RECORDER	
8506	USA	ISSUED	4,887,516	12/19/89	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8454	VENDA	ISSUED	88/0110	01/08/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8451	VENDA	ISSUED	88/0108	01/19/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	VENDA	ISSUED	88/0109	01/19/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SE	RVICE FUNCTION
8383	SOFRC	ISSUED	89/3654	01/31/90	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
VAPOR-33	CANAD	ISSUED	1,265,387	02/06/90	VAPR	DOOR OPERATING ASSEMBLY	
8243	AUSAL	ISSUED	589439	02/08/90	CARD	FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
VAPOR-34	CANAD	ISSUED	1,266,093	02/20/90	VAPR	THERMOELECTRIC COOLER	
VAPOR-36	USA	ISSUED	4,901,474	02/20/90	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK	
8457	USA	ISSUED	4,901,953	02/20/90	PTDS	CONTROLLER FOR RAILWAY VEHICLES	
8451	TRANS	ISSUED	88/0117	02/22/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8489	USA	ISSUED	4,904,027	02/27/90	REPD	DIGITAL AIR BRAKE CONTROL SYSTEM	
8505	USA	ISSUED	4,911,615	03/27/90	CLDW	HYDRAULIC PUMP UNLOADER	
8470	USA	ISSUED	4,915,018	04/10/90	NAFW	IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8433	USA	ISSUED	4,916,794	04/17/90	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8451	BOPRU	ISSUED	88/0184	05/01/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION

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NO.	ISSUED	NO.	DATE	CLASS	DESCRIPTION	FUNCTION
8454	ISSUED	88/0182	05/01/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	ISSUED	88/0183	05/01/90	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SE	RVICE FUNCTION
8453	ISSUED	89/5980	05/30/90	NAFW	FREIGHT BRAKE EMERGENCY VALVE	
8307	ISSUED	1270211	06/12/90	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8383	ISSUED	4941099	07/10/90	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
PULSE-20	ISSUED	4,940,292	07/10/90	PULS	RAPID RELEASE VALVE MECHANISM	
8361	ISSUED	1271972	07/24/90	PTDS	DECELERATION CONTROL SYSTEM	
8489	ISSUED	89/7261	07/25/90	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8502	ISSUED	4,944,964	07/31/90	REPD	BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8509	ISSUED	4,949,754	08/21/90	PTDS	PRESSURE CONTROL VALVE FOR RAILWAY VEHIC LES	
8300	ISSUED	4,951,554	08/28/90	NAFW	LOW STRESS DIAPHRAGM	
8550	ISSUED	4,951,516	08/28/90	PTDS	FORCE MULTIPLICATION MECHANISM	
6899	ISSUED	87/0058	09/05/90	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
PULSE-29	ISSUED	310,510	09/11/90	PULS	DEFAULT CONTROLLER FOR RAILWAY VEHICLES	
8488	ISSUED	4,957,208	09/18/90	PTDS	MULT-CONTACT ELECTRICAL CONNECTOR PORTION FOR AUTO RY CPLR	
8396	ISSUED	597,103	09/18/90	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION	ISSUED	4957193	09/18/90	PTDS	ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE	
8236	ISSUED	1,275,136	10/09/90	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RY TRANSIT VEHICLE	
7001	ISSUED	1582983	10/22/90	NAFW	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8351	ISSUED	90/0338	10/31/90	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
6522	ISSUED	1,276,211	11/13/90	NAFW	EMPTY-LOAD CHANGEOVER APPARATUS	
8389	ISSUED	600,104	11/20/90	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION

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8510	USA	ISSUED	4972145	11/20/90	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE	AXLE RAIL VEHICLES
8566	USA	ISSUED	4971399	11/20/90	LPDW	SYSTEM FOR ASSURING RECHARGE OF BRAKE PIPE	PRESSURE...LOCOMOTIVE BRAKE VALV
VAPOR-36	TAIWN	ISSUED	42,921	12/01/90	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND	LOCK
8410	AUSAL	ISSUED	600,538	12/03/90	MAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSE MBLV	
8535	USA	ISSUED	4,974,910	12/04/90	MAFW	FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE	FUNCTION
6961	USA	ISSUED	4,974,911	12/04/90	MAFW	VENT VALVE DEVICE	
8539	USA	ISSUED	4979391	12/25/90	PTDS	TRANSDUCDR OPERATIONAL FAULT DETERMINATION SYSTEM	
8531	USA	ISSUED	4,986,500	01/22/91	LPDW	ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES	
8427	USA	ISSUED	4987543	01/22/91	PTDS	WHEEL SPIN CONTROL SYSTEM	
8427	SOFRC	ISSUED	90/1322	01/30/91	PTDS	WHEEL SPIN CONTROL SYSTEM	
8552	USA	ISSUED	4993521	02/19/91	PTDS	IMPROVED TREAD BRAKE UNIT	
8488	SOFRC	ISSUED	90/3253	02/27/91	PTDS	MULT..CONTACT ELECTRICAL CONNECTOR PORTION FOR AUTO RMY CPLR	
8500	SOFRC	ISSUED	90/3254	02/27/91	LPDW	BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8531	SOFRC	ISSUED	90/3201	02/27/91	LPDW	ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES	
8510	SOFRC	ISSUED	90/3199	02/27/91	LPDW	BRAKE ASSURANCE CIRCUIT OPERATIVE IN RES PONSE TO A LOW BRAK	E PIPE PRESSURE
PULSE-9	USA	ISSUED	315,114	03/05/91	PULS	END OF TRAIN MARKER LIGHT	
8504	USA	ISSUED	4999779	03/12/91	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8508	SOFRC	ISSUED	90/3961	03/27/91	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
6951	SOFRC	ISSUED	90/3963	03/27/91	MAFW	VENT VALVE DEVICE	
8532	USA	ISSUED	5,005,915	04/09/91	MAFW	EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8299	CANAD	ISSUED	1283148	04/16/91	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CA
6829	CANAD	ISSUED	1283149	04/16/91	MAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8427	TAIWN	ISSUED	NI-44301	05/15/91	PTDS	WHEEL SPIN CONTROL SYSTEM	

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NO.	COUNTRY	ISSUED	NO.	DATE	CLASS	DESCRIPTION	FUNCTION
8383	TAIWAN	ISSUED	44299	05/15/91	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
PULSE-22	USA	ISSUED	5,016,840	05/21/91	PULS	METHOD TO AUTHORIZE H.O.T. UNIT TO TRANSMIT EMERGENCY	COMMONS TO ASSOC. REAR UNIT
6973	JAPAN	ISSUED	UM1854566	06/10/91	PTDS	FOUR-WAY BALL VALVE	
8433	UNITED KINGDOM	ISSUED	2214267	07/03/91	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8592	USA	ISSUED	5031731	07/16/91	PTDS	BRAKE ACTUATOR WITH SLACK ADJUSTER DISABLING MECHANISM	
8390	USA	ISSUED	5035582	07/30/91	PTDS	ELECTRO PNEUMATIC GOVERNOR FOR A COMPRESSED AIR SYSTEM	
8588	USA	ISSUED	5,036,468	07/30/91	LPDW	ARRANGEMENT FOR READING AN ABSOLUTE POSITION ENCODER ... POSITION OF BRAKE HANDLE	
8504	SOVIET FEDERATION	ISSUED	90/7232	07/31/91	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8523	USA	ISSUED	D319039	08/13/91	LPDW	LOCOMOTIVE BRAKE CONSOLE	
8611	USA	ISSUED	5,042,393	08/27/91	CARD	LOCKING ASSEMBLY TO SECURE BEARING ASSEMBLY ... PAIR OF RAILWAY CARS	
8522	USA	ISSUED	D319423	08/27/91	LPDW	LOCOMOTIVE BRAKE CONSOLE	
8630	USA	ISSUED	5,044,698	09/03/91	NAFW	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION	
8606	USA	ISSUED	5046921	09/10/91	PTDS	MOISTURE REMOVAL DEVICE FOR A COMPRESSED AIR SYSTEM	
8528	USA	ISSUED	5,058,712	10/22/91	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE ASSEMBLY	
8484	TRANSFORMER	ISSUED	88/0120	10/29/91	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	
8582	USA	ISSUED	5,064,251	11/12/91	LPDW	ELECTROPNEUMATIC AIR BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES	
8608	USA	ISSUED	5,065,679	11/19/91	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RY CARS TOGETHER IN A	
8616	USA	ISSUED	5,069,312	12/03/91	NAFW	HANDBRAKE FOR SINGLE-CYLINDER TRUCK-MOUNTED RAILWAY CAR BRAKE	
8556	USA	ISSUED	5,071,198	12/10/91	NAFW	EMERGENCY VALVE FOR AIR BRAKE CONTROL VALVE DEVICE	
8633	USA	ISSUED	5,072,913	12/17/91	NAFW	SPRING LOADED LOCKING HANDLE FOR ANGLE COCK OR THE LIKE	
8383	ITALY	ISSUED	1231593	12/18/91	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8578	USA	ISSUED	5,076,401	12/31/91	PTDS	SPRING APPLIED HYDRAULICALLY RELEASED ... POSITIVE CLEARANCE SLACK ADJ. MECHANISM	

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8276	BRAZL	ISSUED	8603163	12/31/91	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE
8620	USA	ISSUED	5,080,243	01/14/92	CARD	ASSEMBLY MECHANISM FOR AN ARTICULATED COUPLING SYSTEM
8621	AUSAL	ISSUED	613668	01/17/92	NAFW	TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICL TRUCK-MOUNTED BRAKE ASSEMBLY
PULSE-31	USA	ISSUED	5,083,274	01/21/92	PULS	RAILROAD BRAKE PRESSURE RECORDING
8489	ITALY	ISSUED	1231980	01/22/92	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM
8433	AUSAL	ISSUED	613,138	01/28/92	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8652	USA	ISSUED	5,083,586	01/28/92	LPDW	MTG. ARRANGE FOR CONN.A FLUID PRESS.VAL TO A PIPE BRKT.BY A HOLLOW ADAPT.MEMBER
8178	JAPAN	ISSUED	1637432	01/31/92	NAFW	CLAMPING ARRANBEMENT FOR DIAPHRAGM TYPE PISTON
8638	USA	ISSUED	5,085,243	02/04/92	PTDS	HYDRAULIC ISOLATION VAL FOR RHY VEHICLE NOTE: ALSO A C.I.P. CASE
8587	USA	ISSUED	5,086,641	02/11/92	LPDW	ARRANGEMENT FOR DYNAMIC CALIBRATING AN ABSOLUTE POSITION ENCODER
8594	USA	ISSUED	5090780	02/25/92	PTDS	BINARY WEIGHTED DIGITAL FLOW REGULATING SYSTEM
8575	USA	ISSUED	5,092,204	03/03/92	CARD	APPAR.FOR ALIGNING SPHERICAL MEMBER DURING ASSEMBLY OF ARTICULATED CPLG SYSTEM
8571	USA	ISSUED	5,096,266	03/17/92	LPDW	DUAL-RESPONSE VENT VALVE DEVICE
8584	USA	ISSUED	5098169	03/24/92	PTDS	MAGNET VALVE SAFETY CHECK & FAULT INDICATOR INTEGRATOR
8181	JAPAN	ISSUED	1649364	03/30/92	PTDS	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
8609	USA	ISSUED	5,100,207	03/31/92	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR
8622	USA	ISSUED	5,104,203	04/14/92	LPDW	ARRNGMT FOR EMULATING A J-TYPE RELAY AIR VALVE USABLE IN A RMY BRAKING SYSTEM
8627	USA	ISSUED	5,106,270	04/21/92	LPDW	AIR-COOLED AIR COMPRESSOR
8593	USA	ISSUED	5,106,168	04/21/92	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR
8590	USA	ISSUED	5,105,955	04/21/92	CARD	SPHERICAL CONNECTOR APPARATUS IN AN ARTICULATED SLACKLESS-TYPE RMY APPLICATION
8396	CANAD	ISSUED	1300208	05/05/92	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE & GRADUATING VALV ARRANGED PROVID
8389	CANAD	ISSUED	1300209	05/05/92	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8446	CANAD	ISSUED	1300038	05/05/92	PTDS	MOISTURE REMOVAL APPARATUS

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8458	CANAD	ISSUED	1300723	05/12/92	PTDS	CONTROL COMMAND SYSTEM FOR RAILWAY VEHIC LES	
8440	CANAD	ISSUED	1300724	05/12/92	PTDS	ELECTROPNEUMATIC MASTER CONTROLLER FOR A N AIR BRAKE SYSTEM	
8259	JAPAN	ISSUED	UM1904780	05/13/92	NAFW	IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8661	USA	ISSUED	5,113,694	05/19/92	NAFW	MODIFIED PRESS. REGULATOR VAL FOR SINGLE CAR TESTING DEVICE	
8410	CANAD	ISSUED	1301079	05/19/92	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSE MBL	CAR BRAKE ASSEMBLY
8374	CANAD	ISSUED	1301078	05/19/92	NAFW	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RWY	MEMBER
8627	USA	ISSUED	5,115,927	05/26/92	CARD	STRENGTHENING MECHANISM FOR A FEMALE ARTICULATED COUPLING	CAPABILITIES OF A SEAL
8110	JAPAN	ISSUED	1909081	05/26/92	NAFW	AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	ARRANGEMENT FUNCTION
8383	AUSAL	ISSUED	617457	05/28/92	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	DEVICE
8607	USA	ISSUED	5,118,166	06/02/92	NAFW	QUICK SER. FUNCTION FOR RWY. FREIGHT BRAKE CONTROL VALVE	
PULSE-1	USA	ISSUED	5,117,866	06/02/92	PULS	AIR FLOW REGULATOR FOR FUEL MEASURING SYSTEMS	
8549	USA	ISSUED	5124988	06/23/92	PTDS	DUMP VALVE OPERATIONAL FAULT DETERMINATI ON SYSTEM	
7092	JAPAN	ISSUED	1675356	06/26/92	PTDS	ADJUSTABLE VARIABLE LOAD CONTROL VALVE D EVICE	
8374	BRAZL	ISSUED	8706703-0	06/30/92	NAFW	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RWY	CAR BRAKE ASSEMBLY
8621	USA	ISSUED	5,125,722	06/30/92	PTDS	LOAD COMPENSATION CONTROL VALVE	
8646	USA	ISSUED	5,127,283	07/07/92	CARD	HAND BRAKE MECCHANISM FOR RAILWAY CARS	
8177	JAPAN	ISSUED	1680618	07/13/92	PTDS	VIGILANCE SAFETY CONTROL SYSTEM	
8190	JAPAN	ISSUED	1679851	07/13/92	NAFW	EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
VAPOR-37	USA	ISSUED	5,130,503	07/14/92	VAPR	PRESSURE WAVE SWITCH HAVING IMPROVED CONTACT STRUCTURE AND	PRESSURE EQUALIZATION
8605	USA	ISSUED	5,129,145	07/14/92	LPDW	VALVE RECONDITIONING PROCESS	
8383	UNTKN	ISSUED	2218763	07/15/92	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8609	USA	ISSUED	5,131,331	07/21/92	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RAILWAY CARS

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8521	USA	ISSUED	5,131,612	07/21/92	LPDW	ARRANGEMENT FOR POSITIVELY DETERMINING ACTUAL SOUNDING OF WARNING HORN ON RAIL VEHICLE
8632	USA	ISSUED	5,131,667	07/21/92	NAFW	HOSE COUPLING GASKET
8276	JAPAN	ISSUED	1919239	07/22/92	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE
8415	CANAD	ISSUED	1305740	07/28/92	NAFW	VARIABLE LOAD VALVE
8269	JAPAN	ISSUED	1688343	08/11/92	PTDS	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
8189	JAPAN	ISSUED	1688332	08/11/92	PTDS	MANUALLY RELEASABLE PARKING BRAKE DEVICE
8640	USA	ISSUED	5,139,159	08/18/92	CARD	CONNECTING PIN FOR ARTICULATED COUPLING ARRANGEMENT
8489	AUSAL	ISSUED	620,442	08/20/92	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM
8596	USA	ISSUED	5,141,293	08/25/92	PTDS	HYDRAULIC ISOLATION VALVE FOR RAILWAY VEHICLE
8175	JAPAN	ISSUED	1691519	08/27/92	PTDS	PENALTY BRAKE APPLICATION NULLIFICATION- PREVENTION SYSTEM
6829	MEXIC	ISSUED	164579	09/03/92	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION
8674	USA	ISSUED	5,144,985	09/08/92	PTDS	VARIABLE LOAD VALVE FOR RAILWAY VEHICLES
8402	JAPAN	ISSUED	1307572	09/15/92	NABC	VITAL PRESSURE REGULATING SYSTEM FOR RAILROAD CARS
8675	USA	ISSUED	5,146,952	09/15/92	PTDS	FLUID PRESSURE CONTROL VALVE DEVICE FOR A RAILWAY CAR
8662	USA	ISSUED	5,146,939	09/15/92	LPDW	VALVE BUSHING CLEANING DEVICE & METHOD OF CLEANING VALVE BUSHINGS
8599	USA	ISSUED	5,148,631	09/22/92	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
8556	BRAZL	ISSUED	8801207	09/29/92	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8562	USA	ISSUED	5,152,410	10/06/92	PTDS	ELECTRO-PNEUMATIC COUPLER CONTROL SYS. . . UNCOUPLING OF RAILWAY VEHICLES
8693	USA	ISSUED	5,152,409	10/06/92	CARD	DRAFT GEAR ASSEMBLY
8282	JAPAN	ISSUED	1703083	10/14/92	WABD	RAILWAY VEHICLE PENALTY BRAKE CONTROL SYSTEM
8299	BRAZL	ISSUED	8605510	10/27/92	PTDS	CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE SYSTEM...POWER AND NON-POWER CAR
8276	JAPAN	ISSUED	1705205	10/27/92	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RAIL TRANSIT VEHICLE

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8276	JAPAN	ISSUED	1705205	10/27/92	PTDS	ELECTROPNEUMATIC BRK CONTROL SYS FOR RHW TRANSIT VEHICLE	
8415	BRAZL	ISSUED	8803450	11/24/92	NAFW	VARIABLE LOAD VALVE	
8659	USA	ISSUED	5,165,962	11/24/92	NAFW	MASKING FILM FOR COATING PROCESS	
PULSE-7	USA	ISSUED	5,166,610	11/24/92	PULS	DUAL RANGE SPEED INDICATOR WITH ACCELERATION DISPLAY	
8410	BRAZL	ISSUED	8706702-1	11/24/92	NAFW	SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSE MBL Y	
8214	JAPAN	ISSUED	1716111	11/27/92	LPDW	QUICK RELEASE VALVE ARRANGEMENT	
8576	USA	ISSUED	5,167,334	12/01/92	CARD	APPAR TO ENABLE VERSATILITY ATTACHING CPLR TO SEAL ON A RAILWAY CAR	
8641	USA	ISSUED	5,167,333	12/01/92	CARD	APPARATUS PREVENT DETRIMENTAL EXTRANEOUS FOREIGN MATTER ... ARTICULATED COUPLING	
8653	USA	ISSUED	5,170,818	12/15/92	PTDS	SAFETY VALVE	
8698	USA	ISSUED	5,172,819	12/22/92	CARD	BEARING ASSEMBLY FOR AN ARTICULATED COUPLING APPRARTUS WHICH CONNECTS ADJACENT ENDS OF A PAIR OF RHW CARS TOGETHER.	
8669	USA	ISSUED	5,172,820	12/22/92	CARD	IMPROVED FEMALE CONNECTION MEMBER USED I N AN ARTICULATED CO UPLING ARRANGEMENT	
8630	SOFRC	ISSUED	91/6850	12/30/92	NAFW	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION	
8592	SOFRC	ISSUED	91/1245A	12/30/92	NAFW	EMPTY LOAD CHANGEVER VALVE FOR RAILWAY CAR	
8559	SOFRC	ISSUED	91/1245	12/30/92	PTDS	TRANSDUCDR OPERATIONAL FAULT DETERMINATION SYSTEM	
8284	JAPAN	ISSUED	1725600	01/19/93	PTDS	COMBBINED HYDROPNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR...ADJU STER ARRANGEMENT	
8285	FRANC	ISSUED	2578932-B1	01/22/93	CARD	ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8551	AUSAL	ISSUED	627535	01/29/93	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8184	JAPAN	ISSUED	1729861	01/29/93	LPDW	CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION	
8224	JAPAN	ISSUED	1729859	01/29/93	LPDW	BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT	
8292	JAPAN	ISSUED	1729856	01/29/93	PTDS	FLUID PRESSURE BRAKE ACTUATOR WITH SPRIN G-APPLIED EMERGENCY /PARKING BRAKE	
8179	JAPAN	ISSUED	1729847	01/29/93	NAFW	IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8455	CANAD	ISSUED	1313392	02/02/93	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVIN G IMPROVED QUICK SE RVICE FUNCTION	

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NO.	COUNTRY	STATUS	NO.	DATE	AMOUNT	DESCRIPTION	SERVICE FUNCTION
8451	CANAD	ISSUED	1313390	02/02/93	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8454	CANAD	ISSUED	1313391	02/02/93	NAFW	FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8465	CANAD	ISSUED	1313353	02/02/93	PTDS	HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8427	AUSAL	ISSUED	627838	02/05/93	PTDS	WHEEL SPIN CONTROL SYSTEM	
PULSE-10	USA	ISSUED	5,185,700	02/09/93	PULS	SOLID STATE EVEN, RECORDER	
8445	CANAD	ISSUED	1313505	02/09/93	PTDS	CONTROL METHOD FOR DUAL CYLINDER MOISTUR E REMOVAL APPARATUS	
8396	JAPAN	ISSUED	1953405	02/12/93	NAFW	FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVID
E ACCELER BRK APPL FUNCTION							
8508	CANAD	ISSUED	1313686	02/16/93	PTDS	LOAD DEPENDENT VALVE FOR RAILWAY VEHICLES	
PULSE-25	USA	ISSUED	5,190,359	03/02/93	PULS	PRESSURE RELIEF VALVE FOR RAILWAY BRAKE EMERGENCY SYSTEMS	
8639	USA	ISSUED	5,192,118	03/09/93	LPDW	ELECTRO-PNEUMATIC LOCOMOTIVE BRAKE CONTROL SYSTEM	
8433	MEXIC	ISSUED	167,240	03/11/93	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
VAPOR-35	CANAD	ISSUED	1,315,812	04/06/93	VAPR	DOOR OPERATOR WITH LOCKING MECHANISM	
8182	JAPAN	ISSUED	1755824	04/23/93	PTDS	BRAKE ACTUATOR DEVICE HAVING A HYDRAULIC SLACK ADJUSTING ARR	ANGEMENT
8374	JAPAN	ISSUED	1755853	04/23/93	NAFW	HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RWY	CAR BRAKE ASSEMBLY
8462	CANAD	ISSUED	1316707	04/27/93	PTDS	MAGNETIC ROTATIONAL DETECTING ARRANGEMENT FOR SENSING SPEED	OF RAILWAY VEHICLE
8489	UNITKN	ISSUED	2224322	04/28/93	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8670	USA	ISSUED	5,207,482	05/04/93	NAFW	VENT VALVE DEVICE HAVING DISABLING MEANS	
8574	USA	ISSUED	5,209,551	05/11/93	PTDS	ANALOG SERVICE BRAKE RESPONSE ENHANCING CIRCUIT FOR RAILWAY	VEHICLES
8706	USA	ISSUED	5,211,451	05/18/93	LPDW	ADJUSTABLE REGULATING DEVICE FOR A RAILWAY LOCOMOTIVE	BRAKE VALVE APPARATUS
8564	USA	ISSUED	5,213,397	05/25/93	NAFW	FREIGHT BRAKE CONTROL VALVE FOR RAILWAY CAR.	
8678	USA	ISSUED	5,213,749	05/25/93	LPDW	A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT &	SEAL SO PRODUCED
8629	USA	ISSUED	5,219,082	06/15/93	CARD	A MALE CONNECTION MEMBER FOR AN ARTICULATED COUPLING	ARRANGEMENT
8550	CANAD	ISSUED	1,319,033	06/15/93	PTDS	FORCE MULTIPLICATION MECHANISM	

8682	USA	ISSUED	5,220,863	06/22/93	NAFW	CONICAL DIAPHRAGM AND METHOD OF MAKING	SYSTEM HAVING BRAKE ASSURANCE C
8644	USA	ISSUED	5,222,788	06/29/93	LPDW	MICROPROCESSOR BASED ELECTRO-PNEU. LOCOMOTIVE BRAKE CONTROL	
8643	USA	ISSUED	5,224,994	07/06/93	NAFW	APPARATUS & METHOD FOR LIQUID TREATMENT OF ARTICLE SURFACES	
8343	JAPAN	ISSUED	1771682	07/14/93	PTDS	HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE	
8600	USA	ISSUED	5,228,648	07/20/93	NAFW	RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8433	BRAZL	ISSUED	8900266	07/27/93	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
VAPOR-36	CANAD	ISSUED	1,321,219	08/10/93	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK	
PULSE-26	USA	ISSUED	5,235,849	08/17/93	PULS	RAILROAD COUPLER MOUNT	
8604	USA	ISSUED	5,244,171	09/14/93	PTDS	INTERSLIP SEQUENCE SPEED ALGORITHM	
6829	INDIA	ISSUED	169289	09/18/93	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE APPLICATION FUNCTION	
8696	USA	ISSUED	5,246,030	09/21/93	LPDW	SAFETY VALVE ARRANGEMENT	
8460	CANAD	ISSUED	1322567	09/28/93	PTDS	HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
8421	CANAD	ISSUED	1,322,729	10/05/93	NAFW	TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8453	CANAD	ISSUED	1,323,063	10/12/93	NAFW	FREIGHT BRAKE EMERGENCY VALVE	
8504	CANAD	ISSUED	1,323,062	10/12/93	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8427	FRANC	ISSUED	2644742-81	10/15/93	PTDS	WHEEL SPIN CONTROL SYSTEM	
8363	FRANC	ISSUED	89 06362	10/15/93	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION	
8433	USA	ISSUED	5,253,930	10/19/93	PTDS	AIR BRAKE CONTROL SYS. HAVING ELECTROMAGNETIC VALVE DEVICE WHICH HAS 2 SET POINTS FOR ESTABLISHING A LAP POSITION	
8433	CANAD	ISSUED	1,323,487	10/26/93	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8247	BRAZL	ISSUED	8600648-7	10/26/93	PTDS	FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
VAPOR-38	USA	ISSUED	5,259,342	11/09/93	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS FUELS (parent)	
8120	JAPAN	ISSUED	UM1994612	11/26/93	PTDS	DIFFERENTIAL FLUID PRESSURE SWITCH	

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8120	JAPAN	ISSUED	1994612	11/26/93	PTDS	DIFFERENTIAL FLUID PRESSURE SWITCH	
8470	CANAD	ISSUED	1,324,809	11/30/93	NAFW	IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8421-N	BRAZL	ISSUED	8803666	11/30/93	NAFW		
8551	CANAD	ISSUED	1,324,810	11/30/93	PTDS	ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE	
PULSE-23	USA	ISSUED	5,267,473	12/07/93	PULS	SELF POWERED END OF TRAIN UNIT	
8552	CANAD	ISSUED	1,324,964	12/07/93	PTDS	IMPROVED TREAD BRAKE UNIT	
8383	CANAD	ISSUED	1,325,054	12/07/93	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8504	AUSAL	ISSUED	639,480	12/13/93	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8424	CANAD	ISSUED	1,325,264	12/14/93	PTDS	BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8677	USA	ISSUED	5,269,595	12/14/93	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8510	AUSAL	ISSUED	637660	12/19/93	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8711	USA	ISSUED	5,271,511	12/21/93	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
8504	UNIKN	ISSUED	2,236,155	12/22/93	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8650	USA	ISSUED	5,277,323	01/11/94	CARD	LOCKING WEDGE ASSEMBLY...ARTICULATED TYPE CPLG ARRANGEMENT	
8630	AUSAL	ISSUED	641272	01/17/94	NAFW	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION	
8605	USA	ISSUED	5,280,718	01/25/94	PTDS	TRANSDUCER HEALTH AND OFFSET CALIBRATION PROCESSING SYSTEM	
VAPOR-39	USA	ISSUED	5,280,754	01/25/94	VAPR	TRANSIT CAR POWER DOOR OBSTRUCTION SENSING SYSTEM AND DEVICE	
8600	SOFRC	ISSUED	93/2917	01/26/94	NAFW	RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8433	AUSAL	ISSUED	641,287	02/01/94	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS	
8704	USA	ISSUED	5,286,096	02/15/94	REPD	ARRANGEMENT FOR ENHANCING THE BAIL-OFF FUNCTION OF BRAKE CYLINDER PRESSURES ON A RAILROAD	
8510	SOFRC	ISSUED	90/9952	02/23/94	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8618	USA	ISSUED	5,290,095	03/01/94	PTDS	WHEEL LOCK DETECTION ARRANGEMENT FOR MULTIPLE-AXLE RAILWAY VEHICLES	
PULSE-33	CANAD	ISSUED	1,327,714	03/15/94	PULS	FUEL MEASURING SYSTEM	

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 LOCOMOTIVE

8702	USA	ISSUED	5,293,777	03/15/94	NAFW	HINGED ASSEMBLY FOR AIR BRAKE VALVE TEST FIXTURE	
8427	ITALY	ISSUED	1242483	03/17/94	PTDS	WHEEL SPIN CONTROL SYSTEM	
8719	USA	ISSUED	5,297,856	03/29/94	PTDS	TWO SEPARATE HIGH SPEED AND LOW SPEED DISC BRAKE UNITS FOR RAILWAY VEHICLES	
8539	UNIKN	ISSUED	2242980	04/06/94	PTDS	TRANSDUCEDR OPERATIONAL FAULT DETERMINATION SYSTEM	
8678	USA	ISSUED	5,303,937	04/19/94	LPDW	A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT & SEAL SO PRODUCED	
8718	USA	ISSUED	5,303,987	04/19/94	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8510	UNIKN	ISSUED	2240848	04/20/94	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
PULSE-34	USA	ISSUED	5,309,315	05/03/94	PULS	COMPUTER CHASSIS CONSTRUCTION	
8489	FRANC	ISSUED	2645818	05/06/94	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
8602	USA	ISSUED	5,315,520	05/24/94	PTDS	FRICTION BRAKE INTERFACE HEALTH CHECK SYSTEM FOR MULTIPLE-AXLE RAILWAY VEHICLES	
8711	SOFRS	ISSUED	92/9009	06/29/94	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
8694	USA	ISSUED	5,326,159	07/05/94	NAFW	QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL VALVE DEVICE	
8725	USA	ISSUED	5,332,297	07/26/94	REPD	CHARGING CUT-OFF VALVE ARRANGEMENT FOR MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRA	
KE CONTROL SYSTEM	USA	ISSUED	5,332,279	07/26/94	VAPR	POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT VEHICLES (electric bus door ope	
VAPOR-40	USA	ISSUED	5,333,941	08/02/94	NAFW	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE	
8692	USA	ISSUED	5,333,574	08/02/94	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS FUELS (parent)	
8685	USA	ISSUED	5,339,930	08/23/94	CARD	CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	
8708	AUSAL	ISSUED	648,306	08/23/94	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RMY CARS TOGETHER IN A	
SEMPERMANENT MANNER	USA	ISSUED	5,340,203	08/23/94	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE	
8728	USA	ISSUED	5,341,598	08/30/94	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED LOCKS (RT10)	
VAPOR-41	USA	ISSUED	8904266-2	08/30/94	NAFW	CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8506	BRAZL	ISSUED	5,350,222	09/27/94	NAFW	AUXILIARY STABILIZER VALVE FOR VK VENT VALVE	

PATENT
 NO. 5,332,297
 VAPOR-38
 8685
 8708
 SEMPERMANENT MANNER

8489	AUSAL	ISSUED	649,535	10/18/94	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	CONTROL SYSTEM HAVING PNEUMATIC
8532	AUSAL	ISSUED	650862	10/25/94	NAFW	EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8351	BRAZL	ISSUED	9000169-9	10/25/94	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8701	USA	ISSUED	5,358,315	10/25/94	REPD	MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	
8539	AUSAL	ISSUED	650861	10/31/94	PTDS	TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	
8502	CANAD	ISSUED	2014423	11/01/94	LPDW	BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8351	CANAD	ISSUED	2,005,295	11/08/94	NAFW	INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
PULSE-8	USA	ISSUED	5,365,550	11/15/94	PULS	INITIAL SYNCHRONIZATION & TRACKING CIRCUITS FOR SPREAD	SPECTRUM RECEIVERS
8433	INDIA	ISSUED	172823	11/21/94	CARD	METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8625	SOFRC	ISSUED	93/2880	11/30/94	LPDW	AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8610	AUSAL	ISSUED	651820	12/06/94	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TO
PULSE-28	USA	ISSUED	5,374,015	12/20/94	PULS	RAILROAD TELEMETRY AND CONTROL SYSTEMS	
PULSE-24	USA	ISSUED	5,376,925	12/27/94	PULS	MOTION AND DIRECTION SENSORS	
8643	SOFRC	ISSUED	93/3107	12/28/94	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
PULSE-27	USA	ISSUED	5,377,938	01/03/95	PULS	RAILROAD TELEMETRY AND CONTROL SYSTEMS	
8704	CANAD	ISSUED	2,025,196	01/17/95	PTDS	AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8789	JAPAN	ISSUED	06-24924	01/23/95	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
PULSE-25	USA	ISSUED	5,383,717	01/24/95	PULS	BRAKE CONTROL OF HELPER LOCOMOTIVE	
8705	USA	ISSUED	5,385,392	01/31/95	LPDW	Recoverable and a Direct Release and Non-Recoverable	Bail-Off Logic Arrangement for
8780	USA	ISSUED	5,388,675	02/14/95	RFPD	BACKING PLATE FOR DISC BRAKE PADS	
8771	AUSAL	ISSUED	654063	02/15/95	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN	ARTICULATED BEARING ASSEMBLY
8709	USA	ISSUED	5,390,772	02/21/95	PTDS	SWITCHABLE HIGH SPEED FROG MECHANISM	
8757	USA	ISSUED	5,393,129	02/28/95	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	

PATENT
 REEL 9433 FRAME 0100
 use on a RR vehicle

8608	ITALY	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RMY CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	UNIKN	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RMY CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	EPO	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RMY CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	GERWE	ISSUED	69108769.5	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RMY CARS TOGETHER IN A
EMIPERMANENT MANNER							
8608	FRANC	ISSUED	0456221	04/12/95	CARD	ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF	PAIR OF RMY CARS TOGETHER IN A
EMIPERMANENT MANNER							
8610	EPO	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RMY CARS TO
ETHER							
8610	UNIKN	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RMY CARS TO
ETHER							
8610	GERWE	ISSUED	69108977.9	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RMY CARS TO
ETHER							
8610	FRANC	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RMY CARS TO
ETHER							
8610	ITALY	ISSUED	0456222	04/19/95	CARD	BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RMY CARS TO
ETHER							
8692	SOFRC	ISSUED	9377828	04/26/95	NAFW	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	APPARATUS...PAIR OF RMY CARS TO
8590	USA	ISSUED	5,415,465	05/16/95	LPDW	APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	PRESSURE ON A LOCOMOTIVE CONSIS
REF: 9233							
8799	USA	ISSUED	5,417,143	05/23/95	NAFW	LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE	
8625	JAPAN	ISSUED	1936194	05/26/95	PTDS	HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8644	JAPAN	ISSUED	1936195	05/26/95	PTDS	BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERA	TING STATUS
VAPOR 36							
8627	UNIKN	ISSUED	0435874	05/31/95	VAPR	PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND	LOCK
8627	CANAD	ISSUED	2,005,293	06/06/95	PTDS	WHEEL SPIN CONTROL SYSTEM	
8722	USA	ISSUED	5,423,401	06/13/95	PTDS	BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8691	USA	ISSUED	5,423,129	06/13/95	PTDS	DESICCANT CARTRIDGE OF AN AIR DRYER	
8725	USA	ISSUED	5,423,275	06/13/95	CARD	COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY	CAR TRUCK BOLSTER BOWL
8640	JAPAN	ISSUED	1942647	06/23/95	PTDS	HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT	BRAKE SHOE CLEARANCE
8626	USA	ISSUED	5,428,538	06/27/95	LPDW	SANDING CONTROL SYSTEM FOR RAILWAY VEHICLES	

PATENT

REF: 9233

8746	SOFRC	ISSUED	94/4302	06/28/95	CARD	LUBRICATING APPARATUS FOR ARTICULATED COUPLING	ARRANGEMENT
VAPOR-38	MEXIC	ISSUED	178,516	06/30/95	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
8755	USA	ISSUED	5,429,426	07/04/95	NAFW	BRAKE CYLINDER PRESSURE RELAY VALVE FOR RAILROAD	FREIGHT CAR
VAPOR-38	USA	ISSUED	5,433,174	07/18/95	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-43	USA	ISSUED	5,433,031	07/18/95	VAPR	RESILIENT EDGES FOR POWER OPERATED DOORS (biparting doors)	
8737	SOFRC	ISSUED	94/4300	07/26/95	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8783	SOFRC	ISSUED	94/6566	07/26/95	CARD	A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAMBAR	ASSEMBLY USING A BALL AND RACE
ASSEMBLY							
8758	SOFRC	ISSUED	94/4301	07/26/95	CARD	HIGH CAPACITY DRAFT GEAR ASSEMBLY	
8519	JAPAN	ISSUED	1956479	07/28/95	LPDW	BRAKE ASSURANCE CIRCUIT OPERATIVE IN RESPONSE TO A LOW BRAK	E PIPE PRESSURE
8681	USA	ISSUED	5,437,219	08/01/95	NAFW	LOW STRESS CONICAL TYPE DIAPHRAGM	
8735	USA	ISSUED	5,439,276	08/08/95	LPDW	TAMPER-RESISTANT INDEPENDENT BRAKE VALVE DEVICE FOR	LOCOMOTIVE AIR BRAKE EQUIPMENT
VAPOR-47	USA	ISSUED	5,438,800	08/08/95	VAPR	STABILIZER FOR OUTSIDE SLIDING PLUG DOORS (door leaf)	
6829	JAPAN	ISSUED	1958162	08/10/95	NAFW	FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8600	AUSAL	ISSUED	658754	08/15/95	NAFW	RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8613	USA	ISSUED	5,443,170	08/22/95	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8510	BRAZL	ISSUED	9006339-2	08/29/95	PTDS	SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE	AXLE RAIL VEHICLES
8766	SOFRC	ISSUED	94/6617	08/30/95	CARD	SLACKLESS DRAMBAR USING A BALL AND RACE ASSEMBLY AT	EACH END OF THE DRAMBAR
8740	USA	ISSUED	5,449,295	09/12/95	PTDS	AUTOMATIC ELECTRIC COUPLING MECHANISM FOR A PASSENGER	TRANSIT TYPE VEHICLE
8787	USA	ISSUED	5,451,099	09/19/95	NAFW	RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8788	USA	ISSUED	5,450,782	09/19/95	NAFW	VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR	CONTROL VALVE
8614	USA	ISSUED	5,453,942	09/26/95	PTDS	WHEEL SPIN SPEED PROCESSING SYSTEM FOR MULTIPLE-AXLE	RAILWAY VEHICLES
8613	USA	ISSUED	5,452,814	09/26/95	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8539	BRAZL	ISSUED	P19100678	09/26/95	PTDS	TRANSDUCEDR OPERATIONAL FAULT DETERMINATION SYSTEM	

PATENT REEL 9403 FROM 610

8712	USA	ISSUED	5,454,399	10/03/95	PTDS	APPLICATION & RELEASE MAGNET VALVE	
8782	USA	ISSUED	5,456,504	10/10/95	PTDS	LOCKING AND UNLOCKING APPARATUS FOR ACCESS DOOR ON A PASSENGER RAILWAY VEHICLE	
8781	USA	ISSUED	5,460,100	10/24/95	PTDS	SERVICE BYPASS APPARATUS FOR AUTOMATIC DOOR OPERATOR ON A PASSENGER RAILWAY VEHICLE	
8766	USA	ISSUED	5,462,179	10/31/95	CARD	SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR	
8727	USA	ISSUED	5,467,246	11/14/95	LPDW	ARRANGEMENT FOR EMULATING AN H-TYPE RELAY AIR VALVE WHICH IS UTILIZED IN A RAILWAY BRAKING SYSTEM	
8768	USA	ISSUED	5,465,816	11/14/95	PTDS	SLACK ADJUSTING BRAKE CYLINDER FOR A BRAKE UNIT ON A RAILWAY TRANSIT VEHICLE.	
8748	USA	ISSUED	5,466,105	11/14/95	NAFW	FASTENER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE	
8528	JAPAN	ISSUED	1995288	11/22/95	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE ASSEMBLY	
8720	USA	ISSUED	5,471,387	11/28/95	PTDS	SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND SLIP INTENSITY DETERMINATION PROCESS	
VAPOR-38	USA	ISSUED	5,471,957	12/05/95	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS FUELS (parent)	
VAPOR-41	MEXIC	ISSUED	180,346	12/07/95	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED LOCKS (R110)	
8694	AUSAL	ISSUED	662,264	12/12/95	NAFW	QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL VALVE DEVICE	
8728	JAPAN	ISSUED	2003892	12/20/95	LPDW	RVY BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRK PRESS. DURING COMB. INDEP. AND AUTOMAT	
IC BRAKE OPERATION	JAPAN	ISSUED	2000587	12/20/95	PTDS	WHEEL SPIN CONTROL SYSTEM	
8724	USA	ISSUED	5,480,218	01/02/96	NAFW	RAILWAY BRAKE PIPE WITH ACCESS PORTS	
8728	CANAD	ISSUED	2,005,296	01/09/96	WLTD	FREIGHT BRAKE EMERGENCY VALVE	
8789	CANAD	ISSUED	1,337,947	01/16/96	LPDW	DIGITAL AIR BRAKE CONTROL SYSTEM	
VAPOR-46	USA	ISSUED	5,483,769	01/16/96	VAPR	DOOR DRIVE EQUIPMENT FOR MASS TRANSIT VEHICLE (sliding outside plug door)	
8737	AUSAL	ISSUED	663443	01/23/96	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8725	SOFRC	ISSUED	9474257	01/31/96	CARD	COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8625	USA	ISSUED	5,491,830	02/13/96	LPDW	AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8847	USA	ISSUED	5,492,511	02/20/96	REPD	APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND REVERSER HANDLES ON A CONTROL STA	

ND OF A RAILWAY LOCOMOTIVE

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8809	SOFRC	ISSUED	95/4705	04/24/96	NAFW	TEST CONNECTOR FOR AUTOMATIC TEST DEVICE
8794	SOFRC	ISSUED	94/8645	04/24/96	CARD	A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY
8844	USA	ISSUED	5,519,299	05/21/96	REPD	METHOD AND APPARATUS FOR DETERMINING AND ENCODING THE POSITION OF A REVERSER HANDLE ON A
8772	USA	ISSUED	5,518,304	05/21/96	NAFW	FILTER ARRANGEMENT AND MOUNTING IN RAILWAY BRAKE PIPE BRACKET.
8389	ARGNT	ISSUED	249,654	05/24/96	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE VALVE...FUNCTION
8739	AUSAL	ISSUED	666438	05/28/96	NAFW	LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE
8692	AUSAL	ISSUED	666408	05/28/96	NAFW	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE
8630	BRAZL	ISSUED	9103727-1	05/28/96	NAFW	IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE PROTECTION
8361	KORSO	ISSUED	100493	06/10/96	PTDS	DECELERATION CONTROL SYSTEM
8383	JAPAN	ISSUED	2064840	06/24/96	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION
8677	JAPAN	ISSUED	2064957	06/24/96	NAFW	EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR
PULSE-37	USA	ISSUED	5,530,328	06/25/96	PULS	CONSIST POWER MONITOR
8613	USA	ISSUED	5,529,194	06/25/96	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT
8751	SOFRC	ISSUED	95/7080	06/26/96	NAFW	ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR
8893	SOFRC	ISSUED	95/7998	06/26/96	CARD	FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY
8813	SOFRC	ISSUED	95/7996	06/26/96	NAFW	PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT BRAKE
8752	SOFRC	ISSUED	95/6931	06/26/96	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM
8826	USA	ISSUED	5,535,122	07/09/96	PTDS	A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK OF THE BRAKE RETARDATION...ON A
8851	USA	ISSUED	5,537,014	07/16/96	REPD	AN APPARATUS FOR FEEDBACK OF AN ANALOG SIGNAL USED TO MONITOR &/OR CONTROL DYNAMIC BR
8845	USA	ISSUED	5,537,285	07/16/96	REPD	DIGITAL OUTPUT CONTROL DEVICE AND METHOD FOR OPERATING
8811	USA	ISSUED	5,538,331	07/23/96	LPDW	APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-PNEUMATIC SYSTEMS
8789	USA	ISSUED	5,538,332	07/23/96	NAFW	VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY

REFERENCE TO THE PATENT OFFICE RECORDS OF THE U.S. PATENT AND TRADEMARK OFFICE IS HEREBY REFERRED TO FOR THE FULL DISCLOSURE OF THE INVENTION.

STAND OF A RAILWAY LOCOMOTIVE

APPARATUS FOR INTERLOCKING REVERSER HANDLE ON A CONTROL

8853 USA ISSUED 5,542,891 08/06/96 REPD

LOAD SETTING DEVICE FOR RAILWAY CARS

8757 USA ISSUED 5,544,057 08/06/96 PTDS

RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER

8224 JAPAN ISSUED 2080831 08/09/96 CARD

FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY

8893 USA ISSUED 5,544,767 08/13/96 CARD

DIPSTICK ASSEMBLY

8857 USA ISSUED 5,544,419 08/13/96 LPDW

REMOTE CONTROL OF CUT-OUT COCK

8829 USA ISSUED 5,544,854 08/13/96 NAFW

SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY

8792 USA ISSUED 5,547,089 08/20/96 CARD

MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS

8651 USA ISSUED 5,549,363 08/27/96 CARD

ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR

8751 USA ISSUED 5,551,765 09/03/96 NAFW

BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER

8722 AUSAL ISSUED 668839 09/04/96 PTDS

EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR

8718 JAPAN ISSUED 2564100 09/19/96 NAFW

MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS

8651 USA ISSUED 5,558,411 09/24/96 CARD

FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY

8911 USA ISSUED 5,558,238 09/24/96 CARD

MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS

8651 USA ISSUED 5,558,412 09/24/96 CARD

MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS

8651 USA ISSUED 5,558,410 09/24/96 CARD

COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL

8745 USA ISSUED 5,558,025 09/24/96 CARD

TREVOR A. SCOTT - ERIC G. SMITH - ULF STAHRMER - W. THOMAS DIGNEED (8 INVENTORS)

8885 USA ISSUED 5,559,281 09/24/96 NAFW

INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RMY FRT CAR AND AN INTERLOCKING MECHANISM THEREFOR

8796 SOFRC ISSUED 95/8002 09/25/96 CARD

KEY FOR RAILROAD BRAKE SHOE ASSEMBLY

8785 USA ISSUED 5,560,453 10/01/96 RFPC

LUBRICATING APPARATUS FOR ARTICULATED COUPLING ARRANGEMENT

8746 USA ISSUED 5,560,503 10/01/96 CARD

SOFTWARE NULLIFICATION OF TRANSDUCER INDUCED OFFSET ERRORS WITHIN A FLOW RATE MEASU

8812 USA ISSUED 5,563,353 10/08/96 REPD

METHOD OF PERFORMING DIAGNOSTICS ON AN ELECTRONICALLY CONTROLLED RAILWAY LOCOMOTIVE THROUGH

8848 USA ISSUED 5,563,785 10/08/96 REPD

COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL

8745 CANAD ISSUED 2,119,850 10/08/96 CARD

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 REEL 94
 33 FRAMING

REMENT SYSTEM

TTLF CONTROLLER

NO.	COUNTRY	ISSUED	NO.	DATE	NO.	DESCRIPTION	UNIT
8843	USA	ISSUED	5,564,657	10/15/96	REPD	ELECTRONICALLY CONTROLLED LOCO. THROTTLE CONTROLLER	INCLUDING REMOTE MULTIPLE UNIT
8861	USA	ISSUED	5,564,794	10/15/96	NAFW	TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR	
8715	USA	ISSUED	5,566,793	10/22/96	RFPC	IMPROVED RAILWAY TYPE BRAKE SHOE	
VAPOR-41	AUSAL	ISSUED	670,079	10/22/96	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED LOCKS (R110)	
8856	USA	ISSUED	5,570,284	10/29/96	REPD	A METHOD AND APPARATUS FOR REMOTE CONTROL OF A LOCOMOTIVE THROTTLE CONTROLLER	
8613	AUSAL	ISSUED	670275	10/29/96	CARD	VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY	
VAPOR-37	CANAD	ISSUED	2,062,901	10/29/96	VAPR	PRESSURE WAVE SWITCH HAVING IMPROVED CONTACT STRUCTURE AND PRESSURE EQUALIZATION	
PULSE-38	USA	ISSUED	5,570,270	10/29/96	PULS	CHASSIS AND PERSONAL COMPUTER FOR SEVERE ENVIRONMENT EM-BEDDED APPLICATIONS	
8790	SOFRC	ISSUED	96/0266	10/30/96	NAFW	MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE	
8885	SOFRC	ISSUED	96/0335	10/30/96	NAFW	TREVOR A. SCOTT - ERIC G. SMITH - ULF STAHMER - W. THOMAS DIGNEED (8 INVENTORS)	
8794	AUSAL	ISSUED	670521	11/05/96	CARD	A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8502	JAPAN	ISSUED	2106812	11/06/96	LPDW	BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8725	JAPAN	ISSUED	2576834	11/07/96	LPDW	CHARGING CUT-OFF VALVE ARRANGEMENT FOR MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRA	
8714	JAPAN	ISSUED	2576835	11/07/96	NAFW	AUXILIARY STABILIZER VALVE FOR VX VENT VALVE	
8766	AUSAL	ISSUED	670714	11/12/96	CARD	SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR	
8600	CANAD	ISSUED	2,090,383	11/12/96	NAFW	RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8592	JAPAN	ISSUED	2583393	11/21/96	NAFW	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE	
8745	JAPAN	ISSUED	2581524	11/21/96	CARD	COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8861	SOFRC	ISSUED	96/1847	11/27/96	NAFW	TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR	
8846	USA	ISSUED	5,581,472	12/03/96	REPD	METHOD AND APPARATUS FOR FEEDBACK OF TRAINLINE STATUS TO THE CENTRAL PROCESSOR OF A LOCOM	
8815	USA	ISSUED	5,582,206	12/10/96	PTDS	ROTARY MAGNET VALVE	
VAPOR-38	USA	ISSUED	5,582,137	12/10/96	VAPR	METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS FUELS (parent)	

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8796	USA	ISSUED	5,584,407	12/17/96	CARD	INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RMY FRT CAR AND AN	INTERLOCKING MECHANISM THEREFOR
8747	USA	ISSUED	5,586,668	12/24/96	NAFW	IMBEDDED ELECTRICAL CONNECTOR	
8651	USA	ISSUED	5,586,812	12/24/96	CARD	MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8752	USA	ISSUED	5,586,813	12/24/96	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8779	USA	ISSUED	5,589,767	12/31/96	PTDS	MECHANISM FOR THE ATTACHMENT OF A SPEED SENSOR	
8891	USA	ISSUED	5,590,797	01/07/97	CARD	FRICTION CLUTCH MECHANISM FOR HIGH CAPACITY DRAFT GEAR	ASSEMBLY AND METHOD OF RECONDIT
8880	USA	ISSUED	5,592,384	01/07/97	LPDW	RAILWAY BRAKE SYSTEM TESTER	
8651	USA	ISSUED	5,593,214	01/14/97	CARD	MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8535	CANAD	ISSUED	2,014,685	01/21/97	NAFW	FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE	FUNCTION
6961	CANAD	ISSUED	2,014,686	01/21/97	NAFW	VENT VALVE DEVICE	
8972	USA	ISSUED	5,595,267	01/21/97	RFFC	BRAKE SHOE HAVING FATIGUE RESISTANT BACKING PLATE	
8528	CANAD	ISSUED	2,015,689	01/21/97	PTDS	PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8922	USA	ISSUED	5,604,991	02/25/97	PTDS	SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8883	SOFRFC	ISSUED	96/4015	02/26/97	NAFW	FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO	
8828	SOFRFC	ISSUED	96/3750	02/26/97	NAFW	PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC	BRAKE
8767	USA	ISSUED	5,613,579	03/25/97	PTDS	LATCH LOCKING SPRING CLIP FOR RETAINING AN INSERTABLE BRAKE	SHOE LINING ON A DISC BRAKE HEA
8825	SOFRFC	ISSUED	96/5105	03/26/97	CARD	ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8827	POLND	ISSUED	172628	04/04/97	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
8895	USA	ISSUED	5,617,965	04/08/97	CARD	AN INTERLOCKING TYPE MECHANISM FOR A SLACKLESS DRAWBAR	ASSEMBLY USED ON A RAILWAY FREI
8907	USA	ISSUED	5,621,657	04/15/97	LPDW	AUTOMATIC DETECTION OF AIR FLOW TRANSDUCER TYPE UNDER	SOFTWARE CONTROL
8788	AUSAL	ISSUED	674618	04/22/97	NAFW	VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR	CONTROL VALVE
8939	USA	ISSUED	5,630,354	05/20/97	LPDW	EXTENDED LIFE BRAKE CYLINDER HOLDER	
8884	SOFRFC	ISSUED	96/7296	05/28/97	NAFW	TWO-PIECE CHECK VALVE ASSEMBLY	

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8919	SOFRC	ISSUED	96/7297	05/28/97	NAFW	TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8928	USA	ISSUED	5,634,696	06/03/97	NAFW	RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8992	USA	ISSUED	5,634,391	06/03/97	LPDW	INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR PUMP	APPLICATION IN A SANITARY TYPE
8722	JAPAN	ISSUED	2659175	06/06/97	PTDS	BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8790	USA	ISSUED	5,638,276	06/10/97	NAFW	MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A	RAILROAD CAR BRAKE PIPE PRESSUR
8858	CANAD	ISSUED	2,147,097	06/17/97	PTDS	HIGH CURRENT HARP FOR AN ELECTRIC TROLLEY BUS	
8928	SOFRC	ISSUED	96/6437	06/25/97	NAFW	RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8900	SOFRC	ISSUED	96/6215	06/25/97	NAFW	RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8799	USA	ISSUED	5,644,461	07/01/97	LPDW	HIGH VOLTAGE D-C CURRENT LIMITER	
8701	JAPAN	ISSUED	2670425	07/04/97	LPDW	MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC
8728	JAPAN	ISSUED	2672779	07/11/97	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE	
8932	USA	ISSUED	5,647,460	07/15/97	RFPC	SPRING-TYPE RAILROAD BRAKE SHOE LOCKING KEY	
8924	USA	ISSUED	5,650,933	07/22/97	PTDS	TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS	
8863	USA	ISSUED	5,650,561	07/22/97	PULS	DIAGNOSTIC DEVICE FOR DETERMINING THE PNEUMATIC INTEGRITY	OF A BUBBLE-TYPE FUEL MEASURING
8756	AUSAL	ISSUED	677285	08/05/97	PTDS	SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION	
8715	USA	ISSUED	5,657,839	08/07/97	CARD	HIGH CAPACITY DRAFT GEAR ASSEMBLY	
8850	USA	ISSUED	5,659,204	08/19/97	RFPC	IMPROVED RAILWAY TYPE BRAKE SHOE	
8922	USA	ISSUED	RE35590	08/19/97	REPD	AN APPARATUS FOR AND A METHOD OF GENERATING AN ANALOG	SIGNAL FOR CONTROL OF DYNAMIC B
8924	USA	ISSUED	96,8800	08/19/97	PULS	SOLID STATE EVENT RECORDER	
8922	SOFRC	ISSUED	96,8800	08/27/97	PTDS	SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8924	SOFRC	ISSUED	96/8801	08/27/97	PTDS	TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8921	SOFRC	ISSUED	96/8802	08/27/97	PTDS	LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A	TWIN TOWER AIR DRYER

PULSE-36
 SYSTEM
 PULSE-39
 RAKING
 PULS-36
 PULS-39
 RAKING

8685	JAPAN	ISSUED	2690674	08/29/97	NAFW	CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	PRESSURE ON A LOCOMOTIVE CONSIS
8590	JAPAN	ISSUED	2690270	08/29/97	LPDW	APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	
8828	USA	ISSUED	5,662,391	09/02/97	NAFW	PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE	
8924	USA	ISSUED	5,662,727	09/02/97	PTDS	TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8752	USA	ISSUED	5,669,674	09/23/97	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8987	SOFRC	ISSUED	9770031	09/23/97	CARD	A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8884	USA	ISSUED	5,669,412	09/23/97	NAFW	TWO-PIECE CHECK VALVE ASSEMBLY	
8894	USA	ISSUED	5,673,774	10/07/97	PTDS	AUXILIARY VEHICLE CURRENT COLLECTOR	
8910	USA	ISSUED	5,673,493	10/07/97	PTDS	TELESCOPING DESICCANT CARTRIDGE FOR AN AIR DRYER DISPOSED IN AN AIR SYSTEM	
8839	USA	ISSUED	5,677,608	10/14/97	PTDS	EMBEDDED DUPLEX LOCAL CONTROL PANEL	
8789	JAPAN	ISSUED	2709046	10/17/97	NAFW	VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY	
8841	JAPAN	ISSUED	2709293	10/17/97	NAFW	RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND MOUNT THEREFOR	
8909	USA	ISSUED	5,681,015	10/28/97	PULS	RADIO-BASED ELECTRO-PNEUMATIC CONTROL COMMUNICATIONS SYSTEM	
8911	USA	ISSUED	5,685,896	11/11/97	PTDS	LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER	
8991	USA	ISSUED	5,687,653	11/18/97	LPDW	IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP DIAPHRAGM	
8938	USA	ISSUED	5,691,888	11/25/97	PTDS	POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER * inventor's full name: CHARLE	
9013	USA	ISSUED	5,689,893	11/25/97	LPDW	DESICCANT CANISTER WITH POSITIONING BORE	
8983	KORSO	ISSUED	131073	11/26/97	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION	
8829	SOFRC	ISSUED	9772409	11/26/97	CARD	A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
8943	USA	ISSUED	2723492	11/28/97	NAFW	REMOTE CONTROL OF CUT-OUT COCK	
8943	USA	ISSUED	5,692,586	12/02/97	PTDS	BRAKE DEVICE	
8701	CANAD	ISSUED	2,105,152	12/02/97	LPDW	MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC
8224	GERWE	ISSUED	P3609268.1	12/04/97	CARD	RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	

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8900	USA	ISSUED	5,695,258	12/09/97	NAFW	RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8711	EPO	ISSUED	0582035	12/10/97	CARD	REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
VAPOR-41	JAPAN	ISSUED	2727397	12/12/97	VAPR	POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED LOCKS (R110)	
8792	AUSAL	ISSUED	680970	12/18/97	CARD	SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY	
9010	USA	ISSUED	5,700,065	12/23/97	PTDS	PENALTY BRAKE SCHEME FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
9012	USA	ISSUED	5,700,066	12/23/97	PTDS	PENALTY BRAKE DESIGN FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
8985	USA	ISSUED	5,701,975	12/30/97	CARD	RAILWAY VEHICLE BRAKE SYSTEM	
8635	USA	ISSUED	5,702,774	12/30/97	PTDS	REUSABLE PAINT MASKING MEMBER	
8983	USA	ISSUED	5,702,012	12/30/97	CARD	A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
8651	USA	ISSUED	5,701,974	12/30/97	CARD	MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS	
8741	USA	ISSUED	5,704,770	01/06/98	LPDW	AIR PASSAGE INSERT FOR OIL FILL SPOUT	
8882	USA	ISSUED	5,704,454	01/06/98	RFPC	FATIGUE AND IMPACT RESISTANT RAILWAY BRAKE SHOE	
8627	USA	ISSUED	5,704,396	01/06/98	PTDS	MODULATION ROTARY VALVE	
8672	JAPAN	ISSUED	2736054	01/09/98	CARD	DRAFT GEAR ASSEMBLY	
8624	JAPAN	ISSUED	2739046	01/16/98	PTDS	TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS	
8692	CANAD	ISSUED	2,109,379	01/20/98	NAFW	HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE DEVICE	
8714	CANAD	ISSUED	2,109,378	01/20/98	NAFW	AUXILIARY STABILIZER VALVE FOR Vx VENT VALVE	
8699	USA	ISSUED	5,709,436	01/20/98	NAFW	ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALV	
8704	USA	ISSUED	5,711,206	01/27/98	LPDW	PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY IN AN AIR COMPRESSOR	
8728	EPO	ISSUED	0628458	01/28/98	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE	
8847	JAPAN	ISSUED	2742525	01/30/98	LPDW	APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND RE-VERSER HANDLES ON A CONTROL STA	
8853	JAPAN	ISSUED	2742526	01/30/98	LPDW	APPARATUS FOR INTERLOCKING REVERSER HANDLE ON A CONTROL STAND OF A RAILWAY LOCOMOTIVE	

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8949	USA	ISSUED	5,713,639	02/03/98	PTDS	BRAKE CONTROL DEVICE FOR RAILROAD ROLLING STOCK	VEHICLE BRAKE SYSTEM
8987	USA	ISSUED	5,713,261	02/03/98	CARD	A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8919	USA	ISSUED	5,714,684	02/03/98	NAFW	TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
9016	USA	ISSUED	5,715,621	02/10/98	LPDW	REGENERATIVE DESICCANT AIR DRYER	
8930	USA	ISSUED	5,718,487	02/17/98	REPD	BRAKE CONTROL SYSTEM FOR DOUBLED ENDED LOCOMOTIVE	
8912	USA	ISSUED	5,721,683	02/24/98	REPD	IMMEDIATE COMMUNICATION DESIGN FOR DISCRETE CONTROL SYSTEM	
8997	USA	ISSUED	5,720,455	02/24/98	PULS	INTRA-TRAIN RADIO COMMUNICATION SYSTEM	
8986	SOFRC	ISSUED	97/3994	02/25/98	CARD	PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	
8951	SOFRC	ISSUED	97/2348	02/25/98	CARD	END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
9014	SOFRC	ISSUED	97/3997	02/25/98	LPDW	Molded Rubber Val Seal for use in predetermined type Valves	such as, a Ck Val in a Regenera
8988	SOFRC	ISSUED	97/3989	02/25/98	CARD	AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8737	JAPAN	ISSUED	2753457	02/27/98	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
9031	MEXIC	ISSUED	188149	03/05/98	VAPR	POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT	VEHICLES (electric bus door ope
8783	AUSAL	ISSUED	683498	03/19/98	CARD	A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR	ASSEMBLY USING A BALL AND RACE
9043	USA	ISSUED	5,730,504	03/24/98	NAFW	Release Assuring Arrangement for Comb. Electro-pneu./Auto.	Pneumatic Brake
8973	SOFRC	ISSUED	97/4626	03/25/98	LPDW	DESICCANT CANISTER WITH POSITIONING BORE	
8964	SOFRC	ISSUED	97/6436	03/25/98	NAFW	SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR	RAILWAY FREIGHT VEHICLE
9008	SOFRC	ISSUED	97/5963	03/25/98	NAFW	ELECTRO-PNEUMATIC VALVE CONTROL	
8985	SOFRC	ISSUED	97/4586	03/25/98	CARD	RAILWAY VEHICLE BRAKE SYSTEM	
8982	SOFRC	ISSUED	97/4891	03/25/98	LPDW	THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND M
8812	JAPAN	ISSUED	2763284	03/27/98	LPDW	SOFTWARE NULLIFICATION OF TRANSDUCER INDUCED OFFSET	ERRORS WITHIN A FLOW RATE MEASU
8816	JAPAN	ISSUED	2766631	04/03/98	LPDW	APPARATUS TO PREVENT INADVERTENT DISCHARGE AND TRAPPING OF	PIPE PRESS. IN AN ELECTRO-PNEU.
9004	USA	ISSUED	5,735,579	04/07/98	PTDS	BRAKE ASSURANCE MODULE	

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Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Title	long:title2
7006	USA		ISSUED	4,236,424	12/02/80	CARD HAND BRAKE FOR RAILWAY VEHICLES	
7048	USA		ISSUED	4,292,721	10/06/81	CARD CRIMPING DEVICE FOR USE IN ASSEMBLING OVERTRAVEL SPRING ASSEMBLY...	ADJUSTER
7059	USA		ISSUED	4,296,868	10/27/81	CARD HOUSING FOR DRAFT GEAR	
6931	CANAD		ISSUED	1115239	12/29/81	CARD HOUSING FOR DRAFT GEAR	
7006	CANAD		ISSUED	1121744	04/13/82	CARD HAND BRAKE FOR RAILWAY VEHICLES	
7061	SOFRC		ISSUED	81/4066	07/28/82	CARD HAND BRAKE FOR RAILROAD CAR	
7047	USA		ISSUED	4,354,302	10/19/82	CARD JACKING TOOL FOR INSTALLING AND REMOVING DRAFT GEARS ON RAILWAY CARS	
7061	USA		ISSUED	4,368,648	01/18/83	CARD HAND BRAKE FOR RAILROAD CAR	
7047	AUSAL		ISSUED	537077	09/27/84	CARD JACKING TOOL FOR INSTALLING AND REMOVING DRAFT GEARS ON RAILWAY CARS	
7061	AUSAL		ISSUED	541155	05/22/85	CARD HAND BRAKE FOR RAILROAD CAR	
8224	UNIKN		ISSUED	2172678	03/19/86	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8224	SOFRC		ISSUED	85/6755	04/30/86	CARD DRAFT GEAR ASSEMBLY	
8224	SOFRC		ISSUED	85/8592	07/30/86	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8243	UNIKN		ISSUED	2180319	08/28/86	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8243	FRANC		ISSUED	8612759	09/12/86	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8243	SOFRC		ISSUED	86/1651	11/26/86	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM	
8243	USA		ISSUED	4,645,187	02/24/87	CARD DRAFT GEAR ASSEMBLY	
8182	USA		ISSUED	4,647,024	03/03/87	CARD FRICTIONAL SHOCK-ABSORBING METHOD AND APPARATUS	
8273	SOFRC		ISSUED	86/6027	03/25/87	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	

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8126	USA	ISSUED	4,657,230	04/16/87	CARD OVERTRAVEL SPRING ASSEMBLY FOR SLACK ADJUSTER	
8224	USA	ISSUED	4,662,485	05/05/87	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8243	USA	ISSUED	4,674,729	06/23/87	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8285	USA	ISSUED	4,683,991	08/04/87	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8285	ITALY	ISSUED	1191280	02/24/88	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8285	UNITKN	ISSUED	2172351	11/16/88	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8224	CANAD	ISSUED	1246467	12/13/88	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8452	USA	ISSUED	4,793,720	12/27/88	CARD RAILWAY CAR RESILIENT SIDE BEARING	
8285	AUSAL	ISSUED	577930	02/22/89	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHA NISM	
8224	ITALY	ISSUED	1203729	02/23/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8433	USA	ISSUED	4,809,419	03/07/89	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8272	AUSAL	ISSUED	579891	05/10/89	CARD DRAFT GEAR ASSEMBLY	
8272	CANAD	ISSUED	1254535	05/23/89	CARD DRAFT GEAR ASSEMBLY	
8182	CANAD	ISSUED	1254534	05/23/89	CARD FRICTIONAL SHOCK-ABSORBING METHOD AND APPARATUS	
8272	AUSAL	ISSUED	583072	08/11/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8243	CANAD	ISSUED	1259343	09/12/89	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8433	SOFRC	ISSUED	89/0026	10/25/89	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8272	FRANC	ISSUED	8602246	11/17/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8272	BRAZL	ISSUED	P18504464	11/28/89	CARD DRAFT GEAR ASSEMBLY	
8224	BRAZL	ISSUED	P18505798	11/28/89	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER	
8243	AUSAL	ISSUED	589439	02/08/90	CARD FRICTION SHOCK-ABSORBING ASSEMBLY AND METHOD OF MAKING	
8433	USA	ISSUED	4,916,794	04/17/90	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8433	UNITKN	ISSUED	2214267	07/03/91	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS

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8611	USA	ISSUED	5,042,393	08/27/91	CARD LOCKING ASSEMBLY TO SECURE BEARING ASSEMBLY...PAIR OF RAILWAY CARS
8608	USA	ISSUED	5,065,679	11/19/91	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT
8620	USA	ISSUED	5,080,243	01/14/92	CARD ASSEMBLY MECHANISM FOR AN ARTICULATED COUPLING SYSTEM
8433	AUSAL	ISSUED	613,138	01/28/92	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8575	USA	ISSUED	5,092,204	03/03/92	CARD APPAR. FOR ALIGNING SPHERICAL MEMBER DURING ASSEMBLY OF ARTICULATED CPLG SYSTEM
8530	USA	ISSUED	5,105,955	04/21/92	CARD SPHERICAL CONNECTOR APPARATUS (IN AN ARTICULATED SLACKLESS-TYPE)...RUY APPLICATION
8627	USA	ISSUED	5,115,927	05/26/92	CARD STRENGTHENING MECHANISM FOR A FEMALE ARTICULATED COUPLING MEMBER
8646	USA	ISSUED	5,127,283	07/07/92	CARD HAND BRAKE MECHANISM FOR RAILWAY CARS
8609	USA	ISSUED	5,131,331	07/21/92	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RAILWAY CARS
8640	USA	ISSUED	5,139,159	08/18/92	CARD CONNECTING PIN FOR ARTICULATED COUPLING ARRANGEMENT
8562	USA	ISSUED	5,152,409	10/06/92	CARD DRAFT GEAR ASSEMBLY
8641	USA	ISSUED	5,167,333	12/01/92	CARD APPARATUS PREVENT DETRIMENTAL EXTRANEUS FOREIGN MATTER ... ARTICULATED COUPLING
8576	USA	ISSUED	5,167,334	12/01/92	CARD APPAR TO ENABLE VERSATILITY ATTACHING CPLR TO SEAL ON A RAILWAY CAR
8669	USA	ISSUED	5,172,820	12/22/92	CARD IMPROVED FEMALE CONNECTION MEMBER USED IN AN ARTICULATED COUPLING ARRANGEMENT
8698	USA C	ISSUED	5,172,819	12/22/92	CARD BEARING ASSEMBLY FOR AN ARTICULATED COUPLING APPARATUS WHICH CONNECTS ADJACENT ENDS OF A PAIR OF RUY
8285	FRANC	ISSUED	2578932-81	01/22/93	CARD ACTUATING MEANS FOR SLACK ADJUSTER OVER TRAVEL CONTROL MECHANISM
8633	MEXIC	ISSUED	167,240	03/11/93	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8629	USA	ISSUED	5,219,082	06/15/93	CARD A MALE CONNECTION MEMBER FOR AN ARTICULATED COUPLING ARRANGEMENT
8633	BRAZL	ISSUED	6900266	07/27/93	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8633	CANAD	ISSUED	1,323,487	10/26/93	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8711	USA	ISSUED	5,271,511	12/21/93	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY
8650	USA C	ISSUED	5,277,323	01/11/94	CARD LOCKING WEDGE ASSEMBLY...ARTICULATED TYPE CPLG ARRANGEMENT

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8433	AUSAL 1	ISSUED	641,287	02/01/94	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8711	SOFRC	ISSUED	92/9009	06/29/94	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
8408 MANNER	AUSAL	ISSUED	648,306	08/23/94	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	
8685	USA	ISSUED	5,339,930	08/23/94	CARD CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	
8433	INDIA	ISSUED	172823	11/21/94	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR	DRAFT GEARS
8610	AUSAL	ISSUED	651820	12/06/94	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8613	SOFRC	ISSUED	93/3107	12/28/94	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8711	AUSAL	ISSUED	654063	02/15/95	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY	
8608 MANNER	ITALY	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	
8608 MANNER	EPO	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	
8608 MANNER	GERNE	ISSUED	69108769.5	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	
8608 MANNER	UNITKN	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	
8608 MANNER	FRANC	ISSUED	0456221	04/12/95	CARD ARTICULATED CPLG. APPARATUS FOR CONNECTING ADJACENT ENDS OF PAIR OF RUY CARS TOGETHER IN A SEMIPERMANENT	
8610	ITALY	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8600	GERNE	ISSUED	69108977.9	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8600	FRANC	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8600	UNITKN	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8600	EPO	ISSUED	0456222	04/19/95	CARD BEARING ASSEMBLY FOR ARTICULATED COUPLING	APPARATUS...PAIR OF RUY CARS TOGETHER
8745	USA	ISSUED	5,423,275	06/13/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8746	SOFRC	ISSUED	94/4302	06/28/95	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING	ARRANGEMENT
8758	SOFRC	ISSUED	94/4301	07/26/95	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY	
8783	SOFRC	ISSUED	94/6566	07/26/95	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAUBAR	ASSEMBLY USING A BALL AND RACE ASSEMBLY
8613	USA D1	ISSUED	5,443,170	08/22/95	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY

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8766	SOFRC	ISSUED	94/6617	08/30/95	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8613	USA	ISSUED	5,452,814	09/26/95	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8766	USA	ISSUED	5,462,179	10/31/95	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8745	SOFRC	ISSUED	94/4257	01/31/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL
8792	SOFRC	ISSUED	95/2066	02/28/96	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY
8613	USA	ISSUED	5,495,957	03/05/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8613	USA	ISSUED	5,501,347	03/26/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8433	INDIA	ISSUED	175539	04/09/96	CARD METHOD OF AND APPARATUS FOR RECONDITIONING RAILWAY CAR DRAFT GEARS
8794	SOFRC	ISSUED	94/8645	04/24/96	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY
8613	USA	ISSUED	5,529,194	06/25/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8893	SOFRC	ISSUED	95/7998	06/26/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY
8224	JAPAN	ISSUED	2080831	08/09/96	CARD RAILWAY VEHICLE BRAKE RIGGING JACK ADJUSTER
8693	USA	ISSUED	5,544,767	08/13/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY
8792	USA	ISSUED	5,547,089	08/20/96	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY
8651	USA	ISSUED	5,549,363	08/27/96	CARD McCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8745	USA	ISSUED	5,558,025	09/24/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL
8651	USA	ISSUED	5,558,238	09/24/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY
8651	USA	ISSUED	5,558,411	09/24/96	CARD McCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8651	USA	ISSUED	5,558,412	09/24/96	CARD McCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8651	USA	ISSUED	5,558,410	09/24/96	CARD McCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8796	SOFRC	ISSUED	95/8002	09/25/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RWY FRT CAR AND AN INTERLOCKING MECHANISM THEREFOR
8746	USA	ISSUED	5,560,503	10/01/96	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING ARRANGEMENT

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 REFERENCE FRAMES

8745	CANAD	ISSUED	2,119,850	10/08/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL
8613	AUSAL	ISSUED	670275	10/29/96	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT GEAR ASSEMBLY
8794	AUSAL	ISSUED	670521	11/05/96	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY
8766	AUSAL	ISSUED	670714	11/12/96	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR
8745	JAPAN	ISSUED	2581524	11/21/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL
8796	USA	ISSUED	5,584,407	12/17/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RY FRT CAR AND AN INTERLOCKING MECHANISM THEREFOR
8651	USA D4	ISSUED	5,586,812	12/24/96	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8891	USA	ISSUED	5,590,797	01/07/97	CARD FRICTION CLUTCH MECHANISM FOR HIGH CAPACITY DRAFT GEAR ASSEMBLY AND METHOD OF RECONDITIONING DRAFT G
8651	USA D2	ISSUED	5,593,214	01/14/97	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8875	SOFRC	ISSUED	9675105	03/26/97	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE
8895	USA	ISSUED	5,617,965	04/08/97	CARD AN INTERLOCKING TYPE MECHANISM FOR A SLACKLESS DRAWBAR ASSEMBLY USED ON A RAILWAY FREIGHT CAR
8758	AUSAL	ISSUED	677285	08/07/97	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY
8987	SOFRC	ISSUED	9770031	09/23/97	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER
8983	SOFRC	ISSUED	9772409	11/26/97	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR
8224	GERWE	ISSUED	P3609268.1	12/04/97	CARD RAILWAY VEHICLE BRAKE RIGGING SLACK ADJUSTER
8713	EPO	ISSUED	0582035	12/10/97	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN ARTICULATED BEARING ASSEMBLY
8792	AUSAL	ISSUED	680970	12/18/97	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE ASSEMBLY
8989	USA	ISSUED	5,701,975	12/30/97	CARD RAILWAY VEHICLE BRAKE SYSTEM
8651	USA D5	ISSUED	5,701,974	12/30/97	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & MATSCHKE, SCOTT = INV RAILWAY BRAKING APPARATUS
8983	USA	ISSUED	5,702,012	12/30/97	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR
8279	JAPAN	ISSUED	2736054	01/09/98	CARD DRAFT GEAR ASSEMBLY
8987	USA	ISSUED	5,713,261	02/03/98	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER
8988	SOFRC	ISSUED	9773989	02/25/98	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE INTENSIFIER MECHANISM

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8986	SOFRC	ISSUED	97/3994	02/25/98	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8951	SOFRC	ISSUED	97/2348	02/25/98	CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8783	AUSAL	ISSUED	683498	03/19/98	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR	ASSEMBLY USING A BALL AND RACE ASSEMBLY
8985	SOFRC	ISSUED	97/4586	03/25/98	CARD RAILWAY VEHICLE BRAKE SYSTEM	
8651	USA	ISSUED	5,738,416	04/14/98	CARD MCCABE, THOMAS, FESSLER, CHARLES B. & NATSCHKE, SCOTT = INV	RAILWAY BRAKING APPARATUS
8988	USA	ISSUED	5,746,293	05/05/98	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM

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Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Client	Long Title	Long Title 2
7000	USA		ISSUED	4,181,369	01/01/80	LPDW PNEUMATIC/ELECTRO-PNEUMATIC BRAKE ... CIRCUITRY FOR		PUSH/PULL TRAIN OPERATION
6426	JAPAN		ISSUED	1009772	08/26/80	LPDW PNEUMATIC-ELECTRIC SELF-LAPPING BRAKE CONTROL APPARATUS		
7050	USA		ISSUED	4,309,018	01/05/82	LPDW CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7000	CANADA		ISSUED	1116659	01/19/82	LPDW PNEUMATIC/ELECTRO-PNEUMATIC BRAKE ... CIRCUITRY FOR		PUSH/PULL TRAIN OPERATION
7050	SOFRIC		ISSUED	81/0244	02/24/82	LPDW CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7050	VENDA		ISSUED	81/0005	03/19/82	LPDW CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7050	CANADA		ISSUED	1136597	11/30/82	LPDW CLAMP-DOWN DEVICE FOR USE IN SECURING A MEMBER IN AN INACCESSIBLE AREA		
7000	JAPAN		ISSUED	1210644	06/12/84	LPDW PNEUMATIC/ELECTRO-PNEUMATIC BRAKE ... CIRCUITRY FOR		PUSH/PULL TRAIN OPERATION
8244	USA		ISSUED	4,552,412	11/12/85	LPDW BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT		
8104	USA		ISSUED	4,558,907	12/17/85	LPDW CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8244	SOFRIC		ISSUED	85/3348	12/24/85	LPDW QUICK RELEASE VALVE ARRANGEMENT		
8244	USA		ISSUED	4,577,910	03/25/86	LPDW QUICK RELEASE VALVE ARRANGEMENT		
8104	VENDA		ISSUED	85/0052	04/25/86	LPDW CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8244	USA		ISSUED	4,586,755	05/06/86	LPDW RLY BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRK PRESS.		DURING COMB. INDEP. AND AUTOMATIC BRAKE OPERA
8244	VENDA		ISSUED	85/0035	05/30/86	LPDW QUICK RELEASE VALVE ARRANGEMENT		
8104	SOFRIC		ISSUED	85/4720	07/30/86	LPDW CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8184	TRANS		ISSUED	85/0060	09/26/86	LPDW CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION
8214	BOPHU		ISSUED	85/0057	12/11/86	LPDW QUICK RELEASE VALVE ARRANGEMENT		
8104	BOPHU		ISSUED	85/0091	12/11/86	LPDW CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED		RELEASE OPERATION

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8214	TRAHS	ISSUED	85/0037	03/13/87	LPDM QUICK RELEASE VALVE ARRANGEMENT	
8220	HEWZL	ISSUED	213583	06/24/87	LPDM PISTON ASSEMBLY	
8394	USA	ISSUED	4721515	01/26/88	LPDM CONTROL SYSTEM OF A DUAL CYLINDER TYPE D HUMIDIFIER	
8214	CANAD	ISSUED	1234849	04/05/88	LPDM QUICK RELEASE VALVE ARRANGEMENT	
8392	USA	ISSUED	4,750,787	06/14/88	LPDM RELAY VALVE FOR AN AIR BRAKE SYSTEM	
8104	CANAD	ISSUED	1242232	09/20/88	LPDM CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION	
8469	USA C	ISSUED	4,830,580	05/16/89	LPDM TWO STAGE AIR COMPRESSOR UNIT	
8220	CANAD	ISSUED	1254157	05/16/89	LPDM PISTON ASSEMBLY	
8220	AUSAL	ISSUED	581248	05/26/89	LPDM PISTON ASSEMBLY	
8391	USA C	ISSUED	4,836,093	06/06/89	LPDM PISTON ASSEMBLY	
8244	CANAD	ISSUED	1255721	06/13/89	LPDM BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT	
8489	SOFRC	ISSUED	89/7261	07/25/90	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM	
8566	USA	ISSUED	4971399	11/20/90	LPDM SYSTEM FOR ASSURING RECHARGE OF BRAKE PIPE	PRESSURE . . . LOCOMOTIVE BRAKE VALVE
8531	USA	ISSUED	4,986,500	01/22/91	LPDM ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES	
8502	SOFRC	ISSUED	90/3254	02/27/91	LPDM BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8531	SOFRC	ISSUED	90/3201	02/27/91	LPDM ADJUSTABLE AIR BRAKE HOSE SUPPORT FOR RAILWAY VEHICLES	
8519	SOFRC	ISSUED	90/3199	02/27/91	LPDM BRAKE ASSURANCE CIRCUIT OPERATIVE IN RESPONSE TO A LOW BRAKE PIPE PRESSURE	
8588	USA	ISSUED	5,036,468	07/30/91	LPDM ARRANGEMENT FOR READING AN ABSOLUTE POSITION EMCODER . . . POSITION OF BRAKE HANDLE	
8525	USA	ISSUED	D319039	08/13/91	LPDM LOCOMOTIVE BRAKE CONSOLE	
8522	USA	ISSUED	D319423	08/27/91	LPDM LOCOMOTIVE BRAKE CONSOLE	
8582	USA	ISSUED	5,064,251	11/12/91	LPDM ELECTROPNEUMATIC AIR BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES	
8489	ITALY	ISSUED	1231980	01/22/92	LPDM DIGITAL AIR BRAKE CONTROL SYSTEM	
8652	USA	ISSUED	5,083,586	01/28/92	LPDM MFG. ARRANGE FOR CONN. A FLUID PRESS. VAL TO A PIPE BRKT. BY A HOLLOW ADAPT. MEMBER	

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8587	USA	ISSUED	5,086,641	02/11/92	LPDW ARRANGEMENT FOR DYNAMIC CALIBRATING AN ABSOLUTE POSITION EN CODER
8541	USA	ISSUED	5,096,266	03/17/92	LPDW DUAL-RESPONSE VENT VALVE DEVICE
8622	USA	ISSUED	5,104,203	04/14/92	LPDW ARNGMNT FOR EMULATING A J-TYPE RELAY AIR VALVE USABLE IN A RHY BRAKING SYSTEM
8637	USA	ISSUED	5,106,270	04/21/92	LPDW AIR-COOLED AIR COMPRESSOR
8665	USA	ISSUED	5,129,145	07/14/92	LPDW VALVE RECONDITIONING PROCESS
8521	USA	ISSUED	5,131,612	07/21/92	LPDW ARNGMNT FOR POSITIVELY DETERMINING ACTU AL SOUNDING OF WARN ING HORN ON RMY VEHIC
8489	AUSAL	ISSUED	620,442	08/20/92	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM
8642	USA	ISSUED	5,146,939	09/15/92	LPDW VALVE BUSHING CLEANING DEVICE & METHOD OF CLEAHING VALVE BUSHINGS
8214	JAPAN	ISSUED	1716111	11/27/92	LPDW QUICK RELEASE VALVE ARRANGEMENT
8104	JAPAN	ISSUED	1729861	01/29/93	LPDW CONTROL VALVE DEVICE ARRANGED FOR DIRECT OR GRADUATED RELEASE OPERATION
8244	JAPAN	ISSUED	1729859	01/29/93	LPDW BRAKE PIPE CHARGING CUT-OFF ARRANGEMENT
8639	USA	ISSUED	5,192,118	03/09/93	LPDW ELECTRO-PNEUMATIC LOCOMOTIVE BRAKE CONTROL SYSTEM
8486	UNKM	ISSUED	2224322	04/28/93	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM
8706	USA C	ISSUED	5,211,451	05/18/93	LPDW ADJUSTABLE REGULATING DEVICE FOR A RAILWAY LOCOMOTIVE BRAKE VALVE APPARATUS
8678	USA	ISSUED	5,213,749	05/25/93	LPDW A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT & SEAL SO PRODUCED
8644	USA	ISSUED	5,222,788	06/29/93	LPDW MICROPROCESSOR BASED ELECTRO-PNEU. LOCOMOTIVE BRAKE CONTROL SYSTEM HAVING BRAKE ASSURANCE CIRCUIT
8676	USA	ISSUED	5,246,030	09/21/93	LPDW SAFETY VALVE ARRANGEMENT
8673	USA D1	ISSUED	5,303,937	04/19/94	LPDW A METHOD OF FORMING A RUBBER SEAL HAVING A METALLIC INSERT & SEAL SO PRODUCED
8489	FRANC	ISSUED	2645818	05/06/94	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM
8489	AUSAL 1	ISSUED	649,535	10/18/94	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM
8502	CANAD	ISSUED	2014423	11/01/94	LPDW BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL
8625	SOFRC	ISSUED	9372880	11/30/94	LPDW AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM

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8489	JAPAN	ISSUED	06-24924	01/23/95	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM	
8705	USA	ISSUED	5,385,392	01/31/95	LPDW Recoverable and a Direct Release and Non-Recoverable	Ball-Off Logic Arrangement for use on a RR Ve
8590	USA	ISSUED	5,415,465	05/16/95	LPDW APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	PRESSURE ON A LOCOMOTIVE CONSIST.
8626	USA	ISSUED	5,428,538	06/27/95	LPDW SAMBING CONTROL SYSTEM FOR RAILWAY VEHICLES	
8519	JAPAN	ISSUED	1956479	07/28/95	LPDW BRAKE ASSURANCE CIRCUIT OPERATIVE IN RES PONSE TO A LOW BRAK E PIPE PRESSURE	
8735	USA	ISSUED	5,439,276	08/08/95	LPDW TAMPER-RESISTANT INDEPENDENT BRAKE VALVE DEVICE FOR	LOCOMOTIVE AIR BRAKE EQUIPMENT
8727	USA	ISSUED	5,467,246	11/14/95	LPDW ARRANGEMENT FOR EMULATING AN N-TYPE RELAY AIR VALVE WHICH	IS UTILIZED IN A RAILWAY BRAKING SYSTEM
8248	JAPAN	ISSUED	2003892	12/20/95	LPDW RHY BRAKE CONTROL SYS. ARRANGED TO LIMIT MAX. BRK PRESS.	DURING COMB. INDEP. AND AUTOMATIC BRAKE OPERA
8489	CANAD	ISSUED	1,337,947	01/16/96	LPDW DIGITAL AIR BRAKE CONTROL SYSTEM	
8625	USA C	ISSUED	5,491,830	02/13/96	LPDW AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8696	CANAD	ISSUED	2,109,381	03/12/96	LPDW SAFETY VALVE ARRANGEMENT	
8704	JAPAN	ISSUED	2503195	03/13/96	LPDW ARRANGEMENT FOR ENHANCING THE BAIL-OFF FUNCTION OF BRAKE	CYLINDER PRESSURES ON A RAILROAD LOCOMOTIVE
8655	AUSAL	ISSUED	664809	03/26/96	LPDW AUTOMATIC SLOT IDENTIFICATION AND ADDRESS DECODING SYSTEM	
8676	USA	ISSUED	5,503,469	04/02/96	LPDW APPARATUS TO PREVENT INADVERTENT DISCHARGE AND TRAPPING OF	PIPE PRESS. IN AN ELECTRO-PNEU. LOCO. BRAKE C
8611	USA	ISSUED	5,538,331	07/23/96	LPDW APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-	PNEUMATIC SYSTEMS
8697	USA	ISSUED	5,544,419	08/13/96	LPDW DIPSTICK ASSEMBLY	
8502	JAPAN	ISSUED	2106812	11/06/96	LPDW BRAKE VALVE DEVICE ARRANGED FOR ELECTRO-PNEUMATIC CONTROL	
8725	JAPAN	ISSUED	2576834	11/07/96	LPDW CHARGING CUT-OFF VALVE ARRANGEMENT FOR MICROPROCESSOR-BASED	ELECTROPNEUMATIC LOCOMOTIVE BRAKE CONTROL SYS
8680	USA	ISSUED	5,592,384	01/07/97	LPDW RAILWAY BRAKE SYSTEM TESTER	
8697	USA	ISSUED	5,621,657	04/15/97	LPDW AUTOMATIC DETECTION OF AIR FLOW TRANSDUCER TYPE UNDER	SOFTWARE CONTROL
8939	USA	ISSUED	5,630,354	05/20/97	LPDW EXTENDED LIFE BRAKE CYLINDER HOLDER	
8992	USA	ISSUED	5,634,391	06/03/97	LPDW INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR	APPLICATION IN A SANITARY TYPE PUMP
8799	USA C	ISSUED	5,644,461	07/01/97	LPDW HIGH VOLTAGE D-C CURRENT LIMITER	

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 TRADE MARK

8701	JAPAN	ISSUED	2670425	07/04/97	LPDW MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC BACKUP BRAKE
8590	JAPAN	ISSUED	2690270	08/29/97	LPDW APPARATUS & METHOD OF BAILING OFF THE BRAKE CYLINDER	PRESSURE ON A LOCOMOTIVE CONSIST.
8991	USA	ISSUED	5,687,633	11/18/97	LPDW IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP	DIAPHRAGM
9013	USA	ISSUED	5,689,893	11/25/97	LPDW DESICCANT CANISTER WITH POSITIONING BORE	
8701	CANAD	ISSUED	2,105,152	12/02/97	LPDW MICROPROCESSOR-BASED ELECTROPNEUMATIC LOCOMOTIVE BRAKE	CONTROL SYSTEM HAVING PNEUMATIC BACKUP BRAKE
8741	USA	ISSUED	5,704,770	01/06/98	LPDW AIR PASSAGE INSERT FOR OIL FILL SPOUT	
8905	USA	ISSUED	5,711,206	01/27/98	LPDW PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY	IN AN AIR COMPRESSOR
8847	JAPAN	ISSUED	2742525	01/30/98	LPDW APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND RE-	VERSER HANDLES ON A CONTROL STAND OF A RAILWA
8853	JAPAN	ISSUED	2742526	01/30/98	LPDW APPARATUS FOR INTERLOCKING REVERSE HANDLE ON A CONTROL	STAND OF A RAILWAY LOCOMOTIVE
9016	USA	ISSUED	5,715,621	02/10/98	LPDW REGENERATIVE DESICCANT AIR DRYER	
9014	SOFCR	ISSUED	97/3997	02/25/98	LPDW Molded Rubber Val Seal for use in Predetermined type Valves	such as, a Ck Val in a Regenerative Desiccant
9013	SOFCR	ISSUED	97/4626	03/25/98	LPDW DESICCANT CANISTER WITH POSITIONING BORE	
8984	SOFCR	ISSUED	97/4891	03/25/98	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A	MULTIPLE STAGE COMPRESSOR AND METHOD
8872	JAPAN	ISSUED	2763284	03/27/98	LPDW SOFTWARE NULLIFICATION OF TRANSDUCER INDUCED OFFSET	ERRORS WITHIN A FLOW RATE MEASUREMENT SYSTEM
8878	JAPAN	ISSUED	2766631	04/03/98	LPDW APPARATUS TO PREVENT INADVERTENT DISCHARGE AND TRAPPING OF	PIPE PRESS. IN AN ELECTRO-PNEU. LOCO. BRAKE C
8857	CANAD	ISSUED	2,150,882	06/09/98	LPDW DIPSTICK ASSEMBLY	

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Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Client	Long Title 1	Long Title 2
6821	USA	1	ISSUED	4,175,792	11/27/79	NAFW	CONTINUAL QUICK SERVICE VALVE DEVICE	
6975	SOFRC		ISSUED	79/1232	03/26/80	NAFW	RAILWAY VEHICLE BRAKE APPARATUS ARRANGED ..REDUCED EMERGENCY RESERVOIR VOLUME	
6982	SOFRC		ISSUED	79/1200	03/26/80	NAFW	NEW POPPET VALVE TYPE BRAKE CONTROL VALV E DEVICE	
7005	SOFRC		ISSUED	79/3204	06/25/80	NAFW	IMPROVED HOSE COUPLING	
6986	SOFRC		ISSUED	79/3203	06/25/80	NAFW	VARIABLE LOAD VALVE DEVICE	
7005	USA		ISSUED	4,215,681	08/05/80	NAFW	IMPROVED HOSE COUPLING	
7020	SOFRC		ISSUED	79/4008	08/27/80	NAFW	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND R ESERVOIR	
7020	USA		ISSUED	4,225,193	09/30/80	NAFW	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND R ESERVOIR	
7023	USA		ISSUED	RE30408	09/30/80	NAFW	BRAKE APPARATUS WITH COMBINED BRAKE CYLI NDER AND RESERVOIR	
6982	USA		ISSUED	4,235,477	11/25/80	NAFW	VARIABLE LOAD VALVE DEVICE	
7024	SOFRC		ISSUED	80/3282	05/27/81	NAFW	IMPROVED CORE FOR FORMING PASSAGEWAYS IN CASTINGS	
6985	CANAD		ISSUED	1111466	10/27/81	NAFW	NEW POPPET VALVE TYPE BRAKE CONTROL VALV E DEVICE	
6979	CANAD		ISSUED	1111465	10/27/81	NAFW	RAILWAY VEHICLE BRAKE APPARATUS ARRANGED ..REDUCED EMERGENCY RESERVOIR VOLUME	
7008	CANAD		ISSUED	1115308	12/29/81	NAFW	IMPROVED HOSE COUPLING	
7020	CANAD		ISSUED	1116660	01/19/82	NAFW	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND R ESERVOIR	
8123	TRANS		ISSUED	83/0042	04/28/82	NAFW	UNIVERSAL GASKET	
8006	VENDA		ISSUED	81/0071	06/04/82	NAFW	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AID A IR RESERVOIR DEVICE	
7027	VENDA		ISSUED	80/0545	06/12/82	NAFW	IMPROVED CORE FOR FORMING PASSAGEWAYS IN CASTINGS	
8006	SOFRC		ISSUED	81/3958	06/30/82	NAFW	CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE	

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8006	USA	ISSUED	4,339,155	07/13/82	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE
7100	SOFRC	ISSUED	81/5775	09/29/82	MAFW INSHOT VALVE ARRANGEMENT. RAILWAY BRAKE. A PPARATUS. BRAKE CYLINDER DEVICE
7098	USA	ISSUED	RE31059	10/19/82	MAFW EMERGENCY PORTION FOR A BRAKE CONTROL VALVE
7135	VENDA	ISSUED	82/0070	06/24/83	MAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/B RAKE CYLINDER DEVICE
7144	VENDA	ISSUED	82/0074	06/24/83	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE
7135	SOFRC	ISSUED	82/5862	06/29/83	MAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/B RAKE CYLINDER DEVICE
7144	SOFRC	ISSUED	82/6590	07/27/83	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE
7144	USA	ISSUED	4,405,182	09/20/83	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE
7081	CANAD	ISSUED	1154386	09/27/83	MAFW BRAKE CYLINDER DEVICE
7080	CANAD	ISSUED	1154387	09/27/83	MAFW BRAKE CYLINDER DEVICE
7135	USA	ISSUED	4,418,799	12/06/83	MAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/B RAKE CYLINDER DEVICE
7144	BOPHU	ISSUED	82/0127	12/28/83	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE
8123	VENDA	ISSUED	83/0031	01/13/84	MAFW UNIVERSAL GASKET
8123	SOFRC	ISSUED	83/3265	01/25/84	MAFW UNIVERSAL GASKET
7144	TRANS	ISSUED	82/0079	02/09/84	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE
7135	TRANS	ISSUED	82/0077	02/09/84	MAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/B RAKE CYLINDER DEVICE
6995	JAPAN	ISSUED	1195608	03/12/84	MAFW RAILWAY VEHICLE BRAKE APPARATUS ARRANGED ... REDUCED EMERGENCY RESERVOIR VOLUME
7135	BOPHU	ISSUED	82/0121	04/13/84	MAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/B RAKE CYLINDER DEVICE
8123	BOPHU	ISSUED	83/0050	05/24/84	MAFW UNIVERSAL GASKET
8130	USA	ISSUED	4,456,219	06/26/84	MAFW SPRING LOCKING HANDLE MECHANISM
8101	USA	ISSUED	4,467,605	08/28/84	MAFW HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
7100	CANAD	ISSUED	1178992	12/04/84	MAFW INSHOT VALVE ARRANGEMENT. RAILWAY BRAKE. A PPARATUS. BRAKE CYLINDER DEVICE
8006	CANAD	ISSUED	1178993	12/04/84	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B RAKE CYLINDER AND A IR RESERVOIR DEVICE

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5982	JAPAN	ISSUED	1247151	01/16/85	MAFW NEW POPPET VALVE TYPE BRAKE CONTROL VALV E DEVICE	
8190	SOFRC	ISSUED	84/4369	03/27/85	MAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
8190	VENDA	ISSUED	84/0054	06/21/85	MAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
8179	SOFRC	ISSUED	84/9082	07/31/85	MAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8179	VENDA	ISSUED	84/0109	08/30/85	MAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8190	TRANS	ISSUED	84/0055	09/02/85	MAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
6986	CANAD	ISSUED	1193300	09/10/85	MAFW VARIABLE LOAD VALVE DEVICE	
8110	SOFRC	ISSUED	85/0871	10/30/85	MAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8110	VENDA	ISSUED	85/0010	12/06/85	MAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8179	USA	ISSUED	4,557,181	12/10/85	MAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
7135	CANAD	ISSUED	1198758	12/31/85	MAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/B BRAKE CYLINDER DEVIC E	
8110	TRANS	ISSUED	85/0012	02/28/86	MAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8180	USA	ISSUED	4,577,870	03/25/86	MAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	CAPABILITIES OF A SEAL
8259	USA	ISSUED	4,583,790	04/22/86	MAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
7135	AUSAL	ISSUED	549521	06/10/86	MAFW IMPROVEMENTS IN COMBINED AIR RESERVOIR/B BRAKE CYLINDER DEVIC E	
8179	TRANS	ISSUED	84/0118	07/04/86	MAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8178	SOFRC	ISSUED	85/8722	07/30/86	MAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8259	SOFRC	ISSUED	85/9407	08/27/86	MAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8307	USA	ISSUED	4,613,016	09/23/86	MAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8259	VENDA	ISSUED	85/0108	10/31/86	MAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
7144	CANAD	ISSUED	1213634	11/04/86	MAFW CONTROL VALVE ARRANGEMENT FOR COMBINED B BRAKE CYLINDER AND A IR RESERVOIR DEVICE	
8179	BOPHU	ISSUED	84/0181	12/11/86	MAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	

8178	VENDA	ISSUED	85/0093	12/23/86	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON				
6986	JAPAN	ISSUED	1364209	02/09/87	NAFW VARIABLE LOAD VALVE DEVICE				
8307	SOFRC	ISSUED	86/5988	03/25/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY				
8259	TRANS	ISSUED	85/0114	05/01/87	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM				
8178	TRANS	ISSUED	85/0106	05/01/87	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON				
8307	VENDA	ISSUED	86/0054	05/29/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY				
8190	BOPHU	ISSUED	84/0081	06/11/87	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT				
8190	CANAD	ISSUED	1225112	08/04/87	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT				
6829	USA	ISSUED	4,690,463	09/01/87	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE				APPLICATION FUNCTION
8307	TRANS	ISSUED	86/0061	10/12/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY				
8307	BOPHU	ISSUED	86/0094	11/19/87	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY				
6829	SOFRC	ISSUED	87/2764	11/25/87	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE				APPLICATION FUNCTION
6829	VENDA	ISSUED	87/0038	02/26/88	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE				APPLICATION FUNCTION
8259	BOPHU	ISSUED	85/0179	03/01/88	NAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM				
8110	BOPHU	ISSUED	85/0016	03/01/88	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING				CAPABILITIES OF A SEAL
8307	NEWZL	ISSUED	217149	04/18/88	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY				
8396	SOFRC	ISSUED	87/6327	04/27/88	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &				GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8396	USA	ISSUED	4,744,609	05/17/88	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &				GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8178	CANAD	ISSUED	1237749	06/07/88	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE				
8156	CANAD	ISSUED	1238889	07/05/88	NAFW SPRING LOCKING HANDLE MECHANISM				
8178	BOPHU	ISSUED	85/0160	07/14/88	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON				
8410	SOFRC	ISSUED	87/9026	07/27/88	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY				
8396	VENDA	ISSUED	87/0086	08/26/88	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &				GRADUATING VALV ARRANGED PROVIDE ACCELER BRK

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6829	ARGNT	ISSUED	239228	07/31/89	MAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
6829	TRAMS	ISSUED	87/0040	08/03/89	MAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8259	CHINA	ISSUED	85109613.1	08/23/89	MAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8415	VENDA	ISSUED	88/0067	09/21/89	MAFW VARIABLE LOAD VALVE	
8351	USA	ISSUED	4,875,739	10/24/89	MAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8415	TRANS	ISSUED	88/0064	11/16/89	MAFW VARIABLE LOAD VALVE	
6829	UNTKN	ISSUED	2189299	11/29/89	MAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8506	USA	ISSUED	4,887,516	12/19/89	MAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8454	VENDA	ISSUED	88/0110	01/08/90	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8455	VENDA	ISSUED	88/0109	01/19/90	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	SERVICE FUNCTION
8451	VENDA	ISSUED	88/0108	01/19/90	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	SERVICE FUNCTION
8451	TRAMS	ISSUED	88/0117	02/22/90	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	SERVICE FUNCTION
8470	USA	ISSUED	4,915,018	04/10/90	MAFW IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8451	BOPHU	ISSUED	88/0184	05/01/90	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	SERVICE FUNCTION
8459	BOPHU	ISSUED	88/0183	05/01/90	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	SERVICE FUNCTION
8451	BOPHU	ISSUED	88/0182	05/01/90	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SERVICE FUNCTION	SERVICE FUNCTION
8451	SOFRC	ISSUED	89/5980	05/30/90	MAFW FREIGHT BRAKE EMERGENCY VALVE	
8307	CANAD	ISSUED	1270211	06/12/90	MAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8307	USA	ISSUED	4,951,554	08/28/90	MAFW LOW STRESS DIAPHRAGM	
8427	BOPHU	ISSUED	87/0058	09/05/90	MAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8396	AUSAL	ISSUED	597,103	09/18/90	MAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
7091	JAPAN	ISSUED	1582983	10/22/90	MAFW HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8351	SOFRC	ISSUED	90/0338	10/31/90	MAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	

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NO.	ISSUED	COUNTRY	NO.	DATE	DESCRIPTION	FUNCTION
6522	ISSUED	CANAD	1,276,211	11/13/90	MAFW EMPTY-LOAD CHANGEOVER APPARATUS	
8389	ISSUED	AUSAL	600,104	11/20/90	MAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE....FUNCTION
8410	ISSUED	AUSAL	600,538	12/03/90	MAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
6961	ISSUED	USA	4,974,911	12/04/90	MAFW VENT VALVE DEVICE	
8535	ISSUED	USA	4,974,910	12/04/90	MAFW FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE	FUNCTION
6961	ISSUED	SDFRC	90/3963	03/27/91	MAFW VENT VALVE DEVICE	
8532	ISSUED	USA	5,005,915	04/09/91	MAFW EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
6829	ISSUED	CANAD	1285149	04/16/91	MAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8630	ISSUED	USA	5,044,698	09/03/91	MAFW IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE	PROTECTION
8454	ISSUED	TRANS	88/0120	10/29/91	MAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8616	ISSUED	USA	5,069,312	12/03/91	MAFW HANDBRAKE FOR SINGLE-CYLINDER TRUCK-MOUNTED RAILWAY CAR	BRAKE
8556	ISSUED	USA	5,071,198	12/10/91	MAFW EMER. VAL FOR ABD FR. BRAKE CONTROL VALVE DEVICE	
8635	ISSUED	USA	5,072,913	12/17/91	MAFW SPRING LOADED LOCKING HANDLE FOR ANGLE COCK OR THE LIKE	
8421	ISSUED	AUSAL	613668	01/17/92	MAFW TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8178	ISSUED	JAPAN	1637432	01/31/92	MAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM TYPE PISTON	
8619	ISSUED	USA	5,100,207	03/31/92	MAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8598	ISSUED	USA	5,106,168	04/21/92	MAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8396	ISSUED	CANAD	1300208	05/05/92	MAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8389	ISSUED	CANAD	1300209	05/05/92	MAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE....FUNCTION
8250	ISSUED	JAPAN	UN1904780	05/13/92	MAFW IMPROVED EMPTY/LOAD BRAKE CONTROL SYSTEM	
8661	ISSUED	USA	5,113,694	05/19/92	MAFW MODIFIED PRESS. REGULATOR VAL FOR SINGLE CAR TESTING DEVICE	
8374	ISSUED	CANAD	1301078	05/19/92	MAFW HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED RAY	CAR BRAKE ASSEMBLY

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NO.	CLASS.	ISSUE DATE	NO.	ISSUE DATE	DESCRIPTION	FUNCTION
8410	CANAD	ISSUED	1301079	05/19/92	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	CAPABILITIES OF A SEAL
8110	JAPAN	ISSUED	1909081	05/26/92	NAFW AN APPARATUS FOR AND A METHOD OF IMPROVING THE SEALING	DEVICE
8607	USA	ISSUED	5, 118, 166	06/02/92	NAFW QUICK SER. FUNCTION FOR R.V.T. FREIGHT BRAKE CONTROL VALVE	CAR BRAKE ASSEMBLY
8374	BRAZL	ISSUED	8706703-0	06/30/92	NAFW HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED R.V.T.	
8190	JAPAN	ISSUED	1679851	07/13/92	NAFW EMPTY/LOAD BRAKE CONTROL ARRANGEMENT	
8632	USA	ISSUED	5, 131, 667	07/21/92	NAFW HOSE COUPLING GASKET	
8415	CANAD	ISSUED	1305740	07/28/92	NAFW VARIABLE LOAD VALVE	
6829	MEXIC	ISSUED	164579	09/03/92	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8389	BRAZL	ISSUED	8801207	09/29/92	NAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION
8415	BRAZL	ISSUED	8803450	11/24/92	NAFW VARIABLE LOAD VALVE	
8410	BRAZL	ISSUED	8706702-1	11/24/92	NAFW SINGLE CYLINDER TRUCK MOUNTED BRAKE ASSEMBLY	
8659	USA	ISSUED	5, 165, 962	11/24/92	NAFW MASKING FILM FOR COATING PROCESS	
9532	SOFRC	ISSUED	91/1245A	12/30/92	NAFW EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8630	SOFRC	ISSUED	91/6850	12/30/92	NAFW IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE	PROTECTION
8179	JAPAN	ISSUED	1729847	01/29/93	NAFW IMPROVED BRAKE CYLINDER/AIR RESERVOIR DEVICE	
8355	AUSAL	ISSUED	627535	01/29/93	NAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8454	CANAD	ISSUED	1313391	02/02/93	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8454	CANAD	ISSUED	1313392	02/02/93	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK SE	RVICE FUNCTION
8454	CANAD	ISSUED	1313390	02/02/93	NAFW FREIGHT BRAKE CONTROL VALVE DEVICE HAVING IMPROVED QUICK	SERVICE FUNCTION
8398	JAPAN	ISSUED	1953405	02/12/93	NAFW FRT BRK CONTROL VALV HAVING EMERG PISTON SLIDE VALVE &	GRADUATING VALV ARRANGED PROVIDE ACCELER BRK
8374	JAPAN	ISSUED	1755853	06/23/93	NAFW HANDBRAKE MECHANISM FOR SINGLE CYLINDER TRUCK MOUNTED R.V.T.	CAR BRAKE ASSEMBLY
8645	USA	ISSUED	5, 207, 482	05/04/93	NAFW VENT VALVE DEVICE HAVING DISABLING MEANS	
8564	USA	ISSUED	5, 213, 397	05/25/93	NAFW FREIGHT BRAKE CONTROL VALVE FOR RAILWAY CAR.	

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8682	USA	ISSUED	5,220,863	06/22/93	NAFW CONICAL DIAPHRAGM AND METHOD OF MAKING	
8643	USA	ISSUED	5,224,994	07/06/93	NAFW APPARATUS & METHOD FOR LIQUID TREATMENT OF ARTICLE SURFACES	
8600	USA	ISSUED	5,228,648	07/20/93	NAFW RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8629	INDIA	ISSUED	169289	09/18/93	NAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8421	CANAD	ISSUED	1,322,729	10/05/93	NAFW TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	
8453	CANAD	ISSUED	1,323,063	10/12/93	NAFW FREIGHT BRAKE EMERGENCY VALVE	
8506	CANAD	ISSUED	1,323,062	10/12/93	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8421-M	BRAZL	ISSUED	8803666	11/30/93	NAFW	
8470	CANAD	ISSUED	1,324,809	11/30/93	NAFW IMPROVED DIAPHRAGM PISTON ASSEMBLY	
8677	USA	ISSUED	5,269,595	12/14/93	NAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8630	AUSAL	ISSUED	641272	01/17/94	NAFW IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE	PROTECTION
8600	SOFRC	ISSUED	93/2917	01/26/94	NAFW RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8706	USA	ISSUED	5,293,777	03/15/94	NAFW HINGED ASSEMBLY FOR AIR BRAKE VALVE TEST FIXTURE	
8710	USA	ISSUED	5,303,987	04/19/94	NAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8694	USA	ISSUED	5,326,159	07/05/94	NAFW QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL	VALVE DEVICE
8692	USA	ISSUED	5,333,941	08/02/94	NAFW HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	DEVICE
8506	BRAZL	ISSUED	8904266-2	08/30/94	NAFW CLAMPING ARRANGEMENT FOR DIAPHRAGM PISTON ASSEMBLY	
8714	USA	ISSUED	5,350,222	09/27/94	NAFW AUXILIARY STABILIZER VALVE FOR VX VENT VALVE	
8350	BRAZL	ISSUED	9000169-9	10/25/94	NAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8532	AUSAL	ISSUED	650862	10/25/94	NAFW EMPTY LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8351	CANAD	ISSUED	2,005,295	11/08/94	NAFW INDEPENDENT CONTINUAL QUICK SERVICE VALVE DEVICE	
8737	USA	ISSUED	5,393,129	02/28/95	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	

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NO.	ISSUED	DATE	DESCRIPTION	DEVICE
8692	ISSUED	04/26/95	MAFW HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	DEVICES IN ELECTRO-PNEUMATIC FREIGHT BRAKE CDM
8739	ISSUED	05/23/95	MAFW LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE	
8755	ISSUED	07/04/95	MAFW BRAKE CYLINDER PRESSURE RELAY VALVE FOR RAILROAD FREIGHT CAR	
8737	ISSUED	07/26/95	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8681	ISSUED	08/01/95	MAFW LOW STRESS CONICAL TYPE DIAPHRAGM	
8829	ISSUED	08/10/95	MAFW FRT BRAKE CONTROL VALVE...PISTON SLIDE VALVE...BRAKE	APPLICATION FUNCTION
8600	ISSUED	08/15/95	MAFW RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8787	ISSUED	09/19/95	MAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8788	ISSUED	09/19/95	MAFW VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR	CONTROL VALVE
8748	ISSUED	11/14/95	MAFW FASTENER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE	
8694	ISSUED	12/12/95	MAFW QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL VALVE DEVICE	
8754	ISSUED	01/02/96	MAFW RAILWAY BRAKE PIPE WITH ACCES PORTS	
8737	ISSUED	01/23/96	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8647	ISSUED	02/20/96	MAFW RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND MOUNT THEREFOR	
8747	ISSUED	02/28/96	MAFW IMBEDDED ELECTRICAL CONNECTOR	
8816	ISSUED	03/26/96	MAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANS-DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE CDM	
8787	ISSUED	03/27/96	MAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8673	ISSUED	04/02/96	MAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8809	ISSUED	04/02/96	MAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT BRAKE	
8784	ISSUED	04/02/96	MAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8809	ISSUED	04/23/96	MAFW Railway Automatic Brake Control Valve Test Unit	
8809	ISSUED	04/24/96	MAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8786	ISSUED	04/24/96	MAFW Railway Automatic Brake Control Valve Test Unit	

8772	USA	ISSUED	5,518,304	05/21/96	NAFW FILTER ARRANGEMENT AND MOUNTING IN RAILWAY BRAKE PIPE	BRACKET.
8389	ARGHT	ISSUED	249,854	05/24/96	NAFW FREIGHT BRAKE CONTROL VALVE HAVING EMERGENCY PISTON SLIDE	VALVE...FUNCTION
8739	AUSAL	ISSUED	666438	05/28/96	NAFW LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE	DEVICE
8692	AUSAL	ISSUED	666408	05/28/96	NAFW HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	PROTECTION
8630	BRAZL	ISSUED	9103727-1	05/28/96	NAFW IMPROVED FREIGHT BRAKE CONTROL VALVE HAVING LAP LEAKAGE	PROTECTION
8677	JAPAN	ISSUED	2064957	06/24/96	NAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8752	SOFRC	ISSUED	95/6931	06/26/96	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8813	SOFRC	ISSUED	95/7996	06/26/96	NAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8751	SOFRC	ISSUED	95/7080	06/26/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8789	USA	ISSUED	5,538,332	07/23/96	NAFW VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY	
8829	USA	ISSUED	5,544,854	08/13/96	NAFW REMOTE CONTROL OF CUT-OUT COCK	
8751	USA	ISSUED	5,551,765	09/03/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8788	JAPAN	ISSUED	2564100	09/19/96	NAFW EMPTY/LOAD CHANGEOVER VALVE FOR RAILWAY CAR	
8865	USA	ISSUED	5,559,281	09/24/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAHNER -	W. THOMAS DIGWEED (8 INVENTORS)
8861	USA	ISSUED	5,564,794	10/15/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGU-	LATING VALVE THEREFOR
8885	SOFRC	ISSUED	96/0335	10/30/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAHNER -	W. THOMAS DIGWEED (8 INVENTORS)
8790	SOFRC	ISSUED	96/0266	10/30/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A	RAILROAD CAR BRAKE PIPE PRESSURE
8794	JAPAN	ISSUED	2576835	11/07/96	NAFW AUXILIARY STABILIZER VALVE FOR VX VENT VALVE	
8600	CANAD	ISSUED	2,090,383	11/12/96	NAFW RAILWAY FREIGHT BRAKE RETAINER VALVE DEVICE	
8692	JAPAN	ISSUED	2583393	11/21/96	NAFW HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	DEVICE
8861	SOFRC	ISSUED	96/1847	11/27/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGU-	LATING VALVE THEREFOR
8752	USA	ISSUED	5,586,813	12/24/96	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	

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NO.	COUNTRY	STATUS	NO.	DATE	DESCRIPTION	FUNCTION
8747	USA	ISSUED	5,586,668	12/24/96	NAFM IMBEDDED ELECTRICAL CONNECTOR	
8535	CANAD	ISSUED	2,014,685	01/21/97	NAFM FREIGHT BRAKE CONTROL VALVE HAVING IMPROVED QUICK SERVICE	BRAKE
6961	CANAD	ISSUED	2,014,686	01/21/97	NAFM VENT VALVE DEVICE	CONTROL VALVE
8865	SOFRC	ISSUED	96/4015	02/26/97	NAFM FREIGHT BRAKE CONTROL USING IRRAIN NET BRAKING RATIO	
8828	SOFRC	ISSUED	96/3750	02/26/97	NAFM PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC	BRAKE
8788	AUSAL	ISSUED	674618	04/22/97	NAFM VIBRATION DESENSITIZING PISTON WEAR RING FOR RAILROAD CAR	CONTROL VALVE
8884	SOFRC	ISSUED	96/7296	05/28/97	NAFM TWO-PIECE CHECK VALVE ASSEMBLY	
8919	SOFRC	ISSUED	96/7297	05/28/97	NAFM TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8928	USA CP	ISSUED	5,634,696	06/03/97	NAFM RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8790	USA	ISSUED	5,638,276	06/10/97	NAFM MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A	RAILROAD CAR BRAKE PIPE PRESSURE
8900	SOFRC	ISSUED	96/6215	06/25/97	NAFM RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8928	SOFRC	ISSUED	96/6437	06/25/97	NAFM RAILWAY PIPE BRACKET WITH ACCESS PORTS	
8685	JAPAN	ISSUED	2690674	08/29/97	NAFM CONSTANT TENSION DEVICE FOR RAILWAY CAR HANDBRAKE	
8829	USA	ISSUED	5,662,391	09/02/97	NAFM PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC	BRAKE
8884	USA	ISSUED	5,669,412	09/23/97	NAFM TWO-PIECE CHECK VALVE ASSEMBLY	
8752	USA D1	ISSUED	5,669,674	09/23/97	NAFM ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8789	JAPAN	ISSUED	2709046	10/17/97	NAFM VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY	
8841	JAPAN	ISSUED	2709293	10/17/97	NAFM RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND	MOUNT THEREFOR
8829	JAPAN	ISSUED	2723492	11/28/97	NAFM REMOTE CONTROL OF CUT-OUT COCK	
8980	USA CP	ISSUED	5,695,258	12/09/97	NAFM RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8692	CANAD	ISSUED	2,109,379	01/20/98	NAFM HIGH PRESSURE VALVE FOR RAILWAY CAR BRAKE CONTROL VALVE	DEVICE
8714	CANAD	ISSUED	2,109,378	01/20/98	NAFM AUXILIARY STABILIZER VALVE FOR VX VENT VALVE	
8889	USA	ISSUED	5,709,436	01/20/98	NAFM ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A	RAILROAD CAR BRAKE CONTROL VALVE DEVICE

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8919	USA	ISSUED	5,714,684	02/03/98	NAFW TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER
8737	JAPAN	ISSUED	2753457	02/27/98	NAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM
9031	USA	ISSUED	5,730,504	03/24/98	NAFW Release Assuring Arrangement for Comb. Electro-Pneu./Auto. Pneumatic Brake
9008	SOFRC	ISSUED	97/5963	03/25/98	NAFW ELECTRO-PNEUMATIC VALVE CONTROL
8864	SOFRC	ISSUED	97/6436	03/25/98	NAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE
8976	SOFRC	ISSUED	97/6934	04/29/98	NAFW ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR
8899	USA	ISSUED	5,746,484	05/05/98	NAFW E/P INTERFACE WITH PNEUMATIC CONTROL VALVE FOR BACK-UP BRAKE ARRANGEMENT

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Case Number	Country	Count	Sub Case	Status	Patent Number	Issue Date	Client	Long Title 1	Long Title 2
6968	USA			ISSUED	4175793	11/27/79	PTDS	PARKING BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES	
6771	JAPAN			ISSUED	993518	04/22/80	PTDS	APPARATUS FOR PREVENTING RELEASE OF AN EMERGENCY...COMPLETE STOP OF THE TRAIN	
7001	USA			ISSUED	4,199,195	04/22/80	PTDS	DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM	
7001	SOFRC			ISSUED	79/1921	05/28/80	PTDS	DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM	
6973	SOFRC			ISSUED	79/1991	05/28/80	PTDS	FOUR-WAY BALL VALVE	
6965	USA			ISSUED	4215767	08/05/80	PTDS	PARKING BRAKE DEVICE	
6973	USA			ISSUED	4232709	11/11/80	PTDS	FOUR-WAY BALL VALVE	
7012	USA			ISSUED	4,239,292	12/16/80	PTDS	BRAKE GEAR FOR VEHICLES	
6963	USA			ISSUED	4243273	01/06/81	PTDS	ADJUSTABLE VARIABLE LOAD VALVE DEVICE	
7062	SOFRC			ISSUED	80/3283	05/27/81	PTDS	MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE	
7062	VERDA			ISSUED	80/0544	06/12/81	PTDS	MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE	
6962	USA			ISSUED	4273218	06/16/81	PTDS	FLEXIBLE MOUNTING HUB FOR DISC MEMBER	
7001	CANAD			ISSUED	1105067	07/14/81	PTDS	DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM	
7062	USA			ISSUED	4,279,332	07/21/81	PTDS	MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE	
6960	USA			ISSUED	4290368	09/22/81	PTDS	MANUALLY OPERATED SLIDING DOORS FOR RAILROAD CAR...CLOSING BY REMOTE CONTROL	
7066	SOFRC			ISSUED	80/6838	09/30/81	PTDS	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
6973	CANAD			ISSUED	1111327	10/27/81	PTDS	FOUR-WAY BALL VALVE	
7012	CANAD			ISSUED	1111464	10/27/81	PTDS	BRAKE GEAR FOR VEHICLES	
7063	USA			ISSUED	4,302,058	11/24/81	PTDS	VARIABLE LOAD VALVE DEVICE	

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7085	SOFRC	ISSUED	80/7139	11/25/81	PTDS HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
6968	CANAD	ISSUED	1116661	01/19/82	PTDS PARKING BRAKE CONTROL SYSTEM FOR RAILWAY VEHICLES
6965	CANAD	ISSUED	1116538	01/19/82	PTDS PARKING BRAKE DEVICE
7085	VENDA	ISSUED	80/0597	02/12/82	PTDS HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7085	USA	ISSUED	4319671	03/16/82	PTDS HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7079	SOFRC	ISSUED	81/1411	03/31/82	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
7086	USA	ISSUED	4323144	04/06/82	PTDS HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
6952	CANAD	ISSUED	1121745	04/13/82	PTDS FLEXIBLE MOUNTING HUB FOR DISC MEMBER
7078	VENDA	ISSUED	81/0093	06/04/82	PTDS SEGMENTED FLEXIBLE HUB
7122	VENDA	ISSUED	81/0072	06/04/82	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7079	VENDA	ISSUED	81/0023	06/04/82	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
7056	USA	ISSUED	4,334,711	06/15/82	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION OF A SHOCK BRAKE FOR A RAILWAY VEHICLE
7122	SOFRC	ISSUED	81/3983	06/30/82	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7086	VENDA	ISSUED	80/0593	08/20/82	PTDS HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7083	SOFRC	ISSUED	81/5739	08/25/82	PTDS SEGMENTED FLEXIBLE HUB
7083	USA	ISSUED	4354518	10/19/82	PTDS DIAPHRAGM PISTON OPERATED VALVE DEVICE
7122	USA	ISSUED	4361078	11/30/82	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7057	USA	ISSUED	4,367,903	01/11/83	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION... SHOCK BRAKE FOR RAILWAY VEHICLES
7075	USA	ISSUED	4368752	01/18/83	PTDS COMPOUND CHECK VALVE
8002	USA	ISSUED	4375303	03/01/83	PTDS CHANGEOVER VALVE DEVICE UTILIZING LOWER PRESSURE... DELIVERED OPERATING PRESSURE
7122	TRANS	ISSUED	81/0085	04/08/83	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
7042	CANAD	ISSUED	1145689	05/03/83	PTDS MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE
7086	CANAD	ISSUED	1149760	07/12/83	PTDS HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE

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7137	USA	ISSUED	4404987	09/20/83	PTDS CAP NUT FOR A TRIP COCK DEVICE ... FOR OVERRIDING AUTOMATIC RESET
7079	JAPAN	ISSUED	1193797	03/12/84	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
7085	JAPAN	ISSUED	1193796	03/12/84	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
7079	CANAD	ISSUED	1166171	04/24/84	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
8117	SOFRC	ISSUED	83/5785	04/25/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8117	VENDA	ISSUED	83/0063	04/27/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
7057	CANAD	ISSUED	1167087	05/08/84	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION OF A SNOW BRAKE FOR RAILWAY VEHICLES
7056	CANAD	ISSUED	1168277	05/29/84	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION OF A SNOW BRAKE FOR A RAILWAY VEHICLE
8103	SOFRC	ISSUED	83/7001A	05/30/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8101	SOFRC	ISSUED	83/7205	05/30/84	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
8116	VENDA	ISSUED	83/0083	06/22/84	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
8101	VENDA	ISSUED	83/0077	06/22/84	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
8107	SOFRC	ISSUED	83/7867	06/27/84	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
8117	BOPHU	ISSUED	83/0105	09/06/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
7084	JAPAN	ISSUED	1233437	09/26/84	PTDS DYNAMIC/FRICTION BRAKE BLENDING CONTROL SYSTEM
8154	USA	ISSUED	4478319	10/23/84	PTDS SPRING-APPLIED BRAKE UNIT FOR RAILWAY VEHICLE WITH MANUAL RELEASE ARRANGEMENT
8103	BOPHU	ISSUED	83/0123	11/21/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8105	TRANS	ISSUED	83/0086	11/28/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8107	TRANS	ISSUED	83/0078	11/28/84	PTDS VIGILANCE SAFETY CONTROL SYSTEM
7078	CANAD	ISSUED	1178901	12/04/84	PTDS SEGMENTED FLEXIBLE HUB
7116	USA	ISSUED	4,486,839	12/04/84	PTDS SYNCHRONOUS WHEEL-SLIP PROTECTION SYSTEM
8101	BOPHU	ISSUED	83/0133	12/12/84	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER

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7117	USA	ISSUED	4,491,920	01/01/85	PTDS RATE POLARITY SHIFT WHEEL-SLIP CONTROL SYSTEM
6963	CANAD	ISSUED	1180740	01/08/85	PTDS ADJUSTABLE VARIABLE LOAD VALVE DEVICE
8103	USA	ISSUED	4,496,193	01/29/85	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8120	USA	ISSUED	4,503,301	03/05/85	PTDS DIFFERENTIAL FLUID PRESSURE SWITCH
8148	SOFRC	ISSUED	84/5847	03/27/85	PTDS SOLENOID-OPERATED VALVE
7042	JAPAN	ISSUED	1257507	03/29/85	PTDS MANUAL RELEASE MECHANISM FOR SPRING-APPLIED PARKING BRAKE
8116	BOPHU	ISSUED	83/0143	04/15/85	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
7141	CANAD	ISSUED	1185904	04/23/85	PTDS MAGNETIC BRAKE SHOE
8116	TRANS	ISSUED	83/0101	05/24/85	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
7057	JAPAN	ISSUED	1265184	05/27/85	PTDS SYSTEM FOR AUTOMATICALLY DELAYING APPLICATION...SNOW BRAKE FOR RAILWAY VEHICLES
8101	TRANS	ISSUED	83/0091	07/21/85	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER
8148	VENDA	ISSUED	84/0088	08/30/85	PTDS SOLENOID-OPERATED VALVE
7177	CANAD	ISSUED	1193299	09/10/85	PTDS CAP NUT FOR A TRIP COCK DEVICE ... FOR OVERRIDING AUTOMATIC RESET
7116	CANAD	ISSUED	1193695	09/17/85	PTDS SYNCHRONOUS WHEEL-SLIP PROTECTION SYSTEM
8104	USA CP	ISSUED	4544047	10/01/85	PTDS SPRING-APPLIED, AIR-RELEASED, SLACK-ADJUSTING PARKING BRAKE
8198	TRANS	ISSUED	84/0080	11/01/85	PTDS SOLENOID-OPERATED VALVE
8109	USA	ISSUED	4550811	11/05/85	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8209	USA	ISSUED	4552056	11/12/85	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRAKE
8189	SOFRC	ISSUED	85/0870	11/27/85	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8189	VENDA	ISSUED	85/0008	12/06/85	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8234	SOFRC	ISSUED	85/3064	12/24/85	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/AIR RESERVOIR...ADJUSTER ARRANGEMENT
8222	SOFRC	ISSUED	85/3069	01/29/86	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE
8234	VENDA	ISSUED	85/0034	02/28/86	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/AIR RESERVOIR...ADJUSTER ARRANGEMENT

8276	ISSUED	86/4519	02/25/87	PTDS ELECTRIC	SOFR	USA	ISSUED	85/0011	02/28/86	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE	TRANS	USA	ISSUED	85/0011	02/28/86	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8222	ISSUED	85/0041	03/13/87	PTDS FLUID F	TRANS	USA	ISSUED	275531	03/19/86	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	HEUZZ	USA	ISSUED	275531	03/19/86	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8269	ISSUED	85/0120	03/13/87	PTDS MANUAL	TRANS	USA	ISSUED	85/0040	04/11/86	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR...ADJUSTER ARRANGEMENT	TRANS	USA	ISSUED	85/0040	04/11/86	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR...ADJUSTER ARRANGEMENT
8261	ISSUED	4,649,805	03/17/87	PTDS VEHICLE	USA	USA	ISSUED	86/0132	06/20/86	PTDS SOLENOID-OPERATED VALVE	BOPHU	USA	ISSUED	86/0132	06/20/86	PTDS SOLENOID-OPERATED VALVE
8148	ISSUED	1219513	03/24/87	PTDS SOLENOID	CANAD	CANAD	ISSUED	1206561	06/24/86	PTDS VIGILANCE SAFETY CONTROL SYSTEM	CANAD	CANAD	ISSUED	1206561	06/24/86	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8299	ISSUED	4659149	04/21/87	PTDS CROSS E	USA	USA	ISSUED	4598953	07/08/86	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RUT TRANSIT VEHICLE	USA	USA	ISSUED	4598953	07/08/86	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RUT TRANSIT VEHICLE
8299	ISSUED	86/6140	04/29/87	PTDS CROSS I	SOFR	VENDA	ISSUED	85/0033	08/01/86	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE	VENDA	VENDA	ISSUED	85/0033	08/01/86	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE
8247	ISSUED	86/0012	05/01/87	PTDS FAIL-S	TRANS	CANAD	ISSUED	1212402	10/07/86	PTDS ADJUSTABLE VARIABLE LOAD CONTROL VALVE DEVICE	CANAD	CANAD	ISSUED	1212402	10/07/86	PTDS ADJUSTABLE VARIABLE LOAD CONTROL VALVE DEVICE
8276	ISSUED	86/0048	05/12/87	PTDS ELECTRI	VENDA	BOPHU	ISSUED	85/0015	10/14/86	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE	BOPHU	BOPHU	ISSUED	85/0015	10/14/86	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8361	ISSUED	4,615,76	06/09/87	PTDS BELLELE	USA	VENDA	ISSUED	86/0109	10/17/86	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	VENDA	VENDA	ISSUED	86/0109	10/17/86	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
6863	ISSUED	1381770	06/09/87	PTDS ADJUST	JAPAN	SOFR	ISSUED	85/0835	10/29/86	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SOFR	USA	ISSUED	85/0835	10/29/86	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
8253	ISSUED	4676346	06/30/87	PTDS BRAKE	USA	UNIKW	ISSUED	2182742	10/30/86	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	UNIKW	USA	ISSUED	2182742	10/30/86	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE
8247	ISSUED	86/0020	07/03/87	PTDS FAIL-S	BOPHU	VENDA	ISSUED	86/0013	10/31/86	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	VENDA	VENDA	ISSUED	86/0013	10/31/86	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8362	ISSUED	4678261	07/07/87	PTDS EQUALI	USA	CANAD	ISSUED	1213633	11/04/86	PTDS VIGILANCE SAFETY CONTROL SYSTEM	CANAD	CANAD	ISSUED	1213633	11/04/86	PTDS VIGILANCE SAFETY CONTROL SYSTEM
8299	ISSUED	86/0056	07/24/87	PTDS CROSS	VENDA	USA	ISSUED	4620567	11/04/86	PTDS SOLENOID OPERATED VALVE	USA	USA	ISSUED	4620567	11/04/86	PTDS SOLENOID OPERATED VALVE
8247	ISSUED	4685052	08/04/87	PTDS FAIL-S	USA	USA	ISSUED	4,624,506	11/25/86	PTDS COMPOUND ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM	USA	USA	ISSUED	4,624,506	11/25/86	PTDS COMPOUND ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM
8299	ISSUED	4685750	08/11/87	PTDS RUT VE	USA	SOFR	ISSUED	86/1248	11/26/86	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	SOFR	USA	ISSUED	86/1248	11/26/86	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8357	ISSUED	4696626	09/29/87	PTDS RAILRL	USA	JAPAN	ISSUED	1351664	12/11/86	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS	JAPAN	USA	ISSUED	1351664	12/11/86	PTDS HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS
8299	ISSUED	86/0064	10/12/87	PTDS CROSS	TRANS	BOPHU	ISSUED	85/0056	12/11/86	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE	BOPHU	USA	ISSUED	85/0056	12/11/86	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE
8276	ISSUED	86/0052	10/12/87	PTDS ELECTI	TRANS	BOPHU	ISSUED	85/0183	12/11/86	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	BOPHU	USA	ISSUED	85/0183	12/11/86	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR
8236	ISSUED	85/0055	11/19/87	PTDS COMBBI	BOPHU	USA	ISSUED	4631514	12/23/86	PTDS MALFUNCTION DETECTION ARRANGEMENT FOR JET-CONTROLLED BRAKE COMMAND SYSTEM	USA	USA	ISSUED	4631514	12/23/86	PTDS MALFUNCTION DETECTION ARRANGEMENT FOR JET-CONTROLLED BRAKE COMMAND SYSTEM
8276	ISSUED	86/0078	11/19/87	PTDS ELECTI	BOPHU	USA	ISSUED	4639047	01/27/87	PTDS RUT VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF PNEUMATIC & ELEC. BRAKES	USA	USA	ISSUED	4639047	01/27/87	PTDS RUT VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF PNEUMATIC & ELEC. BRAKES
8299	ISSUED	86/0100	11/19/87	PTDS CROSS	BOPHU	USA	ISSUED	4639047	01/27/87	PTDS RUT VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF PNEUMATIC & ELEC. BRAKES	USA	USA	ISSUED	4639047	01/27/87	PTDS RUT VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF PNEUMATIC & ELEC. BRAKES

8276	SOFRC	ISSUED	86/4519	02/25/87	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8222	TRANS	ISSUED	85/0041	03/13/87	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING APPLIED EMERGENCY /PARKING BRAKE	
8269	TRANS	ISSUED	85/0120	03/13/87	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRAKE
8261	USA	ISSUED	4,649,805	03/17/87	PTDS VEHICLE BRAKE APPLICATION APPARATUS	
8148	CANAD	ISSUED	1219513	03/24/87	PTDS SOLENOID-OPERATED VALVE	
8299	USA	ISSUED	4659149	04/21/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8299	SOFRC	ISSUED	86/6140	04/29/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8247	TRANS	ISSUED	86/0012	05/01/87	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8276	VENDA	ISSUED	86/0048	05/29/87	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8361	USA	ISSUED	4671576	06/09/87	PTDS DECELERATION CONTROL SYSTEM	
6963	JAPAN	ISSUED	1381770	06/09/87	PTDS ADJUSTABLE VARIABLE LOAD VALVE DEVICE	
8253	USA	ISSUED	4676346	06/30/87	PTDS BRAKE SLACK ADJUSTING APPARATUS	
8247	BOPHU	ISSUED	86/0020	07/03/87	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8362	USA	ISSUED	4678241	07/07/87	PTDS EQUALIZER DISCHARGE VALVE FOR A RAILROAD CAR AIR BRAKE SYSTEM	
8299	VENDA	ISSUED	86/0056	07/24/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8247	USA	ISSUED	4485052	08/04/87	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8299	USA	ISSUED	4685750	08/11/87	PTDS RMY VEHICLE BRAKE SYSTEM W/IMPROVED BLENDING CONTROL OF	PNEUMATIC & ELEC. BRAKES
8351	USA	ISSUED	4696626	09/29/87	PTDS RAILROAD CAR AIR COMPRESSOR UNIT	
8299	TRANS	ISSUED	86/0064	10/12/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8276	TRANS	ISSUED	86/0052	10/12/87	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8234	BOPHU	ISSUED	85/0055	11/19/87	PTDS COMBINED HYDROPNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR..ADJUSTER ARRANGEMENT	
8276	BOPHU	ISSUED	86/0078	11/19/87	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8299	BOPHU	ISSUED	86/0100	11/19/87	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS

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8343	SOFRC	ISSUED	87/1941	12/30/87	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE
8116	CANAD	ISSUED	1232523	02/09/88	PTDS METHOD OF BONDING A LAMINATED ASSEMBLY
8276	WENZL	ISSUED	216538	03/04/88	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RUY TRANSIT VEHICLE
8343	80PMU	ISSUED	87/0040	03/14/88	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE
8343	USA	ISSUED	4,733,602	03/29/88	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE
8189	CANAD	ISSUED	1237680	06/07/88	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE
8361	UNIKM	ISSUED	2172355	06/15/88	PTDS DECELERATION CONTROL SYSTEM
8428	USA	ISSUED	4,756,669	07/12/88	PTDS AIR COMPRESSOR CONTROL APPARATUS AND MET HOD
8446	USA	ISSUED	4,758,254	07/19/88	PTDS MOISTURE REMOVAL APPARATUS
8368	USA	ISSUED	4,763,261	08/09/88	PTDS WHEEL - SPEED DETECTING ARRANGEMENT
8445	USA	ISSUED	4,765,806	08/23/88	PTDS CONTROL METHOD FOR DUAL CYLINDER MOISTUR E REMOVAL APPARATUS
8426	USA	ISSUED	4,773,447	09/27/88	PTDS ELECTROMAGNETIC VALVE
8128	JAPAN	ISSUED	1466862	11/10/88	PTDS SOLENOID-OPERATED VALVE
8429	USA	ISSUED	4,784,585	11/15/88	PTDS ELECTRIC AIR COMPRESSOR
8247	AUSAL	ISSUED	576066	12/06/88	PTDS FAIL - SAFE PULSE TRAIN PRESENCE DETECTOR
8465	USA	ISSUED	4,790,415	12/13/88	PTDS HYDROPNEUMATIC BRAKE ACTUATOR ARRANGED T O MAINTAIN CONSTAHT BRAKE SHOE CLEARANCE
8276	UNIKM	ISSUED	2176857	12/14/88	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RUY TRANSIT VEHICLE
8430	USA	ISSUED	4,795,902	01/03/89	PTDS OPTICAL MASTER CONTROLLER
8400	USA	ISSUED	4,796,513	01/10/89	PTDS SPRING BRAKE CYLINDER
8440	USA	ISSUED	4,799,740	01/24/89	PTDS ELECTROPNEUMATIC MASTER CONTROLLER FOR A M AIR BRAKE SYSTEM
8460	USA	ISSUED	4,802,559	02/07/89	PTDS HYROPNEUMATIC BRAKE ACTUATOR ARRANGED T O MAINTAIN CONSTAHT BRAKE SHOE CLEARANCE
8343	TRANS	ISSUED	87/0029	02/09/89	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BR AKE

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8343	USA	ISSUED	87/0029	02/09/89	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE	
8447	USA	ISSUED	4,812,148	03/14/89	PTDS ARRANGEMENT FOR CONTROLLING REMOVAL OF MOISTURE FROM CYLINDER TYPE MOISTURE REMOVER	
8397	USA	ISSUED	4,811,651	03/14/89	PTDS SPRING BRAKE CYLINDER	
8437	USA	ISSUED	4,819,123	04/04/89	PTDS COMPRESSED AIR SUPPLY SYSTEM	
8424	USA	ISSUED	4,830,437	05/16/89	PTDS BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8276	AUSAL	ISSUED	584211	05/18/89	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RY TRANSIT VEHICLE	
8247	CANAD	ISSUED	1254644	05/23/89	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR	
8299	NEWZL	ISSUED	218191	06/06/89	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8462	USA	ISSUED	4,845,428	07/04/89	PTDS MAGNETIC ROTATIONAL DETECTING ARRANGEMENT FOR SENSING SPEED OF RAILWAY VEHICLE	
8299	AUSAL	ISSUED	587295	08/10/89	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8458	USA	ISSUED	4,865,278	09/12/89	PTDS CONTROL COMMAND SYSTEM FOR RAILWAY VEHICLE	
8507	USA	ISSUED	4,883,089	11/28/89	PTDS RAILWAY CAR PRESSURE CONTROL VALVES	
8483	SOFRC	ISSUED	89/3654	01/31/90	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8457	USA	ISSUED	4,901,953	02/20/90	PTDS CONTROLLER FOR RAILWAY VEHICLES	
8493	USA	ISSUED	4,941,099	07/10/90	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8491	CANAD	ISSUED	1271972	07/24/90	PTDS DECELERATION CONTROL SYSTEM	
8509	USA	ISSUED	4,949,754	08/21/90	PTDS PRESSURE CONTROL VALVE FOR RAILWAY VEHICLE	
8550	USA	ISSUED	4,951,516	08/28/90	PTDS FORCE MULTIPLICATION MECHANISM	
8488	USA	ISSUED	4,957,208	09/18/90	PTDS MULTI-CONTACT ELECTRICAL CONNECTOR PORTION FOR AUTO RY CPLR	
8531	USA	ISSUED	4,957,193	09/18/90	PTDS ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE	
8276	CANAD	ISSUED	1,275,136	10/09/90	PTDS ELECTROPNEUMATIC BRK CONTROL SYS FOR RY TRANSIT VEHICLE	
8510	USA	ISSUED	4,972,145	11/20/90	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8539	USA	ISSUED	4,979,391	12/25/90	PTDS TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	

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8427	USA	ISSUED	4987543	01/22/91	PTDS WHEEL SPIN CONTROL SYSTEM	
8427	SOFRC	ISSUED	90/1322	01/30/91	PTDS WHEEL SPIN CONTROL SYSTEM	
8552	USA	ISSUED	4993521	02/19/91	PTDS IMPROVED TREAD BRAKE UNIT	
8488	SOFRC	ISSUED	90/3253	02/27/91	PTDS MULT. CONTACT ELECTRICAL CONNECTOR PORTION FOR AUTO RMY CPLR	
8504	USA	ISSUED	4999779	03/12/91	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8528	SOFRC	ISSUED	90/3961	03/27/91	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8299	CANAD	ISSUED	1283148	04/16/91	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8427	TAIWI	ISSUED	NI-44301	05/15/91	PTDS WHEEL SPIN CONTROL SYSTEM	
8383	TAIWI	ISSUED	44299	05/15/91	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
6973	JAPAN	ISSUED	UM1854566	06/10/91	PTDS FOUR-WAY BALL VALVE	
8592	USA	ISSUED	5031731	07/16/91	PTDS BRAKE ACTUATOR WITH SLACK ADJUSTER DISABLING MECHANISM	
8390	USA	ISSUED	5035582	07/30/91	PTDS ELECTRO PNEUMATIC GOVERNOR FOR A COMPRESSED AIR SYSTEM	
8504	SOFRC	ISSUED	90/7232	07/31/91	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8606	USA	ISSUED	5046921	09/10/91	PTDS MOISTURE REMOVAL DEVICE FOR A COMPRESSED AIR SYSTEM	
8928	USA	ISSUED	5,058,712	10/22/91	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8381	ITALY	ISSUED	1231593	12/18/91	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8578	USA	ISSUED	5,076,401	12/31/91	PTDS SPRING APPLIED HYDRAULICALLY RELEASED... POSITIVE CLEARANCE SLACK ADJ. MECHANISM	
8276	BRAZL	ISSUED	8603163	12/31/91	PTDS ELECTRO-PNEUMATIC BRK CONTROL SYS FOR RMY TRANSIT VEHICLE	
8638	USA	ISSUED	5,085,243	02/04/92	PTDS HYDRAULIC ISOLATION VAL FOR RMY VEHICLE NOTE: ALSO A C.I.P. CASE	
8594	USA	ISSUED	5090780	02/25/92	PTDS BINARY WEIGHTED DIGITAL FLOW REGULATING SYSTEM	
8584	USA	ISSUED	5098169	03/24/92	PTDS MAGNET VALVE SAFETY CHECK & FAULT INDICATOR INTEGRATOR	
8101	JAPAN	ISSUED	1649364	03/30/92	PTDS HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	

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8446	CANAD	ISSUED	1300038	05/05/92	PTDS MOISTURE REMOVAL APPARATUS	
8458	CANAD	ISSUED	1300723	05/12/92	PTDS CONTROL COMMAND SYSTEM FOR RAILWAY VEHICLE	
8440	CANAD	ISSUED	1300724	05/12/92	PTDS ELECTRO-PNEUMATIC MASTER CONTROLLER FOR AN AIR BRAKE SYSTEM	
8383	AUSAL	ISSUED	617457	05/28/92	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8549	USA	ISSUED	5124988	06/23/92	PTDS DUMP VALVE OPERATIONAL FAULT DETERMINATION SYSTEM	
7092	JAPAN	ISSUED	1675356	06/26/92	PTDS ADJUSTABLE VARIABLE LOAD CONTROL VALVE DEVICE	
8621	USA	ISSUED	5,125,722	06/30/92	PTDS LOAD COMPENSATION CONTROL VALVE	
8117	JAPAN	ISSUED	1680618	07/13/92	PTDS VIGILANCE SAFETY CONTROL SYSTEM	
8383	UNIKN	ISSUED	2218763	07/15/92	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8276	JAPAN	ISSUED	1919239	07/22/92	PTDS ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM FOR RAIL TRANSIT VEHICLE	
8269	JAPAN	ISSUED	1688343	08/11/92	PTDS MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR	SPRING-APPLIED/AIR-RELEASED BRAKE
8189	JAPAN	ISSUED	1688332	08/11/92	PTDS MANUALLY RELEASABLE PARKING BRAKE DEVICE	
8596	USA	ISSUED	5,141,293	08/25/92	PTDS HYDRAULIC ISOLATION VALVE FOR RAILWAY VEHICLE	
8125	JAPAN	ISSUED	1691519	08/27/92	PTDS PENALTY BRAKE APPLICATION NULLIFICATION- PREVENTION SYSTEM	
8670	USA	ISSUED	5,144,985	09/08/92	PTDS VARIABLE LOAD VALVE FOR RAILWAY VEHICLES	
8603	USA	ISSUED	5,146,952	09/15/92	PTDS FLUID PRESSURE CONTROL VALVE DEVICE FOR A RAILWAY CAR	
8670	USA	ISSUED	5,152,410	10/06/92	PTDS ELECTRO-PNEUMATIC COUPLER CONTROL SYSTEM FOR RAILWAY VEHICLES	
8623	USA	ISSUED	5,154,204	10/13/92	PTDS AUTOMATIC DRAIN VALVE FOR A COMPRESSED AIR SYSTEM	
8299	BRAZL	ISSUED	8605510	10/27/92	PTDS CROSS BLENDING ELECTRO-DYNAMIC/FRICTION BRAKE	SYSTEM...POWER AND NON-POWER CARS
8276	JAPAN WA	ISSUED	1705205	10/27/92	PTDS ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM FOR RAIL TRANSIT VEHICLE	
8276	JAPAN A	ISSUED	1705205	10/27/92	PTDS ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM FOR RAIL TRANSIT VEHICLE	
8653	USA	ISSUED	5,170,818	12/15/92	PTDS SAFETY VALVE	
8539	SOFCR	ISSUED	91/1245	12/30/92	PTDS TRANSDUCER OPERATIONAL FAULT DETERMINATION SYSTEM	

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8234	JAPAN	ISSUED	1725600	01/19/93	PTDS COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/ AIR RESERVOIR...ADJUSTER ARRANGEMENT
8222	JAPAN	ISSUED	1729856	01/29/93	PTDS FLUID PRESSURE BRAKE ACTUATOR WITH SPRING-APPLIED EMERGENCY /PARKING BRAKE
8465	CANAD	ISSUED	1313353	02/02/93	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
8427	AUSAL	ISSUED	627838	02/05/93	PTDS WHEEL SPIN CONTROL SYSTEM
8445	CANAD	ISSUED	1313505	02/09/93	PTDS CONTROL METHOD FOR DUAL CYLINDER MOISTURE REMOVAL APPARATUS
8508	CANAD	ISSUED	1313686	02/16/93	PTDS LOAD DEPENDENT VALVE FOR RAILWAY VEHICLES
8122	JAPAN	ISSUED	1755824	04/23/93	PTDS BRAKE ACTUATOR DEVICE HAVING A HYDRAULIC SLACK ADJUSTING ARRANGEMENT
8462	CANAD	ISSUED	1316707	04/27/93	PTDS MAGNETIC ROTATIONAL DETECTING ARRANGEMENT FOR SENSING SPEED OF RAILWAY VEHICLE
8514	USA	ISSUED	5,209,551	05/11/93	PTDS ANALOG SERVICE BRAKE RESPONSE ENHANCING CIRCUIT FOR RAILWAY VEHICLES
8550	CANAD	ISSUED	1,319,033	06/15/93	PTDS FORCE MULTIPLICATION MECHANISM
8363	JAPAN	ISSUED	1771682	07/14/93	PTDS HYDRAULIC BRAKE ACTUATOR WITH PARKING BRAKE
8604	USA	ISSUED	5,244,171	09/14/93	PTDS INTERSLIP SEQUENCE SPEED ALGORITHM
8660	CANAD	ISSUED	1322567	09/28/93	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE
8427	FRANC	ISSUED	2644742-B1	10/15/93	PTDS WHEEL SPIN CONTROL SYSTEM
8393	FRANC	ISSUED	89 06362	10/15/93	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION
8673	USA	ISSUED	5,253,930	10/19/93	PTDS AIR BRAKE CONTROL SYS. HAVING ELECTROMAGNETIC VALVE DEVICE WHICH HAS 2 SET POINTS FOR ESTABLISHING A LAP
8277	BRAZL	ISSUED	8600648-7	10/26/93	PTDS FAIL-SAFE PULSE TRAIN PRESENCE DETECTOR
8720	JAPAN	ISSUED	UM1994612	11/26/93	PTDS DIFFERENTIAL FLUID PRESSURE SWITCH
8720	JAPAN	ISSUED	1994612	11/26/93	PTDS DIFFERENTIAL FLUID PRESSURE SWITCH
8591	CANAD	ISSUED	1,324,810	11/30/93	PTDS ACTUATING CYLINDER HAVING MECHANICAL ADVANTAGE
8383	CANAD	ISSUED	1,325,054	12/07/93	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION ARRANGEMENT FUNCTION
8552	CANAD	ISSUED	1,324,964	12/07/93	PTDS IMPROVED TREAD BRAKE UNIT

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 APPLICATION

8504	AUSAL	ISSUED	639,480	12/13/93	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8424	CANAD	ISSUED	1,325,264	12/14/93	PTDS BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8510	AUSAL	ISSUED	637660	12/19/93	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8504	UNIKN	ISSUED	2,236,155	12/22/93	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8605	USA	ISSUED	5,280,718	01/25/94	PTDS TRANSDUCER HEALTH AND OFFSET CALIBRATION PROCESSING SYSTEM	
8510	SOFRC	ISSUED	90/9952	02/23/94	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8618	USA C	ISSUED	5,290,095	03/01/94	PTDS WHEEL LOCK DETECTION ARRANGEMENT FOR MULTIPLE-AXLE RAILWAY VEHICLES	
8427	ITALY	ISSUED	1242483	03/17/94	PTDS WHEEL SPIN CONTROL SYSTEM	
8719	USA	ISSUED	5,297,856	03/29/94	PTDS TWO SEPARATE HIGH SPEED AND LOW SPEED DISC BRAKE UNITS FOR RAILWAY VEHICLES	
8539	UNIKN	ISSUED	2242980	04/06/94	PTDS TRANSDUCEDR OPERATIONAL FAULT DETERMINATION SYSTEM	
8510	UNIKN	ISSUED	2240848	04/20/94	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	
8602	USA	ISSUED	5,315,520	05/24/94	PTDS FRICTION BRAKE INTERFACE HEALTH CHECK SYSTEM FOR MULTIPLE-AXLE RAILWAY VEHICLES	
8728	USA	ISSUED	5,340,203	08/23/94	PTDS VARIABLE LOAD CONTROL VALVE DEVICE	
8539	AUSAL	ISSUED	650861	10/31/94	PTDS TRANSDUCEDR OPERATIONAL FAULT DETERMINATION SYSTEM	
8504	CANAD	ISSUED	2,025,196	01/17/95	PTDS AXLE HEALTH DISCRIMINATORY SAFETY TIMER ARRANGEMENT	
8409	USA	ISSUED	5,390,772	02/21/95	PTDS SWITCHABLE HIGH SPEED FROG MECHANISM	
8474	JAPAN	ISSUED	1936195	05/26/95	PTDS BRAKE ASSURANCE CIRCUIT TO PRESERVE PROPER LOCOMOTIVE OPERATING STATUS	
8495	JAPAN	ISSUED	1936194	05/26/95	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
8427	CANAD	ISSUED	2,005,293	06/06/95	PTDS WHEEL SPIN CONTROL SYSTEM	
8722	USA	ISSUED	5,423,401	06/13/95	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8691	USA	ISSUED	5,423,129	06/13/95	PTDS DESICCANT CARTRIDGE OF AN AIR DRYER	
8460	JAPAN	ISSUED	1942647	06/23/95	PTDS HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
8510	BRAZL	ISSUED	9006339-2	08/29/95	PTDS SPEED SENSOR GAP FAULT DETECTION ARRANGEMENT FOR MULTIPLE AXLE RAIL VEHICLES	

TEL: 419-476-0470 PATENT NAME 0470

Patent No.	Country	Status	Issue Date	Applicant No.	Description	Vehicle Type
8740	USA	ISSUED	09/12/95	5,449,295	PTDS AUTOMATIC ELECTRIC COUPLING MECHANISM FOR A PASSENGER	TRANSIT TYPE VEHICLE
8539	BRAZL	ISSUED	09/26/95	P19108678	PTDS TRANSDUCED OPERATIONAL FAULT DETERMINATION SYSTEM	
8614	USA	ISSUED	09/26/95	5,453,942	WHEEL SPIN SPEED PROCESSING SYSTEM FOR MULTIPLE-AXLE	RAILWAY VEHICLES
8712	USA	ISSUED	10/03/95	5,454,399	PIDS APPLICATION & RELEASE MAGNET VALVE	
8782	USA	ISSUED	10/10/95	5,456,504	PTDS LOCKING AND UNLOCKING APPARATUS FOR ACCESS DOOR ON A	PASSENGER RAILWAY VEHICLE
8781	USA	ISSUED	10/24/95	5,460,100	PIDS SERVICE BYPASS APPARATUS FOR AUTOMATIC DOOR OPERATOR ON A	PASSENGER RAILWAY VEHICLE
8768	USA	ISSUED	11/14/95	5,465,816	PTDS SLACK ADJUSTING BRAKE CYLINDER FOR A BRAKE UNIT ON A	RAILWAY TRANSIT VEHICLE
8528	JAPAN	ISSUED	11/22/95	1995288	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8720	USA	ISSUED	11/28/95	5,471,387	PTDS SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND	SLIP INTENSITY DETERMINATION PROCESS
8427	JAPAN	ISSUED	12/20/95	2000587	PTDS WHEEL SPIN CONTROL SYSTEM	
8759	USA	ISSUED	03/19/96	5,499,728	PTDS ELECTRICALLY OPERATED HOOK COUPLER WITH MANUAL OVER RIDE	
8749	USA	ISSUED	04/02/96	5,503,280	PTDS TIMED THRUST UNCOUPLING MECHANISM FOR PASSENGER TRANSIT	TYPE RAILWAY CARS
8858	USA	ISSUED	04/09/96	5,505,283	PTDS HIGH CURRENT HARP FOR AN ELECTRIC TROLLEY BUS	
8361	KORSO	ISSUED	06/10/96	100493	PTDS DECELERATION CONTROL SYSTEM	
8863	JAPAN	ISSUED	06/24/96	2064840	PTDS ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION	ARRANGEMENT FUNCTION
8726	USA	ISSUED	07/09/96	5,535,122	PTDS A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK	OF THE BRAKE RETARDATION...ON A VEHICLE
8757	USA	ISSUED	08/06/96	5,544,057	PTDS LOAD SETTING DEVICE FOR RAILWAY CARS	
8722	AUSAL	ISSUED	09/04/96	668839	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8815	USA	ISSUED	12/10/96	5,582,206	PTDS ROTARY MAGNET VALVE	
8779	USA	ISSUED	12/31/96	5,589,767	PTDS MECHANISM FOR THE ATTACHMENT OF A SPEED SENSOR	
8528	CANAD	ISSUED	01/21/97	2,015,689	PTDS PRE-LOADING PIVOTAL PIN CONNECTION FOR A DISC BRAKE	ASSEMBLY
8922	USA	ISSUED	02/25/97	5,604,991	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	

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Patent No.	Country	Status	Date	Inventor	Title
8707	USA	ISSUED	03/25/97	PTDS	LATCH LOCKING SPRING CLIP FOR RETAINING AN INSERTABLE BRAKE SHOE LINING ON A DISC BRAKE HEAD
8722	JAPAN	ISSUED	06/06/97	PTDS	BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER
8858	CANAD	ISSUED	06/17/97	PTDS	HIGH CURRENT HARP FOR AN ELECTRIC TROLLEY BUS
8728	JAPAN	ISSUED	07/11/97	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE
8624	USA	ISSUED	07/22/97	PTDS	TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS
8863	USA	ISSUED	08/05/97	PTDS	SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION
8922	SOFRC	ISSUED	08/27/97	PTDS	SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER
8921	SOFRC	ISSUED	08/27/97	PTDS	LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER
8924	SOFRC	ISSUED	08/27/97	PTDS	TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT
8924	USA	ISSUED	09/02/97	PTDS	TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT
8910	USA	ISSUED	10/07/97	PTDS	TELESCOPING DESICCANT CARTRIDGE FOR AN AIR DRYER DISPOSED IN AN AIR SYSTEM
8894	USA	ISSUED	10/07/97	PTDS	AUXILIARY VEHICLE CURRENT COLLECTOR
8859	USA	ISSUED	10/14/97	PTDS	EMBEDDED DUPLEX LOCAL CONTROL PANEL
8921	USA	ISSUED	11/11/97	PTDS	LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER
8936	USA	ISSUED	11/25/97	PTDS	POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER
8936	USA	ISSUED	11/25/97	PTDS	POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER
8936	KORSG	ISSUED	11/26/97	PTDS	ELECTRONIC ADHESION ADAPTIVE WHEEL SLIDE PROTECTION
8943	USA	ISSUED	12/02/97	PTDS	BRAKE DEVICE
8910	USA	ISSUED	12/23/97	PTDS	PENALTY BRAKE SCHEME FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT
8912	USA	ISSUED	12/23/97	PTDS	PENALTY BRAKE DESIGN FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT
8635	USA	ISSUED	12/30/97	PTDS	REUSABLE PAINT MASKING MEMBER
8927	USA	ISSUED	01/06/98	PTDS	MODULATION ROTARY VALVE
8624	JAPAN	ISSUED	01/16/98	PTDS	TWO STATE TO THREE STATE EMULATOR PROCESS AND APPARATUS
8728	EPO	ISSUED	01/28/98	PTDS	VARIABLE LOAD CONTROL VALVE DEVICE

INVENTOR'S FULL NAME: CHARLES C. STEGLING

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8949	USA	ISSUED	5,713,639	02/03/98	PTDS	BRAKE CONTROL DEVICE FOR RAILROAD ROLLING STOCK
9004	USA	ISSUED	5,735,579	04/07/98	PTDS	BRAKE ASSURANCE MODULE
8929	USA	ISSUED	5,740,043	04/14/98	PTDS	RELATIVE SPIN SPEED TRACTION CONTROL
8936	USA	ISSUED	5,740,025	04/14/98	PTDS	ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM
111						* inventor's full name: CHARLES C. SIEGLING
9033	USA	ISSUED	5,738,417	04/14/98	PTDS	BRAKE PIPE SENSING UNIT
9011	USA	ISSUED	5,746,485	05/05/98	PTDS	PENALTY BRAKE CIRCUIT FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT
8879	USA	ISSUED	5,752,212	05/12/98	PTDS	PROPORTIONAL POLARITY SHIFT WHEEL SLIDE PROTECTION
9047	USA	ISSUED	5,771,933	06/30/98	PTDS	A Three-Position Solenoid Valve
9046	USA	ISSUED	5,775,367	07/07/98	PTDS	A SOLENOID VALVE CONTROL DEVICE

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Case Number	Country	Count	Sub Case	Status	Patent Number	Issue Date	Title	long:title1	long:title2
PULSE-32	USA			ISSUED	4,353,068	10/05/82	PULS METHOD FOR CALIBRATING BEAM EMITTER TYPE SPEED SENSOR		FOR RR ROLLING STOCK
PULSE-40	USA			ISSUED	4,487,060	12/11/84	PULS		
PULSE-40A	USA			ISSUED	4,520,662	06/04/85	PULS		
PULSE-40B	USA			ISSUED	4,554,221	11/19/85	PULS		
PULSE-13	USA			ISSUED	4,592,217	06/03/86	PULS MARKER ATTACHMENT FOR RAILROAD EQUIPMENT		
PULSE-2	USA			ISSUED	4,599,723	07/08/86	PULS METHOD OF ENCODING DATA FOR SERIAL TRANSMISSION		
PULSE-11	USA			ISSUED	4,638,237	01/20/87	PULS BATTERY CONDITION INDICATOR		
PULSE-14	USA			ISSUED	4,654,629	03/31/87	PULS VEHICLE MARKER LIGHT		
PULSE-12	USA			ISSUED	4,785,197	11/15/88	PULS TILT SWITCH		
PULSE-33	USA			ISSUED	4,840,056	06/20/89	PULS FUEL MEASURING SYSTEM		
PULSE-4	USA			ISSUED	4,847,770	07/11/89	PULS INITIAL TERMINAL TESTER		
PULSE-30	USA			ISSUED	4,862,433	08/29/89	PULS TIMER CIRCUIT FOR DRAG OPERATION IN AN ENGINEMAN		MONITORING DEVICE
PULSE-18	USA			ISSUED	4,885,689	12/05/89	PULS MULTILINGUAL CODE RECEIVER		
PULSE-15	USA			ISSUED	305,122	12/19/89	PULS FRONT PANEL FOR DATA RECORDER		
PULSE-20	USA			ISSUED	4,940,292	07/10/90	PULS RAPID RELEASE VALVE MECHANISM		
PULSE-29	USA			ISSUED	310,510	09/11/90	PULS DEFAULT CONTROLLER FOR RAILWAY VEHICLES		
PULSE-6	USA			ISSUED	315,114	03/05/91	PULS END OF TRAIN MARKER LIGHT		
PULSE-22	USA			ISSUED	5,016,840	05/21/91	PULS METHOD TO AUTHORIZE H.O.T. UNIT TO TRANSMIT EMERGENCY		COMMDNS TO ASSOC. REAR UNIT
PULSE-31	USA			ISSUED	5,083,274	01/21/92	PULS RAILROAD BRAKE PRESSURE RECORDING		

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PULSE-1	USA	ISSUED	5, 117, 866	06/02/92	PULS AIR FLOW REGULATOR FOR FUEL MEASURING SYSTEMS
PULSE-7	USA	ISSUED	5, 166, 610	11/24/92	PULS DUAL RANGE SPEED INDICATOR WITH ACCELERATION DISPLAY
PULSE-10	USA C1	ISSUED	5, 185, 700	02/09/93	PULS SOLID STATE EVENT RECORDER
PULSE-25	USA	ISSUED	5, 190, 359	03/02/93	PULS PRESSURE RELIEF VALVE FOR RAILWAY BRAKE EMERGENCY SYSTEMS
PULSE-26	USA	ISSUED	5, 235, 849	08/17/93	PULS RAILROAD COUPLER MOUNT
PULSE-23	USA	ISSUED	5, 267, 473	12/07/93	PULS SELF POWERED END OF TRAIN UNIT
PULSE-33	CANAD	ISSUED	1, 327, 714	03/15/94	PULS FUEL MEASURING SYSTEM
PULSE-34	USA	ISSUED	5, 309, 315	05/03/94	PULS COMPUTER CHASSIS CONSTRUCTION
PULSE-8	USA	ISSUED	5, 365, 550	11/15/94	PULS INITIAL SYNCHRONIZATION & TRACKING CIRCUITS FOR SPREAD SPECTRUM RECEIVERS
PULSE-28	USA CP	ISSUED	5, 374, 015	12/20/94	PULS RAILROAD TELEMETRY AND CONTROL SYSTEMS
PULSE-24	USA	ISSUED	5, 376, 925	12/27/94	PULS MOTION AND DIRECTION SENSORS
PULSE-27	USA	ISSUED	5, 377, 938	01/03/95	PULS RAILROAD TELEMETRY AND CONTROL SYSTEMS
PULSE-3	USA	ISSUED	5, 383, 717	01/24/95	PULS BRAKE CONTROL OF HELPER LOCOMOTIVE
PULSE-35	USA	ISSUED	5, 507, 457	04/16/96	PULS TRAIN INTEGRITY DETECTION SYSTEM
PULSE-37	USA	ISSUED	5, 530, 328	06/25/96	PULS CONSIST POWER MONITOR
PULSE-38	USA	ISSUED	5, 570, 270	10/29/96	PULS CHASSIS AND PERSONAL COMPUTER FOR SEVERE ENVIRONMENT EM-BEDDED APPLICATIONS
PULSE-36	USA	ISSUED	5, 650, 561	07/22/97	PULS DIAGNOSTIC DEVICE FOR DETERMINING THE PNEUMATIC INTEGRITY OF A BUBBLE-TYPE FUEL MEASURING SYSTEM
PULSE-39	USA	ISSUED	RE35590	08/19/97	PULS SOLID STATE EVENT RECORDER
8909	USA	ISSUED	5, 681, 015	10/28/97	PULS RADIO-BASED ELECTRO-PNEUMATIC CONTROL COMMUNICATIONS SYSTEM
8997	USA	ISSUED	5, 720, 455	02/24/98	PULS INTRA-TRAIN RADIO COMMUNICATION SYSTEM
9058	USA	ISSUED	5, 738, 311	04/14/98	PULS DISTRIBUTED POWER TRAIN SEPARATION DETECTION
8903	USA	ISSUED	5, 740, 547	04/14/98	PULS RAIL NAVIGATION SYSTEM
8904	USA	ISSUED	5, 744, 707	04/28/98	PULS TRAIN BRAKE PERFORMANCE MONITOR

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B998 USA 5,748,269 05/05/98 PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX LIQUID CRYSTAL DISPLAY (LCD)

PULSE-41 USA 5,757,291 05/26/98 PULS INTEGRATED PROXIMITY WARMING SYSTEM AND EMO-OF-TRAIN COMMUNICATION SYSTEM

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Case Number      Count Sub Case      Stat      Patent Number      Issue Date      Client      Long Title1      Long Title2
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8770      USA      ISSUED      5,388,675      02/14/95      RFPC BACKING PLATE FOR DISC BRAKE PADS
8785      USA      ISSUED      5,560,453      10/01/96      RFPC KEY FOR RAILROAD BRAKE SHOE ASSEMBLY
8715      USA      ISSUED      5,566,793      10/22/96      RFPC IMPROVED RAILWAY TYPE BRAKE SHOE
8972      USA      CP          ISSUED      5,595,267      01/21/97      RFPC BRAKE SHOE HAVING FATIGUE RESISTANT BACKING PLATE
8932      USA      ISSUED      5,647,460      07/15/97      RFPC SPRING-TYPE RAILROAD BRAKE SHOE LOCKING KEY
8715      USA      C          ISSUED      5,657,839      08/19/97      RFPC IMPROVED RAILWAY TYPE BRAKE SHOE
8882      USA      ISSUED      5,704,454      01/06/98      RFPC FATIGUE AND IMPACT RESISTANT RAILWAY BRAKE SHOE
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Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Client	long:title1	long:title2
VAPOR-16	CANAD	01	ISSUED	1,076,165	04/22/80	VAPR	HEAVY FUEL OIL NOZZLE	
VAPOR-15	USA		ISSUED	4,247,266	01/27/81	VAPR	FLUID PUMP DRIVE SYSTEM	
VAPOR-16	USA	01	ISSUED	4,249,885	02/10/81	VAPR	HEAVY FUEL OIL NOZZLE	
VAPOR-17	USA		ISSUED	4,266,485	05/12/81	VAPR	Control Sys. for Economic Operation of Multiple Locomotive Trains (Note: Inventors = outsiders)	
VAPOR-18	USA		ISSUED	4,275,664	06/30/81	VAPR	STEP/PLATFORM OPERATOR	
VAPOR-7	CANAD		ISSUED	1,109,900	09/29/81	VAPR	PACKING ASSEMBLY	
VAPOR-8	CANAD		ISSUED	1,116,018	01/12/82	VAPR	MOVABLE HANGERS FOR PLUG DOORS	
VAPOR-19	USA		ISSUED	4,341,398	07/27/82	VAPR	Sys for Controlling the Kneeling Operation of Air	Suspension Equipped Transit Vehicles
VAPOR-14	CANAD		ISSUED	1,126,276	11/23/82	VAPR	VEHICULAR DATA HANDLING AND CONTROL SYSTEM	
VAPOR-21	CANAD		ISSUED	1,136,015	11/23/82	VAPR	CONTACTLESS PRESSURE SENSITIVE SWITCH	
VAPOR-20	USA		ISSUED	4,369,344	01/18/83	VAPR	SENSITIVE DOOR EDGE WIEGAND MODULE SWITCH ASSEMBLY	
VAPOR-21	USA		ISSUED	4,371,762	02/01/83	VAPR	CONTACTLESS PRESSURE SENSITIVE SWITCH	
VAPOR-20	CANAD		ISSUED	1,148,589	06/21/83	VAPR	SENSITIVE DOOR EDGE WIEGAND MODULE SWITCH ASSEMBLY	
VAPOR-22	USA		ISSUED	4,407,623	10/04/83	VAPR	LIFT ASSEMBLY INCLUDING A REACTION SWITCH	
VAPOR-18	CANAD		ISSUED	1,156,875	11/15/83	VAPR	STEP/PLATFORM OPERATOR	
VAPOR-26	USA		ISSUED	4,422,387	12/27/83	VAPR	DOOR SEAL	
VAPOR-23	CANAD		ISSUED	1,173,407	08/28/84	VAPR		
VAPOR-24	CANAD		ISSUED	1,178,302	11/20/84	VAPR		
VAPOR-27	USA		ISSUED	4,491,917	01/01/85	VAPR	DOOR CONTROL SYSTEM (CTA zero speed sensor)	

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VAPOR-25	CANAD	ISSUED	1,183,558	03/05/85	VAPR SPINDLE DOOR OPERATOR
VAPOR-26	CANAD	ISSUED	1,183,730	03/12/85	VAPR DOOR SEAL
VAPOR-29	AUSAL	ISSUED	594,323	02/21/86	VAPR ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
VAPOR-29	UNIKW	ISSUED	2,172,480	02/28/86	VAPR ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
VAPOR-9	CANAD	ISSUED	1,203,624	04/22/86	VAPR METHOD FOR AUTOMATED ANALYSIS OF VEHICLE PERFORMANCE
VAPOR-10	USA	ISSUED	4,583,466	04/22/86	VAPR STEP LIFT FOR RAILWAY CARS
VAPOR-30	USA	ISSUED	4,611,104	09/09/86	VAPR ELECTROMECHANICAL SWITCH ACTUATOR HAVING HIGH SECURITY KEY ACTUATOR
VAPOR-31	USA	ISSUED	4,627,242	12/09/86	VAPR THERMOELECTRIC COOLER
VAPOR-32	USA	ISSUED	4,628,835	12/16/86	VAPR WASTE FLUID INCINERATOR HAVING HEAT RECOVERY MEANS
VAPOR-33	USA	ISSUED	4,653,227	03/31/87	VAPR DOOR OPERATING ASSEMBLY
VAPOR-10	CANAD	ISSUED	1,220,089	04/07/87	VAPR STEP LIFT FOR RAILWAY CARS
VAPOR-34	USA	ISSUED	4,704,870	11/10/87	VAPR THERMOELECTRIC COOLER
VAPOR-29	CANAD	ISSUED	1,244,864	11/15/88	VAPR ELECTRODE CONFIGURATION FOR HIGH VOLTAGE
VAPOR-26	CANAD 01	ISSUED	1,252,351	04/11/89	VAPR DOOR SEAL
VAPOR-32	CANAD	ISSUED	1,256,321	06/27/89	VAPR WASTE FLUID INCINERATOR HAVING HEAT RECOVERY MEANS
VAPOR-35	USA C	ISSUED	4,882,876	11/28/89	VAPR DOOR OPERATOR WITH LOCKING MECHANISM
VAPOR-33	CANAD	ISSUED	1,265,387	02/06/90	VAPR DOOR OPERATING ASSEMBLY
VAPOR-34	CANAD	ISSUED	1,266,093	02/20/90	VAPR THERMOELECTRIC COOLER
VAPOR-36	USA	ISSUED	4,901,474	02/20/90	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
VAPOR-36	TAIWN	ISSUED	42,921	12/01/90	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
VAPOR-37	USA	ISSUED	5,130,503	07/14/92	VAPR PRESSURE WAVE SWITCH HAVING IMPROVED CONTACT STRUCTURE AND PRESSURE EQUALIZATION
VAPOR-36	USA CP	ISSUED	5,148,631	09/22/92	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK
VAPOR-35	CANAD	ISSUED	1,315,812	04/06/93	VAPR DOOR OPERATOR WITH LOCKING MECHANISM

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VAPOR-36	CAHAD	ISSUED	1,321,219	08/10/93	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK	LOCK
VAPOR-38	USA	ISSUED	5,259,342	11/09/93	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-39	USA	ISSUED	5,280,754	01/25/94	VAPR TRANSIT CAR POWER DOOR OBSTRUCTION SENSING SYSTEM AND DEVICE	VEHICLES (electric bus door operator)
VAPOR-40	USA	ISSUED	5,332,279	07/26/94	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT	FUELS (parent)
VAPOR-38	USA	CP	5,333,574	08/02/94	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	LOCKS (R110)
VAPOR-41	USA	ISSUED	5,341,598	08/30/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCK
VAPOR-36	UNIKH	ISSUED	0435874	05/31/95	VAPR PNEUMATIC DOOR OPERATOR HAVING NOVEL PNEUMATIC ACTUATOR AND LOCK	FUELS (parent)
VAPOR-38	MEXIC	ISSUED	178,516	06/30/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-38	USA	C1	5,433,174	07/18/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	FUELS (parent)
VAPOR-43	USA	ISSUED	5,433,031	07/18/95	VAPR RESILIENT EDGES FOR POWER OPERATED DOORS (biparting doors)	FUELS (parent)
VAPOR-44	USA	ISSUED	5,438,800	08/08/95	VAPR STABILIZER FOR OUTSIDE SLIDING PLUG DOORS (door leaf)	LOCKS (R110)
VAPOR-38	USA	01	5,471,957	12/05/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	outside plug door)
VAPOR-41	MEXIC	ISSUED	180,346	12/07/95	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-46	USA	ISSUED	5,483,769	01/16/96	VAPR DOOR DRIVE EQUIPMENT FOR MASS TRANSIT VEHICLE (sliding	LOCKS (R110)
VAPOR-48	UNIKH	ISSUED	2,271,331	02/28/96	VAPR IMPROVED DOOR HANGER SYSTEM FOR MASS TRANSIT VEHICLES	PRESSURE EQUALIZATION
VAPOR-41	AUSAL	ISSUED	670,079	10/22/96	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	FUELS (parent)
VAPOR-37	CAHAD	ISSUED	2,062,901	10/29/96	VAPR PRESSURE WAVE SWITCH HAVING IMPROVED CONTACT STRUCTURE AND	LOCKS (R110)
VAPOR-38	USA	P2	5,582,137	12/10/96	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS	LOCKS (R110)
VAPOR-41	POLND	ISSUED	172628	04/04/97	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	JAPAN	ISSUED	2727397	12/12/97	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-40	MEXIC	ISSUED	188149	03/05/98	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT	VEHICLES (electric bus door operator)
VAPOR-49	USA	ISSUED	5,755,060	05/26/98	VAPR COMPACT PANEL LOCK FOR AN OVERHEAD MOUNTED DOOR PANEL	OPERATOR (filed orig as provisional ep 60/000

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VAPOR-52 USA ISSUED 5,775,232 07/07/98 VAPR BRIDGE PLATE FOR A MASS TRANSIT VEHICLE

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PATENT
REEL: 9423 FRAME: 0461

Case Number	Country	Sub Case	Status	Patent Number	Issue Date	Client	long:title1	long:title2
7085	CANAD		ISSUED	1149759	07/12/83	WLTD	HYDRO-PNEUMATIC BRAKE ACTUATOR ARRANGED TO MAINTAIN CONSTANT BRAKE SHOE CLEARANCE	
7122	CANAD		ISSUED	1166977	05/08/84	WLTD	HYDRAULIC BRAKE ACTUATOR HAVING SPRING-APPLIED BACK-UP WITH MANUAL RELEASE MEANS	
8101	CANAD		ISSUED	1209059	08/05/86	WLTD	HYDRO-PNEUMATIC ACTUATOR WITH AUTOMATIC SLACK ADJUSTER	
8234	CANAD		ISSUED	1246641	12/13/88	WLTD	COMBINED HYDRO-PNEUMATIC BRAKE CYLINDER/AIR RESERVOIR...ADJUSTER ARRANGEMENT	
8122	CANAD		ISSUED	1256039	06/20/89	WLTD	BRAKE ACTUATOR DEVICE HAVING A HYDRAULIC SLACK ADJUSTING ARRANGEMENT	
8269	CANAD		ISSUED	1260515	09/26/89	WLTD	MANUAL RELEASE AND AUTO RESET ARRANGEMENT FOR SPRING-APPLIED/AIR-RELEASED BRAKE	
8468	CANAD		ISSUED	2,005,296	01/09/96	WLTD	FREIGHT BRAKE EMERGENCY VALVE	

WABCO ALLOWED APPLICATIONS

Case Number	Count	Sub Case	Stat	Application Number	Filing Date	Clie nt	long:title1	long:title2
8715	AUSAL		ALLOWED	53919/94	01/21/94	REPC	IMPROVED RAILWAY TYPE BRAKE SHOE	
8694	CANAD		ALLOWED	2,119,546	03/21/94	NAFW	QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL	VALVE DEVICE
8739	CANAD		ALLOWED	2,119,607	03/22/94	NAFW	LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE	
8745	BRAZL		ALLOWED	PI-9403702	10/13/94	CARD	COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY	CAR TRUCK BOLSTER BOWL
8694	BRAZL		ALLOWED	PI-9403670-5	10/04/94	NAFW	QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL	VALVE DEVICE
8758	BRAZL		ALLOWED	PI-9403704	10/13/94	CARD	HIGH CAPACITY DRAFT GEAR ASSEMBLY	
8737	BRAZL		ALLOWED	PI-9403705	10/13/94	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8737	CANAD		ALLOWED	2,123,040	05/06/94	NAFW	ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8739	BRAZL		ALLOWED	PI-9403703-5	10/13/94	NAFW	LOCK-OUT MECHANISM FOR EMPTY/LOAD CHANGEOVER VALVE	
8720	CANAD		ALLOWED	2,123,754	05/17/94	PTDS	SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND	SLIP INTENSITY DETERMINATION PROCESS
8740	CANAD		ALLOWED	2,124,303	05/25/94	PTDS	AUTOMATIC ELECTRIC COUPLING MECHANISM FOR A PASSENGER	TRANSIT TYPE VEHICLE
8735	CANAD		ALLOWED	2,116,312	02/23/94	LPDW	TAMPER-RESISTANT INDEPENDENT BRAKE VALVE DEVICE FOR	LOCOMOTIVE AIR BRAKE EQUIPMENT
8644	CANAD		ALLOWED	2,129,402	08/03/94	PTDS	WHEEL SPIN SPEED PROCESSING SYSTEM FOR MULTIPLE-AXLE	RAILWAY VEHICLES
8748	CANAD		ALLOWED	2,129,401	08/03/94	NAFW	FASTER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE	
8772	EPO		ALLOWED	94115927.9	10/10/94	PTDS	BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER	
8744	CANAD		ALLOWED	2,140,112	01/12/95	LPDW	METHOD AND APPARATUS FOR DETERMINING AND ENCODING THE POSI-	TION OF A REVERSER HANDLE ON A LOCOMOTIVE
8833	CANAD		ALLOWED	2,140,113	01/12/95	LPDW	APPARATUS FOR INTERLOCKING REVERSER HANDLE ON A CONTROL	STAND OF A RAILWAY LOCOMOTIVE
8789	CANAD		ALLOWED	2,140,115	01/12/95	NAFW	VIBRATION INSULATING MEMBERS FOR PISTON VALVE ASSEMBLY	
8854	CANAD		ALLOWED	2,140,401	01/17/95	LPDW	APPARATUS FOR DETERMINING THE ABSOLUTE POSITION OF THROTTLE	DYNAMIC BRAKE & REVERSER HANDLES ON A LOCO

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NO.	COUNTRY	STATUS	DATE	TITLE	ABSTRACT
8812	CANAD	ALLOWED	2,144,813	03/16/95 LPDW SOFTWARE NULLIFICATION OF TRANSDUCER INDUCED OFFSET	ERRORS WITHIN A FLOW RATE MEASUREMENT SYST
8787	AUSAL	ALLOWED	17830/95	05/02/95 NAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8787	CANAD	ALLOWED	2,144,932	03/17/95 NAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8745	CANAD CP	ALLOWED	2,146,624	04/07/95 CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY	CAR TRUCK BOLSTER BOWL
8745	SOFRC CP	ALLOWED	954706	06/07/95 CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY	CAR TRUCK BOLSTER BOWL
8847	CANAD	ALLOWED	2,148,867	05/08/95 LPDW APPARATUS FOR INTERLOCKING THROTTLE, DYNAMIC BRAKE AND RE-	VERSER HANDLES ON A CONTROL STAND OF A RAI
8860	USA	ALLOWED	08/520,464	08/28/95 PTDS EVENT HISTORY DATA ACQUISITION	
8796	CANAD	ALLOWED	2,157,735	09/07/95 CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RMY FRT CAR AND AN	INTERLOCKING MECHANISM THEREFOR
8894	CANAD	ALLOWED	2,158,819	09/21/95 PTDS AUXILIARY VEHICLE CURRENT COLLECTOR	
8877	CANAD	ALLOWED	2,160,413	10/12/95 REPD AUTOMATED TERMINAL TEST PROCEDURE	
8815	CANAD	ALLOWED	2,160,970	10/19/95 PTDS ROTARY MAGNET VALVE	
8810	SOFRC	ALLOWED	96/0366	01/17/96 NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANS-	DUCCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8900	USA	ALLOWED	08/602,492	02/20/96 CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8909	CANAD	ALLOWED	2,170,857	03/01/96 PTDS BRAKE CONTROL DEVICE FOR RAILROAD ROLLING STOCK	
8900	USA	ALLOWED	08/594,517	01/31/96 PTDS BRAKE DEVICE	
8902	USA	ALLOWED	08/653,076	05/21/96 PTDS A BRAKE MONITORING DEVICE FOR RAILROAD CARS	
8906	USA	ALLOWED	08/664,391	06/14/96 CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8901	USA	ALLOWED	08/670,778	06/20/96 CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8933	USA	ALLOWED	08/677,584	07/09/96 NAFW TRAIN BRAKE PIPE REMOTE PRESSURE CONTROL SYSTEM &	MOTOR-DRIVEN REGULATING VALVE THEREFOR
8900	USA	ALLOWED	08/642,569	05/03/96 NAFW BRAKE CONTROL FOR MULTI-PLATFORM FREIGHT CAR	
8964	USA CP	ALLOWED	08/637,873	04/25/96 NAFW FREIGHT BRAKE CONTROL FOR UNIFORM CAR DECELERATION	
8746	AUSAL 01	ALLOWED	58369/96	07/04/96 CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING	ARRANGEMENT
9015	USA	ALLOWED	08/709,197	08/23/96 FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED	FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM

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8958	USA	ALLOWED	08/745,429	11/12/96	NAFW COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC
8957	USA	ALLOWED	08/748,241	11/12/96	NAFW OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION LEVER
8991	CANAD	ALLOWED	2,195,274	01/16/97	LPDW IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP DIAPHRAGM
8973	USA	ALLOWED	08/790,574	01/28/97	PTDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT
8977	USA	ALLOWED	08/759,411	12/06/96	PTDS PULSE WIDTH MODULATED DRIVE FOR AN INFINITELY VARIABLE SOLENOID OPERATED BRAKE CYLINDER PRESSURE CONTROL VALVE
8877	USA	ALLOWED	08/807,795	02/28/97	REPD AUTOMATED TERMINAL TEST PROCEDURE
8960	USA	ALLOWED	08/772,326	12/23/96	NAFW MICROPROCESSOR CONTROLLED RAILWAY CAR ACCOUNTING AND COMMUNICATION SYSTEM
9055	USA	ALLOWED	08/835,859	04/08/97	PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYSTEM
9014	EPO	ALLOWED	97108004.9	05/16/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desiccant Air Dryer
9016	SOFRC	ALLOWED	97/5048	06/06/97	LPDW REGENERATIVE DESICCANT AIR DRYER
8970	SOFRC	ALLOWED	97/5038	06/06/97	LPDW Pneumatic Emergency Brake Application Valve and an Associated Electrical Signaling Switch
8961	USA	ALLOWED	08/831,076	04/01/97	ELECTRONIC BLUE FLAG SAFETY EQUIPMENT
9085	USA	ALLOWED	08/870,877	06/06/97	RFPC TRIM SHOE
8852	USA	ALLOWED	08/920,207	08/15/97	REPD AN APPARATUS TO ENABLE CONTROLLING A THROTTLE CONTROLLER FROM A REMOTE HOST
8959	SOFRC	ALLOWED	97/6835	07/31/97	NAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE
9040	USA	ALLOWED	08/907,936	08/12/97	LPDW COMPRESSOR INLET VALVE
9086	SOFRC	ALLOWED	97/8930	10/06/97	RFPC TRIM SHOE
9053	SOFRC	ALLOWED	97/8670	09/26/97	PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYSTEM
8982	SOFRC	ALLOWED	97/9421	10/21/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE
8998	SOFRC	ALLOWED	979620	10/27/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX LIQUID CRYSTAL DISPLAY (LCD)
8908	USA	ALLOWED	08/642,954	05/06/96	PTDS RAILWAY BRAKE VALVE ASSEMBLY

(filed by Dority & Manning, Craig H. Kille

n, Greenville, SC)

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WABCO ALLOWED APPLICATIONS

Case Number	Country	Sub Case	Status	Application Number	Filing Date	Client	long:Title1	long:Title2
8712	JAPAN		PENDING	06-065869	04/04/94	PTDS APPLICATION & RELEASE MAGNET VALVE		
8681	CANAD		PENDING	2,119,608	03/22/94	NAFW LOW STRESS CONICAL TYPE DIAPHRAGM		
8745	INDIA		PENDING	368/De1/94	03/30/94	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL		
8746	INDIA		PENDING	369/De1/94	03/30/94	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING ARRANGEMENT		
8758	CHINA		PENDING	94115049.6	08/18/94	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY		
8758	INDIA		PENDING	422/De1/94	04/12/94	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY		
8694	SOFRC		PENDING	94/2049	03/23/94	NAFW QUICK SERVICE LIMITING VALVE FOR FREIGHT BRAKE CONTROL VALVE DEVICE		
8746	CANAD		PENDING	2,120,314	03/30/94	CARD LUBRICATING APPARATUS FOR ARTICULATED COUPLING ARRANGEMENT		
8758	CANAD		PENDING	2,121,007	04/11/94	CARD HIGH CAPACITY DRAFT GEAR ASSEMBLY		
8783	USA		PENDING	08/238,264	05/04/94	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY		
8784	USA		PENDING	08/238,263	05/04/94	CARD A MALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY		
8722	CANAD		PENDING	2,123,767	05/17/94	PTDS BRAKE ACTUATOR HAVING COLLET STYLE SLACK ADJUSTER		
8726	CANAD		PENDING	2,123,952	05/19/94	PTDS A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK OF THE BRAKE RETARDATION...ON A VEHICLE		
8755	CANAD		PENDING	2,124,921	06/01/94	NAFW BRAKE CYLINDER PRESSURE RELAY VALVE FOR RAILROAD FREIGHT CAR		
8726	CANAD		PENDING	2,125,438	06/08/94	CARD SLACKLESS DRAWBAR USING A BALL AND RACE ASSEMBLY AT EACH END OF THE DRAWBAR		
8733	CANAD		PENDING	2,125,439	06/08/94	CARD A FEMALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY		
8734	CANAD		PENDING	2,125,437	06/08/94	CARD A MALE CONNECTION MEMBER FOR A SLACKLESS DRAWBAR ASSEMBLY USING A BALL AND RACE ASSEMBLY		
8749	CANAD		PENDING	2,125,746	06/13/94	PTDS TIMED THRUST UNCOUPLING MECHANISM FOR PASSENGER TRANSIT TYPE RAILWAY CARS		
8745	EPO		PENDING	94107183.9	05/07/94	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL		

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8794	JAPAN	PENDING	07-013066	01/30/95	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8794	EPO	PENDING	94117804.8	11/11/94	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8794	BRAZL	PENDING	PI 9500580	02/15/95	CARD A FEMALE CONNECTION MEMBER FOR SLACKLESS DRAWBAR ASSEMBLY	
8792	CANAD	PENDING	2,141,096	01/25/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8792	BRAZL	PENDING	PI 9500921-3	03/09/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8792	INDIA	PENDING	103/DEL/95	01/25/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8792	JAPAN	PENDING	07-013065	01/30/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8720	JAPAN	PENDING	07-088053	04/13/95	PTDS SPEED VARYING ENERGY LEVEL WHEEL SLIP DETECTION AND	SLIP INTENSITY DETERMINATION PROCESS
8726	JAPAN	PENDING	07-054181	03/14/95	PTDS A METHOD OF AND AN APPARATUS FOR PROVIDING A SAFETY CHECK	OF THE BRAKE RETARDATION...ON A VEHICLE
8748	JAPAN	PENDING	07-143084	06/09/95	NAFW FASTENER ASSEMBLY FOR INSTALLING VALVE DEVICES AND THE LIKE	
8792	EPO	PENDING	95101392.9	02/02/95	CARD SLACKLESS DRAWBAR ASSEMBLY UTILIZING A BALL AND RACE	ASSEMBLY
8843	CANAD	PENDING	2,141,087	01/25/95	LPDW ELECTRONICALLY CONTROLLED LOCO THROTTLE CONTROLLER	INCLUDING REMOTE MULTIPLE UNIT THROTTLE CO
8769	CANAD	PENDING	2,141,720	02/02/95	RFPD WHEEL TREAD CONDITIONING BRAKE SHOE	
8856	CANAD	PENDING	2,141,513	01/31/95	LPDW A METHOD AND APPARATUS FOR REMOTE CONTROL OF A LOCOMOTIVE	THROTTLE CONTROLLER
8747	CANAD	PENDING	2,142,175	02/09/95	NAFW IMBEDDED ELECTRICAL CONNECTOR	
8856	AUSAL	PENDING	14934/95	03/20/95	LPDW A METHOD AND APPARATUS FOR REMOTE CONTROL OF A LOCOMOTIVE	THROTTLE CONTROLLER
8813	USA	PENDING	08/393,419	02/23/95	CARD VARIABLE ANGLE FRICTION CLUTCH MECHANISM FOR A DRAFT	GEAR ASSEMBLY
8786	AUSAL	PENDING	17842/95	05/03/95	NAFW Railway Automatic Brake Control Valve Test Unit	
8786	BRAZL	PENDING	PI 9504899-5	10/30/95	NAFW Railway Automatic Brake Control Valve Test Unit	
8786	CANAD	PENDING	2,148,424	05/02/95	NAFW Railway Automatic Brake Control Valve Test Unit	
8786	EPO	PENDING	95106957.4	05/09/95	NAFW Railway Automatic Brake Control Valve Test Unit	
8811	CANAD	PENDING	2,144,812	03/16/95	LPDW APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-	PNEUMATIC SYSTEMS

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8787	BRAZL	PENDING	P1 9503145-6	08/14/95	MAFW RAILWAY BRAKE PIPE BRACKET ACCESS PLATE	
8809	AUSAL	PENDING	16589/95	04/24/95	MAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8809	BRAZL	PENDING	P1 9504806-5	10/10/95	MAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8809	CANAD	PENDING	2,144,931	03/17/95	MAFW TEST CONNECTOR FOR AUTOMATIC TEST DEVICE	
8816	CANAD	PENDING	2,145,381	03/23/95	LPDW APPARATUS TO PREVENT INADVERTENT DISCHARGE AND TRAPPING OF PIPE PRESS. IN AN ELECTRO-PNEU. LOCO. BRAK E CONTROL SYSTEM	
8759	CANAD	PENDING	2,149,181	05/11/95	PTDS ELECTRICALLY OPERATED HOOK COUPLER WITH MANUAL OVER RIDE	
8745	AUSAL CP	PENDING	20331/95	05/26/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8745	BRAZL CP	PENDING	P1 9504805-7	10/10/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8745	INDIA CP	PENDING	681/De1/95	04/17/95	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8745	JAPAN CP	PENDING	08-005193	01/16/96	CARD COMBINATION WEAR AND LUBRICATING LINER ASSEMBLY FOR RAILWAY CAR TRUCK BOLSTER BOWL	
8880	CANAD	PENDING	2,147,096	04/19/95	LPDW RAILWAY BRAKE SYSTEM TESTER	
8747	AUSAL	PENDING	14935/95	03/20/95	MAFW IMBEDDED ELECTRICAL CONNECTOR	
8777	BRAZL	PENDING	P1 9503146-4	08/14/95	MAFW IMBEDDED ELECTRICAL CONNECTOR	
8785	CANAD	PENDING	2,149,964	05/23/95	RFPC KEY FOR RAILROAD BRAKE SHOE ASSEMBLY	
8809	CANAD	PENDING	2,151,665	06/13/95	MAFW REMOTE CONTROL OF CUT-OUT COCK	
8809	CANAD	PENDING	2,152,739	06/27/95	PTDS PROPORTIONAL POLARITY SHIFT WHEEL SLIDE PROTECTION	
8805	CANAD	PENDING	2,153,854	07/13/95	MAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STANMER - W. THOMAS DIGMEE (B INVENTORS)	
8722	JAPAN	PENDING	08-102733	04/24/96	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8863	CANAD	PENDING	2,154,540	07/24/95	PTDS SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION	
8822	AUSAL	PENDING	34214/95	10/12/95	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8752	BRAZL	PENDING	P1 9601530-6	04/11/96	MAFW ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8796	AUSAL	PENDING	45519/96	02/13/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RMY FRI CAR AND AN INTERLOCKING MECHANISM THEREFOR	
8796	EPO	PENDING	96103045.9	02/29/96	CARD INTERLOCKING SLACKLESS DRAWBAR ASSY FOR RMY FRI CAR AND AN INTERLOCKING MECHANISM THEREFOR	

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8813	CANAD	PENDING	2, 157, 351	08/31/95	NAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8893	CANAD	PENDING	2, 157, 734	09/07/95	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8751	CANAD	PENDING	2, 156, 587	08/21/95	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8895	CANAD	PENDING	2, 157, 724	09/07/95	CARD AN INTERLOCKING TYPE MECHANISM FOR A SLACKLESS DRAWBAR	ASSEMBLY USED ON A RAILWAY FREIGHT CAR
8751	AUSAL	PENDING	40841/96	01/05/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8751	BRAZL	PENDING	PJ 9601672-8	05/14/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	
8813	AUSAL	PENDING	34436/95	10/24/95	NAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8813	BRAZL	PENDING	PI 9600319	02/05/96	NAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT	BRAKE
8893	AUSAL	PENDING	34579/95	10/31/95	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8893	EPO	PENDING	95117368.1	11/04/95	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	
8635	USA C2	PENDING	08/504,605	07/20/95	PIDS REUSABLE PAINT MASKING MEMBER	
PULSE-36	CANAD	PENDING	2, 160, 414	10/12/95	PULS DIAGNOSTIC DEVICE FOR DETERMINING THE PNEUMATIC INTEGRITY	OF A BUBBLE-TYPE FUEL MEASURING SYSTEM
8747	JAPAN	PENDING	07-325529	12/14/95	NAFW IMBEDDED ELECTRICAL CONNECTOR	
8843	JAPAN	PENDING	07-298695	11/16/95	LPDW ELECTRONICALLY CONTROLLED LOCO THROTTLE CONTROLLER	INCLUDING REMOTE MULTIPLE UNIT THROTTLE CO
8844	JAPAN	PENDING	07-297169	11/15/95	LPDW METHOD AND APPARATUS FOR DETERMINING AND ENCODING THE POSI-	TION OF A REVERSER HANDLE ON A LOCOMOTIVE
8846	JAPAN	PENDING	07-298474	11/16/95	LPDW METHOD AND APPARATUS FOR FEEDBACK OF TRAINLINE STATUS TO	THE CENTRALPROCESSOR OF A LOCOMOTIVE THROT
8849	JAPAN	PENDING	07-298154	11/16/95	LPDW METHOD OPERATING LOCO.MOUNTED THROTTLE CONTROLLER BETWEEN 2	MODES OF OPERATION INC.A TRANSITION BETWE
8850	JAPAN	PENDING	07-298475	11/16/95	LPDW AN APPARATUS FOR AND A METHOD OF GENERATING AN ANALOG	SIGNAL FOR CONTROL OF DYNAMIC BRAKING
8851	JAPAN	PENDING	07-295444	11/14/95	LPDW AN APPARATUS FOR FEEDBACK OF AN ANALOG SIGNAL USED TO	MONITOR &/OR CONTROL DYNAMIC BRAKING & NET
8860	CANAD	PENDING	2, 161, 383	10/25/95	PIDS EVENT HISTORY DATA ACQUISITION	
8894	FRANC	PENDING	96 05227	04/25/96	PIDS AUXILIARY VEHICLE CURRENT COLLECTOR	
8926	USA	PENDING	08/548,874	10/26/95	RFPCL SELF LUBRICATING BRAKE SHOE MATERIAL	

8856	JAPAN	PENDING	07-316696	12/05/95	LPDW A METHOD AND APPARATUS FOR REMOTE CONTROL OF A LOCOMOTIVE	THROTTLE CONTROLLER
8811	JAPAN	PENDING	08-012695	01/29/96	LPDW APPLICATIONS OF EPIC(R) 3102 BRAKE EQUIPMENT TO ELECTRO-PNEUMATIC SYSTEMS	PNEUMATIC SYSTEMS
8852	JAPAN	PENDING	07-298696	11/16/95	LPDW AN APPARATUS TO ENABLE CONTROLLING A THROTTLE CONTROLLER FROM A REMOTE HOST	FROM A REMOTE HOST
8790	AUSAL	PENDING	48236/96	03/22/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE	RAILROAD CAR BRAKE PIPE PRESSURE
8790	BRAZL	PENDING	PI 9602697-9	06/07/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE	RAILROAD CAR BRAKE PIPE PRESSURE
8790	CANAD	PENDING	2,162,980	11/15/95	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE	RAILROAD CAR BRAKE PIPE PRESSURE
8810	CANAD	PENDING	2,162,971	11/15/95	NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANSDUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE	DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8810	BRAZL	PENDING	9601187	03/29/96	NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANSDUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE	DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8885	AUSAL	PENDING	48238/96	03/22/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAHMER	W. THOMAS DIGWEED (8 INVENTORS)
8885	BRAZL	PENDING	9600318	02/05/96	NAFW TREVOR A. SCOTT - ERIC G. SMITH - ULF STAHMER	W. THOMAS DIGWEED (8 INVENTORS)
8839	CANAD	PENDING	2,175,518	05/01/96	PTDS EMBEDDED DUPLEX LOCAL CONTROL PANEL	SOFTWARE CONTROL
8907	CANAD	PENDING	2,164,159	11/30/95	LPDW AUTOMATIC DETECTION OF AIR FLOW TRANSDUCER TYPE UNDER IN AN AIR SYSTEM	IN AN AIR SYSTEM
8910	CANAD	PENDING	2,164,475	12/05/95	PTDS TELESCOPING DESICCANT CARTRIDGE FOR AN AIR DRYER DISPOSED	DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8911	CANAD	PENDING	2,166,594	01/04/96	CARD FREIGHT RAILWAY CAR SLACKLESS DRAWBAR ASSEMBLY	DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8910	AUSAL	PENDING	47989/96	03/04/96	NAFW SYSTEM AND METHOD FOR AUTOMATICALLY CALIBRATING TRANSDUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE	DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8910	CANAD	PENDING	2,168,408	01/30/96	REPC SELF LUBRICATING BRAKE SHOE MATERIAL	DUCERS IN ELECTRO-PNEUMATIC FREIGHT BRAKE
8998	USA	PENDING	08/556,198	11/09/95	REPD LIMP-IN CONTROL ARRANGEMENT FOR AN ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM	CONTROL SYSTEM
8996	CANAD	PENDING	2,169,038	02/07/96	REPD LIMP-IN CONTROL ARRANGEMENT FOR AN ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM	CONTROL SYSTEM
8751	JAPAN	PENDING	08-163216	06/24/96	NAFW ELECTRIC BRAKE CONTROL SYSTEM AND METHOD FOR RAILROAD CAR	RAILROAD CAR BRAKE PIPE PRESSURE
8790	JAPAN	PENDING	08-147296	06/10/96	NAFW MICROPROCESSOR BASED SYSTEM AND METHOD FOR REGULATING A RAILROAD CAR BRAKE PIPE PRESSURE	RAILROAD CAR BRAKE PIPE PRESSURE
8813	JAPAN	PENDING	08-126952	05/22/96	NAFW PNEUMATIC EMERGENCY BACKUP FOR ELECTRO-PNEUMATIC FREIGHT BRAKE	BRAKE
8879	JAPAN	PENDING	08-113876	05/08/96	PTDS PROPORTIONAL POLARITY SHIFT WHEEL SLIDE PROTECTION	BRAKE
8861	BRAZL	PENDING	9602742	06/12/96	NAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR	LATING VALVE THEREFOR

Patent No.	Country	Status	Date	Inventor	Description	Notes
8861	CANAD	PENDING	03/01/96	MAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR		
8861	INDIA	PENDING	03/12/96	MAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR		
8861	AUSAL	PENDING	03/22/96	MAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR		
8940	CANAD	PENDING	03/01/96	PTDS BRAKE DEVICE		
8943	CANAD	PENDING	03/01/96	PTDS BRAKE DEVICE		
8861	CHINA	PENDING	07/30/96	MAFW TRAIN BRAKE PIPE PRESSURE EXHAUST CONTROL SYSTEM AND REGULATING VALVE THEREFOR		
8927	CANAD	PENDING	03/28/96	PTDS MODULATION ROTARY VALVE		
8927	EPO	PENDING	08/22/96	PTDS MODULATION ROTARY VALVE		
8865	USA	PENDING	02/06/96	MAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO		
8884	CANAD	PENDING	03/27/96	MAFW TWO-PIECE CHECK VALVE ASSEMBLY		
8921	CANAD	PENDING	04/04/96	PTDS LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER		
8922	CANAD	PENDING	04/16/96	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER		
8930	CANAD	PENDING	04/22/96	REPD BRAKE CONTROL SYSTEM FOR DOUBLED ENDED LOCOMOTIVE		
8828	CANAD	PENDING	04/24/96	MAFW PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE		
8828	AUSAL	PENDING	06/03/96	MAFW PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE		
8828	BRAZL	PENDING	07/30/96	MAFW PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE		
8865	CANAD	PENDING	04/30/96	MAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO		
8865	AUSAL	PENDING	06/12/96	MAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO		
8865	BRAZL	PENDING	07/11/96	MAFW FREIGHT BRAKE CONTROL USING TRAIN NET BRAKING RATIO		
8903	CANAD	PENDING	05/03/96	PULS RAIL NAVIGATION SYSTEM		
8929	CANAD	PENDING	05/14/96	PTDS RELATIVE SPIN SPEED TRACTION CONTROL		
8937	CANAD	PENDING	08/13/96	PTDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH		CONTROLLER #3 ABOVE IS CHARLES C. SIEGLIN

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8971	USA	PENDING	08/643,604	05/06/96	LPDW ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	
8863	JAPAN	PENDING	08-140500	06/03/96	PTDS SIMPLIFIED PATTERN RECOGNITION WHEEL SLIDE PROTECTION	
8900	AUSAL	PENDING	55876/96	06/07/96	MAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8900	BRAZL	PENDING	9603277	08/05/96	MAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8900	CANAD	PENDING	2,177,130	05/22/96	MAFV RAILWAY MANUAL BRAKE CONTROL VALVE TEST UNIT	
8898	JAPAN	PENDING	08-295,348	11/07/96	REPD LIMP-IN CONTROL ARRANGEMENT FOR AN ELECTRO-PNEUMATIC BRAKE CONTROL SYSTEM	
8875	CANAD	PENDING	2,177,460	05/27/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8875	AUSAL	PENDING	55877/96	06/07/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8875	BRAZL	PENDING	9603552	08/23/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8875	CHINA	PENDING	96107134.6	06/21/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8875	EPO	PENDING	96113233.9	08/19/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8875	JAPAN	PENDING	09-008546	01/21/97	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8924	CANAD	PENDING	2,178,058	06/03/96	PTDS TWIN TOWER AIR DRYER FOR AN A.R COMPRESSOR UNIT	
8875	INDIA	PENDING	1294/De1/96	06/12/96	CARD ERGONOMIC HAND WHEEL FOR RAILWAY CAR HAND BRAKE	
8926	FRANC	PENDING	96/12983	10/24/96	RPFC SELF LUBRICATING BRAKE SHOE MATERIAL	
8928	MEXIC	PENDING	965113	10/25/96	RPFC SELF LUBRICATING BRAKE SHOE MATERIAL	
8906	USA CP	PENDING	08/630,075	04/15/96	MAFV SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE	
8902	USA	PENDING	08/657,651	06/03/96	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD	
8963	USA	PENDING	08/651,919	05/21/96	PTDS A BRAKE CONTROL DEVICE FOR RAILROAD CARS	*note: filed Non-Convention
8901	USA	PENDING	08/653,153	05/24/96	PULS METHOD OF DETERMINING CAR POSITION	
8828	JAPAN	PENDING	09-005690	01/16/97	MAFV PNEUMATIC EMPTY/LOAD PROPORTIONING FOR ELECTRO-PNEUMATIC BRAKE	
8884	JAPAN	PENDING	09-005691	01/16/97	MAFV TWO-PIECE CHECK VALVE ASSEMBLY	
8815	JAPAN	PENDING	08-208333	08/07/96	PTDS ROTARY MAGNET VALVE	

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8927	JAPAN	PENDING	09-000433	01/06/97	PTDS MODULATION ROTARY VALVE		
8930	AUSAL	PENDING	68008/96	10/09/96	REPD BRAKE CONTROL SYSTEM FOR DOUBLED ENDED LOCOMOTIVE		
8882	CANAD	PENDING	2,180,422	07/03/96	RFPFC FATIGUE AND IMPACT RESISTANT RAILWAY BRAKE SHOE		
8919	CANAD	PENDING	2,180,415	07/03/96	MAFW TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER		
8932	CANAD	PENDING	2,180,401	07/03/96	RFPFC SPRING-TYPE RAILROAD BRAKE SHOE LOCKING KEY		
8971	CANAD	PENDING	2,180,413	07/03/96	LPDW ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM		
8963	CANAD	PENDING	2,181,405	07/17/96	PTDS A BRAKE CONTROL DEVICE FOR RAILROAD CARS		*note: filed Non-Convention
8860	CANAD	PENDING	2,181,871	07/23/96	MAFW BRAKE CONTROL FOR MULTI-PLATFORM FREIGHT CAR		
8928	ARGNT	PENDING	338,610	10/22/96	MAFW RAILWAY PIPE BRACKET WITH ACCESS PORTS		
8901	CANAD	PENDING	2,182,869	07/23/96	PULS METHOD OF DETERMINING CAR POSITION		
8901	EPO	PENDING	961132218.0	08/17/96	PULS METHOD OF DETERMINING CAR POSITION		
8904	CANAD	PENDING	2,192,151	12/05/96	PULS TRAIN BRAKE PERFORMANCE MONITOR		
8928	CANAD	PENDING	2,181,977	07/24/96	MAFW RAILWAY PIPE BRACKET WITH ACCESS PORTS		
8928	BRAZL	PENDING	9603780	09/17/96	MAFW RAILWAY PIPE BRACKET WITH ACCESS PORTS		
8864	CANAD	PENDING	2,181,872	07/23/96	MAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR		RAILWAY FREIGHT VEHICLE
8864	BRAZL	PENDING	9603792	09/18/96	MAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR		RAILWAY FREIGHT VEHICLE
8928	CANAD	PENDING	2,189,838	11/07/96	MAFW FREIGHT BRAKE CONTROL FOR UNIFORM CAR DECELERATION		
8962	CANAD	PENDING	2,182,338	07/30/96	PTDS A BRAKE MONITORING DEVICE FOR RAILROAD CARS		
8982	CANAD	PENDING	2,182,339	07/30/96	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A		MULTIPLE STAGE COMPRESSOR AND METHOD
8908	CANAD	PENDING	2,182,462	07/31/96	PTDS RAILWAY BRAKE VALVE ASSEMBLY		(filed by Dority & Manning, Craig M. Kille
8936	CANAD	PENDING	2,183,207	08/13/96	PTDS ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM		* inventor's full name: CHARLES C. SIEGLI

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8938	CANAD	PENDING	2,182,929	08/08/96	PTDS POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER	* inventor's full name: CHARLES C. SIEGLI
8984	CANAD	PENDING	2,182,928	08/08/96	IMPROVED RESILIENT TYPE SEALING MEMBER FOR SEALING A PUSH ROD MEMBER OF A RAILWAY TYPE VEHICLE BRAKE	
8937	USA	PENDING	08/641,439	05/01/96	PTDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER (#3 ABOVE IS CHARLES C. SIEGLIN	
8982	USA	CP	08/686,433	07/26/96	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD	
8747	USA	D1	08/688,436	07/30/96	NAFW IMBEDDED ELECTRICAL CONNECTOR	
8884	AUSAL	PENDING	65672/96	09/17/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	BRAZL	PENDING	PI 9605139	10/15/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	CH1HA	PENDING	96113418.6	09/16/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	EPO	PENDING	96114694.1	09/13/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8884	INDIA	PENDING	1925/Del/96	08/29/96	NAFW TWO-PIECE CHECK VALVE ASSEMBLY	
8901	AUSAL	PENDING	65784/96	09/20/96	PULS METHOD OF DETERMINING CAR POSITION	
8901	BRAZL	PENDING	PI 9605338	10/29/96	PULS METHOD OF DETERMINING C/P POSITION	
8901	JAPAN	PENDING	09-095761	04/14/97	PULS METHOD OF DETERMINING CAR POSITION	
8919	AUSAL	PENDING	67975/96	10/02/96	NAFW TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8919	BRAZL	PENDING	9605341-0	10/29/96	NAFW TEST PLATE ADAPTER FOR MANUAL SINGLE CAR TESTER	
8903	AUSAL	PENDING	67972/96	10/02/96	PULS RAIL NAVIGATION SYSTEM	
8903	BRAZL	PENDING	PI 9605340	10/29/96	PULS RAIL NAVIGATION SYSTEM	
8903	CHINA	PENDING	96108265.B	09/20/96	PULS RAIL NAVIGATION SYSTEM	
8903	JAPAN	PENDING	09-036206	02/20/97	PULS RAIL NAVIGATION SYSTEM	
8903	SOFRC	PENDING	96/7423	09/02/96	PULS RAIL NAVIGATION SYSTEM	
8992	CANAD	PENDING	2,184,568	08/30/96	LPDW INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR APPLICATION IN A SANITARY TYPE PUMP	
8992	JAPAN	PENDING	9-182576	07/08/97	LPDW INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR APPLICATION IN A SANITARY TYPE PUMP	
8985	CANAD	PENDING	2,184,867	09/05/96	CARD RAILWAY VEHICLE BRAKE SYSTEM	

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8840	JAPAN	PENDING	09-114021	05/01/97	NAFW BRAKE CONTROL FOR MULTI-PLATFORM FREIGHT CAR	
8905	JAPAN	PENDING		05/23/97	LPDW PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY IN AN AIR COMPRESSOR	
8921	JAPAN	PENDING	09-023874	02/06/97	PTDS LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER	
8922	JAPAN	PENDING	09-023875	02/06/97	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8924	JAPAN	PENDING	09-023873	02/06/97	PTDS TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8929	JAPAN	PENDING	09-049382	03/04/97	PTDS RELATIVE SPIN SPEED TRACTION CONTROL	
8982	JAPAN	PENDING	09-127210	05/16/97	LPOW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD	
8984	JAPAN	PENDING	9-138296	05/28/97	LPOW IMPROVED RESILIENT TYPE SEALING MEMBER FOR SEALING A PUSH ROD MEMBER OF A RAILWAY TYPE VEHICLE BRAKE	
8903	EPO	PENDING	96114693.3	09/13/96	PULS RAIL NAVIGATION SYSTEM	
8939	CANAD	PENDING	2,185,509	09/13/96	LPDW EXTENDED LIFE BRAKE CYLINDER HOLDER	
8951	CANAD	PENDING	2,185,775	09/17/96	CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8987	AUSAL	PENDING	75444/96	12/18/96	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8988	CANAD	PENDING	2,187,001	10/02/96	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE INTENSIFIER MECHANISM	
8983	CANAD	PENDING	2,188,232	10/18/96	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
8986	CANAD	PENDING	2,188,107	10/17/96	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY VEHICLE BRAKE SYSTEM	
8927	AUSAL	PENDING	10064/97	01/07/97	PTDS LINEAR CHOKE SHUTTLE/ORIFICE CHECK VALVE MECHANISM FOR A TWIN TOWER AIR DRYER	
8924	AUSAL	PENDING	70237/96	10/16/96	PTDS SWITCHING/PURGING MECHANISM FOR A TWIN TOWER AIR DRYER	
8915	AUSAL	PENDING	71791/96	11/15/96	PTDS TWIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
8916	CANAD	PENDING	2,160,415	10/12/96	PULS Train Integrity Detection System	
8905	CANAD	PENDING	2,160,414	10/12/96	Diagnostic Device For Determining The Pneumatic Integrity Of A Bubble-Type Fuel Measuring System	
8916	CANAD	PENDING	2,190,421	11/15/96	LPDW PISTON AND CYLINDER ASSEMBLY FOR MINIMIZING WATER BLOW-BY IN AN AIR COMPRESSOR	
8916	USA	PENDING	087748,200	11/12/96	NAFW WEDGE-SHAPED DISC BRAKE SHOE	

8892	USA	PENDING	08/748,199	11/12/96	NAFW TREAD-DISC ASSIST DUAL TRUCK MOUNTED BRAKE ASSEMBLY	
9013	CANAD	PENDING	2,193,561	12/20/96	LPDW DESICCANT CANISTER WITH POSITIONING BORE	
8987	CANAD	PENDING	2,185,763	09/17/96	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
8987	EPO	PENDING	96120711.5	12/21/96	CARD A SLACK ADJUSTABLE FORCE TRANSMITTING CYLINDER	
9015	CANAD	PENDING	2,194,042	12/27/96	FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM	
8929	EPO	PENDING	97101207.5	01/27/97	PTDS RELATIVE SPIN SPEED TRACTION CONTROL	
8936	GERVE	PENDING	19718431.6	04/03/97	PTDS ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM	* inventor's full name: CHARLES C. SIEGLI
8937	MEXIC	PENDING	973207	04/30/97	PTDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH	CONTROLLER (W3 ABOVE IS CHARLES C. SIEGLI
8937	GERVE	PENDING	19718368.3	04/03/97	PTDS SIGNAL PROCESSING UNIT FOR A TROLLEY POLE SWITCH	CONTROLLER (W3 ABOVE IS CHARLES C. SIEGLI
8935	MEXIC	PENDING	973206	04/30/97	PTDS ELECTRONIC CONTROLLER FOR A TROLLEY POLE SWITCH MECHANISM	* inventor's full name: CHARLES C. SIEGLI
8938	GERVE	PENDING	19718428.6	04/03/97	PTDS POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER	* inventor's full name: CHARLES C. SIEGLI
8938	MEXIC	PENDING	973205	04/30/97	PTDS POWER CONTROLLING UNIT FOR A TROLLEY POLE SWITCH CONTROLLER	* inventor's full name: CHARLES C. SIEGLI
8983	AUSAL	PENDING	15079/97	03/04/97	CARD A ROTARY DRAWBAR ASSEMBLY FOR A RAILWAY FREIGHT CAR	
8906	AUSAL	PENDING	12584/97	02/07/97	REPD SOFTWARE ALGORITHM PROVIDING DYNAMIC CONFIGURATION OF DEAD BAND CONTROL CRITERIA WITHIN A MICRO BASED	
9044	CANAD	PENDING	2,203,604	04/24/97	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
9057	USA	PENDING	08,789,754	01/28/97	PTDS DUAL PNEUMATIC TRAINLINE CONTROL UNIT	
9057	USA	PENDING	08,798,774	02/11/97	LPDW CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
9005	USA	PENDING	08,794,302	02/03/97	NAFW PRECISION FILTERED CHOKE	
8970	USA	PENDING	08,747,979	11/12/96	LPDW Pneumatic Emergency Brake Application Valve and an Associated Electrical Signaling Switch	
8951	AUSAL	PENDING	19122/97	04/28/97	CARD END DESIGN FOR A RAILWAY TYPE FREIGHT CAR	
8877	USA	D2 PENDING	08,808,794	02/28/97	REPD AUTOMATED TERMINAL TEST PROCEDURE	
8953	USA	PENDING	08,803,261	02/20/97	NAFW NOSE COUPLING WITH ELECTRICAL CONTACTS	
9023	USA	PENDING	08,803,415	02/20/97	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN	

9009	USA	PENDING	08/803,262	02/20/97	MAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING	
9014	USA	PENDING	08/710,209	09/13/96	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desiccant Air Dryer	
8976	USA	PENDING	08/770,584	12/19/96	MAFW ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
8941	USA	PENDING	08/815,422	03/11/97	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE	
8841	CANAD	PENDING	2149963	05/23/95	MAFW RAILROAD CAR BRAKE CYLINDER PISTON TRAVEL INDICATOR AND MOUNT THEREFOR	
9008	USA	PENDING	08/772,327	12/23/96	MAFW ELECTRO-PNEUMATIC VALVE CONTROL	
9014	JAPAN	PENDING	09-251067	09/16/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desiccant Air Dryer	
8982	CANAD CP	PENDING	2,202,818	04/16/97	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD	
8892	CANAD	PENDING	2,202,570	04/14/97	MAFW TREAD-DISC ASSIST DUAL TRUCK MOUNTED BRAKE ASSEMBLY	
9011	CANAD	PENDING	2,203,047	04/18/97	PTDS PENALTY BRAKE CIRCUIT FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
9012	CANAD	PENDING	2,203,048	04/18/97	PTDS PENALTY BRAKE DESIGN FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
8977	CANAD	PENDING	2,202,937	04/17/97	PTDS PULSE WIDTH MODULATED DRIVE FOR AN INFINITELY VARIABLE SOLENOID OPERATED BRAKE CYLINDER PRESSURE CONTROL VALVE	
9010	CANAD	PENDING	2,202,938	04/17/97	PTDS PENALTY BRAKE SCHEME FOR STRAIGHT AIR PIPE BRAKE CONTROL EQUIPMENT	
8965	USA	PENDING	08/831,576	04/09/97	REPD Modified Airflow Algorithm With Compensation for Variations in Main Reservoir Air Pressure and Ambient Airflow.	
8958	CANAD	PENDING	2,203,197	04/21/97	MAFW COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC	
8959	CANAD	PENDING	2,203,196	04/21/97	MAFW WEDGE-SHAPED DISC BRAKE SHOE	
8968	USA OR	PENDING	08/826,897	04/09/97	REPD EQUALIZING RESERVOIR COMPENSATION	
8902	USA	PENDING	08/835,860	04/08/97	DUAL CONNECTION EP BRAKE SYSTEM	
8956	USA	PENDING	08/842,685	04/15/97	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
8914	CANAD	PENDING	2,203,304	04/22/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desiccant Air Dryer	
9016	CANAD	PENDING	2,203,305	04/22/97	LPDW REGENERATIVE DESICCANT AIR DRYER	
8957	CANAD	PENDING	2,203,607	04/24/97	MAFW OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION LEVER	

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8973	CANAD	PENDING	2,203,603	04/24/97	PTDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT	
9004	CANAD	PENDING	2,203,606	04/24/97	PTDS BRAKE ASSURANCE MODULE	
9033	CANAD	PENDING	2,203,605	04/24/97	PTDS BRAKE PIPE SENSING UNIT	
8988	BRAZL	PENDING	P19703647-1	06/20/97	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8988	AUSAL	PENDING	28673/97	07/15/97	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
8988	CHINA	PENDING	97116115.1	08/01/97	CARD AN IMPROVED PNEUMATIC PRESSURE TO HYDRAULIC PRESSURE	INTENSIFIER MECHANISM
9014	AUSAL	PENDING	28619/97	07/11/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desicc	
ant Air Dryer						
9014	BRAZL	PENDING	970193	08/25/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desicc	
ant Air Dryer						
9014	CHINA	PENDING	97116527.1	09/09/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desicc	
ant Air Dryer						
9014	INDIA	PENDING	1283/DEL/1997	05/15/97	LPDW Molded Rubber Val Seal for use in Predetermined type Valves such as, a Ck Val in a Regenerative Desicc	
ant Air Dryer						
8899	CANAD	PENDING	2,204,325	05/02/97	NAFM E/P INTERFACE WITH PNEUMATIC CONTROL VALVE FOR BACK-UP	BRAKE ARRANGEMENT
8933	CANAD	PENDING	2,204,324	05/02/97	NAFM TRAIN BRAKE PIPE REMOTE PRESSURE CONTROL SYSTEM &	MOTOR-DRIVEN REGULATING VALVE THEREFOR
8931	CANAD	PENDING	2,204,323	05/02/97	NAFM Release Assuring Arrangement for Comb. Electro-Pneu./Auto.	Pneumatic Brake
9044	USA	PENDING	08/789,920	01/28/97	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
8986	AUSAL	PENDING	24782/97	06/06/97	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8986	BRAZL	PENDING	9703560	06/13/97	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8986	CHINA	PENDING	97113619.X	06/12/97	CARD PNEUMATIC PRESSURE OPERATED PARKING BRAKE FOR A RAILWAY	VEHICLE BRAKE SYSTEM
8986	INDIA	PENDING	1450/DEL/97	05/30/97	LPDW DESICCANT CANISTER WITH POSITIONING BORE	
9013	AUSAL	PENDING	28672/97	07/15/97	LPDW DESICCANT CANISTER WITH POSITIONING BORE	
9057	CANAD	PENDING	2,204,944	05/09/97	LPDW CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
8970	CANAD	PENDING	2,204,943	05/09/97	LPDW Pneumatic Emergency Brake Application Valve and an Assoc-	ated Electrical Signaling Switch
8993	USA	PENDING	08/850,600	05/02/97	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
Cathcart						
8990	USA	PENDING	08/850,599	05/02/97	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE	SLACK ADJUSTER (note: Inventor is Christo

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9040	USA	PENDING	08/852,799	05/07/97	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS
8985	AUSAL	PENDING	Z3740/97	05/30/97	CARD RAILWAY VEHICLE BRAKE SYSTEM
9023	CAHAD	PENDING	2,206,111	05/26/97	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN
8908	BRAZL n,Greenville,SC)	PENDING	P19703402-9	05/26/97	PTDS RAILWAY BRAKE VALVE ASSEMBLY
8908	EPO	PENDING	97108106.2	05/20/97	PTDS RAILWAY BRAKE VALVE ASSEMBLY
8889	JAPAM n,Greenville,SC)	PENDING	09-348277	12/17/97	NAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE
8957	JAPAN	PENDING	09-310913	11/12/97	NAFW OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION LEVER
8958	JAPAN	PENDING	09-310912	11/12/97	NAFW COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC
8976	JAPAN	PENDING	09-351429	12/19/97	NAFW ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR
8977	JAPAN	PENDING	09-334500	12/04/97	PTDS PULSE WIDTH MODULATED DRIVE FOR AN INFINITELY VARIABLE CONTROL VALVE
9016	AUSAL	PENDING	28737/97	07/18/97	LPDW REGENERATIVE DESICCANT AIR DRYER
9016	CHINA	PENDING	97118294.9	09/12/97	LPDW REGENERATIVE DESICCANT AIR DRYER
9016	EPO	PENDING	97109339.8	06/10/97	LPDW REGENERATIVE DESICCANT AIR DRYER
9016	INDIA	PENDING	1648/DEL/1997	06/19/97	LPDW REGENERATIVE DESICCANT AIR DRYER
9087	USA	PENDING	08/870,943	06/06/97	LPDW ABRASION RESISTANT DIAPHRAGM
8982	CHINA	PENDING	97115514.3	06/03/97	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD
8982	AUSAL	PENDING	24659/97	06/02/97	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD
8982	EPO	PENDING	97108893.5	06/03/97	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD
8982	INDIA	PENDING	1684/del/97	06/03/97	LPDW THERMOSTATICALLY CONTROLLED INTERCOOLER SYSTEM FOR A MULTIPLE STAGE COMPRESSOR AND METHOD
8970	AUSAL	PENDING	28736/97	07/18/97	LPDW Pneumatic Emergency Brake Application Valve and an Associated Electrical Signaling Switch
8971	JAPAN	PENDING	09-216499	08/11/97	LPDW ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM
8971	EPO	PENDING	97114278.1	08/19/97	LPDW ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM

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8953	CANAD	PENDING	2,225,105	12/17/97	NAFW HOSE COUPLING WITH ELECTRICAL CONTACTS
9009	CANAD	PENDING	2,207,640	06/12/97	NAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING
8958	AUSAL	PENDING	30126/97	07/23/97	NAFW COOLING SPOKE ARRANGEMENT FOR A BRAKE DISC
8959	AUSAL	PENDING	30134/97	07/23/97	NAFW WEDGE-SHAPED DISC BRAKE SHOE
8957	AUSAL	PENDING	30128/97	07/23/97	NAFW OFFSET ARRANGEMENT FOR BRAKE SYSTEM PROPORTIONALIZATION LEVER
8892	AUSAL	PENDING	30127/97	07/23/97	NAFW TREAD-DISC ASSIST DUAL TRUCK MOUNTED BRAKE ASSEMBLY
8991	EPO	PENDING	97202026.7	07/02/97	LPDW IMPROVED INSERT TYPE MEMBER FOR USE IN A FLEXIBLE TYPE PUMP DIAPHRAGM
8992	EPO	PENDING	9720207.5	07/02/97	LPDW INERT PLASTIC COATED FLEXIBLE TYPE DIAPHRAGM FOR APPLICATION IN A SANITARY TYPE PUMP
9008	CANAD	PENDING	2,209,405	07/02/97	NAFW ELECTRO-PNEUMATIC VALVE CONTROL
9008	AUSAL	PENDING	30129/97	07/23/97	NAFW ELECTRO-PNEUMATIC VALVE CONTROL
9008	CHINA	PENDING	97109499.3	12/19/97	NAFW ELECTRO-PNEUMATIC VALVE CONTROL
8854	USA C	PENDING	08/879,454	06/20/97	REPD APPARATUS FOR DETERMINING THE ABSOLUTE POSITION OF THROTTLE DYNAMIC BRAKE & REVERSER HANDLES ON A LOCO
9093	USA	PENDING	08/886,734	07/01/97	REPD Disc Brake Shoe Assembly
9082	USA	PENDING	08/886,614	07/01/97	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER
9045	USA	PENDING	08/891,357	07/10/97	PTDS FLUID PRESSURE CONTROL DEVICE
9048	USA	PENDING	08/891,217	07/10/97	PTDS Pressure Control Valve Equipped with a Solenoid Valve
9044	CANAD	PENDING	2,209,401	07/02/97	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE
9094	USA	PENDING	08/896,464	07/18/97	LPDW DISC DIAPHRAGM FOR AN INTEGRATED COCK VALVE
9063	USA	PENDING	08/897,277	07/21/97	LPDW AFTERCOOLER BYPASS MEANS FOR A LOCOMOTIVE COMPRESSED AIR SYSTEM
9052	USA	PENDING	08/898,373	07/22/97	PULS INTEGRATED CAB SIGNAL RAIL NAVIGATION SYSTEM
9051	USA	PENDING	08/898,648	07/22/97	PULS RAIL VISION SYSTEM
8891	JAPAN	PENDING	9-177324	07/02/97	CARD FRICTION CLUTCH MECHANISM FOR HIGH CAPACITY DRAFT GEAR ASSEMBLY AND METHOD OF RECONDITIONING DRAFT GEAR WITH SUCH
9100	USA	PENDING	08/901,606	07/28/97	NAFW DUAL SEAL COUPLING APPARATUS FOR ENABLING QUICK MEASUREMENT OF BRAKE CYLINDER PRESSURE

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9102	USA	PENDING	08/901,096	07/28/97	NAFV Dual Seal Fitting for Enabling Quick Measurement of Brake Cylinder Pressure
8912	USA	D1 PENDING	08/906,219	08/04/97	REPO IMMEDIATE COMMUNICATION DESIGN FOR DISCRETE CONTROL SYSTEM
8950	USA	PENDING	08/906,504	08/05/97	REPD Method for Limiting Brk Cyl Press on Loco Equipped with Distributed Power and Electronic Brake Sys
9046	CANAD	PENDING	2,212,308	08/01/97	PTDS A SOLENOID VALVE CONTROL DEVICE
9047	CANAD	PENDING	2,212,321	08/01/97	PTDS A Three-Position Solenoid Valve
9037	CANAD	PENDING	2,212,105	07/31/97	PTDS DUAL PNEUMATIC TRAINLINE CONTROL UNIT
8942	USA	PENDING	08/831,485	03/31/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE
8881	USA	PENDING	08/831,461	03/31/97	REPD BACKUP CONTROL TECHNIQUE FOR 20 PIPE BRAKING SYSTEM
8967	USA	PENDING	08/831,499	03/31/97	LPDM LOCOMOTIVE COMPRESSED AIR AFTERCOOLER UNIT
9049	USA	PENDING	08/831,498	03/31/97	LPDM Fan Powered Aftercooler & Control Circuit for Locomotive Compressors having no Integral Aftercooler
8966	USA	PENDING	08/870,875	06/06/97	PTDS COUPLER HOOK FORCE GAGE
9059	USA	PENDING	08/816,527	03/13/97	PULS DUAL PURPOSE END OF TRAIN DEVICE FOR ELECTRICALLY CONTROLLED PNEUMATIC FREIGHT BRAKE SYSTEMS
8877	USA	D3 PENDING	08/915,623	08/21/97	REPD AUTOMATED TERMINAL TEST PROCEDURE
9041	USA	PENDING	08/912,105	08/18/97	PTDS UNIVERSAL WHEEL SLIP FORCE CONTROL LOGIC
8996	USA	PENDING	08/829,819	03/25/97	PULS ELECTRONIC FAIL-SAFE CIRCUIT FOR ELECTRO-PNEUMATIC BRAKE CONTROL
8956	USA	PENDING	08/922,470	09/02/97	REPD EMERGENCY BRAKE READBACK HARDWARE AND FAULT DIAGNOSTICS ROUTINE
8948	USA	PENDING	08/922,426	09/03/97	PULS DUAL STATION AIR BRAKE CONTROL
8997	CANAD	PENDING	2,213,764	08/20/97	PULS INTRA-TRAIN RADIO COMMUNICATION SYSTEM
8999	CANAD	PENDING	2,214,682	09/05/97	PULS RADIO-BASED ELECTRO-PNEUMATIC CONTROL COMMUNICATIONS SYSTEM
8889	CANAD	PENDING	2,211,773	07/30/97	NAFV ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A RAILROAD CAR BRAKE CONTROL VALVE DEVICE
8976	CANAD	PENDING	2,212,155	07/30/97	NAFV ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR
9060	USA	PENDING	08/888,134	07/03/97	PULS APPLN OF GPS TO RR DISTRIBUTED POWER CONTROL SYSTEMS

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VAPOR-47	USA	PENDING	08/744,342	11/07/96	VAPR POWER DOOR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED	DIRECT PANEL LOCK (door panel lock overhea
VAPOR-47	EPO	PENDING	97116312.6	09/19/97	VAPR POWER DOOR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED	DIRECT PANEL LOCK (door panel lock overhea
VAPOR-52	CANAD	PENDING	2,215,086	09/10/97	VAPR BRIDGE PLATE FOR A MASS TRANSIT VEHICLE	
8968	CANAD	PENDING	2,215,085	09/10/97	REPD EQUALIZING RESERVOIR COMPENSATION	
8965	CANAD	PENDING	2,213,349	08/19/97	REPD Modified Airflow Algorithm With Compensation For Variations In Main Reservoir Air Pressure and Ambient Airflow.	
VAPOR-53	CANAD	PENDING	2,214,683	09/05/97	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-53	USA	PENDING	08/804,779	02/24/97	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-53	EPO	PENDING	97117648.2	10/11/97	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-53	MEXIC	PENDING	98 1452	02/23/98	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
VAPOR-38	USA	PENDING	08/503,581	07/17/95	VAPR METHOD AND APPARATUS FOR LOW NOX COMBUSTION OF GASEOUS FUELS (parent)	
VAPOR-40	BRAZL	PENDING	PI9401184-2	03/16/94	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT VEHICLES (electric bus door operator)	
VAPOR-40	CANAD	PENDING	2,114,096	01/24/94	VAPR POWER DOOR OPERATOR FOR MULTI-PASSENGER MASS TRANSIT VEHICLES (electric bus door operator)	
VAPOR-41	EPO	PENDING	93/909322.5	01/12/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	BRAZL	PENDING	PI9305591	04/28/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	CZECH	PENDING	PV 0098-94	01/28/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	FINLN	PENDING	940,104	01/10/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	NEWZL	PENDING	251,854	01/06/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	RUMAN	PENDING	94-01738	10/28/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-41	RUSSA	PENDING	94-033350	02/21/94	VAPR	
VAPOR-41	KORSO	PENDING	94-700833	03/14/94	VAPR POWER DOOR DRIVE AND DOOR SUPPORT HAVING MOTOR OPERATED	LOCKS (R110)
VAPOR-42	CANAD	PENDING	2,134,162	10/24/94	VAPR TRANSPONDER HAVING MICROPROCESSOR GENERATED FREQUENCY SHIFT SIGNALS	
VAPOR-43	CANAD	PENDING	2,135,343	11/08/94	VAPR RESILIENT EDGES FOR POWER OPERATED DOORS (biparting doors)	
VAPOR-44	CANAD	PENDING	2,136,397	11/22/94	VAPR STABILIZER FOR OUTSIDE SLIDING PLUG DOORS (door leaf)	

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VAPOR-45	USA	PENDING	08/238,116	05/04/94	VAPR SYSTEM AND APPARATUS FOR CONTROL OF A PNEUMATIC DOOR	OPERATOR (obstruction sensing pneumatic do
or operator)						
VAPOR-45	CANAD	PENDING	2,148,036	04/27/95	VAPR SYSTEM AND APPARATUS FOR CONTROL OF A PNEUMATIC DOOR	OPERATOR (obstruction sensing pneumatic do
or operator)						
VAPOR-45	MEXIC	PENDING	94-9268	11/30/94	VAPR SYSTEM AND APPARATUS FOR CONTROL OF A PNEUMATIC DOOR	OPERATOR (obstruction sensing pneumatic do
or operator)						
VAPOR-46	CANAD	PENDING	2,135,344	11/08/94	VAPR DOOR DRIVE EQUIPMENT FOR MASS TRANSIT VEHICLE (sliding	outside plug door)
VAPOR-50	USA	PENDING	60/011887	02/20/96	VAPR APPARATUS AND METHOD FOR DIFFERENTIAL MODE PRESSURE	MEASUREMENT
VAPOR-51	USA	PENDING	08/744,341	11/07/96	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
973001	USA	PENDING	08/926,635	09/10/97	PTDS ROLLER EQUIPPED UNCOUPLING CAM	
8984	USA	PENDING	08/953,800	09/24/97	LPOW IMPROVED RESILIENT TYPE SEALING MEMBER FOR SEALING A PUSH	ROD MEMBER OF A RAILWAY TYPE VEHICLE BRAKE
CYLINDER	C					
VAPOR-51	EPO	PENDING	97116040.3	09/16/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
9077	USA	PENDING	08/855,418	05/13/97	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	(9077-VT)
9077	CANAD	PENDING	2,217,078	10/01/97	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	(9077-VT)
8990	CANAD	PENDING	2,217,245	10/02/97	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE	SLACK ADJUSTER (note: Inventor is Christo
or operator)						
8993	CANAD	PENDING	2,217,242	10/02/97	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
8993	CANAD	PENDING	45334/97	11/21/97	RFPC TRIM SHOE	
9085	AUSAL	PENDING	2926/DEL/97	10/13/97	RFPC TRIM SHOE	
9085	INDIA	PENDING	9705490	11/18/97	RFPC TRIM SHOE	
9085	BRAZL	PENDING	2196-97	10/17/97	RFPC TRIM SHOE	
9087	CHILE	PENDING	98101793.2	02/03/98	RFPC TRIM SHOE	
9085	EPO	PENDING	2,216,506	09/26/97	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
9085	CANAD	PENDING	98101774.2	02/03/98	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	(9077-VT)
9077	EPO	PENDING	2,216,673	09/24/97	PULS DUAL CONNECTION EP BRAKE SYSTEM	
8902	CANAD	PENDING	2,216,680	09/24/97	PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYTEM	
9055	CANAD	PENDING				

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8902	AUSAL	PENDING	44428/97	11/07/97	PULS DUAL CONNECTION EP BRAKE SYSTEM	
8902	SOFRC	PENDING	97/8674	09/26/97	PULS DUAL CONNECTION EP BRAKE SYSTEM	
9055	AUSAL	PENDING	44430/97	11/07/97	PULS SIMPLIFIED DUAL CONNECTION EP BRAKE SYTEM	
9017	USA	PENDING	08/947,799	10/08/97	MAFV ANGLE COCK WITH JUNCTION BOX	
8752	CANAD	PENDING	2,153,853	07/13/95	MAFV ELECTRO-PNEUMATIC FREIGHT BRAKE CONTROL SYSTEM	
8971	USA C1	PENDING	08/951,682	10/16/97	LPDW ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	
9085	CANAD	PENDING	2,219,694	10/30/97	REPC TRIM SHOE	
9057	JAPAN	PENDING	10-028456	02/10/98	LPDW CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
9044	JAPAN	PENDING	10-016227	01/28/98	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
8973	JAPAN	PENDING	10-016225	01/28/98	PTDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT	
9049	JAPAN	PENDING	10-079706	03/26/98	LPDW Fan Powered Aftercooler & Control Circuit for Locomotive	Compressors having no Integral Aftercooler
8967	JAPAN	PENDING	10-079705	03/26/98	LPDW LOCOMOTIVE COMPRESSED AIR AFTERCOOLER UNIT	
9004	JAPAN	PENDING	10-016226	01/28/98	PTDS BRAKE ASSURANCE MODULE	
9056	JAPAN	PENDING	10-104541	04/15/98	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
8990	JAPAN	PENDING	10-122335	05/01/98	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE	SLACK ADJUSTER (note: inventor is Christo
8993	Robert A. Cathcart)	PENDING	10-124652	05/07/98	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
8994	JAPAN	PENDING	10-122334	05/01/98	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
8995	AUSAL	PENDING	44431/97	11/07/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE	PRESSURE EXHAUST VALVE
8992	BRAZL	PENDING	9706449	12/22/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE	PRESSURE EXHAUST VALVE
89040	CANAD	PENDING	2,218,574	10/16/97	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
8976	AUSAL	PENDING	33144/97	08/04/97	MAFV ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
9038	USA	PENDING	08/958,493	10/27/97	PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON	TRAINS USING AN EXISTING LOCOMOTIVE ELECTR
8971	USA D1	PENDING	08/950,845	10/15/97	LPDW ABRASION RESISTANT PLASTIC BONDED TO A DIAPHRAGM	

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8998	CANAD	PENDING	2,219,476	10/28/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
8998	EPO	PENDING	97120080.3	11/17/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
8998	INDIA	PENDING	3186/DEL/1997	11/06/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
8998	AUSAL	PENDING	44429/97	11/07/97	PULS ENVIRONMENTALLY-SEALED CONNECTIVELY-COOLED ACTIVE MATRIX	LIQUID CRYSTAL DISPLAY (LCD)
VAPOR-51	MEXIC	PENDING	978371	10/30/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
8889	AUSAL	PENDING	37560/97	09/12/97	NAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A	RAILROAD CAR BRAKE CONTROL VALVE DEVICE
972005	USA	PENDING	08/968,271	11/12/97	NAFW DUAL VALVE FITTING FOR ENABLING QUICK MEASUREMENT OF PRESS.	INVS: LI, WEI; DIMSA, ROBER T.; VELTRI, M.
J; SCOTT, D.G. 8889	EPO	PENDING	97117647.4	10/11/97	NAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A	RAILROAD CAR BRAKE CONTROL VALVE DEVICE
8881	CANAD	PENDING	2,212,911	08/13/97	PULS BACKUP CONTROL TECHNIQUE FOR 20 PIPE BRAKING SYSTEM	
8942	CANAD	PENDING	2,213,013	08/13/97	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAM BRAKE PIPE	PRESSURE EXHAUST VALVE
8967	CANAD	PENDING	2,213,077	08/14/97	L PDM LOCOMOTIVE COMPRESSED AIR AFTERCOOLER UNIT	
VAPOR-51	CANAD	PENDING	2,204,556	05/06/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
VAPOR-51	UNITED	PENDING	9715229.2	07/18/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
VAPOR-51	ITALY	PENDING	1097A00793	09/08/97	VAPR POWERED DOOR DRIVE SYSTEM AND LOCK	
9058	USA	PENDING	08/979,310	11/26/97	PULS DISTRIBUTED POWER TRAIN SEPARATION DETECTION	
9055	SOFRC	PENDING	98/2016	03/10/98	PULS RAIL VISION SYSTEM	
9053	CANAD	PENDING	2,226,435	01/07/98	PULS RAIL VISION SYSTEM	
9051	EPO	PENDING	98102039.9	02/06/98	PULS RAIL VISION SYSTEM	
9052	CANAD	PENDING	2,226,433	01/07/98	PULS INTEGRATED CAB SIGNAL RAIL NAVIGATION SYSTEM	
9093	AUSAL	PENDING	56304/98	02/24/98	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
Cathcart 8993	EPO	PENDING	98101665.2	01/31/98	PTDS PARKING BRAKE MANUAL RELEASE MECHANISM	*NOTE: INVENTOR'S NAME IS Christopher A.
Cathcart 8979	USA	PENDING	08/978,551	11/26/97	PTDS CONTROL VALVE WITH AXIAL SEALING	

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8978	USA	PENDING	08/978,796	11/26/97	PTDS E-1 AIR DRYER LIQUID SEPARATOR WITH BABBLE	
9001	USA	PENDING	08/979,649	11/26/97	PTDS E-1 THIN TOWER AIR DRYER FOR AN AIR COMPRESSOR UNIT	
971006	USA	PENDING	08/972,581	11/18/97	LPDW WEAR RING FOR DIAPHRAGM AND FLANGE	
976001	USA	PENDING	08/993,069	12/18/97	RFPD RAILWAY BRAKE SHOE BACKING PLATE WITH IMPROVED MOUNTING	ALIGNMENT FEATURE
9018	USA	PENDING	08/989,456	12/12/97	LPDW COMBINATION MAIN RESERVOIR AND AIR SYSTEM	
8980	USA	PENDING	08/979,198	11/26/97	PTDS SHUTTLE MECHANISM FOR TWIN TOWER AIR DRYER SYSTEM	
8981	USA	PENDING	08/979,197	11/26/97	PTDS PURGE TUBE WITH FLAPPER VALVE FOR DESICCANT CONTAINING AIR DRYER	
9080	USA	PENDING	08/865,119	05/29/97	VAPR IMPROVEMENTS IN BOILER COIL DESIGN (Bifilar coil design)	(9080-VP)
9044	AUSAL	PENDING	52726/98	01/23/98	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
9044	EPO	PENDING	98100800.6	01/19/98	PTDS PNEUMATIC TRAINLINE CONTROL UNIT	
9040	EPO	PENDING	98101035.9	02/05/98	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
9004	AUSAL	PENDING	52722/98	01/23/98	PTDS BRAKE ASSURANCE MODULE	
9045	CANAD	PENDING	2,224,763	12/12/97	PTDS FLUID PRESSURE CONTROL DEVICE	
VAPOR-53	KORSO	PENDING	1998-2116	01/23/98	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	
9023	EPO	PENDING	98101132.3	01/23/98	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN	
9023	AUSAL	PENDING	52724/98	01/23/98	PTDS SAFE BRAKE CUTOFF DETECTION FOR TRAIN	
9077	KORSO	PENDING	1998-2117	01/23/98	VAPR POWER OPERATOR FOR SLIDING PLUG DOORS	(9077-VT)
9040	AUSAL	PENDING	52727/98	01/23/98	PTDS WHEEL SLIP CONTROL PARAMETER VARIATION PROCESS	
8990	EPO	PENDING	98101664.5	01/31/98	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE SLACK ADJUSTER	(note: Inventor is Christo
8990	AUSAL	PENDING	52825/98	01/28/98	PTDS SPRING APPLIED PARKING BRAKE ACTUATOR HAVING A COLLET STYLE SLACK ADJUSTER	(note: Inventor is Christo
9033	EPO	PENDING	98100799.0	01/19/98	PTDS BRAKE PIPE SENSING UNIT	
9033	AUSAL	PENDING	52725/98	01/23/98	PTDS BRAKE PIPE SENSING UNIT	
VAPOR-53	JAPAN	PENDING	10-042196	02/24/98	VAPR DOOR DRIVE AND LOCK FOR A MASS TRANSIT VEHICLE	

VAPOR-47	KORSO	PENDING	1998-2118	01/23/98	VAPR POWER DOOR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED	DIRECT PANEL LOCK (door panel lock overhea
d power door driv						
9094	CANAD	PENDING	2,226,030	12/31/97	LPDW DISC DIAPHRAGM FOR AN INTEGRATED COCK VALVE	
9049	CANAD	PENDING	2,213,074	08/14/97	LPDW Fan Powered Aftercooler & Control Circuit for Locomotive	Compressors having no Integral Aftercooler
8976	CHINA	PENDING	97121337.2	10/17/97	MAFW ELECTRO-PNEUMATIC BRAKE SYSTEM AND CONTROLLER THEREFOR	
8961	AUSAL	PENDING	52723/98	01/23/98	PULS ELECTRONIC BLUE FLAG SAFETY EQUIPMENT	
8961	SOFRC	PENDING	98/2410	03/20/98	PULS ELECTRONIC BLUE FLAG SAFETY EQUIPMENT	
8961	CANAD	PENDING	2,212,902	08/12/97	PULS ELECTRONIC BLUE FLAG SAFETY EQUIPMENT	
8973	EPO	PENDING	98101254.5	01/26/98	PTDS UNIVERSAL PNEUMATIC BRAKE CONTROL UNIT	
9102	CANAD	PENDING	2,227,389	01/20/98	MAFW Dual Seal fitting for Enabling Quick Measurement of Brake	Cylinder Pressure
9041	AUSAL	PENDING	52860/98	01/30/98	PTDS UNIVERSAL WHEEL SLIP FORCE CONTROL LOGIC	
9041	CANAD	PENDING	2,227,299	01/16/98	PTDS UNIVERSAL WHEEL SLIP FORCE CONTROL LOGIC	
9041	EPO	PENDING	98102257.7	02/10/98	PTDS UNIVERSAL WHEEL SLIP FORCE CONTROL LOGIC	
9056	CHINA	PENDING	98105522.2	03/09/98	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
9056	EPO	PENDING	98101497.0	01/29/98	PTDS AFTERCOOLER WITH INTEGRAL BYPASS LINE	
9056	CHINA	PENDING	97123013.7	11/26/97	MAFW ARRANGEMENT FOR CONNECTING A TEST DEVICE OR THE LIKE TO A	RAILROAD CAR BRAKE CONTROL VALVE DEVICE
9037	AUSAL	PENDING	52063/98	01/14/98	MAFW Release Assuring Arrangement for Comb. Electro-Pneu./Auto.	Pneumatic Brake
9037	SOFRC	PENDING	980274	01/13/98	MAFW Release Assuring Arrangement for Comb. Electro-Pneu./Auto.	Pneumatic Brake
9065	AUSAL	PENDING	52824/98	01/29/98	PULS Modified Airflow Algorithm With Compensation For Variations	In Main Reservoir Air Pressure and Ambient
Airflow.						
9065	SOFRC	PENDING	98/2826	04/02/98	PULS Modified Airflow Algorithm With Compensation For Variations	In Main Reservoir Air Pressure and Ambient
Airflow.						
9068	USA	PENDING	09/005,452	01/12/98	PTDS AXIAL VIBRATION DAMPING MEANS IN A BRAKE ACTUATOR	
8711	ITALY	PENDING	0582035	03/06/98	CARD REMOVABLE SHAFT MEMBER ENGAGEABLE IN A BALL PORTION OF AN	ARTICULATED BEARING ASSEMBLY
9000	USA	PENDING	08/903,960	07/31/97	MAFW APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL

PATENT FRAMEWORK

OF BRAKE CYLINDER PRESSURE

NO.	COUNTRY	STATUS	NO.	DATE	DESCRIPTION	CONTROL
9100	CANAD	PENDING	2,227,109	01/16/98	MAFW DUAL SEAL COUPLING APPARATUS FOR ENABLING QUICK MEASUREMENT	OF BRAKE CYLINDER PRESSURE
9037	EPO	PENDING	98101261.0	01/26/98	PTDS DUAL PNEUMATIC TRAINLINE CONTROL UNIT	
9005	SOFRC	PENDING	98/0663	01/27/98	MAFW PRECISION FILTERED CHOKE	
9065	AUSAL	PENDING	52879/98	02/02/98	MAFW PRECISION FILTERED CHOKE	
8966	CANAD	PENDING	2,227,164	01/16/98	PTDS COUPLER HOOK FORCE GAGE	
983001	USA	PENDING	09/017,247	02/02/98	PTDS LOW PROFILE DISCHARGE CHECK VALVE	
983002	USA	PENDING	09/017,245	02/22/98	PTDS TWIN TOWER AIR DRYER	
973003	USA	PENDING	09/017,126	02/02/98	PTDS SHUTTLE VALVE FOR TWIN TOWER AIR DRYER	
9000	AUSAL	PENDING	56387/98	02/24/98	APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9000	EPO	PENDING	98103421.8	02/27/98	APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9000	SOFRC	PENDING	98/1254	02/16/98	APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9057	AUSAL	PENDING	52823/98	01/29/98	LPDW CASING ASSEMBLY FOR DESICCANT ELEMENT HOUSING	
8966	EPO	PENDING	98102198.3	02/07/98	PTDS COUPLER HOOK FORCE GAGE	
9009	AUSAL	PENDING	55391/98	02/19/98	MAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING	
9009	SOFRC	PENDING	98/1297	02/17/98	MAFW ELECTRIC CONTACT ARRANGEMENT FOR HOSE COUPLING	
8963	AUSAL	PENDING	53870/98	02/05/98	MAFW HOSE COUPLING WITH ELECTRICAL CONTACTS	
8963	SOFRC	PENDING	98/1299	02/17/98	HOSE COUPLING WITH ELECTRICAL CONTACTS	
9004	GERNE	PENDING	19803044.4	01/27/98	PTDS BRAKE ASSURANCE MODULE	
9030	CANAD	PENDING	2,229,498	02/13/98	LPDW COMPRESSOR INLET VALVE	
9000	CANAD	PENDING	2,229,501	02/13/98	MAFW APPARATUS AND METHOD FOR A RAILWAY FREIGHT CAR BRAKE	CONTROL
9069	USA	PENDING	09/044,295	03/19/98	PULS INDEPENDENT BRAKE HANDLE ASSEMBLY	
9062	USA	PENDING	09/036,071	03/11/98	PULS IMPROVED METHOD OF CONTROLLING BRAKE PIPE PRESSURE	
9061	USA	PENDING	09/034,592	03/04/98	PULS IMPROVED METHOD OF CONTROLLING 20 PIPE PRESSURE	

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8728	ITALY	PENDING	21011 BE/98	03/20/98	PTDS VARIABLE LOAD CONTROL VALVE DEVICE	
9017	SOFC	PENDING	98/4170	05/18/98	NAFW ANGLE COCK WITH JUNCTION BOX	
VAPOR-47 d power door drry	JAPAN	PENDING	9-9405	01/22/97	VAPR POWER DOOR OPERATOR HAVING ROTARY DRIVE AND DRIVE OPERATED	DIRECT PANEL LOCK (door panel lock overhea
9082	SOFC	PENDING	98/4082	05/14/98	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER	
9082	EPO	PENDING	98107243.2	04/21/98	AIR COOLED AIR COMPRESSOR AND AFTERCOOLER	
9082	CANAD	PENDING	2,231,744	03/11/98	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER	
9063	CANAD	PENDING	2,231,712	03/11/98	LPDW AFTERCOOLER BYPASS MEANS FOR A LOCOMOTIVE COMPRESSED AIR SYSTEM	
8941	SOFC	PENDING	98/1939	03/06/98	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE	
9038	CANAD	PENDING	2,231,212	03/03/98	PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON TRAINS USING AN EXISTING LOCOMOTIVE ELECTR	
ONIC AIR BRAKE 9017	CANAD	PENDING	2,231,075	03/04/98	NAFW ANGLE COCK WITH JUNCTION BOX	
9082	AUSAL	PENDING	63547/98	04/22/98	LPDW AIR COOLED AIR COMPRESSOR AND AFTERCOOLER	
973001	EPO	PENDING	98106554.3	04/09/98	PTDS ROLLER EQUIPPED UNCOUPLER CAR	
984006	USA	PENDING	09/061,314	04/16/98	CARD JOINTED HAND BRAKE RELEASE HANDLE	
984001	USA	PENDING	09/061,313	04/16/98	CARD TWO PIECE HAND BRAKE RELEASE HANDLE	
984002	USA	PENDING	09/069,356	04/29/98	LPDW BRAKE VALVE LATCH WITH ENHANCED LUBRICITY	
9071	USA	PENDING	09/069,373	04/29/98	NAFW FILTER FOR RAILROAD CAR CONTROL VALVE PIPE BRACKET AND ACCESS PLATE	
9038 ONIC AIR BRAKE	EPO	PENDING	98109885.8	05/29/98	PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON TRAINS USING AN EXISTING LOCOMOTIVE ELECTR	
9038 ONIC AIR BRAKE	SOFC	PENDING	98/4228	05/19/98	PULS METH. & APPAR. FOR CONTROLLING ELECTRO-PNEUMATIC BRAKES ON TRAINS USING AN EXISTING LOCOMOTIVE ELECTR	
8948	EPO	PENDING	98109913.8	05/29/98	PULS DUAL STATION AIR BRAKE CONTROL	
8948	SOFC	PENDING	98/4173	05/18/98	PULS DUAL STATION AIR BRAKE CONTROL	
8941	USA D1	PENDING	09/084,610	05/26/98	PULS PNEUMATICALLY DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE	
9015	SOFC	PENDING	098/3925	05/08/98	FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM	
8942	USA D1	PENDING	09/084,330	05/26/98	PULS COMBINATION MOTOR/PNEUMATIC DRIVEN TRAIN BRAKE PIPE PRESSURE EXHAUST VALVE	

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984008	USA	PENDING	09/059,235	04/13/98	CARD BRAKE VALVE SYSTEM FOR DEDICATED FREIGHT CARS	
8962	USA	D1	PENDING	09/062,842	04/20/98	PTDS A BRAKE MONITORING DEVICE FOR RAILROAD CARS
9043	USA	PENDING	09/080,858	05/18/98	LPDW COMPRESSOR INTERCOOLER UNLOADER ARRANGEMENT	
9015	EPO	PENDING	98109904.7	05/29/98	FIPP A DUAL TYPE COMPOSITION BRAKE BLOCK SPECIFICALLY DESIGNED FOR USE IN PREDETERMINED TYPE BRAKE SYSTEM	

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WABCO ALLOWED APPLICATIONS

Case Number	Count	Sub Case	Stat	Application Number	Filing Date	Client	long:title1	long:title2
8901	SOFRC		ACTIVE	96/7295	08/28/96		PULS METHOD OF DETERMINING CAR POSITION	
8903	INDIA		ACTIVE	1927/DeI/96	08/29/96		PULS RAIL NAVIGATION SYSTEM	
8864	JAPAN		ACTIVE	09-088195	04/07/97		NAFW SELECTABLE GRADE AND UNIFORM NET SHOE FORCE BRAKING FOR RAILWAY FREIGHT VEHICLE	
9005	CANAD		ACTIVE	2,209,398	07/02/97		NAFW PRECISION FILTERED CHOKE	
9087	CANAD		ACTIVE	2,220,363	11/06/97		LPDM ABRASION RESISTANT DIAPHRAGM	
972017	USA		ACTIVE	60/075,579	02/23/98		NAFW INTEGRAL INTERMODAL TRAIN	
8950	AUSAL		ACTIVE		05/11/98		REPD Method for Limiting Brk Cyl Press on Loco Equipped with Distributed Power and Electronic Brake Sys	
8948	AUSAL		ACTIVE		05/29/98		PULS DUAL STATION AIR BRAKE CONTROL	
8421	INDIA		ACTIVE		05/12/98		NAFW TRUSS-TYPE BRAKE BEAM FOR RAILWAY VEHICLE TRUCK-MOUNTED BRAKE ASSEMBLY	

Schedule II

Trademarks

1. See attached list of WABCO Trademarks (Exhibit A).
2. See attached lists of Pulse trademarks (Exhibit B).

SCHEDULE II (EXHIBIT A)
W.A.B.CO. TRADEMARKS

COUNTRY	TRADEMARK	REGISTRATION	DATE
AUSTRALIA	COBRA	A123,251	05/19/55
	CW & GLOBE	A183,825	10/30/63
	CW & GLOBE	A194,575	05/10/65
	WABCO	A349,340	08/04/80
	WABCO	A349,339	08/04/80
	WABCO	A349,338	08/04/80
	WABCO	A349,337	08/04/80
	WABCO	A349,341	08/04/80
	WABCO & DESIGN	A179,971	04/30/63
	WABCO & DESIGN	A202,309	05/23/66
	WABCO & DESIGN	A179,970	04/30/63
	WABCO & DESIGN	A179,969	04/30/63
	WABCO & DESIGN	A179,968	04/30/63
	WABCO & DESIGN	A179,967	04/30/63
WABCOPAC	A193,773	03/31/65	
BENELUX	COBRA	039,162	06/18/71
	VAPOR	105,927	12/31/71
	VAPOR & DIAMOND DESIGN	106,940	12/30/71
BRAZIL	"BALANCE FLO"	810201194	03/27/84
	"BALANCE-FLO"	810062844	03/27/84
	"HSI"	810062836	11/13/84
	"HSI"	810201186	02/14/84
	"RESISTO-FLO"	810201208	09/20/83
	"RESISTO-FLO"	810062852	09/20/83
	CW	06447163	09/03/76
	CW & GLOBE	817027556	10/01/96
	INTERTWINED WA	003295257	07/17/16
	VAPOR & DIAMOND DESIGN	003005917	06/26/64
	VAPOR & DIAMOND DESIGN	810665360	08/28/84
VAPOR & DIAMOND DESIGN	003005925	06/26/64	
BULGARIA	CW & GLOBE	7831	10/20/70
CANADA	ALERTOR & DESIGN	142,097	10/01/65
	AQUAZONE	450,129	11/17/95
	CABAN DESIGN	110,412	05/30/58
	CARDWELL	UCA46779	02/12/53
	CINESTON	TMA271,962	08/20/82
	CIRC-U-LATIC & DESIGN	129,959	02/15/63
	COBRA	229,891	08/25/78
	COBRA	101,566	10/07/65
COBRA & DESIGN	183,116	05/12/72	

CANADA	CW & GLOBE	136,867	08/07/64	
	DECELOSTAT	TMA272,160	08/27/82	
	DRYMOR	332,649	10/02/87	
	INTERTWINED WA	TMDA/04316	05/03/92	
	INTERTWINED WA in a Circle	TMDA 5937	03/13/97	
	MODULATIC	108,429	11/01/57	
	MODUZONE & DESIGN	102,890	03/16/56	
	THERM-O-MATIC	TMA216,758	10/22/76	
	UNIVERSAL	UCA47829	09/30/53	
	UNIVERSAL	169/37797	05/14/25	
	UNIZONE & DESIGN	104,269	08/31/56	
	VA-POWER & DESIGN	335,704	12/24/87	
	VAPOLEX	TMA279,959	06/03/83	
	VAPOR	445,616	07/28/95	
	VAPOR & DIAMOND DESIGN	UCA 32343	01/22/49	
	WABCOMATIC	289,065	03/23/84	
	WABCOPAC	129,919	02/15/63	
	CHILE	COBRA	458,869	01/14/76
		COBRA	470,929	10/17/86
	CHINA	CW & GLOBE	411,243	08/24/93
INTERTWINED WA		448,911	05/22/85	
CARDWELL		177,154	05/15/83	
CUBA	CW & GLOBE	177,155	05/15/83	
	UNIVERSAL	177,156	05/15/83	
CZECH REPUBLIC	COBRA	98,904	05/12/59	
	INTERTWINED WA	32,100	09/07/16	
DENMARK	CW & GLOBE	161,843	10/02/70	
	CW & GLOBE	161,843	10/02/70	
EGYPT	VAPOR & DIAMOND DESIGN	1340/57	08/24/57	
	VAPOR & DIAMOND DESIGN	09011/1992	10/02/92	
FINLAND	CW & GLOBE	46,231	05/31/70	
	VAPOR	35,872	11/12/60	
FRANCE	B WITHIN O	1,626,939	12/18/89	
	CIRC-U-LATIC & DESIGN	1,424,266	08/28/62	
	COBRA	1,568,484	01/04/90	
	CW & GLOBE	1,574,051	11/08/63	
	DOR-TROL & DESIGN	1,327,316	11/09/65	
	DOUBLE ARROW w/Pitchfork Sym.	1,348,789	02/12/76	
	STONE-VAPOR	1,480,533	08/02/68	
	VAPOR	1,243,682	10/22/58	
	VAPOR & DIAMOND DESIGN	1,243,681	10/22/58	
	VAPOR & DIAMOND DESIGN	93484250	09/20/93	
	GERMANY	COBRA	1,024,989	04/03/81
		CW & GLOBE	794,591	11/13/63
	HUNGARY	CW & GLOBE	638,458	11/17/70
		CW & GLOBE	116,051	10/22/64
	INDIA	CW & GLOBE	113,744	10/14/70
CIRC-U-LATIC		211,843	10/16/62	
CW & GLOBE		243,448B	08/02/67	
	INTERTWINED WA MONOGRAM	185,349	06/03/58	

INDIA	VAPOR & DIAMOND DESIGN	205,575	10/31/61	
	WABCO	359,912	03/24/80	
	WABCO	359,910	03/24/80	
	WABCO	359,908	03/24/80	
	WABCO & DESIGN	215,260	04/30/63	
	WABCO & DESIGN	215,259	04/30/63	
	WABCO & DESIGN	215,258	04/30/63	
	WABCO & DESIGN	215,257	04/30/63	
ITALY	WABCO & DESIGN	215,256	04/30/63	
	COBRA	726,680	05/11/79	
	CW & GLOBE	590,254	06/16/70	
	CW & GLOBE	524,870	04/08/88	
	VAPOR & DIAMOND DESIGN	685,232	11/23/94	
	VAPOR & DIAMOND DESIGN	352,590	12/04/58	
JAPAN	WESTINGHOUSE AUTOMATION	195,701	02/20/64	
	CIRC-U-LATIC	2,187,617	11/28/89	
	COBRA	483,964	07/15/56	
	CW & GLOBE	1,648,171	01/26/84	
	INTERTWINED WA	183,515	08/06/26	
	INTERTWINED WA	2,230,782	05/31/90	
	INTERTWINED WA	171,596	05/22/25	
	VAPOR	1,545,567	10/27/82	
	VAPOR & DIAMOND DESIGN	1,678,492	04/20/84	
	VAPOR & DIAMOND DESIGN	1,910,287	11/27/86	
	VAPOR & DIAMOND DESIGN	1,482,663	09/30/81	
	SOUTH KOREA	INTERTWINED WA	91,203	05/30/83
		INTERTWINED WA	96,127	10/28/83
VAPOR		81,219	02/03/82	
VAPOR		84,827	10/27/82	
VAPOR		82,145	05/04/82	
VAPOR & DIAMOND DESIGN		82,146	05/04/82	
VAPOR & DIAMOND DESIGN		81,220	02/03/82	
VAPOR & DIAMOND DESIGN		90,136	04/20/83	
LESOTHO	CARDWELL	LSM/98/00084	02/28/67	
MEXICO	COBRA	82,963	12/02/55	
	COBRA	85,184	06/15/56	
	INTERTWINED WA	40,167	10/31/39	
	PTC	449,569	03/01/89	
	VAPOR	502,398	11/24/94	
	VAPOR	495,921	05/19/95	
	VAPOR	495,922	05/19/95	
	VAPOR & DIAMOND DESIGN	236,904	07/26/79	
NEW ZEALAND	CW & GLOBE	74,548	10/09/63	
NORWAY	VAPOR & DIAMOND DESIGN	134,219	11/17/88	
PAKISTAN	INTERTWINED WA	29,200	06/02/58	
	VAPOR & DIAMOND DESIGN	71328	03/11/80	
PERU	COBRA	87,219	09/19/90	
POLAND	CW & GLOBE	87234	10/15/93	
PORTUGAL	VAPOR & DIAMOND DESIGN	42,824	08/11/61	
	COBRA	143,282	07/19/68	

PORTUGAL	CW & GLOBE	144,864	11/12/68
ROMANIA	CW & GLOBE	2R 6931	10/16/70
SLOVAK REP.	CW & GLOBE	161,843	10/02/70
SOUTH AFRICA	CARDWELL	67/0824	10/23/67
	CIRC-U-LATIC & DESIGN	94/3551	04/08/94
	CIRC-U-LATIC & DESIGN	62/2548/2	07/31/62
	CIRC-U-LATIC & DESIGN	62/2548/3	07/31/62
	COBRA	67/2680	06/26/67
	CW & GLOBE	63/3633	09/25/64
	VAPOR	3647/58/1	11/10/58
	VAPOR	3647/58/2	11/10/58
	VAPOR	73/0456	01/29/73
	VAPOR	94/3550	04/08/94
	VAPOR	3647/58/3	11/10/58
	VAPOR & DIAMOND DESIGN	92/9266	10/29/92
	VAPOR & DIAMOND DESIGN	92/9265	10/29/92
	VAPOR & DIAMOND DESIGN	3652/58/3	11/10/58
	VAPOR & DIAMOND DESIGN	3652/58/2	11/10/58
	VAPOR & DIAMOND DESIGN	3652/58/1	11/10/58
	VAPOR & DIAMOND DESIGN	92/9267	10/29/92
	VAPOR & DIAMOND DESIGN	73/0457	01/29/73
	WABCO	81/4033	05/21/81
	WABCO	80/1479	03/17/80
	WABCO	80/1480	03/17/80
	WABCO	80/1481	03/17/80
	WABCO	80/1482	03/17/80
	WABCO	80/1483	03/17/80
	WABCO	81/4032	05/21/81
	WABCO & DESIGN	63/1465/4	04/29/63
	WABCO & DESIGN	63/1465/3	04/29/63
	WABCO & DESIGN	77/2333	06/06/77
	WABCO & DESIGN	67/4023	09/12/67
	WABCO & DESIGN	63/1465/5	04/29/63
	WABCO & DESIGN	63/1465/1	04/29/63
	WABCO & DESIGN	63/1465/2	04/29/63
	WABCO WESTINGHOUSE	72/0319	01/07/72
	WABCO WESTINGHOUSE	72/0318	01/07/72
	WABCO WESTINGHOUSE	72/0317	01/07/72
	WABCO WESTINGHOUSE	72/0320	01/07/72
	WABCO WESTINGHOUSE	72/0321	01/07/72
	WABCO WESTINGHOUSE	72/0316	01/07/72
	WABCO WESTINGHOUSE	72/0315	01/07/72
	WABCO WESTINGHOUSE	72/0314	01/07/71
	WABCO WESTINGHOUSE	72/0313	01/07/72
NAMIBIA	CARDWELL	B77/510 (SWA)	08/03/77
SPAIN	COBRA	540,117	02/15/71
	INTERTWINED WA	334,569	10/08/59
	VAPOR & DIAMOND DESIGN	1,943,227	01/25/95
	VAPOR & DIAMOND DESIGN	1,943,228	01/25/95
SWAZILAND	CARDWELL	246/1977/SA	02/28/77

SWEDEN	COBRA	124,694	08/30/68
	CW & GLOBE	137,577	12/17/71
	INTERTWINED WA	85,612	09/19/58
	VAPOR & DIAMOND DESIGN	170,656	01/18/80
	VAPOR & DIAMOND DESIGN	171,538	03/21/80
SWITZERLAND	COBRA	276,168	06/24/55
	Pitchfork (WA Symbol)	271,639	09/10/74
	VAPOR & DIAMOND DESIGN	301,445	07/18/59
TAIWAN	CW & GLOBE	497,306	09/01/90
THAILAND	CW & GLOBE	53,350	06/01/70
UNITED KINGDOM	CIRC-U-LATIC	B841,522	11/09/62
	CIRC-U-LATIC & DESIGN	B837,599	08/01/69
	COBRA	742,377	05/16/55
	CW & GLOBE	B872,399	11/26/64
	DIAMOND DESIGN	B928,953	08/01/68
	DIAMOND DESIGN	B940,031	03/20/69
	DOR-TROL	960,088	05/22/70
	VAPOR	2,002,120	11/11/94
	VAPOR & DIAMOND DESIGN	766,436	06/11/57
	VAPOR TURBOTUBE	B856,104	11/04/63
	WABCO	1,154,776	05/28/81
	WABCO	1,130,971	03/26/80
	WABCO	1,130,970	03/26/80
	WABCO	1,154,777	05/28/81
	WABCO	1,130,967	03/26/80
	WABCO	1,130,968	03/26/80
	WABCO	1,130,969	03/26/80
	WABCO & DESIGN	848,381	04/29/63
	WABCO & DESIGN	848,382	04/29/63
	WABCO & DESIGN	848,380	04/29/63
	WABCO & DESIGN	848,379	04/29/63
	WABCO WESTINGHOUSE	B995,248	07/14/72
	WABCO WESTINGHOUSE	B995,249	07/14/72
	WABCO WESTINGHOUSE	B995,247	07/14/72
	WABCO WESTINGHOUSE	B995,246	07/14/72
	WABCO WESTINGHOUSE	B995,245	07/14/72
	WABCO WESTINGHOUSE	B995,244	07/14/72
	WABCO WESTINGHOUSE	B995,243	07/14/72
	WABCO WESTINGHOUSE	B995,242	07/14/72
USA	'RESISTO-FLO'	1,020,473	09/16/75
	ABDX	1,925,345	10/10/95
	ABDX-L	1,925,344	10/10/95
	AN OPEN AN SHUT CASE	1,857,210	10/04/94
	AQUAZONE	2,153,310	04/28/98
	ARMADILLO	1,909,793	08/08/95
	BALANCE FLO	1,205,328	08/17/82
	CINESTON & DESIGN	372,586	11/07/39
	CIRC-U-LATIC AND DESIGN	754,623	08/13/63
	COBRA	629,423	06/26/56
	COBRA & DESIGN	867,832	04/08/69

USA

CONSERVATIONIST	1,135,690	05/20/80
CW	1,294,963	09/11/84
CW & GLOBE	772,170	06/30/64
CW & GLOBE	832,110	07/18/67
DECELOSTAT	400,239	02/23/43
DOR-TROL AND DESIGN	757,667	10/01/63
DRYMOR	1,447,359	07/14/87
DUMPBUMP	2,164,398	06/09/98
EPIC	1,650,085	07/09/91
FUELLINK	1,536,241	04/25/89
FUELLINK	1,536,241	04/25/89
HI-R-TEMP	729,454	04/03/62
HSI	1,193,120	04/06/82
INTERTWINED WA	394,545	04/14/42
INTERTWINED WA	396,576	07/28/42
INTERTWINED WA	394,042	03/17/42
INTERTWINED WA	394,438	04/07/42
INTERTWINED WA	394,041	03/17/42
INTERTWINED WA	106,386	10/19/15
MERC	1,587,529	03/20/90
MODULATIC	615,782	11/08/55
MODULECTRIC AND DESIGN	683,597	08/18/59
O-B	577,255	07/14/53
OB & DESIGN	1,643,460	05/07/91
PACE SETTER	1,678,317	03/10/92
PLUS 1	1,020,424	09/16/75
POWER SETTER	1,121,350	07/03/79
PULSAR	1,553,550	08/29/89
PULSE	1,220,626	12/21/82
SMARTPACK	1,782,500	07/20/93
SUPERMAT	617,159	12/06/55
SW 800	1,691,385	06/09/92
THERM-O-MATIC	1,153,053	05/05/81
TMX	1,521,713	01/24/89
TRACER	1,807,238	11/30/93
TRAIN SENTRY	1,786,567	08/10/93
TRAINLINK	1,777,714	06/22/93
TRANS-LITE	1,730,333	11/03/92
TRAVELIFT	1,154,538	05/19/81
TUNDRA	1,308,833	12/11/84
TWIN CUSHION	948,115	11/28/72
UNIVERSAL	797,090	10/05/65
UNIVERSAL	197,108	04/07/25
VA-POWER	788,165	04/13/65
VAPOLEX	672,812	01/20/59
VAPOLEX	1,502,092	08/30/88
VAPOR	754,526	08/13/63
VAPOR	663,469	06/24/58
VAPOR AND DESIGN	669,175	11/04/58
VAPOR AND DESIGN	754,972	08/20/63

	VAPOR AND DESIGN	576,567	06/30/53
	VAPOR AND DESIGN	669,903	11/18/58
	VAPOR AND DESIGN	668,282	10/14/58
	VAPOR AND DESIGN	665,368	08/05/58
	VAPOR AND DESIGN	691,952	01/26/60
	VAPOR AND DESIGN	647,802	07/02/57
	VAPOR PACE SETTER AND DESIGN	871,744	06/24/69
	VAPOR TURBOTUBE AND DESIGN	722,235	10/03/61
	WAB-LINK	2,095,911	09/09/97
	WABOPAC	1,259,930	12/06/83
	WABCOTITE	394,437	04/07/42
	WAUGH	973,846	11/27/73
	WAUGHMAT	912,547	06/08/71
VENEZUELA	INTERTWINED WA	37637-F	10/15/59
YUGOSLAVIA	VAPOR & DIAMOND DESIGN	15,270	12/23/61
ZAMBIA	CARDWELL	276/78	09/22/78
	CW & GLOBE	B382/65	06/25/65
ZIMBABWE	CW & GLOBE	749/97	05/05/97
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SCHEDULE II (EXHIBIT A)
W.A.B.CO. PENDING APPLICATIONS

COUNTRY	MARK	SERIAL NO.	FILED
Canada	CLASS	825,906	10/15/96
Canada	SW 800	871,964	03/13/98
Canada	TWIN CUSHION	871,965	03/12/98
India	WABCO	359,909	03/24/80
India	WABCO	359,911	03/24/80
S. Korea	VAPOR	92-289	09/03/92
S. Korea	VAPOR & DIAMOND DESIGN	92-290	09/03/92
Mexico	DECELOSTAT	288,922	03/05/97

SCHEDULE II (EXHIBIT B)
PULSE TRADEMARKS

COUNTRY	TRADEMARK	REGISTRATION	DATE

UNITED STATES			
	ARMADILLO	1,909,793	08/08/95
	FUELLINK	1,536,241	04/25/89
	PULSAR	1,553,550	08/29/89
	PULSE	1,220,626	12/21/82
	SMARTPACK	1,782,500	07/20/93
	TRAIN SENTRY	1,786,567	08/10/93
	TRAINLINK	1,777,714	06/22/93
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SCHEDULE II (EXHIBIT B)
PENDING PULSE TRADEMARKS

COUNTRY	MARK	SERIAL NO.	FILED
----- NONE -----			

Schedule III

Copyrights

None

Schedule IV

WABCO
RFPC
CARDWELL
UNIVERSAL
FAIVELEY
OHIO BRASS
AJAX
PULSE
MARK IV
VAPOR
COBRA

SUPPLEMENT NO. [] dated as of [], to the Intellectual Property Security Agreement dated as of June 30, 1998 (the "Intellectual Property Security Agreement"), among WESTINGHOUSE AIR BRAKE COMPANY, a Delaware corporation (the "Borrower"), each Domestic Subsidiary of the Borrower party thereto (collectively, the "Subsidiary Grantors" and, together with the Borrower, the "Grantors") and THE CHASE MANHATTAN BANK, a New York banking corporation ("Chase"), as collateral agent (in such capacity, the "Collateral Agent") for the Secured Parties (as defined in the Credit Agreement referred to below).

A. Reference is made to the Credit Agreement dated as of June 30, 1998 (as amended or modified from time to time, the "Credit Agreement"), among the Borrower, the financial institutions party thereto, as lenders (together with the Swingline Lender (as defined below), the "Lenders"), The Chase Manhattan Bank, a New York banking corporation, as agent (in such capacity, the "Administrative Agent") and as collateral agent (in such capacity, the "Collateral Agent") for the Lenders, as swingline lender (in such capacity, the "Swingline Lender"), Chase Manhattan Bank Delaware, a Delaware banking corporation, as issuing bank (in such capacity, the "Issuing Bank"), and The Bank of New York, as documentation agent (in such capacity, the "Documentation Agent").

B. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Intellectual Property Security Agreement and the Credit Agreement.

C. Certain Domestic Subsidiaries have entered into the Intellectual Property Security Agreement in order to induce the Lenders to make Loans and the Swingline Lender to make Swingline Loans to the Borrower and to induce the Issuing Bank to issue Letters of Credit for the account of the Borrower pursuant to, and upon the terms and subject to the conditions specified in, the Credit Agreement. Pursuant to Section 5.11 of the Credit Agreement, each Domestic Subsidiary that was not in existence or not a Domestic Subsidiary on the date thereof is required to enter into the Intellectual Property Security Agreement as a Grantor upon becoming a Domestic Subsidiary. Section 6.16 of the Intellectual Property Security Agreement provides that additional Domestic Subsidiaries may become Grantors under the Intellectual Property Security Agreement by execution and delivery of an instrument in the form of this Supplement. The undersigned (the "New Grantor") is a Domestic Subsidiary and is executing this Supplement in accordance with the requirements of the Credit Agreement to become a Grantor under the Intellectual Property Security Agreement in order to induce the Lenders to make additional Loans and the Swingline Lender to make additional Swingline Loans and the Issuing Bank to issue additional Letters of Credit and as consideration for Loans and Swingline Loans previously made and Letters of Credit previously issued.

Accordingly, the Collateral Agent and the New Grantor agree as follows:

SECTION 1.01. In accordance with Section 6.16 of the Intellectual Property Security Agreement, the New Grantor by its signature below becomes a Grantor under the Intellectual Property Security Agreement with the same force and effect as if

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originally named therein as a Grantor and the New Grantor hereby agrees to all the terms and provisions of the Intellectual Property Security Agreement applicable to it as a Grantor thereunder. Each reference to a "Grantor" in the Intellectual Property Security Agreement shall be deemed to include the New Grantor. The Intellectual Property Security Agreement is hereby incorporated herein by reference.

SECTION 2.01. The New Grantor represents and warrants to the Collateral Agent and the other Secured Parties that this Supplement has been duly authorized, executed and delivered by it and constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms, subject to bankruptcy, insolvency, reorganization, fraudulent transfer, moratorium or other similar laws affecting creditors' rights generally and by general principles of equity (regardless of whether such enforceability is considered in a proceeding at law or in equity).

SECTION 3.01. This Supplement may be executed in two or more counterparts, each of which shall constitute an original, but all of which, when taken together, shall constitute but one instrument. This Supplement shall become effective when the Collateral Agent shall have received counterparts of this Supplement that, when taken together, bear the signatures of the New Grantor and the Collateral Agent.

SECTION 4.01. Except as expressly supplemented hereby, the Intellectual Property Security Agreement shall remain in full force and effect.

SECTION 5.01. THIS SUPPLEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

SECTION 6.01. In case any one or more of the Provisions contained in this Supplement should be held invalid, illegal or unenforceable in any respect, neither party hereto shall be required to comply with such provision for so long as such provision is held to be invalid, illegal or unenforceable, but the validity, legality and enforceability of the remaining provisions contained herein and in the Intellectual Property Security Agreement shall not in any way be affected or impaired. The parties hereto shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions, the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

SECTION 7.01. All communications and notices to the Collateral Agent hereunder shall be in writing and given as provided in the Credit Agreement. All communications and notices hereunder to the New Grantor shall be in writing and be given as provided in the Guarantee Agreement.

Schedule V

Liens held by The Chase Manhattan Bank which are to be released on the Effective Date.