

PATENT ASSIGNMENT

Electronic Version v1.1
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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	General Assignment of Patents

CONVEYING PARTY DATA

Name	Execution Date
Mold Masters Limited	10/11/2007

RECEIVING PARTY DATA

Name:	4437667 Canada Inc.
Street Address:	233 Armstrong Avenue
City:	Georgetown, Ontario
State/Country:	CANADA
Postal Code:	L7G 4X5

PROPERTY NUMBERS Total: 223

Property Type	Number
Patent Number:	4793795
Patent Number:	4818217
Patent Number:	5028227
Patent Number:	4917594
Patent Number:	5022846
Patent Number:	4981431
Patent Number:	5002480
Patent Number:	5000675
Patent Number:	5007821
Patent Number:	5030084
Patent Number:	5142126
Patent Number:	5238391
Patent Number:	5217730
Patent Number:	5227181
Patent Number:	5334010

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Patent Number:	5496168
Patent Number:	5405258
Patent Number:	5441197
Patent Number:	5591465
Patent Number:	5700499
Patent Number:	5658604
Patent Number:	5695793
Patent Number:	5707664
Patent Number:	5704113
Patent Number:	5644835
Patent Number:	5820899
Patent Number:	5849343
Patent Number:	5935616
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Patent Number:	6135751
Patent Number:	6062841
Patent Number:	6074191
Patent Number:	6030198
Patent Number:	5942257
Patent Number:	6017209
Patent Number:	6030202
Patent Number:	6095790
Patent Number:	5980236
Patent Number:	6270711
Patent Number:	6203310
Patent Number:	6323465
Patent Number:	6113381
Patent Number:	6302680
Patent Number:	6655945
Patent Number:	6648622
Patent Number:	6162044
Patent Number:	6398537
Patent Number:	6348171
Patent Number:	6196826
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Patent Number:	6440350
Patent Number:	6230384
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Patent Number:	6575731
Patent Number:	6675055
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Patent Number:	6945767
Application Number:	10327671
Patent Number:	6936199
Patent Number:	6860732

Patent Number:	6992269
Patent Number:	7022278
Patent Number:	6921259
Patent Number:	7014455
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Patent Number:	7108502
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Patent Number:	7131834
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Patent Number:	7044728
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Patent Number:	7128566
Patent Number:	7192270
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Application Number:	10726482
Patent Number:	7040378
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Patent Number:	7189071
Patent Number:	7175420
Application Number:	10785105
Application Number:	10785068
Application Number:	10786017
Patent Number:	7160101
Patent Number:	7172409
Patent Number:	7182893
Application Number:	10811176
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Application Number:	10812028
Application Number:	10813165
Patent Number:	6945768
Patent Number:	7179081
Patent Number:	7252498
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Patent Number:	7143496
Patent Number:	7172411
Patent Number:	7258536
Application Number:	10873459
Patent Number:	7086852
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Patent Number:	7201335
Patent Number:	7122145
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Patent Number:	6988883
Application Number:	10925211
Patent Number:	7244118
Patent Number:	D525592
Application Number:	10968459
Application Number:	10986061
Application Number:	11065136
Application Number:	11065166

Application Number:	11065167
Application Number:	11065565
Patent Number:	7168941
Application Number:	11100506
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Patent Number:	7108503
Application Number:	11142915
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Application Number:	11242038
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Application Number:	11252790
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Application Number:	11548769

Application Number:	11549365
Application Number:	60867088
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Application Number:	11608396
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Application Number:	60871193
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Application Number:	11615620
Application Number:	60871668
Application Number:	60871672
Application Number:	60882872
Application Number:	60891009
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Application Number:	11685266
Application Number:	60908404
Application Number:	11746054
Application Number:	11746060
Application Number:	11753310
Application Number:	60940300
Application Number:	60942929
Application Number:	11764163
Application Number:	11736901
Application Number:	11764845
Application Number:	60945272
Application Number:	60945881
Application Number:	60945859
Application Number:	60956627
Application Number:	11845859
Patent Number:	6776600
Patent Number:	5299928
Patent Number:	7226283
Application Number:	60974229

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	11317-4
NAME OF SUBMITTER:	Edward Sadtler

Total Attachments: 46

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GENERAL ASSIGNMENT OF PATENTS

WHEREAS Mold Masters Limited (the "Assignor"), a company incorporated and governed under the laws of Canada, the full post office address of whose principal office or place of business is 233 Armstrong Avenue, Georgetown, Ontario, L7G 4X5, is the owner of the inventions, patents and patent applications listed in the schedule annexed hereto (the "Patents");

AND WHEREAS, 4437667 Canada Inc. (the "Assignee"), a company incorporated and governed under the laws of Canada, the full post office address of whose principal office or place of business is 233 Armstrong Avenue, Georgetown, Ontario, L7G 4X5, is desirous of acquiring from the Assignor the whole right, title and interest in and to the Patents and the inventions described therein;

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the Assignor does hereby sell, assign and transfer unto the Assignee, its successors and assigns, effective October 11, 2007, all of Assignor's right, title and interest in and to the Patents in their respective jurisdictions as indicated in the schedule annexed hereto and including the United States, Canada and the European Union, the inventions described or claimed therein, any and all continuations, continuations-in-part, divisions, renewals and substitutes for said Patents, any patents which may be granted on or as a result thereof, and any issues or reissues or extensions or re-examinations of such patents, together with all rights of action relating thereto and the right to claim such relief as appropriate, the same to be held and enjoyed by Assignee, its successors and assigns, as fully and entirely as the same could have been held and enjoyed by Assignor if this sale, assignment and transfer had not been made.

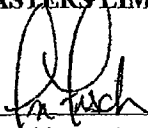
This agreement may be executed in counterparts and by means of facsimile or PDF signature, each of which once signed shall be deemed an original and all such counterparts shall constitute one and the same instrument.

(signature page to follow)

EXECUTED at NY, NY, this 11 day of October, 2007.


Witness

MOLD MASTERS LIMITED

By: 
Name: Jonathan Fischer
Title: President & CEO

EXECUTED at _____, _____, this _____ day of October, 2007.

Witness

4437667 CANADA INC.

By: _____
Name: Kenneth Hanau
Title: Vice President

General Assignment of Patents (HML)

EXECUTED at _____, this _____ day of October, 2007.

MOLD MASTERS LIMITED

By: _____

Name:

Title:

Witness

EXECUTED at NY, NY, this 11 day of October, 2007.

4437667 CANADA INC.

By: K Hanau

Name: **Kenneth Hanau**

Title: **Vice President**

Witness

KH37

General Assignment of Patents (MML)

CA	Injection Molding Valve Member With Head and Neck Portions	2175634	2175634C
CA	Heated Nozzle Manifolds In Common Plane Interconnected Through Connector Manifolds	2180601	
CA	Injection Molding Nozzle Method Using a Terminal Locating & Sealing Ring	2181964	2181964C
CA	Heating Element Method	2183722	2183722C
CA	Injection Molding Nozzle with Edge Gate Inserts and Sealing Ring	2190569	2190569C
CA	Injection molding apparatus with a one-piece gate insert locating a cylindrical valve member	2203741	2203741C
CA	Five Layer Injection Molding Apparatus Having Four Position Valve Member Actuating Mechanism	2219235	2219235C
CA	Injection Molding Apparatus Having Inter-Manifold Melt Transfer Bushings	2219260	2219260C
CA	Injection Molding Apparatus Having Melt Bore Through The Front End of The Pin	2219247	2219247C
CA	Injection Molding Apparatus Having Melt Dividing Bushings	2219054	2219054C
CA	Injection Molding Apparatus Having Melt Transfer and Dividing Bushing	2219197	2219197C
CA	Sprue Gated Multi-Layer Injection Molding Apparatus	2219257	2219257C
CA	Multi-layer injection molding apparatus having adjustable valve member	2225287	2225287

CA	Injection Molding Apparatus With Cooled Core	2224796	2224796C
CA	Injection molding cooled gate insert	2228458	
CA	Injection Molding Three Portion Gate and Cavity Insert	2228931	2228931C
CA	Injection Molding Cylindrical Manifold Insert and Method	2233433	2233433C
CA	Injection Molding Apparatus Having Mold Cores With Reverse Taper	2256090	2256090C
CA	Injection Molding Valve Member Actuating Mechanism	2261367	
CA	Injection Molding Apparatus with Removable Nozzle Seal	2262175	
CA	Method and Apparatus for Distributing Melt in a Multi-Level Stack Mold	2271407	2271407C
CA	Apparatus and Method For Multi-Layer Injection Molding	2367741	
CA	Apparatus and Method For Multi-Layer Injection Molding	2367737	
CA	Apparatus and Method for Three Layer Injection Molding	2367746	
CA	Drool control apparatus and method	2307945	
CA	Valve Gate Assembly for Injection Molding	2317779	
CA	Nozzle End for Multiple Tipped Injection Molding Nozzle	2332061	
CA	Injection Molding Component with Heating Element and Method of Making	2398436	
CA	Compact Cartridge Hot Runner Nozzle and Method of Making	2402170	

CA	Injection Nozzle System and Injection Machine Incorporating Same	2406162	
CA	Method for Fast Manufacturing and Assembling of Hot Runner Systems	2376244	
CA	Thermally Balanced Hot Runner Nozzle	2412802	
CA	Method and Apparatus for an Automated Injection Molding Configuring & Manufacturing System	2412341	
CA	Stack Injection Molding Apparatus with Separately Actuated Arrays of Valve Gates	2356011	
CA	Valve Pin Actuating Mechanism	2357083	
CA	Gap Seal Between Nozzle Components	2405879	
CA	Injection Manifold Having a Valve Pin Guiding Device	2470793	2470793C
CA	Valve Pin Locking Mechanism	2418653	
CA	Removable Heater For A Hot Runner Nozzle	2436571	
CA	Improved Valve to Valve Melt Transfer Device	2437294	
CA	Valve Pin Adjustment Device	2437076	
CA	Manifold to Nozzle Sealing Mechanism	2441139	
CA	Mixing Device	2443483	
CA	Injection Molding Apparatus and Linear Actuator with Position Sensor Therefore	2445224	
CA	Tight Pitch Nozzle With Individual Valve Gate Control	2448129	
CA	Injection nozzle with planar heater	2448706	
CA	Nozzle with Thermally Conductive Device	2450039	
CA	In-Line Valve Gated Nozzle	2449907	

CA	Hot Runner Nozzle With A Tip, A Tip Surrounding Piece And An Alignment Piece	2450411	
CA	Hot Runner Co-injection Nozzle	2451898	
CA	Nozzle Tip and Seal	2452112	
CA	Injection Molding Nozzle with Embedded and Removable Heaters	2452179	
CA	Injection Molding Component with Heating Element and Method of Making	2448901	
CA	Nozzle and Method for Making a Nozzle with a Removable and Replaceable Heating Device	2452894	
CA	Lateral Gating Injection Molding Apparatus	2453170	
CA	Injection Molding Apparatus Having An Elongated Nozzle Incorporating Multiple Nozzle Bodies in Tandem	2455514	
CA	Heat Dissipation Device For And Method of Dissipating Heat From A Nozzle	2455537	
CA	Heat Dissipation Device for And Method of Dissipating Heat From a Manifold	2455739	
CA	Telescopic Manifold Nozzle Seal	2457583	
CA	Valve gated injection molding system with independent flow control	2457643	
CA	Injection Molding Valve Pin Bushing	2461461	
CA	Tip Assembly Having at Least Three Components for Hot Runner Nozzle	2462311	

CA	Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Appar	2462310	
CA	Front-mountable, Edge-gating Nozzle	2463356	
CA	Hot Runner Nozzle with Melt Sealing	2463402	
CA	Valve Pin With Thermocouple	2463498	
CA	Injection Molding Nozzle with Helical Cooling Conduit	2464607	
CA	Mold and Hot Runner Controller Located on the Machine Platen	2471439	
CA	Injection Molding Manifold with Multi-Axis Adjustable Manifold Blocks and Nozzles	2471659	
CA	Method and Apparatus for Measuring the Temperature of Molten Material in a Mold Cavity	2473112	
CA	GATE ASSEMBLY FOR REDUCING DROOLING OF MELT FROM A SPRUE BAR	2473921	
CA	Thermal Seal Between Manifold and Nozzle	2474024	
CA	A Valve Pin Guide for a Valve-Gated Nozzle	2473920	
CA	An Injection Nozzle Having a Heated Head Portion	2475051	
CA	Valve-Gated Injection Molding System with Side-Mounted Actuator	2478929	
CA	MODULAR INJECTION NOZZLE HAVING A THERMAL BARRIER	2482254	
CA	A Valve Pin Guiding and Alignment System for an Injection Molding Machine	2492701	

CA	Valve Gated Nozzle with Pressure Sensor Linked to the Valve Pin	2502377	
CA	Metering device for a nozzle of an injection molding apparatus	2498897	
CA	Nozzle Having a Nozzle Body with Heated and Unheated Nozzle	2503665	
CA	VALVE-GATED INJECTION MOLDING NOZZLE HAVING AN ANNULAR FLOW	2509114	
CA	Injection Molding Nozzle Having An Annular Flow Tip	2509110	
CA	Adjustable Valve Pin Actuator For An Injection Molding Apparatus	2521406	
CA	Manifold Plug for an Injection Molding Apparatus	2523636	
CA	Injection Molding Nozzle with Rounded Tip	2523900	
CA	Edge Gated Injection Molding Apparatus	2523963	
CA	Snap on Flange	2523894	
CA	Guided Valve Pin For An Injection Molding Apparatus	2536903	
CA	Guided Valve Pin For An Injection Molding Apparatus	2536905	
CA	Hot Runner Nozzle and Manifold Seal	2537831	
CA	Configurable Manifold	2542374	
CA	Valve Pin Guiding Tip For A Nozzle	2551047	
CA	Thermal Shroud and Method of Making Same	2547377	
CA	Melt Redistribution Element for and injection Molding Apparatus	2561998	
CA	Melt Transfer Device For A Stack Injection Molding Apparatus	2569661	

CA	Compact Cartridge Hot Runner Nozzle and Method of Making	2580869	
CA	Compact Cartridge Hot Runner Nozzle and Method of Making	2580974	
CA	Individual Cavity Shut-Off For An Injection Molding Apparatus	2591729	
CA	Open Loop Pressure Control For Injection Molding	2591730	
CA	Valve Pin Actuating Device For A Hot Runner Apparatus	2592237	
CA	Method and Injection Molding Machine for Producing Injection-Molded Articles, Especially Toothbrush Bodies or Toothbrushes	2356245	
CN	Pneumatic Actuating Mechanism for Injection Molding	90100622	1020427C
CN	Injection Molding System with Flanged Insulating Gate Seal	90104523	1034158C
CN	Injection Molding Manifold and Nozzle Having Laterally Clamped Flanges	91100252	1035752C
CN	Injection molding probe with coaxial thermocouple tube and heating element	92111801	1031332C
CN	Multi-Cavity Injection Molding Heated Nozzle	93101880	1039795C
CN	Injection Molding Nozzle Having Electrical Terminal with Insulative Connector	93117248	1050560C
CN	Heated Nozzle Manifolds In Common Plane Interconnected Through Connector Manifolds	97111977	1102099C
CN	Injection Molding Nozzle with Edge Gate Inserts and Sealing Ring	97117099	1074977C

CN	Five Layer Injection Molding Apparatus Having Four Position Valve Member Actuating Mechanism	98120197	1102097C
CN	Injection Molding Apparatus Having Inter-Manifold Melt Transfer Bushings	98120187	1099952C
CN	Injection Molding Apparatus Having Melt Bore Through The Front End of The Pin	98120194	1102096C
CN	Injection Molding Apparatus Having Melt Transfer and Dividing Bushing	98120196	1099949C
CN	Sprue Gated Multi-Layer Injection Molding Apparatus	98120193	1104318C
CN	Multi-layer injection molding apparatus having adjustable valve member	98123360	1092103C
CN	Injection molding cooled gate insert	99100337	1102098C
CN	Injection Molding Three Portion Gate and Cavity Insert	99100338	1099950C
CN	Injection Molding Valve Member Actuating Mechanism	99102921	1099951C
CN	Injection Molding Cylindrical Manifold Insert and Method	99103243	1095738C
CN	Injection Molding Apparatus with Removable Nozzle Seal	00804364	1144665C
CN	Method and Apparatus for an Automated Injection Molding Configuring & Manufacturing System	01812839	
CN	Removable Heater For A Hot Runner Nozzle	03158090	
CN	Tight Pitch Nozzle With Individual Valve Gate Control	200310119815	
CN	Injection nozzle with planar heater	200310119814	

CN	Hot Runner Co-injection Nozzle	200310122273	
CN	Injection Molding Nozzle with Embedded and Removable Heaters	200310124794	
CN	Nozzle and Method for Making a Nozzle with a Removable and Replaceable Heating Device	200310124623	1302907C
CN	Lateral Gating Injection Molding Apparatus	200310113124	1325199C
CN	Telescopic Manifold Nozzle Seal	200410007416	
CN	Valve gated injection molding system with independent flow control	200410039766	
CN	Injection Molding Valve Pin Bushing	200410035270	
CN	Cast Hot Runner Manifold for Injection Molding Apparatus	200410032292	
CN	Injection Molding Apparatus Having An Elongated Nozzle Incorporating Multiple Nozzle Bodies in Tandem	200410036926	
CN	Hot Runner Nozzle with Removable Tip and Tip Retainer	200410047757	
CN	Tip Assembly Having at Least Three Components for Hot Runner Nozzle	02823870	
CN	Valve Pin With Thermocouple	02824860	
CN	Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Appar	02823868	
CN	Mold and Hot Runner Controller Located on the Machine Platen	200410055093	

CN	Injection Molding Manifold with Multi-Axis Adjustable Manifold Blocks and Nozzles	200410055094	
CN	Injection Molding Nozzle with Helical Cooling Conduit	02825961	
CN	Method and Apparatus for Measuring the Temperature of Molten Material in a Mold Cavity	03804998	
CN	An Injection Nozzle Having a Heated Head Portion	03807567	
CN	Thermal Seal Between Manifold and Nozzle	03807927	
CN	A Valve Pin Guiding and Alignment System for an Injection Molding Machine	03822952	
CN	Valve Gated Nozzle with Pressure Sensor Linked to the Valve Pin	200510068585	
CN	Nozzle Having a Nozzle Body with Heated and Unheated Nozzle	200510071760	
CN	Metering device for a nozzle of an injection molding apparatus	03825069	
CN	VALVE-GATED INJECTION MOLDING NOZZLE HAVING AN ANNULAR FLOW	200510083742	
CN	Injection Molding Nozzle Having An Annular Flow Tip	200510081788	
CN	Guided Valve Pin For An Injection Molding Apparatus	200480032035	
CN	Thermal Shroud and Method of Making Same	200640092886	
CN	Valve Pin Guiding Tip For A Nozzle	200480039583	
CN	Melt Redistribution Element for and injection Molding Apparatus	200610148699	

CN	MODULAR INJECTION NOZZLE HAVING A THERMAL BARRIER	200580017103	
CN	Melt Transfer Device For A Stack Injection Molding Apparatus	200580027981	
CN	Open Loop Pressure Control For Injection Molding	200710138825	
CN	Valve Pin Actuating Device For A Hot Runner Apparatus		
DE	Injection Molding System Having Clamped Rotatable Nozzles & Method	3835087	3835087C2
DE	Injection Molding System Having Fluid Cooled Inserts	3939870	3939870C2
DE	Pneumatic Actuating Mechanism for Injection Molding	4004224	4004224C2
DE	Injection Molding System with Gas Flow Through Valve Gate	4004225	4004225C2
DE	Injection Molding System with Flanged Insulating Gate Seal	4021910	4021910C2
DE	Injection Molding Nozzle	4032508	4032508C2
DE	Multi-Cavity Injection Molding Heated Nozzle	4308922	4308922B4
DE	Valve Gated Injection Molding Apparatus with a Spring in the Piston	4444170	4444170C2
DE	Method of Manufacturing Injection Molding Manifold Having A Melt Passage With An Elbow	19542236	19542236C2
DE	Side Gated Injection Molding Apparatus With Radially Mounted Gate Inserts	19618959	
DE	Valve Member Locating Insert For Injection Molding Nozzle	19623308	19623308C2
DE	Injection Molding Carbide Torpedo	19652047	

DE	Injection Molding Valve Member With Head and Neck Portions	19717381	
DE	Heated Nozzle Manifolds In Common Plane Interconnected Through Connector Manifolds	19728451	
DE	Injection Molding Nozzle Method Using a Terminal Locating & Sealing Ring	19731214	
DE	Injection Molding Nozzle with Edge Gate Inserts and Sealing Ring	19745230	19745230B4
DE	Externally heated hot-runner nozzle with resistance wire	29800473	29800473U1
DE	Sprue Gated Multi-Layer Injection Molding Apparatus	19848777	
DE	Hot Runner Manifold for Multi-Layer	19860796	
DE	Static Mixer	19860797	
DE	Multi-Cavity Injection Molding Apparatus Splitting Melt Near Nozzle Front	10084280	
DE	Drool control apparatus and method	10084589	
DE	Method and Apparatus for Distributing Melt in a Multi-Level Stack Mold	10084588	
DE	Seepage system for an injection molding apparatus	10025341	10025341B4
DE	Mold Material Processing Device, Method & Apparatus for Producing Same	10025588	
DE	Compact Cartridge Hot Runner Nozzle and Method of Making	20122253	20122253U
DE	Method for Fast Manufacturing and Assembling of Hot Runner Systems	10192746	
DE	Valve Gate Assembly for Injection Molding	10143737	

DE	Nozzle End for Multiple Tipped Injection Molding Nozzle	10201830	
DE	Gap Seal Between Nozzle Components	10246701	
DE	Small Pitch Nozzle with a Thermally Conductive Insert for an Injection Molding Machine	10255938	
DE	Injection Manifold Having a Valve Pin Guiding Device	10297576	
DE	Valve Pin Adjustment Device	10337520	
DE	Improved Alignment Collar for a Nozzle	10340618	
DE	Mixing Device	10345761	
DE	Injection Molding Apparatus and Linear Actuator with Position Sensor Therefore	10346924	
DE	Injection nozzle with planar heater	10351738	
DE	Nozzle with Thermally Conductive Device	10353696	
DE	In-Line Valve Gated Nozzle	10354422	
DE	Hot Runner Nozzle With A Tip, A Tip Surrounding Piece And An Alignment Piece	10354456	
DE	Stroke Limiter for Valve Actuating Mechanism	10355963	
DE	Nozzle Tip and Seal	10356937	
DE	Lateral Gating Injection Molding Apparatus	10359692	
DE	Injection Molding Apparatus Having An Elongated Nozzle Incorporating Multiple Nozzle Bodies in Tandem	102004001665	
DE	Heat Dissipation Device For And Method of Dissipating Heat From A Nozzle	102004002882	

DE	Heat Dissipation Device for And Method of Dissipating Heat From a Manifold	102004002883	
DE	Method and Apparatus for Removing Melt from a Dead Melt Residue Stagnation Zone Adjoining a Valve Pin In An Injection Molding Apparatus	102004009184	
DE	Hot Runner Manifold Plug for Rheological Balance in Hot Runner Injection Molding	102004009320	
DE	Method and Apparatus for Heating a Nozzle With Radiant Energy	102004013485	
DE	Cast Hot Runner Manifold for Injection Molding Apparatus	102004015033	
DE	Sprue Bar Anti-Drool with Side Entry	102004015879	
DE	Front-mountable, Edge-gating Nozzle	102004017276	
DE	A Valve Pin Guide for a Valve-Gated Nozzle	10392298	
DE	Multi-Cavity Injection Molding Heated Nozzle	4345592	
DE	Mold Gate Insert with a Thermal Barrier	10392533	
DE	Diamond Coating of Nozzle Tip	102004056717	
DE	Injection Moulding Apparatus With Valve Needle Rotation Securing Device	202004019328	202004019328
DE	Metering device for a nozzle of an injection molding apparatus	10393285	
DE	Valve Gated Nozzle with Pressure Sensor Linked to the Valve Pin	102005014192	
DE	VALVE-GATED INJECTION MOLDING NOZZLE HAVING AN ANNULAR FLOW	102005024331	
DE	Injection Molding Nozzle Having An Annular Flow Tip	102005024330	

DE	Adjustable Valve Pin Actuator For An Injection Molding Apparatus	102005046770	
DE	Manifold Plug for an Injection Molding Apparatus	102005049605	
DE	Multi Zone Temperature Controller For Injection Molding System	102005049804	
DE	Injection Molding Nozzle with Rounded Tip	102005050161	
DE	Edge Gated Injection Molding Apparatus	102005050360	
DE	Snap on Flange	102005050361	
DE	Insulating Collar for an Injection Molding Apparatus	112006000474	
DE	Guided Valve Pin For An Injection Molding Apparatus	112004001573	
DE	MODULAR INJECTION NOZZLE HAVING A THERMAL BARRIER	112005000784	
DE	Micro Molding Manifold (Small Pitch)	112005001013	
DE	Retainer for a mold gate insert for use in an injection molding apparatus	102006058008	
DE	Insert For an Injection Molding Apparatus	102007004066	
DE	Individual Cavity Shut-Off For An Injection Molding Apparatus	102007027548	
DE	Valve Pin Actuating Device For A Hot Runner Apparatus	1002007028151	
DE	Method for Fast Manufacturing and Assembling of Hot Runner Systems	10165026	
EP	Method of Manufacturing Injection Molding Manifold with Plugs	86115692	226798B1
EP	Dual Feed Bushing for Multi-Cavity Injection Molding	87114680	264725B1

EP	Injection Molding System Having Clamped Rotatable Nozzles & Method	88117137	312098B1
EP	Injection Molding System Having Fluid Cooled Inserts	89122225	374549B1
EP	Pneumatic Actuating Mechanism for Injection Molding	90102751	407683B1
EP	Injection Molding System with Flanged Insulating Gate Seal	90113160	407971B1
EP	Injection Molding Manifold and Nozzle Having Laterally Clamped Flanges	90124762	437777B1
EP	Injection Molding Cooled Manifold	91101785	444455B1
EP	Pre-Wired Injection Molding Assembly	91112435	468485B1
EP	Multi-Cavity Melt Distribution Manifold	91121551	491332B1
EP	Injection molding manifold with integral heated inlet portion	92108860	518120B1
EP	Injection molding probe with coaxial thermocouple tube and heating element	93100590	552684B1
EP	Multi-Cavity Injection Molding Heated Nozzle	93104576	563711B1
EP	Injection Molding Nozzle Having Electrical Terminal with Insulative Connector	93114439	607499B1
EP	Injection Molding Torpedo With Thermocouple Bore	94103214	614746B1
EP	Valve Gated Injection Molding Apparatus with a Spring in the Piston	94119624	657270B1
EP	Injection molding manifold having a heating element extending between the plates	95106916	681899B1

EP	Method of Manufacturing Injection Molding Manifold Having A Melt Passage With An Elbow	95117880	716913B1
EP	Side Gated Injection Molding Apparatus With Radially Mounted Gate Inserts	96107499	743159B1
EP	Valve Member Locating Insert For Injection Molding Nozzle	96109331	750975B1
EP	Injection Molding Carbide Torpedo	96120092	780209B1
EP	Heated Nozzle Manifolds In Common Plane Interconnected Through Connector Manifolds	97111184	816046B1
EP	Injection Molding Nozzle Method Using a Terminal Locating & Sealing Ring	97112468	820847B1
EP	Heating Element Method	97112469	825801B1
EP	Injection Molding Nozzle with Edge Gate Inserts and Sealing Ring	97117701	842751B1
EP	Injection Molding Apparatus With Cooled Core	98101095	855261B1
EP	Injection molding apparatus with a one-piece gate insert locating a cylindrical valve member	98106372	873841B1
EP	Five Layer Injection Molding Apparatus Having Four Position Valve Member Actuating Mechanism	98120005	911134B1
EP	Injection Molding Apparatus Having Inter-Manifold Melt Transfer Bushings	98120039	911138B1
EP	Injection Molding Apparatus Having Melt Bore Through The Front End of The Pin	98120036	911135B1

EP	Injection Molding Apparatus Having Melt Dividing Bushings	98119999	911133B1
EP	Injection Molding Apparatus Having Melt Transfer and Dividing Bushing	98120037	916468B1
EP	Sprue Gated Multi-Layer Injection Molding Apparatus	98120038	911136B1
EP	Multi-layer injection molding apparatus having adjustable valve member	98123653	924045B1
EP	Injection molding cooled gate insert	99101540	933186B1
EP	Injection Molding Three Portion Gate and Cavity Insert	99101593	934810B1
EP	Injection Molding Three Portion Gate and Cavity Insert	01115206	1151842B1
EP	Injection Molding Valve Member Actuating Mechanism	99103331	1025974B1
EP	Injection Molding Cylindrical Manifold Insert and Method	99104886	950494B1
EP	Injection molding apparatus having nozzles with elongated mounting flanges	99108853	960713B1
EP	Injection Molding Apparatus Having Mold Cores With Reverse Taper	99967029	1140457B1
EP	Injection Molding Apparatus with Removable Nozzle Seal	00903472	1152880B1
EP	Apparatus and Method For Multi-Layer Injection Molding	00909568	1163098B1
EP	Apparatus and Method For Multi-Layer Injection Molding	00909567	1163097B1
EP	Apparatus and Method for Three Layer Injection Molding	00907894	1163096B1

EP	Injection Molding Component with Heating Element and Method of Making	01902200	
EP	Compact Cartridge Hot Runner Nozzle and Method of Making	01911310	1263563B1
EP	Compact Cartridge Hot Runner Nozzle and Method of Making	02027569	
EP	Compact Cartridge Hot Runner Nozzle and Method of Making	02027570	
EP	Thermally Balanced Hot Runner Nozzle	01949138	1294553B1
EP	Method and Apparatus for an Automated Injection Molding Configuring & Manufacturing System	01938493	
EP	Stack Injection Molding Apparatus with Separately Actuated Arrays of Valve Gates	01120909	1184152B1
EP	Valve Pin Actuating Mechanism	02019808	1291148B1
EP	Valve Pin Locking Mechanism	03002658	1336464B1
EP	Injection Molding Component with Heating Element and Method of Making	03011651	
EP	Removable Heater For A Hot Runner Nozzle	03017780	
EP	Improved Valve to Valve Melt Transfer Device	03018474	1389516B1
EP	Tight Pitch Nozzle With Individual Valve Gate Control	03025448	1418034B1
EP	Injection nozzle with planar heater	03025483	
EP	Hot Runner Co-injection Nozzle	03027790	
EP	Injection Molding Nozzle with Helical Cooling Conduit	02801833	
EP	Injection Molding Nozzle with Embedded and Removable Heaters	03028117	1426161B1

EP	Nozzle and Method for Making a Nozzle with a Removable and Replaceable Heating Device	03028770	1428646B1
EP	Telescopic Manifold Nozzle Seal	04003158	
EP	Valve gated injection molding system with independent flow control	04003312	
EP	Injection Molding System with Flow Control	04004267	
EP	Injection Molding Valve Pin Bushing	04006716	
EP	Hot Runner Nozzle with Melt Sealing	04008435	
EP	Tip Assembly Having at Least Three Components for Hot Runner Nozzle	02764452	
EP	Valve Pin With Thermocouple	02800527	
EP	Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Appar	02766992	
EP	Hot Runner Nozzle with Removable Tip and Tip Retainer	04011090	
EP	Transfer Seal For A Removable Nozzle Tip Of An Injection Molding Apparatus	04011091	
EP	Mold and Hot Runner Controller Located on the Machine Platen	04014495	
EP	Injection Molding Manifold with Multi-Axis Adjustable Manifold Blocks and Nozzles	04014492	1488905B1
EP	Mold Flow Transfer Mechanism Having a Melt Homogenizing Device	04014493	

EP	Method and Apparatus for Measuring the Temperature of Molten Material in a Mold Cavity	03702045	
EP	GATE ASSEMBLY FOR REDUCING DROOLING OF MELT FROM A SPRUE BAR	03704121	1476292B1
EP	Thermal Seal Between Manifold and Nozzle	03704922	
EP	An Injection Nozzle Having a Heated Head Portion	03701391	
EP	Valve-Gated Injection Molding System with Side-Mounted Actuator	03707959	
EP	Nozzle Having a Nozzle Body with Heated and Unheated Nozzle	04030354	
EP	A Valve Pin Guiding and Alignment System for an Injection Molding Machine	03766086	
EP	Multiple Materials Injection Molding Method	05004062	
EP	Nozzle Having a Nozzle Body with Heated and Unheated Nozzle	05007655	
EP	VALVE-GATED INJECTION MOLDING NOZZLE HAVING AN ANNULAR FLOW	05011479	
EP	Injection Molding Nozzle Having An Annular Flow Tip	05011509	
EP	Guided Valve Pin For An Injection Molding Apparatus	04761576	
EP	Hot Runner Nozzle and Manifold Seal	04761813	
EP	Configurable Manifold	06007451	
EP	Valve Pin Guiding Tip For A Nozzle	04797174	
EP	Thermal Shroud and Method of Making Same	06009770	

EP	Melt Redistribution Element for and injection Molding Apparatus	06020876	
EP	Melt Transfer Device For A Stack Injection Molding Apparatus	05759269	
EP	Hot Runner Co-injection Nozzle	06026503	
EP	Valve-Gated Injection Molding System with Side-Mounted Actuator	07001917	
EP	Open Loop Pressure Control For Injection Molding	07011774	
EP	Compact Cartridge Hot Runner Nozzle and Method of Making		
EP	Thermally Balanced Hot Runner Nozzle		
EP	Method and Apparatus for Measuring the Temperature of Molten Material in a Mold Cavity	Not Available Yet	
EP	Method and Injection Molding Machine for Producing Injection-Molded Articles, Especially Toothbrush Bodies or Toothbrushes	98966688	1140456B1
EP	Apparatus and Method for A Hot Runner Injection Molding System-owner Mold-Masters	Not Available Yet	
EP	Co-injection Molding Apparatus and Related Hot--Runner Nozzle- owner Mold-Masters	Not Available Yet	
HK	Heated Nozzle Manifolds In Common Plane Interconnected Through Connector Manifolds	98106695	1007466
HK	Injection Molding Nozzle with Edge Gate Inserts and Sealing Ring	98112050	1010855

HK	Injection Molding Valve Member Actuating Mechanism	00107572	1028374
IL	Injection Molding Carbide Torpedo	119625	119625
IN	Guided Valve Pin For An Injection Molding Apparatus	708/CHENP/2006	
IT	Nozzle End for Multiple Tipped Injection Molding Nozzle	RM2002A000025	
IT	Improved Alignment Collar for a Nozzle	MI2003A001692	
IT	Injection Molding Nozzle with Embedded and Removable Heaters	TO2003A00979	
IT	Lateral Gating Injection Molding Apparatus	TO2003A01026	
IT	Injection Molding Nozzle with Helical Cooling Conduit	67015DE/2004	
IT	Injection Molding Apparatus Having An Elongated Nozzle Incorporating Multiple Nozzle Bodies in Tandem	TO2004A000593	
JP	Method of Manufacturing Injection Molding Manifold with Plugs	278507	1946951C
JP	Fluid Cooled Hydraulic Actuating Mechanism for Injection Molding	258487	1727584C
JP	Injection Molding System Having Clamped Rotatable Nozzles & Method	259283	1738005C
JP	Injection Molding System Having Fluid Cooled Inserts	313091	2771285B2
JP	Pneumatic Actuating Mechanism for Injection Molding	029381	2768784B2
JP	Injection Molding System with Gas Flow Through Valve Gate	032288	2716557B2

JP	Injection Molding Manifold and Nozzle Having Laterally Clamped Flanges	016978	2974800B2
JP	Pre-Wired Injection Molding Assembly	206465	2989043B2
JP	Multi-Cavity Melt Distribution Manifold	333509	3088533B2
JP	Injection molding probe with coaxial thermocouple tube and heating element	002502	3207574B2
JP	Multi-Cavity Injection Molding Heated Nozzle	045396	3238515B2
JP	Injection Molding Nozzle Having Electrical Terminal with Insulative Connector	217508	3490117B2
JP	Injection Molding Torpedo With Thermocouple Bore	032234	3519115B2
JP	Valve Gated Injection Molding Apparatus with a Spring in the Piston	304890	3773557
JP	Method of Manufacturing Injection Molding Manifold Having A Melt Passage With An Elbow	292833	3741756B2
JP	Side Gated Injection Molding Apparatus With Radially Mounted Gate Inserts	118819	3830575
JP	Valve Member Locating Insert For Injection Molding Nozzle	155257	3946283B
JP	Injection Molding Carbide Torpedo	316221	
JP	Heated Nozzle Manifolds In Common Plane Interconnected Through Connector Manifolds	181514	
JP	Injection Molding Nozzle Method Using a Terminal Locating & Sealing Ring	192774	
JP	Injection Molding Nozzle with Edge Gate Inserts and Sealing Ring	317325	

JP	Injection Molding Apparatus With Cooled Core	010729	
JP	Injection Molding Apparatus Having Melt Bore Through The Front End of The Pin	300758	
JP	Five Layer Injection Molding Apparatus Having Four Position Valve Member Actuating Mechanism	302754	
JP	Injection Molding Apparatus Having Inter-Manifold Melt Transfer Bushings	302651	
JP	Injection Molding Apparatus Having Melt Transfer and Dividing Bushing	302823	
JP	Multi-layer injection molding apparatus having adjustable valve member	337462	
JP	Injection Molding Three Portion Gate and Cavity Insert	024279	
JP	Injection molding cooled gate insert	025119	
JP	Injection Molding Valve Member Actuating Mechanism	058946	
JP	Injection Molding Cylindrical Manifold Insert and Method	085754	
JP	Injection Molding Apparatus Having Mold Cores With Reverse Taper	587949	
JP	Injection Molding Apparatus with Removable Nozzle Seal	599579	
JP	Apparatus and Method For Multi-Layer Injection Molding	605012	
JP	Apparatus and Method For Multi-Layer Injection Molding	605011	

JP	Apparatus and Method for Three Layer Injection Molding	605013	
JP	Method and Apparatus for Distributing Melt in a Multi-Level Stack Mold	616990	
JP	Injection Molding Component with Heating Element and Method of Making	554846	
JP	Compact Cartridge Hot Runner Nozzle and Method of Making	564971	
JP	Method and Apparatus for an Automated Injection Molding Configuring & Manufacturing System	510244	
JP	Stack Injection Molding Apparatus with Separately Actuated Arrays of Valve Gates	266235	
JP	Valve Gate Assembly for Injection Molding	270861	
JP	Nozzle End for Multiple Tipped Injection Molding Nozzle	012948	
JP	Injection Molding Component with Heating Element and Method of Making	127838	
JP	Removable Heater For A Hot Runner Nozzle	286290	
JP	Tight Pitch Nozzle With Individual Valve Gate Control	375910	
JP	Injection nozzle with planar heater	377389	
JP	Hot Runner Co-injection Nozzle	404836	
JP	Injection Molding Nozzle with Embedded and Removable Heaters	408740	
JP	Nozzle and Method for Making a Nozzle with a Removable and Replaceable Heating Device	416771	

JP	Lateral Gating Injection Molding Apparatus	424954	
JP	Telescopic Manifold Nozzle Seal	035614	
JP	Valve gated injection molding system with independent flow control	037080	
JP	Cast Hot Runner Manifold for Injection Molding Apparatus	104000	
JP	Injection Molding Nozzle with Helical Cooling Conduit	537900	
JP	Hot Runner Nozzle with Removable Tip and Tip Retainer	139989	
JP	Mold and Hot Runner Controller Located on the Machine Platen	182601	
JP	Injection Molding Manifold with Multi-Axis Adjustable Manifold Blocks and Nozzles	182902	
JP	Method and Apparatus for Measuring the Temperature of Molten Material in a Mold Cavity	559744	
JP	Thermal Seal Between Manifold and Nozzle	565718	
JP	A Valve Pin Guiding and Alignment System for an Injection Molding Machine	525092	
JP	Metering device for a nozzle of an injection molding apparatus	536718	
JP	Valve Gated Nozzle with Pressure Sensor Linked to the Valve Pin	2005-90924	
JP	Nozzle Having a Nozzle Body with Heated and Unheated Nozzle	2005-110897	
JP	Hot Runner Nozzle and Manifold Seal	2006525589	
JP	Thermal Shroud and Method of Making Same	2006-140341	

JP	Melt Redistribution Element for and injection Molding Apparatus	2006-272889	
JP	Open Loop Pressure Control For Injection Molding	2007-160335	
KR	Method and Apparatus for an Automated Injection Molding Configuring & Manufacturing System	7017192/2002	
KR	Metering device for a nozzle of an injection molding apparatus	7004528/2005	
KR	Valve Gated Nozzle with Pressure Sensor Linked to the Valve Pin	25265/2005	
KR	Guided Valve Pin For An Injection Molding Apparatus	7004263	
LU	Valve Gate Assembly for Injection Molding	90822	
LU	Nozzle End for Multiple Tipped Injection Molding Nozzle	90880	90880A
MX	Injection Molding Three Portion Gate and Cavity Insert	PA/A/1999/001185	210857
MX	Injection Molding Valve Member Actuating Mechanism	PA/A/1999/002251	211030
MX	Injection Molding Cylindrical Manifold Insert and Method	PA/A/1999/002945	214819
MX	Injection Molding Apparatus with Removable Nozzle Seal	PA/A/2001/008317	231188
PCT	Extruded Shape for Distribution of Electrical Wiring, Hydraulic Fluid and Cooling Fluid around a Hot Runner System, Inside an Injection Mold	PCT/CA2006/001693	
PCT	INJECTION MOLDING NOZZLE WITH RECESSED TERMINAL	PCT/CA2006/001928	

PCT	Heater For A Manifold of An Injection Molding Apparatus	PCT/CA2007/000226	
SG	Side Gated Injection Molding Apparatus With Radially Mounted Gate Inserts	9609330	80549
SG	Injection Molding Valve Member Actuating Mechanism	9901255	84523
SG	Injection Molding Cylindrical Manifold Insert and Method	9901097	80019
US	Injection Molding System Having Clamped Rotatable Nozzles & Method	07/130205	4793795
US	Injection Molding System With Nozzles in Tandem	07/191882	4818217
US	Injection Molding Nozzle with Replaceable Gate Inserts	07/265408	5028227
US	Injection Molding System with Gas Flow Through Valve Gate	07/398990	4917594
US	Pneumatic Actuating Mechanism for Injection Molding	07/399999	5022846
US	Injection Molding System with Flanged Insulating Gate Seal	07/399972	4981431
US	Injection Molding Insulated Valve Member	07/430325	5002480
US	Injection Molding Manifold and Nozzle Having Laterally Clamped Flanges	07/477497	5000675
US	Injection Molding Manifold Having a Pair of Cooling Bores on Opposite Sides of the Melt Passage	07/489044	5007821
US	Pre-Wired Injection Molding Assembly	07/576857	5030084
US	Injection molding manifold with integral heated inlet portion	07/726883	5142126

US	Injection molding probe with coaxial thermocouple tube & heating element	07/837155	5238391
US	Multi-Cavity Injection Molding Heated Nozzle	877770	5217730
US	Multi-Cavity Melt Distribution Manifold	07/884601	5227181
US	Valve Gated Injection Molding Apparatus with a Spring in the Piston	08/183313	5334010
US	Injection molding manifold having a heating element extending between the plates	08/254558	5496168
US	Injection Molding Torpedo With Thermocouple Bore	08/323588	5405258
US	Method of Manufacturing Injection Molding Manifold Having A Melt Passage With An Elbow	08/373444	5441197
US	Side Gated Injection Molding Apparatus With Radially Mounted Gate Inserts	08/463921	5591465
US	Valve Member Locating Insert For Injection Molding Nozzle	08/520161	5700499
US	Injection Molding Carbide Torpedo	08/585848	5658604
US	Injection Molding Valve Member With Head and Neck Portions	08/662004	5695793
US	Heated Nozzle Manifolds In Common Plane Interconnected Through Connector Manifolds	08/692707	5707664
US	Injection Molding Nozzle Method Using a Terminal Locating & Sealing Ring	08/699164	5704113
US	Heating Element Method	08/708814	5644835
US	Injection Molding Nozzle with Edge Gate Inserts and Sealing Ring	08/779973	5820899

US	Injection molding apparatus with a one-piece gate insert locating a cylindrical valve member	08/854243	5849343
US	Injection Molding Apparatus Having Inter-Manifold Melt Transfer Bushings	08/969756	5935616
US	Injection Molding Apparatus Having Melt Bore Through The Front End of The Pin	08/969754	5935615
US	Injection Molding Apparatus Having Melt Dividing Bushings	08/969755	6135751
US	Sprue Gated Multi-Layer Injection Molding Apparatus	08/969764	6062841
US	Five Layer Injection Molding Apparatus Having Four Position Valve Member Actuating Mechanism	08/977676	6074191
US	Injection Molding Apparatus Having Melt Transfer and Dividing Bushing	08/977675	6030198
US	Multi-layer injection molding apparatus having adjustable valve member	09/013278	5942257
US	Injection molding cooled gate insert	09/036909	6017209
US	Injection Molding Three Portion Gate and Cavity Insert	09/036910	6030202
US	Injection Molding Cylindrical Manifold Insert and Method	09/058919	6095790
US	Injection molding apparatus having nozzles with elongated mounting flanges	09/100989	5980236
US	Injection Molding Apparatus Having Melt Bore Through The Front End of The Pin	09/215389	6270711B1

US	Injection Molding Apparatus Having Mold Cores With Reverse Taper	09/221767	6203310B1
US	Externally Heated Hot-Runner Nozzle with Resistance Wire	09/582553	6323465B1
US	Injection Molding Valve Member Actuating Mechanism	09/257141	6113381
US	Injection Molding Apparatus with Removable Nozzle Seal	09/261466	6302680B1
US	Apparatus and Method for Three Layer Injection Molding	09/271835	6655945B1
US	Apparatus and Method For Multi-Layer Injection Molding	09/274443	6648622B1
US	Multi-Cavity Injection Molding Apparatus Splitting Melt Near Nozzle Front	09/285179	6162044
US	Shuttle System for an Apparatus and Method for Injection Molding	09/289148	6398537B2
US	Drool control apparatus and method	09/309648	6348171B1
US	Seepage system for an injection molding apparatus	09/322573	6196826B1
US	Five Layer Injection Molding Apparatus Having Four Position Valve Member Actuating Mechanism	09/327641	6274075B1
US	Apparatus and Method For Multi-Layer Injection Molding	09/329036	6440350B1
US	Method of Making an Injection Molding Cylindrical Manifold Insert	09/455386	6230384B1
US	Method of Multi-Layer Injection Molding	09/456848	6350401B1
US	Injection Molding Component with Heating Element and Method of Making	09/493149	6405785B1

US	Compact Cartridge Hot Runner Nozzle and Method of Making	09/520843	6394784B1
US	Method and Apparatus for Distributing Melt in a Multi-Level Stack Mold	09/568130	6575731B1
US	Method and Apparatus for an Automated Injection Molding Configuring & Manufacturing System	09/595154	6675055B1
US	Injection Molding Nozzle Apparatus	09/610009	6318990B1
US	Injection Molding Apparatus Having Melt Dividing Bushings	09/614008	6286751B1
US	Stack Injection Molding Apparatus with Separately Actuated Arrays of Valve Gates	09/654165	6755641B1
US	Injection Nozzle Tip	10/110198	6789745B1
US	Injection Nozzle System and Injection Machine Incorporating Same	10/268886	6769901B2
US	Mold Material Processing Device, Method & Apparatus for Producing Same	10/276962	7044191B2
US	Injection Molding Apparatus With Cooled Core	09/928230	RE38265
US	Valve Gate Assembly for Injection Molding	09/944109	6830447B2
US	Injection Manifold Having a Valve Pin Guiding Device	10/022282	6752618B2
US	Compact Cartridge Hot Runner Nozzle and Method of Making	10/025768	6561789B2
US	Compact Cartridge Hot Runner Nozzle and Method of Making	10/025767	6638053B2
US	Nozzle End for Multiple Tipped Injection Molding Nozzle	10/052571	6688875B2

US	GATE ASSEMBLY FOR REDUCING DROOLING OF MELT FROM A SPRUE BAR	10/076656	6835060B2
US	Injection Molding Component with Heating Element and Method of Making	10/171615	6701997B2
US	Removable Heater For A Hot Runner Nozzle	10/210883	6780003B2
US	Improved Alignment Collar for a Nozzle	10/232619	6890473B2
US	Valve Pin Actuating Mechanism	10/237035	6893249B2
US	Metering device for a nozzle of an injection molding apparatus	10/245723	6884061B2
US	Gap Seal Between Nozzle Components	10/261660	6962492B2
US	Tip Assembly Having at Least Three Components for Hot Runner Nozzle	10/262982	6921257B2
US	Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Appar	10/262967	6869276B2
US	Valve Pin With Thermocouple	10/268885	6739863B2
US	Injection Molding Nozzle with Helical Cooling Conduit	10/279024	6887418B2
US	Valve Bushing Assembly	10/279850	6840758B2
US	Small Pitch Nozzle with a Thermally Conductive Insert for an Injection Molding Machine	10/304747	6945767B2
US	Multi-Cavity Injection Molding Apparatus Splitting Melt Near Nozzle Front	10/327671	

US	Method and Apparatus for Measuring the Temperature of Molten Material in a Mold Cavity	10/338744	6936199B2
US	Thermal Seal Between Manifold and Nozzle	10/357420	6860732B2
US	An Injection Nozzle Having a Heated Head Portion	10/358378	6992269B2
US	Valve Pin Locking Mechanism	10/361698	7022278B2
US	A Valve Pin Guide for a Valve-Gated Nozzle	10/369564	6921259B2
US	Valve-Gated Injection Molding System with Side-Mounted Actuator	10/386933	7014455B2
US	Method and Apparatus for Distributing Melt in a Multi-Level Stack Mold	10/420921	6852265B2
US	Compact Cartridge Hot Runner Nozzle and Method of Making	10/465804	6761557B2
US	Mold Flow Transfer Mechanism Having a Melt Homogenizing Device	10/465861	7115226B2
US	Thermally Balanced Hot Runner Nozzle	10/311530	7137806B2
US	Hot Runner Nozzle with Interlaced Heater and Sensor	10/601190	7108502B2
US	A Valve Pin Guiding and Alignment System for an Injection Molding Machine	10/629699	7025586B2
US	Decompression Device For An Injection Molding Apparatus	10/637576	7125242B2
US	Valve Pin Adjustment Device	10/639488	7131834B2
US	Improved Valve to Valve Melt Transfer Device	10/640685	6955534B2
US	Guided Valve Pin For An Injection Molding Apparatus	10/651547	7168943B2
US	Mixing Device	10/674807	

US	Injection Molding Apparatus and Linear Actuator with Position Sensor Therefore	10/680220	7044728B2
US	Transfer Seal For A Removable Nozzle Tip Of An Injection Molding Apparatus	10/686624	7131832B2
US	Valve Pin Guiding Tip For A Nozzle	10/699867	7128566B2
US	Tight Pitch Nozzle With Individual Valve Gate Control	10/700521	7192270B2
US	Injection nozzle with planar heater	10/701493	7156648B2
US	Nozzle with Thermally Conductive Device	10/713211	7131833B2
US	In-Line Valve Gated Nozzle	10/716827	7029269B2
US	Hot Runner Nozzle With A Tip, A Tip Surrounding Piece And An Alignment Piece	10/717623	7137807B2
US	Method for Fast Manufacturing and Assembling of Hot Runner Systems	10/720017	7236841B2
US	Diamond Coating of Nozzle Tip	10/722120	7134868B2
US	Stroke Limiter for Valve Actuating Mechanism	10/725031	7048532B2
US	Hot Runner Co-injection Nozzle	10/725538	7175419B2
US	Injection Molding Nozzle with Embedded and Removable Heaters	10/726482	
US	Injection Molding Component with Heating Element and Method of Making	10/728871	7040378B2
US	Nozzle Tip and Seal	10/728872	7165965B2
US	Nozzle and Method for Making a Nozzle with a Removable and Replaceable Heating Device	10/732417	7118704B2
US	Lateral Gating Injection Molding Apparatus	10/736624	7198740B2

US	Two Position Double Injection Molding Apparatus and Method	10/749001	7210917B2
US	Injection Molding Apparatus Having An Elongated Nozzle Incorporating Multiple Nozzle Bodies in Tandem	10/751507	7160100B2
US	Heat Dissipation Device For And Method of Dissipating Heat From A Nozzle	10/755366	7118703B2
US	Heat Dissipation Device for And Method of Dissipating Heat From a Manifold	10/755367	7105123B2
US	Telescopic Manifold Nozzle Seal	10/775154	7189071B2
US	Valve gated injection molding system with independent flow control	10/777643	7175420B2
US	Method and Apparatus for Removing Melt from a Dead Melt Residue Stagnation Zone Adjoining a Valve Pin In An Injection Molding Apparatus	10/785105	
US	Injection Molding System with Flow Control	10/785068	
US	Hot Runner Manifold Plug for Rheological Balance in Hot Runner Injection Molding	10/786017	
US	Method and Apparatus for Heating a Nozzle With Radiant Energy	10/801672	7160101B2
US	Injection Molding Valve Pin Bushing	10/805382	7172409B2
US	Valve Gated Nozzle with Pressure Sensor Linked to the Valve Pin	10/809707	7182893B2
US	Guided Valve Pin For An Injection Molding Apparatus	10/811176	
US	Injection Molding Nozzle and Tip	10/810679	7238019B2

US	Cast Hot Runner Manifold for Injection Molding Apparatus	10/812028	
US	Sprue Bar Anti-Drool with Side Entry	10/813165	
US	Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Appar	10/817825	6945768B2
US	Front-mountable, Edge-gating Nozzle	10/819165	7179081B2
US	Hot Runner Nozzle with Melt Sealing	10/819267	7252498B2
US	Gap Seal Between Nozzle Components	10/822855	7018197B2
US	Hot Runner Nozzle with Removable Tip and Tip Retainer	10/839337	7143496B2
US	Injection Molding Manifold with Multi-Axis Adjustable Manifold Blocks and Nozzles	10/871684	7172411B2
US	Mold and Hot Runner Controller Located on the Machine Platen	10/871570	7258536B2
US	Injection Molding Manifold Having A heating System With Two Portions	10/873459	
US	Stack Injection Molding Apparatus with Separately Actuated Arrays of Valve Gates	10/877990	7086852B2
US	Injection Nozzle System and Injection Machine Incorporating Same	10/880438	7182591B2
US	Removable Heater For A Hot Runner Nozzle	10/885128	7125243B2
US	Injection Nozzle Tip	10/889301	7201335B2
US	Method and Apparatus for Distributing Melt in a Multi-Level Stack Mold	10/892397	7122145B2

US	Tip Assembly Having at Least Three Components for Hot Runner Nozzle	10/899033	6971869B2
US	Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Gap Seal Between a Nozzle and a Mold Component in an Injection Molding Appar	10/902470	6988883B2
US	Tip Assembly Having at Least Three Components for Hot Runner Nozzle	10/925211	
US	Hot Runner Nozzle and Manifold Seal	10/936726	7244118B2
US	Hot-Runner Controller	29/215302	D525592
US	Front-mountable, Edge-gating Nozzle	10/968459	
US	Injection nozzle with planar heater	10/986061	
US	Multiple Materials Injection Molding Method	11/065136	
US	Front-mountable, Edge-gating Nozzle	11/065166	
US	Injection Molding Nozzle Having An Annular Flow Tip	11/065167	
US	Insulating Collar for an Injection Molding Apparatus	11/065565	
US	Thermal Seal Between Manifold and Nozzle	11/067660	7168941B2
US	Nozzle Having a Nozzle Body with Heated and Unheated Nozzle	11/100506	
US	MODULAR INJECTION NOZZLE HAVING A THERMAL BARRIER	11/100457	
US	Metering device for a nozzle of an injection molding apparatus	11/113359	7192268B2
US	Micro Molding Manifold (Small Pitch)	11/120205	7255555B2

US	Tip Assembly Having at Least Three Components for Hot Runner Nozzle	11/135525	7108503B2
US	VALVE-GATED INJECTION MOLDING NOZZLE HAVING AN ANNULAR FLOW	11/142915	
US	Melt Transfer Device For A Stack Injection Molding Apparatus	11/155726	
US	Adjustable Valve Pin Actuator For An Injection Molding Apparatus	11/237886	
US	Melt Redistribution Element for and injection Molding Apparatus	11/242038	
US	Extruded Shape for Distribution of Electrical Wiring, Hydraulic Fluid and Cooling Fluid around a Hot Runner System, Inside an Injection Mold	11/247155	
US	Multi Zone Temperature Controller For Injection Molding System	11/252243	
US	Manifold Plug for an Injection Molding Apparatus	11/252790	
US	Snap on Flange	11/252883	
US	Injection Molding Nozzle with Rounded Tip	11/252884	
US	Edge Gated Injection Molding Apparatus	11/253585	
US	INJECTION MOLDING NOZZLE WITH RECESSED TERMINAL	11/286479	
US	Retainer for a mold gate insert for use in an injection molding apparatus	11/298059	
US	Anti-Drool Mechanism For a Sprue Bushing	11/301075	
US	Insert For an Injection Molding Apparatus	11/339957	

US	Valve Bushing With Vent Channels For An Injection Molding Apparatus	11/347137	
US	Nozzle End for Multiple Tipped Injection Molding Nozzle	11/352519	
US	Heater For A Manifold of An Injection Molding Apparatus	11/354416	
US	Edge Gate Nozzle Seal	11/373600	
US	Configurable Manifold	11/399940	
US	A Valve Pin Guiding and Alignment System for an Injection Molding Machine	11/400216	7223092B2
US	Valve Pin With Thermocouple	11/436185	
US	Thermal Shroud and Method of Making Same	11/435969	
US	Extruded Shape for Distribution of Electrical Wiring, Hydraulic Fluid and Cooling Fluid around a Hot Runner System, Inside an Injection Mold	11/455243	
US	Wear Resistant Titanium Zirconium Molybdenum (TZM) Alloy Component	60/805184	
US	Nozzle For Use In An Injection Molding Apparatus	60/814549	
US	Hot Runner Nozzle with Interlaced Heater and Sensor	11/510994	
US	Using Load Cells to Prevent Melt Leakage	11/548769	
US	Coinjection Molding Apparatus and Related Hot--Runner Nozzle	11/549365	
US	IN-LINE VALVE GATED HOT RUNNER NOZZLE FOR AN INJECTION MOLDING APPARATUS	60/867088	

US	INJECTION MOLDING NOZZLE WITH RECESSED TERMINAL	11/563087	
US	Method for Fast Manufacturing and Assembling of Hot Runner Systems	11/608396	
US	VALVE-GATED INJECTION MOLDING NOZZLE HAVING AN ANNULAR FLOW	11/609152	
US	Self-Regulating Valve for Injection Molding Apparatus	60/871193	
US	Co-injection with Melt Flow Balancing	60/871169	
US	Valve Gated Nozzle with Pressure Sensor Linked to the Valve Pin	11/615620	
US	Edge Gated Injection Molding Apparatus	60/871668	
US	Injection Molding System Having A Bus	60/871672	
US	Edge Gated Injection Molding Apparatus	60/882872	
US	Hot Runner Actuator	60/891009	
US	Injection Nozzle System and Injection Machine Incorporating Same	11/679455	
US	Hot Runner Nozzle with Interlaced Heater and Sensor	11/681593	
US	Hot Runner Nozzle with Interlaced Heater and Sensor	11/685266	
US	Hot Runner Nozzle Having Thermal Insert At Downstream End	60/908404	
US	A Manifold Nozzle Connection For An Injection Molding System	11/746054	
US	Injection Molding Nozzle With Valve Pin Alignment	11/746060	
US	Valve Bushing Having Thermally Insulative Component	11/753310	

US	Hot Runner Having Temperature Sensor For Controlling Nozzle Heater and Related Method	60/940300	
US	Multi-Piece Valve Pin Bushing	60/942929	
US	Individual Cavity Shut-Off For An Injection Molding Apparatus	11/764163	
US	Open Loop Pressure Control For Injection Molding	11/736901	
US	Valve Pin Actuating Device For A Hot Runner Apparatus	11/764845	
US	Edge-Gated Nozzle	60/945272	
US	Servo Driven Synchro Plate	60/945881	
US	MELT BALANCING ELEMENT IN A MANIFOLD MELT CHANNEL	60/945859	
US	Edge-Gated Nozzle	60/956627	
US	Injection Molding Apparatus Having Valve Pin Bushing	11/845859	
US	Method and Injection Molding Machine for Producing Injection-Molded Articles, Especially Toothbrush Bodies or Toothbrushes	09/869676	6776600B1
US	Two Piece Injection Molding Nozzle Seal	08/095538	5299928
US	Injection Molding Apparatus with a Melt Channel in Valve Pin	10/962551	7226283
US	Injection Molding Nozzle Having a Nozzle Tip with Diamond Crown	60/974229	