

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3670591

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST

**CONVEYING PARTY DATA**

Name	Execution Date
PITTSBURGH GLASS WORKS, LLC, AS GRANTOR	11/25/2015

**RECEIVING PARTY DATA**

<b>Name:</b>	BANK OF AMERICA, N.A., AS AGENT
<b>Street Address:</b>	135 S. LASALLE ST.
<b>City:</b>	CHICAGO
<b>State/Country:</b>	ILLINOIS
<b>Postal Code:</b>	60603

**PROPERTY NUMBERS Total: 42**

Property Type	Number
Patent Number:	7237408
Patent Number:	7204130
Patent Number:	7205504
Patent Number:	7223940
Patent Number:	6791066
Patent Number:	6953911
Patent Number:	6802205
Patent Number:	6675541
Patent Number:	7159756
Patent Number:	6995339
Patent Number:	6862851
Patent Number:	8466842
Patent Number:	8576130
Patent Number:	7263875
Patent Number:	7617964
Patent Number:	7296461
Patent Number:	7459199
Patent Number:	7658967
Patent Number:	6582799
Patent Number:	5792559

PATENT

Property Type	Number
Patent Number:	6043782
Patent Number:	5695538
Patent Number:	5999134
Patent Number:	5886321
Patent Number:	5796055
Patent Number:	5791538
Patent Number:	6076373
Patent Number:	5959587
Patent Number:	6119807
Patent Number:	6384790
Patent Number:	5999136
Patent Number:	6131339
Patent Number:	6448935
Patent Number:	8995039
Patent Number:	7947373
Application Number:	14455294
Application Number:	14177790
Application Number:	14171114
Application Number:	14171204
Application Number:	14171070
Application Number:	14700649
Application Number:	14821713

**CORRESPONDENCE DATA**

**Fax Number:** (212)294-4700  
*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*  
**Phone:** 2122946635  
**Email:** dkumar@winston.com  
**Correspondent Name:** WINSTON & STRAWN LLP-WILLIAM E. HUGHES  
**Address Line 1:** 35 WEST WACKER DRIVE  
**Address Line 4:** CHICAGO, ILLINOIS 60601-9703

<b>ATTORNEY DOCKET NUMBER:</b>	1740-290-SS-PGW LLC / BOA
<b>NAME OF SUBMITTER:</b>	WILLIAM E. HUGHES
<b>SIGNATURE:</b>	/William E. Hughes/
<b>DATE SIGNED:</b>	12/22/2015

**Total Attachments: 9**  
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## PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT, dated as of November 25, 2015, is made by each entity on the signature pages hereof (each a "Grantor" and collectively, the "Grantors"), in favor of Bank of America, N.A. ("Bank of America"), as Agent under the Credit Agreement described below (in such capacity, together with its successors and permitted assigns, the "Agent").

### WITNESSETH:

WHEREAS, pursuant to the Credit Agreement, dated as of November 25, 2015 (as amended, restated, supplemented or otherwise modified from time to time, the "Credit Agreement"), by and among Pittsburgh Glass Works, LLC (the "Borrower"), the other Credit Parties from time to time party thereto, the financial institutions from time to time party thereto as Lenders and Bank of America, as Agent thereunder, as an L/C Issuer and as Swingline Lender, the Lenders and the L/C Issuers have severally agreed to make extensions of credit to the Borrower upon the terms and subject to the conditions set forth therein;

WHEREAS, each Grantor (other than the Borrower) has agreed, pursuant to a Guaranty and Security Agreement, of even date with the Credit Agreement, in favor of the Agent (as amended, restated, supplemented or otherwise modified from time to time, the "Guaranty and Security Agreement"), to guarantee the Guaranteed Obligations (as defined in the Guaranty and Security Agreement); and WHEREAS, each Grantor is party to the Guaranty and Security Agreement pursuant to which such Grantor is required to execute and deliver this Patent Security Agreement.

NOW, THEREFORE, in consideration of these premises and to induce the Lenders, the L/C Issuers and the Agent to enter into the Credit Agreement and to induce the Lenders and the L/C Issuers to make their respective extensions of credit to the Borrower thereunder, each Grantor hereby agrees with the Agent as follows:

Section 1. Defined Terms. Capitalized terms used herein without definition are used as defined in the Guaranty and Security Agreement.

Section 2. Grant of Security Interest in Patent Collateral. Each Grantor, as collateral security for the prompt and complete payment and performance when due (whether at stated maturity, by acceleration or otherwise) of the Secured Obligations, hereby mortgages, pledges and hypothecates to the Agent, for the benefit of the Secured Parties, and grants to the Agent, for the benefit of the Secured Parties, a Lien on and security interest in, all of its right, title and interest in, to and under the following Collateral of such Grantor (the "Patent Collateral"):

(a) all of its Patents and all IP Licenses providing for the grant by or to Grantor of any right under any Patent, including, without limitation, those referred to on Schedule 1 hereto;

(b) all reissues, reexaminations, continuations, continuations-in-part, divisionals, renewals and extensions of the foregoing; and

(c) all income, royalties, proceeds and Liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof.

Section 3. Guaranty and Security Agreement; Power of Attorney. The security interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interest granted to the Agent pursuant to the Guaranty and Security Agreement and each Grantor hereby acknowledges and agrees that the rights and remedies of the Agent with respect to the security interest in the Patent Collateral made and granted hereby are more fully set forth in the Guaranty and Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. Except to the extent not prohibited in the Guaranty and Security Agreement or the Credit Agreement, Grantor agrees not to sell, license, exchange, assign or otherwise transfer or dispose of, grant any rights with respect to or mortgage or otherwise encumber any of the foregoing Patent Collateral. Grantor hereby irrevocably constitutes and appoints Bank of America and any officer or agent thereof, with full power of substitution, as its true and lawful attorney in fact with full power and authority in the name of Grantor or in its name, from time to time, in Bank of America's discretion, so long as any Event of Default (as defined in the Credit Agreement) shall have occurred and be continuing, to take with respect to the Patent Collateral any and all appropriate action which Grantor might take with respect to the Patent Collateral and to execute any and all documents and instruments which may be necessary or desirable to carry out the terms and accomplish the purposes of the Guaranty and Security Agreement (subject to the terms and provisions thereof).

Section 4. Grantor Remains Liable. Each Grantor hereby agrees that, anything herein to the contrary notwithstanding, such Grantor shall assume full and complete responsibility for the prosecution, defense, enforcement or any other necessary or desirable actions in connection with their Patents and IP Licenses subject to a security interest hereunder.

Section 5. Counterparts. This Patent Security Agreement may be executed in any number of counterparts and by different parties in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. Signature pages may be detached from multiple separate counterparts and attached to a single counterpart.

Section 6. Governing Law. This Patent Security Agreement and the rights and obligations of the parties hereto shall be governed by, and construed and interpreted in accordance with, the law of the State of New York.

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IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

PITTSBURGH GLASS WORKS, LLC, as Grantor

By: 

Name: Jeffrey Gronbeck

Title: Chief Financial Officer

*[Patent Security Agreement]*

**PATENT**  
**REEL: 037352 FRAME: 0605**

SCHEDULE I to  
PATENT SECURITY AGREEMENT

1. REGISTERED PATENTS AND PATENT APPLICATIONS

Patent Title	Country	Status	Current Owner	Application No.	Filed	Patent No.	Issued
Flexible surface mold and method of use	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 1/3/2019	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/652,143	8/29/2003	7,237,408	7/3/2007
Windshield moisture detector	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 10/17/2018	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/963,172	10/11/2004	7,204,130	4/17/2007
Interlayer composite for a laminated transparency	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 10/17/2018	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	11/247,501	10/11/2005	7,205,504	4/17/2007
Heatable windshield	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 11/29/2018	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	11/063,315	2/22/2005	7,223,940	5/29/2007
Eliminating hot spots at end portions of bus bars of a heatable transparency having an electrically conductive member	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 3/14/2016	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/201,864	7/24/2002	6,791,066	9/14/2004
Edge sealing of a laminated transparency	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 4/11/2017	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/931,755	9/1/2004	6,953,911	10/11/2005
Moisture detection system and method of use thereof	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 4/12/2016	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/308,670	12/3/2002	6,802,205	10/12/2004

Patent Title	Country	Status	Current Owner	Application No.	Filed	Patent No.	Issued
Method and apparatus for applying edge members to a window	U.S.	Issued; 4th and 8th and 12 <sup>th</sup> year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/219,847	8/15/2002	6,675,541	1/13/2004
Method of soldering and solder compositions	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 7/9/2018	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/652,405	8/29/2003	7,159,756	1/9/2007
Heatable wiper rest area for a transparency	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 8/7/2017	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/662,733	9/15/2003	6,995,339	2/7/2006
Mounting assembly for vehicle panels	U.S.	Issued; 4th and 8th year fees paid; 12th year fee due 9/8/2016	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/190,971	7/8/2002	6,862,851	3/8/2005
Window antenna	U.S.	Issued; 4th year fee due 12/18/2016	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	12/910,343	10/22/2010	8,466,842	6/18/2013
Wideband antenna	U.S.	Issued; 4th year fee due 5/5/2017	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	12/910,357	10/22/2010	8,576,130	11/5/2013
Multi-layer windshield moisture detector	U.S.	Issued; 12th year fee due 3/4/2019	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	11/503,615	8/14/2006	7,263,875	9/4/2007



Patent Title	Country	Status	Current Owner	Application No.	Filed	Patent No.	Issued
Solder compositions; method of soldering, and a laminated transparency having bus bars	U.S.	Issued; 4th year fee paid; 8th year fee due 5/17/2017	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	11/638,961	12/14/2006	7,617,964	11/17/2009
Temperature compensated windshield moisture detector	U.S.	Issued; 12 <sup>th</sup> year fee due 5/20/2019	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	11/516,769	9/6/2006	7,296,461	11/20/2007
Method of and apparatus for strengthening edges of one or more glass sheets	U.S.	Issued; 4th year fee paid; 8th year fee due 6/2/2016	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	10/767,915	1/29/2004	7,459,199	12/2/2008
Methods for applying sound dampening and/or aesthetic coatings and articles made thereby	U.S.	Issued; 4th year fee paid; 8th year fee due 8/9/2017	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	11/427,123	6/28/2006	7,658,967	2/9/2010
Laminated transparency	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	09/512,852	2/25/2000	6,582,799	6/24/2003
Composite transparency	U.S.	EXPIRED	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/270,337	7/5/1994	5,792,559	8/11/1998
Antenna connector arrangement	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/573,626	12/18/1995	6,043,782	3/28/2000

Patent Title	Country	Status	Current Owner	Application No.	Filed	Patent No.	Issued
Flexible press and method of use	U.S.	EXPIRED	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/763,585	12/10/1996	5,695,538	12/9/1997
Glass antenna system with an impedance matching network	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/769,359	12/19/1996	5,999,134	12/7/1999
Arrangement for heating the wiper rest area of a vehicle windshield	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/769,913	12/19/1996	5,886,321	3/23/1999
Sound absorbing article and method of making same	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/783,596	1/13/1997	5,796,055	8/18/1998
Frictional support pad and utility belt	U.S.	EXPIRED	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/785,639	1/17/1997	5,791,538	8/11/1998
Apparatus and method for bending glass sheets	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/876,872	6/16/1997	6,076,373	6/20/2000
On the glass antenna system	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	08/928,786	9/12/1997	5,959,587	9/28/1999

Patent Title	Country	Status	Current Owner	Application No.	Filed	Patent No.	Issued
Sound absorbing article and method of making same	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	09/084,143	5/26/1998	6,119,807	9/19/2000
On-glass antenna	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	09/094,805	6/15/1998	6,384,790	5/7/2002
Use of electrically conductive ceramic paints in antenna systems	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	09/130,564	8/7/1998	5,999,136	12/7/1999
Window assembly and mount for a window assembly	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	09/209,111	12/10/1998	6,131,339	10/17/2000
Vehicle antenna	U.S.	Issued; 4th, 8th and 12th year fees paid	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	09/780,888	2/9/2001	6,448,935	9/10/2002
SWITCHABLE AUTOMOTIVE GLAZING	U.S.	Issued; 4th year fee due 9/30/2018	Pittsburgh Glass Works, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	13/465,567	05/07/2012	8995039	03/31/2015
Multi-stage glass pressing systems and methods	U.S.	Pending	Pittsburgh Glass Work, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	14/455,294	8/8/2014	-	-
Heatable window with a high-pass frequency selective surface	U.S.	Pending	Pittsburgh Glass Work, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	14/177,790	2/11/2014	-	-

Patent Title	Country	Status	Current Owner	Application No.	Filed	Patent No.	Issued
Hidden window antenna	U.S.	Pending	Pittsburgh Glass Work, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	14/171,114	2/3/2014	-	-
Window antenna connector with impedance matching	U.S.	Pending	Pittsburgh Glass Work, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	14/171,204	2/3/2014	-	-
Window Antenna loaded with coupled lines	U.S.	Pending	Pittsburgh Glass Work, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	14/171,070	2/3/2014	-	-
High Luminance Coated Glass	U.S.	Issued; 8 <sup>th</sup> year fee due 11/24/2018	PPG Industries Ohio, Inc.	10/965,390	10/14/2004	7,947,373	5/24/2011
Two-Stage Gravity Press	U.S.	Pending	Pittsburgh Glass Work, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	14/700,649	4/30/2015		
Multi-Element Window Antenna	U.S.	Pending	Pittsburgh Glass Work, LLC 30 Isabella St., Suite 500 Pittsburgh, Pennsylvania 15212	14/821,713	8/8/2015		

3. IP LICENSES

None.