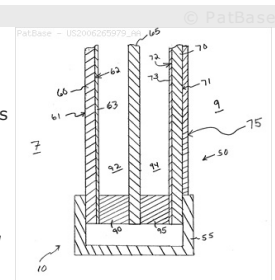


1) Family number: 32759896 (US2006265979A)**ANTI-FOG REFRIGERATION DOOR AND METHOD OF MAKING THE SAME**

Abstract: Source: US2006265979A The energy-free refrigeration door of the present application provides a way to control condensation when the door of a refrigeration unit is opened by providing thermal insulation to the door with glass panels which have a low emissivity coating. The door includes a door frame housing and an insulating glass unit comprising inner, middle and outer sheets of glass. A first sealant assembly disposed around the periphery of the inner and middle sheets of glass forms a first chamber between the inner and middle sheets of glass. A second sealant assembly disposed around the periphery of the middle and outer sheets of glass forms a second chamber between the middle and outer sheets of glass. A gas, such as krypton, air, or argon is held in the first and second chambers. The outer sheet of glass and inner sheet of glass each have an unexposed surface that faces the middle sheet of glass. A low emissivity coating is disposed on the unexposed surfaces of the inner and outer sheets of glass so that the glass door as a whole avoids formation of condensation on the outer surface of the outer sheet of the glass door, without the application of electricity to heat the door, while also providing the desired evaporation rate of condensation from the inner side of the inner sheet of the glass door. An anti-fog or anti-frost coating is included on a surface of one of the sheets of glass.

Probable Assignee: AGC FLAT GLASS NORTH AMERICA INC

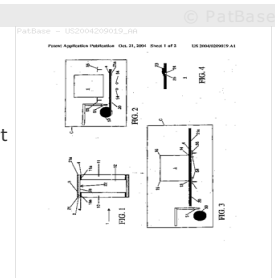
Earliest Publication Date: 20060330

**2) Family number: 15703109** (US2004209019A)**INSULATING GLAZING AND METHOD FOR MAKING SAME**

Abstract: Source: US2004209019A An insulating glazing unit including at least two glass sheets separated by, e.g., a gas-filled cavity. An insert serves for spacing the at least two glass sheets apart and has an internal face facing the gas-filled cavity and an opposed external face, together with a mechanism for sealing the inside of the glazing unit. The insert is in the form of a substantially flat profiled strip that girds the perimeter of the glazing unit by its internal face being pressed against the edges of the at least two glass sheets and held fast by a fastening device.

Probable Assignee: SAINT GOBAIN SA

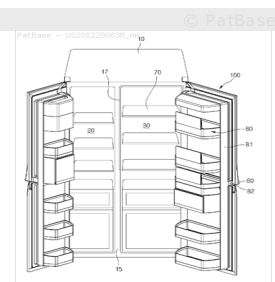
Earliest Publication Date: 20011019

**3) Family number: 49386003** (US2012286638A)**REFRIGERATOR AND METHOD FOR CONTROLLING THE SAME**

Abstract: Source: US2012286638A Provided is a refrigerator, which includes a refrigerating compartment, a freezing compartment, and a door assembly. The freezing compartment is adjacent to the refrigerating compartment. The door assembly selectively opens the refrigerating compartment and the freezing compartment. The door assembly includes a glass member defining a frontal exterior thereof and allowing an inside of the refrigerating compartment or the freezing compartment to be seen therethrough when the door assembly is closed, a deposition treated layer formed on a rear surface of the glass member to allow light to partially pass through the glass member, and a transparent plate spaced a predetermined distance from the glass member. Gas for insulation is injected in a space formed between the glass member and the transparent plate, and the space is sealed.

Probable Assignee: LG ELECTRONICS

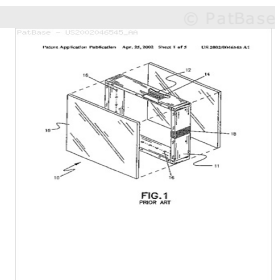
Earliest Publication Date: 20110804

**4) Family number: 44880332** (US2002046545A)**INTEGRATED MULTIPANE WINDOW UNIT AND SASH ASSEMBLY AND METHOD FOR MANUFACTURING THE SAME**

Abstract: Source: US2002046545A A multipane window unit is provided in which a sash frame is formed having an integral spacing structure upon which glazing panes are directly affixed. The spacing structure is formed integrally with the sash frame at internal glazing surfaces. Adhesive can be affixed to the internal glazing surfaces to attach the glazing panes. In this manner, a rigid, structural sash frame can be formed prior to attachment of the glazing panes, thereby eliminating the need for using separately manufactured insulating glass units while obtaining similar and improved benefits.

Probable Assignee: SASHLITE LLC

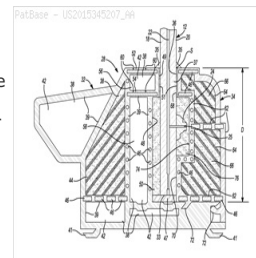
Earliest Publication Date: 19980611

**5) Family number: 60956510** (US2015345207A)**WINDOW FRAME SYSTEM FOR VACUUM INSULATED GLASS UNIT**

Abstract: Source: US2015345207A A window assembly may include a vacuum insulated glass unit and a frame assembly. The vacuum insulated glass unit may include first and second glass substrates defining a space therebetween that is at a pressure lower than atmospheric pressure. One of the first and second glass substrates may include a vacuum port extending outward therefrom. The vacuum port may define a passage in communication with the space. The frame assembly supports the glass unit and may include a base member and a glazing member. The base member and the glazing member cooperate to define a slot in which an edge portion of the glass unit is received. The glazing member may include a cavity receiving the vacuum port. The glazing member and the base member may define a plurality of pockets that hinder thermal conductivity through the frame assembly.

Probable Assignee: GUARDIAN GLASS LLC

Earliest Publication Date: 20151203



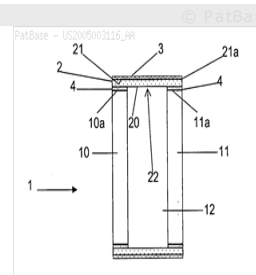
6) Family number: 28453865 (US2005003116A)

INSULATING GLAZING AND THE PRODUCTION METHOD THEREOF

Abstract: Source: US2005003116A An insulating glazing unit including at least two glass sheets spaced apart by a gas-filled cavity, an insert that serves to keep the two glass sheets apart and that has an internal face facing the gas-filled cavity and an opposed external face, and a sealing with respect to the inside of the glazing unit. The insert includes a substantially flat strip that surrounds a first part of the perimeter of the glazing unit, being pressed by its internal face against the edges of the glass sheets and kept fastened by a fastener, and another strip that surrounds a second part of the perimeter of the glazing unit.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20030418



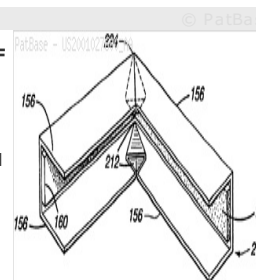
7) Family number: 30037240 (US2001027600A)

LOW THERMAL CONDUCTING SPACER ASSEMBLY FOR AN INSULATING GLAZING UNIT AND METHOD OF MAKING SAME

Abstract: Source: US2001027600A An insulating unit has a pair of glass sheets about an edge assembly to provide a compartment between the sheets. The edge assembly has a U-shaped spacer made of metal, metal coated plastic, gas and moisture impervious polymer, or gas and moisture impervious film coated polymer. The outer legs of the spacer and the glass provide a long diffusion path to limit the diffusion of argon gas out of the compartment. The edge assembly has materials selected and sized to provide edge assembly having an RES-value of at least 75. A spacer for use in insulating units includes a plastic core having a gas impervious film e.g. a metal film or a halogenated polymer film. Also taught herein are techniques for making the unit and spacer.

Probable Assignee: VITRO SAB DE CV

Earliest Publication Date: 19920305



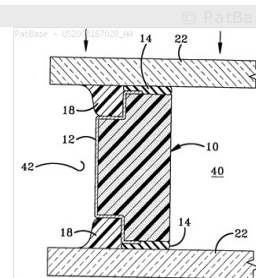
8) Family number: 32122849 (US2005167028A)

METHOD FOR FORMING AN INSULATING GLAZING UNIT

Abstract: Source: US2005167028A A method of applying a spacer to a glass panel while forming an insulating glazing unit includes the step of integrating the application of the sealant to the spacer body with the automated manufacturing process. The sealant is applied to the spacer body on line so that the sealant-laden spacer body may be applied to the glass without manually handling the sealant.

Probable Assignee: QUANEX IG SYSTEMS INC

Earliest Publication Date: 20050804



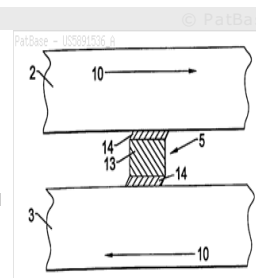
9) Family number: 12353571 (US5891536A)

DESIGN IMPROVEMENTS TO VACUUM GLAZING

Abstract: Source: US5891536A PCT No. PCT/AU95/00640 Sec. 371 Date Apr. 18, 1997 Sec. 102(e) Date Apr. 18, 1997 PCT Filed Sep. 28, 1995 PCT Pub. No. WO96/12862 PCT Pub. Date May 2, 1996 Vacuum glazings and methods of manufacture thereof are described; the glazings provide improved shear stress resistance in that the vacuum glazing comprises two sheets of glass (2, 3), hermetically sealed around the edge (4), with a thermally insulating internal vacuum, and an array of support pillars (5) placed between the glass sheets (2, 3), wherein the pillars (5) consist of a core (13), made of a material of higher compressive strength, with at least one end covered by a layer of softer material (14). Alternatively, the vacuum glazing comprises two sheets of glass (2, 3), hermetically sealed around the edge (4), with a thermally insulating vacuum, and an array of support pillars (5) placed between the glass sheets (2, 3), wherein the array includes a small number of fused solder glass pillars located over the surface of the glazing, between pillars of higher compressive strength. Advantageously the support pillars (5) comprise two flat parallel ends (15, 16) shaped to provide stable equilibrium, and sides (17) shaped to provide unstable equilibrium, to ensure that the pillars when placed on a glass sheet will fall onto one of the flat faces (15, 16) and thereafter lie on that face.

Probable Assignee: OF SYDNEY UNIV

Earliest Publication Date: 19960502



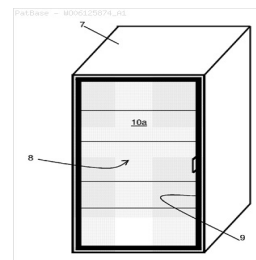
10) Family number: 14940525 (US2005064101A)

TRANSPARENT GLAZING AND USE THEREOF IN A CHILLING CHAMBER DOOR COMPRISING IN PARTICULAR A GLAZING UNDER VACUUM

Abstract: Source: US2005064101A The subject of the invention is a transparent glazing unit having at least one viewing area and its use in a door of a refrigerated enclosure and more particularly a glazed door, the glazed area of which essentially consists of a vacuum glazing unit. According to the invention the viewing area is combined with an antifrosting absorbent layer deposited on at least one surface of the said area.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20001130



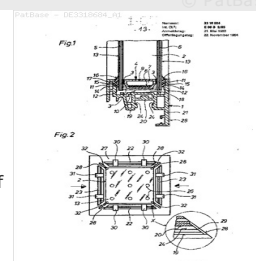
11) Family number: 15324430 (DE3318684C2)

VERFAHREN ZUR HERSTELLUNG VON RAHMEN FÜR FENSTER, TÜREREN AUS KUNSTSTOFFPROFILEN, INSBESONDERE FLÜGELRAHMEN, UND DAMIT HERGESTELLTER RAHMEN

Abstract: Source: DE3318684A1 A process for producing frames for windows, doors from plastic profiles, in particular leaf or casement frames, and frames produced by the said process are specified, the mitre-cut spars 22, 23 being pushed over the edge of the insulating glass pane 2 and the mitre surfaces 28 of the spars 22, 23 being joined to one another. By means of a sealing adhesive 15, arranged in the glazing groove 10 of the spars 22, 23, the insulating glass pane 2 and the spars 22, 23 form an undetachable unit. The aim of the invention is to improve substantially the joining of the individual spars 22, 23 with regard to strength and to allow the sealing adhesive to be arranged in the glazing groove in such a way that no finishing work on the said adhesive is necessary. According to the invention, the object is achieved by welding together the spars 22, 23 to be joined on the insulating glass pane 2, by centring the insulating glass pane 2 in the glazing groove 10 by means of a spacer web 12, one such web protruding out of the plane of each of the mutually parallel walls 11 of the glazing groove 10 and arranged at a distance from the free wall end, and by the sealing adhesive 15 being introduced after welding on both sides of the insulating glass pane 2 into the open groove 14 formed by the pane surface 13, wall 11 and spacer web 12.....

Probable Assignee: FRANK GMBH WILH

Earliest Publication Date: 19840917



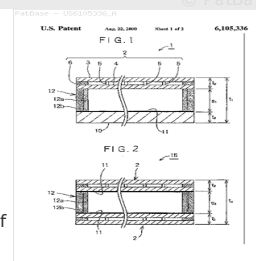
12) Family number: 20640671 (US6105336A)

INSULATING DOUBLE-GLAZING UNIT AND VACUUM DOUBLE-GLAZING UNIT

Abstract: Source: US6105336A PCT No. PCT/JP97/03172 Sec. 371 Date Apr. 17, 1998 Sec. 102(e) Date Apr. 17, 1998 PCT Filed Aug. 9, 1997 PCT Pub. No. WO98/11032 PCT Pub. Date Mar. 19, 1998 The present invention relates to a heat-insulating multiple glazing and a vacuum multiple glazing. Conventionally, this type of glass does not provide sufficient heat-insulating performance. And, it has been necessary to form the heat-insulating multiple glazing thick, in order to enhance the heat-insulating performance. The present invention comprises a first vacuum multiple glazing (2) including two sheet glasses (3), (4) having peripheries thereof sealed and a plurality of layers of spacer (5) disposed within a gap therebetween, with the gap being depressurized; and a second vacuum multiple glazing (2) or an ordinary sheet glass (10) overlapped with the first multiple glazing (2) with a gap relative thereto and having the periphery thereof sealed with a sealing material (12), with the gap being charged with dry air or rare gas. Thus, it is possible to enhance the heat-insulating performance, without increasing the thickness of the entire heat-insulating multiple glazing.

Probable Assignee: NIPPON SHEET GLASS CO LTD

Earliest Publication Date: 19980319



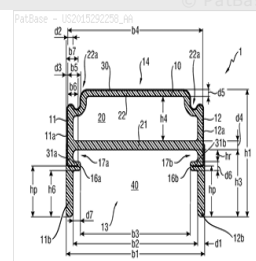
13) Family number: 54519623 (US2015292258A)

SPACER PROFILE FOR A SPACER FRAME FOR AN INSULATING GLASS UNIT WITH INTERSPACE ELEMENTS AND INSULATING GLASS UNIT

Abstract: Source: US2015292258A A spacer profile for an insulating glazing unit for maintaining a space between glazing panes includes a profile body formed from a first heat insulating material that has, viewed in a cross section perpendicular to a longitudinal direction, outer side walls extending in a height direction and that has a distance in a transverse direction smaller than a first width, each side wall having an inner protrusion protruding towards the opposite side wall into a recess which is open to the inner side, and a diffusion barrier film made from a second material and firmly bonded with the profile body and, viewed in the cross section perpendicular to the longitudinal direction, extending over the profile body on the outer side of the spacer profile and continuous thereto in the height direction on the outside of the side walls and/or in the same to a second height and into the protrusions.

Probable Assignee: PELLINI SPA

Earliest Publication Date: 20130814



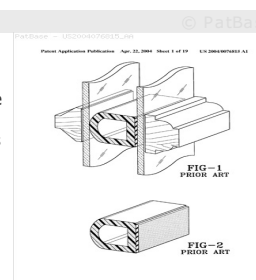
14) Family number: 30261486 (US2004076815A)

SPACER AND MUNTIN ELEMENTS FOR INSULATING GLAZING UNITS

Abstract: Source: US2004076815A A muntin bar element that is adapted to be connected to at least one interior surface of opposed glass panes includes an insulating cavity. The muntin bar element has a body configuration that prevents the muntin bar element from collapsing when rolled for storage. The muntin bar element may also be attached to both panes of glass and include an accommodating element that allows the height of the muntin bar to adjust as the opposed panes of glass move toward and away from each other. The Application also discloses a spacer having insulating cavities wherein the spacer is fabricated from a foam material having a desiccant.

Probable Assignee: EDGETECH IG INC

Earliest Publication Date: 20040115



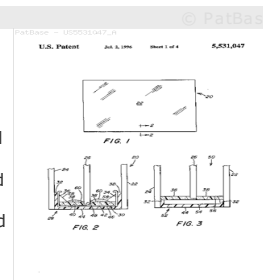
15) Family number: 29254932 (US5531047A)

GLAZING UNIT HAVING THREE OR MORE GLASS SHEETS AND HAVING A LOW THERMAL EDGE, AND METHOD OF MAKING SAME

Abstract: Source: US5531047A A glazed unit having three sheets includes a pair of outer glass sheets secured to outer legs of a spacer having a generally U-shaped cross section. On the base of the spacer between the outer legs is provided a layer of pliable material having a generally U-shaped cross section and having a desiccant therein. A third or intermediate glass sheet has its edge portion in the groove formed by the layer of pliable material. Movement of the third sheet toward an outer glass sheet is limited by the cooperation of the layer of the pliable material and portion of the outer legs of the spacer at the corners of the unit bent inwardly to move the layer of pliable material at the corner toward the unit during fabrication of the unit. A method is also disclosed for making the triple glazed unit and for filling the compartments between the sheets with an insulating gas e.g. Argon.

Probable Assignee: VITRO SAB DE CV

Earliest Publication Date: 19950206



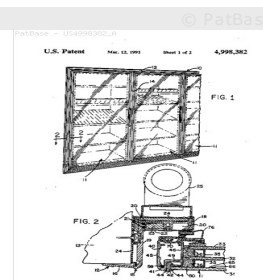
16) Family number: 3569262 (US4998382A)

INSULATED REFRIGERATOR DOOR ASSEMBLY WITH SUBSTANTIALLY ALL GLASS FRONT DOORS

Abstract: Source: US4998382A A multi-pane insulated glass door assembly in which the forward pane of the glass unit extends outwardly a greater than the panes rearwardly thereof and is supported by an outer metal frame having a relatively narrow forwardly extending perimeter portion adjacent the peripheral edge of the forward glass pane so as to provide the door with a modernistic, substantially all glass front appearance. In the illustrated embodiment, the outer metal frame has a rear portion extending inwardly behind the forward glass pane and a moulding is interposed between the forwardly extending perimeter portion of the metal frame and the peripheral edge of the forward glass pane to provide a finished appearance. A dark ink is affixed to an inside peripheral face of the forward glass pane for masking the peripheral components of the door assembly from sight through the forward glass pane from the front side thereof.

Probable Assignee: ANTHONY INC

Earliest Publication Date: 19910312



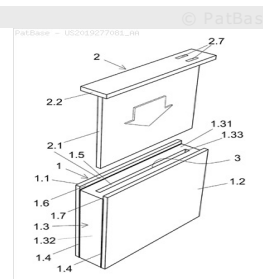
17) Family number: 68952181 (US2019277081A)

MODULAR SYSTEM FOR A MULTIPLE INSULATING GLAZING UNIT, MULTIPLE INSULATING GLAZING UNIT, AND METHOD FOR PRODUCING THE MULTIPLE INSULATING GLAZING UNIT

Abstract: Source: US2019277081A A modular system for a multiple insulating glazing unit includes a double glazing component having a first and second pane elements with first and second pane sealing surfaces, a spacer arranged between the first and second pane sealing surfaces and composed of a spacer strut that encloses an insulating glass volume between the first and second pane elements and is fixed in a gas-tight manner by a fixing system to the first and second pane sealing surfaces. The spacer strut is arranged as a frame open in sections such that a receiving opening is implemented between two spacer struts, which receiving opening is dimensioned such that a third pane element is insertable through the opening into the insulating glass volume. The modular system also includes a closure component with the third pane element, and a closure sealing system for the gas-tight closure of the insulating glass volume.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20180322



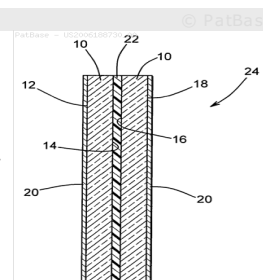
18) Family number: 33255546 (US2006188730A)

ANTI-REFLECTIVE, THERMALLY INSULATED GLAZING ARTICLES

Abstract: Source: US2006188730A A laminated glass unit having at least two sheets of glass separated and bonded by a polymeric interlayer material, and further having multi-layer thin film coatings on each of the unbonded surfaces of the at least two glass sheets, is disclosed. Two or more of such laminated glass units can be utilized in various configurations to form an insulated glass unit. The thin films deposited on the unbonded glass surfaces have anti-reflective, iridescence-suppressing and solar control properties when suitable configurations, materials and layer thicknesses are chosen. The laminated glass unit and insulated glass units of the invention exhibit an excellent combination of low visible light reflectance and thermal insulating properties.

Probable Assignee: PILKINGTON NORTH AMERICA INC

Earliest Publication Date: 20060824



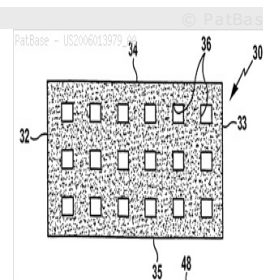
19) Family number: 30971329 (US2006013979A)

SPACER PROFILE FOR AN INSULATED GLAZING UNIT

Abstract: Source: US2006013979A In order to provide a spacer profile for an insulated glazing unit, which profile has a cross-section based on a rectangular shape, is provided with two parallel spaced side walls which, when said insulated glazing unit is assembled, will be placed against the panes of glass to be kept apart from each other, and is further provided with first and second transverse walls which extend between said side walls and of which the first will be adjacent to the edge of the glazing unit and the second will face the space between the panes, with the intention of enabling simple handling of said profile when assembling the spacer frame whilst maintaining a high absorptive capacity for water vapor, it is proposed that said spacer profile comprises a binder matrix and, embedded therein, a particulate adsorbent material for water vapor, and that the binder matrix is permeable to water vapor.

Probable Assignee: ENSINGER KUNSTSTOFFTECHNOLOGIE GBR

Earliest Publication Date: 20040923



20) Family number: 42299127 (US2010133037A)

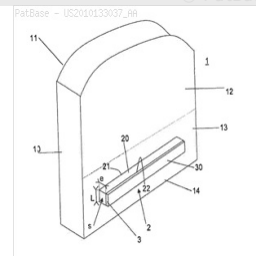
PatBase - US2010133037_A

GLAZING UNIT WITH IMPROVED VIBRO-ACOUSTIC DAMPING PROPERTIES, METHOD FOR MAKING SUCH GLAZING UNIT AND METHOD FOR ACOUSTIC PROTECTION IN A VEHICLE PASSENGER COMPARTMENT

Abstract: Source: US2010133037A A glazing unit with improved vibro-acoustic damping properties, including at least one glass sheet and at least one vibro-acoustic damping strip fastened onto at least one of faces of the glass sheet and that includes at least one element made of damping material having a loss factor of at least 0.4 and a Young's modulus of less than 200 MPa at 20 degrees centigrade for frequencies below 5000 Hz. The strip also includes at least one weighting element that has a linear mass of greater than 0.05 kg/m and is fastened onto the element made of damping material, the element made of damping material being inserted between the glass sheet and the weighting element, and no device other than the glazing unit being joined to the strip.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20081010



21) Family number: 29502865 (US5413156A)

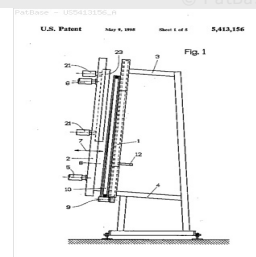
PatBase - US5413156_A

PROCESS AND APPARATUS FOR FILLING INSULATING GLASS PANES WITH A GAS OTHER THAN AIR

Abstract: Source: US5413156A A process and apparatus for filling insulating glass panes (10) with filler gas comprises two plates (1 and 2) and an endless conveyor belt (9) provided at the lower rim of the plates (1 and 2), on which the insulating glass pane (10) stands with its lower, open edge. Sealing devices (30 and 31) that can be brought into contact with the vertical edges of the insulating glass pane (10) are provided between the plates (1 and 2) in order to seal the interior of the insulating glass pane (10). The sealing device (30) is associated with a connection (50) for feeding filler gas into the interior of the insulating glass pane (10). Air and air-gas mixtures can be removed from the insulating glass pane (10) via a channel formed between the other vertical edge of the insulating glass pane (10) and a sealing device (31) applied at that location, whereby air or air-gas mixture can flow out over the entire height of the open, vertical rim of the insulating glass pane (10) from the interior of the latter.

Probable Assignee: LISEC PETER

Earliest Publication Date: 19940622



22) Family number: 30012737 (US6647676B)

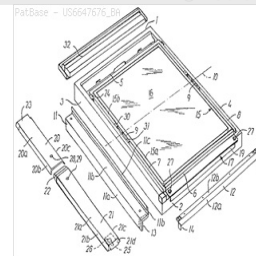
PatBase - US6647676_B4

OPENABLE WINDOW WITH MAIN FRAME AND SASH COVERING MEMBERS

Abstract: Source: US6647676B In a roof window with a frame structure and an openable, pane supporting sash structure, the top, bottom and side members (1-8) of the frame and sash structures are for the major part made as wood profiles, which on the outwards facing sides are covered by covering members of weather-shielding material connected with the wood profiles by means of engagement and securing means. The covering members (11, 12, 15, 17, 20, 21, 32) consist of an upper and a lower cap member (20, 21) on the frame and sash side members (3, 4, 7, 8) designed as flat, trough-shaped profiles with identical, substantially U-shaped profile cross section comprising an exterior wall (20a, 21a) and two low side walls (20w, 21b-c). The lower cap member (21) has at its upper end a joggled connection member (22) inserted under the lower end of the upper cap member (20), said connection member having such a shape that the cap members (20, 21) in the closed position of the window are placed with their exterior walls (20a, 21a) and side walls (20b-c, 21b-c) in alignment with each other, and that the lower cap member (21) when the window is opened may swing unimpededly outwards relative to the upper cap member (20).

Probable Assignee: VKR HOLDING A S

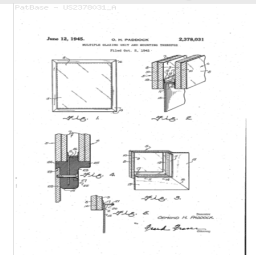
Earliest Publication Date: 19991014



23) Family number: 21665057 (US2378031A)

PatBase - US2378031_A

MULTIPLE GLAZING UNIT AND MOUNTING THEREFOR



Abstract: Source: US2378031A I claim: 1. A multiple glazing unit. comprising two sheets of relatively hard transparent material arranged in face to face relation and spaced from one another, a metallic coating applied to the inner face of one of the glass sheets around the marginal portion thereof separator means securing said sheets together adjacent the edges thereof to provide an insulating space therebetween, and a flexible metal attaching member secured to said metallic coating and projecting outwardly beyond the edges of the glass sheets. 2. A multiple glazing unit, comprising two sheets of relatively hard transparent material arranged in face to face relation and spaced from one another, a metallic coating applied to the inner face of one of the glass sheets around the marginal portion thereof separator means securing said sheets together adjacent the edges thereof to provide an insulating space therebetween, a flexible metal attaching member carried by the said sheets and projecting outwardly beyond the edges of the glass sheets, and a mounting strip of resilient, compressible material carried by said flexible metal attaching member. 3. A multiple glazing unit, comprising two sheets of relatively hard transparent material arranged in face to face relation and spaced from one another, separator means securing said sheets together adjacent the edges thereof to provide an insulating space therebetween, a flexible metal attaching member carried by the said sheets and projecting outwardly beyond the edges thereof to lie within a single plane, and a mounting strip of resilient, compressible material engaging the peripheral edges of said sheets and having said flexible metal attaching member embedded therein. 4. A multiple glazing unit, comprising two sheets of relatively hard transparent material arranged in face to face relation and spaced from one another, separator means securing said sheets together adjacent the edges thereof to provide an insulating space therebetween, a flexible metal attaching member forming a permanent DH-rt of said separator means and projecting outwardly beyond the edges of said sheets, and a mounting strip of resilient, compressible material engaging the peripheral edges of said sheets and having said flexible metal attaching member embedded therein. 5. A multiple, glazing unit, comprising two sheets of relatively hard transparent material arranged in face to face relation and spaced from one another, metal separator means securing said sheets together adjacent the edges thereof to provide an insulating space therebetween, a flexible metal attaching member formed integral with said metal separator means and projecting outwardly beyond the edges of said sheets, and a mounting strip of resilient, compressible material engaging the peripheral edges of said sheets and having said flexible metal attaching member embedded therein. 6. A multiple glazing unit, comprising two sheets of glass arranged in face to face relation and spaced from one another, metallic coatings applied to the inner faces of the glass sheets around the marginal portions thereof, metal separator means arranged between the glass sheets and secured to the metallic coatings thereon, and a flexible metal attaching member carried by said separator means and projecting outwardly beyond the edges of the glass sheets inwardly of the outer faces of said sheets. 7. A multiple glazing unit, comprising two sheets of glass arranged in face to face relation and spaced from one another, metallic coatings applied to the inner faces of the glass sheets around the marginal portions thereof, metal separator means arranged between the glass sheets and secured to the metallic coatings thereon, a flexible metal attaching member carried by said separator means and projecting outwardly beyond the edges of the glass sheets inwardly of the outer faces of said sheets, and a mounting strip of resilient, compressible material carried by said flexible metal attaching member. 8. A multiple glazing unit, comprising two sheets of glass arranged in face to face relation and spaced from one another, metallic coatings applied to the inner faces of the glass sheets around the marginal portions thereof, metal separator means arranged between the glass sheets and secured to the metallic coatings thereon, a flexible metal attaching member carried by said separator means and projecting outwardly beyond the edges of the glass sheets inwardly of the outer faces of said sheets, and a mounting strip of resilient, compressible material engaging the peripheral edges of the glass sheets and having said flexible metal attaching member embedded therein. 9. A multiple glazing unit, comprising two sheets of glass arranged in face to face relation and spaced from one another, metallic coatings applied to the inner faces of the glass sheets around the marginal portions thereof, a substantially L shaped metal member arranged between the glass sheets and secured to the metallic coatings thereon, one leg of said member constituting separator means securing the glass sheets together and the other leg of said member constituting a flexible metal attaching flange and projecting outwardly beyond the edges of the glass sheets. 10. A multiple glazing unit, comprising two sheets of glass arranged in face to face relation and spaced from one another, metallic coatings applied to the inner faces of the glass sheets around the marginal portions thereof, a substantially L shaped metal member arranged between the glass sheets and secured to the metallic coatings thereon, one leg of said member constituting separator means securing the glass sheets together and the other leg of said member constituting a flexible metal attaching flange and projecting outwardly beyond the edges of the glass sheets, and a mounting strip of resilient, compressible material carried by said flexible metal attaching flange. 11. A multiple glazing unit, comprising two sheets of glass arranged in face to face relation and spaced from one another, metallic coatings applied to the inner faces of the glass sheets around the marginal portions thereof, a substantially L shaped metal member arranged between the glass sheets and secured to the metallic coatings thereon, one leg of said member constituting separator means securing the glass sheets together and the other leg of said member constituting a flexible metal attaching flange and projecting outwardly beyond the edges of the glass sheets, and a mounting strip of resilient, compressible material engaging the peripheral edges of the glass sheets and having said flexible metal attaching member embedded therein

Probable Assignee: LIBBEY OWENS FORD GLASS CO

Earliest Publication Date: 19450612

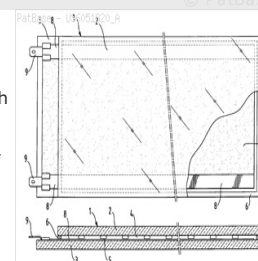
24) Family number: 1393954 (US6051820A)

HEATED, MULTI-PANE, GLASS SHEETS OF DIFFERENT THICKNESSES WITH CURRENT LINES LOCATED OUTSIDE OF VACUUM SEAL

Abstract: Source: US6051820A An insulating glazed element composed of at least two glass sheets separated from each other by a small space in which a vacuum has been created is provided with a heating element on an internal face of at least one of the glass sheets. Two current supply collecting lines are positioned on at least part of the internal face of the at least one of said glass sheets. The heating element includes at least one conductive layer deposited on at least part of the internal face of the at least one of the glass sheets. The conductive layer extends between the two current supply collecting lines.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 19981011

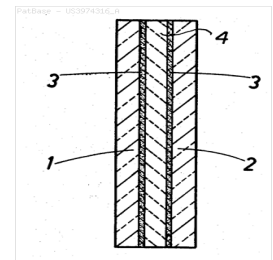


25) Family number: 29459484 (US3974316A)

FIREPROOF GLASSWORK

Abstract: Source: US3974316A The invention relates to a fire screening glazing panel and a method for forming the panel. The panel is composed of at least two structural plies, at least one of which is a vitreous sheet, and a layer therebetween composed at least in part of a heat convertible carrier forming material which material forms a solid porous or cellular thermally insulating body when subjected to sufficient heat, as during a fire. A protective stratum is applied to at least one of the vitreous sheet plies for inhibiting interaction between the barrier forming material and the ply, thereby maintaining the transparency of the ply if it is formed of transparent material, and maintaining its color.

Probable Assignee: GLAVERBEL



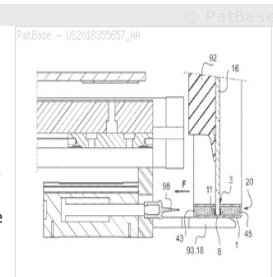
26) Family number: 66281686 (US2018355657A)

PROCESS AND PLANT FOR MANUFACTURING AN INSULATING GLAZING UNIT

Abstract: Source: US2018355657A A process includes the assembling of an insulating glazing subassembly which includes a spacer frame and at least one central glass sheet, the spacer frame being formed of four profiles angularly assembled at their ends, where each profile has a groove for receiving one edge of the central glass sheet. The assembling of the insulating glazing subassembly includes successive steps wherein: the four edges of the central glass sheet are inserted into the grooves of the four profiles; the ends of the profiles are assembled by welding at each corner of the spacer frame without an alignment bracket, using the edges of the central glass sheet inserted in the grooves of the profiles as a frame of reference for guiding the profiles at each corner of the spacer frame into a configuration where their end faces are aligned by superposition in one and the same plane.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20170706



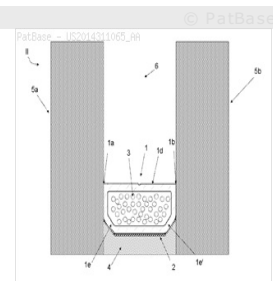
27) Family number: 54330538 (US2014311065A)

SPACER FOR INSULATING GLAZING UNITS

Abstract: Source: US2014311065A A spacer for a multiple-pane insulating glazing unit, at least having a composite composed of a glass-fibre-reinforced, polymeric main body having two pane contact surfaces, which extend parallel to one another, an adhesive surface, a glazing interior surface, and an insulation film on the adhesive surface or the adhesive surface and the connecting surfaces, where the insulation film has at least one polymeric film having a thickness of 10 micro m to 100 micro m, at least one polymeric layer having a thickness of 5 micro m to 80 micro m and also a metal layer having a thickness of 10 nm to 1500 nm or a ceramic layer having a thickness of 10 nm to 1500 nm.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20130718



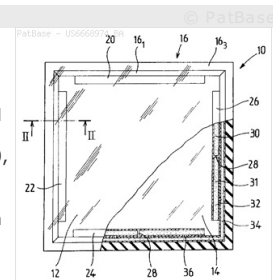
28) Family number: 14379139 (US6668974B)

PARTITIONED WAVE-GUIDE SOUND INSULATION GLAZING

Abstract: Source: US6668974B The invention relates to an acoustic insulating glazing unit. This glazing unit comprises two glass sheets (12, 14) joined together around their periphery by means of an assembly (16) forming a seal (163) and an insert frame (161) which defines, with the two glass sheets, a flat cavity filled with a gas, and a waveguide fastened between the glass sheets, internal to the insert frame. The waveguide consists of at least one straight tubular section (20, 22, 24, 26) placed on the periphery of the gas-filled cavity along one side of the glazing unit, this section being provided with a transverse partition (28) which closes the latter in its length direction, the said partition being placed at a length position along the section which depends on the acoustic mode of the cavity that it is desired to disorganize, this partition defining, on either side of it, two chambers (30, 31) which communicate with the cavity through the ends of the sections.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20001214



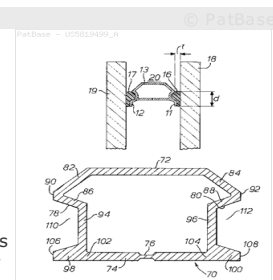
29) Family number: 23291051 (US5819499A)

INSULATING UNITS

Abstract: Source: US5819499A A sealed insulating unit including two parallel opposed panes with a spacing and sealing system therebetween defining, with said panes, a sealed gas spaced between them, said spacing and sealing system comprising a spacer frame with a primary seal between each side of the spacer frame and the opposing pane face and a secondary seal extending between the panes outside the outer peripheral face of the spacer frame characterised in that each primary seal is greater than 0.4 mm thick on construction of the unit and comprises at least 7 grams of sealant material on each side of the spacer frame per metre of the spacer frame length. There is also provided a method of producing a sealed insulating unit including the steps of providing a spacer frame of required size, applying primary sealant to each side face of the spacer frame, assembling the spacer frame with and between two opposed parallel panes so that the spacer frame with the panes defines a gas space therebetween, and, with a primary seal thickness of greater than 0.4 mm on each side of the spacer frame, applying a secondary sealant into a channel between the panes outside the outer peripheral face of the spacer frame and curing said secondary sealant in situ between the panes. There is further provided a spacer for a sealed insulating unit in which in the side walls of the spacer are defined elongate recesses, the dimensions of the recesses being selected such that sufficient primary sealant can be accommodated therein to provide in the sealed insulating unit opposed primary seals each at least 0.4 mm thick.

Probable Assignee: PILKINGTON UNITED KINGDOM LIMITED

Earliest Publication Date: 19940227



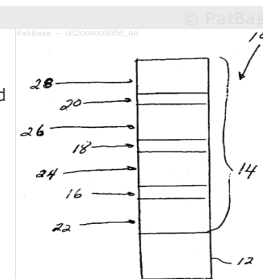
30) Family number: 29580978 (US2004009356A)

SUBSTRATE HAVING THERMAL MANAGEMENT COATING FOR AN INSULATING GLASS UNIT

Abstract: Source: US2004009356A A coated article is provided for use in an IG unit. The article includes a substrate and a coating formed over at least a portion of the substrate. The coating includes a plurality of separation layers having one or more dielectric layers and a plurality of infrared reflective layers. The coating can be positioned on the #2 or #3 surface of the IG unit and can provide a reference solar heat gain coefficient of less than or equal to 0.35.

Probable Assignee: VITRO FLAT GLASS LLC

Earliest Publication Date: 20031113



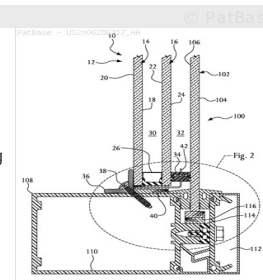
31) Family number: 34025856 (US2006286317A)

SYSTEM AND METHOD FOR UPGRADING BUILDING WINDOWS

Abstract: Source: US2006286317A A glazing method and system for upgrading an existing single glazed window installation includes providing an insulating glass unit comprising a first glazing lite and a second glazing lite. Providing a spacer located between the existing lite and the insulating glass unit. The spacer is formed from a material which is capable of forming a seal between the insulating glass unit and the existing lite and forms a cavity between the insulating glass unit assembly and the existing glazing installation. Providing a supplemental holder for holding the insulating glass unit in place against the existing glazing installation.

Probable Assignee: RENOVATE BY BERKOWITZ LLC

Earliest Publication Date: 20061220



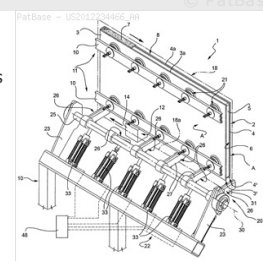
32) Family number: 51788810 (US2012234466A)

INSULATING GLASS PRODUCTION METHOD AND UNIT

Abstract: Source: US2012234466A Insulating glass is produced by forming an assembly having at least two facing glass sheets and at least one inner spacer frame separating the glass sheets, and by depositing a bead of sealant on an outer peripheral edge of the assembly; the sealant being deposited by keeping the assembly stationary in a vertical position, and moving a dispenser head along an endless path about the assembly; the dispenser head being moved about the assembly by resting at least one glass sheet on underlying movable supporting members, detaching the supporting members successively from the assembly to let the dispenser head through, and moving the supporting members back onto the assembly once the dispenser head has passed.

Probable Assignee: BOTTERO IG SRL

Earliest Publication Date: 20120824



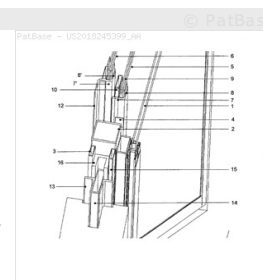
33) Family number: 63515243 (US2018245399A)

FIRE-BLAST RESISTANT WINDOW ASSEMBLY AND METHODS FOR INSTALLING THE SAME

Abstract: Source: US2018245399A The invention relates to a fire and blast resistant window assembly, comprising a frame adapted to be built into a window aperture, a glazing system and a front insulating glass unit. The assembly is characterized in that the front insulating glass unit is mounted on the frame such that a thermal break is formed therebetween, the frame contains a metal framework, which delimits a mounting aperture for the glazing system, wherein separator plates are welded to the framework, along the perimeter thereof, with spaces between the separator plates, and the glazing system comprises a first and a second glazing unit. Each of the glazing units comprises a support profile and a glazing sheet, which is inserted in the support profile and clamped thereto from the inside by glazing beads, wherein a thermal break is formed therebetween.

Probable Assignee: BELOV DMITRIY OLEGOVICH

Earliest Publication Date: 20160910



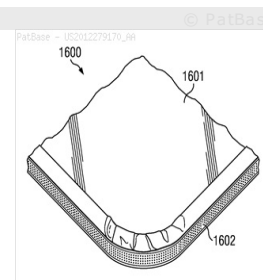
34) Family number: 52323371 (US2012279170A)

METHOD AND APPARATUS FOR AN INSULATING GLAZING UNIT AND COMPLIANT SEAL FOR AN INSULATING GLAZING UNIT

Abstract: Source: US2012279170A A Vacuum Insulating Glazing Unit (VIGU) comprises two or more glass lites (panes) spaced apart from one another and hermetically bonded to an edge seal assembly therebetween. The resulting cavity between the lites is evacuated to create at least one insulating vacuum cavity within which are disposed a plurality of stand-off members to maintain separation between the lites. The edge seal assembly is preferably compliant in the longitudinal (i.e., edgewise) direction to allow longitudinal relative motion between the two lites (e.g., from thermal expansion). The longitudinal compliance may be obtained by imprinting a three-dimensional pattern into the edge seal material. The edge seal assembly is preferably bonded to the lites with a first bond portion that is hermetic and a second bond portion that is load-resistant. Methods for producing VIGUs and/or compliant edge seal assemblies and VIGU and edge seal apparatus are disclosed.

Probable Assignee: ASTRAVAC GLASS INC

Earliest Publication Date: 20121108



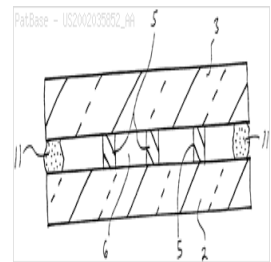
35) Family number: 52211034 (US2002035852A)

VACUUM IG WINDOW UNIT WITH EDGE SEAL AT LEAST PARTIALLY DIFFUSED AT TEMPER AND COMPLETED VIA MICROWAVE CURING, AND CORRESPONDING METHOD OF MAKING THE SAME

Abstract: Source: US2002035852A A vacuum insulating glass (IG) unit and method of manufacturing the same. A peripheral or edge seal (11) of a vacuum IG unit is formed utilizing microwave energy (17) in order to enable tempered glass sheets (2, 3) of the IG unit to retain a significant portion of their original temper strength. In certain exemplary embodiments, the edge seal may be formed of glass frit or solder glass. In certain embodiments, at least a portion (12, 12a, 301) of the edge seal material may be deposited on one or both substrates prior to a thermal tempering process so that during tempering the edge seal material is permitted to diffuse into (i.e., bond to) the glass substrate(s) (2, 3). Optionally, additional edge seal material (303) may be added after tempering. The final edge seal (11) is preferably formed via microwave heating (17) of the edge seal material.

Probable Assignee: GUARDIAN GLASS LLC

Earliest Publication Date: 20020328



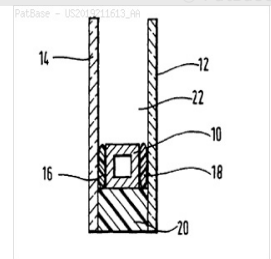
36) Family number: 64157793 (US2019211613A)

INSULATING GLASS UNIT

Abstract: Source: US2019211613A An insulating glass unit is provided. The insulating glass unit comprises two glass panes spaced apart by a transparent spacer material adherent to the glass panes, e.g. a silicone hot melt material. Optionally, an inert or heavy gas is trapped within the unit. The insulating glass unit further comprises a layer of a transparent silicone elastomer located at the periphery of the unit between edge portions of the glass panes and in contact with external surfaces of the spacer. Processes for making the insulating glass unit are also described herein.

Probable Assignee: DOW CORNING

Earliest Publication Date: 20180322



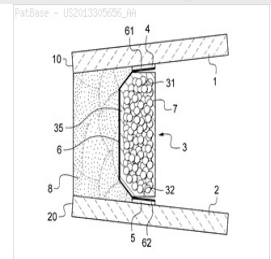
37) Family number: 51722412 (US2013305656A)

SPACER, CONNECTOR AND INSULATING GLAZING UNIT

Abstract: Source: US2013305656A A spacer for an insulating glazing unit, the spacer including a longitudinal body including two longitudinal sides and two membranes or membrane parts, each membrane or membrane part configured to be secured to a glass sheet of the insulating glazing unit, and each membrane or membrane part configured to be articulated to the body about an axis parallel to the longitudinal axis of the body between a position in which the membrane or membrane part lies against a longitudinal side of the body and a position in which the membrane or membrane part is at least partially moved apart from the longitudinal side of the body. The spacer allows the size of the insulating glazing unit not to be restricted while ensuring a bead for example of butyl of the insulating glazing unit can withstand high climatic loads without being damaged.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20120810



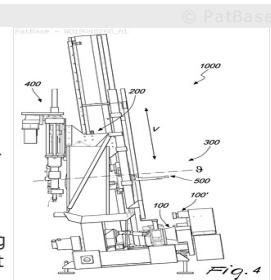
38) Family number: 73505203 (WO19048268A1)

AUTOMATIC MACHINE AND AUTOMATIC METHOD FOR SEALING THE PERIMETRIC EDGE OF THE INSULATING GLAZING UNIT HAVING IRREGULAR GEOMETRY

Abstract: A machine (1000) for the automatic sealing of the perimetric cavity of the insulating glazing unit (1, 1', 1'', 1'''), the geometry of which is irregular in terms of flatness and shape with respect to the theoretical one, constituted by at least two glass panes (2, 2', 2'', 2''', etc.) having a rectangular or other than rectangular shape and at least one spacer frame (3, 3', 3'', etc., 5, 5', 5'', etc.) located proximate to the perimeter at a finite distance from the margin of the glass panes or of the smaller glass pane, the glass panes being optionally aligned or offset along one or more of all the perimetric sides and the thickness both of each glass pane (2, 2', 2'', 2''', etc.) and of each spacer frame (3, 3', 3'', etc., 5, 5', 5'', etc.) and therefore the total thickness of the insulating glazing unit (1) being variable from one insulating glazing unit to another, constituted by: at least one synchronous conveyor (100) having the function of support and displacement [together with the synchronous suction cup carriage (100')] of the insulating glazing unit (1) along the horizontal axis H during the sealing cycle; at least one synchronous carriage (200) which runs along vertical guides along the vertical axis V and is provided with the sealing head (300), the head having a synchronous rotary motion ? so that the sealing nozzle (301) is oriented so as to be tangent to the perimeter of the insulating glazing unit (1), or in any case the relative movement between the insulating glazing unit (1) and the sealing nozzle (301) being able to occur by means of different mechanisms and the arrangement of the insulating glazing unit (1) being any, and fed by one or more, in case of a plurality of types of sealants, synchronous volumetric units for the dosage of bi-component (400) or mono-component (450) sealant, each assembly being constituted, for the two-component case, by a dosage unit for the base product and by a dosage unit for the catalyst product, the flow rates of which are adjusted: as a function of the stoichiometric dosage ratio, for the bi-component case, and of the dimensions of the cavity of the perimetric edge comprised between the glass panes (2, 2', 2'', 2''', etc.) and the outside curve of the spacer frame (3, 3', 3'', etc., 5, 5', 5'', etc.) and of the relative speed between the nozzle (301) and the perimeter of the insulating glazing unit (1), so as to fill the cavity up to the extreme margin of the smaller glass pane or of the glass panes if aligned, wherein the devices (304, 501, 502) interfaced and operating in connection with the perimetric cavity of the insulating glazing unit (1) during the corresponding sealing follow without discontinuity the actual position of the cavity along the transverse axis Z, which is different from the theoretical one due to non-flatness of the insulating glazing unit (1).

Probable Assignee: FOREL SPA

Earliest Publication Date: 20190311



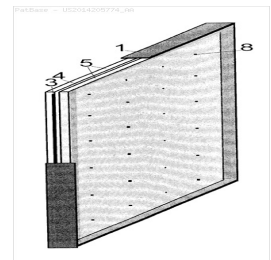
39) Family number: 53001103 (US2014205774A)

GLAZING UNIT WITH PERIPHERAL SEAL AND CORRESPONDING MANUFACTURING PROCESS

Abstract: Source: US2014205774A The invention relates to a glazing unit, in particular an insulating glazing unit, comprising at least a first (5) and a second (5) glass sheet joined together via at least one spacer (8) that keeps them a certain distance apart from each other and, between said at least two glass sheets, at least one internal space (4) closed by a peripheral seal (101) placed on the periphery of the glass sheets, around said internal space, the seal having a U-shaped cross section comprising a first flange (101) securely fastened to the first glass sheet and a second flange (1012) securely fastened to the second glass sheet. According to the invention, the first flange is securely fastened in a first recess (521) produced in the edge face of the first glass sheet.

Probable Assignee: AGC GLASS EUROPE

Earliest Publication Date: 20130207



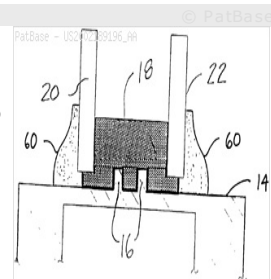
40) Family number: 28287300 (US2002189196A)

INSULATING GLASS SASH ASSEMBLIES WITH ADHESIVE MOUNTING AND SPACING STRUCTURES

Abstract: Source: US2002189196A An integrated multipane window sash is fabricated from a sash frame having an inside perimeter. An adhesive material is applied to the inside perimeter. The adhesive material has sufficient stiffness to function as a mounting structure for glazing panes, and may also function as a spacing structure. A first glazing pane is mounted to a first side of the adhesive mounting structure. A second glazing pane is mounted to a second side of the adhesive mounting structure or to a separate adhesive mounting structure. The adhesive mounting structure can be applied by co-extrusion with the sash profile, by post-extrusion, manually or automatically and can comprise, for example, a bead of adhesive, a preformed adhesive foam, a preformed adhesive tape, or a chemical sealant. The adhesive mounting structure can be combined with a desiccant.

Probable Assignee: SASHLITE LLC

Earliest Publication Date: 20021219



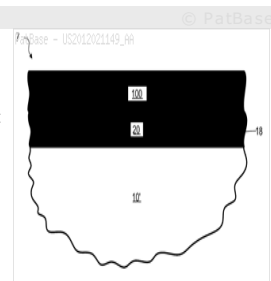
41) Family number: 49294599 (US2012021149A)

HIGH QUALITY EMISSION CONTROL COATINGS, EMISSION CONTROL GLAZINGS, AND PRODUCTION METHODS

Abstract: Source: US2012021149A The invention provides emission control coatings. The coating includes a transparent conductive film over which there is an oxygen barrier film. In some embodiments, the transparent conductive film comprises indium tin oxide and the oxygen barrier film comprises silicon nitride.

Probable Assignee: CARDINAL CG CO

Earliest Publication Date: 20110721



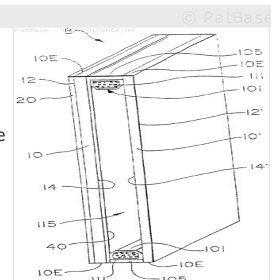
42) Family number: 28629784 (US2003101664A)

METHODS AND DEVICES FOR MANUFACTURING INSULATING GLASS UNITS

Abstract: Source: US2003101664A The present invention provides methods and apparatus for manufacturing insulating glass units. In apparatus and method of using the apparatus is provided by which adhesive is applied to the end regions of the insulating glass unit with one or more nozzles while a separate side arm extends from the device and alongside the insulating glass unit having a nozzle that delivers adhesive bead to the side of the pane to be adhered to the frame or sash. Methods are also provided for applying a deposit forming material to the periphery of the panes of an insulating glass unit.

Probable Assignee: CARDINAL GLASS IND INC

Earliest Publication Date: 20030605



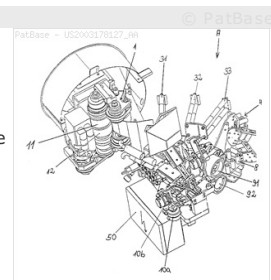
43) Family number: 31870158 (US2003178127A)

METHOD AND APPARATUS FOR THE MECHANICAL APPLICATION OF A SPACER STRIP ONTO A GLASS PANE

Abstract: Source: US2003178127A A method for the dimensionally accurate application of an elastoplastic spacer strip onto a glass pane intended for producing an insulating glass unit is that the spacer strip is not withdrawn from the storage drum but instead it is unwound in a manner free from any tensile stress and that the same is kept free from tensile and shearing stresses on the further route up to the pressing onto the glass pane, this being despite the fact that the application speed will inevitably fluctuate several times between zero, and a maximum value while edges of the glass pane are covered mechanically. The apparatus for performing the method therefore comprises a compensating or tailback section (3) between a first adjustably driven pair of rollers (1) and a second adjustably driven pair of rollers (9) as well as a sensor for recognizing the position of the strip in the compensating section.

Probable Assignee: TECHNOPAT AG

Earliest Publication Date: 20030924



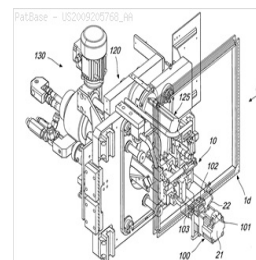
44) Family number: 42938940 (US2009205768A)

AUTOMATIC DEVICE AND METHOD FOR PERIMETRIC SEALING OF INSULATING GLAZING UNITS

Abstract: Source: US2009205768A An automatic device for perimetric sealing of an insulating glazing unit composed of at least two glass panes and at least one spacer frame supported and movable in a slightly inclined position with respect to the vertical on a conveyor. A sealing head movable with relative motion with respect to the glazing unit has at least one sealing nozzle suitable to deliver a sealant flow. In order to maintain the correct mutual position of said at least one sealing nozzle with respect to the cavities of the glazing unit to be sealed and to allow the spacing of the nozzle therefrom, a sensor is provided transversely to the plane of the insulating glazing unit that detects the distance from the glass pane. An actuation mechanism is further provided for the relative motion between the sealing head and nozzle and the glazing unit.

Probable Assignee: FOREL BASE DI DAVANZO NADIA AND CSNC

Earliest Publication Date: 20090820



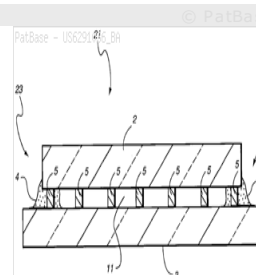
45) Family number: 28264861 (US6291036B)

VACUUM IG WINDOW UNIT WITH SPACERS IN SEAL

Abstract: Source: US6291036B A vacuum insulating glass (IG) unit and method of making the same. A plurality of spacers or pillars are provided in contact with and/or embedded within an edge seal in order to better control the gap or spacing between the two opposing glass substrates.

Probable Assignee: GUARDIAN GLASS LLC

Earliest Publication Date: 20001109



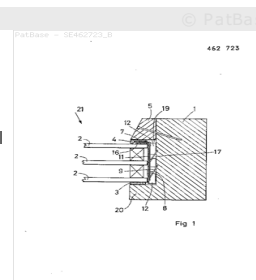
46) Family number: 30496357 (GB8724793A)

SPACER ELEMENT

Abstract: Source: DE3735637A1 A device for preventing the unlawful removal of a pane (2) from a window casement (1) includes a locking plate (6) which is fixedly retained in the casement (1) and is provided with one shank (7) on the outside of the pane (2). A spacer member (12) is disposed between an edge portion of the glass pane (2) and a proximal surface (17) of the casement, such that a space (19) is formed for accommodating a second shank (8) provided with barbs (9) on the locking plate (6). Auxiliary spacers (11, 16) are disposed between the locking plate (6) and the glass pane (2), these being suitably of one-piece manufacture with the spacer members (12) which are located on both sides of the locking plate (6).

Probable Assignee: ELIT FOENSTER AB

Earliest Publication Date: 19880423



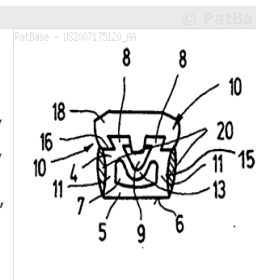
47) Family number: 32172623 (US2007175120A)

INSULATING GLASS PANEL AND METHOD FOR PRODUCING THE SAME

Abstract: Source: US2007175120A The invention relates to an insulating glass pane, in which two separate glass panes (2, 3) are held at a distance from one another by a spacer (4), which consists of a strip and which has an inner side (12), and outer side (6) and two flanks (11). A drying agent is provided in conjunction with the spacer (4), and a gap is provided on both sides of the spacer (4) between the spacer and both glass panes (2, 3). This gap is sealed by a primary sealing compound (19) that adheres to the spacer (4) and to the glass panes (2, 3). The invention provides that a compound (18), which contains a drying agent, is applied to the primary sealing compound (19) that seals both gaps and, afterwards, to the side (12) of the spacer (4) (also referred to as inner side (12) hereafter), this side facing the inner space (17) of the insulating glass pane. Compound (18) is applied so that it covers the inner side (12), that is, as long as the inner side is not already covered by the primary sealing compound (19).

Probable Assignee: PLUS INVENTIA AG

Earliest Publication Date: 20050818



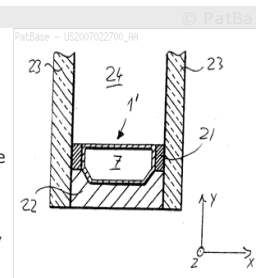
48) Family number: 34170958 (US2007022700A)

SPACER ARRANGEMENT WITH FUSABLE CONNECTOR FOR INSULATING GLASS UNITS

Abstract: Source: US2007022700A A spacer frame arrangement for insulating glass units, comprising a spacer profile body extending in a first direction and having a predetermined cross section in a plane perpendicular to the first direction, the predetermined cross section defining a hollow inner space of the spacer profile body with predetermined dimensions in the plane perpendicular to the first direction, and a connector comprising a connector section adapted to be inserted in the first direction into the hollow inner space of the spacer profile body by having a cross sectional shape perpendicular to the first direction which corresponds, with predetermined tolerances, to the cross section of the spacer profile body limiting the hollow inner space, at least the outer surface of the connector section facing the inner surface of the hollow inner space of the spacer profile body after insertion of the same being made of a fusable material, preferably a material fusable by melting the same, wherein the connector section is inserted into the hollow inner space of the spacer profile body and the outer surfaces of the connector section and the inner surface of the spacer profile body facing each other are connected by fusing.

Probable Assignee: TECHNOFORM GLASS INSULATION HOLDING GMBH

Earliest Publication Date: 20070201



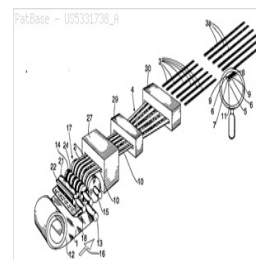
49) Family number: 11596958 (US5331738A)

COLOR-COATED SPACER TUBE FOR INSULATING GLAZINGS, AND METHOD AND APPARATUS FOR ITS PRODUCTION

Abstract: Source: US5331738A The invention relates to a spacer tube of metal, in particular of aluminum, for frame or strut bars of an insulating glazing as spacer or respectively drying agent container between two continuous glass panes, a color stripe being imprinted on the inner wall of the spacer tube visible in the insulating glazing and preferably subsequently gas exchange openings are provided in the inner wall. Further the invention relates to a method for the production of a spacer tube, several color strips being imprinted in side-by-side arrangement on the surface of a metal strip, preferably simultaneously, using a rotary printing mechanism, the paint is dried, and the metal strip is divided longitudinally between the color stripes, and the resulting metal slats are shaped to form spacer tubes and are cut to length.

Probable Assignee: LINGEMANN HELMUT GMBH AND CO

Earliest Publication Date: 19911105



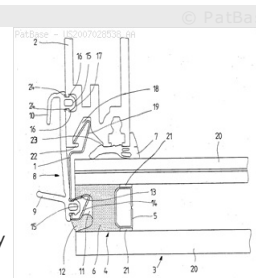
50) Family number: 32505940 (US2007028538A)

GLAZING SYSTEM

Abstract: Source: US2007028538A The present invention relates to a system for the frameless fixation of an insulating glass unit having two panes connected to each other by a rim connection having a groove in which a fixation element engages. The rim connection of the insulating glass unit consists of a preferably metallic spacer profile which is located between two panes that are essentially parallel to each other. On the outer face of the spacer profile a sealing matter, usually made of silicon, is placed, which assures a constant connection of the two panes, on the one hand, and an air-tight or gas-tight closing of the insulating glass unit, on the other hand. A groove is formed in this sealing matter belonging to the rim connection, on the outer face of the insulating glass unit. When the insulating glass unit has been mounted, the groove is advantageously not visible for an observer, since it is covered by the sealing matter as well as by the spacer profile.

Probable Assignee: LINDNER SCHMIDLIN FACADES LTD

Earliest Publication Date: 20051124

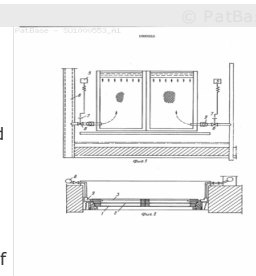


51) Family number: 2784187 (SU1000553A)

HEAT AND SOUND INSULATING WINDOW BLOCK

Abstract: Source: SU1000553A 1 Invention relates to construction, namely the construction of window frames, and can be used in civil, industrial and agricultural buildings x, as well as in other sectors of the national host ystva x. noise protection window is known, comprising a box, the outer and inner casement acid, scharnirno fixed to the box, and sound absorbing material disposed in the space between glass panes, transmission is made as a separate component frames interconnected plates forming the inter-glass space along the perimeter of the closed cavity filled with sound-absorbing material, and the plate, in between glass panes facing space is perforated, and the frames are joined at the corners of the box inserts 1. disadvantage of this window is its low zvukoizoliruyuscha ability and considerable material consumption. Known another window assembly comprising two parallel glass arranged with clearance and fixed in a frame made from hollow profiles. which stacked elastomeric pads 2. disadvantage of this window unit is the complexity of its manufacturing capacity and low zvukoizoliruyuscha in 5 especially in the midrange. closest to the technical essence and results of the proposed is a window unit comprising two parallel glass, arranged with a gap and fixed to the frame ras10 porn, set in framing guide frame and hermetic sealing elements, it is also provided with a flexible sheath attached the gap between the walls and filled with gas, and L obram15 guide frame is provided positioned along the perimeter of the profiled ledge Z-shaped, placed on it with vibrodempfiruyuschim material 3. common drawback of known window blocks 20 are passive part of the window block to prevent heat loss from the room, and, moreover, does not provide the necessary insulation from the external content noise. object of the invention - an increase RTD and sound insulation of the window unit. Said aim is achieved in that tetslozvukoizol OKOHHOIV-insulating unit comprising triple glazing inserted in the guide frame framing and forced ventilation of between glass panes, consisting of a temperature sensor, a throttle and regulator framed guide frame is provided with apertures and provided guide nlankey fixed above the openings and provided with venting between glass panes flexible element with a relief valve, wherein the flexible element is connected to the choke. Fig. 1 shows teplozvukoizol insulating window unit, general view; Fig. 2 is a cross-sectional view; Fig. 3 is a longitudinal sectional view. suggestion window assembly comprising 1-3 triple glazing inserted in the guide frame framing 4 and the forced ventilation of between glass panes, consisting of a temperature sensor 5, the throttle and b regulator 7. venting between glass panes of the window unit is connected to one trunk com- 8 by means of the flexible member 9 with a relief valve mounted on it a throttle 6. At the top is framed by a frame 4 are formed guide holes 10 and guide bar 11 supported above the openings and guide exiting air along the glazing 3. The structure operates as follows. In autumn-winter period from the main riser 8 by a flexible element 9 of the throttle 6 is pumped under pressure heated air into the space between the panes 2 and 3 of the window unit. The heated air through the guide holes 10 is framed by a frame 4 and a guide bar 11 enters the space, providing the correct amount of air for heat loss which reimbursement and simultaneously creating favorable conditions venting. Stable air temperature 18 - 20 degrees centigrade variation in room is provided ADF pumping pressurized heated air through the servo system, consisting of the temperature sensor 5, an automatic regulator throttle valve 7 and the throttle 6. the summer season through the main riser 8 through a flexible element 9 choke used in the space between the panes 2 and 3 is pumped under pressure chilled air through the holes that are framed by the guide frame 4 through guide plate 11 enters the room. At this temperature sensor 5 provides constancy of temperature 22-25 degrees centigrade by adjusting the automatic regulator valve throttle 6 7. For avtomat41cheskogo stopping supplying air to the space between the panes 2 and 3, when the need is at the opening of one or two shutters of the window unit, a bypass valve installed on the flexible member 9. Due to the proposed window units in different seasons indoor optimum microclimate is created. Besides, glazed window unit forms two chambers with razny.m pressure as the air between the panes 2 and 3 fed pressurized and guide strip II rejects a feed stream of air along the glazing, creating a glazed layer before moving air. All this greatly increases the sound insulation of the window unit. Proposed teplozvukoizol insulating window unit is recommended. use in the autumn-winter season as the space heater, and in the summer - air conditioning. Application of the proposed window unit raises product aesthetic look of a room creates optimal microclimatic conditions for people and thereby povyschaet their productivity. claims Teplozvukoizol insulating window unit comprising triple glazing inserted in the guide frame framing and forced ventilation of between glass panes, consisting of a temperature sensor, a throttle and a regulator, characterized - in that in order to increase the RTD and sound insulation structures, Framed guide frame is provided with apertures and is provided with a guide plate fixed above the openings and venting between glass panes provided with a flexible element with a relief valve, wherein the flexible element is connected to the choke. Sources, received into account in the examination 1.Avtorskoe USSR certificate number 706519, cl. E On In 5/20, 1979. 2.Patent USA number 3899858, cl. 52-172, 1975. 3.Avtorskoe USSR certificate number 711263, cl. E 06 B 5/20, 1980 (prototype). Fig. 2 W 2 MJ / / / / 777A

Probable Assignee: NII OBSHCHEJ GIGIENY PROFESSIO



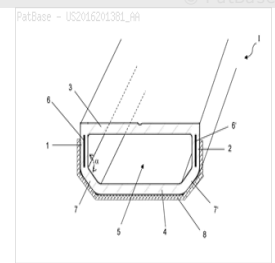
52) Family number: 58867774 (US2016201381A)

SPACER FOR INSULATING GLAZING UNITS

Abstract: Source: US2016201381A A spacer for an insulating glazing unit composed of at least two glass panes is described. The spacer includes a polymeric basic body having at least two mutually parallel side walls which are connected to one another by an inner wall and an outer wall, wherein the side walls, the inner wall and the outer wall enclose a hollow chamber. The spacer further includes an insulation film on at least the outer wall. The insulation film contains a polymeric carrier film and at least one metallic or ceramic layer, wherein a reinforcing strip is incorporated in each side wall and contains at least one metal or a metallic alloy.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20150402



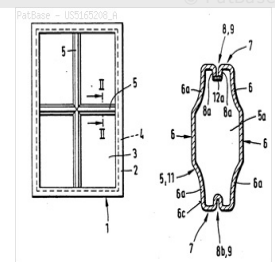
53) Family number: 28647958 (US5165208A)

HOLLOW SASH SECTION FOR INSULATION GLAZING OR MUNTIN

Abstract: Source: US5165208A The invention relates to a hollow sash muntin section (11) of metal, in particular aluminum, for insulation glazing, with a longitudinal welding seam (12a) invisibly disposed in a recess (8) in the section.

Probable Assignee: HELMUT LINGEMANN GMBH

Earliest Publication Date: 19910627



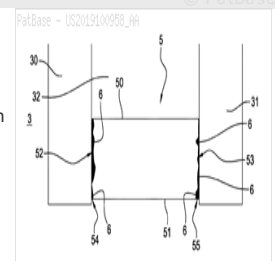
54) Family number: 67013768 (US2019100958A)

INSULATING GLAZING WITH GLASS SPACER, NOTABLY FOR CLIMATE-CONTROLLED UNIT

Abstract: Source: US2019100958A An insulating glazing includes two glass sheets spaced apart by at least one air- or gas-filled cavity, at least one transparent spacer made of glass, which is arranged at a periphery of the glass sheets and which keeps the two glass sheets spaced apart, and a transparent fastening system to fasten by adhesive bonding, which fastens the spacer to each glass sheet via two opposite fastening faces of the spacer, wherein the spacer made of glass is obtained by the cutting of glass sheet in a raw state, and is joined to the glass sheets directly in the raw state, and wherein the fastening system to fasten by adhesive bonding consist of a transparent material having been placed at an external junction of the spacer and of the glass sheets and having flowed into asperities of the glass of the fastening faces of the spacer.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20170921



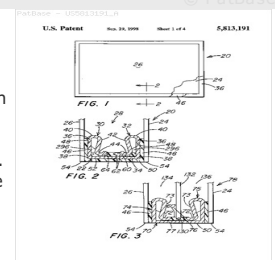
55) Family number: 10221195 (US5813191A)

SPACER FRAME FOR AN INSULATING UNIT HAVING STRENGTHENED SIDEWALLS TO RESIST TORSIONAL TWIST

Abstract: Source: US5813191A A spacer stock has a pair of outer legs joined by a base to provide the spacer stock with a generally U-shaped cross section. The outer legs are formed e.g. each leg has a pair of members having a hairpin cross section to reduce the degree of torsional twist of the spacer stock and/or spacer frame with the legs preferably only connected by the base having only one thermal conducting path e.g. through the base from one leg to the other leg. The spacer stock may be shaped or sections of spacer stock joined to provide a spacer frame. The spacer frame may be used to fabricate a multi-sheet glazing unit e.g. by securing a sheet to each of the outer legs with moisture impervious adhesive or sealant.

Probable Assignee: VITRO SAB DE CV

Earliest Publication Date: 19980228



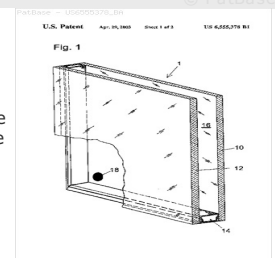
56) Family number: 13390165 (US6555378B)

METHOD FOR CHECKING THE STATE OF THE GAS FILL IN THE INSULATING CAVITY OF AN INSULATING GLASS PANE, AND INSULATING GLASS PANE

Abstract: Source: US6555378B An insulating glass pane (1) has at least two glass plates (10, 12) which are spaced apart from one another, and an edge joining strip (14) which surrounds and joins together the glass plates (10, 12) in the region of their edges. The edge joining strip (14) seals and delimits an insulating cavity (16) which is located between the glass plates (10, 12) and which is filled with a fill gas which is not air. A sensor (18) is provided in the insulating cavity (16) of the insulating glass pane (1), which sensor reacts and gives a signal if the composition of the fill gas changes.

Probable Assignee: SCHWAB ARMIN DR ING

Earliest Publication Date: 20000509



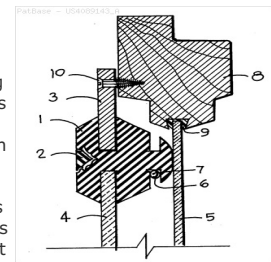
57) Family number: 1531024 (US4089143A)

METHOD OF CONVERTING SINGLE PANE GLASS TO MULTIPLE PANE, HERMETICALLY SEALED INSULATING GLASS WITHOUT REMOVING THE EXISTING GLASS SASH AND FRAME

Abstract: Source: US4089143A A method of converting single pane glass to multiple pane hermetically sealed insulating glass without removing the existing glass sash and frame by using a preformed elastomeric (neoprene) glazing gasket as a mechanical seal. The preformed neoprene rubber seal glazing gasket is supported on a suitable frame of metal, aluminum, or other construction material. The glazing gasket support frame is attached to the existing sash or frame with suitable fastener. The preformed elastomeric glazing gasket is mechanically compressed against the existing lite of glass by the force of the fastener when the support frame is tightened against the existing sash or frame. This mechanical compression of the preformed elastomeric glazing gasket against the existing lite of glass forms a seal that is impervious to air and water vapor. The preformed elastomeric glazing gasket is grooved for support of the second lite of glass that is required to form the multiple pane hermetically sealed insulating glass unit. To effect the seal between the glazing gasket and second lite of glass, a special rubber locking strip is inserted progressively into another groove that is provided in the preformed gasket. This puts the gasket under sufficient compression to produce the required sealing pressure between the neoprene and glass. A suitable water vapor removal desiccant is placed in another groove in the neoprene gasket in the air gap space between the multiple lites of glass to control condensation.

Probable Assignee: MULVIHILL JAMES W

Earliest Publication Date: 19780516



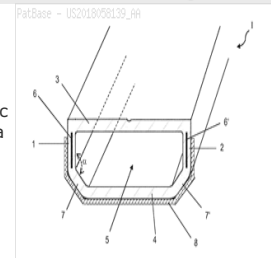
58) Family number: 63512396 (US2018058139A)

GLASS-FIBER-REINFORCED SPACER FOR INSULATING GLAZING UNIT

Abstract: Source: US2018058139A A spacer for insulating glazing units is presented. The spacer has a polymeric main body with features that include two parallel side walls that are connected to one another by an inner wall and an outer wall. The side walls, the inner wall, and the outer wall surround a hollow chamber. According to one aspect, the polymeric main body has a glass fiber content of 0 wt.- percent to 40 wt.- percent, to which 0.5 wt.- percent to 1.5 wt.- percent of a foaming agent is added to form hollow spaces that provide a weight reduction of the polymeric main body of 10 wt.- percent to 20 wt.- percent.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20160909



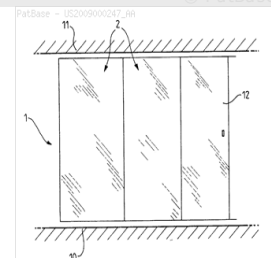
59) Family number: 34718460 (US2009000247A)

GLASS WALL

Abstract: Source: US2009000247A Glass wall (1) intended to be used as a wall or partition wall comprising at least two insulating glazing units (2), characterized in that each glazing unit (2) comprises at least two sheets of glass (20, 21) spaced apart by an air gap and assembled by means of at least one substantially flat insert (3) which is secured by one of its faces (30) to the edge faces of the sheets of glass, and in that the glazing units (2) are secured together by one of its faces (30) to the edge faces of the sheets of glass, and in that the glazing units (2) are secured together by securing means (4) which collaborate with the inserts (3) placed facing each of the glazing units.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20070629



60) Family number: 44155856 (EP2138667B1)

THREEFOLD INSULATING GLAZING

Abstract: The threefold insulating glazing unit comprises three glass panes arranged to each other at a distance and defining two intermediate spaces, where the outer glass pane comprises a thermal-insulating layer on its inwardly pointing side, the middle glass pane comprises antireflection layer on its both sides and the inner glass pane comprises a further thermal-insulating layer on its inwardly pointing side. The middle glass pane is arranged between the two remaining glass panes. The inner glass pane differs from the outer glass pane. One of the intermediate spaces is filled with air. The threefold insulating glazing unit comprises three glass panes arranged to each other at a distance and defining two intermediate spaces, where the outer glass pane comprises a thermal-insulating layer on its inwardly pointing side, the middle glass pane comprises antireflection layer on its both sides and the inner glass pane comprises a further thermal-insulating layer on its inwardly pointing side. The middle glass pane is arranged between the two remaining glass panes. The inner glass pane differs from the outer glass pane. One of the intermediate spaces is filled with air, nitrogen and/or inert gas. The thermal-insulating layer is an asymmetrical low-E-layer or an asymmetrical low-E-layer structure. The antireflection layer has high transmission in infrared region, and is a porous layer comprising silicon dioxide. One of the glass panes has a content of oxides, which absorb radiation with a wavelength of 100nm to 1.1 mm, of less than 0.05 percent.

Probable Assignee: SCHEUTEN S A R L

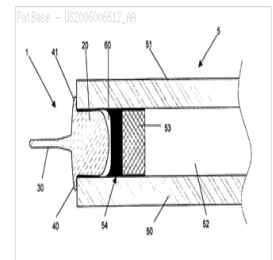
Earliest Publication Date: 20091230

61) Family number: 30498203 (US2006006612A)

GASKET AND INSULATING GLASS COMPRISING SAID GASKET

Abstract: Source: US2006006612A A seal including a body with a longitudinal axis X that includes a base-piece having a first end and an opposed second end, two opposed side walls connecting the two ends, and two shoulders located on either side of each of the two side walls and at one of the ends. The body is made of a single flexible material and, in a section perpendicular to the X axis, the width of the base-piece, from one side wall to the other, in the vicinity of the end on the opposite side from the shoulders is larger than the width of the base-piece, from one side wall to the other, in the vicinity of the end near the shoulders.

Probable Assignee: SAINT GOBAIN SA



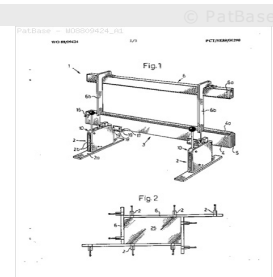
62) Family number: 2704208 (WO8809424A1)

A CLAMPING APPARATUS FOR MANUFACTURE OF INSULATING GLASS

Abstract: In the manufacture of insulating glass or multiple glazing units two glass plates (25, 26) and an intermediate sealing element (27) are placed on a number of clamping apparatus (1) arranged in a pattern corresponding to the contours of the insulating glass unit, such that the edge region of the lower glass plate (26) rests on respective lower apparatus parts (3). The upper parts (6) of respective apparatus may be detachably secured at desired distances from respective lower apparatus parts (3). The lower apparatus parts have a respective engagement part (4) which is moved in an upward direction by placing an inflatable hose (7) under pressure, whereupon a uniformly divided pressure is exerted on the glass plates, such as to cause the plates to adhere to the sealing element (27). The clamping apparatus may be arranged in suitable numbers and in suitable configurations for the manufacture of insulating glass units of desired configuration.

Probable Assignee: LARSSON HOLGER I MORA AB

Earliest Publication Date: 19881130



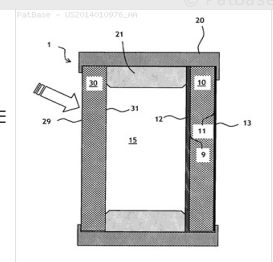
63) Family number: 52066781 (US2014010976A)

INSULATING MULTIPLE GLAZING INCLUDING TWO LOW-EMISSIVITY STACKS

Abstract: Source: US2014010976A The invention relates to a multiple glazing unit with thermal isolation properties, obtained by associating at least two glass substrates, which substrates are separated by gas-filled cavities, the multiple glazing unit incorporating: a first low-E film multilayer comprising at least one functional metallic film; and a second low-E film multilayer comprising at least one functional film made of a transparent conductive oxide, and a film made essentially of silicon oxide deposited on the function film made of transparent conductive oxide.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20120928



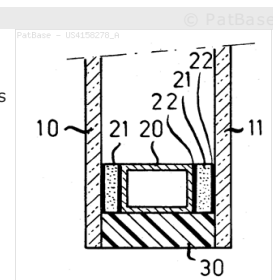
64) Family number: 1273757 (US4158278A)

INSULATING GLASS PANE ASSEMBLY

Abstract: Source: US4158278A An insulating glass pane assembly and its use. The assembly includes at least two panes of glass sealingly connected to each other and held apart from each other by a crosspiece attached on the perimeters thereof. The crosspiece is provided with at least one layer of sound-reducing material attached in such a way that it prevents the transmission of sound from pane to pane by way of the crosspiece. The assembly can be used to produce windows by providing a window pane having grooves therein disposed in such a way that they receive and retain the panes of glass within the window frame. A sound-reducing material is attached in the grooves to insulate the panes of glass on all sides against the window frame in a sound-reducing manner. The assembly is completed by installing the panes of glass in the grooves in the window frame. With these features, the insulating glass pane assembly and its use successfully prevent the transmission of sound from pane to pane by way of the crosspieces.

Probable Assignee: RAFFAELE CARDINALE TE URDORF EN JAKOB KUECHLER TE DIETLIKON ZWITSERLAND

Earliest Publication Date: 19770501



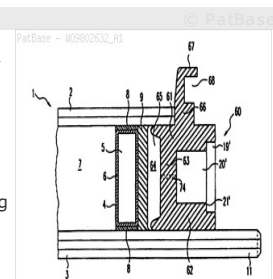
65) Family number: 18938308 (WO9802632A1)

FRAMELESS DOOR OR WINDOW WING ARRANGEMENT WITH INSULATED GLAZING, AND PROCESS FOR THE MANUFACTURE THEREOF

Abstract: The invention relates to a frameless door, or door or window wing arrangement with insulated glazing. From the conventional structure of insulated glazing a preferably plastic section (10) open externally and having a U-shape is embedded, when separated from the conventional spacer (4), in the conventional edge filling (9) or is attached (60, 80) in such a manner that an air space (64) remains. The section (10; 60; 80) is used to hold a commercially-available turning/ tilting fitting. The required tightness of the intermediate pane space (7) is consequently ensured externally. Using single-pane toughened safety glass and providing enamel (23) or a similar covering in the edge region to cover the spacers (4), edge filling (9), air space (64) and the section (10, 60, 80) is advantageous, as is a sealing system against the surrounding front surface (27) of the external glass pane (2).

Probable Assignee: CESKE VUT

Earliest Publication Date: 19980115



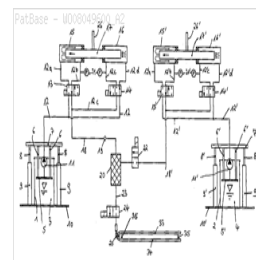
66) Family number: 41750961 (WO08049600A2)

METHOD AND DEVICE FOR INJECTING A STRAND OF A PASTY MATERIAL INTO THE INTERMEDIATE SPACE BETWEEN TWO GLASS PANES OF AN INSULATING GLASS PLATE

Abstract: A description is given of a method for injecting a strand of a pasty material into the intermediate space between two glass panes (33, 34) of an insulating glass plate, in that a nozzle (25) with at least one mouth which is directed into the intermediate space between the glass panes (33, 34) is moved along the edge of at least one of the two glass panes (33, 34) and the pasty material is fed to the nozzle (25) during this movement, in that this material or a constituent of this material is respectively pressed out of at least one refillable reservoir (15, 15', 16, 16', 27, 27'), which is connected to the nozzle (25) by a first delivery path. According to the invention, it is provided that two arrangements that are connected to the nozzle (25) and comprise a reservoir (15, 15', 16, 16', 27, 27') and a torpedo (17, 17', 28, 28') engaging in the said reservoir are respectively operated in opposite directions for the material or for constituents of the material.

Probable Assignee: LENHARDT MASCHINENBAU

Earliest Publication Date: 20080430



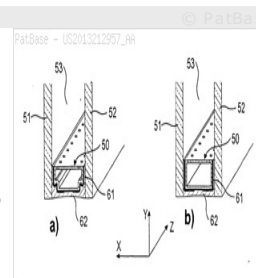
67) Family number: 51038443 (US2013212957A)

SPACER PROFILE AND INSULATING PANE UNIT HAVING SUCH A SPACER PROFILE

Abstract: Source: US2013212957A A spacer profile for a spacer frame of an insulating pane unit includes a hollow profile body made of plastic with a chamber defined therein. The hollow profile body extends in a longitudinal direction and includes an inner wall, an outer wall, a first side wall and a second side wall, which are connected to the inner and outer walls to form the chamber. First and second reinforcing layers made of a metallic material respectively extend on the first and second side walls and partially on the outer wall so as to be spaced apart by a first distance. A diffusion barrier layer is formed directly on the outer wall between the first and second reinforcing layers and is connected thereto in a diffusion-proof manner in order to form a heat-insulating diffusion barrier. An insulating pane unit includes at least two panes with such a spacer frame disposed therebetween.

Probable Assignee: TECHNOFORM GLASS INSULATION HOLDING GMBH

Earliest Publication Date: 20120503



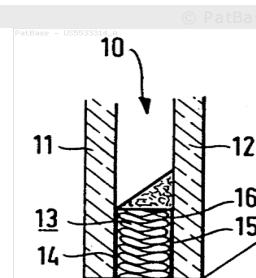
68) Family number: 13088109 (US5533314A)

FRAMELESS INSULATING GLAZING UNIT AND A METHOD FOR THE PRODUCTION THEREOF

Abstract: Source: US5533314A PCT No. PCT/EP94/00069 Sec. 371 Date Sep. 12, 1994 Sec. 102(e) Date Sep. 12, 1994 PCT Filed Jan. 11, 1994 PCT Pub. No. WO94/16187 PCT Pub. Date Jul. 21, 1994. The insulating glazing unit in accordance with the invention consists in its simplest form of two panes 1 and 2 which are joined together by means of a shaped body 13 constituted by a textile spacer fabric. By means of its high elasticity, flexurally rigid rib fibers 16 the textile spacer fabric renders possible a force transmitting coupling of the panes and the formation of a dimensionally stable and self-supporting sheet body. This sheet body is suitable in particular for the production of frameless window lights.

Probable Assignee: KUNERT

Earliest Publication Date: 19940714



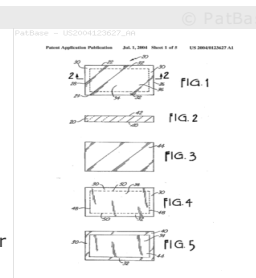
69) Family number: 30689948 (US2004123627A)

GLASS MASKING METHOD USING LASERS

Abstract: Source: US2004123627A Methods and apparatus for masking glazing panels while leaving a peripheral region free of masking material. The method can include providing a masking material and applying the masking material to at least one major surface of the glazing panel. The glazing panel can be either a single glass pane or a multi-pane insulating glass unit. After application to at least one major surface, a laser can be used to describe a closed path on the major surface, thereby cutting or scoring the masking material through to the glass major surface. The path demarcates a central, masked region from a peripheral masked region of the glazing panel. In one method, the laser cuts a muntin bar pattern having several central regions. The laser power can be selected and/or adjusted such that the masking material is burned through, without damage to the underlying glass material and any coatings on the glass material. After cutting through the masking material to define the peripheral masked region, the peripheral masked region can be peeled or stripped off from the masked glazing panel. The remaining panel thus has a protective mask about the central region while leaving the peripheral region unprotected. The resultant masked glazing panel may be assembled into a window unit by mounting window frame members about the four sides of the glazing panel. The window frame members may thus have a tight and durable fit directly to the glass in the peripheral region, while the central region of the glazing panel remains protected by the masking material.

Probable Assignee: CARDINAL IG CO

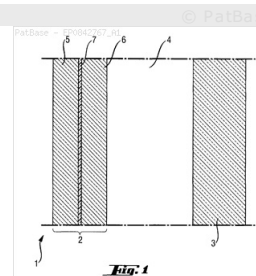
Earliest Publication Date: 20040701



70) Family number: 32489136 (EP0842767A1)

THERMALLY AND ACOUSTICALLY INSULATING MULTIPLE GLAZING UNIT

Abstract: The multiple acoustic protective glazing (1) mounted in a window is claimed comprising a first laminated glass panel (2) and at least a second plain glass panel (3), parallel to the first panel and separated from it by a gas lamina (4). The panels are assembled in an airtight manner and the sheets (5, 6) of glass in the laminated panel are joined together by at least one plastics film (7) giving some properties highly sound-proofing and/or of low inflexibility. The laminated glass panel incorporates at least two glass sheets (5, 6) with a thickness of 1-3.2 mm and the plain glass panel has a thickness of 2.8-8.2 mm such that it is equal or greater than the thickness of the laminated glass panel. The gas lamina has a thickness of 6-20 mm and preferably has a thickness of 12 mm. The plastics film joining the two glass panels is made up of a resin such that a stretcher of 9cm in length and 3 cm in width, constituting a laminated glass incorporating two sheets of glass of 4 mm in thickness joined together by a 2 mm layer of the resin, having a resonance frequency of primary mode (fc) that differs by more than 35 percent from that of a stretcher of monolithic glass having the same length, the same width and a thickness of 4 mm. The thickness of the plastics film is equal to or greater than 0.38 mm.



Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 19980515

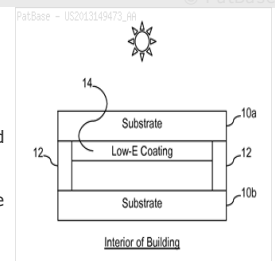
71) Family number: 54080449 (US2013149473A)

INSULATING GLASS UNITS WITH LOW-E AND ANTIREFLECTIVE COATINGS, AND/OR METHODS OF MAKING THE SAME

Abstract: Source: US2013149473A Certain example embodiments of this invention relate to insulating glass (IG) units including three substantially parallel spaced apart glass substrates, wherein at least two of the surfaces include low-emissivity (low-E) coatings and at least some of the non-low E coated surfaces have antireflective (AR) coatings disposed thereon. In certain example embodiments, low-E coatings are provided on the second and fifth surfaces of the IG unit, and each internal surface of the IG unit that does not support a low-E coating does support an AR coating. Additional AR coatings may be provided on one or both of the outermost surfaces in certain example embodiments. In some cases, the center substrate need not be heat treated because of the reduced absorption enabled by providing the low-E coatings on the two outermost substrates, as well as the reduced heat accumulation in the center lite itself and in the two adjacent spacers.

Probable Assignee: GUARDIAN GLASS LLC

Earliest Publication Date: 20130613



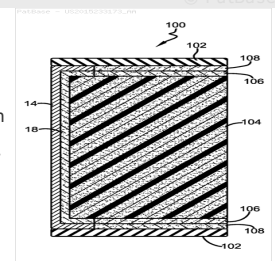
72) Family number: 55312438 (US2015233173A)

SPACER FOR INSULATING GLAZING UNIT

Abstract: Source: US2015233173A A flexible spacer body has two opposing faces adapted to engage the inner surfaces of glazing structures to define an insulating glazing unit. The spacer body may be desiccated polymeric foam such as a silicone foam rubber or EPDM. An adhesive capable of bonding the spacer body to the glazing structure is carried by both of the faces. The adhesive may be from about 0.050 mm to about 1.524 mm thick. The adhesive material also has the properties of low argon gas and low moisture permeability. The adhesive comprises polymers where butyl rubber and/or polyisobutylene polymers together make up the majority of the polymers. The adhesive may also comprise other materials as needed to make it pressure sensitive and to impart a water resistant bond to glass glazing structures. The space assembly may include additional materials to secure the adhesive to the spacer body.

Probable Assignee: QUANEX IG SYSTEMS INC

Earliest Publication Date: 20131205



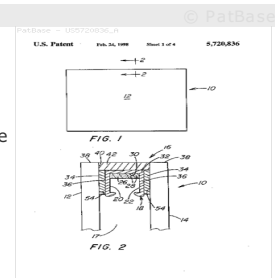
73) Family number: 11648847 (US5720836A)

DEVICE FOR AND METHOD OF ALIGNING AND/OR MAINTAINING A SIDE OF A SPACER FRAME IN ALIGNMENT DURING FABRICATION OF A MULTI SHEET GLAZING UNIT

Abstract: Source: US5720836A Magnetic forces are applied to a side of a spacer frame mounted on a glass sheet to maintain the side of the spacer frame in alignment i.e. the plane containing base of the spacer frame perpendicular to the plane containing the surface of the glass to which the spacer frame is adhered. Thereafter a glass sheet is mounted on the other surface of the spacer frame. The sheets are adhered to the spacer frame by a sealant layer. After the sheets are assembled, the sheets are urged toward one another to flow the sealant to seal the space between the sheets.

Probable Assignee: PPG IND OHIO INC

Earliest Publication Date: 19970224



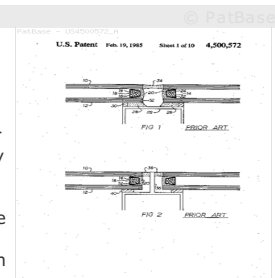
74) Family number: 2103513 (US4500572A)

STRUCTURAL SPACER GLAZING WITH CONNECTING SPACER DEVICE

Abstract: Source: US4500572A A glass insulating sealed unit suitable for capless or stopless glazing comprising two spaced-apart glass plates and spacers to separate and join the glass plates arranged about the entire periphery of the plates and between the plates. The spacers are adapted for connection of the unit to adjoining support members in order to support and fix the unit. One spacer embodiment includes a first section forming substantially enclosed elongate cavity for holding desiccant, which section is positioned between the plates adjacent edges thereof, and second and third sections in form of integral extensions of the first section forming a channel shaped recess, open along the edge. The spacer can include an expansion mechanism to permit one glass plate to move perpendicularly towards or away from the other plate, thereby equalizing the pressures between and outside of the plates. A preferred form of spacer is connected to a support member by means of connectors or clips evenly spaced along the spacer. One form of connector has a stem portion and two flat arms projecting perpendicularly from one end of the stem portion. The thickness of each arm is about equal to the width of a channel-shaped recess formed by the spacer. After the sealed unit is put in place, the connectors are used to connect it by rotating them about their central axes.

Probable Assignee: VISION ENGINEERING AND DESIGN INC

Earliest Publication Date: 19850103



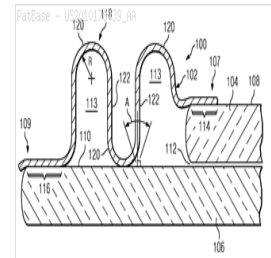
75) Family number: 45962143 (US2010178439A)

FLEXIBLE EDGE SEAL FOR VACUUM INSULATING GLAZING UNITS

Abstract: Source: US2010178439A A flexible edge seal is provided for a vacuum insulating glazing unit having a first glass pane and a second glass pane spaced-apart from the first. The edge seal comprises a seal member formed of a hermetically bondable material and having a first end, a second end and a center section disposed therebetween. The first end is hermetically bondable to a first glass pane. The second end is hermetically bondable to a second glass pane. The center section comprises a plurality of convolutes.

Probable Assignee: EVERSEALED WINDOWS INC

Earliest Publication Date: 20100715



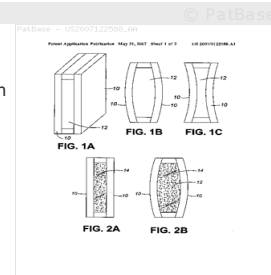
76) Family number: 34504316 (US2007122588A)

GLAZING UNIT WITH TRANSPARENT FILLER

Abstract: Source: US2007122588A A glazing unit has a at least one self-supporting insert of light-transmissive insulation material in the form of honeycomb arrangement of cells sandwiched in a gap between a pair of glass lites. A granular, light-transmissive, thermally insulating filler, such as silica aerogel, substantially fills the cells.

Probable Assignee: ADVANCED GLAZING TECHNOLOGIES LTD AGTL

Earliest Publication Date: 20070525



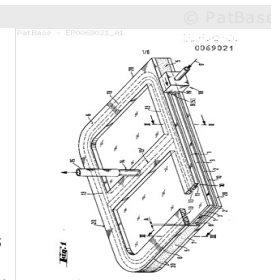
77) Family number: 3015064 (EP0069021A1)

METHOD OF PRODUCING AN INSULATED GLAZING UNIT WITH PERIPHERAL EDGE PROTECTION, DEVICE FOR CARRYING OUT THE METHOD, AND GLAZING UNIT PRODUCED ACCORDINGLY.

Abstract: 1. A method of making an insulating glazing unit provided with a member for protecting the edges (5, 9) at its periphery, of the type in which an injectable hardenable plastics material is applied at the same time in the groove (8) formed by the interior faces of two individual panes (1 and 2) and by the spacing block (3) and, exteriorly, around the whole marginal edge part of the glazing unit, by means of mounting in place, on the exterior surfaces of the insulating pane, two jigs (6, 7) extending slightly beyond the periphery of said surfaces, thus defining a cavity (8) of given cross-section surrounding the edge part of the glass sheets, filling of this cavity (8) being carried out using hardenable plastics material (9) and the jigs (6, 7) being withdrawn after hardening of the plastics material, characterised in that the two jigs (6, 7) are provided at the level of the periphery of the exterior surface of their respective glass sheet with an opening (10) corresponding to the desired exterior contour of the member for protecting the edges, and in that filling of the cavity (8) of given cross-section and of the openings (10) in the jigs (6, 7) by the plastics material (9) is carried out by means of an injection nozzle (18) obturating the cavity (8) and the openings (10) towards the exterior, and moving while making contact with the edges of said jigs (6, 7).

Probable Assignee: VEGLA VEREINIGTE GLASWERKE GMBH

Earliest Publication Date: 19830105



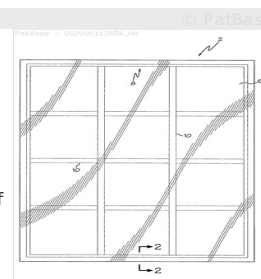
80) Family number: 32887938 (US2006112654A)

MUNTIN CLIP AND METHOD OF USING THE SAME

Abstract: Source: US2006112654A A muntin clip supports a muntin grid inside an insulating glazing unit. The clip includes a positioning arm that allows the clip to be positioned with respect to the spacer. In one embodiment, the clip has a flat base adapted to be positioned on the inwardly facing surface of the spacer. The positioning arm extends from one side of the plate with the muntin-engaging body extending from the other side of the plate. The arm has an outer end that projects beyond the outer edge of the plate. A method for using the clip includes the step of using one of the glass sheets to engage and position the positioning arm of the muntin clip. Stops may be provided to limit the insertion of the clip into the spacer.

Probable Assignee: QUANEX IG SYSTEMS INC

Earliest Publication Date: 20060511



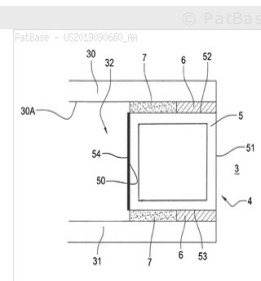
81) Family number: 67013767 (US2019090660A)

INSULATING GLAZING UNIT, IN PARTICULAR FOR A CLIMATE CHAMBER

Abstract: Source: US2019090660A An insulating glazing includes two glass sheets that are spaced apart by an air- or gas-filled cavity, a spacer arranged at periphery of the glass sheets and that keeps the glass sheets spaced apart, the spacer being transparent and placed on one of the sides of the glazing, and a first barrier that is leaktight to water, formed by a structural seal, the material of which is watertight, and a second barrier that is leaktight to gases and to water vapor, the first and second barriers associated to the transparent spacer being made of transparent material, wherein the second barrier that is leaktight to gases and to water vapor and made of transparent material is arranged at an interface between the glass sheets and the transparent spacer on an internal side of the glazing, the structural seal also at the interface being positioned abutted and aligned with the second barrier.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20170921



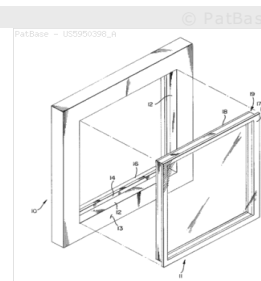
82) Family number: 11701777 (US5950398A)

PASS-BY INSULATING GLASS WINDOW UNIT AND METHOD FOR REPLACING SINGLE GLAZING

Abstract: Source: US5950398A A pass-by insulating glass window unit for replacing single glazing including a sealing assembly sandwiched by glazings having dissimilar plane surface dimensions. One glazing, the exterior glazing, has the plane dimensions of the single glazing it replaces. The other, the interior glazing, and the sealing assembly have plane dimensions slightly smaller than the dimensions of the window opening. The pass-by insulating glass window unit is assembled with each of the four edges of the exterior glazing extending equidistantly outwardly from the aligned edges of the sealing assembly and the interior glazing. The thickness of the sealing assembly is predetermined to provide an enclosed insulating space of optimum insulating value. For use in double hung window sashes, the thickness is chosen to assure passage of the movable window openings, and to position the interior glazing to be in approximate alignment with the plane of the interior surface of the wood sash. The assembled pass-by insulating glass window unit is placed, interior glazing first, through the window opening or sash from the exterior side until the exterior glazing contacts the glazing rabbet.

Probable Assignee: HUBBARD BRUCE M

Earliest Publication Date: 19990914



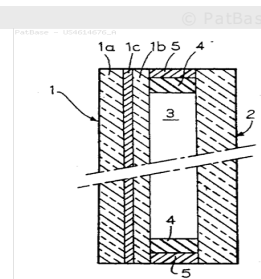
83) Family number: 19159003 (US4614676A)

MULTIPLE WINDOW GLASS HAVING THERMAL AND ACOUSTICAL INSULATING PROPERTIES

Abstract: Source: US4614676A The invention relates to a multiple window glass comprising a first laminated glass plate and a second simple or laminated glass plate, parallel to the first and separated from it by a gas layer, the two plates being held together in a gastight manner. The resin of the laminated glass of the first plate (1) is chosen so that a bar 9 cm long and 3 cm wide, consisting of a laminated glass comprising two glass sheets 4 mm thick joined by a 2 mm layer of this resin, has a critical frequency that differs at most 35 percent from that of a glass bar having the same length, same width and 4 mm thickness.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 19840106

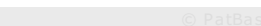


84) Family number: 51427648 (RU2009125608A)

GLASS THERMAL BARRIER (MACHINE TRANSLATION)

Abstract: Source: RU2009125608A 1. insulating glass unit consisting of two or more essentially parallel sheets of glass separated by air or gas gaps, different in that it contains one or more sheets of insulating material in the gap or gaps. 2. insulating double glazing on p. 1, distinguished by the fact that one or more sheets of insulating material have a thickness less than the width of the gap between the respective glass, forming a convection cavity inside the gap. 3. insulating double glazing on p. 1, distinguished by the fact that one or more sheets of insulating material have partial or full svetoprozrachnost' and/or translucent slots. 4. insulating double glazing on p. 1, distinguished by the fact that one or more sheets of insulating material or on its surface are composed of metal coating (coating, foil) or metal inclusions. 5. Glazing heat on p. 1, featuring the fact that design is adsorbent for absorption of moisture from any of the gaps. 6. Glazing heat on p. 1, featuring the fact that bonds glass sheets used for perimeter frame glass glued with them with glue or sealant, or several layers of glue or sealant. 7. Glazing heat on p. 1, featuring the fact that bonds glass sheets used welding the edges of the glass sheets. 8. protective Glazing on p. 1, featuring the fact that bonds glass sheets used external frame or doorway bearing design, which is going to be installed or Windows. 9. Double glazing teploza

Probable Assignee: LARIN SERGEY G



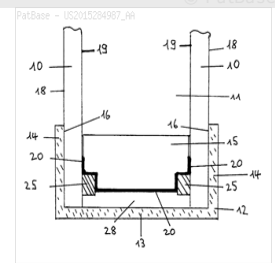
85) Family number: 56240498 (US2015284987A)

INSULATING GLAZING UNIT

Abstract: Source: US2015284987A Insulating glazing unit containing at least one spacer for the spacing of glass panes received in a frame, wherein a barrier film is applied to the spacer, at least on the side directed towards the frame. The barrier film is a composite film, which, on the side directed towards the spacer, has an adhesive or sealing layer as the internal layer and, on the side directed towards the frame, a barrier layer containing oriented EVOH and a thin adhesive layer of metal or metal oxide located on the outside and directed towards the frame

Probable Assignee: AMCOR FLEXIBLES KREUZLINGEN LTD

Earliest Publication Date: 20140416



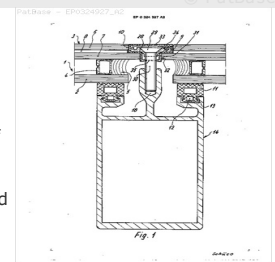
86) Family number: 3095614 (EP0324927A2)

ATTACHMENT FOR INSULATING GLASS PANES OF AN OUTER WALL OR ROOF GLAZING.

Abstract: 2. The outer wall or roof glazing which is formed by insulating glass panes (1), is held by a supporting structure which is anchored on the building. 2.1 The object of the invention is to design an attachment for the insulating glass panes in such a way that the outer panes are fixed and secured in the facade or roof joints in a positive-locking manner, so that bonding and/or sealing work at the site are dispensed with. 2.2 To achieve this object, the outer pane of each insulating glass unit (1) is provided over its periphery with a step (9) which begins from the respective lateral edge face. The mutually facing step faces of adjacent insulating glass panes (1) which bound a facade or roof joint are aligned with one another. In the steps (9) engage flange strips of one or more holding profiles (28, 35, 44) which is(are) attached to the supporting structure. 2.3 Application area: building construction.

Probable Assignee: SCHUECO INTERNATIONAL KG

Earliest Publication Date: 19890719



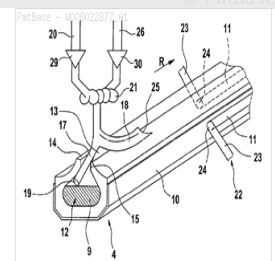
87) Family number: 41517915 (WO08022877A1)

METHOD OF PRODUCING AN INSULATING GLASS UNIT, AND AN ARRANGEMENT FOR APPLYING A SPACER TO A GLASS PANE

Abstract: A method of producing an insulating glass unit having at least two glass panes comprises the following steps: glass panes and a spacer are made available, desiccant is introduced into or onto the spacer, the spacer is fitted onto a glass pane. A second glass pane is then placed on the first glass pane and the glass panes are combined to form an insulating glass unit. The desiccant is introduced during or after the mounting of the spacer.

Probable Assignee: PROWERB ST GALLEN AG

Earliest Publication Date: 20080227



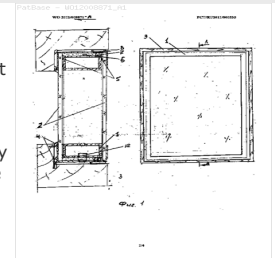
88) Family number: 50485023 (WO12008871A1)

STEEL CARRIER FRAME FOR AN INSULATING GLASS UNIT

Abstract: The invention makes it possible to increase the light transmission qualities of a glazing structure by 25 percent through the use of a steel carrier frame instead of an external casement, which frame also performs the function of a spacer frame between the panes of an insulating glass unit. The thermal insulation of the spaces between the panes is increased because of the possibility of significantly increasing the thickness of a single space in the insulating glass unit up to 200 mm. A burglar resistant grille can be mounted inside the movable sash of the insulating glass unit. This security function is a novel feature of insulated glass units for windows that also meet fire safety requirements with respect to the evacuation of people. The bearing capacity of the glazing structure makes it possible to manufacture multi-contoured panels for glazing building facades, which panels are capable of performing movements, for example, tilting. The provision of a vacuum nipple in the frame makes it possible to routinely vacuumize the space between the panes. The provision of an electric heating cable inside the shaped tube of the glazing frame prevents the formation of ice, fog and dew, increases thermal insulation and makes it possible not to place heating radiators below glazed apertures. The reinforced insulating glass unit which uses a steel frame consisting of shaped tubes instead of a conventional foil spacer frame assumes the property of a rigid independent sash that does not require a casement, which is a novel quality for an insulating glass unit.

Probable Assignee: KALASHNIKOV ANDREJ JUR EVICH

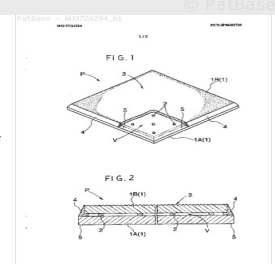
Earliest Publication Date: 20120119



89) Family number: 10229279 (WO9724294A1)

DOUBLE-GLAZING UNIT

Abstract: A double-glazing unit having a plurality of spacers interposed between a pair of flat glasses and spaced along the sheet surface to define spaces between both the flat glasses, the spaces being hermetically sealed and under reduced pressure. No double-glazing unit has been proposed which is permeable to light and, at the same time, can shield the line of sight and maintain high heat insulating properties for a long period of time. In the double-glazing unit of this invention, at least one of the flat glasses constituting the pair of flat glasses is constituted of a frosted glass which has been disposed so that a surface (3) which has been treated to provide irregularities faces in a direction opposite to spaces (V). Alternatively, a coating (6) may be provided on the surface of the glazing unit remote from the spaces (V). This enables the surface where the spacer is in contact with the flat glass to be kept smooth and local stress concentration derived from unstably abutted state to be avoided, permitting both glazing and high heat insulating effect to be maintained for a long period of time.



Probable Assignee: NIPPON SHEET GLASS CO LTD

Earliest Publication Date: 19970710

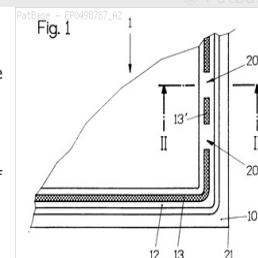
90) Family number: 18973226 (EP0498787A2)

METHOD AND DEVICE FOR MANUFACTURING INSULATING GLAZING UNITS.

Abstract: The openings (22, 23) for gas exchange, necessary for manufacturing insulating glazing units (1), in which the air contained in the space (24) arranged between the panes of glass is at least partially replaced by a special gas, are produced by providing at least two interruptions (20), arranged at a distance from each other in the strands (13) of sealing or cementing compound. When filling the inner space (24) of the insulating glazing units with special gas, at least part of the gas is separated from the mixture of air and gas drawn off from the inner space (24) of the insulating glazing unit (1) and is stored. After a certain amount of gas has been stored, stored gas is used for filling the inner space (24) of insulating glazing units (1).

Probable Assignee: LISEC PETER

Earliest Publication Date: 19920527



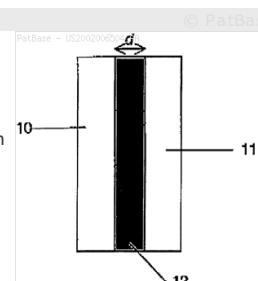
91) Family number: 28169331 (US2002006504A)

LAMINATED GLAZING MATERIAL

Abstract: Source: US2002006504A A laminated glazing material with properties of acoustic insulation and mechanical strength. The laminated glazing material including two glass sheets and a single-ply intermediate layer of a thickness having the form of a polymer film. The thickness of the intermediate layer being defined as a function of a variable which is specific to the material, and which defines the critical energy value of the intermediate layer and is representative of the energy necessary for propagation of a crack initiated in the intermediate layer.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20011107



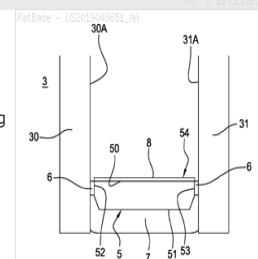
92) Family number: 67013766 (US2019048651A)

INSULATING GLAZING, IN PARTICULAR FOR A TEMPERATURE-CONTROLLED PIECE OF FURNITURE

Abstract: Source: US2019048651A An insulating glazing includes at least two substantially parallel glass sheets, which are spaced apart by at least one air- or gas-filled cavity forming a cavity internal to the glazing, a spacer, which is arranged at a periphery of the glass sheets and which keeps the two glass sheets spaced apart, and an adhesive bonding system arranged to fasten the spacer to each glass sheet via two of opposite fastening faces of the spacer, wherein the spacer includes, at least for one side of the glazing, a mirror-function reflective surface on an internal face of the spacer facing the internal cavity of the glazing.

Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 20170921



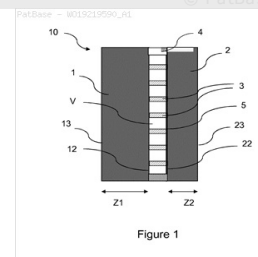
93) Family number: 76607803 (WO19219590A1)

ASYMMETRICAL VACUUM-INSULATED GLAZING UNIT

Abstract: The present invention refers to a vacuum insulating glazing unit (10) extending along a plane, P, defined by a longitudinal axis, X, and a vertical axis, Z; having a width, W, measured along the longitudinal axis, X, and a length, L, measured along the vertical axis, Z. The length of the vacuum insulating glazing unit, L, is equal to or greater than 300 mm, (L greater than or equal to 300 mm). The vacuum insulating glazing unit comprises: a. a first glass pane (1) having a thickness Z1, and a second glass pane (2) having a thickness, Z2, wherein the thicknesses are measured in the direction normal to the pane, P. The thickness of the second glass pane, Z2, is equal to or greater than 3 mm, (Z2 greater than or equal to 3 mm). Z1 is greater than Z2 so that a thickness ratio, Z1/Z2, of the thickness of the first glass pane, Z1, to the thickness of the second glass pane, Z2, is equal to or greater than 1.30 (Z1 / Z2 greater than or equal to 1.30), and greater than Z1 / (Z1 - 2.10) (Z1/Z2 > Z1 / (Z1 - 2.10)). The first glass pane and the second glass pane are float annealed glass panes and wherein the first glass pane has a coefficient of thermal expansion, CTE1, and the second glass pane has a coefficient of thermal expansion, CTE2, and wherein the absolute difference between CTE1 and CTE2 is at most 0.40 10⁻⁶/ degrees centigrade (|CTE1-CTE2| less than or equal to 0.40 10⁻⁶/ degrees C). b. a set of discrete spacers (3) positioned between the first and second glass panes, maintaining a distance between the first and the second glass panes and forming an array having a pitch, ?. The pitch, ?, is comprised between 10 mm and 26 mm (10 mm less than or equal to ? less than or equal to 26 mm). c. a hermetically bonding seal (4) sealing the distance between the first and second glass panes over a perimeter thereof. d. an internal volume, V, defined by the first and second glass panes and the set of discrete spacers and closed by the hermetically bonding seal and wherein there is a vacuum of absolute pressure of less than 0.1 mbar.

Probable Assignee: AGC GLASS EUROPE

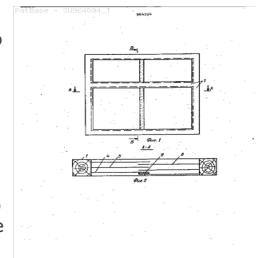
Earliest Publication Date: 20191121



94) Family number: 6588997 (SU964094T)

GLAZING BLOCK

Abstract: Source: SU964094T Invention relates to construction, namely the design of a window used for residential and office premises. Izvest.en double door window glazing unit with an additional inner side of the frame, which is attached to the frame and clamping bars with screws. Moreover, an additional third glass improves thermal insulation reduces noise 1J. It is also known window glass comprising a movable mounted in the guide grooves and fixed glass fixed on the frame. Wherein the glass is provided with a movable rod, which is formed on the end of through holes, and the actuator is configured as a pinch blocks pa and spring return. Window provided with clamping bars disposed at the outer tracks formed in the rails of W-shaped elements, 2j. A disadvantage of the known window is the inability bloKOB control value of the air gap according to the outside temperature and the external noise level. When cleaning the glass required dismantling paired leaflets; for the manufacture of the frame (sash) and gibs consumed a significant amount of materials and labor. Installing a third window also requires additional labor and materials (strips and screws, and attaching them to be screwed, etc.). Such designs are complex matermaloemki, laborious to manufacture and maintain. The purpose of the invention - to simplify the design and to ensure easy operation. This goal is achieved in 4to in windowed block including koeobku, sliding glass installed in the box and seal, installed between the panes, sealing fuse is provided with gabled ends elements for fixing it in the box, and the box around the perimeter accomplished by internal slots for additional glazing, raSpolagaemogo-sliding between the outer glass. Fig. 1 shows a window assembly outside appearance; Fig. 2 - once cut A-A in Fig. One; Fig.. W section B-B in Fig. One; Fig. k - construction sealant; Fig. 5 node I in Fig. 3. Window unit consists of one box inside which there are around the perimeter of the slots 2 and 3 - And in slots 2 installed exterior sliding glass sash-t; and in the grooves of the glass inner 3-fold 5 - Box 1 for internal sliding glass No. kami 5 is provided around the perimeter of the additional slots 6 and 7 which are set more | glass-8 sash. between panes in the flaps, set the seal 9, pointed metal Mechanical elements 10 which are fixed to the frame 1. installing window-sash 8 additional slots 6 and 7 Moyno find the desired width of the air gap. For example, in the winter (and when necessary to reduce the level will. Noise from the street), you can maximize the width of the air gap, ie window-sash 8 set in the grooves 6. seal 9 (shown in Fig. 3 is shown schematically in the outer cover) serves to reduce heat loss, noise and direct penetration of dust. To both sides of seal 9 is glued an insulating material 11. Sealing NITEL total thickness (with the insulating material) must correspond to the distance between the panes in the flaps. In upper portions of the set of grooves 12, the insulating material of the sponge, and the ridge grooves x, along the entire length, mounted waterproof insulating material 13 (Fig. 5) in order to dozh; c Eva is no water was collected in the grooves. However, since the water collecting in the small amount of inevitable for its retraction in the grooves on the outer bottom. all are made more grooves (not azans PA1). Opening windows is accomplished by moving the glass in the horizontal direction. If necessary, can be easily removed, the sash window. CLAIMS window unit comprising a box, sliding windows, installed in the recesses of the box, and a seal mounted between the panes of Whitlock ichayuschiys that for simplicity of design and ease of use is provided with a seal at the ends of pointed elements for fixing it in the box, and the box perimeter provided with internal grooves for additional glazing sandwiched between an outermost sliding windows. Sources of information received into account in the examination 1. Kirichenko NN Conserve heat. - Science and Life, 1978, ? 9, p. 118, 2. USSR Author's Certificate on Application ? 2658596/29-33, cl. E 06 B 3/2TS 1979. n1. /.. 1 9c / / , 7 / / / / have Fig.Z SW 9W Fig.It



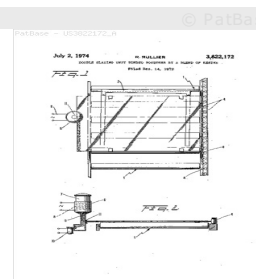
Probable Assignee: GRIGORYAN GRIGORIJ E

Earliest Publication Date: 19821007

95) Family number: 1082959 (US3822172A)

DOUBLE GLAZING UNIT BONDED TOGETHER BY A BLEND OF RESINS

Abstract: Source: US3822172A ABSTRACT OF THE DISCLOSURE A panel in the form of a double glazing un two sheets of glass spaced in parallel relation a to form a cavity, and bonded together by a blend having good adhesion to the glass and a comp efficient of expansion, said blend containing a ingredients an ionomer resin and a terpene este colophony ester and which may include addit butyl rubber or polyisobutylene and ethylene polymer, together with adjuvants including oxidant and an ultra violet filter agent and a method of making the laminate by applying of resins to the glass is included. The blend o: also disclosed. This application relates to improvements in' forming double glazing units comprising two sheets of glass joined together at their edges t sealed unit with an insulating space between The method of making such units by solder pieces directly to the periphery of the glass known. The technique has led to the production lent double windows, but the process is expe the product is often injured as the joint between and metal is weak and the glass and metal hay coefficients of expansion. Attempts have been made to form these doi of glass by using a glued joint. In one propose the glued joint is arranged to maintain the s] tween the sheets. This process requires the n ssbe firm when applied in the form of a putty. the materials proposed have lacked the neces: erties of having a good adherence to the glass water-resistant. The materials which have bee the past which had good adherence to the glas water resistance would not maintain the gap b sheets, but would collapse if applied in such ti maintain a desirable separation of the sheets. I necessary to space the glass sheets by onlj distance so that the thermal insulation values Only by forming a laminate having three shee could the desired insulating values be obta added to the cost and increased the weight of Another proposal was to form the doubl glass which would have sufficient water tig] resistance to cracking by making a joint in of a composite structure in which one elen serve to space the glass and another element part the necessary water resistance. In one ea sheets were spaced apart by means of a stra terial between the glass and the edges sealed a silicone resin or a polysulfide resin. The c have sufficient rigidity to maintain the sheets relation while the resins polymerized. This wa suming and often resulted in defective units. The present invention discloses materials permit the formation of the double panes of single continuous operation. The new materi following characteristics: 1. good adherence to the glass in the range of temperatures corresponding to the temperatures to which the glass ETHER may be exposed in use.



Probable Assignee: SAINT GOBAIN SA

Earliest Publication Date: 19730615

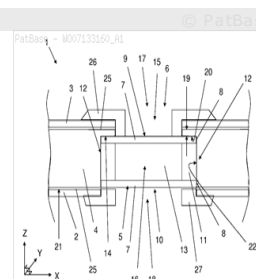
96) Family number: 34557074 (WO07133160A1)

A METHOD TO GLAZE A DOOR

Abstract: The present invention relates to a glazed door (1) comprising an insulating layer (4) and a glazing unit (5) set in an aperture (6) in the door (1). The invention is characterized in that the insulating layer (1) around the aperture (6) comprises a profiled section (14) designed to contain the glazing unit (5) in such a way that the profiled section (14) and the glazing unit (5) bear against one another and form a sealing bond.

Probable Assignee: JELD WEN SVERIGE AB

Earliest Publication Date: 20070529

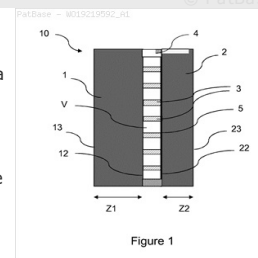


ASYMMETRICAL VACUUM-INSULATED GLAZING UNIT

Abstract: The present invention relates to a vacuum insulating glazing unit (10) extending along a plane, P, defined by a longitudinal axis, X, and a vertical axis, Z; having a width, W, measured along the longitudinal axis, X, and a length, L, measured along the vertical axis, Z. The length of the vacuum insulating glazing unit, L, is equal to or greater than 800 mm, (L greater than or equal to 800 mm) and the width of the vacuum insulating glazing unit, W, is equal to or greater than 500 mm, (W greater than or equal to 500 mm). The unit comprises: a) a first glass pane (1) having a thickness Z1, and a second glass pane (2) having a thickness, Z2, wherein the thicknesses are measured in the direction normal to the plane, P. The thickness of the second glass pane, Z2, is equal to or greater than 4 mm, (Z2 greater than or equal to 4 mm) and equal to or greater than $(? - 15 \text{ mm}) / 5$ (Z2 greater than or equal to $(? - 15 \text{ mm}) / 5$); wherein Z1 is greater than Z2 (Z1 greater than or equal to Z2). The thickness ratio, Z1/Z2, of the thickness of the first glass pane, Z1, to the thickness of the second glass pane, Z2, is equal to or greater than 1.10 (Z1 / Z2 greater than or equal to 1.10). The first glass pane and the second glass pane are float annealed glass panes; b) a set of discrete spacers (3) positioned between the first and second glass panes, maintaining a distance between the first and the second glass panes and forming an array having a pitch, ?. The pitch, ?, is comprised between 10 mm and 40 mm ($10 \text{ mm} < ? < 40 \text{ mm}$); c) a hermetically bonding seal (4) sealing the distance between the first and second glass panes over a perimeter thereof; d) an internal volume, V, defined by the first and second glass panes and the set of discrete spacers and closed by the hermetically bonding seal and wherein there is a vacuum of absolute pressure of less than 0.1 mbar.

Probable Assignee: AGC GLASS EUROPE

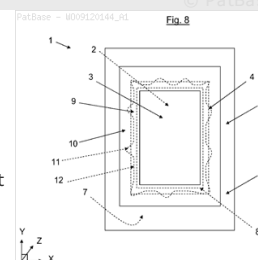
Earliest Publication Date: 20191121

**METHOD AND DEVICE FOR FITTING GLASS TO A DOOR**

Abstract: The invention relates to a method of glazing a door (1) comprising a first outer layer (5), comprising a first outer side (6) and a first inner side (7), a second outer layer (13) comprising a second outer side (14) and a second inner side (15) and an insulating layer (17) arranged between the first inner side (7) and the second inner side (15). The method comprises the steps. - To place a unit of glass (3) in one of the door (1) existing through opening (2). - To place a first strip (4) to abut against the unit of glass (3) and to abut against the door (1). - To attach the first strip (4) against the door (1) by means of that of the first strip (4) existing first flange (9) is placed by means of snapping against the first inner side (7) of the first outer layer (5) between the unit of glass (3) and the first outer layer (5). The invention also relates to a strip, a door and a door composition according to the method.

Probable Assignee: JELD WEN SVERIGE AB

Earliest Publication Date: 20090929

**INSULATING WINDOW UNIT**

Abstract: Source: US2017362882A An insulating window unit for a building including adjacent glazed panels linked to each other by at least one translucent connection element having a structural function, wherein each glazed panel is a multiple glazing unit including plural sheets of glass enclosing at least one closed space between the sheets and including at least one translucent seal along a connection edge of same facing the other adjacent glazed panel.

Probable Assignee: AGC GLASS EUROPE

Earliest Publication Date: 20160616

