Aug. 7, 1928. 1,679,632

R. A. SCHLEGEL

STORE WINDOW

Filed Sept. 1, 1926 2 Sheets-Sheet 1

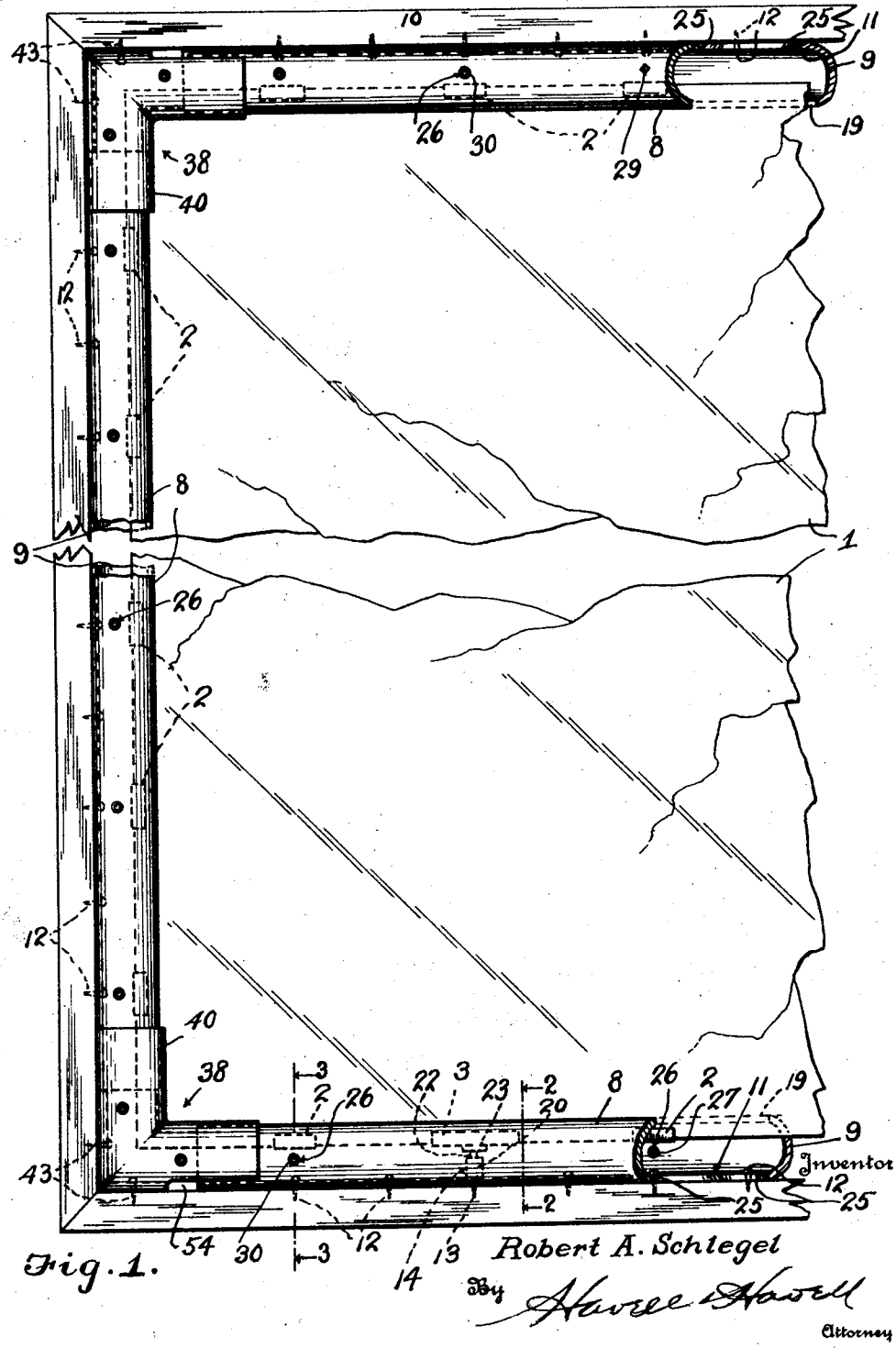


Fig. 1.

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STORE WINDOW

Filed Sept. 1, 1926 2 Sheets-Sheet 2

Fig. 2.

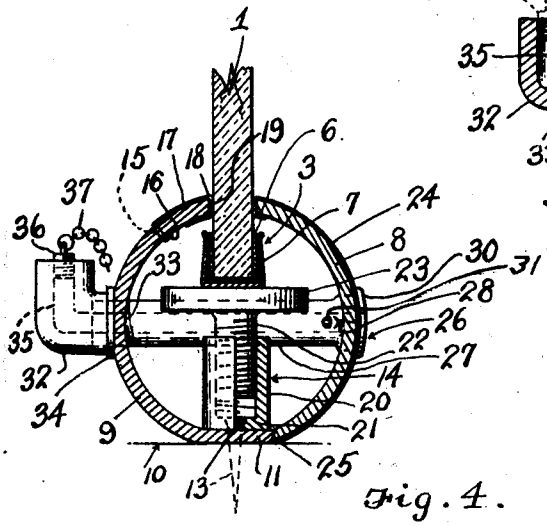


Fig. 3.

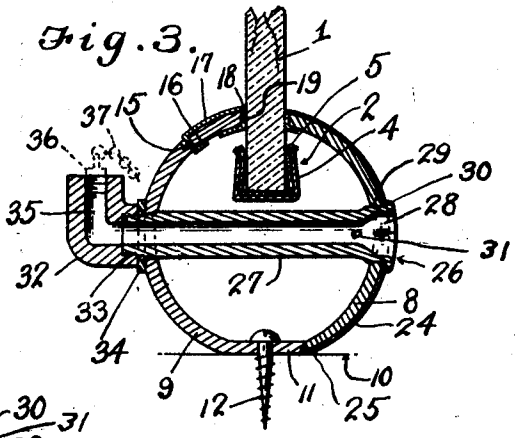


Fig. 5.

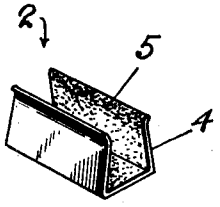


Fig. 4.

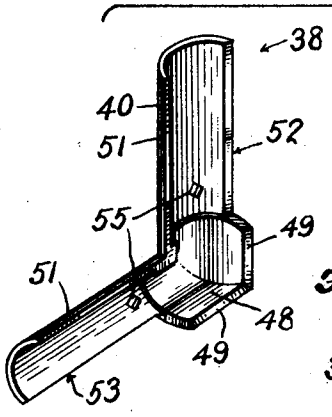


Fig. 6.

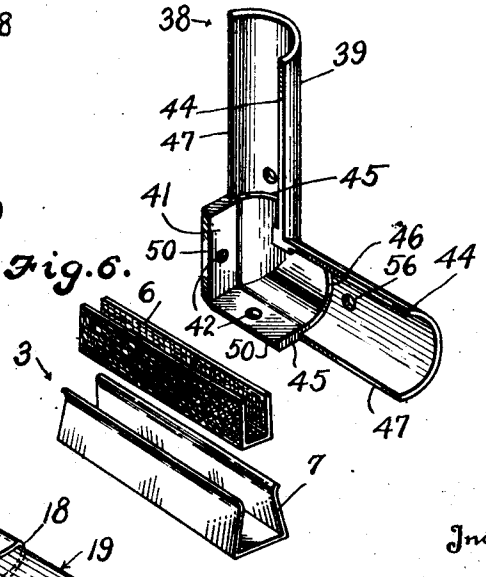


Fig. 7.

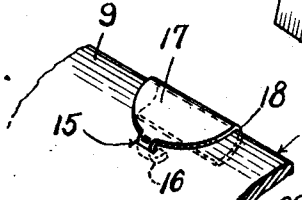
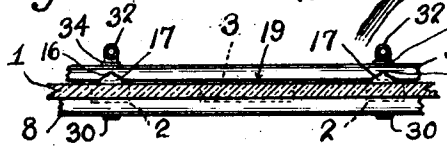


Fig. 8.



Inventor

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Patented Aug. 7, 1928. 1,679,632

UNITED STATES PATENT OFFICE.

ROBERT A. SCHLEGEL, OF WILLIAMSPORT, PENNSYLVANIA, ASSIGNOR TO WILLIAMSPORT MIRROR & GLASS COMPANY, OF WILLIAMSPORT, PENNSYLVANIA.

STORE WINDOW.

Application filed September 1, 1926. Serial No. 133,016.

This invention relates to improvements in store windows and more particularly to improved means for mounting and securing large sheets of glass in a store front window frame.

Where large panes of glass are used in store fronts, the glass is usually placed against a straight edge of the window frame, and metal clamping rails are attached to the frame and are used for securing the glass in place. The frame to which the metal rails are usually fastened sometimes causes breakage of the glass through warping. This warping is caused by moisture in the lumber and surroundings, and the warping is transferred to the glass through the flexible constructions now on the market, causing an unequal strain on the glass. Breakage, due to this, is usually laid to the settling of the building, which is not the fact.

An object of my construction, is to provide a firm, rigid setting for the glass, which will not be affected by any warping such as outlined above. A sheet of glass held firmly in a frame at its edges, will withstand a terrific pressure, providing it is held firmly on all four sides.

The purpose of my invention is to overcome such disadvantage by placing the sheet of glass in a firm fixed position and providing the same with metal protectors to reinforce it against lateral strains. In addition, these metal protectors are provided for holding the glass in place should breakage occur, as they will not allow the glass to slip or drop out of the frame, this resulting in greatly increased salvage.

I further provide improved adjustable metal setting bases, which, in connection with the metal setting protectors, greatly improves the construction and minimizes the danger of breakage during setting of the glass sheet. My object further in this construction, is to provide a strong substantial installation.

Another object of the invention is to furnish clamping rails of novel construction which will not only secure a glass sheet in place without breaking or cracking the latter, but will permit moisture from the glass to flow into the lower rail and to discharge from that rail by gravity. This feature will permit liquids used in washing the window to readily drain to the outside of the building and thus prevent any rusting or rotting, due to the accumulation of moisture within the rails or window frame.

A still further object is to provide the clamping rails with special hollow vent screws adapted to admit air from the exterior of the window into the space formed by the clamping rails, so as to ventilate the rails and prevent undue heating of the same by the rays of the sun. The inner clamping rails are preferably provided with sheet lead buffers or the like, adapted to contact with the inner surface of the glass, and spaced apart to provide vents to permit air from the interior of the rails to be discharged into the interior of the building.

A further object is to provide novel hollow vent nuts for the vent screws, each of said nuts having a plug to control the passage of air through the nut when the plug is removed so that air may readily flow from the exterior of the window through the hollow vent screw, and nut into the building, and such air may be used to prevent condensation on the inner surface of the glass.

Another object is to furnish special corner clamps designed to cooperate with the rails for clamping the adjacent ends of the same and furnishing a neat finish for the window.

With the foregoing objects outlined and with other objects in view which will appear as the description proceeds, the invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

Referring to the drawings:

Fig. 1 is a front fragmentary, partially sectional view of a store window frame provided with my improved means for securing a sheet of glass in position.

Fig. 2 is an enlarged vertical sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a similar view taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the two sections forming one of the corner clamps.

Fig. 5 is a perspective view of one of the metal protectors for the glass.

Fig. 6 is a similar view of another type of glass protector used with the setting bases.

Fig. 7 is a fragmentary perspective view

of one of the inner clamp rails, and showing one of the sheet lead buffers secured in position on the edge thereof.

Fig. 8 is a fragmentary horizontal sectional view of the window on a reduced scale.

Referring to the drawing, 1 designates a glass sheet which, for the purpose of the present invention, is provided along each of its edges with metal protectors designated 2 and 3. These protectors are preferably spaced about twelve inches apart and each protector 2, as best shown in Fig. 5, consists of a channel-shaped strip of metal 4, lined with gum or the like 5, for adhesive purposes.

At the points where the metal protectors 3 are arranged, the edge of the glass is preferably provided with a U-shaped strip 6 of adhesive tape, see Fig. 6, which is adapted to fit inside the protector 3. This protector is preferably formed of a channel-shaped strip of metal 7, and is longer than each of the protectors 2.

These protectors 2 and 3 in effect, form a metal-clad binder or border for the glass sheet and they tend to take up strains to which the glass is subjected in handling and putting the same in position.

The clamping rails which I have devised, preferably consist of semi-cylindrical, or semi-tubular outer rails 8, and inner rails 9. A pair of said rails might be made by splitting a tube longitudinally and then cutting and forming the sections into proper shape. I preferably employ four inner rails and four outer rails, the inner rails being secured to the frame 10 of the window.

As best shown in Figs. 2 and 3, each inner rail is provided at one edge with a flat or straight wing 11 having properly spaced apertures along its length to receive screws 12 and 13, the screws 12 functioning only to secure the inner rails to the window frame, but the screws 13 functioning in addition to hold the adjustable setting bases 14 in place, as will be described hereinafter.

The opposite edge portion of each inner rail forms the so-called "straight edge" against which the glass sheet abuts when placing the latter in the window frame. For the purpose of the present invention, each inner rail when it is manufactured, is provided about every twelve inches along its length with a slot 15, (see Figs. 7 and 8) adapted to receive the tongue 16 of a buffer 17. Each of these buffers is formed of some suitable material such as lead, and as it is in sheet form it is bent over the edge of the inner rail as shown at 18, so as to provide buffer or cushion surfaces about every twelve inches along the straight edge of each inner rail. These buffers not alone cushion the glass sheet, but they space the same from the edge 19 of each inner rail, the spaces permitting the circulation of air in a manner hereinafter described.

As before stated, adjustable setting bases 14 are arranged between the inner and outer lower rails to form a seat for the lower edge of the glass. Each setting base should be located from one-fourth to one-third the width of the glass from each end, convenient to the screw holes provided. Each of these setting bases consists of a socket 20 having internal screw threads and an apertured bottom 21, the latter receiving the screw 13 employed in connecting the adjustable setting base to the window frame. Each socket cooperates with a screw 22 having a head 23, the latter having a smooth upper surface on which the protector 3 rests. As the screw 22 may be readily adjusted in the socket 20, it is obvious that any slight inaccuracies in the dimensions of the glass sheet may be compensated for by means of these adjustable setting bases.

Each of the outer rails 8 is preferably clad on its outer surface with copper or the like as shown at 24, while the bases of the inner rails and outer rails may be made of some base metal such as galvanized iron. The outer surface of each outer rail may also be ornamented in any desired manner to suit the taste of the user. At the lines where the inner and outer rails contact, the edges are preferably inclined as shown at 25, so as to provide a snug fit and prevent moisture from seeping into the space or chamber formed by the rails.

The rails are clamped together by means of hollow vent screws 26, best illustrated in Figs. 2 and 3. Each of these screws consists of a tube 27 having a squared outer end 28 adapted to engage a square aperture 29 in the outer rail 8. Each outer rail may have these square apertures 29 arranged about every twelve inches along its length. The head of each vent screw is provided with a flange 30 conforming to the shape of the outer surface of the rail and contacting with said surface to prevent moisture or the like from seeping into the rails at the points where the apertures are arranged.

Each vent screw also has a port 31, so that air passing through the screw, in warm weather, for instance, may enter the space formed by the rails and may then discharge by way of the spaces formed between the buffers 17. In warm weather, when the sun heats the metal rails, a natural circulation of air will take place in this way, and this will tend to cool the rails and prevent undue expansion.

Each of the hollow vent screws is provided with a hollow vent nut 32, which is preferably angular in shape and is provided at one end with internal screw threads adapted to engage external screw threads on the screw as shown at 33. A suitable

washer 34 of leather, may be arranged between the nut 32 and the outer surface of the inner rail 9. The passageway 35 through each of the nuts 32 may be closed whenever desired, by means of a plug 36, which may be secured to the inner rail 9 by a chain 37. In winter when the condensation of moisture tends to take place on the inner surface of the glass, due to the difference between interior and exterior temperatures, the plugs 36 may be removed and then the air from the outside will pass through the hollow vent screws 26 and nuts 32 and into the building and will rise upwardly along the inner surface of the glass, so as to prevent such condensation taking place. Any condensation flowing downwardly on the glass, or any water flowing downwardly during washing of the glass may pass through the spaces between the buffers 17 into the interior of the rails, and will be discharged from this space by means hereinafter described.

The structure is completed by corner clamps 38, each of which consists of an inner section 39 and an outer section 40, see Fig. 4. The inner section is preferably provided with a thickened part 41 having an angular edge portion provided with apertures 42 to receive screws 43 employed in securing the inner section to the frame. If the rails are made in the cylindrical formation shown, then it is obvious that the thin arms 44 of the inner section must have their inner surfaces of the same configuration as the outer surfaces of the inner rails, so that the ends of the inner rails may fit into the corner clamps and abut against the shoulders 45 of the section 39. While the edge 46 of the section 39 may be made straight or in the same plane along both arms 44, the opposite edges 47 of said arms must be cut away to accommodate the flat or straight portions 11 of the inner rails.

Each section 40 of the corner clamp comprises a thickened part 48, the edge 49 of each is adapted to engage the edge 50 of the section 39 when the corner clamp is in position, it being obvious that this may take place due to the fact that the rails do not extend all the way to the corners of the frame 10. The thin arms 51 of the outer section are also cut away at 52 and 53, the cut-away part 52 accommodating the flat portion 11 of the inner rail, and the cut-away part 53 not only accommodating said flat portion of the inner rail, but also providing a drain opening 54, see Fig. 1. Due to this construction, any moisture gathering within the rails may gravitate to the exterior of the building.

Each corner clamp outer section has square apertures 55 to receive the square heads 29 of a pair of the hollow vent screws, and each section 39 has a pair of apertures 56 to receive the threaded ends of a pair of the vent screws.

From the foregoing, it is believed that the construction, operation and advantages of the invention may be readily understood, and I am aware that changes may be made in the details disclosed, without departing from the spirit of the invention as expressed in the claims.

What I claim and desire to secure by Letters Patent is:

1. A store window comprising a frame and a glass sheet, spaced substantially rigid channel-shaped metal protectors arranged around the edges of the sheet, soft yielding material lining said protectors, and means connected to the frame for clamping the edge portions of the sheet to the frame.

2. In a store window, a rail having a straight edge, and spaced ductile metal buffers interlocked with the rail and extending over the straight edge, a glass sheet contacting with said buffers, and means for holding the sheet in contact with the buffers.

3. A store window including a sheet metal rail provided with spaced slots and having a straight edge, ductile metal buffers extending over the straight edge and having tongues extending through the slots for securing the buffers in position, a glass sheet contacting with the buffers, and means for holding the sheet in contact with said buffers.

4. In a store window, a channel-shaped rail provided at one edge with spaced buffers and having its other edge flattened out and apertured, fastening elements extending through the apertures for securing the rail to a window frame, a glass sheet engaging said buffers, and means for holding the sheet in contact with said buffers.

5. A store window including a frame and a glass sheet, channel shaped protecting strips snugly embracing the edges of the sheet and spaced end to end, each of said protecting strips being substantially rigid longitudinally, and forming a reinforcement for the edge of the glass, and means for securing the glass sheet to the frame.

6. A store window including a frame and a glass sheet, substantially rigid reinforcing members embracing the edge of the glass sheet, the ends of each of said reinforcing members being spaced from the ends of adjacent reinforcing members, and means for clamping the edge portions of the sheet in the frame.

7. A store window comprising a frame and a glass sheet, substantially rigid metal protectors embracing the edges of said sheet, the ends of each protector being spaced from the ends of adjacent protectors, and means for securing the sheet to the frame.

8. A store window comprising a frame and a glass sheet, substantially rigid chan-

nel-shaped protecting strips arranged end to end, and embracing the edges of the sheet, the ends of each protecting strip being spaced from the ends of adjacent protecting strips, and means for securing the sheet to the frame.

9. A store window comprising a frame and a glass sheet, substantially rigid channel-shaped metal protectors embracing the edges of the sheet, and each having its ends spaced from adjacent protectors, and means connected to the frame for clamping the edge portions of the sheet.

In testimony whereof I affix my signature.

ROBERT A. SCHLEGEL.