

Sept. 3, 1940.

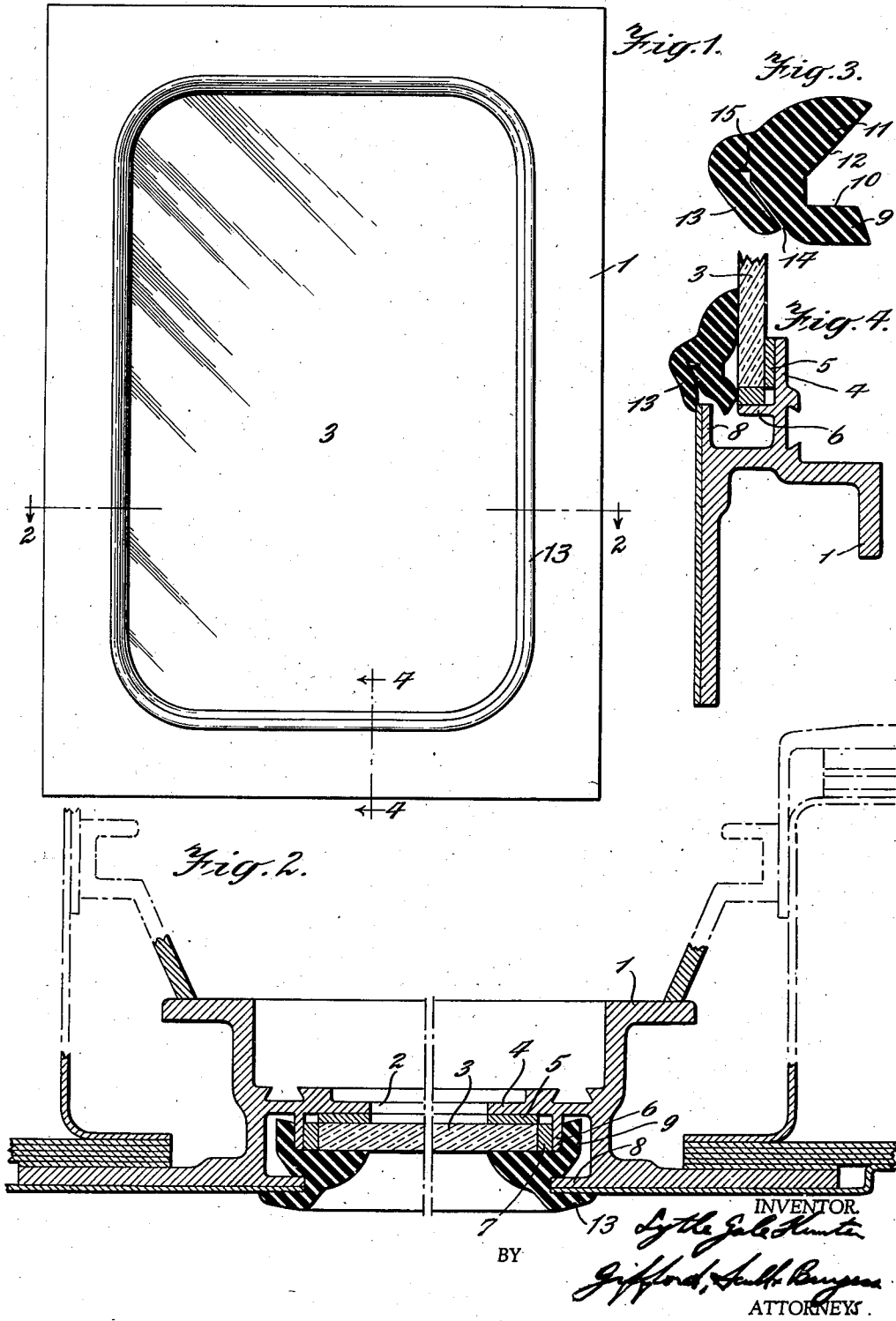
L. G. HUNTER

2,213,315

MOUNTING FOR PANEL

Filed Oct. 28, 1938

2 Sheets-Sheet 1



Sept. 3, 1940.

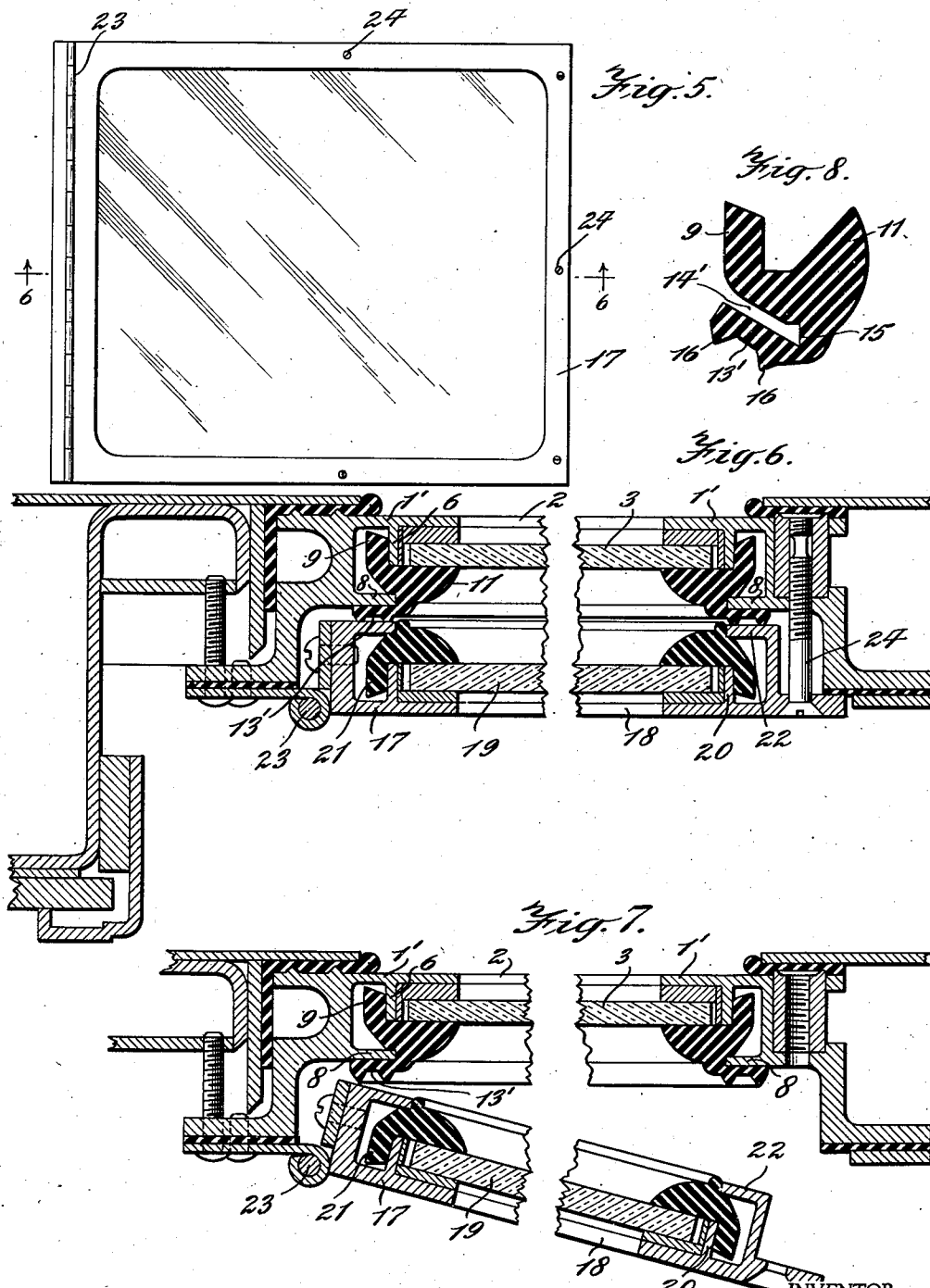
L. G. HUNTER

2,213,315

MOUNTING FOR PANEL

Filed Oct. 28, 1939

2 Sheets-Sheet 2



BY

INVENTOR.
Lytle Gale Hunter
Gifford, Smith & Company.
ATTORNEY.

UNITED STATES PATENT OFFICE

2,213,315

MOUNTING FOR PANELS

Lytle Gale Hunter, Flushing, N. Y., assignor to
Hunter Sash Company, Inc., Flushing, N. Y., a
corporation of New York

Application October 28, 1938, Serial No. 237,455

3 Claims. (Cl. 189—78)

This invention relates to a novel and improved form of mounting for panels, the novel features of which will be best understood from the following description and the annexed drawings, in which I have shown a selected embodiment of the invention and in which:

Fig. 1 is a face view of a frame having my invention applied thereto;

Fig. 2 is a section approximately on the line 2—2 of Fig. 1;

Fig. 3 is a cross-section of the rubber strip used in the practice of the invention and in its normal condition;

Fig. 4 is a cross-section approximately on the line 4—4 of Fig. 1 but showing the strip of Fig. 3 in the stage of being inserted in position;

Fig. 5 is a view similar to Fig. 1 but showing a different use of the invention;

Fig. 6 is a section approximately on the line 6—6 of Fig. 5;

Fig. 7 is a view on the same plane as Fig. 6 but showing certain of the parts in different positions;

Fig. 8 is a view similar to Fig. 3 but showing a slightly different form of strip.

The subject matter of this application represents certain improvements and developments of the invention of my prior Patent 1,891,932, in which is shown a rubber strip having a peculiar form and which has been found very successful in holding a panel in place in a sash or other frame. The invention of that patent has been found particularly useful in sashes for railroad cars, particularly the air-conditioned cars where a tight seal is necessary at the windows of the car. The form of strip illustrated in this application is of particular use with railroad car windows, either where a single panel is used or where a double panel is employed.

Referring first to Figs. 1, 2, 3, and 4, wherein I have shown the invention as used with a single panel, I have indicated a frame 1 which may be a window sash of any suitable form and which has therethrough an opening 2 closed by a panel 3 which normally will be of glass. For the sake of convenience, the center of the panel will be taken as a reference point and the structure will be described with reference thereto, using the word "outwardly" as meaning a lateral direction from the center of the panel and substantially in the plane thereof. The outside surface of the panel will be referred to as its face and the inside surface thereof as its back. It will be understood, of course, that these terms are merely used relatively and not in a limiting sense.

The panel 3 is preferably larger than the opening 2 which it closes, and it bears against the backing member 4 of the frame, being separated therefrom by a suitable cushioning member 5. Outwardly of the panel the frame is provided with a peripheral shelf 6 which is shown as being spaced from the edge of the panel by a cushion 7. Disposed in front of the panel and spaced from the adjacent edge of the shelf 6 is a member 8 which, with the shelf 6, defines a throat through which is forced the foot 9 of a strip of rubber. The material of the strip should be resilient and compressible, and soft rubber is the best known material for the purpose. Therefore, for the sake of convenience of expression, I shall define the strip as "rubber," although it is to be understood that any other material which may be found applicable may be employed in place of rubber.

The foot 9, as shown in Fig. 3, has a surface 10 which engages on the outward surface of the shelf 6. The strip is also provided with a head 11 having a surface 12 normally forming an acute angle with respect to the surface 10, as shown in Fig. 3. The strip is forced through the throat in some such manner as shown in Fig. 4 and as more fully shown in my aforesaid prior patent, and the result is that the surfaces 10 and 12 are forced to take a position at about right angles to each other, as shown in Fig. 2, thus setting up an internal compression and a distortion of the section, which greatly aids in holding the panel in place. Substantial compression, both internal and external, is present in the strip between the shelf 6 and the member 8 and between the face of the panel adjacent its edge and the member 8.

While under many conditions a thoroughly effective seal is provided with the arrangement described above and shown in my aforesaid patent, nevertheless I find that in some situations a more effective seal is obtained by providing the strip with a skirt 13 integral with the head and extending adjacent the foot but separated therefrom by a narrow slot 14. This slot terminates at an end wall 15 which is adapted to engage the edge of the member 8.

In operation, the panel is put in position against the cushions, and then the foot of the strip is inserted through the throat and at the same time the lower edge of the skirt is bent outwardly in some such manner as shown in Fig. 4, so that it will slide down the front face of the member 8. In so doing, the skirt 13 and the foot 9 are separated, thus setting up a further compression in the strip which will cause the skirt to be forced

tightly against the face of the member 8 and will also probably add to the pressure against the face of the panel. As set forth in my aforesaid patent, the foot will press securely against the outer surface of the shelf 6, and a pressure will be exerted against the member 8 which, in connection with the pressure of the skirt 13, will insure a thoroughly tight seal between the frame and the panel.

The structure described above has been found to be particularly useful where the skirt is disposed on the outside of a window on a railroad car, and it has also been found useful in the situation illustrated in Figs. 5, 6, and 7.

Referring to these figures, I have shown the invention as used in connection with a double panel wherein a frame 1' of any suitable construction may have a panel 3 mounted therein in the same general manner as described above. Similar parts have been given similar numerals in these figures and their details will not be described a second time. In this particular instance, however, I have shown the strip as having a slightly wider slot 14', and I have shown the skirt 13' as provided with two ribs 16' extending lengthwise thereof, for a purpose which will presently appear.

Hinged to the frame is a sash 17 having an opening 18 shown as in line with the opening 2 and which is closed by a panel 19. The sash has a peripheral shelf 20 corresponding in function to the shelf 6, and the panel 19 is held in place by a rubber strip 21 which may be of a form of strip shown in my aforesaid prior patent. Likewise, the strip 21 is held in place between the shelf 20 and a member 22 which, with the shelf 20, forms a throat acting in the same way as the throat between the shelf 6 and member 8.

Preferably, the members 8 and 22 are parallel and closely adjacent each other, and the skirt 13' is disposed in the space between these members. The sash is hinged to the frame along one edge of the sash, as indicated at 23, and along the other edges of the sash it may be tightly secured to the frame as by screws 24. The space between the members 8 and 22 is so designed with respect to the hinge and the screws that when the screws are tightened the skirt 13' will be compressed, this compression being enough to form a tight seal for the space between the panels 3 and 19. I have found that I can get the desired sealing effect by means of one or more of the ribs 16 extending lengthwise of the strip, and since this strip usually extends completely around the panels, a tight seal is provided between the members 8 and 22 throughout their lengths.

I found that this construction is particularly advantageous where air-conditioned cars are used. With such cars it is thought desirable to have two panels providing an air space therebetween. Trouble has been experienced, however, in preventing moisture from entering such space, but with this invention a tight seal is provided which will effectively prevent moisture from getting in between the panels. Similarly, when for any reason, for example cleaning the panels, it is de-

sired to obtain access to the space between the panels, this may be readily done by taking out the screws 24 and moving the sash outwardly on its hinge, as shown in Fig. 7. Then, after the glass panels are cleaned, the sash may be swung back into position and secured. Then, if desired, the air between the panels may be conditioned in any known way, such, for example, as the way illustrated and claimed in the copending application of Fenley Hunter, Ser. No. 69,640, filed March 19, 1936. The details of such conditioning means is not necessary to an understanding of the invention claimed herein and therefore they have been omitted from this application.

Another advantage of the use of the skirt 13 or 13' is that it not only acts as a seal but also covers any inaccuracies in the edge over which it extends. This edge may be formed of several layers of material, as indicated, and the edges of the layers may not be in line with each other, but nevertheless the skirt will effectively cover all of them and furnish an effective seal.

While I have shown the invention as embodied in a specific form, it is to be understood that various changes in details may be made without departing from the scope of the invention, as defined by the appended claims.

I claim:

1. In combination, a frame having an opening therein, a panel disposed in said opening, said frame comprising a member in front of said panel adjacent the edge thereof and spaced therefrom, a rubber strip compressed between said panel and said member, a backing against which said panel is forced by said compression, said strip having thereon an integral foot and skirt normally separated from each other by a narrow slot in the strip, said foot being received in a recess in the frame outwardly of the edge of the panel and said skirt being disposed against the face of said member and thus forced away from said foot.

2. In combination, a frame having an opening therein, a panel disposed in said opening, said frame comprising a member in front of said panel adjacent the edge thereof and spaced therefrom, a rubber strip compressed between said panel and said member, a backing against which said panel is forced by said compression, said strip having a head, foot and skirt integral therewith, said head having a surface engaging the face of said panel adjacent the edge thereof and said foot having a surface disposed outwardly adjacent the edge of said panel, said surfaces normally making an acute angle with respect to each other but when in place being forced away from each other, said skirt normally being closely adjacent said foot but when in place being disposed against the face of said member and thus forced away from said foot.

3. A strip of resilient rubber adapted to hold a panel in a frame and comprising a head and a foot having surfaces at an acute angle to each other and a skirt integral with the head and extending adjacent the foot but separated therefrom by a narrow slot.

LYTLE GALE HUNTER.