

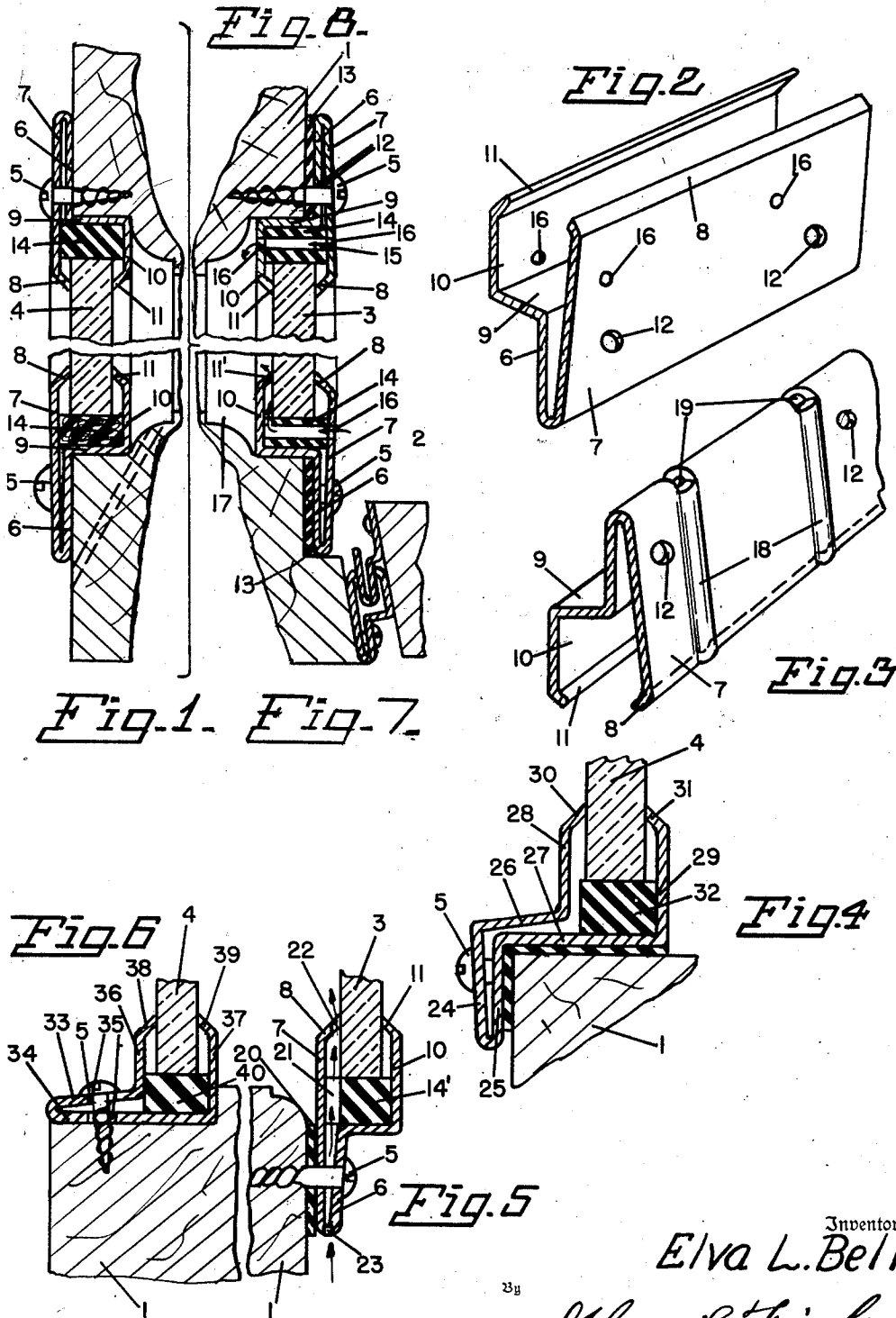
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WINDOWPANE SECURING STRIP

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WINDOWPANE SECURING STRIP

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This invention relates to a window sash and more particularly to strips for securing panes of glass in window sashes, it being one object of the invention to provide strips by means of which the window panes may be firmly held in place and easily removed when they become broken and have to be replaced.

Another object of the invention is to provide strips of such construction that they may be applied to edge portions of a pane of glass with the said edge portions of the pane disposed between the jaws which are held in gripping engagement with the inner and outer faces of the pane by screws which serve to secure the strips firmly in place against a window sash.

Another object of the invention is to provide strips in which are mounted packing strips which are formed of soft rubber and permit expansion and contraction of the glass pane in response to heat and cold and thus prevent the glass panes from being cracked by expansion.

Another object of the invention is to provide strips of such construction that they may be each formed from a single sheet metal blank, certain of the strips being formed with openings with which openings formed through packing strips register so that air may flow through the registering openings into and out of space between inner and outer panes of a storm window and provide a good heat insulation for the window sash.

Another object of the invention is to provide securing strips which are simple in construction and capable of being manufactured at low cost.

The invention is illustrated in the accompanying drawings wherein:

Fig. 1 is a vertical sectional view showing strips of the improved construction mounted against the outer face of a window sash and a pane of glass held in place by the strips.

Fig. 2 is a perspective view of a portion of one of the strips shown in Figure 1.

Fig. 3 is a perspective view of a portion of a strip of modified construction.

Fig. 4 is a sectional view taken transversely through another modified form of strip applied to a window sash and gripping a window pane.

Fig. 5 is a view showing another form of securing strip in transverse section and applied in position for use.

Fig. 6 is a sectional view of still another form of strip.

Fig. 7 is a vertical sectional view of the transom of a window showing a modified strip securing an inner pane to the sash.

Fig. 8 is a vertical sectional view of a top bar

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of a window sash showing a further modified strip securing an inner pane to the sash.

The window sash which is indicated in general by the numeral 1 consists of the usual side rails and upper and lower cross rails. A portion of a lower sash 2 has been shown in Figure 1 and it will be understood that each sash is provided with inner and outer glass panes 3 and 4 which are held in place by strips of the improved construction. These strips are mounted along inner margins of the side rails and upper and lower rails and each has inner and outer jaws between which marginal portions of the pane are disposed so that when screws 5 are applied and tightened to secure the strips to the sash the pane will be gripped between the jaws and firmly held in place. The sash in Figure 1 has been shown provided with inner and outer panes which are spaced from each other to form a storm window, but it will be understood that the sash may be provided with a single pane if so desired.

The strips shown in Figure 1 are each formed as shown in Figure 2, and referring to this figure it will be seen that the securing strip is formed from an elongated strip of sheet metal, or other suitable material, which is bent intermediate its width to form leaves 6 and 7. The leaf 7 is disposed in diverging relation to leaf 6 and is flat throughout its width except for its free edge portion which is bent inwardly at an incline to form a lip 8 extending its full length. The leaf 6 extends in diverging relation to leaf 7 for approximately one-half the width thereof and is then bent outwardly to form a laterally extending ledge 9 from which projects a flange 10 having its free side edge portion bent to form a lip 11 disposed opposite the lip 8. The ledge 9 forms the side wall of a pocket having inner and outer walls formed by the flange 10 and the free side portion of the leaf 7 projecting beyond ledge 9. Oppositely disposed openings 12 are formed in the leaves 6 and 7 to receive the screws 5, and from an inspection of Figure 1 it will be seen that when the screws 5 are passed through these openings and into the sash 1 and tightened the leaf 7 will be forced towards leaf 6 until the pane of glass is gripped between the lips 8 and 11 of the inner and outer side walls which may be referred to as pane-engaging jaws. Therefore the screws serve to hold the jaws in gripping engagement with the glass pane as well as serving to secure the strip against the sash. The leaf 6 may have direct engagement with the surface of the sash, as shown at the left of Figure 1, or a strip of rubber 13 may be fitted between the sash and the leaf 6, as shown

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at the right of this figure, and serve as a packing or cushion for the strip and prevent cold air or rain water from leaking inwardly between the strips and the side rails and cross rails of the sash.

Edge faces of the glass pane are engaged with thick rubber strips or packing 14 fitted into the strips between the flanges 10 of their leaves 6 and opposed portions of the leaves 7 and serve as cushions for the glass pane and also as sealing strips.

These packing strips 14 may be solid for their entire length or they may be formed with bores or openings 15 which register with openings 16 formed in the leaves of the strips and thus form air passages which communicate with space 17 between the inner and outer panes 3 and 4. If the packing strips are solid dead air spaces will be formed between the glass panes and if the sealing strips of the inner or outer pane are formed with the openings air will be allowed to flow through them and thus keep the space filled with live air. If so desired openings 16 in the flange 10 may be omitted and notches 11' formed in the lip 11 to insure an air passage.

In Figure 3 there has been illustrated a securing strip of modified formation. This strip is in most respects of the same construction as that shown in Figures 1 and 2 and corresponding parts have been indicated by the same reference numbers. It will be noted, however, that the openings 16 are omitted and solid packing strips are fitted into this type of securing strip. In order that air may flow into and out of space between inner and outer window panes this form of strip has its leaf 7 formed with a suitable number of channels 18 which are spaced from each other longitudinally thereof and have open inner and outer ends, the inner ends communicating with slots or recesses 19 formed across interconnected inner side edges of the two leaves 6 and 7 and outer ends of the channels opening through the junction of the leaf with its lip 8. This form of strip is mounted against a sash the same as that shown in Figure 1 and air flows through the channels 18 into and out of space between the window panes.

Fig. 5 shows a pane securing strip which is similar to that shown in Figures 2 and 3 but is applied to the window sash with its leaf 7 disposed towards the side face of the sash instead of having the leaf 6 confronting the sash and its ledge 9 projecting into the pane-receiving opening of the sash. The leaf 7 may have direct engagement with the sash or a strip of rubber 20 may be disposed between this leaf and the sash and form a tight joint. Openings 21 are formed through the rubber strip 14' in alignment with openings 22 and 23 formed in the lip 8 and at connected side edges of the two leaves and cooperate therewith to form air passages so that air may flow through the securing strip into and out of space between inner and outer panes of the sash.

Figure 4 shows a pane securing a strip which is applied in a manner different from the strips shown in Figures 1 and 5. In this embodiment of the invention the leaves 24 and 25 are bent to form laterally extending portions 26 and 27 which are in their turn bent to form flanges 28 and 29 terminating in diagonally disposed lips 30 and 31.

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The flanges 28 and 29 and the portion of the section 27 of leaf 25 extending between them cooperate with each other to form a pane-receiving socket in which the sealing strip 32 is fitted. When this form of securing strip is in use the leaf 25 and its laterally extending portion 27 are fitted to the sash, as shown, and the screws 5 passed through aligned openings in the leaves. When the screws are tightened the leaf 24 is forced towards leaf 25 and this causes the flange or wall 26 to be moved towards the flange or wall 29, thus causing the glass pane to be gripped between the lips 30 and 31.

The securing strip shown in Figure 6 is also formed of sheet metal and has leaves 33 and 34 which are formed with openings 35 to receive the screws 5. The leaves 33 and 34 are shorter than the leaves 24 and 25 and are bent to form flanges 36 and 37 which correspond to the flanges or walls 28 and 29 and have diagonally extending lips 38 and 39 along their free side edges for gripping the glass window pane which fits into the socket, formed by the flanges 36 and 37 and the portion of the leaf 34 projecting beyond the flange 36, and rests against the elastic strip 40. The window sash may have a single glass pane secured by strips of the construction shown in Figure 6 or as shown in Figure 4 or Figure 5 or two panes may be used with one secured as shown in Figure 6 and the other as shown in Figure 5 to form a storm sash.

Having thus described the invention, what is claimed is:

A window pane fastener comprising an elongated strip folded transversely and forming leaves upwardly diverging toward their free side edges and formed with opposed openings through which screws are adapted to be passed to secure the strip against a window sash and force the leaves toward each other to a window pane securing position, one of said leaves having a portion bent outwardly at right angle to form a laterally extending ledge adapted to be supported by the inner face of a window sash and carry the weight of a glass and thence bent upwardly and together with the companion leaf defining jaws and a pocket between the jaws, an elastic packing strip extending longitudinally in said pocket in position for engagement with the edge face of a marginal portion of a window pane fitted into the pocket, diagonal lips along free side edges of said leaves and extending towards each other in position for gripping opposite inner and outer faces of the window pane when the screws are tightened, perforations in the jaws of the pocket, and transversely extending openings in the packing strip and registering with the perforations and constituting air vents.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,982,351	Phillips	Nov. 27, 1934
2,117,581	Stoneback	May 17, 1938
2,191,500	Rosling	Feb. 27, 1940
2,266,235	Mollard	Dec. 16, 1941
2,266,973	Horton	Dec. 23, 1941
2,449,264	Wilkinson	Sept. 14, 1948
2,565,937	Verhagen	Aug. 28, 1951