Jan. 23, 1951 C. R. MEEK 2,538,976

WEATHERSTRIP FOR DOUBLE GLAZED WINDOWS

Filed Feb. 12, 1947 3 Sheets-Sheet 1

FIG. 1

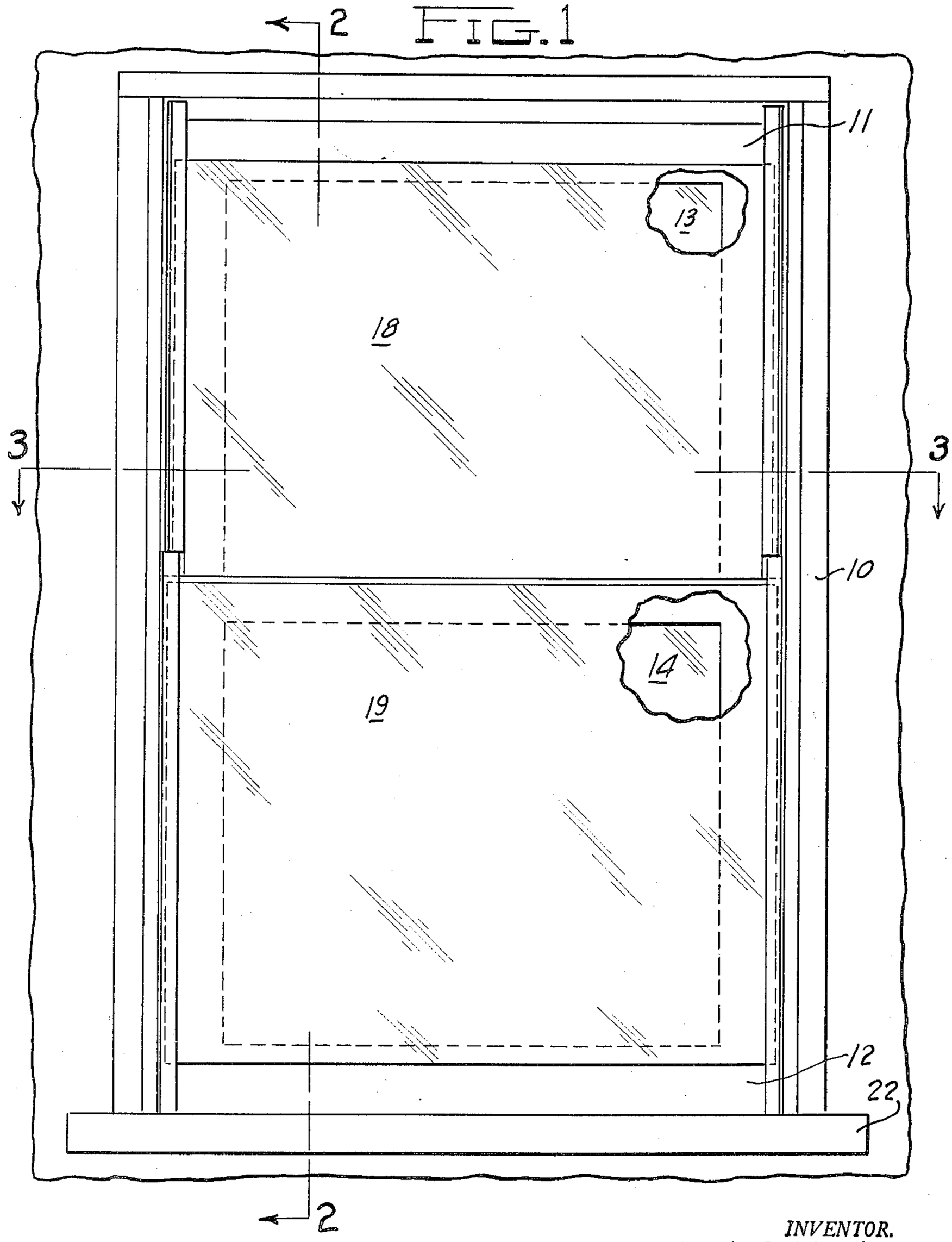

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FIG. 2.

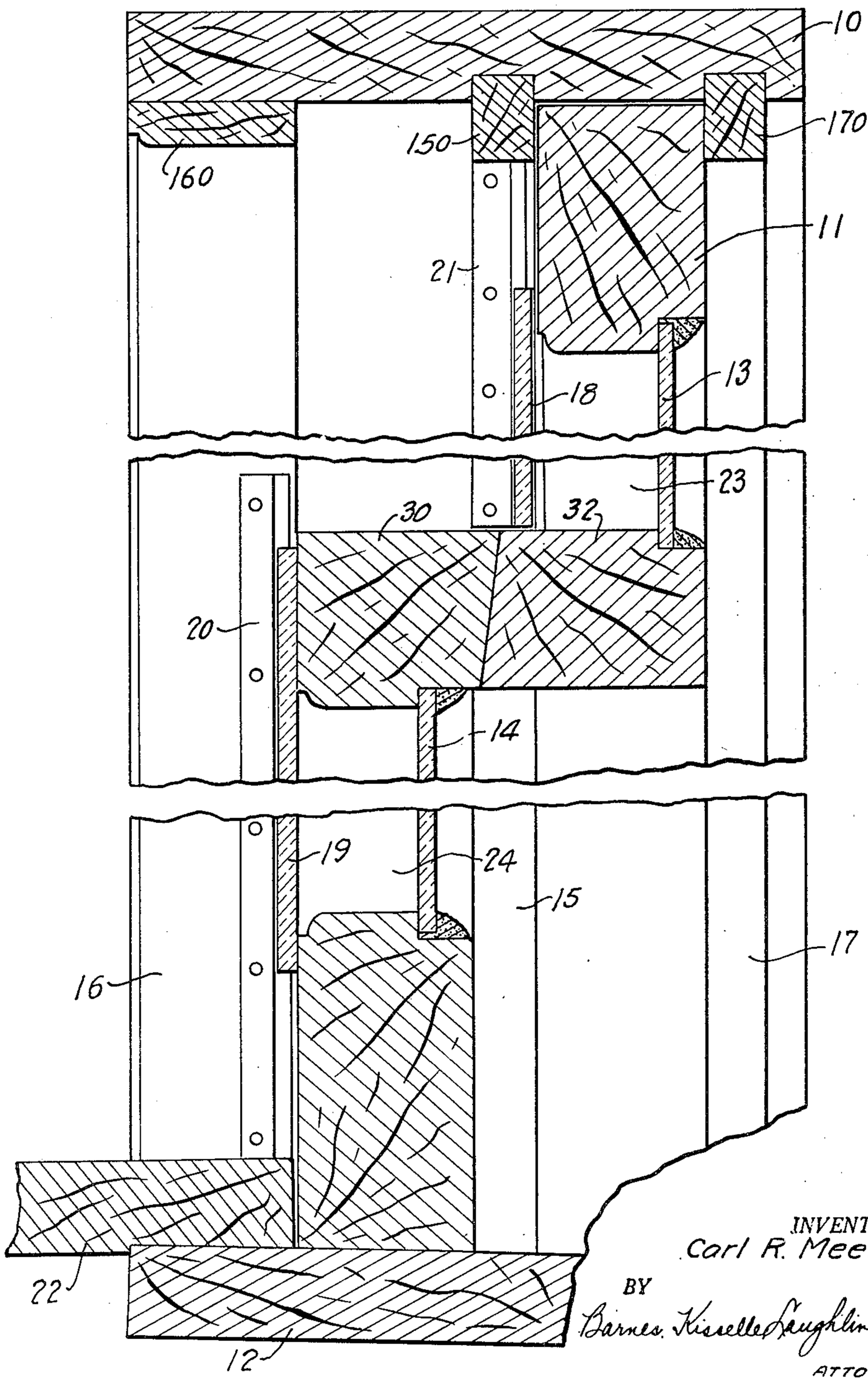

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FIG. 3.

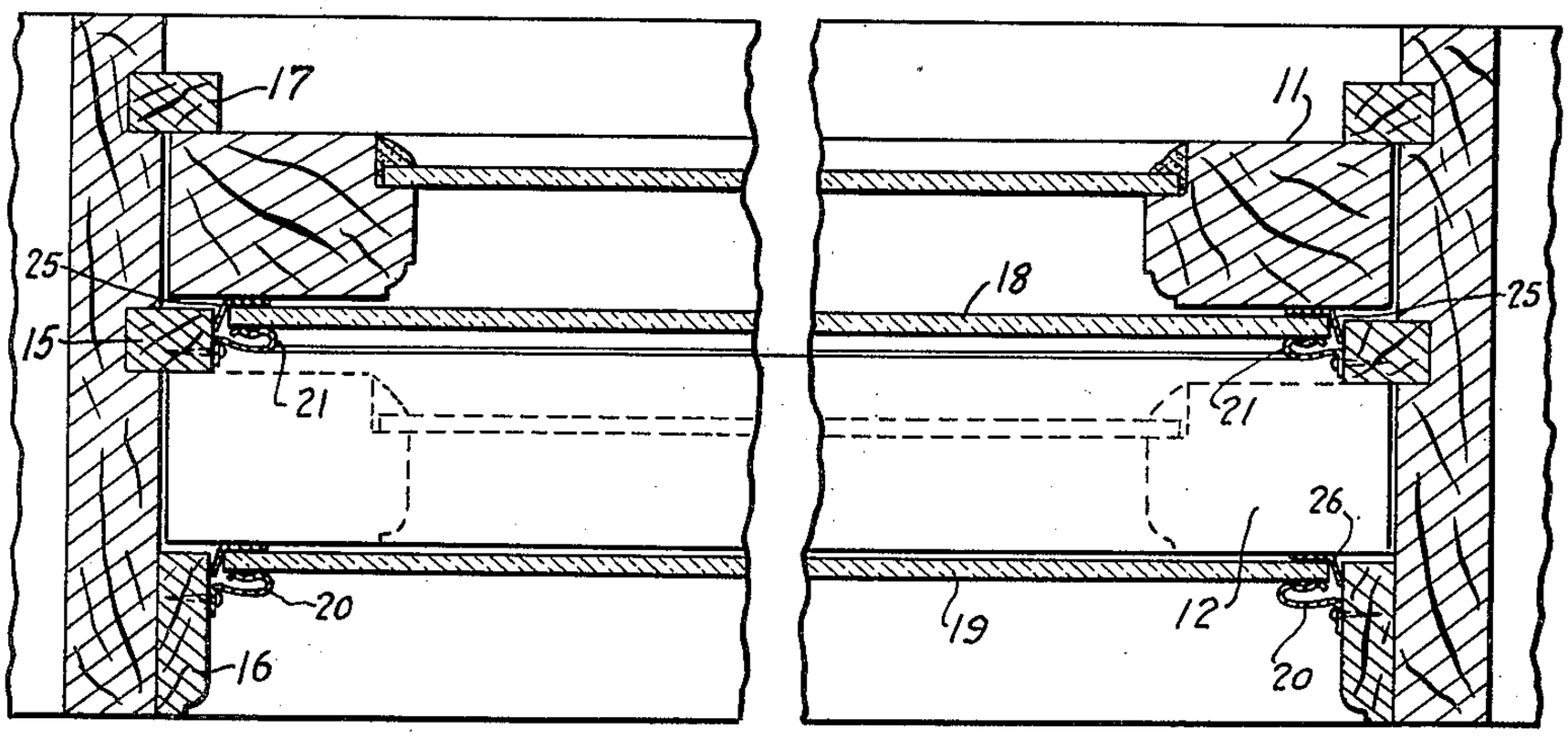


FIG. 4.

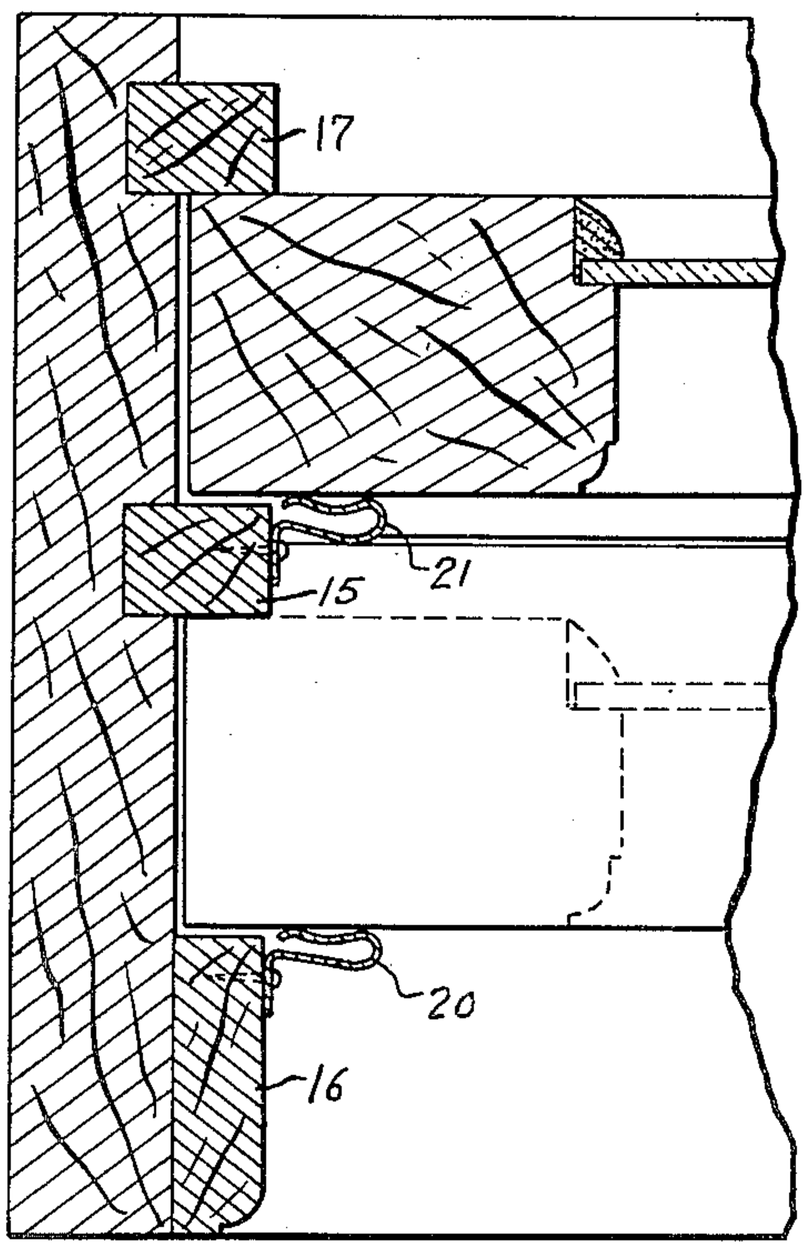


FIG. 5.

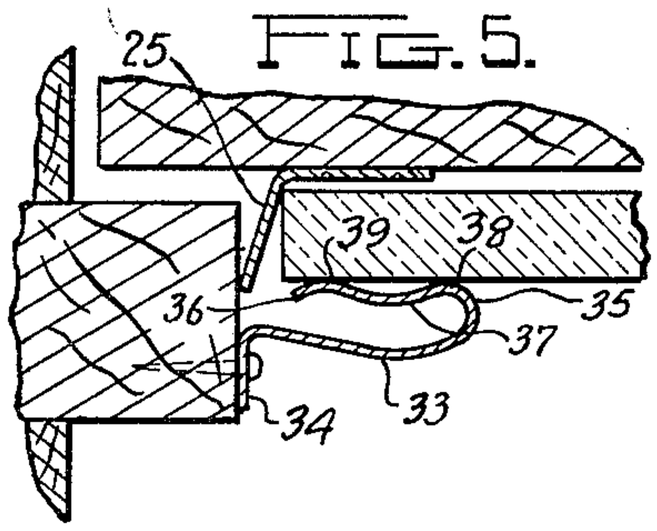
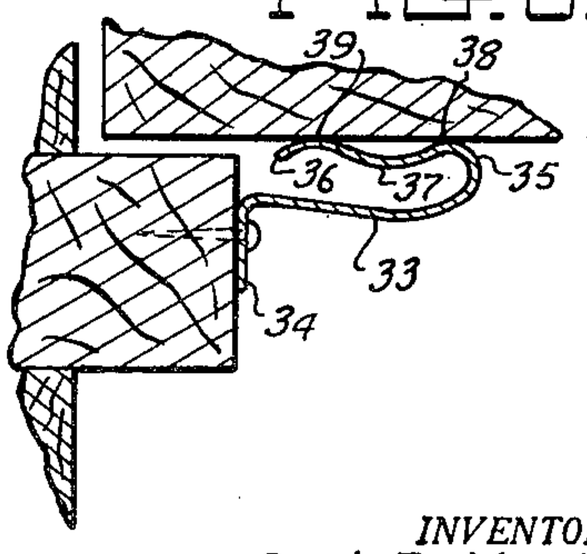


FIG. 6.



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WEATHER STRIP FOR DOUBLE GLAZED WINDOWS

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6 Claims. (Cl. 20—69)

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The invention relates to weatherstripping and more particularly to weatherstripping in the form of double glazed windows.

It is an object of this invention to increase the insulative qualities of a window by applying an extra pane of glass directly to a window sash.

This invention contemplates means for retaining an additional pane of glass against one side of a sash which also serves to seal the sash within the frame and thereby prevent the passage of air therethrough.

Still another object of the invention resides in the application of an extra pane of glass on a window sash in a manner which renders its installation wholly accessible from the inner side of the window. It can however be installed on the outer side of the window if desired.

Other objects and improvements in the way of construction will become evident from the following description and drawings in which

Fig. 1 is an elevational view of a window weatherstripped in accordance with my invention.

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1 illustrating the arrangement of glass panes and glass retainers utilized by my invention.

Fig. 3 is a sectional view taken along line 3—3 of Fig. 1 showing a horizontal cross-section of the window and incorporating a slightly modified construction.

Fig. 4 is a partial cross-section of the construction shown in Fig. 2 with the additional panes of glass removed.

Fig. 5 is an enlarged sectional view of a portion of the structure shown in Fig. 3.

Fig. 6 is an enlarged sectional view of a portion of the structure shown in Fig. 4.

For the purposes of illustration I have shown in the drawings the application of my invention to a conventional double hung window of wood construction. In the frame, generally indicated as 10, are hung upper and lower sashes 11 and 12, respectively, which are glazed in any conventional manner with glass panes 13 and 14. The sashes are slidably retained within the frame in spaced relationship by means of a vertical sash divider 15 at each side of frame 10 and inner and outer guides 16 and 17, respectively. Similar inner and outer guides 160 and 170, respectively, together with a divider strip 150 extend across the upper end of frame 10.

It is not uncommon to find in a window of this type that in order to allow for contraction and expansion of the wood, the sashes fit in the guides of the frame somewhat loosely and provide passages for the seepage of cold air during the winter months. To correct for this condition, as well as increase the insulative properties of window

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pane itself, my invention contemplates applying additional panes of glass 18 and 19 resiliently against the upper and lower sashes 11 and 12, preferably on the inside of the sash. As is best shown in Fig. 3, pane 19 is retained against lower sash 12 by means of resilient metal retainers 20 which are nailed or otherwise secured to the upright guides 16 at the inner edges of frame 10. Pane 18 is likewise retained against the inner surface of sash 11 by similar resilient strips 21 which are secured to divider 15 at each side of the frame.

As is shown more clearly in Fig. 2, retaining strips 20 extend from the stool 22 at the bottom of frame 10 up beyond the upper edge of sash 12 and retainer 21 extends from the top of the frame to the lower edge of sash 11. These strips are secured to their respective members so as to press the sashes along their entire length against their outer guides, that is, the force or pressure exerted by strip 20 tends to seal the joint between sash 12 and divider 15 and strip 21 causes sealing of the joint between sash 11 and guide 17, as is best shown in Fig. 4. In addition, strip 20 presses parting member 30 of sash 12 against the cooperating parting member 32 of sash 11 and effectively seals the joint therebetween.

In Fig. 3 I have also shown a modified construction which, although not essential, serves to further restrict the seepage of air between the sashes and the frame. In this construction additional resilient strips 25 and 26 are secured along the inner vertical edges of sashes 11 and 12 so as to bear against guides 15 and 16, respectively, and thereby seal the joint between these guides and the sashes.

It will be observed that in addition to the effective seal obtained between the sashes and the guides, the insulative qualities of the window are further increased by the completely enclosed air pockets 23 and 24 which are formed by inserting pane 18 between sash 11 and retainer 21 and pane 19 between sash 12 and retainer 26. Panes 19 and 18 are shown to be somewhat shorter in height than their respective sashes. This is provided for to permit ready removal of the panes without removing strips 20 and 21. Pane 19 may be removed from sash 12 by simply sliding it upwardly until its lower end clears the upper end of sash 12 and retainers 20 and then withdrawing it from the frame aperture above sash 12. Upper pane 18 may be removed with equal facility. This is accomplished by raising sash 12 to the upper end of frame 10 and lowering sash 11 to the lower end of the frame. Since pane 18 is movable with sash 11, it slides downwardly below retainer 21 and may be withdrawn through the frame aperture normally closed by sash 12.

By way of description rather than limitation,

I have shown in Figs. 5 and 6 a particular form of retainer strip which I have found to be most satisfactory for the purpose of exerting pressure against a sash and retaining a glass pane thereon. Essentially it consists of a resilient U-shaped member one leg **33** of which is flanged outwardly as at **34** to provide means for conveniently securing the strip to a window guide. The free leg **35** is bent inwardly at the free end **36** and the central portion **37** for the purpose of obtaining line contact with the glass at points **38** and **39**.

It will thus be seen that the weatherstripping means which I have provided are of simple construction and yet will materially increase the insulative qualities of a window. By employing retainer strips as described, the panes may be easily installed or removed as desired and may even be retained on the window the year around since they may be raised and lowered with the sashes and therefore will not interfere with opening and closing of the window.

I claim.

1. In a window construction comprising a frame having marginal guides for retaining a sash therein, insulating means comprising resilient members mounted on said frame and having leg members overlying exposed surface portions of said sash and a pane of glass between said resilient leg members and said sash, said pane of glass being pressed by said resilient leg members against the inner face of said sash and cooperating with said sash to form an enclosed air chamber between the glazing of said sash and said pane of glass, said resilient leg members exerting pressure against said sash in a direction normal to the plane of said sash whereby said sash is sealed against said marginal guides.

2. In a window construction comprising one or more glazed sashes retained on a window frame between adjacent marginal guides which overlap the inner and outer face of the sashes at the lateral edges thereof, resilient means secured along exposed vertical portions of said frame exteriorly of said guides, said resilient means including a resilient leg member overlying the inner exposed face of said sashes and a pane of glass interposed between said resilient means and said sash, said resilient leg member pressing said pane tightly against said inner exposed face of said sash to form an insulative air chamber between the glazing of said sash and said pane of glass and pressing said sash against said outer marginal guides to seal the joint between said sash and said outer guides.

3. In a window construction comprising upper and lower glazed sashes slidably retained in a window frame between inner and outer guide members which overlap the inner and outer faces of said sash at the lateral edges thereof, resilient metal strips secured at one edge along vertical exposed lateral faces on the inner side of said frame and having their free edge extending toward the exposed inner face of said sashes so as to press said sashes against their outer guides and panes of glass resiliently retained by said metal strips against said inner exposed surface of said upper and lower sashes whereby an enclosed air chamber is formed between said glass and the glazing on said upper and lower sashes, said resilient strips being wholly exposed on the inner side of the window.

4. In a window construction comprising a frame having upper and lower sashes vertically slidable thereon in adjacent vertical ways on the window frame which overlap the inner and outer faces of said sashes along the lateral edges thereof, at least two resilient members each secured directly adjacent the inner faces of said upper and lower sashes on the inner side of said frame along the lateral edges thereof, said resilient members exerting outward pressure on the exposed portion of the inner face of said sashes and glass panes interposed between the exposed inner face of said sashes and the resilient members adjacent thereto, said panes extending over substantially the entire inner face of said upper and lower sashes, the resilient members adjacent said lower sash being spaced downwardly from the upper edge of said frame a distance greater than the height of said pane adjacent the lower sash and the resilient members adjacent said upper sash being spaced upwardly from the sill of said frame a distance greater than the height of said pane adjacent said upper sash whereby said panes may be removed from said sashes by sliding said lower pane upwardly and said upper pane downwardly out of engagement with said resilient members.

5. In a window of the type having a frame and a sash mounted within the frame, insulating means comprising a pane of glass adapted to be fitted against one face of said window sash and to cooperate with the glazing of said sash to form an insulative air chamber therebetween and means for retaining said glass pressed against said sash comprising U-shaped metal strips having resilient leg portions, one of said legs being secured entirely along the vertical exposed lateral edges of said window frame with the free leg exerting pressure against the inner face of said sash in a direction perpendicular to the plane of the sash, said pane being arranged between the inner face of said sash and the free leg of said metal strip.

6. In a window construction of the type comprising a frame having a sash mounted thereon for sliding movement between inner and outer vertical guide members which overlap the inner and outer faces of the sash along the lateral edges thereof, resilient metal strips secured to and extending along the exposed inner face of said sash adjacent said vertical guide members and contacting the exposed face of said inner guide members which is disposed perpendicular to the plane of said sash to seal the joint between the overlapping faces of said inner guide member and said sash, additional members secured to said exposed faces of said inner guide members and having an exposed resilient leg portion pressing said sash in a direction perpendicular to the plane of said sash, and a pane of glass interposed between the inner face of said sash and said resilient leg portion, said pane of glass being shaped to cover substantially the entire inner exposed face of said sash to form an insulative air chamber between said pane of glass and the glazing of said sash.

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