

Nov. 6, 1945.

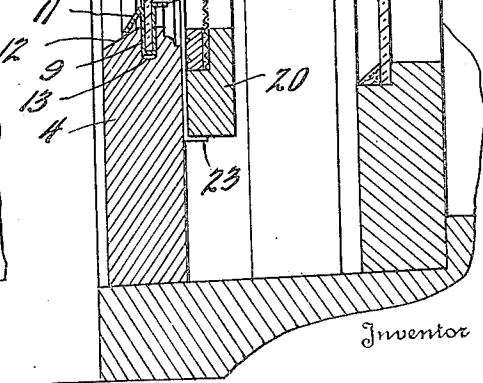
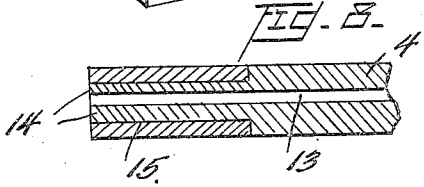
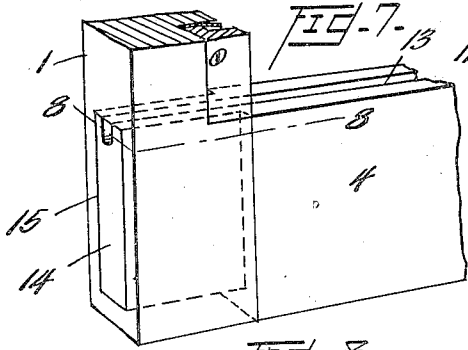
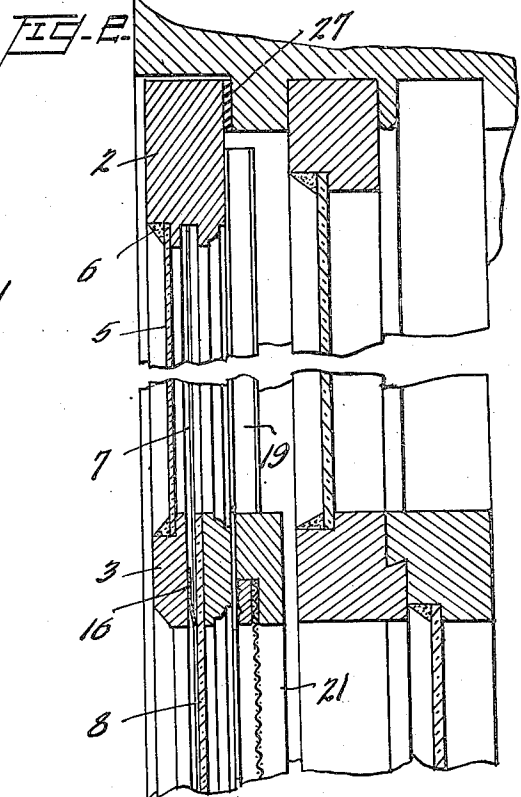
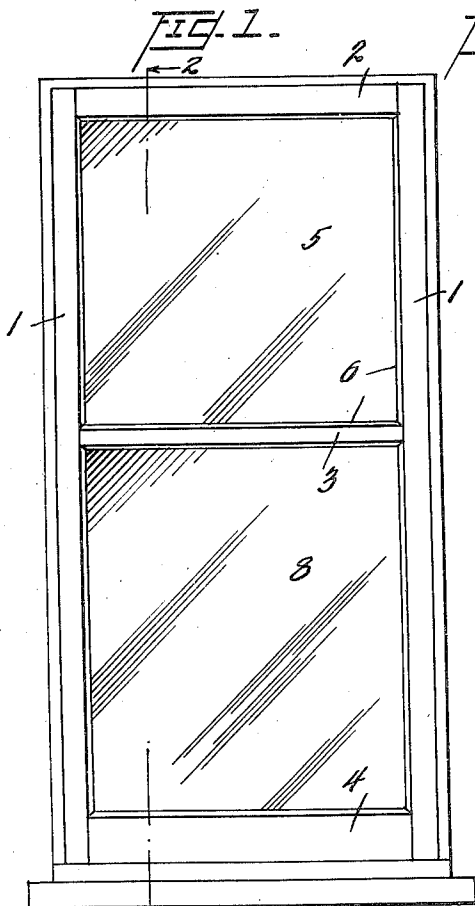
R. W. GILL

2,388,404

STORM SASH AND SCREEN

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2 Sheets-Sheet 1



Inventor
Raymond W. Gill,
Parker Cook,
Attorney

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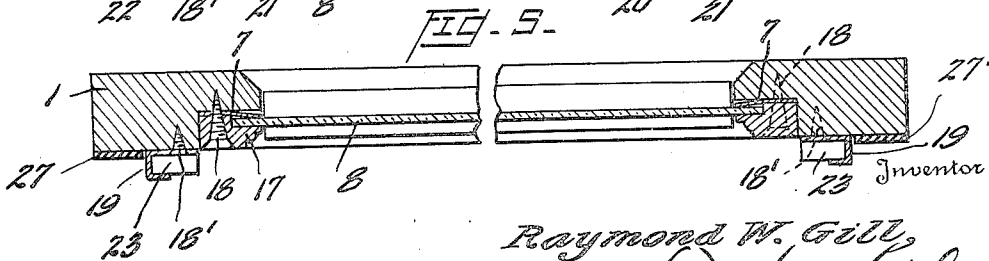
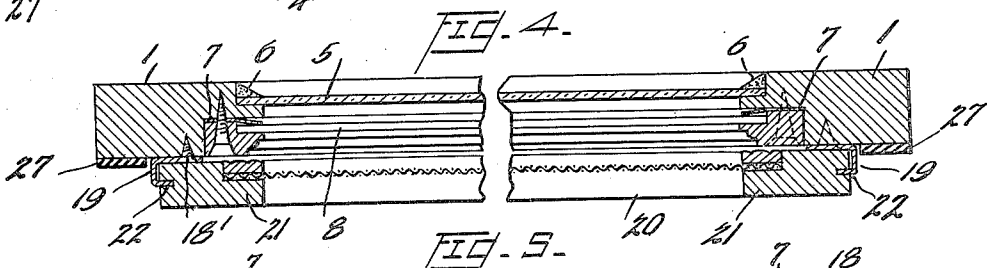
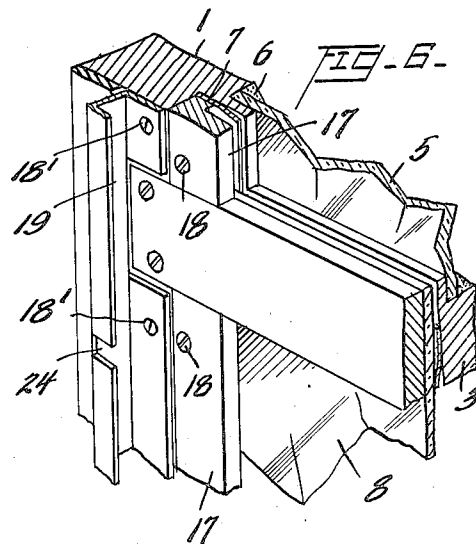
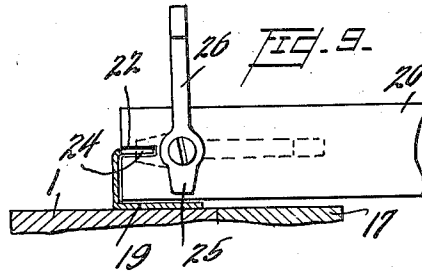
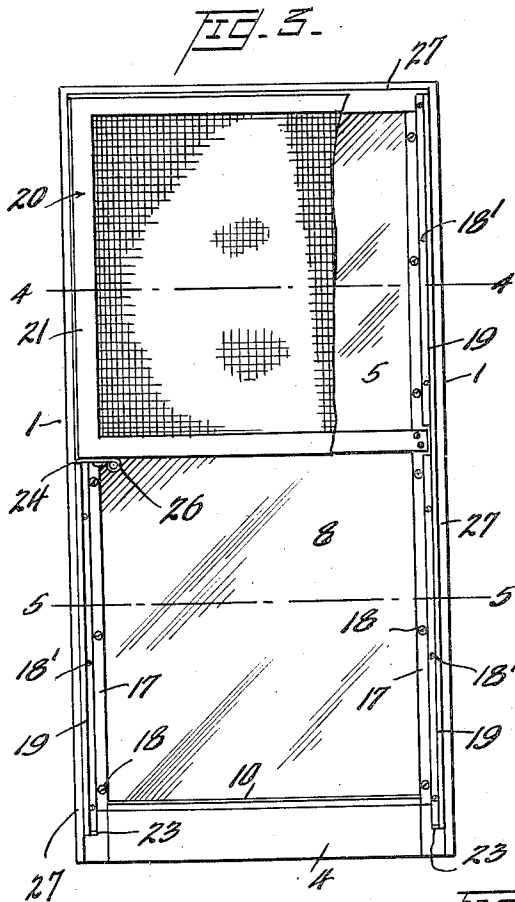
R. W. GILL

2,388,404

STORM SASH AND SCREEN

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2 Sheets-Sheet 2



Raymond W. Gill,
Parker Cook.

334

Attorney

UNITED STATES PATENT OFFICE

2,388,404

STORM SASH AND SCREEN

Raymond W. Gill, Pleasantville, N. J.

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2 Claims. (Cl. 160—91)

My invention relates to new and useful improvements in storm sashes and has for an object to provide a sash that may be readily fitted on the weather or outside of the slidable window sashes.

Still another object of the invention is to provide a storm sash wherein the upper part of the sash is provided with a non-movable glass pane, and the lower half of the sash is provided with a glass pane that is raisable and lowerable; while on the rear of the sash is also a raisable and lowerable screen, so that after the storm sash is once placed in position, it can be left there during the summer months if desired and the lower pane raised and the screen kept in its lowered position.

On the other hand, during the cold winter months, the screen will be raised and held in its upper position and out of view providing the curtains or shades are partially lowered.

Still another object of the invention is to provide a storm sash with a movable lower pane and a movable screen either of which may be quickly and readily manipulated so that it is not necessary to store the storm sash in the summer months and, at the same time, the screen may also be moved into a desired position.

Still another object of the invention is to provide a storm sash wherein a frame may be relatively thin in depth, due to the fact that the slidable pane is not fitted into a permanent casing or frame of its own, but in turn, slides within relatively narrow slots or grooves which extend substantially the height of the stiles.

Still another object of the invention is to provide a storm sash wherein the lower pane travels in relatively narrow grooves, the side edges of the glass bearing against resilient metal strips to hold the glass from rattling, and also hold the glass in any desired raised or lowered position. This construction also tends to make a water and air tight joint between the glass pane and the grooved inner walls of the casing.

Still another object of the invention is to so form the storm sash and its screen that the frame and its parts may be all assembled from new parts, or the conventional type of storm sash, that is, with two permanent panes of glass therein, may be reconstructed to include the features of the present invention by removing the lower pane from the conventional type sash, routing or grooving the stiles, applying the screen tracks, and installing the metal resilient strips, all of which will be more fully described as the invention proceeds.

With these and other objects in view, the invention consists in certain new and novel arrangements and combination of parts as will be hereinafter more fully described and pointed out in the claims.

Referring now to the drawings showing the preferred embodiment:

Fig. 1 is a plan view of my improved storm sash as viewed from the outside;

Fig. 2 is an enlarged vertical section taken on lines 2—2 of Fig. 1 and showing the storm sash installed in front of a conventional window casing;

Fig. 3 is a plan view of the storm sash from the inside showing the screen as being held in its upper position;

Fig. 4 is a section taken through lines 4—4 of Fig. 3;

Fig. 5 is a section taken through lines 5—5 of Fig. 3;

Fig. 6 is a fragmentary perspective showing the construction about centrally of the one stile of the storm sash;

Fig. 7 is a perspective of the mortise and tenon joint between the bottom rail and one of the stiles;

Fig. 8 is a fragmentary detailed sectional view taken on lines 8—8 of Fig. 7; and

Fig. 9 is a detail showing the bottom of the screen and the latch for holding the screen in its raised position.

At the outset, it might be mentioned that I have not shown any special method of fastening the storm sash in place but it is well understood that this may be done by providing hangers and small latches to hold the sash in position, or it may be held in place by several screws that will be inserted around the frame.

Referring now more particularly to the several views and for the moment to Fig. 1, there may be seen the two stiles 1, the top rail 2, the center rail or cross bar 3, formed of two parts and the bottom rail 4.

As heretofore mentioned in the specification, the frame may be manufactured and assembled with the various parts therein as about to be described, or a conventional type storm sash that has the two permanent panes of glass in there, may have the lower glass removed and its certain parts cut out and grooved to incorporate the features about to be described. However, in most instances, the frame as well as the other parts can be readily and quickly made up at the mill.

Referring to Figs. 1 and 2 for the moment, there may be seen in the upper part of the frame,

the glass pane 8 which is held in place by putty 6 around its sides, as is the usual practice.

Now glancing at Figs. 4 and 5 for the moment, there will be noticed in each of the stiles which are cut back on their inner faces, the weather strips, or in other words, resilient metal strips 7 which will bear against the opposite edges of the lower movable glass pane 8.

It will be noticed that these strips extend substantially throughout the height of the frame so that the lower pane throughout its travel will always be held tightly against the side walls of the grooves.

Extending across and enclosing the lower edge of the glass pane 8 is the U-shaped metal strip 9 which has the horizontally extending portion 10 which is to be gripped by the hands of the operator when it is desired to raise or lower this lower pane 8.

On the upper, outer edge of the U shaped strip is an angular portion 11 which will act as a water shed to divert the water to the lower rail 4, the upper edge of this rail 4 being also inclined angularly as at 12 to in turn shed the water.

It will be noticed that along the upper edge of the lower rail, as may be seen in Figs. 2, 7, and 8, I provide a groove 13 in which the U shaped strip 9 fits when the pane is in its lowermost position.

I have not shown any plastic cement between the lower edge of the pane and within the U shaped strip, but it will be understood that this strip will be cemented in position so that it cannot be pulled from its glass, and when the U shaped strip is within the groove 13, it forms a relatively water tight joint.

It will also be noticed that the groove 13 in the bottom rail extends outwardly to the outer edge of the tenon 14 formed on the outer end of the bottom rail 4, this tenon fitting in the mortise 15 in the lower edge of the stile.

Only one corner is shown, but it will be understood that the bottom rail is tenoned on both ends so that the groove will extend of course through both stiles.

The purpose of having the groove run through to the end of the tenon is that a few drops of water may run down the lower pane 8, while at the opposite ends of the U shaped strip 9, it may tend to run down into the groove 13 of that rail. By extending the groove to the outer end of the tenon, there is an outlet for the water and any water collected will seep down between the outer edge of the stile and the casing in which the storm sash is positioned. This will tend to prevent a rotting and thus insure a longer life for the bottom rail.

As may be seen in Figs. 2 and 3, I also provide a horizontally extending weather strip 16 which is located within the cross rail 3 which will also be in frictional engagement with the lower pane 8 so that there is a metal weather strip bearing against the pane of glass across its upper portion and against its two side portions to thus prevent the pane from rattling, and make a water tight and substantially air tight joint. Also, the bottom metal strip makes it possible to grip the horizontally projecting portion 10 of the U shaped strip 9 and easily elevate or lower the window to any desired height. Again, the metal strips pressing against the pane will, by the frictional contact, hold the window in any raised or partly lowered position.

It will be noticed that along the length of the

stiles on the inner face, I provide the plurality of removable strips 17 and these are held in place by the respective screws 18 which it will be noticed, also pass through the respective weather stripping that extends throughout the length of the stiles, so that after the strips are once in place, they will be fixedly held. At the same time, should the lower glass pane be broken or a new piece of weather stripping be needed, it is a matter of but a moment to remove the necessary screws 18 and a removable strip 17 and insert a new glass or a new piece of metal weather stripping as desired.

It will also be seen that by providing these removable strips it is possible to quickly assemble the various parts. In the same way, part of the cross rail 3 is made removable so that in the assembling the horizontally extending strip 16 may be readily secured in place.

Now referring especially to Figs. 2, 3, and 4, there will be seen also extending throughout the length of the stiles and adjacent to the removable strips 17 the two metal tracks 19 which are secured on the inner face of the stiles by the screws 18' and in these tracks will be slidably mounted the screen frame 20. It may be seen in Fig. 4 that the side pieces 21 of the screen frame are provided with the grooves or channels 22 in which a portion of the tracks 19 are interfitted.

The lower ends of the tracks may be turned inwardly at 23 as may be seen in Fig. 2 to provide a support or stop for the screen when in its lowermost position.

To assemble the screen it is but a simple matter to slidably register the screen in the tracks at the top of the sash. Should, however, it be necessary to remove the screen to repair it after it has been once installed, then it will only be necessary to remove the screws 18' and one of the track sections 19, put the new screen in place and then put back the track section 19.

It will be noticed in Fig. 6 that I cut a slot 24 in the tracks 22 about centrally of the height to receive the nose 25 of a latch 26 which is positioned on the bottom of the screen. Thus when it is desired to hold the screen in its uppermost position as shown in Fig. 3, the little latch 26 will be swung until the nose 25 engages the slot 24 and thus the screen cannot be lowered until the latch is again swung.

The screen, in the winter season, will be normally held in its upper position, as it will then not affect vision and it will be hidden behind the shades (not shown) as a general thing.

It will also be noticed that I apply a piece of rubber or felt or other desired strip of insulation 27 around the inner face of the storm window so as to make a tight fit between the storm sash and the casing in which it is inserted. This strip also provides a little more clearance for the sliding of the screen.

From the foregoing it will be seen that I have provided a storm sash which carries its own screen wherein the sash does not have to be removed and stored in the summer season, and at the same time, the screen will be protected from the weather during the winter season. Furthermore, the lower pane may be easily raised or lowered when desired.

Finally, it will be seen that by mounting this lower pane the way I have, the stiles may be relatively narrow in thickness or depth as no extra frame is used around the glass pane, it sliding into grooves and being spring-pressed by the metal weather strips that force the pane against

the side walls of the grooves. Also, the weather stripping and the bottom strip make a water tight joint for the frame and also prevent air from entering around the sides of the frame to thus provide an efficient waterproof and air tight storm sash. Should any water get in the bottom rail, it will ooze or run out along the groove formed in the tenon.

Many slight changes might be made without in any way departing from the spirit or scope of the invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A combined storm sash and screen including a main frame, an intermediate crossbar, a portion of which is removable, a pane of glass set in the frame above said crossbar, the stiles of the frame having relatively narrow channels extending throughout their length and open along their inner edges, metal resilient weatherstrips mounted in said channels, removable wooden strips forming the inner face of said channels, a slideable lower pane mounted in said channels and frictionally held against the side walls by said resilient metal weatherstrips, a further resilient metal strip mounted in said crossbar and bearing against said slideable pane, a metal U shaped strip extending across the lower edge of the slideable pane, said strip having a horizontal portion on its inner edge, and the outer edge extending downwardly to form a water shed, tracks mounted on the inner face of the stiles, a raisable screen mounted in said tracks and the said tracks cut out about centrally of their length to facilitate

the removal of the inner portion of the intermediate crossbar, and the said horizontal portion of the U shaped strip providing a grip for the fingers to raise and lower said slideable pane when said screen is in an upper position.

2. A combined storm sash and screen including a main frame, an intermediate crossbar, the inner portion of which is removable, a pane of glass mounted in the frame above said crossbar, the stiles of the frame having relatively narrow channels extending throughout their length and open along their inner edges, metal resilient weatherstrips in said channels, removable wooden strips forming the inner face of said channels and means for holding the wooden strips and the weatherstrips in position, a slideable lower pane mounted in said channel and frictionally held against the side walls of said channels by the said resilient metal weatherstrips, a further resilient metal strip mounted in said crossbar and bearing against said slideable pane, a metal strip forming a binding across the lower edge of the slideable pane and said strip having a horizontal portion on its inner edge, track sections mounted on the inner face of the stiles, a raisable screen mounted in said tracks and said tracks cut out about centrally of their length to facilitate the ready removal of the inner portion of the intermediate crossbar, the said horizontal portion of the metal strip binding the lower edge of the slideable pane providing a hand hold for the fingers to raise and lower said slideable pane when said screen is in a raised position.

RAYMOND W. GILL.