April 14, 1953 A. S. WILLIAMS 2,634,466

SELF-STORING COMBINATION STORM WINDOW

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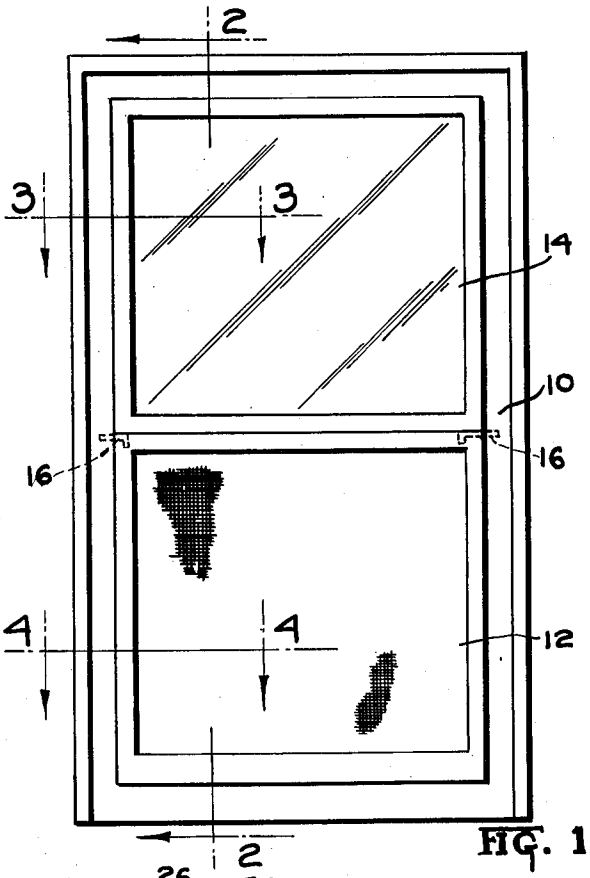


FIG. 1

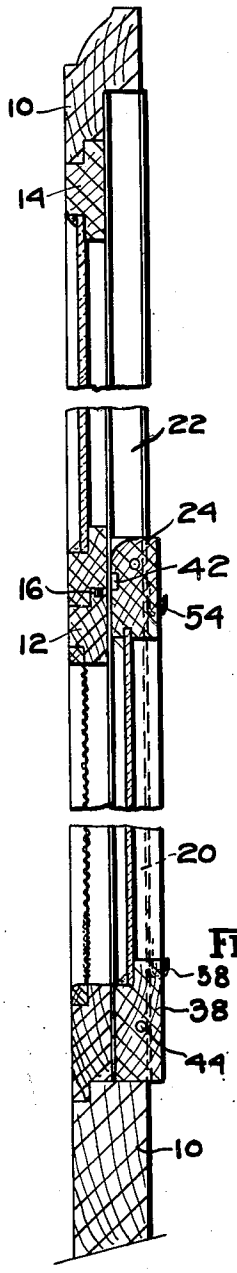


FIG. 2

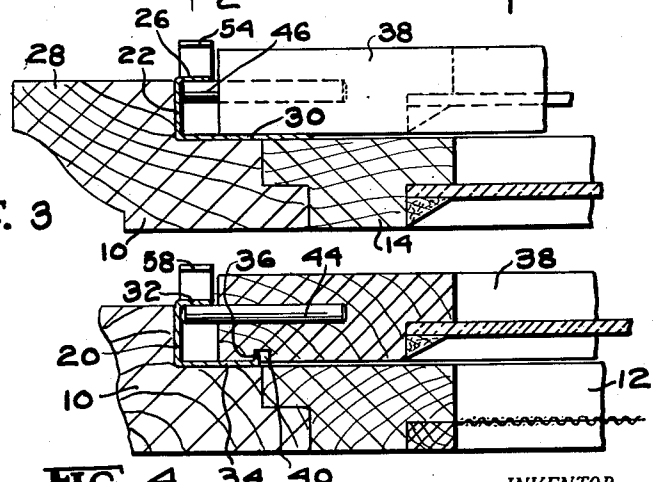


FIG. 3

FIG. 4

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SELF-STORING COMBINATION STORM WINDOW

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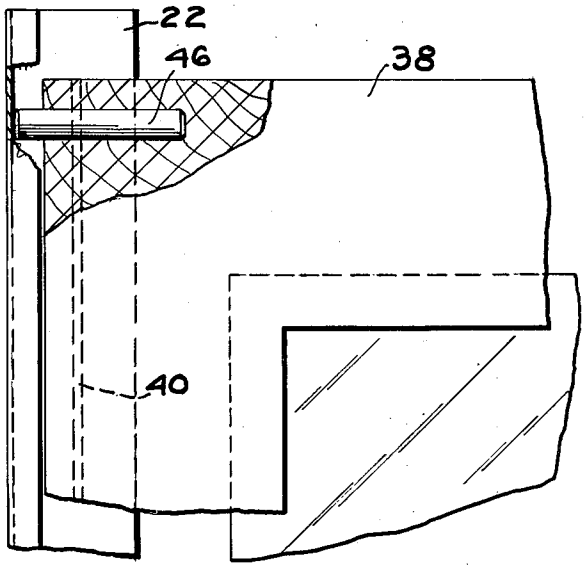


FIG. 5

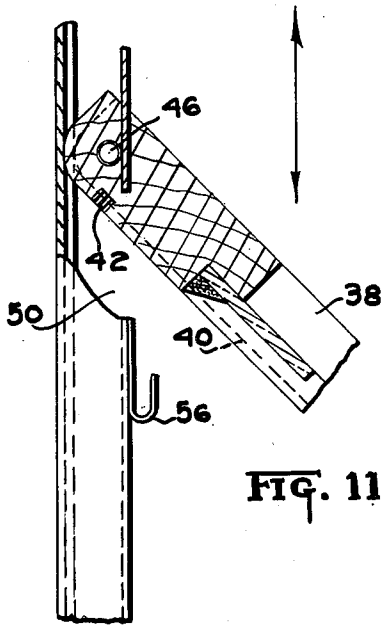


FIG. 11

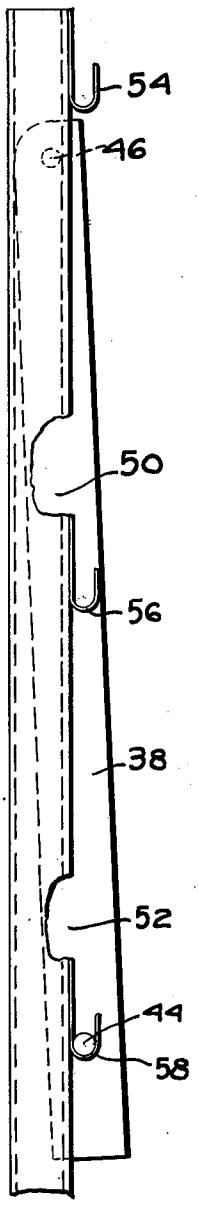


FIG. 8

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SELF-STORING COMBINATION STORM WINDOW

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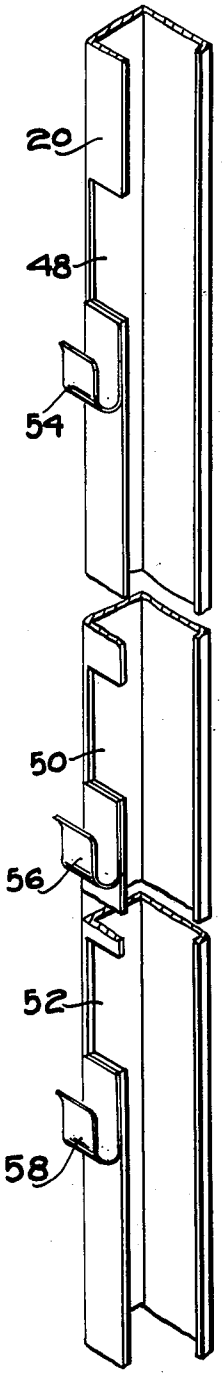


FIG. 6

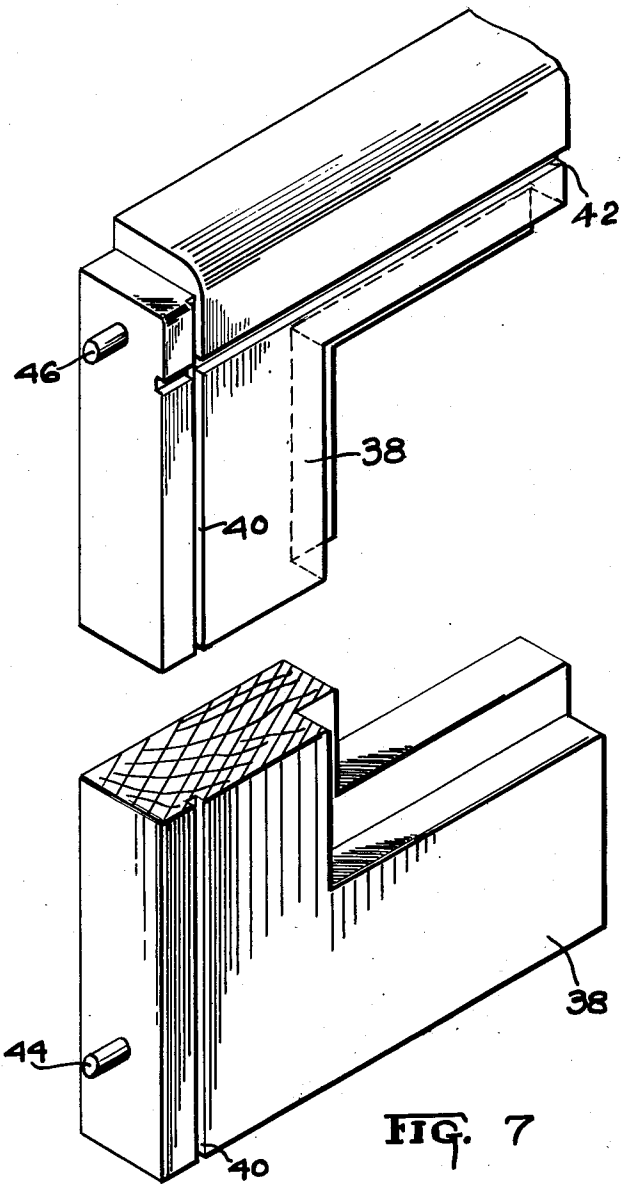


FIG. 7

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SELF-STORING COMBINATION STORM WINDOW

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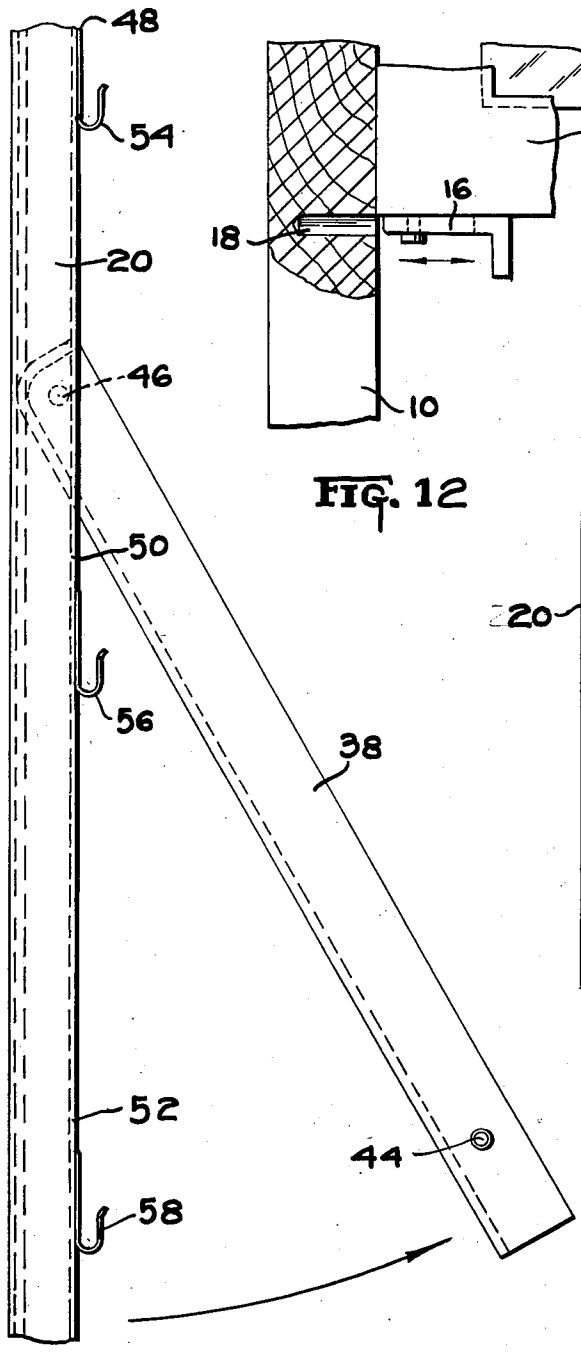


FIG. 10

FIG. 12

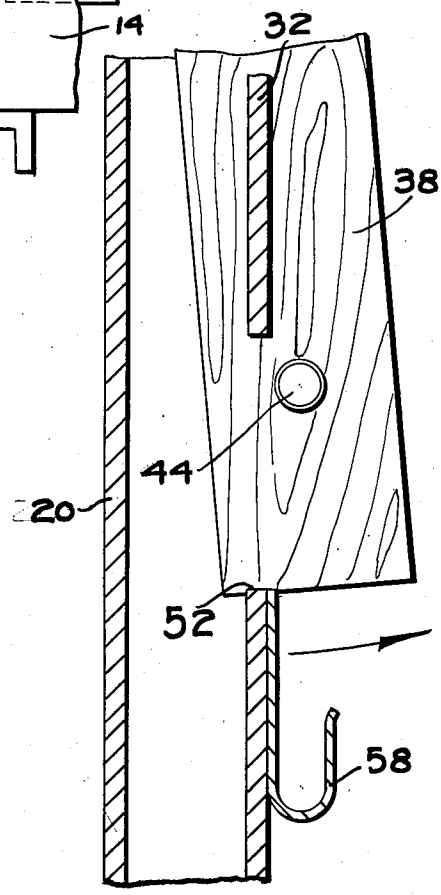


FIG. 9

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2,634,466

SELF-STORING COMBINATION STORM WINDOW

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Application March 23, 1951, Serial No. 217,268

3 Claims. (Cl. 20—55)

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This invention relates to self-storing combination storm windows and the principal object of the present invention resides in the provision of a new and improved combination self-storing storm window made of wood which does not take up any more room than the conventional self-storing metal storm windows of the prior art; the provision of a wooden self-storing storm window having all the advantages of metal self-storing storm windows and further advantages as to inexpensiveness, simplicity of manufacture and ease of operation.

A further object of the invention resides in the provision of a wooden self-storing combination storm sash comprising a main frame adapted to be secured either temporarily or permanently to the existing window frame, an upper window sash disposed either in permanent relation relative to the frame or detachable therefrom, a lower permanent or detachable screen frame, and a vertically slidable lower window sash which together with the said upper sash provides the storm window; in combination with a pair of U-shaped metal channel members disposed facing each other, one at each side of the frame, and slidably supporting the lower sliding sash by means of laterally extending sash pins which extend into the channels, the sash itself being of a width no greater than the distance between the shorter flanges of the channels, so that the sash itself is not received therein but is held in tight but slidable relation relative thereto by means of the pins.

Another object of the invention resides in a wooden combination self-storing storm sash as above described including a series of slots in the channel members and a hook for each slot just under the same whereby the above mentioned laterally extending pins on the lower sash may be removed from the channels and set in selective hooks for holding the lower slidable sash in completely open position for summertime use, or in any desired partly open condition for wintertime ventilation.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which

Fig. 1 is a view in front elevation of the outside of a device according to the present invention;

Fig. 2 is a section on an enlarged scale on line 2—2 of Fig. 1;

Fig. 3 is an enlarged section on line 3—3 of Fig. 1;

Fig. 4 is an enlarged section on line 4—4 of Fig. 1;

Fig. 5 is a detail view of an upper corner of the lower slidable storm sash, part being broken away and part in section;

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Fig. 6 is a perspective view of one of the U-shaped channel type guideways;

Fig. 7 is a perspective view of the slidable sash;

Fig. 8 is an edge view of the slidable sash and one of the guideways illustrating the position of the slidable sash raised for purposes of ventilation;

Fig. 9 is a section illustrating the removal of the lower end of the slidable sash from the guideways;

Fig. 10 is a view in side elevation similar to Fig. 8 but showing the sash in the process of being removed completely;

Fig. 11 is a view illustrating the extraction of the upper end of the slidable sash from the guideways; and

Fig. 12 is a detail view illustrating the locking of the upper fixed sash.

Referring now to Fig. 1, there is shown a main frame usually rectangular in shape and generally indicated at 10 for application to the already existing window frame, and as viewed from the front this main frame 10 is provided with a lower screen sash 12 and upper storm window sash 14. The screen sash and the window sash may be permanently secured to the frame 10 if desired or they may be removably mounted therein as herein illustrated.

Referring now to Fig. 2 it will be seen that the upper storm window sash 14 fits into a rabbet and the screen frame 12 interfits therewith and with the main frame 10 in mutually engaged condition so that they will not accidentally become separated from the main frame. The upper sash 14 may be provided with slidable lugs or brackets 16 taking into holes 18 in the main frame 10, see Fig. 12, in order to hold the same in position.

Inwardly of the upper window sash 14 and screen sash 12, the main frame is provided with a pair of generally U-shaped channels or guide members. These guide members comprise in general a lower part 20 and slightly different upper part 22 which join at approximately the center of the frame indicated at 24 in Fig. 2. The cross sections of these channels are illustrated in Figs. 3 and 4, and the upper channel member 22 is illustrated in Fig. 3 as having a short leg or flange 26 extending slightly outwardly of the rear surface 28 of the main frame 10, and a considerably longer leg or flange 30 contacting main frame 10 and overlapping the edges of the upper sash member 14. There is, of course, one of these channels at the opposite side of main frame 10 facing the one disclosed.

The lower channel or guideway 20 is shown in

Fig. 4 and comprises a short exposed leg or flange 32 and a longer leg or flange 34 which, however, is not as long as leg 30 and does not overlap screen 12. However, long leg 34 terminates in a turned-up lip 36 for a purpose to be described.

A single lower storm sash is indicated generally at 38 and this storm sash in general is arranged for vertical sliding movement in frame 10 relative to the guideways or channels 20 and 22 which guide the same and hold it in position as will be described. The sash 38 is located to the rear of sashes 12 and 14 and at no time interferes therewith in any position thereof.

The slidable storm sash 38 is narrower than the distance between the terminations of the short legs 26 and 32 of the channels as clearly shown in Figs. 3, 4 and 5 and, therefore, it is seen the slidable storm sash does not engage in the channels but is located between them. The rear surface of the slidable sash extends to the rear of the short legs 26, 32 to a slight extent. A channel 40 is provided for the reception of the lip 36, thus providing a weather strip regardless of the vertically adjusted position of storm sash 38, which is also provided with a felt or rubber strip 42 for the same purpose.

Adjacent the lower edge of storm sash 38, there are provided two lateral outwardly extending pins 44 which extend into the channel guideways 20 and which are so spaced from the front surface of the sliding face 38 as to bear firmly against the inside surface of the legs 32 as clearly shown in Fig. 4. Adjacent the upper end of sash 38 there are provided another pair of similar pins 46 which also engage in the channels and in the same manner, see Fig. 3. Thus the slidable sash 38 is seen to be slidable up and down relative to the guideways or channels while actually not entering the same except by reason of the pins 44, 46, the latter engaging in the upper channels 22 when the sash is raised.

Each of the short legs 32 of the lower guide channel 20 is provided with a series of slots 48, 50 and 52, and just below each such slot there is a hook 54, 56 and 58, respectively these hooks extending outwardly to the rear as clearly shown in Fig. 2. The purpose of these slots is to allow the extraction or removal of the various pins from engagement with the channels or guideways, for adjustment of sash 38 and removal thereof from the storm window.

As shown in Fig. 2, the sash 38 is located in wintertime storm window condition closing the entire frame. If it is desired to obtain a small amount of ventilation during the wintertime, the sash 38 may be slightly raised as by conventional finger grips, until pins 44 align with slots 52, whereupon, of course, the lower end of sash 38 may be withdrawn from the guides and the pins 44 then may be dropped into hooks 58, see Fig. 8, for providing a small air passage below the lower edge of sash 38. If more air is desired, the sash 38 is raised higher until pins 44 align with slots 50 and then the pins may be set on hooks 56, in which condition the storm window sash 38 is half open. For summertime use, the sash 38 is completely open by raising it so that pins 46 are near the tops of channels 20, aligning pins 44 with slots 48, and then resting pins 44 in hooks 54, so that the sash is fully open. It will be seen that opening and closing of sash 38 is extremely simple and the transition from winter to summer use takes but an instant and the sash may be changed back to winter use at a moment's notice in case of inclement weather.

In order to completely remove sash 38 from frame 10, it is merely necessary to raise sash 38 to the Fig. 9 position, and withdraw the lower end thereof as shown. Then as illustrated in Fig. 10, the sash is drawn downwardly with pins 46 still in engagement in the channels until the same come opposite slots 50 whereupon they may be easily withdrawn and the entire sash is removed. This action is shown in Fig. 11. To reapply the sash 38 to the frame 10, the opposite action takes place, merely by inserting pins 46 in slots 50 and raising sash 38 in a combined pivotal and sliding movement until pins 44 enter slots 52, whereupon the assembly is completed and it only remains to choose whether to completely close sash 38 or to have it semi-open or all the way open.

It will be seen that this invention provides an inexpensive wooden convertible self-storing storm sash which takes up no more room than the conventional metal self-storing sash and which is simpler to manufacture and operate and is clearly cheaper in cost.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed otherwise than as set forth in the claims, but what I claim is:

1. A combination storm window adapted to be inserted in an existing window frame in front of existing window sashes, comprising a wooden storm window frame having a relatively fixed storm sash at the front thereof partially closing the frame opening and having a guideway for a vertically sliding sash at the rear of the relatively fixed sash, said guideway comprising a pair of oppositely facing vertically extending U-shaped metal channel members each including a pair of parallel flanges of unequal lengths extending inwardly from a base portion mounted in a recess in the storm window frame, a storm sash slidable within the guideway but terminating short of the shorter flanges of the channel members and overlapping and contacting substantial portions of the longer flanges, and a pair of oppositely directed laterally extending pins carried by said sliding sash arranged to snugly contact the shorter flanges but spaced away from the longer flanges of the channel members, whereby a smooth sliding movement of the movable storm sash is insured.

2. A combination storm window as set forth in claim 1 wherein the short flanges of the channel members are cut away at intervals to permit the removal of the guide pins therefrom.

3. A combination storm window as set forth in claim 1 wherein hooks to receive the guide pins are located slightly below the cut away portions of the channel members.

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