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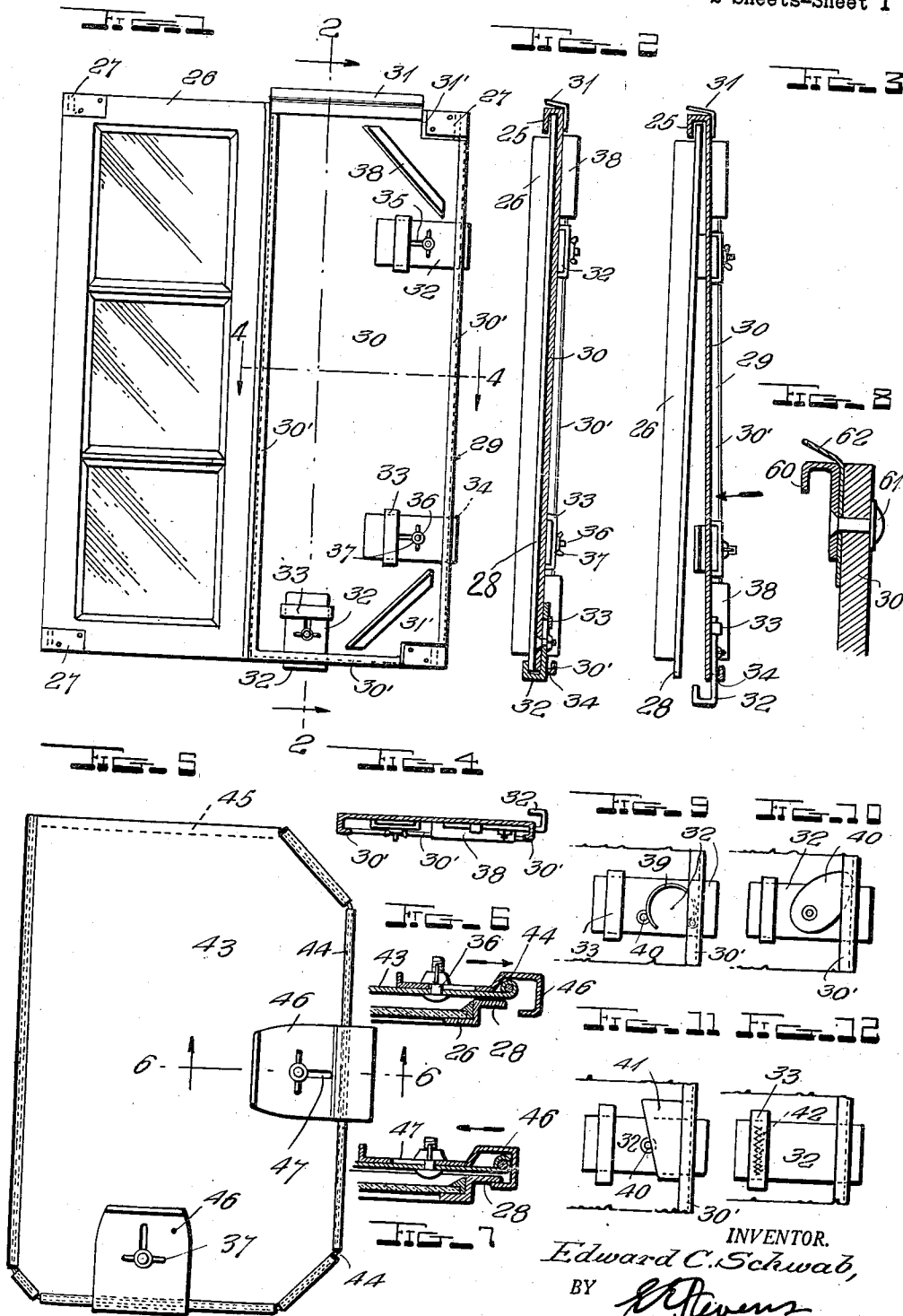
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SHUTTER FASTENER

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2 Sheets-Sheet 1



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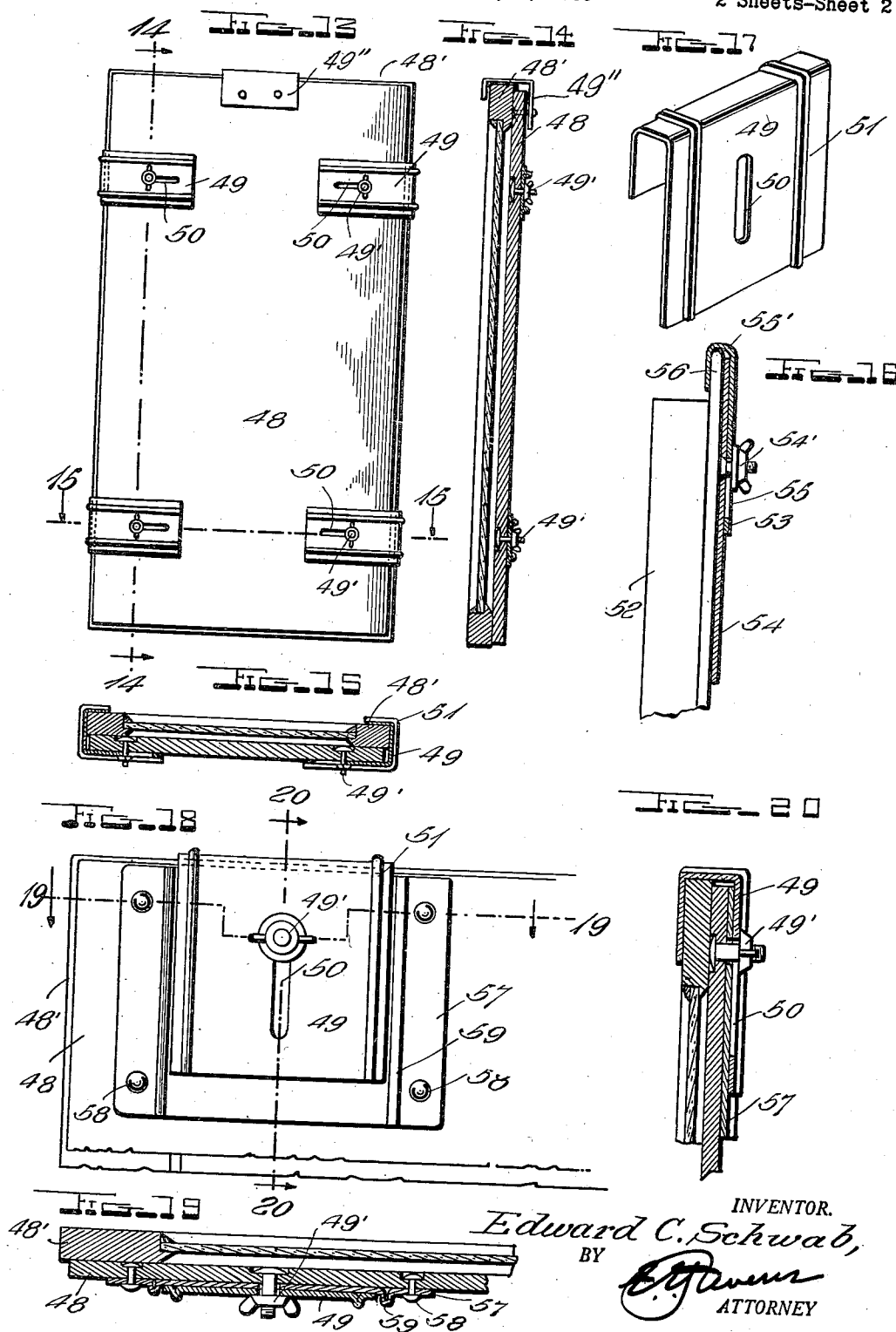
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SHUTTER FASTENER

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2 Claims. (Cl. 189—79)

My invention relates to storm shutters and particularly to windows.

A primary object of my invention is to provide a covering or storm shutter for windows to protect the same from flying debris during windstorms and the like.

A still further object is to provide a simple, detachable covering or storm shutter which is easily and quickly applied to casement windows and the like, and which can be manufactured at small cost.

Another object is to provide a covering especially adapted for use with windows having a metal frame and metal sash.

A further object is to provide novel fastening means for securing the shutter to the sash.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts in all views:

Figure 1 is a front elevation of my shutter applied to one window of a swinging twin metal sash.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a view similar to Figure 2, but showing the application of the shutter or guard to the sash.

Figure 4 is a section taken on line 4—4 of Figure 1.

Figure 5 is a modified type of covering.

Figure 6 is a section taken on the line 6—6 of Figure 5, and showing the same about to be applied to a sash.

Figure 7 is a similar view but showing the same attached to a sash.

Figure 8 is a fragmentary view of a modified type of fastening with a rain guard attached thereto.

Figures 9, 10, 11 and 12 show various types of locking means for the fastening or clamping hooks.

Figure 13 is another modification of the shutter applied to a sash.

Figure 14 is a section on the line 14—14 of Figure 13.

Figure 15 is a section on the line 15—15 of Figure 13.

Figure 16 is a fragmentary view of a clamping hook for a steel casement window.

Figure 17 is a perspective view of the clamping hook.

Figure 18 is a modified type of clamping hook applied to one corner of a shutter and shown secured to a reinforcing plate fastened to the sash.

Figure 19 is a section on the line 19—19 of Figure 18, and

Figure 20 is a section on the line 20—20 of Figure 18.

In the drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 26 designates a swinging metal window sash carried by the hinges 27 which are in turn secured to a metal window frame (not shown). The usual metal window sash is provided with a flange 28 which extends entirely around the sash.

The storm shutter or covering is indicated at 29 and comprises a panel 30 which may be made of any suitable material, preferably metal, and has a reinforcing bead or bend 30', and its upper extremity is provided with an integral intumed portion 25 to provide a hook for engaging the window flange 28 for hanging thereon. The upper portion may also be provided with a rain guard or watershed 31. This member extends inwardly over the portion 25 and is preferably of sheet metal fastened to the body of the shutter in any suitable way and is of sufficient elasticity so that when the window is closed the upper edge of the guard will press firmly against the frame and effectively close the top against rain. The panel 30 has a cut-out portion 31' to prevent interference with the hinges 27 so that the panel may be properly positioned against the window.

Suitably arranged around the edges of said panel 30 are adjustable clamping hooks 32 for engaging and overlapping the edges of the window sash. These clamps are of any suitable configuration for engaging the window sash or door, if such is the case, and are of such size and shape as will accommodate the member to which they are attached. While it is preferable that the hook at the upper end of the shutter be fixed or integral with the panel, it may be adjustable also. These hooks, as will be appreciated, furnish the means whereby the shutter or covering is quickly attached to a window or door.

These adjustable clamps are fixed in position by guides 33 fastened to the panel 30, and slots 34 in the reinforcing bead or bend 30'. This bend 30' forms a flange around the sides and bottom of the panel and is of a width wide enough to accommodate the clamps 32 operating through the slots 34. An elongated slot 35 is arranged in each clamp and a bolt 36 secured to the panel passes through the said slot 35. A wing nut 37 is secured to the bolt. By loosening the wing nut the clamp may be slidably adjusted

and by tightening the same it may be held in fixed position as will be obvious.

These clamping members are attached to the panel at points determined suitable, the shutter is then held in proper place in front of the sash or door to be covered and the fastening hooks are drawn over the edge of the sash or door, until firmly positioned against the said edges where they are held in place by tightening the wing nut 37. These hooks being of thin metal do not prevent the door or window from closing. The panel is first hung onto the window or door at its upper edge by means of the upper hook 25, and is then swung into contact relation with said window or door as indicated by arrow in Fig. 3, after which the clamp hooks may be easily and quickly adjusted to firmly secure the shutter in place.

The numeral 38 designates reinforcing bars across the corners of the panel and in Figures 9, 10, 11 and 12 are shown various modified means for locking the slidable clamps in position instead of the bolt and wing nut previously described. Figure 9 shows a flat spring 39 connected to the bend 30' which bears against a pin 40 on clamp 32. Figure 10 shows a cam 40 for locking the clamp. The cam is noted as being pivotally connected to the clamp 32 and it bears against the bead or bend 30'. Figure 11 shows a sliding wedge 41 which bears against a pin 40 carried by the clamp or hook 32 and bead 30', and in Figure 12 a friction type of grip 42 is provided by the guide 33.

Referring to Figure 5 a modified type of shutter is shown. In this instance the panel is designated at 43. This shutter is provided with wire reinforcing 44 with the exception of the top portion which is provided with the usual integral overhanging lip or hook 45. The hook clamps 46 are formed to set over the wired edge. Each hook is secured to the panel 43 by a bolt 36 fixed to the panel which extends through an elongated slot 47 in the clamp hook. A wing nut 37 completes the assembly.

Referring to the modified form in Figure 13, the shutter panel is of wood, such as pressed wood, etc., and is indicated at 48 secured to the sash 48'. In this case, the upper overhanging hook or lip 49' is riveted or otherwise fastened to the shutter panel in fixed relation thereto, or as is shown in Figure 8, and it can be attached either to the inside or outside surface of panel. Attaching clamp members, indicated at 49, are suitably arranged around the edges of said panel and are provided with elongated slots 50 where they are held in clamping position by bolt and wing nut assembly 49', shown more particularly in Figure 20. This specific clamp hook is shown in Figure 17 and is provided with reinforcing ribs 51.

In Figure 16, a similar clamping member is shown for a steel casement window 52. This clamp is shown at 53 carried by the panel 54 and the bolt and wing nut assembly 54', the bolt of which extends through the elongated slot 55. The hook portion 55' of the clamp engages the window flange 56.

In Figure 18 a further modified clamping member is shown although it is practically identical to Figures 13-17 with the exception of the bottom plate 57 which is secured to the panel by rivets 58 or the like and provide additional reinforcing means. Reinforcing ribs 59 are also carried by the plate 57.

Referring back to Figure 8, the hook 60 is shown rigidly secured to the top of the panel 30 by means 61 instead of being integral therewith. The panel in this case may be of asbestos, "Prestwood", plywood and the like. A rain guard 62 may be used in connection with this assembly.

It is to be pointed out that the upper hook or lip is for the purpose of hanging the device on the sash or door while the other hooks are being positioned. This provides a very simple and easy method to adjust said covering or shutter.

Storm-protection shutters as now made and installed comprise a sheet metal panel or the like of the approximate size and shape of the sash, bolted to the sash itself with six to eight or more brass bolts around the edges, and are far from satisfactory. The necessarily small screws, especially if tapped into the sash, are easily bent, broken or otherwise made unfit for use; and if loose, to be used through holes drilled in steel flange of sash, are easily lost and difficult for the average householder to find replacements when the urgent need for protection suddenly arrives. The two biggest objections are those of expense—the cost of drilling and tapping all of the holes in the sash in the first place and the continuing expense of attaching the shutters by means of so many small bolts every time a storm or hurricane threatens, which is sometimes three and four times a year, in the southeast section. The time required for installing may be greater than the windstorm or hurricane movement permits. In addition, every hole drilled into a galvanized sash represents one or more openings for water to start a rusting operation under the galvanizing.

All of these objections are overcome by my invention, and additionally no holes are required in the sash or the building and the minimum of time is sufficient to install them in event of storm by simply hanging the shutter on the top edge of the sash or door and adjusting the clamping hooks into place, and further, no tools are required.

It is to be understood that the form of my invention herewith shown, and described is to be taken as a preferred embodiment of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention and the scope of the subjoined claims.

Having thus described my invention what I claim is:

1. A storm shutter for casement windows comprising a panel having an intumed portion to engage the sash, said panel having a relatively wide flange arranged around the sides and bottom thereof and having slots therein, and slidably arranged clamp hooks provided with intumed portions fastened to said panel and extending through said slots for engagement with portions of said sash, and means for holding said clamps in locked position.

2. A storm shutter for casement windows comprising a panel provided with intumed means to hook over the window whereby the shutter may hang thereon, slidably arranged securing hooks provided with intumed portions carried by said panel for clamping engagement with the edges of said window, and a rain guard arranged at the top of said panel and adjacent said intumed means, said guard being flexible and extending inwardly and overlying the top of said intumed means.

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