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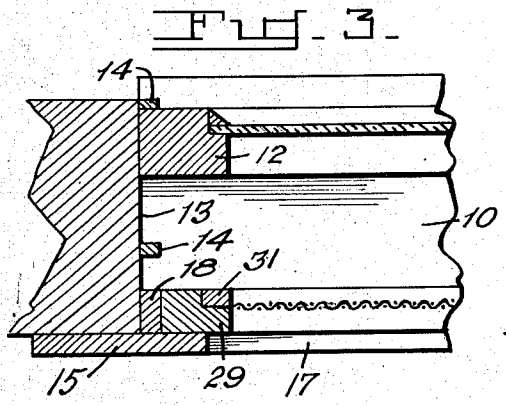
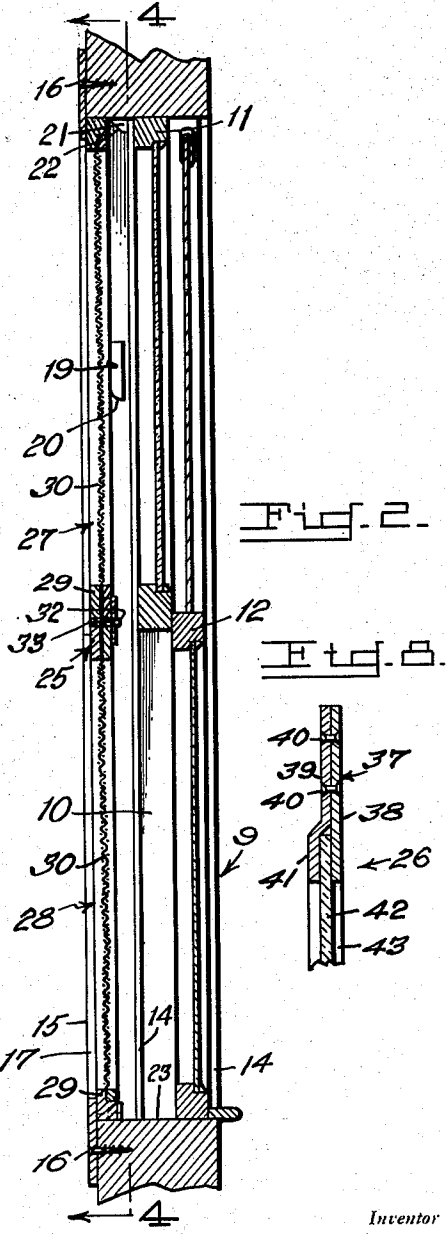
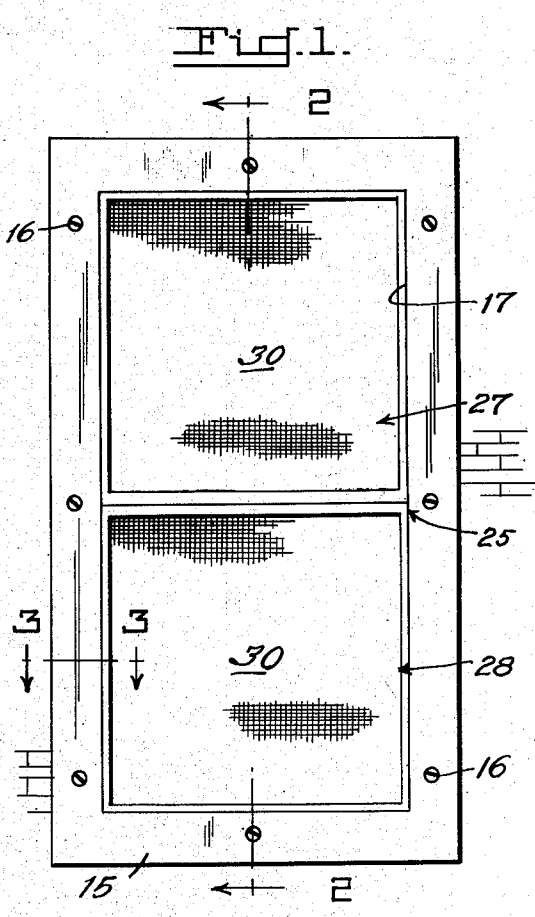
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2,519,132

COMBINATION STORM AND SCREEN WINDOW

Filed Nov. 22, 1946

2 Sheets-Sheet 1



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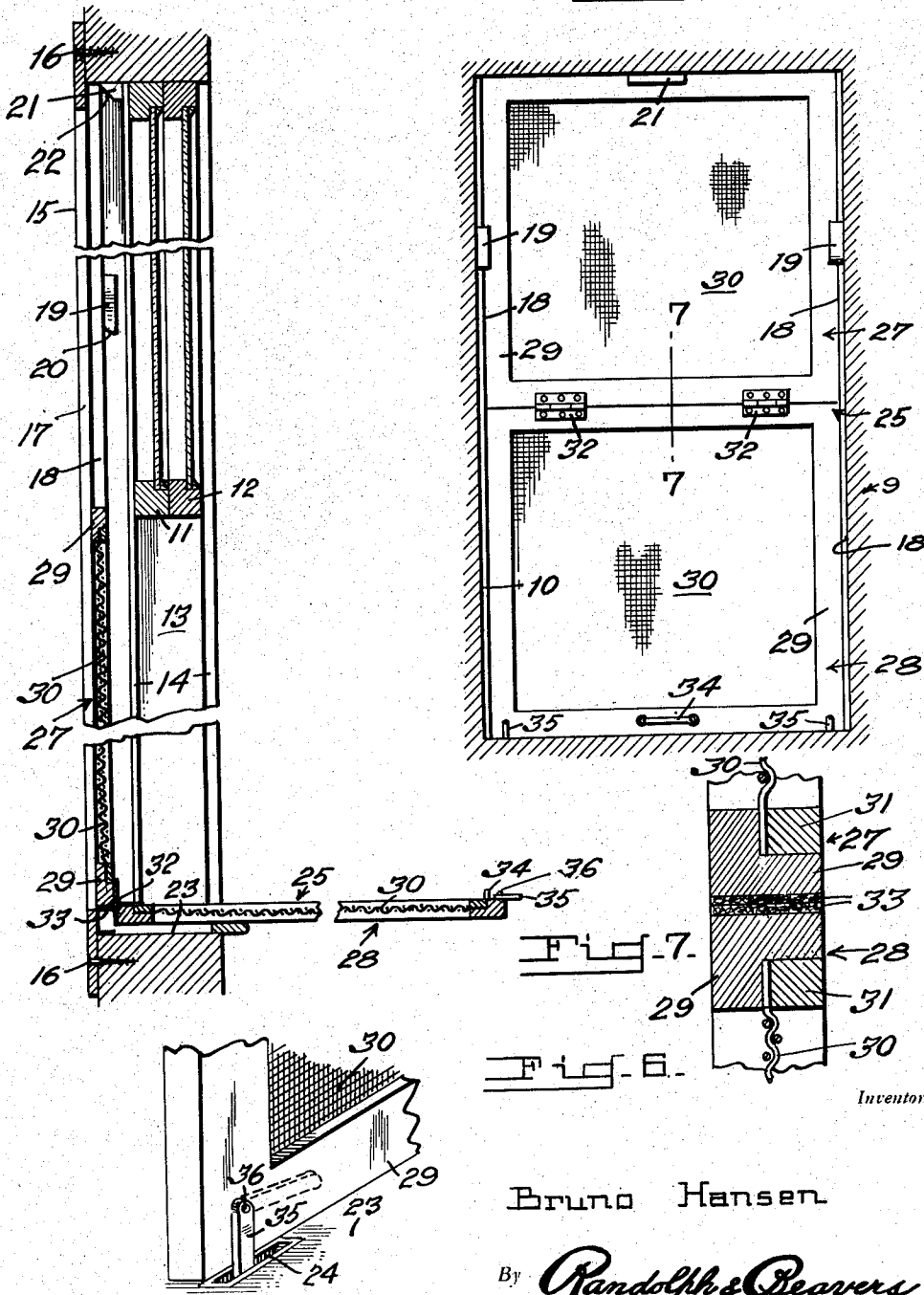
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Fig. 5.

Fig. 4.



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UNITED STATES PATENT OFFICE

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COMBINATION STORM AND SCREEN WINDOW

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1 Claim. (Cl. 160—107)

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This invention relates to a combination storm and screen window adapted for use in conjunction with a window of an enclosure having a pair of vertically sliding sashes for normally closing the window opening.

The primary object of the present invention is to provide a storm or screen window and a mounting therefor whereby the storm or screen window may be readily applied to or removed from a window opening from a position on the inside of the opening.

More particularly, it is an object of the present invention to provide a storm or screen window formed of sections disposed in end to end relationship and hingedly connected along their abutting edges to facilitate the folding of the sections relatively to one another and to enable the screen and storm windows to be slid transversely and longitudinally of the window opening into and out of position therein.

Still a further object of the invention is to provide a storm or screen window which will entirely close the window opening, when in position therein, and which is spaced outwardly with respect to the sliding sashes to afford a space therebetween.

Still another and important object of the invention is to provide an improved mounting for a storm or screen window of extremely simple construction and which will function to sufficiently guide the window into or out of the window opening and which will also assist in maintaining the window, when applied, in tight engagement between portions of the mounting means to prevent rattling of the window and to seal the window between its frame or frames and the window opening.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawings, illustrating a preferred embodiment thereof, and wherein:

Figure 1 is an elevational view looking toward the outer side of a window constructed in accordance with the invention and showing a screen window mounted in the outer part of the window opening;

Figure 2 is an enlarged vertical sectional view taken substantially along a plane as indicated by the line 2—2 of Figure 1;

Figure 3 is an enlarged horizontal sectional view taken substantially along a plane as indicated by the line 3—3 of Figure 1;

Figure 4 is a vertical sectional view looking toward the inner side of the screen window and

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taken substantially along a plane as indicated by the line 4—4 of Figure 2, and on a reduced scale;

Figure 5 is a view similar to Figure 2, but showing the screen window in a partially applied or partially removed position;

Figure 6 is a perspective view looking toward the inner side of one of the lower corners of the screen window;

Figure 7 is an enlarged cross sectional view taken substantially along a plane as indicated by the line 7—7 of Figure 4; and

Figure 8 is a fragmentary sectional view of a portion of a storm window adapted for use interchangeably with the screen window in Figures 1 to 7.

Referring more specifically to the drawings, the numeral 9 designates generally a conventional window frame defining a window opening 10 which is adapted to be normally closed by a pair of conventional sliding sashes 11 and 12. The upper and lower sashes 11 and 12, respectively, are slidably disposed in inwardly opening channels 13 of the stiles or side rails of the frame 9 and which channels are formed by spaced beading strips 14. The spaced strips 14 support the sashes 11 and 12 for vertical sliding movement adjacent the inner side of the frame 9 and affords an otherwise unoccupied space between the outer side of the frame and the sashes 11 and 12 for accommodating the invention, now to be described.

The mounting portion of the invention includes a substantially flat plate 15 of a length and width greater than that of the opening 10 and which is detachably secured to the outer side of the window frame 9, around the opening 10, by detachable fastenings 16. The plate 15 is preferably formed of a light weight metal, such as aluminum, and is provided with an opening 17 of approximately the same shape as the window opening 10 but somewhat smaller in length and width so that the plate 15 has portions overlying the ends and sides of the opening 10, as clearly illustrated in Figures 2 and 3. The stiles or side rails of the frame 9 are provided with strips 18 which are secured to the inner sides thereof and adjacent the plate 15 and which extend into the opening 10 approximately the same distance as the strips 14. As best illustrated in Figures 2 and 5, the stiles of the frame are each provided with a longitudinally disposed guide strip 19. The strips 19 are secured to the stiles with their outer edges disposed adjacent the inner edges of the strips 18 and said strips 19 extend into the window opening 10 to a point beyond the inner surfaces of the strips 18. The guide

strips 19 are disposed midway of the upper half of the window opening 10 and are provided with bottom edges which are beveled on the outer sides thereof, as seen at 20. A guide strip 21 is secured in the opening 10 and to the upper rail of the frame 9 and with the outer edge thereof in substantial vertical alignment with the outer edges of the strips 19. The strip 21 is disposed intermediate of the stiles of the window frame, as seen in Figure 4, and is beveled on its outer side at 22, as seen in Figure 5. The sill 23 of the frame is provided adjacent its ends with longitudinally disposed lined indentations or grooves 24, one of which is illustrated in Figures 6 and for a purpose hereinafter to be described. The structure previously described constitutes the mounting for either a storm or screen window.

A screen window, designated generally 25 is illustrated in Figures 1 to 7, inclusive, and will be described in conjunction with the window mounting, but it will be readily apparent that a storm window, a portion of which is illustrated in Figure 8, and designated generally 26, could be and is intended to be employed in the same manner as the screen window and interchangeably therewith.

The screen window 25 includes an upper sash, designated generally 27 and a lower sash, designated generally 28. Each of the sashes 27 and 28 includes a frame 29 having an opening normally closed by a sheet of mesh wire fabric 30 which is suitably clamped in the frame 29 as by means of a detachable clamping section 31 thereof, as illustrated in Figure 3. The sashes 27 and 28 are pivotally connected in end to end relationship by hinges 32 which are disposed on the inner sides of the adjacent portions of the frames 29 and the abutting ends of said frames are lined with felt or other compressible means 33 to prevent the frame from rattling when the sashes 27 and 28 are in extended positions as illustrated in Figures 1 and 2.

The inner side of the bottom rail of the lower sash 28 is provided intermediate of its ends with a conventional handle 34 and adjacent each end thereof, with a swingably mounted latch member 35. Each of the latches 35 is swingably mounted at its upper end on a pin or other fastening 35. When it is desired to insert the window screen 25 into the window opening 10, the operator, from the inner side of the window frame 9 raises the lower sash 28 to its position of Figure 5 and inserts the upper sash 27 of the screen window 25 through the opening in the bottom half of the window frame 9, thus provided. The upper edge of the upper screen sash 27 engages against the inner side of the exposed portion of the plate 15 and while disposed in an upwardly and outwardly inclined position with respect to the window opening 10, is slid upwardly in said window opening, guided by its engagement with the plate 15. The upper rail of the sash 27 will pass between the plate 15 and the side guide strips 19, and should said upper rail not be in close engagement with the plate 15, the beveled surface 20 of the strips 19 will deflect said upper rail toward the plate 15 or outwardly of the opening 10. During this movement, the lower sash 28 is disposed at an obtuse angle to the upper sash 27 and extends inwardly through the lower part of the window opening 10. When the upper sash 27 reaches the upper extremity of its movement in the window opening 10, it will be disposed in the position as illustrated in Figure 2 and with the side rails of said sash engaged between a por-

tion of the plate 15 and the guide strips 19 and with a portion of the upper rail of the sash engaged between the plate 15 and the upper retaining or guide strip 21. When the upper sash 27 is thus disposed, the lower sash 28 can be swung inwardly on the hinges 32 and to its position of Figure 2 against the plate 15 after which the latch members 35 are swung downwardly and outwardly from their positions, as indicated in dotted lines in Figure 6, to their full line position in engagement with the grooves 24, for latching the lower sash 28 flush against the inner side of the plate 15. It will thus be seen that the latch members 35 and guide strips 19 and the retaining or guide strip 21 will effectively hold the window screen 25 in tight engagement with the inner side of the plate 15 and the felt strips 33 will be clamped or compressed between the adjacent edges of the frames of the sashes 27 and 28 to combine with the aforementioned parts for securely maintaining the screen 25 in fixed position and to prevent rattling or vibration thereof.

To remove the screen 25, the latch members 35 are swung upwardly to the dotted line positions in Figure 6 and the handle 34 is grasped to swing the lower sash 28 inwardly of the window opening. This will permit the upper side 27 to slide downwardly to dispose the screen 25 in its position of Figure 5 from which it can be removed inwardly through the window frame by an inward pull on the handle 34.

A portion of one sash of a storm window is illustrated in Figure 8 and includes a frame 37 formed of an inner section 38 and an outer section 39 which are riveted or otherwise secured together at 40 adjacent the outer edges of said sections. The inner portion of the outer section 39 is offset outwardly, as seen at 41, to combine with the inner portion of the inner section 38 to form a continuous inwardly opening channel for receiving the edge portion of a transparent pane 42 which closes the opening 43 of the window frame 37. The storm window and screen window are otherwise identical, the storm window likewise being formed of top and bottom hingedly connected sashes adapted to be inserted in and removed from the window opening in the same manner as the screen window 25, as previously described. It will thus be readily apparent that the storm window can be interchanged with the screen window for providing an air chamber between said storm window and the sashes 11 and 12 for insulating the window against the passage of cold air therethrough.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit and scope of the invention as hereinafter defined by the appended claim.

I claim:

In combination with a window including a frame having a pair of vertically sliding sashes for normally closing the opening thereof and disposed adjacent the inner part of the frame opening to afford a space outwardly of the sashes; a frame secured to the outer side of the window frame and having flanges overlying portions of the window opening, guide members secured to the upper portions of the stiles of the window frame and spaced inwardly from portions of said flanges, a window formed of upper and lower sashes disposed in end to end relationship and hingedly connected on the inner sides of said sashes and at the abutting edges thereof, said last mentioned window being adapted to be inserted

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through the lower half of the window opening when the sliding sashes are both in raised position and with the upper sash thereof being adapted to be slid into the upper portion of the window opening and between portions of said flanges and said guide members, the lower sash of the last mentioned window being adapted to be swung outwardly on said hinges through the lower part of the window opening and to a position against the inner side of portions of said flanges and directly beneath said upper sash, for closing the outer part of the window opening, latch means for latching the lower part of the lower sash of the last mentioned window against portions of said flanges, and resilient cushioning strips interposed between the abutting edges of said last mentioned sashes and compressed therebetween, when the sashes are in extended positions relatively to one another, for cooperation with said

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guide members and latch means to retain said last mentioned window in substantially a rigid position in the window opening and against the inner sides of said flanges.

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