July 13, 1943. L. O. DAVIS 2,324,139

SASH AND VENTILATOR

Filed May 9, 1941

FIG. 1

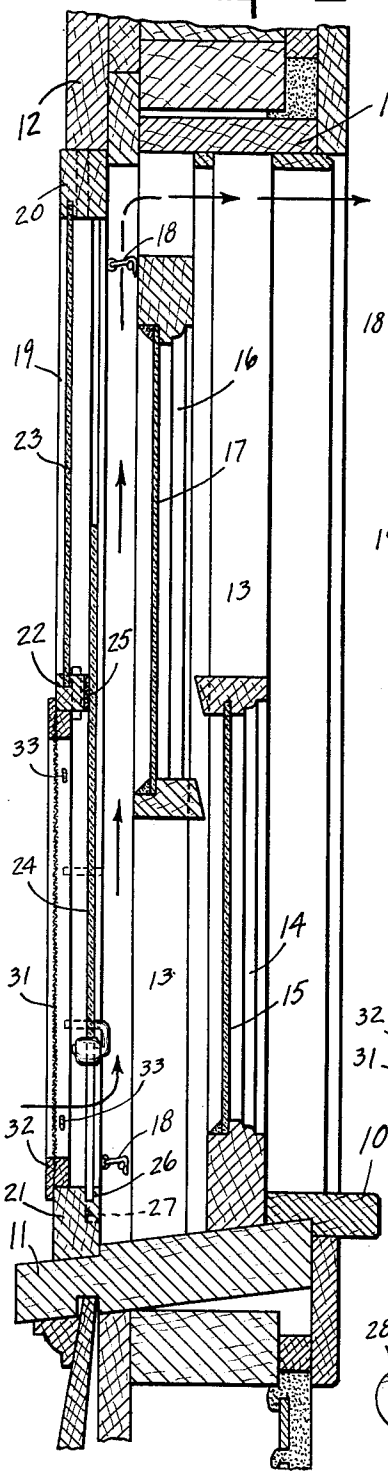


FIG. 2

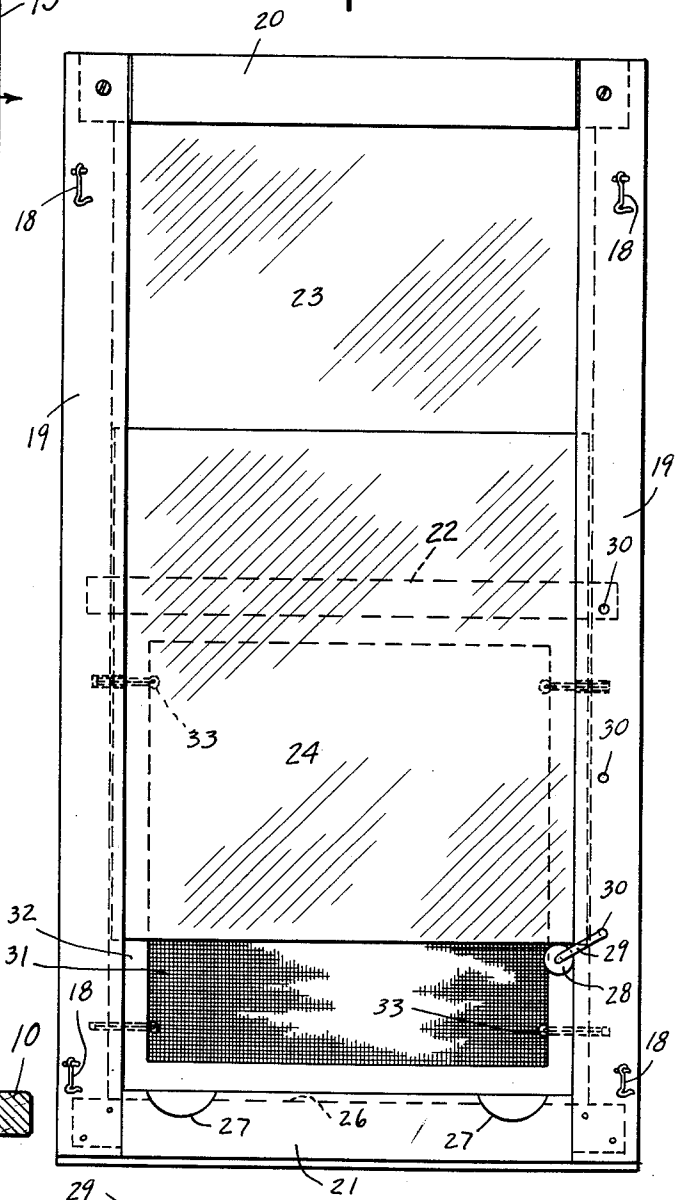
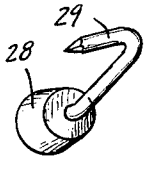


FIG. 3



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SASH AND VENTILATOR

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1 Claim. (Cl. 160—90)

This invention relates to a storm sash for windows in the form of a unitary structure adapted to ready installation and removal.

The object of the invention is to provide a unitary storm sash inclusive of a removable screen provided therein as a part of the unit, said screen being associated with an adjustable glass plate. This structure has the advantage over the usual type of storm sash employing fixed glass plates, of remaining installed and being useful both in cold and hot weather. Thus, the storm sash has definite advantages the year around.

The principal feature of the invention resides in the ventilating properties of the storm sash wherein the lower half lying adjacent the lower window sash is provided with a screen and a slidable and adjustable glass plate. Thus, the upper and lower plates may be closed when no ventilation is desired to thereby act as a full protection and create an inactive air space between the window sash and the storm sash.

For winter ventilation it is useful in providing a draft of fresh air entering the building through the screen and under the slightly raised lower plate of the storm sash, upwardly between the storm sash and window sash to enter the room at the top of the window near the ceiling where the cool air is most needed, and wherein the upper window sash is slightly lowered for this purpose. This same arrangement is effective in the warm months of the year as a protection against raining in while at the same time permitting partial or full ventilation. Thus, the lower plate of the storm sash may be partially or entirely raised, and the upper window sash partially or entirely lowered. This permits of full ventilation while the lower window sash prevents rain from entering the building. Thus, it is not necessary between seasons to either remove the storm sash or remove the screen, the storm sash remaining a permanent year around unit of the window.

The space between the two sashes acts as an insulating medium when the storm sash is closed and when the lower plate thereof is raised and the upper sash of the window lowered, it acts as a flue, such as will create a substantial draft for ventilating purposes, the fresh air being thereby projected near the top of the room or building where it is most effective to maintain a more even temperature as between floor and ceiling, particularly during the heating periods.

The full nature of the invention will be understood from the accompanying drawing and the following description and claim:

Fig. 1 is a central vertical section through a conventional window frame and sashes showing a storm sash secured in place. Fig. 2 is a front elevation of the storm sash showing the lower glass plate partially raised. Fig. 3 is a perspective view of the keeper pin for supporting the glass plate partially raised.

In the drawing there is illustrated the conventional window casing including an inner window sill 10, outer sill 11, outer casing 12 and frame 13. Within the casing there is a window frame in which the lower window sash 14 carrying the lower window pane 15 is slidably mounted, and in the upper portion of the window frame 13 there is slidably mounted an upper window sash 16 with an upper window pane 17.

The storm sash is removably mounted as a unit within the outer casing of the window to seat upon the outside sill and be secured in place by suitable hooks or any similar means, as indicated at 18. Said storm sash includes a framework having the vertical frame members 19 joined at the top by the top bar 20 and at the bottom by the bottom bar 21. Intermediate the top and bottom bars and secured to the vertical frame members 19 there is a cross bar 22. The top glass plate or window pane 23 is secured within the frame structure comprising the members 19, 20 and 22, its lower edge seating in the recess in the member 22 and its lateral edges slidably mounted in recesses formed in the vertical frame members 19. Said plate is locked in place by the top bar 20, but may be removed and replaced by unscrewing the top bar and placing it to one side, whereupon the plate 23 may be slid upwardly and out of the frame.

The lower glass plate or window pane 24 is slidably mounted within vertical recesses formed in the frame members 19, the upper portion thereof overlapping the member 22 and bearing against a felt sealing strip indicated at 25. The lower end of the plate 24 extends into the recess of the bottom bar 21, which is indicated at 26, when said plate is lowered to closed position. In order that the plate 24 may be manipulated, bar 21 is provided with finger grooves 27 to enable the lower edge of plate 21 to be engaged from the inside of the window for raising it. Thus, while the top plate is stationary, the lower plate is moved the full length of the frame members 19 so that its lower edge may be positioned adjacent the cross member 22.

The lower movable plate 24 may be supported in raised adjusted positions by a keeper, as illustrated in Fig. 3, having a rubber head 28 and a

keeper pin 29, said keeper being shown in plate-supporting position in Fig. 2. One of the inner vertical frame members 19 is provided with a series of holes 30 for receiving the keeper pin 29.

In addition to the above described part of the storm sash there is provided a screen 31 mounted in the screen frame 32 adapted to seat within the lower half of the sash frame between the members 19, 21 and 22. Said screen frame may be removably secured therein by the keeper pins 33 extending through the side frame members 32 into the vertical frame members 19.

From the foregoing, it will be observed that various combinations of window arrangements may be employed through various adjustments or positioning of the lower storm glass plate 24 within the storm sash in association with various adjustments of the lower and upper window sashes. Thus, full direct and screened ventilation may be obtained through raising both the plate 24 and lower sash 14, or indirect ventilation or storm protection may be obtained through raising the plate 24 and lowering the upper sash 16. By thus manipulating the various sashes together with the lower plate 24, the several glass plates may be conveniently made accessible for cleaning.

The invention claimed is:

A singular sash structure having a rigid frame and adapted to be secured in a window casing in storm window relation, the window casing supporting guillotine type windows, a stationary glass plate secured in the upper half of said structure frame, a slidable and adjustable glass plate mounted in the lower half of the structure frame, a cross member below the upper glass and retaining same in the sash structure frame and forming a lower half opening therethrough, a sealing strip means carried by the cross member and constantly engaging the adjustable glass plate in all positions thereof for insuring direct or circuitous air circulation from the last mentioned opening through the guillotine window casing when the adjustable plate is appropriately elevated and at least one of the guillotine windows is appropriately opened, and as a completely sealed storm window when the adjustable plate is fully lowered to close the lower half opening, a framed screen removably seated in the lower half opening of the sash frame and in spaced relation to said adjustable glass plate and substantially co-planar with the stationary glass plate, said sash structure frame and screen frame being provided with a series of aligned openings extended horizontally and inwardly of the plane of the screen for receiving removable locking pins for removably securing within the sash structure frame said screen frame, said sash structure frame also being provided with another series of openings and in the lower half thereof and extending at right angles to the parallel planes of the glass plates and screen, and a U-shaped keeper pin having one shank end portion removably engageable in any one of said last mentioned right angle positioned openings and a second shank end portion at right angles to the pin's central portion and directed similar to and substantially parallel to the first shank end portion and provided with a cushion head extending into the plane of the said adjustable plate for engaging the bottom thereof to support said glass plate in one of the raised positions.

LATTA O. DAVIS.