Jan. 15, 1946. T. G. PRENTICE 2,392,997

SASH FASTENING

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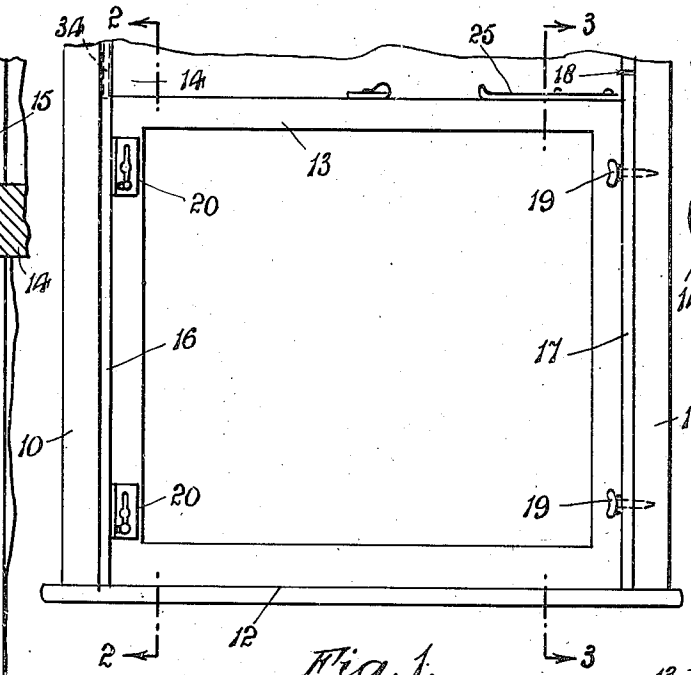


Fig. 1.

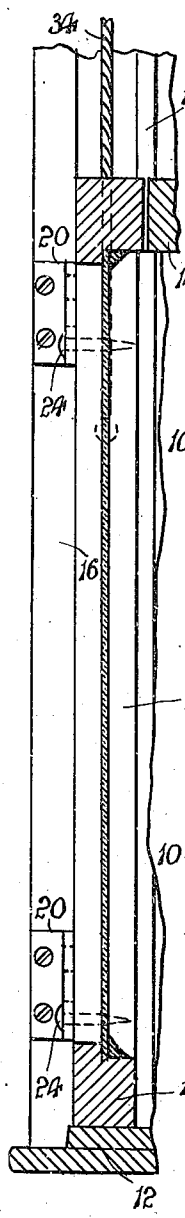


Fig. 2

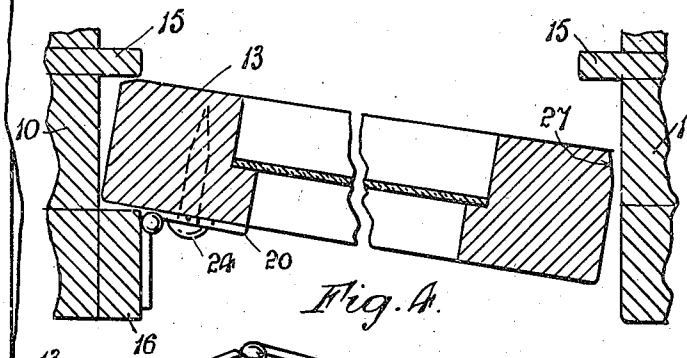


Fig. 4.

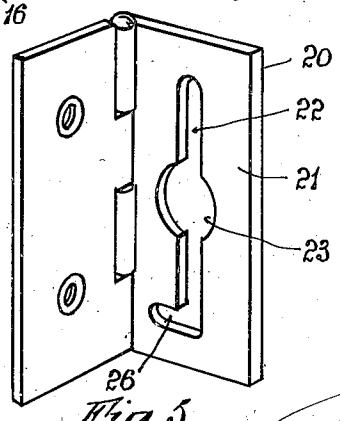


Fig. 5.

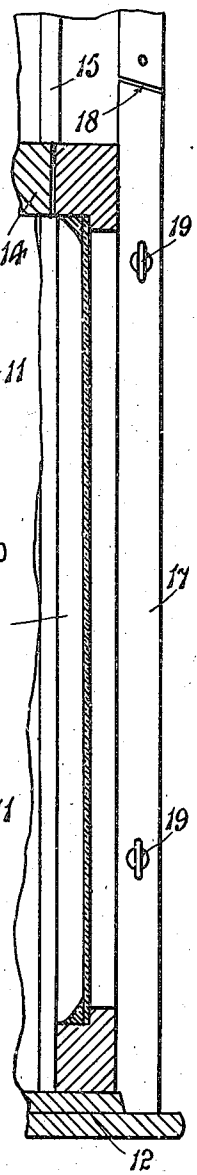


Fig. 3.

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SASH FASTENING

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2 Claims. (Cl. 20—46)

This invention relates to casement window hardware and has for its object to provide means whereby the lower casement sash may be operated both as a sliding and as a hinged sash, under conditions which will render the said sash capable of ready manipulation from the inside of the building for raising or swinging of the sash but proof against unwarranted opening from the outside of the building. Thus a sash equipped in accordance with the present invention may be opened to a definitely limited extent for purposes of ventilation, but locked against further unauthorized opening from the outside of the building, by the same means which provide for the inward swinging of the sash to facilitate cleaning or to provide directional ventilation into the room should this be desired.

The invention also provides a form of hinge for the sash permitting the aforesaid manipulation thereof and also permitting ready and simple detachment of the sash from the frame of the window, such as for repair or replacement as with a screen, for instance.

Still further the said invention contemplates the provision of a sash hinge affording vertical adjustment as well as swinging adjustment and also certain horizontally sliding movement on the hinge to facilitate the clearing of the frame work of the window when the sash is swung inwardly therefrom.

Still further objects or advantages additional or subsidiary to the aforesaid objects, or resulting from the construction or operation of the invention as it may be carried into effect, will become apparent as the said invention is hereinafter further disclosed.

In carrying the said invention into effect, I may provide the lower and inner vertically slidable sash of a window with a plurality of hinges attaching it to one of the inside stop strips of the window frame, the other inside stop strip, on the opposite vertical edge of the sash, being severed intermediate of its height and provided with thumb screws of similarly manually detachable fastenings whereby that part of the said stop strip may be removed when it is desired to swing the sash inwardly of the building, the said hinges being characterized by the plates thereof, which abut the sash, being vertically slotted to receive and permit the vertical movement therein of pins entering the frame work of the sash, the said slots each having enlarged openings intermediate their length to permit attachment and detachment of the said pins to or from the said plates, and horizontally offset recesses at the lower ends of the said slots to permit horizontal adjustment of the sash on the hinges during the operation of swinging the said sash out of and into its closed position in the frame of the window. All of which is more particularly described and ascertained, by way of example, in and by the following specification having reference to the accompanying drawing, wherein:

Figure 1 is an elevation of the lower part of a window embodying the said invention;

Figure 2 is a vertical section of the same taken on a plane indicated by the line 2—2 in Figure 1;

Figure 3 is a similar section taken on a plane indicated by the line 3—3 in Figure 1;

Figure 4 is a fragmentary horizontal section illustrating the sash partly opened; and

Figure 5 is a detail perspective view of one of the hinges.

Similar characters of reference indicate similar parts in the several figures of the drawing.

10 and 11 indicate the left and right jambs respectively, of a window frame, and 12 is the lower sill. 13 is the lower inside sash and 14 the upper outside sash of the window, the said sashes being separated in sliding relation to each other by the intermediate parting stops 15. 16 indicates the left inside stop or strip of the window frame and 17 the right inside stop, which in the present case is severed as by sawing at 18 from the upper portion thereof and is provided with thumb screws 19 which may be manually detached from the jamb 11 to permit easy removal of this lower portion of the said stop 17.

Hinges, generally numbered 20, swingably attach the left hand vertical member of the sash 13 to the stop 16 of the jamb 10, as will be readily seen, and it will be noted that the plates 21 of the hinges 20 which abut the face of the sash frame are each provided with a vertical slot 22 interrupted by an enlarged opening 23 intermediate the length of the slot, through which opening the heads of studs or pins 24 projecting from the sash frame may be passed to permit the interlocking of the said studs with the slots 22 of the hinges, as will be readily understood. Thus, with the said studs 24 engaged in the slots 22 of the hinges, the said sash 13 is permitted movement vertically within the limitation imposed by the length of the said slots 22, the window being fully closed when the studs 24 are at the lower ends of the said slots, and, of course, partially open when the said studs are at the upper ends of the said slots 22.

It is proposed that, while the left hand counterweight cord 34 be retained in connection with the sash to facilitate its vertical movement, the usual right hand cord be dispensed with as this would only interfere with the swinging action of the sash 13 on its hinges 20 when desired. This swinging is effected after the lower portion of the right hand stop 17 has been removed, as hereinbefore described, and the studs 24 being at the lower ends of the slots and thereby fully supported by the hinge plates 21 in such position the said sash is held freely swingable over the lower sill 12 of the window frame without objectionable friction at this point.

When the said window is so swung inwardly of the room, both sides are easily accessible for cleaning and a clear opening provided for access to both sides of the upper sash for cleaning, there being no obstruction of the upper sash such as is ordinarily experienced when the lower sash is raised in the manner of sliding casement windows as ordinarily constructed.

Further, if thought necessary or desirable, suitable means such as an adjustable brace 25 may be provided to secure the sash in various angles of opening to which it may be swung, in order to direct a draft at an angle into the room for instance, but this means of securing the sash in such positions of opening is not an essential part of the present invention and is not described in further detail as it is obvious that any of many devices on the market may be used for such purpose.

The said sash 13 may be readily detached from its hinges, after it has been partly swung out from the frame, by simply aligning the studs 24 with the enlargements 23 of the slots whereupon the heads may be withdrawn through the said enlarged openings; and when the sash is so detached from the hinges it may be opened wide by sliding in the usual manner between its stops without the limitations imposed by the hinges and already described. The change from the free opening to the limited opening arrangement is quite simply effected by this disengagement of the hinges from the sash.

In cases where the thickness of the sash and the size and position of the stops may impose an undesirable obstruction to the free swinging of the sash on its hinges, I may provide at the lower end of each slot 22 a horizontal offset notch 26 permitting movement of the said studs 24 laterally in to the notches 26 of the hinge plates, during the swinging of the sash, in order that corresponding horizontal movement of the sash may take place to permit the outer vertical frame member of the swinging sash to be moved away from the jamb 11 as the swinging takes place and thus prevent the sash, by reason of its thickness, becoming wedged against the opposing face of the jamb during the swinging movement. This prevents the necessity of cutting away an undue amount of the rear edge of the right hand vertical frame member of the sash 13, as at 27, so that a maximum true sealing or abutting surface between the said sash frame member and the jamb may be maintained when the parts are in their closed position.

This invention may be developed within the scope of the following claims without departing from the essential features of the said invention, and it is desired that the specification and drawing be read as being merely illustrative of a practical embodiment of the said invention and not in a strictly limiting sense.

What I claim is:

1. In a device of the class described, in combination, a window frame, a vertically slidable sash mounted therein, a removable stop strip on said frame for one vertical edge of said sash, and hinges on the opposite side of said frame, said hinges being characterized by pin and slot attachment to the other vertical edge of said sash permitting limited vertical sliding of said sash, the slots having enlarged openings intermediate their length whereby the said hinges may be disconnected from said sash when it is partially raised within the sliding limitation imposed by said slots, said slots also having horizontally offset recesses at their lower ends.

2. A hinge to provide sliding action, swinging action, and horizontal movement in a window sash, said hinge having a vertical slot in one of the plates thereof with an enlarged opening intermediate the length of said slot and a horizontally offset recess at the lower end of said slot, as and for the purposes specified.

THOMAS G. PRENTICE.