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STORM WINDOW HINGE

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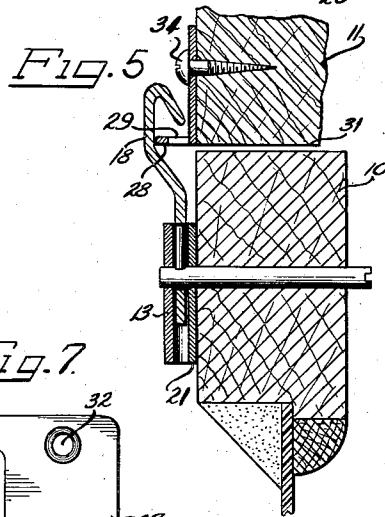
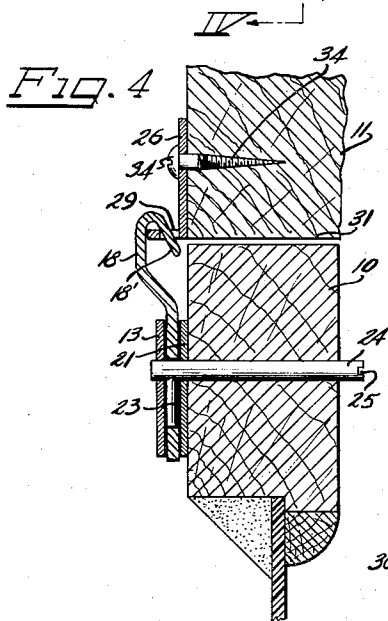
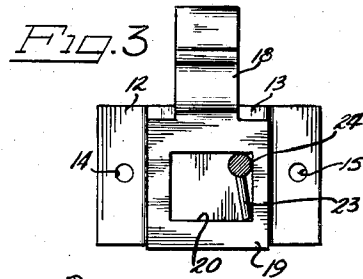
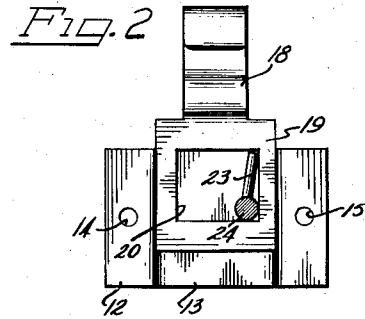
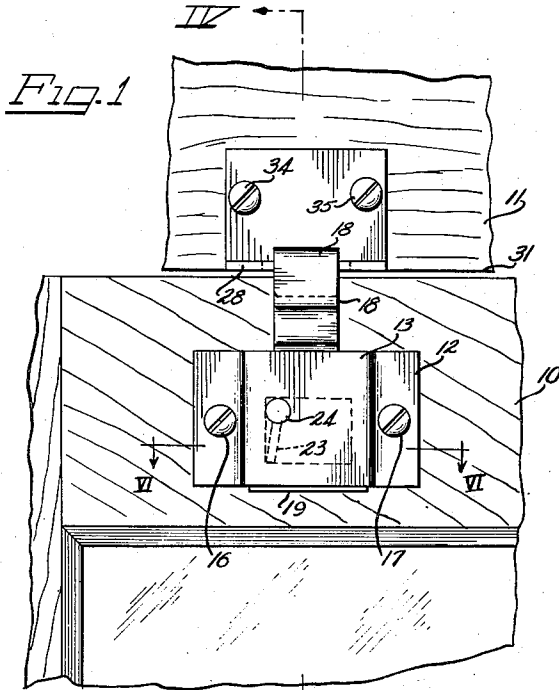
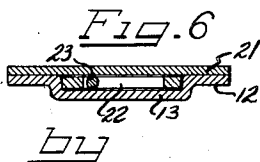
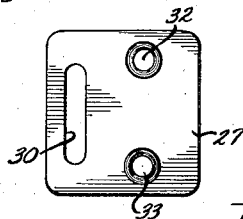


Fig. 7



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STORM WINDOW HINGE

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4-Claims. (Cl. 16-172)

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This invention relates to improvements in separable hinges which may be used for various purposes but which are particularly intended for use in connection with the hanging of screens and storm windows.

The difficulties and hazards attending the hanging and removal of large screens and storm sashes at locations which are so high above the ground level as to require the use of ladders is so universally known as to require no explanation herein, hence the advantages of the present invention will be readily discerned without exposition of the difficulties to be overcome.

The general object of the present invention is to facilitate the mounting and dismounting of screens and storm window sashes by an operator working from the interior of a building, by providing separable hinges which can be rendered operative or inoperative by manipulation from the inside of the building.

Another object of the invention is to provide a separable hinge having one leaf portion permanently attached to the outside of the building and another leaf portion adjustably attached to the storm sash, for example, which adjustable member may be operated, by means of a control element extending to the inner surface of the storm sash, to hingedly engage the first leaf portion.

Another object of the invention is to provide a separable hinge having the foregoing advantages and which may be readily attached to a window frame and storm sash without requiring the skilled services of a carpenter.

Another object and advantage of the invention is to provide a separable hinge of the class described which is economical to manufacture and to install.

Other objects and advantages of the invention will become apparent from a perusal of this specification.

On the drawings:

Figure 1 is an elevational view of a portion of a storm sash and window frame having mounted thereon a separable hinge made in accordance with this invention, showing the hinge in its operative or hinged position.

Figure 2 is an elevational view of the rear or inside face of the sash portion of the hinge, showing the hook thereof raised to the disengaged position.

Figure 3 is an elevational view of the rear or inside face of the same hinge, showing it lowered to the engaged position.

Figure 4 is a sectional view on the line IV—IV

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of Figure 1, showing the two portions of the hinge in the engaged or hinged position.

Figure 5 is a sectional view corresponding to that of Figure 4, showing the hook of the lower hinge member raised to the disengaged position.

Figure 6 is a sectional view taken along line VI—VI of Figure 1, showing the slideway between the retainer plate and the backing plate.

Figure 7 is a plan view of a modified form of the hinge member which may be attached to the window frame.

While Figure 1 shows only the left hand hinge, it is to be understood that another hinge will be mounted near the upper right corner of the sash.

Referring to the drawings, the upper horizontal top frame member of a storm window sash is indicated as 10, and the adjoining window frame member is indicated as 11.

Ordinarily, a storm sash will be hung on two identical hinges; but it will suffice to show here only one of them.

The lower portion of the hinge includes a retainer plate 12 having an outwardly offset portion 13 and two apertures 14 and 15 which are intended to receive the screws 16 and 17. A hook 18 is fashioned as shown and provided with a plate portion 19 having a rectangular slot 20.

As shown in Figure 6, a flat backing plate 21 having the same external dimensions as the plate 12 is spot welded thereto and provided with apertures (not shown) to register with the apertures 14 and 15. This assembly thereby provides a slideway 22 in which the hook plate 19 may vertically slide and the tongue 23 of the locking key may oscillate.

As seen in Figure 4, the tongue 23 is fixedly secured to a key shank 24, the shank extending through a suitable hole drilled in the window sash, and having at its inner end a kerf 25 to facilitate manipulation of the key by means of a screwdriver.

To cooperate with the hook 18 of the lower hinge member, I may use either the hinge plate or leaf 26 shown in Figure 4, or the hinge plate 27 as shown in Figure 7. The plate 26 has a horizontally extending flange 28 provided with a suitable slot 29 to receive the hook 18. The margin of the flange outside of the slot 29 therefore constitutes a hinge pintle. As a modified form of the upper leaf, I may use the plate 27, provided with a slot 30, which likewise may receive and cooperate with the hook 18. The hinge leaf or plate 26 is secured in the manner shown in Figures 1 and 4 to the window frame, while if the plate 27 be employed it would be secured

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to the under horizontal edge 31 of the window frame by means of screws extending through the screw holes 32 and 33. The plate 26 is secured by means of wood screws 34 and 35.

As the space between the top of the storm window sash and the edge 31 of the window frame usually is ample, the plate 27 may be secured at that location to the window frame, and may be so secured without the user climbing outside of the window to do so.

When the hook 18 is being lowered from the position shown in Figure 5 to the position shown in Figure 4, the inclined surface 18' of the hook, acting on the outer edge of the slot 29, serves to draw the upper edge of the storm sash more tightly against the vertical portions of the window frame, whereby the storm sash more tightly seals the opening in the window frame.

The hinge portion mounted on the window frame and the hinge portion mounted on the window sash should be so relatively spaced that when the tongue 23 is rotated into the position shown in Figure 3, drawing the hook 18 downwardly, the sash will be raised very slightly to suspend it on the hinges. The tongue 23, having rotated past dead center, will remain as located until actuated again by the key stem 24.

One or more hooks may then be employed to hold the bottom portion of the storm sash or screen against the window frame. If it be desired to swing the lower edge of the storm sash outwardly at times for ventilation purposes, any of the various well known devices suitable for that purpose may be employed.

While the drawings and the foregoing specification show preferred embodiments of the invention, it should be understood that the invention is susceptible of some variation and modification without departure from the spirit and scope of the invention defined in the appended claims.

I claim as my invention:

1. A separable hinge comprising a leaf for mounting on the top horizontal portion of a window frame and having a horizontally extending pintle integral therewith, a second leaf member for vertically shiftable mounting on the upper outside surface of a window sash and having a hook portion at its upper end inclined inwardly and downwardly for engagement with said pintle, a guide for said shiftable member consisting of a flat metal plate and a second plate secured in its lateral marginal portions to the first plate and having a central outwardly offset portion providing with the first plate a vertical slideway for the shiftable leaf member, the latter member having a slot disposed within the area thereof concealed within said slideway, means for securing said plates to the window sash, a cylindrical rod rotatably supported on both plates extending through said slot and having a length adequate to extend through a drilled hole in a window sash from the outer to the inner surface thereof, means at the inner end of said rod for rotating it, and an operating arm fixed on said rod extending perpendicularly therefrom for oscillation therewith between said plates and the margins of said slot effective for raising and lowering said hook portion.

2. A separable hinge for a window frame and

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sash assembly comprising a plate for mounting on one portion of the window assembly and slotted near one margin thereof to provide a pintle between said slot and said margin, a reciprocable hinge leaf having a hook at one end thereof and a slotted plate portion, mounting means for said leaf on another portion of the window assembly for slidably guiding said plate portion, a rotatable rod extending from said mounting means through said another portion of the window assembly to the opposite surface thereof, and an arm secured to said rod extending within the slot of said plate portion, said arm being oscillatable in response to rotation of said rod to act on the adjacent portions of said plate portion to reciprocate the same for engaging and disengaging said hook with respect to said pintle.

3. A separable hinge for a window frame and sash assembly comprising a plate for mounting on one portion of the window assembly and slotted near one margin thereof, a reciprocable hinge leaf having a hook for engagement with the slotted portion of said plate to hinge thereon, said leaf having an aperture, mounting means for said leaf on another portion of the window assembly for slidably guiding the leaf and covering the aperture therein, a shaft extended from said mounting means through said another portion of the window assembly to the opposite surface thereof, and an arm connected to said shaft and disposed within said aperture for cooperation with an edge defining said aperture for reciprocating said leaf relative to its mounting means.

4. A separable hinge comprising a leaf carrying a pintle, means for mounting said leaf on a window frame with said pintle in horizontal position, a second leaf member having a hook for hinging engagement with said pintle, means slidably guiding said second leaf member for movement toward and away from said pintle, a rod extending through said second leaf member for projection on the inside of a sash on which said second leaf member is mounted, an arm connected to said rod and engaging said second leaf member for reciprocating the latter into and out of engagement of said hook with said pintle, and means for mounting said guiding means on the outer surface of a storm window sash, said hook having an inclined surface cooperative with the pintle upon being moved into engagement therewith for drawing a window sash on which the hook may be mounted more closely against the associated window frame on which the pintle leaf may be mounted.

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