July 22, 1952 F. S. EVANS 2,603,822

THREE-PIECE HINGE

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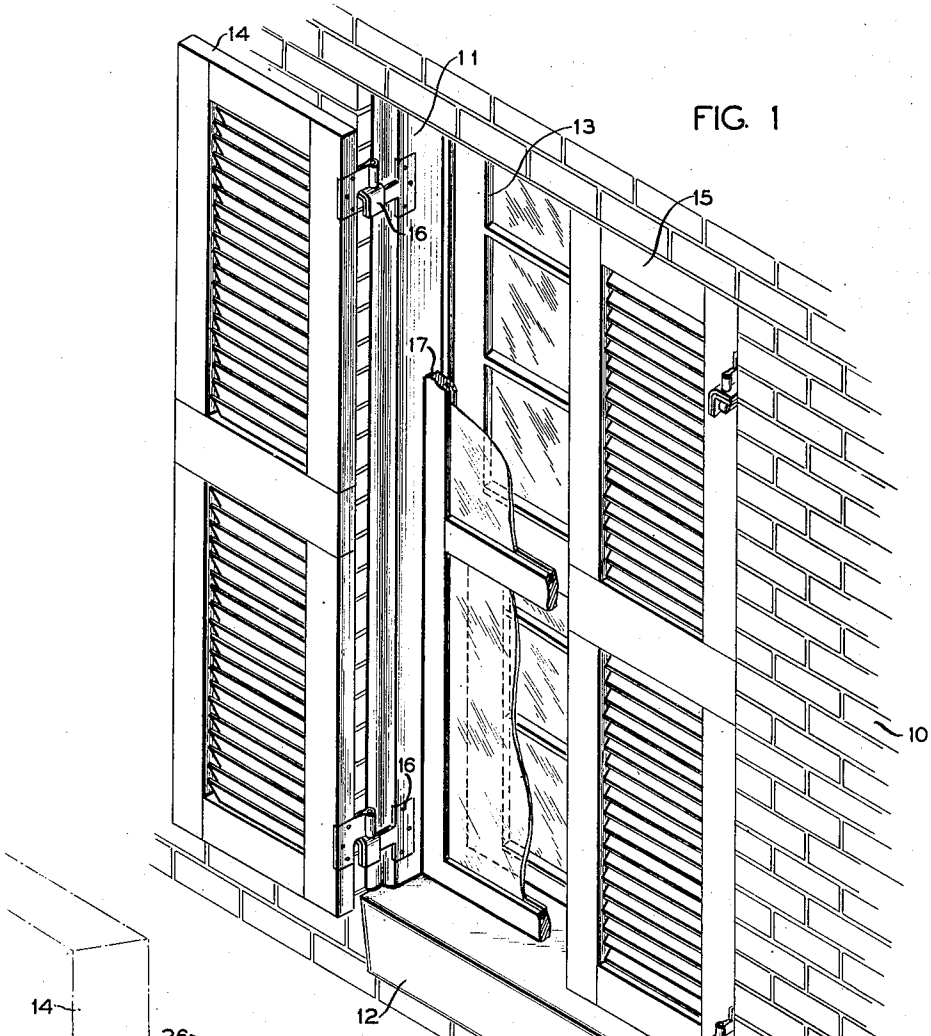


FIG. 1

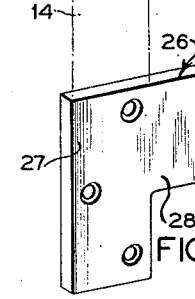


FIG. 3

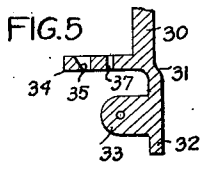


FIG. 5

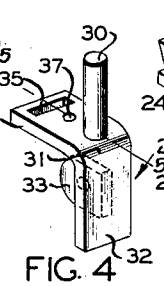


FIG. 4

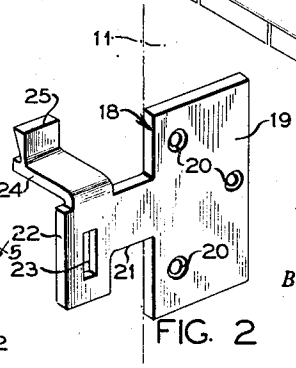


FIG. 2

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THREE-PIECE HINGE

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5 Claims. (Cl. 16—128)

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This invention relates to improvements in hinges and more particularly to an improved hinge for supporting shutters adjacent to the window openings of a building.

Shutter hinges are well known to the art and have been provided in various forms. It has been found, however, that when conventional shutter hinges are used and it is desired to install storm windows, either the hinges must be removed or the storm windows must be notched to pass the hinges since the conventional hinges have portions which set inside of the face planes of the window opening.

It is among the objects of the present invention to provide an improved hinge construction, portions of which may be permanently attached to the window jamb and to the shutter, in which the hinge pin is so located that the shutter will fit closely against the window jamb and in line with the outer edge of the jamb when closed and will have its inner edge portion substantially flush with the edge of the window opening when open, and wherein the pin and a supporting member therefor is separately removable from the remainder of the hinge to eliminate any portion of the hinge extending within the window opening. Thus, a storm window may be installed in the window opening without removing the hinge parts from the window jamb and without having to notch the edges of the storm window sash to enable the window to pass an inwardly extending portion of the hinge.

Other objects and advantages will be apparent from a consideration of the following description in conjunction with the accompanying drawing wherein;

Fig. 1 is a perspective view of a window provided with a storm window and shutters showing the application thereto of improved shutter hinges illustrative of the invention;

Fig. 2, a perspective view of a hinge butt portion adapted to be secured to the window jamb;

Fig. 3, a perspective view, partly broken away, of a hinge butt portion adapted to be secured to a shutter;

Fig. 4, a perspective view of a hinge pin and detachable support therefor arranged to be operatively associated with the hinge portions illustrated in Figs. 2 and 3; and,

Fig. 5, a section on the line 5—5 of Fig. 4.

With continued reference to the drawing, house wall 10 is provided with a window opening having the usual window jamb 11, ledge 12, and sash 13. The window is provided with shutters 14 and 15 secured to the jamb 11 by the hinges 16,

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the illustration showing two hinges applied to each shutter. The shutter 14 is shown in open position and the shutter 15 is closed position and a storm window sash 17 is shown in operative position in the window opening.

In order to maintain the axis of the hinges 16 in position so that the inner edge of the shutter will fit closely against the inner surface of the window jamb at the edge thereof when the shutter is closed, and will be substantially in alignment with the vertical edge of the window opening when the shutter is open, it is necessary to have the common axis of the hinge pins substantially in the plane of the inner surface of the window jamb. This causes a portion of the hinge structure to project within the area of the window opening so that a storm window cannot be installed without either removing the hinge butt portions secured to the window jamb or providing notches or indentations in the edges of the storm window sash to pass these inwardly extending portions of the hinges. An attempt has been made to overcome this difficulty by bending outwardly the shank of the hinge portions secured to the window jamb to offset the hinge pins away from the area of the window opening. This has the result, however, of throwing the shutters outwardly relative to the window opening so that the inner edges of the shutters do not line up with the vertical edges of the window opening when the shutters are open or, if the hinges are adjusted to accomplish this, then the shutters will not properly close with the window jamb.

The improved hinge provides a flat butt portion, generally indicated at 18, including a rectangular part or butt portion 19 which is set into the window jamb so that its outer surface is flush with the surface of the jamb, and is provided with counter sunk screw holes 20 for the reception of screws securing the butt portion to the window jamb; a reduced shank portion 21 extending outwardly from one side of the portion 19 and a support portion at the outer end of the shank 21, this support portion providing a rectangular parallel portion 22 substantially parallel to the rectangular butt portion 19 having an elongated rectangular aperture 23, and an arm 24 disposed at right angles to the parallel portion 22 and provided at its end with an upstanding taper key 25.

The hinge butt portion shown in Fig. 3 and generally indicated at 26 has a second rectangular butt portion 27 adapted to be inset into the edge of a shutter, such as the shutter 14, a second

shank portion 28 extending from one side of the rectangular butt portion 27 and a cylindrical pin receiving sleeve 29 at the outer end of the second shank portion.

The hinge pin 30 is secured at its bottom end to the upper surface of an angular bracket 31 having a normally vertical arm 32 provided with an inwardly extending apertured lug 33 receivable in the aperture 23 of the parallel portion 22 and having a normally horizontal arm 34 provided in the end portion thereof with a rectangular aperture 35 adapted to receive the key 25 on the arm 24 of the parallel portion 22. The key 25 is provided with an outer wall which is tapered inwardly and downwardly and the aperture 35 is provided with a corresponding downwardly and inwardly tapered outer wall to provide a locking engagement with the key.

In order to assemble the hinge parts the bracket 31 is placed above the support portion with the outer edge of the key 25 inserted in aperture 35. The bracket 31 is then moved downwardly and inwardly relative to the support portion until the lug 33 extends through the aperture 23 with the normally horizontal arm 34 of the pin bracket in contact with the arm 24 of the support portion and the normally vertical arm 32 of the angular bracket in contact with the parallel portion 22 of the support portion. A conventional cotter key is then inserted through the aperture in the lug 33 to hold the bracket member 31 in operative association with the support portion of the hinge butt 18. After the pin carrying brackets have been operatively connected to the jamb supported hinge butt portions of the hinges common to a particular shutter and the shutter carried butt portions have been properly secured to the shutter, the shutter may be mounted by placing the cylindrical hinge portions 29 over the corresponding pins, allowing the shutter to move downwardly so that the pins are inserted into the pin receiving portions.

When it is desired to install a storm window sash in a window having shutters mounted by the improved hinges, the shutters are first removed from the hinges, the pin carrying brackets are removed from the hinge butt portions secured to the window jamb and the storm window sash may then be inserted without providing any recesses in the sash edges and without removing any major portion of the hinges, since no portion of the hinge butt portion 18 facing the window opening extends into the area of the window opening.

The shank 28 of the butt portion 26 at the bottom edge of pin receiving portion 29 is preferably provided with a small depending detent 36 which is releasably engageable in an aperture 37 provided in the horizontal arm 34 of the hinge bracket when the shutter is in open position to releasably lock the shutter open.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawings and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A hinge comprising a first hinge butt including a first rectangular butt portion, a shank extending from one edge of said first rectangular butt portion, and a support portion at the outer end of said shank including a portion substantially parallel to said shank having an elongated aperture therein and an arm substantially perpendicular to said parallel portion of said support portion, and a tapered key at the outer end of said arm, a bracket having a portion overlying said parallel portion and arm of said support portion and engageable with said key, and an apertured lug on said bracket positioned to pass through said elongated aperture in said support portion and receive a fastening element, a hinge pin secured at one end to said bracket, and a second hinge butt including a second substantially rectangular butt portion, a second shank extending from one edge of said second substantially rectangular butt portion, and a pin receiving sleeve at the outer end of said second shank.

2. A hinge comprising a first hinge butt including a first generally rectangular butt portion, a first shank portion and a support portion all behind a plane including one surface of said first generally rectangular butt portion; a second hinge butt including a second generally rectangular butt portion, a second shank extending from one edge of said second generally rectangular butt portion, and a pin receiving sleeve at the outer end of said second shank; and a hinge pin and supporting bracket therefor detachably secured to the support portion of said first hinge butt.

3. A hinge comprising a first hinge butt including a first generally rectangular butt portion, a first shank portion and a support portion all behind a plane including one surface of said first generally rectangular butt portion; a second hinge butt including a second generally rectangular butt portion, a second shank extending from one edge of said second generally rectangular butt portion, and a pin receiving sleeve at the outer end of said second shank; and a hinge pin and supporting bracket therefor detachably secured to the support portion of said first hinge butt, said support portion of said first hinge butt having a locking key and an aperture spaced from said key and said supporting bracket having a portion engageable with said locking key and an apertured lug receivable in said aperture spaced from said key to receive a fastening element releasably securing said bracket to said first hinge butt.

4. A hinge comprising a first hinge butt including a generally rectangular butt portion, a shank portion and a support portion all behind a plane including one surface of said generally rectangular butt portion, a second hinge butt including a second generally rectangular butt portion, a second shank extending from one edge of said second generally rectangular butt portion, and a pin receiving sleeve at the outer end of said second shank; and a hinge pin and supporting bracket therefor detachably secured to the support portion of said first hinge butt, said supporting bracket being shaped to position said hinge pin with its axis substantially in said plane.

5. A hinge comprising a first hinge butt including a flat butt portion, a shank portion and a support portion all behind a plane including one surface of said flat butt portion, a second hinge butt including a second flat butt portion, a second shank extending from one edge of said second flat butt portion, and a pin-receiving sleeve at the outer end of said second shank, a hinge pin and supporting bracket therefor detachably secured to the support portion of said first hinge butt, said supporting bracket being

shaped to position said hinge pin with its axis substantially in said plane.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
26,375	Richardson	Dec. 6, 1859
103,758	Long	May 31, 1870
721,721	Moore	Mar. 3, 1903
854,580	John	May 21, 1907

FOREIGN PATENTS

Number	Country	Date
168,696	Great Britain	Sept. 15, 1921