Aug. 20, 1929. M. L. RAYMOND 1,725,419

STORM WINDOW FASTENER

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Fig. 1.

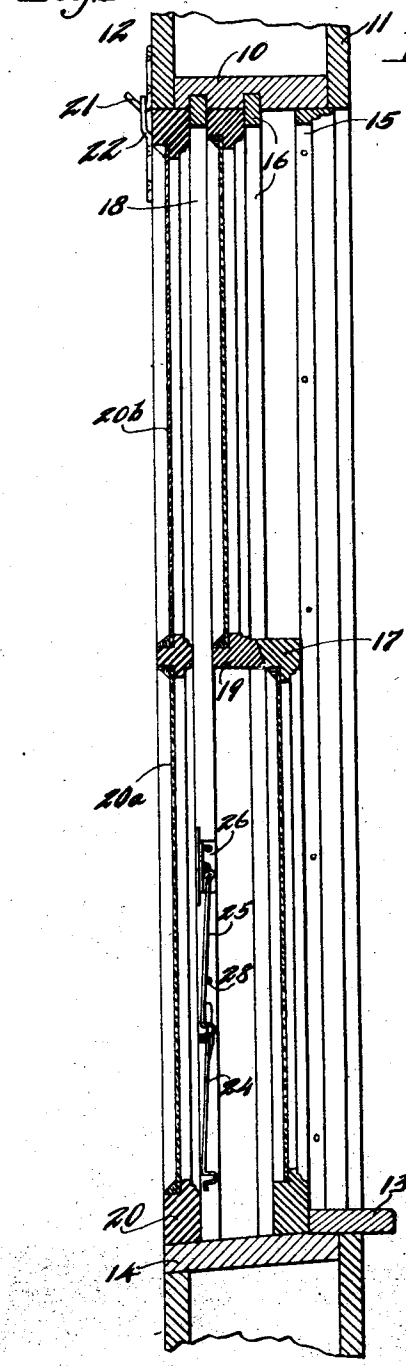


Fig. 2.

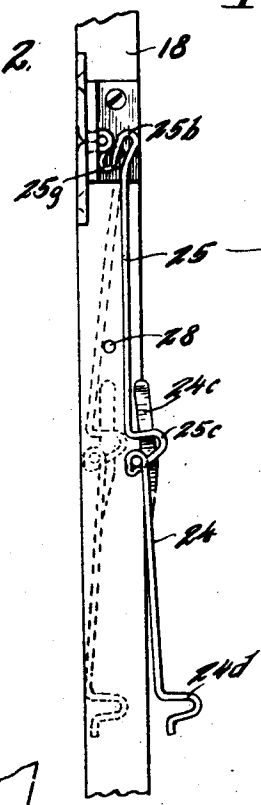


Fig. 3.

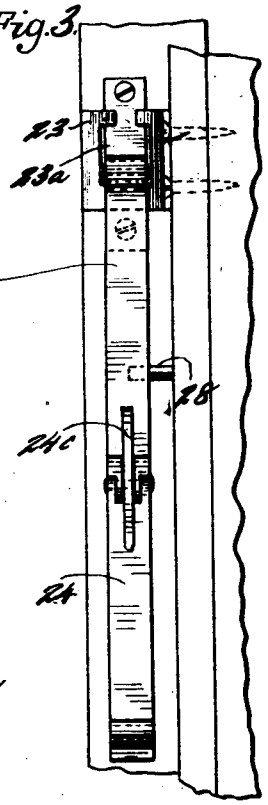


Fig. 4

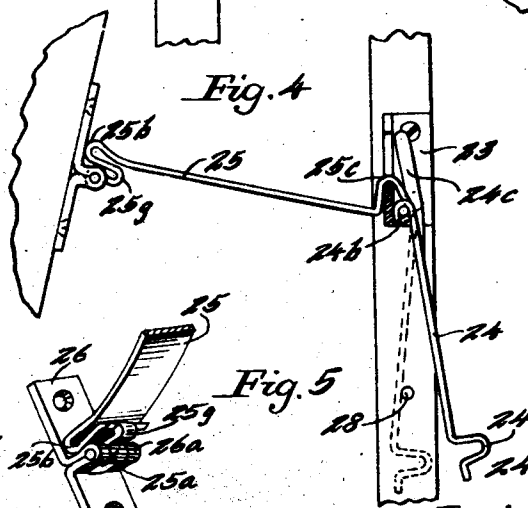


Fig. 5

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Fig. 7.

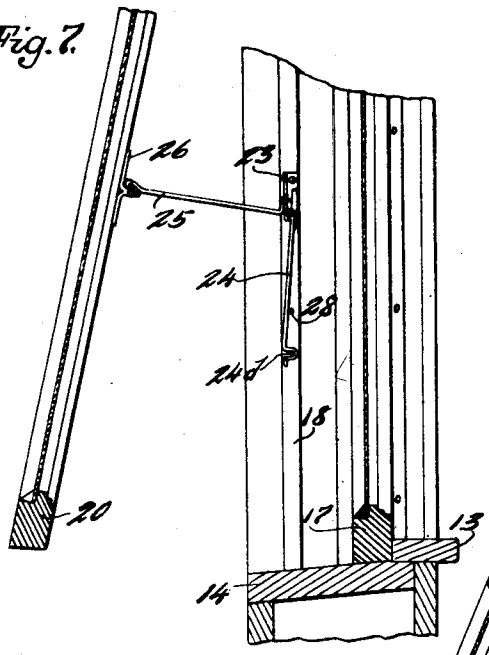


Fig. 6.

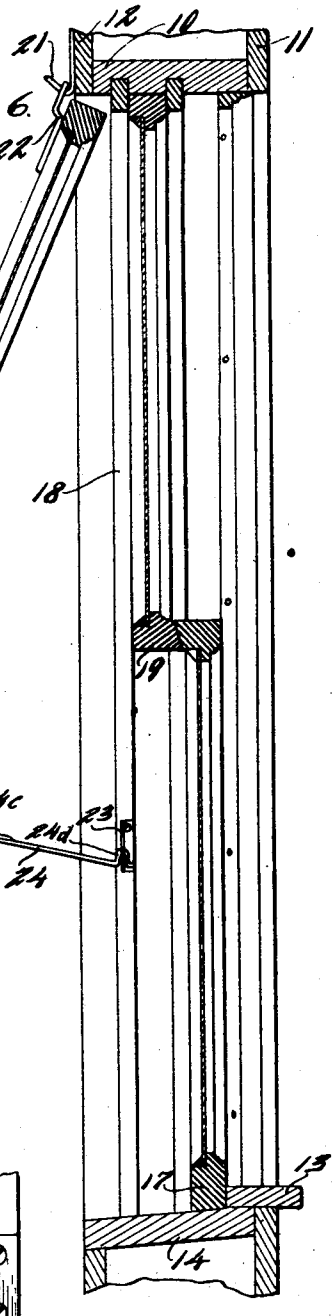


Fig. 8.

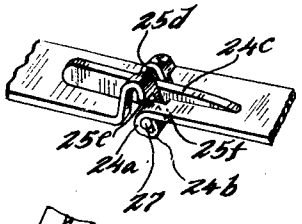
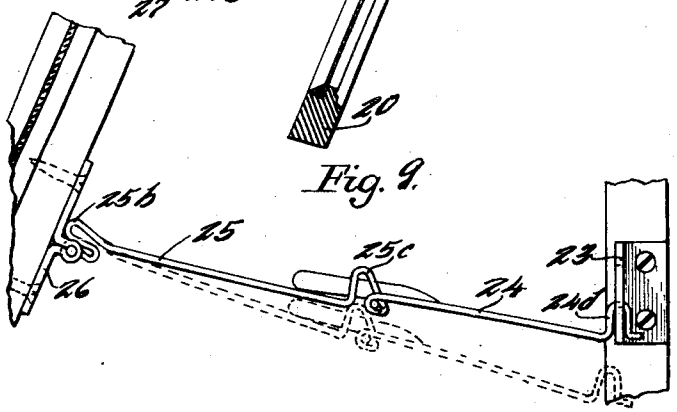


Fig. 9.



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UNITED STATES PATENT OFFICE.

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STORM-WINDOW FASTENER.

Application filed June 14, 1926. Serial No. 115,880.

This invention relates to a storm window fastener. As is well known, storm windows are now commonly used in the colder climates. These windows are usually placed at the outer side of the window casings and hingedly connected thereto at the top. It is often desired to have the storm windows partly open for ventilation and it is desirable and important to have a simple and efficient storm window fastener which will hold the storm window securely and firmly in open position so that the same will not be unduly vibrated by the wind. It is also desirable to have a fastener which will hold the storm window in different positions and one which will also hold the storm window securely and firmly in closed position. The storm window fastener must also be one which does not take up a great deal of room and can be conveniently disposed between the storm window and the customary windows comprising the upper and lower sash.

It is an object of this invention, therefore, to provide a very simple and efficient storm window fastener and one which will firmly and securely hold the storm window in different open positions and will also hold the same securely and firmly in closed position.

It is a further object of the invention to provide a storm window fastener comprising two elongated members or bars hingedly connected at one end, one of the same being hingedly connected to the storm window together with a keeper mounted on the window frame, said bars having means adjacent their ends and adjacent their hinged connection for engaging said keeper.

It is still further an object of the invention to provide such a fastener as is set forth in the preceding paragraph, said bars or members having means for holding them in alined rectilinear position with the storm window held securely in open position.

It is also an object of the invention to provide a storm window fastener comprising two elongated members or bars hingedly connected together at one of their ends and having a plurality of means for engaging a keeper secured to the window frame, said bars having stop means thereon for holding the same in alined rectilinear position and one of the bars being pivotally connected to the storm window and having means engaging the same for holding the window firmly in open position when said bars are in alined rectilinear position.

It is still another object of the invention to provide a storm window fastener comprising elongated members or bars hingedly connected at one end and one of which is hingedly connected at its other end to the storm window, said bars having a plurality of means for engaging a keeper secured to the window frame, said frame having a stop member thereon below said keeper, adapted to be engaged by said bars when said window is in open and in closed position.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings, in which like reference characters refer to similar parts throughout the several views and in which:—

Fig. 1 is a vertical section through a window frame, showing the usual windows therein together with an outer storm window, the latter being shown held in closed position by the device of this invention;

Fig. 2 is a side view of the device as attached to the storm window, showing the same in closed operative position in dotted lines;

Fig. 3 is a view of the device as seen from the right of Fig. 2;

Fig. 4 is a view in side elevation of the device showing portions of the window frame and the storm window, with the latter in partially open position, a keeper being shown in vertical section;

Fig. 5 is a perspective view of one end of the device;

Fig. 6 is a vertical section through a window frame, showing the usual windows therein and showing the storm window held in open position by the device of the present invention;

Fig. 7 is a partial view similar to Fig. 6 but showing the storm window held in partly open position;

Fig. 8 is a perspective view of the central portion of the device; and

Fig. 9 is a view on an enlarged scale of the device, showing the same holding the storm window in open position, the released position of the device being indicated in dotted lines.

Referring to the drawings, a window

frame of ordinary construction is shown, comprising the top 10 extending between the inner wall or strip 11 and the outer wall or strip 12, the inner lower sill 13 and the outer drain board or sill 14. The frame also comprises the inner molding 15, the usual parting bead or strip 16 which, with the molding 15, forms the guideway for the usual lower window sash 17, as well as the outer guide strip 18 forming with the parting strip 16 the guideway for the outer and upper window sash 19. The storm window which usually comprises a unitary rectilinear frame 20 is shown disposed adjacent and outside of the strip 18, said storm window being illustrated as having a lower pane of glass 20^a therein and the upper pane of glass 20^b.

The frame or wall 12 is shown as having the spaced outwardly and upwardly extending hooks 21 secured thereto and the storm window 20 has the apertured outwardly offset brackets 22 secured adjacent its upper corners adapted to hook over the hooks 21 so that the storm window is swingingly mounted on the hooks 21. A catch or keeper 23 is provided and while this keeper may take various forms, in the embodiment of the invention illustrated it is shown as a right angled plate having one flange secured by suitable screws to the strip 18 and having its other flange extending inwardly therefrom parallel to the plane of the storm window and provided with a substantially rectangular aperture 23^a, said aperture having a narrow slot extending through the slot of said keeper. The storm window fastener proper comprises two elongated members or bars 24 and 25 respectively and while these bars may take various forms, in the embodiment of the invention illustrated they are shown as formed from simple flat slightly resilient bars rectangular in cross section. The bar 25 at its outer end is provided with a substantially cylindrical eyelet 25^a bent from a narrow tongue projecting from a central terminal portion of said bar 25, which eyelet is disposed between and pivotally connected to spaced lugs or ears 26^a bent upwardly from a flat rectangular plate 26 having spaced holes 26^b therein adapted to receive attaching screws securing the same to the inner side of the storm window frame. The bar 25 extends inwardly a short distance from the eyelet 25^a and is again bent outwardly above said eyelet, as clearly shown in Figs. 4 and 9 to form a loop 25^g and to extend to a point somewhat beyond the eyelet 25^a, and said bar is then again bent reversely to form the loop 25^b. From the loop 25^b bar 25 extends somewhat downwardly and then rectilinearly to a point adjacent its inner end, where it is bent upwardly substantially at right angles and then bent downwardly and forwardly to form the loop 25^c. The loop 25^c is provided with a central slot 25^d and the inner downwardly extending side of the loop 25^c is cut away at 25^e as shown in Fig. 8 to form quite narrow strips, which strips are formed into substantially cylindrical eyelets 25^f. A connecting rivet or pin 27 extends through the eyelets 25^f and through the spaced eyelet 24^a formed on the bifurcated outer end of the bar 24. The eyelet 24^a has an eccentric or projecting portion 24^b for a purpose to be later described. The bar 24 also has a narrow tongue 24^c secured centrally thereto adjacent its outer end, which tongue projects beyond the eyelet 24^a and is adapted to project through the opening 25^d and engage the top of bar 25 at the inner end of the latter. The bar 24 has a hook portion 24^d formed adjacent its inner end and has a short terminal portion 24^e extending beyond said hook. The window frame or specifically, the strip 18, has a pin 28 projecting inwardly therefrom a short distance below the keeper 23.

In operation the bars 24 and 25 extend through the opening 23^a in the keeper 23. When the storm window is to be held in its wide open position, the bars 24 and 25 will be brought into substantially alined rectilinear position, as shown in Figs. 6 and 9. At this time the tongue 24^c projects through opening 25^e between the loops or hooks 25^c and engages the top of bar 25 as shown in Figs. 6, 8 and 9. The tongue 24^c thus forms a stop which limits the movements of bars 24 and 25 and maintains them substantially in alined position forming in effect a straightened toggle. The storm window is now pushed outwardly and as the bar 25 is swung upwardly, the outer end of the loop 25^b engages against the upper side of the bracket 26. The hook 24^d at the inner end of the bar 24 is now engaged over the keeper at the bottom of the opening 23^a as shown in Figs. 6 and 9. The bars 24 and 25 must be sprung upwardly somewhat to so engage hook 24^d and the same are sprung substantially from the dotted line position shown in Fig. 9 to the full line position shown therein. The hook 24^d then snaps down over the keeper 23. The bars 24 and 25 are thus held in rigid relation and the outer end of the bar 25 rigidly engages the bracket 26 secured to the storm window. The fastener is thus under tension and the storm window is very firmly and securely held in open position. It will be understood that there is one of the fasteners at either side of the window and the window is thus very securely maintained in open position with no chance to twist or vibrate in the wind.

When the window is to be held in partial open position, as shown in Fig. 7, the hook 24^d is released from the keeper 23 and bar 24 is moved inwardly through the keeper 23. The loop or hook 25^c is now engaged

over the bottom of the keeper 23 and bar 24 is swung downwardly as shown in Fig. 4. As the bar 24 assumes the full line position shown in Fig. 4, the eccentric or projecting portion 24^b on the eyelets 24^a engages the inner side of the keeper 23. The bar 24 is now moved forward rearwardly and sprung laterally somewhat so as to be disposed at the outer side of the pin 28 as shown in dotted lines in Fig. 4. The bar 24 is thus placed under tension and the hook 25^c is firmy engaged over the keeper 23. The loop 25^b at the outer end of bar 25 also engages the plate 26 and the fastener is also now under tension and firmly and securely holds the storm window in partially open position. There is thus no chance for the window to rattle or vibrate.

When the window is to be held in its closed position, the bar 24 is released from pin 28, the hook 25^c lifted from the keeper, and bar 25 moved inwardly through the keeper. The storm window is now brought to closed position and the bar 25 swung downwardly. The loop 25^g now engages the inner side of the keeper below opening 23^a as shown in Fig. 2. The bars 25 and 24 now depend as shown in the full line position in Fig. 2. The bar 25 is now sprung somewhat laterally and also sprung to the outside of the pin 28 as shown in the dotted line position in Fig. 2. The lower end of the bar 24 is then pressed against the frame of the storm window 20. The fastener, particularly the bar 25, is now also under tension and the storm window is held firmly and securely clamped in its closed position. The fastener is also in position where it is conveniently disposed inside of the storm window and in a position in which it cannot rattle.

From the above description it is seen that applicant has provided a very simple and efficient storm window holder. The parts of the fastener are easily and inexpensively made from a simple form of material. The parts are also quite easily assembled and can be readily attached to any standard storm window and window frame. The device has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts, without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above set forth, in the novel parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:—

1. A storm window fastener, comprising two bars hingedly connected at one end, one of said bars being hingedly connected at its other end to a window, a keeper on the window frame, said bars having a plurality of means thereon to engage over said keeper to hold said window in partially open and fully open positions, and said bars having a plurality of means thereon to abut said keeper when the window is in partially open and closed positions respectively, and means on the window frame over which said bars may respectively be engaged to place the same under tension when said keeper is abutted by said second mentioned means.

2. A storm window fastener comprising two bars hingedly connected at one end, one of said bars being hingedly connected to the window at its other end, a keeper on the window frame, said last mentioned bar having means adjacent one end for engaging said keeper to hold the window in partially open position, and a portion at its other end adapted to resiliently engage the window in partially or fully open position to place tension on said bars, a stop member on the window frame below said keeper over which either of said bars are adapted respectively to be sprung when said window is in partially or fully opened position.

3. A storm window fastener comprising a pair of bars hinged together at one end, one of said bars being pivoted to the window at its other end having a reversely bent loop adjacent its pivot for abutting the window, a keeper on said window frame, the other bar having means adjacent its free end engaging said keeper and having means integral therewith engaging said first mentioned bar for holding said bars in substantially rectilinear alinement, said bars being held firmly under tension when in rectilinear alinement with the means on said first mentioned bar engaging the window and the means on said last mentioned bar engaging said keeper.

4. A storm window fastener comprising two flat bars hinged together at one end, one of said bars being pivotally connected to the window at its other end, a keeper on the window frame, said last mentioned bar being folded to form a loop adjacent its pivotal connection with the window adapted to engage said keeper when holding the window in closed position and adapted to engage the window to place the bars under tension in substantially rectilinear alinement when the window is in open position and the other bar having means adjacent its free end for engaging over said keeper when the window is in said open position.

5. The structure set forth in claim 4, said first mentioned bar also being folded to form a loop adjacent its inner end adapted to engage over said keeper to hold the window in partially open position.

6. The structure set forth in claim 4, said first mentioned bar being folded adjacent its inner end to form a loop adapted to engage

over said keeper to hold the window in partially open position, said loop having a slot extending centrally therethrough and a tongue projecting from the other bar adapted to extend through said slot and engage the top of said first mentioned bar to form a stop whereby said links form a toggle which is straightened with said bars under tension, when said window is held in fully open position.

7. A storm window fastener comprising two bars hingedly connected at one end, one of said bars being hingedly connected at its other end to a window, a keeper on the window frame, one of said bars having a plurality of means respectively adapted to engage said keeper when the window is in closed and partially open position and the other bar having means adjacent its free end to engage said keeper when the window is in fully open position, said latter bar having a projection engaging said first mentioned bar when said bars are substantially alined with the window in fully open position, and said first mentioned bar having a resilient loop adjacent the end thereof connected to the window for engaging the window, whereby said bars are under tension when in alinement with the window in fully open position with said second mentioned bar engaging said keeper.

8. A storm window fastener comprising two bars hinged together at one end, one of said bars being pivotally connected to the window at its other end, a keeper on the window frame, said last mentioned bar being folded to form a resilient loop adjacent its pivotal connection with the window adapted to engage said keeper when the window is in closed position and adapted to engage the window to place the bars under tension in substantially rectilinear alignment when the window is in open position and to engage the window and place tension on said bar when the window is in partially opened position.

9. A storm window fastener comprising two bars hingedly connected together at one end, one of said bars being hingedly connected at its other end to a window, a keeper on the window frame, said bar having a bight portion adjacent its inner end adapted to fit over said keeper to hold the window in partially opened position and having a resilient portion at its other end adapted to abut the window when the window is in partially or fully opened position and adapted to engage said keeper when the window is in closed position, said resilient portion acting to place said bars under tension.

10. A storm window fastener comprising two flat resilient bars hingedly connected together at one end about an axis substantially parallel to the flat sides of said bars, one of said bars being hingedly connected at its other end to the window about an axis substantially parallel to the bottom of said window and to the flat side of said bar, a keeper on the window frame, said bar having means adjacent its free end for engaging said keeper to hold the window in partially opened position, said other bar having a portion adjacent its free end adapted to engage the keeper to hold the window in fully opened position and having a portion projecting beyond its hinged connection to said first mentioned bar and adapted to engage said first mentioned bar when said other bar is not engaged with the keeper and the window is in fully opened position, said first mentioned bar having resilient means adjacent its connection to the window adapted to engage the window, said last mentioned means and said projection acting to place the bars under tension.

11. A storm window fastener comprising two resilient bars hingedly connected together at one end, one of said bars being hingedly connected to the window at its other end, a keeper on the window frame, both of said bars having means adjacent their free ends for engaging over said keeper to hold the window in partially or fully opened position respectively, a pin projecting from the window frame below said keeper, the innermost of said bars being adapted to engage over said pin under tension when the outermost bar is engaged with the keeper and the outermost bar being adapted to engage over said pin when the window is in closed position.

12. A storm window fastener comprising two flat bars hingedly connected together at one end about an axis extending substantially parallel to the flat sides of the bars, one of said bars being hingedly connected at its other end to the window about an axis extending parallel to the flat side of the bars, a keeper on the window frame, each of said bars having adjacent its end remote from the window a U shaped bend adapted to engage said keeper, said first mentioned bar also having a loop formed therein adjacent its connection to the window, which loop is adapted to engage the window when either of said U shaped portions is in engagement with said keeper and is adapted to engage said keeper when the window is in closed position.

In testimony whereof I affix my signature.

MATTICE L. RAYMOND.