Nov. 27, 1923 1,475,335

W. WRIGHT

LATCHING HINGE

Filed March 20, 1922

Fig. 1.

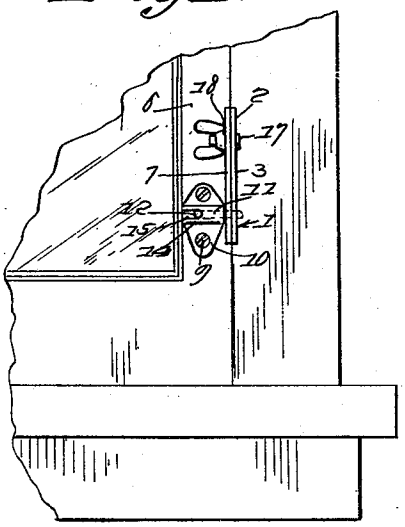


Fig. 2.

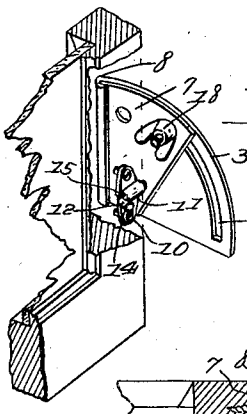


Fig. 3

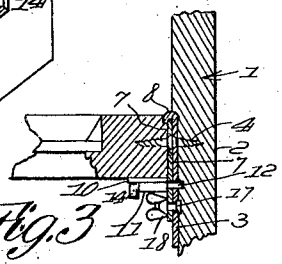


Fig. 4.

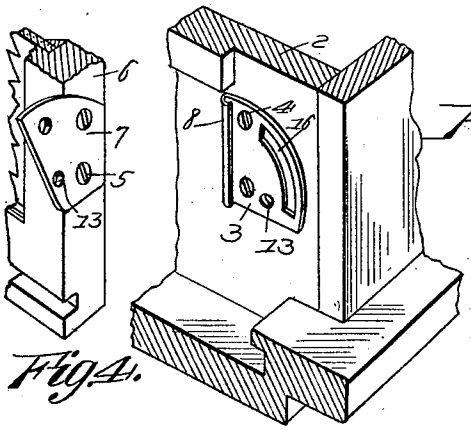


Fig. 5.

Fig. 6.

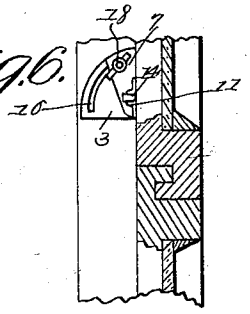


Fig. 7.

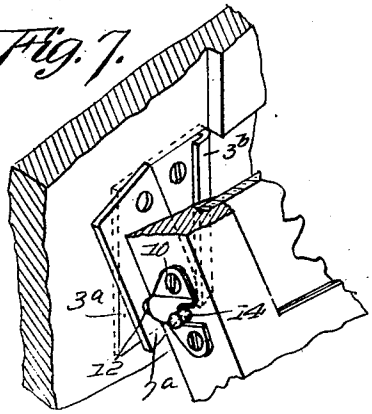


Fig. 8.

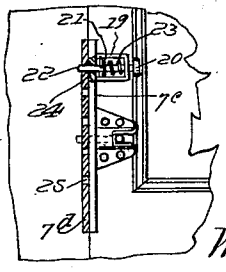
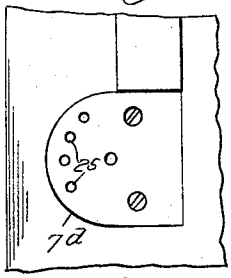


Fig. 9.



Inventor

William Wright,

By Watson E. Coleman

Attorney

Patented Nov. 27, 1923. 1,475,335

UNITED STATES PATENT OFFICE.

WILLIAM WRIGHT, OF LAKE PRESTON, SOUTH DAKOTA.

LATCHING HINGE.

Application filed March 20, 1922. Serial No. 545,265.

To all whom it may concern:

Be it known that I, WILLIAM WRIGHT, a citizen of the United States, residing at Lake Preston, in the county of Kingsbury and State of South Dakota, have invented certain new and useful Improvements in Latching Hinges, of which the following is a specification, reference being had to the accompanying drawings.

It is the purpose of the present invention to provide a device of this kind providing for pivotal latching connection between a stationary structure or frame and a movable panel, either a window sash, windshield, window, door, transom or the like.

It is another purpose to provide a latching hinge especially adapted for use in connection with swinging sashes, such as disclosed in the copending application of William Wright, filed on the 13th day of March, 1922, Serial No. 543,324.

Heretofore latching hinges of this character have been produced and used, but in the most of them it is necessary to unscrew the hinge, in order to remove the sash or transom. Therefore a further purpose of the present invention is to provide means, such as a sliding bolt, to hold the two facing plates pivotally together, and in such wise as will permit the plates to be separated for the purpose of removing the sash or other swinging member, by simply sliding the bolt from engagement with the plates.

In certain of the devices heretofore used, it has been found that the pressure of wind or other external forces will cause the sash or the swinging member to easily open, unless such devices have springs strong enough to retard the pressure or air or other external force. The present invention aims to avoid the accidental opening of the sash or other swinging member, which is due to the pressure or air or wind, and in order to accomplish this result, a headed stud and thumb nut are employed, carried by one facing plate, and cooperating with a slot in the other facing plate, in order that the sash or other swinging closure may be set to assume an open position at any angle.

It is to be understood that the particulars herein given are in no way limitative and that while still keeping within the scope of the invention, any desired modifications of detail and desired proportions may be made in the apparatus according to circumstances.

The invention comprises further features and combination of parts, as will be hereinafter set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1 is a view of a portion of a window frame, showing the pivotal hinge mounting of the sash, said mounting being constructed in accordance with the invention;

Figure 2 is a view in perspective, showing a portion of a sash, with the two facing plates applied, showing the headed stud, and also the thumb nut;

Figure 3 is a detail sectional view through the hinge connection between the two facing plates;

Figure 4 is a detail view of a plate constituting a part of the hinge connection;

Figure 5 is a detail perspective view of a portion of the window frame showing the application of the plate which is provided with an arcuate slot;

Figure 6 is a sectional view through two sashes showing where the sashes unite, and showing the hinge mounting of one sash in elevation;

Figure 7 is a perspective view of a modified form of hinge;

Figure 8 is a view in elevation of a modified form of latching hinge; and

Figure 9 is a view in elevation of a portion of the window frame showing a supporting plate which is provided with a plurality of openings 25.

Referring to the drawings, 1 designates a portion of a window frame, to the stile 2 of which a facing plate 3 is secured by means of screws 4. Fastened by screws 5 to the side stile 6 of the sash is a facing plate 7. The plate 3 at one edge is provided with a lateral flange 8, which is engaged by one edge of the plate 7, to limit the plate and the sash to which it is attached in their movements. Secured by screws 9 to the sash is a plate 10, which is provided with a bearing 11, for the reception of a pivot pin or stud 12, one end of which engages the registering openings 13 of the plates 3 and 7, for the purpose of hingedly connecting them. The other end of the pin has a laterally bent portion 14, which engages a slot or notch 15 formed in the wall of the bearing, thereby preventing movement of the pin relatively to the plate 10. By this construction the two facing plates 3 and 7 are hingedly united.

The plate 3 is provided with an arcuate slot 16, which receives the shank of a headed

stud 17. A thumb nut 18 is threaded upon the stud and engages one face of the plate 7, so as to hold a sash or other swinging member in different adjusted positions.

In Figure 7 the two plates are pivotally united in the same manner as in the preceding figures. However the plates 3^a and 7^a are of slightly different shape, for instance rectangular, and the plate 3^a is provided with a flange 3^b, which is engaged by one edge of the plate 7^a, to limit it in its movement, and also limit the sash.

In Figures 8 and 9 the facing plates are substantially semi-circular, and are hingedly united the same as those in the other figures. However the plate 7^c has connected to it a U-shaped bracket or holder 19, which carries a headed pin 20. The pin 20 has a collar 21 surrounding its shank, there being a transverse pin 22 to hold the collar in position. Interposed between the collar and the transverse wall of the holder or bracket is a coil spring 23. One end of the pin passes through an opening 24 in the facing plate 7^c, and is designed to engage any one of the openings 25 which are formed in the facing plate 7^d, so as to hold the sash or other swinging closure in different adjusted positions.

The invention having been set forth, what is claimed is:—

1. In a hinge, the combination with a stationary structure having a facing plate, of a swinging closure provided with a facing plate, to register with the first plate, a pin pivotally mounting the closure within the stationary structure and hinging said plates together and provided with a lateral extension at one end, a securing plate on the closure provided with a bearing receiving said pin, said pin holding bearing having its wall provided with a notch to receive the lateral extension of the pin to hold the pin stationary in its bearing, and means carried by one plate and cooperatively engaging with the other plate, for holding the two plates in different adjusted positions, thereby holding the swinging closure in different positions.

2. In a hinge, a stationary structure, a swinging closure mounted therein, a pair of registering facing plates carried by the adjacent faces of the stationary structure and the swinging closure, a plate secured to the closure provided with a bearing, a pin mounted in said bearing with one end passing through and hingedly uniting the two facing plates, said pin extending into the stationary structure and serving as the pivot for the closure, cooperative means carried by the pin and its holding plate, to hold the pin against rotation in its bearing, means separably connecting the facing plates to hold the swinging closure in different adjusted positions, and an abutment on one plate engageable by the other plate to limit movement thereof in one direction.

3. In a hinge, a stationary structure, a swinging closure mounted therein, registering facing plates secured to the adjacent engaging faces of the structure and the closure, means hingedly uniting said plates, whereby the closure may be swung to different positions, one of said facing plates having an arcuate slot, a headed screw engaging said slot, and means on one end of the screw for frictionally clamping said plates together thereby holding the closure in different adjusted positions, one of said plates having a lateral flange, to be engaged by the edge of the other plate, to limit the latter with relation to the former.

4. In a hinge, a stationary structure, a swinging closure mounted therein, facing plates secured to the adjacent engaging faces of the structure and the closure, a retractable pin carried by the closure pivotally uniting said plates, whereby the one carried by the closure may oscillate with its face adjacent to and parallel with the plate carried by the stationary structure, the plate carried by the stationary structure having an arcuate slot concentric with said pin, a headed screw engaging through the slot and passing through the plate carried by the closure, and a nut threaded upon the screw for holding the plate carried by the closure in different adjusted positions.

5. In a hinge, a stationary structure, a swinging closure mounted therein, a pair of facing plates secured to the adjacent engaging faces of the structure and the closure, a plate having an arched bearing secured to the closure, one end of the arched bearing having a notch, a pin mounted in the arched bearing and passing through the two facing plates, for pivotally uniting the plates, whereby the plate carried by the closure may move with its face adjacent the plate carried by the stationary structure, said pin having a lateral head to engage the notch, and prevent rotation of the pin, which is held in the bearing against longitudinal movement by friction, and means carried by one plate and operatively connecting with the other plate for holding the plate carried by the closure in different adjusted positions, the pin being retractable to permit removal of the closure.

6. In a hinge, a stationary structure, a swinging closure mounted therein, a pair of facing plates secured to the adjacent engaging faces of the structure and the closure, a plate having an arched bearing secured to the closure, one end of the arched bearing having a notch, a pin mounted in the arched bearing and passing through the two facing plates, for pivotally uniting the plates, whereby the plate carried by the closure may move with its face adjacent the

plate carried by the stationary structure, said pin having a lateral head to engage the notch, and prevent rotation of the pin, which is held in the bearing against longitudinal movement by friction, the stationary structure having a rabbet with which the closure engages when closed, the plate carried by the stationary structure having an overhanging longitudinal flange aligned with the rabbet and constituting means to receive an edge of the plate carried by the closure.

7. In a hinge, a stationary structure, a swinging closure mounted therein, a pair of facing plates secured to the adjacent engaging faces of the structure and the closure, a plate having an arched bearing secured to the closure, one end of the arched bearing having a notch, a pin mounted in the arched bearing and passing through the two facing plates, for pivotally uniting the plates, whereby the plate carried by the closure may move with its face adjacent the plate carried by the stationary structure, said pin having a lateral head to engage the notch, and prevent rotation of the pin, which is held in the bearing against longitudinal movement by friction, and means carried by one plate and operatively connecting with the other plate for holding the plate carried by the closure in different adjusted positions, the stationary structure having a rabbet with which the closure engages when closed, the plate carried by the stationary structure having an overhanging longitudinal flange aligned with the rabbet and constituting means to receive an edge of the plate carried by the closure.

8. In a hinge, a stationary structure, a swinging closure mounted therein, facing plates secured to the adjacent engaging faces of the structure and the closure, means pivotally uniting said plates, whereby the one carried by the closure may oscillate with its face adjacent to and parallel with the plate carried by the stationary structure, the plate carried by the stationary structure having an arcuate slot, a headed pin engaging through the slot and passing through the plate carried by the closure, and a nut threaded upon the pin for holding the plate carried by the closure in different adjusted positions, the stationary structure having a rabbet with which the closure engages when closed, the plate carried by the stationary structure having an overhanging longitudinal flange aligned with the rabbet and constituting means to receive an edge of the plate carried by the closure.

In testimony whereof I hereunto affix my signature.

WILLIAM WRIGHT.