March 6, 1928. 1,661,162

R. H. BLISS

WINDOW

Filed June 24. 1927

FIG. 1.

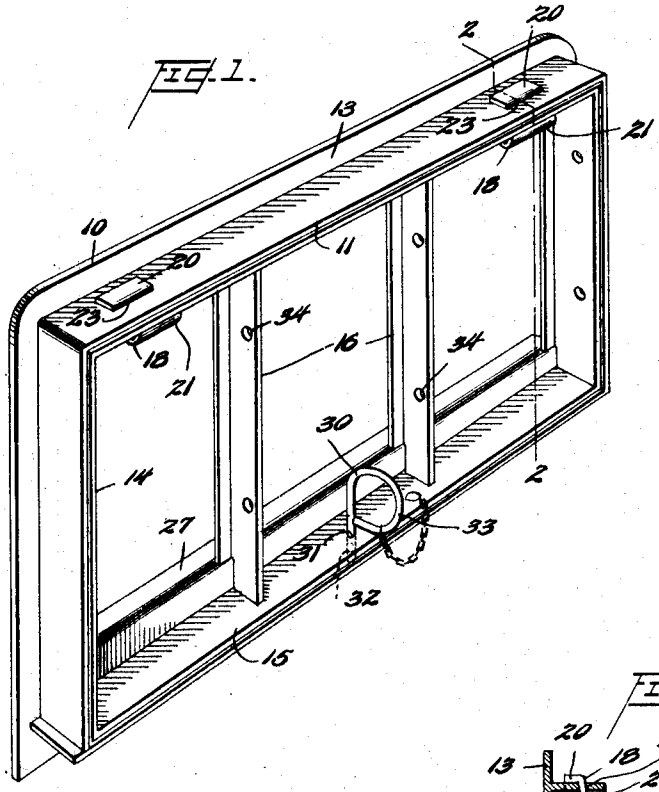


FIG. 2.

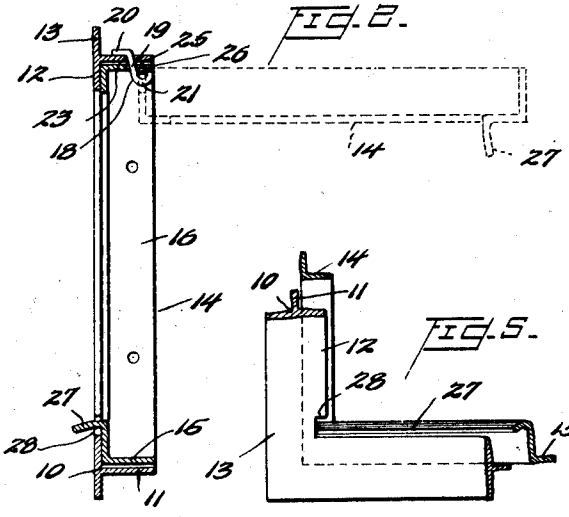


FIG. 3.

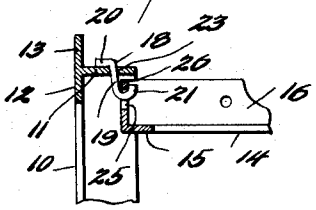


FIG. 4.

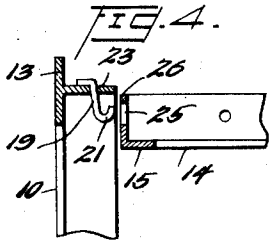


FIG. 5.

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UNITED STATES PATENT OFFICE.

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WINDOW.

Application filed June 24, 1927. Serial No. 201,256.

This invention relates to windows and more particularly to the type of window in which the sash is hinged to the frame.

An object of this invention is the provision of an improved construction in hinges for a window which will insure a close peripheral fit between the sash and frame when the sash is closed but which at the same time will also allow the sash to swing in such a manner that its edges will not jamb or bind against the frame. Another object is the provision of such a hinge which will be located entirely between the front and rear faces of the window frame so that it will not be bent or broken in handling, as during shipment, storage, etc.

Another object of the invention is the provision of a hinge which will be simple in design; hence cheap to manufacture and durable and reliable in service.

Another object is the provision of improved means for preventing the leakage of drip water thru the window.

Another object is the provision of improved means for locking the sash to the frame.

Another object is the provision of improved means for securing panes in the window sash. Other objects and various features of novelty will be apparent from the following description of one embodiment of the invention when read in connection with the appended drawings forming a part of this specification, and in which:

Figure 1 is a perspective view of the window viewed from the rear, i. e., looking from the interior of the building;

Figure 2 is a vertical section, taken on the line 2—2 of Figure 1;

Figure 3 is a fragmentary view similar to Figure 2 but showing the sash swung to a different position;

Figure 4 is a view similar to Figure 3 showing the manner in which the sash is removed from the window frame; and

Figure 5 is a fragmentary front elevation of the lower portion of the window.

Referring more particularly to the drawings wherein like reference characters refer to like parts throughout the several views, 10 denotes a window frame preferably of T-iron, the head of the T comprising the front face of the frame and the stem 11 of the T comprising the enclosing sides or rearwardly extending edges of the frame. The head of the T thus forms flanges 12 and 13 extending from the inside and outside edges respectively, of the rearwardly extending edges 11.

Closely fitting within this window frame 10 is a sash 14 preferably formed of angle-iron sections. The sash 14 is conveniently made up with a peripheral or border frame 15 of L-shaped section, which in the closed position of the sash is adapted to lie closely behind the inner flange 12 of the window frame. The sash may, if desired, be subdivided for small panes by T-shaped bars or mullions 16.

Hinge members 18 are employed to support the sash 14 within the frame 10. Each of these members consists of a shank portion 19, an angularly bent tab 20 at the upper end, and a hook-shaped portion 21 at the lower end. Slots 23 are formed in the upper edge of the window frame to receive the shank of the hinge members. This slot is located a sufficient distance from the edges of the frame to insure that no portion of the hinge member will extend beyond either the front or the rear faces of the frame. This is an important feature since it prevents bending or breaking of the hinge members in handling. The tab 20 of the hinge member is welded or otherwise suitably secured to the top face of the frame edge 11, in such position that the hook portion 21 opens toward the rear of the frame.

Slots 25 are formed in the upper edge of the sash frame through which the shank of the hinge member extends. The width of uncut metal at the rear of each slot 25 is greater than the width of opening of the hook, or is spaced a sufficient distance from the front edge of the slot, so that in the closed position of the sash the pivot bar 26 formed of this uncut metal will rest upon the upper end of the upstanding portion of the hook. This provision is made to keep the space between the sash and frame as small as possible. The thickness of the pivot bar 26 is made less than the width of the hook opening so that when the sash is swung open this pivot bar will drop edgewise into the hook, to prevent binding of the rear upper edge of the sash frame upon the rear edge of the window frame. The length of radius from the hinge to the bottom of the sash is sufficiently great to insure that there will be no binding here while the sash is swinging out even when only a small bottom clearance is provided. This construction is clearly

shown in Figure 2. The position of the sash when swung about 90° is also indicated in dotted lines in Figure 2. Figure 3 shows in full lines how the pivot bar 26 in this position drops into the hook. The width of the pivot bar is made less than the distance between the upper end of the upstanding portion of the hook and the lower face of the upper side of the frame so that the pivot bar may be lifted and passed out of the hook as shown in Figure 4 to remove the sash from the frame.

Figures 4 and 5 show the means provided for leading water from the front of the window to prevent its entry into the building. Here a forwardly extending flange 27 is provided on the bottom bar of the sash frame. This flange is longer than the width between the inner edges of the vertical flanges 12 of the window frame so notches 28 are cut in the flanges 12 at the bottom of the frame to receive the ends of the flange 27. This flange 27 then constitutes a drip table for the window. The purpose of making the ends of the flanges 27 longer than the open width of the window frame is to insure that none of the water running down the vertical faces of the sash frame exposed alongside the frame flanges 12 will find an opening leading downward. Such water will encounter the end of the flange 27 and be carried away.

The window sash is locked to the frame by means of a locking pin 30 which passes through aligned openings 31 and 32 in the sash and the window frames. The openings 31 and 32 are disposed close to the position taken by the panes when secured in the sash. Therefore, a pull ring 33 provided on the locking pin is formed on one side of the shank thereof so there will be no interference in inserting or removing the same.

While the one embodiment of this invention has been described particularly, it will be evident that other embodiments may be devised and are contemplated. The applicant therefore desires it to be understood that the invention is not to be limited except by the prior art and the scope of the appended claims.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. In a window, in combination, a frame, a hook-shaped hinge member secured to the upper side of said frame, a sash fitting closely within said frame, said sash being provided on its upper side with a slot into which the shank of said member extends, and a flat pivot bar provided on said sash adjacent the slot for pivotally supporting the same upon said hook, the width of said bar being greater than the open width of said hook so that it rests upon the upstanding end thereof, but the thickness of said bar being less than the open width of said hook so that the bar will drop edgewise into the hook opening as the window is swung open, the distance between the upstanding end of said hook and the inner face of said frame being greater than the width of said bar to permit the sash to be removed from said hook when opened approximately ninety degrees.

2 In a window, in combination, a frame, a hook-shaped hinge member secured to the upper side of said frame and disposed entirely between the front and rear faces of said frame, a sash fitting closely within said frame, a flat pivot bar provided on the upper side of said sash for pivotally supporting the same upon said hook, the width of said bar being less than the distance between the end of the upstanding portion of said hook and the inner face of the frame to permit the sash to be removed from said hook when opened approximately ninety degrees.

3. In a window, in combination, a frame, a hook-shaped hinge member secured to the upper side of said frame, a sash fitting closely within said frame, said sash being provided on its upper side with a slot into which the shank of said member extends, and a flat pivot bar provided on said sash adjacent the slot for pivotally supporting the same upon said hook, the width of said bar being greater than the open width of said hook so that it rests upon the upstanding end thereof, but the thickness of said bar being less than the open width of said hook so that the bar will drop edgewise into the hook opening as the window is swung open.

4. In a window, in combination, a window frame, a hook-shaped hinge member secured to the upper side of said frame, a sash fitting closely within said frame, said sash being provided on its upper side with a slot into which the shank of said member extends, and a flat pivot bar provided on said sash adjacent the slot for pivotally supporting said sash upon said hook, the width of said bar being greater than the open width of said hook so that it rests upon the upstanding end thereof.

5. In a window, in combination, a frame, a hook-shaped hinge member secured to the upper side of said frame and disposed entirely between the front and rear faces of the frame, a sash fitting closely within said frame, said sash being provided on its upper side with a slot into which the shank of said member extends, and a pivot bar provided on said sash adjacent the slot for pivotally supporting said sash upon said hook.

6. In a window, in combination, a frame having a slot in its upper side, a hinge member having a shank, an angularly bent tab at its upper end, and a hook at its lower end, the shank of said hinge member passing through the slot of said frame and the

tab being secured to said frame above and to one side of said slot, a sash fitting closely within said frame, said sash having a slot in its upper side into which the shank of said member extends, and a pivot bar provided on said sash adjacent the slot thereof for pivotally supporting said sash upon the hook of said hinge member, the sash in closed position resting on the upper end of the upstanding portion of said hook.

7 In a window, in combination, a frame provided with an interiorly extending peripheral flange, a sash having its front face disposed directly behind the frame flange, and a forwardly extending drip flange provided on the bottom bar of said sash, the vertical sections of said frame flange being provided with notches and the ends of said drip flange extending through these notches for the purposes set forth.

8. In a metallic window construction, the combination with a stationary frame, of a swinging sash provided with a horizontally disposed drip flange which projects forwardly beyond the frame when the sash is in closed position, said flange being longer than the window opening, measured horizontally, and the marginal inner edges of the end members of the frame being notched to provide recesses to receive the ends of the drip flange when the sash is in closed position.

In testimony whereof I hereunto affix my signature.

ROBERT H. BLISS.