Jan. 11, 1927. 1,614,166

V. J. WHITNEY

SWINGING WINDOW MOUNTING

Filed Sept. 16, 1925 2 Sheets-Sheet 1

Fig. 1.

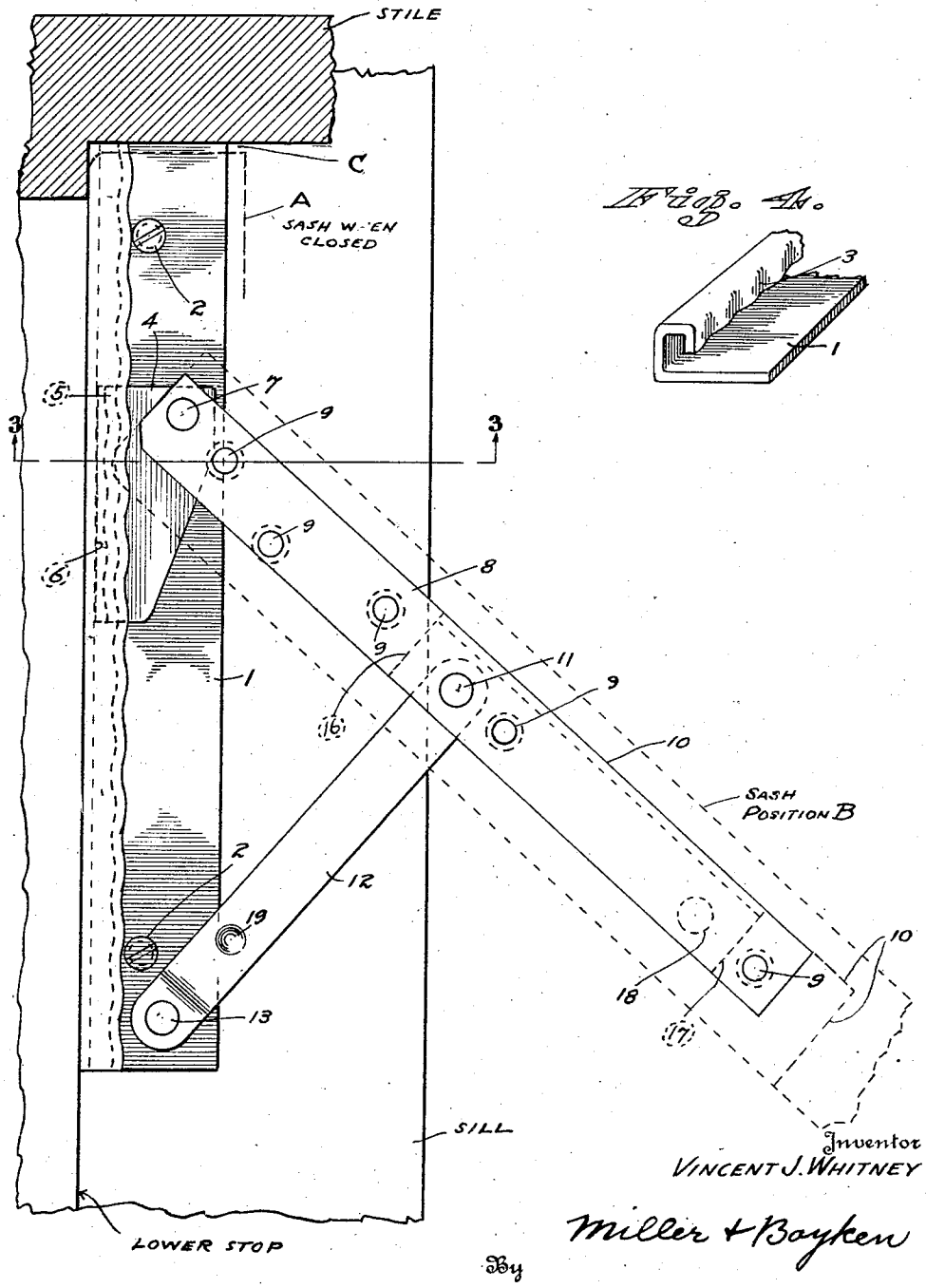


Fig. 4.

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Fig. 2.

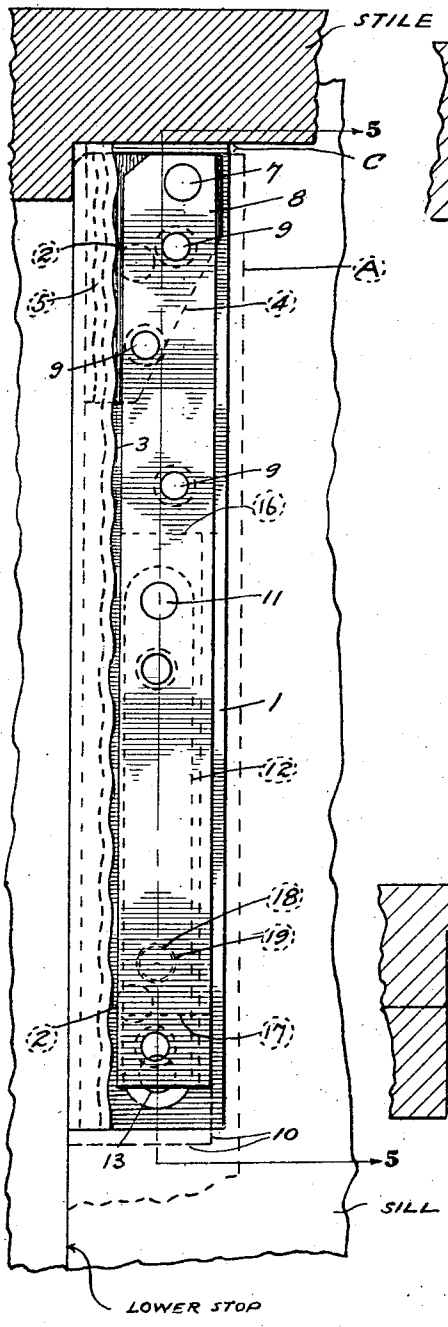


Fig. 3.

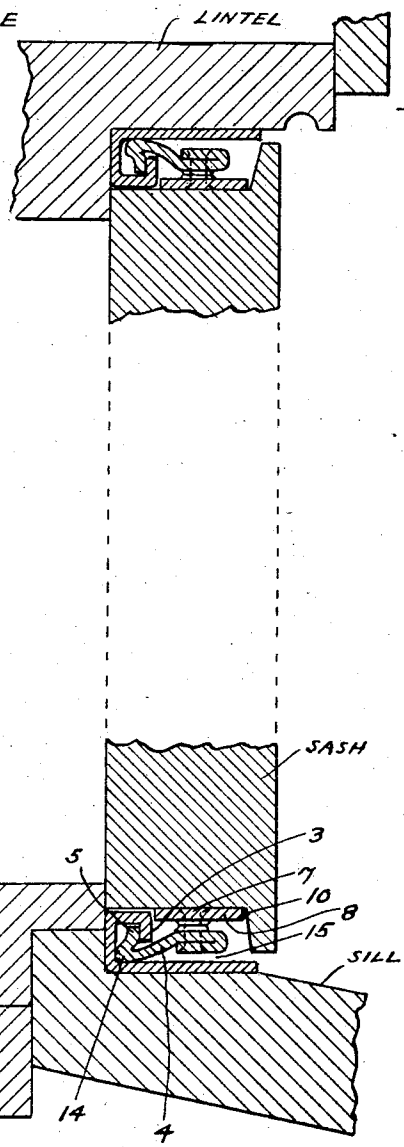
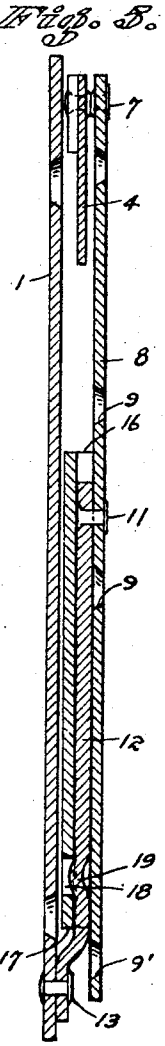


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SWINGING-WINDOW MOUNTING.

Application filed September 16, 1925. Serial No. 56,583.

This invention relates to swingingly mounted windows of the casement or transom type and particularly to special hinge or pivotal mountings for such windows affording access to both sides of the window from within a building in which the window is installed.

The objects of the invention are to effect certain improvements in the mounting devices as will simplify the same and also insure the accurate installation of the devices while at the same time reducing the labor of installation as well as provide for an improved frictional or locking means effective against displacement of the open windows through heavy winds, and better secure the window in closed or slightly open position.

The objects outlined above form improvements over the mountings shown in my issued Patent #1,531,054 of March 24, 1925 and the improvements are realized in the construction shown in the accompanying drawings.

In the drawings, Figure 1 is a plan view of a portion of a window framing showing my window mounting in place on the sill and with the window sash dotted as in partly open position.

Figure 2 is a similar view showing the mounting folded to closed position and with the sash and stile clearance indicated.

Figure 3 is a vertical section of the window framing and sash as taken at the line 3—3 of Figure 1 and it shows the contacting of the sliding shoe with the channel guide frictionally locked against displacement.

Figure 4 is a perspective sketch showing a piece of the channel guide with forward leg fluted or corrugated to increase the frictional resistance of the shoe.

Figure 5 is a longitudinal section of the device in closed position as seen from the dotted line 5—5 of Figure 2.

In further detail the drawings reveal a window framing comprising sill, stile, lintel and sash all named, with a channel guide or anchor plate 1 secured to the sill positioned against the lower stop and at one end abutting the stile.

This channel guide has a relatively wide plate for securing to the sill by means of screws 2 and in cross section takes the form shown in Figures 3 and 4, the latter figure more clearly indicating the form of the forward leg which is seen to be fluted or corrugated along its dependent free edge 3.

Slidably engaging the corrugated edges of the channel is a shoe 4 formed as shown in Figure 3 with a free edge 5 corrugated to match the corrugations of the channel so that in different positions of sliding adjustment along the channel it will to a certain extent lock with the corrugations of the channel if moved into engagement with them, the clearance is provided at 6 so that when the shoe is forcibly pushed along the channel it may disengage the corrugations.

To the shoe is pivotally riveted at 7 a sash plate 8 provided with screw holes 9 for screwing to the edge of the window sash rabbeted out at 10 to receive it, and to the outer end of the plate is pivotally riveted at 11 a link or bracing arm 12 again pivotally riveted at 13 to the guide or anchor plate 1.

It is intended that the assemblage shown be made rights and lefts for attaching in alignment with one another at opposite ends of the sash and window frame as indicated in Figure 3, and when so installed the sash may be swung outwardly from a closed position as indicated at "A" to any angular open position as at "B" or further to a right angle as shown dotted in Figure 2.

During the swinging adjustment of the sash fulcrumed on the fixed pivotal point 13 the shoe slides along the channel guide and due to the weight of the extending sash there is developed an outward pull at the upper end which urges the corrugated shoe to interlock with the corrugated guide, while the lower shoe functions similarly through the weight of the sash resting upon it thereby fulcruming the shoe on its heel 14 and rocking its corrugated free edge 5, into contact with the corrugated guide, the clearance at 15 under the shoe together with spring of parts permitting the action.

If the corrugations of the shoe and guide are not unduly exaggerated no special precautions are necessary in operating the sash tho a slight relieving of the weight of the sash by an inward pull of the operator causes the shoe to slide more freely.

Of course it is possible to dispense with the corrugations of the contacting edges of the shoe and guide and still get intensi-

fied friction on smooth members through the weight of the sash in the manner described, tho the addition of the corrugations is an advantage in locking the window in any adjustment against the wind.

The assemblage as shown forms a toggle joint of the plate 8 and arm 12 so that in consequence when the window is closed and the members of the assemblage all lie in overlapped parallel relation, the toggle is straightened out and the slightest outward pressure against the sash would ordinarily open it, since the powerful pull of the toggle at once carries the shoe inward from the end of the plate—and conversely when the sash is slightly opened a moderate wind pressure would ordinarily close the window as the collapsed condition of the toggle could not prevent it. This is a weakness common to all window adjusters wherein the stay arm assumes a decreasing angle as the window is closed, and to overcome this weakness I provide an increasing frictional resistance to the parts as the toggle closes.

This is accomplished by extending the sash plate 8 a considerable distance beyond the pivot 11 of the arm 12 and folding it over from the points 16 to 17 so as to increasingly embrace the arm 12 as the parts are closed, the arm 12 being flat and the folded portion of the plate being open along the rearward edges forming a channel to tightly grip the arm as indcated in Figure 5.

The arm is at all times gripped between the double plate but naturally falls into greater contact as the toggle is collapsed thus producing a quick mounting resistance to sustain the window sash in slightly opened position. This resistance may be made of any degree by decreasing the separation of the folded portions of the plate 8 toward the outer end of the same, and the screw in hold 9′ may be loose or omitted to give freedom to the parts.

Also to more securely lock the sash in completely closed position a hole 18 is formed in the plate 8 adapted to engage with a projection or detent 19 in the arm so as to provide a definite snap lock when the sash is tightly closed.

It is evident that other methods of achieving the above result may be made within the spirit of the invention but this one embodiment is thought sufficient for purposes of this application.

Another point of considerable importance to which attention is called is that where the mounting is folded to closed position, and secured to the sill with the end of plate 1 abutting the stile, all as shown in Figure 2, the sash plate 8 does not extend to the end of plate 1 but is spaced back from its end: This provides a gauge in attaching the plates 1 and 8 respectively to the sill and sash so that the proper clearance of the sash and stile as indicated at "C" is automatically obtained and absolute uniformity of this clearance and vertical alignment of the upper and lower mountings is assured, it being merely necessary to attach the plates 8 flush at their ends with the edge of the sash and abut the plates 1 to the stile.

This feature while simple not only insures accurate alignment of the mountings but saves a considerable amount of time in installing as no measurement for sash clearance or planing off is ever necessary after the fittings are installed, and while I show the improvements applied to the device of my former patent mentioned I wish to cover the use of these features in any type of sash mounting wherein they are applicable.

I claim:

1. A mounting for a swinging window sash comprising an anchor plate adapted to be attached to the window frame with one end of said plate abutting a stile of the frame, a sash plate adapted to be attached to the sash in flush relation with the edge thereof which closes adjacent said stile, and means pivotally connecting the two plates and providing a predetermined clearance of the sash and said stile when the window is closed.

2. A mounting for a swinging window sash comprising an elongated anchor sill plate adapted at one end to abut the stile of the window frame, and an elongated sash plate adapted at a corresponding end to come flush with the edge of the sash, and means pivotally connecting the plates together so that the plates will lie parallel in closed position with said one end of the anchor plate extending beyond the said corresponding end of the sash plate.

3. A mounting for a window sash for swinging the same from a point adjacent one edge of the sash, comprising an anchor plate adapted for securing to a window frame member with one end of the plate abutting a stile of the frame lying at right angles to said member, a second plate adapted for securing to an edge of the sash which closes adjacent and overlying said member and with an end of the plate flush with the end of said edge, pivotal means connecting the plates for movement relative to one another from an open angularly extended position to a closed position in overlying parallel relation, and with said end of said second plate spaced inward from said stile.

4. A mounting for a vertically pivoted window of the character described including an elongated guide plate adapted for securing in horizontal extension to the window sill and provided with a flange extending at an angle from said plate, a shoe slidably engaging said plate and provided with a con-

tact face engaging said flange and said shoe being fulcrumed to said plate for forcing contact of said face and flange upon applying weight to said shoe.

5. In a mounting for a swinging window of the character described, means for progressively increasing the frictional resistance of the parts against both opening or closing of the mounting as the mounting is closed.

6. In a mounting for a swinging window including a pivoted bracing arm, means for bringing increasing frictional resistance against any pivotal action of the arm as the mounting is closed.

7. In a mounting for a swinging window of the character described, means for increasing the frictional resistance of the parts against opening or closing of the window as the mounting is closed and a terminating frictional snap fastener when the window is closed.

8. In a mounting for a swinging window including a sill plate and a sash plate with a bracing arm pivotally connecting the same, means for bringing increasing frictional resistance against pivotal movement of the arm as the mounting is closed and terminating with a frictional snap fastener with the mounting closed.

9. In a swinging sash mounting a sash bracing arm pivoted to extend at an angle to the open sash and to fold substantially parallel to the sash when the same is closed, and means for effecting an increasing frictional resistance against the arm in folding the same to a closed position comprising a plate extending from the mounting bearing against the side of the arm in increasing surface contact during the folding operation.

10. In a swinging sash mounting a sash bracing arm pivoted to extend at an angle to the open sash and to fold substantially parallel to the sash when the same is closed, and means for effecting an increasing frictional resistance against the arm in folding the same to a closed position comprising a channel plate frictionally embracing opposite sides of the arm in increasing surface contact during the folding operation.

11. A window mounting of the character described comprising an anchor plate for securing to the framing of a window, a sash plate for securing to a sash, a shoe connected to the sash plate and slidable on the anchor plate, a bracing arm pivotally connecting the sash and anchor plate, and said sash plate being formed to increasingly embrace the arm in frictional contact as the mounting is folded to closed position.

12. A mounting for a swinging window of the character described including an elongated guide plate with a slidable shoe thereon respectively adapted to be secured to the window frame and sash, said guide comprising a flat plate with one edge turned over upon the plate and spaced therefrom forming a channel recess with its free edge extending toward and spaced from the plate, corrugations along said free edge, and said shoe being positioned within the channel and formed with a surface engaging said corrugations.

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