May 17, 1927. 1,629,264

A. ENTENMAN

WINDOW CONSTRUCTION

Filed May 25 1926

Fig. 1.

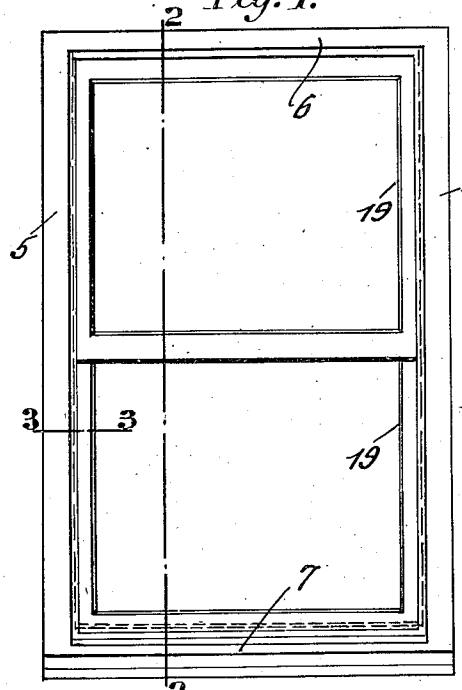

Fig. 2.

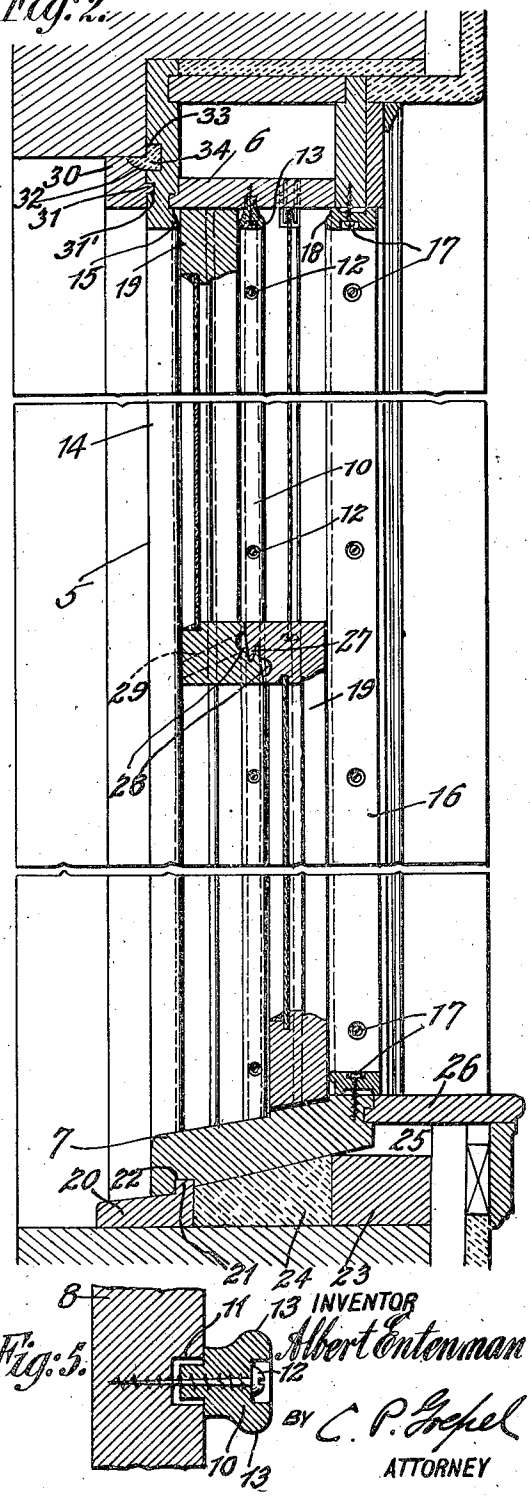

Fig. 3.

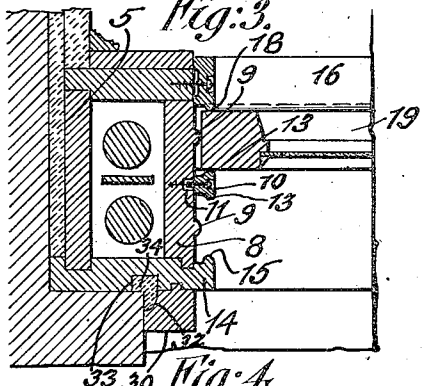

Fig. 4.

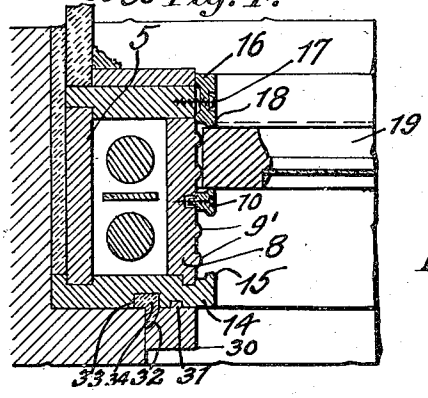

Fig. 5.

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UNITED STATES PATENT OFFICE.

ALBERT ENTENMAN, OF BROOKLYN, NEW YORK.

WINDOW CONSTRUCTION.

Application filed May 25, 1926. Serial No. 111,518.

This invention relates to window construction and has for its primary object to provide a simple, durable and relatively inexpensive construction whereby the window sashes mounted in the frame may have free vertical sliding movement relative to each other with a minimum of frictional resistance.

It is another object of the invention to provide simple and easily applied means whereby the window frame may be securely locked and rigidly fixed in its position in the building wall, said means obviating the possibility of the frame pulling away from the brick wall by shrinkage and thereby eliminating the necessity of caulking.

It is a more particular object of the invention to provide improved means arranged beneath the window frame for closing the joint between the outside stone sill and the brick work and elevating the sill so that a further row of bricks may be placed under the same, thus forming a barrier preventing the seepage of water inwardly under the window frame.

It is also an additional object of the invention to provide an improved interlocking joint connection between the meeting rails of the two sashes when closed and means in said sash rails whereby any water finding its way between the meeting faces of the rails may be drained off and prevented from entering the room.

With the above and other objects in view, the invention consists in the improved window construction and in the form and arrangement of the several parts thereof as will be hereinafter more fully described, illustrated in the accompanying drawings, and subsequently incorporated in the subjoined claims.

In the drawings, wherein I have illustrated one simple and practical embodiment of the invention, and in which similar reference characters designate corresponding parts throughout the several views,—

Figure 1 is an exterior elevation of a window construction embodying my present improvements;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1;

Fig. 4 is a similar section, but illustrating a slightly modified construction, and

Fig. 5 is an enlarged detail horizontal section.

Referring in detail to the drawings, the numeral 5 generally indicates the opposite sides of the window frame, 6 the top horizontal bar of the frame and 7 the base or sill bar. Each side 5 of the frame is constructed with the usual sash weight receiving chambers, the inner sides of which are closed by the stiles 8 upon the upper end of which the usual cord pulleys (not shown) are mounted. As shown in Fig. 3 of the drawings, each of the stiles 8 is provided with a vertically extending bearing rib of substantially half circular form in cross section as shown at 9 and between these ribs parting strips 10 are arranged. Each of these parting strips is engaged in a groove or channel 11 formed in the face of the stile 8 and may be adjusted relative to the stile by means of the screw 12. Each parting strip is further provided upon its opposite sides with longitudinally extending bearing ribs 13 similar to the ribs 9. As shown in Fig. 4 of the drawings. I prefer to provide two spaced longitudinally extending ribs 9′ on the face of the stiles 8 at each side of the parting strip 10.

The outer vertical member 14 of each side 5 of the frame is also provided with an extension projecting inwardly from the stile 8 and provided upon its inner face with the vertically extending bearing bead 15. To the inner member of each side of the frame and to the corresponding top member and to the sill bar 7, the bars 16 are secured by screws 17, each of said bars being provided on its inner edge with a longitudinally extending bearing bead 18.

The sashes 19 are mounted in the frame between the members 14 and 16 and the parting strips 10 and have contacting sliding engagement with the convex surfaces of the several ribs 9, 13, 15 and 18. Owing to the very limited area of bearing contact of the sashes upon these ribs, frictional resistance to the free sliding movement of the sashes is reduced to a minimum.

A horizontal shoe 20 preferably of wood is arranged between the outside stone sill and the wood sill bar 7 of the window frame and has a tongue or rib 21 thereon interlocking in a groove 22 provided in the under side of the bar 7. Thus, the window frame is elevated so that an additional course of brick

23 may be inserted between the building wall and the inner edge of the frame bar 7, thereby providing a space between said brick course and the shoe member 20 which, if desired, may be filled with concrete as indicated at 24 and also providing an air space 25 beneath the inner sill 26.

The opposed faces of the meeting rails of the sashes 19 are provided with interlocking tongues and grooves as shown at 27 so as to provide a substantially water tight connection between said rails when the sashes are closed. However, I also provide these faces of the sash rails with longitudinally extending grooves 28 which constitute air receiving pockets to evaporate moisture and keep the sash rails dry. However, any water which may find its way into the groove in the rail of the upper sash will be drained off by the outwardly and downwardly inclined grooves or channels 29 at the ends of the grooves 28 and directed to the outer sides of the sash.

In conjunction with the shoe member 20 and for the purpose of locking the window frame at the top and sides thereof to the wall structure, I provide at the inner side of the frame the bars 30 each having a longitudinally extending rib 31 locking in a groove 31′ in the frame. The upper side of this bar opposed to the frame is cut away or recessed at 32 in opposed relation to the recess or channel 33 in the face of the window frame, said mating recesses receiving the cement indicated at 34 whereby the bar 29 and the window frame are united to the wall structure. It will be noted that the recess or channel 33 extends around the corner of the brick work or masonry within which the window frame is set so that the cement will thus produce a very secure lock. By this means, the possibility of the window frame pulling away from the wall at the top thereof is obviated.

From the foregoing description considered in connection with the accompanying drawings, it is believed that the construction and several novel features of my present improvements will be clearly understood. By the provision on the spaced bearing ribs for the sliding sashes, limiting the area of contact, friction is reduced to a minimum, and in addition, air spaces are provided between said ribs which serve as collecting and drainage channels for moisture and also have a certain insulating effect. Also, it will be evident that by providing the interlocking shoe 20 beneath the window frame and the additional course of brick 23, shifting or displacement of the frame due to warpage from the effects of the sun, will be prevented. Thus, I have produced a window construction which is very substantial, comparatively inexpensive and in which the sashes may be raised or lowered with a minimum of effort while at the same time preventing the inward seepage of water between the sashes and the frame and also preventing a substantially air tight closure when the sashes are in closed position.

While I have herein shown and described a simple and practical embodiment of my invention, it will nevertheless be understood that the several features herein disclosed are susceptible of more or less modification, and I therefore, reserve the privilege of adopting all such alternative constructions as may be fairly incorporated within the spirit and scope of the invention as claimed.

I claim:

1. In a window construction, a frame, parting strips secured to the opposite sides of the frame, vertically sliding sashes mounted in the frame at each side of the parting strips, each side of the frame on opposite sides of the parting strip being provided with spaced vertically extending beads of semi-circular form in cross section with which the respective sashes have sliding bearing contact.

2. In a window construction, a frame, parting strips secured to the opposite sides of the frame, vertically sliding sashes mounted in the frame at each side of the parting strips, each side of the frame on opposite sides of the parting strip being provided with spaced vertically extending beads of semi-circular form in cross section with which the respective sashes have sliding bearing contact, and said frame and the parting strips being provided with similar vertical beads having bearing contact with the inner and outer faces respectively of the vertical sash stiles.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

ALBERT ENTENMAN.