Feb. 26, 1924. 1,485,307

J. F. STECKENREITER

SILL CONSTRUCTION

Filed Nov. 18, 1921

Fig. 1.

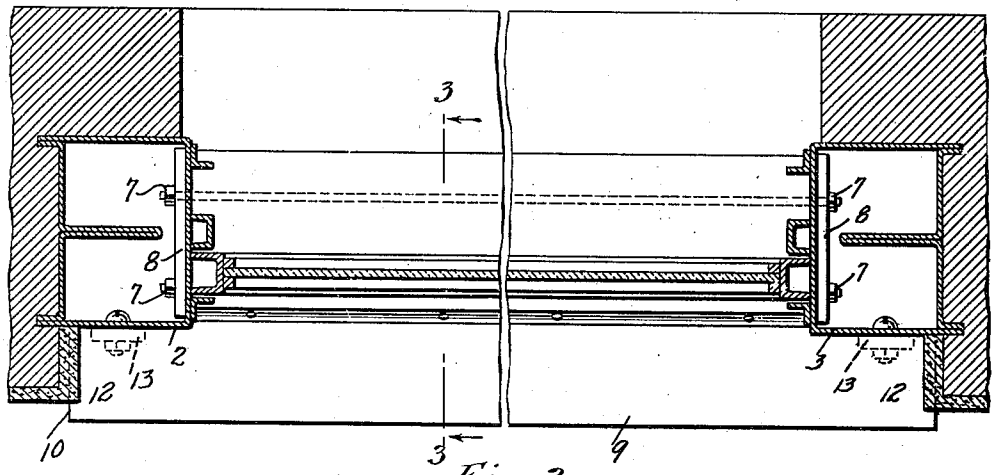


Fig. 2.

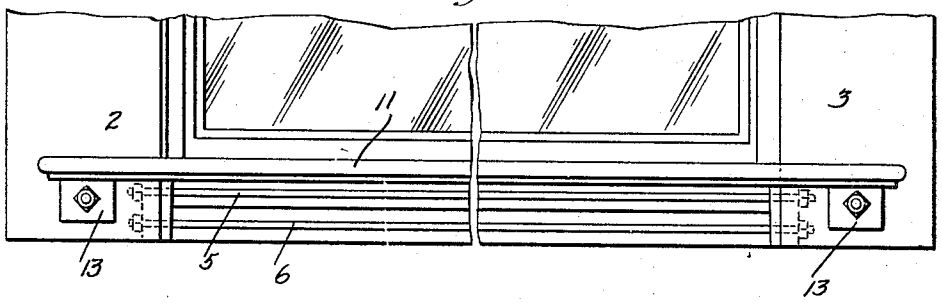
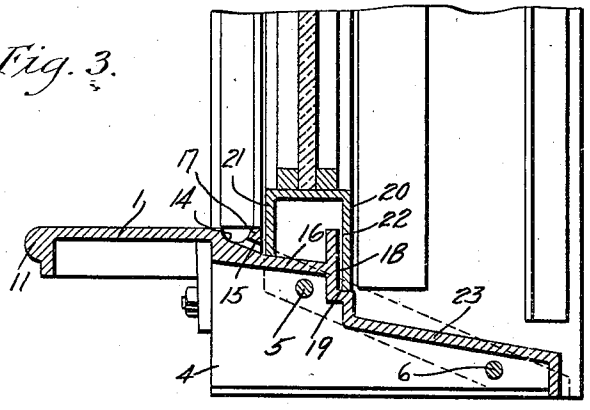


Fig. 3.



WITNESSES

Edw. Thorpe

Robert J. Hulseizer

INVENTOR

John F. Steckenreiter

BY Munn & Co.

ATTORNEYS

Patented Feb. 26, 1924. 1,485,307

UNITED STATES PATENT OFFICE.

JOHN F. STECKENREITER, OF BROOKLYN, NEW YORK.

SILL CONSTRUCTION.

Application filed November 18, 1921. Serial No. 516,054.

To all whom it may concern:

Be it known that I, JOHN F. STECKENREITER, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, Flatbush, in the county of Kings and State of New York, have invented a new and Improved Sill Construction, of which the following is a full, clear, and exact description.

The invention relates to a new and improved construction for windows, and has for an object the provision of a sill construction whereby the lower sash member particularly can be operated very easily and simply and when closed form a very tight construction against air and the elements and wherein the liability of the sash to rattle is reduced to a minimum.

Another object resides in the provision of means whereby a simple and economically manufactured sill is very readily adapted to a window opening and can be quickly and easily applied to the jamb members, substantially all of which is made of ordinary common stock material thereby reducing the expense of manufacture.

A further object resides in the provision of a combination of the sill and jambs and lower sash of a metal window whereby all the practical requirements are satisfied and the combination is easily and economically assembled.

A still further object resides in the particular construction and arrangement of parts which are hereinafter described and claimed and shown in the accompanying drawings.

The invention is illustrated in the drawings, of which—

Figure 1 is a plan of the window opening showing the sill and the lower portion of two hollow metal jambs and the window sash in section;

Fig. 2 is a partial rear elevation of the sill and the jamb; and

Fig. 3 is a vertical transverse section taken on the line 3—3 of Fig. 1 showing the sill, hollow metal jamb and the window sash in its closed position.

As shown in the drawings the preferred form of the invention is set forth, although minor modifications may be made in the construction and arrangement of the parts without departing from the spirit of the invention. The sill 1 extends across the window opening between the jamb 2 and the jamb 3. It has at each end thereof a downwardly extending flange portion 4 which is fastened to the jambs by means of tie rods such as 5 and 6 which pass under the sill through the flange 4 and the jamb members and extend within the jamb members and are threaded on their ends to receive nuts such as 7. Disposed between the nuts 7 and the jamb members are flat plates 8 which act somewhat in the fashion of washers. The flanges 4 of the sill may be bolted directly to the jamb members with ordinary bolts, but to avoid breaking of the flange due to the shocks and jolts of handling and shipping, tie rods are preferable. These rods, furthermore, may act as anchors for cement where the underside of the sill is grouted. This flange 4 also provides ample surface for applying any plastic substance, such as putty, to make a watertight joint between the jamb and the sill.

The sill extends along its rear portion 9, as indicated in Fig. 1, across the window opening, to a plaster line such as 10, at each end of the sill, and is provided with a suitable curved molding 11 on the rear edge. The horizontal portions of the sill which are disposed adjacent the rear face of the jamb and the plaster line 10 are called the stools 12. Beneath these stool portions are disposed lugs or bracket members 13 which extend downwardly therefrom and may be bolted to the jamb to give additional support and stiffness to the structure.

On the top of the sill, on the front edge of the flat portion 9, is a condensation gutter or groove 14. Throughout the length of this groove are provided a plurality of apertures 15 which are generally called weep-holes. This groove 14 is adapted to receive moisture due to condensation or otherwise on the window and permits it to pass through these holes to a point connected with the downwardly sloping surface 16 of the sill whereby it can run out of the window. The sill is provided with vertically extending faces or shoulders, such as 17 and 18, and a horizontal face 19. The lower rail of the lower sash is formed of a U-shaped channel member 20 having downwardly extending limb portions 21 and 22, the limb portion 22 facing the outside or front of the window projecting further down than the limb portion 21 and is adapted to bear against the vertical wall 18 and rest on the surface 19; whereas the limb 22 rests on the sloping surface 16 and against the shoulder 17. In this way it will

be seen that the lower portion of each limb of the bottom rail of the lower sash has two surfaces with which it fits tightly, and that this construction provides a practically air-tight and moisture tight joint.

It will also be noted that the slope of the surface 16 is not quite so great as the slope of the surface 23 extending from the surface 19 to the front of the sill. This pitch is required so that the sill will shed the water readily toward the front of the window.

The flat plates 8 previously mentioned act as washers which, under the pull of the tie rods draw the jamb hard up against the sill at all points to make a water-tight connection.

It is clear that under this construction the jambs do not rest upon the sill but that the sill is coped to fit around the jamb. The jambs thus passing by the sill down to the wall upon which the sill rests results in a great advantage to the construction by reason of the additional and maximum space afforded in the jambs for the sash weight (not shown).

It will therefore be observed that I have provided a simple and economically constructed, strong and durable window construction especially relating to the lower sash, the jambs and the sill, whereby the contact between the sash and the sill is made very tight to prevent leakage of air and moisture therethrough and in which the sill is very easily connected to the jamb members.

It should be borne in mind, of course, that the stool can be made separate from the remainder of the sill for practical reasons, such as to avoid breakage and for convenience in shipping. Furthermore, a metal stool may not be desired, since the stool may be finished in marble or other material. The sill proper may, of course, be made of rolled steel instead of being cast.

The vertical shoulder 18 may, as shown in the drawings, be extended upward some distance above the level of the sloping surface 16.

What I claim is:

1. A sill made of metal having downwardly projecting end flanges for disposition against a hollow jamb member, a plurality of tie rods extending across between and through the flanges, the ends of the tie rods extending within the jamb members, and means on the ends of the tie rods to fasten them to the jamb members.

2. A sill construction which comprises a plurality of hollow jamb members, a sill extending therebetween, downwardly projecting flanges on the end of the sill to bear against the side of the jamb members and fastened thereto, tie rods connecting the jamb members and extending through the flanges of the sill, a plate washer disposed within each jamb member, through which plate the tie rods extend, and nuts on the ends of the tie rods bearing against the plate washer whereby the jamb members and the sill can be tightly clamped together.

3. A sill construction which comprises a metal sill having a flat inner surface, a moisture groove on the inner end thereof extending across the sill, a vertical shoulder adjacent the groove against which one portion of the lower sash member of the window bears, said shoulder member having a plurality of seepage passages connecting the groove with the outer portion of the sill, a sloping surface outwardly adjacent said shoulder, and a second shoulder on the outer end of said sloping surface against which another portion of the sash member is adapted to bear to form a direct line of surface bearing between the sash member and the sill.

4. A sill construction which comprises a metal sill having a flat inner surface, a moisture groove on the inner end thereof extending across the sill, a vertical shoulder adjacent the groove against which one portion of the lower sash member of the window bears, said shoulder member having a plurality of seepage passages connecting the groove with the outer portion of the sill, a sloping surface outwardly adjacent said shoulder, a second shoulder on the outer end of said sloping surface against which another portion of the sash member is adapted to bear to form a direct line of surface bearing between the sash member and the sill, and a third surface disposed still further outwardly on the sill and having a greater downward inclination than the first-mentioned sloping surface.

5. A metal sill construction for windows, which comprises a pair of vertical faces on the sill adapted to provide side bearings against the inside and outside faces, respectively, of the limits of the lower rail member, a sloping surface and a horizontal shoulder adjacent the vertical faces respectively to provide bottom bearings for the limbs of the lower rail of the sash, and means at the end of the sill for fastening the sill to jamb members.

6. A metal sill construction for windows, which comprises a sill having a pair of spaced vertical faces to provide side bearings against the inside and outside faces, respectively, of the limits of the lower rail member, a sloping surface adjacent one of said vertical faces and a horizontal shoulder adjacent the other vertical face, said sloping surface and horizontal shoulder providing bottom bearings for the lower rail of the sash, and a moisture groove therein adjacent the inside vertical face of the sill.

7. A metal sill construction comprising a lower sash having a rail formed of an inverted U channel member, the leg of the

channel member disposed on its outward side being longer than the inner leg, a sill on which said member is adapted to rest, a plurality of vertical shoulders on said sill, a sloping surface and a horizontal surface formed on the sill respectively adjacent the vertical shoulders, the legs of the channel members adapted to bear at their inside and outside faces, respectively, against the vertical shoulders and at their bottoms against the sloping and horizontal surface.

8. A sill construction which comprises a metal sill coped around and adapted to be connected to the side and rear faces of jamb members at each end, a plurality of downwardly projecting flanges at each end of the sill acting as brackets, and means for fastening the flanges to the side of the jamb members to form a tight connection between the sill and the jamb members.

9. A sill construction which comprises a metal sill having a flat inner surface extending across and behind the jamb members, the longer side of which make a finish to the plaster at the inside of the wall and the ends of which finish within the plaster line at the end returns of the wall, said sill having a moisture groove on the outer sides thereof extending thereacross, a vertical shoulder adjacent the groove against which one side of the sash member bears, said shoulder having a plurality of seepage passages connecting the groove with the outer part of the sill, a sloping surface disposed adjacent said shoulder, a second vertical shoulder on the outer end of said sloping surface, and a horizontal surface disposed adjacent said second vertical shoulder against which another part of the sash member is adapted to bear to form direct lines of surface contact between the sash member and the sill.

10. A metal sill construction for windows, which comprises a sill coped around the jambs and having a flat inner surface, said sill having a moisture groove on the outer end thereof extending thereacross, a vertical shoulder adjacent the groove against which shoulder one part of the lower sash member of the window bears, said vertical shoulder having a plurality of seepage passages connecting the groove with the outer part of the sill, sloping surfaces disposed outwardly adjacent said shoulder, a second vertical shoulder on the outer side of said sloping surface, a horizontal surface adjacent said second vertical shoulder, another part of the sash member bearing at its side and bottom against the second shoulder and the horizontal surface to form direct lines of surface contact between the sash member and the sill, and a third surface disposed still further outwardly on the sill and having a greater downward inclination than the first-mentioned sloping surface.

JOHN F. STECKENREITER.