Dec. 31, 1935. M. F. POWERS 2,026,285

DOUBLE HUNG WINDOW FRAME

Filed July 29, 1933

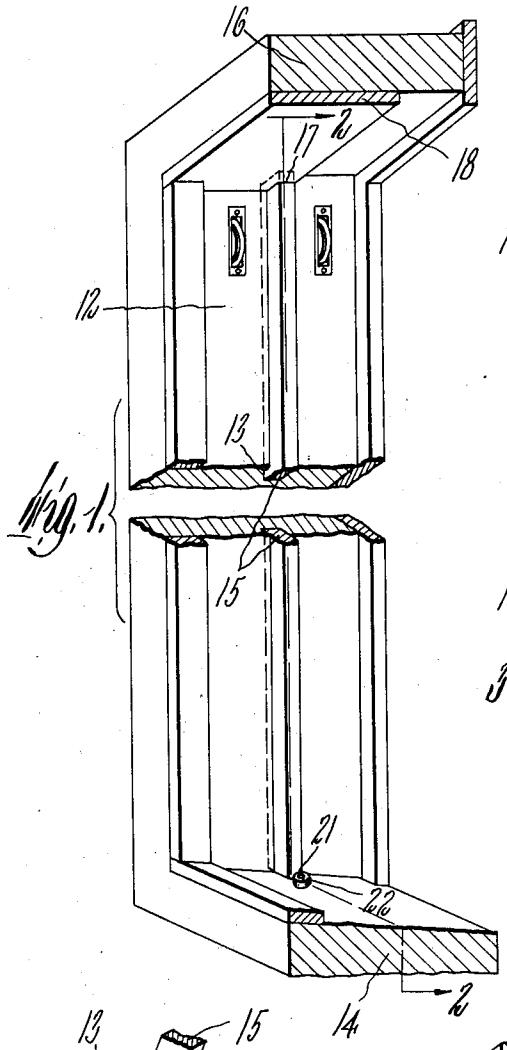
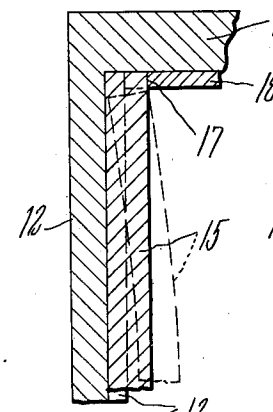


Fig. 1.



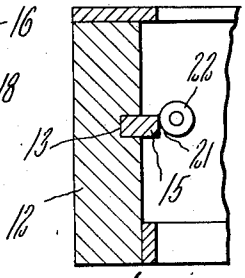


Fig. 3.

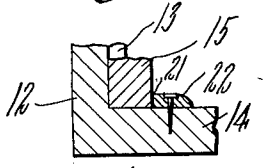


Fig. 4.

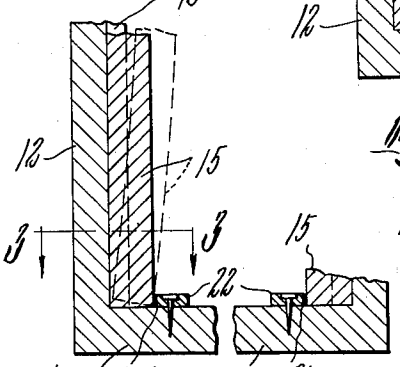


Fig. 2.



Fig. 5.

Fig. 6.

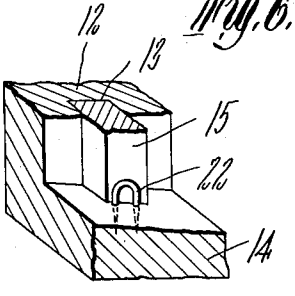


Fig. 7.

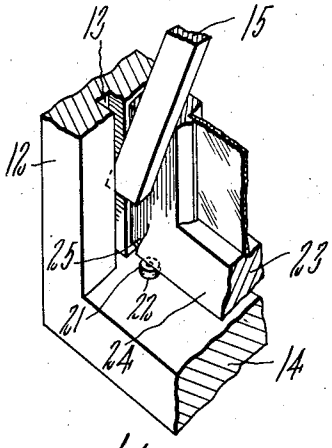


Fig. 9.

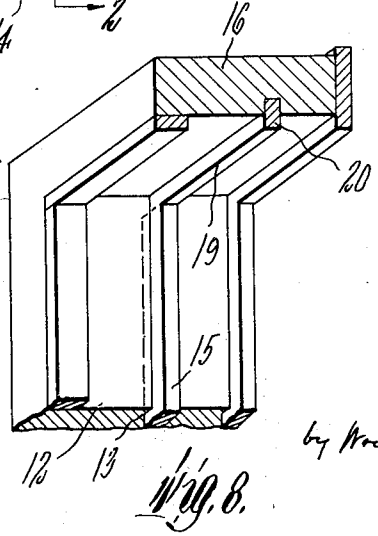


Fig. 8.

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DOUBLE HUNG WINDOW FRAME

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Application July 29, 1933, Serial No. 682,807

4 Claims. (Cl. 20—12)

The object of this invention is to provide a double hung window structure having simple, durable, and effective means for securing in the grooves of the pulley stiles of the window frame, sash guiding parting beads, formed to extend from end to end of the grooves, said beads being secured in such manner that they are not mutilated in any way by the securing means, and can be readily removed and replaced.

Of the accompanying drawing forming a part of this specification,—

Figure 1 is a perspective view showing a portion of a window structure embodying the invention, and the preferred form of the immovable stops.

Figure 2 is a fragmental section on the plane indicated by line 2—2 of Figure 1.

Figure 3 is a fragmental section on the plane indicated by line 3—3 of Figure 2.

Figure 4 is a fragmental sectional view showing portions of the window frame, a portion of a parting bead secured thereto, and another form of the immovable stop.

Figure 5 shows in perspective the stop shown by Fig. 4.

Figure 6 shows in perspective another form of immovable stop.

Figure 7 is a fragmental perspective view showing another form of immovable stop.

Figure 8 is a fragmental perspective view showing the upper portion of the frame.

Figure 9 is a fragmental perspective view showing the lower portion of the frame, a portion of a parting bead partly inserted in its groove, and a portion of an upper sash in a lowered position.

The same reference characters indicate the same parts in all of the figures.

In the drawing, 12—12 designates the pulley stiles of a double hung window frame, each stile having a vertical parting bead-receiving groove 13. The lower ends of the grooves are closed by the top surfaces of the sill member 14 of the frame, so that the lower ends of parting beads 15 inserted in the grooves are seated on the sill.

The upper portion of the frame formed by the top header 16 is provided with means for releasably confining the upper end portions of the parting beads 15, said upper ends being engageable with said means by manipulation of the beads, as described later. Said confining means may include faces 17 of notches formed in the usual finish header 18 attached to the top header 16, said faces being spaced from the grooves sufficiently to bear on the exposed outer faces of the parting beads, as shown by Figure 2. If desired said confining means may be provided by the end portions of the lower face 19 of a horizontal top bead 20, (Figure 8), said top bead being attached to the top header 16.

The structure includes immovable stops 22 rigidly attached to the lower portions of the frame. Said stops have abutment surfaces 21 projecting upwardly from the sill, and facing the lower ends of the grooves 13, in position to abut the lower portions of the outer sides of the parting beads 15, when only the lower ends of the beads are inserted in the grooves, and the beads are inclined as shown by Figure 9. Said stops are preferably attached to the sill, and may be of any suitable form. Preferably each stop 22 is a disk of any suitable material, (sole leather being a suitable material) secured by a nail or screw to the sill, as shown by Figures 1, 2, 3, and 9. Figures 4 and 5 show the stop 22 as a metal plate having a thicker end on which the abutment surface 21 is formed, the opposite end being reduced to a thin edge. Figure 6 shows the stop 22 as the circular head of a screw, a portion of the periphery of the head constituting the abutment surface 21. The threaded shank of the screw shown by Figure 6 permits a sufficient upward adjustment of the stop 22, to enable it to confine the lower end of a parting bead which may have been cut too short. Figure 7 shows the stop 22 as a staple driven into the sill, one side of the staple constituting the abutment surface 21.

The said stops are preferably in practice secured to the frame at the factory where the frame is made, and the parting beads may subsequently be secured to the frame by a carpenter. The operation of securing the beads may be as next described.

Before securing the parting beads the carpenter hangs the upper sash in the frame and lowers it, as indicated by Figure 9, until its meeting rail 23 rests on the stop 22. The usual lateral extension or projection 24 formed on this meeting rail to enter a corresponding recess in the meeting rail of the lower sash, (not shown), is cut away to form a recess or groove 25, one face of which guides the lower end of the parting bead into the groove 13.

The abutment surfaces 21 are spaced from the inner faces or bottoms of the grooves sufficiently to permit said abutment surfaces to bear on the parting beads and hold the inner sides of the beads against the inner faces or bottoms of the grooves.

The finish header face 18 is customarily applied to the frame after the latter leaves the factory

where the frame is made, and the parting beads are applied by a carpenter. Before the application of the parting beads to the frame the carpenter applies each parting bead by inserting its lower end in a recess 25, swinging the bead to its final position in the groove 13 and then securing the upper end, as by applying the finish header 18 to the top header 16 so that the finish header face 17 confines the upper end of the bead.

When it becomes necessary to replace an originally applied parting bead which has become inoperative, by a new bead, the finish header 18 which was applied by the carpenter remains in place, and the lower end of the new bead is inserted in the recess 25 and its upper end is placed in contact with the under side of the finish header 18, the bead being at first inclined outward from the groove 13. The upper end of the bead is then forced along the under side of the finish header toward the groove 13 until the upper end of the bead springs into the finish header notch and against the abutment face 17, the bead being slightly flexed, as shown by dotted lines in Figure 2, while being forced into the groove, until its upper end passes beyond the face 17, whereupon the bead automatically straightens and its upper end abuts said face, as shown by full lines in Figure 2. After the application of the parting bead the lower sash is hung as usual.

When the top header is provided with the horizontal top bead 20, the manipulation of the parting bead by the operator consists in swinging the bead inwardly after its lower end abuts the sill, until the upper end is in sufficiently firm frictional engagement with the face 19 of the top bead 20 to prevent the bead from coming out of the groove, no spring flexure of the bead being required.

It will be seen that after the parting beads have been secured as described there is no liability of the accidental release of either bead, and that the beads and sashes may be easily removed and replaced.

It is obvious that the frame may be provided with means other than the finish header 18, or the top bead 20, for securing the upper ends of the parting beads.

The frame characterized by the fixed stops 22 permits the securing of the parting beads without the use of movable fasteners, and eliminates the use of brads driven through the parting beads, into the sill or the stile. Such brads are liable to split the beads. The fixed fasteners allow the parting beads to be made with plain flat surfaces without shoulders, grooves, notches and inclines, and the frame to be made without depressions and recesses in the sill 14.

It is well known that the lower portions of the parting beads of a double hung window are not protected from the weather by the upper sash, and are therefore liable to be caused by warpage to spring outward from the grooves. This liability is not always prevented by brads driven into the exposed portions of the beads because, as above stated, the brads are liable to split the beads and lose their hold thereon. Moreover, the brads are liable to be pulled out by the warping of the lower portions of the beads.

There being no movable securing units there is little or no liability of the completion of a window without suitably fastening the parting beads, such as is sometimes caused by carelessness of workmen.

The application of paint to the sill 14, and to the immovable stops 22 does not affect the usefulness of the stops, the same remaining in place after being attached at the factory. Parting beads have to be removed occasionally to permit repairs, and have to be renewed when injured or broken. The fasteners 22 are improved by painting and permit the convenient renewal of the parting beads, and the use of parting beads of extremely simple form, extending continuously from the top beads to the sill.

It will be seen that the fixed stops 22 may be rigidly attached to any suitable portions of the frame, and are formed and arranged to be engaged with the lower end portions of the parting beads 15 by a downward endwise movement of the beads to confine said lower end portions in the grooves 13. It will also be seen that the stops are wholly out of contact with the sides of the parting beads which bear on and project from the grooves in the sides of the frame, so that the beads are freely engageable with the stops when the beads are inclined relatively to the sides of the frame.

It will also be seen that each embodiment of the means associated with the top header 16 for confining the upper end portions of the parting beads in the upper portions of the grooves 13 is caused to perform its function by lateral movements of the beads without bodily endwise movement thereof, the means shown by Figures 1 and 2 being embodied in the shoulder 17 formed on the finish header 18, and the means shown by Figure 8 being embodied in the top bead 20 attached to the finish header and having a horizontal bottom face arranged to contact with the upper ends of the parting beads and frictionally confine said upper ends in the grooves.

Referring to Figures 1 and 2, it will be seen that the arrangement is such that the parting beads are confined by first engaging their lower ends with the fixed stops by downward endwise movement of the beads, then flexing the parting beads as indicated by dotted lines in Figure 2 to slightly lower their upper ends, and finally moving the beads laterally into the grooves to cause their upper ends to spring behind and engage the shoulder 17, there being no bodily endwise movement of the parting beads.

Referring to Figure 8, it will be seen that the arrangement is such that the parting beads are confined by first engaging their lower ends with the fixed stops, and then swinging the parting beads laterally inward until their upper ends are frictionally confined by the top bead 20, there being no bodily endwise movement of the parting beads.

Provision is therefore made for easily securing the elongated parting beads by exerting a minimum degree of force thereon which is much less than would be necessary if the beads required endwise bodily movement in the grooves, and for removing the parting beads with corresponding ease.

I claim:

1. In combination, a window frame having parting bead grooves extending from the top header of the frame to the sill thereof and closed at their lower ends by the top surface of the sill, and at their upper ends by the top header, parting beads removably inserted in said grooves and formed to extend from end to end thereof, the lower ends of said beads bearing separably on the sill and their upper ends bearing separably on the top header, stops for confining the lower ends of the parting beads in the lower ends of the grooves, said stops being rigidly attached to the

frame without contact with the side faces of said beads, so that the stops are engageable with the lower end portions of the beads by a downward endwise movement of the beads when said beads are inclined relative to the vertical sides of the frame, and means associated with the top header for confining the upper ends of the beads in the upper ends of the grooves, said means being engageable with the upper ends of the parting beads by lateral movements of the beads without bodily endwise movement thereof, the arrangement being such that the beads are confined by first engaging their lower end portions with said stops while the beads are inclined relative to the sides of the frame, and then laterally forcing the beads to vertical positions in the grooves and thereby separably securing the upper ends of the beads to the top header.

2. In combination, a window frame having parting bead grooves extending from the top header of the frame to the sill thereof and closed at the lower ends by the top surfaces of the sill, and at their upper ends by the top header, parting beads removably inserted in said grooves, and formed to extend from end to end thereof, the lower ends of said beads bearing separably on the sill and their upper ends bearing separably on the top header, stops for confining the lower ends of the parting beads in the lower ends of the grooves, said stops being rigidly attached to the frame without contact with the side faces of said beads, so that the stops are engageable with the lower end portions of the beads by a downward endwise movement of the beads when said beads are inclined relative to the vertical sides of the frame, and a finish header attached to the top header and having shoulders facing the upper ends of the groove bottoms to confine the upper ends of the beads, the arrangement being such that the parting beads are confined by first engaging their lower ends with said stops while the beads are inclined relative to the sides of the frame and then laterally forcing the beads to vertical positions in the grooves and thereby separably engaging the upper ends of the beads with the shoulders of the finish header.

3. In combination, a window frame having parting bead grooves extending from the top header of the frame to the sill thereof and closed at their lower ends by the top surface of the sill, and at their upper ends by the top header, parting beads removably inserted in said grooves and formed to extend from end to end thereof, the lower ends of said beads bearing separably on the sill, and their upper ends bearing separably on the top header, stops for confining the lower ends of the parting beads in the lower ends of the grooves, said stops being rigidly attached to the frame without contact with the side faces of said beads, so that the stops are engageable with the lower end portions of the beads by a downward endwise movement of the beads when said beads are inclined relative to the vertical sides of the frame, and a top bead attached to the top header and having a bottom face arranged to contact with the upper ends of the parting beads and frictionally confine said upper ends in the grooves, the arrangement being such that the parting beads are confined by first engaging their lower ends with said stops while the beads are inclined relative to the sides of the frame and then forcing the beads to vertical positions in the grooves and thereby frictionally engaging the upper ends of the beads with the bottom face of the top bead.

4. In combination, a window frame having parting bead groves extending from the top header of the frame to the top surface of the sill and closed at their ends by said header and sill, parting beads removably inserted in said grooves and formed to extend from end to end thereof, the lower ends of said beads bearing separably on the sill, stops for confining the lower ends of the beads in the lower ends of the grooves, said stops being attached to the sill and formed and arranged to bear only on outer edge faces of the beads and not on side faces thereof, so that the beads are engageable with the stops by a downward endwise movement of the beads when they are inclined relative to the vertical sides of the frame, and means associated with the top header for confining the upper ends of the beads in the upper ends of the grooves, said means being engageable with the upper ends of the beads by movement of the beads to vertical positions in the grooves, without bodily endwise movement of the beads.

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