Nov. 30, 1926. 1,608,671

J. A. RAPPAPORT

DOUBLE HUNG WINDOW AND LIKE CONSTRUCTION

Filed Oct. 26, 1922 2 Sheets-Sheet 1

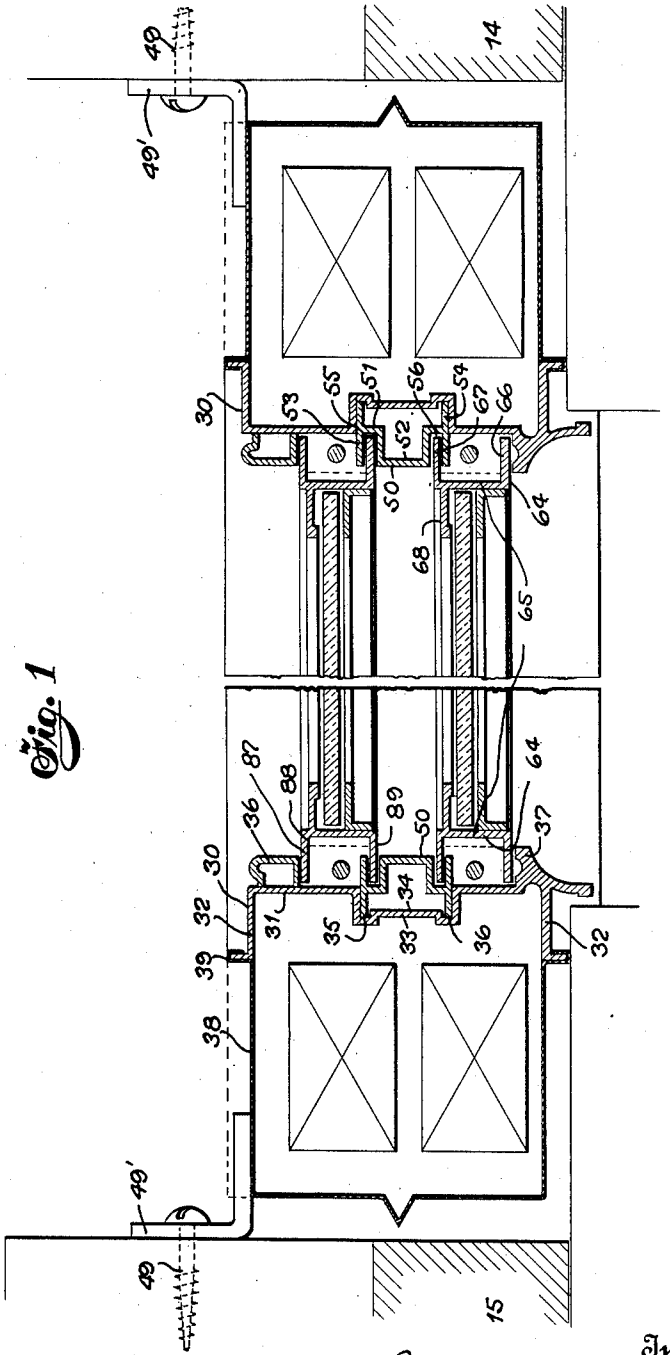


Fig. 1

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Fig. 2

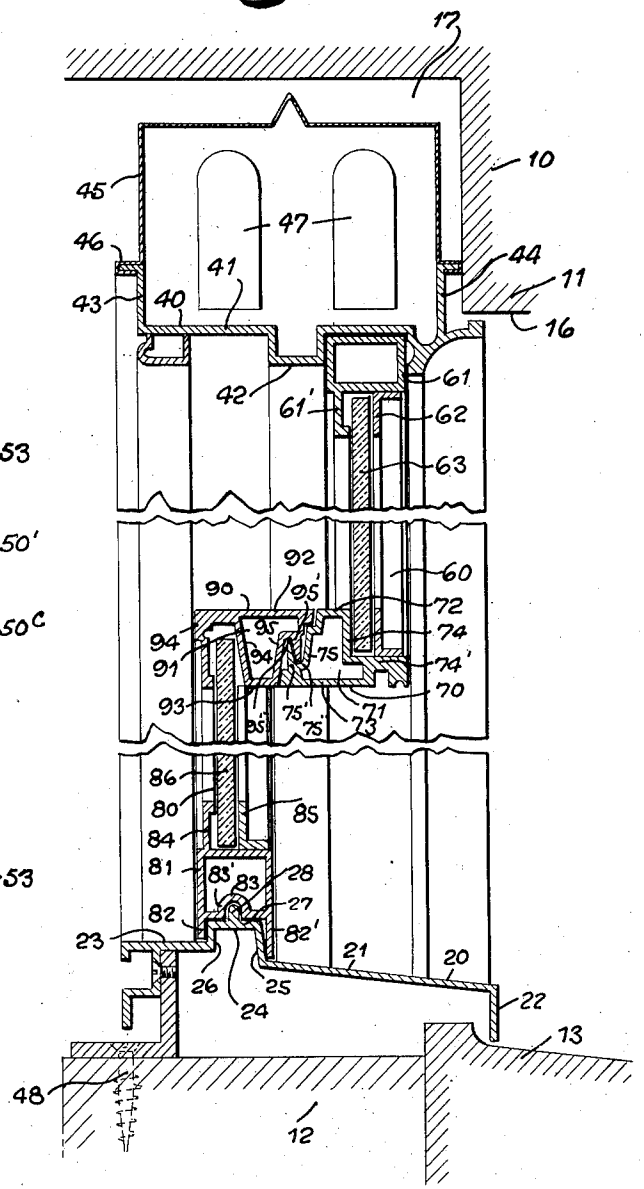
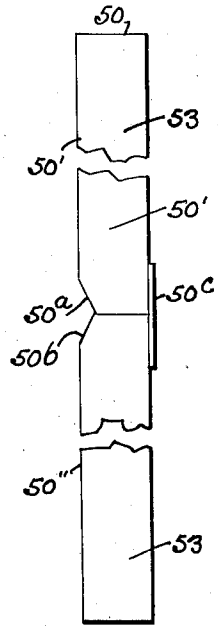


Fig. 3



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UNITED STATES PATENT OFFICE.

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DOUBLE-HUNG WINDOW AND LIKE CONSTRUCTION.

Application filed October 26, 1922. Serial No. 596,991.

My present invention relates to metal window frames, particularly the heads for such frames and the associated pulley box covers, the window jambs and associated parting strips, and the side rails of the upper and lower sashes cooperating with the window jambs and the associated parting strips.

It is an object of the present invention to provide devices of the character generally referred to above which shall be very simple in construction, which shall be easy and convenient to manufacture and to assemble, which shall be of a strong, rigid construction, which shall operate smoothly, which shall be neat and attractive in appearance, and which shall provide the desired protection against wind and rain for the various parts of the window frame and for the interiors of the structures to which the window frames may be applied, all qualities recommending these devices very highly to builders, architects and the like.

In the accompanying specification I shall describe, and in the annexed drawing show, a preferred embodiment of the present invention. It is, however, to be clearly understood that my invention is not limited to the particular embodiment thereof herein shown and described for purposes of illustration only.

Referring to the drawing wherein I have illustrated the aforesaid illustrative embodiment of the present invention:

Figure 1 is a horizontal sectional view, partly broken away, through the window frame and surrounding structure as a whole, showing also the pulley boxes and the upper and lower sashes within the window frame;

Figure 2 is a vertical sectional view, also partly broken away, of the device shown in Figure 1 of the drawing; and

Figure 3 is a detail view of one form of parting strip which may be used in connection with the present invention.

Referring to said illustrative embodiment of the present invention, the same comprises the usual surrounding masonry within which the window frame is set, the masonry being indicated by reference character 10. The masonry includes the usual upper portion 11, lower portion 12, the sill brick 13, and the side members 14 and 15 defining between them the opening 16 and the space 17 within which the window frame is positioned.

The metal window frame, generally indicated by reference character 18, the various metal portions of which may be made of extruded bronze or equivalent metal or of metal given the desired shape and form by any other convenient method, comprises a sill 20 having the outwardly and downwardly inclined portion 21 and the flange portion 22 cooperating with the sill brick 13. The inner portion 23 of the metal sill 20 may have any desired form. However, I prefer to give it the form shown in the drawing.

Between the outer portion 21 and the inner portion 23 of the metal sill 20 is an intermediate raised portion 24 which comprises an outer slightly inclined wall 25, an inner substantially vertical wall 26, which is preferably shorter than the outer wall 25, and an intermediate wall 27 joining the outer wall 25 and the inner wall 26. The intermediate wall 27 is slightly downwardly and outwardly inclined and is provided adjacent its central portion with a longitudinal bead 28 for a purpose subsequently to be described in greater detail.

Cooperating with the metal sill 20 are a plurality of window jambs generally indicated by reference character 30. Since the two jambs are substantially indentical, it will be sufficient for the purposes of the present description merely to describe one of these jambs. Each jamb 30 comprises a main central web portion 31 and the laterally extending L-shaped flanges 32. At an intermediate portion of the same the web portion 31 is provided with a depressed portion 33, the central portion 34 of which is slightly raised to provide a plurality of grooves 35 and 35′ for a purpose subsequently to be described in greater detail. Cooperating with each jamb 30 is a bead 36 and an extension 37 serving likewise as a bead for the window sashes when in place.

Cooperating with the L-shaped flange portions 32 is a sheet metal weight box cover 38, the ends of which, as indicated at 39, are turned or flanged over portions of the

L-shaped flanges 32 to fasten and position the weight box cover 38 in its place on the jamb 30.

Completing the main portion of the metal window frame 18 is a head generally designated by reference character 40 and comprising a main web portion 41 having a central depressed portion 42 and the laterally extending L-shaped flanges 43 and 44. Cooperating with the L-shaped flanges 43 and 44 of the head 40 is a sheet metal pulley box cover indicated by reference character 45, portions of which, as indicated at 46, are bent or flanged over portions of the laterally extending flanges 43 and 44 to properly position and retain the pulley box cover in place. The pulleys are generally indicated by reference character 47 and may be of any suitable or desired type of construction.

Any suitable or desirable fastening means, such as screws 48 and 49, with which latter screws cooperate the angle irons 49′, may be used for fastening the various portions of the window frame within the masonry 10.

Cooperating with the window jambs 30 are the parting strips 50 each comprising the cooperating sections 50′ and 50″. Each such section comprises a main central web portion 51 having the raised portion 52 and the flange portions 53 and 54. Preferably the flange portions 53 and 54 extend above and below the main web portion 51 so that there is thus provided a plurality of grooves 55 and 56 for a purpose subsequently to be described in greater detail. At 50ᶜ I have shown a rubbing strip covering the joint between the sections 50′ and 50″.

As an important feature of the present invention, more particularly illustrated in Figure 3 of the drawing, it will be noted that each parting strip 50 is bi-partite, that is, consists of two separate portions 50′ and 50″, the inner ends of which, as indicated at 50ᵃ and 50ᵇ, are slightly tapered. The purpose of this is to facilitate the assembly of the window by first placing the upper and lower sashes within the frame and thereafter inserting the successive sections of the parting strip.

This operation is facilitated by giving each of the flange portions 53 and 54 of each section of the parting strip a slight taper at the inner ends of the inner ends of the sections, as shown at 50ᵃ and 50ᵇ. This enables the parting strip sections to be inserted into the frame by raising both sashes to their uppermost position, and inserting the lower parting strip section, then lowering both sashes, and inserting the upper parting strip section, the taper at the inner end of each parting strip section permitting the sections to be readily inserted into the frame in the designated positions of the window sashes.

The upper window sash, here generally indicated by reference character 60, comprises a top sash rail 61 provided with the inwardly extending L-shaped flange 61′, which, by cooperation with the glass molding 62, assists in positioning the pane of glass 63.

The upper sash 60 also includes the side rails 64 comprising a central web portion 65 and the outwardly extending flange portions 66 and 67, of which the flange portion 67 slides within the groove 56 of the parting strip 50. The side rail 64 also includes the inwardly extending L-shaped flanges 68 which, by cooperation with the glass molding 62, help to position and retain the pane of glass 63. It will be noted that the remaining flange portion 67 of the upper sash 60 cooperates with the extension 37 on the window frame 30 to properly guide and position the sash.

The meeting rail 70 of the upper sash 60 also comprises a tubular member, generally indicated by reference character 71. The member 71 has the top wall 72, the bottom wall 73 and the side walls 74 and 75. It is not deemed necessary here to describe in detail the exact construction of the side walls 74 and 75, since this construction is made the subject of another application for Letters Patent filed of even date herewith, entitled "Meeting rail for windows and the like."

It is, however, sufficient to state that the side wall 75 is provided with a tongue-like projection 75′ defining a groove 75″ for cooperation with the similiarly shaped tongue and groove of the meeting rail of the lower sash, while the side wall 74 is provided with an L-shaped extension 74′ which, by cooperation with the glass molding 62, helps to position and protect the pane of glass 63. It may here also be stated that the general inclination of the side wall 75 is upward and outward, thus giving ideal protection for the interior of the structure to which the window is applied, and for the various parts of the window itself against the ingress of wind and rain.

The lower sash, here generally indicated by reference character 80, comprises the bottom rail 81, of tubular construction, provided with the flanges 82 and 82′ and with the indented portion 83 defining a groove 83′ for receiving the bead 28 of the raised portion 27 of the metal sill 20. The bottom rail 81 is provided with an L-shaped extension 84 which, by cooperation with the glass molding 85 serves to retain and protect the pane of glass 86.

The side rails 87 of the lower sash 80 are constructed in the same manner as the side rails 64 of the upper sash 60 and need not be described in greater detail herein, except to note that of the two flange members 88 and 89 of the side rails 87 of the lower sash 80 the flange member 89 slides in the groove 55 of the parting strip 50, while the re-

maining flange 88 cooperates with the bead 36 to properly finish and protect the lower sash 80.

The meeting rail 90 of the lower sash 80 comprises a tubular member 91 having the top wall 92, the bottom wall 93 and the side walls 94 and 95. Since this meeting rail has been made the subject of the other copending application referred to by me above, it will not be necessary to describe the same in detail herein, except to state that the side wall 94 is provided with an extension 94′ for assisting in the retention and protection of the pane of glass 86, while the side wall 95 is provided with a tongue-like projection 95′ defining the recess 95″ for cooperation with the similarly shaped tongue-like projection and recess 75′ and 75″ of the meeting rail 70 of the upper sash 60.

The manner of assembling the window frame and window described in detail above and the advantages of the same in use will be substantially clear from the foregoing description.

After the sill, jambs and head of the window have been properly positioned and fastened within the masonry of the structure to which the window is to be applied, and, with the jambs and head, the respective pulley weight covers and pulley box covers have also been positioned within the masonry of the structure, the upper and lower sashes 60 and 80 respectively are placed within the frame, the pulley weight cords attached to the sashes, and the sashes raised to their uppermost position.

Thereafter, the upper section 50′ of each parting strip 50 is inserted in place, this insertion being facilitated by the taper of the inner end of each parting strip section. Then the remaining parting strip section 50″ is placed in position and any suitable fastening means, such as screws or the like, not here deemed necessary to be shown, may be used for removably positioning the parting strip sections in place within the window jambs 30.

The advantages of the foregoing construction are numerous and of great practical importance. The device is very simple in construction, and easy to manufacture and to assemble. This is particularly true where, as is preferred, the various metal portions of the frame and sashes are made of extruded bronze or equivalent metal, or of suitable metal made by some other convenient process. The device is at the same time strong and rigid in construction, operates very easily and conveniently, and is very neat and attractive in appearance, qualities which render the device much desired by builders, contractors, architects and the like. At the same time, the device affords very secure protection for the various parts of the frame and of the sashes and for the interior of the structures to which the windows may be aplied, against the ingress of wind and rain.

What I claim is:

1. In a metal window, a window jamb comprising a main web portion provided with an intermediate depression having a substantially centrally disposed raised portion providing a channel at each side of the raised portion, in combination with a bi-partite parting strip provided with a plurality of flanges fitting into said channels.

2. In a metal window, a window jamb comprising a main web portion provided with an intermediate depression having a substantially centrally disposed raised portion providing a plurality of channels at each side of said raised portion, in combination with a bi-partite parting strip provided with a plurality of flanges fitting into said channels, the inner end of each part of the parting strip being tapered to facilitate its insertion.

3. In a metal window frame, a window jamb comprising a main web portion provided with an intermediate depression having a raised portion providing a plurality of channels, one on each side of said raised portion, in combination with a plurality of cooperating bi-partite parting strip sections having portions fitting into said channels.

4. In a metal window frame, a window jamb comprising a main web portion provided with an intermediate depression having a substantially centrally disposed raised portion providing a plurality of channels, one on each side of said raised portion, in combination with a plurality of cooperating bi-partite parting strip sections fitting into said depression, the inner end of each parting strip section being tapered to facilitate its insertion into said depression.

5. In a metal window frame, a window jamb comprising a main web portion provided with an intermediate depression, presenting a plurality of channels, in combination with a plurality of cooperating bi-partite parting strip sections fitting directly into said channels.

6. In a metal window frame, a window jamb comprising a main web portion provided with an intermediate depresison, in combination with a plurality of cooperating bi-partite parting strip sections fitting into said depression, the inner end of each parting strip section being tapered to facilitate its insertion.

7. In a metal window frame, a window jamb comprising a main web portion provided with an intermediate depression, in combination with a plurality of cooperating removable bi-partite parting strip sections fitting into said depression, the inner end of each parting strip section being tapered to facilitate its insertion.

8. A parting strip for metal window

frames, comprising a parting strip section consisting of a main web portion having associated therewith a plurality of tapered flange portions.

9. A parting strip for metal window frames, comprising a parting strip section consisting of a main web portion having associated therewith a plurality of tapered flange portions extending above and below said main web portion, said main web portion being provided with an intermediate depressed portion providing a plurality of longitudinally disposed grooves.

In testimony, whereof, I have signed my name to this specification this 30th day of September, 1922.

JACOB A. RAPPAPORT.