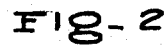


2,835,933

3 Sheets-Sheet 1



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DOOR FRAME

Filed Jan. 21, 1955

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FIG-3

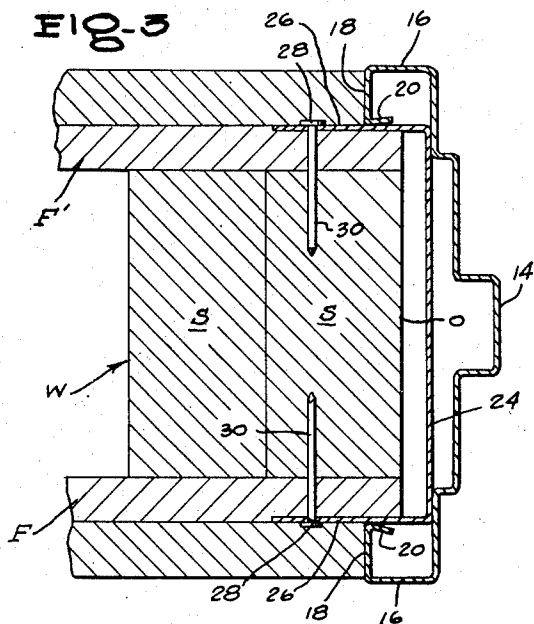


FIG-9

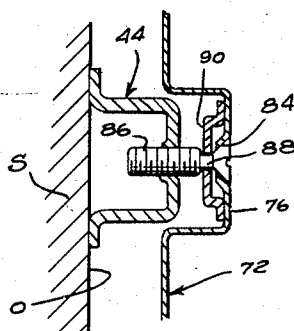


FIG-4

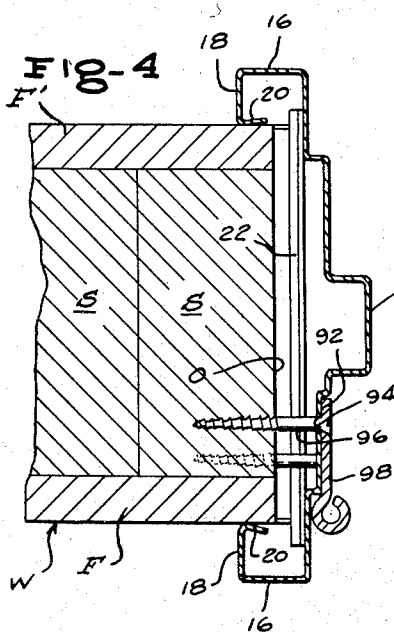
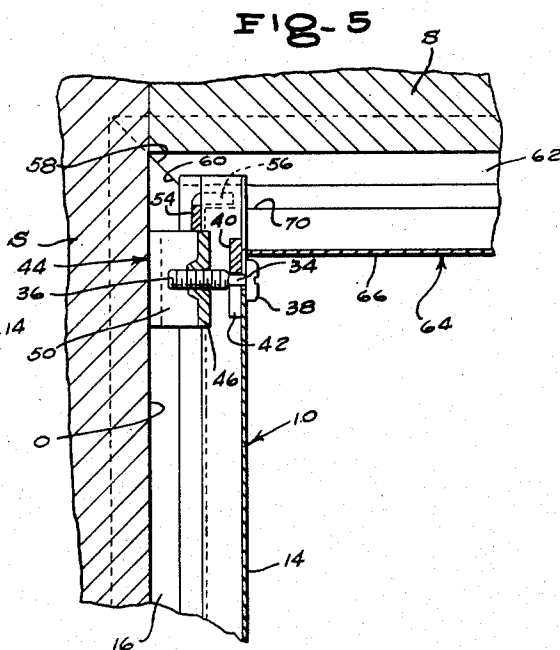


FIG-5



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FIG-8

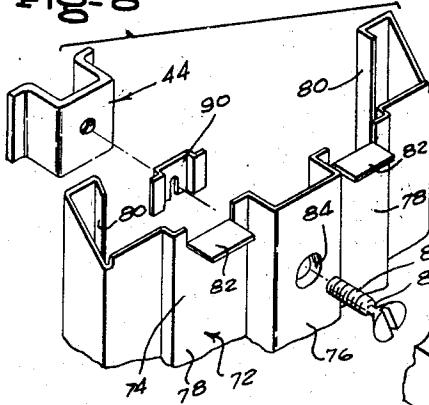


FIG-7

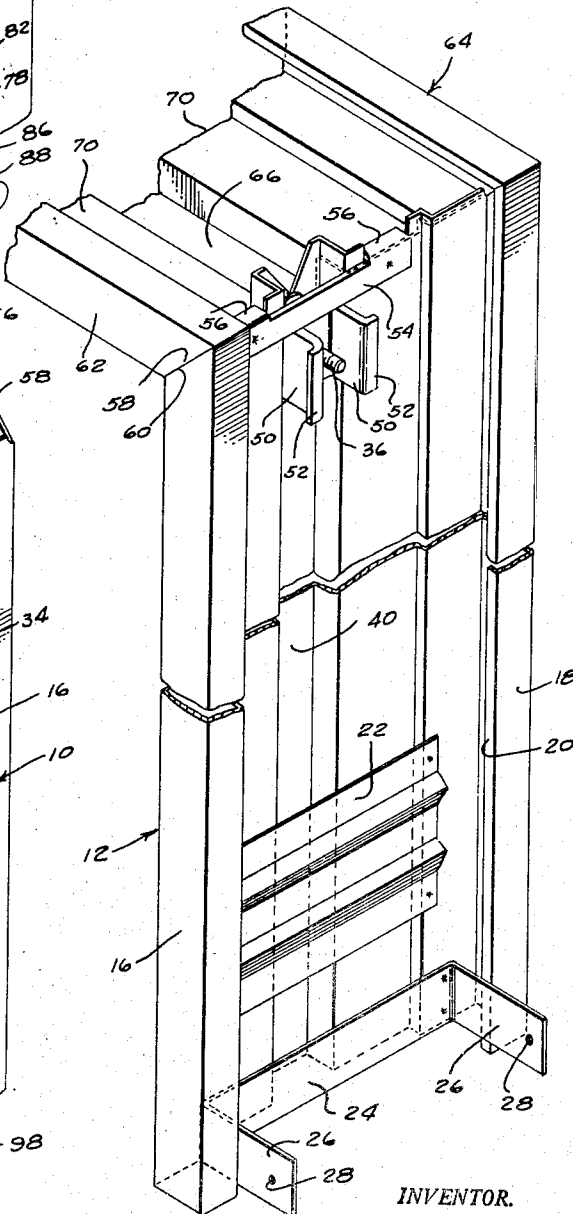
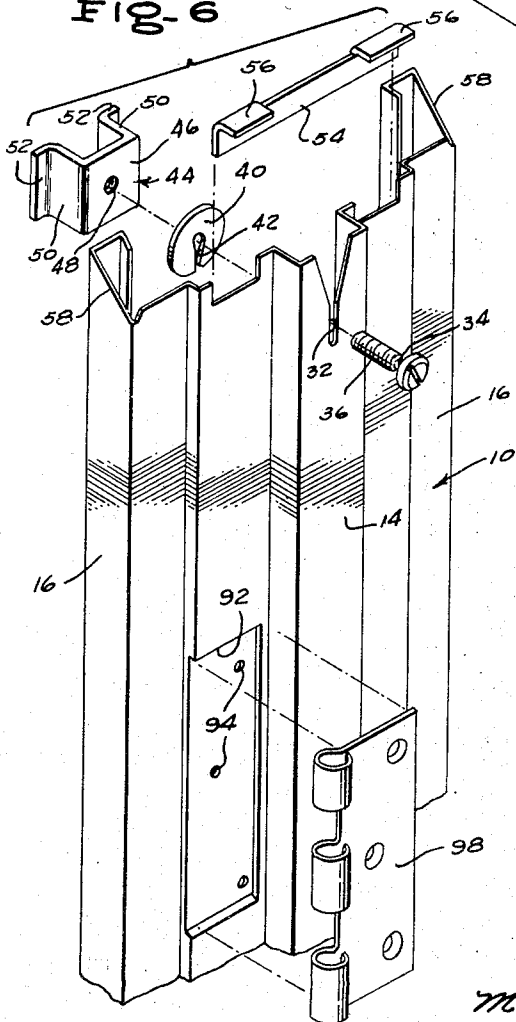


FIG-6



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Application January 21, 1955, Serial No. 483,289

4 Claims. (Cl. 20—12)

This invention relates to improved door frames wherein the stiles can be adjusted to vertical or plumb positions after installation and the headers of the frames are supported on the stiles in such a manner as to afford neat joints between the headers and the stiles.

Another object is to simplify the installation of metal door or window frames and to enable the stiles thereof to be maintained in a plumb or vertical position even after the settling, or expansion or contraction of the building frame.

A further object is to enable the frame to be mounted in the opening after the wall finish has been applied but prior to the application of the baseboard to the wall.

The above and other objects may be attained by employing this invention which embodies among its features a pair of stiles, a lintel carried by the stiles for pivotal movement therebetween adjacent the upper ends thereof, means carried by the stiles and projecting outwardly therefrom adjacent the lower ends thereof for pivotally connecting said stiles to a wall adjacent opposite sides of an opening therein, and adjusting means carried by the stiles for engaging opposite sides of the opening adjacent the upper end thereof and moving the stiles into vertical positions within the opening.

Other features include flanges carried by the stiles and extending outwardly therefrom adjacent opposite longitudinal side edges thereof for frictionally engaging the finish on opposite sides of a wall adjacent an opening therein, means carried by the stiles adjacent the lower ends thereof for securing the stiles to the wall, a header, flanges carried by the header and extending upwardly therefrom adjacent opposite longitudinal side edges thereof for frictionally engaging opposite sides of the wall and confining the header for movement in an upward path between the upper ends of the stiles, means carried by the stiles and extending outwardly therefrom adjacent the upper ends thereof for engaging the header and limiting upward movement thereof beyond a selected height, and means carried by the stiles and bearing on the wall between opposite sides thereof for retaining the stiles vertical.

In the drawings:

Figure 1 is a side elevation of a wall having a door opening therein and an improved frame in accordance with the present invention installed in an opening therein;

Figure 2 is a horizontal sectional view taken substantially on the line 2—2 of Figure 1, and on a somewhat enlarged scale;

Figure 3 is an enlarged sectional view taken substantially on the line 3—3 of Figure 1;

Figure 4 is a fragmentary enlarged sectional view taken substantially on the line 4—4 of Figure 1;

Figure 5 is a fragmentary sectional view taken substantially on the line 5—5 of Figure 2;

Figure 6 is a fragmentary exploded perspective view

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showing a stile and certain elements associated therewith;

Figure 7 is a fragmentary perspective view of the opposite side of the stile illustrated in Figure 6, showing the parts thereof assembled and a header in engagement therewith;

Figure 8 is a fragmentary exploded perspective view of a modified form of the invention; and

Figure 9 is a fragmentary horizontal section taken through Figure 8.

Referring to the drawings in detail, a wall designated generally W is provided with a conventional opening O therethrough which is conventionally framed adjacent opposite sides and across its top by studs S. The wall W is provided on opposite sides with conventional finished faces F and F'. The structure so far described is conventional and forms no part of this invention except in combination therewith.

The form of frame illustrated in Figures 1 to 7 of the drawings, for framing the opening O comprises right and left hand stiles 10 and 12, each comprising an elongated stamped channel cross section body 13 having formed substantially midway between opposite longitudinal side edges a channel shaped door stop. Extending laterally outwardly from the body 13 in a direction opposite the stop 14 along opposite longitudinal side edges of the body are right angular flanges 16 which, as illustrated in the drawings, lie in spaced parallel relation to the finished faces F and F' of the wall W. Inwardly extending opposed flanges 18 are carried by the free edges of the flanges 16 in spaced relation to the sheet metal body 13 and guard flanges 20 are carried by the free edges of the flange 18 in spaced relation to the flanges 16 for frictionally engaging the finished faces F and F' of the wall W. Transverse reinforcing plates 22 are welded or otherwise secured to the inner side of the sheet metal body between the flanges 16 and on the side thereof remote from the stop 14. Welded or otherwise secured to the inner side of each stile adjacent its lower end is a U-shaped yoke 24 having spaced parallel legs 26 which extend laterally outwardly between the flanges 20 for engagement with the opposite wall finish faces F and F', as shown in Figures 1 and 3 of the drawings.

The yoke legs 26 are pierced as at 28 for the reception of suitable fasteners, such as nails 30 which are driven into one of the vertical framing studs S adjacent the lower end of the door or window opening O, so that the stiles 10 and 12 are secured adjacent the lower end of the opening O for movement about the horizontal axes of the nails 30.

Opening through the upper end stop 14 of each is a vertical slot 32 for receiving the shank 34 of a screw 36 having a head 38 which is adapted to engage the outer face of the stop 14. On the reduced neck of the screw 34 at the inner side of the stop 14 is a stop washer 40 which, when it is snapped into place on the shank 34, locks the screw 36 against longitudinal movement through the slot 32. It is to be noted that the washer 40 is provided with a slot 42 which opens through the periphery thereof and whose width is reduced as it approaches the periphery of the washer. The slot has a flaring upper portion 33. Threadedly engaged with the screw 36 between the stop 14 and the related framing stud S is a U-shaped pressure member designated generally 44 which comprises a bight portion 46 having a threaded opening 48 extending therethrough for engagement with the threaded shank of the screw 36, and carried by the bight portion 46 and extending perpendicularly outwardly therefrom in a direction away from the stop 14 are legs 50 which are adapted to bear against the adjacent stud

S. Feet 52 are carried by the free ends of the legs 50 and extend outwardly therefrom to afford bearing surfaces which engage the adjacent stud S. Welded or otherwise secured to the inner side of the body 13 of each stile 10 and 12 and extending across said body adjacent the upper end thereof is a bar 54 which not only serves to reinforce its respective stile but also serves to hold an inverted header in place. Lugs 56 on the upper edge of the bar 54 project laterally from the bar 54 at the opposite sides of the stop 14. The upper edges of the stile bodies 13 have notches 57 at opposite sides of the stop 14 in which the lugs 56 engage. The upper ends of the stile flanges 16 are mitered as at 58 for cooperation with miters 60 carried by opposite ends of side flanges 62 of a header designated generally 64 which is provided midway between opposite side edges with a channel shaped stop 66. As shown in the drawings, the header comprises a sheet metal body 68 which is stamped out to form the stop 66 and the side flanges 62. As illustrated in Figures 5 and 7, the opposite ends 70 of the body 68 are engaged beneath the lugs 56 so as to preclude upward movement of the header relative to the stiles 10 and 12 while at the same time preserving a pivotal relationship between the header and the stiles. The free edges of the flanges 62 of the header are provided with interned friction flanges 67 for frictionally engaging the finished faces F and F' of the wall W.

In the modified form of the invention, illustrated in Figures 8 and 9, a stile designated generally 72 comprises an elongated sheet metal body 74 stamped to provide a stop 76, outwardly extending flanges 78 on opposite sides of the stop and wall finish engaging flanges 80 corresponding in all respects to the flanges 20 previously described. Carried by the upper ends of the side flanges 78 and projecting outwardly therefrom are lugs 82 which correspond in all respects to the lugs 56 for engagement with a header. Formed in the stile and extending through the stop 76 adjacent the upper end of the stile is a countersunk opening 84 for the reception of the tapered head of a screw 86 having a reduced portion 88 adjacent its head. A retainer 90 is engaged in the reduced neck 88 after the screw has been extending through the countersunk opening 84 with the head of the screw engaged in the countersunk. The retainer, by engagement with the inner side of the stop 76, prevents accidental extraction of the screw 86 from the opening 84.

As illustrated in the drawings, one of the stile bodies is equipped intermediate its ends with a hinge plate receiving recess 92 which is pierced with spaced openings 94 for the reception of fasteners such as screws 96 which extend through a hinge leaf 98 and through the openings 94 into an adjacent stud S. It is to be understood that if so desired, the hinge leaf 98 may be welded to the stile within the recess 92 in lieu of fastening to the stud S. Obviously, when a door is to swing in the opposite direction, the other stile will be provided with hinge receiving recesses 92 in which the hinge leaves 98 are secured in any conventional manner.

The header 64 is positioned between the stiles 10 and 12 at the upper ends thereof and 13 pushed upwardly in the door opening and the stiles are pushed endwise in the door opening until the lower ends thereof are a proper distance apart. With the stiles thus located, the nails 30 are driven through the openings 28 in the legs 26 of the yoke 24 so that the stiles may pivot about the fasteners 30. It is to be understood, of course, that the screws 36 or 86, as the case may be, are mounted in their respective stiles and secured therein against axial movement by the retainers 40 or 90. With the pressure members threadedly engaged with the screws, the header 64 is pushed upwardly until it engages the lugs 56 or 82, as the case may be, and in this position the mitered ends 58 of the stiles and 60 of the header will engage one another, as illustrated in Figures 1 and 7. The stiles are

then plumbed by turning the screws 36 or 86, as the case may be, and moving the pressure members 44 against the adjacent sides of the wall opening, as suggested in Figures 2 and 5. Owing to the loose pivotal connection between the stiles and the header, it will be obvious that as the stiles are brought to plumb, the header will assume a perpendicular position between the stiles with the mitered edges 58 and 60 in engagement with one another. Obviously, as the building settles, or if for any reason the sides of the wall opening become out of plumb, the frame itself may be plumbed by adjusting the screws 36 or 86, as the case may be to adjust the frame relative to the opening O.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What is claimed is:

1. In a frame for framing an opening in a wall comprising a pair of spaced stiles and a header bridging the stiles, the improvement comprising adjustable means mounted on at least one of said stiles adjacent the top thereof for reacting against the adjacent wall surface and thereby moving said stile outwardly toward the opposite stile and thus determining the spacing of the first named stile from the wall, the abutting ends of the header and stiles being mitered and engaged for relative sliding movement of the mitered surfaces resulting in raising of the header responsive to said adjustable means being actuated to move said first named stile outwardly from said wall surface toward said opposite stile, and abutment means providing overlapping surfaces on said header and stiles connecting said header to said stiles, said overlapping surfaces on said stiles being engageable by said overlapping surfaces on said header to limit sliding movement of said mitered surfaces and lock said header to said stiles with said mitered surfaces in predetermined relationship.

2. In a frame for framing an opening in a wall comprising a pair of spaced stiles and a header bridging the stiles, the improvement comprising adjustable means mounted on each of said stiles adjacent its top for reacting against the adjacent wall surface and thereby moving said stile outwardly toward the opposite stile and thus determining the spacing of the stiles from the wall, the abutting ends of the header and stiles being mitered and engaged for relative sliding movement of the mitered surfaces resulting in raising of the header responsive to said adjustable means being actuated to move the stiles outwardly from said wall surface, and abutment means providing overlapping surfaces on said header and stiles connecting said header to said stiles, said overlapping surfaces on said stiles being engageable by said overlapping surfaces on said header to limit sliding movement of said mitered surfaces and lock said header to said stiles with said mitered surfaces in predetermined relationship.

3. In a frame for framing an opening in a wall comprising a pair of spaced stiles and a header bridging the stiles, the improvement comprising adjustable means mounted on at least one of said stiles adjacent the top thereof for reacting against the adjacent wall surface and thereby moving said stile outwardly toward the opposite stile and thus determining the spacing of the first named stile from the wall, the abutting ends of the header and stiles being mitered and engaged for relative sliding movement of the mitered surfaces resulting in raising of the header responsive to said adjustable means being actuated to move said first named stile outwardly from said wall surface toward said opposite stile, and abutment means connecting the header to the stiles comprising lugs outwardly projecting from the upper ends of the stiles, said

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lugs being engageable by the header to limit sliding movement of the mitered surfaces and lock the header to the stiles with said mitered surfaces in predetermined relationship.

4. The structure claimed in claim 2, in combination with a pair of spaced parallel legs extending outwardly from the lower portion of each stile for embracing the adjacent wall and adjustable attachment thereto with the stile fixed in plumbed position.

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