

Feb. 16, 1971

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3,562,956

SLIDING DOOR FRAME

Filed Nov. 19, 1969

2 Sheets-Sheet 1

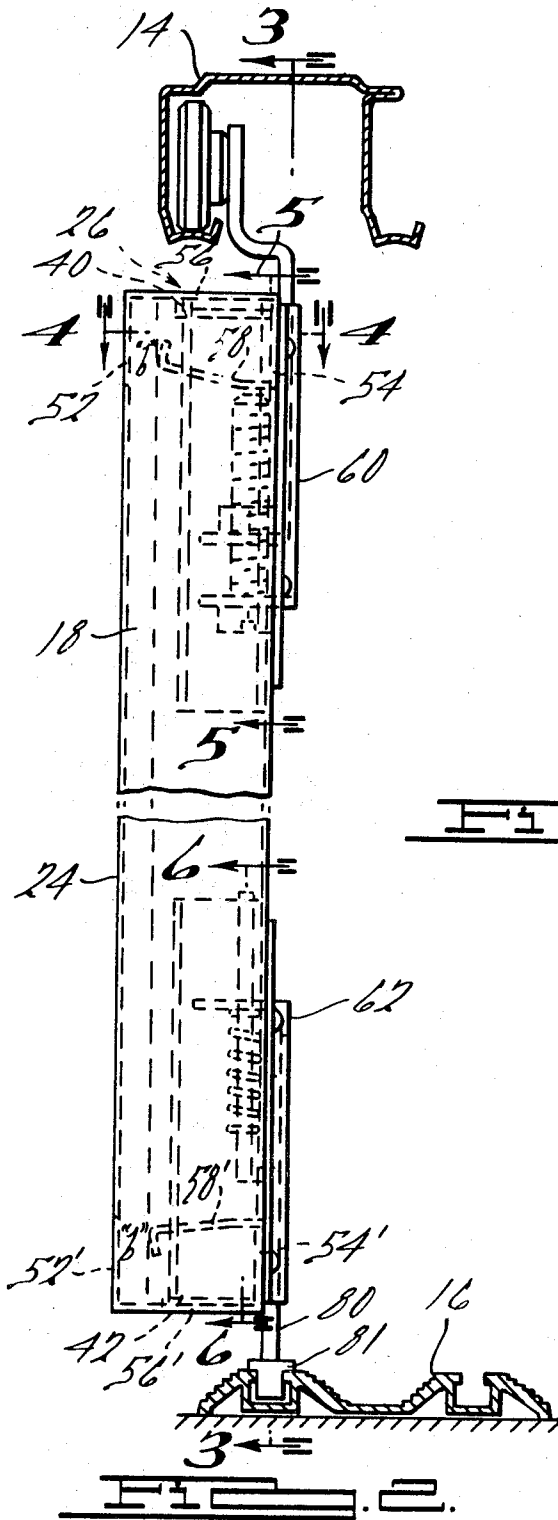
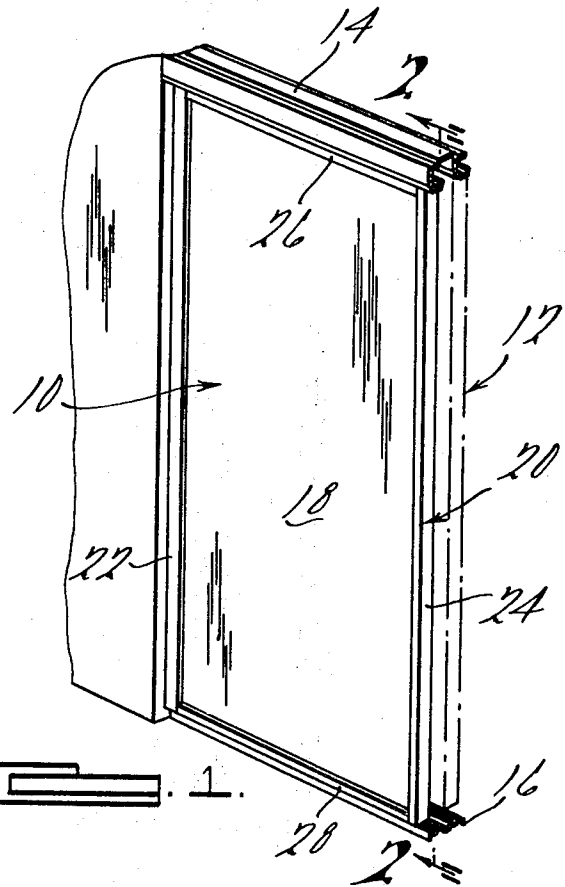
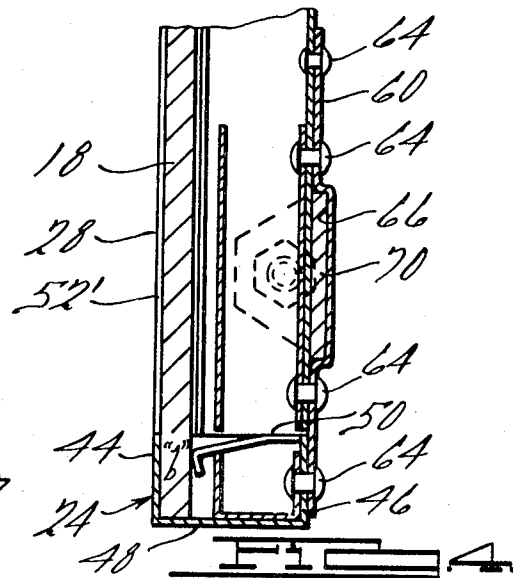


FIG. 1.



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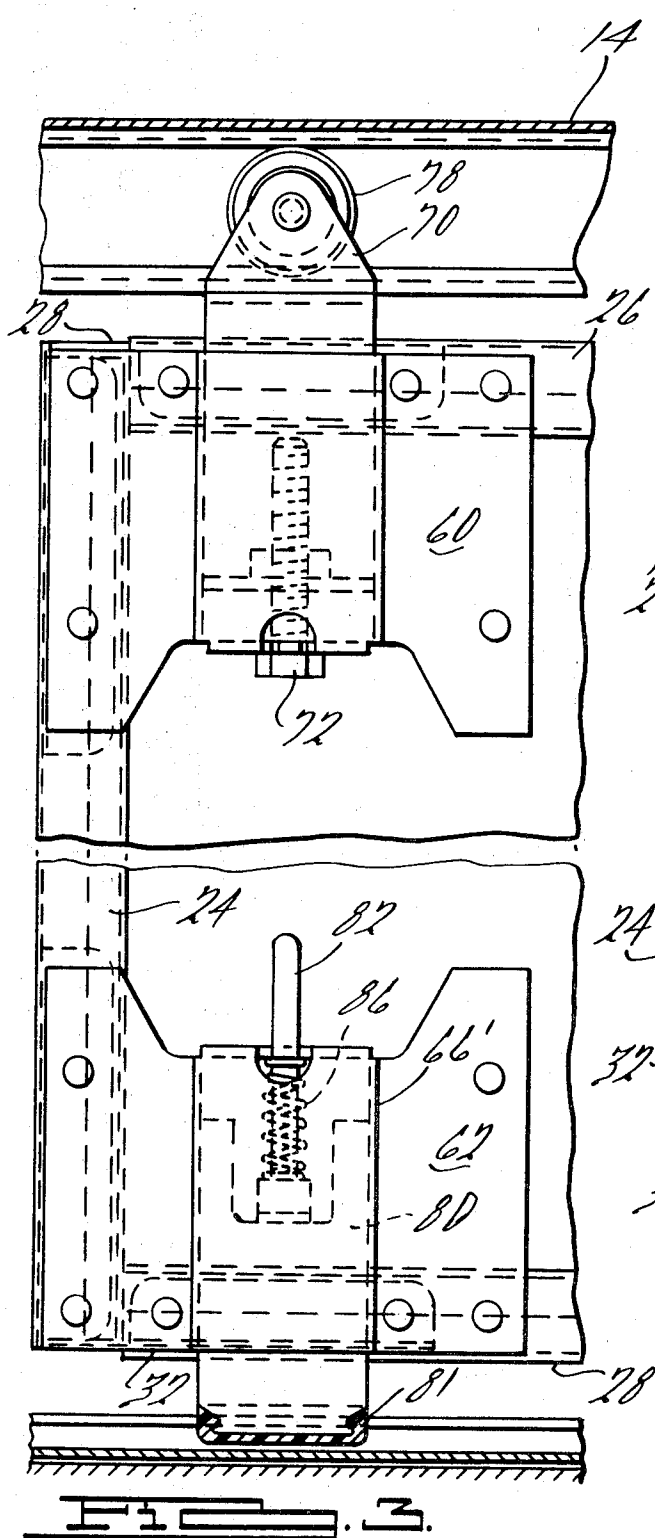
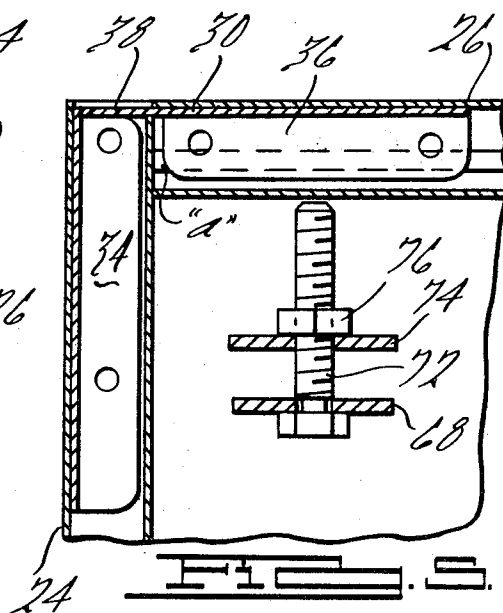
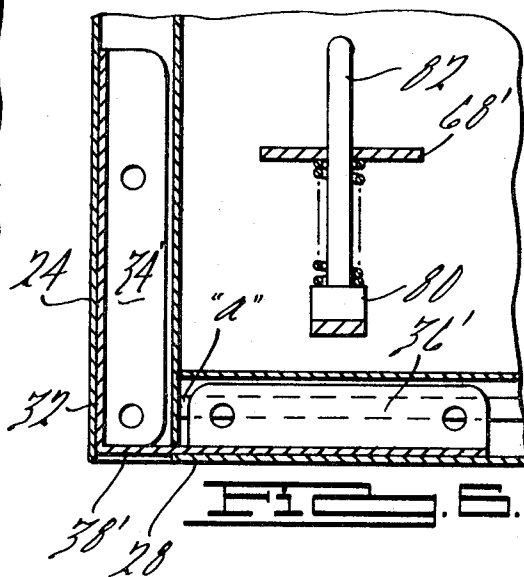
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2 Sheets-Sheet 2



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SLIDING DOOR FRAME

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3 Claims

ABSTRACT OF THE DISCLOSURE

A sliding door frame having open, rectangular cross section stiles and rails for resiliently holding a door panel in place in the frame and brackets with spaced channel portions disposed within the stiles and rails which together with corner hanger and guide plates secure the stiles to the rails.

This invention relates to an improved sliding door frame in which identically shaped corner brackets join stiles and rails to form a frame around a door panel. Sliding door frames embodying the present invention are particularly useful in mobile homes but may be used in other applications. An example of one form of door frame is shown in U.S. Pat. No. 3,058,173 in which specially constructed E-shaped stiles and rails are held together by specially constructed hanger members and guide members. The prior art frame is relatively expensive but is also relatively weak and does not withstand severe usage. The prior art frame is also not readily assembled and disassembled and does not readily accommodate door panels of varying thickness.

It is an object of the present invention to provide a relatively inexpensive door frame which is rugged and will stand up well under severe condition, may be readily fitted and installed and which will accommodate door panels of varying thickness.

These and other objects and advantages of the present invention will become readily apparent from the following detailed description taken in conjunction with the appended drawings in which:

FIG. 1 shows a sliding door installation embodying the present invention,

FIG. 2 is a view taken along line 2—2 in FIG. 1,

FIG. 3 is a view taken along line 3—3 in FIG. 2,

FIG. 4 is a view taken along line 4—4 in FIG. 2,

FIG. 5 is a view taken along line 5—5 of FIG. 2, and

FIG. 6 is a view taken along line 6—6 of FIG. 2.

Referring now to the drawings and more particularly to FIG. 1, numerals 10 and 12 designate sliding doors suspended from an overhead track 14 and guided in floor mounted track 16. The doors 10 and 12 are identical so that a description of one will suffice. Door 10 comprised a panel 18 mounted in a frame 20 formed by stiles 22 and 24 and upper and lower rails 26 and 28 respectively. As best seen in FIGS. 3, 5 and 6, stile 24 is joined to upper and lower rails 26 and 28 by means of brackets 30 and 32. Identical brackets, not shown, join stile 22 to rails 26 and 28. The brackets are identical. Hereafter similar parts will be indicated by similar numerals primed. Bracket 30 is formed with a first channel portion 34 and a second channel portion 36 connected by an intermediate planar portion 38 which is turned over to position the second channel portion 36 substantially perpendicular to the first channel portion 34 but spaced a predetermined distance "a" therefrom. As best seen in FIG. 2, notches 40 and 42 are formed in the upper and lower ends respectively of stile 24 to receive intermediate portion 38, 38'.

Stiles 22 and 24 are identical and rails 26 and 28 are identical and each has a generally rectangular cross section. As best seen in FIG. 4, stile 24 is provided with a

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front member 44 and a back member 46 connected by an outside member 48, an inside member 50 extends angularly and resiliently from the back member 46 toward the front member 44 but terminates a predetermined distance "b" therefrom. Rail 26, as best seen in FIG. 2, is provided with a front member 52 and a back member 54 connected by an outside member 56, an inside member 58 extends angularly and resiliently from the back member 54 toward the front member 52 but terminates a predetermined distance "b" therefrom.

The first channel portions 34, 34' of brackets 30 and 32 are disposed within stile 24 with the intermediate planar portion 38, 38' in notches 40 and 42 respectively. The second channel portions 36, 36' are respectively disposed in rails 26 and 28, the ends of which are adapted for abutting engagement with stiles 22 and 24.

Four identical corner plates, two of which are shown at 60 and 62 are secured to a stile and rail by suitable screws 64. Screws 64 pass through the stile and rail back members to be secured to the brackets mounted within the stile and rail. The plates are formed with a channel 66 and a flange 68. The channels 66 open toward a rail back member 54. The upper brackets 60 are provided with a hanger 70 which is slidably mounted in channel 66 for movement between the corner plate 60 and back member 54. A bolt 72 mounted on flange 68 is adjustably secured to a flange 74 on the hanger 70 by means of a nut 76. A wheel 78 mounted on hanger 70 is adapted to ride in overhead track 14.

A guide member 80 carrying a plastic guide block 81 is slidably mounted in channel 66' formed in the lower plate 62. A stem 82 on guide member 80 projects through an opening 84 in flange 68' and carries a spring 86 which reacts between the flange 68' and guide member 80 to urge the guide member outwardly away from the rail outside member 56' to bring guide block 81 into engagement with the floor track 16.

As will be readily seen, the frame 20 can be easily assembled and disassembled to obtained a proper fit around door panel 18. The frame is relatively inexpensive in that the rails and stiles have the same cross section and the brackets and corner plates are identical in construction. The corner plates not only serve to brace and strengthen the frame but also serve to carry the hanger and guide members. The bracket construction while adding to the strength of the frame and providing a more secure mounting for the hanger and guide members also permits the stiles and rails to be flushy and evenly joined. The resilient inside members 50 and 58 permit the frame 40 to accommodate panels of different thicknesses.

Having described a preferred embodiment of my invention, it will be readily apparent to those skilled in the art that various changes and modifications may be made without departing from the spirit of the invention.

I claim:

1. A sliding door frame comprising a pair of stiles adapted to be joined to an upper and lower rail to form a frame, each of said stiles and rails being generally rectangular in cross section with a front member and a back member connected by an outside member and an inside member extending angularly and resiliently from said back member toward said front member and terminating a predetermined distance therefrom, a notch formed in the end of each stile inside member, corner bracket means for securing said stiles to said rails, said bracket means being formed with a first channel portion and a second channel portion connected by an intermediate planar portion, said second channel portion being substantially perpendicular to said first channel portion and spaced a predetermined distance therefrom, said first channel portion of each corner bracket being disposed

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in a stile with the intermediate planar portion in the notch in the stile inside member, said second channel portion of each bracket being disposed in a rail, corner plate members adapted to be secured to the back members of said stiles and rails, means for securing said corner plates and said brackets to said back members, hanger means adjustably mounted on the corner plates secured to the upper rail and guide means depending from the corner plates secured to the lower rail, said stiles and rails forming a frame to receive a door panel between said front members and said inside members whereby said inside members resiliently engage the rear surface of the door panel to hold the door panel in place in the frame.

2. The door frame of claim 1 wherein the corner plates secured to the upper rail are formed with a channel opening toward the back member of said rail, a hanger slidably mounted in said channel for movement between said

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corner plate and rail back member, and adjusting means mounted on said plates and connected to said hanger for moving said hanger in said channel.

3. The door frame of claim 1 wherein the corner plates secured to the lower rail are formed with a channel opening toward the back member of said rail, guide means slidably mounted in said channel, and spring means between said corner plates and guide means for urging said guide means outwardly away from the rail outside member.

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KENNETH DOWNEY, Primary Examiner