

July 21, 1959

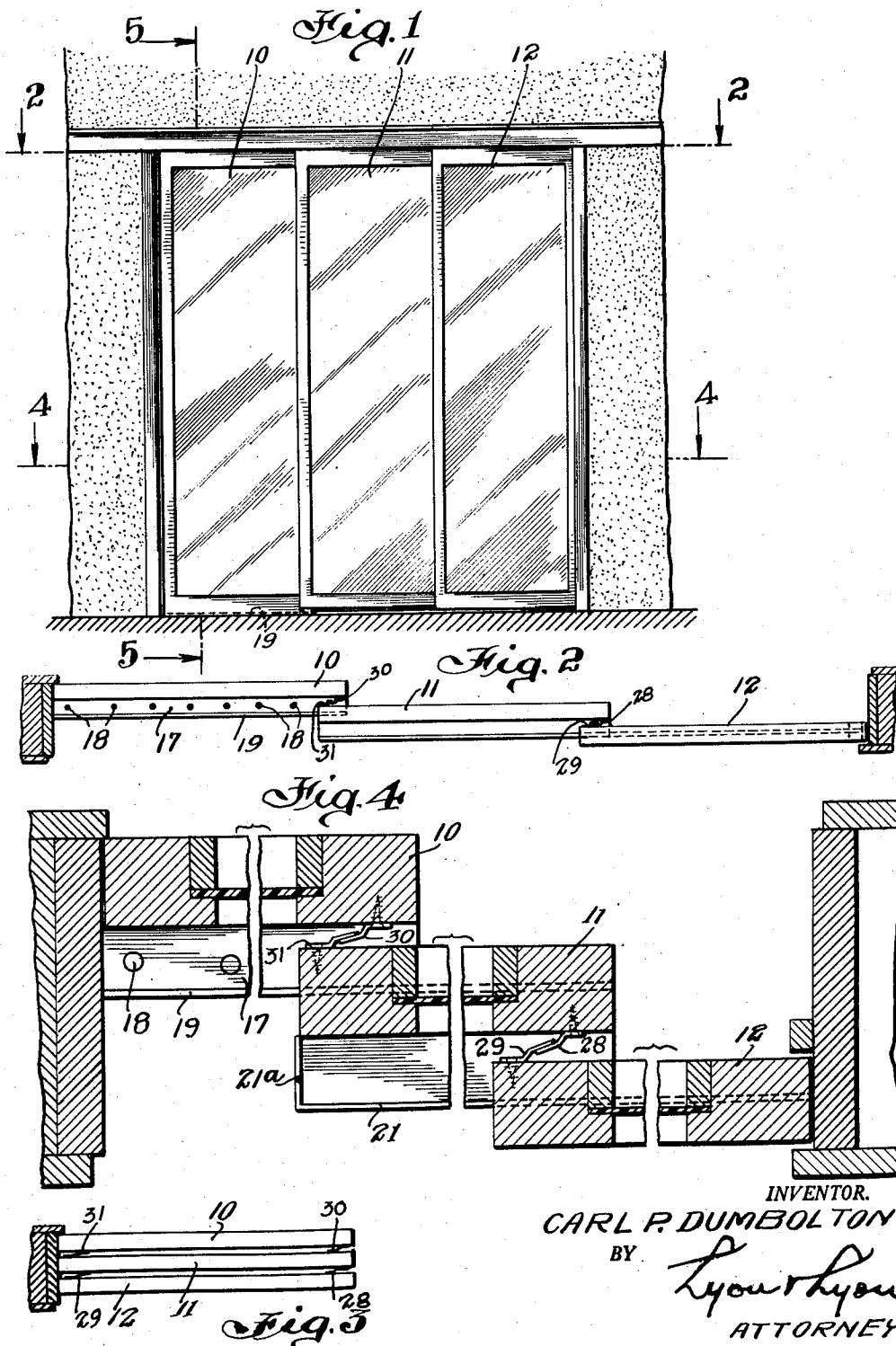
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2,895,183

DOOR CONSTRUCTION

Filed Oct. 21, 1954

2 Sheets-Sheet 1



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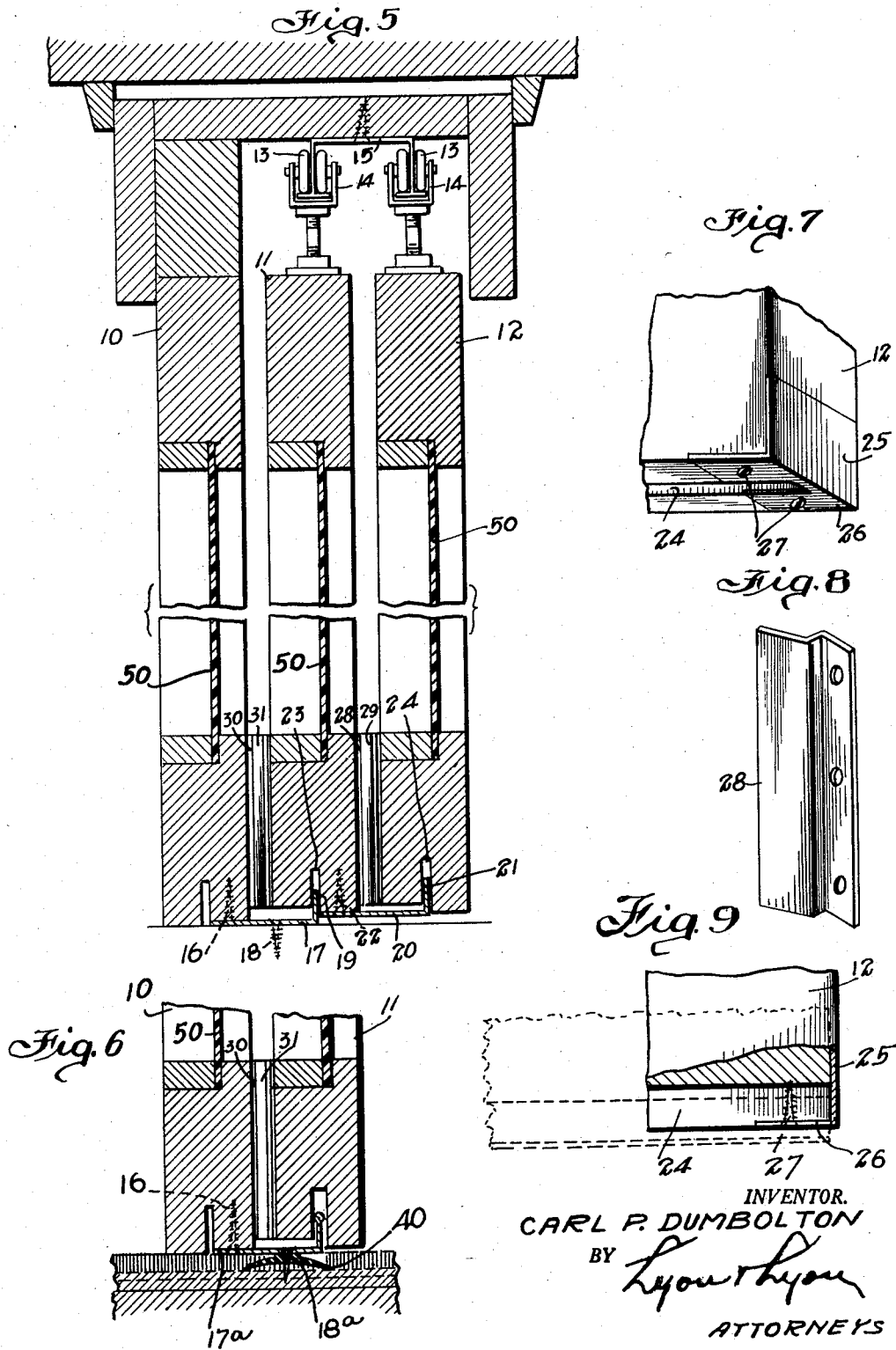
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DOOR CONSTRUCTION

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4 Claims. (Cl. 20—19)

This invention relates to a door construction and more particularly to an assembly for sliding doors or panels.

While the particular form of the invention shown and described relates to a sliding door, it is obvious that the invention can be applied to room dividers or partitions, sliding screens, inside or outside glass doors or windows, wardrobe doors, show window panels, cabinets and the like.

It is accordingly one object of this invention to provide an assembly of the type described employing one or more sliding panels suspended by rollers running in a track above the top of the doors or panels.

It is another object of this invention to provide an assembly of the type described in which a sliding panel is guided and held in parallel position by a continuous angle-type guide. Such guide projects out from one panel so that the upturned leg of the angle guide slides in a continuous slot in the bottom rail of each sliding panel. Such upturned leg is continuous and provides continuous and parallel guidance between panels, preventing adjoining panels from either separating or hitting.

It is a feature of this invention that where one fixed panel is employed, it is held in place by affixing the guide member for the next movable panel to the bottom of the fixed panel and to the front adjacent the edge of the fixed panel and that each successive sliding panel has affixed thereto the guide member for the ensuing panel.

It is a further feature of this invention that a spring-type interlocker is attached to the bottom of each of the inside faces of the overlapping panels to provide a catch. Such catch functions to stop the sliding panel adjacent the fixed panel in the proper location. The other interlockers on the next adjacent sliding panel or panels serve as catches which pull each adjoining panel with them as they are closed. Such spring interlockers permit panel removal by compressing the interlockers with a tool to permit slipping the interlockers past each other.

It is a further feature of this invention that a durable stop is attached to the lower edge and underside of the first sliding panel adjoining the jamb. The stop engages with the end of the guide of the adjoining panel and carries the adjoining panel back with it as the doors or panels are opened.

It is a further feature of this invention that vertical alignment of the stiles is provided when in open position.

These and other objects, features and advantages of the present invention will be apparent from the annexed specification in which:

Figure 1 is a front elevation of a preferred embodiment of the invention.

Figure 2 is a schematic top plan view on a reduced scale about the line 2—2 of Figure 1, showing the doors closed.

Figure 3 is a view similar to Figure 2 showing the doors open.

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Figure 4 is an enlarged fragmentary section taken on the line 4—4 of Figure 1.

Figure 5 is an enlarged broken section taken on the line 5—5 of Figure 1.

Figure 6 is a fragmentary bottom end elevation of a modified form of anchoring the fixed panel.

Figure 7 is a fragmentary perspective view of the lower corner of the panel nearest the jamb.

Figure 8 is a perspective view of one of the interlock members.

Figure 9 is a fragmentary elevation of the lower corner of the last two doors, one door and rail being shown in phantom and illustrating the engaging of the stop member on the last door for returning the doors to open position.

Referring now more particularly to the drawings, the invention is illustrated in connection with three doors or panels indicated respectively as 10, 11 and 12. As shown, the panel 10 is fixed and the panels 11 and 12 are sliding, being supported on rollers 13 mounted in a bracket 14 secured to the upper end of the doors 11 or 12, which rollers ride upon an inverted T-shaped track 15 as clearly shown in Figure 5. The fixed panel 10 has affixed thereto as by screws 16 an L-shaped guide 17 which is also secured to the floor as by screws 18. The bracket 17 includes an upwardly extending flange 19. The next adjacent panel 11 has secured thereto an L-shaped guide 20 having an upstanding flange 21 and being secured to the panel 11 by screws 22 engaging the bottom of the panel 11 adjacent the front thereof as most clearly shown in Figure 5. The upstanding flange 19 of guide 17 rides in a longitudinally extending groove 23 in the panel 11, while the upstanding flange 21 of the guide 20 rides in a longitudinally extending groove 24 in the panel 12. The groove 24 is closed at the end adjacent the jamb by a stop 25 shown here as a metallic bracket 26 secured to the bottom and free end of the panel 12 as by screws 27. Alternatively, the flange 21 may be extended and bent over as at 21a to form a stop adapted to engage the inner edge of the adjacent panel to perform the same function. Adjacent the bottom of each of the panels 11 and 12 is a spring interlocking member 28 and 29, and adjacent the bottom on the front face of each of the panels 10 and 11 is a similar spring member 30 or 31. Each of the interlocking members 28, 29, 30 or 31 is identical in shape and is constructed as shown in detail in Figure 8, the members 28 and 30 being assembled with their leaf spring extending inwardly and the members 29 and 31 being assembled with the leaf spring extending outwardly as shown in Figure 4.

Referring now more particularly to Figure 6, there is shown an alternative construction for the guide member affixed to the fixed panel. In this embodiment, the guide member 17a is affixed to the bottom of the fixed panel as by screws 16 as in the previous embodiment but the screw 18a is provided with a rubber suction tip 40 which grips the rug or floor covering without the necessity of penetrating the floor itself.

Each of the panels 10, 11 or 12 has been illustrated as comprising a frame section and a plastic or glass section 50. It will be appreciated that this construction is optional and that the panels may be made of any material.

It will be appreciated from the foregoing description that assuming the door to be in the condition shown in Figure 1 in which the door is closed, if it is desired to open, the door panel 12 is moved to the left (Figure 1) riding upon the rollers 13 on the track 15 and as this is done the lower edge of the door 12 is maintained in proper vertical alignment by the engagement of the

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flange 21 in the groove 24. As the door 12 continues to move toward the left, the end of the flange 21 engages the end of the stop 25. This situation is depicted in Figure 9. Further movement of the door 12 to the left causes the door 11 to be similarly transported until such time as the doors are in full open position, the condition shown in Figure 3. When it is desired to close the doors from the position shown in Figure 3, the reverse movement takes place with the exception that the engagement of the interlocking member 29 with the interlocking member 28 first causes the door 12 to pick up the door 11 and movement of the two doors to the right continues until the interlocking member 31 engages the interlocking member 30 at which point the doors are in their fully closed position, held in place by the guides 17 and 20 and the interlocking members 28, 29, 30 and 31.

While there has been described what is at present considered a preferred embodiment of the present invention, it will be appreciated by those skilled in the art that various changes and modifications can be made therein without departing from the essence of the invention and it is intended to cover herein all such changes and modifications as come within the true spirit and scope of the appended claims.

I claim:

1. A door construction comprising a fixed panel and a plurality of sliding panels in offset parallel vertical planes, each sliding panel being suspended from an overhead track and slidable thereon and having a longitudinal guide groove extending the length of its bottom edge, and separate guide means mounted on the fixed panel adjacent its bottom and mounted on each but the outermost of the sliding panels adjacent their respective bottoms, each guide means having an upturned flange slid-

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ably engaged in the guide groove of the next outermost panel whereby each sliding panel is maintained in stable vertical alignment with adjacent panels during sliding movement, one panel of each adjoining pair of panels having a first stop means, the other panel of each adjoining pair of panels having a second stop means, said first and second stop means positioned to be in engaging relationship when the adjoining pair of panels are substantially aligned and acting to produce combined movement as the outermost panel of the pair of panels is moved toward the fixed panel.

2. Door construction in accordance with claim 1 wherein the first stop means comprises a bracket affixed to each sliding panel to close the end of the guide groove remote from the fixed panel.

3. Door construction in accordance with claim 1 wherein the first stop means comprises a cross-flange joined to the end of the upturned flange of each guide means at the end nearest the fixed panel so as to be transverse to the upturned flange.

4. Door construction in accordance with claim 1 wherein interlocking means are joined to each sliding panel to be engageable to lock each adjoining pair of panels as the outermost of the two panels moves away from the fixed panel and to be releasable as the outermost of the two panels moves toward the fixed panel.

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