Aug. 25, 1959 J. W. GREIG 2,901,036

FOLDING DOOR ASSEMBLY

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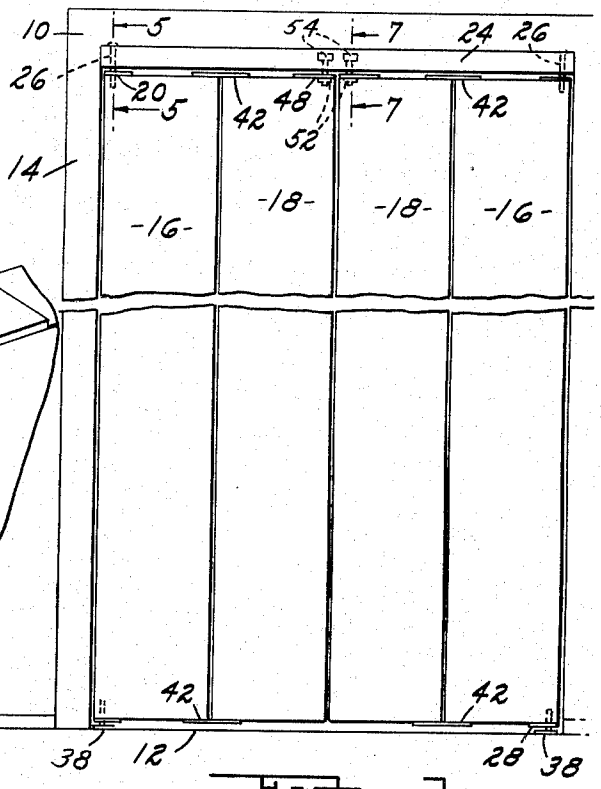


FIG. 1

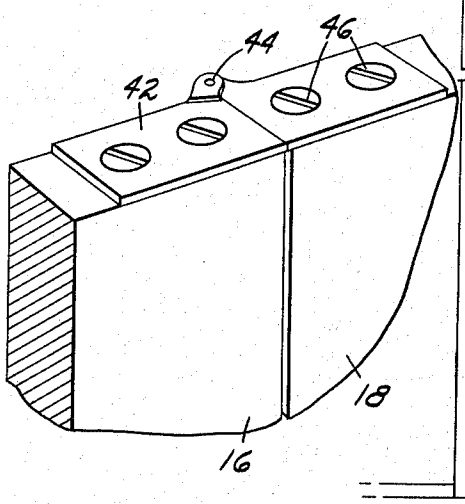


FIG. 3

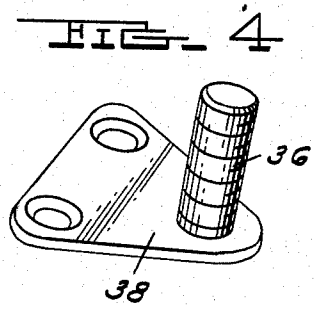


FIG. 4

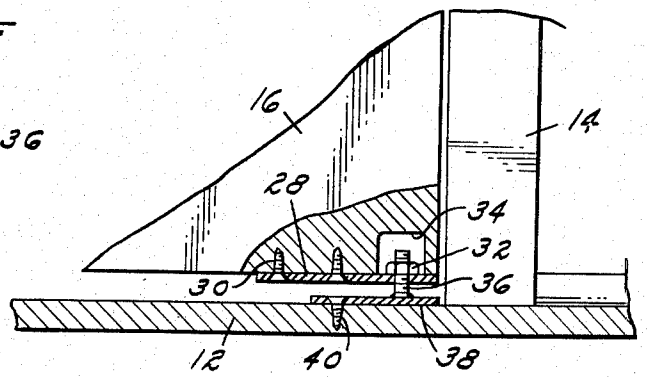


FIG. 2

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FOLDING DOOR ASSEMBLY

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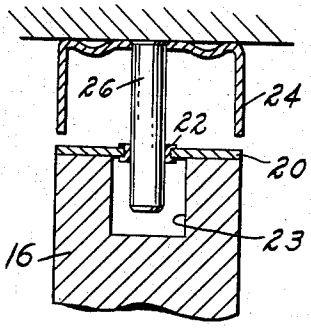


FIG. 5

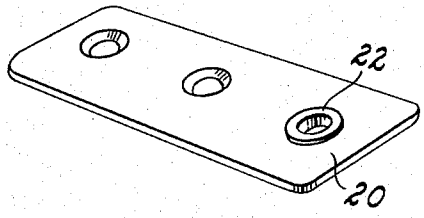


FIG. 6

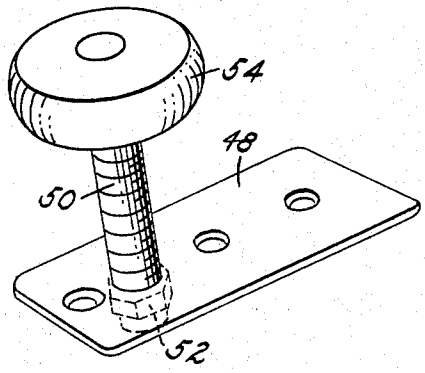


FIG. 8

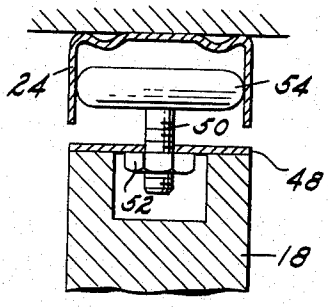


FIG. 7

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FOLDING DOOR ASSEMBLY

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Application October 1, 1956, Serial No. 613,131

2 Claims. (Cl. 160—206)

This invention relates to a folding door assembly such as might be employed as a closet door or a door in any other location where such a door was suitable for use.

An object is to provide a folding door assembly comprising a pair of folding door sections which are adapted to be folded toward each other and partially out of the door frame opening to provide entry into the space controlled by the door and which are apt to be unfolded into planar extension to provide a closure for the space controlled by the door.

Another object is to provide a folding door assembly comprising a pair of door sections which are so constructed, coupled together, and supported within the door frame as to function to provide easy access to the space controlled by the door or a closure therefor.

More particularly an object is to provide a folding door assembly of the character above described which is simple, inexpensive, and embodies a minimum number of parts and wherein the construction is such that the folding door sections may be readily adapted to door openings which vary slightly in dimension.

Another object is the provision of a door assembly of the character specified wherein the door sections may be adjustably positioned upwardly or downwardly within the door opening to properly dispose them within said opening by the simple adjustment of a single supporting screw stud and the other supporting elements for the door assembly accommodate themselves to this adjustment.

A further object is the provision of a door assembly as characterized wherein the folding door sections and associated hardware elements form a compact unit which may be readily installed within a door frame opening by unskilled labor or the householder himself and without the use of other than very simple tools.

Other objects, advantages, and meritorious features will more fully appear from the specification, claims, and accompanying drawing, wherein:

Fig. 1 is a front elevation of a folding door assembly embodying the invention;

Fig. 2 is a fragmentary front elevation of the lower hinge of said assembly;

Fig. 3 is a fragmentary perspective of the upper hinge of the two door sections;

Fig. 4 is a perspective of the threaded stud plate used at the bottom of the door;

Fig. 5 is a fragmentary section taken on the line 5—5 of Fig. 1;

Fig. 6 is a perspective of the upper socket plate of one of the door sections;

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 1; and

Fig. 8 is a perspective of the guide roller and plate used at the top of the door.

The door construction shown in Fig. 1 illustrates two folding door assemblies disposed within the same door frame opening. These assemblies are similar. Each is adapted to be folded independently of the other. Each may be unfolded to provide access to the space controlled by the door. These two assemblies are mounted within a door frame having a header 10, a sill 12, and a jamb 14.

Each door assembly comprises a pair of vertical, upright, similar door panels 16 and 18. These door panels may be formed of plywood, Masonite, or any suitable door panel construction and the character of the individual panel sheets has nothing to do with the invention. The invention relates to the mounting and assembly of the panels within the door opening and the hardware with which they are provided. In each of the two door assemblies shown, the panel 16 is shown as disposed adjacent to the jamb portion of the door. Such panel is provided at its upper corner adjacent to the jamb with a socket retaining plate 20 which may be formed of metal or the like and secured by screws or in any other suitable manner to the top edge of the door adjacent to its jamb margin. Such socket plate is fitted with a socket 22 which may be formed of nylon or any suitable bearing material. The door header of the frame is provided with a channel 24 secured therein by screws or in any suitable manner. This channel opens downwardly as shown in Figs. 1, 5, and 7. A pintle 26 is fixed within the channel projecting downwardly therefrom as shown in Fig. 5. This pintle extends freely, slidably, vertically through the socket 22 and into a space 23 within the upper edge of the door panel below the socket plate 20, all as shown in Fig. 5.

There is attached to the lower edge of this same door panel 16 and adjacent to its jamb margin a nut-retaining plate 28. This plate is secured to the door panel by screws 30 or the like. A nut 32 is fixed to the plate upon its inner face and within an opening 34 formed in the door panel above the plate. This nut 32 has its threaded opening in vertical alignment with the socket opening 22 in the socket plate at the top edge of the door panel.

A threaded supporting stud 36 is provided at its lower end with a supporting plate 38. This stud is of a size and is threaded to be received within the nut as shown in Fig. 2. The supporting plate 38 of the stud is provided with openings through which screws 40 may be extended to secure the plate to the door jamb or floor 12.

The two door sections 16 and 18 are hinged together by hinges 42 secured to the top and bottom edges of the door panel sections. Each hinge comprises a pair of hinge leaves, as shown in Fig. 3, hinged together by a hinge pintle 44 and the hinge leaves themselves are secured to the edges of the door by screws 46 or the like. These hinges support the outer section 18 of each door assembly so that it will occupy the same horizontal plane as the inner door section 16 and may be swung to hold the sections toward each other or to spread them apart as shown in Fig. 1.

The outer door section 18 is provided at its upper edge adjacent to its outer margin with a roller-carrying guide plate 48 shown in Figs. 1 and 8. Such plate carries a stud 50 adjustably threadedly received within a nut 52 fixed to the lower surface of the plate as shown in dotted outline in Fig. 8. The stud carries at its upper end a roller 54 supported for rotation about the axis of the stud. This roller is of a size to be freely received within the header trackway 24 as shown particularly in Fig. 1.

In mounting one or more door assemblies within the door frame opening, and it is apparent that one or any number of such door assemblies may be used, it will be found that door openings vary somewhat is height. For this reason it is necessary to adjustably position the door assemblies within the opening. The instant door structure lends itself to simplicity of such positioning. The door assembly is positioned within the opening. It is then lifted to the proper elevation. The threaded stud 36 is threaded into the nut 32 of the nut-retaining plate 28 until

the stud plate **38** rests upon the floor or door jamb so that the door is supported at the proper height. The door is supported at the proper height entirely by this stud **36** which is rotatably adjustable within the nut **32**. The pintle **26** is, of course, vertically slidably received within the socket **22** of the socket plate and the roller **54** is, of course, received within the trackway **24** as shown in Fig. 7. It is evident that it is possible to adjustably position the folding door vertically by adjusting the threaded stud **36** within the nut **32**. When such stud is properly adjusted the stud plate is then fastened to the floor by the screws **40** and the door is mounted for use.

What I claim is:

1. In a folding door assembly comprising a door frame having a header channel extending lengthwise along the header and open downwardly, and comprising two complementary door sections hinged together along two vertical edges to fold toward each other or to be unfolded in a planar alignment, one door section provided with a socket in its top edge and provided with a threaded nut fixed in its bottom edge which said nut and socket are disposed in vertical alignment, a header pintle fixed in the header channel and projecting downwardly therefrom and vertically slidably received within the socket in the upper edge of the door, a threaded stud threadedly received within the nut in the bottom edge of the door for adjustment of the stud upwardly and downwardly therein, said stud provided on its lower end with a mounting plate fixed thereon for adjustment up and down with the stud, said plate adapted to be secured to the door frame to support the stud projecting upwardly therefrom, said door being swingable upon the threaded stud by threaded relative rotation of the stud and nut, a pivot pin secured to the other door section adjacent to the free vertical margin thereof and projecting upwardly therefrom, said pivot pin provided with a roller on its outer end adapted to travel through the header channel.

2. In a folding door assembly having two complementary door sections hinged together along adjacent vertical edges and wherein one section is a primary section and is hinged at top and bottom adjacent to one vertical edge within a door frame having a header and a sill, the combination in said assembly of said primary section provided with a socket in its top edge and a threaded nut fixed in its bottom edge aligned vertically with the socket and a header channel adapted to be secured upon the header within the door frame and provided with a pin fixed therein and projecting downwardly therefrom and slidably vertically received within the socket of the primary section and a plate adapted to be secured upon the sill within the door frame, said plate provided with a threaded stud fixed thereto and adjustably threadedly rotatable within the nut for vertical adjustment of the primary section within the door frame and for swinging of the primary section upon relative rotation of the stud and nut.

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