

Oct. 26, 1971

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3,614,975

FOLDING DOORS

Filed Feb. 5, 1969

2 Sheets-Sheet 1

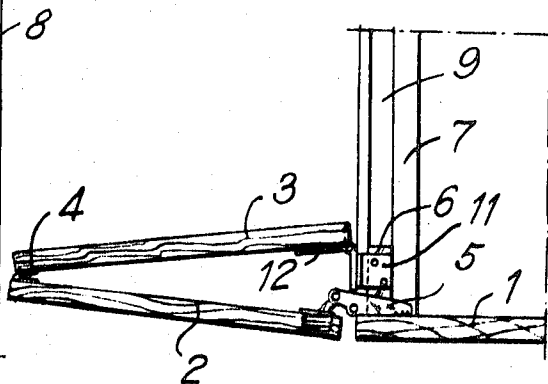
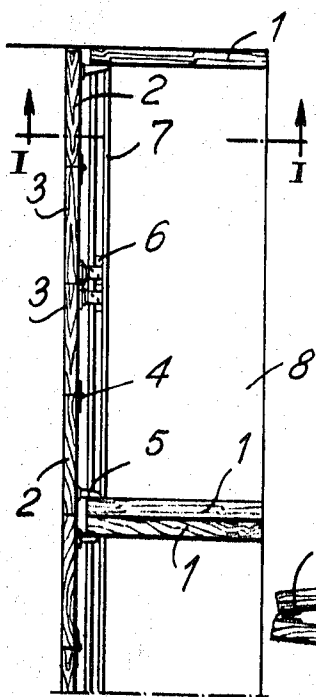
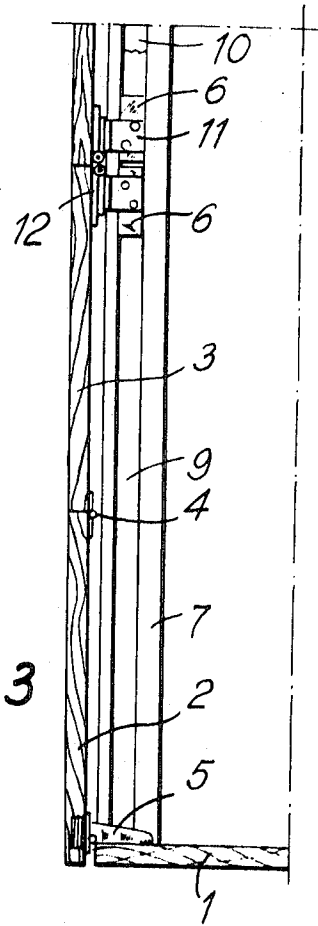
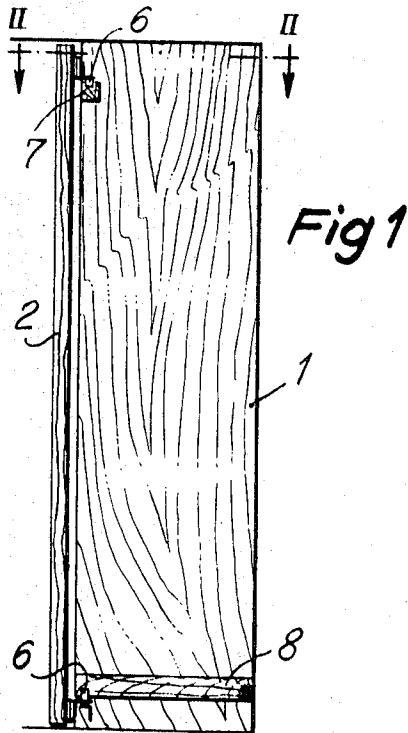


Fig. 2

Fig. 4

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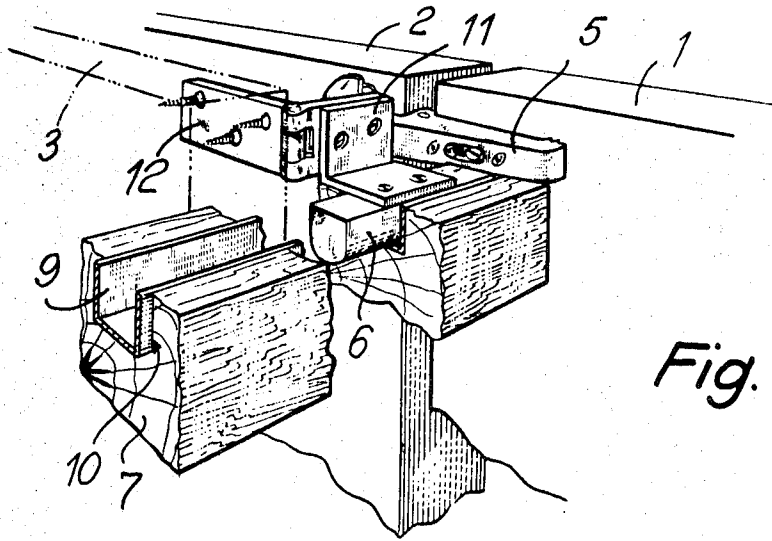


Fig. 5

Fig. 6

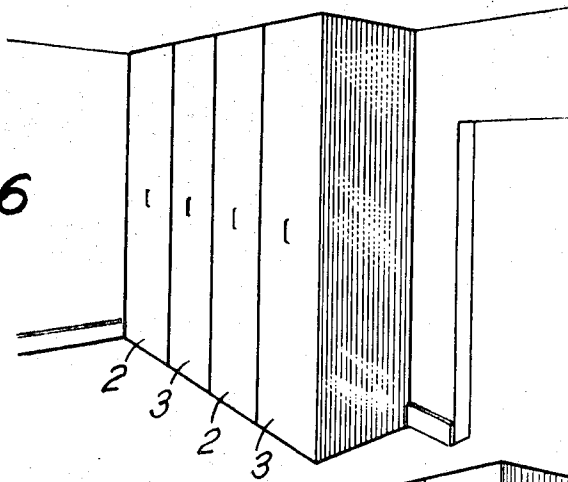
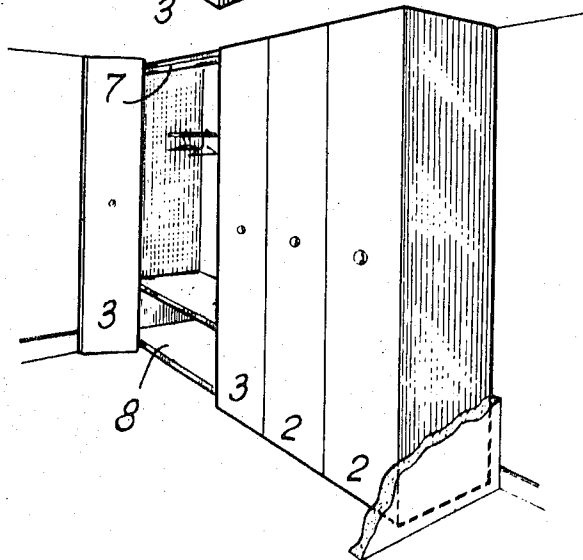


Fig. 7



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3,614,975

FOLDING DOORS

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8 Claims

ABSTRACT OF THE DISCLOSURE

A guided folding-door comprises two hinged panels, one of which is pivotally mounted and the other has its upper and lower portions equipped with parts which slide in slideways on horizontal transverse elements extending over the entire width of the door, said sliding parts being fixed to the rear side of the panel in such manner as not to project beyond the edge thereof, said transverse elements being positioned behind the door, and said slideways being located in the lower and upper faces of said transverse element in respect of said lower and upper parts respectively.

BRIEF SUMMARY OF THE INVENTION

The folding doors used notably in modern flats to close cupboards and recesses each comprise two panels which are hinged together and of which the first opens by pivoting in relation to a fixed frame while the second folds back against the first with suitable guide means. The latter usually consists of parts positioned at the top and bottom portions of the second panel, each of which parts slides in a rail.

In certain constructional forms the rail is carried by a visible cross-member located above or below the door, while the sliding part is positioned on the edge of the panel. But the presence of the cross-member prevents the design of doors capable of extending down to the floor and up to the ceiling, and furthermore the rail is visible when the door is open.

It is the object of the present invention to provide improvements to folding doors in order to eliminate the above-mentioned drawbacks.

In accordance with the invention, the guiding part is positioned on the rear face of the second panel in such manner as not to protrude therefrom vertically, and this part slides along a horizontal transverse element positioned behind the door and extending over its entire width, thus making it possible for the doors to extend down to the floor or up to the ceiling.

In one embodiment of the invention, the guiding part slides in a guideway formed in the lower face of said transverse element in the case of the lower part and in the upper face of the transverse element in the case of the upper part. As a result, the guideway is no longer visible when the door is open.

Between the sliding part and the second panel is provided a vertical hinge positioned forward of the transverse element in order to prevent the panel from abutting thereagainst when the door is open.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side view of a cupboard equipped with doors according to the invention, shown in section through the line I—I of FIG. 2, the doors being closed.

FIG. 2 is a top view of the cupboard of FIG. 1, shown in section through the line II—II thereof.

FIG. 3 is a view on an enlarged scale corresponding to FIG. 2.

FIG. 4 is a view corresponding to FIG. 3, the door being open.

FIG. 5 is a perspective view of the upper guiding mechanism, the door being open.

FIGS. 6 and 7 illustrate two possible applications of doors according to the present invention.

DETAILED DESCRIPTION

The cupboard illustrated in FIGS. 1 to 5 comprises two symmetrical folding doors mounted on two lateral partition walls 1. Each door includes two panels 2 and 3 which are articulated to each other by means of hinges 4. Panel 2 is hinged to one partition wall 1 by means of hinge 5 and panel 3 carries shoes 6 at its top and bottom, one of which shoes is slidable along a cross-member 7 and the other beneath a false bottom 8. Cross-member 7 and false bottom 8 are mounted between the two partition walls 1, the false bottom being of the same depth as said partition walls and the cross-member being positioned flush with the forward edges thereof.

The shoes 6 run inside rails 9 placed in grooves 10 formed respectively in the upper face of cross-member 7 and in the lower face of false bottom 8. Each shoe is fixed to the horizontal flange of a bracket 11, the other flange of which is fixed to one leaf of a hinge 12. The latter is a plain hinge with an inset pivot or pin, and its other leaf is fixed to one corner of the inside face of panel 3.

The hinges 5 are special hinges such that when the door is closed its edge lies flush with the outer surface of the partition wall, whereas when it is open its outer surface lies flush with said outer surface of the partition wall. At no time during its pivotal motion does the door project beyond said surface. It is alternatively possible to position a door directly against a wall, or to juxtapose several doors so as to obtain an unbroken facade devoid of intermediate elements.

FIG. 6 shows a corner cupboard comprising two folding doors 2-3, and FIG. 7 a cupboard filling a space between two walls and comprising two folding doors 2-3 and a door with a single panel 2.

It is possible in this way to provide doors extending all the way from the floor to the ceiling and which, when opened as shown in FIG. 7, reveal no visible guiding means.

Clearly, changes may be made in the specific form of embodiment hereinbefore described without departing from the scope of the invention. For instance, such doors may be used on low pieces of furniture or on cupboards not extending up to the ceiling, or the false bottom (or the cross-member) and the bottom of the door may be raised to a higher level to provide a passageway thereunder.

What I claim is:

1. A folding door assembly comprising a door including a first panel comprising means for connection with a fixed frame, a second panel articulated to said first panel, said door having a width and upper and lower edges, a fixed upper horizontal transverse element extending behind and along the full width of said door at a level below the upper edge thereof, said upper horizontal transverse element having an upper face, an upper slideway mounted in said upper face of said upper horizontal transverse element, an upper guide means fixed to the top of the rear face of said second panel so as not to project vertically beyond the upper edge thereof, said upper guide means extending downwardly from the second panel and being slidably supported in said upper slideway, a fixed lower horizontal transverse element extending behind and along the full width of said door at a level above the lower edge thereof, said lower transverse element having a lower face, a lower slideway mounted in said lower face of said lower horizontal transverse element and a lower guide means fixed to the bottom of the rear face of said second

3

panel so as not to project vertically beyond the lower edge thereof, said lower guide means extending upwardly from the second panel and being slidably supported in said lower slideway, said upper and lower slideways being concealed from view by said upper and lower transverse elements respectively with said door opened. 5

2. A door as claimed in claim 1 comprising a vertical hinge means positioned forward of said upper horizontal transverse element and connecting said upper guide means to said second panel. 10

3. A door as claimed in claim 1 wherein said upper guide means is a shoe.

4. A door as claimed in claim 2 wherein said vertical hinge means is a hinge having one leaf fixed to the inside face of said second panel and the second leaf is rigid with said upper guide means. 15

5. A door as claimed in claim 4 comprising bracket means rigidly connecting said second leaf with said upper guide means.

6. A door as claimed in claim 1 wherein said lower horizontal transverse element is a false bottom. 20

7. A door as claimed in claim 1 wherein said upper horizontal transverse element is a false ceiling.

4

8. A door as claimed in claim 1 wherein at least one of said first and second horizontal transverse elements is a structural cross-member.

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DENNIS L. TAYLOR, Primary Examiner

U.S. Cl. X.R.

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