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(54) A FOLDING DOOR

(71) We, PANELFOLD DOORS, INC., of 10700 N.W. 36th Avenue, Miami, Florida 33167, United States of America, a Corporation organized and existing under the laws of the State of Florida, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a folding door.

Folding doors, panels, closures and the like, hereinafter referred to generally as folding doors, in which relatively narrow rigid panels are hingedly interconnected along their side edges and supported from an overhead track, have been proposed, for example in US Patents Nos. 3,486,549 and 3,516,473. When such panels are constructed of relatively thin material such as extruded plastics material, problems have arisen in providing a hinged connection between adjacent panels, in maintaining the panels in assembled condition, and in effectively supporting the panels from an overhead support.

In accordance with the invention, there is provided a folding door comprising: a plurality of elongate panels; hinge means pivotally connecting adjacent panels together at their respective edges whereby the door can be extended or retracted by pivotal movement of adjacent panels relative to each other so that during movement of the door from the extended to the retracted position, adjacent panels fold in a zig-zag manner relative to each other, each hinge means comprising a substantially cylindrical hinge element integral with one edge of each panel, and a substantially channel-shaped hollow hinge element integral with the other edge of the adjacent panel, the cylindrical hinge element defining an entrance slot which opens into its interior and which extends in the longitudinal direction of the respective panel and the channel-shaped hinge

element also defining an entrance slot which opens into its interior and which extends in the longitudinal direction of the respective panel, such that at least a portion of the cylindrical hinge element projects through the slot of and into the channel-shaped hinge element and at least in the retracted condition of the panels a portion of the channel-shaped hinge element projects through the slot of and into the cylindrical hinge element, whereby the hinge elements can be assembled into their interconnected operating position by relative movement of the panels in their longitudinal direction to a position alongside each other; and a retaining means operatively associated with the interengaged hinge elements of a respective hinge means and operable to prevent relative movement between the respective adjacent panels in the longitudinal direction thereof, each retaining means including a projection which is fixed with respect to one of said hinge elements and which engages a recess in the other hinge element.

A folding door according to the present invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a top plan view of the folding door, with portions broken away, illustrating the relationship of the door components when in an extended position;

Figure 2 is a plan view similar to Figure 1 but with the door components in a folded or retracted position;

Figure 3 is a vertical sectional view of the supporting track, roller carriage and bracket for the track;

Figure 4 is an exploded perspective view illustrating the top edge of one of the door panels and a roller carriage associated therewith;

Figure 5 is an exploded perspective view illustrating a hinge connecting adjacent panels and an end cap or plug;

Figure 6 is a sectional view of part of the construction of Figure 5 showing the structural

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details of the assembly of Figure 5;

Figure 7 is a perspective view of a retaining latch for securing the track onto a supporting bracket;

5 Figure 8 is a fragmentary perspective view showing the structure of the track and supporting bracket with the two components separated from each other;

10 Figure 9 is a perspective view of a jamb post employed along one edge of the door; and

Figure 10 is a perspective view of an end cap.

Referring to the drawings, a folding door 10 includes a plurality of substantially rigid, vertically extending elongate panels 12, preferably constructed of plastics material and being relatively thin. The length of the panels 12 is determined by the vertical door dimension desired and the width of the panels may also vary although it is preferred that when the panels are in extended position, the distance between the centres of adjacent panels should be a minimum of four inches. The panels may be constructed of various materials but are preferably constructed of an extruded plastics material such as polyvinylchloride.

Each of the intermediate panels 12 of the door includes a continuous hinge element 14 on one edge and a continuous hinge element 16 on the opposite edge. The hinge elements 14 and 16 are of unitary construction with and formed on the panels 12 when the panels are formed.

30 The hinge element 14 is of generally channel-shaped configuration and includes a flange 18 that is generally perpendicular to the panel although slightly inclined in relation thereto as shown in Figures 1 and 2, and that projects laterally from both faces of the panel 12. Extending from one edge of the flange 18 is a flange 20 which is at an acute angle to and slightly wider than the flange 18. At the opposite edge of the flange 20 is a flange 22 having a free edge 24, the flange 22 being at an acute angle to the flange 20 and inclined towards the flange 18. The edge of the flange 18 opposite flange 20 is provided with a flange 26 which is narrower than flange 20 and slightly divergent in relation thereto. The flange 26 terminates in an in-turned relatively narrow free edge portion 28 to provide an entrance slot or throat 30 for the adjacent panel 12 having the hinge element 16 thereon.

45 The flange 18 is provided with an inwardly projecting flange 32 having a beveled free inner edge 34 and the flange 22 is provided with an inwardly projecting flange 36 having a beveled free inner edge 38. The flanges 32 and 36 are in alignment with each other and the beveled edges 34 and 38 are spaced from each other and form surfaces for engaging the external peripheral surface of the hinge element 16 during relative pivotal movement of the adjacent panels 12.

60 The hinge element 16, which may be considered as the male hinge element, is in the form of a cylindrical member 40 formed on the

panel 12, with the cylinder being not quite closed so as to leave a free edge 42 on the cylindrical member defining an entrance slot or throat 44. The cylindrical member 40 is offset slightly from the plane of the panel 12 as indicated at 46 and as shown in Figures 1, 2 and 5.

When adjacent panels 12 are assembled, they are longitudinally engaged with each other by inserting an end of the male hinge element 16 into an end of the female hinge element 14 and then moving the panels into side by side relation. When the door is folded as in Figure 2, the outer surface of the flange 26 is disposed alongside the offset portion 46 of the panel 12 to which the member 40 is connected. As the panels 12 move to an extended position, the free edge 42 of the cylindrical member 40 will move along the inner surface of the flange 26 and at the same time the outer surface of the cylindrical member 40 will engage the inclined surface 38 and possibly the inclined surface 34. Eventually the cylindrical member 40 will engage the inner surface of the flange 26 and possibly the inner surface of the flange 18 until the panels are in their fully extended position, with further movement of the panels being limited by engagement of the offset portion 46 of the panel 12 with the free edge of the flange 22 as shown in Figures 1 and 5. Thus, there is a continuous engagement of surfaces in the hinge elements to provide a constant barrier to passage of light, noise, sound, air and the like. The hinge elements 14 and 16 are constructed of the same material as the panels 12 and may be formed during an extrusion operation and have some degree of resilient flexibility for assembly and operation. All of the corners between the flanges are radiused. While dimensions may vary, it has been found that if the diameter of the male hinge element 16 is .250 inches, then an imaginary circle defined by the surface 32, the inner radius of the juncture between flanges 18 and 26 and the in-turned edge 28 would have the same dimension. Also, the dimensions of the panel may vary and the exact angle of inclination of the offset portion 46 and the exact angle of inclination of the various flanges in relation to the panel 12 and in relation to each other are also capable of some variation but the arrangement as illustrated has been found to operate successfully.

In supporting the door, certain of the panels 12 are supported by carriages 50 with other of the panels being unsupported. In order to enable easy and quick assembly and disassembly of the panels but yet prevent relative vertical movement between the supported and unsupported panels 12 when assembled, end caps or plugs 52 are provided for insertion into the ends of the female hinge elements 14. Referring to Figures 5, 6 and 10, each plug 52 includes a top end plate 54 which conforms in shape and configuration to the top edges of the flanges 18, 20, 22, 26 and 28 and thus forms a closure for the end of the hinge element 14 to provide

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not only a limiting plug but also a finished appearance to the hinge structure, since this plate will also conceal the top edge of the male hinge element 16. The plate 54 carries a mounting portion for mounting the plate 54 on the hinge element 14, which mounting portion is in the form of a depending wall or plate 56 which has rounded side edges 58 which correspond with the area defined by the inner surface of the flange 20 and the inner surfaces of the flanges 18 and 22 between the flange 20 and the flanges 32 and 36. The outer surface of the wall 56 and the rounded edges 58 are provided with one or more lateral ribs 60 of generally right triangular cross-section, with the upper surface of the ribs 60 being generally perpendicular to the corresponding wall 56 and edges 58. The ribs 60 are provided to co-operate with the hinge element 14 thereby to lock the end plugs 52 in place, while permitting removal thereof when desired. For example, the ribs 60 extend into grooves (shown but not referenced in Figure 6), although the ribs 60 may simply frictionally engage the inner surface of the correspondingly shaped flange surfaces on hinge component 14. The wall 56 includes a projection in the form of a laterally extending flange 61 which snaps into a recess formed by an arcuate peripheral groove or slot 62 in the outer surface of the cylindrical member 40 to prevent relative vertical movement of the panels 12 when the plug is installed. The plugs 52 may be of plastics, metal or any suitable material and may be bonded in place with a suitable adhesive if desired.

Referring to Figure 4, each carriage 50 includes a depending screw-threaded member 64 journaled in a supporting block 66 having axles 68 extending laterally from each side thereof and carrying rollers 70. The member 64 is intended to be screw-threaded into and secured in a recess 72 in the upper edge portion of a panel 12. The recess 72 includes inwardly extending ribs 74 which are provided with portions of screw-threads on the inner surface thereof, for connecting the panel 12 to the carriage 50. Various techniques may be employed for securing the panel 12 to the carriage 50 so that the panels may move between the retracted and extended positions.

Referring to Figure 8, the carriage 50 are supported from an overhead track 76 which includes vertical parallel side flanges 78 terminating in inwardly extending flanges 80 having up-turned free edges 82 that are spaced from each other and form a longitudinal slot 84 for receiving the depending members 64 of carriages 50. The upper surfaces of the flanges 80 form a support for the rollers 70, as shown in Figure 3. The vertical flanges 78 are rigidly interconnected by a horizontal flange 86 that has an upwardly offset central portion 88, with the top edges of the side flanges 78 being disposed above the central portion 88 of the horizontal flange 86. One of the side flanges 78 is

provided with an inwardly extending rib 90 having an inclined lower surface which is spaced above the corresponding portion of the horizontal flange 86. The flange 90 extends toward the portion 87 which interconnects the central portion 88 to the adjacent portion of the flange 86. The portion 87 remote from the flange 90 is provided with a projecting flange 92 which extends toward the opposite side flange 78 and has a similarly inclined bottom surface. The free edge of the flange 92 is provided with a short vertically extending flange 94 which is generally parallel to but spaced from the adjacent side flange 78 and terminates slightly below the top edge of the side flange 78.

The flanges 90 and 92 form an engaging structure for a mounting bracket 96 which includes a top horizontal flange 98 for securing to an overhead supporting structure 100. One edge of flange 98 is provided with a depending vertical flange 102 having an in-turned flange 104 that has an inclined upper surface that corresponds to the inclined lower surface on the flange 92. The opposite edge of the flange 98 is provided with a relatively short vertical depending flange 106, a relatively narrow outwardly extending flange 108 perpendicular to the flange 106, a second vertical flange 110 that is relatively short, and a laterally extending flange 112 that has an upper surface inclined in the same manner as the lower surface of the flange 90 on the side flange 78. The track 76 is assembled with the bracket 96 by vertically moving the track upwardly until the horizontal flange 86 engages with the bottom surfaces of the flanges 104 and 112. The track 76 is then moved laterally to bring the surfaces of the flanges 104 and 112 into underlying engagement with the flanges 90 and 92. When thus assembled, the outer surface of the flange 94 will be disposed alongside and in engagement with the inner surface of the flange 102 and the outer surface of the flange 110 will be disposed along the free edge of the flange 90 and the junction between the flanges 106 and 108 will be disposed adjacent the junction between the central portion 88 and the offset flange 87 of the horizontal flange 86 as shown in Figure 3. This will then provide an interlocking engagement between the track 76 and the mounting bracket 96.

Referring to Figure 7, in order to retain the interlocked engagement between the track 76 and the bracket 96, track latches 114 are provided which are in the form of a generally rectangular block or plate 116 having a depending cylindrical stud 118 thereon that is provided with a slightly inwardly tapered lower end 120 which has a slot 122 therein for receiving a screwdriver or other similar turning instrument. The stud 118 includes a plurality of lugs 119 thereon which have an outer surface which tapers upwardly to enable the stud 118 to be inserted downwardly through a hole 121 in the track flange 88 thereby assembling the latches

114 with the track 76.

The rectangular block 116 has diagonally opposed corners rounded or radiused as at 124 and the block 116 is oriented lengthwise along the top surface of flange 88. When the track 76 is assembled with bracket 96, the block 116 is disposed in the area between the inner surface of the vertical flange 106 and the inner surface of the flange 94. The retaining latch 114 may then be rotated 90° with the corners 124 enabling the device to rotate, until the block 116 has its major length extending transversely of the track and bracket so that the end edges thereof will engage the inner surface of the flange 106 and the inner surface of the flange 94, thereby preventing lateral movement of the track 76 in a manner that will enable the track to be disengaged from the mounting bracket 96. The latch 114 may be turned with a suitable screwdriver or other instrument and is constructed of a plastics material such as nylon or the like having sufficient resiliency to enable the latch to be rotated from a position with the block 116 longitudinally oriented in relation to the track 76 and bracket 96, which enables quick assembly or disassembly of the track and bracket, to a position with the long dimension thereof transverse of the track and bracket, which secures the track and bracket in the assembled condition. The latches 114 may be pre-assembled with the track 76 and retained in holes 121 by lugs 119 so that when the track section with the retaining latches mounted thereon is assembled onto the mounting bracket 96, they will be in position to be immediately rotated with a screwdriver or the like, thus quickly and effectively locking the track in supported engagement with the mounting bracket 96.

As shown in Figure 1, the outer edges of the outermost panels 12, which are half the width of the intermediate panels, are provided with offset continuous cylindrical hinge elements 126 that are reinforced by internal ribs 128. The edge of the door that is attached to the side of a door opening includes a jamb post 132 of channel-shaped construction including substantially parallel flanges 134. The flanges 134 have internal ribs 136 thereon for engagement with a channel-shaped anchor 138 having outwardly extending ribs 140 along the outer edges of the outwardly projecting wide flanges of the channel 138. The web 142 of the jamb post 134 includes a recess 144 in the form of a partial cylinder which rotatably receives the hinge element 126, thus hingedly anchoring the outermost panel 12 to the wall 130 delineating the door opening to be closed by the door.

The other side of the opening is provided with a channel-shaped anchor 148 similar to the channel-shaped anchor 138. The anchor 148 includes a rib 150 and receives a jamb moulding or post 152, the details of which are shown in Figure 9. The jamb moulding 152 includes a pair of flanges 154 and 156 interconnected by

a generally centrally disposed web 158, thus defining a cross-section of substantially H shape. The flanges 154 and 156 are each provided, at one side of the web 158, with a pair of inward projections as at 160 and 162 for engagement with the side walls of the anchor 148 and the ribs 150 thereon as shown in Figure 1, thus securing the jamb moulding 152 in place on the anchor 148 so that it is stationary with respect to the wall 146 defining the opening. The edges of the flanges 154 and 156 at the opposite side of the web 158 are provided with rounded and slightly outwardly diverging edge portions 164 which form an entrance guide to the end post 166 at the free edge of the folding door. The end post 166 is supported by roller assemblies 168 from the track 76 and also connected to the adjacent half-width panel 12 by a cylindrical female hinge element 170 provided thereon, similar to the recess 144 in the jamb post 132. The end post 166 may be provided with a suitable handle structure and latch or lock mechanism associated with the jamb moulding 152 to secure the door 10 in a closed position, with the edge of the vertical end post 166 being frictionally received between the flanges 154 and 156 and abutting against the web 158 as shown in Figure 1.

With the above-described construction, the panels 12 are quickly and easily assembled and disassembled and effectively hinged together and precluded from relative vertical movement in relation to each other when assembled. The track 76 is quickly and effectively mounted onto the mounting bracket 96 therefor and the jamb post 132 and jamb moulding 152 are easily connected to the door jambs or side walls of an opening to be closed, thereby providing a door that is relatively simple in construction and easy to install.

The folding door just described is constructed of a plurality of relatively thin, substantially rigid vertically elongated panels of extruded plastics or the like which have continuous interconnecting hinge structures formed on the vertical side edges thereof, facilitating easy and quick assembly and disassembly of the panels. The hinge structures are of one-piece or unitary construction with the panels, and are barely visible and do not detract from the appearance of the door. The jamb structures with the channel-shaped jamb mouldings and anchor brackets having interengaging ribs facilitate quick installation and removal of the door, by telescoping the jamb posts over the brackets until the ribs are engaged.

WHAT WE CLAIM IS:—

1. A folding door comprising: a plurality of elongate panels; hinge means pivotally connecting adjacent panels together at their respective edges whereby the door can be extended or retracted by pivotal movement of adjacent panels relative to each other, so that during movement of the door from the extended to the retracted position, adjacent panels fold in a zig-zag

114 with the track 76.

The rectangular block 116 has diagonally opposed corners rounded or radiused as at 124 and the block 116 is oriented lengthwise along the top surface of flange 88. When the track 76 is assembled with bracket 96, the block 116 is disposed in the area between the inner surface of the vertical flange 106 and the inner surface of the flange 94. The retaining latch 114 may then be rotated 90° with the corners 124 enabling the device to rotate, until the block 116 has its major length extending transversely of the track and bracket so that the end edges thereof will engage the inner surface of the flange 106 and the inner surface of the flange 94, thereby preventing lateral movement of the track 76 in a manner that will enable the track to be disengaged from the mounting bracket 96. The latch 114 may be turned with a suitable screwdriver or other instrument and is constructed of a plastics material such as nylon or the like having sufficient resiliency to enable the latch to be rotated from a position with the block 116 longitudinally oriented in relation to the track 76 and bracket 96, which enables quick assembly or disassembly of the track and bracket, to a position with the long dimension thereof transverse of the track and bracket, which secures the track and bracket in the assembled condition. The latches 114 may be pre-assembled with the track 76 and retained in holes 121 by lugs 119 so that when the track section with the retaining latches mounted thereon is assembled onto the mounting bracket 96, they will be in position to be immediately rotated with a screwdriver or the like, thus quickly and effectively locking the track in supported engagement with the mounting bracket 96.

As shown in Figure 1, the outer edges of the outermost panels 12, which are half the width of the intermediate panels, are provided with offset continuous cylindrical hinge elements 126 that are reinforced by internal ribs 128. The edge of the door that is attached to the side of a door opening includes a jamb post 132 of channel-shaped construction including substantially parallel flanges 134. The flanges 134 have internal ribs 136 thereon for engagement with a channel-shaped anchor 138 having outwardly extending ribs 140 along the outer edges of the outwardly projecting wide flanges of the channel 138. The web 142 of the jamb post 134 includes a recess 144 in the form of a partial cylinder which rotatably receives the hinge element 126, thus hingedly anchoring the outermost panel 12 to the wall 130 delineating the door opening to be closed by the door.

The other side of the opening is provided with a channel-shaped anchor 148 similar to the channel-shaped anchor 138. The anchor 148 includes a rib 150 and receives a jamb moulding or post 152, the details of which are shown in Figure 9. The jamb moulding 152 includes a pair of flanges 154 and 156 interconnected by

a generally centrally disposed web 158, thus defining a cross-section of substantially H shape. The flanges 154 and 156 are each provided, at one side of the web 158, with a pair of inward projections as at 160 and 162 for engagement with the side walls of the anchor 148 and the ribs 150 thereon as shown in Figure 1, thus securing the jamb moulding 152 in place on the anchor 148 so that it is stationary with respect to the wall 146 defining the opening. The edges of the flanges 154 and 156 at the opposite side of the web 158 are provided with rounded and slightly outwardly diverging edge portions 164 which form an entrance guide to the end post 166 at the free edge of the folding door. The end post 166 is supported by roller assemblies 168 from the track 76 and also connected to the adjacent half-width panel 12 by a cylindrical female hinge element 170 provided thereon, similar to the recess 144 in the jamb post 132. The end post 166 may be provided with a suitable handle structure and latch or lock mechanism associated with the jamb moulding 152 to secure the door 10 in a closed position, with the edge of the vertical end post 166 being frictionally received between the flanges 154 and 156 and abutting against the web 158 as shown in Figure 1.

With the above-described construction, the panels 12 are quickly and easily assembled and disassembled and effectively hinged together and precluded from relative vertical movement in relation to each other when assembled. The track 76 is quickly and effectively mounted onto the mounting bracket 96 therefor and the jamb post 132 and jamb moulding 152 are easily connected to the door jambs or side walls of an opening to be closed, thereby providing a door that is relatively simple in construction and easy to install.

The folding door just described is constructed of a plurality of relatively thin, substantially rigid vertically elongated panels of extruded plastics or the like which have continuous inter-connecting hinge structures formed on the vertical side edges thereof, facilitating easy and quick assembly and disassembly of the panels. The hinge structures are of one-piece or unitary construction with the panels, and are barely visible and do not detract from the appearance of the door. The jamb structures with the channel-shaped jamb mouldings and anchor brackets having interengaging ribs facilitate quick installation and removal of the door, by telescoping the jamb posts over the brackets until the ribs are engaged.

WHAT WE CLAIM IS:—

1. A folding door comprising: a plurality of elongate panels; hinge means pivotally connecting adjacent panels together at their respective edges whereby the door can be extended or retracted by pivotal movement of adjacent panels relative to each other, so that during movement of the door from the extended to the retracted position, adjacent panels fold in a zig-zag

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manner relative to each other, each hinge means comprising a substantially cylindrical hinge element integral with one edge of each panel, and a substantially channel-shaped hollow hinge element integral with the other edge of the adjacent panel, the cylindrical hinge element defining an entrance slot which opens into its interior and which extends in the longitudinal direction of the respective panel and the channel-shaped hinge element also defining an entrance slot which opens into its interior and which extends in the longitudinal direction of the respective panel, such that at least a portion of the cylindrical hinge element projects through the slot of and into the channel-shaped hinge element and at least in the retracted condition of the panels a portion of the channel-shaped hinge element projects through the slot of and into the cylindrical hinge element, whereby the hinge elements can be assembled into their interconnected operating position by relative movement of the panels in their longitudinal direction to a position alongside each other; and a retaining means operatively associated with the interengaged hinge elements of a respective hinge means and operable to prevent relative movement between the respective adjacent panels in the longitudinal direction thereof, each retaining means including a projection which is fixed with respect to one of said hinge elements and which engages a recess in the other hinge element.

2. A door as claimed in Claim 1 wherein said channel-shaped hinge element is said one hinge element and said cylindrical hinge element is said other hinge element.

3. A door as claimed in Claim 1 or Claim 2 wherein said recess is a slot in the cylindrical hinge element.

4. A door as claimed in Claim 3 wherein said retaining means is in the form of a member which is stationarily engaged with the channel-shaped hinge element and which carries said projection whereby the projection is disposed in the interior of the channel-shaped hinge element.

5. A door as claimed in Claim 4 wherein said projection projects in a cantilever manner into the interior of the channel-shaped hinge element.

6. A door as claimed in Claim 2 wherein said channel-shaped hinge element is constructed with resilient flexibility to enable deflection sufficient for disengaging the projection from the recess thereby enabling relative longitudinal movement between the adjacent panels during assembly and disassembly and to enable deflection sufficient for engaging the projection with the recess during assembly of the panels.

7. A door as claimed in Claim 4 or any Claim appendant thereto wherein said locking member includes a mounting plate inserted into the interior of the channel-shaped hinge element and wherein said projection is a tongue

on the mounting plate extending into the recess in the cylindrical hinge element.

8. A door as claimed in Claim 7 wherein the mounting plate has at least one lug engaging the channel-shaped hinge element, thereby to secure the mounting plate relative to the channel-shaped hinge element.

9. A door as claimed in Claim 8 wherein the or each said lug engages into one or more grooves in the inner surface of the channel-shaped hinge element.

10. A door as claimed in Claim 7 wherein said mounting plate also has an end plate engaging the adjacent end surface of the channel-shaped hinge element thereby to form a closure for the end of the channel-shaped hinge element.

11. A door as claimed in any one of Claims 7 to 10 wherein said mounting plate is secured to the channel-shaped hinge element by adhesive.

12. A door as claimed in any one of the preceding Claims wherein each channel-shaped hinge element includes at least one flange portion which extends inwardly of the channel-shape and which is disposed opposite to the entrance slot thereof, the at least one flange portion engaging the external peripheral surface of the portion of the cylindrical hinge element disposed in the channel-shaped hinge element, during relative pivotal movement of the adjacent interconnected panels.

13. A door as claimed in any one of the preceding Claims wherein one edge of said entrance slot in the channel-shaped hinge element of each panel forms an abutment for engaging the adjacent panel at a position adjacent the cylindrical hinge element thereof, to limit the movement of the panels towards their extended position.

14. A door as claimed in Claim 13 wherein the edge of said entrance slot in each channel-shaped hinge element opposite to said one edge is turned inwardly of the channel shape and forms a retaining flange which when the panels are moved towards their extended position is co-operable with the free edge portion of the entrance slot in the cylindrical hinge element of the adjacent panel, to prevent lateral disassembly of the panels during such movement.

15. A door as claimed in Claim 13 or Claim 14 wherein each said cylindrical hinge element is connected to the respective panel by a portion that is offset from the remainder of the panel, with the offset portion providing said position engageable by said abutment, the entrance slot in the cylindrical hinge element being disposed adjacent the point of connection of the cylindrical hinge element to said offset portion.

16. A door as claimed in any one of the preceding Claims wherein the outer longitudinal edge of one end panel of the door is pivotally connected to a first jamb post capable of being secured to a first vertical edge of an opening to

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be closed in use by the door.

17. A door as claimed in Claim 16 and further including a second jamb post capable of being secured to the second vertical edge of said opening, the second jamb post defining a channel for receiving an end post at the edge of the door remote from said one end panel, to enable the door to be closed in relation to said opening.

18. A door as claimed in Claim 16 or Claim 17 wherein the or each jamb post defines a channel capable of receiving a respective anchor bracket having parallel flanges engageable into the channel, the co-operating surfaces of the or each jamb post and the flanges of the respective anchor bracket having ribs thereon for releasably retaining the jamb post secured to the anchor bracket.

19. A door as claimed in any one of the preceding Claims and further including a door-supporting track assembly, which assembly comprises: (a) an elongate track member having a pair of longitudinally extending flanges each projecting from a respective one of the parallel flanges substantially perpendicularly thereto; (b) a bracket for mounting the track member to support the door, the bracket including a pair

of substantially parallel flanges and two further flanges each extending from a respective one of the parallel flanges substantially perpendicular thereto, the arrangement being such that when the track member and the bracket are in their position of use their parallel flanges extend substantially vertically and the further flanges of the bracket engage below the further flanges of the track member, the further flanges being brought into their position of engagement with each other by relative movement between the track member and the bracket substantially perpendicularly to said parallel flanges; and (c) latch means co-operable with portions of the track member and the bracket for preventing relative movement between the track member and the bracket for disengagement thereof.

20. A folding door substantially as hereinbefore described with reference to the accompanying drawings.

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