

Dec. 7, 1965

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3,221,804

FOLDING DOOR STRUCTURE AND ASSEMBLY

Filed Feb. 18, 1963

5 Sheets-Sheet 1

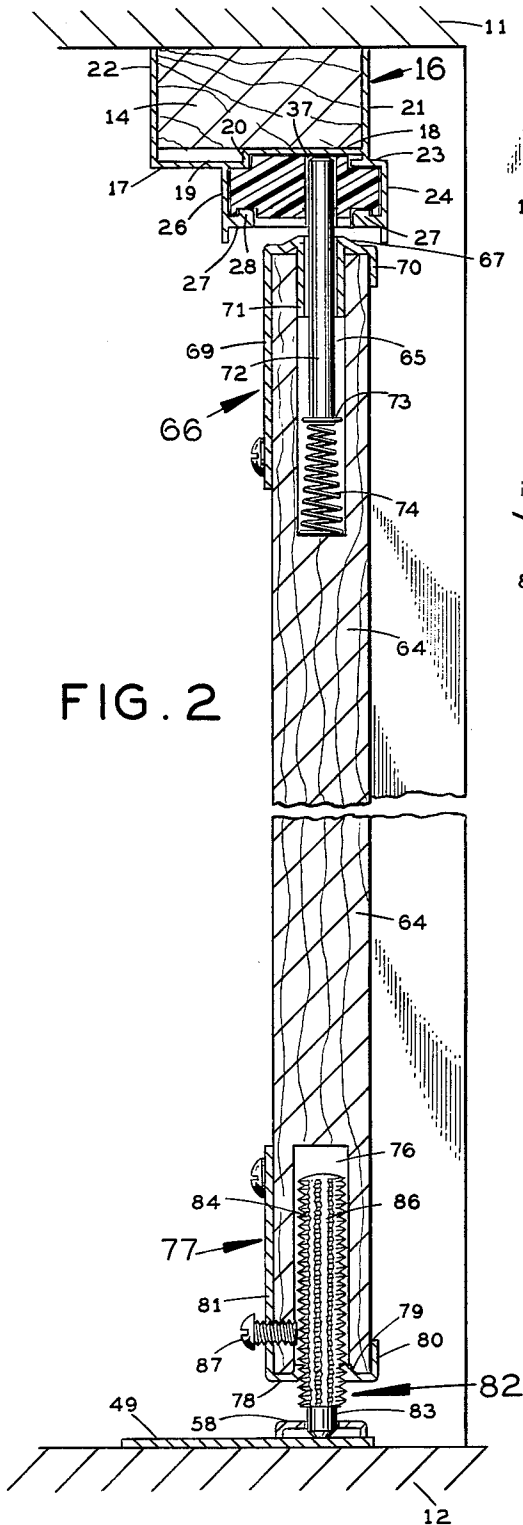


FIG. 2

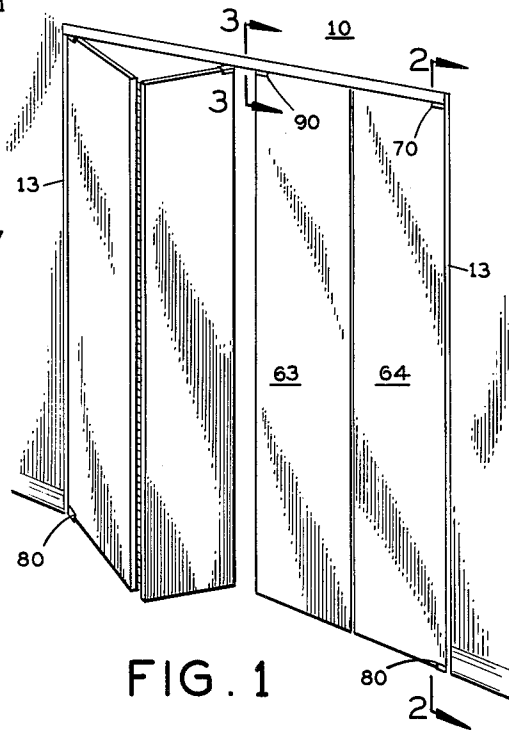


FIG. 1

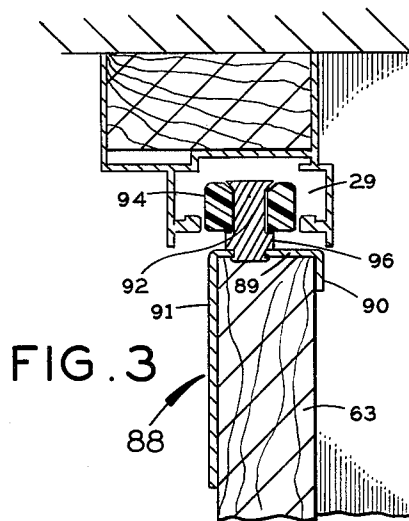


FIG. 3

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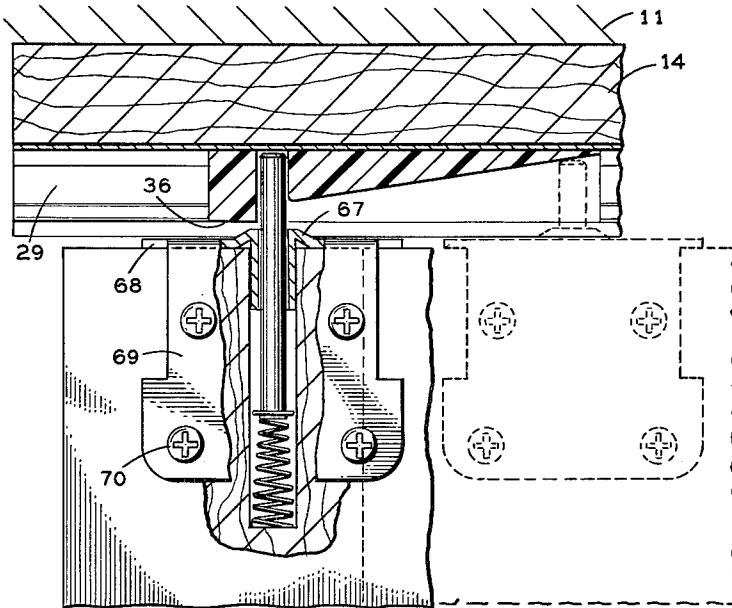


FIG. 4

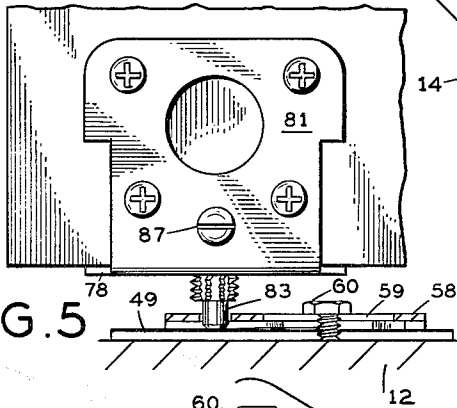


FIG. 5

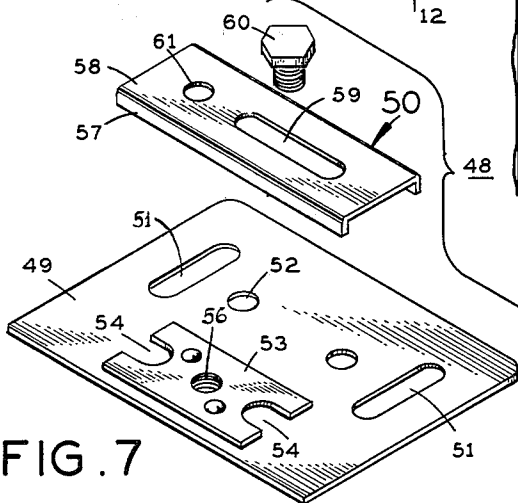


FIG. 7

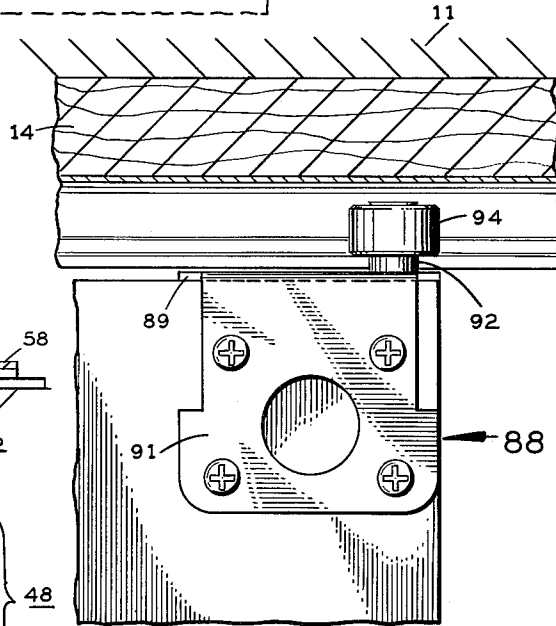


FIG. 6

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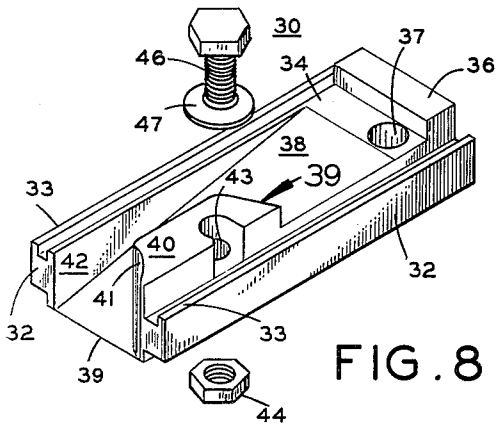


FIG. 8

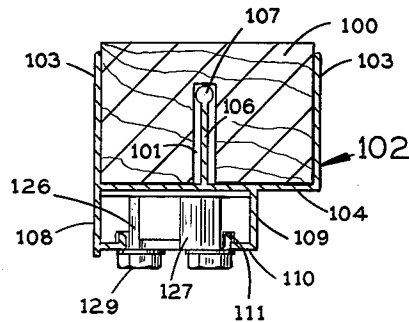


FIG. 9

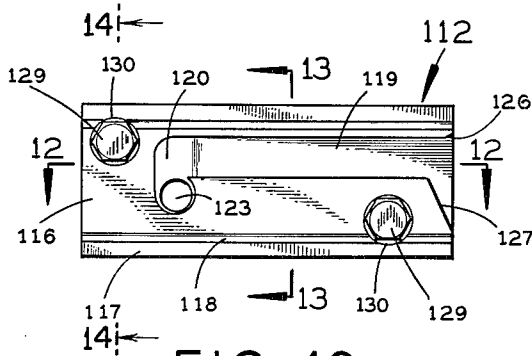


FIG. 10

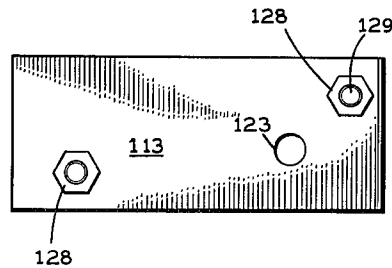


FIG. 11

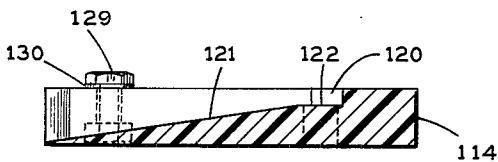


FIG. 12

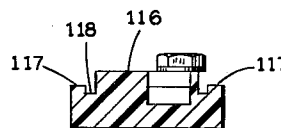


FIG. 13

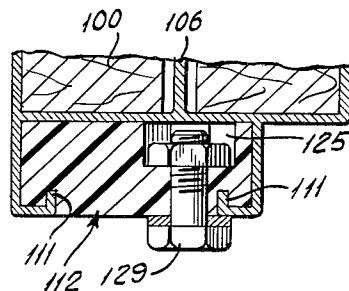


FIG. 14

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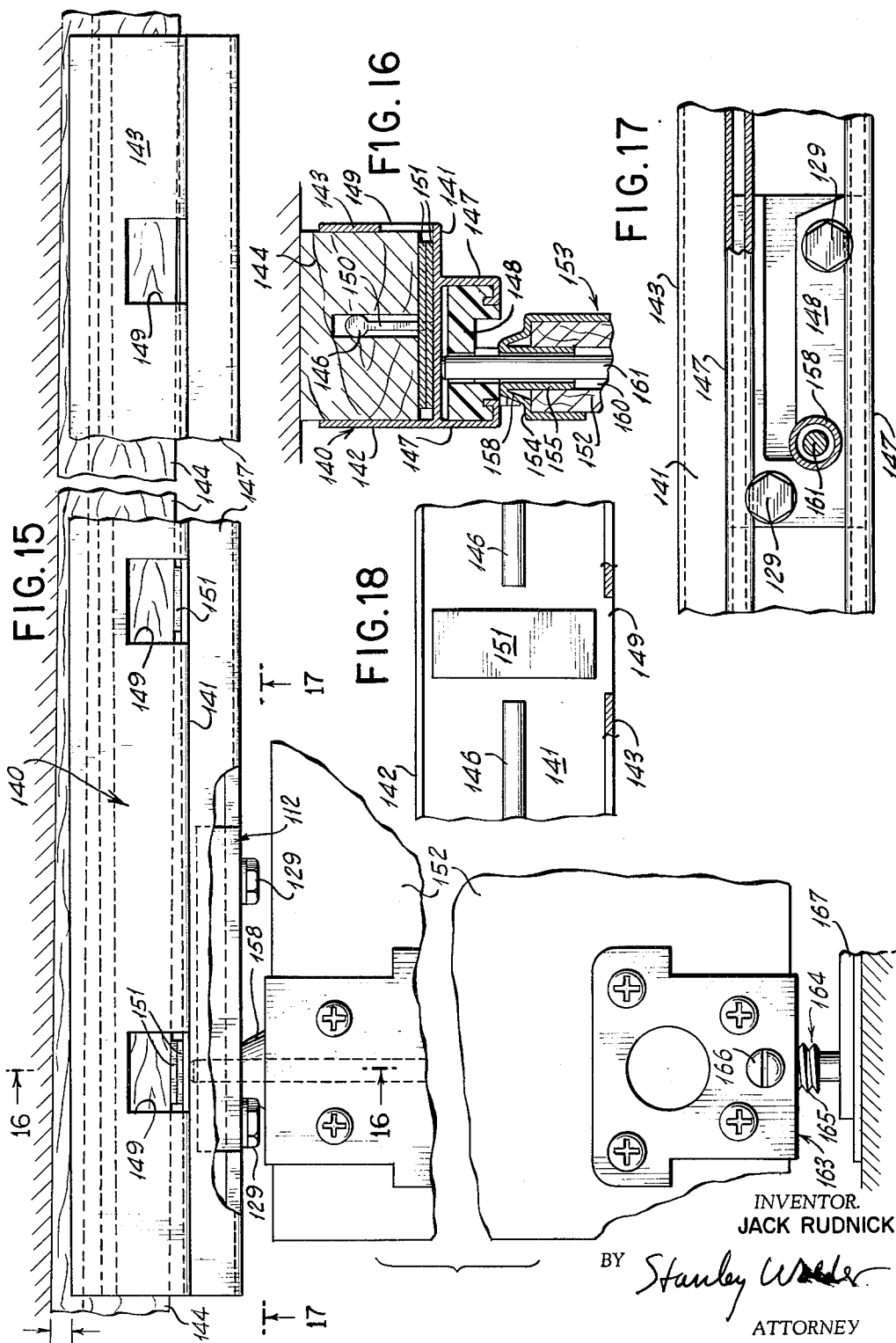
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FIG. 20

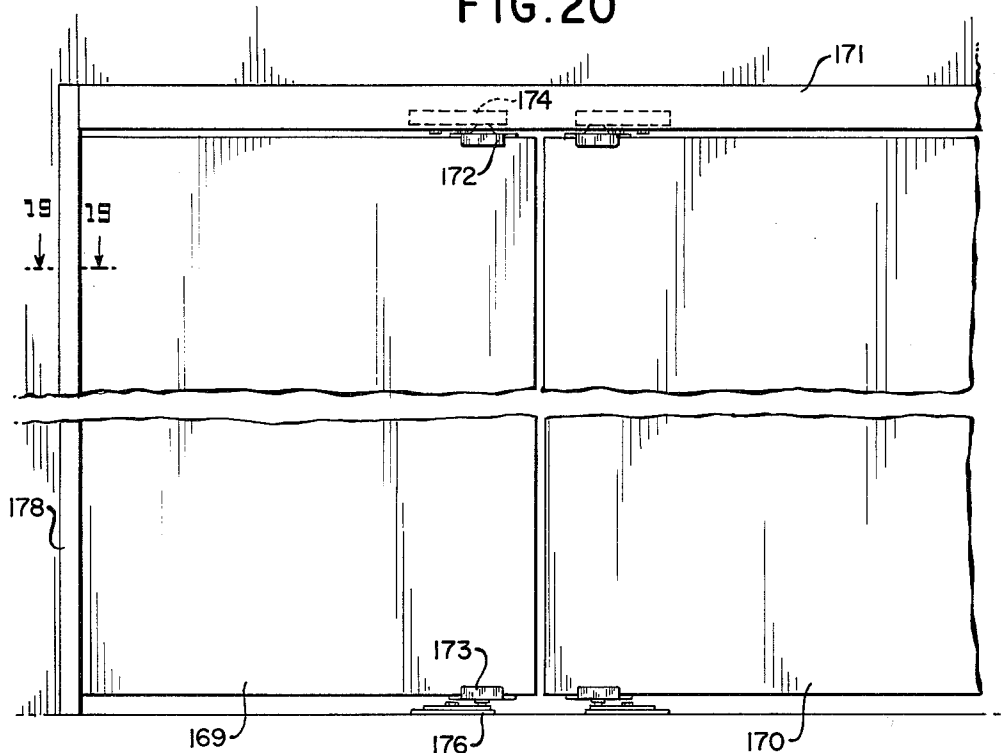
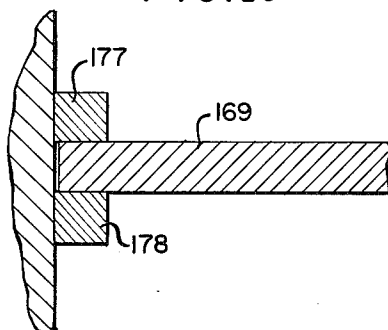


FIG. 19



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FOLDING DOOR STRUCTURE AND ASSEMBLY
Jack Rudnick, Bronx, N.Y., assignor to Jack Rudnick,
New York, and Benjamin Rudnick, Tarrytown, N.Y.
Filed Feb. 18, 1963, Ser. No. 259,327
11 Claims. (Cl. 160—206)

The present invention relates generally to improvements in door structures and the like and it relates more particularly to an improved mounting structure for doors of the folding type.

The employment of folding type doors affords numerous advantages in many applications. This is particularly true where the area to be opened and closed is of great width. The use of the conventional swinging doors under these conditions is unsuitable since the width of a single panel swinging door is limited for mechanical and space reasons and provision of a plurality of side by side individually swingable doors is not only inconvenient and unattractive but is structurally awkward and expensive. Sliding doors have been frequently used in these applications but these likewise leave much to be desired. While the folding type of door offers many advantages when employed in covering large areas and in regions of limited space they possess certain drawbacks. The erection and mounting of the conventional folding door is a laborious and time consuming procedure contributing significantly to the expense thereof. The door frames and openings to closets and like areas found in apartments and inexpensive housing, even though designed to standard dimensions, generally not only deviate appreciably from the specified dimensions but are frequently considerably off plumb. As a consequence, each set of doors must be individually fitted and adjusted, a procedure which has been highly inconvenient and uneconomical and often resulted in a structure of rough and unreliable operation and of unattractive appearance.

It is therefore a principal object of the present invention to provide an improved door structure.

Another object of the present invention is to provide an improved door structure of the folding type.

Still another object of the present invention is to provide an improved mounting structure for folding doors.

A further object of the present invention is to provide an improved folding door mounting structure permitting the rapid erection of the door and adjustment thereof to compensate for variations from true plumb and established dimensions.

Still a further object of the present invention is to provide a folding door mounting structure of the above nature characterized by its adaptability, versatility, ruggedness and low cost.

The above and other objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawings, wherein:

FIGURE 1 is a front perspective view of a two section double panel folding door embodying the present invention;

FIGURE 2 is an enlarged detailed fragmentary sectional view taken along line 2—2 in FIGURE 1;

FIGURE 3 is an enlarged detailed sectional view taken along line 3—3 in FIGURE 1;

FIGURE 4 is an enlarged detailed front fragmentary view of the door upper pivot assembly, the door panel being shown in broken line preparatory to such assembly;

FIGURE 5 is an enlarged detail front fragmentary view of the door lower pivot assembly;

FIGURE 6 is an enlarged detail front fragmentary view of the door roller guide assembly;

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FIGURE 7 is an exploded perspective view of the lower pivot base plate assembly;

FIGURE 8 is a bottom perspective view of the pivot journal block in accordance with the present invention;

FIGURE 9 is a transverse sectional view of a track and upper pivot assembly of another embodiment of the present invention;

FIGURE 10 is a bottom plan view of the pivot journal block;

FIGURE 11 is a top plan view thereof;

FIGURE 12 is a sectional view taken along line 12—12 in FIGURE 10;

FIGURE 13 is a sectional view taken along line 13—13 in FIGURE 10;

FIGURE 14 is a sectional view taken along line 14—14 in FIGURE 10;

FIGURE 15 is a fragmentary rear elevational view of another embodiment of the present invention;

FIGURE 16 is a sectional view taken along line 16—16 in FIGURE 15;

FIGURE 17 is a sectional view taken along line 17—17 in FIGURE 15;

FIGURE 18 is a fragmentary top plan view of the track member;

FIGURE 19 is a sectional view taken along line 19—19 in FIGURE 20; and

FIGURE 20 is a fragmentary front elevational view of another embodiment of the present invention.

In a sense the present invention contemplates the provision of a door structure comprising a track member, a journal block engaging said track member and having a vertical socket formed therein provided with an entrance opening and an inclined guide surface leading to said entrance opening, a door panel, a substantially vertical pivot pin mounted on said door panel and axially movable between an advanced position engaging said socket and a retracted position, and spring means urging said pivot pin to its advanced position, said pivot pin being slidable along said guide surface to effect the retraction thereof approaching said socket opening.

According to a preferred form of the present structure the door is mounted in a frame delineated by a head, sill and jambs, the head being provided with a longitudinally extending depending bar. The track member includes an upwardly directed longitudinal channel engaging the head bar and a downwardly directed track defining channel having depending legs provided with inwardly directed flanges. A first journal block slidably registers with the track and rests on the flanges and has a vertical socket defining bore formed therein. A longitudinally inclined guide surface extends upwardly from the socket downwardly facing opening to the upper edge of the journal block. A second journal block is mounted on the sill in vertical alignment with the first journal block and includes a base plate secured to the sill and an apertured journal plate longitudinally adjustable along the base plate. The door, per se, includes a pair of first and second rectangular panels hinged to each other along adjacent inner edges. The first panel carries a follower at its upper outer corner registering with the track. A vertical well is formed in the upper outer corner of the second panel and the first pivot pin slidably registers therewith and is urged to a raised position into engagement with the first journal block socket by a compression spring entrapped between the well base and the first pivot pin. A bracket reinforces the second panel upper outer corner and includes a top web carrying a bushing entering the well and engaging the first pivot pin and depending plates embracing the second panel. A second bracket engages the second panel lower outer corner and includes a bottom web underlying the panel bottom edge and having a tapped opening registering with a vertical well in the

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panel. A second pivot pin engages the second journal block and is provided with an upwardly directed threaded shank engaging the bracket tapped opening and having opposite longitudinal extending flats formed therein for the reception of a tool.

Referring now to the drawings, and more particularly to FIGURES 1 to 9 thereof which illustrate a preferred embodiment of the present invention, the reference numeral 10 generally designates the improved folding door structure illustrated as including two oppositely hinged pairs of panels, it being understood that the present mechanism is advantageously applicable to door structures of any desired number of panel pairs. The door structure 10 is associated with a door frame which may be located and delineated as desired, such as for example, a closet opening, and includes a head 11, a sill 12, and opposite side jambs 13, which may be in the form of a unitary fabricated frame or which may be defined by other structural sections. Secured to and extending longitudinally along the head 11 for substantially the length thereof is a rectangular positioning strip or bar 14 which may be continuous or may merely comprise two or more longitudinally spaced aligned blocks.

Extending for substantially the full length of the head 11 and registering with the positioning bar 14 is a track member 16 which is of uniform transverse cross-section and may be formed of any suitable material such as aluminum, a synthetic organic plastic material, or the like. The track member 16 comprises an upper channel section engaging the bar 14 and including a transversely stepped cross web 17 defined by upper and lower levels 18 and 19 respectively separated by an intermediate step 20. Directed upwardly from the longitudinal edges of the cross web 17 are front and rear vertical legs 21 and 22 which tightly embrace the bar 14 and frictionally engage the side faces thereof, the web upper level 18 abutting the underface of the bar 14. The front leg 21 depends below the web level 18 and terminates in a cross arm 23 coplanar with the web level 19 and having depending from its front edge a front track leg 24. Depending from the web level 19 is a rear track leg 26, symmetrically positioned relative to the front leg 24. Directed inwardly from the track legs 24 and 26 adjacent their lower edges are track flanges 27 terminating in upwardly directed lips 28. The web level 18, legs 24 and 26 and flanges 27 delineate a longitudinally extending track 29.

A first journal block 30 of a transverse cross-section substantially mating the track 29, slidably registers with the track 29 and is releasably locked therein in a predetermined position adjacent a jamb 13. The journal block 30 is integrally formed of nylon or other suitable material and includes transversely directed longitudinally extending side bars 32 registering with the spaces delineated by the track flanges 27, the track legs 24 and 26 and the overlying sections of the web 17 and cross arm 23. The side bars 32 terminate in depending lips 33 which register with the grooves delineated by the lips 28 and legs 24 and 26. The top face of the journal block 30 is flat and closely confronts the underface of the web level 18. The trailing section 34 of the underface of the journal block 30 is horizontal and flat and a cross block 36 depends from its outer border into engagement with the space between flanges 27.

A socket defining vertical bore 37 is formed in the block 30 in the area of the section 34 and is transversely offset relative to the medial longitudinal axis of the block 30. The underface of the block 30 inwardly of the side bars 32 comprises a longitudinally inclined face 38 extending from the leading upper edge 39 of the block 30 to the leading edge of the underface section 34. Depending from the block 30 along the leading side border of the inclined guide surface 38 and projecting to the level of the underface of the flanges 27 is a block 39 having a flat underface 40 and a tapered end face 41 directed

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from the leading corners of the blocks 30 and 41 rearwardly toward the longitudinal medial axis of the block 30 to delineate a funneled opening to the guide surface 38. It should be noted the guide surface 38 is bordered by vertical confronting faces 42 of the blocks 30 and 38 which terminate at the section 34.

A vertical bore 43 is formed through the block 40 inwardly of the bar 32 and flange 27 and terminates at the top of the block in a well of hexagonal transverse cross-section. A hex nut 44 snugly nests in the hexagonal well and is engaged by a bolt 46 projecting through the bore 43 and carrying a washer 47. The washer 47 abuts the block underface 40 and the underface of the flange 27 so that the tightening of the bolt 46 effects the securing of the block 30 along a preselected position in the track 29.

A second journal block 48 is mounted on the sill 12 in vertical alignment with the first journal block 30 and includes a base plate 49 and a channel shaped journal plate 50. The base plate 49 is of rectangular configuration and has formed therein a pair of longitudinally spaced transverse slots 51 and a pair of longitudinally spaced apertures 52 to facilitate the transverse adjustable mounting of the base plate 49 to the sill 12 by means of suitable screws. Affixed to the front border of the base plate 49 is a flat mounting plate 53 having end recesses 54 formed therein. A tapped vertical bore 56 is formed in the superimposed plates 49 and 53 and is centrally located in the plate 53.

The journal channel plate 50 straddles the plate 53 and includes depending longitudinal side legs 57 embracing the side edges of the plate 53 and resting on the plate 49, and a cross web 58. A longitudinal slot 59 is formed in the cross web 58 in registry with the tapped bore 56 and a bolt 60 registers with the slot 59 and engages the tapped bore 56 to permit the longitudinal adjustment of the journal plate 50 and the locking thereof in a preselected position. A journal aperture 61 is formed adjacent an end of the cross web 58.

The door, per se, includes a pair of vertical substantially rectangular first and second side by side panels 63 and 64 respectively swingably joined to each other by a vertically extending piano hinge fastened to the respective inside faces of the panels 63 and 64 along their adjacent or inner edges to permit the mutual folding of the panels 63 and 64 with their adjacent inner edges advancing outwardly as seen in the left hand pair of panels in FIGURE 1. A vertical cylindrical well 65 is formed in the top face of the upper outer corner of panel 64 remote from the inner hinged edge thereof.

A bracket 66 embraces the upper outer corner of the panel 64 and includes a top rectangular web 68 overlying the outer top edge of the panel 64 and provided with an apertured crowned section 67 in vertical registry with the well 65. Depending from the rear edge of the web 68 is a relatively deep rear plate 69 which abuts the rear face of the panel 64 and is secured thereto by suitable screws registering with corresponding openings formed in the plate 69. A relatively shallow wall or flange 70 depends from the front edge of the web 68 and abuts the front face of the panel 64. A bushing 71 is secured to the underface of the apertured crowned section 67 and depends therefrom into telescoping registry with the well 65. A vertical cylindrical pivot pin 72 having a rounded top end slidably registers with the bushing 71 and extends into the well 65 and above the crown section 67. The bottom of the pivot pin 72 is formed with a peripheral flange 73 of greater diameter than the inside diameter of the bushing 71. A helical compression spring 74 is entrapped between the bottom of the well 65 and the bottom of the pivot pin 72 to resiliently urge the pin upwardly to its advanced or raised position, the pin being fully retractable by downward pressure thereon to the level of the crown section 67 against the pressure of the spring 74. In the assembled position, the

pivot pin 72 is spring urged into engagement with the journal socket 37, and the pivot pin 72 is depressed attendant to the assembly of the door structure.

A vertical well 76 is formed in the outer underface of the panel 64 in axial alignment with the well 65 and the panel lower corner is embraced by a bracket 77. The bracket 77 includes a cross web 78 underlying the bottom face of panel 64 and having a tapped bushing 79 integrally formed therewith and entering the well 76. Projecting upwardly from the front and rear edges of the web 78 are front flange 80 and rear wall 81 abutting the panel front and rear faces respectively, the rear wall 81 being secured to the panel 64 by suitable screws. A second vertical pivot pin 82 which functions as well as a jack for adjusting the elevation of the panel 64 includes a lower pin section 83 engaging the journal opening 61 and terminating in a tapered end bearing on the base plate 49. Projecting upwardly from the pin section 83 and coaxial therewith is a threaded shank 84 engaging the bushing 79 and entering the well 76. In order to facilitate the axial adjustment of the pivot pin 82, the threaded shank 84 is provided with six equally circumferentially spaced longitudinally extending flats 86 which lie in vertical planes forming mutual angles of 120°. Thus, the shank 84 may be engaged by an open ended hex wrench to permit rotation and axial adjustment thereof. A set screw 87 engages a tapped opening in the lower part of the plate 81 and passes through an opening in the panel 64 into engagement with the shank 84 to releasably lock the pivot pin 82 in a preselected position.

A bracket 88 embraces the upper outer corner of the first panel 63 and includes a top web 89 overlying the outer top face of the panel 63 and a depending front flange 90 and a rear wall 91 abutting the front and rear faces of the panel 63. The bracket rear wall 91 is secured to the panel 63 by suitable screws. An axle 92 is secured to and projects upwardly from the section of the web 89 adjacent to the outer edge of the panel 63. A roller 94 is rotatably carried by the axle 92, being spaced from the web 89 by a peripheral flange 96 integrally formed with the axle 92 and resting on the web 89. The roller 94 enters the track 29 and is at the level of the flanges 27 to limit the outer edge of the panel 63 to a linear longitudinal movement along the track 27.

In erecting the door structure described above, the track member 16 carrying journal blocks 30 at opposite ends thereof is slipped onto the positioning bar 14 and trued by inserting wedges or shims between the higher end of the channel web 17 and the confronting face of the bar 14. The lower journal blocks 48 are mounted on the sill 12 in vertical alignment with the track 29 by attaching the base plates 49 to the sill 12 by suitable screws. The pivot pin 82 is turned to a partially retracted position and the panels 63 and 64 collapsed. The pin section 83 is then inserted in the journal opening 61 with the collapsed panels laterally inclined, and the panels are then swung upwardly to bring the pivot pin 72 and roller into engagement with the track 29. As the panels 63, 64 approach their vertical position the top of the pivot pin 74 first engages the web section 18 to effect the depression of the pivot pin 72 against the spring 74. The pivot pin 74 then enters and rides upon the block inclined surface 33 to further depress the pivot pin until it reaches the flat surface 34, further longitudinal movement being limited by the stop block 36. The top of the panels are then tipped rearwardly to bring the pivot pin into registry with the socket 37, the spring 74 raising the pivot pin into engagement with the socket. The journal block 30 and the journal plate 50 are then longitudinally adjusted to bring the panels 63 and 64 into their desired longitudinal and plumb positions and the height of the outer edge of the panel 64 is adjusted by turning the pivot pin 82 with an end wrench as earlier described. When the door panels have been suitably adjusted the journal block 30 is locked in position by tightening the bolt 46, the

journal plate 50 is locked in position by tightening the bolt 60 and the pivot pin 82 is locked in position by tightening the set screw 87.

It is clear from the above that the erection of the door assembly is a simple, rapid and highly adaptable operation. Another pair of door panels may be similarly mounted along an opposite jamb. Furthermore, if desired, the track member may be secured to the bar 14 by screws or the like.

In FIGURES 9 to 13 of the drawings there is illustrated another form of track member and first journal block which may be advantageously employed in the present structure. Specifically, the positioning bar 100 which extends along the length of the head has a medially located longitudinal slot 101 formed therein. The track member 102 comprises an upper channel which embraces the bar 100 and includes a cross web 104 abutting the underface of the bar 100 and upwardly directed side legs 103 frictionally engaging the side faces of the bar 100. Directed upwardly from the web 104 into registry with the slot 101 is a medial longitudinal arm 106 terminating in an enlarged cylindrical bead 107. The track, per se, includes a front longitudinal arm 108 depending from the web 104 and coplanar with the corresponding side leg 103 and a rear longitudinal arm 109 depending from the web 104 and spaced inwardly of the corresponding side leg 103. Inwardly directed coplanar flanges 110 are formed along the lower edges of the legs 108 and 109 and terminate in upwardly directed lips 111 spaced by a longitudinally extending slot.

The journal block 112 slidably mates the track and includes a flat top face 113 closely confronting the underface of the web 104 and a vertical flat trailing face 114. The underface 116 of the block 112 is substantially coplanar with or slightly higher than the underfaces of the flanges 110 and has its longitudinal borders 117, which are of a width substantially that of the distance of the lips 111 from the corresponding legs 108, 109, raised approximately the thickness of the flanges 110. Formed adjacent the borders 117 are longitudinal slots 118 which slidably register with the lips 111, the ribs delineated by the borders 117 slidably resting on the flanges 110. A longitudinal passageway 119 is formed in the underface of the block 112 transversely offset relative to its medial longitudinal axis and extends from the leading face of the block 112 to a point short of the trailing face thereof and terminates in a short transverse passageway 120. The base 121 of the passageway 119 is inclined from the upper leading edge of the block 112 to the horizontal base 122 of the transverse passageway 120 which base 122 is slightly above the level of the block underface 116. A socket defining vertical bore 123 is formed at the terminus of the passageway 120 and extends through the block 112. The leading side faces 126 and 127 of the passageway 119 diverge forwardly to the respective slots 118 and the registering lips 111.

In order to lock the block 112 against movement in the track a pair of diagonally opposed vertical bores are formed through the block 112 slightly inwardly offset relative to the grooves 118 and terminate at the top face 113 in wells 125 of hexagonal cross-section. A hex nut 128 tightly nests in each of the hexagonal wells and is below the level of the block top face 113. A hex head bolt 129 registers with each of the latter vertical bores and engages a corresponding nut 128, nesting in a respective well 125, each of the bolts 129 carrying a washer 130. The washers 130 underlie and are adapted to bear against the underfaces of the flanges 110 and are clear of the passageways 119 and 120.

The positioning block, journal block and track member last described may be substituted for those first described and the erection and assembly and the operation of the resulting door structure are as above set forth.

A further embodiment of the present invention which may be employed to great advantage is illustrated in

FIGURES 14 to 18 of the drawings and differs from that last described primarily in the provision of a modified form of track member which facilitates the adjustment and levelling thereof and the manner of locking the track member in the final assembly. Specifically, the track member 140 comprises an upper coupling channel section defined by a cross web 141 and upwardly directed front and rear legs 142 and 143 respectively which tightly embrace the corresponding faces of a longitudinally extending overhead positioning bar 144. A medially located longitudinally extending strip 146 is directed upwardly from the web 141 and engages a mating slot in the bar 144. Depending from the web 141 are a pair of longitudinal track legs 147 which slidably engage a journal block 148 adjustably positioned along the length thereof, the block 148 being similar to the block 112 last described and co-operating with the track in a like manner.

In order to facilitate the longitudinal angular adjustment or levelling of the track member 140 attendant to the assembly of the door structure there are formed in the channel rearleg 143 a plurality of longitudinally spaced, longitudinally extending vertical openings 149 which project upwardly from the level of the top face of the web 141. Formed in the strip 146 in transverse alignment with the openings 149 are corresponding openings 150 which may extend to the top of the strip 146 as shown. There are provided one or more shim members 151 which may be in the form of flat rectangular plates of wood, plastic or the like of the same or different thicknesses. The shim members 151 are sandwiched between the confronting faces of the bar 144 and the web 141 and are distributed along the bar 144 and web 141 in registry with the openings 149 and 150 in an arrangement which will effect the desired angular relationship between the bar 144 and the track member 140. The shim members are selectively insertable into position through the openings 149 and 150.

Associated with the track 140 is at least one pair of folding door panels in the manner earlier described including an outer panel 152. Embracing and suitably secured to the upper outer corner of the panel 152 is a bracket 153 including a top web 154, a depending front wall 156 and a front flange 157. A high crown 158 having an opening formed in the top thereof surrounded by a flat peripheral shoulder is formed on the web 154 and has a bushing 155 depending therefrom into registry with a well 160 formed in the panel 152. A pin 161 extends from the well 160 through the bushing 159 into engagement with the journal socket in the block 148 in the manner earlier described. However, it is important to note that the crown 158 bears directly on the underface of the block 148 whereby to lock the track 140 in position and permit the swinging of the panel 152.

A second bracket 163 is affixed to and embraces the lower outer corner of the panel 152 and has associated therewith a vertically adjustable jack defining pivot pin 164 provided with a hexagonal shaped threaded shank 165 and a lock screw 166 similar to and in the manner of the bracket 77, pivot pin 82 and lock screw 87 described earlier. Further, a second journal member 167 like the journal member 48 is mounted in the door sill in vertical alignment with the journal block 148 and engages the pivot pin 164.

In erecting the last described door structure, the door panels, the track member and the journal members are assembled in the manner earlier described. The track member 140 is vertically angularly adjusted relative to the upper edge of the door panels to the desired and optimum level or inclination and shim members 151 and inserted through selected of the openings 149 to substantially fill the space between the confronting faces of the web 141 and the bar 144 in these areas. It should be noted that an opening 149 is in the region of each of the journal blocks 148 and that the space between the bar and the web in one of these areas should be filled by shim

members 151. Thereafter, the jack pivot pin 164 is turned by means of a suitable tool to raise the outer edge of the panel 152 until the crown 158 bears on the underface of the block 148 to lock the track in position and the lock screw 166 is then tightened. The outer edge of the panel 152 jacked by the pin 164 serves as a post or column to support or lock the corresponding end of the track member 140.

Referring now to FIGURES 19 and 20 of the drawings, these illustrate another embodiment of the present invention, which is advantageously employed in connection with an opening where it is desired to close a side section of the opening either with a fixed panel or a single hinged panel. Heretofore such panels were required to be cut and trimmed to size directly on the job since the openings were rarely precise and varied from opening to opening. This was a time-consuming and expensive procedure. However, by employing the devices and expedients of the present invention the drawbacks of the conventional practice are overcome.

Specifically, there is provided a rectangular side door panel 169 preferably of the same height as the associated folding door panels 170 and of a width corresponding to that of the side section to be closed. As in the earlier described embodiments there are provided an overhead track member 171 located along a positioning bar, journal blocks carried by the track member, journal plates affixed to the opening sill and pin carrying brackets and followers mounted on the appropriate panels and engaging the journal members and tracks respectively as above set forth. Affixed to the upper corner of the panel 169 adjacent to the panel 170 is a pin carrying bracket assembly 172 similar to the bracket assembly 153 and affixed to the corresponding lower corner of the panel 169 is an adjustable pin carrying bracket assembly 173 similar to the bracket assembly 163. A journal block 174 similar to the block 112 is carried by the track member 171 in the manner previously described in association with the bracket assembly 172 and a journal member 176 is mounted on the sill in association with the bracket assembly 173.

In erecting the door structure last described a stop member or block 177 is affixed to the side wall of the opening directly behind the position of the rear face of the erected panel 169. The bracket assemblies 172 and 173 are brought into engagement with the journal members 174 and 176 in the manner earlier set forth and the panel swung into engagement with the stop 177. Thereafter the folding door assemblies including the panels 170 are erected. The track member 171 is then adjusted, the panel 169 and the various panels 170 are plumbed and leveled and brought into mutual alignment by adjustment of the journal blocks and journal members including 174 and 176 and adjustment of the pins of the lower bracket assemblies including 173. The journal blocks and members and the lower bracket pins are then locked in position. If the door panel 169 is to be fixed in position, a vertical trim bar 178 is preferably affixed to the opening side wall along the adjacent front border of the panel 169. It should be noted that a panel 169 may be positioned in a like manner along the opposite side section of the door opening.

While there have been described and illustrated preferred embodiments of the present invention, it is apparent that numerous alterations, omissions and additions may be made without department from the spirit thereof.

What is claimed is:

1. A door structure comprising an overhead longitudinal positioning member, a track member including a downwardly facing longitudinal track and an upwardly facing channel embracing said positioning member and vertically adjustable relative thereto, a first journal block registering with said track and having formed therein a socket provided with a downwardly directed opening and a longitudinally extending guide surface inclined downwardly

toward said socket opening, a pair of laterally spaced substantially vertical first and second panels hingedly connected to each other along their inner adjacent edges, a follower member mounted on and adjacent to the upper outer corner of said first panel and longitudinally slidably registering with said track, a retractable vertical first pivot pin mounted on and adjacent to the upper outer corner of said second panel and engaging said socket and axially movable between a raised and depressed position, spring means urging said pivot pin to its raised position transversely locked in said socket, a first bearing member substantially coaxial with said first pivot pin and located adjacent the lower outer corner of said second panel and supporting said second panel for swinging about a vertical axis, and a second upwardly facing bearing member located on the top of said second panel adjacent its outer edge and bearing on said first journal block to substantially lock said track member against vertical movement.

2. The door structure of claim 1 wherein said guide surface extends substantially to the top face of said journal block.

3. The door structure of claim 1 wherein said socket opening is transversely offset relative to said inclined guide surface.

4. The door structure of claim 1 wherein said first bearing member includes a second pivot pin coaxial with said first pivot pin and depending from the outer corner of said second panel, a second journal member mounted below said second panel and having a second socket engaging said second pivot pin, and means for longitudinally adjusting the position of said second socket.

5. The structure of claim 1 wherein said channel includes a horizontal cross web confronting the underface of said positioning member, and comprising at least one shim sandwiched between said cross web and said underface.

6. The door structure of claim 1 wherein said channel includes a horizontal cross web and a vertically extending rear leg having an opening formed therein at substantially the level of said cross web.

7. The door structure of claim 1 wherein said second bearing member comprises an upwardly directed annular boss coaxial with said first pivot pin.

8. The door structure of claim 1 wherein said track comprises a pair of depending transversely spaced longitudinally extending legs having inwardly directed lips adjacent their lower edges and said first journal block rests on said flanges.

9. The door structure of claim 8 including a nut member carried by said first journal block, and a depending screw engaging said nut member and positioned to engage the underface of one of said flanges whereby to releasably lock said journal block against longitudinal movement.

10. The door structure of claim 1 wherein said first bearing member includes a second pivot pin coaxial with said first pivot pin and depending from the lower outer corner of said second panel, and a second journal member mounted below said second panel and having a socket engaging said second pivot pin.

11. The door structure of claim 10 including means for axially adjusting said second pivot pin.

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