Aug. 20, 1968 J. E. HUNT ET AL 3,397,487

SLIDING DOOR CONSTRUCTION AND MEANS FOR STORING SAME

Original Filed Nov. 18, 1965 2 Sheets-Sheet 1

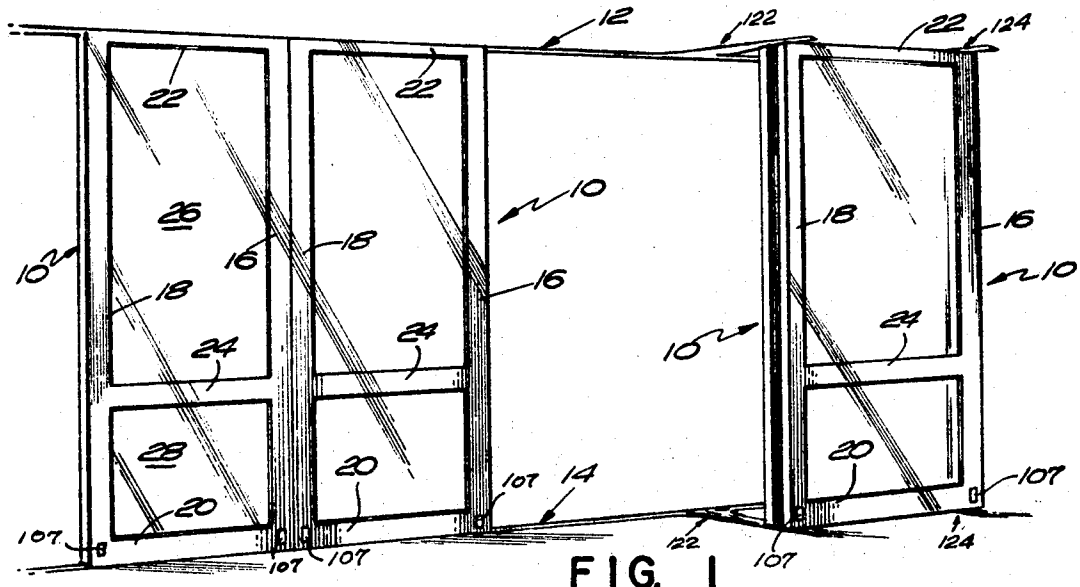


FIG. 1

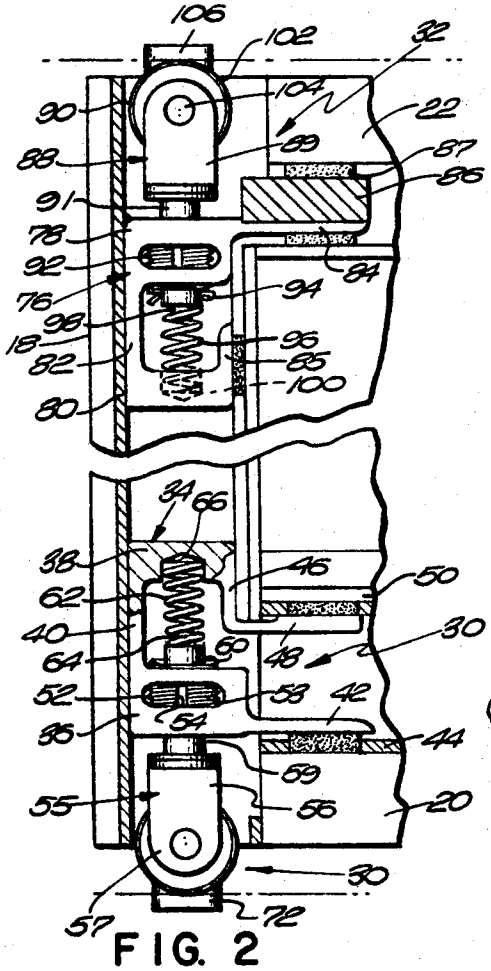


FIG. 2

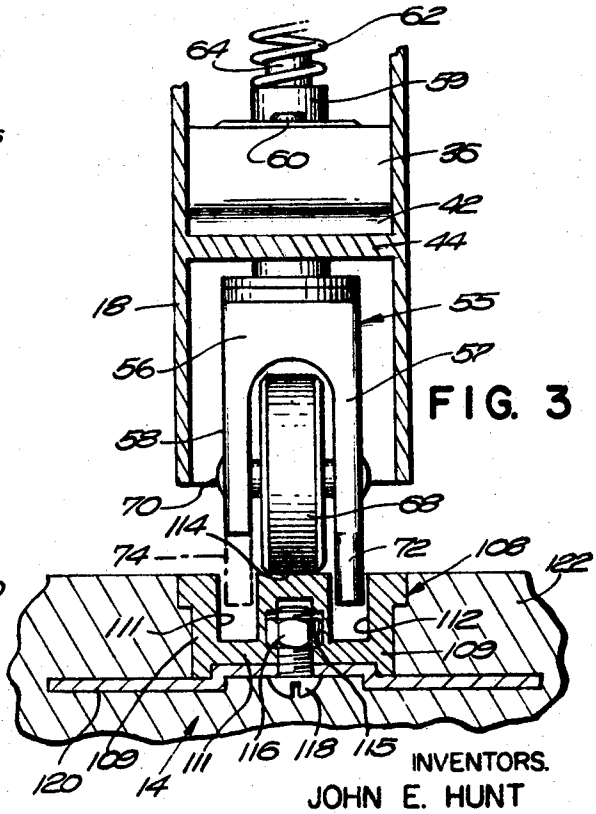


FIG. 3

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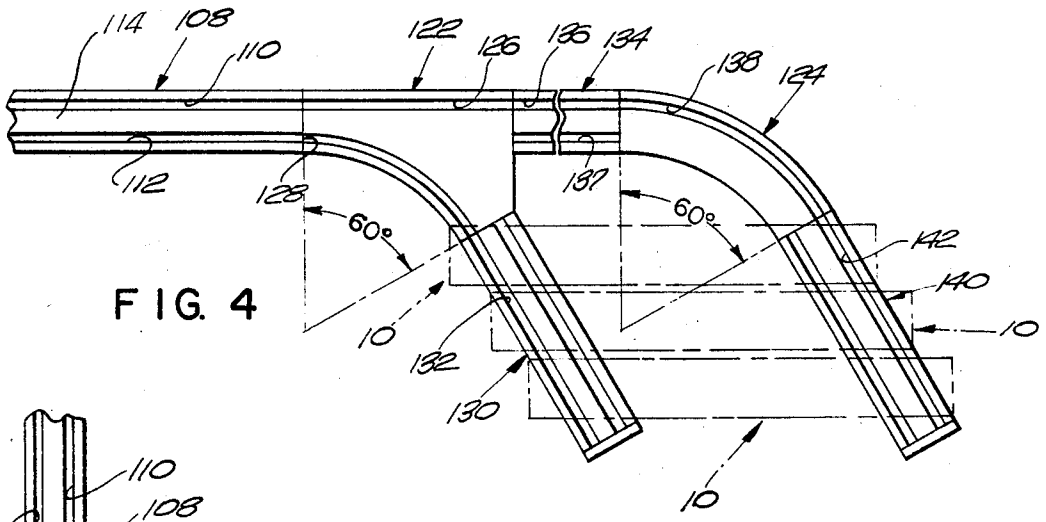


FIG. 4

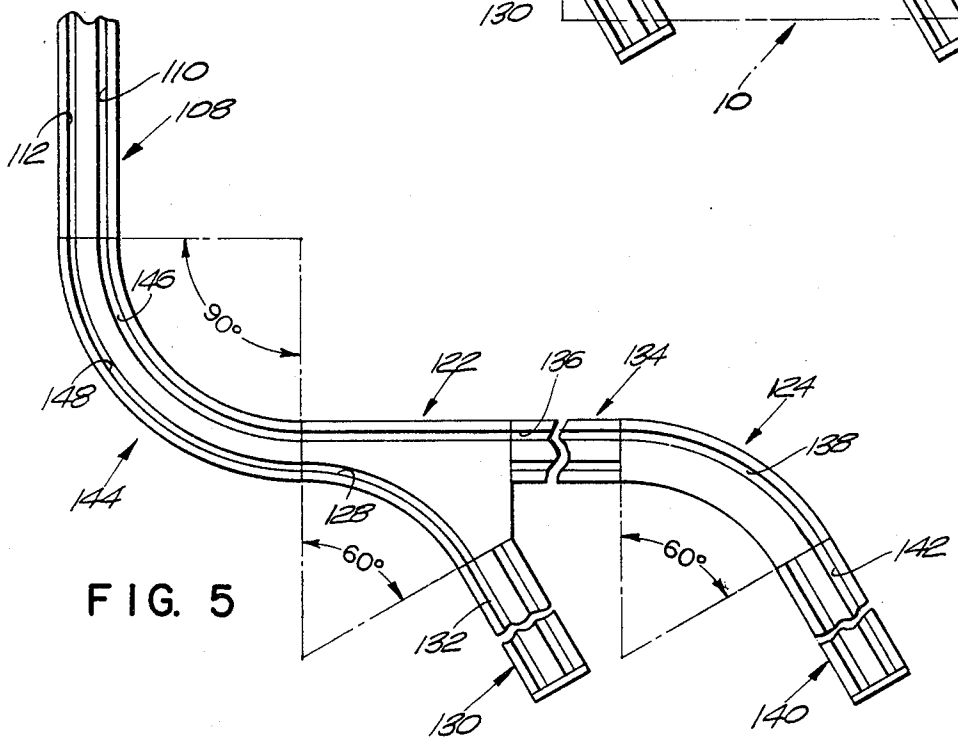


FIG. 5

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SLIDING DOOR CONSTRUCTION AND MEANS FOR STORING SAME

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5 Claims. (Cl. 49—130)

ABSTRACT OF THE DISCLOSURE

A sliding door construction that is movable in upper and lower track assemblies and that includes vertically adjustable guide members that are receivable in said track assemblies, the door construction being movable in said track assemblies from an entrance opening to a storage position.

This application is a continuation application of application Ser. No. 508,504, filed Nov. 18, 1965, now abandoned.

The present invention relates to sliding door constructions and means for storing same. More particularly, the present invention relates to a door assembly that includes a plurality of doors that are adapted to be located in coplanar relation across an entrance opening and are movable on a single track to a storage position, wherein the doors are disposed in spaced, parallel relation.

The present invention has particular application in entrance constructions wherein a plurality of doors are employed to define a closure for the entrance opening. In this type of entrance construction, all of the doors are movable to either side of the entrance opening to provide a relatively large entrance area through which customer traffic flows. In this type of entrance construction, which is used primarily in commercial installations, it has been the practice heretofore to mount the various doors on separate tracks that were located either in the floor or in an upper header or support, the separate tracks being required for storage of the doors when the entrance area was open to customer traffic. The present invention is unique in that it provides a plurality of doors that in the closed position thereof are located in a single plane and that appear to define a fixed wall. One of the features of the invention is the vertical adjustment of the door guide members that are located in the upper and lower ends of the doors and that are receivable in the tracks in which the doors are moved. Adjustment of the guide members is accomplished by locating threaded bushings in the vertical stiles and providing access to the bushings through openings formed in the stiles.

Accordingly, it is an object of the present invention to provide a sliding door assembly which includes a plurality of doors that in the closed position thereof are disposed in a single plane.

Another object of the invention is to provide track assemblies that are easily mountable in the floor and an upper support of the installation in which the door assembly of the present invention is located, the track assemblies including grooved tracks that receive tensioned guide tabs and rollers that are mounted in the four corners of the individual doors of the door assembly.

Still another object is to provide track assemblies for use in a sliding door assembly that includes switch sections that provide for movement of the individual doors from a single plane position to a storage position, wherein the doors are disposed in spaced, parallel relation.

Still another object is to provide a door for use in a door assembly that includes vertical members in which tensioned guide members are mounted in the upper and lower ends thereof, the guide members being received in grooved track sections and being located in the vertical members in offset relation with respect to the leading and trailing ends of the door.

Still another object is to provide a switch member for use in a sliding door track assembly that includes upper and lower grooved tracks for receiving upper and lower leading and trailing edge guides, respectively, both the upper and lower guides being placed under spring tension to provide for tensioned control of the door at the top thereof.

Still another object is to provide a sliding door assembly wherein a plurality of doors are located in a single plane and are adapted to roll on spring urged rollers on upper and lower single track assemblies that are provided with spaced grooves for guiding the doors during the movement thereof.

Still another object is to provide upper and lower tensioned guide members for a sliding door that are axially rotatable so as to provide for movement of the doors on curved switch sections of the track assemblies as the doors are moved from the position of use to an open or storage position.

Still another object is to provide upper and lower switch sections in a sliding door assembly both of which include curved tracks for guiding the sliding door to and from a storage area.

Still another object is to provide spring roller guides for the top and bottom ends of a sliding door, both the top and bottom roller guides being under constant tension to provide tensioned control at the top of the door.

Still another object is to provide switch sections in a sliding door track assembly that include surved tail tracks that are defined at least a 60° angle of curvature so as to permit storage of the door in an upright position and without the requirement of mechanical linkages or attachments.

Still another object is to provide a sliding door having roller guides at both top and bottom corners thereof so as to provide four corner control of the door.

Other objects, features and advantages of the invention will become apparent as the description thereof proceeds whn considered in connection with the accompanying illustrative drawings.

In the drawings which illustrate the best mode presently contemplated for carrying out the present invention:

FIG. 1 is a perspective view of an entrance construction showing a pair of doors of the sliding door assembly of the present invention located in the position of use and further showing a plurality of the sliding doors located in a storage position;

FIG. 2 is a fragmentary section view of a corner of one of the door constructions embodied in the present invention illustrating the upper and lower corner clip and guide assemblies associates therewith;

FIG. 3 is an enlarged sectional view with parts shown in elevation of the lower clip and guide assembly illustrated in FIG. 2 and further showing the location of the clip and guide assembly with respect to a track section on which the guide member thereof is mounted;

FIG. 4 is a top plan view of one form of a switch section that is utilized with the track assembly of the present invention and that is employed for storing the doors in parallel located with respect to the position of use; and

FIG. 5 is a top plan view showing another form of track section and switch section communicating therewith that provides for storage of the doors at right angles with respect to the position of use.

Referring now to the drawings and particularly to FIG. 1, a plurality of doors that define the sliding door assembly of the present invention are illustrated, each of

the doors being generally indicated at 10. As shown in FIG. 1, the doors 10 that define the sliding door assembly are mounted in an entrance between a top track assembly generally indicated at 12 and a bottom track assembly generally indicated at 14. As will be described, the top and bottom track assemblies 12 and 14 are formed so as to receive the doors 10 therebetween in a single plane in the position of use, thereby imparting a fixed wall appearance to the assembly. The track assemblies 12 and 14, as will be described, are defined by a plurality of track sections that include switch sections which provide for movement of the sliding doors 10 from the position of use to an open or storage position.

The sliding doors 10 that define the sliding door assemblies are generally conventional in construction with respect to the frame portions thereof and include vertical stiles or members 16 and 18 to which are joined a bottom rail member 20, a top rail member 22, and an intermediate rail member 24. Glazing 26 and 28 is fixed between the vertical and horizontal members in the conventional manner. Although not illustrated, the leading and trailing edges of the doors 10 are formed in a particular manner so as to provide meeting stiles. This constructional arrangement of the meeting stiles or vertical rail members insures that the door assemblies in the closed position thereof are sealed against weather and are theft proof. It is understood, of course, that suitable weatherstripping, such as felting, is secured in the edges of the vertical members of the doors 10 in accordance with the conventional requirements.

In order to secure the vertical and horizontal members of each door together and to further guide the doors 10 on the track assemblies 12 and 14, a lower clip and guide assembly generally indicated at 30 and an upper clip and guide assembly generally indicated at 32 are mounted in each of the vertical members 16 and 18 of the doors for securement to the lower and upper rail members 20 and 22.

The lower and upper clip and guide assemblies 30 and 32 are formed substantially alike, and, as shown in FIGS. 2 and 3, the guide assembly 30 includes a clip portion generally indicated at 34 that is defined by a lower portion 36, an upper portion 38, and a vertically extending web 40 that interconnects the lower and upper portions 36 and 38. Formed as an integral part of the lower portion 36 of the clip portion 34 and extending outwardly in a horizontal direction therefrom is a leg 42 that is welded directly to an interior web 44 of the lower rail member 20. The upper portion 38 of the clip portion 34 has a downwardly extending leg 46 joined thereto to which a horizontal extension 48 is joined. The extension 48 is welded to the underside of an upper wall 50 of the horizontal rail member 20 and cooperates with the leg 42 to secure the vertical member 18 to the horizontal rail member 20.

Formed interiorly of the bottom portion 36 of the clip portion 34 is a threaded opening in which a bushing 52 having exterior threads formed thereon is received. An opening 53 is formed in the bottom portion 36 and provides access to a slot 54 that is used to adjust the vertical position of the bushing 52 in the clip portion 34. A guide member 55 defined by a body 56 and spaced ears 57 and 58 is adapted to be mounted in the bushing 52 for rotation with respect thereto and for this purpose includes a shaft 59 that extends through the bushing 52 and projects above the upper end of the lower portion 36. A cotter pin 60 extends through the shaft 59 and engages the upper end of the bushing 52 and is designed to retain the shaft 59 in position in the bushing 52, it being understood that the guide member 55 is mounted for rotation with the shaft 59 in the bushing 52 that is vertically adjustable in the clip portion. Upward movement of the guide member 55 and shaft 59 is resisted by a spring 62 that is mounted on a pin 64 secured to the top of the shaft 59 and that extends into a hole 66 formed in the underside of the upper portion 38 of the clip portion 34. It is seen that the spring 62 urges the guide member 55 outwardly thereby providing for tensioned control thereof.

As illustrated in FIG. 3, a roller 68 is mounted for rotation on a pin 70 between the ears 57, 58 of the guide member 55, and, as will be described, the roller 68 is adapted to engage a portion of the track assembly 14 for supporting the door 10 for rolling movement thereon. As further shown in FIG. 3, the ear 57 of the guide member 55 is formed with an extension that defines a guide tab 72 which, as will be described, extends into a grooved track of the track assembly 14 and thus defines a guide for the door 10 during the rolling movement thereof. As illustrated in FIGS. 2 and 3, the guide tab 72 is located at the bottommost end of the vertical member 18, and in movement of the door to a storage position (see FIG. 1), the vertical member 18 defines the trailing end of the door 10 with respect to the movement thereof. Thus, during movement of the door 10 to the storage position, the guide tab 72 would be located on the right rear edge of the door 10 as seen in FIG. 1. A corresponding guide tab 74 is formed as part of a guide member located at the lower end of the vertical member 16, it being understood that during movement of the door 10 to a storage position, as seen in FIG. 1, the guide tab 74 will be located on the leading end of the door 10 and thus is disposed on the front left side thereof. This positioning of the guide tabs 72 and 74 is illustrated in FIG. 3, and the purpose thereof will be more fully described hereinafter. It is understood that the actual construction of the guide members as mounted in the lower ends of the vertical members 16 and 18 is substantially identical, the guide tabs 72 and 74 being positioned by rotating each guide member 55 with respect to its clip portion 34. It is further seen that the roller 68 and guides 72 or 74 are urged outwardly under control of spring 62 and are thus urged into engagement with the adjacent track assembly.

The vertical members 16 and 18 are secured to the upper rail members 22 in substantially the same manner as that described above in connection with the securement of the vertical members to the lower rail member 20. Thus, as illustrated in FIG. 2, the upper clip and guide assembly includes an upper clip portion generally indicated at 76 that is located within the upper end of the vertical member 18. The upper clip portion 76 is defined by an upper portion 78, a lower portion 80 and an intermediate web portion 82. An extension 84 is joined to the upper portion 78 and is welded to the horizontal rail member 22 while the lower portion 80 and an extension 85 projecting upwardly therefrom are welded to the vertical member 18. A tubular portion 86 is secured to the extension 84 and is also welded to an interior web 87 of the rail member 22. Mounted for rotation within the clip portion 76 is a guide member generally indicated at 88 that is defined by a body portion 89 and opposed ears 90. A shaft 91 extends through a bushing 92 that is mounted within the upper portion 78 of the clip portion 76 and projects downwardly therefrom, being secured in the clip portion 76 by a cotter pin 94. A spring 96 is mounted on a pin 98 that is fixed to the shaft 91 and extends into a hole 100 formed in the lower portion 80 of the clip portion 76, the spring 96 maintaining the guide member 88 under tension. A roller 102 is mounted between the ears 90 on a pin 104 and is engageable on a portion of the upper track assembly 12 for rolling movement thereon. A guide tab 106 is formed as an extension of one of the ears 89 and projects into a grooved track in the track assembly 12 for guiding the movement of the door 10 during the transferring movement thereof. It is seen that the guide tab 106 is located in corresponding relation in the vertical member 18 to the guide tab 72, and, thus, during movement of the door 10 to the storage position wherein the vertical rail 18 defines the trailing end of the door, the guide tab 106 is located on the

right rear end thereof. A corresponding guide tab **106** is formed as part of a giude member that is located in the upper end of the vertical member **16** and is positioned oppositely to the guide tab **106**. Thus, when the door **10** is moved to the storage position, the guide tab **106** in the upper end of the vertical member **16** is located on the left forward end of the door. If vertical adjustment of the guide members is required, the bushing **52** may be rotated, access to the bushing **52** being provided through the opening **53** and through an opening formed in the lower ends of the vertical members **16** and **18** that is covered by a plate **107** as seen in FIG. 1.

As previously described, the doors **10** are mounted between an upper track assembly **12** and a lower track assembly **14** for sliding movement therebetween. Referring now to FIGS. 3, 4 and 5, the lower track assembly **14** is illustrated, it being understood that the upper track assembly **12** is constructed and formed similarly. Since the doors **10** are normally located in a single plane when disposed in the closed position thereof so as to form a fixed wall, the portions of the track assemblies **12** and **14** that are located in the entrance area are formed in elongated straight sections. One of the track sections is illustrated in section in FIG. 3 and is representative of the straight track sections that are mounted in the floor and upper support for guiding the doors **10** to and from the open and closed position thereof. The track section shown in FIG. 3 is generally indicated at **108** and is cast or extruded in an integral construction to define side walls **109**, a bottom wall **111** and a top wall in which parallel grooves or tracks **110** and **112** are formed. The portion of the upper surface of the track section **108** that is located between the spaced tracks **110** and **112** defines a surface **114** on which the guide member rollers are received. A central groove **115** is formed in the track section **108** between the tracks **110**, **112** and receives a nut **116** therein, a screw **118** engaging the nut **16** for securing a mounting element **120** to the track section **08**. The mounting element **120** and track section **108** are fixed in a floor **122** in any suitable manner, it being understood that the upper surface of the track section **108** is flush with the surface of the floor. With the track section **108** of the track assemblies **12** and **14** fixed in the floor and upper support as illustrated, the doors **10** are suitably mounted therebetween by first locating the guide tab **72** and **74** in the tracks **112** and **110**, respectively, of the lower track assembly, the rollers **68** being received on the surface **114**. It is further understood that the upper guide tabs **106** located in the upper ends of the vertical members **16** and **18** are received and guided in the tracks of the track assembly **12** in the same manner as just described. The doors **10** are thus moved between the track assemblies **12** and **14**, the rollers **68** and **102** supporting the doors while the guide tabs **72**, **74** and **106** guide the doors in the tracks **110**, **112** during rolling movement thereof. The guide assemblies defined by the rollers **68** and **102** and the guide tabs **72**, **74** and **106** thus support and guide all four corners of the door and further provide for control of the four corners. By providing the four corner control through the use of the spring loaded guide assemblies, the doors are locked between the track assemblies **12** and **14** and can only be removed therefrom by first removing a track section of the upper track assembly **12**.

One of the novel features of the invention is the movement of the doors **10** from the closed position to a storage position whereby the doors are located in a stacking arrangement. In this connection, reference is first made to FIG. 4 where one form of a storage area is illustrated. In the form of the invention illustrated in FIG. 4, the doors **10** are designed to be stacked in spaced parallel relation and in parallel position with respect to the normal use thereof. In order to stack the doors **10** in the manner indicated, a first switch member generally indicated at **122** is provided and cooperates with a second switch member generally indicated at **124** to guide the doors to the stacked or storage position thereof. The switch members **122** and **124** are preferably cast in a one-piece construction and are formed with grooved tracks of the type shown in FIG. 3. The switch member **122** is thus formed with a straight groove or track **126** that communicates with the track **110** formed in the adjacent straight track section **108**. The track **126** formed in the switch member **122** is thus a continuation of the track **110** and will receive and guide a guide tab **74** therein of the guide member that is located in the vertical member **16** which defines the leading end of the door **10** when it is moved to the storage position. Also formed in the switch member **122** is a curved groove or track **128** that communicates with the track **112** formed in the straight track section **108**. The angle defined by the curvature of the track **128** is preferably 60°, this angle providing for location of the door **10** in the required manner in the storage position without tilting and without mechanical attachments. A straight, end track section generally indicated at **130** is located adjacent to the switch member **122** and includes a groove or track **132** that communicates with the track **128**. A parallel track is also formed in the track section **130** but is only a dummy track and is not employed for receiving a guide tab in the position of use of the track section **130** in the storage area. Although not shown, the track section **130** is formed with an end stop or bumper that limits the travel of the end door. It is also contemplated that the bumpers be removable for removing the doors as required.

Interposed between the switch member **122** and the switch member **124** is an intermediate track section generally indicated at **134** that includes a grooved track **136** and a parallel dummy track **137**. The track **136** communicates with the track **126** and defines an extension of the track **126** and the track **110**. As will be apparent hereinafter, the length of the track section **134** is such as to locate the switch member **124** that distance that is defined by the distance between the center lines of the leading and trailing guide tabs mounted in the vertical members **16** and **18**. Located adjacent to the track section **134** in abutting relation thereto is the switch member **124** which is formed with a grooved track **138**, the grooved track communicating with the grooved track **136**. The grooved track **138** is also curved in the same manner as the track **128**, that is to say, the curvature of the track **138** defines a 60° angle. It is seen that the tracks **128** and **138** are substantially parallel in the curvature thereof and will guide the guide tabs moving therein along parallel lines. An end track section **140** is located adjacent to the end of the switch member **124** and includes a grooved track **142** that communicates with the track **138**. The track section **140**, as seen in FIG. 4, is disposed in spaced parallel relation with respect to the track section **130** and may include a bumper or stop for limiting travel of the endmost door or for permitting installation or removal of the doors on and from the track section **140**. It is further seen that the movement of the doors through the switch section is facilitated by locating the center line of the track sections **108**, **130**, **134** and **140** in alignment with the center line of the rollers **68** and **102**.

In movement of the doors **10** from the closed position to the open or storage position, each of the doors is moved along the track assemblies **12** and **14**, the guide tabs of each guide member being urged outwardly for engagement in its respective groove or track, and the rollers of each guide member riding on the wall between the tracks to provide four corner control for each door. As described hereinafter, reference is made to the operation of the lower guide assemblies as they are received in the switch sections **122** and **124**, it being understood that the corresponding upper guide assemblies **106** will be received in the upper switch assemblies **122** and **124** in a similar manner. As the leading guide tab **74** of a

door **10** approaches the switch member **122**, it will follow in the track **126** thereof and in track **136** of the track section **134** in a straight line and without deviation. As the leading guide tab **74** reaches the switch member **124**, the trailing guide tab **72** reaches the switch member **122**. Thus, it is seen that the spacing of the switch members **122** and **124** must conform to the spacing between the leading and trailing guide tabs. The leading guide tab **74** is guided into the curved track **138** of the switch member **124**, and simultaneously the guide tab **72** is guided into the curved track **128**. The door is thus moved from the position that is aligned between the top and bottom straight track sections toward the track sections **130** and **140**, the guide tabs **72** and **74** following tracks **132** and **142** formed therein. The first door to be stacked is thus moved to the position illustrated in dotted lines in FIG. 4, which is the endmost point of the track sections **130** and **140**. As each succeeding door is moved from the straight track sections in the entrance area to the storage area, the rotatable guide members mounted therein will cause the doors to follow the curved tracks **128** and **138** in the switch members **122** and **124** until all the doors are disposed in the storage position. In this storage position, the doors are located in spaced parallel relation. It is understood that any number of doors can be stored in the storage area, the length of the end tracks **130** and **140** determining the number of doors to be stored. It is also understood that in movement of the doors **10** through the switch members **122** and **124**, the movement thereof is achieved as a result of the rotatably mounted guide members **55** of which the guide tabs **72** and **74** form a part in their respective guide members. Thus, the guide tabs **72** and **74** are rotated to conform to the configuration of the curved tracks **128** and **138** as the doors move into the storage area.

Referring now to FIG. 5, a modified form of the storage area is illustrated, although the switch members **122** and **124** as illustrated therein are substantially identical in construction to the switch members illustrated in FIG. 4. In FIG. 5, the doors are adapted to be stored in a position whereby they are disposed at right angles with respect to the normal position they occupy when located in an entranceway. A straight track section **108**, as illustrated in FIG. 4 and described in connection with FIG. 3, is shown in FIG. 5 as forming a part of the track assembly disposed in the entranceway. In order to move the doors **10** into the storage area whereby they are located at right angles with respect to the position of use thereof, a curved track section generally indicated at **144** is employed. The curved track section includes grooved tracks **146** and **148** that communicate with the tracks **110** and **112**, respectively. The curved track section **144** defines an angle of 90° and thus moves the doors through this angle so that they are moved into the storage area at right angles with respect to the normal position of use. As each of the doors moves to the storage area, the guide tabs thereof slide into the grooves **128** and **138** of the switch members **122** and **124**, respectively; and the doors are thus moved to the storage position wherein they are located in spaced parallel relation. It is understood that an intermediate track section is located between the switch members **122** and **124** as seen in FIG. 5, and the end track sections **130** and **140** are employed therewith as illustrated and described above in FIG. 4. The length of the end track sections **130**, **140** will, of course, be dependent upon the number of doors to be stored.

If the doors are to be stored in an area remote from the entrance area, they may be transferred over any length of track sections and moved in the required direction by utilizing curved track sections such as section **144**. The direction of movement can be changed as desired by forming the right angle track sections either left or right hand depending upon the location of the storage area.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and rearrangements of the parts may be made without departing from the spirit and scope of the underlying inventive concept and that the same is not limited to the particular forms herein shown and described except insofar as indicated by the scope of the appended claims.

What is claimed is:

1. In a sliding door construction, a door mounted for sliding movement between an upper support and a floor, an upper track assembly fixed to said upper support and a lower track assembly fixed to said floor, each of said track assemblies having a continuous slot formed therein defining a track, clip portions located in said door at the upper and lower ends thereof, an externally threaded bushing threadably received in each clip portion and having a bore formed therethrough, a guide member mounted in each bushing for rotation therein, and including a body portion, a shaft fixed to said body portion and extending through the bore of the bushing, means fixed to the upper end of said shaft and engaging the upper end of a bushing for locking said shaft therein, a roller mounted on said body portion and engaging a guide surface of a track assembly for movement thereon, a guide tab joined to said body portion and projecting outwardly beyond said roller into a track, each of said clip portions having an opening formed therein that communicates with said externally threaded bushing, a spring located in each clip portion and engaging the upper end of the shaft that extends through the bore of the bushing mounted therein, wherein the spring positively urges the roller mounted in the body portion to which the shaft is joined outwardly of the end of the door and into positive engagement with said guide surface of the adjacent track assembly, and openings formed in the door that communicate with the openings in said clip portions to provide external access to the bushings mounted therein, wherein each of the bushings is adjustable vertically to vertically adjust the position of the associated guide tab and roller relative to the adjacent tracks and guide surface and without removal of the door from the tracks in said track assemblies.

2. In a sliding door construction as set forth in claim **1**, a plurality of said doors mounted for sliding movement in a single plane between said upper support and floor, each of said upper track assemblies having a second track formed therein that is located in spaced parallel relation with respect to the first named track, each track in the lower track assembly being located in vertical alignment with a track in the upper track assembly, the guide members that are located in a clip portion in each door being disposed at the upper and lower ends thereof and adjacent to the leading edge of each door with respect to the movement of the doors toward a storage position, said guide members being further disposed at the upper and lower ends of each door and adjacent to the trailing edge thereof, the guide tabs of the guide members located adjacent to the trailing edge of each door being received in vertically aligned tracks of said upper and lower track assemblies, and the guide tabs of the guide members of each door located adjacent to the trailing edge thereof being received in the other vertically aligned tracks of said upper and lower track assemblies.

3. In a sliding door construction as set forth in claim **2**, said upper and lower track assemblies including switch sections that provide for movement of said doors from the single plane position to a storage position, wherein the doors are disposed in spaced, parallel relation, each of said guide members being rotatable in the associated bushing so as to follow the tracks in said track assemblies, thereby providing for movement of said doors from the single plane position to the storage position.

4. In a sliding door construction as set forth in claim **3**, both the upper and lower track assemblies including

linear track sections that provide for the single plane position of the doors, each of said switch sections including only a fixed curved track that communicates with a track in the adjacent linear section, the curved track in one of said switch sections receiving the guide tabs located adjacent to the leading edge of each door and the curved track in another of said switch sections receiving the guide tabs located adjacent to the trailing edge of each door.

5. In a sliding door construction as set forth in claim 1, each of said doors including spaced vertical members that define side stiles and to which are joined upper and lower horizontal rail members, a clip portion and a guide member located in the upper and lower end of the vertical

members to provide four-corner control for said door as the guide tab of each guide member is received in the tracks of said track assemblies, the openings in said door that communicate with the openings in said clip portions being formed in said vertical stiles adjacent to the ends thereof.

References Cited

UNITED STATES PATENTS

1,448,845	3/1923	Johnson et al.	49—420 XR
1,934,299	11/1933	Fairhurst	49—127

KENNETH DOWNEY, *Primary Examiner.*