Dec. 27, 1955 T. C. COWDROY 2,728,101

SUSPENDED SLIDING DOOR

Filed Aug. 14, 1953 2 Sheets-Sheet 1

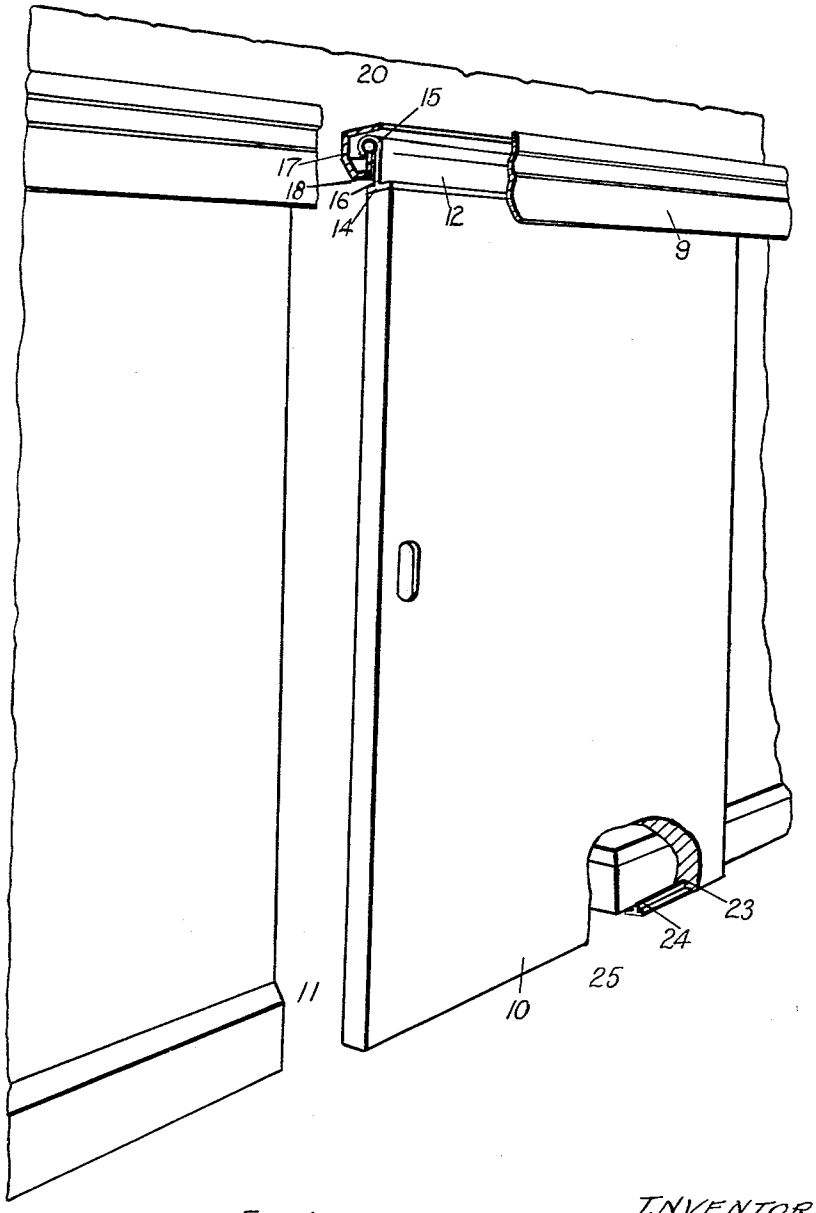

Fig. 1.

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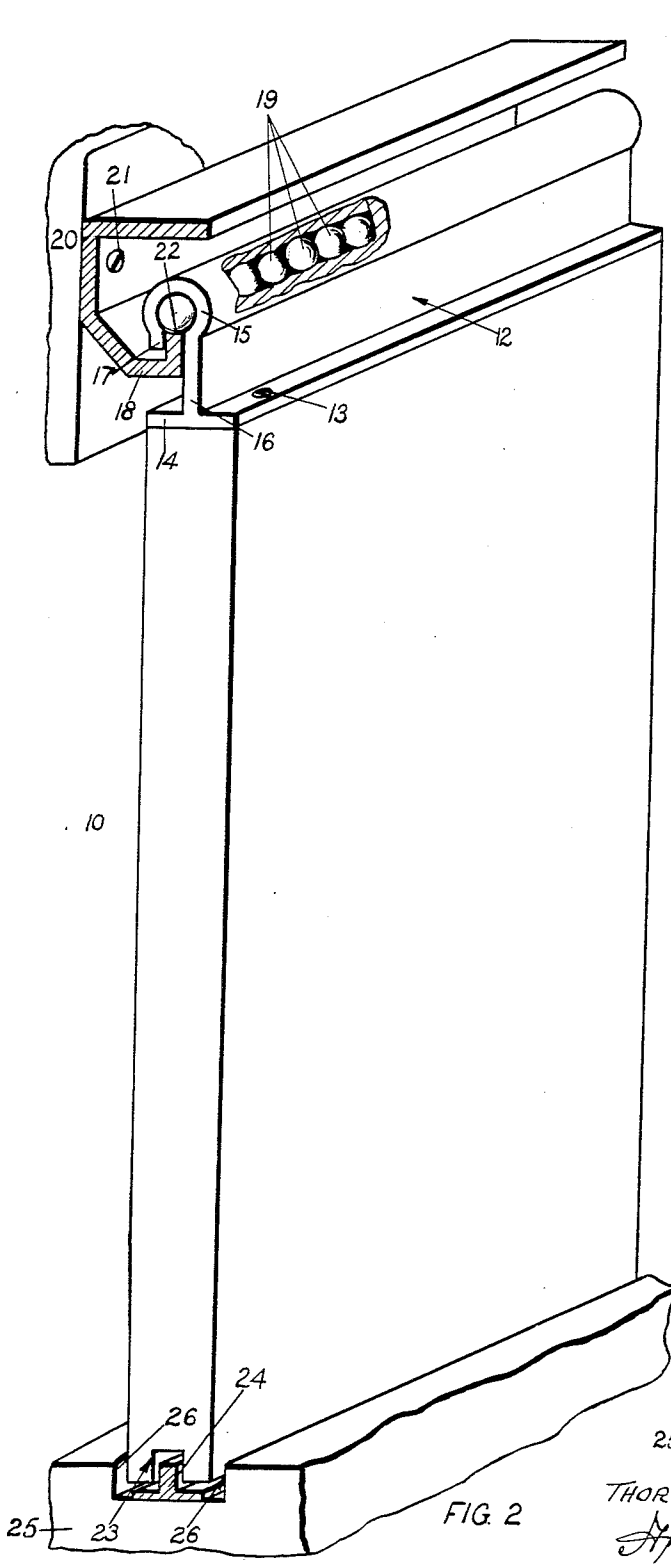

FIG. 2

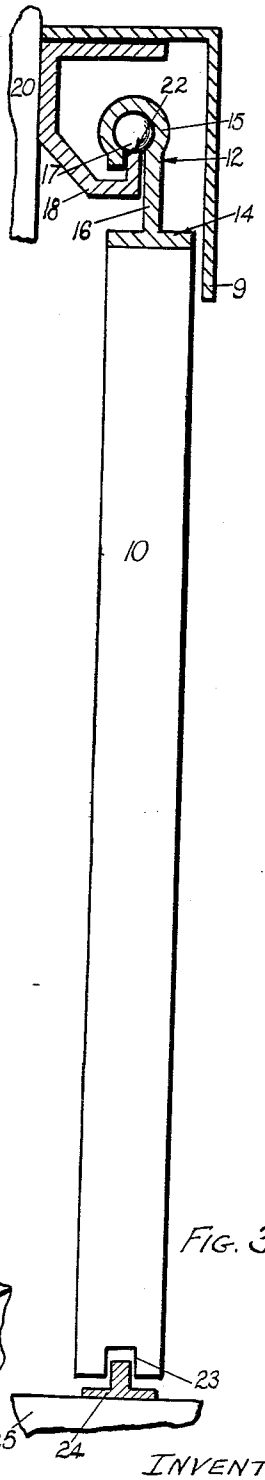

FIG. 3.

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SUSPENDED SLIDING DOOR

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Application August 14, 1953, Serial No. 374,326

1 Claim. (Cl. 16—88)

This invention relates to a suspended sliding door mounted upon an overhead rail by means of an improved hanger.

Suspended slidable doors are known and they are usually required to have heavy cumbersome roller equipment whereby they may be operated and furthermore they usually require considerable manual power to move them from one position of operation to another.

An object of the present invention is to provide a suspended sliding door which is free from the above disadvantages and which is relatively light and easily operated.

The present invention includes ball bearings disposed in a ball track portion of a hanger carried by the door which together with the door is suspended upon an elongated rail secured to the door frame adjacent to the door opening and which is received within the hanger.

According to the present invention the hanger is adapted to be secured to the upper portion of the sliding door adjacent to the top edge thereof the said hanger extends upwardly and terminates in what may be termed a hook-like ball track portion which is substantially cylindrical in elongation.

The hanger has a long limb and a short limb the said long limb is integral with the base or main portion of the hanger which is attached to the upper portion of the door.

The short limb of the hanger is such that in addition to playing its part in forming the ball track proper it is designed to enable it to be lifted over the said elongated rail which is provided to slidably support the door.

Within the ball track portion of the hanger a plurality of ball bearings are located the number of ball bearings being such that they together occupy a space equal to one-half of the total length of the said hanger in order to ensure free movement of the door upon the rail.

The elongated rail is required to be offset with respect to its support, the degree of offset being such that the said elongated rail is received in a bifurcated portion of the hanger formed between the said long leg and short leg thereof when the door is in its suspended position and with the said ball bearings disposed in the ball track and resting upon an arcuate upper surface of the rail.

The lower portion of the door is provided with a guide member to maintain the door in alignment.

In order that the invention may be more readily understood reference will now be made to the accompanying drawings wherein:

Figure 1 is a perspective view illustrating the improved sliding door in position adjacent to a door opening.

Figure 2 is a detail perspective view of the door showing the upper and lower metal fittings.

Figure 3 is an end elevational view corresponding to Figure 2, and also showing a cover strip.

The door **10** which is adapted to slide across the door opening **11** for the purpose of closing the latter, has secured to the top thereof a hanger **12** which as illustrated is secured to the top edge of the door, for example, by screws **13** passed through a base flange **14** of the said ball track fitting **12**, a cover strip **9** is provided to screen the fitting **12** from view.

The said hanger **12** extends upwardly from the said base flange **14** and terminates in a substantially cylindrical ball track portion **15** formed by a long limb **16** and a short limb **17**, which in addition to playing its part in forming the ball track portion **15** is adapted to enable the said hanger **12** to be lifted over an elongated supporting rail **18** provided to slidably support the door **10**.

To ensure maximum freedom of movement of the door the said ball track portion **15** receives a plurality of ball bearings **19** the number of which is such that they occupy a space within the said hanger **12** constituting one half of the total length of the said ball track fitting **12**.

The elongated supporting rail **18** is secured to the door head **20** adjacent to the opening **11** by means such as screws **21**, and the said rail **18** is offset with respect to its support the degree of offset being such that the said rail **18** may be disposed between the said long limb **16** and short limb **17** of the hanger **12** when the door **10** is suspended for operation.

The said elongated rail **18** has an upper arcuate surface **22** upon which the said ball bearings **19** are adapted to roll.

To ensure correct alignment and guide the lower portion of the door **10** the latter has a channel **23** to receive a guide member **24** adapted to be secured to the floor **25** adjacent to the door **10** and the said guide member **24** may be recessed in a groove **26** in the floor **25** or it may be secured directly to the floor as seen in Figure 3.

In use the door slides freely and is such that it may be placed in position upon the rail **18** and may be just as easily removed therefrom without the need for removing any of the fittings or attachments thereof.

I claim:

In an elongated door hanger and supporting rail and door of the character described, a hanger of unitary construction extending the full width of the said door, having a base flange by which the said hanger is attached to the door, a long limb extending vertically upward from the said base, said long limb terminating in a substantially cylindrical ball bearing track, a plurality of ball bearings retained within said ball bearing track, said ball bearing track terminating in a short limb extending vertically downwards from said ball bearing track parallel to and spaced from said long limb to freely receive said supporting rail for engagement with said ball bearings, said short limb terminating a sufficient distance from said base flange to allow said hanger to be lifted on and off said supporting rail, said ball bearings being retained by said ball bearing track when not in contact with said supporting rail.

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