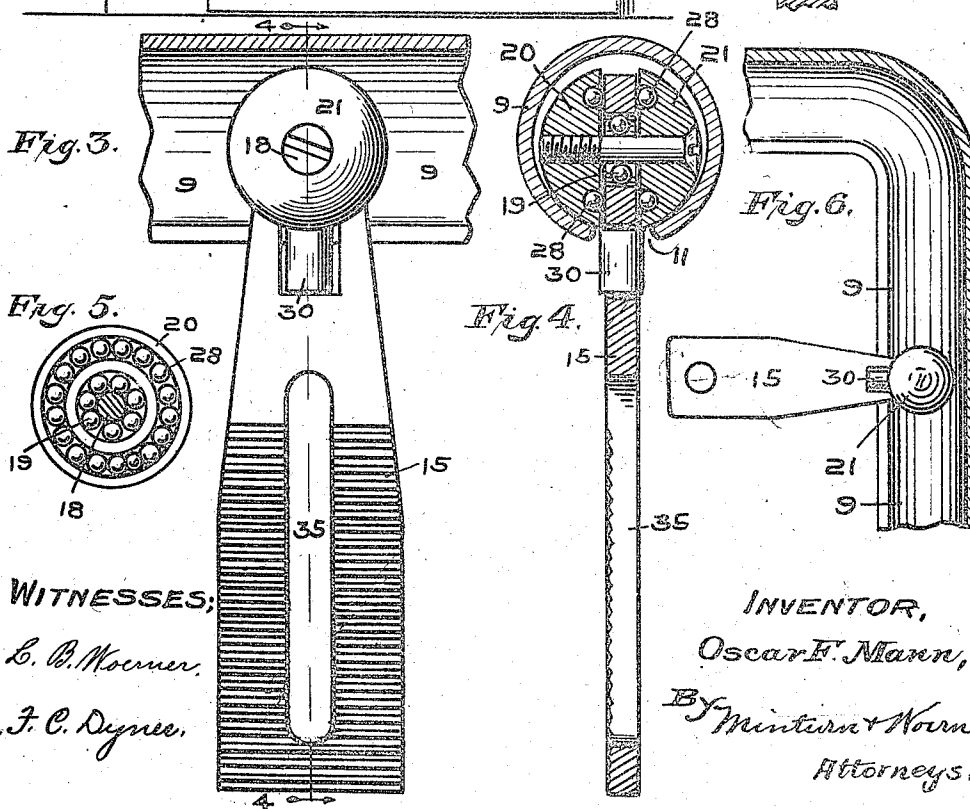
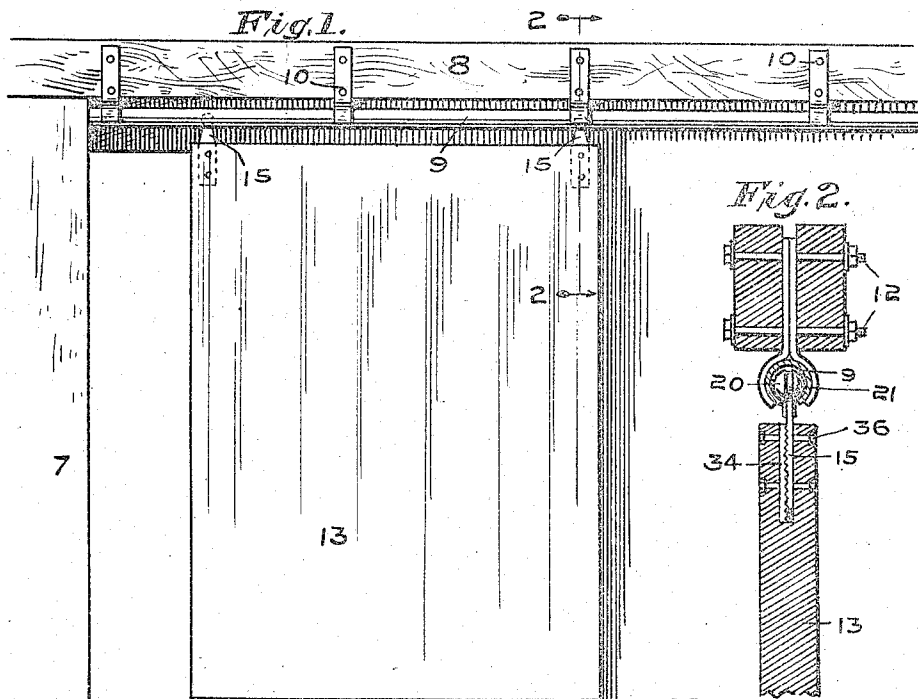


No. 867,283.

PATENTED OCT. 1, 1907.

O. F. MANN.
HANGER FOR DOORS,
APPLICATION FILED DEC. 26, 1906.



WITNESSES;

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UNITED STATES PATENT OFFICE.

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HANGER FOR DOORS.

No. 867,283.

Specification of Letters Patent.

Patented Oct. 1, 1907.

Application filed December 26, 1906. Serial No. 349,522.

To all whom it may concern:

Be it known that I, OSCAR F. MANN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented
5 certain new and useful Improvements in Hangers for Doors, of which the following is a specification.

This invention relates to improvements in combined hanger and track for doors to be opened and closed by sliding them edgewise, and for hanging ob-
10 jects of all kinds which are made to be moved along a fixed track.

The invention also relates to means for guiding objects which are made to travel, whether in a horizontal, or vertical, or oblique direction.

15 The object of the invention is to provide a fixture with a part to contact with the guide or track, constructed in such a manner as to be practically without friction, and to provide such a device as cannot be displaced from its track, and which will follow curves in
20 the track without binding or interference.

The object also is to provide a track which will form an almost complete housing for the traveling member so as to preclude water and dirt, and which will have an opening in the under surface to serve as an auto-
25 matic drain or clean-out for all water or foreign substances that may by any possibility obtain entrance, and also a runway for the hanger arm.

The object also is to provide a device which will be strong and durable, inexpensive to manufacture, and
30 easily installed and adjusted.

I accomplish the objects of my invention by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a view in side elevation of a sliding door,
35 here shown as a car door equipped with my invention. Fig. 2 is a detail in vertical section on the line 2—2 of Fig. 1. Fig. 3 is a detail in longitudinal section of the track used in my construction, with my improved hanger in operative position, extended therefrom.
40 Fig. 4 is a vertical section on the line 4—4 of Fig. 3. Fig. 5 is an inside view of one of the hemispherical sections of my roller and Fig. 6 is a detail in vertical section of a vertical guide-way with a quarter-round top merging into a horizontal track, the same being
45 shown in connection with my improved holding device and carriage.

Like characters of reference indicate like parts throughout the several views of the drawing.

7 represents the side of a car or a wall of any kind, as
50 the case may be, 8 a horizontal supporting beam, or a pair of them, as shown in Fig. 2, and 9 a track supported from said beam 8 by means of the track hangers 10. This track will preferably be gas pipe, round in cross section having a longitudinal slot 11. This slot
55 will be in the under surface of the pipe when the latter

is mounted in operative position. The hangers 10 will preferably be in the form of a pair of plates the lower ends of which will be curved in opposite directions to embrace the pipe 9 as shown in Figs. 1 and 2. Then the two sections forming a pair will be forced to-
60 gether by means of the bolts 12, so as to clamp the hanger securely upon the pipe 9. This will be done during the erection of the building, while the beams 8 are being placed.

13 indicates a door to be suspended from the track
65 and transported along it. It has the vertically elongated plates 15, preferably two in number, each located adjacent to the upper corners of the door. The body portion of the plate is preferably mortised into the door so as to occupy a vertical center of the latter, 70 and these plates have ends projecting above the door into the pipe forming the track 9. The ends of the plates which project into the ends of the tracks are each provided with a transverse hole to receive the
75 spindles or axle 18, and the hole will be enough larger than the diameter of the spindle to permit of the introduction of a series of bearing-balls 19 to lessen the friction.

Mounted on the spindle 18 on each side of the plate
15 are the hemispherical rollers 20 and 21. The spindle
80 18 has a head on one of its ends, and its opposite end is screw-threaded. The spindle is passed first through the hemispherical roller 21, thence through the plate 15, and its threaded end is screwed into the threaded opening in the hemispherical roller 20. The latter
85 will rotate with the spindle but the part 21 will turn on the spindle, and by this means the necessary differential will be obtained to enable the spherical shaped head formed by the two ball sections to go around a
90 curve without sliding, as the outer section will be able to travel faster than the inner one because of this independent mounting of the two parts. The inner straight faces of each of the hemispherical sections 20 and 21 will be provided with an annular groove to receive a
95 series of bearing-balls 28. These ball-bearings 28 are particularly important in my device to relieve the friction between the plate 15 and the two hemispherical members 20 and 21 occasioned by the spherical shape of these parts operating as they do in a pipe the
100 curved wall of which in conjunction with the shape of the ball sections forces the latter against the plate 15 with a force which increases proportionately with the size of the load.

In order to prevent friction of the plate 15 against the sides of slot 11 in the tubular track 9, I provide the
105 vertical roller 30 which is suitably mounted in the proper position in an opening in the plate 15. The spherical shape of the combined rollers makes it operative in all positions of the hanger, and the plate 15 is shortened below the top of the roller sections so as to
110

prevent contact between the plate and the pipe 9, should the hanger be forced up far enough to strike the top of the track. Binding of the rollers against the track is thus prevented in all directions.

5 To enable the plate 15 to be adjusted longitudinally in the door 13, one of its faces will be corrugated, as shown, to engage a locking plate 34, also provided with a corrugated face to interlock with the plate 15, and the plate 15 will be provided with the longitudinal slot 35
10 to permit the plate 15 to be adjusted longitudinally without disturbing the plate 34 or removing the holding bolts 36. This is accomplished by first loosening the nuts on the bolts 36 and there will be found enough looseness in the slot of the door receiving the plates 15
15 and 34, and spring of the wood material of the door, to permit of the required longitudinal adjustment of the plates 15 and 34.

It will be observed that a direct center support is obtained with my device for a door or other object, which

is a matter of great advantage and benefit in this kind 20 of construction.

Having thus fully described my invention, what I claim as new and wish to secure by Letters Patent of the United States, is—

In a fixture for the purposes specified, a tubular track 25 round in cross section having a longitudinal slot, a body-plate entering the track through said slot, a spindle mounted in the end of said body-plate, a pair of hemispherical rollers mounted on said spindle within the track on opposite sides of the body-plate, both of said hemispherical 30 rollers having an annular ball race on each of their flat sides concentric with the spindle, and friction balls in said ball races.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this, 22nd day of December, 35 A. D. one thousand nine hundred and six.

OSCAR E. MANN. [L. S.]

Witnesses:

J. A. MINTERN,
P. W. WOERNER.