

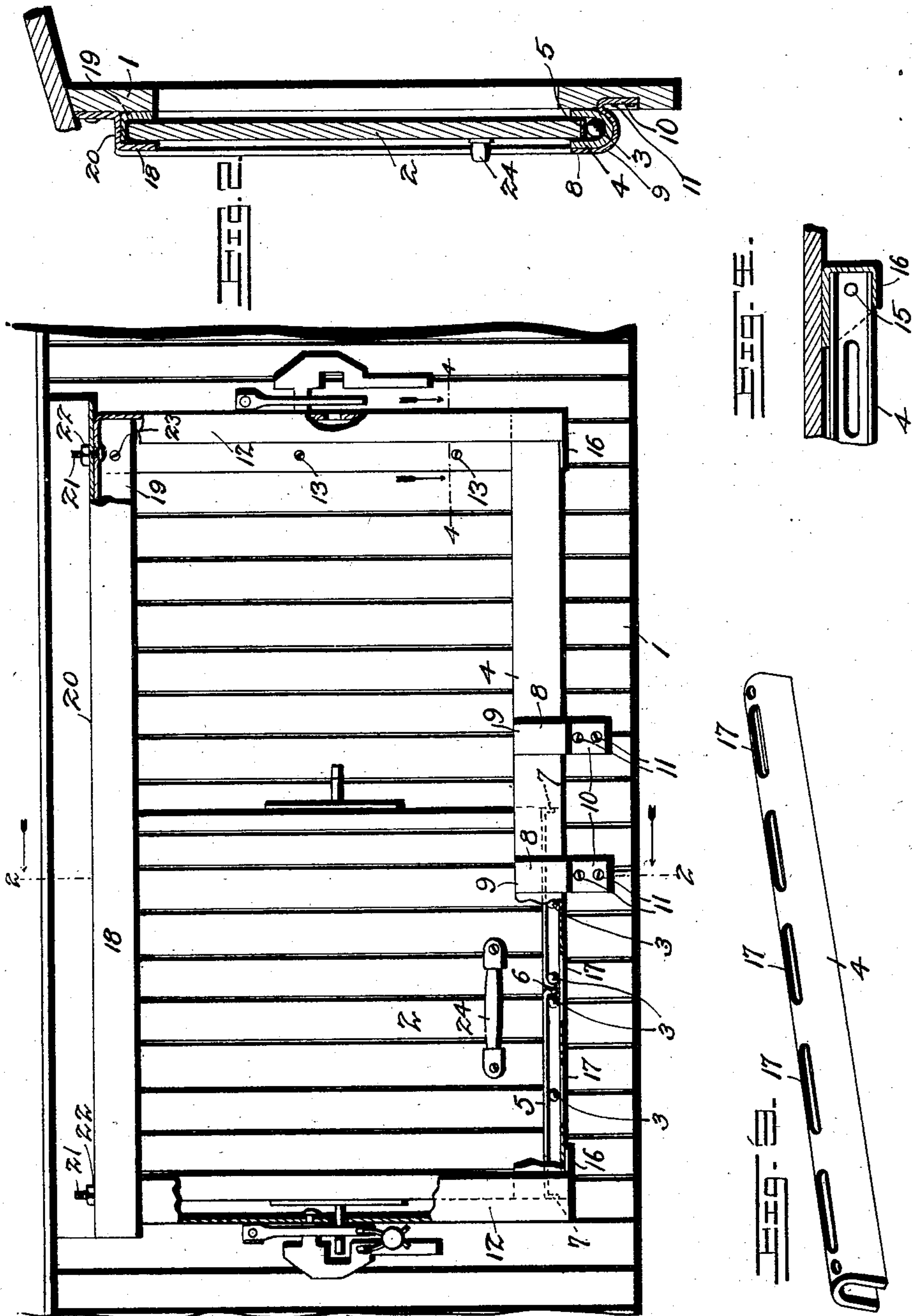
No. 724,858.

PATENTED APR. 7, 1903.

F. J. HANRAHAN.
BOX CAR DOOR.

APPLICATION FILED NOV. 25, 1901.

NO MODEL.



Witnesses
R. M. Elliott

F. J. Hanrahan Inventor.
by *C. A. Snow & Co.* Attorneys

UNITED STATES PATENT OFFICE.

FRANCIS J. HANRAHAN, OF CATAWISSA, PENNSYLVANIA.

BOX-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 724,858, dated April 7, 1903.

Application filed November 25, 1901. Serial No. 83,645. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS J. HANRAHAN, a citizen of the United States, residing at Catawissa, in the county of Columbia and State of Pennsylvania, have invented a new and useful Box-Car Door, of which the following is a specification.

This invention relates to box-car doors, and has for its object to present a simply-constructed, cheap, durable, and highly-efficient form of guide or track therefor which may be readily applied to an ordinary box-car without necessitating any change in its structural arrangement and which will render the door exceedingly easy of operation.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a box-car door, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into effect, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the scope of the invention.

In the drawings, Figure 1 is a view in front elevation of a portion of the side of an ordinary box-car, showing the same equipped with a car-door of this invention. Fig. 2 is a view in vertical section, taken on the line 2 2, Fig. 1. Fig. 3 is an inverted detached perspective view of the ball-track. Fig. 4 is a horizontal sectional view taken on the line 4 4, Fig. 1, and looking in the direction of the arrow thereon.

Referring to the drawings, 1 designates the side of an ordinary box-car, and 2 the laterally-sliding door thereof. As these parts may be of any usual or preferred construction, detailed description thereof is deemed unnecessary.

The door is supported for lateral movement upon a plurality of balls 3, which work in a track 4, secured to the side of the car a short distance below the door-opening, the balls being borne upon by a shoe 5, secured to the

lower edge of the door and having a centrally-disposed downwardly-extending projection 6, which serves to divide the balls into separate series, whereby there will always be an even bearing for the door, thereby to insure easy movement and to prevent any tilting thereof. The shoe at each end is bent downward to present stops 7, (indicated in dotted lines in Fig. 1,) which operate to prevent the balls from leaving the track or race 4 when the door is being moved from side to side. As herein shown, there are three balls in each of the compartments between the projection 6 and stops 7; but it is to be understood that this number may be increased if found necessary or desirable. The track 4 is supported intermediate of its ends by two brackets 8, each comprising a curved arm 9 and a straight number 10, the latter being secured to the side of the car by screws or bolts 11. The ends of the track 4 are supported by two door-stops 12, which, as shown in Fig. 8, are approximately rectangular in section and are held assembled with the car-body by screws or bolts 13, rivets or bolts 15, passing through the ends of the track and through the inverted bottom portions 16 of the stops, serving rigidly to hold the ends of the track in a horizontal plane. As shown in Fig. 2, the track is U-shaped in cross-section, and its bottom is provided with a plurality of slots 17, which are provided to permit the escape of dirt and dust from the track, which would operate to prevent easy movement of the balls. The upper edge of the door is housed in a top guide 18, comprising an inner angle-plate 19, secured to the side of the car, and a double L-shaped cap-plate 20, secured to the plate 19 by bolts 21, carrying nuts 22, the plate 19 being secured to the car by screws or bolts 23 and serving to support the cap-plate 20. This manner of constructing the cap-plate 20 will be found thoroughly efficient in use; but it is to be understood that any other form of cap-plate found adaptable for the purpose may be employed in lieu of that shown. To facilitate moving the door from side to side, the same may be provided with an ordinary handle or handhold 24.

From the foregoing description it will be seen that although the device of the present invention is composed of but a compara-

tively few number of parts they are so arranged and so operate as to produce the highest results in use, and that by reason of the arrangement in which they are associated
5 with the car liability of damage or breakage from being struck by obstructions will be reduced to a minimum.

Having thus fully described my invention, what I claim as new, and desire to secure by
10 Letters Patent, is—

1. The combination with a car, of a U-shaped track housing a plurality of loose rollers and provided along its bottom with escape-openings, a top guide secured to the car,
15 a door working in the guide, and a shoe secured to the lower edge of the door and supporting it on the rollers.

2. The combination with a car, of a U-shaped track housing a plurality of loose roll-

ers and provided along its bottom with escape-openings, door-stops secured to the car and supporting the ends of the track, brackets secured to the car and supporting the intermediate portion of the track, a top guide secured to the car and to the door-stops, a door
25 working in the guide, and a shoe secured to the lower edge of the door and provided with a projection to divide the rollers into separate series and with end stops for limiting the lateral movement of the rollers.
30

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FRANCIS J. HANRAHAN.

Witnesses:

R. R. ZARR,

H. CLARE HENRIE.