F. MATHEWS.

DOOR HANGER.

APPLICATION FILED MAY 16, 1907.

Patented Apr. 6, 1909.

917,336.

Fig. 1.

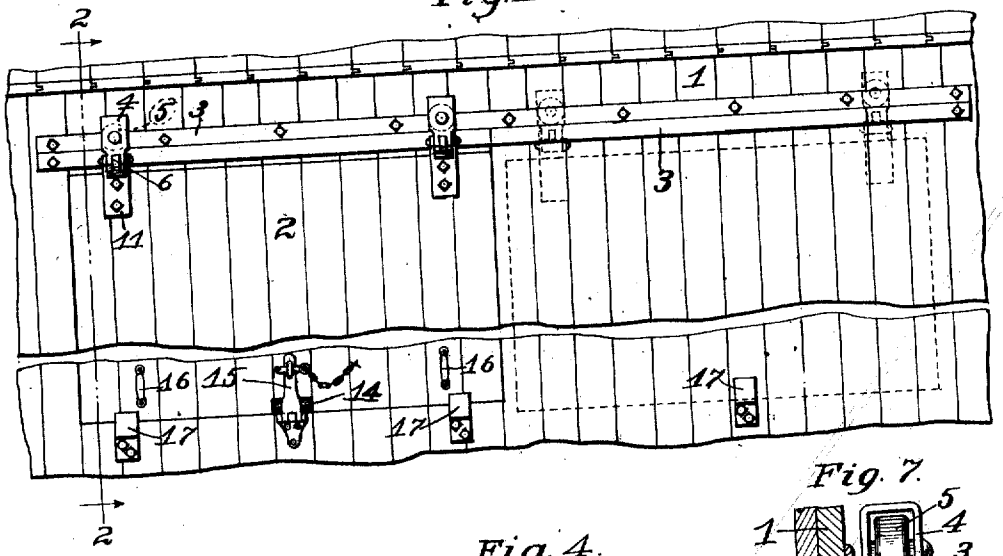


Fig. 2.

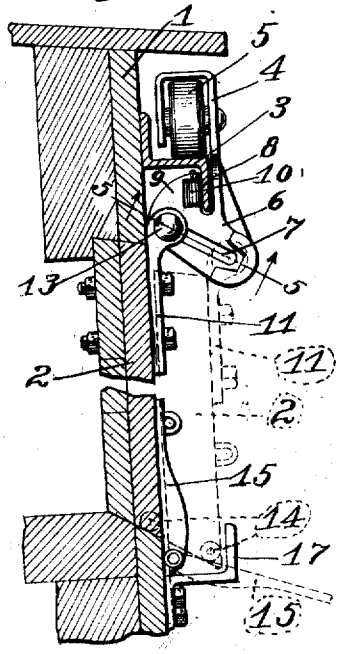


Fig. 4.

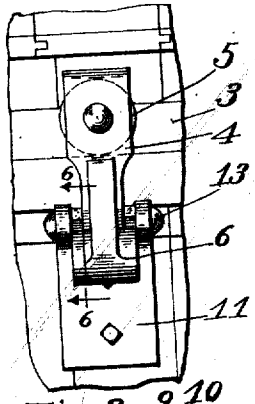


Fig. 3.

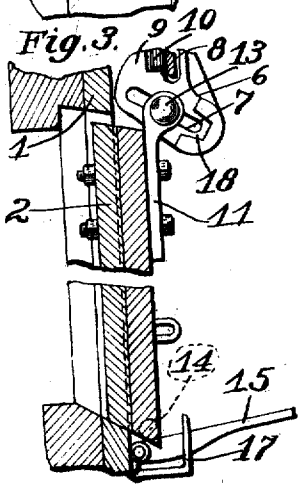


Fig. 7.

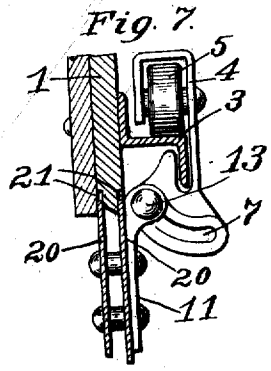


Fig. 5.

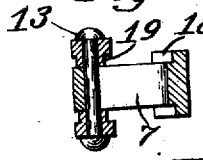
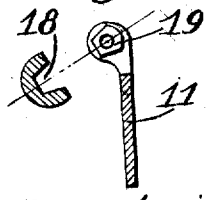


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRED MATHEWS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE Q & H CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DOOR-HANGER.

No. 917,336. Specification of Letters Patent. Patented April 6, 1909.

Application filed May 16, 1907. Serial No. 373,973.

To all whom it may concern:

Be it known that I, FRED MATHEWS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Door-Hangers, of which the following is a description.

My invention relates to that particular class of door hangers in which a track positioned near the door opening coöperates with sliding members provided with straps secured to and carrying the door. The door is moved out of or into position by moving the sliding members upon the track.

The object of my invention is to provide a simple, durable, economical, and effective device of the kind described.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings wherein like reference characters indicate like or corresponding parts; Figure 1 is a partial side elevation of a car or similar structure equipped with my invention. Fig. 2 is a section taken on line 2—2 of Fig. 1. Fig. 3 is a similar section showing the door partially removed from its seat. Fig. 4 is a fragmentary view showing an enlarged view of one of the hangers or sliding members. Fig. 5 is a section on line 5—5 of Fig. 2. Fig. 6 is a section on line 6—6 of Fig. 4 and Fig. 7 is a section showing a modification of the form illustrated in Fig. 2.

In the drawings, 1 represents the side of a car body or corresponding structure in which is formed a door opening provided with a door 2. The door snugly fits the opening so as to close the same when the door is in position.

3 is a track preferably placed above the door and extending transverse to the opening in the usual manner.

4 is a member constructed to slide upon the track 3.

In the preferred form a roller or truck 5 is provided to reduce friction between the parts. The said member is provided with a part 6 extending below the track having formed therein an upwardly and backwardly inclined slot 7.

Any preferred means may be employed to so engage the sliding members with the track that they shall not be disengaged. In the form shown, the track is provided with a downwardly extending flange 8 and the part 6 is provided with an inward shoulder 9 spaced from the outer wall of the member to receive flange 8 between them. If desired, an anti-friction roller 10 may be provided to contact with the inner side of the flange 8 to reduce friction. Straps 11—11 which are secured to the door are provided with pins 13 which are loosely positioned within the slots 7. It will be readily seen that as the door is moved along the track 3 into registry with the door opening by a lifting and backward movement, the pins 13 in the slots 7 will direct the movement of the door into the door opening, effectually closing the same. Any preferred means may be employed for securing the door in its closed position.

In the form shown, the upper and lower portions of the door casing are inclined downward and outward at an angle and the upper and lower edges of the door are correspondingly constructed to engage therewith. A corresponding construction may be continued at the side edges of the door also, if desired. It is obvious that the angle may be modified as required, and that the angle at the top and bottom of the door may not be the same. In the form shown in the drawings, the inclination at the top is less than that at the bottom, by means of which the top of the door does not engage with the wall of the opening until at the moment the door reaches its limit of movement. By this means friction between the parts is reduced to that of the bottom upon the lower part of the opening.

Any preferred means may be employed to aid in operating the door. As shown in the drawings, the door is provided at its lower edge and near the center thereof with a roller 14, and at a corresponding point on the wall of the structure below the door, a lever hasp is provided. It will be readily seen that as the door reaches the proper position before the opening by grasping the lever hasp 15, and forcing the same upward, it will contact with the roller 14, lifting the door and forcing the same backward into its seat in the opening, the upper end of the door being guided by the slot and pin connection described. The upper end of the

hasp may then be secured in the usual manner, as shown in Fig. 1. When it is desired to open the door, the hasp is disconnected, when by seizing the handles 16—16 the lower end of the door is drawn outward, which, aided by the force of gravity, causes the door to assume a position parallel to the side of the structure and outside of the plane thereof, as shown in dotted lines in Fig. 2. It may then be readily moved to one side upon the track, as shown in dotted lines in Fig. 1.

Any preferred means may be employed to prevent the lower end of the door swinging out. In the simple form shown in Figs. 1, 2, and 3, suitable brackets 17—17 secured to the body of the structure, extend upward outside of the outer face of the door when the latter is open, for this purpose. This may also be secured or aided by the form of the castings employed. As shown in Figs. 2, 3, 4, 5 and 6, the outer end of the part 6 is provided with an angular recess 18, while the pin 13 is provided with a corresponding extension 19. It will be apparent that when the door is opened, and the pin 13 moves down the slot 7, the parts 19 and 18 will be engaged in such manner as to prevent the lower edge of the door swinging outward farther than is permitted by such engagement. It is obvious that the relative positions of the parts 18 and 19 may be changed and the form or configuration of the parts also modified, without changing the result.

Fig. 7 is a modified form in which the door is formed with projecting plates 20—20, which, as the door is closed, seat in corresponding recesses 21—21 in the upper wall of the door opening. The slot 7 is therefore curved instead of extending in a straight line, as before, in order to permit the upward movement necessary in seating the door as described. Aside from the slight changes described, the operation is the same.

My invention is particularly adapted for use upon freight, refrigerator, and similar cars, but it is also adapted for use upon any other structure where similar results are desired.

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

1. Door hangers comprising a track, in combination with sliding members therefor, each provided with a part having an upwardly and rearwardly inclined slot formed therein, and door straps for said members, each provided with a pin loosely fitting in said slot, the slotted member and the pin being provided with coöperating engaging members when the pin is at its lower limit of movement to prevent the swinging of the door carried by the straps.

2. Door hangers, comprising a track with a downwardly extending flange at its outer side, in combination with sliding members therefor, each provided with anti-friction rollers riding upon the track, an inward extension 9 spaced from the wall of the member to receive the flange of the track, each of said members being provided with a part having an upwardly and rearwardly inclined slot formed therein, and door straps for said members each provided with a pin loosely fitting in said slot, the slot-member and the pin being provided with a complementary engaging means to prevent the swinging of the free edge of the door carried thereby.

3. The combination with a track located adjacent a door way, of members mounted to travel upon said track there being inclined slots formed in said members, members slidably mounted in said slots, a door supported by said members, and angular bosses carried by said slidable members and adapted to engage angular recesses of the slotted members when at their outward limit of movement to thereby prevent swinging of the door.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

FRED MATHEWS.

Witnesses:
EDWARD DAVID,
J. R. BAILY.