

I. JOHNSON.
DOOR HANGER.

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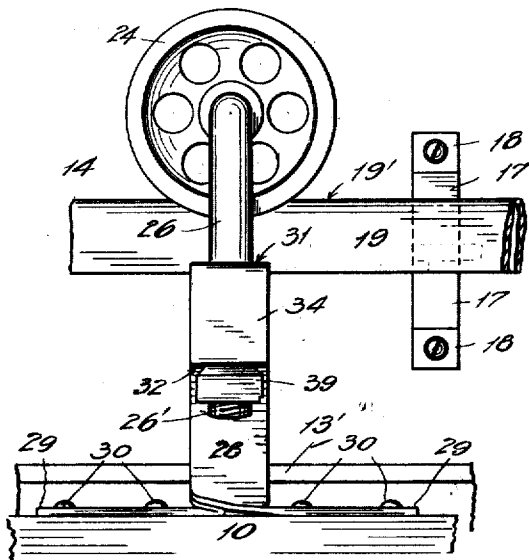


FIG. 1

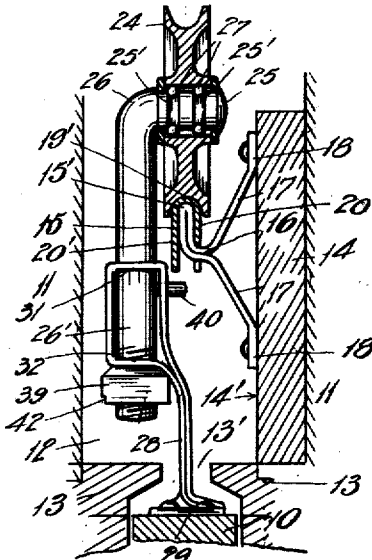


FIG. 2

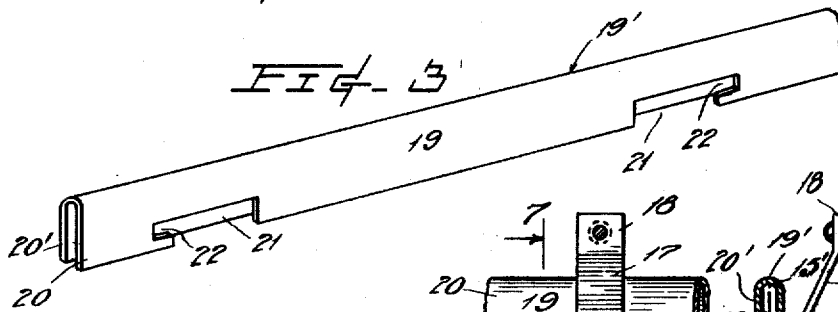


FIG. 3



FIG. 4

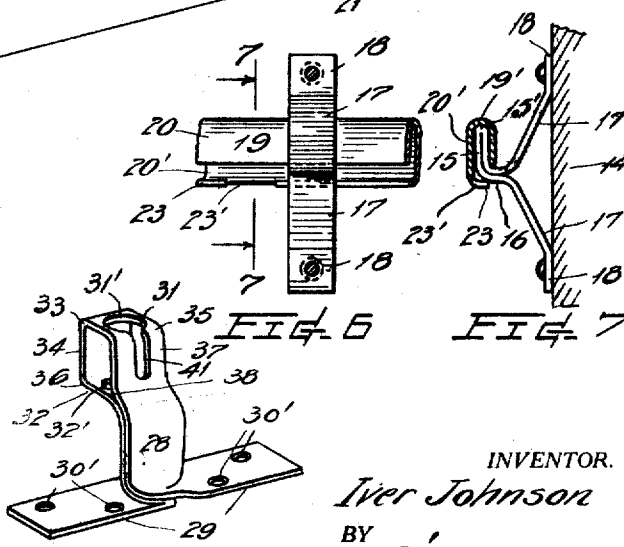


FIG. 5

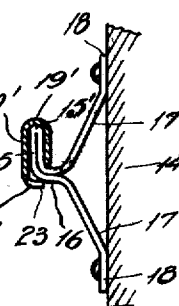


FIG. 6

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FIG. 7

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DOOR-HANGER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, IVER JOHNSON, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Door-Hangers, of which the following is a specification.

The object of this invention is the improvement in door-hangers so that the parts are simplified in their construction with a corresponding lessening in cost, and this, too, with an increased efficiency and convenience in installing the same.

The invention consists in the novel construction and adaptation of devices, as will be hereinafter described with reference to the accompanying drawings, wherein—

Figure 1 is a front elevation of a door-hanger with portions of the track therefor and associated parts with which employed. Fig. 2 is a vertical cross sectional view taken through Fig. 1. Fig. 3 is a fragmentary perspective view of a track rail such as shown in Figs. 1 and 2 and which I deem to be the preferred form of the same. Fig. 4 is a perspective view of a door hanger-member. Fig. 5 is a perspective view of the nut which is utilized in securing the hanger at adjusted lengths to accommodate the proper elevation and hanging of the door with respect to the track. Fig. 6 is a fragmentary front elevation of a track slightly modified from that illustrated in the preceding views, taken together with a supporting bracket in engaged position therewith. Fig. 7 is a cross sectional view through 7—7 of Fig. 6.

In the drawings, the reference numeral 10 designates an edgewise movable door.

11 are casing-members, or studding, in the wall over the door-opening and are spaced to afford a compartment 12 having at its lower side jamb pieces 13 arranged to provide a longitudinally extending slot 13'. Fixedly secured to the studs 11 upon one side of said compartment is a board or furring piece 14 to furnish a plane surface 14' which is parallel to the slot 13' and to which the track supporting brackets are secured. These brackets are each comprised of an upstanding part 15 connected by a horizontally arranged neck 16 with diverging legs 17 which terminate in feet 18 which are apertured to receive the screws whereby the bracket is rigidly secured to the board 14. The horizontal distance between the

outer faces of the bracket-feet 18 from the center of the part 15 is such as to locate the latter directly above the longitudinal medial line of the slot 13'. The brackets, 60 as exhibited in Figs. 2 and 7, are constructed of strap-iron and are severally doubled at the top 15' of the upstanding part and thence continue as two juxtaposed folds through the neck to their juncture with the legs 17 which are formed of single thickness. 65

The track is comprised of one or more lengths of rails. The rails 19 are formed of sheet metal which are formed by rolling or otherwise, to prevent the configuration of 70 an inverted U in cross section, that is to say, with a semi-circular bend 19' at the top and with two depending parallel webs 20, 20'. The distance between these webs is such as to accommodate the thickness of the 75 bracket part 15. In the construction illustrated in Figs. 1 and 3, the rearmost web 20 is provided at intervals along its lower edge with rectangular-shaped notches 21 of a height and length somewhat greater than 80 the respective thickness and width of the bracket neck 16 of the bracket, and at an end of each of the notches is a longitudinal recess 22 into which the necks are entered to engage the same with the rail. One of these 85 recesses at least should be disposed oppositely to the others to afford a means for locking the rail against longitudinal displacement.

In the modified construction of the rail, 90 Figs. 6 and 7, one of the webs, as 20', is made of greater depth than the other web and has its lower edge turned inwardly to afford a flange for a ledge 23. At intervals, gaps, 95 such as 23', are provided in the flange in order to introduce the upstanding parts of the respective brackets between the webs of the track, and are then moved to one side of the gaps in order that the under side of the bracket-necks will contact with the top 100 of the ledge to prevent the raising of the track from the brackets.

The hangers are each provided with a peripherally grooved wheel 24 which is 105 mounted for rotation on an axle provided by an arm 25 of a carrier 26. This arm is disposed horizontally and at right angles to the axis of a stem 26' which is made integral with the arm. Balls 27 seated in peripheral grooves 25' of the axle may advantageously be employed to minimize the friction ensuing at the wheel journal and thus 110

facilitate the rolling of the wheel in accomplishing the movements of the suspended door. Connection is had between the door and said carrier by a hanger member, which is shown detached in Fig. 4, and in operative position in Figs. 1 and 2. This member is provided with a shank 28 having at its lower end two oppositely directed feet 29 to furnish a seating upon the top of the door 10 and to which they are rigidly secured by screws 30 inserted through holes 30' provided. Above the shank the member is provided with a substantially rectangular shaped portion whose upper and lower walls 31 and 32 are provided with aligned apertures 31', 32' wherethrough the stem of the carrier is extended and then secured against withdrawal by an adjustment nut 39 engaging screw threads provided upon the stem 20 and bearing against the underside of the wall 32 of said member. The hanger member is desirably constructed of a flat bar which is formed to assume the shape in which it is illustrated in the various views, that is to say, at or about the midlength of the bar it is given a rectangular bend 33 whence extend walls 31 and 34 to other rectangular bends 35 and 36 bounding the remaining sides 32 and 37 of the upper rectangular portion of the said member, and from the corner 38, which is diagonally opposite the first named bend, the shank extends downwardly in a two-fold condition having their planes arranged correspondingly with that of the door, and at the bottom the ends of the bar are each given a partial turn and directed oppositely to obtain the feet 29, as before explained. In forming the hanger member the shank 28 is so formed as to have its longitudinal axis coincide with the axis of the rail thereabove, and the aforesaid rectangular upper portion is accordingly offset therefrom to have the apertures 31', 32' correspond with the offset stem 26' of the arm 25 on which is mounted the track wheel 24.

40 represents a stud projecting outwardly from the stem sufficiently far to extend beyond the adjacent web of the track for the purpose of preventing the derailment of the wheel through the interference of the rail with the upward movement of the stud should the door be raised or tilted upwardly. A slot 41 is desirably provided in the part 37 of the hanger member to allow the stud to pass therethrough at some distance below the top of the member and thus makes it possible to reduce the extreme height of the hanger.

The aforesaid nut 39 is desirably of quadrilateral shape and of a width so as to fit closely against the shank of said hanger member to secure the nut from turning. When the nut is being applied and adjusted the hanger member is temporarily elevated

to allow turning the nut. A slot 42 for a screw-driver is desirably provided in the underside of this nut.

In assembling the parts, the rail is first properly leveled and secured by the supporting bracket with the furring board 14. The carriers are now hung from the rail by engaging the grooved wheels over the same, whereupon the hanger-members which have meanwhile been secured to the door, are inserted into the compartment 12 and the depending stems of the carrier inserted through the apertures 31' and 32' to receive the nut 39 below the part 32. By now manipulating the nuts the lengths of the hangers may be adjusted to regulate the height and accuracy of the door-hanging. After the door is thus regulated the jamb-pieces 13 are secured in place.

Having described my invention, what I claim, is—

1. In a door-hanger, the combination with a track-rail comprising an inverted U-shaped plate, said rail being provided along the edge of one of its side webs with a plurality of notches with a recess extending longitudinally from each such notch, of a supporting bracket comprising a strap which is doubled to provide an upstanding part adapted to fit between the webs of the rail and having two legs, and a neck intermediate the upstanding part and the legs, said neck being adapted to be inserted into one of said rail notches and thence entered into the recess of the same.

2. In a door-hanger, the combination with a track-rail and supporting brackets therefor, of a track-wheel, a hanger member arranged to be rigidly secured to a door, a carrier for the wheel, said carrier being provided with a screw-threaded depending stem which extends through a portion of said hanger member, and an adjustment nut engaging said stem and arranged to bear against the hanger member.

3. In a door hanger, the combination with the track rail and the brackets therefor, of a hanger member constructed to be rigidly secured to a door, a carrier comprising a stem having a screw-threaded end and an arm integral with and at right angles thereto, a track wheel mounted on said arm, and a nut adapted to be screwed on the thread of said stem to adjustably secure the carrier to said member.

4. In a door-hanger, the combination of a track-rail comprising an inverted U-shaped plate having a plurality of notches along the edge of one of its side webs, a supporting bracket having an upstanding part to fit between the webs of said folded plate, said bracket and plate being arranged to interfit and lock the latter against independent vertical and longitudinal movements.

5. In a door hanger, the combination with

the track rail and the brackets therefor, of a hanger member constructed to be rigidly secured to a door, a carrier comprising a stem having a screw-threaded end and an arm integral with and at right angles thereto, a track wheel mounted on said arm, a nut adapted to be screwed on the thread of said stem to adjustably secure the carrier to said member, and a stud provided upon said stem and adapted to coact with said track-rail to prevent the derailment of said track wheel.

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