No. 855,182. PATENTED MAY 28, 1907.

B. D. JONES.

CAR DOOR HANGER.

APPLICATION FILED JAN. 8, 1907.

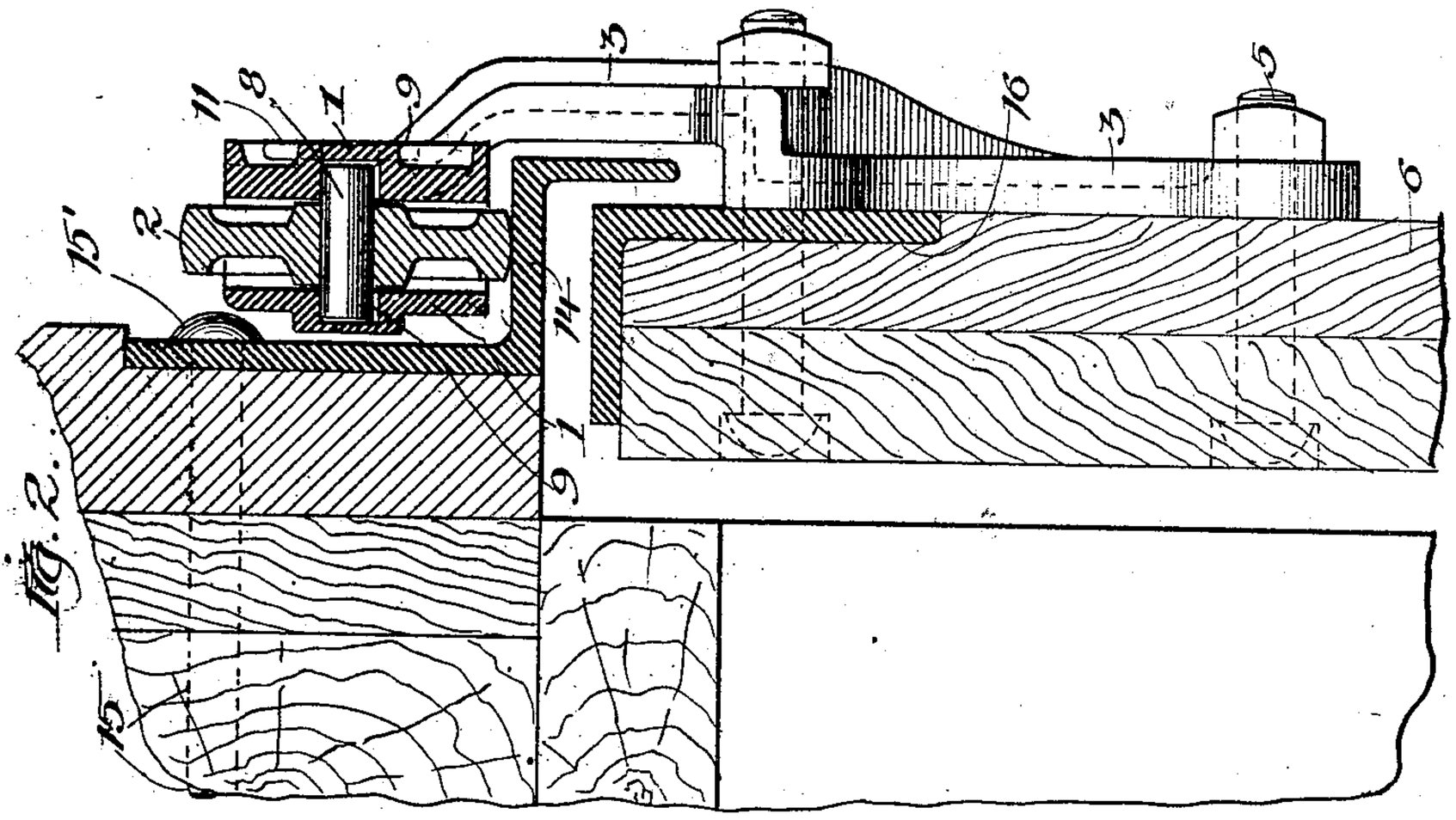

Fig. 2.

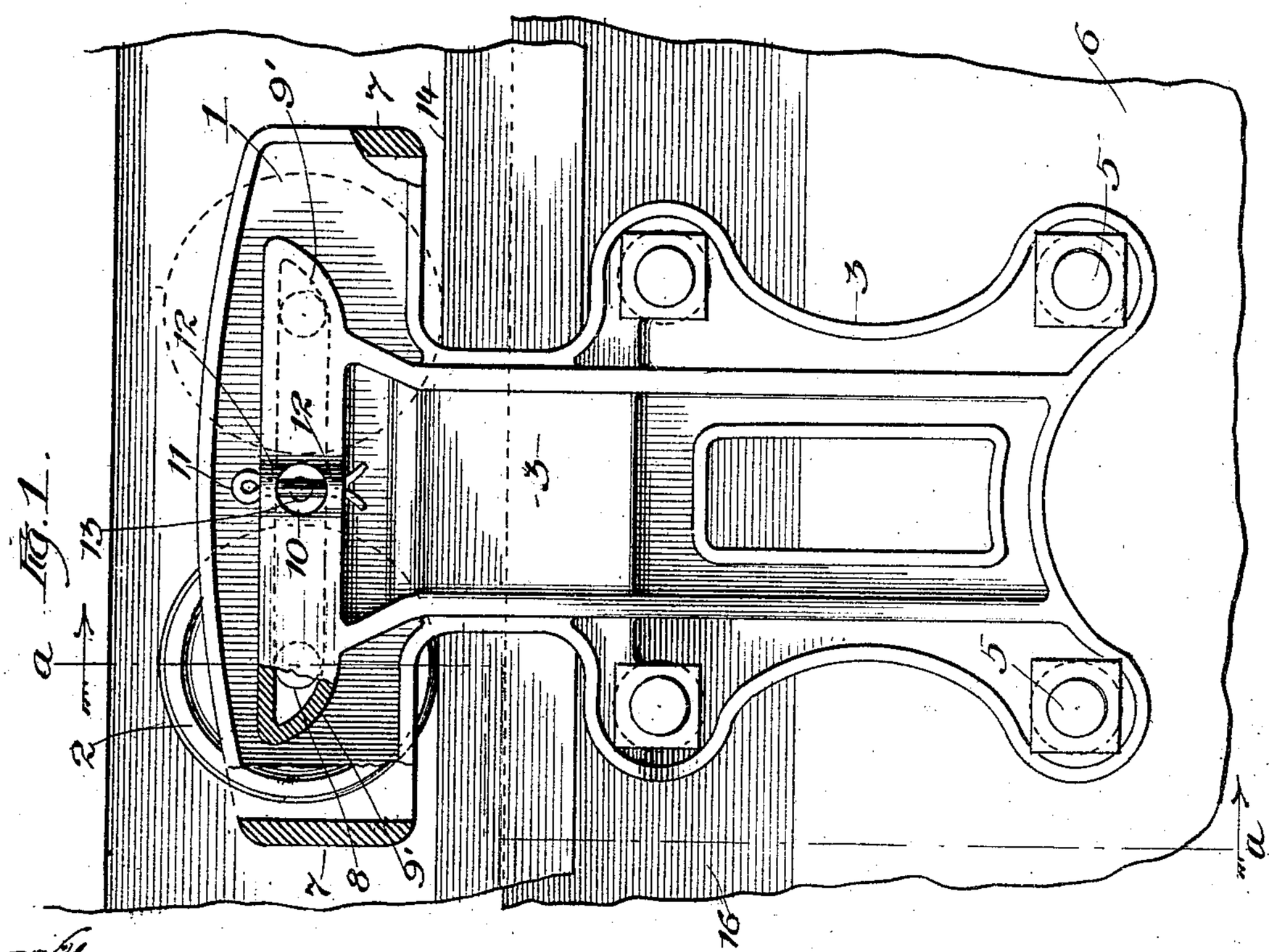

Fig. 1.

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UNITED STATES PATENT OFFICE.

BELDEN D. JONES, OF CHICAGO, ILLINOIS.

CAR-DOOR HANGER.

No. 855,182. Specification of Letters Patent. Patented May 28, 1907.

Application filed January 8, 1907. Serial No. 351,328.

To all whom it may concern:

Be it known that I, BELDEN D. JONES, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Car-Door Hangers, of which the following is a specification.

This invention relates to hangers for sliding doors, more especially for freight cars, and pertains to that class of door-hangers in which the spindles of the track-rollers are arranged also to roll within or upon suitable ways provided by the hanger itself.

Among the objects of the invention are, to provide a car-door hanger that will operate with a minimum degree of friction; to provide a car-door hanger in which the box or head within which the track-roller travels is formed with (preferably integral) closed ends; to provide a car-door hanger of such construction that the door to which it is attached may travel freely until it arrives at a certain distance from its fully open or fully closed position and will then move less freely, thereby preventing the usual banging of the car door against its stops when the car is being switched about; and in general, to provide a car-door hanger of improved, simplified, and cheapened construction.

The invention consists in the matters hereinafter described and particularly pointed out in the appended claims, and will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is an outside or front elevation, partly in section, of my improved car-door hanger, and Fig. 2 is a vertical transverse section thereof, on line *a*—*a* of Fig. 1, showing also a section of the trackway and a portion of the car door.

The body of the hanger comprises the upper, longitudinally slotted portion 1 in which travels the antifriction track-roller 2, and the downwardly extending bracket portion 3 having the bolt-holes for reception of the bolts 5 by which the hanger is secured to a car door, 6. The hanger-head, 1, is cast in one piece and overhangs the lower portion 3 in the usual manner. It is formed with closed ends, 7, connecting the front and rear sides 1 and 1, as clearly shown in Fig. 1.

The track-roller 2 is made with an axial bore. When assembling the parts of the hanger, this roller is dropped into the head 1 from above. The axis of the roller is formed by a roller-pin 8, which is of greater length than the hub thickness of the track-roller. For the reception of the projecting ends of said pin the front and rear walls 1 are formed with interior, longitudinal, parallel and opposite grooves 9, between which the roller-pin 8 travels freely. At their ends these grooves are gradually reduced in dimensions—preferably in vertical depth—as shown in dotted lines at 9′ in Fig. 1, for the purpose presently explained.

In order that the roller-pin 8 may be passed through the bore of the track-roller 2 after the latter has been placed between the walls of the head, the front wall 1 is provided, in vertical alinement with the horizontal groove 9, with a circular opening 10 of slightly larger diameter than the roller-pin; said pin being inserted through this opening into the hub of the roller. Preferably, the hub bore of the roller is made slightly larger than the roller-pin so that the latter will fit rather loosely; a tight fit being undesirable for several reasons, among which are that I intend the track-roller to be independently rotatable upon its pin, and moreover, it is desirable that said pin be easily removable from the hanger when necessary to remove it. Adjacent the opening 10, some suitable device is provided for preventing the roller-pin from being jarred out through said opening. The preferred retaining device consists of a split cotter-pin, 11, to receive which, the front face of the groove 9 is provided with a pair of vertically-perforated lugs 12, the perforations being drilled in such position that when the cotter-pin is in position its inner side will exactly touch the plane of the inner surface of said groove 9. This is very desirable, because, if the cotter-pin project inwardly beyond said plane the end of the roller-pin might be caught thereby; and if the cotter be set too far outwardly, the same end of the roller-pin might be caught by the inner edge of the circular opening 10. Just behind or in alinement with said opening 10, a smaller hole 13 is formed through the rear wall 1, so that when it is necessary to remove the roller from the hanger, a nail or the like may be inserted through said rear opening and the roller-pin driven out through the front opening. Previously, the hanger is to be detached from the door, the roller-pin moved into register with the openings, and the cotter withdrawn.

The track 14, on which the hanger travels, is in section, preferably, what is termed a

Z bar, and is so arranged that its web portion forms the track, one flange depends at the outer side of the track, and the upper flange is made of such width that the heads 15′ of the fastening-bolts 15 may lie principally above the inner wall of the hanger-head, as shown. Round-headed or carriage-bolts are better adapted for this position than square-headed bolts. The depending flange of this track-bar performs a double function in the structure. In the first place it constitutes a confining guard which prevents the top of the door from moving outwardly away from the side of the car, and prevents the rollers 2 (of the two hangers) from leaving their track. Secondly, said flange serves as a weathering strip, which to a large extent prevents the entrance of dust, snow and moisture-laden air into the car between the upper edge of the door and the door-opening.

Describing now the operation of the hanger: I prefer to make the roller-pin grooves 9 of such length that during the rolling travel of the roller-pin 8 upon the upper surfaces of said grooves, the peripheral motion of the track-roller 2 will be about 18 inches; therefore the car door will roll freely for about this distance before the roller-pin begins to bind in the reduced ends of the grooves. As soon as this binding occurs, the rotation of the roller-pin will of course be arrested, and consequently the further movement of the door in the same direction will be impeded to a certain extent by the friction between the roller and its fixed pin as it turns thereon. The reverse movement of the door will cause the roller to disengage the pin from the tight ends of the grooves.

The end walls 7 of the hanger-head are so spaced from the ends of the grooves 9 that when the roller is at either end of its travel it will be held out of contact with said end walls, hence will not be peripherally retarded or "braked" as is the case in a copending application filed by me, Serial No. 343,795.

The door is to be provided with two hangers, arranged near the opposite sides thereof in the usual manner.

I claim as my invention:

1. In a hanger for sliding doors, a bracket adapted for attachment to the door and provided with an integral head comprising front and rear walls and closed ends, a track-roller mounted within said head, a detachable roller-pin adapted to be passed axially through said roller, said front and rear walls being provided with longitudinal opposed bearing surfaces which rest upon the projecting ends of said roller-pin, one of said walls being provided with an opening located to permit the insertion of the roller-pin through the bore of the track-roller while the latter is in assembled position, and a removable closure for said roller-pin opening, the inner face of said closure being flush with the adjacent end of said roller-pin.

2. In a hanger for sliding doors, a bracket adapted for attachment to a door and provided with a head comprising front and rear walls and integral closed ends, a track-roller mounted within said head, a detachable roller-pin adapted to be passed axially through said roller, said front and rear walls being formed with longitudinal opposed bearing surfaces which rest upon the projecting ends of the roller-pin, one of said walls being provided with an opening in transverse alinement with a part of the path of movement of said pin, a removable closure for said opening, and an ejector opening opposed to said first named opening.

3. In a hanger for sliding doors, a bracket adapted for attachment to the door and provided with an integral head comprising front and rear walls and closed ends, a track roller mounted within said head, a detachable roller-pin adapted to be passed axially through said roller, said front and rear walls being provided with longitudinal opposed bearing surfaces which rest upon the projecting ends of said roller-pin, one of said walls being provided with an opening located to permit the insertion of the roller-pin through the bore of the track-roller while the latter is in assembled position, and a detachable locking member arranged to confine the roller-pin against endwise movement through said opening.

4. In a hanger for sliding doors, a hanger-head comprising a front wall, a rear wall and closed ends, said walls being formed with interior, longitudinal, opposed grooves, a roller-pin loosely retained by said grooves, a track-roller loosely mounted upon said roller-pin, said grooves being formed with converging end portions, one of said walls being provided with a suitably located opening to permit insertion of the roller-pin through the bore of the track-roller when the latter is in operative position, and a removable closure for said opening, the inner face of said closure being flush with the adjacent end of said roller-pin.

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Witnesses:
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