Feb. 12, 1935. G. G. GILPIN 1,990,542

RAILWAY CAR DOOR FIXTURE

Original Filed March 27, 1930 2 Sheets-Sheet 1

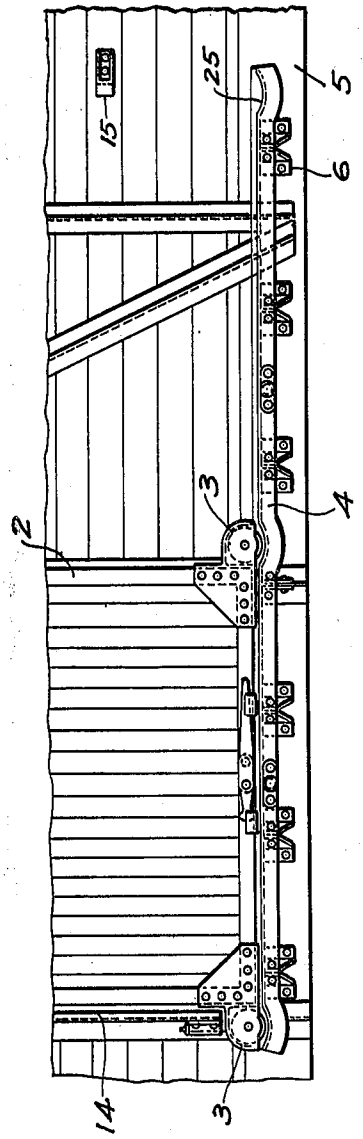


Fig. 1

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Fig. 2

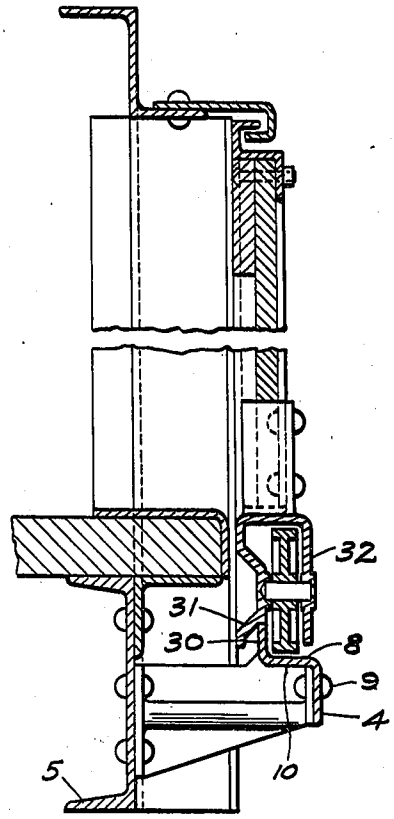
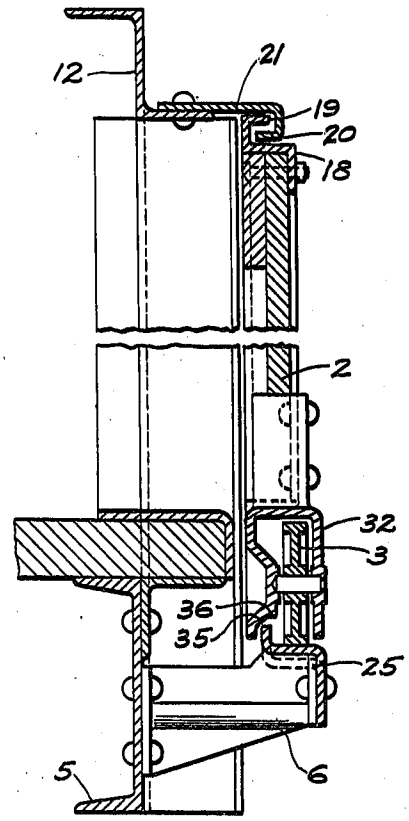


Fig. 3



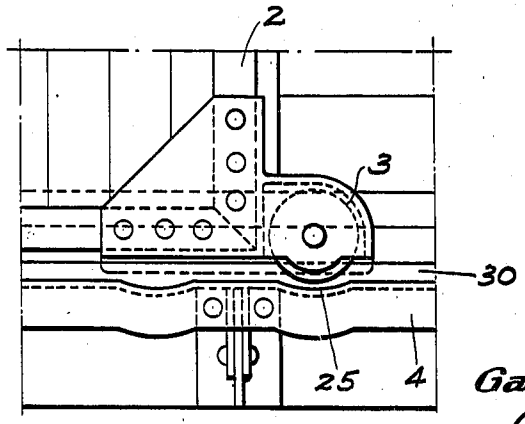


Fig. 4

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UNITED STATES PATENT OFFICE

1,990,542

RAILWAY CAR DOOR FIXTURE

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Original application March 27, 1930, Serial No. 439,398. Divided and this application February 23, 1933, Serial No. 658,213

4 Claims. (Cl. 16—99)

Side doors of railway freight cars are generally arranged to slide horizontally to open or close the door opening and anti-friction rollers are provided between the door and the supporting element to reduce the effort required to move the door. This inertia of such a door caused by the sudden stopping or starting of the car bangs or slams it against the front or back stop causing damage to the car and the door and resulting in a leaky car. Even if the door is locked such inertia causes considerable strain upon the locking mechanism. An object of my invention is to transfer the weight of the door from the anti-friction rollers to a rigid part of the door and thence directly to the track so that the tendency of the door to move longitudinally of the track will be resisted by the friction between such rigid part of the door and the track, thereby retaining the door in a predetermined position. It is desirable to retain the door in a closed position or in full open position; however, my arrangement can be varied to retain the door in any position therebetween. The increased weight of the doors caused by the metallic reinforcements used thereon and the use of all steel doors has increased the necessity for such an arrangement.

Another object of the invention is to provide a construction wherein the inertia of the door, due to the movement of the car, is transferred from the locking or holding mechanism to a track positioned below the car.

Another object of the invention is to provide a mechanism which not only transfers the weight of the door from the door roller to a door track, but also moves the door toward the car when the door approaches the closed position or any other predetermined position.

In the drawings:

Fig. 1 shows a typical railway car door provided with my improved door fixtures.

Figs. 2 and 3 show enlarged vertical sections of detail constructions.

Fig. 4 shows the relation of the door and the track.

In the form of my invention illustrated the track is of substantially Z-section and comprises a substantially horizontal tread 8, an upwardly projecting flange 30 and a depending flange 4. The brackets 6 are mounted upon the car, preferably to side sill 5, and are secured to the depending flange 4 by the rivet 9 and are provided with a portion 10 upon which the horizontal tread 8 of the track rests and is supported thereby. By this arrangement a smooth tread is provided. If the tread is riveted (or bolted) to the bracket the rivet head (even though countersunk) would interfere with the rollers 3.

The door is provided with rollers 3 preferably mounted in roller brackets 32 and a depending arm 31 extending behind the upwardly projecting flange 30 of the track to retain the rollers 3 in engagement with the track.

The tread 8 of the track is provided with interrupted portions or depressions 25 of sufficient depth to allow the door to move downwardly when the rollers 3 are moved to a position over the interrupted portions 25 of the tread until the door engages the track, preferably a shoulder 36 on the depending arm 30, and supports the weight of the door independently of the rollers, and frictionally resists the movement of the door longitudinally of the track.

The depending arm 30 is preferably provided with an inclined surface 35 so that as the rollers are being moved over the interrupted portions of the tread, these inclined surfaces engage the upwardly projecting flange 30 of the track and move the door toward the car. It is desirable to move the door toward the car when it is in closed position to reduce the possibility of snow, sparks, etc., from entering the car between the door and associated parts of the car. It is also desirable to move the door away from the car as it is being moved so as to increase the clearances between the door and the car body.

Fig. 4 is an enlargement of a part of Fig. 1 and shows the relation of the door, roller and track.

The arrangement may be designed to relieve the rollers of the weight of the door at any predetermined position or positions. I prefer, however, to have the roller relieved of the weight of the door when the door is in closed position and also when in full open position.

A typical arrangement of the upper part of the door is shown in Fig. 3, wherein the top rail 18 is provided with an outwardly projecting flange 19 which overlies an inwardly projecting flange 20 forming a part of the hood 21, which hood is secured to the side plate 12 of the car. This door is limited in its forward movement by the front stop 14, and in its backward movement by the back stops 15.

The broad features of providing the tread with interrupted portions to relieve the rollers of the weight of the door is disclosed and claimed in my application Serial No. 588,684, filed January 25, 1932, (which matured into Patent No. 1,902,772 on March 21, 1933) which is a division of my application Serial No. 439,398, filed March 27, 1930.

The accompanying drawings illustrate the pre-

ferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof, within the scope of the claims, will occur to persons skilled in the art.

This is a division of my co-pending application, Serial No. 439,398, filed March 27, 1930.

I claim:

1. In a railway car having a track arranged to engage rollers supporting a door; a track having a substantially horizontal tread, an upwardly projecting flange, and a depending flange, brackets mounted upon the car secured to said depending flange having a portion supporting said tread, said tread having interrupted portions of sufficient depth to allow the door to move downwardly when the rollers are moved to a position over said interrupted portions of the tread until the door engages the upwardly projecting flange and supports the weight of the door independently of the rollers.

2. In a railway car having a track arranged to engage rollers supporting a door; a track having a substantially horizontal tread, an upwardly projecting flange, and a depending flange, an arm on the door extending behind said upwardly projecting flange and provided with a shoulder, said tread having interrupted portions of sufficient depth to allow the door to move downwardly when the rollers are moved to a position over said interrupted portions of the tread until said shoulder engages said upwardly projecting flange and supports the weight of the door independently of the rollers.

3. In a railway car having a track arranged to engage rollers supporting a door; a track having a substantially horizontal tread, an upwardly projecting flange, and a depending flange, an arm on the door extending behind said upwardly projecting flange and provided with a shoulder and inclined surface, said tread having interrupted portions of sufficient depth to allow the door to move downwardly when the rollers are moved to a position over said interrupted portions of the tread until said shoulder engages said upwardly projecting flange and supports the weight of the door independently of the rollers, said elements associated and arranged so that as the rollers are being moved over said interrupted portions of the tread said inclined surface engages said upwardly projecting flange and moves the door toward the car.

4. In a railway car having a track arranged to engage rollers supporting a door; a track having a substantially horizontal tread, an upwardly projecting flange, and a depending flange, brackets mounted upon the car secured to said depending flange having a portion supporting said tread, an arm on the door extending behind said upwardly projecting flange and provided with a shoulder and inclined surface, said tread having interrupted portions of sufficient depth to allow the door to move downwardly when the rollers are moved to a position over said interrupted portions of the track until said shoulder engages said upwardly projecting flange and supports the weight of the door independently of the rollers, said elements associated and arranged so that as the rollers are being moved over said interrupted portions of the tread said inclined surface engages said upwardly projecting flange and moves the door toward the car.

GARTH G. GILPIN.