March 21, 1933. G. G. GILPIN 1,902,772

RAILWAY CAR DOOR FIXTURE

Original Filed March 27, 1930 2 Sheets-Sheet 1

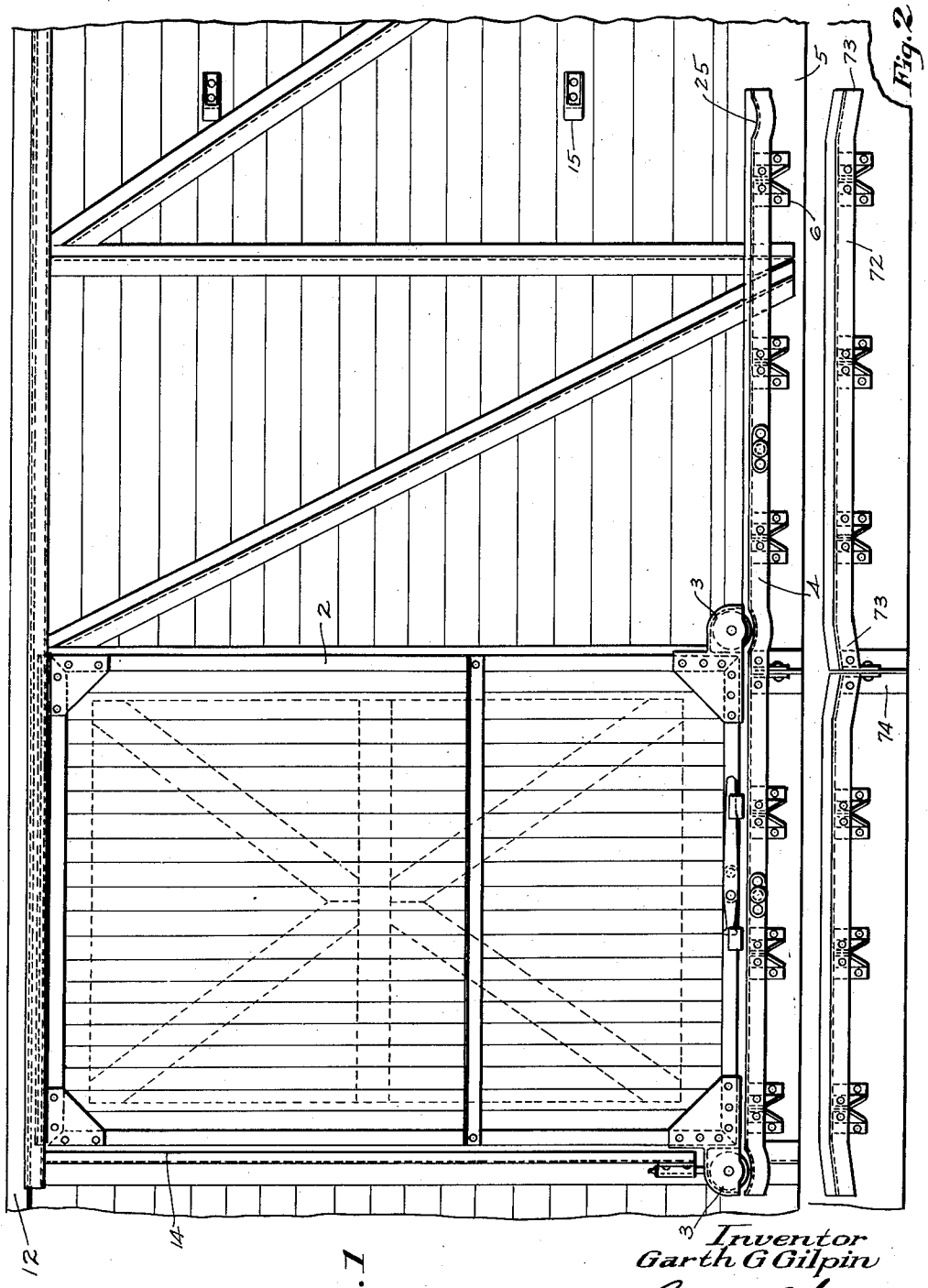


Fig. 2

Fig. 1

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Fig. 3

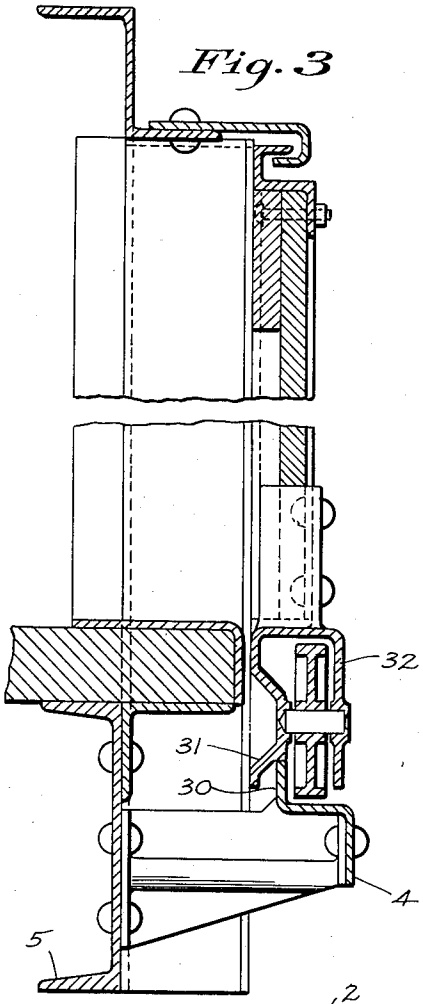
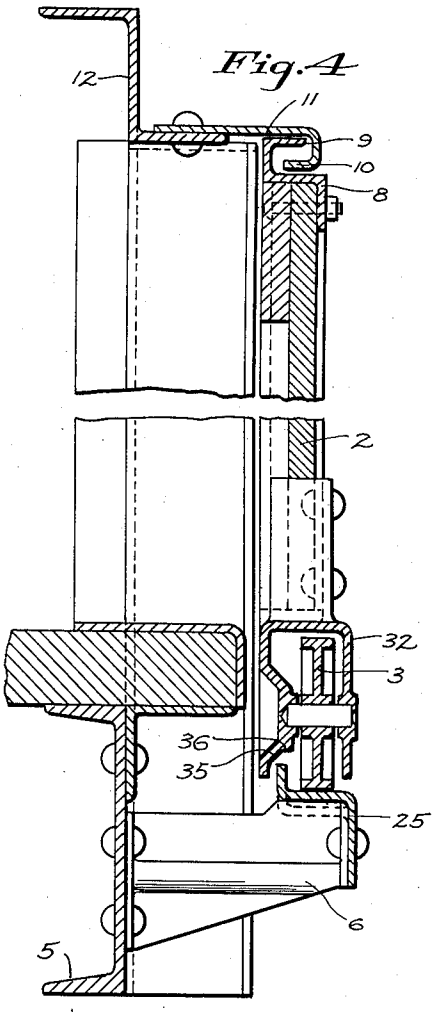


Fig. 4



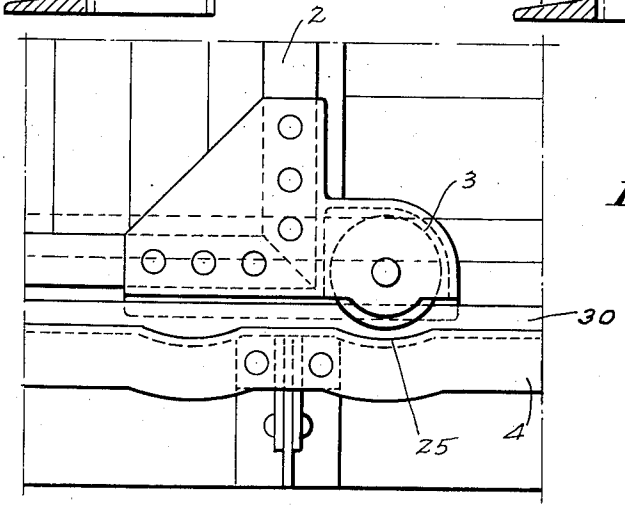


Fig. 5

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UNITED STATES PATENT OFFICE

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RAILWAY CAR DOOR FIXTURE

Original application filed March 27, 1930, Serial No. 439,398. Divided and this application filed January 25, 1932. Serial No. 588,684.

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. The 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 door.

In the drawings:

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

Fig. 2 shows a modified form of door track.

Figs. 3 and 4 show enlarged vertical sections of detail constructions.

Fig. 5 shows the relation of the door and the track.

In the drawings Figs. 1, 3, 4 and 5 show a typical railway car side door and the associated parts of the car wherein the door 2 is provided with rollers 3 which run along the tread of the track 4 which is mounted upon the car below the door and is supported upon the side sill 5 of the car by brackets 6. The upper part of the door is retained adjacent the car and is provided with some water-proofing means. A typical arrangement of the upper part of the door is shown in Fig. 4, wherein the top rail 8 is provided with an outwardly projecting flange 9 which overlies an inwardly projecting flange 10 forming a part of the hood 11, which hood is secured to the side plate 12 of the car. The door is limited in its forward movement by the front stop 14, and in its backward movement by the back stops 15.

The track is provided with interrupted portions, or depressions 25, so positioned that the rollers on the door are opposite or below these interrupted portions when the door is in a predetermined position or positions so that the track (or at least the tread thereof) is relieved of the weight upon the roller, which weight is automatically transferred from the roller to the shoulder 36 of the depending arm 31 of the roller bracket 32 which engages portion 30 of the track 4 so that the tendency of the door to move longitudinally of the track is frictionally resisted. In other words, the weight of the door is supported by the track independently of the rollers. The depending arm 31 extends behind the upstanding flange 30 of the door track 4 and retains the rollers in engagement with the tread.

An inclined surface 35 may be provided on the roller bracket 32 which engages a part of the track or other car part so as to move the door toward the car at about the same time the weight of the door is shifted from the roller. 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. 5 is an enlargement of a part of Fig. 1 and shows the relation of the door, roller and track.

Fig. 1 shows a track 4 formed of one or more sections provided with depressions 25 to relieve the rollers of the weight of the door at predetermined positions, whereas Fig. 2 shows a modified construction of the track 72 wherein the ends 73 of the aligned sections are spaced apart and preferably downwardly deflected at their adjacent ends to form the depressions or interruptions of the track. The ends of the end sections are also preferably downwardly deflected to provide interrupted portions of the tread of the track. The bracket 74 supports the adjacent deflected ends of the track sections.

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 fully open position.

The accompanying drawings illustrate the preferred 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, a track having a tread arranged to engage rollers supporting a door and a member on the door positioned over the track but out of engagement therewith, 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 member engages said track and supports the entire weight of the door upon the track independently of the rollers.

2. In a railway car, a track having a tread arranged to engage rollers supporting a door and a member on the door positioned over the track but out of engagement therewith, 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 member engages said track and supports the entire weight of the door upon the track independently of the rollers, and frictionally resists movement of the door longitudinally of the track when the door is in said position, said interrupted portions of the tread so disposed as to retain said door in full open position and closed position.

3. In a railway car, a track having a tread arranged to engage rollers supporting a door which are mounted in brackets secured to the door over the track but out of engagement therewith, 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 brackets engage said track and support the entire weight of the door upon the track independently of the rollers and frictionally resist movement of the door longitudinally of the track when the door is in said position.

4. In a railway car, a track having a tread arranged to engage rollers supporting a door and a member on the door positioned over said track but out of engagement therewith, 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 member engages said track and supports the entire weight of the door upon the track independently of the rollers, said track comprising a plurality of alined sections having downwardly inclined treads at their ends forming said interrupted portions.

GARTH G. GILPIN.