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RAILWAY-CAR-BRAKING MEANS FOR GRAVITY-YARDS AND THE LIKE.


To all whom it may concern:

Be it known that I, EDWARD H. FRANK, a citizen of the United States, residing at Centralia, in the county of Marion and State of Illinois, have invented a new and useful Railway-Car-Brazing Means for Gravity-Yards and the like, of which the following is a specification.

This invention relates to railway car braking means especially designed for use in gravity yards or “hump” yards where it is necessary to provide some means for retarding the movement of the cars when reaching certain points upon the traffic rails. One means heretofore employed for this purpose has been an arrangement of wheel gripping rails mounted to slide toward the traffic rails so as to grip upon those portions of the wheel flanges projecting below the treads of the traffic rails. These slide believable objectionable because it has been possible for them to engage only very small areas of the car wheels, thus becoming inefficient as braking means. They have also been found objectionable because stones and the like becoming lodged between the gripping rails and the traffic rails have interfered seriously with the proper operation of the braking means.

One of the objects of the present invention is to so mount the wheel gripping rails as to enable them to engage the car wheels at points above the treads of the traffic rails on which they are mounted, thus presenting extensive areas to the gripping action of the rails with the result that a better braking action is obtained than would otherwise be the case.

A further object is to provide wheel gripping rails so mounted that the operation thereof will not be interfered with by any ordinary stones or other hard objects which may become lodged between the traffic rails and the wheel gripping rails.

Another object is to provide improved means for actuating the wheel gripping rails, whereby pressure will be applied simultaneously to the wheels at both sides of a car.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings:—Figure 1 is a plan view of portions of traffic and wheel gripping rails having the present improvements combined therewith, the wheel gripping rails being shown in active or gripping positions. Fig. 2 is a section on line A—B Fig. 1. Fig. 3 is an enlarged section on line C—D Fig. 1. Fig. 4 is an elevation of the meeting end portions of two gripping rails and showing the means employed for fastening them together. Fig. 5 is a section on line E—F Fig. 4. Fig. 6 is a plan view of a modified means for actuating the gripping rails.

Referring to the figures by characters of reference 1 designates the traffic rails and wherever wheel gripping rails are used along the traffic rails, chairs 2 are extended under said traffic rails at desired intervals, each chair having a lip 3 adapted to engage the inner base flange of the traffic rail and having a threaded stem 4 extending outwardly beyond the outer base flange of the rail. The chair is slidable engaged by a removable jaw 5 adapted to overhang the outer base flange of the traffic rail and nuts 6 engage the threaded stem 4 and constitute means whereby the base of the rail 1 can be gripped tightly between the lip 3 and the jaw 5. An arm 7 is extended inwardly from each chair 2 and is pivotally engaged by a link 8 the free end of which is provided with a seat 9 having a recess 10 along one side thereof. The links 8 adjacent each traffic rail 1 support wheel gripping rails 11 the bases of which are bolted or otherwise secured to the seats 9, one of the flanges of the gripping rail being seated in the recesses 10.

Each link 8 has a socket 12 in which is seated a ball 13 at one end of a connecting link 14, this connecting link being attached by a ball and socket joint 15 to a lever 16. The lever 16 is extended through a block 17 to which it may be secured in any suitable manner, as by means of bolts 18. Block 17 has a stem 19 depending therefrom and piv-
totally mounted in a bearing plate 20 which may be secured to one of the ties 21 of the track.

It is to be understood that a gripping rail 5 is arranged adjacent each of the traffic rails and that each gripping rail can be of any length desired. In practice it will often be desirable to make these gripping rails eighty feet or more in length. The sections of the gripping rails may be fixedly connected in any manner desired. For example, and as shown in Figs. 4 and 5, fish plates 22 and 23 may be arranged at opposite sides of the meeting portions of the sections of the gripping rail, there being bolts 24 extending transversely through the fish plates and rail sections. The fish plate 23 is provided at one end with spaced inturned hooks 25 and, at its other end, with an outwardly offset tongue 26 having an opening 27. A locking plate 28 is used in connection with the fish plate 23 and is provided at one end with an offset tongue 29 adapted to be inserted into the opening 27. The other end of the locking plate 28 has a hooked portion 30 adapted to rest between the hooked portions 25, the same being bent oppositely thereto so as to permit the insertion of a locking pin 31 between the hooked portions 25 and 30.

While this locking pin 31 is in place, the locking plate 28 cannot be removed. This locking plate is formed with angular openings 32 in which are seated the nuts 33 engaging bolts 24, said nuts thus being held against displacement. It is designed to place the fish plate 23 and the locking plate 28 upon that side of the gripping rail nearest the traffic rail so that when the gripping rail is moved to active or braking position, the nuts 33, the projecting threaded ends of the bolts 24, and the locking plate 28 will all be extended downwardly where they will not become hung on the car wheels or any part depending from the passing cars.

Extending longitudinally between the wheel gripping rails is a rod 34 and secured to this rod between every two opposed levers 16 is a sleeve 35 having rods 36 pivotally connected to it and extending to the adjacent lever 16. Thus when the rod 34 is shifted longitudinally in one direction, all of the levers of the wheel gripping rails coupled to said rod will be swung upwardly and outwardly about the pivotal connections between arms 7 and links 8 with the result that the heads of the wheel gripping rails 11 will be thrust laterally against the inner sides of the car wheels at points above the treads of the rails 1. In Fig. 3, one of the wheel gripping rails has been shown elevated and almost in contact with a wheel. As has been mentioned, a number of links 8, levers 16, and their connections are provided along each of the rails 11 and as all of the levers 16 of one pair of rails 11 are connected to one rod 34, it will be obvious that the movement of this rod 34 in one direction will result in the simultaneous application of both rails 11 of the pair against the inner sides of the car 70 wheels. By moving the rod 34 in the opposite direction, the rails 11 will be permitted to swing downwardly away from their active positions. By mounting the rails 11 so that they will swing upwardly 75 there is no danger of articles getting between the rails 1 and 11 and preventing shifting of said rails 11. Furthermore by thus mounting the wheel gripping rails, they are free to engage the car wheels at points 80 some distances above the treads of the rails 1 so that extensive friction surfaces are thus presented and the braking action of the apparatus is rendered more efficient.

Any means desired may be employed for shifting the rod 34. For example, one end of the rod may be connected to a lever 37 connected to a piston rod 38 extending beyond a cylinder 39. By directing pressure into one end of the cylinder, the piston 90 therein will pull through rod 38 upon lever 37 and thus cause the rod 34 to be shifted longitudinally to apply the wheel gripping rails as heretofore pointed out. Instead of utilizing pressure operated means for actuating the wheel gripping rails, a hand lever 40 may be employed, as shown in Fig. 6, this hand lever being secured to a crank shaft 41 and there being a link 42 connecting the crank of said shaft to the lever 37. 100 A standard 43 may be provided with a recess 44 for receiving lever 40 when the wheel gripping rails are in one position and this standard may be provided with a lock 45 whereby when the lever 40 is thrust into the recess 44, it will be automatically fastened therein. It is to be understood of course that in a gravity yard it is the practice to use a number of sets of gripping rails at different points along the traffic rails and it is the present intention to provide an operating means such as described for each set or pair of gripping rails. By providing pressure operated mechanism the different gripping rails at various points in the gravity yard can be readily operated by a person located at a central point.

What is claimed is:

1. The combination with traffic rails, of wheel gripping rails, extended therealong 120 and normally spaced therefrom, and means for swinging the wheel gripping rails upwardly and laterally to engage the sides of car wheels on the traffic rails.

2. The combination with traffic rails of wheel gripping rails parallel therewith, an actuating member extending between the gripping rails, and means operated by the movement of said member in one direction, for simultaneously swinging the gripping
rails upwardly and outwardly to engage the inner faces of car wheels at points above the traffic rails.

3. The combination with traffic rails, of links pivotally mounted between and adjacent said rails, means for tying said links to the bases of the traffic rails, gripping rails carried by the links and normally supported in upstanding positions at points removed from the traffic rails, and means for simultaneously shifting the links to swing the gripping rails upwardly and outwardly to points above the traffic rails.

4. The combination with traffic rails, of chairs extending under each of the rails, rail engaging means upon each chair, a jaw slidably engaging each chair, said jaw being adapted to engage the outer base flange of the adjacent rail, means adjustably engaging the chair for binding the jaw upon the engaged rail, links pivotally connected to the respective chairs, each link having a seat, gripping rails secured upon the seats, and means for simultaneously swinging the gripping rails upwardly and outwardly to engage car wheels at points above the traffic rails.

5. The combination with traffic rails, of chairs extending under each of the rails, rail engaging means upon each chair, a jaw slidably engaging each chair, said jaw being adapted to engage the outer base flange of the adjacent rail, means adjustably engaging the chair for binding the jaw upon the engaged rail, links pivotally connected to the respective chairs, each link having a seat, gripping rails secured upon the seats, and means for simultaneously swinging the gripping rails upwardly and outwardly to engage car wheels at points above the traffic rails, said means including an actuating rod, levers between the rod and the gripping rails, link connections between said rod and the respective levers, and connections between the levers and the adjacent rail supporting links.

6. The combination with a traffic rail, of a plurality of links, means for tying the links to the traffic rail, a wheel gripping rail fixedly connected to the links and made up of abutting sections, a connection between the sections of the rail, said connection including opposed fish plates, bolts extending through the fish plates and rail, a locking plate having nut receiving openings, and cooperating means upon the ends of one of the fish plates and of the locking plate for holding said locking plate against displacement relative to the fish plate.

7. The combination with a traffic rail, of a plurality of links, means for tying the links to the traffic rail, a wheel gripping rail fixedly connected to the links and made up of abutting sections, a connection between the sections of the rail, said connection including opposed fish plates, bolts extending through the fish plates and rail, a locking plate having nut receiving openings, cooperating means upon the ends of one of the fish plates and of the locking plate for holding said locking plate against displacement relative to the fish plate, and means for swinging the gripping rail upwardly and outwardly to position the head of the rail against the inner side of a wheel passing along the traffic rail and to position the locking plate and the parts engaged thereby under the gripping rail.

8. The combination with a traffic rail, of a chair extending thereunder, a lip on the chair and overhanging one of the base flanges of the traffic rail, a jaw slidably mounted on the chair and engaging the other base flange of the rail, a threaded stem extending from the chair, means adjustably engaging the stem for binding the jaw against the rail, an arm extending from the chair, a link pivotally connected thereto and having a rail receiving seat, a gripping rail secured to said seat, and means for swinging the link to move the gripping rail upwardly and laterally to bring the head thereof against the inner side of a wheel upon the traffic rail.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD H. FRANK.

Witnesses:

HERBERT D. LAWSON,

R. L. PARKER.