

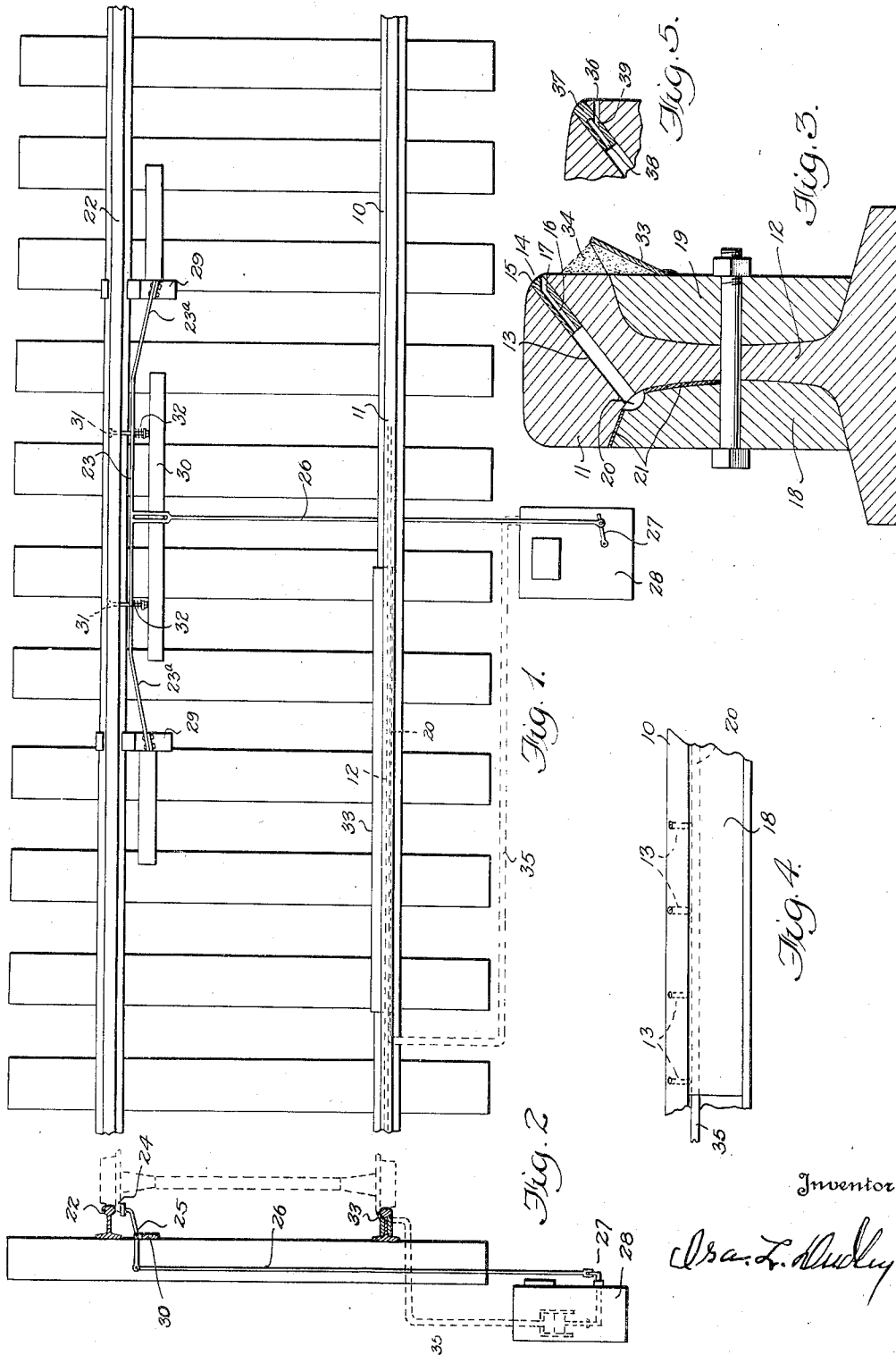
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FLANGE AND RAIL LUBRICATOR

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UNITED STATES PATENT OFFICE

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FLANGE AND RAIL LUBRICATOR

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11 Claims. (Cl. 184—3)

My invention relates generally to lubricating devices for a railroad track and presents an improvement over the device disclosed in my co-pending application, Serial No. 374,412, filed June 28, 1929 of which this application is in part a continuation.

The device herein disclosed is to be applied to a railway track for lubricating the gauge side of the super-elevated rail on curves and for switch points and the like. In the operation of such devices it has been found that a lateral stroke obtained from the flange of a traversing vehicle wheel is preferable for the operation of a pumping device for supplying lubricant in the path of a wheel. Exceeding difficulty has heretofore been experienced in conducting the lubricant to the appropriate portion of a vehicle wheel flange whereby it may be subsequently delivered to the critical point of the railway track.

The object of my invention is to provide a railway track lubricating device which is operated by lateral thrust from the flanges of passing vehicle wheels.

Another object of my invention is to provide a rail whereby lubricant may be conducted there-through to the flange of a vehicle wheel.

A more specific object of my invention is to provide a method of adapting a rail of a railway track for use with a lubricating device.

A further object of my invention is to provide a method of lubricating a railway track wherein excess lubricant delivered at one time may be subsequently used.

Other objects of the invention will become readily apparent to those skilled in the art when the following description is considered in conjunction with the accompanying drawing wherein like characters of reference denote the same parts and in which:

Fig. 1 is a plan view of a section of railway track provided with my lubricating device.

Fig. 2 is an end view of the railway track shown in Fig. 1 with the pumping mechanism in its operated position.

Fig. 3 is a sectional view of one of the rails showing particularly the arrangement of lubricant conducting bores therein.

Fig. 4 is a view in side elevation of a rail showing the arrangement of ducts for conducting lubricant.

Fig. 5 is a modification of the delivering bore as shown in Fig. 3.

The reference character 10 denotes one rail of a railway track which rail is of the conventional configuration comprising a head 11 and

a web 12. A plurality of bores 13 extend diagonally through the head 11 of the rail and terminate at the inner or gauge side ball 14 thereof. In the inner ends of these bores a plug 15 is inserted which plug is provided with two intersecting bores 16 and 17 respectively. The bore 17, it will be noted, extends horizontally whereas the bore 16 is co-axial with the bore 13 of the rail. Adjacent the web 12 of the rail, a pair of plates 18 and 19 are disposed on either side thereof and the plate 18 has in its upper corner a longitudinally extending groove 20 which, as clearly illustrated in Fig. 3, extends along the juncture of the head 11 and the flange 12 of the rail and thereby forms a longitudinally extending duct 20 at this point. It is to be noted that the duct 20 extends along and interconnects the bores 13 which extend diagonally through the rail head 11 as hereinbefore stated. A pair of gaskets 21 are disposed on each side of the duct 20 and thereby form a fluid-tight connection between the plate 18 and the rail 10. The plate 19 is provided merely for the purpose of strengthening the rail which function is also accomplished by the companion plate 18.

Adjacent the opposite rail 22 of the railway track and on the inner side thereof is provided a resilient cam strip 23 having a portion extending parallel to the rail 22 and spaced away therefrom at a distance less than the thickness of the flange of a railway vehicle wheel. The ends of the strip 23 are bent inwardly away from the rail as shown at 23a so that a guideway is formed between the flared ends 23a and the rail 22 whereby upon passage of a railway vehicle, the flange 24 of the wheel will be directed between the rail 22 and the strip 23 as clearly illustrated in Fig. 2 to cam the strip 23 laterally and thereby impart a pumping stroke through a linkage including the lever 25, a rod 26, to an arm 27 of a pump disposed within a lubricant reservoir 28. The pump which is operated by the arm 27 may be of any conventional design which is readily adaptable for the purpose. The strip 23 is mounted upon angular brackets 29 which are supported by the ties of the railway track and engage the strip 23 at each end thereof. A second bracket 30 is provided adjacent the intermediate portions of the strip 23 and supports a pair of bolts 31—31 which extend through the rail 22 and carry at their inner ends springs 32 disposed to bias the strip 23 in a direction toward the rail 22 whereby after the passage of a vehicle wheel the strip 23 will be actuated to its normal position as stated above.

It has been found preferable to form the strip 23 so that the length of the parallel portion is greater than the distance between the axes of succeeding wheels in an ordinary truck of railway vehicle so that the pumping operation will be manifested only once for each traversing truck, but it will be readily apparent that the length of such parallel portion may be decreased so that a pumping stroke is effected each time a wheel passes.

The mouths of the bores 17 lie in the gauge side face of the rail 10 in such position that lubricant emerging therefrom may readily attach itself to the flange of a passing vehicle wheel and be subsequently deposited at critical points in the track to reduce friction between the flange of the wheel and the face of the rail. It will be observed that a pipe 35 is connected to the duct 20 in any desired manner and extends to the reservoir 28 for transmitting viscous lubricant, contained therein, to the duct 20 and the bores 13 under the force of the pump. The pipe 35 may be duplicated and attached to the opposite end of the duct 20 in order to maintain a greater equality of pressure on the lubricant within the duct 20.

On the exposed side of the plate 19 is attached, by welding or in any suitable manner, a trough 33 which extends longitudinally thereof and is disposed to contain a mass of heavy lubricant 34 such as pin grease, retaining the lubricant 34 in the path of the lower portion of a wheel flange and beneath the mouths of bores 17 whereby excess lubricant which has emerged from the bores 17 and which it not taken up by the flange of a passing vehicle wheel may drip down and remain deposited upon the heavy lubricant 34.

In the embodiment shown in Fig. 5 a second bore 36 is provided in the rail and extends substantially parallel with the top surface thereof. The plug 37 employed in this embodiment also contains two intersecting bores 38 and 39, the bore 39 being disposed to connect with the bore 36 of the rail whereby lubricant pumped into the bore 38 may be transmitted through the bores 39 and 36 to the inner face of rail 10 and there placed in the path of a vehicle wheel flange.

The provision of such plugs as 15 and 37 as shown in Figs. 3 and 5 respectively becomes necessary since if the bores 13 were left open it would be an easy matter for an accumulation of dirt, rain, snow or the like to be deposited therein and clog the bore 13 whereas the provision of a secondary laterally extending bore such as 17 or 36 precludes the possibility of such an accumulation of obstructing foreign matter.

In the device herein illustrated it is possible to drill the rail 10 while placed in the track without disturbing the track structure or interfering with the traffic which moves therealong. Since the bore 13 is drilled from the inner ball 14 downwardly and outwardly, such operation may be accomplished with any ordinary drill and without experiencing the exceeding difficulty which would obviously be encountered if it were attempted to drill the rail 10 in another manner. After the bore 13 has been drilled such a plug as 14 or 37 may be inserted in the end thereof to provide delivering orifices at the desired point on the inner face of the rail.

From the foregoing description it is believed that those skilled in the art will readily understand my invention but it is to be understood that the structures herein shown and described are

merely illustrative and I do not desire to be limited to the specific embodiments herein disclosed since it is apparent that many modifications can be made without departing from the spirit of my invention or the scope of the appended claims.

I claim:—

1. An operating mechanism for a lubricating device for a railway track comprising a resilient cam member adjacent a rail of the track, said member having a central portion parallel with said rail, the end portions of said member being bent away from said rail whereby the flange of a passing vehicle wheel is guided between said rail and said central portion to actuate the central portion laterally, a pump, and a linkage connecting said central portion with said pump.

2. An operating member for a railway track lubricating device, having a central portion adjacent to and parallel with a rail of said track, said central portion being movable laterally relative to said rail, and anchored end portions flared away from said rail whereby a vehicle wheel flange is guided between said central portion and said rail.

3. In a lubricating device for a railway track, means for delivering lubricant to the inner face of a rail including a plurality of diagonally upwardly and inwardly extending bores in said rails, plugs inserted in the upper ends of said bores and secondary bores extending laterally and intersecting said first mentioned bores whereby the first mentioned bores are protected from foreign matter.

4. In a lubricating device for a rail of a railway track, a rail having a plurality of bores therein, said bores extending from the outer juncture of the rail web and head diagonally upwardly and inwardly, and secondary bores intersecting said first mentioned bores, said secondary bores extending laterally and terminating on the gauge side face of the rail head.

5. In a lubricating device for a railway track the combination with a rail having a plurality of diagonally extending bores through the head thereof, the mouths of said bores lying at the juncture of the rail web and head, of a plate having a longitudinally extending groove, and means for attaching said plate to said rail whereby said groove is disposed adjacent said mouths.

6. In a lubricating device for a railway track the combination with a rail having a plurality of diagonally extending bores through, the head thereof the mouths of said bores lying at a juncture of the rail web and head, of a conduit interconnecting said mouths comprising, a plate disposed adjacent said web, and a groove in said plate adjacent said juncture.

7. In a lubricating device for a railway track the combination with a rail having a plurality of diagonally extending bores through the head thereof the mouths of said bores lying at the juncture of the rail web and head, of a grooved plate bridging said juncture whereby an interconnecting duct is formed between said mouths.

8. In a track lubricator, a rail, a plurality of lubricant outlets adjacent the ball of the rail, and a trough containing a quantity of heavy lubricant in position for contact with a passing wheel flange, said trough being positioned to receive the drippings from said outlets.

9. A device of the kind described comprising in combination a pump, operating means for the pump having a resilient part extending parallel to a rail and disposed to be moved laterally by

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a passing wheel, and means at one end of said part for anchoring the same.

10. The combination with a railway track lubricating device, of operating mechanism therefor comprising, a member mounted adjacent a rail and having a portion extending parallel to the rail and spaced therefrom less than the thickness of a wheel flange, the length of said parallel portion exceeding the interaxial distance of succeeding wheels of a railway vehicle truck, and the ends of said member extending angularly away from the rail.

bricating device, of operating mechanism therefor comprising, a resilient member having an end anchored at a substantial distance from a rail, a portion of said member extending parallel to the rail for a distance exceeding the interaxial distance of succeeding wheels of a railway vehicle truck, said parallel portion being disposed to be moved laterally by a passing wheel, and thrust transmitting means connected to said member intermediate the ends of said parallel portion.

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11. The combination with a railway track lu-

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25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150