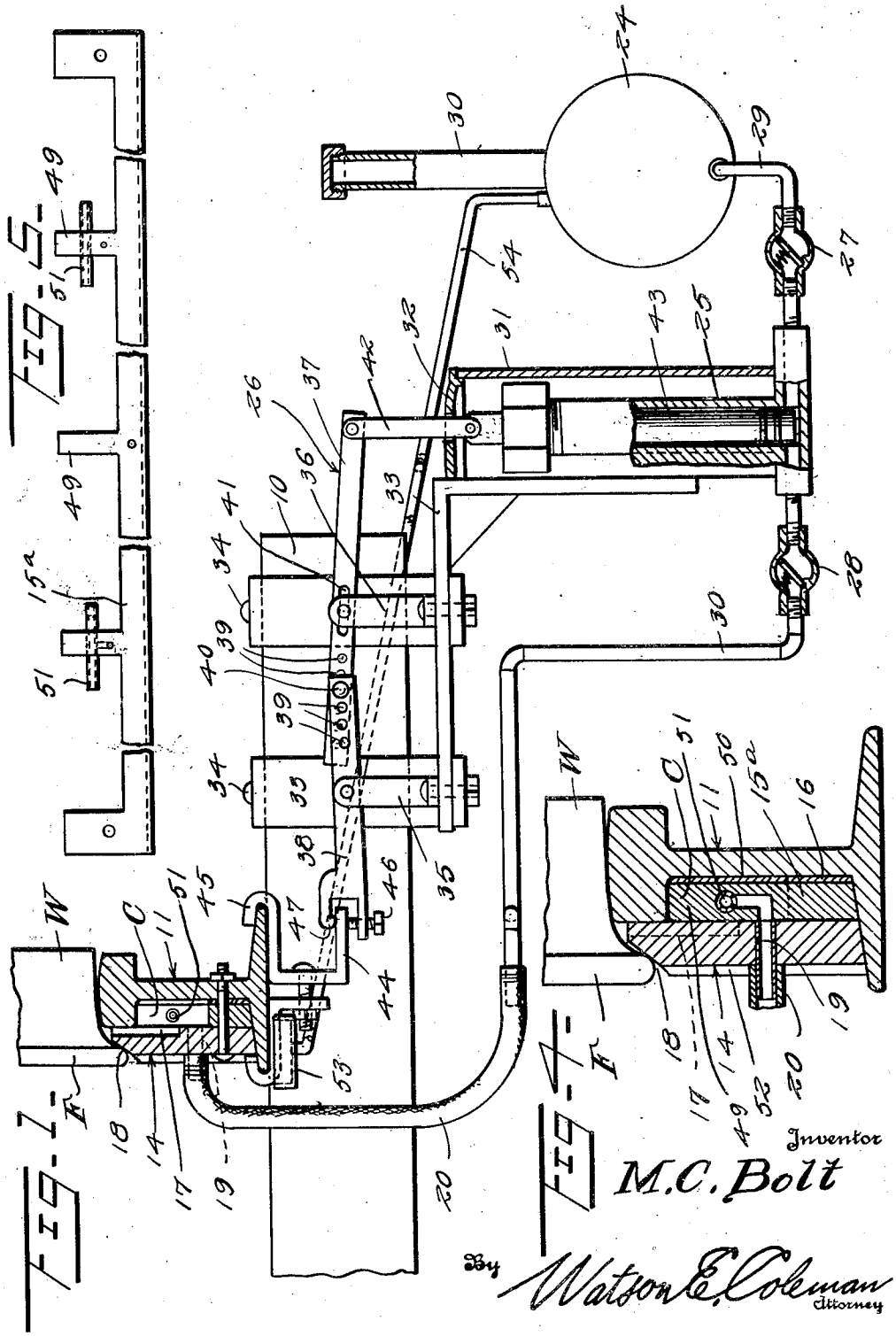
Feb. 19, 1935. M. C. BOLT 1,991,725

MEANS FOR LUBRICATING CAR WHEELS AND RAILS

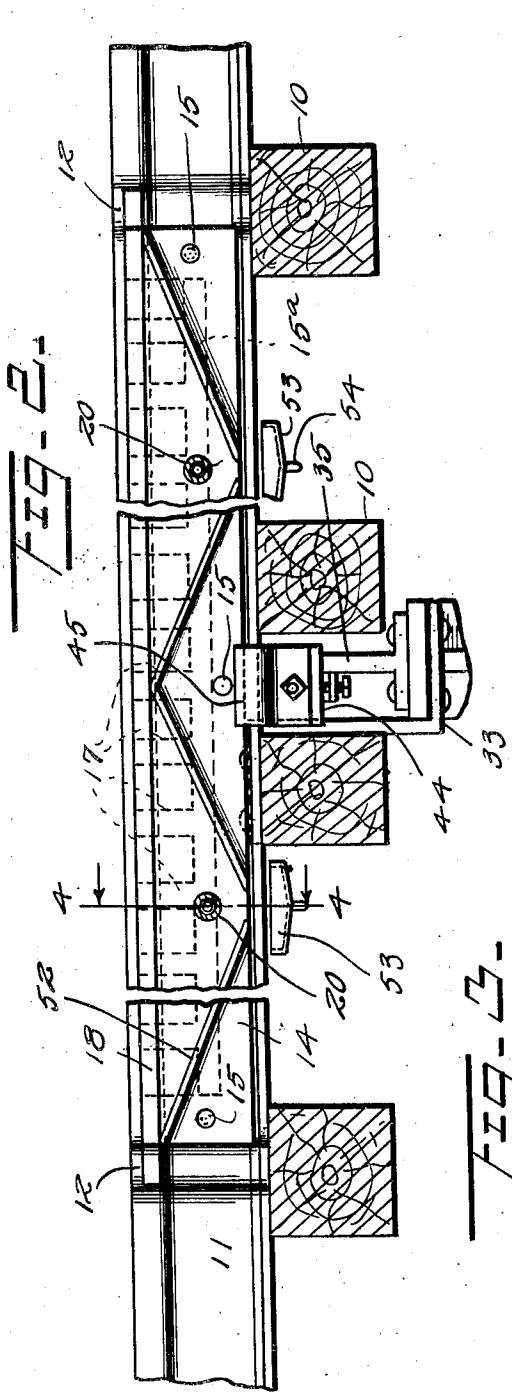
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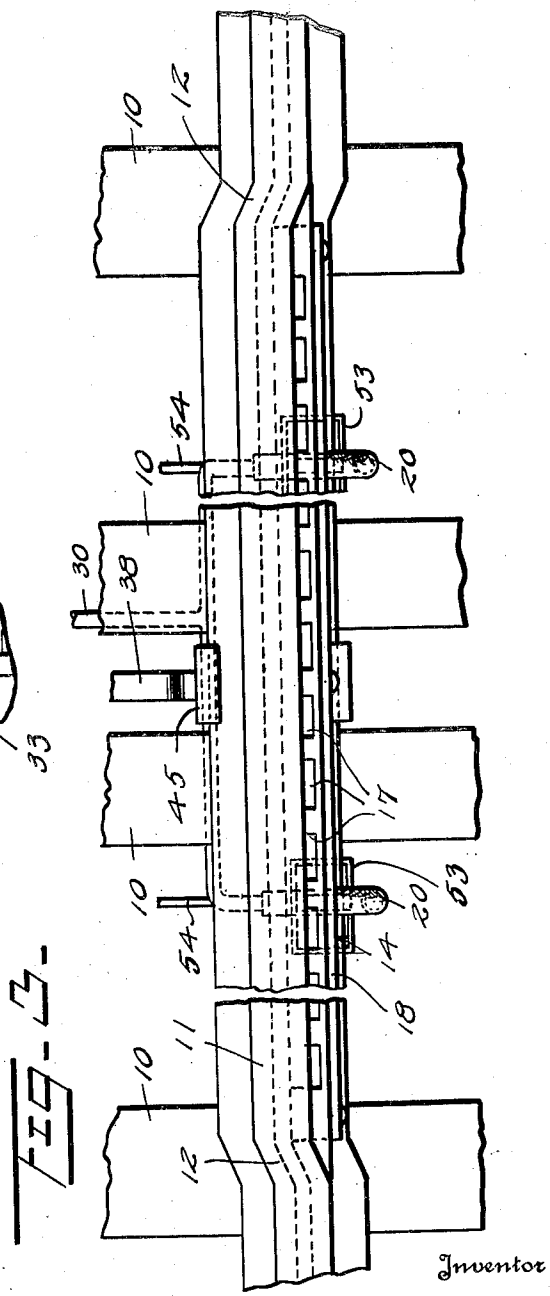


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MEANS FOR LUBRICATING CAR WHEELS AND RAILS

Filed April 18, 1929 2 Sheets-Sheet 2





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MEANS FOR LUBRICATING CAR WHEELS AND RAILS

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3 Claims. (Cl. 184—3)

This invention relates to means for lubricating wheel flanges and rails and more particularly to a means for lubricating these elements operated by movement of the locomotive and cars over the rails.

As is well known to those familiar with the art, the rails of right-of-way have vertical movement with the cars passing thereover. This vertical movements is not only a general movement of the rails and for supporting ties, but likewise a relative movement of the rails with relation to the ties. This movement is always present in the rails and is noticeable in a freshly spiked rail immediately after the passage of a heavily loaded train thereover.

An important object of the present invention is the utilization of this vertical movement of the rail to cause operation of a means for supplying lubricant for lubricating the flanges of the wheel and thus transmitting the lubricant to the side faces of the rail balls for considerable distance in the direction in which the train is travelling.

A further and more specific object of the invention is to provide apparatus of this character, which may be operated by the movement of the rail with relation to the ties, thus permitting storage tanks, pumps and associated mechanisms to be attached to the ties and thus securely anchored.

A further object of the invention is to provide means of this character which when applied to the rail strengthens the same instead of reducing the strength thereof.

A still further object of the invention is to produce an apparatus of this character which with but a slight modification of a rail which may be produced in any railway shop, may be applied to the present railway systems, and which may be very readily and cheaply manufactured.

These and other objects I attain by the construction shown in the accompanying drawings wherein for the purpose of illustration I have shown a preferred embodiment of my invention and wherein:—

Figure 1 is a view partially in section showing track and wheel lubricating mechanism constructed in accordance with my invention;

Figure 2 is a side elevation thereof;

Figure 3 is a plan view thereof;

Figure 4 is a section on the line 4—4 of Figure 2;

Figure 5 is a side elevation of the gasket employed.

Referring now more particularly to the drawings, the numeral 10 designates track rail supports, such as ties or the like, and 11 a rail supported thereby. This rail, in accordance with my invention, is offset outwardly for a desired length, as indicated at 12. Arranged in opposition to the inner face of the rail and seating at its lower end upon the base 13 thereof, is a plate 14 of approximately the same length as the offset portion of the rail. This plate is bolted to the rail, as indicated at 15, the bolts 15 preferably passing through a filler plug 15a arranged between the plate and rail and a gasket 16 arranged between the inner face of the filler plug and rail.

Characteristic elevations of the filler plug and gasket are shown in Figure 5 and it will be noted that these elements combine with the plate and rail to produce beneath the head of the rail at the inner face thereof a chamber C. The inner face of the plate has shallow vertically extending depressions formed therein, as indicated at 17, these depressions, when the plate is in applied position, forming channels for the passage of lubricant from the chamber C through its upper edge and in proximity to the side face of the ball of the rail.

The upper edge of the plate is located slightly below the upper surface of the ball of the rail, and the outer face of the plate at its upper edge is beveled, as indicated at 18, so that it is disposed at an angle to the vertical slightly greater than the angle of the inner face of the flange F of a car wheel W. The body of the plate has formed therethrough openings 19 for connection with lubricant supply conduits 20.

In combination with apparatus of the character just described I employ an oil delivery mechanism, comprising a tank 24, a pump 25, and operating means for the pump generally designated at 26. The pump 25 is at present shown as a simple displacement cylinder, the intake and exhaust check valves, of which indicated at 27 and 28 are spring seated and are included in the connection 29 of the pump with the tank, and in the connection 30 with the oil delivery conduits 20. Conduits 20 should include a flexible section. Tank 24 should be provided with a capped inlet pipe 30, as this tank is intended to be embedded in the ground, and the pump casing should be enclosed within a housing 31, having a removable cap 32 for the same reason.

The operating mechanism may be of any suitable character which permits operation of the pump by the movement of the rails resulting from a train passing over the track. I, however, prefer the construction herein illustrated, which includes bracket elements 33 rigid to the pump

and secured to the ties, as at 34. Upon the bracket element 33 I mount standards 35 and 36, the upper ends of which are pivoted levers 37 and 38. The adjacent ends of these levers over-lap one another and are provided with a series of longitudinal spaced openings 39 for the passage of a pivot bolt 40.

The connection with lever 37 to its standard permit longitudinal shifting movement of the lever, the pivot for the lever projecting through a slot 41 formed therein. The outer end of this lever 37 is connected to link 42 and to the pump piston 43. The outer end of lever 37 is forked to receive a horizontal flange 44 formed upon one element of a clamping bracket 45 adapted to clampingly engage the base of the rail.

One arm of the fork has directed therethrough a set screw 46 engaging one face of this flange, thus forcing a fulcrum 47 formed on the opposite arm into engagement with the opposite face of the flange.

In operation of the device during passage of each wheel over the rail, a slight depression of this rail results, which through the leverage is transmitted to pump piston 43, causing reciprocation thereof. Each operation of the pump causes a small quantity of lubricant to be delivered to the chamber C from which it passes through openings 17 to the upper edge of the plate. At this point, it is picked up by the flanges of the wheels and distributed along the side faces of the rail balls as the train proceeds.

Due to the disposition of the upper edge of the plate below the upper surfaces of the ball of the rail, very little, if any, of this lubricant reaches the ball of the rail, and due to the fact that there is no contact of the rail whatever with the upper edge of this plate, there is no tendency of the opening 17 to close as a result of the spreading of the metal of the rail ball. Application of the plate does not in any way weaken the rail, and as a matter of fact, adds to the strength thereof.

Tests of apparatus constructed in accordance with my invention have indicated that the lubricant is distributed along the right-of-way for a distance as great as two miles from the point of its application, thus rendering the device extremely valuable for use in hilly country where the tracks usually abound with curves and are difficult of access.

In use of the apparatus in hilly country where its use is most generally necessary, it will be obvious that under many circumstances the inclination of the track will be such that there will be a tendency of the grease to collect at one end of the compartment. At this end the filler plug 15*a* and gasket 16 are constructed with longitudinally spaced vertical extensions 48 and 49, which combine to produce partitions within the compartment C, sub-dividing the same into a plurality of lesser compartments. The extensions 49 of the filler plug align with the oil inlet conduits 20 and have ports 50 connecting these inlets with longitudinally extending pipes 51 directed through the extensions 49, so that the lubricant is distributed to the compartment sections formed at opposite sides of the partitions.

Means may likewise be provided for collection of excess oil which passes down the outer face of plate 14 for its return to the tank 24. In the present instance I have shown the outer face of this plate as provided with downwardly converging ribs 52 directing such excess oil into receiving pans 53 which are connected by drain pipes 54 with tank 24.

Since it will be obvious that the construction employed may be modified to a very considerable extent without materially departing from the spirit of the invention, I do not limit myself thereto except as hereinafter claimed.

I claim:—

1. In a track oiling device, a plate having upwardly extending openings for the passage of oil to the head of the rail, means for securing said plate to said rail whereby to position the upper edge portion of said plate against the ball portion of the rail and to offset the rail from the wheel flange, and means operated by depression of the rail during passage of a car thereover for delivering oil to said opening.

2. In a track oiling device, a plate having upwardly extending openings for the passage of oil to the head of the rail, means for securing said plate to said rail whereby to position the upper edge portion of said plate against the ball portion of the rail and to offset the rail from the wheel flange, a supply tank, a pump for delivering oil from the supply tank to said openings, and connections between between the rail and pump whereby the pump is operated by depression of the rail during passage of a car thereover.

3. In a track oiling device, a plate having upwardly extending openings for the passage of oil to the head of the rail, means for securing said plate to said rail whereby to position the upper edge portion of said plate against the ball portion of the rail and to offset the rail from the wheel flange, a supply tank, a pump for delivering oil from the supply tank to said chamber, and link and lever connections between the piston of the pump and said rail.

MALON C. BOLT.