Jan. 4, 1938. H. G. WARR 2,104,176

RAIL AND WHEEL FLANGE LUBRICATOR

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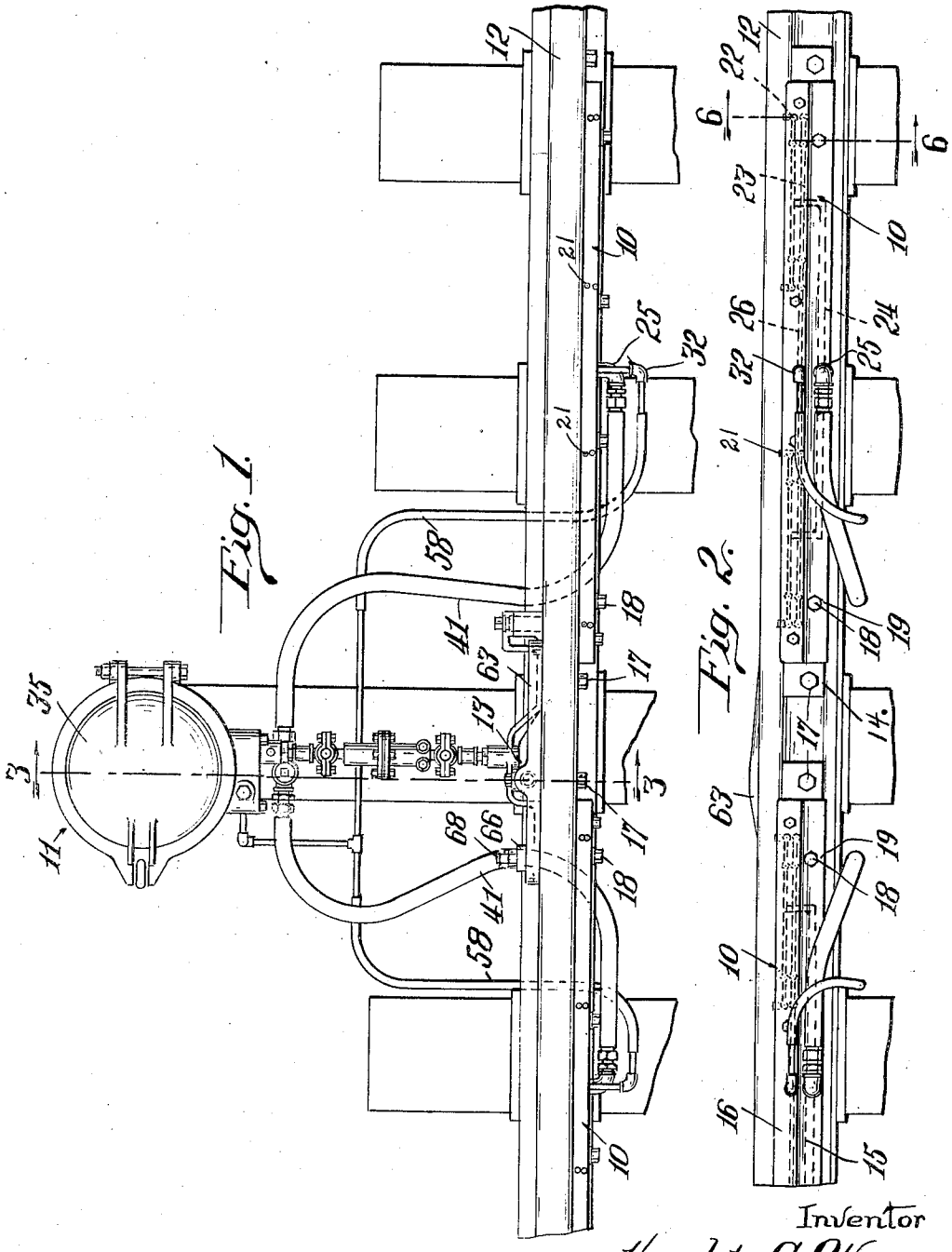


Fig. 1.

Fig. 2.

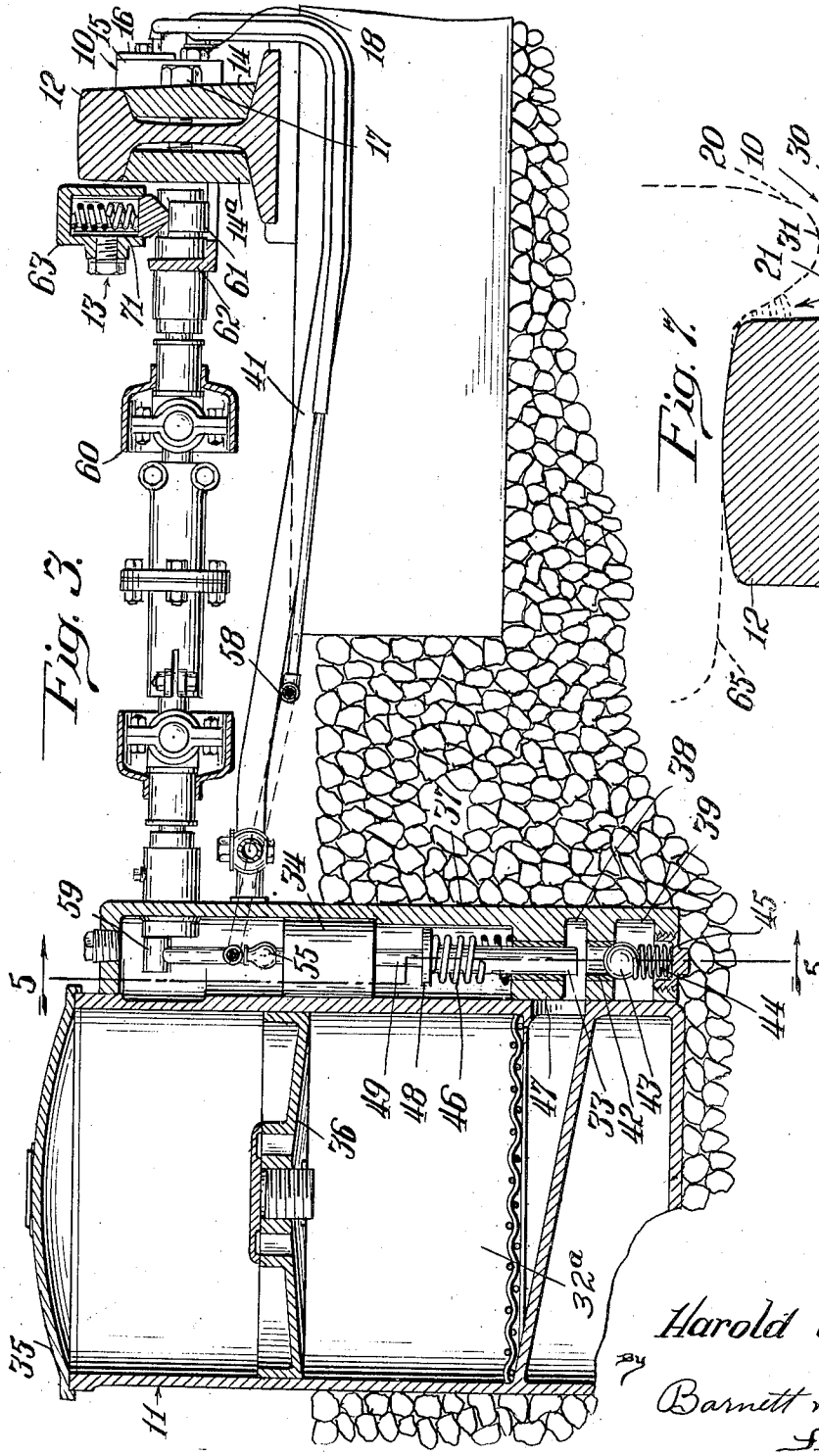
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Fig. 4.

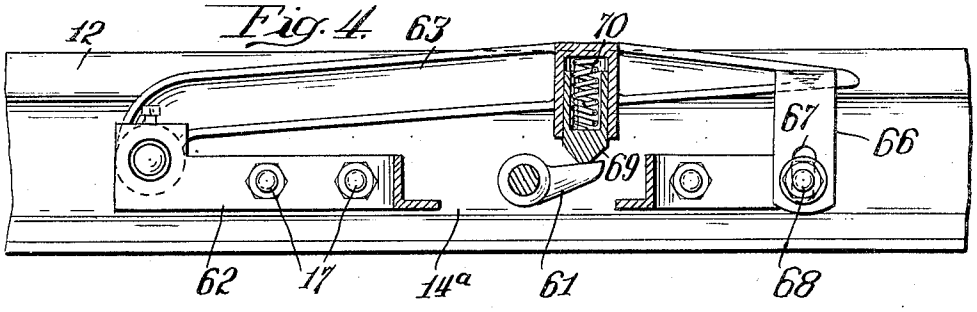


Fig. 5.

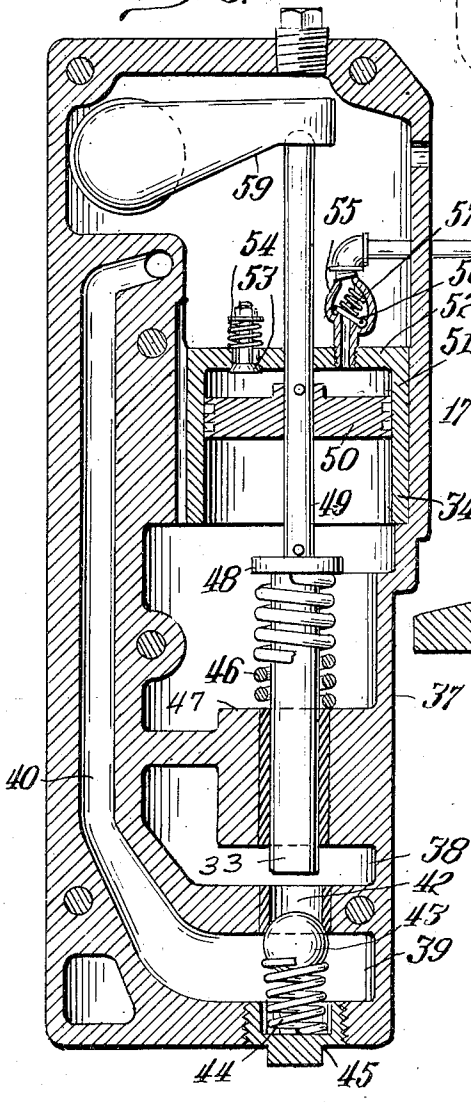
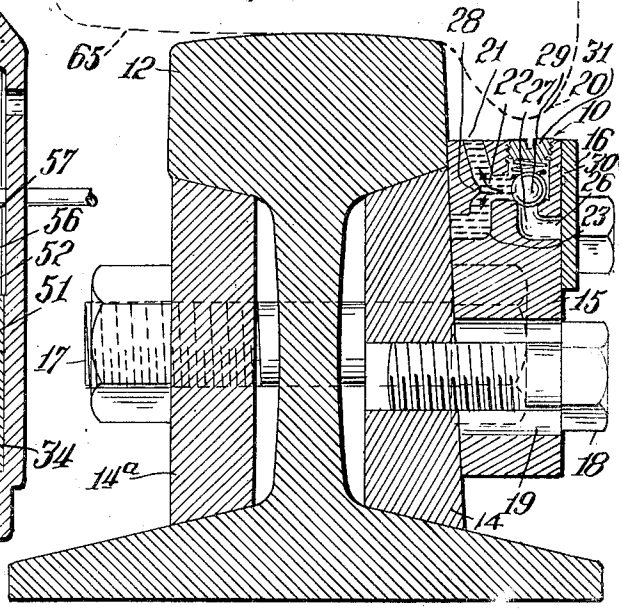


Fig. 6.

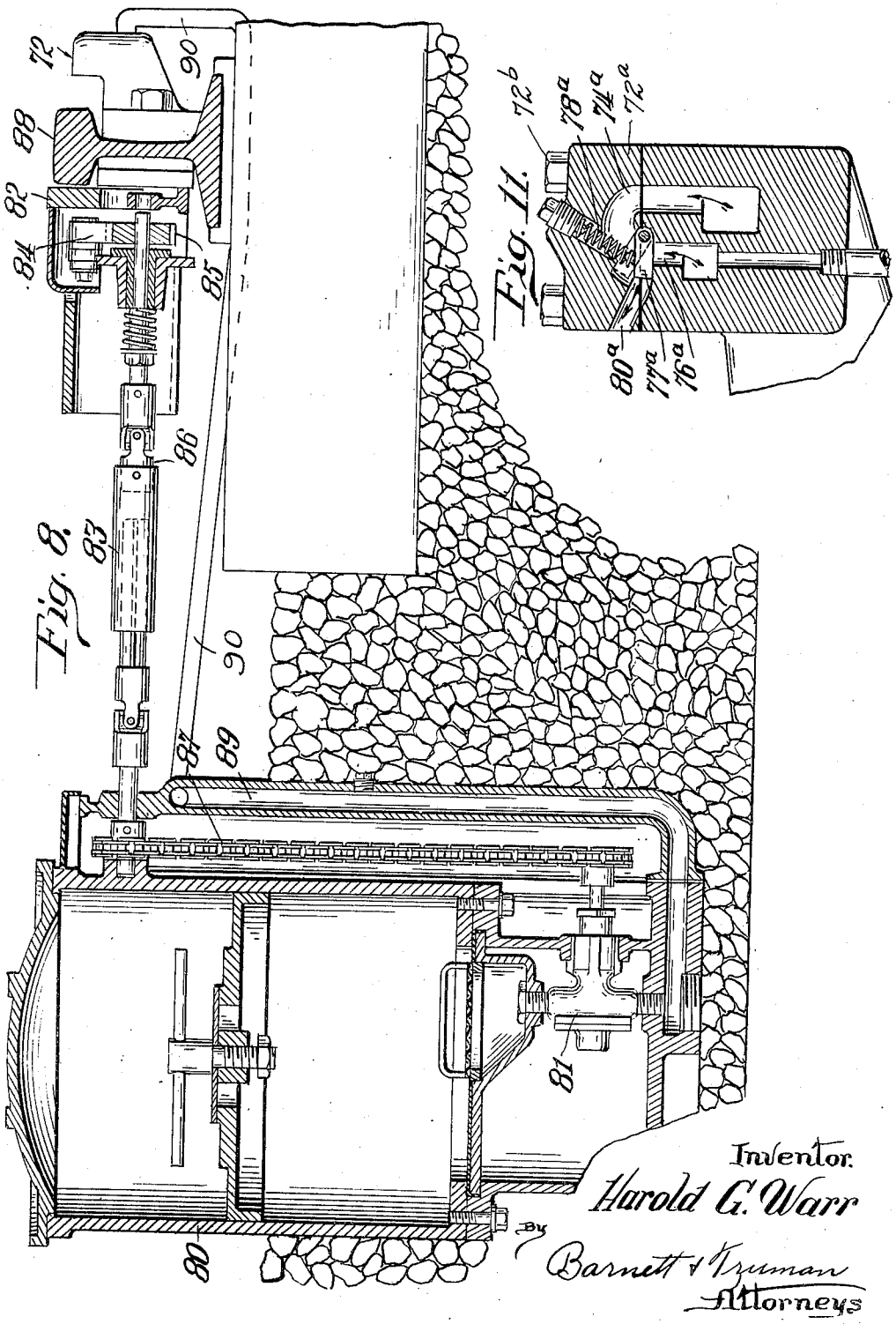


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RAIL AND WHEEL FLANGE LUBRICATOR

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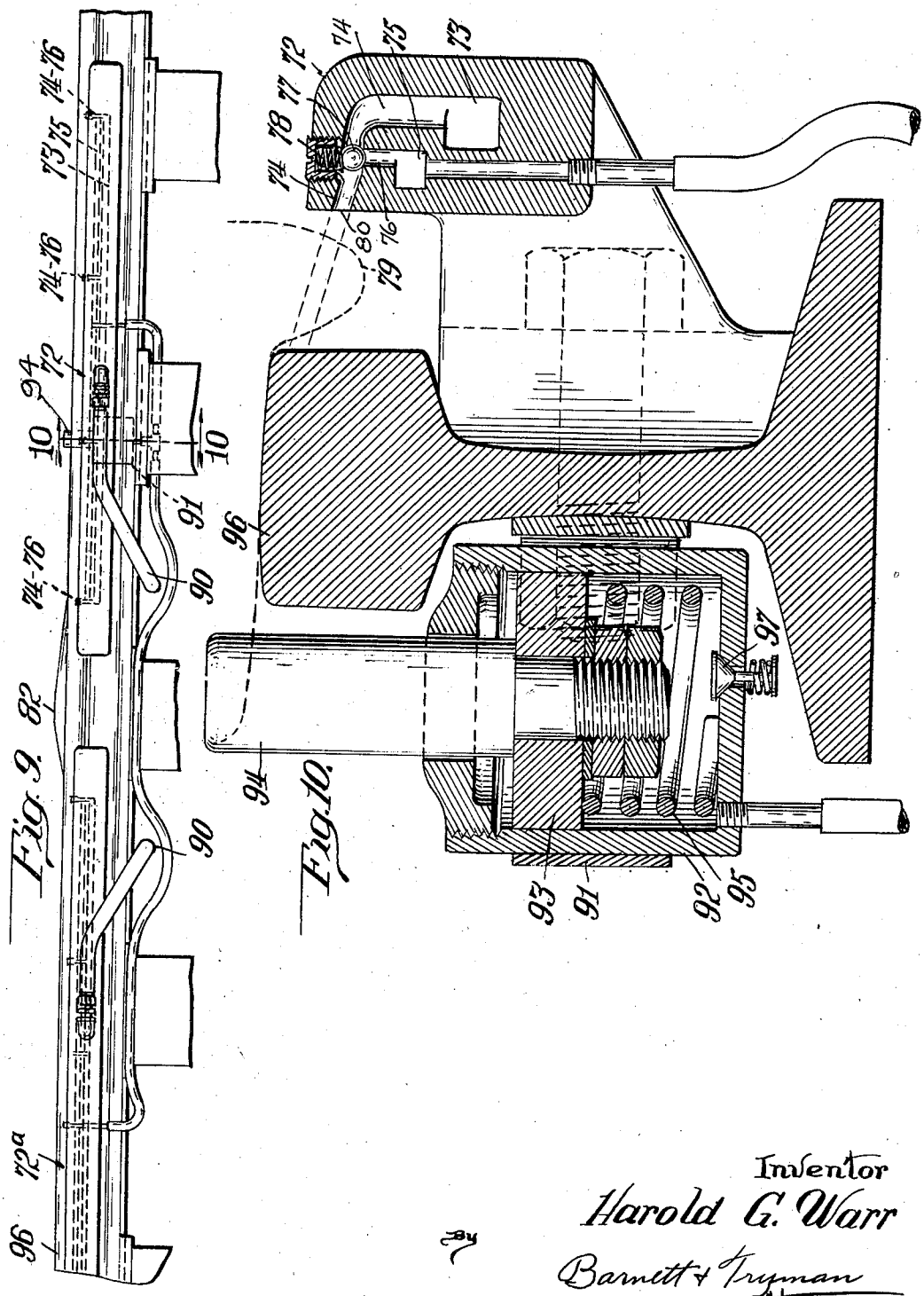


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RAIL AND WHEEL FLANGE LUBRICATOR

Filed July 10, 1936 5 Sheets-Sheet 5



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Patented Jan. 4, 1938 2,104,176

UNITED STATES PATENT OFFICE

2,104,176

RAIL AND WHEEL FLANGE LUBRICATOR

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Application July 10, 1936, Serial No. 89,946

16 Claims. (Cl. 184—3)

This invention relates to improvements in rail and wheel flange lubricators of the general type adapted to be automatically operated, by the passage of a car over a rail, to project small quantities of lubricant onto the side face of the rail head so that it will be wiped and/or picked up and reapplied to adjoining rails at locations remote from the lubricating device by the wiping engagement of the car wheel flanges against the rails.

According to the present invention, a device designated herein as a lubricant discharger is provided with one or more passages for containing a suitable lubricant to be discharged onto the side face of a rail head. The lubricant discharger is positioned at the gauge side of the rail and the lubricant passages therein are kept filled with lubricant, preferably by means of a pump which is operated by mechanism engaged by the car wheels. The lubricant is discharged in small quantities from the lubricant passages and projected against the side face of the rail head by means of air pressure introduced into the discharger.

The mechanism for introducing air into the discharger comprises an air pump having a piston which is operated in one direction by the passage of a car over the rail and is operated in the opposite direction by a suitable spring.

The principal object of the invention is to provide a rail and wheel flange lubricator including a discharger having one or more passages for directing lubricant into the space between the rail head and the adjacent side of a wheel flange and also including means whereby a predetermined quantity of lubricant is segregated from the body of lubricant in each of said passages and discharged therefrom by means of air under pressure.

Another and more specific object is to provide a lubricator of the above character in which the lubricant discharger may be positioned a substantial distance from the path of the car wheels so as to avoid engagement by passing wheels and which includes means for introducing air pressure into the discharger momentarily to expel predetermined quantities of lubricant, particularly heavy grease, from the discharger and project it onto the side face of the rail head and/or wheel flange at locations where it will be wiped or otherwise distributed over the surfaces to be lubricated.

A further object is to provide a rail and wheel flange lubricator such as briefly described hereinabove and as disclosed more in detail in the specification which follows:

The invention is illustrated in connection with certain specific embodiments shown in the accompanying drawings wherein:

Fig. 1 is a plan view of one embodiment of the invention applied to a railroad rail.

Fig. 2 is a side view of the embodiment shown in Fig. 1.

Fig. 3 is a vertical sectional view taken through the lubricant pump, operating mechanism and associated parts, the section being taken substantially on lines 3—3 of Fig. 1.

Fig. 4 is a side view partly in section of a wheel actuated member associated with the pump operating mechanism.

Fig. 5 is a vertical section through the pump mechanism, the section being taken substantially on line 5—5 of Fig. 3, looking in the direction indicated by the arrows.

Fig. 6 is a vertical section through the rail and the lubricant discharger illustrating one preferred arrangement of lubricant and air ducts, said sectional view being taken substantially on line 6—6 of Fig. 2.

Fig. 7 is a fragmentary sectional view of the upper portion of Fig. 6 illustrating the manner in which air pressure segregates a portion of the lubricant from the main body in a lubricant passage and projects it onto the side face of the rail head.

Fig. 8 is a vertical section similar to Fig. 3 but illustrating a modified embodiment.

Fig. 9 is a side view of the modification.

Fig. 10 is an enlarged sectional view taken on line 10—10 of Fig. 9 to illustrate the cross-sectional contour of the discharger and a preferred construction of air pump used in connection therewith; and

Fig. 11 is a fragmentary sectional view of a further modification.

Referring first to the embodiment of the invention shown in Figs. 1 to 7, inclusive: 10 designates a lubricant discharger, 11 a mechanism for supplying lubricant thereto and for projecting the lubricant onto the rail 12, and 13 designates operating mechanism attached to the rail 12 and adapted to be actuated by the passage of a car over the rail, for example, by contact with the wheels of the car.

The lubricant discharger 10 may be composed of a plurality of identical units. In the present embodiment two discharger units are employed, each of which is preferably, though not necessarily, a composite structure, comprising a sup-

porting plate 14, a lubricant distributing plate 15 and an outer plate 16. The supporting plate 14 is positioned between the head and the base flange of the rail at the gauge side thereof with the outer face of the plate extending in the plane of the side of the rail head. The supporting plate 14 is secured to the rail by suitable clamping means, for example, bolts 17 which extend through the vertical web of the rail and through a supporting plate 14a located on the opposite side of the rail. The lubricant distributing plate 15 is adjustably secured to the supporting plate 14 by means of bolts 18 extending through slots 19 formed in the distributing plate. This means of attachment permits the distributing plate 15 to be located a suitable distance below the top of the rail so as to avoid being engaged by flanges 20 of the car wheels.

The upper edge of the distributing plate 15 is provided with a series of discharge openings 21 which are connected by means of branch passages 22—23 of uniform length with the ends of a main lubricant passage 24 (see Fig. 2). The lubricant inlet 25 is positioned at the center of the main passage 24 so that each discharge opening, when following the flow of lubricant, is positioned at an equal distance from the lubricant inlet 25. The main lubricant passage 24 and the branch passages 23 are preferably open channels which are closed by clamping the plate 15 against the face of the supporting plate 14. A main air duct 26 extends lengthwise of the plate 15 and is connected by means of branches 27 to the several lubricant branch passages 22. The branch air ducts communicate with the branch lubricant passages at locations suitably spaced from the discharge openings 21 and preferably at substantially right angles to the lubricant passages. By this arrangement, the air entering the lubricant branches under pressure separates a quantity of lubricant from the main body in each of the lubricant branches and projects the segregated lubricant out of the branch passages and onto the side face of the rail head. The discharge ends of the lubricant passages are preferably disposed at appropriate angles to the side face of the rail head so that the quantity of lubricant discharged will strike the side face of the rail head near the upper corner thereof whereby the lubricant will be applied over the inner surfaces of the wheel flanges and the adjacent face of the rail head by the wiping engagement of the wheel flanges against the side face and the curved corner portion of the rail head. In order to expedite the separation of lubricant from the main body of lubricant in the several branch passages 22, a means is provided for directing the air into each of said branch passages in opposite directions. The said air directing means is illustrated in Figs. 6 and 7 of the drawings in the form of fixed angular projections 28 extending into the lubricant branch passages 22 at a location opposite the air duct opening therein. The back pressure of air against the main body of lubricant in the branch passages 22 avoids any objectional syphoning effect on the main body of lubricant in said passages. Each of the branch air ducts 27 is normally closed by a ball valve 29 which is held in its closed position by means of a spring 30 until the air pressure reaches a predetermined point. The compression of the spring 30 may be varied by adjusting the closure plug 31. The main air duct, like the main lubricant passage hereinbefore described, is preferably formed as an open channel which is closed by the outer plate 16. The air inlet 32 may be located at any suitable point in the main air duct since the valves 29 in the several air branches are held closed until a predetermined air pressure is obtained.

The lubricant discharger 10 is supplied with lubricant and with momentary charges of air under pressure by means of the supplying mechanism 11, said mechanism comprising a lubricant reservoir 32a, a lubricant pump 33 and an air pump 34. The lubricant reservoir is preferably located at a substantial distance from the rail 12 and is partially embedded in the ballast of the roadbed so as to maintain a fixed position. The reservoir is provided with a hinged cover 35 and with a suitable follower 36, the latter of which serves to keep the lubricant substantially level and prevents the formation of air holes therein when the lubricant used is a heavy oil or grease. The lubricant pump 33 is preferably a reciprocate type. Other types of pumps may be used but the reciprocating type is preferred in the present embodiment since it presents certain advantages in connection with the specific operating means 13 and the air pump 34. The pump 33 is arranged in a vertical position in a pump casing 37. This casing is preferably removably secured to the outer wall of the lubricant reservoir and is formed at its lower end with a chamber 38 communicating with the lubricant reservoir and a chamber 39 which is connected by means of lubricant duct 40 (Fig. 5) and flexible conduits 41—41 to the lubricant inlets 25 of the distributing plates 15. The said chambers 38—39 are connected by means of a passage 42 which is concentric with the axis of the lubricant pump and serves as a well adapted to receive the lower end of the pump plunger when it is moved downwardly. The passage 42 is normally closed by a ball valve 43 which is held in its closed position by means of a spring 44. The pressure of the spring 44 may be varied by turning the closure plug 45 in the appropriate direction. The pump plunger 33 is held in its normally elevated position by means of a coil spring 46 interposed between a portion 47 of the pump casing and a flange 48 secured to the reduced stem portion 49 of the pump plunger.

The air pump 34 comprises a piston 50 (Fig. 5) secured to the stem of the lubricant pump plunger and operating in a cylinder 51, the upper end 52 of which is closed. An inlet valve 53 is opened against the compression of the spring 54 to admit air into the cylinder 51 during the down stroke of the lubricant pump. The air is discharged from the cylinder 51 through a pressure valve 55 during the up stroke of the piston 50, said valve comprising a valve member 56 which is held in its closed position by means of a spring 57. The air pressure is conducted to the main air ducts in the several plates 15 through flexible conduits 58—58. Both the lubricant pump 33 and the air pump 34 are operated in one direction, that is to say, moved downwardly, by the operating mechanism 13. This mechanism comprises a rocker arm 59 journaled in the upper portion of the pump casing 37 so that its end portion bears upon the upper end portion of the pump stem 49 (Fig. 5). The rocker arm 59 is connected by means of a flexible shaft 60 to a similar rocker arm 61 journaled in a bracket 62 secured to the supporting plate 14a on the rail (Figs. 3 and 4). An operating bar 63 is pivoted at one end in the brackets 62. An intermediate portion of the bar extends above the rail head so as to be depressed by en-

gagement with the tread portion 65 of a car wheel, the bar being guided by means of an arm 66 which is slotted at 67 to receive a guide bolt 68. The operating bar 63 has a shock absorbing connection with the end portion of the lever 61. The said connection comprises a plunger 69 positioned in a pocket formed in the under portion of the bar 63 and a spring 70 which is interposed between the said plunger and the under portion of the bar 63. The plunger 69 is retained in position by means of a screw stud (Fig. 3) which extends into a slot 71 formed in the plunger 69.

It will be apparent from the above description that a car wheel passing along the rail 12 will engage the elevated portion of the operating bar 63 and thereby depress the bar. This movement of the bar rocks the lever 61 downwardly and, through the flexible shaft 60, imparts a similar downward movement to the rocking lever 59, the latter of which imparts a downward thrust to the lubricant pump plunger 33 and the air compressor piston 50. The downward movement of the piston 50 draws air into the cylinder 51 through the valves 53 and the downward movement of the lubricant pump piston 33 forces a quantity of lubricant past the valve 43 and into the chamber 39. This displaces a corresponding quantity of lubricant in the passage 40, flexible conduits 41—41 so as to completely fill the lubricant passages 22—23 and 24 of the lubricant distributing bar 15. As soon as the wheel rides off the operating bar the lubricant and air pumps and likewise the operating parts of the operating mechanism 13 are returned to their elevated positions by means of the spring 46. This upward movement of the air pump piston 50 forces air through the pressure valve 55, the flexible conduits 58—58 and into the air passages 26—27 of the distributing plate 15, the said air, when it reaches a predetermined pressure, unseats the valves 29 and enters the lubricant branch passages 22. The air pressure being exerted against the lubricant in the said branch passages at a location opposite the angular projection 28 separates a portion of the lubricant from the main body of lubricant in the said passages, as indicated in Fig. 7. The separated lubricant is projected onto the side of the rail head, preferably near the upper edge thereof, so that the lubricant will be wiped along the rail by the wiping action of the inner face of the wheel flange 20; portions of the discharged lubricant being picked up by the wheel flange and re-applied to the rail at locations remote from the lubricating apparatus.

The arrangement of the air pump piston 50 so as to force air into the lubricant discharger 10 during the upward movement of the lubricant pump piston 33, insures that the branch lubricant passages 22 will be filled with lubricant before the air pressure is admitted therein to discharge the lubricant. The intermittent operation of the air pump 50 produces sufficient momentary pressure to project small quantities of the lubricant onto the rail, thereby making it practicable to position the lubricant discharge openings 21 a substantial distance below the flanges of the car wheels.

Referring now to the modified embodiment of the invention shown in Figs. 8, 9 and 10 of the drawings: The lubricant discharger 72 is illustrated in the form of a unitary casting formed with main and branch lubricant passages 73 and 74 and with main and branch air ducts 75 and 76, respectively. A valve 77 for each of the air discharge ports is held closed by means of a spring 78. The discharger is secured to the rail in a position so that the flanges 79 of the car wheels will pass between the rail head and the discharge port 80 of the lubricant branch passages 74; the said branch passages being formed at an angle to direct the lubricant discharged toward the side of the rail head near the upper edge thereof. The lubricant passages 73 and the branch passages 74 of the discharger are kept filled with lubricant, either grease or oil, by any suitable supplying means. For the purpose of illustration, a lubricant supplying mechanism is shown herein which corresponds in structure to the supplying mechanism shown in the Bates and Overmier application Serial No. 397,413, filed October 4, 1929.

This supplying mechanism may be described briefly as comprising a lubricant reservoir 80, a rotary pump 81, a wheel actuated operating bar 82, positioned at one side of the rail and operating connections 83 for connecting the operating bar with the lubricant pump. The last mentioned mechanism consists of a pawl 84 carried by the operating bar 82 and so engaging a ratchet wheel 85 as to impart intermittent partial rotation to the ratchet wheel for each downward movement of the operating bar 82. The ratchet wheel 85 is suitably secured to a flexible shaft 86 which like the shaft of the previous embodiment is both flexible and extensible so as to compensate for the vertical and lateral movements of the rail without imparting said movements to the stationary members of the supply mechanism. The flexible shaft 86 is provided at one end with a suitable sprocket and chain connection 87 with the said lubricant pump 81.

It will be apparent that the intermittent operation of the lubricant supply mechanism produced by contact of the bar 82 with the wheels passing along the rail 88 forces lubricant through the conduit 89 and the flexible conduits 90—90 into the lubricant passages of the dischargers 72—72*a*. Air pressure is forced into the dischargers 72—72*a* at suitably spaced intervals of time by means of an air pump 91 secured to the rail. The air pump comprises a cylinder 92, a piston head 93 and an operating stem 94. The piston 93 and stem 94 are normally supported in their elevated positions by means of a spring 95. The said stem 94 is supported so that its upper end will extend above the level of the rail head 96, as indicated in Fig. 10. The air is admitted to the cylinder 92 through a valve 97 during the upward stroke of the piston 93 and is discharged through the conduit 98 to the air ducts 75 and 76 of the lubricant discharger by the downward movement of the piston 93, for example, when the operating stem 94 is engaged by the tread portion of a car wheel.

In view of the fact that the pulsating air pressures are obtained from a pump mechanism operable independently of the lubricant pump, the air pump is preferably located at a location spaced from one end of the operating bar 82, for example, as shown in Fig. 9. With this arrangement, the air pressure will be supplied to the ducts 75 and 76 to discharge the lubricant after the lubricant ducts 73—74 have been supplied by a previous operation of the lubricant pump 81. The valves 77 are preferably positioned so as to project into the lubricant branch passages 74. Said valves illustrate one form of movable device for performing the functions of the fixed projection 23, shown in Figs. 6 and 7 of the previously described embodiment. The outward movement of the valves 77 serve to cut off a quantity of lubricant

from the main body of lubricant in each of the lubricant branch passages and to so obstruct or close the several branch passages **74** as to prevent the outrush of air from producing a suction or syphoning action on the main body of lubricant in said passages. In some situations it is desirable to apply the lubricant to the side of the rail head only. In such instances the air pump **91** may be so positioned on the rail that its operation causes the discharge of lubricant from the several parts **80** at such a time that the lubricant will miss the passing car wheels and therefore strike the gauge side of the rail head. In certain other situations, for example where it is desired to apply lubricant to the gauge side of the running rail and also to the wheel engaging surface of a guard rail, the air pump **91** and the lubricant ports **80** may be so arranged with relation to the operating bar **82** that the lubricant discharged from a portion of the ports **80** will miss the passing car wheels and strike the side face of the running rail head and the lubricant discharged from the other ports will strike the back face of the wheel flange. This lubricant being wiped from the wheel onto the wheel engaging surface of the guard rail and also spread over the back face of the wheel flange minimizes the development of friction when a train is rounding a curve.

In Fig. 11 a further modification is shown in which the discharger is formed with lubricant passages and air ducts **74***a* and **76***a*, respectively, similar to those shown in Fig. 10. Instead of using the ball valve and directing a back pressure of air against the body of lubricant in the main portion of the lubricant passage, a pivoted flap valve **77***a* is positioned in each of the several lubricant passages at their junction with the air ducts. When the air in the duct **76***a* reaches a predetermined pressure the valve **77***a* opens against the pressure of the spring **78***a* to admit the air pressure back of a quantity of lubricant in the outer end of the lubricant passage and thereby expel it from the port **80***a* in the manner previously described in connection with Fig. 10. The opening movement of the valve **77***a* preferably entirely closes the main portion of the lubricant passage momentarily during the discharge of lubricant from the port **80***a*. In order to facilitate positioning the valve **77***a* in its operative position, the discharger is formed with a removable cap portion **72***a*. The said cap is held in position by suitable stud bolt **72***b*.

While the invention is described and claimed in connection with the specific embodiment shown, it will be obvious to persons skilled in this art that other modified constructions might be made without departure from the spirit of the invention. It will be understood, therefore, that the invention contemplates all such changes in structure and arrangements coming within the scope of the appended claims.

I claim:

1. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage therein for containing lubricant to be discharged and an air duct communicating with said passage at a location intermediate its ends, and means operable at intervals to introduce air under pressure into said duct and said passage, whereby the air pressure segregates a quantity of lubricant from the main body in said passage and discharges the segregated lubricant as a body onto the side face of the rail head.

2. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage therein for containing lubricant to be discharged, an air duct communicating with said passage at a location intermediate its ends, and means operable at intervals to introduce momentary charges of air under pressure into said duct and said passage, whereby the air pressure segregates a quantity of lubricant from the main body in said passage and discharges the segregated lubricant as a body onto the side face of the rail head.

3. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage for containing lubricant to be discharged and an air duct opening into said passage at a location intermediate its ends, a lubricant pump for supplying said passage with lubricant, means actuated by a car passing over the rail for operating the pump to force a quantity of lubricant into said passage to a position intermediate the said air duct opening and the discharge end of the lubricant passage, and means operable at intervals to force momentary charges of air under pressure through said duct and into said passage, whereby the air pressure forces the said quantity of lubricant as a body from said passage and onto the side face of the rail head.

4. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a lubricant passage therein for directing lubricant onto the side of the rail head and an air duct opening into said passage at a location spaced from the discharge end of the passage, a lubricant supply chamber, a pump connected with said chamber and with said discharger for forcing lubricant into said passage to a location between the said air duct opening and the discharge end of the passage, means operated by the passage of a car over the track for operating said pump, and means for forcing momentary charges of air under pressure into said lubricant passage to discharge as a body the quantity of lubricant located in the passage between the air duct opening and the discharge end of the lubricant passage.

5. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a lubricant passage therein for directing lubricant onto the side of the rail head and an air duct opening into said passage at a location spaced from the discharge end of the passage, a lubricant supply chamber, a lubricant pump for forcing a quantity of lubricant through said passage to a location beyond said air duct opening, an air pump for forcing momentary charges of air under pressure into said lubricant passage to discharge as a body the said quantity of lubricant therefrom and means operated by the passage of a car over said rail for operating said lubricant and air pump.

6. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a lubricant passage therein for directing lubricant onto the side of the rail head and an air duct communicating with said passage, a lubricant supply chamber, a reciprocating lubricant pump for forcing lubricant into said passage, a reciprocating air pump for forcing momentary charges of air through said air duct and into said lubricant passage to segregate a quantity of

lubricant from the main body of lubricant therein and to force said quantity of lubricant from the passage and onto the rail head, means actuated by the passage of a car over the rail for operating said lubricant air pumps in one direction, and a resilient member for returning said pumps to their normal positions.

7. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage therein for containing lubricant to be discharged and an air duct communicating with said passage near its discharge end, and means for introducing air under pressure into said duct and passage to force a quantity of lubricant from the latter onto the side of the rail head; the said lubricant passage being formed at a location opposite the air duct opening therein with a lateral projection, whereby the air pressure exerted on the lubricant at opposite sides of said projection segregates a quantity of lubricant from the main body and discharges it onto the rail.

8. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage therein for containing lubricant to be discharged and an air duct communicating with said passage near its discharge end, and means for introducing air under pressure into said duct and passage to force a quantity of lubricant from the latter onto the side of the rail head, there being an air baffle located in said passage at the opening of the air duct therein to direct portions of air in opposite directions, whereby the air pressure separates a quantity of lubricant from the main body and discharges it onto the rail.

9. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage therein for containing lubricant to be discharged and an air duct communicating with said passage at substantially right angles to said passage, and means for introducing air under pressure into said duct and passage to force a quantity of lubricant from the latter onto the side of the rail head and means positioned to obstruct the lubricant passage and direct the air therein to discharge the lubricant onto the rail.

10. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage therein for containing lubricant to be discharged, an air duct communicating with said passage near its discharge end, means for introducing air under pressure into said duct and passage to force a quantity of lubricant from the latter onto the side face of the rail, and means for maintaining the air duct closed at its discharge end until the air pressure in said duct reaches a predetermined point.

11. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent a rail and provided with a plurality of discharge openings, a main lubricant passage, branch passages of uniform resistance to the flow of lubricant therein connecting the discharge openings with one end of the main lubricant passage, a main air duct provided with branches communicating with said branch lubricant passages, means for introducing air under pressure into said duct and lubricant branch passages to force a quantity of lubricant from the latter onto a side face of the rail head, and means positioned adjacent the opening of the air duct into the branch lubricant ducts adapted to obstruct the flow of lubricant and direct the discharge of air toward the discharge opening whereby the air pressure segregates a quantity of lubricant from the main body of lubricant in said branch passages and discharges it onto the rail.

12. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent a rail and having a passage therein for containing lubricant to be discharged and an air duct communicating with the passage, a lubricant pump for supplying lubricant to said passage, a separate air pump for supplying air under pressure to said duct and means positioned for engagement with a car wheel for operating said pump whereby the air under pressure is introduced into said duct after the pressure operation of the lubricant pump.

13. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the rail and having a passage therein for containing lubricant to be discharged and an air duct communicating with said passage, a lubricant pump for supplying lubricant to said passage, means for operating said lubricant pump, and an air pump operatively connected with said pump operating means and adapted to introduce said air into the discharger after the pressure operation of the lubricant pump.

14. A rail and wheel flange oiler comprising a lubricant pump adjustably secured to a rail and having lubricant and air passages therein in the form of open grooves, means for closing the open sides of said grooves, means for introducing lubricant into said lubricant passage comprising a lubricant pump and means actuated by a car wheel passing along the rail for operating the pump, and means separate from the lubricant pump for introducing air into said discharger under pressure to project a quantity of lubricant from said discharger onto the rail head.

15. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the rail and having a passage therein for containing lubricant to be discharged, an air duct communicating with said passage, means for forcing lubricant into said passage and for introducing air under pressure in said air passage, and a valve positioned adjacent the discharge end of said air passage adapted to be moved into the lubricant passage to obstruct the same during the discharge of air from said duct.

16. A rail and wheel flange lubricator comprising a lubricant discharger adapted to be positioned adjacent the gauge side of a rail and having a passage therein for containing lubricant to be discharged and an air duct communicating with said passage, means for introducing air under pressure into said duct to discharge a quantity of lubricant therefrom onto the element to be lubricated and a hinged valve mounted to normally close the air duct and adapted, when in its opened position to obstruct the lubricant passage, and a spring positioned to hold the valve in its air duct closing position until the air in said duct reaches a predetermined pressure.

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