April 28, 1942. H. R. WELBY 2,281,400

LUBRICATING DEVICE

Filed April 10, 1940

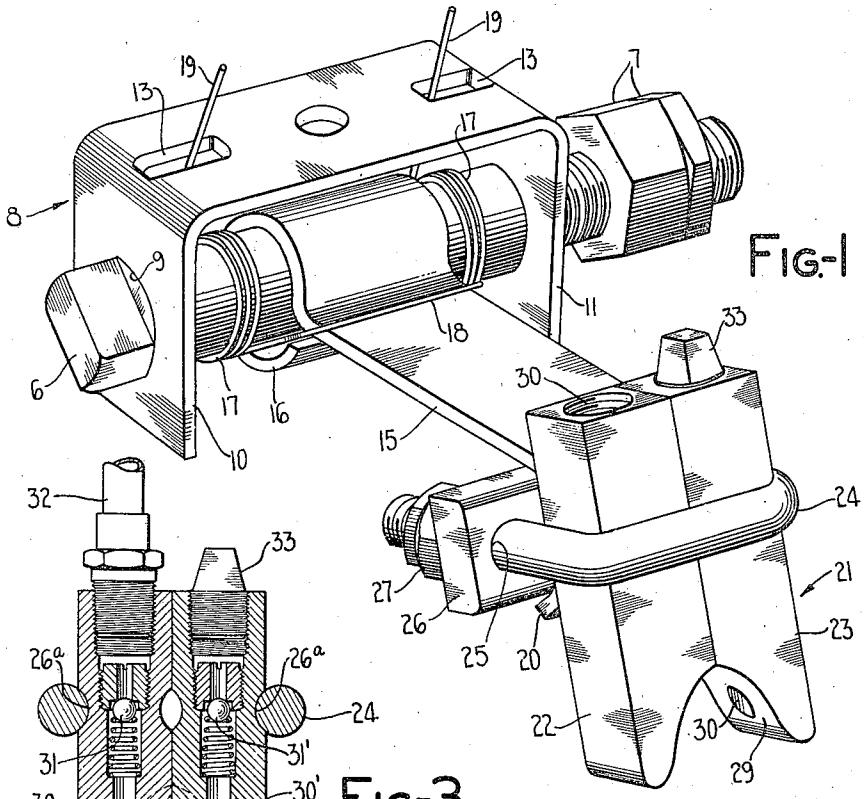


FIG.-1

FIG.-3

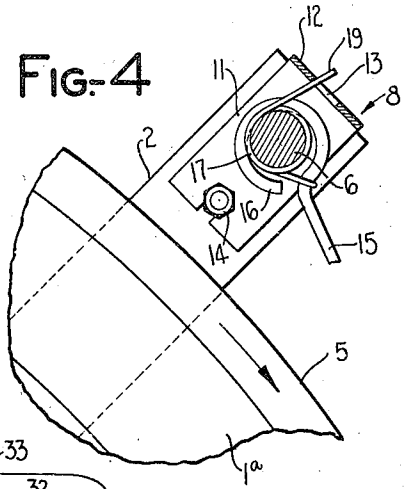


FIG.-4

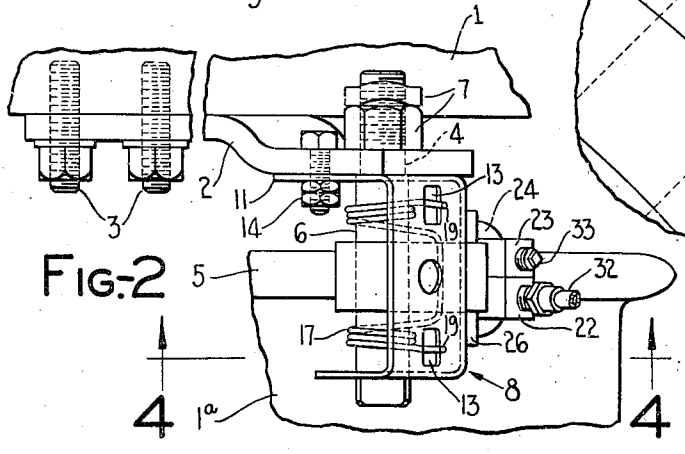


FIG.-2

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UNITED STATES PATENT OFFICE

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LUBRICATING DEVICE

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Application April 10, 1940, Serial No. 328,920

1 Claim. (Cl. 184—3)

This invention relates to new and useful improvements in lubricating devices for feeding lubricant, such as oil, to the rail engaging flanges of flanged wheels.

An object of the invention is to provide a feeding means or nozzle to be held against the wheel flange and so constructed that the lubricant will not reach the wheel tread.

Another object is to provide a nozzle which is universally supported so that shifting or other movement of the nozzle supporting means, such as the engine frame, relative to the wheel will not cause displacement of the nozzle from its operative relation to the wheel flange.

Another object is to provide a nozzle which is interchangeable for either right hand or left hand wheels.

Another object is to provide a nozzle in which the lubricant feeding portion which is subject to wear by the wheel tread may be replaced.

The invention consists in the improved construction and combination of parts to be more fully described hereinafter and the novelty of which will be particularly pointed out and distinctly claimed.

In the accompanying drawing, to be taken as a part of this specification, I have fully and clearly illustrated a preferred embodiment of my invention, in which drawing:

Figure 1 is a view in perspective of the feed nozzle;

Fig. 2 is a top plan view of the nozzle as applied to a wheel flange;

Fig. 3 is a view in longitudinal section through the nozzle head and showing its cooperation with a wheel flange, and

Fig. 4 is a detail view in section on the line 4—4 of Fig. 2.

Referring to the drawing by characters of reference, the numeral 1 designates generally a portion of the frame of a locomotive or other railway rolling stock. Extending from the frame 1 adjacent a wheel 1^a of which the flange is to be lubricated is a supporting member 2 secured to the frame by studs 3. The member 2 extends upward and either forward or rearward of the wheel axle and is provided with an aperture 4 radially outward of the wheel flange 5. A supporting post or bearing pin 6 is rigidly secured in the aperture 4 by nuts 7 which clamp a flange or shoulder on the post 6 against the member 2. The post 6 receives a substantially U-shaped bracket member 8 having aligned apertures 9 in its side flanges or arms 10, 11 and through which the post 6 extends. The base or cross member 12 which joins the arms 10, 11 is positioned radially outward of the post 6 and has elongated slots 13 therethrough extending longitudinally of the wheel axle. The arm 11 is clamped to the supporting member 2 by a nut and bolt 14 so that the bracket 8 is held against rotation and rigidly in position. Carried by the post 6 is a supporting arm 15 of flat rectangular metal stock having one end bent or cylindrically formed to provide a sleeve or eye 16 through which the post 6 extends so that the arm 15 is loosely pivoted or journaled for movement in the plane of the wheel. The sleeve 16 is positioned between the arms 10, 11 such that it is limited thereby in movement longitudinally of the post and is of sufficient internal diameter so that it is free to rock or cant on the post. Encircling the post 6 at the sides of the sleeve 16 are the spaced turns of a coil spring 17 having its connecting midportion 18 overlying and bearing on the arm 15. The free ends 19 of spring 17 extend through the apertures 13. The bracket 8 thus serves as a stop to hold the spring 17 wound under tension so that the spring portion 18 tends to rotate arm 15 clockwise or downward and to hold the nozzle in engagement with the wheel flange. The free end of arm 15 terminates in an offset portion 20, preferably a downward and backward bent hook portion to which the oiler shoe or nozzle head 21 is secured. The nozzle head or oiler shoe 21 comprises a removable and replaceable member which may be formed of a pair of similar rectangular bar members 22, 23, preferably of steel. The shoe 21 is clamped to the portion 20 by a U-shaped member or metal strap 24 which has its end portions threaded and extended through a pair of apertures 25 in a cross member 26. The bar members 22, 23 are provided with a transverse surrounding groove 26^a into which the strap 24 fits to hold the members 22, 23 in tight lateral engagement and to prevent slippage or movement of the shoe 21 on the arm 15. Also, the cross member 26 fits within the hook portion 20 so that the shoe 21 is held securely to and is prevented from twisting or other movement on the arm 15. The strap 24 and cross member 26 are pulled up tight against the portion 20 and shoe 21 by nuts 27 threaded on the ends of strap 24. The bar members 22, 23 extend substantially radially to the wheel flange 5 and have their flange engaging ends recessed or grooved, as at 28, 29 respectively, to provide a channel conforming to the rail engaging face of the wheel flange. The bar member 22 which engages the

tread side of the flange has a longitudinal lubricant delivering passageway **30** extending therethrough. The passageway **30** which opens through the face of groove portion **28** has therein a spring-pressed check valve **31** which normally tends to hold back the flow of lubricant to the wheel flange but which is opened by pressure of the lubricant fed to the shoe through the conduit **32** from a mechanical oiler or other lubricant pressure source. The bar member **23** is of identical construction to that of member **22** and therefore the primes of the numerals applied to member **22** designate like parts in member **23**. Since the passageway **30'** is not utilized when it bears against the outside of the wheel flange, it is closed by a plug **33**.

In operation, when the shoe **21** is seated on a wheel flange and lubricant is supplied thereto through the conduit **32**, then as the wheel rotates, lubricant will feed through the passageway **30** onto the rail engaging face of the wheel flange **5**. The oil supplied to the flange **5** will not flow onto the wheel tread due to the centrifugal force resulting from rotation of the wheel. If the wheel should not run true, the arm **15** can twist from side to side or raise or lower at its inner and outer edges, and further if the wheel has any other displacement relative to the post **6**, the arm **15** can move with it, all of which movements are accommodated by the loose fit of the sleeve **16** on the post **6**. It will be apparent that when the shoe is worn say to the dotted line **35**, such that it would require replacement, then either the complete shoe **21** may be replaced, or if desired and the wear permits, it will be only necessary to supply or renew that portion of the shoe which engages the tread side of the flange and has the active oil delivery passageway. Since the wear of the shoe will occur along the dotted line, designated at **35**, of Fig. 3, a flange will be left as indicated by the dotted line **35** on the member **23**. The shoe when reconditioned by substitution of a new member **22** will thus be held against lateral inward displacement by the remaining flange of the old bar member **23** engaging the outside face of the wheel flange, the new replacement oil delivery bar member serving to support the shoe on the wheel flange in operative position.

What I claim and desire to secure by Letters Patent of the United States is:

In a wheel flange oiling device, a sheet metal supporting arm having one end rebent to cylindrical form to provide a journal bearing for mounting said arm, the other end of said member being transversely bent to provide a hook portion having an outer supporting face, a wheel flange lubricating shoe extending transverse to said supporting arm with a side face abutting said supporting face, and a removable clamping means surrounding and securing together said shoe and said hook portion.

HENRY R. WELBY.