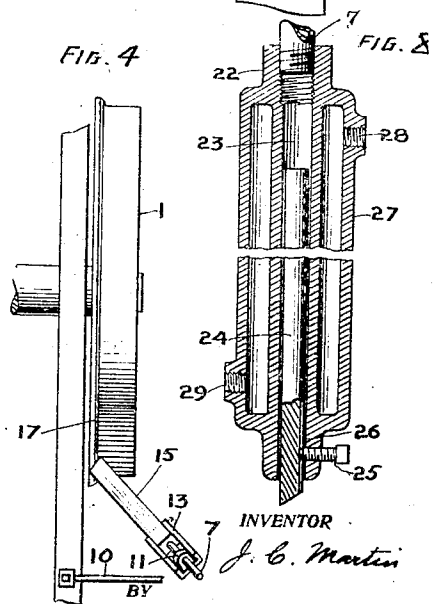
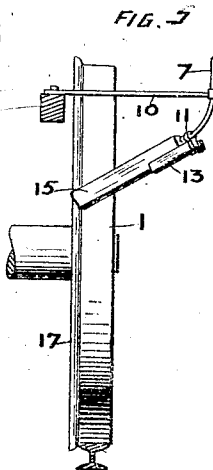
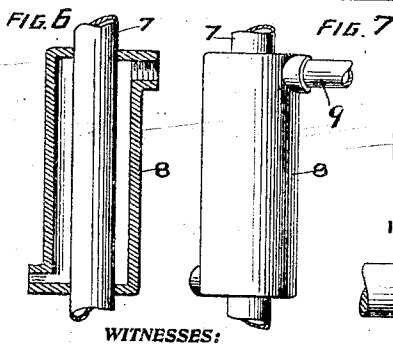
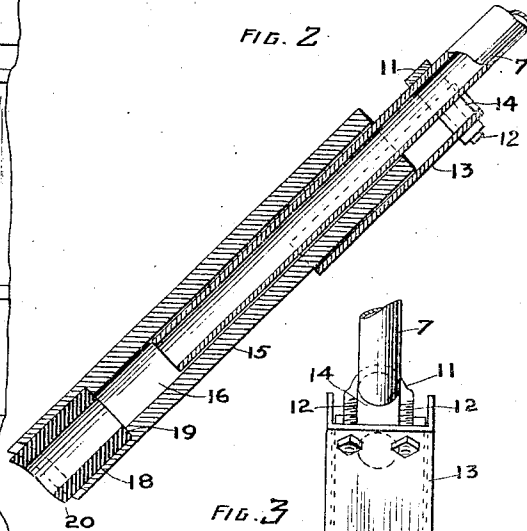
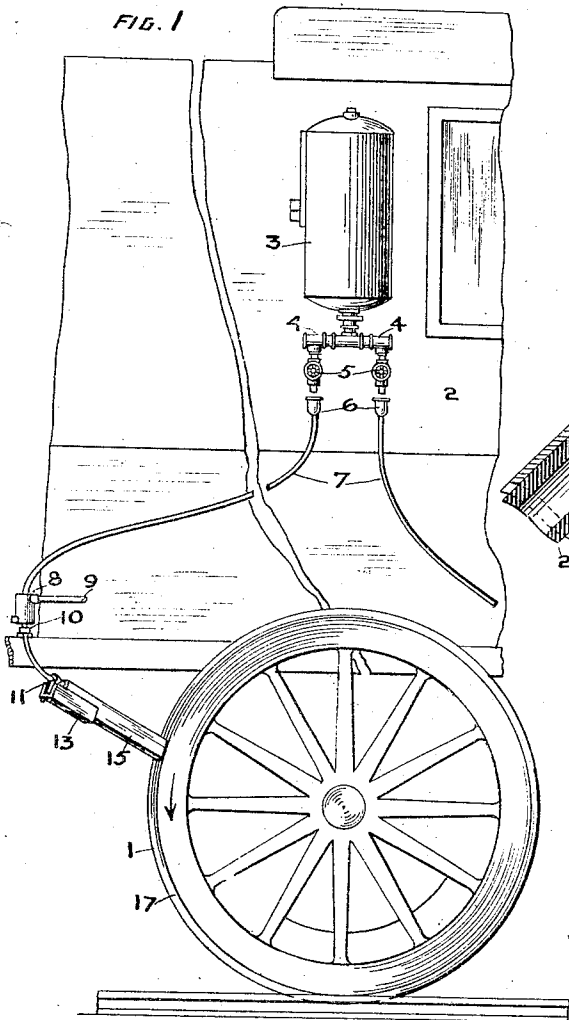


J. C. MARTIN.
FLANGE LUBRICATING DEVICE.
APPLICATION FILED AUG. 31, 1909.

1,058,675.

Patented Apr. 8, 1913.



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JESSE C. MARTIN, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE CHICAGO LUBRICATOR COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FLANGE-LUBRICATING DEVICE.

1,058,675.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed August 31, 1909. Serial No. 515,509.

To all whom it may concern:

Be it known that I, JESSE C. MARTIN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Flange-Lubricating Devices, of which the following is a specification.

The present invention relates to improvements in devices such as disclosed in U. S. Letters Patent No. 887,680, granted to me May 12, 1908, for flange lubricating devices, the purpose of which is to supply lubricant to the flanged wheels of railroad rolling stock so as to avoid the excessive friction between such flanged wheels and the rails of the track, and thus prolong the life of the wheels and rails.

One object of the invention is to provide an improved form and arrangement of shoe for applying the lubricant to the wheel in the least wasteful way and so that the shoe may adjust itself to the movements of the wheel and the car or locomotive body or frame on which it is used.

A further object of the invention is to provide means for keeping the lubricant fluid.

These and other objects of the invention are attained by the means and in the manner I will proceed now to particularly set forth and finally claim.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of part of the cab end of a locomotive equipped with the device of this invention. Fig. 2 is a longitudinal section, and Fig. 3 is a bottom view of the shoe and its mounting, drawn on a larger scale. Fig. 4 is a top plan view, and Fig. 5 is a front elevation of a wheel and part of the lubricating device, same scale as Fig. 1. Fig. 6 is a vertical section of a heater surrounding the lubricant conducting pipe, which latter is shown in elevation, and Fig. 7 is an elevation of the same parts, these two views being on about the same scale as Figs. 2 and 3. Fig. 8 is a longitudinal section and partial elevation of a modified form of heater.

1 indicates a wheel, to which the invention

is applied, and 2 indicates the body of a vehicle supported in connection with the wheel, and herein shown as part of a railway locomotive. 3 is a lubricant receptacle, supported upon said body, and discharging through branch pipes 4, having controlling valves 5, into cups 6 in the upper ends of conducting pipes 7, which lead to the several wheels to be lubricated. Surrounding each pipe 7 is a steam jacket 8, of suitable length, and connected with a steam pipe 9 which may receive exhaust steam from the engine, whereby the lubricant is heated sufficiently to preserve its fluidity. The lower ends of these conducting pipes 7 are supported by bars or brackets on some part of the vehicle body or frame. As shown at the left-hand side of Fig. 1, a bracket 10 is used. The lower end of each pipe 7 has secured to it by a yoke 11 having threaded and nutted ends 12, a channel-shaped rectangular guide 13, which is spaced from the pipe by a block 14. A rectangular shoe 15 is arranged in said guide and on the pipe in such way as to be capable of longitudinal movement upon the pipe, without turning, so as to be longitudinally self-adjusting with relation to the wheel when the vehicle is in motion. This shoe has a cylindrical conduit 16 through it, to receive the lower end of the pipe and to form a continuation of the pipe for supplying the lubricant to the desired point. The lower end of the shoe is formed to fit snugly against the tread side of the flange 17 of the wheel, and in this end is a cylindrical recess 18 of greater diameter than the conduit 16 and having a shoulder 19, against which and within the recess is fitted a short tube 20 of rubber, felt, or any suitable yielding or resilient material forming a swab. Said tube or swab 20 is slightly longer than the recess 18 so that its outer end extends beyond the end of the recess, and the tube is compressed within the recess by the pressure against the flange of the wheel caused by the weight of said shoe. This construction is adopted in order to adapt the device for use with wheels having flanges of irregular form, such as is caused by undue wear of the flange. Whatever be the form of the flange, the tube 20,

of yielding material, will wear away at those parts which are in contact with the flange, and undergo no wear of the parts which are not in contact, until the end of the tube 20 conforms accurately to the form of the flange. A further improvement resides in the arrangement of said shoe relatively to the wheel. Heretofore, in such devices, a common arrangement places the shoe at the top of the wheel, with the result that, in case of a locomotive standing on a track for a considerable length of time, the lubricating oil spreads not only over the flange, but also over the tread of the wheel, and in time covers the whole of the tread, so that the tractive power is greatly reduced. To overcome this serious objection, the shoe is arranged slightly above the center of the wheel and at the front of the same, so that only the flange of the wheel is lubricated and the tractive power of the engine is not impaired.

As will be seen by comparison of Figs. 1, 4 and 5, the shoe is arranged obliquely to the face of the flange of the wheel both transversely and vertically, and at a downward incline in the direction of its discharge end, and its discharge end is at the front of the wheel relatively to its direction of motion, and just above or about where the horizontal diameter touches the tread. By this arrangement the lubricant is delivered at the place where it is immediately needed and not spread all over the wheel.

In the modification shown in Fig. 8, there is screwed on the lower end of pipe 7, a casting 22, having a central slideway 23, in which is slidably arranged a rod or bar 24, the lower end of which is formed to fit closely against the wheel flange. This rod or bar is held against turning in its slideway by a set-screw 25 fitted in the lower end of the casing, and with its point entering a longitudinal groove 26 in the rod or bar, to permit longitudinal adjustment of the rod or bar to the wheel flange. The casting 22 is provided with a steam jacket 27, having a steam inlet 28 and a condensed fluid outlet 29, to provide for keeping the lubricant fluid.

I claim:—

1. A flange lubricating device, comprising a source of supply of lubricant, a pipe leading therefrom, a guideway secured on said pipe, and a tubular shoe movable on said pipe and guided in and by said guideway in such movement and arranged obliquely to the flange with its lower end in contact with the flange.

2. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway secured to said pipe, a shoe longitudinally movable in and guided by said guideway, a flexible part carried on the lower end of the shoe and

shaped to fit closely against the flange of the wheel, and means on said guideway for preventing the shoe turning about its axis.

3. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway secured to said pipe, a shoe guided by said guideway, its lower end being shaped to fit closely against the flange of the wheel, and a short tube of yielding material at the lower end of said shoe, said guideway being provided with means for preventing the shoe turning about its axis, substantially as described.

4. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway secured to said pipe, a shoe longitudinally movable in and guided by said guideway, a flexible part carried on the lower end of the shoe and shaped to fit closely against the flange of the wheel, means on said guideway for preventing the shoe turning about its axis, and means for heating the lubricating material in its passage to said shoe.

5. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway secured to said pipe, and a shoe longitudinally movable in and guided by said guideway and having a flexible tubular end arranged to contact with the flange of the wheel at a point slightly above the center of the wheel and shaped to fit closely against the flange of the wheel, said guideway being provided with means for preventing the shoe turning about its axis.

6. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway secured to said pipe, and a shoe guided by said guideway, and arranged to contact with the flange of the wheel at a point slightly above the center of the wheel, and yielding material at the lower end of said shoe through which the lubricating material can pass, its lower end being shaped to fit closely against the flange of the wheel, and said guideway being provided with means for preventing the shoe turning about its axis, substantially as described.

7. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway secured to said pipe, and a tubular shoe movably connected with the pipe and longitudinally movable in and guided by said guideway, the lower end of the shoe carrying a tip shaped to contact with the flange of the wheel, and said guideway affording suitable means for preventing the shoe turning about its axis.

8. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a shoe movably connected with the pipe, its lower end being

shaped to contact with the flange of the wheel, a short tube of yielding material at the lower end of said shoe, and means for preventing the shoe turning about its axis, substantially as described.

9. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway fixed on said pipe, a shoe movably connected with the pipe and guided by said guideway, and a flexible tip at the lower end of said shoe arranged to contact with the flange of the wheel at a point slightly above the center of the wheel, and means to prevent the shoe from turning about its axis.

10. A flange lubricating device, comprising a source of supply of lubricating oil, a pipe leading therefrom, a guideway fixed on said pipe, a shoe movably connected with the pipe and longitudinally movable in and guided by said guideway, the lower end of the shoe having a tube of yielding material

arranged to contact with the flange of the wheel at a point slightly above the center of the wheel, and means to prevent the shoe from turning about its axis.

11. A flange lubricating device, comprising a lubricant receptacle, a pipe leading therefrom, a tubular lubricant receiving part into which said pipe discharges, a heater applied to said pipe, and a loose member carried by the tubular part and projecting from its end and adapted to rest upon the wheel flange and deliver the lubricant to it and arranged obliquely to said wheel at its front and below its top.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JESSE C. MARTIN.

Witnesses:

FRANCIS M. WRIGHT,
D. B. RICHARDS.