

Feb. 12, 1929.

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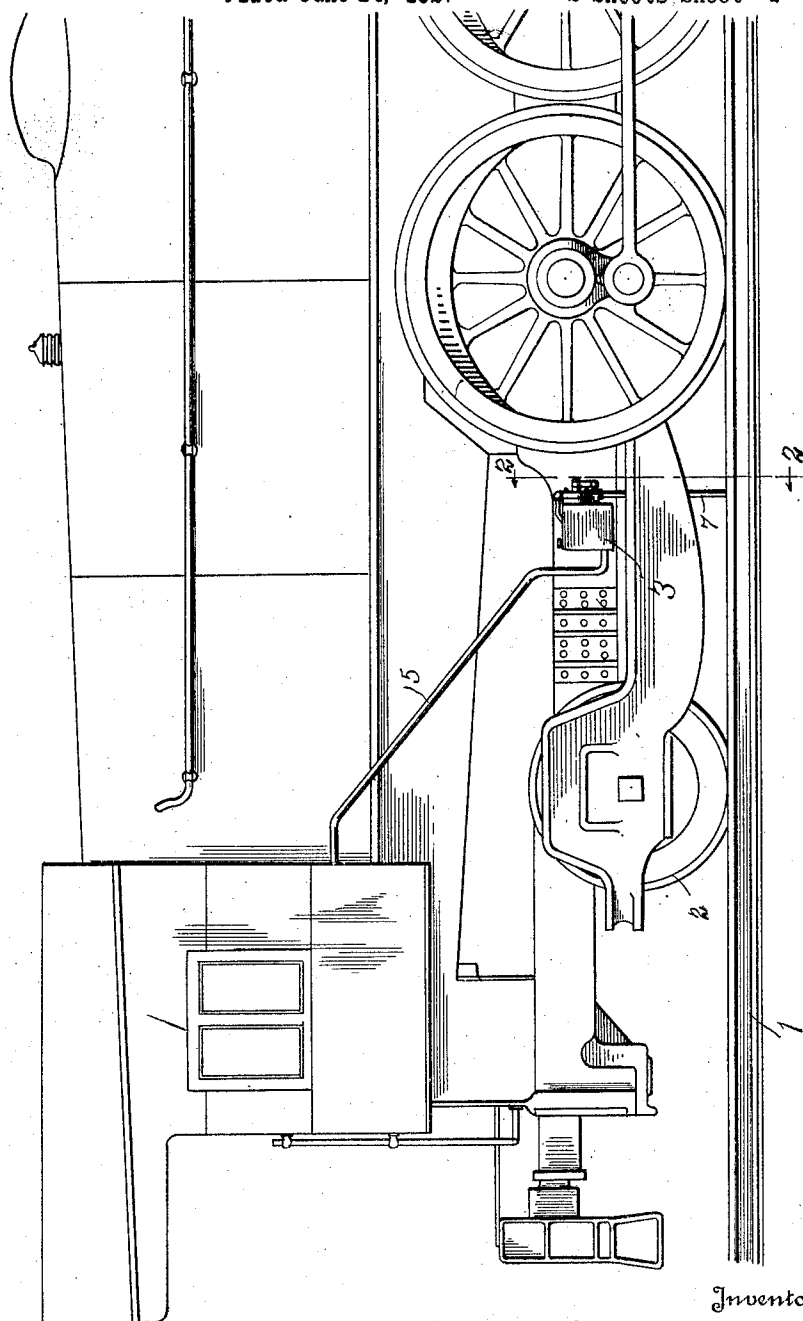
R. E. WEEDON ET AL

RAIL AND WHEEL FLANGE LUBRICATOR

Filed June 14, 1927

2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

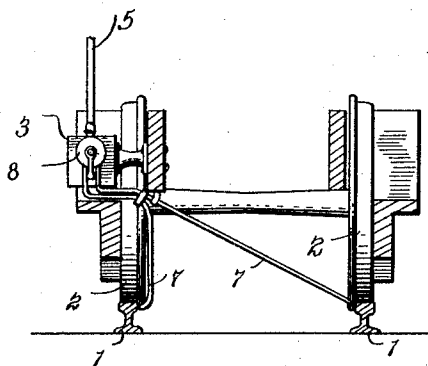


Fig. 3.

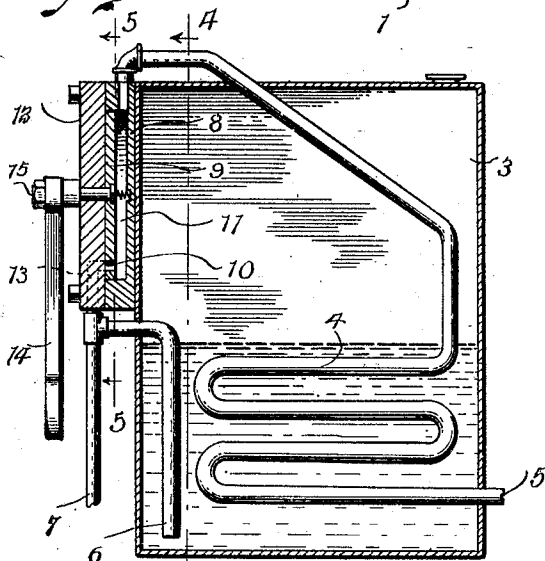


Fig. 4.

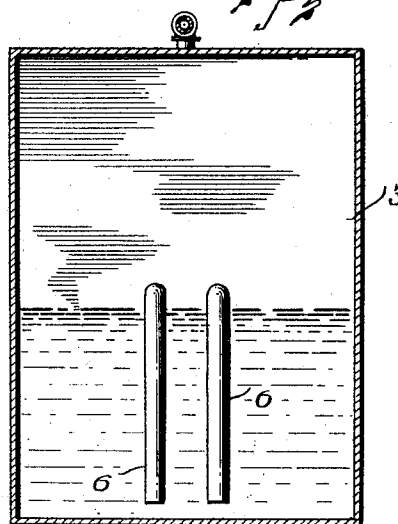


Fig. 5.

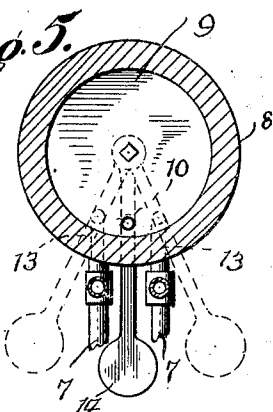


Fig. 6.

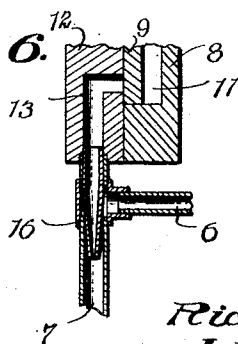


Fig. 7.

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RAIL AND WHEEL-FLANGE LUBRICATOR.

Application filed June 14, 1927. Serial No. 198,776.

In the operation of railroads it is well known that the rails and the flanges of the wheels of the rolling stock are subjected to severe frictional engagement at curves and require oiling to minimize the wear and obviate the screeching noise incident to the rubbing contact of the wheel flanges with the side of the rail head.

This invention provides for the automatic supply of oil to the side of the inner rail at curves, whereby to lubricate the point of contact between the side of the rail head and the flanges of the wheels so as to obviate the objectional features hereinbefore enumerated, and such others as result from the frictional rubbing action between wheel flanges and track rails at curves.

While the drawings illustrate a preferred embodiment of the invention, it is to be understood that in adapting the means to meet specific needs and requirements the design may be varied and such other changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the drawings hereto attached, in which,—

Figure 1 is a side view of a locomotive engine and track provided with wheel flange and rail lubricating means embodying the invention, the pilot and front portions of the locomotive being omitted.

Figure 2 is a detail sectional view on the line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is an enlarged sectional view of the lubricator.

Figure 4 is a sectional view on the line 4—4 of Figure 3, looking to the left as designated by the arrows.

Figure 5 is a detail sectional view on the line 5—5 of Figure 3, looking in the direction of the arrows.

Figure 6 is an enlarged fragmentary sectional view of the injector and parts intimately associated therewith.

Figure 7 is a detail view of the dispensing nozzle.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates the track rails, and 2 the flange wheels of rolling stock, which it is the purpose of the present invention to automatically lubricate at curves. It is preferred to mount the lubricator upon the locomotive engine. However, it is to be understood that the same may be mounted in any determinate way. The position of the lubricator is immaterial, and when mounted upon a locomotive engine it is disposed in rear of the drive wheels, as indicated most clearly in Figure 1 of the drawings, so as not to affect the traction between the drive wheels and the rails of the track.

The lubricator includes a tank 3 which constitutes a container for holding the lubricant which preferably consists of a heavy oil. To render the heavy oil sufficiently fluid to flow readily, it is necessary to heat the same, particularly in cold weather. For this purpose a coil 4 is placed within the tank 3 and steam is adapted to be circulated therethrough by means of a pipe 5 which leads from the cab of the locomotive engine or other determinate point. Delivery pipes 6, two in number, lead from the bottom portion of the tank 3 and connect with distributing pipes 7 whereby the lubricant is supplied to a side of the track rails, as indicated most clearly in Figure 2 of the drawings. A valve mechanism is associated with the tank 3 and comprises a casing 8 and a valve 9 therein, said valve consisting of a disk in which is formed an opening 10. A space 11 is formed in the casing 8 and is adapted to be supplied with steam, preferably the spent steam from the coil 4. The distributing pipes 7 connect with passages formed in the cover plate 12 closing the open side of the valve casing 8. The passages 13 open into the space 11, as indicated most clearly in Figure 5 of the drawings. The valve 9 normally occupies a position with its opening 10 intermediate the receiving ends of the passages 13 opening into the space 11, so that a movement of the valve in either direction will connect its opening 10 with one or the other of the passages 13 to admit of the lubricant being supplied to one or the other of the track rails 1. The valve 9 is pendulum controlled, the pendulum 14 being connected to the outer end of a shaft 15 which is mounted in the cover plate 12 and has the valve 9 connected to its inner end. When the parts are in normal position, which they occupy when the locomotive engine is running upon a straight line of track

the valve 9 occupies a position to cut off communication between the space 11 and the passages 13. However, when a curve is reached the pendulum 14 is swung laterally and moves the valve 9 to connect its opening 10 with one or the other of the passages 13 depending upon the direction of the curve. This admits of steam flowing from the space 11 through the opening 10 into the passage 13, thence through the distributing pipes 7 and resulting in supplying oil to the sides of the inner rail whereby to lubricate the rubbing contact between the wheel flange and rail in a manner readily appreciated. A nozzle 16 connects with the delivery end of each of the passages 13 and extends into the receiving end of the distributing pipes 7 and across the space of the delivery pipe 6. When steam is flowing through the nozzle 16 it creates a suction in the delivery pipe 6, with the result that oil is drawn from the tank 3 into the delivery pipe 6 and is discharged therefrom into the distributing pipe 7 through which it is forced by the jets of steam and delivered to the inner side of the track rail. The delivery end of each of the distributing pipes 7 is provided with a flat nozzle 17 which is arranged in the plane of the head of the track rail and parallel thereto, so as to insure a positive supply of the lubricant thereto.

The steam flowing through the coils 4 renders the heavy oil used sufficiently fluid to flow readily through the delivery and distributing pipes and this steam is further used to draw the oil from the tank 3 and cause it to flow positively through the delivery and distributing pipes in the manner stated. The pendulum 14 may be operated either by centrifugal force incident to travel around a curve or by the banking of the track at curves, or by the combined action of gravity and centrifugal force, as will be readily understood.

Having thus described the invention, we claim:

1. A rail and wheel flange lubricator comprising an oil containing tank, a delivery pipe leading from said tank, a distributing pipe connected with the delivery pipe, and a valve mechanism for controlling the supply of a fluid medium to the distributing pipe

which, in flowing therethrough, draws a supply of oil from the tank and delivers it to the rail and wheel flange to be lubricated, and a pendulum for automatically operating the valve mechanism and actuated by the travel of the moving part about a curve.

2. A rail and wheel flange lubricator comprising a tank adapted to receive a heavy oil, a steam coil within the tank for heating the oil therein to render the same fluid, a delivery pipe leading from the tank, a distributing pipe connected with the delivery pipe, a valve casing having the said steam coil and distributing pipe connected thereto, and a pendulum controlled valve within the casing for controlling the outflow of the steam therefrom to the distributing pipes.

3. A rail and wheel flange lubricator, a tank adapted to receive a heavy oil, a steam coil within the tank, delivery pipes leading from the tank, distributing pipes connected with the delivery pipes, a valve casing having the steam coil and the distributing pipes connected thereto, nozzles within the distributing pipes for creating a flow therethrough and a suction within the delivery pipes, a valve in the valve casing for controlling the outflow of fluid pressure therefrom to the distributing pipes, and a pendulum for automatically operating the valve and adapted to be actuated by the moving part when passing around a curve.

4. Means for lubricating a rail and wheel flange, the same comprising a tank, a steam coil therein, delivery pipes leading from the tank, distributing pipes connected with the delivery pipe, a valve casing having a steam coil and distributing pipe connected thereto, nozzles within the distributing pipes for creating a suction therein whereby to draw oil from the tank, a valve within the valve casing for controlling the outflow of steam therefrom to the distributing pipe, and a pendulum connected with the valve for automatic actuation thereof.

In testimony whereof we affix our signatures.

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