

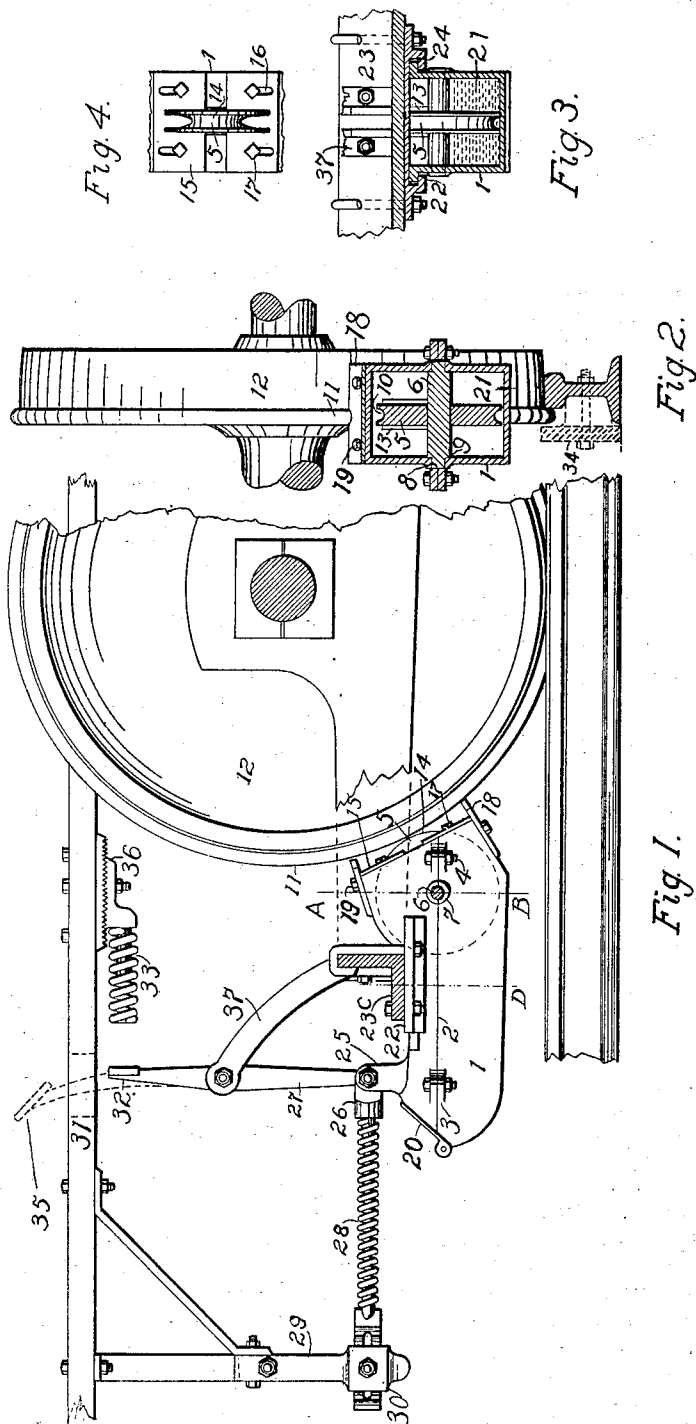
No. 763,537.

PATENTED JUNE 28, 1904.

M. W. BIRD.
RAIL LUBRICATOR.

APPLICATION FILED OCT. 5, 1903.

NO MODEL.



Witnesses
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RAIL-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 763,537, dated June 28, 1904.

Application filed October 5, 1903. Serial No. 175,843. (No model.)

To all whom it may concern:

Be it known that I, MILTON W. BIRD, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a new and useful Rail-Lubricator, of which the following is a specification.

The object of my invention is—

First. To provide a device for lubricating the wheels and rails, more particularly of street-cars, in such a manner that on the curves the friction between the flange and rail will be diminished.

Second. Of so applying the lubricant that the horizontal frictional contact between the wheel proper and rail will not be reduced.

A further object is to suppress the disagreeable noise occasioned by said friction upon curves.

Third. To provide a simple device capable of being attached to any car, one that will be at once economical, uniform, and, where construction of cars will permit, automatic in its action, as in cars that have trucks that turn on a pivot or bolster.

Fourth. To provide a lubricating device which will be serviceable under varying climatic conditions and which may be readily taken apart and assembled.

I attain these several objects by the mechanism illustrated in the accompanying drawings.

Similar characters of reference refer to corresponding parts in the several views.

All of the parts are to be preferably of metal.

Figure 1 is a side view showing the automatic connection between the lubricator and body of the car, also the relation of the lubricator to the several parts of the car with which it coöperates. Fig. 2 is a vertical section of the lubricator on the line A B, Fig. 1, also a front view of car-wheel and rail. Fig. 3 gives a view of the truck-frame to which lubricator is attached, also a section of the lubricator on the line C D, Fig. 1. Fig. 4 is a view of the gates which regulate the discharge of oil from the lubricator-wheel, all of which will be more fully explained hereinafter.

1 is the casing of lubricator, composed of

two principal parts or sections, the lower one forming an oil-chamber. These sections are joined at the line 2, Fig. 1, and secured together by the lugs 3 and bolts 4. A wheel 5 is placed partly within the casing 1 and secured to shaft 6, which rotates in the boxes 7, Fig. 1. The shaft 6, Fig. 2, is reduced at 8, forming shoulders at 9, which prevent any longitudinal movement of the shaft 6. A groove 10 is formed in the rim or periphery of the wheel 5 to receive the flange 11 of the car-wheel 12. The casing 1 is removed at 13 that the wheel 5 may protrude, as at 14, Fig. 1. The gates 15, Figs. 1 and 4, are provided with slotted holes 16, which permit them to be raised or lowered through the medium of the set-screws 17 that the discharge of oil may be regulated, Fig. 4.

At 18, Fig. 1, screens or shields are attached to the casing 1 through the medium of the set-screws 19, which are inserted through slotted or elongated holes which provide for their close adjustment to the car-wheel 12 that no accumulation of dirt may interfere with the lubricator-wheel 5.

At 20, Fig. 1, a lid is provided that access may readily be had to oil-chamber 21, Fig. 2.

The slides 22, Figs. 1 and 3, permit the truck-frame 23 to reciprocate with relation to the lubricator, allowing the wheel 5 and car-wheel 12 to come in contact. By the construction of the slides 22 as shown at 24, Fig. 3, the lubricator will have some lateral movement by which it will accommodate itself to any side movement of the car-wheel 12.

Through the lug 25 a channel is cut to receive the spring-head 26 and the lower end of the vertical lever 27. The spring 28 is connected to the arm 29 with an adjustable clamping device 30 that the lubricator may be properly adjusted. 31 represents the floor of the car-body. The spring 28 is so made that when it is at rest it may be either compressed or extended.

The operation of lubricator will be explained as follows: For example, we say the car-wheel shown is the "front" wheel of the front trucks. The drawings give the position of the lubricator on a straight track. When a curve is reached, if the lubricator is on the outside of

the curve the car-wheel 12 and truck-frame 23 travel forward with relation to the car-body and lubricating device, the car-wheel 12 comes in contact with the lubricator-wheel 5, (the spring 28 is then compressed according to the degree of curve,) and the wheel 5 revolves by the contact. The oil from within the chamber 1 is adhesively conveyed by the partially-submerged wheel 5 when rotated and is delivered by centrifugal force at the periphery of said wheel to the contacting car-wheel flange and thence deposited upon the track-rail therebeneath to thoroughly lubricate the same.

When the lubricator is on the inside of a curve, the operation is reversed from that above described, the spring 28 being extended, which renders the lubricator inoperative unless the degree of curve is sufficient to bring the top end of the vertical lever at 32 in contact with the spring 33, which operation will, through the medium of the vertical lever 27, cause the lubricator to operate by bringing it in contact with the car-wheel. This is necessary that the safety or guard rail (indicated by dotted lines 34, Fig. 2) which is placed on the inside of sharp curves may be lubricated, the afore-described means of imparting a reciprocal movement of the lubricating device into and out of engagement with the wheels of cars having non-rotatable trucks not being operative.

I desire to operate the lubrication device with any simple lever, as indicated by dotted lines 35, Fig. 1, convenient for the motor-man's foot.

The adjustable clamping devices 30 and 36 shown on the drawings form no part of my present invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a rail-lubricator of

a casing so constructed as to receive and retain oil and provided with boxes in which a shaft may rotate substantially as set forth and described.

2. In a rail-lubricator the combination of a wheel partly inclosed within a casing and secured to a shaft having its lower part to be submerged in oil for the purpose described.

3. The combination of the parts in a rail-lubricator forming the automatic connection of the lubricator to the body of the car, namely, the spiral spring 28, the vertical lever 27 the arm 37 and the spring 33 in the arrangement shown and for the object specified and set forth.

4. In a rail-lubricator, the combination with a casing having an oil-chamber therein, of a peripherally-grooved wheel provided with an axle journaled in said casing, substantially as described.

5. In a rail-lubricator, the combination with a casing having an oil-chamber therein, a wheel rotatably mounted in said casing and protruding through an opening in one end of the casing, of the gates slidably secured to the said casing whereby the said opening about the protruding part of the said wheel may be closed, substantially as described.

6. In a rail-lubricator, in combination with a casing having an oil-chamber therein, and the means to deliver the oil from the said chamber to a contacting car-wheel, of means for moving said casing into and out of operative position relatively of said car-wheel.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MILTON W. BIRD.

Witnesses:

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W. H. FLETCHER.