

A. C. FARLEY & W. B. McDONALD.
RAIL LUBRICATING APPARATUS,
APPLICATION FILED APR. 29, 1909.

954,383.

Patented Apr. 5, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

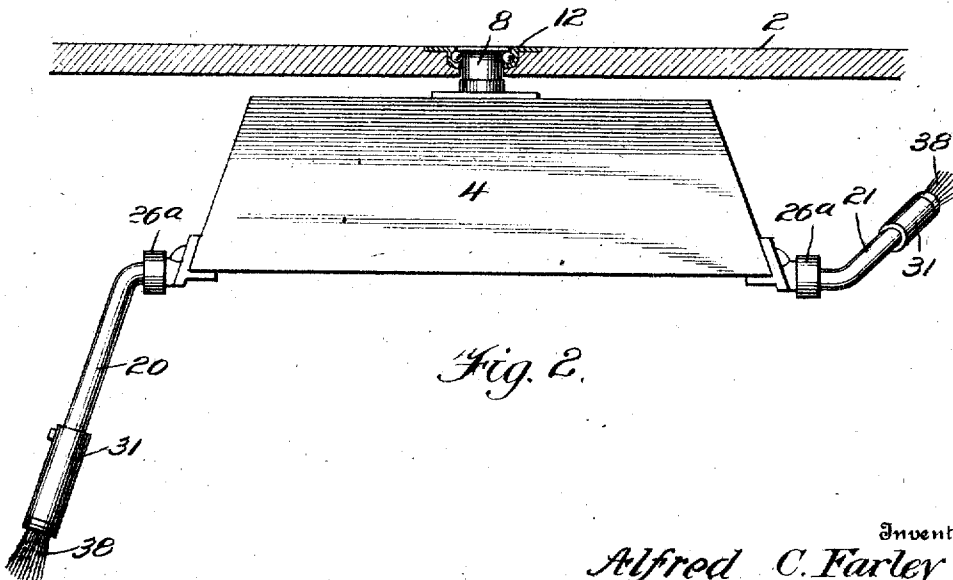
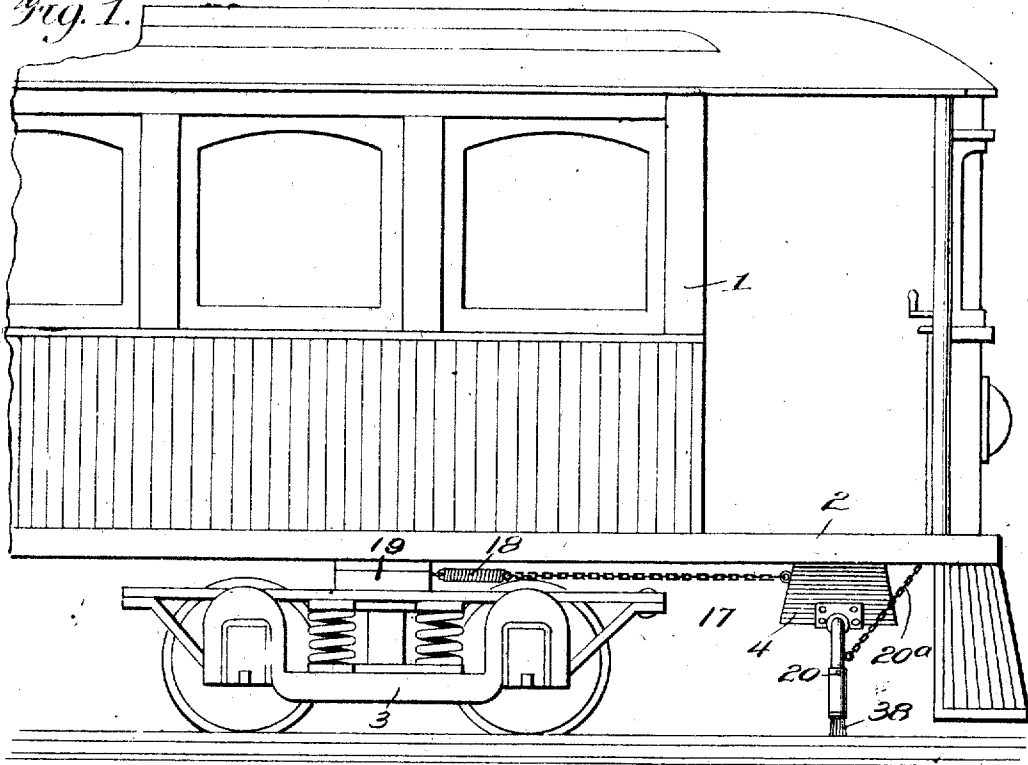


Fig. 2.

Witnesses
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3 SHEETS—SHEET 2.

Fig. 3.

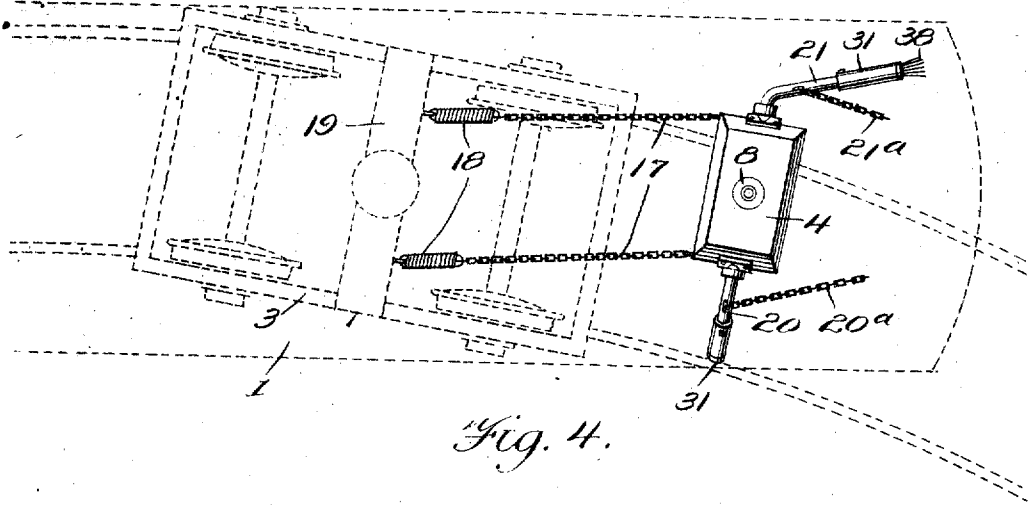
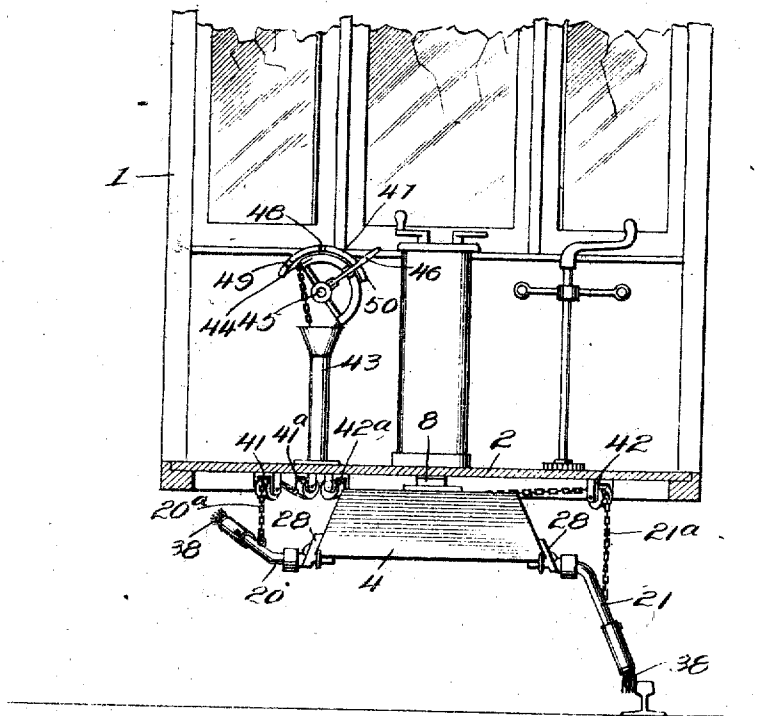


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

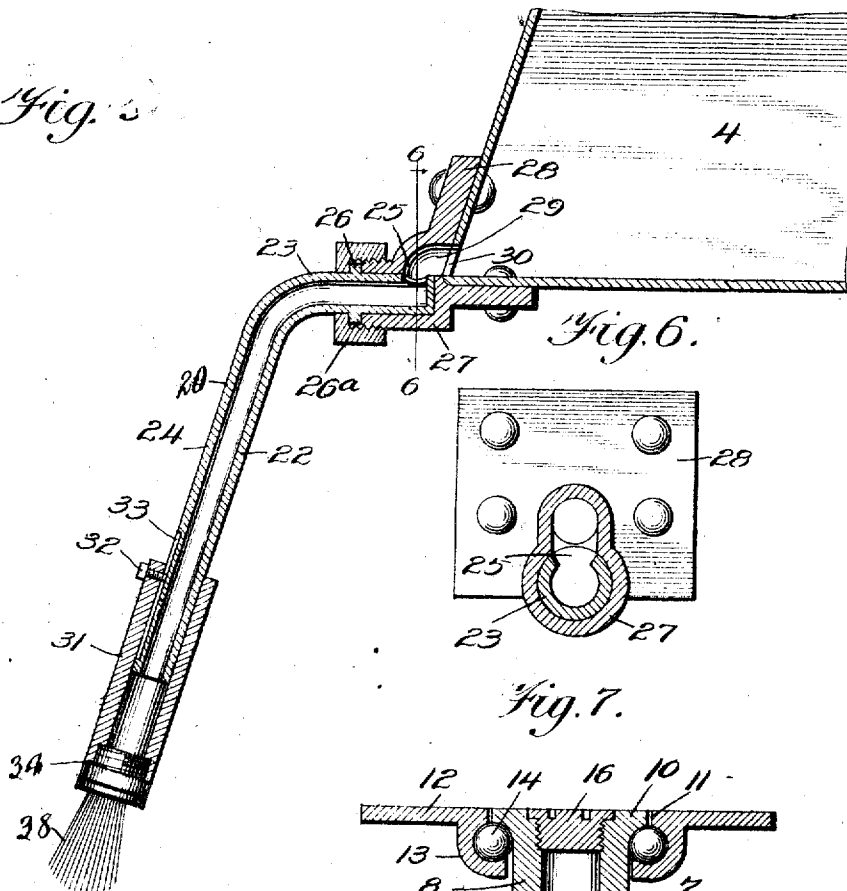


Fig. 6.

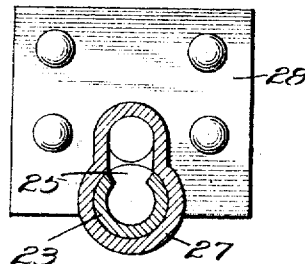


Fig. 7.

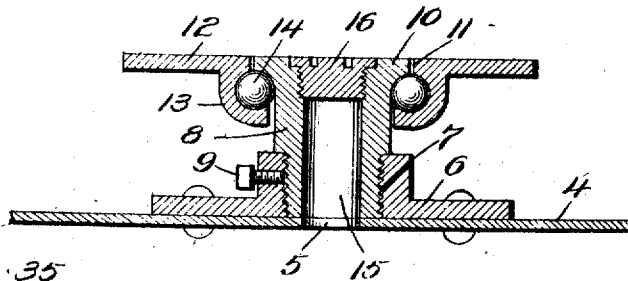
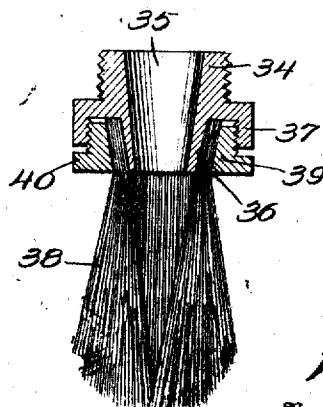


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

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RAIL-LUBRICATING APPARATUS.

954,383.

Specification of Letters Patent.

Patented Apr. 5, 1910.

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To all whom it may concern:

Be it known that we, ALFRED C. FARLEY and WILLIAM B. McDONALD, citizens of the United States, residing at Shinglehouse, in the county of Potter and State of Pennsylvania, have invented new and useful Improvements in Rail-Lubricating Apparatus, of which the following is a specification.

This invention relates to an apparatus for use on street cars for oiling or lubricating the track rails, particularly at curves or points where considerable friction is engendered between the rails and wheels of the car, the object of the invention being to provide a simple and effective apparatus of this character which may be employed to oil or lubricate the inside rail of the track in either direction of running motion of the car, which is mounted for automatic movement to follow the line of the rail which is being oiled or lubricated, and which is under the thorough control of the motorman of the car.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of a portion of an electric street car equipped with the rail lubricating apparatus. Fig. 2 is a transverse section through the platform of the car, showing the arrangement of the oil reservoir and lubricating devices when one of the latter is in action. Fig. 3 is a bottom plan view showing in full lines the lubricating apparatus and in dotted lines the body and front truck of the car and rails, illustrating the arrangement of the device in rounding a curve. Fig. 4 is a sectional front elevation of the car showing the lubricating device illustrated in Figs. 1, 2 and 3 in operation, thrown up or retracted and the opposite lubricating device turned down to lubricate the adjacent rail. Fig. 5 is a vertical section through one end of the reservoir and the associated lubricating device. Fig. 6 is a vertical section on line 6—6 of Fig. 5. Fig. 7 is a vertical transverse section on an enlarged scale, showing the means for pivotally mounting the reservoir upon the car.

Fig. 8 is a sectional view of one of the brushes.

Referring to the drawings, 1 designates the body of a street railway car, 2 the platform at one end thereof, and 3 the swivel wheeled truck at such end of the car, all of which may be of any of the constructions commonly in use. Arranged transversely beneath the platform 2 is a tank or reservoir 4 adapted to contain the lubricant. The top wall of this tank is provided with a central inlet 5, for the introduction of the lubricant thereto, and secured to said wall is a flanged bracket plate 6 having a threaded opening 7 to receive a swivel screw or stud 8 having a lower threaded end fitting within said threaded opening 7 and removably clamped to the bracket 6 by a set screw 9. The upper end of the screw 8 is formed with a flange or head 10 to fit within an opening 11 in a bearing plate 12 secured within an opening in the platform 2, as shown in Fig. 2. This bearing plate is provided below the opening with an annular socket 13 receiving an annular series of anti-friction balls 14 arranged between the wall of the socket and the lower round face of the head 10, by which the swivel screw is mounted to oscillate in the bearing plate to adapt the tank 4 to swing laterally in either direction. The screw is formed with a longitudinal oil feed passage 15 communicating with the inlet 5 and closed at its upper end by a threaded plug 16 adapted to be inserted and removed by means of a spanner or other suitable kind of tool, so that the reservoir may be replenished with oil whenever necessary and the feed inlet then closed to prevent the access of dirt and other foreign substances. The rear end portions of the tank are connected by chains or other flexible connections 17 with cushioning springs 18 attached to the cross bar 19 of the truck on opposite sides of the pivot thereof, by which the tank is adapted to swing with the truck when the car is rounding a curve, as heretofore described.

Arranged at the opposite ends of the tank are track lubricating devices 20 and 21 respectively, which are adapted to be employed for oiling or lubricating the opposite rails. Each of these devices comprises an elbow shaped pipe or tube 22 embodying an

upper horizontal arm 23 and an oblique lower and downwardly and outwardly inclined arm 24. The arm 23 is closed at its inner end and provided with an opening 25 and a flange 26 outwardly beyond the opening. That portion of the arm formed with said opening and flange serves as a journal and valve mounted to rotate within a valve casing 27 formed upon an angular bracket 28 secured to the lower portion of the end of the reservoir. A nut 26^a is threaded upon the casing and surrounds and is flanged to engage the flange 26 to prevent outward movement of said journal and valve. The bracket is provided with a discharge passage 29 communicating with the casing and with an outlet 30 in the wall of the reservoir, which outlet passage 29 is adapted to be opened and closed by the oscillation of the valve, so that when the discharge pipe or tube depends in a vertical position communication will be established between the tank and tube for the discharge of oil into the latter, and so that when said tube is turned upwardly to a horizontal position the flow of oil will be cut off. A sliding collar or sleeve 31 is mounted upon the lower end of the arm 24 and carries a combined key and clamping screw 32 movable in a longitudinal groove 33 formed in said arm, by which said sleeve may be telescopically adjusted on the arm and held from rotary movement. At the lower end of the sleeve is mounted an oil applying device preferably in the form of a brush adapted to run in contact with the rail, said brush comprising a plug or head 34 threaded at its upper end into the sleeve 31 and provided with a tapering discharge passage 35. The lower end of this plug or head is formed with a conical projection 36 through which the passage extends and which is partially surrounded by an internally threaded flange 37. The brush bristles 38 are confined at their upper ends between the conical projection 36 and an externally threaded bushing or clamping ring 39 engaging the flange 37 and having a conical aperture to receive the projection and clamp the bristles firmly against the same and a lower flange 40 adapted for the engagement of a suitable tool to apply and remove it. The bristles are arranged in an annular series, the upper ends of which are divergently held by the beveled clamping faces, while their lower ends contact and are closely arranged, by which a passage through the center of the upper portion of the bristles is formed for the feed of the oil, which is taken up and applied by the cluster at the ends thereof.

The two lubricating devices constructed as thus described are respectively connected with the lower ends of chains or other suitable flexible controlling devices 20^a and 21^a

which pass over forward guide pulleys 41 and 42 on the platform 2 and thence upward over rear guide pulleys 41^a and 42^a and through an opening in the platform, the upper ends of said chains being extended up through a guide tube 43 fixed to the platform and connected with the opposite ends of a segmental operating lever 44 pivotally mounted, as at 45, upon the dash or vestibule of the platform. The handle 46 is fixed to the lever against lateral movement, but is pivotally connected therewith for movement at right angles to the plane of movement of the lever, so as to be thrown into and out of engagement with a segmental rack 47 fixed to the car structure adjacent thereto, which rack is formed with an intermediate notch or recess 48 and two end notches or recesses 49 and 50 in which the handle is adapted to fit to hold the lever in three positions of adjustment. When the lever lies in a vertical position and is engaged with the notch 48, the chains will be disposed to hold both lubricating devices elevated and out of action, in which position of said devices their valves will cut off communication between the same and the reservoir. When the lever is thrown into engagement with the notch 49, the lubricating device 21 will be further elevated, while the lubricating device 20 will be lowered for operation. When the lever is thrown into engagement with the notch 50, the lubricating device 20 will be elevated to an inoperative and cut out position, while the lubricating device 21 will be lowered for use as shown in Fig. 4. It will thus be seen that the motorman of the car may at will, and without moving from his customary position, throw both lubricating devices out of action or lower either one independently of the other for action, so that the car may travel without lubricating the rails or in its course of travel may lubricate either rail.

In operation, assuming the device 20 to be lowered for lubricating the right hand rail of the track in the direction of travel of the car, it will be understood that oil from the reservoir will flow through the tube 22 to the brush bristles 38, which latter will engage the inner face of the rail and apply the lubricating oil thereto, and that when the wheels of the truck 3 strike a curve the chains 17 will be adjusted to swing the reservoir so as to maintain the brush in contact with said rail, as indicated clearly in Fig. 3. When the lubricating device 20 is elevated, and the lubricating device 21 depressed for use, as shown in Fig. 4, the brush carried by said device will travel in contact with the inner face of the opposite rail, and the apparatus will be controlled by the truck and chains in like manner to maintain said device in engagement with its rail when the

car is rounding a curve in the opposite direction.

It will be seen from the foregoing description that the invention provides a lubricating apparatus which may be mounted upon the front of a car in a convenient and effective manner for lubricating the rails to reduce friction at the desired points, and that said device is simple of construction, may be inexpensively applied and employed, and is under the thorough control of the motor-man. The platform at each end of the car may be provided with a swivel bearing of the character described, so that by simply detaching the tank from the bearing at one end it may be applied to the bearing at the opposite end of the car for use, thus securing convenience in lubricating the track rails in car systems unprovided with loops at the ends of the route.

Having thus fully described the invention, what is claimed as new, is:—

1. In a track lubricating device for cars, the combination, with a car, of a reservoir pivoted to the car to swing laterally thereof, lubricating devices communicating with the reservoir, means for throwing said devices into and out of action, and means connecting the reservoir with the adjacent car truck to cause said lubricating devices to follow the line of the rails.

2. In a lubricating device for cars, the combination, with a car, of an oil reservoir pivoted for lateral movement upon the car, pivoted lubricating devices provided with controlling valves for the flow of oil thereto, means for throwing either of said devices into and out of operative position, and means for securing them in such positions.

3. In a track lubricating device for cars, the combination, with a car, of an oil reservoir pivoted for lateral movement upon the car, lubricating devices pivotally mounted upon the reservoir so as to be raised and lowered from an operative to an inoperative position and vice versa, said devices having valves coöperating therewith to regulate the flow of oil thereto, and operating connections alternately throwing said devices into and out of action or both devices out of action and securing the same in such positions.

4. In a track lubricating apparatus for cars, the combination, with a car, of a reservoir pivotally mounted for lateral movement upon the car, lubricating devices pivotally mounted upon the reservoir for movement from a vertical operative to a horizontal inoperative position and having valves associated therewith for throwing said devices into and out of communication with said reservoir, means for throwing said devices into and out of action, and means

connecting said reservoir with the adjacent truck of the car to regulate the pivotal movement of the reservoir to cause the devices to follow the line of the rails.

5. In a track lubricating device for cars, the combination, with a car, of a reservoir pivotally mounted for lateral movement on the car, valved lubricating devices comprising pivoted tubes mounted upon the reservoir and provided with brushes, means for throwing said devices into and out of action, and means for connecting the reservoir with the adjacent car truck to adjust said reservoir to maintain contact between the acting brush and the rail.

6. In a track lubricating device for cars, the combination, with a car, of a reservoir pivoted for lateral movement on the car, valved lubricating devices pivotally mounted on the reservoir and embodying conducting tubes having brushes, a movable lever upon the car, connections between said lever and the lubricating devices to hold both out of action or alternately throw them into and out of action, and connecting means between the reservoir and the truck of the car to swing the reservoir to maintain contact between the acting brush and the rail.

7. In a rail lubricating device for cars, the combination, with a car, of a reservoir pivoted for lateral movement upon the car, valved lubricating devices embodying conducting tubes having valve members pivotally mounted upon the tank and carrying brushes, means for throwing said lubricating devices into and out of action, and means for controlling the reservoir from a truck of the car to adapt the acting brush to follow the line of the track.

8. In a track lubricating apparatus for cars, the combination, with a car, of a reservoir pivoted for lateral movement upon the car, lubricating devices comprising conducting tubes having valves pivotally connected with the reservoir and carrying adjustable brushes at their outer ends, means for throwing said devices into and out of action, and connections between the reservoir and car truck for swinging said reservoir to maintain engagement between the acting brush and the track.

9. A track lubricating apparatus for cars comprising an oil reservoir, a lubricating device embodying a conducting tube having a valve member pivotally connected with the reservoir, a lubricating device at the outer end of said tube, means for swinging the tube to throw it into and out of action, and means for controlling said tube from a car truck to cause it to follow the line of a rail.

10. A track lubricating device for cars comprising a reservoir, a lubricating device embodying a conducting tube having a valve

portion pivotally connected with the reservoir, an extension sleeve upon said tube, a lubricating member carried by the sleeve, means for throwing the tube into and out of operative position, and means for controlling said tube from a car truck to cause it to follow the line of a rail.

In testimony whereof we affix our signatures in presence of two witnesses.

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WILLIAM B. McDONALD.

Witnesses:

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