Sept. 20, 1932. L. E. GILLIAM 1,877,848

LUBRICATING DEVICE

Filed Dec. 22, 1930 3 Sheets-Sheet 1

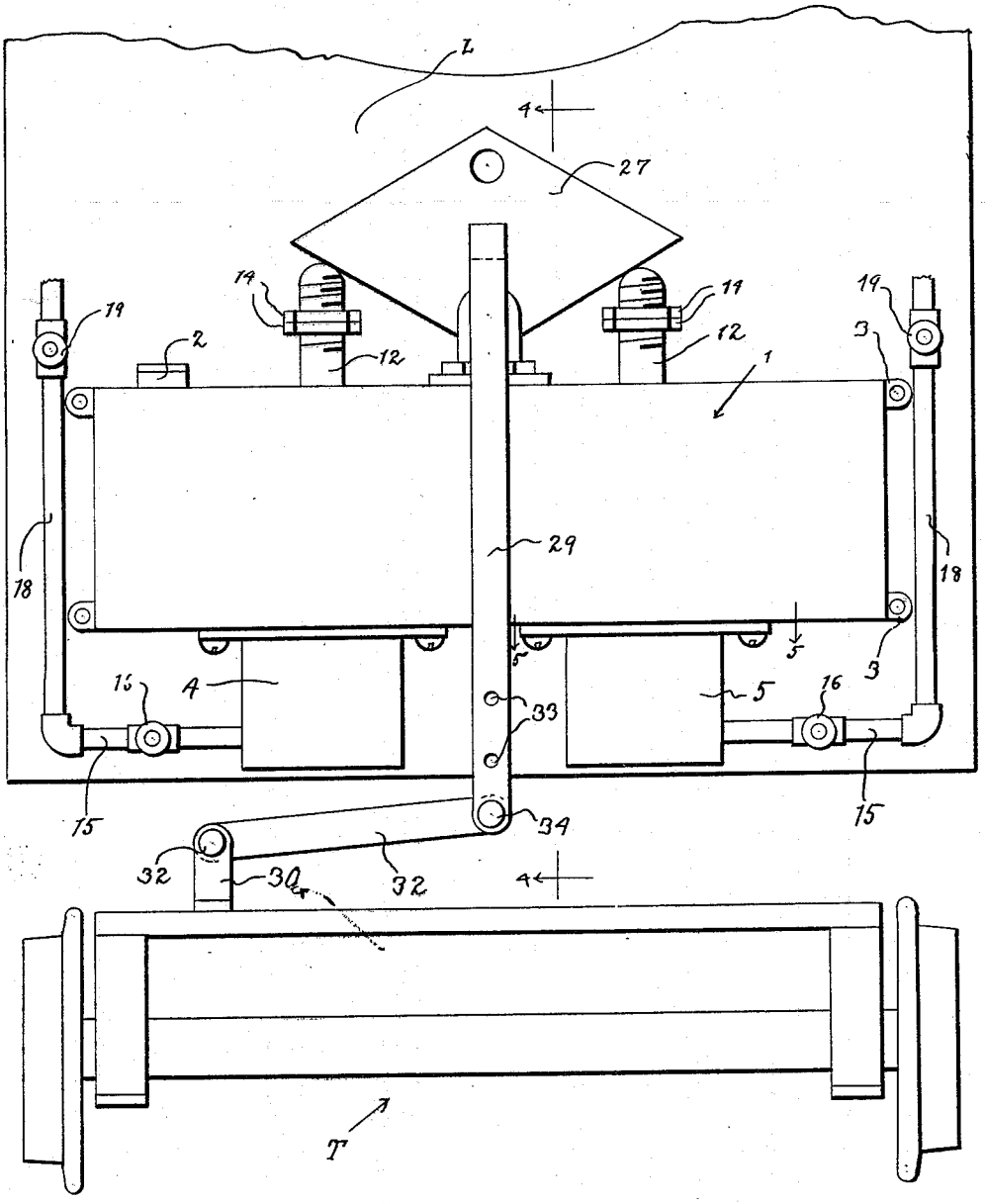



Fig 1

Inventor
Lucious Edgar Gilliam

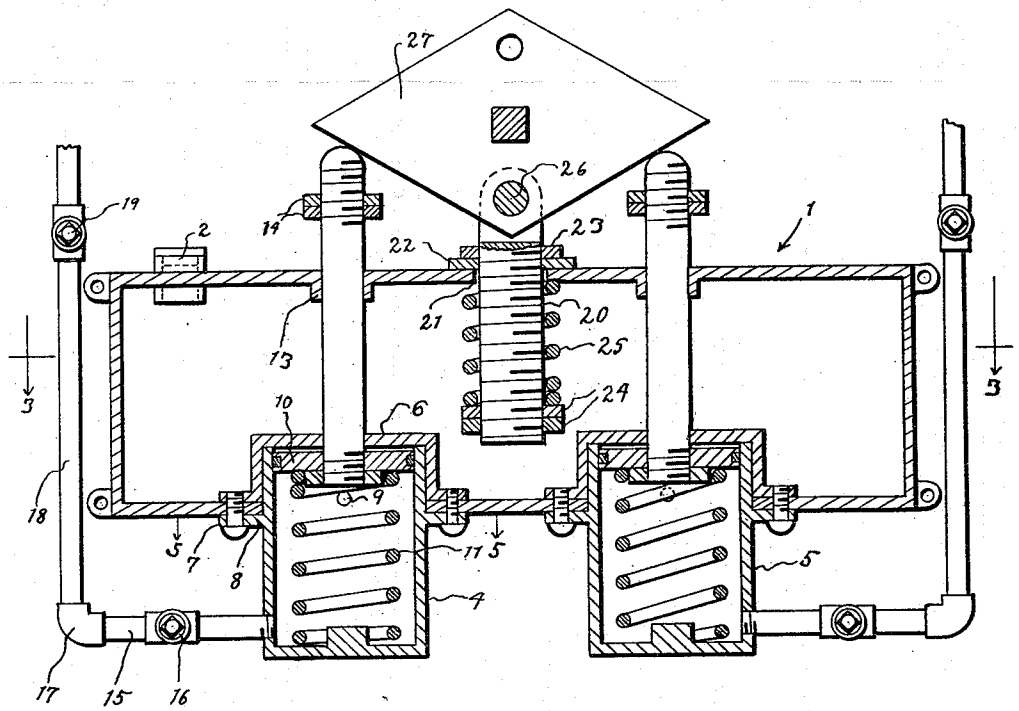
By Clarence O'Brien
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LUBRICATING DEVICE

Filed Dec. 22, 1930 3 Sheets-Sheet 2

Fig 2



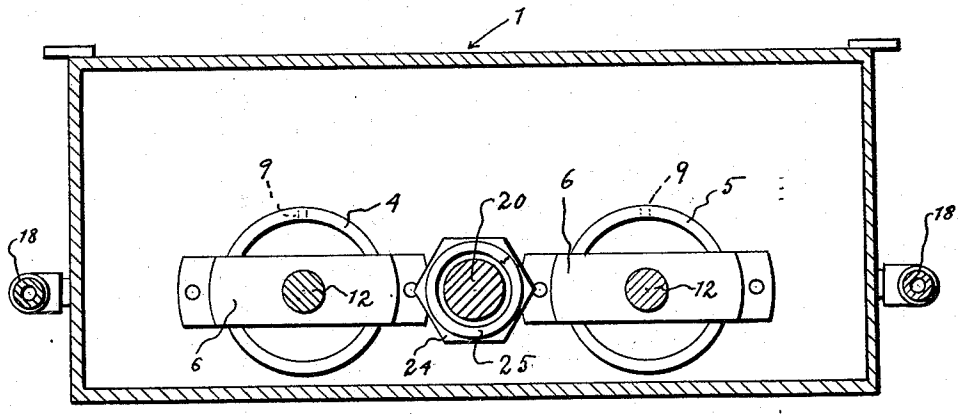




Fig 3

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LUBRICATING DEVICE

Filed Dec. 22, 1930 3 Sheets-Sheet 3

Fig 4

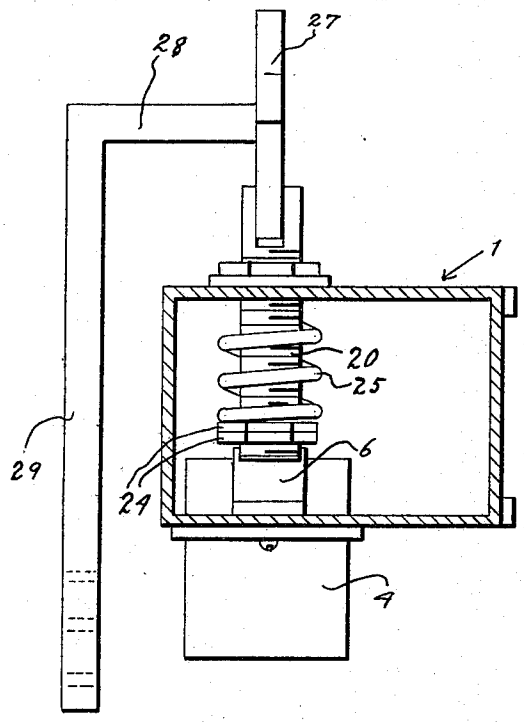
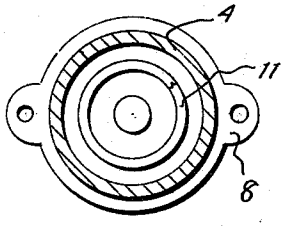



Fig 5



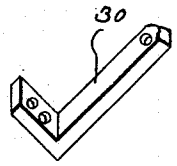




Fig 6

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Patented Sept. 20, 1932 1,877,848

# UNITED STATES PATENT OFFICE

LUCIOUS EDGAR GILLIAM, OF ASHEVILLE, NORTH CAROLINA

## LUBRICATING DEVICE

Application filed December 22, 1930. Serial No. 504,126.

This invention relates to certain new and useful improvements in lubricating devices and the primary object of this invention is to provide a lubricating device presenting certain new and useful improvements over that type of lubricating device forming the subject matter of my co-pending application Serial No. 482,867 filed by me under date of September 18, 1930.

An important object of the present invention is to provide a lubricating device adapted for use on locomotives, railway cars, and like stock for supplying lubricant to the flanges of the wheels of the truck of the locomotive, railway car or the like, or to the driver's flange of the locomotive, or to the rails of the railroad when the locomotive is negotiating a turn, or to any other part of the locomotive or railway car as may require a lubricant being applied thereto.

The invention broadly consists in the provision of a reservoir adapted to contain a lubricant, together with cylinders so associated to the reservoir as to receive therein the lubricant from the reservoir for subsequently directing the lubricant through suitable means provided, either on to the flanges of wheels of the locomotive or for applying the lubricant to the rails of the track.

Other objects and advantages of the invention will become apparent during a study of the following description, taken in connection with the accompanying drawings wherein:

Figure 1 is an elevational view of the device, the same being shown as applied to a locomotive.

Figure 2 is a detail sectional elevational view through the device.

Figure 3 is a horizontal transverse sectional view taken substantially on the line 3—3 of Figure 2.

Figure 4 is a detail view partly in section and partly in elevation, the section being taken through the oil reservoir.

Figure 5 is a detail sectional view taken substantially on the line 5—5 of Figure 1.

Figure 6 is a perspective view of a bracket forming part of the invention.

With reference more in detail to the drawings, it will be seen that my improved lubricator comprises a casing or reservoir 1 adapted to contain oil or other suitable lubricant. The casing or reservoir 1 is provided at the top thereof with a suitable filling opening 2 normally closed by a suitable plug.

In actual practice, the casing or reservoir 1 is bolted or otherwise secured to a fixed part of a locomotive, a portion of which is designated generally by the reference character L, and to this end the casing adjacent each end thereof is provided with suitably apertured lugs for accommodating fastening elements engaging with said stationary part of the locomotive as at 3.

A pair of cylinders 4, 5 are preferably vertically disposed and have their respective upper ends extending into the casing 1 through suitable openings provided therefor in the bottom of the casing. The cylinders 4 and 5 are open at their upper ends and said upper ends are bridged by substantially inverted U-shaped guide plates 6. Bolts 7 are passed through the bottom of casing 1 and engage flanges 8 provided externally of the cylinders 4 and 5, and the ends of the respective straps 6 for securing the cylinders in fixed relation to the casing 1 and the straps 6 in position across the open upper end of the cylinders.

Each of the cylinders 4 and 5 inwardly of the casing 1 is provided with an oil intake opening 9 whereby lubricant or oil from casing 1 may be drawn into the cylinders.

Each cylinder 4, 5 has mounted for reciprocation therein a piston 10 that is normally urged outwardly through the medium of a suitable coil spring 11 provided in the cylinder.

Each of the pistons 10 is equipped with a piston rod 12 that extends upwardly through the casing 1 and is operable through a suitable guide opening 13 provided therefor in top of the casing. Nuts 14 threadedly engage the upper end of the piston rod for controlling the limit of downward movement of the piston 10 as desired.

Manifestly, during reciprocation of the pistons 10, oil will be drawn from the casing or reservoir 1 into the cylinders 4 and 5,

and as each piston 10 moves downwardly the oil in that particular cylinder will be forced therefrom through an outlet pipe 15 leading from the cylinder adjacent the lower end of the cylinder.

In each outlet pipe 15 there is provided a check valve 16, and suitably coupled as at 17 to the free end of each outlet 15, is one end of a conduit 18.

Each conduit 18 has suitably arranged therein a check valve 19. Conduit 18 leading from the cylinder 4 leads to one side of the locomotive, railway car, or the like, while the conduit leading from the cylinder 5 leads to the opposite sides of the locomotive, railway car or the like and each of the conduits at their free ends are provided with suitable nozzles (not shown) whereby lubricant may be supplied to the flanges of the wheels of the truck of the locomotive, railway car or the like, or to the driver's flange of the locomotive, or to the rails of the track as may be found desirable.

A bolt 20 extends vertcally through a suitable opening 21 provided therefor in the top of the casing or reservoir 1. Disposed about an upper portion of the bolt 20 is a washer 22 that is normally retained between the top of the casing or reservoir 1, and a nut 23 threadedly engaged with an upper portion of the bolt 20. A pair of lock nuts 24 are threadedly engaged with the lower portion of the bolt 20 and for normally urging the bolt downwardly and inwardly of the casing or reservoir 1 there is provided a coil spring 25 that is convoluted about the bolt, and the spring at one end impinging against the top of the casing or reservoir, and its lower end impinging against the uppermost one of the lock nuts 24.

As shown, bolt 20 is arranged between the piston rods 12, and the uppermost end of the bolt is bifurcated and has pivoted within its furcations as at 26 an intermediate portion of a substantially diamond shaped operating plate 27. The ends of the plates 27 are adapted to normally engage the upper end of the piston rod 12 so that obviously upon rocking movement of the plate 27 about its pivot 26 one end of the plate acting against adjacent piston rod 12 will force the same downwardly whereby the piston 10 associated with that particular piston rod will force oil or lubricant from one cylinder to pass through the conduit 18 for lubricating the flange of the wheels of the truck of the locomotive, railway car, or the like on one side of the truck, or the rails of the track, or any other desired part of the vehicle as may be found desirable.

Integral with an intermediate portion of the plates 27 directly above its pivot 26 is an arm 28 that projects at right angles to the plate. Arm 28 terminates in a vertical extension or rod 29, which rod 29 terminates at its lower end slightly above the truck T of the locomotive.

Suitably bolted to the top of the locomotive adjacent one side thereof is an angular bracket 30. A link 31 is pivotally connected at one end to the upper end of the bracket 30 as at 32. At its other end link 32 is provided with an aperture adapted to register with a selected one of a vertical series of spaced apertures 33 provided adjacent the lower end of bar or extension 29. A pivot bolt 34 extends through the aperture provided in said one end of the link 32 and that particular one of the apertures 33 with which the aperture in said end of link 32 registers whereby to provide a pivotal connection between rod or extension 29 and link 32.

From the foregoing, it will be apparent then, that a lubricant will be fed to the wheel of truck T, or the track rail, on that side of the locomotive dependent upon direction of turn the locomotive may be in the act of negotiating. In this connection it is apparent that a locomotive when making a turn rocks slightly relative to its truck, and this rocking movement will effect a rocking of link 32 which transmits its movement through the medium of extension 29 and arm 28 to the plate 27 resulting in a rocking of the plate 27 either to the right or to the left according as to whether the locomotive is making a turn to the right or to the left. Plate 27 being thus rocked in one direction will force the rod 12 of the piston 10 operating say for example in the cylinder 4 thus forcing the lubricant from the cylinder through the conduit 18 for supplying lubricant either to the rail of the track, the flanges of the truck wheel, the driver flange of the locomotive, or any other part of the locomotive or railway car on the side of the locomotive or railway car adjacent which side the cylinder 4 is located. When the turn has been negotiated it will be apparent that plate 27 will swing to its normal position or the position shown to advantage in Figure 2 so that piston 10 will now move upwardly and action of its spring 11 thus drawing fluid from the chamber or reservoir 1 into the cylinder 4.

The operation is substantially the same in supplying and discharging lubricant with respect to cylinder 5.

Even though I have herein shown and described the preferred embodiment of the invention it is to be understood that the same is susceptible of changes, variations, modifications and improvements coming within the scope of the appended claims.

Having thus described my invention, what I claim as new is:

1. A lubricating device for vehicles comprising a casing adapted to contain a lubricant, means for mounting the casing on the locomotive, a pair of cylinders extending through the bottom of said casing, each of

said cylinders provided with an inlet connecting the cylinders with said casing, a valve controlled outlet for each of the cylinders, a conduit leading from each of said outlets, a piston mounted for reciprocation in each of said cylinders, a pivotally mounted cam for actuating either of said pistons, and a lever mechanism connecting said cam and the truck of the vehicle for actuating said cam upon the turning of the vehicle in either direction.

2. A lubricating device for vehicles comprising a casing adapted to contain a lubricant, means for mounting the casing on the locomotive, a pair of cylinders extending through the bottom of said casing, each of said cylinders provided with an inlet connecting the cylinders with said casing, a valve controlled outlet for each of the cylinders, a conduit leading from each of said outlets, a piston mounted for reciprocation in each of said cylinders, a pivotally mounted cam for actuating either of said pistons, and a lever mechanism connecting said cam and the truck of the vehicle for actuating said cam.

3. In combination with a locomotive including a truck, a lubricant reservoir adapted to be fixedly mounted on the locomotive, a pair of cylinders respectively having one end extending into said reservoir and provided with an inlet opening for connecting the cylinder with the reservoir, a piston mounted for reciprocation in each of said cylinders and respectively provided with a rod projecting through a wall of said reservoir, a rockably mounted member normally engaging the free end of said piston rod, means for rockably supporting said member, a lever mechanism connecting said rockably mounted member and the truck of the locomotive adapted upon turning of the locomotive to actuate said rockable member, conduits leading from each of said cylinders for supplying a lubricant either to the rail or the flanges of the truck wheel or drivers.

4. A lubricant device for locomotives comprising in combination a casing adapted to contain a lubricant, means for mounting the same on the locomotive, a pair of cylinders respectively having one end extending into said casing, and provided at said end with an inlet opening into said casing, a valve controlled outlet for each of said cylinders, a valve controlled conduit leading from each of said outlets, a piston mounted for reciprocation in each of said cylinders, spring means normally urging said pistons in one direction, and means acting oppositely to said spring means for forcing lubricant from the cylinders through said conduit, said means comprising a pivotally mounted cam, and a lever mechanism connecting said cam and the truck of the locomotive for actuating said cam.

5. A lubricant device for locomotives comprising in combination a casing adapted to contain a lubricant, means for mounting the same on the locomotive, a pair of cylinders respectively having one end extending into said casing, and provided at said end with an inlet opening into said casing, a valve controlled outlet for each of said cylinders, a valve controlled conduit leading from each of said outlets, a piston mounted for reciprocation in each of said cylinders, spring means normally urging said pistons in one direction, and means acting oppositely to said spring means for forcing lubricant from the cylinders through said conduit, said last mentioned means including a piston rod for each of said pistons, a rockably mounted member, said member having the ends thereof engaging with the free end of said piston rod, a lever mechanism connecting said rockably mounted member and the truck of the vehicle for actuating the rockably mounted member.

6. A lubricant device for locomotives comprising in combination a casing adapted to contain a lubricant, means for mounting the same on the locomotive, a pair of cylinders respectively having one end extending into said casing, and provided at said end with an inlet opening into said casing, a valve controlled outlet for each of said cylinders, a valve controlled conduit leading from each of said outlets, a piston mounted for reciprocation in each of said cylinders, spring means normally urging said pistons in one direction, and means acting oppositely to said spring means for forcing lubricant from the cylinders through said conduit, said last mentioned means including a piston rod for each of said pistons, a rockably mounted member, means for rockably mounting said member, said member having the ends thereof engaging with the free end of said piston rod, means operatively connecting said rockable member with the truck of the locomotive and including an arm integral with said rockable member and terminating in a depending extension, a bracket mounted on said truck, and a link pivoted adjacent one end to said bracket, and at its opposite end to said extension.

In testimony whereof I affix my signature.

LUCIOUS EDGAR GILLIAM.