

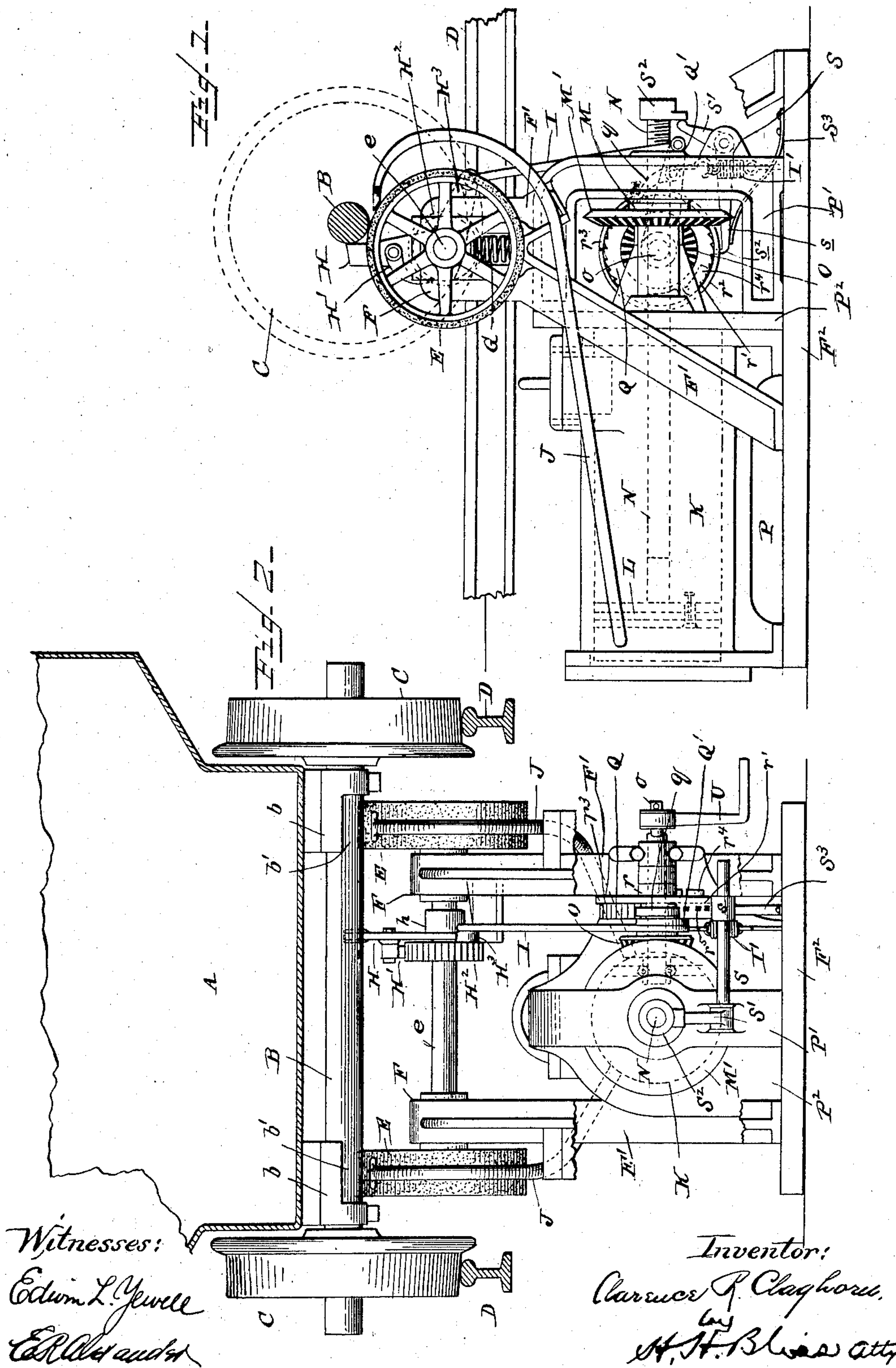
No. 736,819.

PATENTED AUG. 18, 1903.

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CAR AXLE LUBRICATOR.  
APPLICATION FILED JAN. 26, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



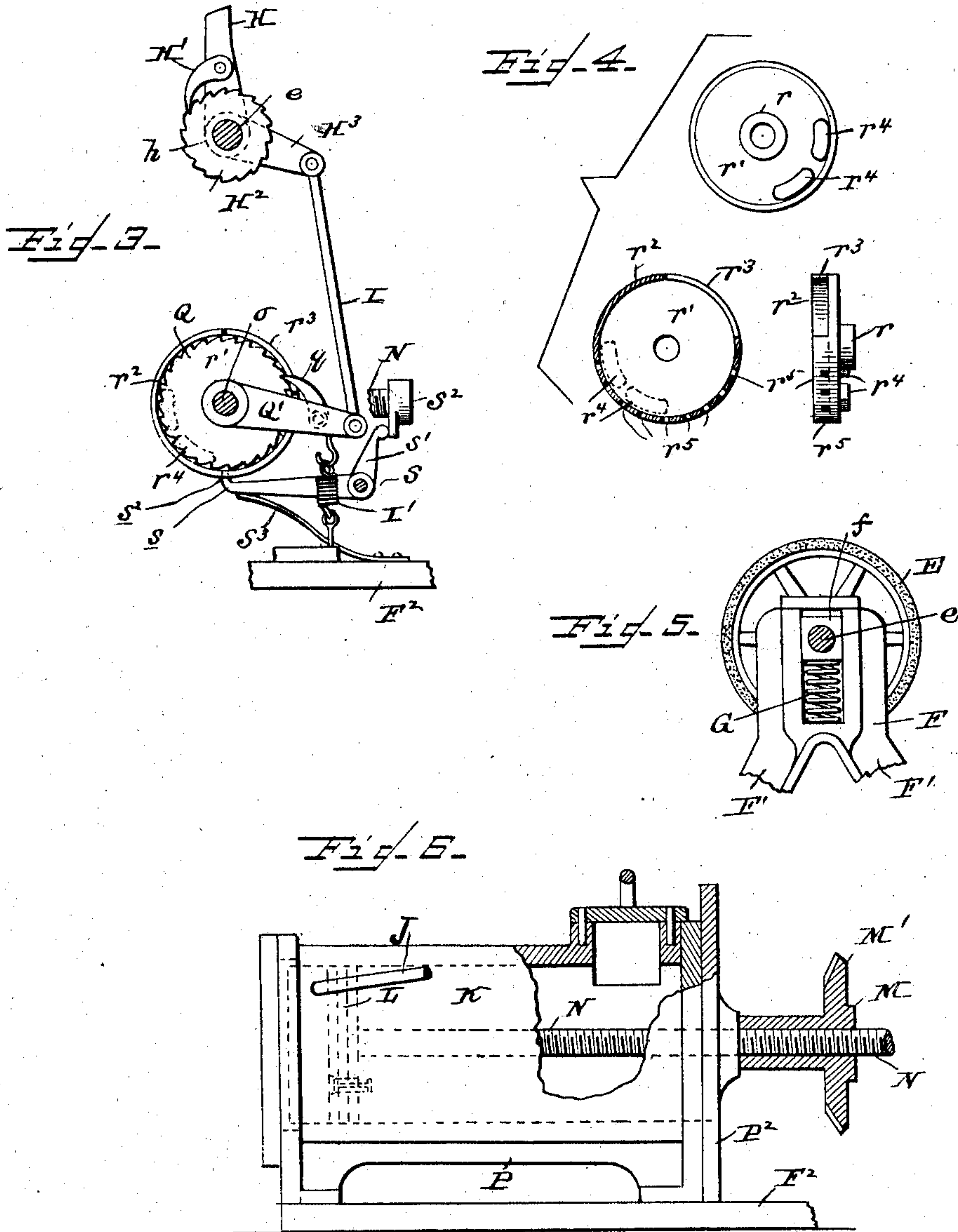
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# UNITED STATES PATENT OFFICE.

CLARENCE R. CLAGHORN, OF WEHRUM, PENNSYLVANIA.

## CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 736,819, dated August 18, 1903.

Application filed January 26, 1903. Serial No. 140,543. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE R. CLAGHORN, a citizen of the United States, residing at Wehrum, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Car-Axle Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation of a car lubricating mechanism embodying my improvements, showing also in section parts of the car and track system. Fig. 2 is a cross-section of the track system, showing lubricating mechanism in end elevation. Figs. 3 to 6 show details.

In the drawings I have indicated more or less conventionally a car A of the sort adapted to be lubricated by a mechanism having my improvements. Its axle is indicated by B, the car-body resting upon it through the boxes b. These boxes are so constructed and attached as to leave at b' parts of the axle exposed, and at these points the lubricant can be readily applied. It distributes itself over the bearing-surfaces when the axle is in motion.

C indicates the wheels, and D the track-rails, by which they are guided.

The lubricant is imparted to the axles by a rotary distributor having lubricant-applying wheels E E. I prefer to lubricate both ends of the axle simultaneously, and therefore the parts which finally apply the oil or lubricant are duplicates of each other; but for present purposes it will not be necessary to describe more than one set of these devices.

The wheel part E of the distributor is connected to a shaft e, which is mounted in bearing-stands F by means of boxes f, which can move vertically in the standards, they resting upon springs G, which tend to hold them to their upper limit of movements, but which permit them to yield downward under the pressure of the car-axle and the weight of the car as it passes over. The stands F are carried by frame-legs F' F', which are extended downward, preferably being long enough to extend into a pit or chamber formed below the track-rails to contain the oil-supplying devices, they being shown secured to a base F<sup>2</sup>. The distributor-wheel E is turned from

time to time, so as to bring new sections of its surface into contact with the axles successively as they impinge upon it. This turning is effected by means of the arm H, having a hub h, which is loosely mounted on the shaft e. It has pivoted a pawl H', which engages with a ratchet-wheel H<sup>2</sup>, secured to the shaft e. As the car-axles successively reach the lubricating devices they impart a forward step movement to the arm H, and this through the pawl and ratchet gives a corresponding advance to the distributor-wheel E. After each axle passes over the distributor the arm and pawl are returned to normal positions by a spring at I' through the draft of a rod I.

The oil is delivered to the surface of the distributor-wheel E through a tube or duct J, which extends from the reservoir below up to points near the top of the periphery of the wheel, as shown. It is forced up to such point by the following devices:

K represents the reservoir for the lubricant. It has an interior cylindrical chamber, to which is fitted a piston L. The piston-rod N extends through the end of the cylinder and is threaded. With it a nut M engages, and as the latter is turned it forces the rod and the piston forward, thereby causing the lubricant to be forced through the duct J. Such turning of the nut is effected by an intermitting or step-by-step movement of a wheel M', rigid with it. This is a bevel-wheel and engages with a bevel-pinion O on a short counter-shaft o. These parts and the cylinder are supported in a suitable framework, such as shown at P and P'. Intermitting movements are given to the wheel O by a ratchet-wheel Q, secured to shaft o, and with which engages a pawl q, carried by a vibrating arm Q', which is pivoted to the aforesaid rod or link I, extending up to the rocker-arm H, the latter being provided with a bell-crank arm H<sup>3</sup> for the connection of this rod I. When the car-axles strike the arm H, it exerts an upward draft on the rod I and also on the pawl-arm Q'. The pawl-and-ratchet wheel Q gives a corresponding movement to the wheels O and M' with a proportionate advance of the piston L.

U is a crank-arm connected to the shaft o. It is so arranged that the crank can be



grasped by hand when desired, and motion can be thereby imparted to the bevel gearing and through the latter to the plunger, either in such way as to cause it to advance or to  
 5 be retracted in the receptacle. In the latter case the pawls can be disengaged either by hand or by the pawl-disengaging devices, to be described.

With the parts described I also combine  
 10 devices for adjusting or regulating the quantity of lubricant to be fed to the distributor and also devices for throwing entirely out of action the means which push the piston. At  
 15  $r^2$  there is a flange carried by a disk  $r'$ , loosely mounted on the shaft  $o$  by means of a hub  $r$ , the flange being cut away at  $r^3$ , so as to expose a series of ratchet-teeth. At  $r^4$  the device is weighted, the weighted part normally  
 20 tending to come to the vertical plane of the shaft. When the cut-away part  $r^3$  is in the arc of travel of the pawl  $q$ , the latter can engage with the ratchet-teeth; but this cut-away part can be adjusted to one position or another and locked under adjustment by the  
 25 holding and releasing devices, whose parts are indicated at  $S$ , it comprising a detent-lever  $S'$  and a knock-off device  $S^2$ . The lever has an arm  $s$ , with a dog  $s^2$ , adapted to engage with one or another of a series of holes, notches,  
 30 or recesses  $r^5$  in the flange  $r^2$ . A spring  $S^3$  tends to hold the dogs in locked position. If it should be desired to advance the piston only short distances at each action, the flange-plate  $r^2$  is turned around to such position  
 35 as that but only one of the ratchet-teeth will be exposed through the cut-away part  $r^3$  to the engagement of the pawl  $q$ , and when brought to such position the dog  $s^2$  enters the proper socket at  $r^5$  and holds it; but if it  
 40 is desired to feed the lubricant faster the flanged disk is turned so as to expose two or more of the ratchet-teeth and similarly locked by the dog. When the piston reaches the end of the cylinder  $K$ , it is desirable in order  
 45 to prevent breakage to automatically throw out the feeding devices entirely. This is accomplished by the parts at  $S$ , the lever  $S'$ , and the knocker  $S^2$ . The latter is secured to the piston-rod  $N$  at the proper point, and  
 50 when the piston comes near the end of the cylinder the knocker engages the lever  $S'$  and rocks it and its dog  $s^2$  out of engagement with the flanged disk  $r'$ . Thereupon the weighted parts rock the flange around to such  
 55 position that it is interposed between the pawl and the teeth, and their further engagement is prevented. Should cars thereafter pass over the mechanism they will, it is true, cause movements of the arm  $H$  and of the  
 60 other parts down to and including the pawl; but such movements will be idle as concerns the advance of the piston.

What I claim is—

1. In a car-axle lubricator, the combination  
 65 of the distributor adapted to apply lubricant to the car-axle, the vessel or receptacle for the lubricant, the duct for conducting the

lubricant to the distributor, the devices actuated by the passing car for forcing the lubricant from the receptacle to the distributor, 70 and means for varying the action of the lubricant-ejecting devices, substantially as set forth.

2. In a car-axle lubricator, the combination of the distributor adapted to supply lubricant to a car-axle, the receptacle or vessel for the lubricant, the plunger in the said vessel, the duct for conducting lubricant from the vessel to the distributor, the means actuated by the passing cars for moving the said 80 plunger, and means for varying the movements of the plunger, substantially as set forth.

3. In a car-axle lubricator, the combination of the distributor adapted to supply lubricant to a car-axle, the vessel or receptacle for the lubricant, the means for ejecting the lubricant from the receptacle to the distributor, the devices for varying the action of the lubricant-ejecting means, and the devices for automatically throwing them entirely out of action when the vessel is empty, substantially as set forth. 90

4. In a car-axle lubricator, the combination of the distributor adapted to supply lubricant 95 to a car-axle, the receptacle for the lubricant, the duct delivering to the distributor lubricant from the receptacle, the plunger in the receptacle, the car-actuated power device independent of the distributor, and the screw-threaded mechanism interposed between the power device and the plunger for transmitting step-by-step movement to the latter, substantially as set forth. 100

5. In a car-axle lubricator, the combination 105 of the distributor adapted to supply lubricant to a car-axle, the vessel or receptacle for the lubricant, the duct delivering lubricant to the distributor from the receptacle, the means for ejecting the lubricant from the receptacle, 110 the car-actuated power devices for actuating the lubricant-ejecting means, and means adapted to be operated by hand for also actuating them, substantially as set forth.

6. In a car-lubricating apparatus, the combination of the lubricant-receptacle, the plunger therein, the distributor adapted to supply lubricant to a car-axle, the duct leading from the receptacle to the distributor, the wheel connected to the plunger, the wheel-driving 120 devices arranged to be actuated by the passing car, and means connected to the plunger for disengaging the wheel-driving devices from the wheel when the plunger reaches the end of its stroke, substantially as set forth. 125

7. In a car-axle-lubricating mechanism, the combination of the lubricant-receptacle, the plunger therein, the lubricant-distributor adapted to supply lubricant to a car-axle, the duct leading from the receptacle to the distributor, the power-receiving device arranged in the path of the car, the train of power-transmitting devices connecting the power-receiver to the plunger, and means connect- 130



ed with the plunger for automatically disconnecting the power-receiver from the plunger at the end of the stroke of the latter, substantially as set forth.

5 8. In a car-lubricating apparatus, the combination of the lubricant-receptacle arranged below the car-tracks, the plunger therein, the horizontally-arranged threaded shaft connected with the plunger, the nut engaging with  
10 said shaft, the ratchet and pawl having one of its members operatively connected to the said nut, the distributor adapted to supply lubricant to a car-axle, the duct leading from the receptacle to the distributor, the power-  
15 receiving devices in the path of the car, and connected with the other member of the ratchet-and-pawl mechanism and means for throwing the ratchet and pawl out of action when the plunger reaches the end of its stroke,  
20 substantially as set forth.

9. In a car-axle-lubricating mechanism, the combination of the lubricant-receptacle, the plunger therein, the rotary lubricant-distributor movable by the passing cars independent  
25 of the plunger, the duct leading from the receptacle to the distributor, the power-receiving device arranged in the path of passing cars, power-transmitting devices connecting said power-receiver with the plunger, and  
30 means for throwing the plunger out of action at the end of its stroke independently of the lubricant-distributor, substantially as described.

10. In a car-axle-lubricating mechanism,  
35 the combination of the lubricant-receptacle, the plunger therein, the power-receiving device arranged in the path of the passing cars, the power-transmitting devices connecting the power-receiver with the plunger, the rotary distributor adapted to supply lubricant  
40 to a car-axle, and to move down and up independently of the power-transmitting devices, and the duct leading from the receptacle to the distributor, substantially as set forth.

45 11. In a car-axle-lubricating apparatus, the combination of the lubricant-receptacle, the plunger therein, the lubricant-distributor adapted to supply lubricant to a car-axle, the duct leading from the receptacle to the distributor, the power devices rotating in one  
50 direction for advancing the plunger, and the reciprocating power-receiving device arranged to be engaged by the passing cars and to intermittently advance the rotary power  
55 devices, substantially as set forth.

12. In a car-axle-lubricating mechanism, the combination of the lubricant-receptacle,

the plunger therein, the lubricant-distributor adapted to supply lubricant to a car-axle, the duct leading from the receptacle to the distributor, the rotary power-transmitting devices connected to and adapted to advance the plunger, the step-by-step moving devices for actuating the said power-transmitting devices, and the reciprocating power-receiving  
60 device arranged in the path of the cars and adapted to intermittently transmit movement to the step-by-step devices, substantially as set forth.

13. In a car-axle-lubricating mechanism,  
70 the combination of the lubricant-receptacle, the plunger therein, the distributor advancing step by step and adapted to supply lubricant to a car-axle, the duct leading from the receptacle to the distributor, the mechanism  
75 moving step by step for transmitting power to the plunger, and the reciprocating devices arranged to be engaged by the passing cars and connected to both the distributor and the said  
80 power-transmitting mechanism which actuates the plunger, substantially as set forth.

14. In a car-lubricating apparatus, the combination of the lubricant-receptacle, the plunger, the distributor adapted to supply lubricant to a car-axle, the duct leading from the  
85 receptacle to the distributor, the wheel connected to the plunger for advancing it, the driving devices for the wheel arranged to be actuated by the passing car, an automatically-movable holder for holding the wheel-driving  
90 devices in inactive position, a lock for retaining the holder out of engagement with said devices, and means for releasing the lock, substantially as described.

15. In a car-axle-lubricating mechanism,  
95 the combination of the lubricant-receptacle, the plunger therein, the lubricant-distributor adapted to supply lubricant to a car-axle, the duct leading from the receptacle to the distributor, the step-by-step moving wheel Q for  
100 operating the plunger, the pawl for rotating said wheel, the power-receiving device for the pawl arranged in the path of a car, pawl-disengaging devices, a lock to hold the pawl-disengaging devices inactive, and means oper-  
105 ated by the plunger for releasing the said lock, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE R. CLAGHORN.

Witnesses:

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H. H. BLISS.