

No. 791,640.

PATENTED JUNE 6, 1905.

J. H. MINER.
LUBRICATING DEVICE.
APPLICATION FILED MAR. 15, 1904.

Fig. 1.

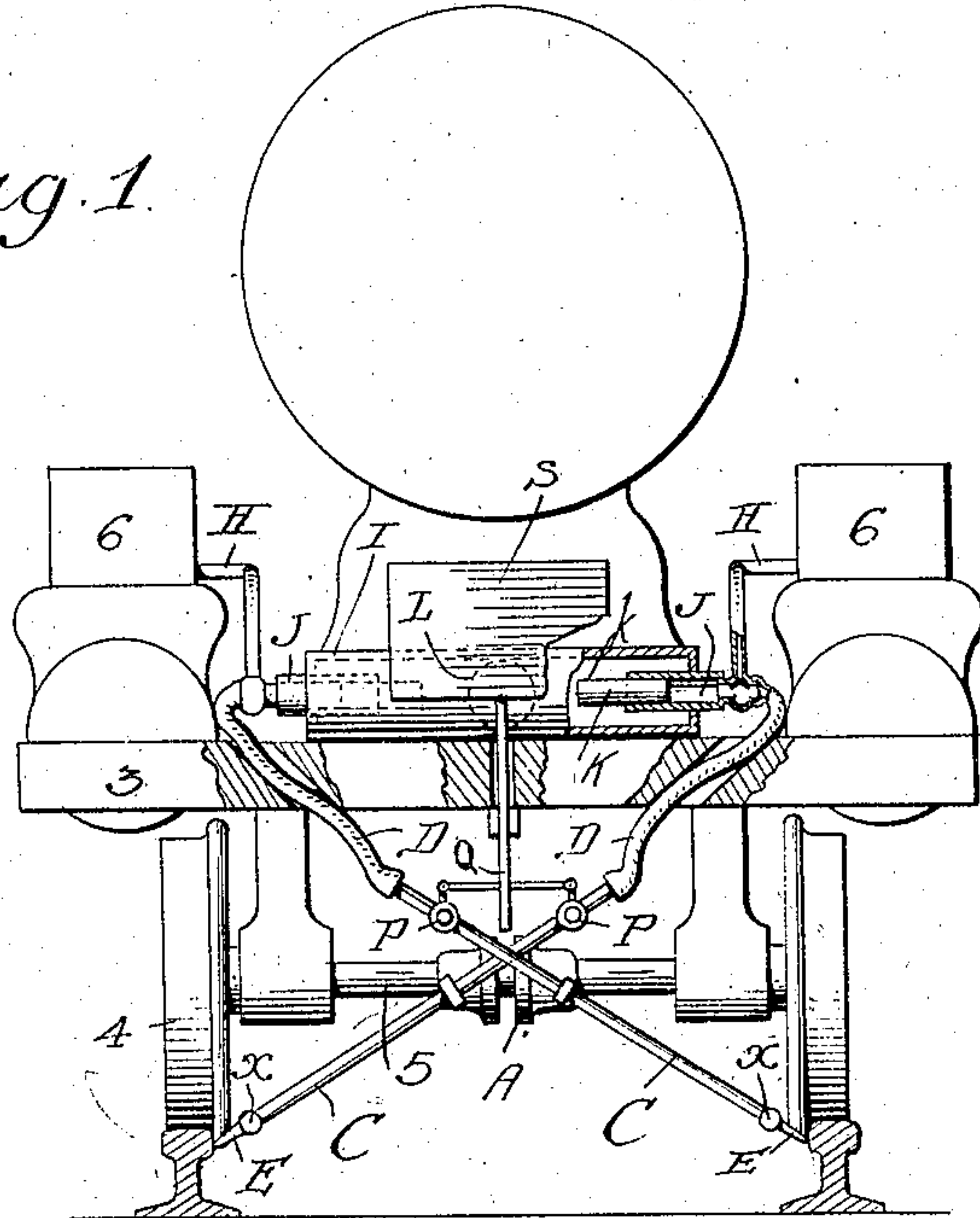


Fig. 3.

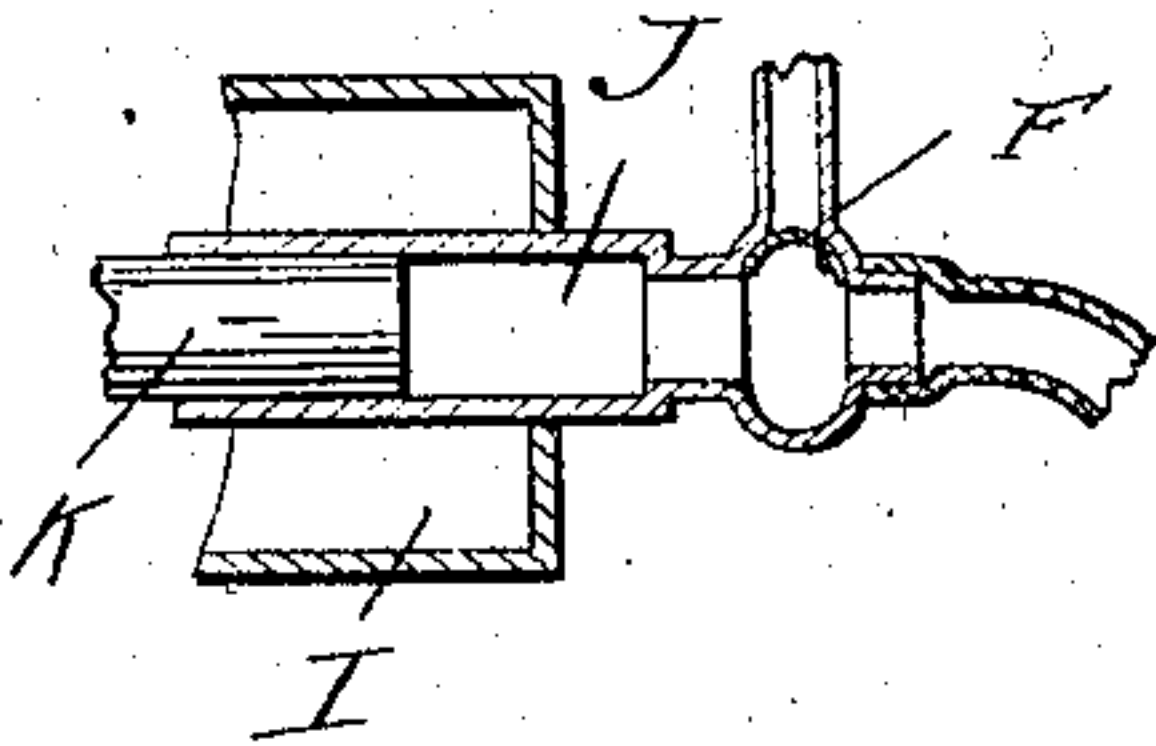


Fig. 4.

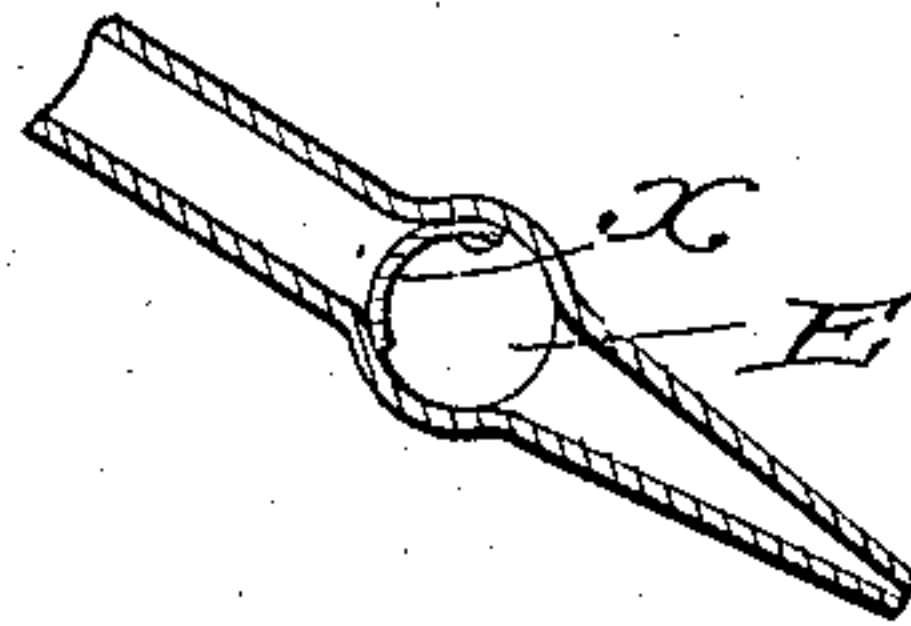
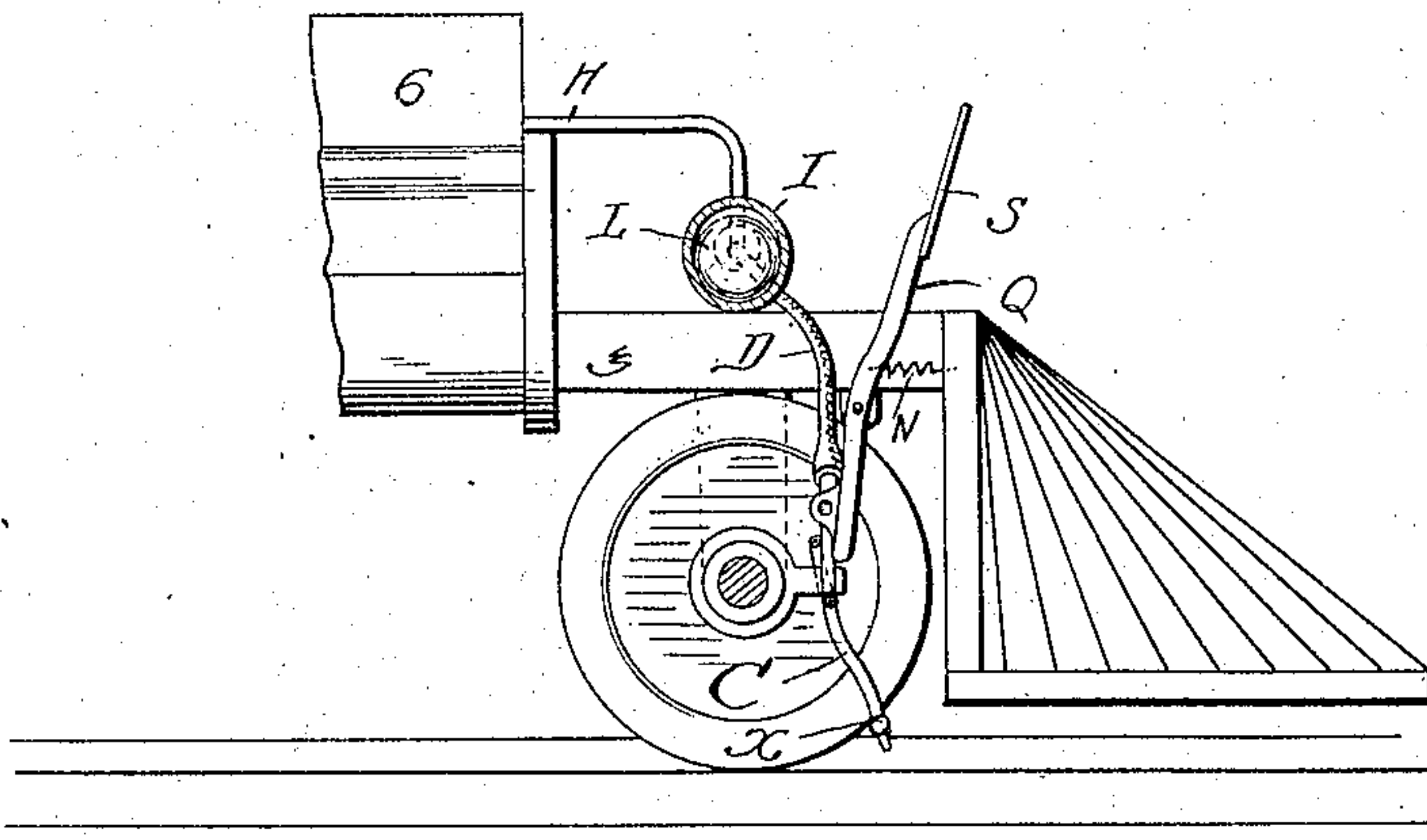


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES HENRY MINER, OF LUMBERTON, MISSISSIPPI.

LUBRICATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 791,640, dated June 6, 1905.

Application filed March 15, 1904. Serial No. 198,264.

To all whom it may concern:

Be it known that I, JAMES HENRY MINER, a citizen of the United States, residing at Lumberton, Mississippi, have invented certain new and useful Improvements in Lubricating Devices, of which the following is a specification.

My present invention relates to improvements in devices for applying a lubricant to the inner edge of a railway-rail for reducing friction and wear and lessening the liability of an engine or car leaving the rails in rounding curves in the track.

The object of the invention is to provide a simple and effective device in which the oil or lubricant will be fed positively, thereby insuring a quicker action of the device. I have also aimed to provide means by which the flow of the lubricant will be prevented when the speed of the train drops below a certain point, so that no lubricant will be supplied in case the train is running slowly around a curve or is starting thereon.

To this end the invention comprises, broadly, an oil-tank or lubricator having connections for feeding oil to the inner edge of a rail and gravity-operated oil-forcing means for forcing oil through said connections in rounding curves.

The invention further includes other automatic means for controlling the flow of oil according to the speed of the train; and, finally, the invention includes the various features of construction and combination and arrangements of parts hereinafter described, and particularly set forth in the appended claims.

I have illustrated it in the accompanying drawings, in which—

Figure 1 illustrates the invention as applied to a locomotive, only a sufficient portion of the locomotive being shown to illustrate the application of the device thereto. Fig. 2 is a sectional view. Figs. 3 and 4 are sectional views of details.

While I have shown the invention as applied to a locomotive, it will be understood that it is intended to be used on any engine or motor or passenger car having flanged wheels running on rails, as may be desired, and of course the arrangement of parts may

be modified according to the requirements of the particular car or engine-frame or truck upon which it is used.

In the drawings the numeral 3 indicates the truck or engine-frame, 4 the wheels thereof, and 5 the axle. Upon this axle I may secure collars, such as A, from which I suspend by suitable connections inclined pipes or tubes C, having delivery-nozzles E, terminating in advance of the wheels and arranged to feed lubricant to the inner edges of the heads of the rails. These pipes C, I preferably connect by flexible pipes D to cylinders J, hereinafter more fully described. These cylinders are connected to pipes H, which lead to any source of oil-supply—as, for instance, the oil cups or tanks indicated at 6. Valves *x* are located in the nozzles E, so as to prevent oil flowing therefrom except when pressure is applied thereto. This pressure is automatically secured in the following manner: Within the cylinders J are located pistons K and having their stems or inner ends *z* projecting toward the center from opposite ends of a horizontal tube or cylinder I, as shown. This cylinder is supported in a horizontal position by the truck and contains a gravity-weight, such as a ball L, which is designed to roll freely within the tube I in case the tube is inclined in either direction, as would be the case were the truck to enter upon a curve in the track toward the right or left. The inclination thus imparted to the truck will cause the ball, which normally occupies a central position, to roll toward the lower end of the tube, thereby striking against the corresponding piston or rod K, forcing it into the cylinder and applying sufficient force to the oil to expel it against the pressure of valve *x*.

It will be obvious that in its motion in one direction or the other the ball will acquire a certain momentum, owing to which the piston K will be abnormally moved at first and the valve open to substantially its full extent to admit full pressure of oil to the rail, whereby a larger quantity of oil is fed at first. The reaction of the ball will permit the valve to partially close, thereby supplying the normal quantity of oil for the balance of the curve. Immediately upon the truck entering a straight

portion of the track again the tube I will be returned to its horizontal position, the ball L removed from the rod or plunger K, and, the pressure being relieved, the valve *x* will close, 5 so that no more oil will be fed.

It will of course be understood that as the cylinders J, with their pistons K, act as ordinary pumps the ordinary arrangement of check-valves will be provided—that is, there 10 will be a check-valve at F in each pipe connection to prevent the oil from being forced back into the tank.

It is not desirable to have oil fed to the rails when the train is running slow, and to prevent this I provide an automatic device, as follows: P P designate cocks or valves which have their stems connected to the lower end of lever Q, which lever is pivoted to the truck and to the upper end of which is secured a fan-blade S, extending in a position 20 to be exposed to the action of the air when the train is in motion. A suitable spring N holds this fan-blade forwardly inclined and the valves P consequently closed, so that if the 25 train is at a standstill on a curve or is running slow thereon no oil will be fed, irrespective of whether the pistons are operated or not. Should, however, the train be running at a predetermined speed for which the spring is 30 adjusted, the pressure of the air against the fan will cause it to move backward against the tension of the spring, and thus keep the valves P open, allowing the oil to be fed to the rail automatically by the operation of the 35 piston, as before described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the class described the combination with the truck, a source of oil-supply and pipe connections therefrom terminating in proximity to the rail, of a gravity-op-

erated oil-forcing means included in said connections, said means being carried by said truck and supported in a horizontal position, 45 substantially as described.

2. In a device of the class described an oil-reservoir, a feed connection for conveying the lubricant from the reservoir to the rail, a horizontal guideway, a ball mounted to roll therein 50 and oil-forcing means operated by the impact of the ball, substantially as described.

3. In combination with a truck, a reservoir having connections for supplying lubricant to the part to be lubricated, automatic oil- 55 forcing means for forcing the lubricant when the car or engine is upon a curve and additional automatic means for cutting off the flow of the lubricant at all times when the car is stationary or moving below a certain speed, 60 substantially as described.

4. In combination with a truck, an oil-reservoir, a pump-cylinder having pipe connections leading to said reservoir and to the rail to be lubricated, a horizontal guideway in 65 proximity to said cylinder, a piston in the cylinder having a projecting stem and a freely-rolling ball in said guideway adapted to operate the piston stem or rod, substantially as described. 70

5. In combination with a truck a horizontal tube carried thereby, a ball loosely held in said tube, a cylinder at each end of said tube, a piston for said cylinder, said piston having its end extending into position to be moved 75 by said ball, and pipe connections from each of said cylinders to an oil-tank and to one of the rails, substantially as described.

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

JAMES HENRY MINER.

Witnesses:

R. L. BROWN,
J. T. BROCK.