

No. 777,428.

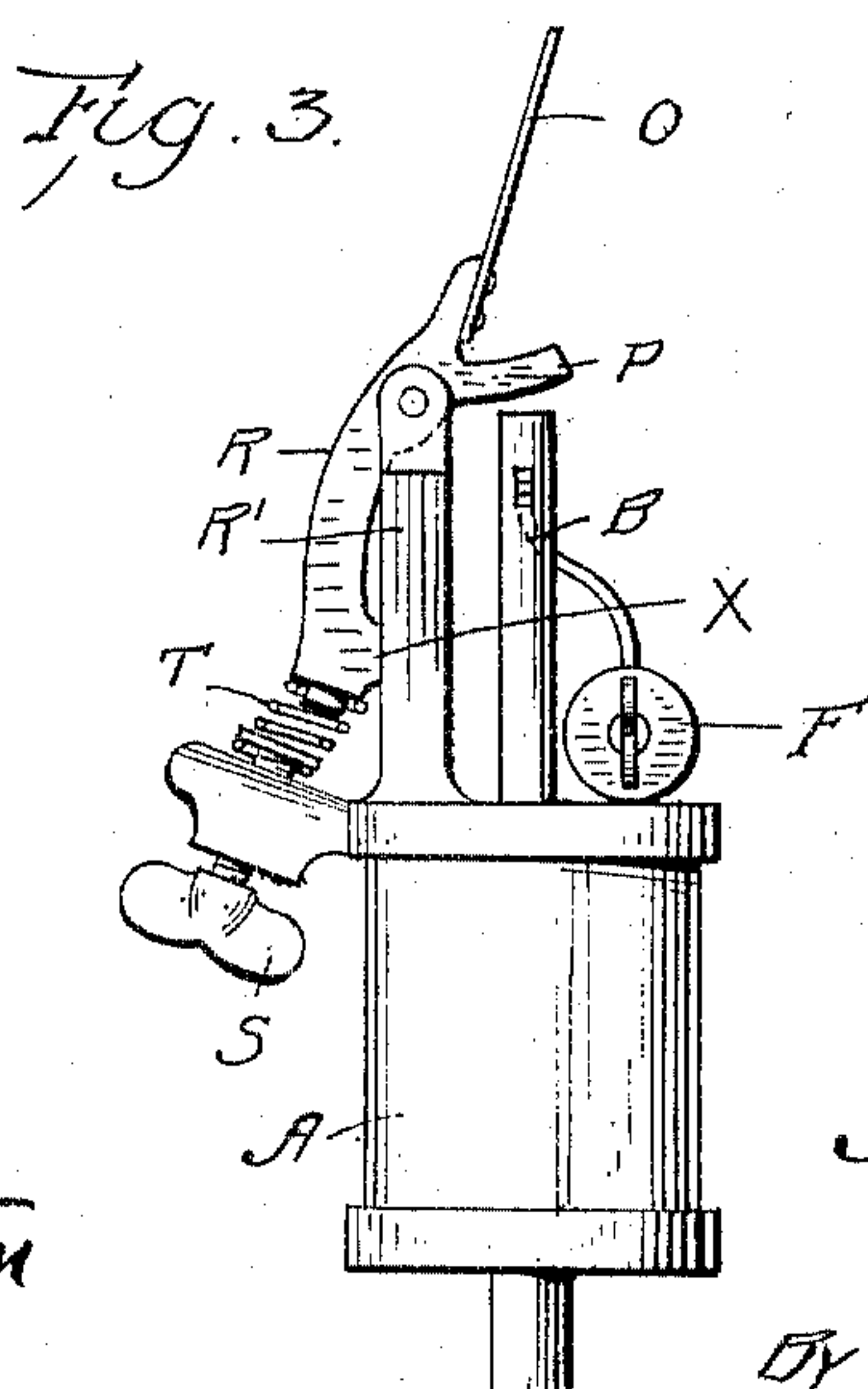
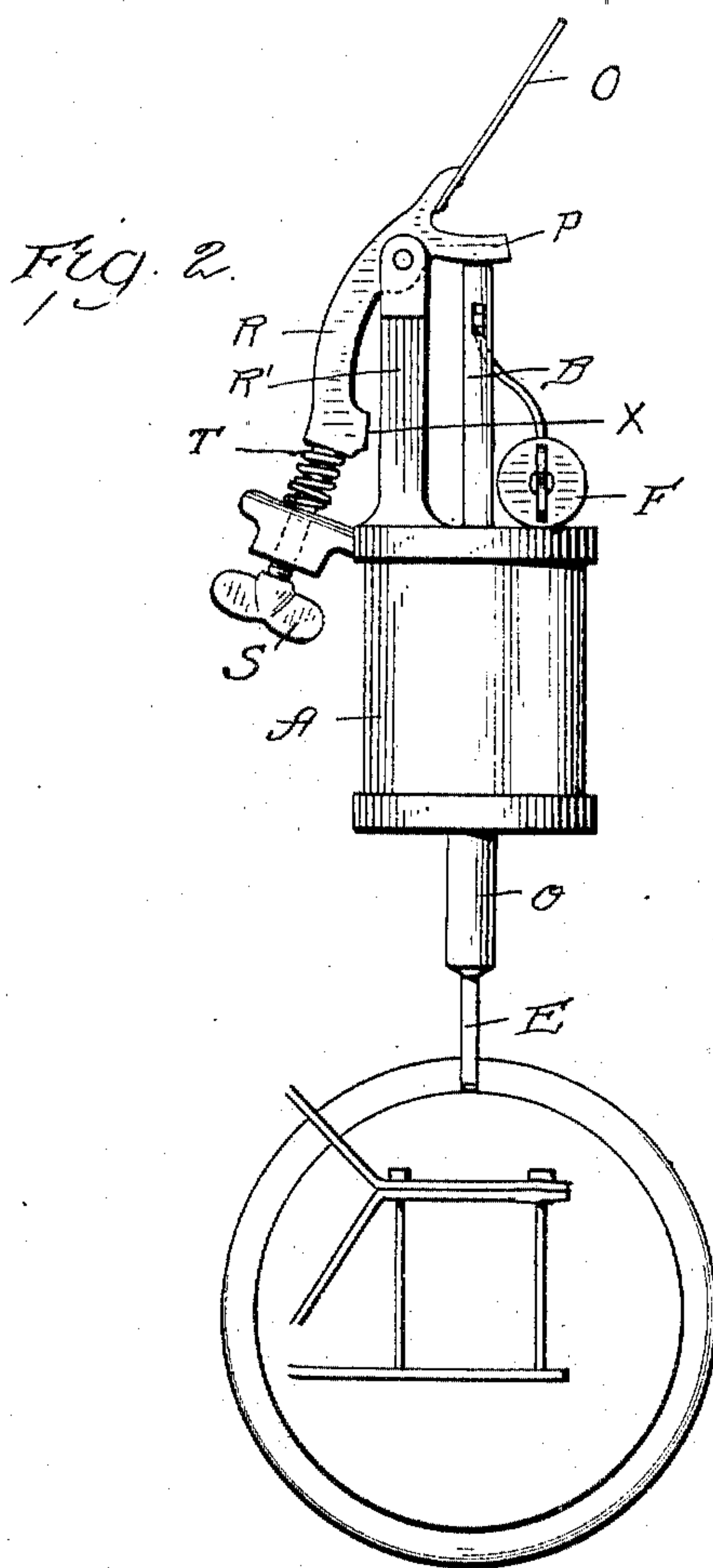
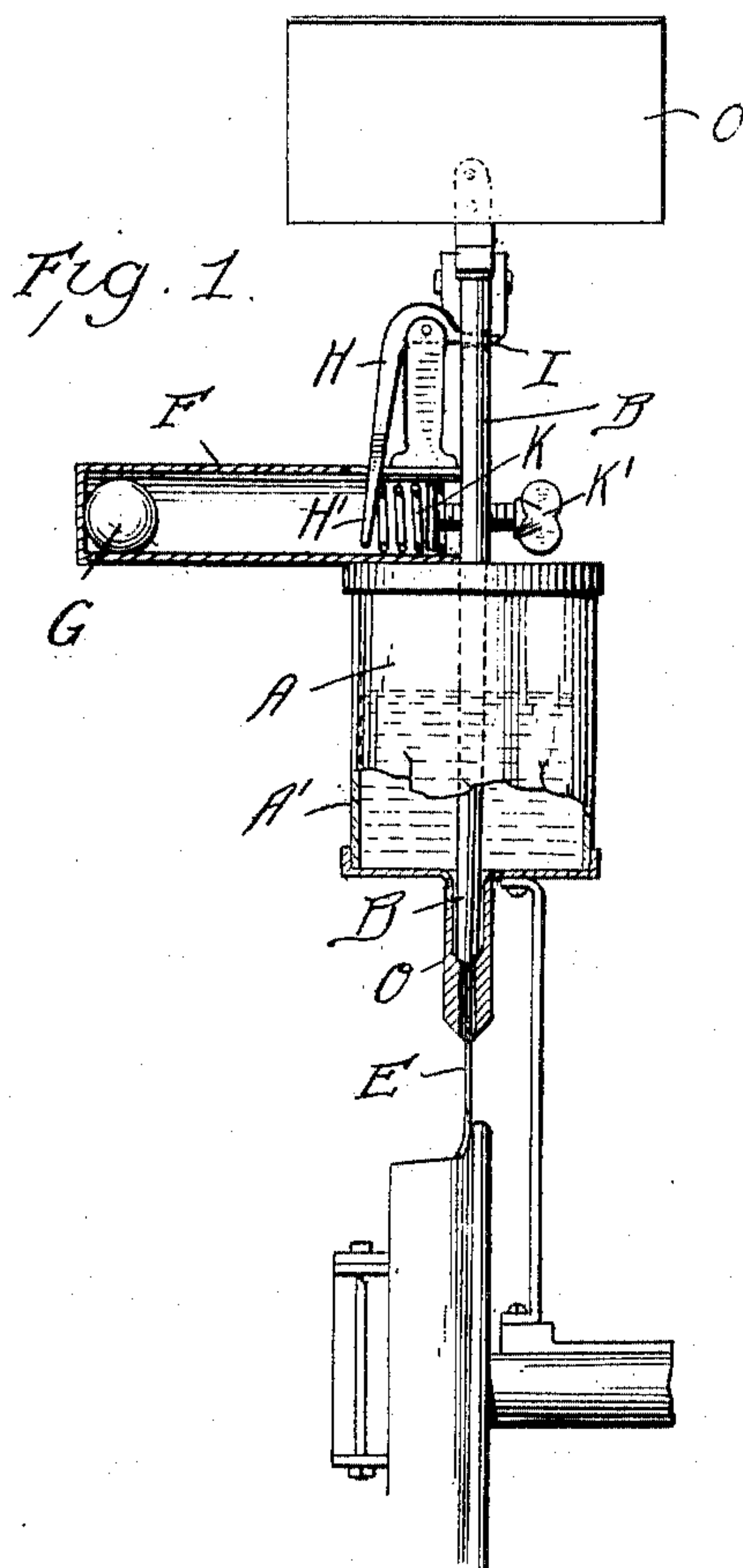
PATENTED DEC. 13, 1904.

J. H. MINER.

DEVICE FOR LUBRICATING WHEEL FLANGES.

APPLICATION FILED JAN. 25, 1904.

NO MODEL.



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UNITED STATES PATENT OFFICE.

JAMES HENRY MINER, OF LUMBERTON, MISSISSIPPI.

DEVICE FOR LUBRICATING WHEEL-FLANGES.

SPECIFICATION forming part of Letters Patent No. 777,428, dated December 13, 1904.

Application filed January 25, 1904. Serial No. 190,542. (No model.)

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 Devices for Lubricating Wheel-Flanges, of which the following is a specification.

My present invention relates to improvements in means for applying oil or lubricating material to the flange or periphery of a car-wheel while rounding curves; and the object of the invention is to provide a simple, economical, and effective device by which the flange of the wheel upon the outer side of the curve will have oil applied thereto, while the wheel upon the inside of the curve will be kept free from oil. Such a device is extremely advantageous for that if applied to the front trucks or drivers the lubrication of the outside flanges in rounding curves removes a certain amount of strain from the rail, lessens the liability of the flange riding upon the rail, and reduces the amount of friction and wear. It will also be apparent that the device may be applied to wheels other than driving-wheels, thereby reducing friction and causing the cars or trains to move more easily and quietly.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a conventional showing of a car-truck with the device applied thereto, and Fig. 2 is a view at right angles to Fig. 1. Fig. 3 is a detail view.

It will be understood that wheels shown in the figures are intended to be representative of the driving-wheels or pilot-trucks of any form of locomotive-engine or motor-car irrespective of the manner in which the power is developed. It will be further understood that while I have shown the invention as applied to the wheel upon one side only of the car or engine in practice the device would be duplicated upon the other side, one or the other of the devices operating to feed the lubricating material according to whether the car or engine is on a curve turning to the right or left.

In proceeding according to my invention I mount over each driving-wheel, as shown, an oil-cup A, which is secured to the truck or en-

gine frame in any suitable manner. This oil-cup may be of the ordinary or of any desired construction, except as hereinafter stated. A convenient form is a gravity feed-cup having glass walls A' and a delivery-opening at the bottom provided with a valve-seat c. This delivery-opening communicates with an oil-passage which terminates directly over the inner edge of the flange of the wheel and is preferably provided with a capillary oil-feed device of some flexible material, as indicated at E. The flow of the oil is regulated by a plunger or valve B, the stem of which extends up through the cap or top plate of the lubricator. The valve is normally held closed by a bell-crank lever H, having its end I engaging the stem and its end H' under the pressure of a spring K. The tension of this spring is sufficient to maintain the valve closed when the car or engine is running upon a straight track, and the said tension may be regulated by a set-screw K'. The spring K is located in the end of a horizontal cylinder F, which is rigidly secured, preferably, to the top of the lubricator. Within the cylinder is a ball G of suitable weight and free to roll back and forth between the end of the cylinder and the end H' of the bell-crank lever. The spring K is adjusted to such a tension that when by reason of the inclination of the truck when upon a curve the ball G acts against it said spring is compressed and then rebounds the ball to a certain extent. The object of this arrangement of tension is to instantly open valve B, so as to apply lubricant quickly and in greater quantity. Should it be applied normally, the train might be half around the curve before oil would reach the flange. With the described arrangement, however, the first impact of the ball opens the valve wide, permitting a sudden flow of a quantity of lubricant, and the action of gravitation causes the ball to keep the valve partly open while rounding the curve. The greater the elevation of the rail the more weight there will be against lever H and the more oil then is fed. The flexible feeder E rests on the flange by gravitation, it working in a free recess or guide, as shown in Fig. 1. The gravity-ball G can be changed and a heavier or lighter used, as the case may demand. I find

it desirable to provide means by which the valve will be automatically held closed when the speed of the train falls below a certain degree, though these means are only necessary when the lubricator is used on the driving-wheels, the object being to prevent slipping when running slow on curves or starting thereon, though no oil is ever applied by the device to the tread of the wheel or rail.

10 A convenient form of means for accomplishing this purpose is shown in the drawings, in which R designates a lever pivotally mounted upon a bracket R', secured to the top of the lubricator-cup. An arm P of this lever extends over the top of the plunger, while the opposite end of the lever is under the tension of a spring tending to draw it down to hold the end P out of contact with the plunger. A fan-blade O is carried by the lever R, and it will thus be seen that when the train is in motion the action of the air on the fan-blade will hold it in the position shown in Fig. 3 against the tension of the spring, and in this position the device is free to act, as hereinbefore described. Should, however, the speed of the train fall below a certain point, the spring will throw lever R into the position shown in Fig. 2, thus holding the valve closed irrespective of the action of the ball G. The tension of the spring T may be adjusted by thumb-screw S. A stop X is provided to limit the movement of lever R.

Having thus described my invention, what I claim is—

35 1. In a device for lubricating car or engine wheels, a lubricator for supplying oil, a valve for controlling the flow of oil from said lubricator, a movable weight controlling said valve, a guide for said weight, and a spring carried by said guide and connected with said valve, substantially as described.

2. In a device for lubricating car or engine wheels, a lubricator for supplying oil, a valve controlling the flow of oil from said lubricator, a movable weight for operating said valve, a guideway for said weight, a lever connected to said valve and having one end in the path of said weight and means for holding said valve normally closed, substantially as described.

3. In a device for applying lubricant to a

car or engine wheel, a lubricating device in proximity thereto, a valve for controlling the flow of oil from said lubricating device, a spring tending to hold said valve closed, means for varying the tension of the spring, a lever connected with the valve, a fixed guide for a movable weight and a movable weight supported by said guide and adapted to actuate said lever, substantially as described.

4. In a device for applying lubricant to the wheel of a car or engine, of a lubricating device for the flange thereof, a valve controlling the flow of oil from said lubricator, a horizontal tubular member, a movable ball therein and means whereby on the inclination of the tube when the engine or car is inclined to one side or the other as in rounding curves, the movement of the ball will open the valve, substantially as described.

5. In a device for lubricating the flanges of car and like wheels, means for feeding the lubricant to the flanges when the wheel is upon a curve, and independent means for controlling the feed according to the speed of the train.

6. In a device for lubricating the flanges of car and like wheels, means for feeding the lubricant to the flanges when the wheel is upon a curve, and independent air-controlled means for controlling the feed according to the speed of the train.

7. In a device for lubricating car-wheel flanges, a feed-tube for the lubricant, a valve normally closed, and a fan having connections for opening said valve when moving at a predetermined rate of speed.

8. In a device of the class described the combination with the truck, and the axle, of a guideway supported on said truck and parallel with said axle, and a gravity-weight supported in said guideway and adapted to move toward the lower end thereof as the truck is inclined by the elevation of one of the rails in rounding a curve, substantially as described.

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

JAMES HENRY MINER.

Witnesses:

J. B. SALMOND,

H. H. CHAMBERS.