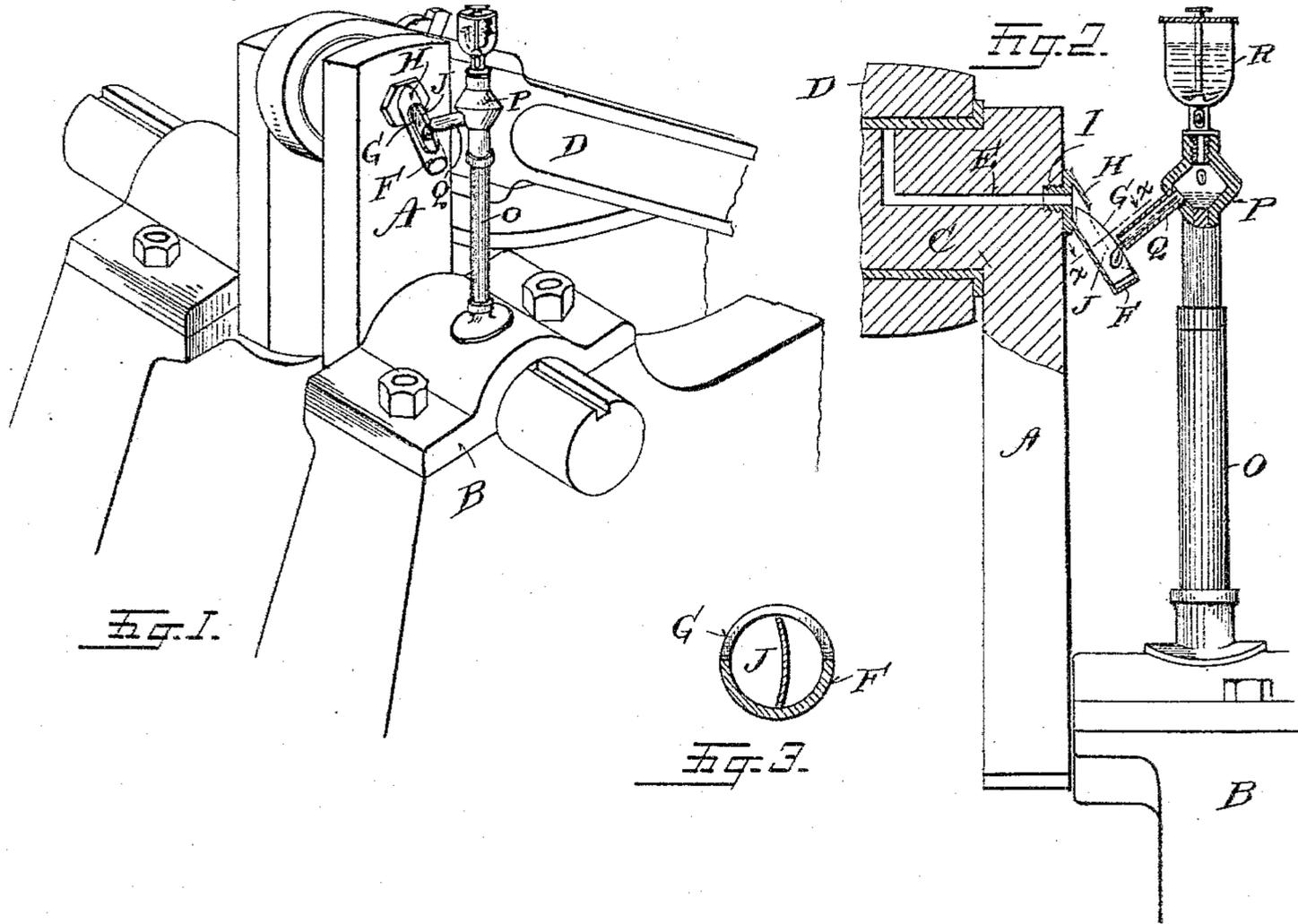


(No Model.)

P. T. COFFIELD.
LUBRICATOR.

No. 571,555.

Patented Nov. 17, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

PETER TENNEY COFFIELD, OF SPRINGFIELD, OHIO.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 571,555, dated November 17, 1896.

Application filed October 3, 1896. Serial No. 564,536. (No model.)

To all whom it may concern:

Be it known that I, PETER TENNEY COFFIELD, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Automatic Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in automatic lubricators, and is specially designed for lubricating the wrist-pins of cranks, and more particularly wrist-pins of center cranks which by reason of the shaft and boxes on each side thereof are difficult of access.

To this end my invention consists, essentially, of a stationary oil-reservoir with a drop-nozzle adapted to be placed in proximity to the revolving crank and deliver oil between the crank center and surface to be lubricated and of separate oil-receiver connected to the crank and constructed with reference to two functions, to wit, the function of receiving the oil from the nozzle at such point, and, secondly, the function of delivering such oil into an orifice in the crank without spilling the oil by reason of the rapid circular motion which the receiver is undergoing, said receiver consisting of a tube fastened to the crank, closed at one end and leading at the other into an orifice in the crank, said tube having an opening in its side and a longitudinal blade within it, which blade extends outside of the opening and is adapted to revolve closely to the nozzle of the reservoir, all as hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings, on which like reference-letters indicate corresponding parts, Figure 1 is a perspective view of a center crank and its bearing-blocks with my improved lubricator applied; Fig. 2, a partial elevation and sectional view of the same parts; Fig. 3, a detail transverse sectional view on the line $x x$ in Fig. 2.

The letter A designates a crank of the type known as a "center" crank, which type my invention is specially designed to be applied to, though it is applicable to and useful in connection with an end crank. In the bearing-blocks B this crank A is mounted in any

approved manner, and to the wrist-pin C of this crank is connected the usual pitman D, operated by the piston-rod. The thing to be done is to supply a lubricant to the wrist-pin while the crank is in motion. The crank is provided with an oil-orifice E, a portion of which is radial or approximately so from the crank center, so that the oil will, by the action of centrifugal force, readily pass to the surface of the wrist-pin. On the crank I secure the oil-receiver, which receiver performs the two essential functions necessary, namely, first, the function of receiving the oil, and, second, the function of delivering such oil into the orifice E without spilling the same while the crank is in motion and irrespective of the speed it may be rotated. This receiver consists of a tube F, cut away at G for the admission of oil, such opening being at the side of the tube. The tube stands at an angle to the crank, is closed at its free end, and provided with a screw-threaded extension I at its other end which screws into the side of the crank opposite the end of the oil-orifice in the crank. That part of the tube shown at H prevents the oil from being thrown out of the tube by centrifugal action or from running out of the tube when such portion of the tube is downward, as when the tube is traveling through the lower portion of the circle made by the crank. Within the tube and longitudinal to it I place a blade J, which runs from the closed end of the tube to the open end and inclines at the latter end, so as to terminate inside of the oil-orifice in the crank, so as not to interfere with the entrance of the oil into such orifice. This blade stands above that part of the tube which is cut away to form the oil-opening and is thus enabled to take off the oil-drop from the nozzle, when the drop is taken off positively. If the reservoir is adjusted to supply the drops periodically, this blade J insures the delivery of such drops into the tube F by standing high enough to come behind the drop and catch it without letting the tube pass by the drop before the latter gets far enough down to flow within the tube. The oil thus entering the tube runs to the orifice in the crank as the revolution of the crank begins to turn the free end of the tube up and the open end down, while the part H of the tube prevents the oil from either

flying out by centrifugal force or dropping out when the crank is in the extreme lower portion of the circle.

Referring now to the stationary reservoir, it consists of a post O, adapted to be mounted upon any stationary part of the engine or near by the engine, and fashioned with a reservoir proper, P, from which the nozzle Q extends in an inclined direction, so as to readily carry off the oil. An ordinary sight-feed oil-cup R is attached to supply the reservoir P with oil in a regular manner, so that the discharge from the nozzle shall be correspondingly regular. I do not wish to be understood, however, as confining myself to any particular form or means for supplying oil to the reservoir P and maintaining its regular discharge therefrom, as such means may be varied, the essential point being that the nozzle shall be properly supplied and that it shall properly discharge the oil in regular quantities.

Thus it will be seen that by my invention I have provided means for a regular and automatic lubrication of crank wrist-pins, and particularly the center cranks which are difficult of access, and that I convey the oil from a stationary reservoir through a delivery-nozzle into an oil-receiver traveling in a circular direction or with the crank and constructed to receive such oil either by positively taking it off of the nozzle or by taking it through the natural periodical dropping of the oil and conducting such oil to the orifice that leads to the wrist-pin surface, yet without dislodging the oil by the action of the centrifugal force to which my oil-receiver is subjected.

It will also be observed that in my invention I deliver the oil from the nozzle or delivery device at a point between the center of the shaft and the surface to be lubricated, and that my oil-receiver is so arranged that it takes the oil from a point which is located

within these two extremes, namely, the shaft center and the surface to be lubricated. The result is that I am enabled to not only apply my lubricator to an end crank, but to a center crank, and that my lubricator is particularly adapted to a center crank because of the fact that the transfer of the oil from the stationary device to the moving receiver is effected at a point intermediate of the crank center and the surface to be lubricated. This is a distinctive feature and principle of my invention.

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

1. The combination with a crank having an oil-orifice leading from one side of it to the periphery of its pin, an oil-receiver secured to the side of the crank opposite said orifice and consisting of a tube standing at an angle to the crank, closed at its free end, open at its other end, cut away at its side leaving a part H to prevent the oil from spilling out, and having a blade placed longitudinally therein and extending above the tube where the opening is made in its side, and a stationary oil-reservoir mounted near the crank and having a nozzle projecting near to the path of rotation of said blade.

2. In a lubricator, a receiver consisting of a tube closed at one end, open at the side with a portion H left remaining open at the end near the portion H and having a screw-threaded projection, and an interiorly-placed longitudinal blade, the blade standing above that part of the tube which is cut away where the opening is made in the side.

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

PETER TENNEY COFFIELD.

Witnesses:

OLIVER H. MILLER,
W. M. MCNAIR.