

(No Model.)

T. G. HOWELLS.
LUBRICATOR.

No. 531,590.

Patented Dec. 25, 1894.

Fig. 1.

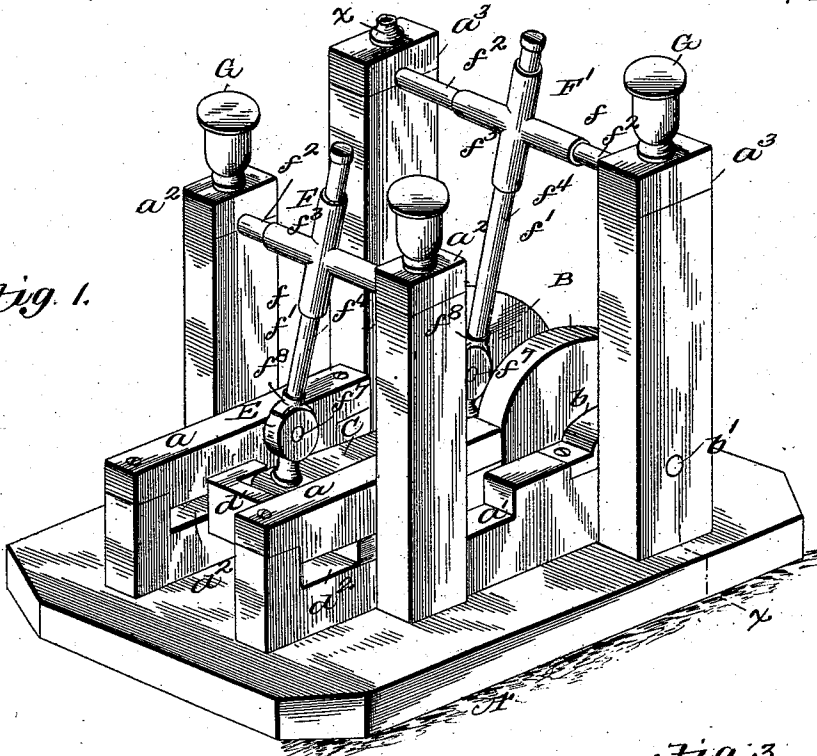


Fig. 2.

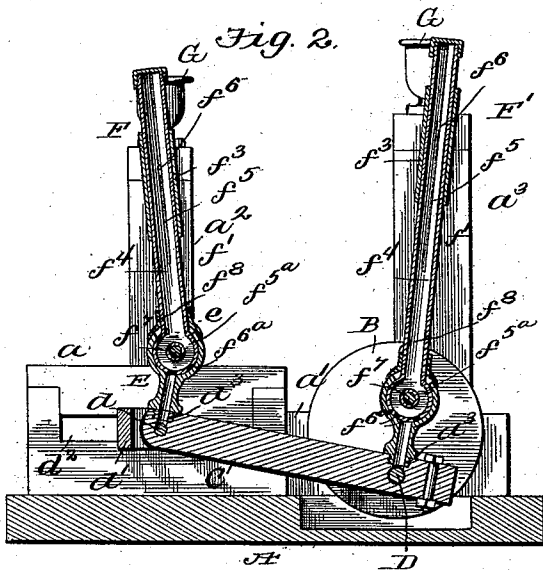


Fig. 3.

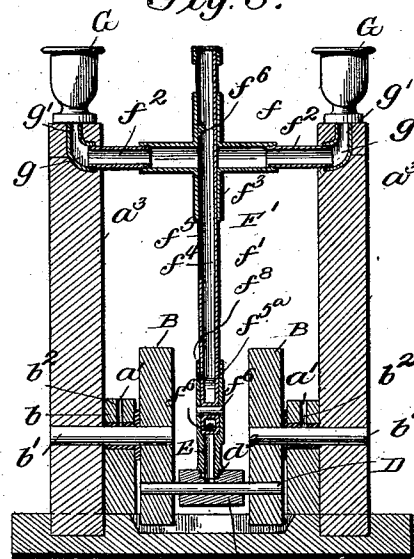
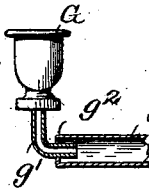


Fig. 4.



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UNITED STATES PATENT OFFICE

THOMAS G. HOWELLS, OF WARREN, OHIO.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 531,590, dated December 25, 1894.

Application filed June 1, 1894. Serial No. 513,181. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. HOWELLS, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Lubricators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates certain new and useful improvements in lubricators for engines and other machinery employing movable parts not capable of easy lubrication.

The invention comprises a hollow reciprocating tube pivotally connected at its lower end to a piston rod or other movable part of an engine and a hollow rock-shaft having a sleeve through which said tube is passed, an oil cup or reservoir communicating with one end of said shaft for supplying oil through the reciprocating tube to the crank-shaft of the piston-rod while the machine is in motion.

The invention also comprises the novel features of construction, combination and arrangement of parts, substantially as herein-after fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figure 1 is a view in perspective showing a portion of an engine provided with my improved lubricator. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view on the line $x-x$, Fig. 1. Fig. 4 is a detail view of a slight modification of the connection between the rock-shaft and the oil-reservoir.

Referring to the drawings, A designates the base or framework; a and a' , two sets of uprights, and a^2 and a^3 two sets of posts. Journalled in boxes b , b , supported by uprights a' are the short axes b' of the drive-wheels B. These axes can be lubricated through upper openings b^2 in said boxes.

C is a piston-rod or plunger eccentrically connected to wheels B by a shaft D supported by said wheels. This rod or plunger at its other end is pivotally connected by a shaft d to a block d' movable in corresponding guide-ways d^2 of uprights a . In this rod or plunger are two holes or openings adjacent to or directly over the shafts D and d , respectively, and in these openings are fitted the lower

tube-like ends d^3 of oil-cups E. These cups are of circular form and slotted at top, as shown at e .

F, F', designate the two lubricating attachments, each of which consists of a horizontal rocking shaft or member f and a reciprocating tube or member f' . Each horizontal rocking shaft has two end-pipes or hollow sections f^2 extended into openings in the opposite posts or uprights, and a central right-angular sleeve f^3 in which loosely fits a reciprocating tube f^4 having a slot f^5 into which projects a lug f^6 on the interior of said sleeve f^3 . This lug serves as a guide for the tube, preventing the turning thereof. The lower end of this tube f^4 has a hollow head f^{5a} projecting therefrom, said head being provided with perforations f^{6a} in its lower curved face through which oil from the tube will pass into the cup in which said head is pivotally mounted by a cross-pin or bolt f^7 . A cap f^8 is preferably secured to reciprocating tube f^4 above the lower end thereof so as to encompass the upper portion of the oil cup, preventing dust from entering the latter. For the same purpose the upper ends of the oil tubes f^4 are capped. Each of the end-pipes f^2 is extended at its outer end into the lower enlarged end g of a short right-angular tube g' in one of the posts. Into this tube opens the lower end of an oil reservoir G. Any surplus oil will accumulate in the enlarged end g . In lieu of this arrangement, the end of the pipe may be provided with a flanged end g^2 , as shown in Fig. 4, through the opening in which projects the lower branch of tube g' , which is of reduced diameter. The flanged end g^2 will prevent the overflow of any surplus oil the same being arrested as against overflow by contact with said flanged end.

In operation, the revolution of the drive-wheels and the back-and-forth movement of the piston rod or plunger will effect the upward and downward movement of the reciprocating oil tube, and also the rocking of the horizontal shaft, said reciprocating tube moving in the central sleeve of said shaft. The oil supplied by the reservoirs will pass horizontally through one of the end-sections of the rocking-shaft and entering the reciprocating tube through the slot in the latter will pass down through said reciprocating tube and out through the perforations in the lower

end of the latter to the oil cup and from the latter to the shaft to which the end of the piston-rod or plunger is connected.

The advantages of my invention are apparent to those skilled in the art to which it appertains and it will be specially observed that an engine or other movable machinery can thus be constantly lubricated at points not convenient of access while in operation. It will also be seen that the parts are simple and inexpensive and not liable to readily get out of order.

I claim as my invention—

1. A lubricator designed to be connected to movable machinery, the same comprising an oil cup, a reciprocating tube pivotally connected at its lower end to said cup, a hollow rock-shaft mounted at its ends and having an intermediate right angular sleeve through which said tube is passed and is free to move, said tube having a slot therein through which communication is had with said shaft, and an oil supply reservoir opening into one end of said rock-shaft, substantially as set forth.

2. A lubricator designed to be connected to movable machinery, the same comprising an oil-cup having an upper slot, a slotted reciprocating tube pivoted at its lower end in said cup and extending through the slot thereof, the inclosing cap secured to said tube and encompassing said oil-cup, the hollow rock-shaft mounted at its ends and having an internal sleeve through which said tube is passed and free to move, and an oil reservoir opening into one end of said rock-shaft, substantially as set forth.

3. A lubricator designed to be connected to movable machinery, the same comprising an oil cup having an upper slot, a slotted reciprocating tube having a hollow head at its lower end provided with holes or perforations, said head fitting in said oil-cup, the pivot-pin for said head, the hollow rock-shaft having a central sleeve through which said reciprocating tube is free to move, and an oil reservoir opening into one end of said rock-shaft, substantially as set forth.

4. A lubricator designed to be connected to movable machinery, the same comprising an

oil-cup having an upper slot, a reciprocating tube having a slot therein and extended at its lower end through the slot in said cup to which latter said tube is pivotally connected, a rock-shaft having a sleeve through which said tube is passed, and an inner lug extending into the slot of said tube, and an oil-reservoir communicating with said rock-shaft substantially as set forth.

5. The combination with a piston-rod or plunger or other movable part of an engine, and two corresponding posts, of an oil-cup secured to said piston-rod or plunger, a rock-shaft having two end-sections supported by said posts and a central right-angular sleeve, a slotted reciprocating tube pivotally connected at its lower end to said cup and movable in said sleeve, a right-angular tube in one of said posts communicating with one of said end-sections, and an oil-reservoir supported by one of said posts and opening into said right-angular tube, substantially as set forth.

6. The combination with a piston-rod or plunger or other movable part of an engine, and two corresponding posts, of an oil-cup secured to said rod or plunger, a hollow rock-shaft having end-sections supported by said posts and a central right-angular sleeve provided with an inner lug in its vertical portion, a reciprocating tube fitted in said sleeve and having a slot into which said lug projects, a hollow head secured to the lower end of said tube and pivoted in said oil-cup, said head having a series of perforations therein, the inclosing cap also secured to said tube, the right-angular tube in one of said posts communicating with one of said end-sections of said rock-shaft, and an oil-reservoir opening into said right-angular tube, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOS. G. HOWELLS.

Witnesses:

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GEO. W. UPTON.