

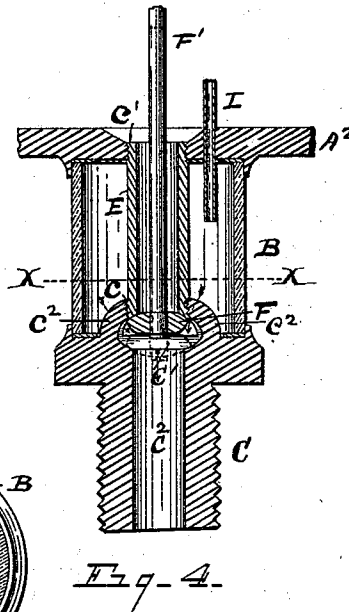
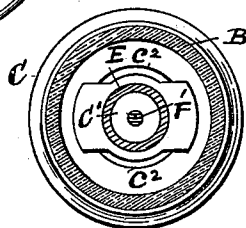
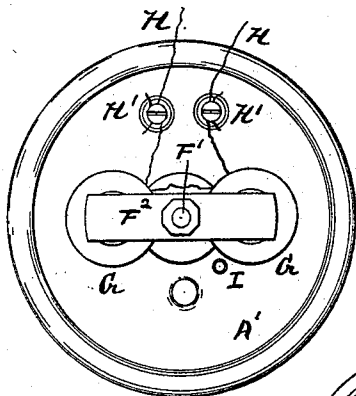
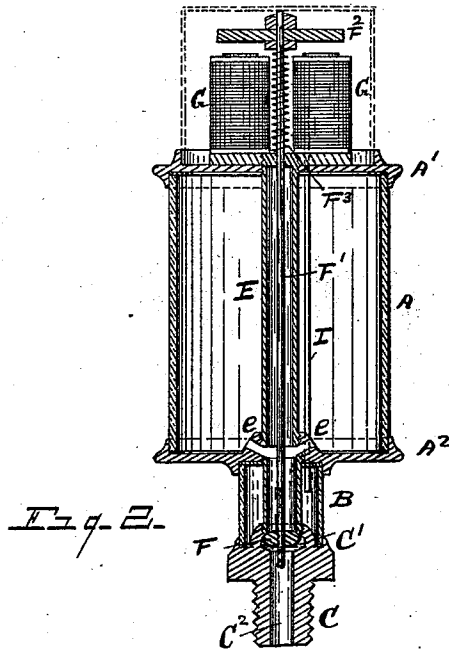
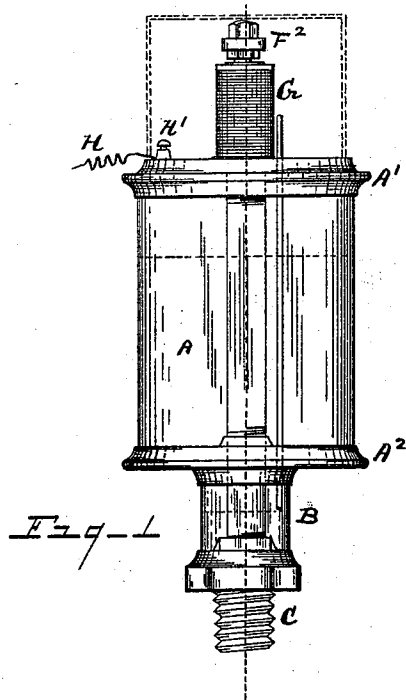
(No Model.)

2 Sheets—Sheet 1.

J. B. PURVIS.
LUBRICATOR.

No. 517,127.

Patented Mar. 27, 1894.



Witnesses

O. W. Burmister
John F. Miller

Fig. 5

Inventor

John B. Purvis
By *his* Attorney
Newell S. Wright.

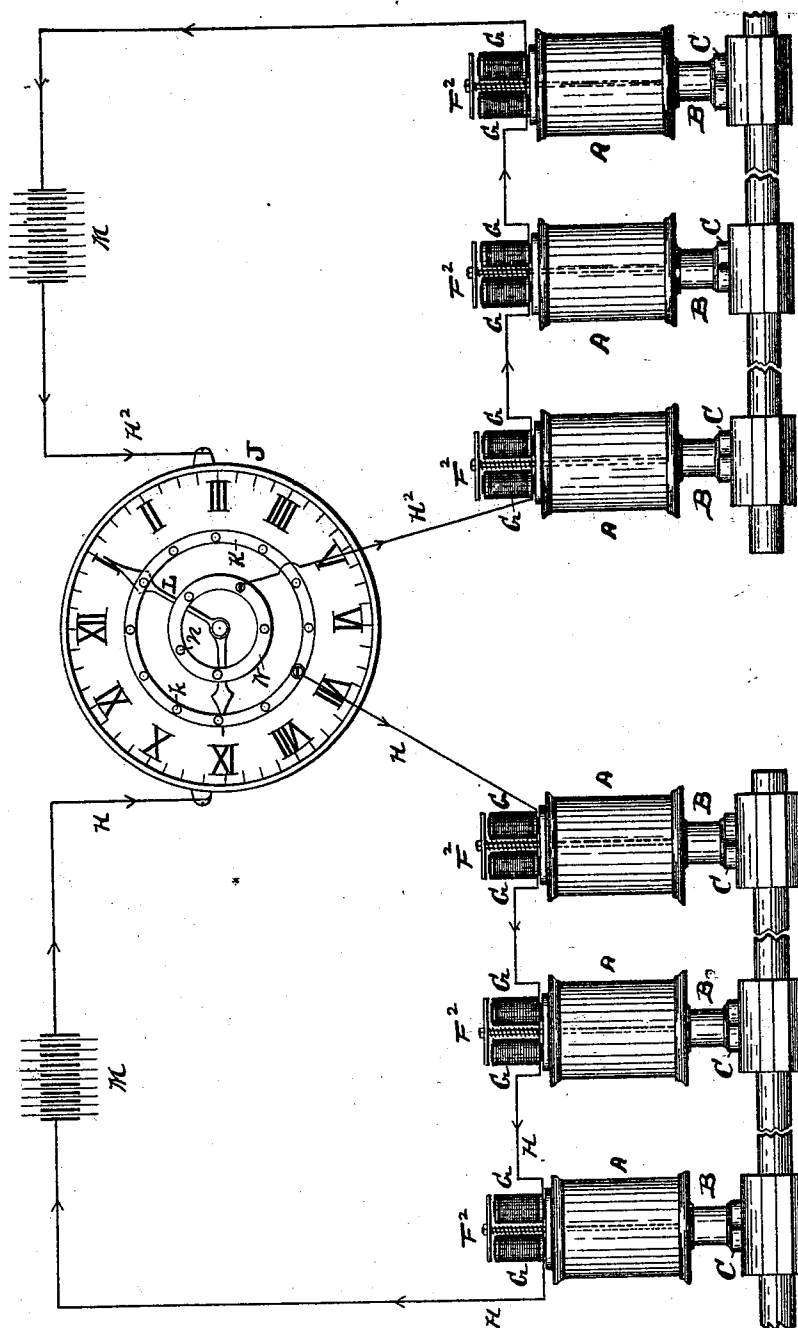
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UNITED STATES PATENT OFFICE.

JOHN B. PURVIS, OF DETROIT, MICHIGAN.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 517,127, dated March 27, 1894.

Application filed March 10, 1893. Serial No. 465,416. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. PURVIS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Electric Oilers; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object an electric oiler for oiling machinery of various kinds, and consists of devices and appliances, their construction, combination and arrangement as hereinafter described and claimed and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a vertical section, at right angles to Fig. 1, showing parts in side elevation. Fig. 3 is a plan view. Fig. 4 is an enlarged view, in vertical section, of the valve, and parts adjacent thereto. Fig. 5 is a horizontal section on the line $x-x$ Fig. 4. Fig. 6 is a diagram view illustrating my invention, showing parts in front elevation.

The aim and purpose of my invention is to provide an oiler which may be operated by simply making an electrical connection, or closing an electric circuit, in any desired manner, and whereby a series of oilers may be connected by an electric circuit, in which any desired number of oilers may be electrically operated. The desirability, economy and utility of such a construction will be readily understood, especially where a large number of oilers are needed, as in a large plant. By my invention the services of an attendant to go about to the individual oilers to operate them is dispensed with, as, by means of a push button convenient to the engineer, he may, by a touch upon the push button, operate as many oilers as may be in a given electric circuit. Instead of using a push button, my invention contemplates closing the circuit automatically also, if desired, by any suitable means; as by a clock arranged to

control the circuit, or by a suitable connection with movable parts of an engine.

I carry out my invention as follows:

In the drawings A represents an oil reservoir. A' is the top or cap thereof, and A² is its base.

B is an oil feed chamber located below the base of the oil reservoir.

C is a tubular threaded supporting stem at the base of the feed chamber.

E denotes a tube extending through the oil reservoir A and feed chamber B, and having a screw threaded connection with the base A² and with the stem C, as shown at "c" and "c'." The body of both the oil reservoir and of the feed chamber may, preferably, be made of glass. Obviously the glass cylinder of the feed chamber will be held in place by the screw connection of the tube E with the stem C, as shown. The stem C is constructed with a valve chamber, as shown at C', at its upper end, communicating with the feed chamber and with the channel C² of the supporting stem, and also with the lower end of the tube E.

F denotes a valve, which is herewith shown located at the base of the tube E. When normally closed, said valve seats upon the lower end of said tube to cut off its communication with the feed chamber. In this normally closed position the valve leaves the communication of the feed chamber with the passage C² open. On the opposite movement of the valve it seats upon the upper end of the passage C², closing the communication of the feed chamber therewith, and opening communication of the tube with the feed chamber.

F' is an elongated valve stem extending upward through the tube E and provided at its upper end with an armature F², and with a self-retracting spring F³.

G G denote an electro-magnet located upon the oil reservoir beneath the armature of the valve stem.

H, H denote the conductors of an electric circuit connected with said magnet. H' denotes binding posts engaging said conductor.

An air tube I leads into the feed chamber B, preferably, extending upward through the

base and the top of the oil reservoir. This air tube is intended to be adjustable so as to be extended less or more into the feed chamber. The tube E communicates with the oil reservoir intermediate its ends, adjacent to the base of said reservoir, as shown at "e" Fig. 2.

The top of the supporting stem C, in order to form the chamber C', may be constructed with upwardly projecting lips C², cut away therebetween, so that said valve chamber shall have free communication with the feed chamber.

The operation of the device is as follows:

It is obvious that when in normal condition the oil reservoir is closed, the valve F seating upon the lower end of the tube E, and being held firmly in position by the spring F³. In this position the armature of the valve is disconnected from the electro-magnets, and the electric circuit is broken. Whenever it is wished to make the oil feed to the parts to be lubricated, by means of a push button or other means, the electric circuit is closed, whereupon the electro-magnet attracts the armature of the valve and pulls it down thereagainst. In so doing the valve F is unseated from the lower end of the tube E, and seated upon the upper end of the passage C². By this change of position, oil is admitted into the feed chamber through the tube E, until the oil has risen to the lower end of the air tube I and sealed it, the sealing of said air tube evidently stopping the further ingress of oil into the feed chamber. The action of filling the feed chamber as desired, takes place rapidly, while the electrical circuit is closed. Upon breaking the electric circuit again, the valve is self-retracted to normal position, shutting off the passage of oil from the oil reservoir into the feed chamber, and opening the passage in the supporting stem, allowing the oil which has accumulated in the feed chamber to discharge to the parts to be lubricated. If a series of oilers are in the same electric circuit, obviously the same action will simultaneously take place in all.

The closing of the electric circuit to actuate the valves of the oilers may be accomplished by any desired means, automatically, at desired intervals, or otherwise.

In Fig. 6, I show a clock J arranged to close the electrical circuit at desired intervals. Any desired construction and arrangement of the clock may be used to secure this result. As shown, I locate upon or over the face of the clock a ring K provided with a series of contact points "k," into which the electrical circuit H H is connected, the minute hand L closing the circuit whenever it comes into contact with said points.

Where it is desired to oil certain parts to be lubricated at different intervals of time from other parts, the oilers therefor may be located on a different electrical circuit, as the

circuit H², H² Fig. 6, which may be closed in any suitable manner. As shown in Fig. 6, two electrical circuits, in each of which are placed a series of oilers is connected with the clock to be automatically operated thereby. This may be accomplished in any desired manner. As shown an additional ring N, provided with contact points "n," is located over the dial of the clock, with which the circuit H² H² is connected to be closed whenever the minute hand L strikes one of the points "n."

M denotes a battery in the electric circuit.

What I claim as my invention is—

1. In combination an oil reservoir, a channeled supporting stem, an intermediate feed chamber communicable with the oil reservoir and feeding oil through said stem, a valve normally closing the communication of said feeding chamber with the oil reservoir and normally opening the communication of the feed chamber through the stem, an electro-magnet to operate said valve, and means to regulate the supply of oil to the feed chamber, said valve when attracted by the magnet opening communication between the oil reservoir and the feed chamber, allowing oil to pass into the feed chamber and closing the communication of the feed chamber through the supporting stem, whereby the feed chamber is normally permitted to discharge oil to parts to be lubricated, substantially as described.

2. In combination an oil reservoir A, a channeled supporting stem C constructed with a double seated valve chamber C' at its upper end communicable therewith, a tube within the oil reservoir communicating therewith and opening into said valve chamber, an intermediate feed chamber B communicable with the valve chamber and with the channel in said stem, a valve F in said valve chamber to control the communication of said feed chamber with the oil reservoir and through the stem, said valve normally closing the communication of the oil reservoir with the feeding chamber, and opening the communication of the feeding chamber through said stem normally allowing oil to pass from the feed chamber to parts to be lubricated, substantially as described.

3. The combination with an oil reservoir, of a hollow supporting stem, an intermediate feed chamber communicable with the oil reservoir and through said stem, a tube within the reservoir communicating therewith and terminating in the feed chamber, an adjustable air tube leading into the feed chamber extending upward through the cup of the oil reservoir, a valve normally closing the communication of the interior tube with the feed chamber and opening the communication of the feed chamber through said stem, and an electro magnet to operate the valve, substantially as described.

4. The combination with an oil reservoir A,

of a feed chamber B communicating therewith, provided with a passage leading to parts to be lubricated, a tube E within the oil reservoir communicating therewith toward its
5 lower end and projecting beyond said communication into the feed chamber and communicable therewith at its lower end, a valve F located at the lower end of said tube controlling the communication of the feed chamber with said tube and with said passage, and
10 means to regulate the amount of oil fed from the oil reservoir into the feed chamber, said

feed chamber feeding the oil therein to parts to be lubricated when the valve is in normal position and the oil reservoir feeding oil to the feed chamber when the valve is operated, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN B. PURVIS.

Witnesses:

N. S. WRIGHT,
JOHN F. MILLER.