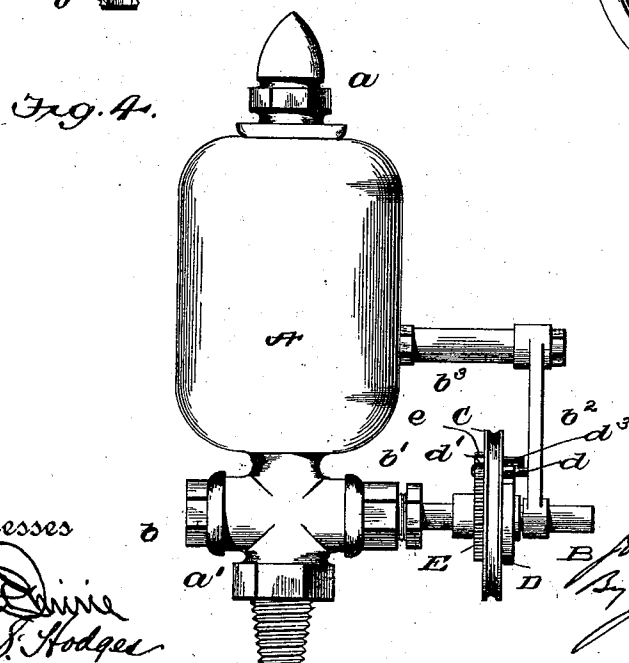
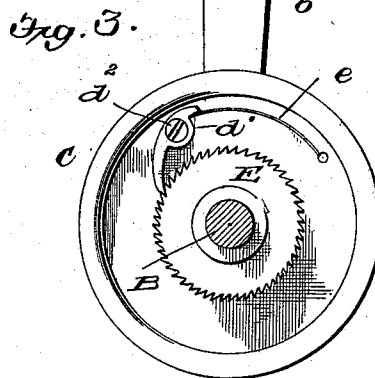
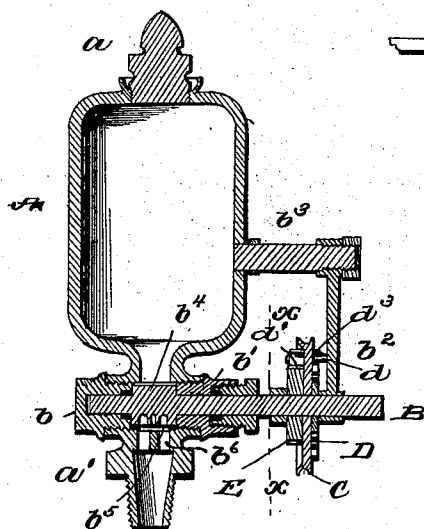
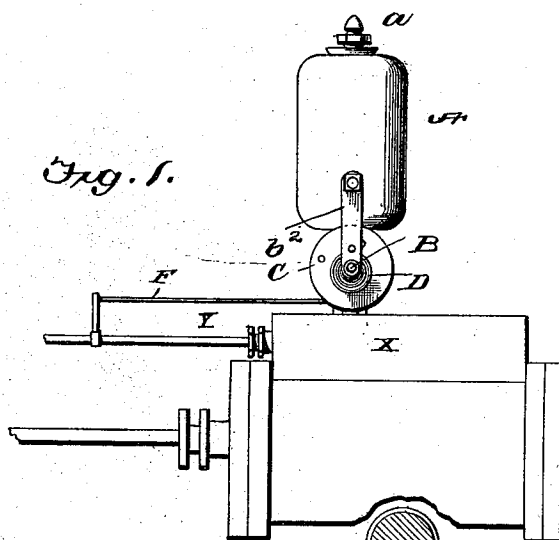


(No Model.)

J. DESMOND.  
LUBRICATOR.

No. 510,632.

Patented Dec. 12, 1893.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN DESMOND, OF DETROIT, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CHAPLIN-FULTON MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 510,632, dated December 12, 1893.

Application filed February 14, 1893. Serial No. 462,316. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN DESMOND, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Lubricators for Steam-Engines; 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 automatically introducing graphite into steam engines.

The invention comprises a spring-impelled wheel mounted on the rotary feed-shaft and carrying a pawl engaging a ratchet on said shaft, and connections between said wheel and the sliding steam valve or other movable part, substantially as hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figure 1 is a view showing my improved lubricator as used in practice. Fig. 2 is a vertical sectional view. Fig. 3 is a transverse sectional view on the line  $x-x$ , Fig. 2. Fig. 4 is a front view.

Referring to the drawings, A designates a vessel having an upper supply opening closed by a plug  $a$ , and a lower extension  $a'$  through which the discharge is effected, said extension being externally threaded at its lower end so as to be screwed into a hole or opening in the steam chest X, or other suitable point on or about an engine. This vessel is designed to contain powdered graphite and the object of the invention is to automatically feed this graphite to the internal mechanism.

B is a rotary shaft extended horizontally through an opening in the lower extension  $a'$ , said shaft being supported by screw plugs  $b, b'$ , in opposite sides of extensions  $a'$ . At its outer end shaft B is additionally supported by a depending arm  $b^2$  secured to a second arm  $b^3$  extended horizontally from vessel A. That portion of shaft B extending across the discharge opening of extension  $a'$  is of greater diameter than the remaining portion thereof. In this thickened portion  $b^4$  are recesses  $b^5$

which are designed to coincide with corresponding openings  $b^6$  in the lower end of vessel A.

C is a grooved wheel loose on shaft B, and to its hub is connected one end of a coil spring D, the outer end thereof being held by a lug  $d$  extending inwardly from arm  $b^2$ . To the inner face of this wheel a pawl  $d'$  is pivoted by a screw  $d^2$  which is extended through said wheel and has a nut  $d^3$  on its outer end forming a projection for engagement with lug  $d$ . This pawl is constantly held in engagement with a ratchet wheel E fast on shaft B, by a spring  $e$  carried by wheel C. The nut  $d^3$  is designed to engage lug  $d$  to limit the movement of wheel C under the expansion of the coiled spring. A cord or strap F is secured at one end to wheel C and is designed to fit in the groove of the periphery thereof, the other end of said cord or strap being connected to the sliding valve Y of the steam engine. By pulling on this cord or strap the wheel C will be given a partial rotation as against the action of the coil spring and the pawl being in engagement with the ratchet wheel will effect the partial rotation of the feed shaft. The recesses in the latter being filled with graphite will feed the same through the lower extension to the steam chest or engine. This operation of the wheel, resulting in the gradual rotation of the feed-shaft, is accomplished by the sliding movement of the valve. The wheel is returned to its normal position by the spring D when the cord or strap is not under tension.

The advantages of my invention are apparent. It will be seen that I have produced simple and inexpensive means for effecting the gradual automatic supply of graphite to a steam engine and that the internal parts thereof can thus be thoroughly lubricated. The feed is effected by the movement of the sliding valve and hence no special means need be employed for operating the feed shaft. It is obvious that by disconnecting the cord or strap from the sliding valve the lubrication can be discontinued.

It is obvious that the lubricator can be attached to any suitable part of an engine or any of its connections, and that the rotary

shaft can be operated by connecting the cord or strap to any rotary or reciprocating part of an engine, and also that a rod can be substituted for said cord or strap, all of these modifications being clearly within the scope of my invention.

I claim as my invention—

1. The herein-described lubricator comprising the vessel having discharge ports, a rotary horizontal shaft having recesses designed to coincide with said ports, a spring impelled wheel loose on said shaft and carrying a pawl, a ratchet wheel fast on said shaft, and a cord or strap encircling said spring-impelled wheel and connected at its outer end to a movable portion of the engine to which the lubricator is attached, substantially as set forth.
2. The herein-described improved lubricator, comprising the vessel having discharge ports, a rotary horizontal feed-shaft having recesses designed to coincide with said ports, a ratchet wheel fast on said shaft, and a spring impelled wheel loose on said shaft carrying a pawl engaging said ratchet wheel whereby the gradual rotation of said shaft is effected, substantially as set forth.
3. The herein-described improved lubricator,

comprising the vessel having discharge ports, a ratchet wheel fast on said shaft, a spring impelled wheel loose on said shaft carrying a projection and a pawl, a stop designed to be engaged by said projection, and means for moving said wheel as against the action of its spring, substantially as set forth.

4. The combination with the steam chest of an engine, and a sliding valve, of a lubricator having a vessel provided with a discharge end opening into said steam chest, a rotary feed-shaft extended transversely through said discharge end, a ratchet fast on said shaft, a grooved wheel loose on said shaft having a projection on one side, a spring pawl, a depending arm supporting said shaft at its outer end and having a lug, a coiled spring secured to said wheel and to said lug, and the cord or strap attached to said wheel and to said sliding valve, substantially as set forth.

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

JOHN DESMOND.

Witnesses:

GARDNER S. WILLIAMS,  
GEO. CATHEY.