S. H. DAVIS, Jr & H. M. Du BOIS.

Lubricator.

No. 165,800. Patented July 20, 1875.

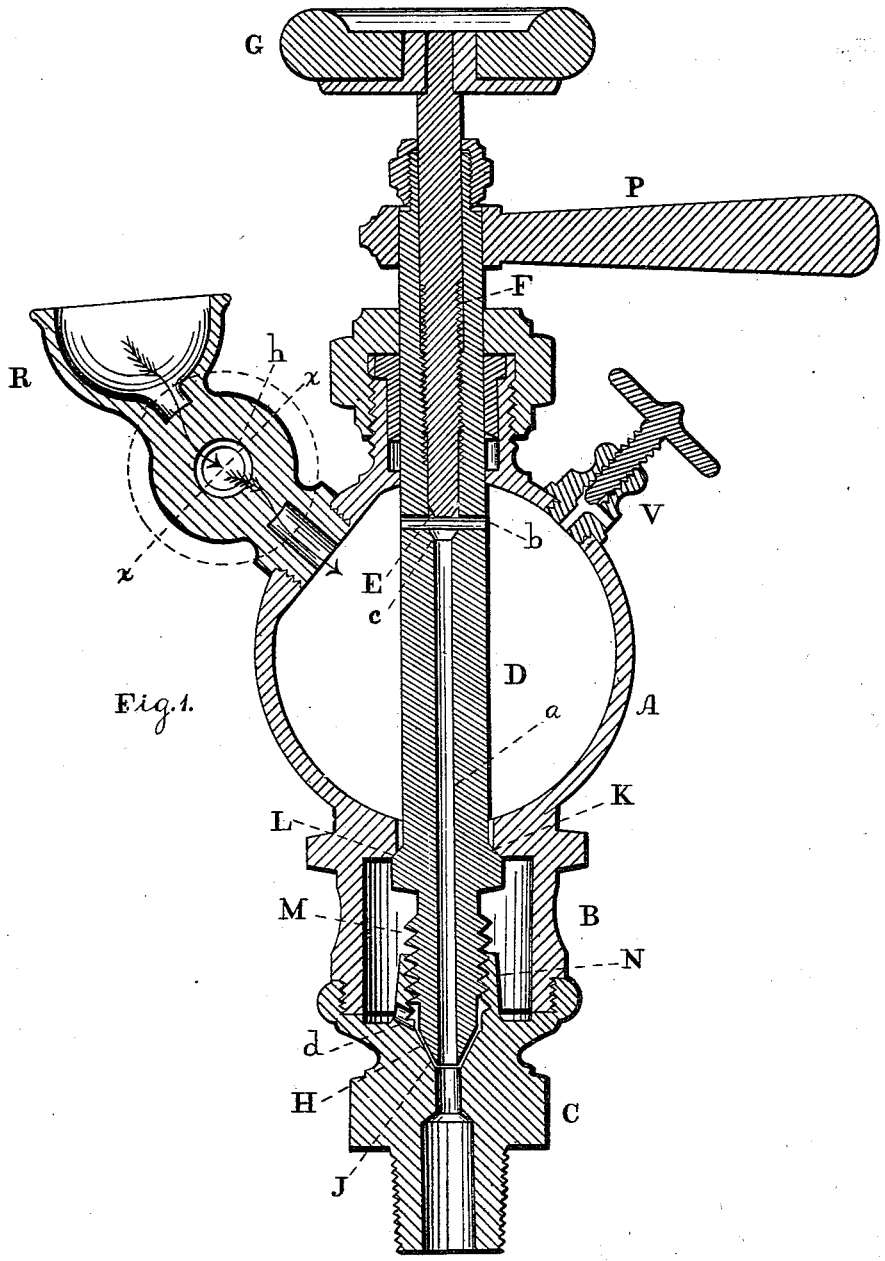
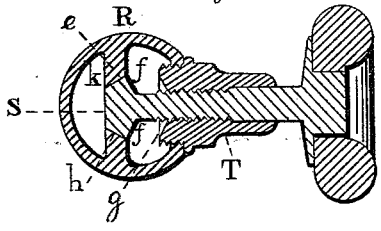


Fig. 1.

Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL H. DAVIS, JR., AND HOWARD M. DU BOIS, OF PHILADELPHIA, PA.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **165,800**, dated July 20, 1875; application filed October 9, 1874.

To all whom it may concern:

Be it known that we, SAMUEL H. DAVIS, Jr., and HOWARD M. DU BOIS, both of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Lubricators; and we do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which our invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a central vertical section of the device embodying our invention. Fig. 2 is a transverse section in line *x x*, Fig. 1.

This invention consists in a hollow stem adapted to rotate for respectively opening and closing two opposed valves, in order to properly perform the operation of lubrication.

Referring to the drawings, A represents a shell, constituting the main reservoir, below which is located, and with which communicates, an auxiliary reservoir or charger, B. C represents a plug, which is arranged at the bottom of the charger B, and constitutes means for attachment of the lubricator to the engine or machinery. Centrally and vertically in the reservoir A is passed a stem, D, which projects above the top of the reservoir A, and has a bore, *a*, whose upper end communicates with the reservoir A through one or more openings, *b*, in the stem D. These openings *b* are covered and uncovered by means of a valve, E, at the bottom of a stem, F, which is fitted into the stem D, and has a screw-thread, which engages with a thread on the upper part of the stem D, so that by means of a handle or lever, G, on the stem F, the valve E may be raised and lowered, and thus open and close the openings *b*, the seat *c* for the valve E being at the upper end of the bore *a*. H represents a valve on the bottom of the stem D, and closing on a seat, J, on the plug C. K represents a valve, which is formed on or with the stem at a point above the bottom of the latter, and closes upwardly against a seat, L, on the bottom of the reservoir A or top of reservoir B. It will be seen that when one valve is closed the other valve is opened. In order to open and close the valves H K, we form on the stem D threads M, which engage with threads on a collar, N, rising centrally from the top of the plug C. By means of a handle or lever, P, a rotary motion may be imparted to the stem D, thus elevating or lowering said stem, whereby the valves H K may be respectively advanced to or moved from the seats J L, thus opening or closing said valves. Openings *d* are made in the collar N or top of the plug B, above the seat L, in order to form a communication between the reservoir B and bore of the plug C. The lubricant is fed to the reservoir A through a funnel or spout R.

The operation is as follows: The stem D is rotated by the handle P, so that the valve H is opened and valve K closed. The valve E is also closed, so as to cover the openings *b*. The lubricant is admitted to the reservoir A, and flows into the charger or reservoir B. When the proper quantity is in the reservoir A, the stem is again rotated in order to close valve K and open valve H. This permits the lubricant to escape from the reservoir B and pass to the engine—a matter of service until the latter is fairly started. The valve E is now raised, so as to uncover the openings *b*. Steam rising through the bore *a* passes into the reservoir, where it condenses, and the water of condensation seeks the bottom of the reservoir through the lubricant, owing to greater specific gravity of the water. This raises the lubricant and causes it to flow through the openings *b* into the bore *a*, and thus to the engine. The continual condensation of the steam serves to elevate the lubricant, and causes it to escape from the reservoir to the place of lubrication uniformly and in proper quantities. The funnel or spout R is opened and closed by means of a valve, S, which has two faces, *e f*. The stem of the valve S passes through a sleeve, T, which screws into the neck of the funnel, and the inner face of said sleeve is formed with a seat, *g*, for the face *f* of the valve S. The other face *e* of the valve engages with a seat, *h*, formed on a wall, *k*, within the neck of the funnel. When the lubricant is to be admitted to the reservoir A, the stem T is rotated, in order to withdraw the valve S from the seat *h*. This forms an open passage in the funnel

to the reservoir. At the same time, the valve S will be moved closely to the sleeve T, so that the face *f* of the valve comes in contact with the seat *g* of the sleeve. This covers the joint of the stem of the valve S and the sleeve T, and prevents leakage of the lubricant at said joint. Air is permitted to escape from the reservoir by means of a valve, V, properly located.

We are aware that it is not new to employ a stem which is raised and lowered by a hinged lever, and we are also aware that it is not new to employ a stem of two parts, fitted to each other by screw-threads, and having a detached valve below said stem. These features are disclaimed.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The valvular stem D, constructed to rotate, formed with a bore, *a*, and openings *b*, and extended above the shell A, in combination with the handle P, valvular stem F, and screw-collar N, substantially as and for the purpose set forth.

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Witnesses:
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