

H. HUGHES.
LUBRICATOR.

No. 174,908.

Patented March 21, 1876.

FIG. 1.

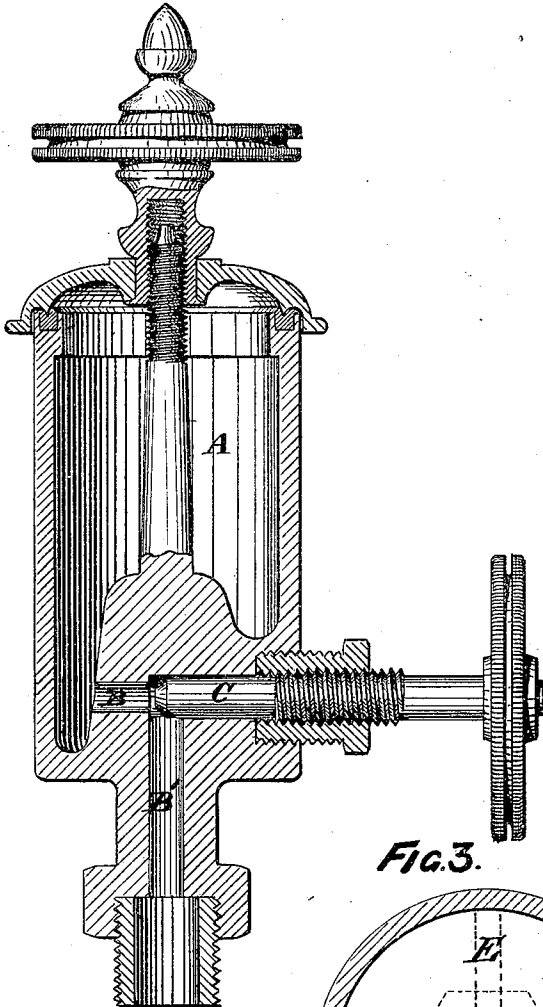


FIG. 2.

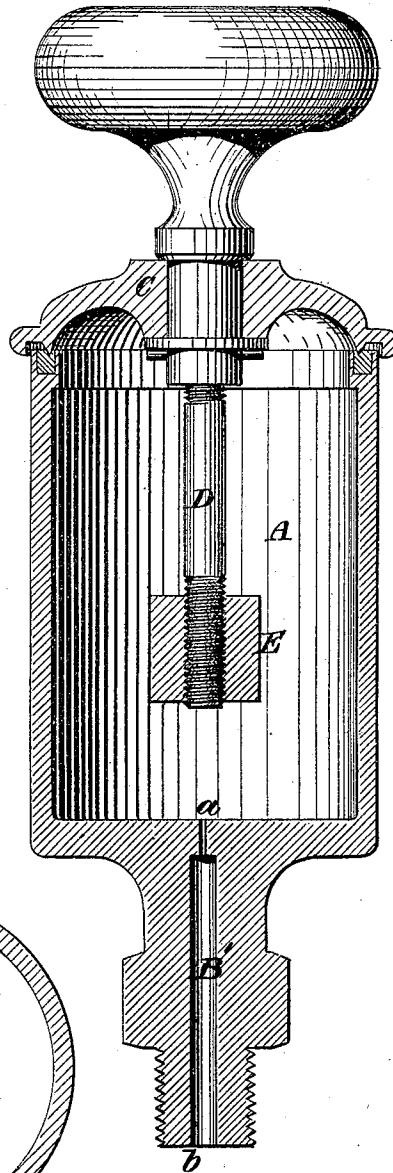
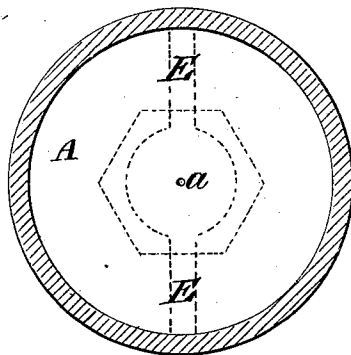


FIG. 3.



Witnesses,
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UNITED STATES PATENT OFFICE.

HENRY HUGHES, OF LEICESTER, ENGLAND.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **174,908**, dated March 21, 1876; application filed January 8, 1876.

To all whom it may concern:

Be it known that I, HENRY HUGHES, of Leicester, in the county of Leicester, England, mechanical engineer, have invented Improvements in Lubricators, of which the following is a specification:

My invention relates to that class of apparatus known as "suet lubricators," used for supplying lubricating material to the cylinders of steam-engines, and to other like surfaces, in an automatic or partially automatic manner; and it has for its object simplifying such apparatus without impairing their efficiency, while rendering them more certain in their action, and preventing waste of the lubricant.

In order that my said invention may be fully understood I have shown on the annexed sheet of drawings an example of one class of suet lubricators of the ordinary construction, and also an example of a lubricator constructed according to my invention.

Figure 1 represents a vertical section of the ordinary lubricator. Fig. 2 represents a similar view of my improved lubricator, and Fig. 3 is a horizontal section of the same.

In one class of suet lubricators, as ordinarily constructed and applied to steam-engines, the suet is introduced into a chamber, A, Fig. 1, having passages B B', which are in communication with the steam-cylinder or steam-pipe below, and when the steam is turned on the suet, under the action of the steam, which ascends the passage B' and flows through the passage B, is converted into tallow, which is gradually supplied to the cylinder. The supply of the tallow is regulated by means of a screw-valve, C, under the control of the driver or other attendant, and which is caused to close or cover the mouths of the passages B B' to a greater or less extent, so as to contract or enlarge the outlet for the tallow, as required.

Now, according to my invention, I dispense with the regulating-valve C, and employ a communicating passage or passages of a minimum diameter, or a passage terminating in an orifice or orifices of a minimum diam-

eter, so as to admit of the egress of only sufficient tallow to maintain in the cylinder the required degree of lubrication.

Figs. 2 and 3 of the drawings illustrate one mode of carrying out my invention, in reference to which figures it will be seen that the bottom of the chamber A has formed in it a minute passage or orifice, *a*, communicating with the main passage B', and thence with the cylinder or steam-pipe.

The diameter of the passage or orifice *a*, when of a circular section, should vary from about one-sixty-fourth of an inch to about one-sixteenth of an inch, according to the extent of the surface to be lubricated, the exact minimum diameter required being readily determined by experience.

When the passage or orifice *a* is of any other sectional form, the area will vary in a corresponding ratio.

It is obvious that the minute passage or orifice *a* may be arranged at the extremity *b* of the lubricator, in lieu of at the upper end of the passage B', as shown, or it may be continued the same size throughout from the bottom of the chamber A to the extremity *b* of the lubricator; or two or more minute passages, or a main passage with two or more minute orifices, may be employed, as required.

The cover O may be attached by means of a screw, D, screwed into the cross-bar E, or otherwise.

By means of this invention the cost of the apparatus is greatly reduced, and the uncertainty in its action, due to its regulation being dependent upon the attendant, and the waste from leakage to which the ordinary apparatus is liable, are entirely obviated; while, if it be required to remove the cover C for the renewal of the supply of suet to the chamber A during the time that the engine is running, no inconvenience will be experienced from the escape of the steam by reason of the reduced size of the aperture *a*, through which it must necessarily pass.

I claim as my invention—

In suet lubricators, to be operated by the

admission of steam, as hereinbefore mentioned, one or more minute passages or orifices, of a permanently restricted area in cross-section, for the purpose of limiting the discharge of the lubricant without the employment of regulating valves or cocks, the whole being constructed substantially as hereinbefore described.

In witness whereof I have signed my name

to this specification in the presence of two subscribing witnesses.

HENRY HUGHES.

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