2 Sheets—Sheet 1.

W. MOSES.

LUBRICATING DEVICES FOR STEAM-ENGINES.

No. 190,722. Patented May 15, 1877.

Fig. 1.

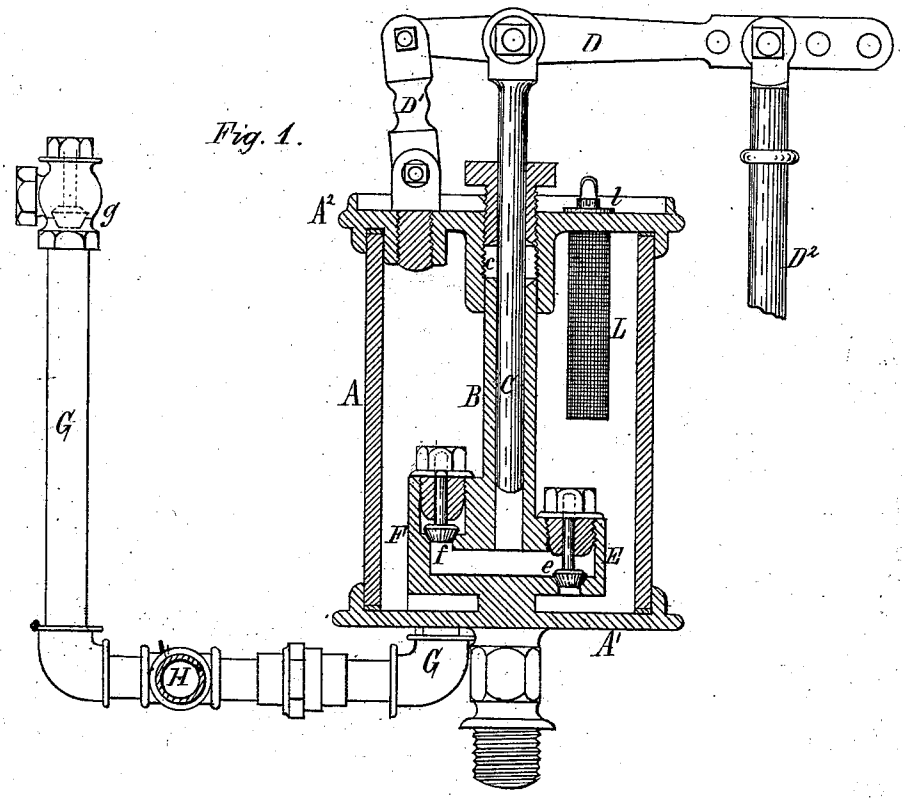
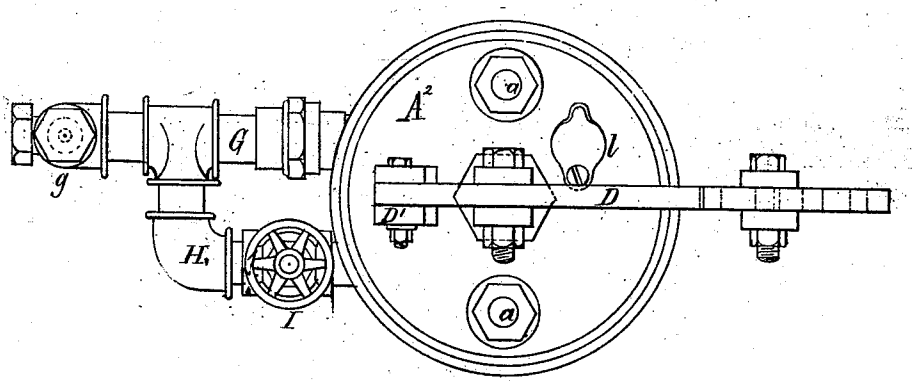


Fig. 2.



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2 Sheets—Sheet 2.

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LUBRICATING DEVICES FOR STEAM-ENGINES.

No. 190,722. Patented May 15, 1877.

Fig. 3.

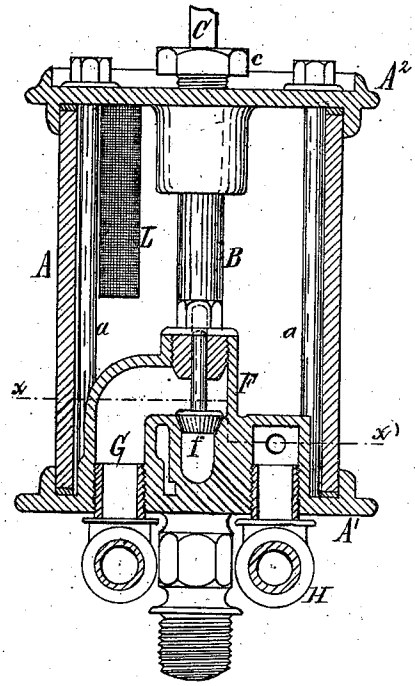
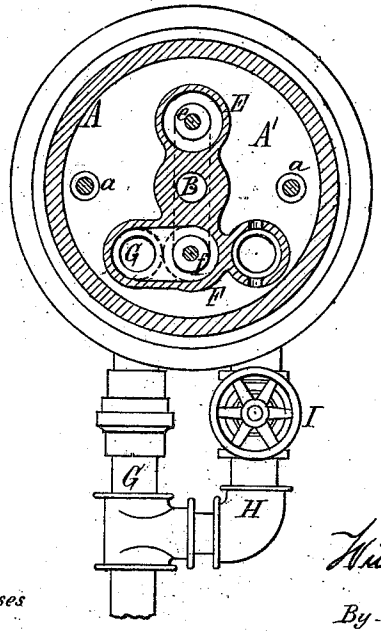


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM MOSES, OF BUFFALO, NEW YORK.

IMPROVEMENT IN LUBRICATING DEVICES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. **190,722**, dated May 15, 1877; application filed October 3, 1876.

To all whom it may concern:

Be it known that I, WILLIAM MOSES, of the city of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Lubricating Devices for Steam-Engines, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to a device designed for supplying the lubricating material to the cylinder or other parts of a steam-engine, pump, or similar mechanism, in a regular and uniform manner, while permitting the quantity of the lubricating material so supplied to be readily regulated, as may be required.

The nature of my invention will be fully understood from the following description.

In the accompanying drawings, consisting of two sheets, Figure 1 is a vertical section of my improved lubricating device. Fig. 2 is a top-plan view thereof. Fig. 3 is a vertical section at right angles to Fig. 1. Fig. 4 is a horizontal section in line *x x*, Fig. 3.

Like letters of reference refer to like parts in each of the figures.

A represents the cylindrical oil-receptacle, preferably made of glass, and provided with a metallic bottom, A^1, adapted to be secured to any suitable support, and a metallic top or cover, A^2, both the top and bottom being provided with suitable grooves or flanges for receiving the glass receptacle A, and secured together by bolts *a*, so as to clamp the cylinder A between them. B represents the pump cylinder or barrel, arranged vertically within the oil-receptacle A, and provided with a plunger or piston, C, projecting through the cover A^2, which is provided with a stuffing-box, *c*. The plunger C is connected above the cover A to a lever, D, having its fulcrum in a link, D^1, secured to the cover A^2, while the long arm of the lever D is connected by a rod, D^2, with any suitable moving part of the engine or pump to which the lubricator is applied, so as to be actuated when the engine or pump is in motion. *e* is the suction-valve, arranged in a chamber, E, opening into the receptacle A, and communicating with the foot of the pump-barrel B. *f* is the pressure-valve, arranged in a chamber, F, communicating with the foot of the pump-barrel, and opening into the discharge-pipe G, which dives and penetrates the bottom A^1 of the oil-receptacle. The pump-barrel B and chambers E and F are preferably cast in one piece with the bottom A^1 of the oil-receptacle.

The main portion of the discharge-pipe, screwed into the bottom of the oil-receptacle, is made of any suitable length, as circumstances may require, and provided near the steam-cylinder, or other part to which the oil is to be supplied, with a check-valve, *g*, of any suitable construction.

H represents the return-pipe, connecting with the discharge-pipe G at a short distance from the oil-receptacle, and opening into the latter, as clearly shown in Figs. 3 and 4. I is a cock or valve, arranged in the return-pipe H, for regulating the flow of the oil through the same. *l* is an opening formed in the cover A^2 for introducing the oil, and L a cylindrical strainer, arranged under the opening *l*, for catching any coarse impurities which may be contained in the oil.

My improved lubricating device being connected with a steam-engine or pump, as hereinbefore described, a uniform reciprocating motion is imparted to the plunger C. When the valve I in the return-pipe H is entirely closed, the full quantity of oil displaced by the plunger C during its downward stroke is forced into the cylinder, or other part to which the discharge-pipe G is connected. Upon opening the valve I to a greater or less extent, a portion of the oil forced into the discharge-pipe G by the plunger C is permitted to return to the receptacle A by the pipe H, the amount so returned being proportionate to the extent to which the valve I has been opened, and the pressure of the steam opposed to the discharge of the oil from the pipe G. When the valve I is entirely opened all of the oil forced into the discharge-pipe G is returned through the pipe H into the receptacle A. From the foregoing it will be seen that by opening the valve I to a greater or less extent, the amount of oil discharged from the pipe G at each stroke of the plunger can be regulated with great nicety, thus rendering the lubrication regular, and at the same time adjustable to the requirements of each

particular case. It is evident that motion may be applied to the plunger C in any desired and suitable manner.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the oil-receptacle and discharge-pipe of a lubricating-pump, of a return-pipe provided with a suitable cock or valve for regulating the amount of oil ejected from the discharge-pipe by the action of the pump, substantially as hereinbefore set forth.

2. The combination, with the oil-receptacle A and pump B C, arranged therein, of the discharge-pipe G and return-pipe H, provided with regulating-valve I, arranged as and for the purpose hereinbefore set forth.

3. The combination, with the glass vessel A, of the metallic top A^2 and metallic bottom A^1, cast with the pump-barrel B and chambers E F, the parts being secured together by bolts *a*, as and for the purpose hereinbefore set forth.

4. The combination, with the oil-vessel A A^1 A^2, of the force-pump B C, discharge-pipe G, return-pipe H, valve I, lever D, and actuating-rod D^2, substantially as and for the purpose hereinbefore set forth.

WILLIAM MOSES.

Witnesses:
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