(No Model.)

E. H. PHIPPS.

STEAM ENGINE LUBRICATOR.

No. 260,781. Patented July 11, 1882.

Fig. I.

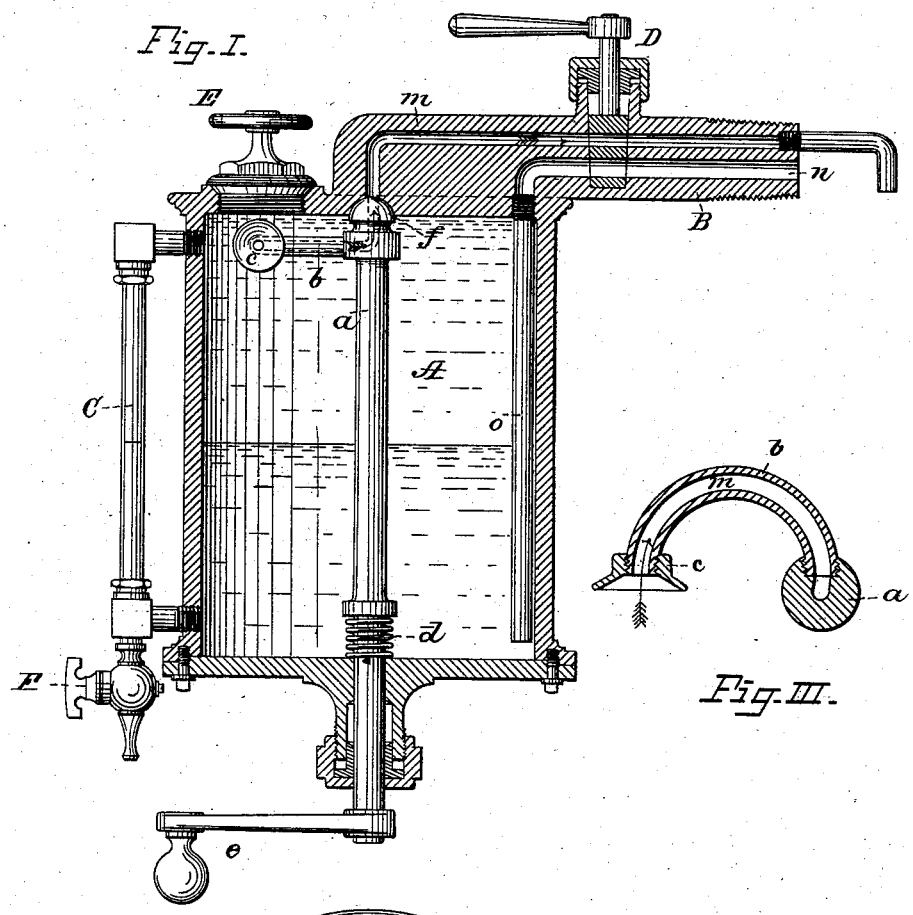
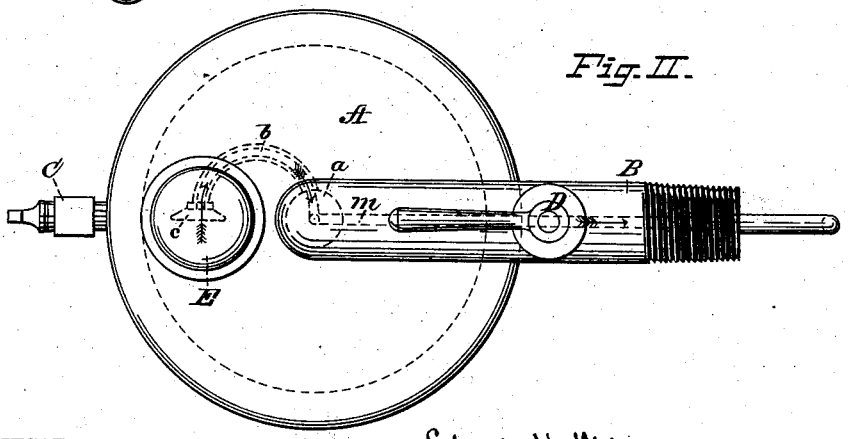


Fig. III.

Fig. II.



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EDWARD H. PHIPPS, OF NEW YORK, N. Y.

STEAM-ENGINE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 260,781, dated July 11, 1882.

Application filed June 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. PHIPPS, of the city, county, and State of New York, have invented, made, and applied to use Improvements in the Construction of Steam-Engine Lubricators; and I do hereby declare that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawings making part of this specification, and to the letters of reference marked thereon, in which—

Figure I is a sectional view of my improved lubricator. Fig. II is a top view of the same. Fig. III is a view in detail of the arm *b c*.

In the drawings like parts of the invention are indicated by the same letters of reference.

The nature of the present invention consists in improvements, as more fully hereinafter set forth, in the construction of lubricators, and has general reference to lubricators for cylinders of steam-engines, particularly locomotive-engines; and it is expressly designed to forcibly drive or inject a stream or quantity of oil or other lubricating matter under the varying conditions incident to the operation of engines to the place or places to be lubricated.

In the operation of my device I utilize the force of resistance produced by a spindle, to which is attached a hollow straight or curved arm, (preferably curved,) the same being revolved in a tank or chamber filled with oil or other lubricating material, the said force acting at the end of the arm, and being competent to drive or force the oil or lubricating matter fast or slow, according to the number of revolutions, through the arm and either up or down the spindle, it being understood that the operation of the lubricator does not depend on the location of the stem or extension of the same through the openings to the steam-pipe or cylinder to be lubricated.

To enable those skilled in the arts to make and use my invention, I will describe its construction and operation.

A shows a tank or chamber intended to receive the oil or lubricating matter, and provided with the threaded extension or stem B, by which it may be secured to the steam-pipe or cylinder of an engine.

Access to the tank or chamber A to fill the same with oil or lubricating matter is had by removing the cap E, which may be removed from the tank or chamber for this purpose.

D is a plug-valve provided with two openings, as shown in Fig. I, and having its bearing in the threaded extension or stem of the tank or chamber A.

C is a gage, constructed in the ordinary manner, to show the quantity of oil or lubricant in the tank or chamber A.

F is a drip-cock for taking off the water of condensation in the tank or chamber A, and is opened when it is desirable the same shall be drawn from the tank or chamber A.

Within the tank or chamber A, about centrally, is placed a spindle, *a*, seated in the upper part of said tank or chamber, having passed over its lower end a helical spring, *d*, so that it shall retain its bearing in the upper part of the tank or chamber A. This spindle is made hollow at the point *f*, Fig. I. The lower part of this spindle *a* is extended below the base of the tank or chamber A, and is provided with a crank or handle, *e*, by which rotary movement may be imparted to the spindle *a* by hand; or, if preferable, the spindle *a* may be caused to revolve by other means.

Upon the upper end of the spindle *a*, just below its bearing in the tank or chamber A, is attached the hollow arm *b*, having upon its outer end a disk, *c*, provided with inclined sides, as shown, and a central opening communicating directly with the hollow arm *b*.

m is an opening, having close connection with the revolving spindle *a* at the point *f*, and passing from it through the threaded extension B directly to the part to be lubricated.

n is an inlet-pipe from the steam-pipe or steam-chest, having close connection with the pipe *o*, the lower end of which terminates in the oil tank or chamber A. A short distance above its bottom *f* is the ball-and-socket bearing which the spindle makes with the top of the tank or chamber A, and is kept in its position by the spring *d*.

The valve D, previously alluded to, is provided with two openings—one in line with the pipe *m*, the other in line with the pipe *n*. When the valve D is opened the lubricator is ready for action.

Such being the construction, the operation will be readily understood. The lubricator is

attached to the steam-pipe, steam-chest, or may have connection going to the same, as in the locomotive, and is held in position by screwing the threaded extension B into the same, the pipe *m* extending into the steam-chest, steam-pipe, or connection. The tank A may then be charged with oil or lubricating matter, and the valve D is opened so that its openings are brought in line with pipes *m* and *n*, and thus communication is established between the tank and the cylinder or parts to be lubricated.

When desired to lubricate the cylinder the spindle *a* is caused to revolve by turning the crank or handle *e;* or it may be kept constantly revolving by connecting and operating it by power, if desired, and as the same is revolved the oil or other lubricant is taken up by the disk *c*, constructed with the inclined sides, and is forced through the opening in the same, through the hollow arm *b*, and through the pipe *m* into the cylinder or onto the parts to be lubricated, and this operation may be at the will of the engineer, and accomplished by him in turning the crank or handle *e*, as he may deem necessary; or it may be a constant operation by causing the spindle to have a continued rotary movement.

The pipe *n* is intended to convey the condensed steam from the steam-pipe to the tank or chamber A through the pipe *o*, and thus as the oil or lubricating material in the tank or chamber A is exhausted this condensed steam or water will take its place in the tank or chamber A, and in this way the oil or lubricant will always be kept in and around the hollow arm *b*.

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

1. In a steam-engine cylinder lubricator, the combination of the following elements: a tank or chamber, A, provided with a threaded extension, B, a revolving spindle, *a*, having upon it a hollow arm, *b*, an exit-pipe, *m*, and a valve, D, provided with two openings, when the same shall be constructed and operate substantially as and for the purpose set forth.

2. In a steam-engine-cylinder lubricator, the combination of the following elements: a tank or chamber, A, provided with a threaded extension, B, a revolving spindle, *a*, having upon it a hollow arm, *b*, the helical spring *d*, the exit and inlet pipes *m* and *n*, and the valve D, with two openings, constructed and operating substantially as and for the purpose specified.

EDWARD H. PHIPPS.

In presence of—
WILLIAM V. H. HICKS,
A. SIDNEY DOANE.