

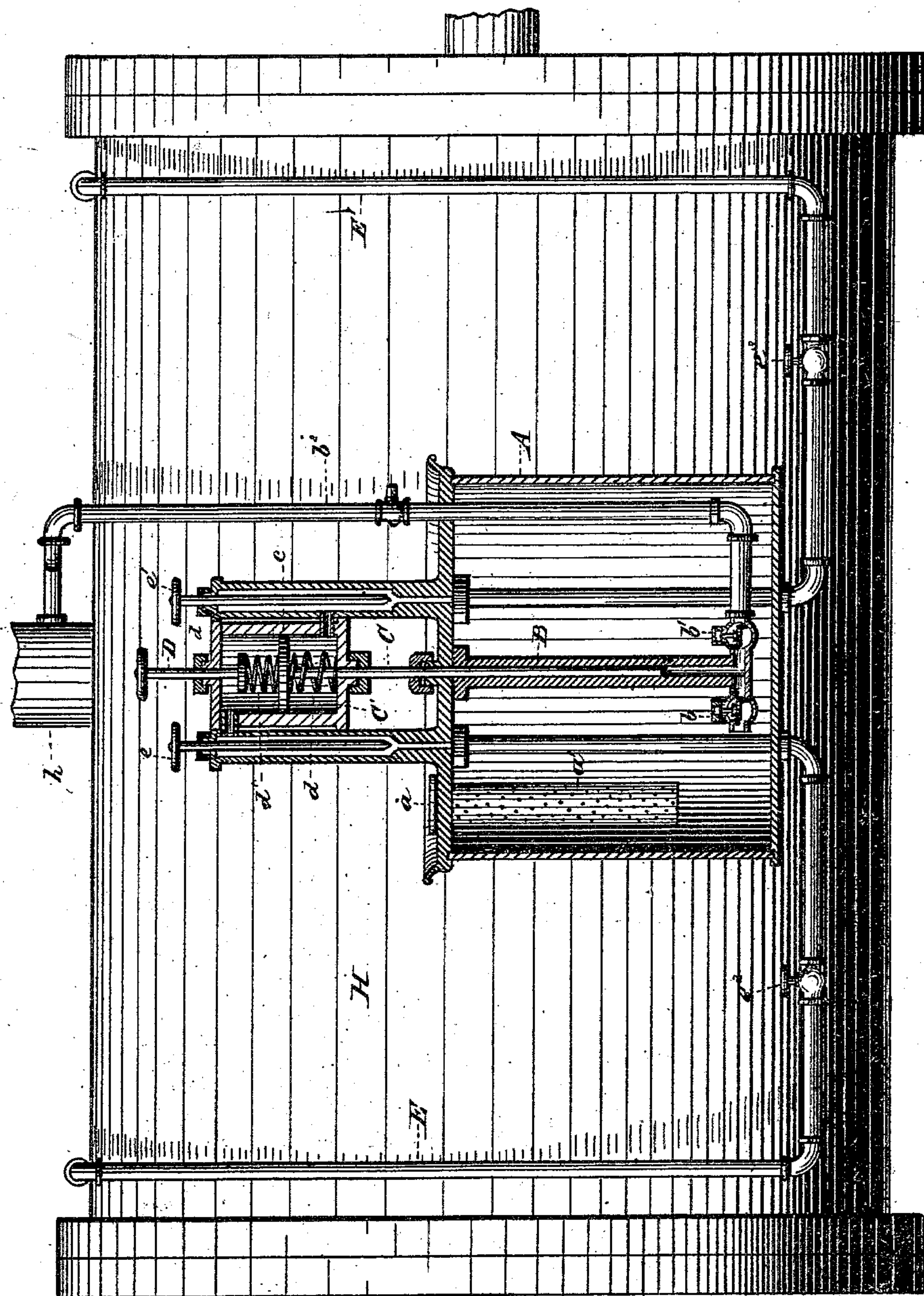
(No Model.)

W. W. BRISBEN.

LUBRICATOR.

No. 281,010.

Patented July 10, 1883



WITNESSES

*W. Engel*  
*Geo. W. King*

*William W. Brisben* INVENTOR.  
*By Leggett & Leggett*

ATTORNE



# UNITED STATES PATENT OFFICE.

WILLIAM W. BRISBEN, OF CLEVELAND, OHIO.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 281,010, dated July 10, 1883.

Application filed May 15, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. BRISBEN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and  
5 useful Improvements in Engine-Lubricators; 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 pertains to make and use the  
10 same.

My invention relates to improvements in lubricators for steam-engines; and it consists in certain features of construction and in combination of parts hereinafter described, and  
15 pointed out in the claims.

In the drawing, the figure is an elevation, partly in section, of a lubricator embodying my invention.

A represents an oil-container, located preferably by the side of the engine-cylinder H, and having at *a* an orifice provided with the strainer *a'*, for filling the container with oil.

B is an oil-pump, that may be inclosed in the container, and is provided with the usual  
25 check-valves, *b* and *b'*. Through the former the oil is received from the container into the pump, and through the latter the oil from the pump is forced into the pipe *b''*, that leads to the steam-pipe *h* of the engine-cylinder.

30 C is a rod, one end of which forms the plunger of the pump, while the other end is attached to the piston *c* and forms the piston-rod for the small pump-cylinder C'. The piston *c* is suspended between the coiled springs *d* and *d'*, the former embracing the piston-rod and the latter attached to the hand-screw D, by which the tension of the springs is regulated.

40 E and E' are pipes leading from their respective ends of the cylinder H to the cylinder C', leading preferably through the container A. These pipes connect the former with the top and the latter with the bottom of the cylinder C', and are provided with the  
45 valves *e* and *e'*, and also the valves *e''* and *e'''*.

The operation of the device is as follows: The container A is filled with oil and the valves are all opened. When steam is admitted to the right-hand end of the cylinder H, it will  
50 pass through the pipe E' and into the pump-cylinder C', under the piston *c*, and raise the

piston, together with the attached rod C, which is, as aforesaid, also the pump-plunger. When the engine reverses and steam is in the left-hand end of the cylinder H, it will pass through  
55 the pipe E and into the top of the pump-cylinder C', and press the piston *c* downward. In the meantime the steam from under the piston *c* will have been exhausted with the steam from the right-hand end of the cylinder H.  
60 Thus every stroke of the engine will cause a stroke of the pump B. By the action of the pump, oil will be drawn from the container A and forced into the steam-pipe *h*, when by the current of steam it is carried to all of the internal parts of the engine that requires lubrication. These oil-pumps and their attachments are made, respectively, of suitable capacity for the size of the engine on which they are to operate, and the quantity of oil discharged may be still further regulated by manipulation of the parts. As the pump makes  
65 even strokes with the engine, the manner of controlling the discharge of oil must be by controlling the length of the stroke of the pump. By turning down the hand-screw D the stroke of the pump may be shortened as desired; also, the springs *d* and *d'*, that act as cushions for the piston, more or less restrain the motion of the piston, according to the pressure  
70 of steam on the piston, and the springs are each of such stiffness that the piston, with the full power of the steam, will not quite overcome the elasticity of either spring. Therefore a less pressure of steam will compress the  
75 springs less, and consequently reciprocate the piston less, or produce a shorter stroke of the pump, than a full pressure. This pressure may be regulated at the will of the operator by throttling the steam by means of the valves *e*  
80 and *e'*. The result is that any discharge of oil that is less than the full capacity of the pump may be had as desired; also, when the apparatus has been adjusted so that the pump will furnish the required amount of lubricant per  
85 hour to supply the wants of the engine, the supply will still vary more or less, according to the load that the engine carries from time to time.

By means of the governors of the engine the pressure of steam in the cylinder H is increased or diminished, according to the load carried.



This same change in the pressure of the steam will be had in the cylinder C', and will vary the stroke of the pump, so that the engine, when laboring under a heavy load, will receive  
5 more oil than when carrying a lighter load.

By setting the apparatus below the point where the steam is taken from the cylinder H, as shown, a trap is formed that soon fills with water, which, by its own gravity, remains in  
10 the pipes and is not exhausted with the strokes of the engine. Therefore very little steam is required to operate the pump.

When by means of the condensation the parts are filled or partially filled with water, as aforesaid, the steam presses alternately on  
15 the pipes E and E', and the water in turn presses upon and actuates the piston c.

There are two advantages in thus operating the piston by water:

20 First, economy of steam. The quantity of steam that would be required to actuate the piston c without any water in the apparatus, as is the case in starting, will, by means of the trap and condensed water, be lessened by  
25 whatever amount of water is left in the apparatus from the last preceding stroke, as it is evident that steam will not be required to fill pipes, &c., that are already filled with water.

Second, the long-continued action of the hot  
30 steam on the springs is injurious to them, whereas, by the intervention of water between the steam and the piston and springs, the springs will retain their elasticity much longer.

In cases when, from local causes, it is im-  
35 practicable to set the apparatus low enough to form a trap, the device may be used with steam alone, as first described, and the springs renewed when required.

What I claim is—

1. In an oil-pump for lubricating, the com- 40  
bination, with a pump-cylinder connected with a power-cylinder having devices for admitting and controlling the action of the motive agent upon its piston, of an oil-container having a pump and discharge-pipe, and the valves for 45  
admitting and discharging the oil therefrom into the power-cylinder, the said pump-cylinder being adapted to operate the pump, substantially as shown.

2. In an oil-pump for lubricating, the com- 50  
bination, with its pump-cylinder, having pipes connecting its respective ends of the power-cylinder, valves for regulating the admission of the motive agent, and a piston provided with yielding devices to regulate the action of 55  
the motive agent thereon, of the oil-container, having a discharge-pipe provided with valves, and a pump whose plunger forms part of the piston-rod, substantially as shown and de- 60  
scribed.

3. In an oil-pump for lubricating, the com-  
bination, with the pump-cylinder and its cyl-  
inder, of the springs located on each side of  
the piston, for regulating the action of the mo-  
tive agent and governing the stroke of the said 65  
piston, and the screw or devices for regulating the tension of the springs, substantially as shown and described.

In testimony whereof I sign this specifica-  
tion, in the presence of two witnesses, this 2d 70  
day of May, 1883.

WILLIAM W. BRISBEN.

Witnesses:

ALBERT E. LYNCH,  
CHAS. H. DORER.