A. GUILD & F. B. CLARK.

Steam-Engine Lubricators.

No. 200,053. Patented Feb. 5, 1878.

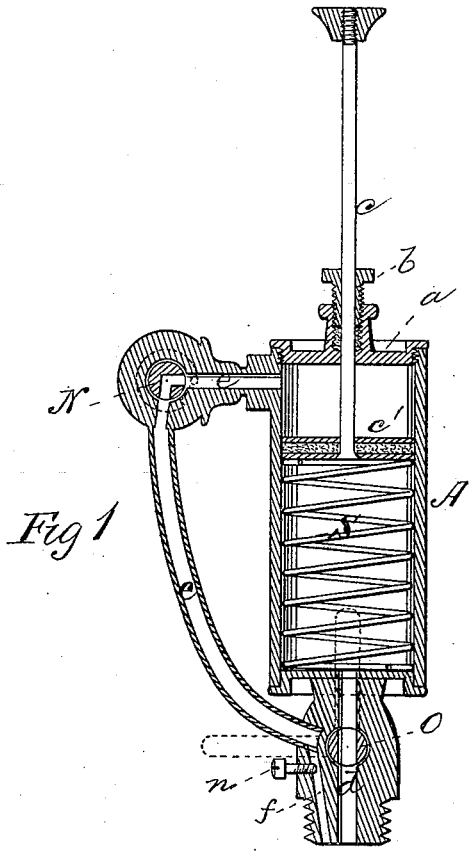


Fig 1

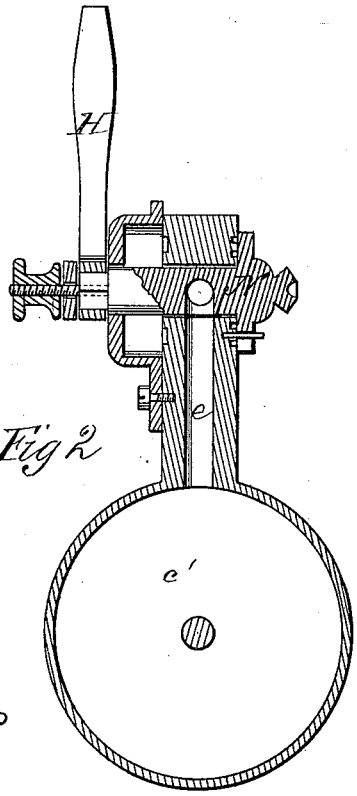
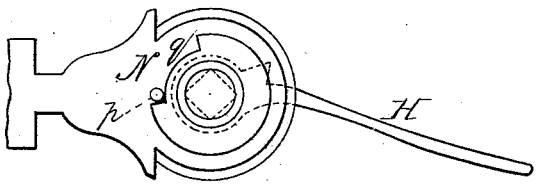


Fig 2

Fig 3



WITNESSES

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AUGUSTUS GUILD AND FREDERICK B. CLARK, OF MIDDLETOWN, CONN.

IMPROVEMENT IN STEAM-ENGINE LUBRICATORS.

Specification forming part of Letters Patent No. **200,053**, dated February 5, 1878; application filed August 11, 1877.

To all whom it may concern:

Be it known that we, AUGUSTUS GUILD and FREDERICK B. CLARK, both of Middletown, in the county of Middlesex and State of Connecticut, have invented a new and valuable Improvement in Steam-Engine Lubricators; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal central vertical section of our improved lubricator. Fig. 2 is a horizontal section of the same, and Fig. 3 is a detail view.

This invention has relation to improvements in automatic lubricators for steam-cylinders and other purposes.

The nature of the invention consists in combining, with a cylindrical oil-cup having a communication with the cylinder below a piston-head working in said cup, and an independent communication above said piston-head, a spring which destroys the equilibrium of the steam-pressure above and below the said head, and forces the oil in the cup through one of the passages into the cylinder, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates a metallic cup-cylinder, having upon its lower end a screw-threaded rabbet, by means of which it is secured to a steam-cylinder. This cup is closed at its upper end by a cap, *a*, having a stuffing-box, *b*, through which extends a rod, *c*, secured at its lower end to a piston-head, *c'*, arranged and packed, in any suitable manner, in the cylinder-cup aforesaid.

The piston divides the oil-cup into two chambers, the one above and the other below it. The latter communicates directly with the steam-cylinder by means of a duct, *d*. The chamber above the piston is connected with the steam-cylinder by means of a tube, *e*, opening, at its upper end, into the oil-cup A, and at its lower end into an independent duct, *f*, parallel to the duct *d*, and opening, like it, into the steam-space of the engine-cylder.

Below the piston-head is placed a (preferably) helical spring, S, the object of which will hereinafter appear.

Our improved lubricator being applied to a steam-engine cylinder or other analogous object, and steam being turned on, the pressure of the same would naturally hold the piston-head *in equilibrio;* but the upward pressure of spring S forces the said head upward to the extent of its power.

In charging the lubricator the head is forcibly thrust down into the barrel or cup, thereby compressing spring S. The oil is thus poured into said barrel and the cap applied. If the tube were then open, the oil would be forced by the reaction of the said spring into the cylinder. This is prevented by means of a faucet-valve, N, or other similar device, which, being closed, prevents the flow of oil.

The conduit into the lower chamber is also provided with a stop-cock, O, which prevents the introduction of steam into the oil-cup below the piston-head.

The valve N above the head and the valve O in the duct *d* below the head being opened, the reaction of spring S will drive the oil through the pipe *e* and duct *f* into the steam-cylinder.

The advantage of this plan, is that the oil is rendered fluent by the heat of the steam in the chamber above the cylinder, and that there is no danger of congelation during the coldest weather, or of thickening during warm weather.

The supply of oil is regulated by means of a screw-plug, *n*, which passes through the wall of the duct *f*, and enlarges or contracts this passage, according to its adjustment.

The throw of the lever H of the valve is regulated by means of a stop-pin, *p*, on the valve-case and a curved notch, *q*, on the valve.

What we claim as new, and desire to secure by Letters Patent, is—

The combination, with a cylindrical cup,

A, a piston, c', and guide-rod c, of the passage d, opening into said cylinder below the piston, the conduit e, leading into the cylinder above said piston, and having a valve, N, and stop-cock O, and a spring arranged below said piston, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

AUGUSTUS GUILD.
FREDERICK B. CLARK.

Witnesses:
BRAINARD S. LEWIS,
ELDON B. BIRDSEY.