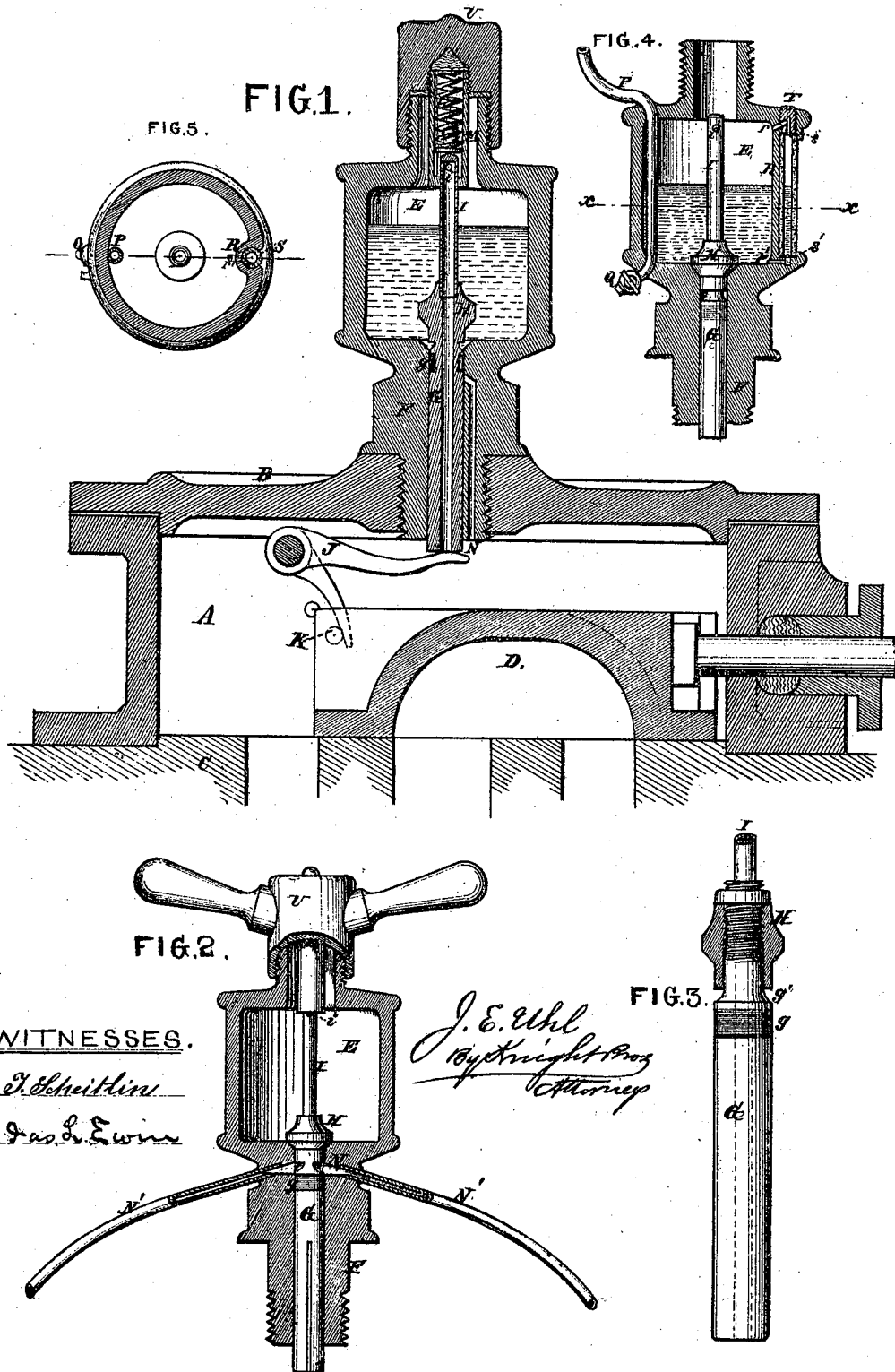


*J. E. Uhl,*

*Lubricator.*

*No. 112515.*

*Patented Mar. 7. 1891.*



WITNESSES.

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# United States Patent Office.

JOHN ERNST UHL, OF RENOVO, PENNSYLVANIA.

Letters Patent No. 112,515, dated March 7, 1871.

## IMPROVEMENT IN LUBRICATORS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOHN ERNST UHL, of Renovo, in the county of Clinton and State of Pennsylvania, have invented a new and improved Lubricator for Steam-Engines and other Machinery, of which the following is a specification.

### *Nature and Objects of the Invention.*

My lubricator is provided with a customary reservoir, surmounting a hollow stem, which may be screwed into the cap of a valve-chest, journal-box, or other object to which the lubricator is to be applied. Within the hollow stem is a vertically-sliding rod, having on its periphery one or more grooves or notches, so located that as the rod approaches its upper position they will receive a supply of oil, and as the rod descends they will deliver the said oil into one or more canals, by which it is conducted to the bearing or within the steam-chest or cylinder, as the case may be.

The rod is made hollow, to conduct air or steam to the reservoir above the oil, so that the pressure within the reservoir may equal that where the oil is to be delivered, whether the said pressure be that of the atmosphere or of boiler-steam.

The rod is thrown up by a tappet movement, and may be made to descend by its own gravity or by means of a spring.

By means of an adjustable nut or collar on the rod the capacity of the oil-notch or groove may be regulated as required.

In order to keep the oil from congealing or becoming thick in cold weather I introduce within the reservoir a metallic pipe containing steam, which may be taken directly from the boiler or from the valve-chest, or even from the exhaust, and is provided at its lowest part with a cock for the purpose of discharging water of condensation. If exhaust steam is used this cock may be dispensed with and the steam may be discharged into the open air.

For the purpose of indicating at all times the quantity of oil in the reservoir I provide a tube of transparent material, communicating at top and bottom with the interior of the reservoir, and packed at its ends.

### *Description of the Accompanying Drawing.*

Figure 1 is a vertical longitudinal section of a steam-chest and valve with my lubricator applied.

Figure 2 is a vertical section of the lubricator detached, the rod and the upper part of the cap being shown in elevation.

Figure 3 is an elevation of a part of the rod, showing in section an adjustable nut or collar, by which the capacity of the oil-groove may be regulated as required.

Figure 4 is a vertical section of the reservoir, illustrating my mode of applying a steam-pipe for heating, and a transparent gauge-tube to indicate the quantity of oil.

Figure 5 is a horizontal section at *x x*, fig. 4.

### *General Description.*

A represents a steam-chest of common form.

B, its cap.

C, a portion of the steam-cylinder, on which is seated the valve D.

E is the oil-reservoir of my lubricator, the stem F of which is screwed into the cap B of the valve-chest, or secured in any convenient manner.

Within the stem F works a hollow rod, G, fitting the cavity in the said stem. A packing may be applied to this rod, as shown at *g*, but this is not always found requisite.

H is a collar, limiting the descent of the tube G. This collar may either be made in one piece with the tube, or may be screwed thereon, as illustrated in fig. 3, for the purpose of changing the capacity of the groove *g'*, by which oil is carried out of the reservoir each time the rod descends.

I is a tube attached to the top of the hollow rod G, and communicating with the interior thereof, through which steam or air (as the case may be) is admitted above the oil, to equalize the pressure within the reservoir with that at the point where the oil is delivered.

J represents a bell-crank lever, operated by a tappet, K, on the valve or slide or other object to be lubricated.

L is a spring, operating on a follower, M, to depress the rod when released.

N is an opening to conduct the oil through the stem F; or, instead of this, branching pipes N', fig. 2, may be employed for the purpose of oiling the guides of a cross-head or any similar piece of machinery.

P is a steam-pipe passing through the interior of the reservoir to prevent the cooling of the oil. The water of condensation in this pipe may be drawn off through a cock, Q.

Within a recess, R, in the reservoir E, is applied a glass tube, S, the upper and lower ends of which are packed steam-tight by means of rings *s s'*, of leather or other proper material.

*r r'* are apertures, through which communication is afforded between the tube S and the inside of the reservoir, above and below.

A screw, T, fills the aperture in the top of the reservoir, through which the tube S is introduced, and bears upon the upper packing *s*. The said screw is perforated at its lower end longitudinally and transversely, as shown in fig. 4, in order to communi-

cate with the aperture *r* and with the interior of the tube.

U is a screw-cap, to close the top of the reservoir.

#### *Claims.*

I claim as my invention—

1. The reservoir E, in combination with a rod, G, which receives an intermittent vertical movement from the valve or other part to be lubricated through the medium of mechanism, substantially as herein described.

2. The combined arrangement of the vertically-reciprocating tube or hollow rod G, collar H, groove *g'*, and tube I, operating substantially, as herein described, to effect an intermittent discharge of oil from

the reservoir and equalize the pressure above and below the oil, as explained.

3. The tappet movement K J, in combination with the vertically-reciprocating rod or tube G and reservoir E, as described.

4. The combined arrangement of the gauge-tube S, recess R, packing-rings *s s'*, communication-ports *r r'*, and screw-cap T, to indicate the quantity of oil contained in the reservoir.

5. The steam-pipe P and cock Q, employed in combination with the reservoir E, in the manner and for the purposes specified.

Witnesses:

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