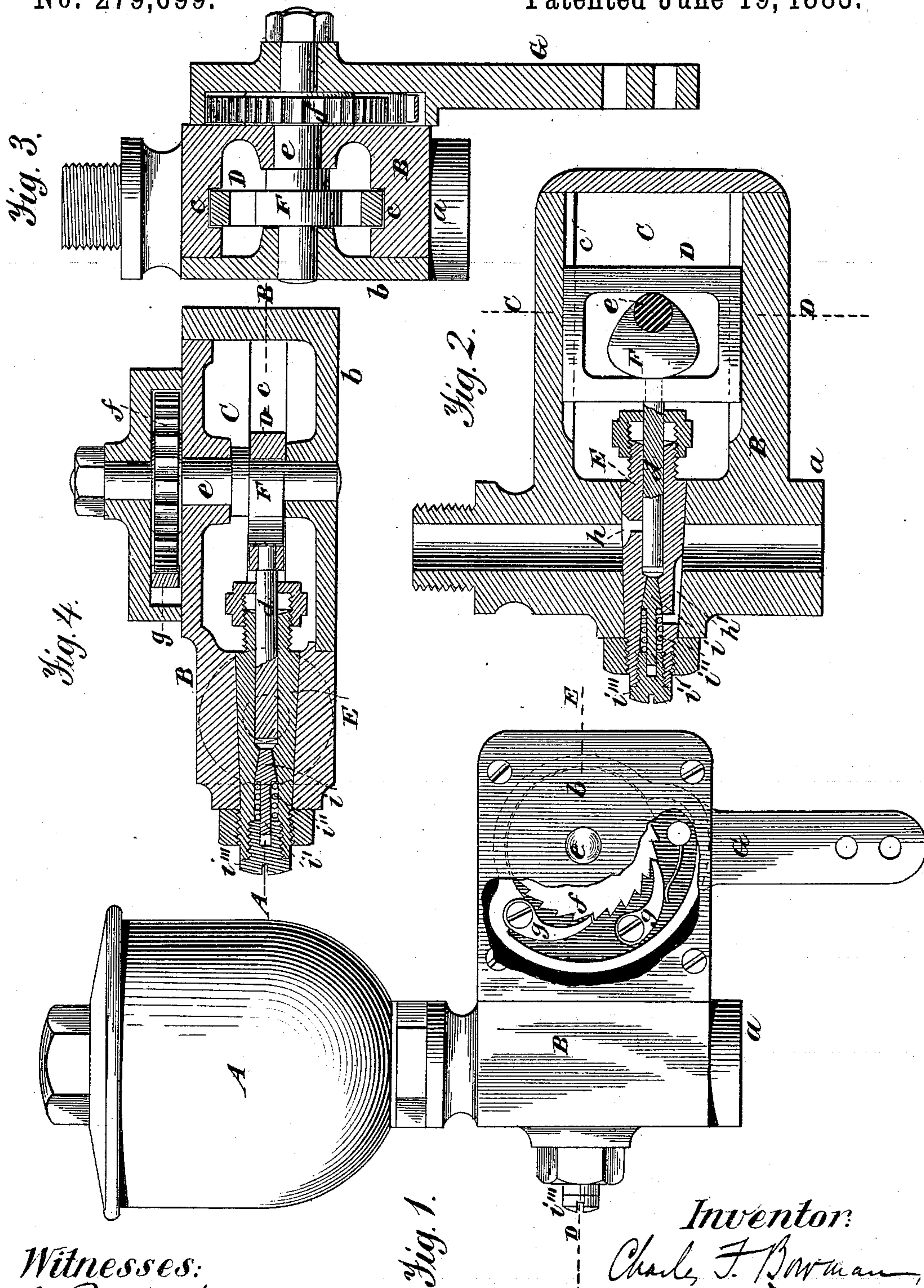


(No Model.)

C. F. BOWMAN.
LUBRICATOR.

No. 279,699.

Patented June 19, 1883.



Witnesses:
A. Ruppert.
W. T. Cole.

Inventor:
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attys.

UNITED STATES PATENT OFFICE.

CHARLES F. BOWMAN, OF NEW HAVEN, CONNECTICUT.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 279,699, dated June 19, 1883.

Application filed December 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. BOWMAN, a citizen of the United States of America, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in lubricators adapted for use with locomotive, stationary, or marine engines, which are operated to feed oil intermittently to the part to be lubricated by means of adjustment to a moving part of the machinery.

15 The lubricator constituting my present invention, when applied to locomotives, will operate in all respects uniformly, whether the engine is running under steam or downgrade without pressure in its cylinders and steam-chests.

20 The lubricator is so constructed and adjusted as to force into the steam-chest or cylinder, when applied to such part, a definite amount of oil through the medium of a piston whose strokes may be increased or diminished in number, as hereinafter set forth.

25 In the accompanying drawings, Figure 1 is a side elevation of the lubricator. Fig. 2 is a vertical section on the line A B, the oil-cup being removed. Fig. 3 is a vertical transverse section of the same on the line C D. Fig. 4 is a section on a horizontal plane at the line D E.

30 Similar letters of reference indicate similar parts in the respective figures.

35 A is the lubricator-cup, which is screwed to the case B, the part *a* of which leads to the cylinder, steam-chest, or other part to be lubricated. The case B is extended so as to form one part of a space or chamber, C, the other part being formed by a separate casting, *b*.

40 Within the space C are grooves or ways *c*, in which slides a yoke, D, operated in a manner hereinafter described.

45 E is a tapering plug resting in a seat formed within the case B, in which plug a piston, *d*, is placed and adapted to have reciprocating movement, the piston being attached to the yoke. The yoke is given sliding movement

by means of a cam, F, which is attached to or forms a part of a shaft, *e*, upon which it has revolution, the shaft having a ratchet-wheel, *f*, secured thereto. The shaft *f* also serves as the bearing for an oscillating arm, G, which is recessed to cover and conceal the ratchet. 55 The arm carries within its recessed part the pawl or pawls *g*, which engage with the teeth of the ratchet. The plug E is provided with an aperture, *h*, which leads from the space below the oil-cup to that in which the piston *d* works. 60

Within the screw-plug E is fitted a conical valve, *i*, the smaller end of which closes an opening which is a continuation of the space wherein the piston moves, the valve having a stem, *i'*, around which is a helical spring, *i''*, to cause the seating of the valve when over-pressure at its front end is not exerted to open it. From the back of the valve *i* an aperture, *h'*, leads to the part to be lubricated. 65 The stem *i'* has a bearing in the screw-nut *i'''*, by means of which the tension of the spring may be adjusted. The other end of the plug E is provided with a packing-nut, which effects a tight joint around the piston. 70 75

In operation the oscillating arm G, being attached to a moving part of the machinery, will give, through the medium of its pawl or pawls, intermittent rotary movement to the ratchet-wheel, and through it to the cam F, which in turn imparts reciprocating movement to the piston *d*. When the piston is moved back so as to uncover the aperture *h*, the oil from the cup will pass through said aperture into the piston-space in front of the piston, and on the forward movement of the latter the aperture *h* will be closed. The pressure of oil against the front of the conical valve *i* will unseat it, and the oil will find its way around the valve and through the aperture *h'* to the part to be lubricated. As the operation proceeds, the oil is fed intermittently and in prescribed quantities at each forward stroke of the piston. The strokes may be varied in number by the adjustment of the arm. 80 85 90 95

It will be seen that no communication can be established between the main body of oil and the cylinder or steam-chest, and that therefore the said body of oil cannot be affected by 100

the pressure or minus pressure to which said parts of the engine may at any time be subjected.

I claim as my invention—

5 1. In a lubricator, a case having induction and eduction oil-ports and an extended inclosed chamber, combined with a cam and a yoke, the latter adapted to reciprocate within said chamber, and with a piston and a spring-
10 valve situated in the oil-eduction port, substantially as set forth.

2. In a lubricator, a case having induction and eduction oil-ports, and a plug provided with a spring-valve and a spring-tension-ad-

justing device, combined with a piston adapted 15 to have intermittent reciprocation, substantially as set forth.

3. In a lubricator, the chamber C, having ways *c*; combined with the yoke D, cam F, shaft *e*, ratchet-wheel *f*, recessed oscillating 20 arm G, and pawl or pawls *g*, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. BOWMAN.

Witnesses:

REUBEN H. BROWN,
ABR. C. DEPEW.