

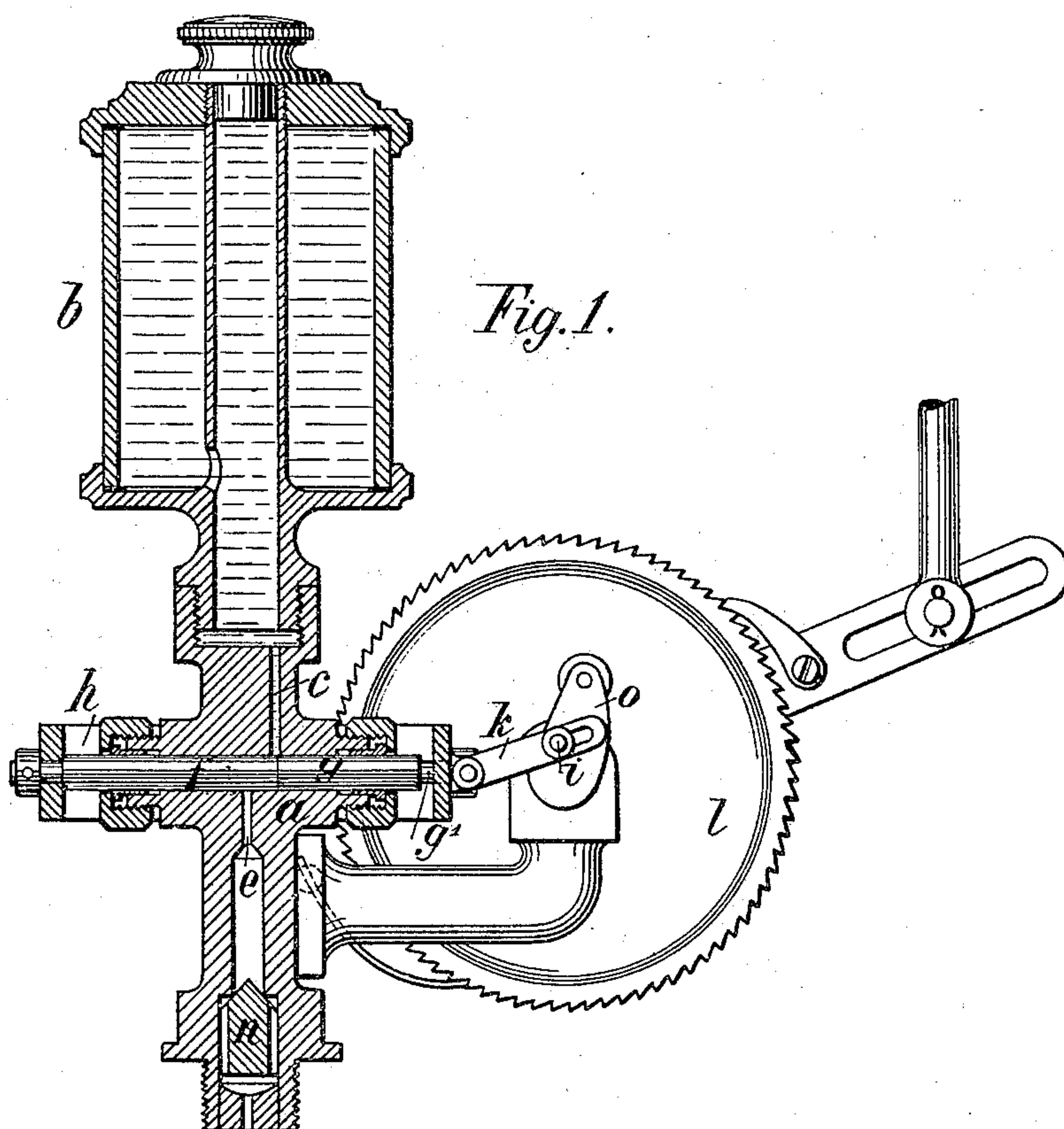
(No Model.)

2 Sheets—Sheet 1.

J. G. G. E. BISCHOFF.
LUBRICATOR.

No. 368,702.

Patented Aug. 23, 1887.



Witnesses,
C. J. Bell,
Edwin Stanch.

Inventor,
Johann G. G. E. Bischoff
By Paine & Co.,
attys.

(No Model.)

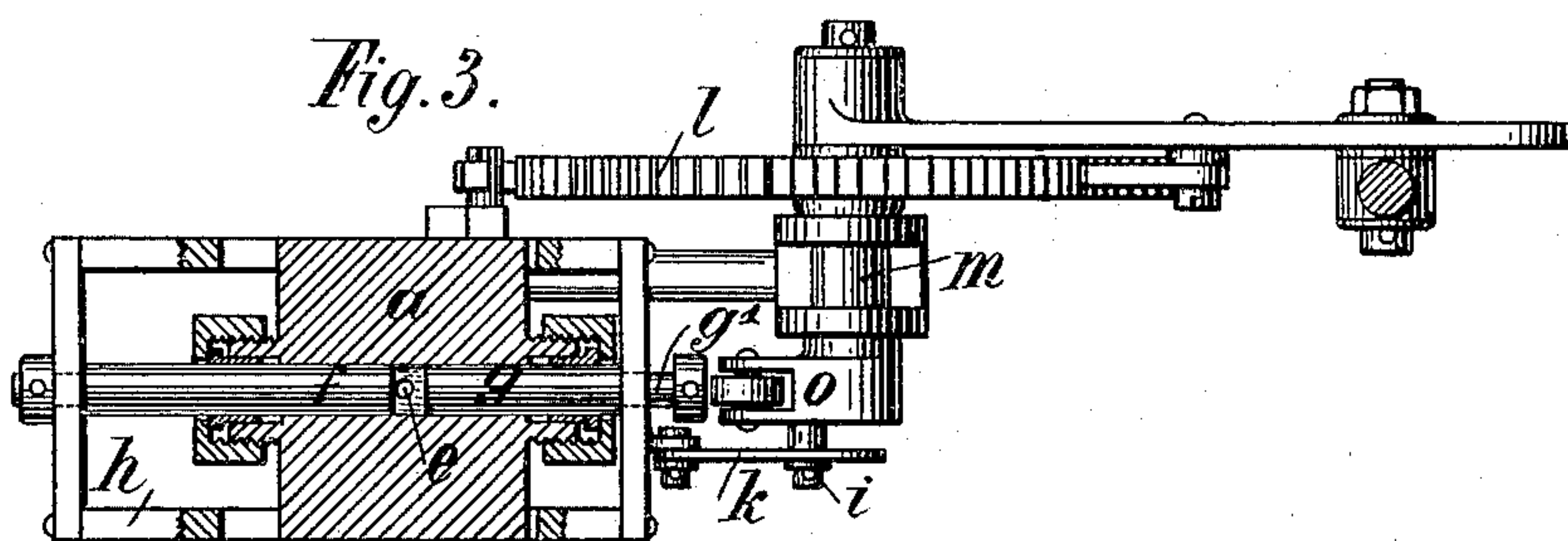
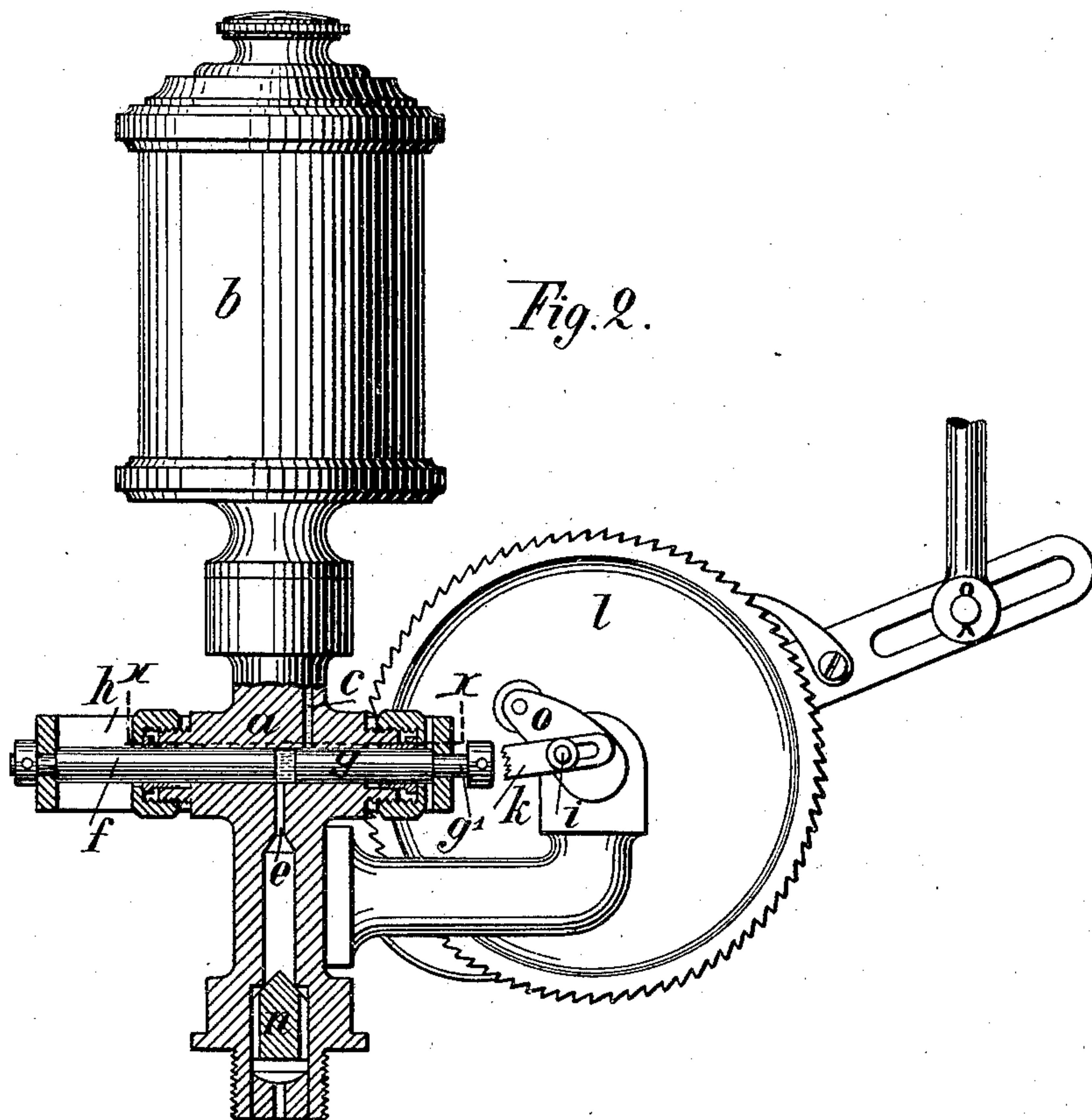
2 Sheets—Sheet 2.

J. G. G. E. BISCHOFF.

LUBRICATOR.

No. 368,702.

Patented Aug. 23, 1887.



Witnesses,
C. T. Beer,
Edwin Stueck.

Inventor,
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UNITED STATES PATENT OFFICE.

JOHANN GEORG GOTTLIEB ELIAS BISCHOFF, OF HAMBURG, GERMANY.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 368,702, dated August 23, 1887.

Application filed June 1, 1887. Serial No. 239,981. (No model.)

To all whom it may concern:

Be it known that I, JOHANN GEORG GOTTLIEB ELIAS BISCHOFF, a subject of the German Emperor, and a resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

My invention relates to improvements in lubricators for introducing the lubricating material into the cylinders of steam-engines and pumps, and for similar purposes; and the objects of my improvements are to force the lubricant periodically into the said cylinders as long as the piston therein is in motion, and to allow the lubricator to be filled even when it is in function. I attain these objects by the apparatus illustrated in the accompanying drawings, in which—

Figure 1 is a sectional side elevation, and Fig. 2 a side elevation, partly in section, both figures showing different positions of the working parts. Fig. 3 is a horizontal section of Fig. 2, taken on the line *x x*.

Similar letters refer to similar parts throughout the several views.

The lubricating material is filled into the reservoir *b*, the interior of which communicates by the canal *c* with the interior of a small cylinder, *a*, wherein are arranged two pistons, *f* and *g*, attached to the sliding frame *h* in such a manner that the piston *f* is rigidly fixed to the frame, while a certain play is allowed to the piston *g* within the limits of its neck *g'*.

The sliding frame *h* is jointed by the connecting-rod *k* with the crank *i* of the shaft *m*, which is intermittingly rotated by means of a ratchet-wheel, *l*, and a ratchet working by a moving part of the steam-engine, pump, &c. Thus the rotation of the shaft *m* causes a reciprocating motion of the sliding frame. During the movement toward the crank-shaft *m* both pistons advance closely, Fig. 1, as the piston *f* pushes the piston *g* forward, but during the return motion the piston *g* remains at first immovably in the limits of its neck *g'*, whereby the intermediate space between both pistons is filled automatically with lubricating

material from the cup *b* through the channel *c*. Hereafter, also, the piston *g* is taken along by the frame *h*, whereby the lubricating material is transported over the canal *e*, Fig. 2, arranged sidewise from the canal *c* and connecting the cylinder *a* with the working-cylinder to be lubricated. A small valve, *n*, is pushed by the pressure of the gas, steam, or fluid of the working-cylinder toward its seat placed above the valve, thus closing the canal *e* at the lower end.

To inject the lubricating material into the working-cylinder, the crank *i* is provided with a finger, *o*, which presses the piston *g* toward the piston *f*, while the lubricating material inclosed between both pistons is above the canal *e*, and the mouth of the canal *e* is closed by the piston *g*. Thus the inclosed lubricating material is forced into the canal *e*. The surplus of pressure thereby produced causes the valve *n* to recede from its seat, thus allowing the lubricant to pass through the longitudinal notches of the valve into the working cylinder; but by this evacuation of the lubricant a compensation of pressure, and finally a surplus of pressure, takes place in the working-cylinder, whereby the valve is raised again toward its seat, thus closing the canal *e*.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In apparatus for lubricating working-cylinders of steam-engines, pumps, &c., the combination of the two pistons *f* and *g* with the reciprocating slide *h* and the finger *o*, together with the cylinder *a*, provided with canals *c* and *e*, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 10th day of May, 1887.

JOHANN GEORG GOTTLIEB ELIAS BISCHOFF.

Witnesses:

ALEXANDER SPECHT,
DIEDRICH PETERSEN.