

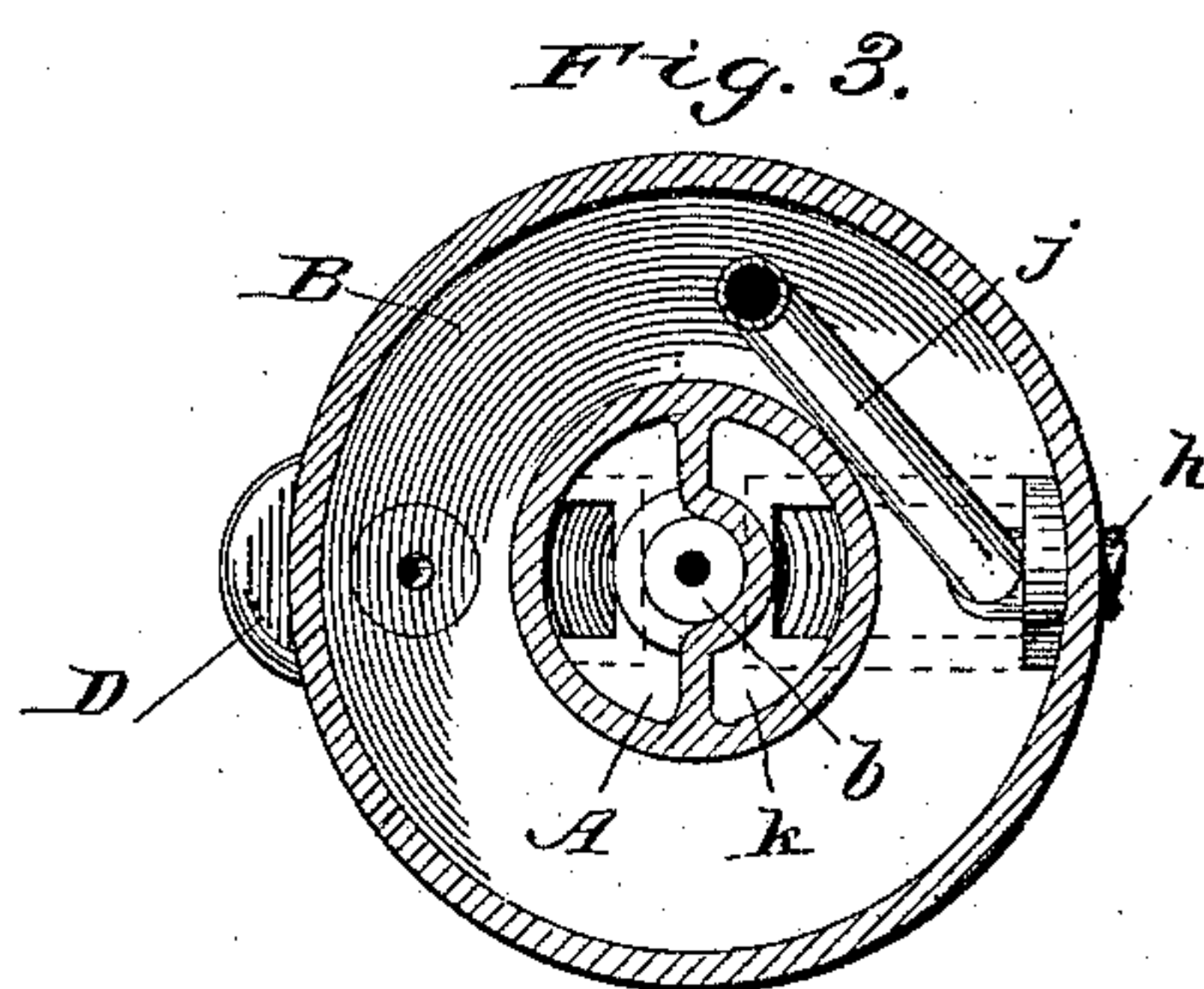
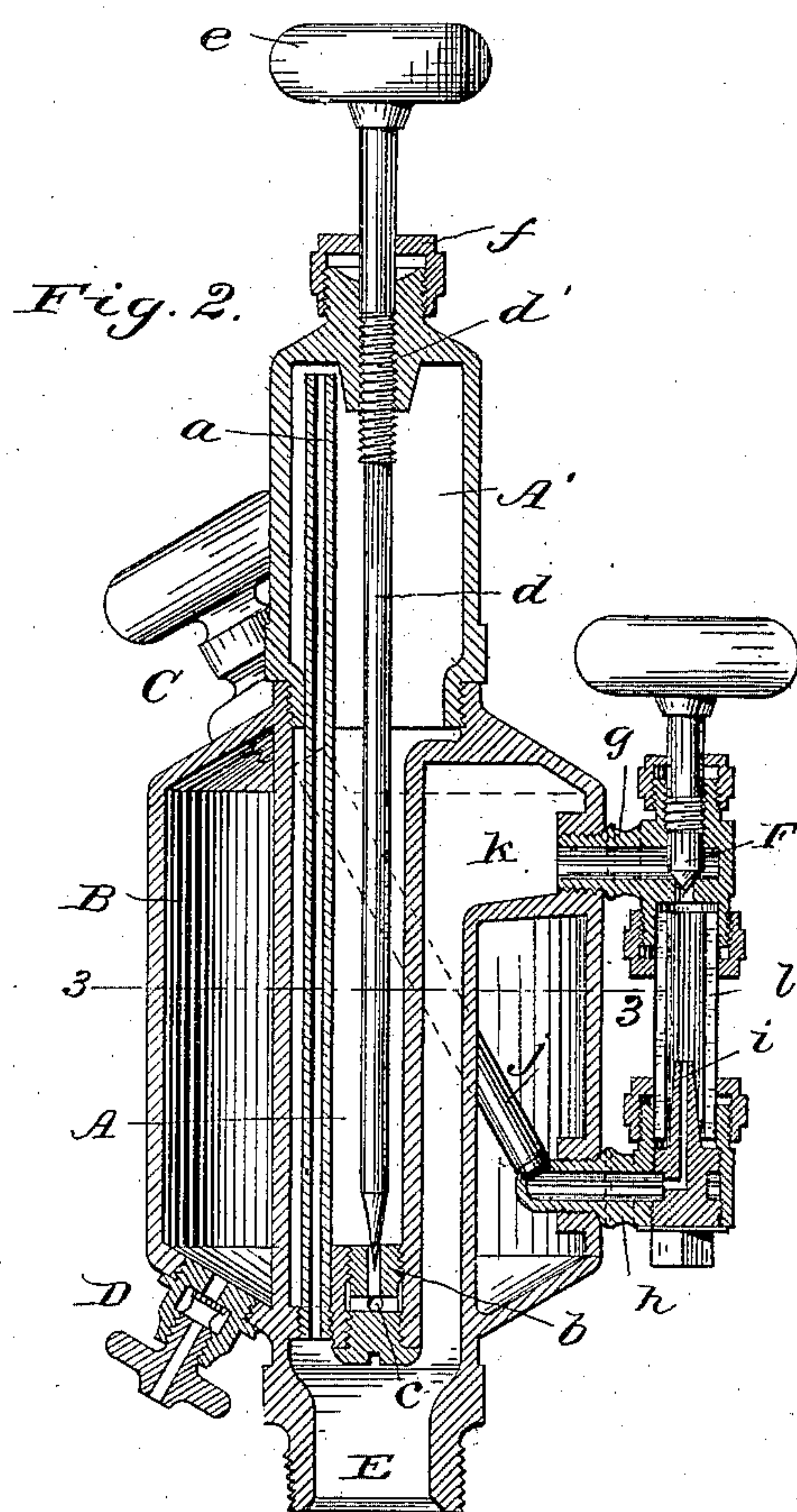
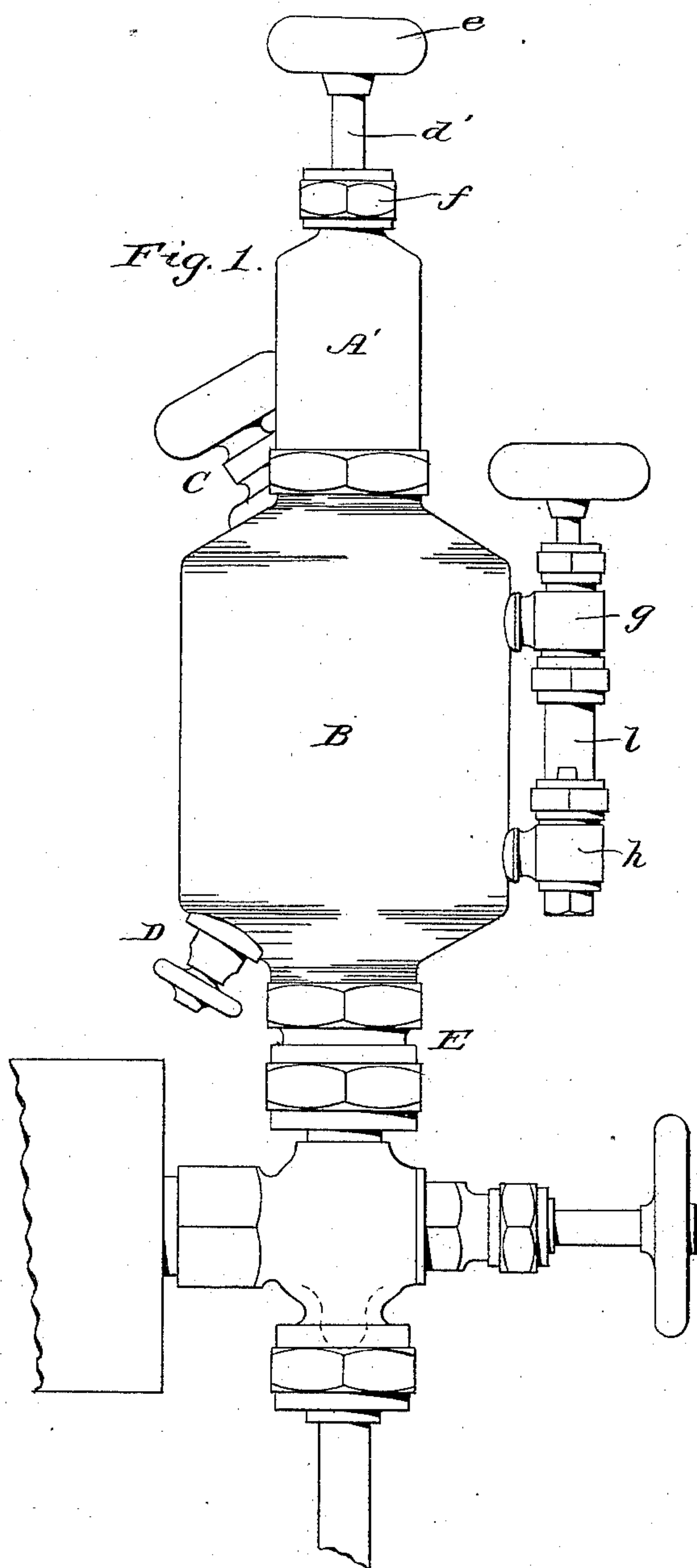
(No Model.)

J. W. CLOUD.

LUBRICATOR FOR LOCOMOTIVES OR OTHER ENGINES.

No. 312,973.

Patented Feb. 24, 1885.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN W. CLOUD, OF ALTOONA, PENNSYLVANIA.

LUBRICATOR FOR LOCOMOTIVE OR OTHER ENGINES.

SPECIFICATION forming part of Letters Patent No. 312,973, dated February 24, 1885.

Application filed January 10, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. CLOUD, of Altoona, in the State of Pennsylvania, have invented certain new and useful Improvements in Lubricators for Locomotive and other Engines, of which the following is a specification.

My invention has relation, in the main, to oil-cups or lubricators in which the feed of the oil from the cup is effected by hydrostatic pressure; and it also refers to a convenient and simple arrangement for obtaining what is generally known as a "visible feed" or "sight-feed" of the oil.

In my lubricator the condensing-chamber, which contains the column of water for furnishing the requisite hydrostatic pressure, has its lower portion surrounded by the oil-containing chamber or reservoir. The steam, by whose condensation the necessary supply of water is maintained, is conducted into the condensing-chamber through a pipe or passage which extends from the bottom to near the top of the condensing-chamber, at which point it discharges into the chamber the steam which enters at the bottom. The valve for controlling the escape of condensed water is located at the bottom of the condensing-chamber, and is operated by a spindle running through said chamber from the valve at the bottom to an operating-handle at the top of the chamber. This arrangement of parts simplifies the mechanical construction of the device, and brings the parts into compact and convenient form. It also insures the requisite condensing action, and at the same time, by reason of the sustained heat furnished by the hot water and what uncondensed steam there may be in the condenser, maintains the lubricant in proper liquid condition, the conditions being most favorable for this purpose, owing to the fact that the oil-reservoir surrounds the greater portion of the condenser, leaving only sufficient length of condensing-chamber above the oil-reservoir to furnish the "head" needed for hydrostatic pressure.

The transparent tube or chamber for the sight-feed is arranged outside of the oil-chamber. Its lower end is about level with the bottom of the said chamber, and at this point

it has an oil-feed nozzle, communicating with the oil-chamber, through a passage inside said chamber or in the walls thereof, which extends to the top of the chamber and opens into it at that point. The upper end of the sight-feed tube or chamber communicates with a passage which is inside of the oil-chamber, or in the walls thereof, and extends down through said chamber, without communicating therewith, to the bottom of the cup and opens into the duct, through which the oil is carried off from the cup to the part to be lubricated. The passages through which the oil is conveyed to and carried off from the sight-feed tube are thus within the compass of the body of the oil-chamber.

The nature of my improvements and the manner in which they are or may be carried into effect will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a lubricator embodying my improvements in their preferred form. Fig. 2 is a vertical central section of the same. Fig. 3 is a cross-section of the lubricator (omitting the sight-feed tube) on line 3 3, Fig. 2.

The lower part, A, of the condensing-chamber is conveniently formed in one casting with the oil-chamber B, which surrounds it. The condensing-chamber, by an extension, A', is prolonged some distance above the top of the oil-chamber, the parts A A' being united by a screw-connection, or in other convenient way. In the bottom of the condensing-chamber is an opening, in which is screwed the steam-pipe a, which extends up through the inside of, and nearly to the top of, the said chamber. In the bottom of the condensing-chamber is also another hole, in which is screwed the valve-seat b, through which water passes from the condensing-chamber into the lower part of the oil-chamber by a lateral opening or duct, c. The valve for controlling the water-discharge is on the lower end of a valve-spindle, d, which extends up through the inside of the condensing-chamber, and is connected to or formed in one with a screw-threaded stem, d', which passes through the top of the condensing-chamber, and is fastened outside

to the operating-handle *e*. A stuffing-box, *f*, is provided at the point where the stem rises above the condensing-chamber. The screw-threaded stopper which closes the filling-orifice in the oil-chamber is lettered C, and the discharge or draw-off cock for the same chamber is lettered D.

In the side of the oil-chamber are formed two apertures—the one near the top and the other near the bottom of the chamber—and in these apertures are screwed the upper and lower tubular couplings, *g h*. The lower coupling is provided with the upright nozzle *i*, and at its lower end it communicates with the pipe or duct *j*, which is inside the oil-chamber. This pipe at its lower end screws into the coupling *h*, and thence extends up to, or nearly to, the top of the oil-chamber, at which point it opens into said chamber. The upper coupling, *g*, opens into a passage or duct, *k*, which is inside of, but has no communication with, the oil-chamber, and opens into the discharge-neck E at the bottom of the lubricator. Between the two couplings is the upright transparent tube or chamber *l*, which is united with them by stuffing-boxes in the customary way. The upper coupling, *g*, is provided with a valve or cock, F, which controls the passage leading from the sight-feed tube to the coupling *g*.

In this lubricator it will be noted that the lower portion of the condensing-chamber is surrounded by the oil-chamber. The steam, by whose condensation the requisite head of water is maintained, is received through the neck E, and thence passes up the length of the condensing-chamber through the pipe or passage inside of the latter and enters said chamber at or near the top. The valve-spindle extends from one end to the other of the condensing-chamber, from the valve-seat below to the operating-handle above. By means of said handle the quantity of water supplied to the lower part of the oil-chamber from the condensing-chamber is readily controlled. The oil as it is displaced by the water is conducted downward from the top to or nearly to the bottom of the oil chamber, thence outwardly to the outside of the oil-chamber, upward through the water contained, as usual, in the

sight-feed tube or chamber, to about the top of the oil-chamber, thence inward and downward through a passage within the compass of the oil-chamber to the bottom of the lubricator, where it is discharged.

The advantages derived from the described construction and arrangement of parts have already been adverted to, and need not be here repeated.

What I claim as new and of my own invention is—

1. The condensing-chamber opening at its lower end into the lower part of the oil-chamber, and provided at that point with a valve-seat, and a valve carried by a spindle extending the length of said chamber, from the valve below to the operating-handle above, in combination with the oil-chamber surrounding the lower portion only of said condensing-chamber, substantially as hereinbefore set forth.

2. The combination of the condensing-chamber, the oil-chamber surrounding the lower portion only of the same, the upwardly-extending steam-passage inside of said condensing-chamber, the valve-seat at the lower end of said condensing-chamber, and the valve-spindle extending through said chamber from the valve-seat below to the operating-handle above, substantially as and for the purposes hereinbefore set forth.

3. The condensing-chamber provided with steam-inlet pipe and valve for controlling escape of condense-water, arranged within it substantially as described, the oil-chamber surrounding the lower portion only of said condensing-chamber, and the sight-feed tube arranged upon the exterior of the oil-chamber, in combination with passages or ducts inside of said oil-chamber, which conduct the oil from the top of the oil-chamber to the bottom of the sight-feed tube, and from the top of the sight-feed tube down into the discharge neck or outlet of the lubricator, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 6th day of January, 1885.

JNO. W. CLOUD.

Witnesses:

J. WALTER BLANDFORD,
M. BAILEY.