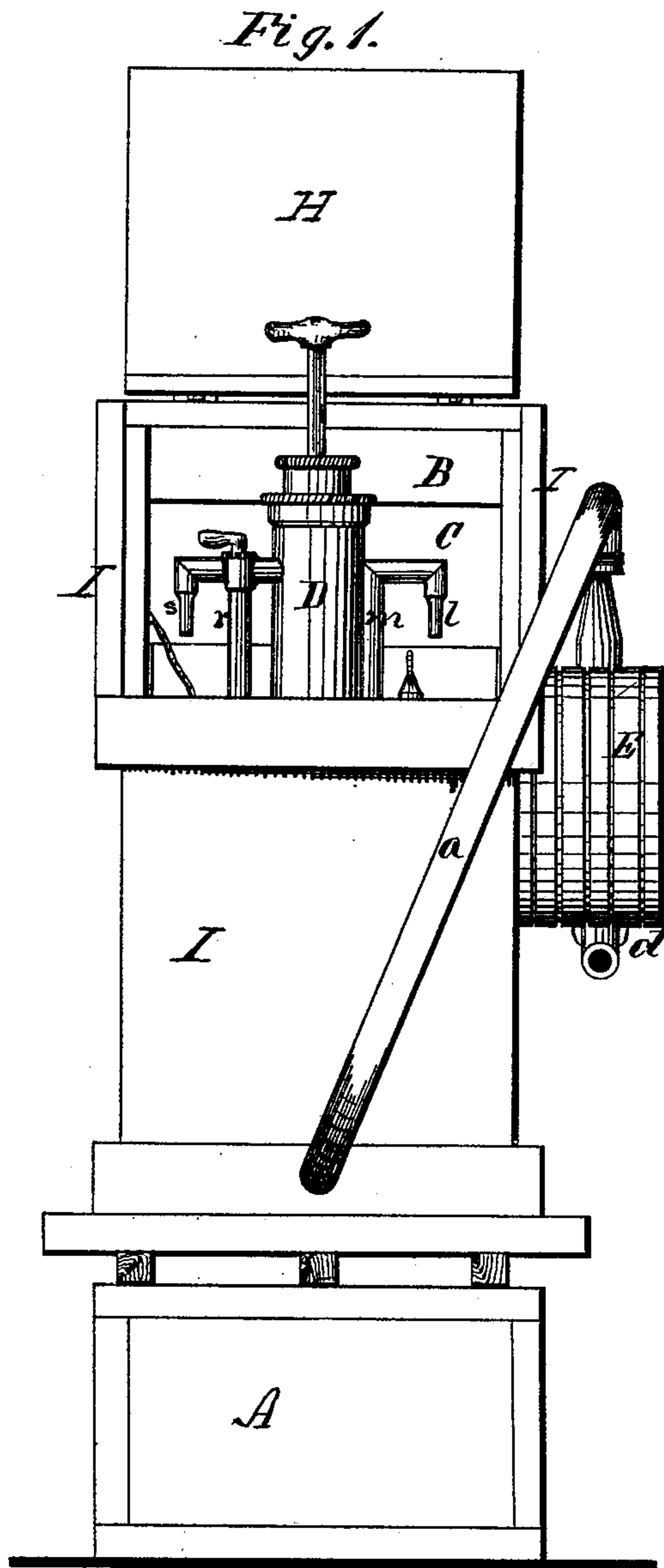


E. F. WILDER.
Apparatus for Storing, Measuring, and Drawing Oil.
No. 222,219. Patented Dec. 2, 1879.



Witnesses,

J. C. Lyons
J. G. King

Inventor,

Eli F. Wilder
By his atty,
J. S. Brown

4 Sheets—Sheet 2.

E. F. WILDER.

Apparatus for Storing, Measuring, and Drawing Oil.
No. 222,219. Patented Dec. 2, 1879.

Fig. 2. ∞

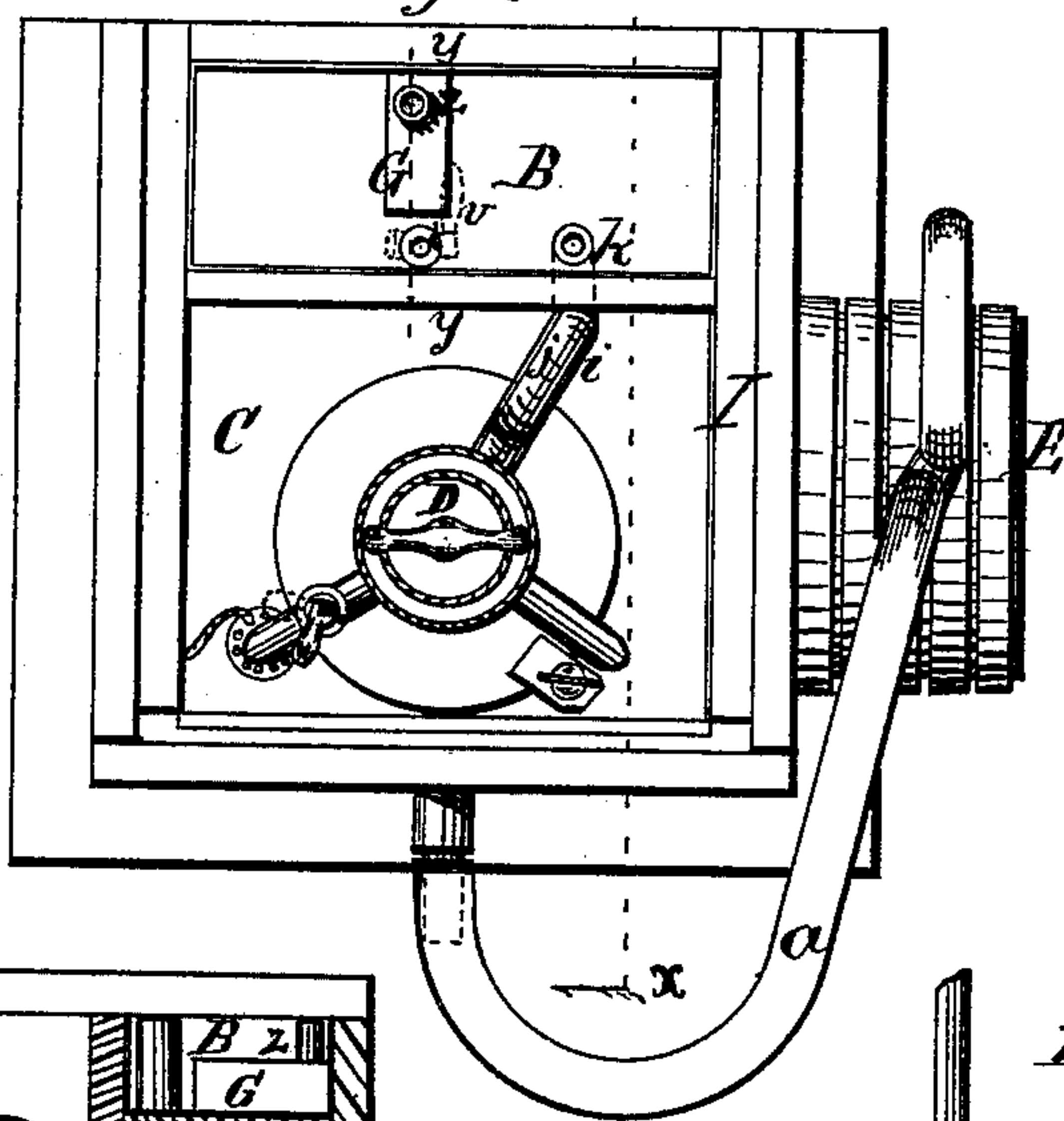


Fig. 3.

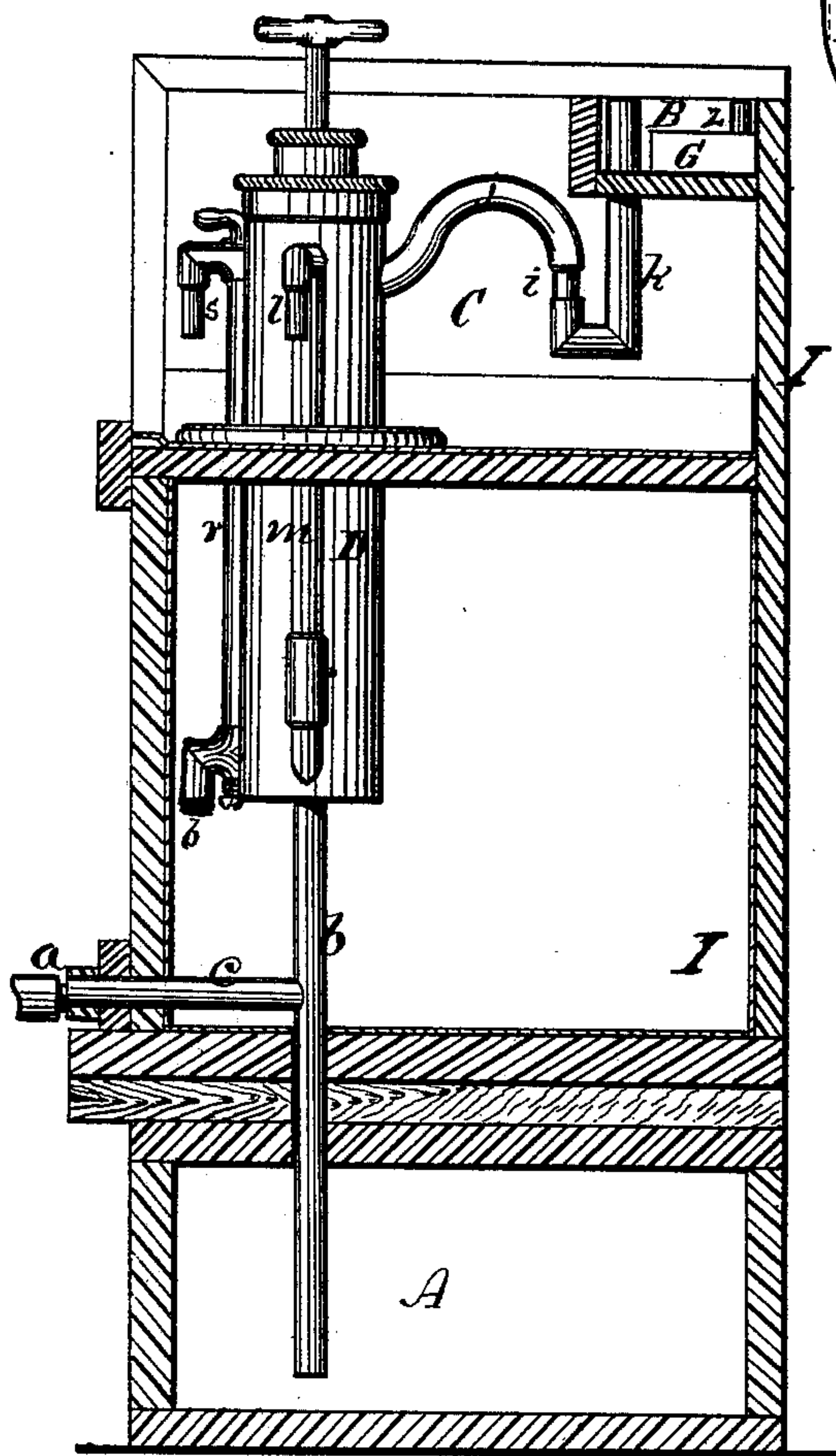
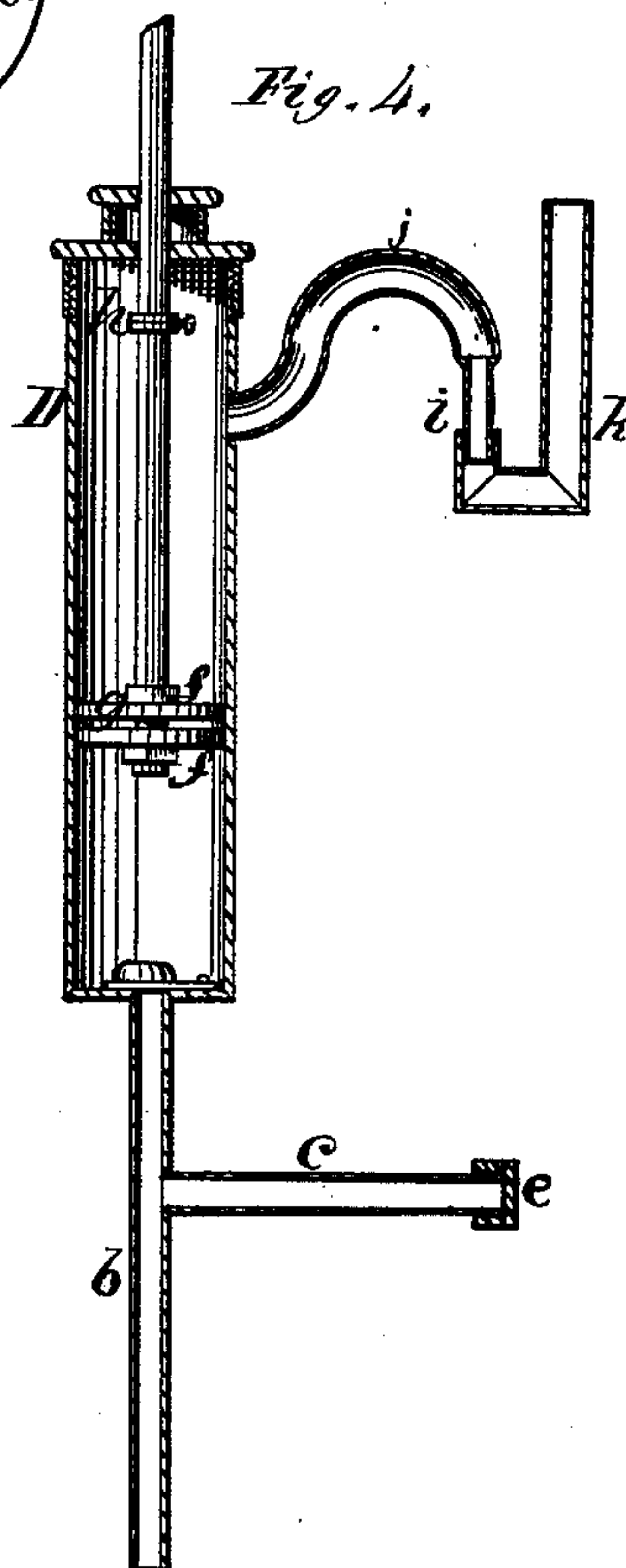


Fig. 4.



Witnesses,

J. C. Lyons
J. C. Lyons

Inventor,
Eli F. Wilder
By his atty.,
J. S. Brown

E. F. WILDER.
Apparatus for Storing, Measuring, and Drawing Oil.
No. 222,219. Patented Dec. 2, 1879.

Fig. 6.

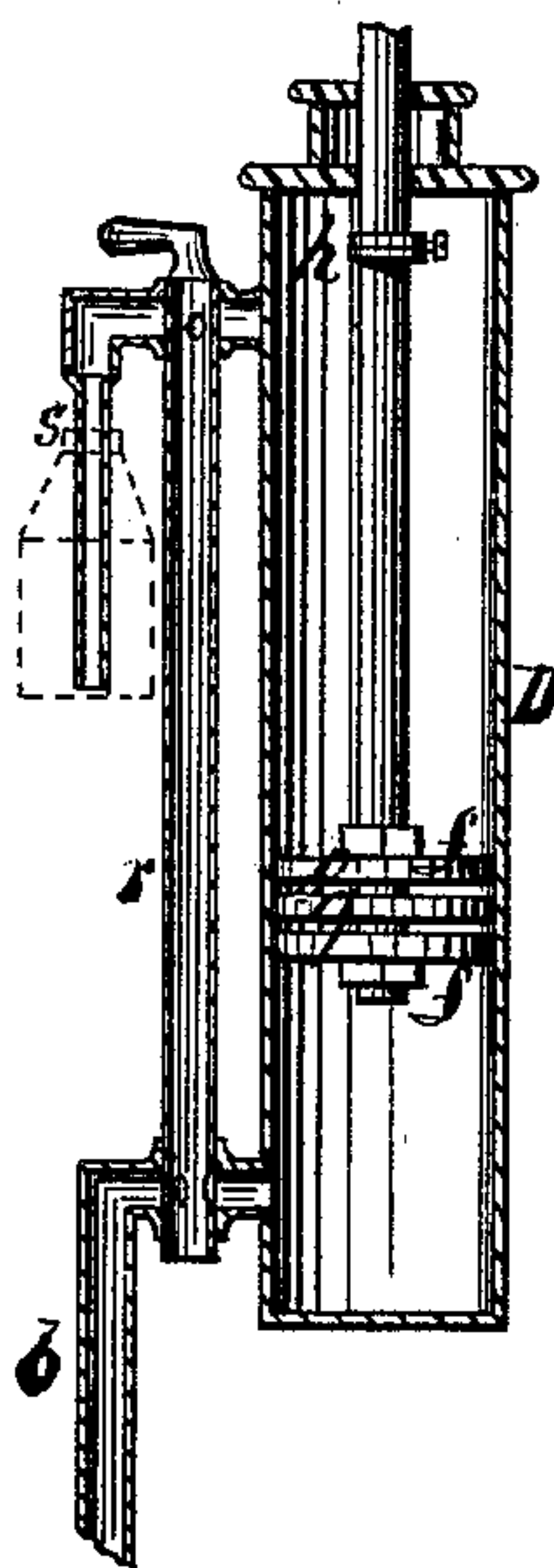


Fig. 5.

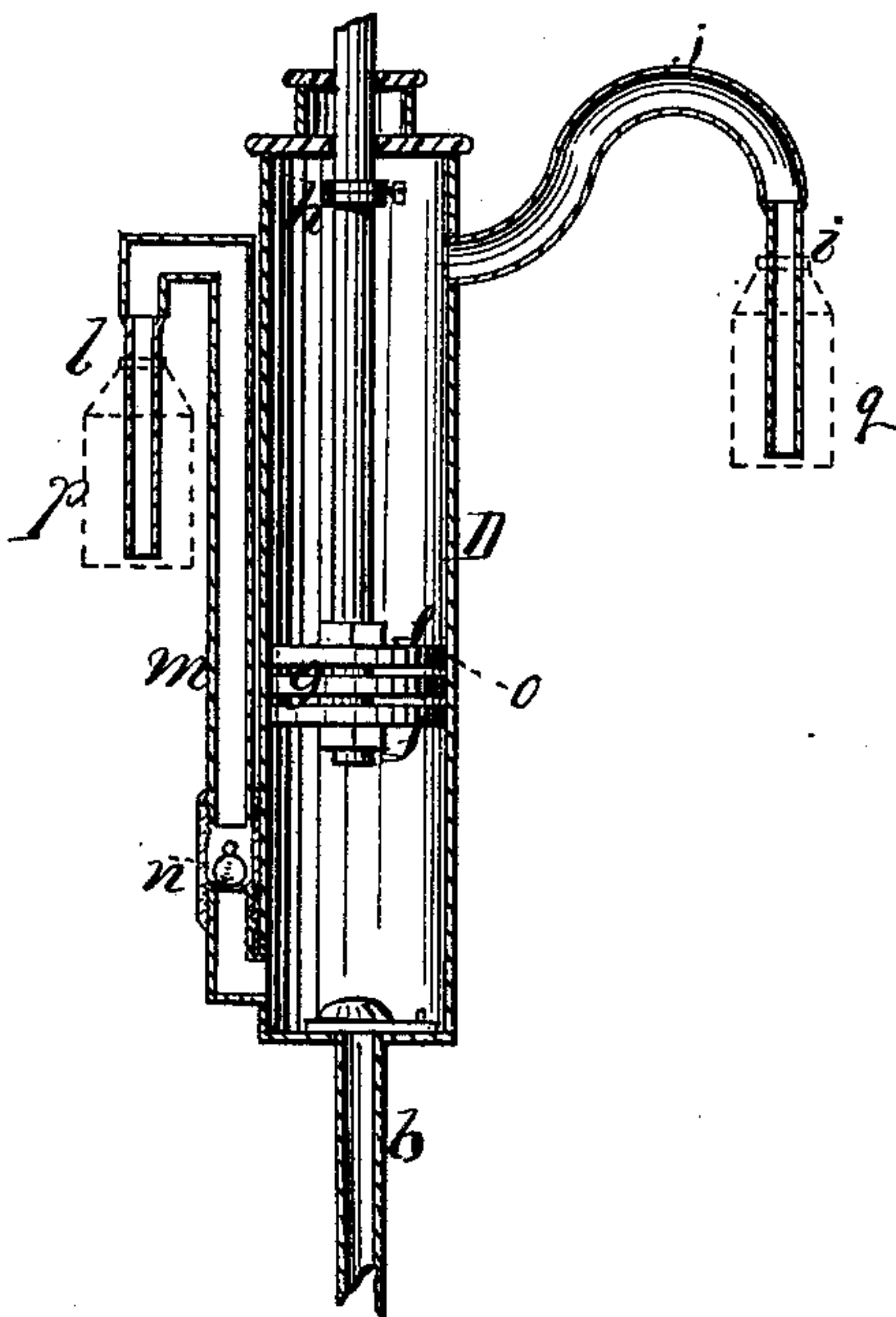


Fig. 9.

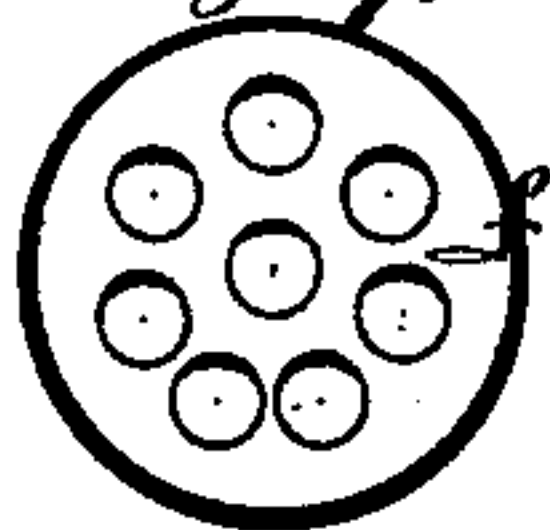


Fig. 7.

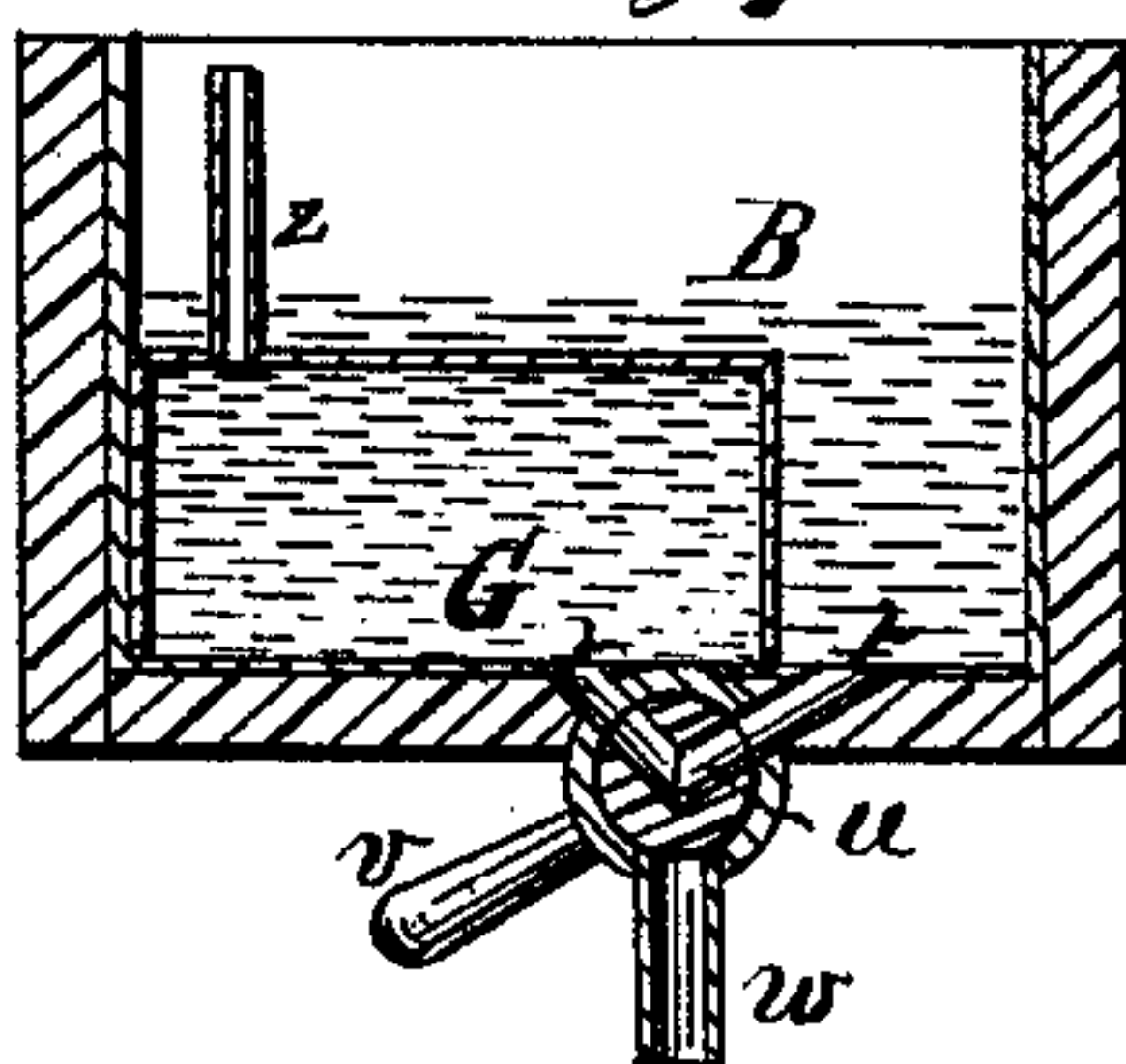
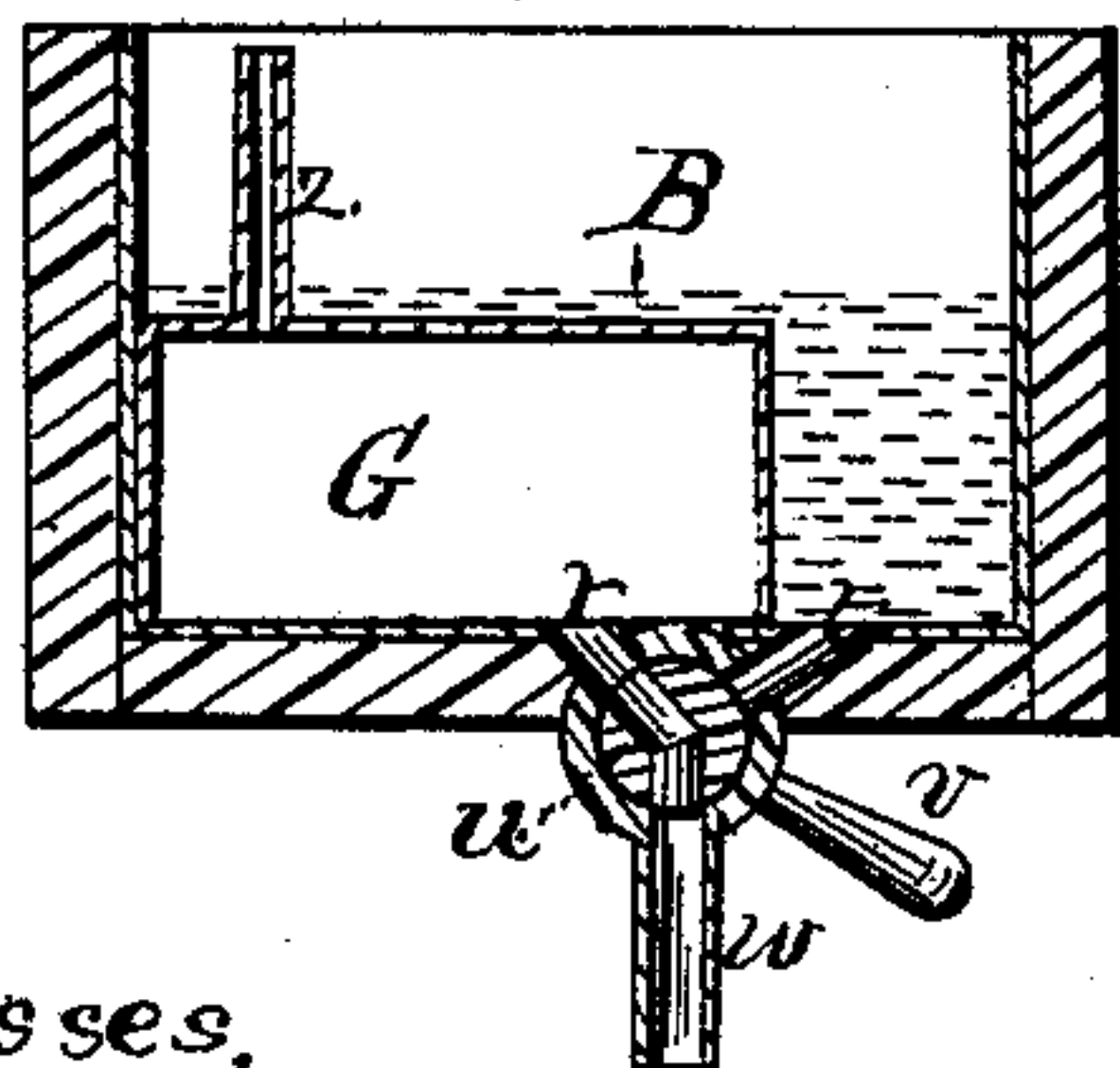


Fig. 8.



Witnesses,

J. C. Lyons
J. C. Lyon

Inventor,

Eli F. Wilder,
By his atty.,

J. S. Brown

E. F. WILDER.

Apparatus for Storing, Measuring, and Drawing Oil.
No. 222,219. Patented Dec. 2, 1879.

Fig. 10.

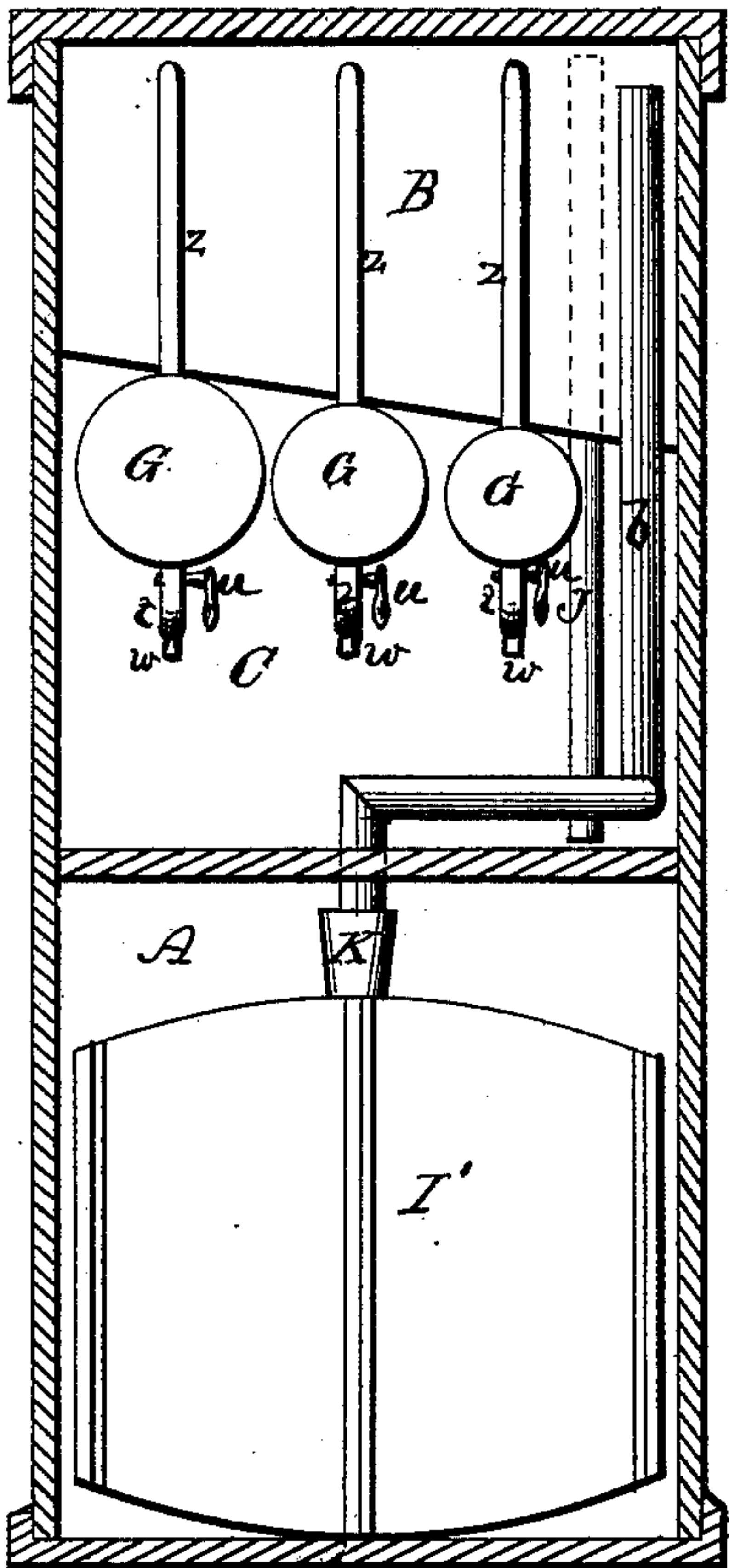


Fig. 11.

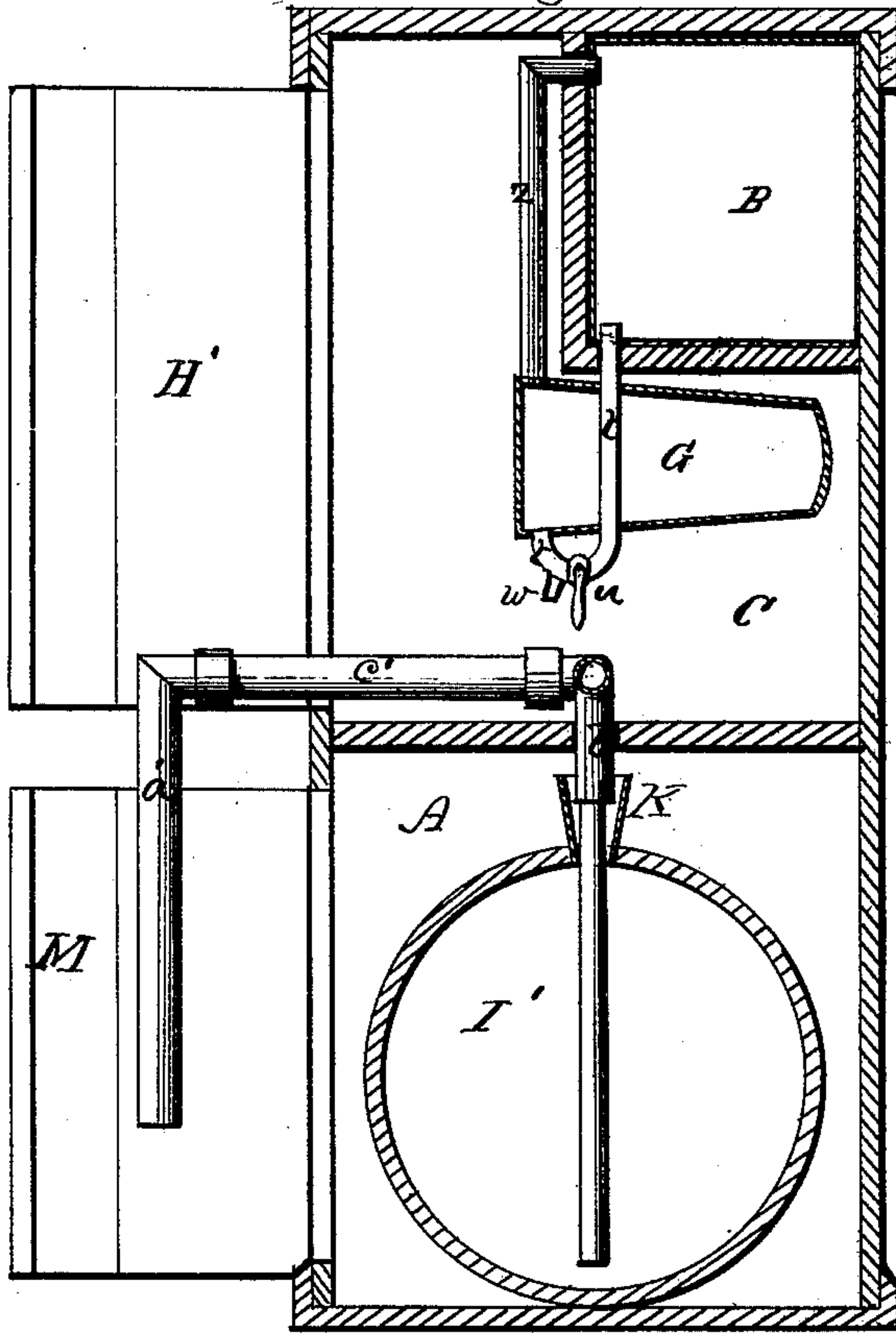
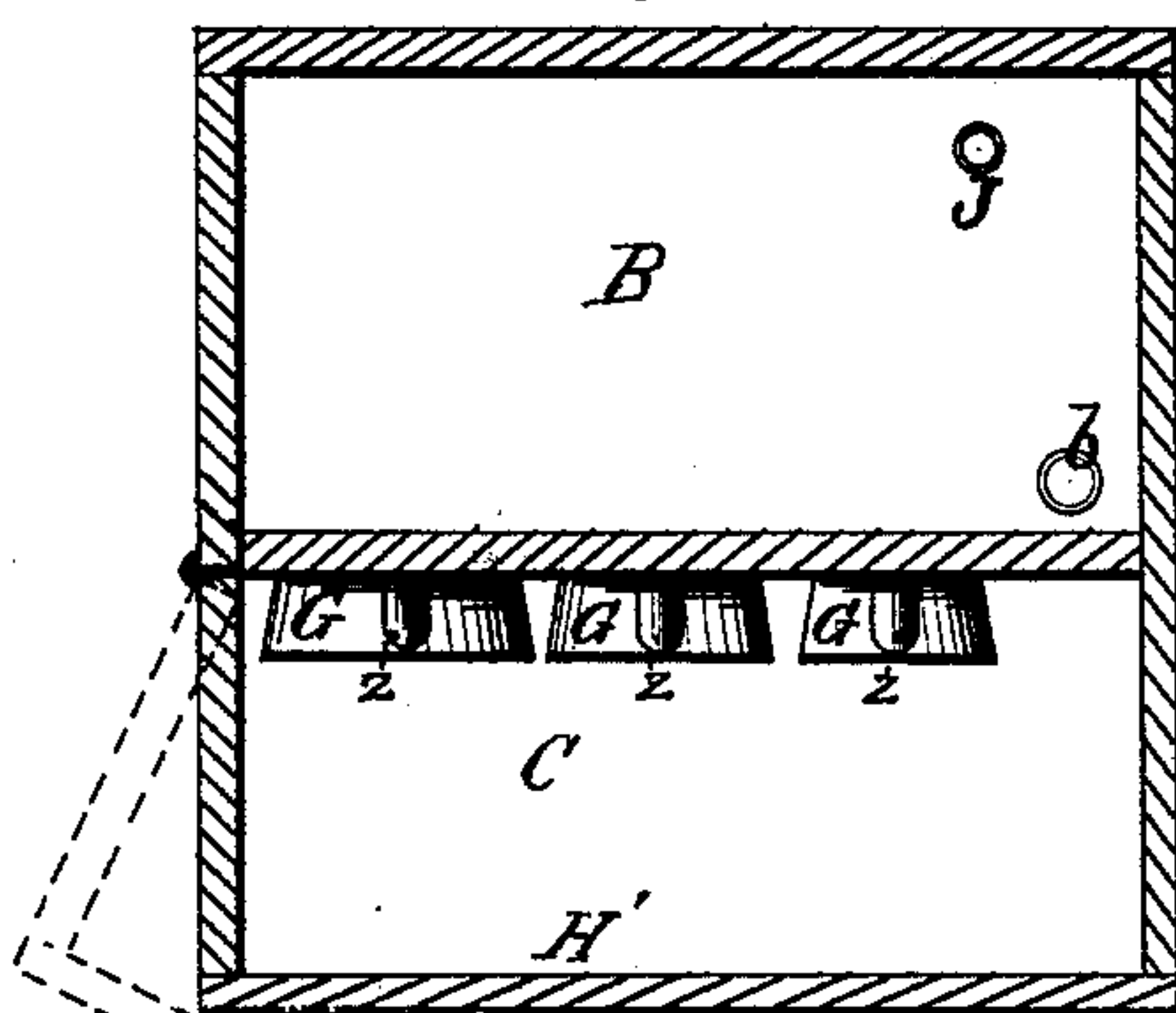


Fig. 12.



WITNESSES

E. M. Gallaher.
D. P. Lowe

INVENTOR,

Eli F. Wilder,
By J. S. Rogers,
his ATTORNEY.

UNITED STATES PATENT OFFICE.

ELI F. WILDER, OF SOMERVILLE, MASSACHUSETTS.

IMPROVEMENT IN APPARATUS FOR STORING, MEASURING, AND DRAWING OILS.

Specification forming part of Letters Patent No. **222,219**, dated December 2, 1879; application filed March 10, 1877.

To all whom it may concern:

Be it known that I, ELI F. WILDER, of Somerville, in the county of Middlesex and State of Massachusetts, have invented an Improved Apparatus for Storing, Measuring, and Drawing Oils and other Liquids; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a front elevation of the apparatus; Fig. 2, a top view of the same; Fig. 3, a vertical section of the same in a plane indicated by the line *x x*, Fig. 2; Figs. 4, 5, and 6, central vertical sections, showing varied constructions of the pump used in the apparatus; Figs. 7 and 8, vertical sections on an enlarged scale, in a plane indicated by the line *y y*, Fig. 2, showing the measuring-reservoir respectively before and after measuring a quantity of liquid; Fig. 9, view of a part detached; Fig. 10, a vertical section from side to side, looking backward, showing a modified construction of the apparatus; Fig. 11, a vertical section of the same in a plane cutting from front to rear; Fig. 12, a horizontal section of the same.

Like letters designate corresponding parts in all of the figures.

The main purposes of this invention are for storing oils in quantity in manufactories and groceries, for elevating the oils in smaller quantities to a fountain, from which the same can be drawn by gravity for filling oilers, lamps, &c.

In this apparatus there are three principal compartments or divisions—first, a closed reservoir, A, at the bottom; second, an elevated fountain, B, at the top; third, an intermediate chamber, C, in which the oil or other liquid is drawn.

The reservoir A may be in the room where the liquid is drawn, or in a cellar or story below; and it may be a tank built for the purpose, or a barrel or cask in which the liquid is ordinarily kept.

The elevated fountain B is situated higher than the chamber C, in which the liquid drawn from the fountain flows therefrom by its own gravity.

The liquid is raised from the reservoir A to the elevated fountain B by a pump, D, whereby a small but sufficient supply for immediate use may be kept in the said elevated fountain. With this pump any barrel E, or other vessel in which the oil is purchased or transported, may be connected by a flexible or jointed pipe, *a*, coupled to the pump-pipe *b*, as shown in Fig. 3, and by a coupling-pipe, *c*, or otherwise. Thus the liquid may run by its own gravity from the barrel into the reservoir; or it may be drawn therefrom by means of the pump, which, however, may be removable from the apparatus for the purpose.

The pipe *a* may be inserted through an aperture or bung-hole at the top of the vessel, as shown in the drawings, so as to act as a siphon; or it may be connected with the bottom, as at *d*, Fig. 1.

When the transferring-pipe *a* is disconnected from the coupling-pipe *c*, the latter may be closed by a cap, *e*, as shown in Fig. 4, so as not to interfere with the operation of the pump D.

One of the uses of the apparatus is to fill small oilers for oiling machinery, especially in factories and machine-shops. To facilitate the filling of these oilers the pump is arranged to fill one at one measured or gaged stroke of the pump-piston *f*. A difficulty arises in this mode of filling the oilers, because in many instances they are brought for refilling before they are entirely emptied of their previous contents, so that they would overflow in refilling unless properly guarded against. To obviate this difficulty I construct the pump so that it will act both as a drawing and filling pump as well as an elevating-pump. Thus the oilers are first entirely emptied, and then refilled by the manipulation of the single pump. The pump as constructed to perform this additional function is represented exteriorly in Fig. 3 and interiorly in three different ways, respectively in Figs. 4, 5, and 6.

In Fig. 4 I have shown the device in its simplest form. It has a piston, *f*, provided with a valve, *g*, to draw the oil into the lower end of the pump-barrel through the induction-pipe *b*, raising enough at one stroke upward and expelling it at the downward stroke to fill an

oiler, the amount being determined by an adjustable gage or stop, *h*, on the piston-rod, which determines the length of the piston's stroke.

The oiler is applied to the spout or nozzle *i* of the pump.

In the drawings the spout is shown coupled to the connecting-pipe *k*, which leads up into the elevated fountain B; but the arrangement is also applicable to the purpose of filling oilers from the said spout.

This construction alone does not provide for emptying the oilers before filling. To do this the construction shown in Fig. 5 is employed. In this construction, in addition to the spout *i*, at the upper end of the pump-barrel, is another spout, *l*, of nearly the same height, but connected with the pump-barrel near the bottom thereof by a pipe, *m*, closed by an upwardly-opening valve, *n*. The piston *f* also is made solid by putting a solid disk, *o*, over the valve-plate *g*. As the piston is drawn upward it fills the barrel of the pump below it, drawing the oil up through the pipe *b* from the reservoir below. Then, as the piston descends it forces the same oil up through the pipe *m* and fills the oiler *p* (shown in dotted lines) applied at the spout *l*. At the same time another oiler *q*, (also shown in dotted lines,) applied at the spout *i*, is emptied of any oil remaining therein from the previous filling by the descent of the piston. This spout reaches to the bottom of the oiler.

In Fig. 6 a single spout serves both for emptying and filling oilers. Here the induction-pipe *b* connects with the pump-barrel at the side near the bottom thereof, and connects with an elevating-pipe, *r*, which terminates in a spout, *s*, at the top. The said pipe *r* is arranged so as to turn a portion of a circle on its axis. When turned to one position it opens into the spout and closes to the induction-pipe *b*, it being here in communication with the pump-barrel, and when turned to the other position it closes to the spout and opens to the induction-pipe *b*, still remaining also in communication with the pump-barrel. When the piston of the pump is down and an oiler to be filled is applied to the spout, the pipe *r* is turned so as to close to the induction-pipe *b* and open it to the spout, by which arrangement a slight raising of the piston draws out any oil remaining in the oiler. The pipe *r* is then turned to the other position and the piston is again raised as high as the gage-stop *h* permits, whereby the pump-barrel below the piston is filled from the reservoir. Then the piston is forced down to the bottom of the pump-barrel, and thereby exactly fills the oiler at the spout *s*.

In the elevated standing fountain B, I locate a self-measuring reservoir, G, for general use. It is situated immediately upon the bottom of the standing fountain, so that it may be filled therefrom by the simple flowing in of the oil. It is entirely shut off from the fountain except through a passage, *t*, extending down-

ward and then upward through the fountain-bottom, and controlled by a two-way or "rain and well water" cock, *u*, which has a handle, *v*, whereby to operate it. This cock also communicates with a discharge-spout, *w*, and therefore acts as a faucet. Its arrangement is such that when it is turned to one position, as seen in Fig. 7, the communication is opened from the standing fountain B to the measuring-reservoir G; and when it is turned to the other position, as shown in Fig. 8, the communication is opened direct from the measuring-reservoir to the discharge-spout. This reservoir, containing any desired exact measure of quantity, is first filled from the fountain B by turning the cock to the position shown in Fig. 7, and then, by turning it back to the position represented in Fig. 8, the measured quantity of liquid is drawn off.

A vent-tube, *z*, extends from the top of the measuring-reservoir to the air above, for admitting and discharging the air as the said reservoir is emptied and filled with the liquid.

If desired, two or more measuring-reservoirs having the same construction and operation as the above described, and measuring different quantities of liquid, may be employed in the standing fountain.

It is best to have the bottom of the measuring-reservoir a little inclined or lowest at the orifice, so that the oil may all drain out, and thus render the measuring accurate.

The pipe *j*, connecting the spout or nozzle with the pump-barrel, is curved upward higher than the top of the said pump-barrel, to hold the oil in the same when full and prevent any dripping from the spout or nozzle.

The whole apparatus is inclosed in a case of wood-work, as shown, the intermediate drawing-chamber, C, being closed by a door or lid, H, Fig. 1, so that no dust gets inside and all is kept clean.

Figs. 10, 11, and 12 represent the apparatus somewhat different in some particulars from the apparatus as shown in the other figures, but essentially similar in principle and general construction.

Instead of a tank or reservoir at the bottom, as shown at A in Figs. 1 and 3, there may be a simple closet, A, with a door, M, into which a barrel or storing-vessel, I', is introduced. This barrel may be used as a permanent part of the apparatus, and it may be filled from an outside barrel or vessel, as above described.

Instead of an india-rubber or other flexible pipe or tube, a siphon-pipe, *a'*, of tin or sheet metal, with a coupling-piece, *c'*, and couplings, may be employed, as shown. This pipe may be coupled with the elevating-pipe *b*, extending from the upper part of the standing fountain, through the chamber C, thence down through a funnel, K, leading into the barrel in the closet, the said funnel serving to collect the drip from the sink in the drawing-chamber C.

The air-pipe J transfers air from the standing fountain to the barrel as the oil is pumped

from the latter to the said fountain, thereby equalizing the pressure and allowing a free flow of oil.

In this arrangement of the apparatus, also, I locate the measuring-vessels G G G beneath the standing fountain, as shown, the bottom of the said fountain being inclined laterally, so that the measures of different sizes may be all at one height at the bottom for convenience in drawing therefrom. These measures are conveniently made of the form shown, and they are best made of sheet metal or glass, the latter material being useful for allowing the interior of the measures to be seen. When made of sheet metal, if of small size they need no protection; but for large sizes the sheet metal is preferably incased in wood.

Each measure is filled from the fountain above by a pipe, *t*, which extends from the interior of the fountain down through the bottom thereof and through the measure, makes a bend below the measure, and thence extends up through the bottom of the measure, into the interior of which it opens. In the bend of the pipe, below the measure, are the two-way cock *u*, as above described, and a discharge-spout or faucet, *w*, as shown.

Each measure requires a vent-tube from its upper interior part, to allow the escape of air when the measure is filled, and to return air to the measure as the oil is drawn therefrom. This tube I extend upward and into the standing fountain above, near the top, so that the measure and fountain relieve each other as the oil is drawn from one and the other; and since, when the oil is let into a measure, G, it is apt to ascend into the air-escape tube, and

even to spurt from its upper end into the upper part of the fountain, the said fountain requires to be covered at the top, which is effected by one of sheet metal, as shown.

The door H', inclosing the chamber O, is peculiarly arranged, as shown. It includes the front and a part of one side, back to the standing fountain, thus having a solid corner. Thus, on swinging it back, the whole space forward of the standing fountain is open and free to work in. A lower door, M, opening to the barrel-closet, may be similarly constructed and hung.

The whole apparatus or case is preferably lined with sheet metal, the case itself being of wood.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the reservoir A, standing fountain B, provided with a series of measuring-reservoirs, G G G, drawing-chamber C, storing-chamber I, and pump D, constructed both as a can emptying and filling pump and as an elevating-pump, and operating as described, all arranged substantially as and for the purpose herein specified.

2. The pump D, constructed with its pipes and valves, substantially as described, for both completely emptying and refilling oilers, substantially as and for the purpose herein specified.

Specification signed by me this 12th day of February, 1877.

ELI F. WILDER.

Witnesses:

A. B. CLEARY,
ALEXR. WOOD.