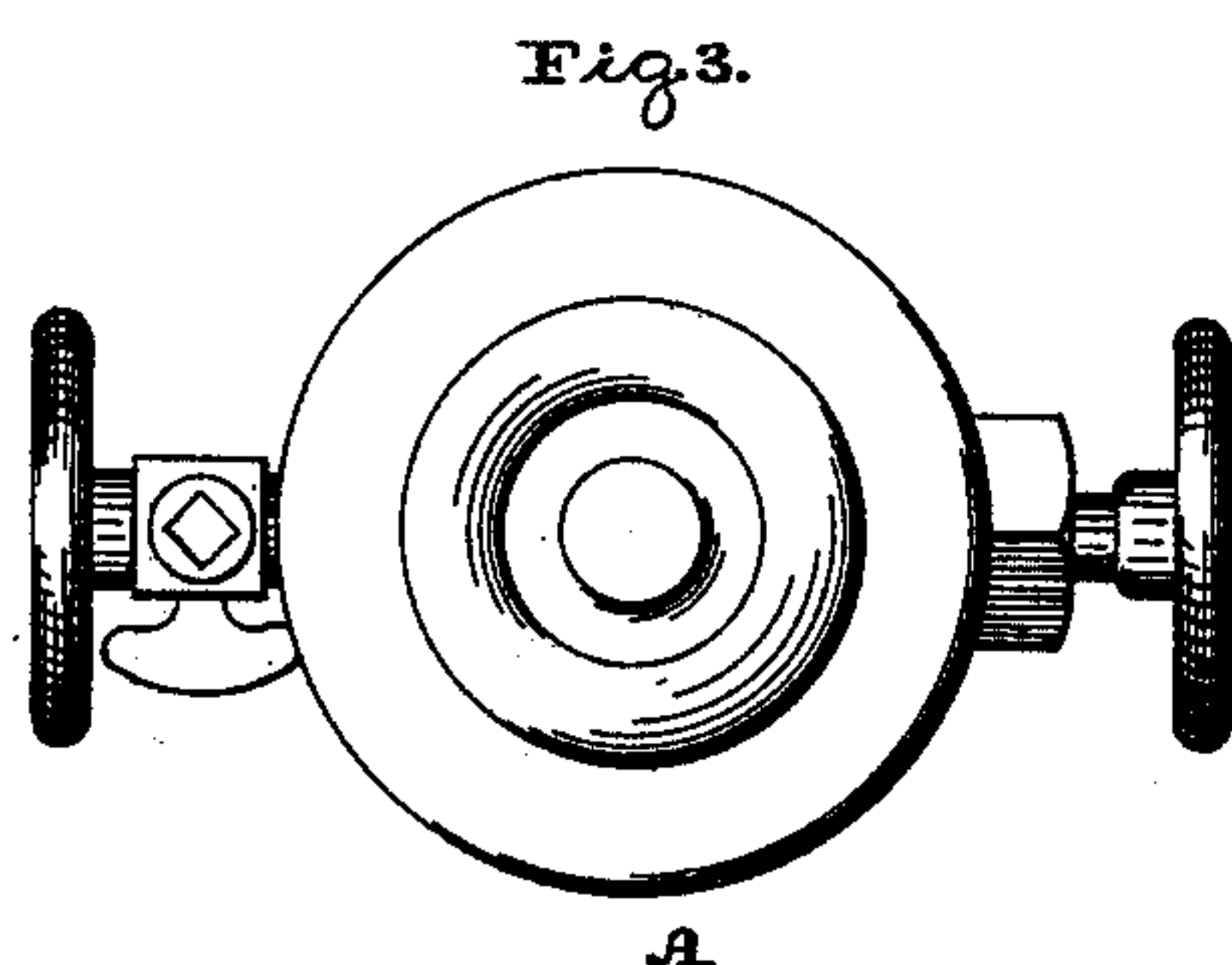
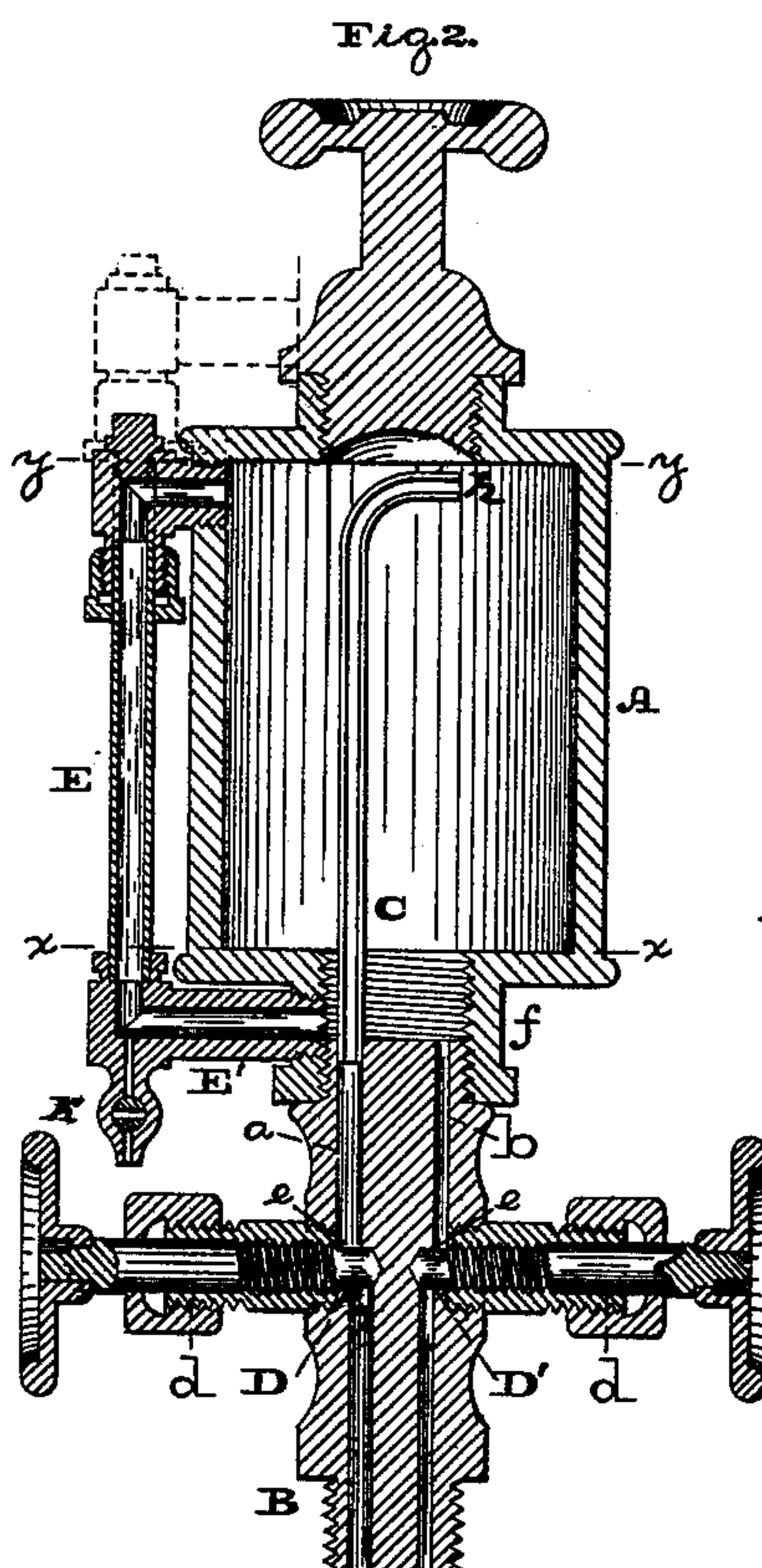
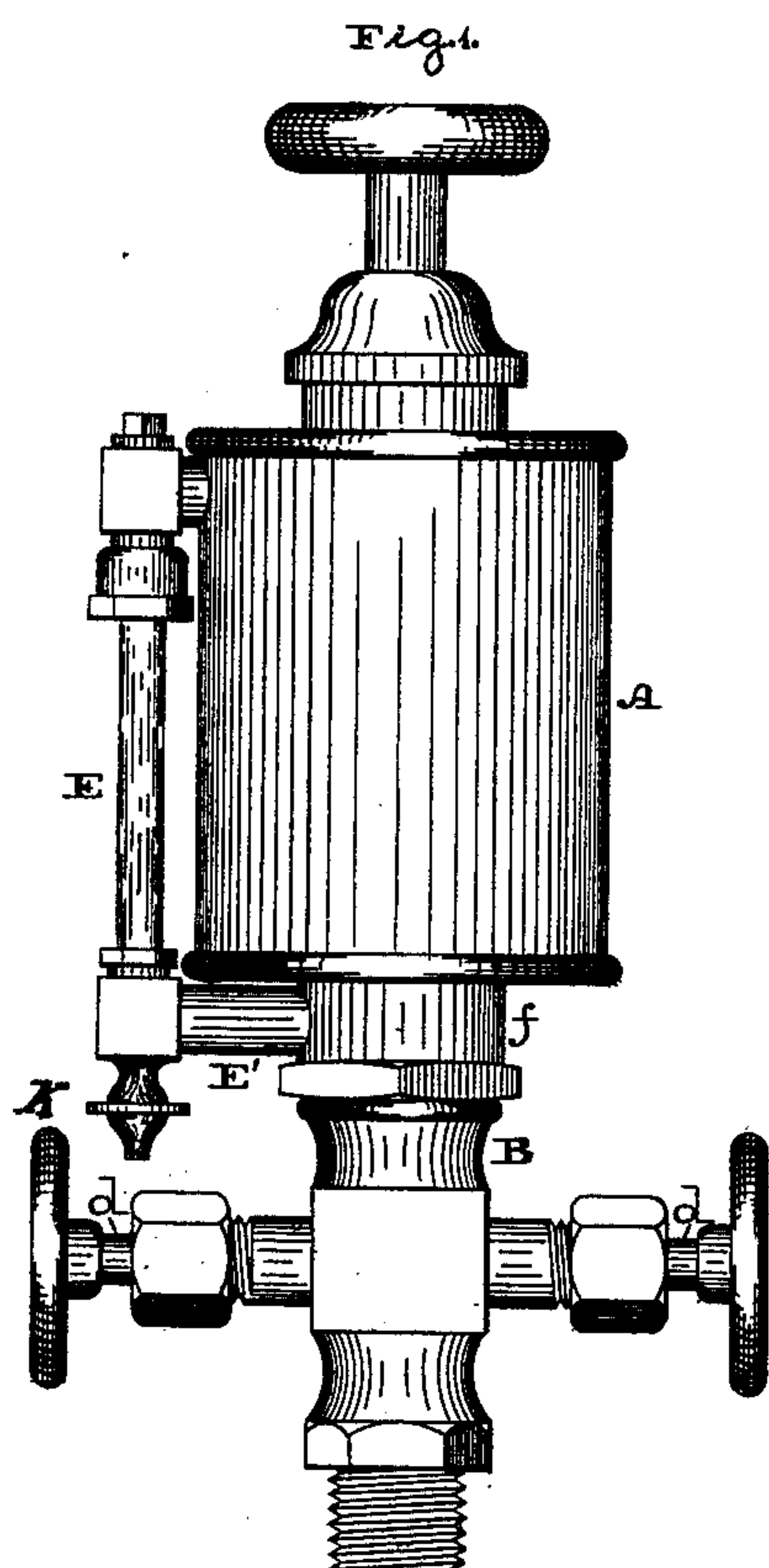


E. WEBB & J. RICHMOND.  
Lubricator.

No. 214,215.

Patented April 8, 1879.



Witnesses:

R. P. Grant,  
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# UNITED STATES PATENT OFFICE.

ELISHA WEBB AND JACOB RICHMOND, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **214,215**, dated April 8, 1879; application filed December 12, 1878.

*To all whom it may concern:*

Be it known that we, ELISHA WEBB and JACOB RICHMOND, both of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Lubricators, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the lubricator embodying my invention. Fig. 2 is a central vertical section thereof. Fig. 3 is a top or plan view thereof.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists of the stem having steam and oil ducts which are independent of each other, and a valve for each duct, the valve-seats being formed by depressions projecting inward from the ducts, whereby, while the points of the valves occupy said seats, the cylindrical portions of the valves also have seats directly on the walls of the ducts, thus providing treble seats for the valve, whereby the steam and oil may be instantly cut off, and tight joints are produced to prevent all possible leakage.

It also consists of a combination of parts forming an improvement in lubricators, as will be hereinafter fully described and claimed.

Referring to the drawings, A represents the oil cup or reservoir, and B the bottom stem, whereby the device is attached to the steam-chest or other place of service.

In the stem there is a steam-duct, *a*, and an oil-duct, *b*, both of which communicate with the steam-chest. Above the duct *a* is a pipe, C, which rises from the stem B, and serves to direct the steam to the top of the reservoir. The duct *b* communicates directly with the reservoir.

Through opposite sides of the stem B there are passed the stems *d* of valves D D', whose seats *e e* are formed in the walls of the ducts *a b*, respectively.

E represents a gage, consisting of a barrel properly supported on the exterior of the reservoir, and its lower end communicates with a tube, E', which projects from the neck *f*, or contracted bottom of the reservoir.

It will be noticed that the lowermost un-

covered portion of the barrel is at least on the level of the lower line, *x x*, of the main portion of the reservoir, whereby, when the lubricant leaves the reservoir, even to the last particle, the exact condition of the lubricant will be indicated in the gage.

The operation is as follows: The reservoir is properly supplied with oil through the top opening, which is afterward covered by a screw-plug. The valve D is opened to admit steam to the top of the reservoir, the pressure whereof is exerted on the oil. The valve D' is then opened to permit the passage of the oil through the duct *b* to the part to be lubricated.

It will be seen that the pressure of steam and of oil may be regulated as required to feed more or less rapidly, and to a greater or less extent at each time, and both valves may be closed as required, so as to completely shut off the steam and prevent the feed of the oil, or shut off oil when steam-pressure is still on.

The oil, being under pressure from above, is reliably caused to flow from the reservoir or cup under pressure. The water of condensation descends through the body of oil, and passes out with the same through the duct *b*.

If desired, the barrel E of the gage may be uncovered at top to the line *y y*, (the upper level of reservoir,) so as to show the extreme height of the oil or lubricant.

If desired, the stem B may be an integral portion of the neck *f*.

In order to direct the impact of steam from the top plate or cover of the cup, which cover is comparatively cool, thus causing immediate condensation of steam, the upper end of the steam-pipe is formed with a horizontal limb, *h*, which extends under the top plate, and directs the steam more immediately on the body of oil, and against the hot side of the cup, whereby, the condensation being less rapid, the power of the steam is temporarily preserved, and the pressure on the oil is greater, so as to overcome any upward pressure from the steam-chest or other place of service through the oil-duct.

The valves D D' have each treble seats, which is caused by forming the seats *e e* deeper or farther in than the respective ducts, whereby as the points of the valves enter their seats



their bodies or cylindrical parts pass the ducts, the walls whereof also serve as seats, so that while said cylindrical parts close the ducts before the points reach their seats, and thus instantly shut off the passage of steam or oil, the seats proper serve as additional obstacles to the escape of steam or oil, and thus all possible leakage of said subtile fluids is prevented.

The oil-duct terminates below the top of the neck *f*, so that the neck acts as a channel and immediately directs the oil to said duct, whereby there are no places for collection or lodgment of the oil or sediment, and every particle of the same is unfailingly passed out through the duct.

The supporting-tube *E'* of the gage glass or barrel *E* has a downwardly-opening cock, *K*, so that said glass may be cleansed or cleared, and the cup *A* completely drained, without drawing off the oil through the duct *b* or steam-chest, or other place of service.

We are aware that lubricators have been constructed to eject the oil by direct pressure of steam, and that they are provided with valves for regulating the supply and flow of steam and oil.

We are furthermore aware that lubricators

have been formed with necks and provided with gages; wherefore we disclaim such features, broadly.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The cup *A* and steam-pipe *C*, in combination with the stem *B*, having steam and oil duct *a b*, independent of each other, with valve-seats *e*, deeper than the ducts, in combination with the valves *D D'*, whose points enter said seats *e e*, and the cylindrical portions or bodies have their seats in the walls of said ducts *a b*, whereby each valve has treble seats, substantially as and for the purpose set forth.

2. The oil-cup *A*, steam-pipe *C*, with horizontal limb *h*, stem *B*, with separated steam and oil ducts *a b*, treble-seated valves *D D'*, gage *E*, tube *E'*, and draw-off cock *K*, all constructed, combined, and operating as described, and forming an improvement in lubricators, as stated.

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Witnesses:

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