

(No Model.)

C. D. ARIA.
LAMP.

No. 411,318.

Patented Sept. 17, 1889.

Fig. 2.

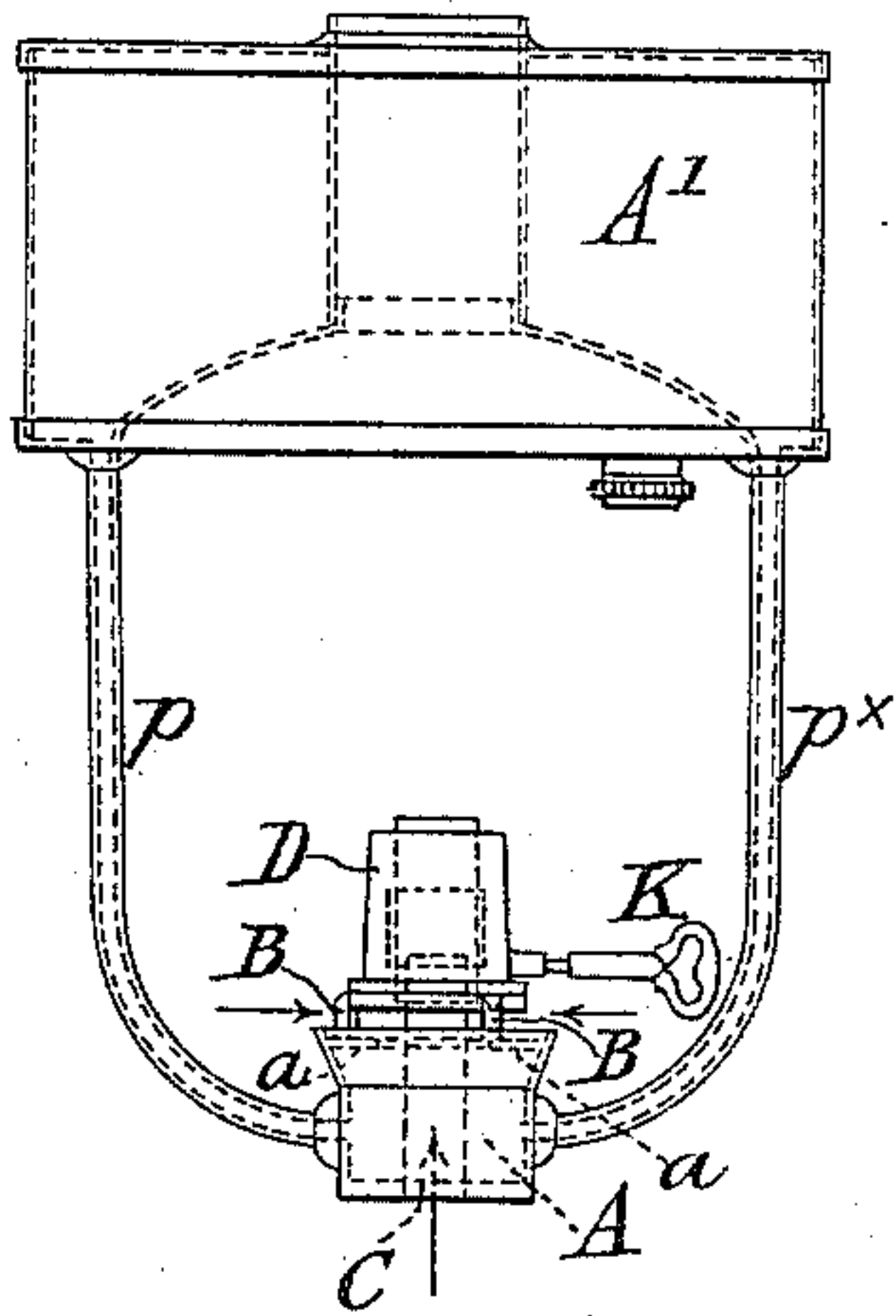


Fig. 1.

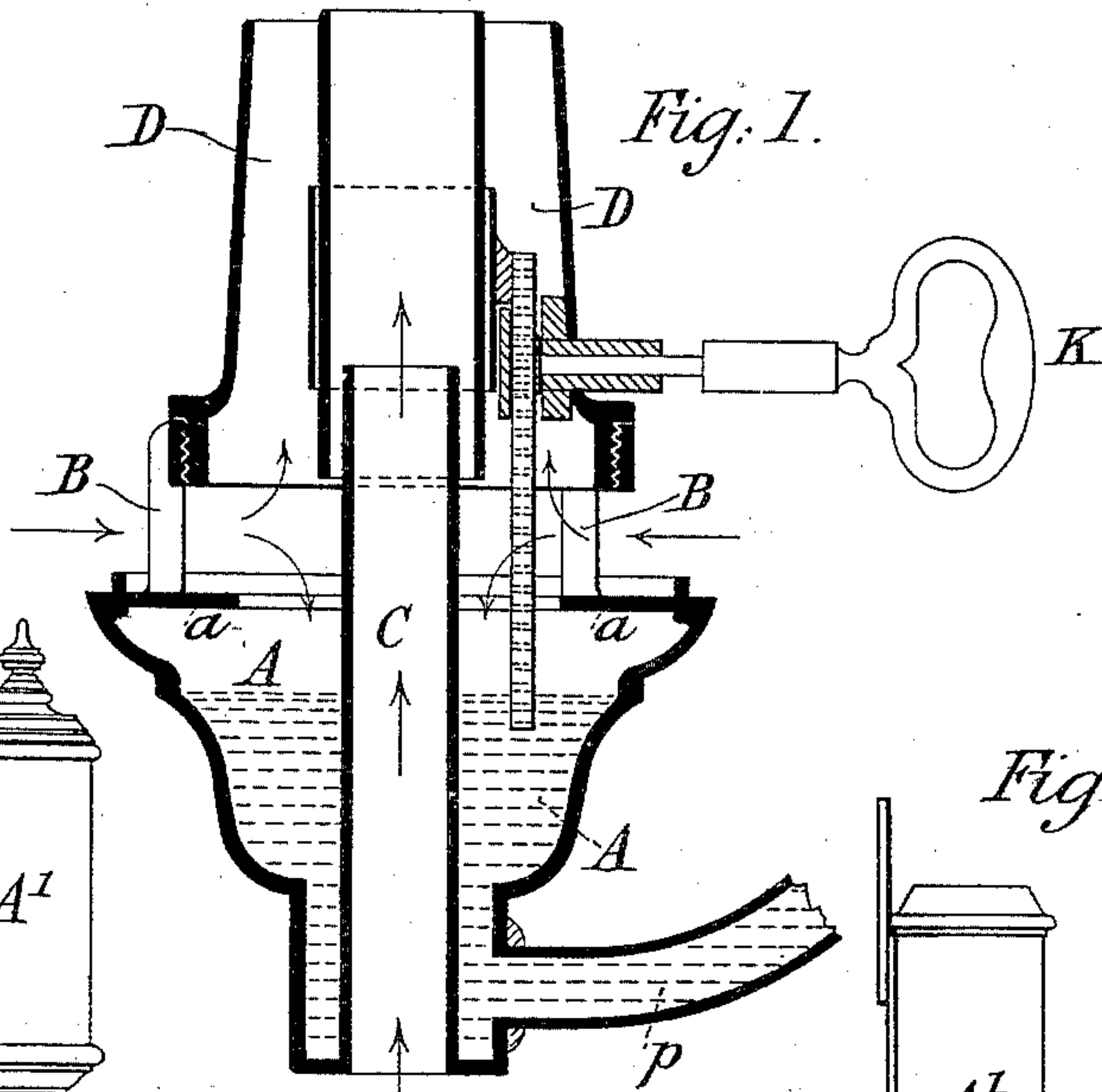


Fig. 3.

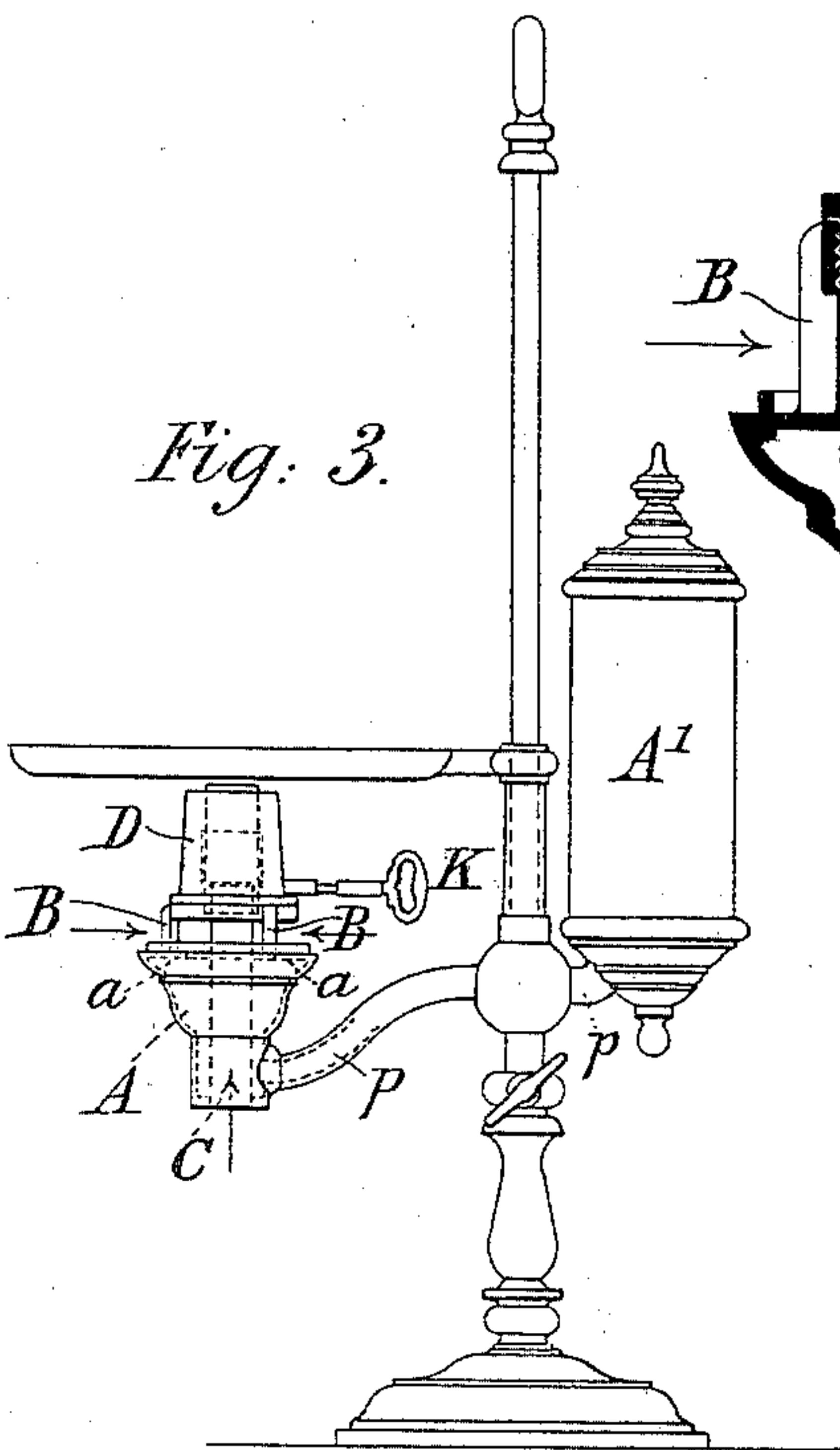
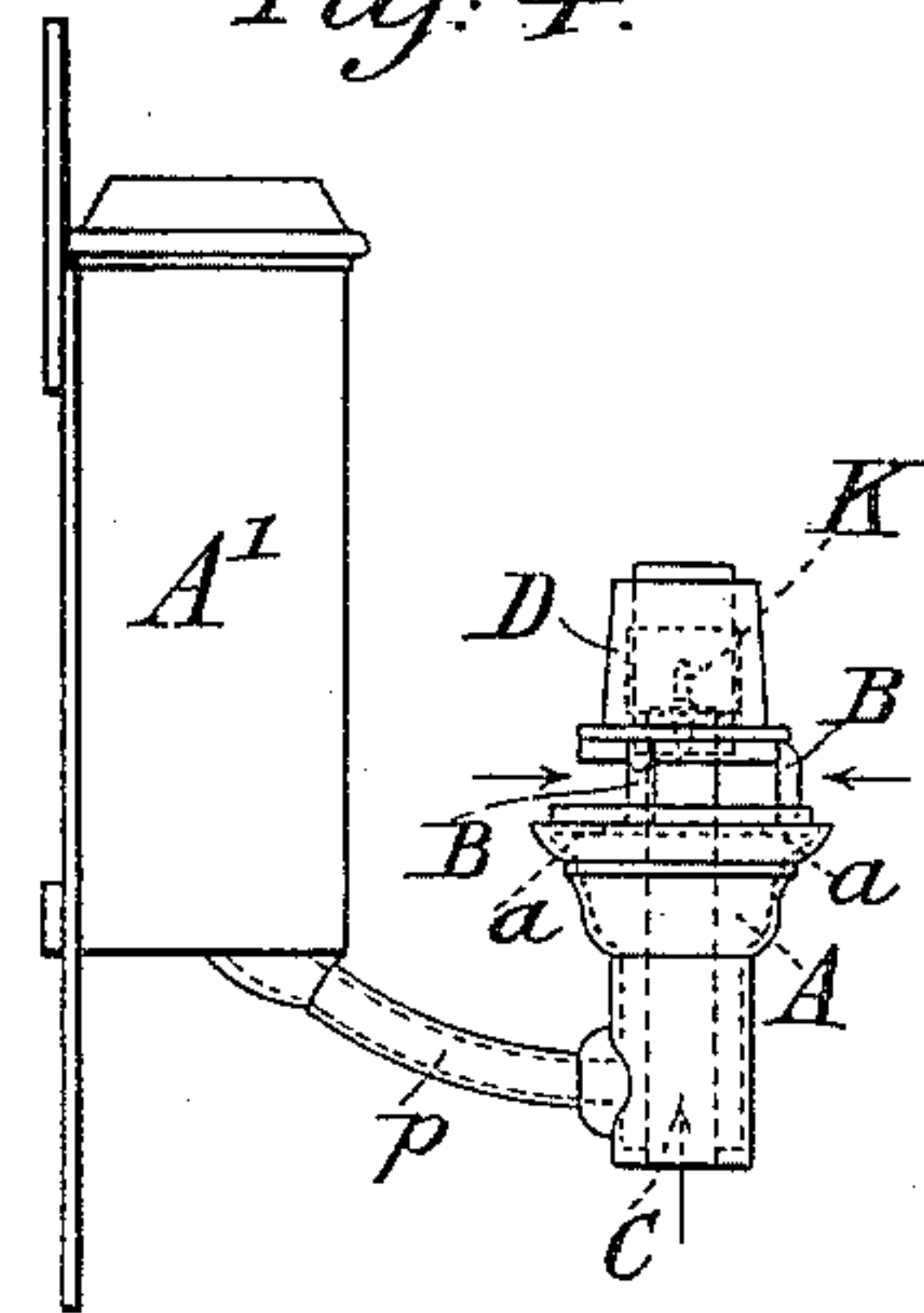


Fig. 4.



Witnesses.

J. A. Rutherford
Dennis Sumby

Inventor.

Charles Dupont Aria
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

CHARLES DIXON ARIA, OF LONDON, ENGLAND.

LAMP.

SPECIFICATION forming part of Letters Patent No. 411,318, dated September 17, 1889.

Application filed February 7, 1889. Serial No. 299,043. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DIXON ARIA, lamp-manufacturer, a subject of the Queen of Great Britain and Ireland, residing at 175 Piccadilly, London, England, have invented certain new and useful Improvements in Oil-Lamps, of which the following is a specification.

The object of my invention is to so construct railway-roof, reading, wall, ring, stand, carriage, and other like lamps as to render them capable of burning mineral oil of commerce with safety, which hitherto it has been found impossible to do, owing to the rapid vaporization of such oil and the consequent explosion of the lamps, and likewise to render such lamps suitable for burning the heavy mineral oils, which, up to the present, have not been employed for illuminating purposes. I attain this object by means of the construction and combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical section of my improved construction of burner. Fig. 2 shows the application thereof to a railway-roof lamp, Fig. 3 to a reading-lamp, and Fig. 4 to a wall or back lamp.

In all the figures the gallery and chimney are omitted for sake of clearness, and like letters of reference indicate like parts throughout the drawings.

A is the secondary reservoir. It is furnished with an interior rim, lip, or flange *a*, to prevent spilling of the oil in case the lamp should receive a sudden blow or shock. To this rim, lip, or flange is secured the open or skeleton frame or support B, which carries at its upper part the detachable wick-case D, which is held in place by a screw-thread or by other means; or said open or skeleton frame or support, instead of being affixed to the rim, lip, or flange, may be directly secured to the secondary reservoir. By the employment and arrangement of this skeleton frame or support the entire wick-case, including its wick-tubes, is maintained wholly above and remote from the top end or wall of the secondary reservoir and at a safe distance from the oil therein, while an opening or passage is constituted through which the air is free to

circulate to keep cool the oil in such reservoir and likewise the wick-case.

Concentric with and traversing the secondary reservoir is a vertical tube C, which projects up through the top end or wall of the secondary reservoir and by preference extends within the internal tube of the wick-case for a short distance, as shown in Fig. 1, although it may be arranged to extend to near the under edge of the same. This tube opens at its lower end through the bottom wall of the secondary reservoir to provide for a free passage of air to the flame for the purpose of assisting in promoting combustion, and, by its position, should a sudden draft or current of air deflect the flame into the inner tube of the wick-case such flame would be prevented from coming into contact with any vapor which by the most unlikely chance may have formed in the secondary reservoir when burning the mineral oil of commerce. The air passing through this tube further assists in keeping cool the oil in the secondary reservoir. The annular space at the base of this reservoir is so constructed that the wick cannot pass into it. The orifice of the tube which connects the main reservoir with this annular space is always sealed by the oil, even if the lamp be allowed to burn out. The oil in the main reservoir and any vapor which may arise therefrom are thus completely isolated and no explosion can occur.

In Figs. 3 and 4, A' represents the main reservoir, from which the secondary reservoir receives its supply of oil through one pipe *p*, but in the case of a railway-roof lamp, as shown in Fig. 2, (or in that of a ring-lamp,) through two pipes *p* and *p*^x.

The main reservoir shown in Fig. 2 is annular, and its base is preferably concave to form a reflector.

By the employment of a main and a secondary reservoir, as above described, the level of the oil is maintained at such vertical distance from the upper surface of the wick as may be desired. The burning of oils which do not readily ascend the wick by capillary attraction is thus aided, and the diminution in the illuminating-power of the lamp resulting from a deficiency in the supply of oil to the flame is prevented.

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—

5 1. In an oil-lamp, the combination of a secondary oil-reservoir having an internal vertical air-tube extending above its top wall and opening at its lower end through the wall of the reservoir, a skeleton frame rising from
10 the top of the said reservoir, and a wick-case supported by the skeleton frame wholly above and at a distance from the top wall of the reservoir, substantially as and for the purpose described.

15 2. In an oil-lamp, the combination of a secondary oil-reservoir having an internal vertical air-tube opening at its upper end through the top wall of the reservoir and at its lower end through the bottom wall of the latter, a skeleton frame rising from the top of the said reservoir, and a wick-case detachably connected
20 at its lower end to the upper end of the skeleton frame and supported thereby wholly above

and at a distance from the top wall of the reservoir, substantially as and for the purposes 25 described.

3. The combination, in an oil-lamp, of a secondary reservoir having an internal vertical air-tube rising at its upper end above the top wall of the reservoir and opening at its lower 30 end through the lower wall portion of the latter, a skeleton frame rising from the top of the secondary reservoir, a wick-case detachably connected to the skeleton frame and supported thereby wholly above and at a distance 35 from the top wall of the reservoir, a main oil-reservoir rising above the secondary reservoir, and a pipe-connection between the two reservoirs, substantially as described.

CHARLES DIXON ARIA.

Witnesses:

W. H. SMITH,
68 Fleet Street, London.

WALTER J. SKERTEN,
17 Gracechurch Street, London, E.C.