

MICHAEL B. DYOTT.  
Improvement in Lanterns.

No. 119,920.

Patented Oct. 17, 1871.

Fig. 1.

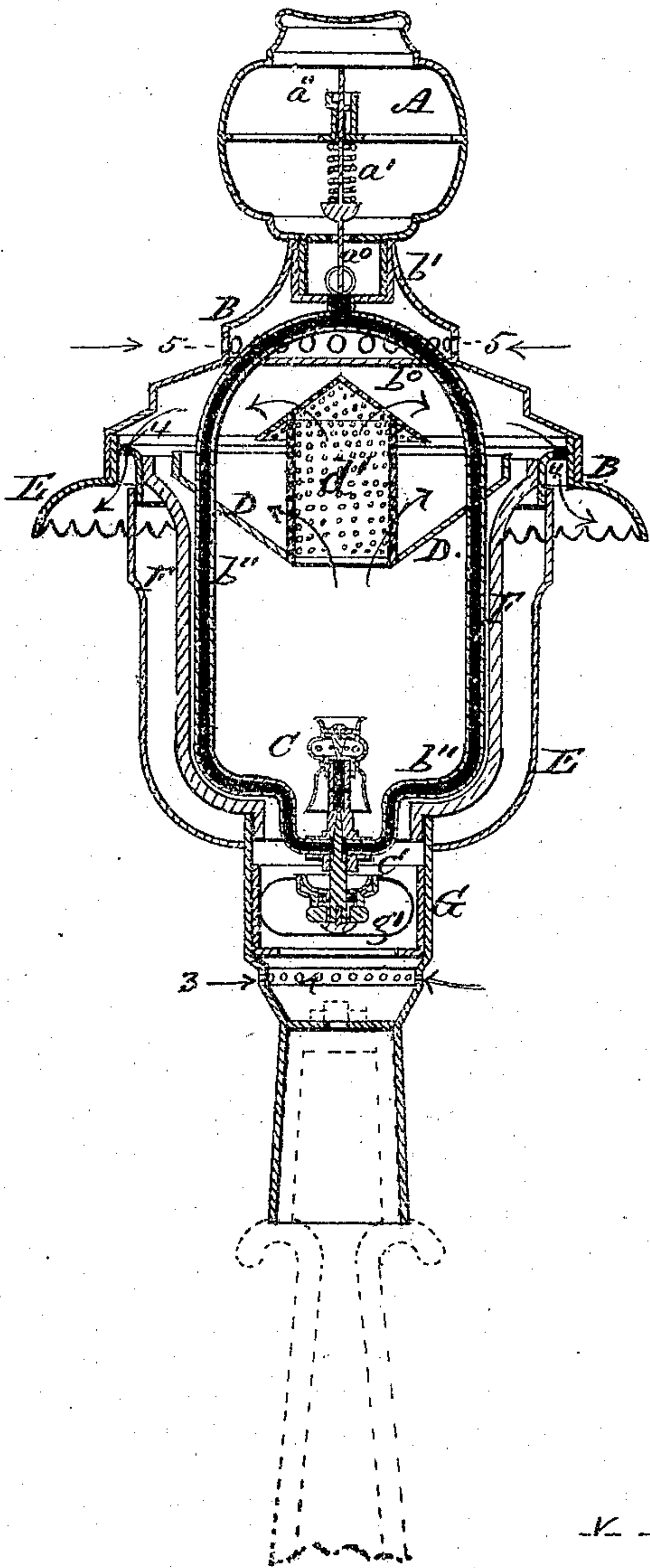


Fig. 4.

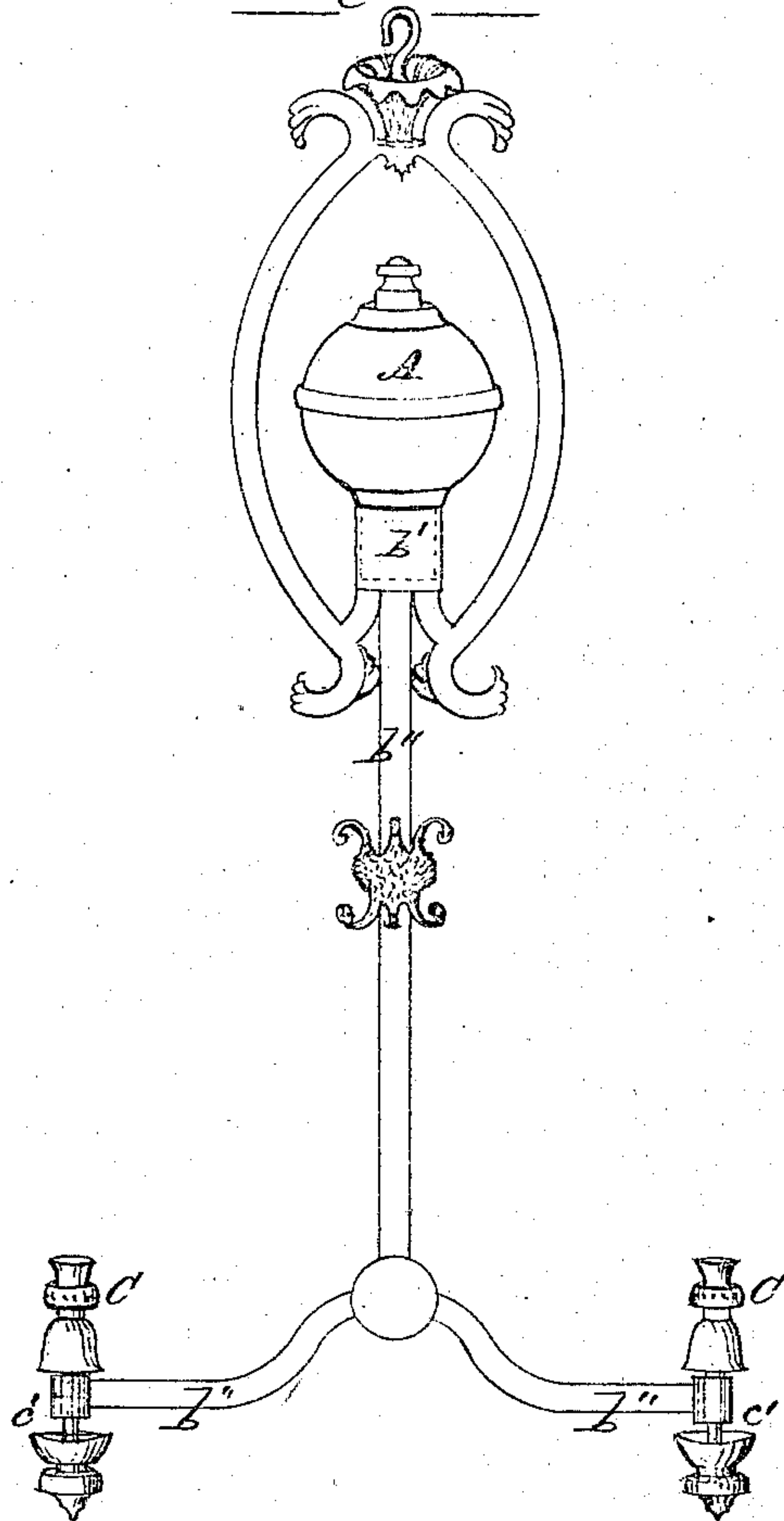


Fig. 2.

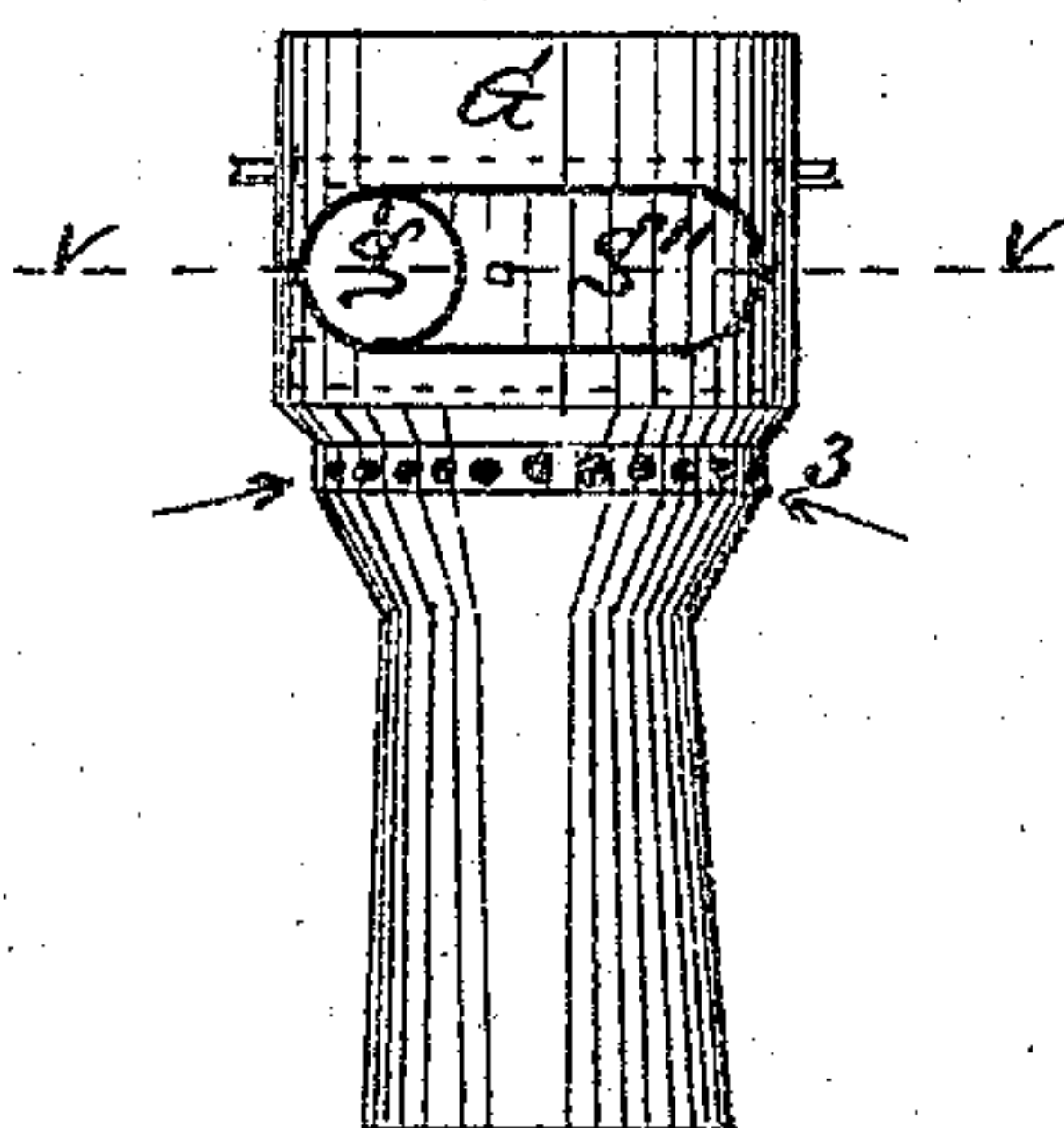
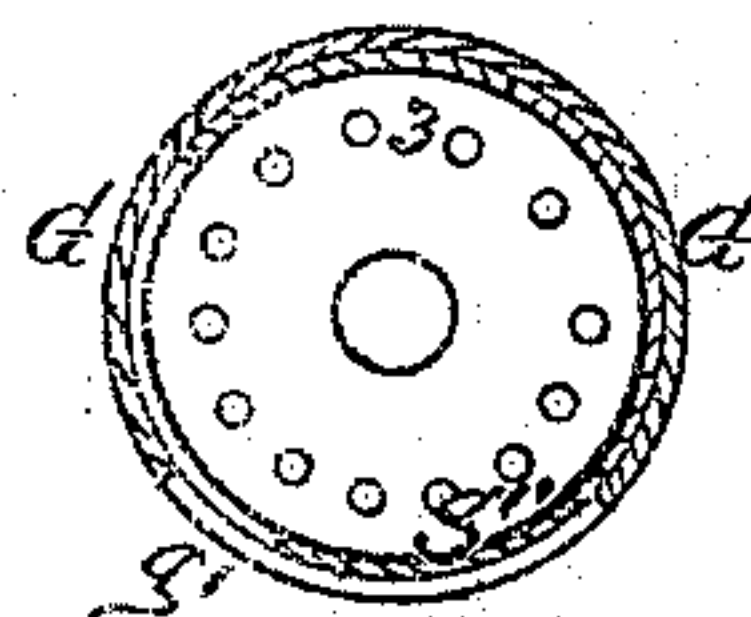


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. 119,920, dated October 17, 1871.

*To all whom it may concern:*

Be it known that I, MICHAEL B. DYOTT, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Lanterns and Chandeliers, of which the following is a specification:

The first part of my invention relates to the arrangement of a readily-removable fountain or reservoir of a lantern or chandelier at any suitable point above the horizontal plane of the point of combustion, so as to supply the contained fluid to the burner or burners by pressure, the said reservoir being distinct and removable at any time from the conduit-tube or tubes between it and the said burner or burners below, simply by lifting the same by hand; the object of this part of my invention being two-fold: First, the production of pressure upon the fluid or vapor in the burner; and second, the ready removal and replacement of the said fountain or reservoir, as occasion may require for filling, cleaning, &c., without disturbing the said conduit-tube or tubes and burner or burners. The second part of my invention relates to the combination of the conduit-tube or tubes and the respective supply and stop-off cock or cocks and burner or burners, with the top or roof of a lantern, irrespective of the distinct removable fountain-reservoir which supplies the tube or tubes and burner or burners; the object of this part of my invention being two-fold: First, to allow the fountain to be readily lifted off and on the roof, as occasion may require, without removing the latter or any of its contents; and, second, to afford facility for removing said roof and its contents together bodily for cleaning the same and the lantern-glass, during the absence of the fountain. The third part of my invention relates to the arrangement of an inverted conical annular reflector above the burner of a lantern, in combination with the roof, a perforated hot-air flue, a deflecting plate, and a cold-air chamber above the plate, in such a manner that the hot air, after passing through the perforated flue, will be deflected by the plate and roof, and compelled to pass downward and escape around beneath the projecting rim of said roof; the object of this part of my invention being to prevent the hot-air from passing up through the upper part of the roof, or imparting heat to the fountain-reservoir above. The fourth part of my invention relates to the construction and arrangement of a cylinder or

cone, of wire-gauze or sheet metal, perforated with numerous minute holes, in connection with or resting upon the upper side of the reflector, and over the central opening in the latter; the object of this part of my invention being two-fold: First, to afford free exit, through openings around above the said reflector, of the air heated by the combustion at the burner below; and secondly, to prevent currents of air from suddenly entering and agitating the flame, and consequently impairing the required steadiness of the light. The fifth part of my invention relates to the peculiar construction and arrangement of a capacious opening with an adjustable covering-slide at the side of the collar which supports the glass-body and frame of the lantern, and opposite to the handle of the supply and stop-off cock; the object of this part of my invention being to afford ready access to the burner for the purpose of lighting and afterward adjusting or extinguishing the flame. The sixth part of my invention relates to the combination of a spring and a catch with the valve-stem and mouth of the fountain or reservoir of the lantern or chandelier, in such a manner that when the fountain is being placed upon the said lantern or chandelier the spring will yield to the pressure on the valve-stem coming in contact with the fixed plate below and allow the hydrocarbon fluid to pass downward; and when the fountain is being lifted the spring will react and close the valve; and so also that when it is desired to refill the fountain the valve will be held open by pushing the valve-stem inward and then turning it partially around to the right or left, whereby a projection or cross-pin at the inner end of the said stem, traversing an open slot in the inner end of the tubular mouth or throat of the fountain-reservoir, will catch over the said inner end or upon a ledge or shoulder made around in the inner side of the same, and thus hold the valve open until it be released by turning the stem around to its first position; the object of this part of my invention being to allow a free handling, opening, and filling, and also transportation of the filled fountains without any loss or waste of the contents through the valves.

Figure 1 is a vertical central section of a street-lantern embodying my invention. Fig. 2 is a front elevation of the collar and supporting-socket of the lantern detached. Fig. 3 is a horizon-



tal section of the same, showing the part below the dotted lines V of Fig. 2. Fig. 4 is a front elevation of a chandelier embodying appropriate parts of my invention.

The tubular lower end of the fountain A fits loosely in a socket,  $b'$ , in the removable upper end or top B of the lantern or chandelier. The bottom of the socket  $b'$  has a hole in its center, with which the tubes  $b''$   $b''$  communicate, and are permanently attached, so as to convey the combustible fluid from the fountain A down into the burner or burners C, when the respective stop-cocks  $c'$  are opened. The inverted conical annular reflector D of the lantern, with the perforated cylinder  $d'$  attached directly over its central opening, is also fixed concentrically in the lower part of the top B, so that the latter with burner C, tubes  $b''$   $b''$ , reflector D, and perforated cylinder  $d'$ , can all be lifted together bodily out of the frame E and glass F. The open lower end of the glass F simply rests in the mouth of the collar G at a point a little below the burner C and above the handle of the stop-cock  $c'$ . Through the side of the collar G is an opening,  $g'$ , which is made large enough to freely admit any one's hand to operate the stop-cock  $c'$ , and also to admit of the introduction or withdrawal of a lighted alcohol torch to heat the burner and ignite the vapor which must be first generated by the application of a temporary flame. A curved band-plate,  $g''$ , is sprung around against the inner side of G, so as to serve the purpose of opening and closing the hole  $g'$ , when the said plate is moved for the purpose. Around through the sides of the collar G, at any suitable point below the hand-hole  $g'$ , a ring of holes, 3, is made for the admission of fresh air to the burner, and around through that part of the top B which surrounds the upper edge of the glass F and supports it vertically, a ring of holes, 4, is made for the exit downward of the heated air, which passes up through the reflector D and cylinder  $d'$ . Above the said cylinder  $d'$  a close horizontal plate,  $b^o$ , is fixed, which prevents the hot air from passing further upward; and above this plate  $b^o$ , a ring of holes, 5, allows external air to enter and pass steadily between the said plate and the fountain, and thus keep the latter from becoming warmed by the heated air from the burner.

The mouth of the fountain A is a short hollow cylinder, provided with a slot at its inner end, and is fitted with a valve and stem in the usual manner, adopted for fountain-lamps; but in combination with this valve and stem I attach a spiral spring,  $a'$ , and make a catch-projection,  $a''$ , on the stem of the valve in such a manner that when the said stem is pushed inward sufficiently far to open the valve fully, and then partially

rotated, it catches over the slotted end or upon a shoulder or ledge thereof of the said hollow cylinder, and thus holds the valve open until the catch  $a''$  of the stem is turned back again into the slot, when the action of the spring closes the valve and keeps it closed sufficiently tight to prevent the contents of the fountain from leaking out in handling or transporting.

I claim as my invention—

1. The arrangement of a readily-removable fountain-reservoir A of a lantern, chandelier, or lamp, at any suitable point above the horizontal plane of combustion, so as to supply the contained fluid to the burner or burners by the pressure of the said fluid, when the said fountain-reservoir is distinct and readily removable by lifting, at any time, from the conduit-tube or tubes between it and the burner or burners below, as and for the purpose hereinbefore set forth and described.

2. The combination of the conduit-tube or tubes  $b''$ , the respective supply and stop-off cock or cocks  $c'$ , and the burner or burners C, with the top or roof B of a lantern, irrespective of the distinct and independently-removable fountain-reservoir A which supplies the said tube or tubes and burner or burners, as and for the purpose hereinbefore set forth and described.

3. The arrangement of the inverted conical annular reflector D above the burner or burners C of a lantern, in combination with the roof B, the perforated hot-air flue  $d'$ , the deflecting plate  $b^o$ , and the cold-air chamber which is between the said deflecting plate and the fountain-reservoir A when in position, as and for the purpose hereinbefore set forth and described.

4. The construction and arrangement of the perforated cylinder  $d'$ , in connection with the central opening in the reflector D, and the open hot-air space or chamber between the said reflector and the partition  $b^o$  above it, substantially as and for the purposes hereinbefore set forth.

5. The capacious opening  $g'$  in the side of the collar G of a lantern, in combination with the inside concentric slide  $g''$ , when the said parts are constructed and arranged substantially as and for the purposes hereinbefore set forth and described.

6. In combination with the slotted cylinder or mouth and throat of the fountain-reservoir A, the spring  $a'$ , and the catch-projection or pin  $a''$ , in the valve-stem  $a^o$ , arranged to operate in relation to each other, as and for the purposes hereinbefore set forth and described.

M. B. DYOTT.

Witnesses:

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WM. H. MORISON.

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