

F. A. CAMERON.
LAMP.
APPLICATION FILED JAN. 16, 1909.

954,779.

Patented Apr. 12, 1910.
2 SHEETS—SHEET 1.

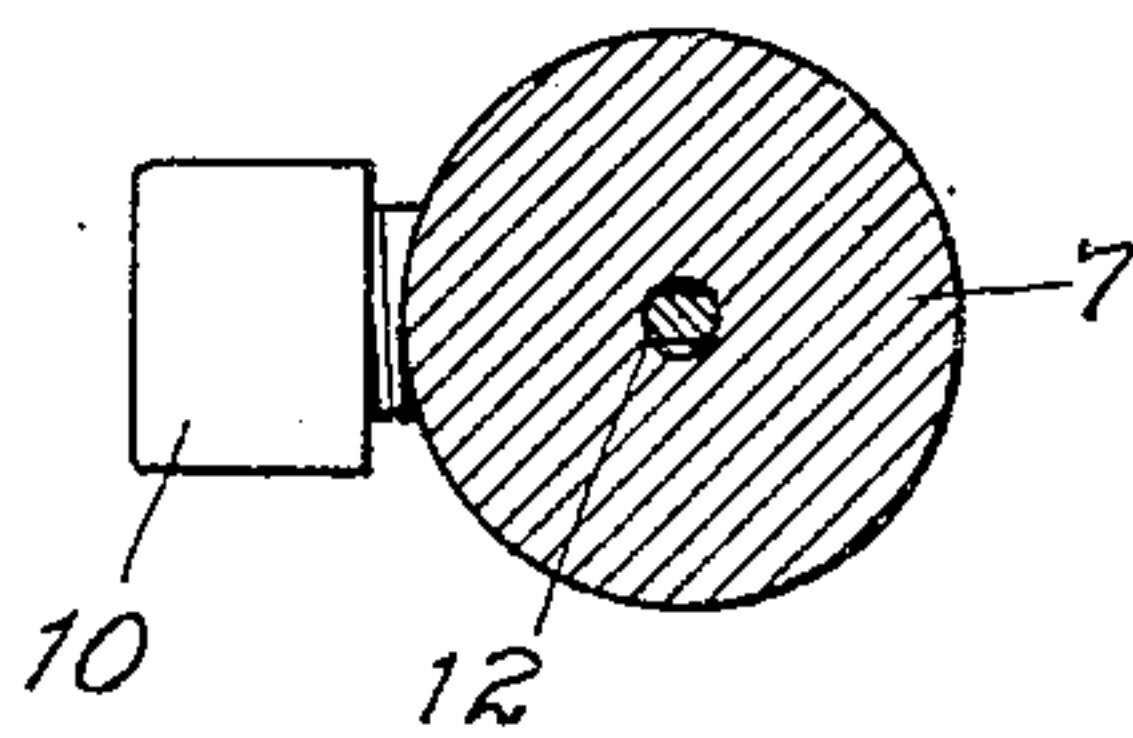


Fig. 4.

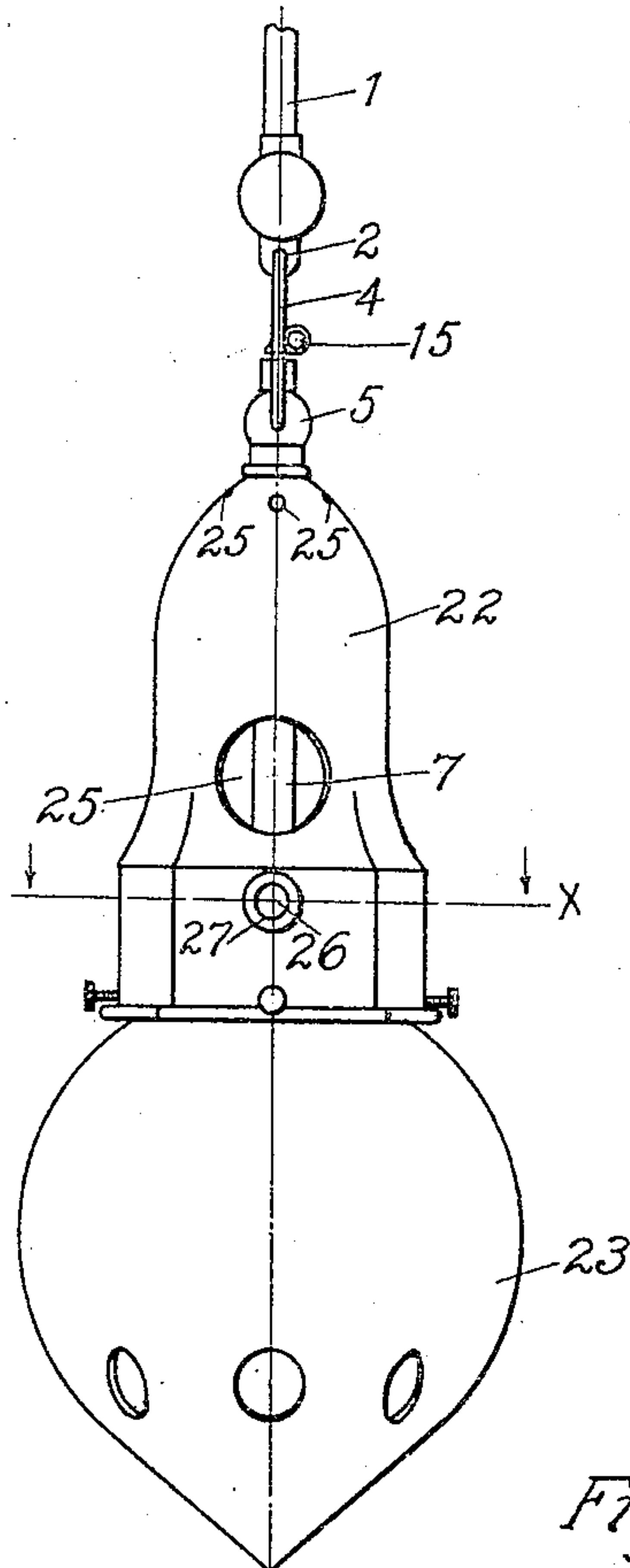


Fig. 1.

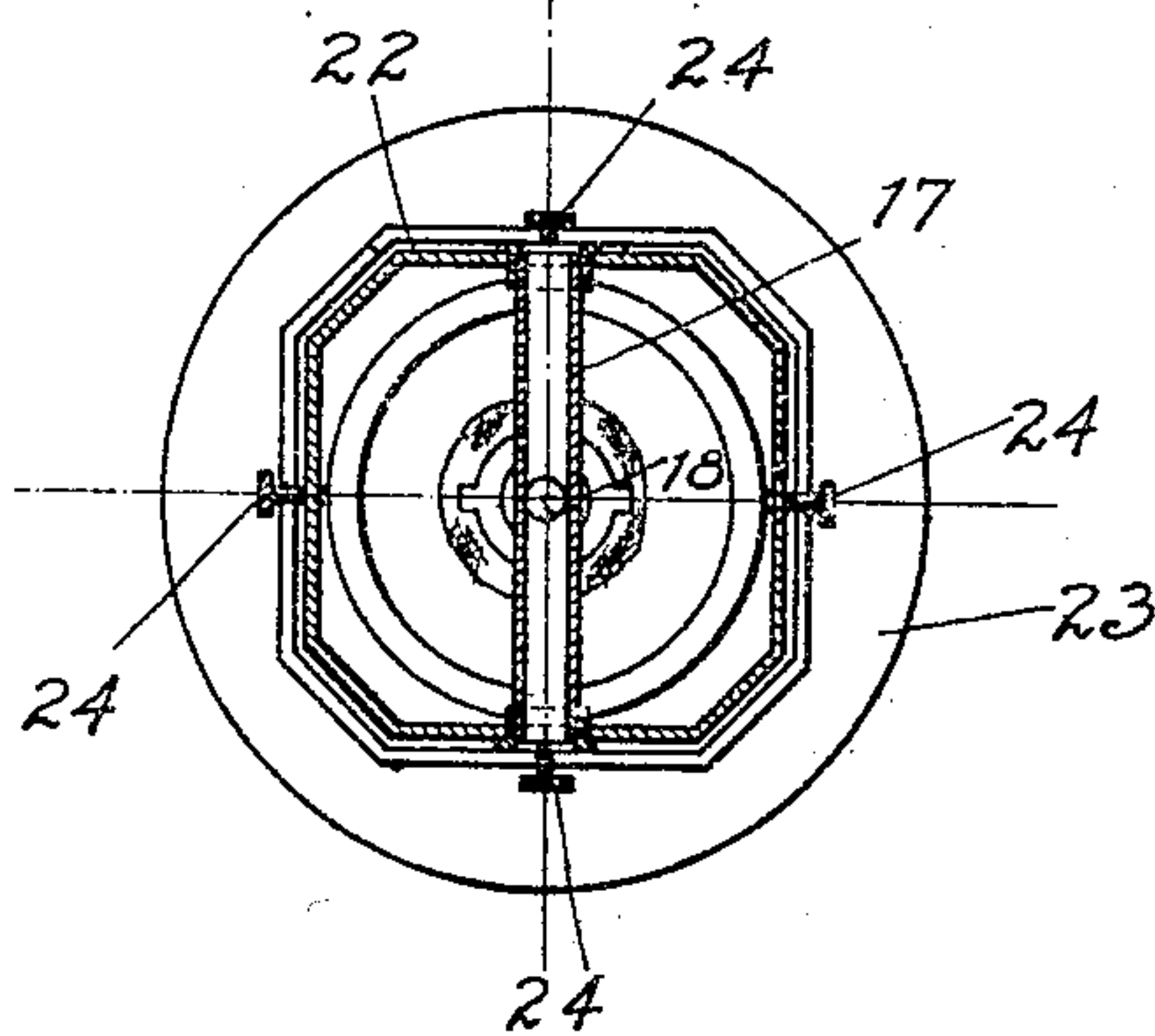


Fig. 3.

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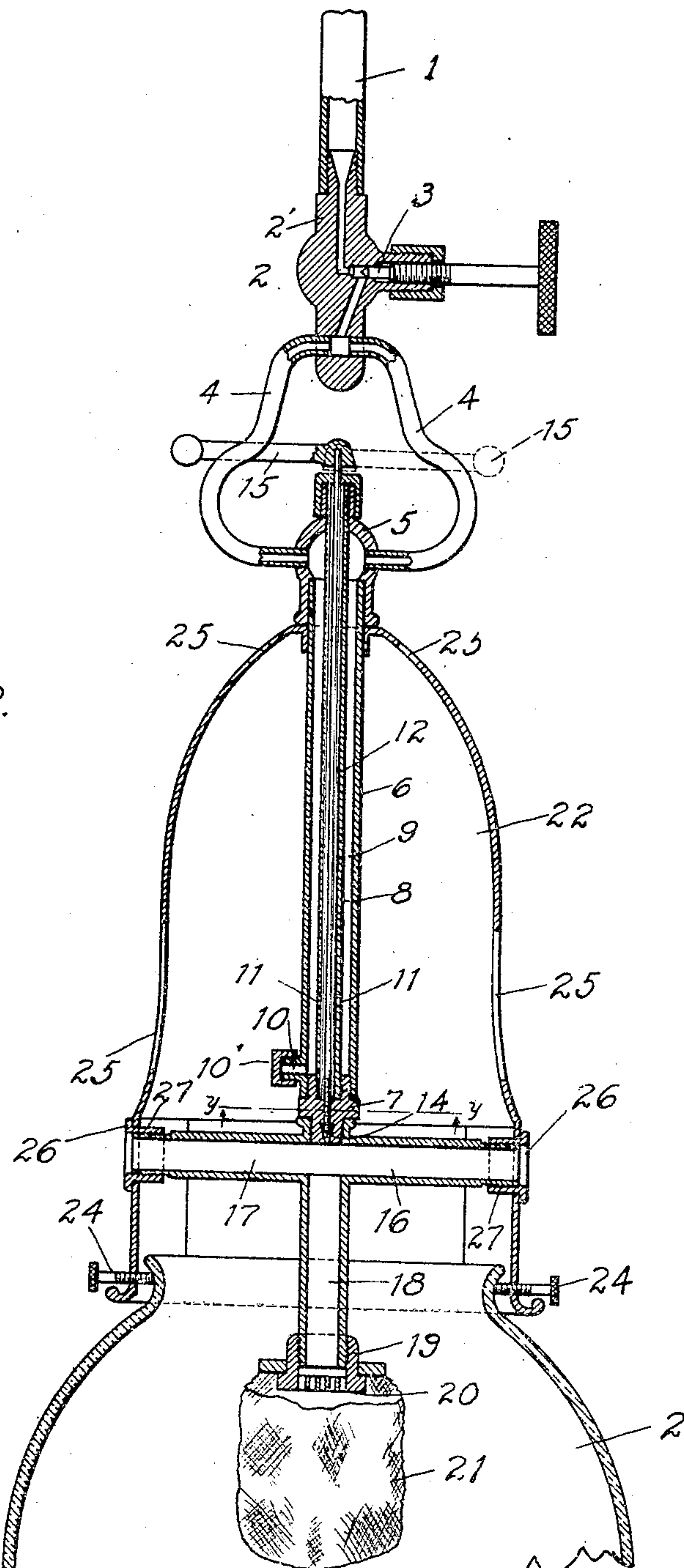
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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LAMP.

954,779.

Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed January 16, 1909. Serial No. 472,728.

To all whom it may concern:

Be it known that I, FREDERICK A. CAMERON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

My invention relates to lamps and more specifically to that class of the same in which a liquid, such as gasoline in its vaporous form is used as a fuel.

The object of my invention is to provide a lamp of the character mentioned which will be of such improved construction as to be adapted, after once lighted, to itself continuously generate vapor from the liquid fuel fed therein so as to at all times support a flame. In lamps of this type, in general use at the present time, at each occasion upon which one wishes to use the same, prior to the lighting thereof, a torch or other similar heating means must be resorted to in order to sufficiently heat the generator of the lamp so as to cause the vaporization of the liquid fuel fed therein, such operation, as is known, being an inconvenient and tedious undertaking.

It is therefore the object of my invention to eliminate the necessity of such performance, by the provision of a lamp, which, as above stated, will be adapted to continuously generate vapor enough to support a flame.

A further object of my invention is to provide a lamp of the character mentioned which will be of the highest possible efficiency.

Other objects will appear hereinafter.

With these objects in view my invention consists in a lamp characterized as above mentioned and in certain details of construction and arrangement of parts all as will be hereinafter fully described and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a side elevation of my improved lamp in its preferred form. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section taken on the line $x-x$ of Fig. 1, and Fig. 4 is an enlarged trans-

verse section taken on the line $y-y$ of Fig. 2 illustrating the valve needle connection.

Referring now to the drawings 1 indicates a hanging pipe through which liquid fuel is fed from any suitable source of fuel supply. In threaded connection with the lower extremity of said pipe is the valve body 2' of a needle valve 2, 3 indicating the valve needle. Said valve serves an obvious purpose. Leading in opposite directions from the lower opening of said valve body 2' are curved pipes 4, the lower extremities of which are suitably secured, preferably brazed or soldered in a head 5. Suitably fixed, preferably by brazing, in the lower extremity of said head 5 is a pipe 6, the lower extremity of which is suitably fixed to a head or plug 7. Arranged concentrically within said pipe 6, the same being substantially co-extensive therewith, is a pipe 8 of a diameter slightly less than the inside diameter of said pipe 6. The upper and lower extremities of said pipe 8 are suitably secured in said heads 5 and 7 respectively. By such construction an elongate annular chamber 9 is formed between the inner surface of the outer pipe 6 and the outer surface of the inner pipe 8, the upper extremity of said chamber communicating with the lower extremities of the pipes 4. An opening 10 provided in the pipe 6, the same being closed by a removable cap 10', said opening communicating with the lower extremity of the chamber 9 facilitates the cleaning out of the latter when necessary. Openings 11 provided in the pipe 6 at the lower end portion thereof, the same being elevated from the lower extremity of the chamber 9, establish communication between the latter chamber and the interior of the pipe 8. Centrally positioned within said pipe 8, the same being substantially co-extensive therewith, is a valve needle 12, preferably of German silver, the lower end portion thereof being in threaded connection with the plug 7, opposite sides of the threaded portion of said needle being flattened as clearly shown in Fig. 4, so as to form vapor passages through said plug. A seat 14 is provided in the lower extremity of said member 7 for the lower conically formed extremity of said needle.

15 indicates an actuating lever or hand-piece, the same being rigidly fixed to the upper extremity of said needle, said lever being of such a length as to be adapted to contact the pipes 4, the same being limited in its movement by said pipes. Said lever is so arranged upon said needle that when the former is resting against one of the pipes 4, the lower extremity of the latter will be so elevated as to entirely open the passage through the member 7, such position of said parts being clearly shown in full lines in Fig. 2. When said lever is resting against the other of the pipes 4, the lower extremity of said needle will be almost seated, that is, said needle extremity will be elevated only sufficiently to permit of the passage of enough fuel through the member 7 to support only a very low flame, commonly known as a pilot, such position of said lever being shown in dotted lines in Fig. 2. Hence, with such a construction, the needle passage through the member 8 can never be entirely closed by the valve needle.

In threaded connection with the lower extremity of the member 8 is a tubular T-shaped member 16, the horizontally extending portion 17 of which is preferably square in cross section, except at its ends where the outer surface thereof is preferably circular. Threaded upon the lower extremity of the depending tubular portion 18 of the member 16, said portion being in axial alinement with the pipes 6 and 8, is a cap piece 19 in which is provided a screen 20, the latter serving an obvious purpose. Removably suspended from said cap is an ordinary inverted mantle 21. Surrounding or inclosing the pipe 6 and substantially the entire member 16 is a preferably substantially bell shaped casing or chimney 22, the same being secured in any suitable manner to said parts, as shown in the drawings, the upper extremity of said casing being, however, preferably secured to the upper end portion of the pipe 6. The lower end portion of said casing is of a cross sectional shape other than circular, the same being, however, preferably octagonal, hence when a shade 23 is suspended therefrom, as by screws 24, openings are formed between the upper edge of said shade and the inner surface of the lower portion of the casing, such openings, together with openings 25 provided in the upper portion of the casing 22, acting in the capacity of draft openings.

The extremities of the horizontally disposed portion 17 of the member 16 communicate with openings 26 provided in the casing 22, said extremities of said portion being fixed in registering position with said openings by means of beaded sleeves 27 resting in said openings and threaded upon said extremities of said tubular portion 17, the

beads formed upon the outer extremities of said sleeves being in abutment with the outer surface of the casing.

The operation of the lamp is simple, the liquid fuel being fed from the pipe 1 through the valve 2, thence through the pipes 4 into the chamber 9, which, upon the initial heating of the pipe 6 in starting the lamp, which is facilitated by any suitable means as by introducing a torch into the chamber 22 through one of the larger openings 25, and later because of the heat arising from the combustion taking place at the mantle, is heated causing the liquid fuel to vaporize. Such vapor passes down the chamber 9 and thence through the openings 11 into the interior of the pipe 8, the same passing down said pipe and through the valved opening in the lower extremity of the plug 7. By elevating said openings 11 above the lower extremity of the chamber 9 all dust particles or other particles of solid matter carried by the liquid and vapor will be deposited at the lower extremity of said chamber where it may be removed through the opening 10 provided in the pipe 8, the advantage of such provision being obvious. After passing through the lower opening in the plug 7 said vapor is mixed with air inwardly flowing from either of the extremities of the tubular portion 17 of the member 16, such mixture, which is approximately 90 per cent air, passing down the tubular portion 18 of the member 16 into the mantle 21 where it supports combustion heating said mantle to incandescence. The valve 2 will only be closed when one anticipates not using the lamp for a considerable length of time. For ordinary use the lever 15 only will be actuated, in which event by turning the same to a position at the extremity of its movement in one direction, as before described, the lamp light will be out, for all practical uses, that is, only a very low light or pilot will be supported, whereas by turning said lever to a position at the extremity of its movement in the other direction the lamp will support a substantial and an incandescent light. By the provision of a lamp of the construction described upon opening the valve 2 and after the initial heating and lighting of the lamp, as before described, the lamp will itself continuously produce enough heat to continuously generate fuel vapor, the raising or lowering of the light therein being governed by the action of the lever 15.

While I have shown what I deem to be the preferable form of my lamp, I do not wish to be limited thereto, as there might be many changes made in the details of construction and arrangement of parts without departing from the spirit of my invention.

Having described my invention what I

claim as new and desire to secure by Letters Patent is:

1. In a lamp, the combination, with a depending feed pipe and a regulating valve therefor, of concentrically arranged pipes, means establishing communication between said feed pipe and the annular chamber formed between said concentrically arranged pipes, passages formed in the innermost of said last-named pipes establishing communication between the lower end of said chamber and the interior of said last named pipe, a valve for governing the flow of vapor through the lower extremity of said last named pipe, means for actuating said valve, said before named means establishing communication between said feed pipe and annular chamber acting as a stop for said valve actuating means preventing entire closure of said valve, a mixing chamber below said valved extremity of said innermost pipe, said chamber communicating with the atmosphere, a tubular passage downwardly leading from said chamber, a mantle provided at the lower extremity of said passage, and a perforated casing and shade surrounding said concentrically arranged pipes and the parts positioned below the same, substantially as described.

2. In a lamp, the combination with a depending feed pipe and a regulating valve therefor, of concentrically arranged pipes, means establishing communication between said feed pipe and the annular chamber formed between said concentrically arranged pipes, passages formed in the innermost of said last named pipes establishing communication between the lower end of said chamber and the interior of said last named pipe, a needle valve for governing the flow of vapor through the lower extremity of said last named pipe, means for actuating said valve, said before named means establishing communication between said feed pipe and annular chamber acting as a stop for said valve actuating means preventing entire closure of said valve, a mixing chamber below said last named pipe communicating with the atmosphere, and a mantle positioned below and in communication with said mixing chamber, substantially as described.

3. In a lamp, the combination, with a feed pipe and regulating valve therefor, of concentrically arranged pipes, means establishing communication between said feed pipe and the upper extremity of the annular chamber formed between said concentrically arranged pipes, passages formed in the innermost of said last mentioned pipes positioned above the lower extremity of said chamber, said passages establishing communication between said chamber and the interior of said last named pipe, an opening

in the outer one of said pipes communicating with the bottom of said chamber, a removable cap for said opening, a valve needle longitudinally extending within said last named pipe, a seat for said valve being provided at the lower extremity of said pipe, means for actuating said valve, said before named means establishing communication between said feed pipe and annular chamber acting as a stop for said valve actuating means preventing entirely seating said needle, a T-shaped tubular member the horizontally extending portion thereof being in connection with said last named pipe, the vertical portion of said last named member being in axial alinement with said pipe, a mantle provided at the lower extremity of said last named portion of said member, a perforated casing and a shade surrounding said concentrically arranged pipes and the parts positioned below the same, substantially as described.

4. In a lamp, the combination, with a feed pipe and a regulating valve therefor, of concentrically arranged pipes, curved pipes connecting said feed pipe in the upper extremity of the annular chamber formed between said concentrically arranged pipes, passages formed in the innermost of said last named pipes establishing communication between the lower end of said chamber and the interior of said last named pipe, a valve needle threaded in said last named pipe, a seat for said needle being provided at the lower extremity of said last named pipe, an actuating handle provided at the upper exteriorly projecting end portion of said needle, the before mentioned curved pipes being adapted to limit the movement of said handle so as to prevent said needle from being entirely seated, together with air supplying means and means for mixing the air and the vapor fed through said needle valve and delivering the mixture to a mantle suspended below said concentrically arranged pipes, substantially as described.

5. In a lamp, the combination with a feed pipe and a regulating valve therefor, of concentrically arranged tubes, curved pipes connecting said feed pipe and the upper extremity of the annular chamber formed between said tubes, the innermost of said tubes being provided with openings communicating with the lower end of said chamber, a needle valve for governing the flow of vapor through the lower extremity of said inner tube, an actuating handle for the needle of said valve said handle being adapted to abut said pipes so as to prevent entirely closing said valve, a T-shaped tubular member arranged below said inner tube, the horizontally disposed portion of said member communicating with the atmosphere, a mantle arranged upon the lower extremity

of the vertically disposed portion of said member, a bell shaped perforated casing and a shade surrounding said concentrically arranged tubes and the part below the same,
5 the lower end portion of said casing being polygonal in cross section, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK A. CAMERON.

Witnesses:

JOSHUA R. H. POTTS,
HELEN F. LILLIS.