

J. B. WHITCOMB

APPARATUS FOR ILLUMINATING BUILDINGS.

No. 246,845.

Patented Sept. 6, 1881.

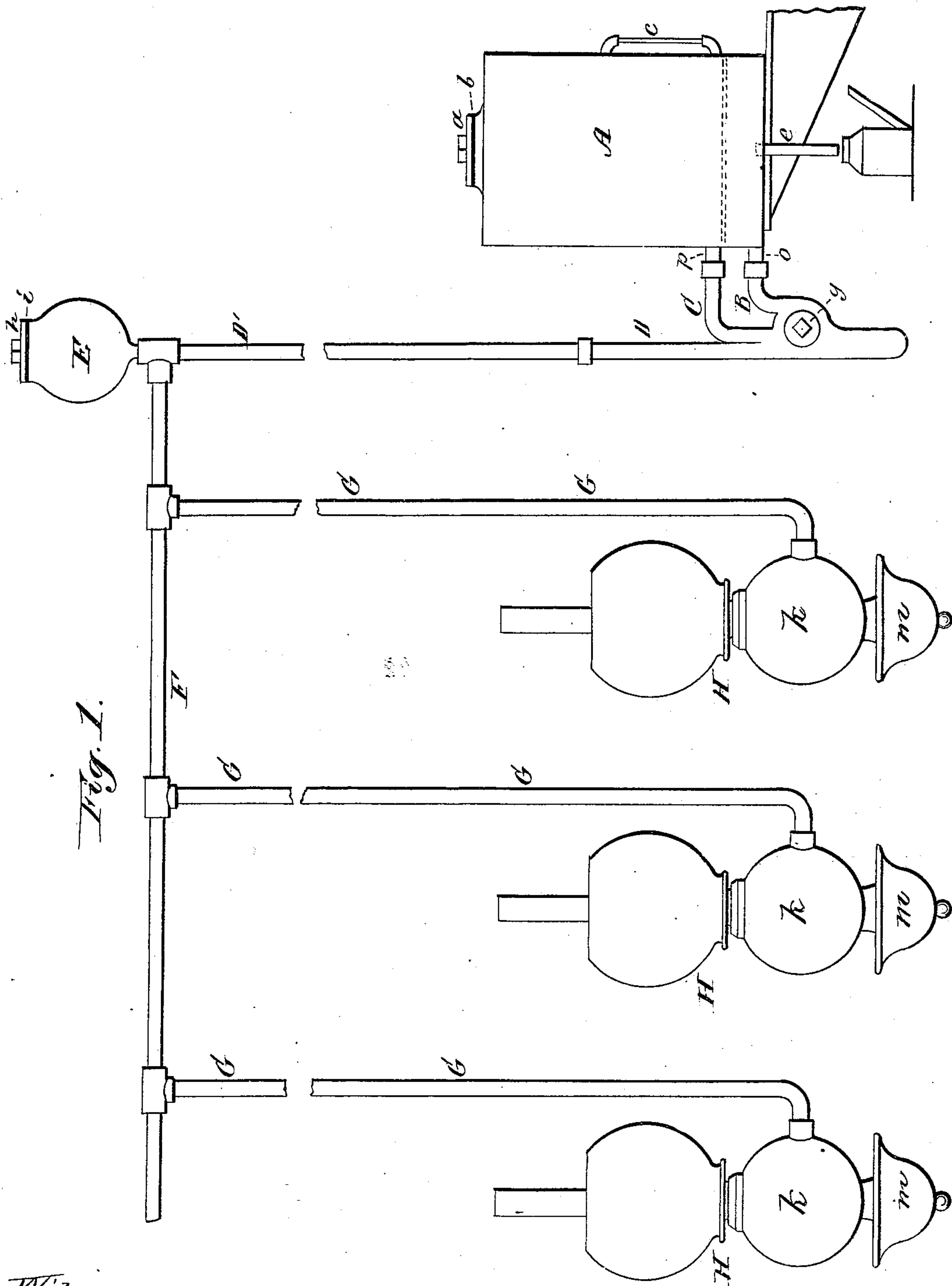


Fig. 1.

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Inventor,
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per
Chas. H. Fowler,
Attorney.

(No Model.)

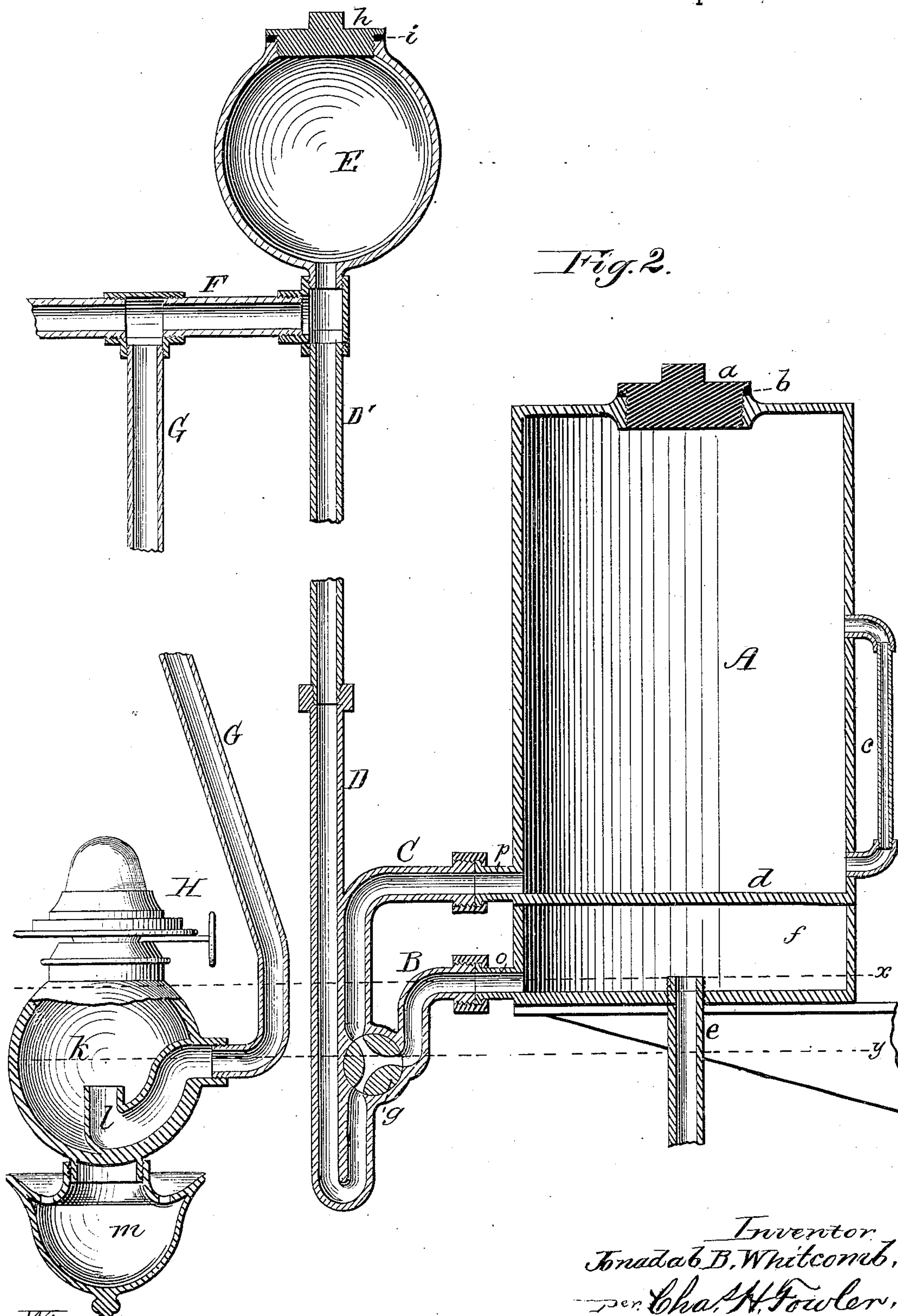
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JONADAB B. WHITCOMB, OF BERKELEY, CALIFORNIA.

APPARATUS FOR ILLUMINATING BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 246,845, dated September 6, 1881.

Application filed December 31, 1880. (No model.)

To all whom it may concern:

Be it known that I, JONADAB BAKER WHITCOMB, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented certain new and useful Improvements in Apparatus for Illuminating with Coal-Oil; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a side elevation of my invention, and Fig. 2 a sectional view of a part of Fig. 1 on an enlarged scale.

The present invention has relation to certain new and useful improvements in apparatus for illuminating with coal-oil or other burning-fluid; and the object thereof is to supply stationary lamps with the oil through ordinary gas-pipes from an air-tight reservoir, so arranged as to supply the oil steadily and automatically, thereby securing an even light and avoiding the danger from the oil when used in the ordinary way. These objects I attain by the construction illustrated in the drawings and hereinafter described.

In the drawings, A represents a suitable reservoir for containing the oil and supplying it to the lamps, said reservoir being made air-tight by a screw-plug, *a*, and packing *b*, and having a glass gage-tube, *c*, to ascertain the height or quantity of oil in the reservoir.

The reservoir A is provided with a false bottom or partition, *d*, to divide the reservoir at its lower end into a receptacle or waste-pan, *f*, the purpose of which will be hereinafter described.

The bottom of the reservoir A has secured to it a pipe, *e*, extending at its upper end above the bottom of the reservoir, said pipe answering the purpose of a waste-pipe and vent for supplying air to the reservoir through the tubes B C and faucet *g*. The tubes B C D are cast together and preferably of brass, the tube D being finished with a screw-thread for connecting it to the lower end of a siphon-pipe, D'. The tubes B C are finished with union couplings, and connected with nipples *p o*, attached respectively to the reservoir A and waste-pan *f*.

By the construction shown the interior of the reservoir A and waste-pan *f* are in connection when the faucet *g* is opened, said connection being broken when the faucet is closed.

The upper end of the siphon-pipe D' is provided with a vessel, E, the opening thereof being closed air-tight by a screw-plug, *h*, and packing *i*. Connected to the pipe D', directly below the vessel E, is a horizontal pipe, F, having secured thereto by suitable couplings a series of pipes, G, each of which is provided with a suitable lamp, H. The body *k* of each lamp has within its interior a short section of tube, *l*, or is cast or otherwise formed with said tube, one end of the pipe or tube *l* projecting out from the body of the lamp, so as to admit of the connection thereto of the lower end of pipe G. The body of the lamp has a removable drip-cup, *m*, of the ordinary construction.

The pipes F, which may be one or more, are to be laid in the ceiling or walls of a building, and may have any desirable form of fixtures for drop or bracket lights similar to gas-fixtures.

In describing the operation of my invention, I will first proceed with the process of filling the apparatus with oil, which is accomplished as follows:

The several burners of the lamps are removed and replaced by screw-plugs and packing similar to those used on the reservoir and vessel E, thus making the openings perfectly air-tight, and, owing to the compression of air within the body of the lamp, the oil cannot rise above the dotted line *y*; but when the burners are replaced the oil rises to a point indicated by the dotted line *x*, and air being admitted through the burners atmospheric pressure is obtained at that end of the column of oil, while at the opposite end of the column atmospheric pressure is had through the pipe *e*. The faucet *g* is next turned to close communication between the tubes B C and pipe or tube D, after which the plugs *a h* are removed and the reservoir and pipes and tubes filled with oil and the screw-plugs replaced. The faucet *g* is now opened to form communication between the tubes B C D, and air from pipe *e* will pass into tube B through the opening in the faucet into tube C, thence into the reservoir, and a corresponding amount of oil

will pass down and fill the openings in the faucet just above the dotted or broken line *y*, thus effectually trapping it from more air. Now, by removing the screw-plugs from the
5 openings in all the lamps, the oil will find its level.

It should be understood that the screw-plugs *a h* are replaced, also the burners with suitable wicks connected to the lamps, and, in
10 starting, the oil in the lamps and waste-pan is at a height represented by dotted line *x*—the highest point oil can ever reach—as at that level it can escape through the waste-pipe *e*. It should also be observed that it is impossi-
15 ble for air to enter the reservoir, as its outlet is completely trapped by the oil in the tubes B C.

Now, consider the lamp burning, and as the oil is consumed it will lower in tube B as fast
20 as in the lamps, owing to the oil being in connection through the faucet *g*. When the oil is consumed to the level of the dotted line *y*, or at a fraction lower, the opening in the faucet will be untrapped and air will pass from
25 pipe *e* up into the reservoir and oil will pass down, and, rising in tube B, again shut off or prevent the passage of air, and so remain until the oil is again consumed to the same point as before. The oil will be constantly at the
30 level represented by the dotted line *y* after the apparatus has been once started, the rise and fall of the oil being only a fraction, the reservoir supplying the oil only as used, the trapping and untrapping of the faucet being wholly
35 automatic.

The end of the pipe *e*, as will be noticed, extends up above the bottom of the reservoir, thereby allowing the bottom of the reservoir to serve as a waste-pan, *f*, to receive any ex-
40 cess of oil which may come down from the reservoir from expansion of oil and air therein when the apparatus is not in use.

In the above-described operation it should be understood that the oil in siphon pipe or
45 tube D and the pipe G is at the same level as in the tubes B C, (indicated by the dotted line *x*.)

The vessel E is for the storage of any air that may accumulate in the siphon pipes or
50 tubes, as it is found that a small quantity will occasionally find its way into the pipes or tubes through the several joints or couplings, and wherever the system of pipes F terminate they are constructed air-tight.

It must be apparent that before the lamps
55 are lighted the oil in the entire apparatus is at perfect rest, for the reason that the pressure of the atmosphere is equal and it having access to the oil in the lamps and also to the oil in the
60 waste-pan through the pipe *e*. The oil in the reservoir is prevented from flowing for the reason of the want of vent. The outlet from the reservoir was trapped immediately after the faucet was opened by the flow of oil, and the

level of the oil in the entire apparatus was
65 equalized at a point between the dotted lines *x y*, there being no flow of oil from the reservoir, and the pressure of air being equal, and the oil being in connection at all the lamps and
70 at pipe B, it must stand at the same level and at rest. The reverse is the case when the lamps are burning. Then oil is being consumed from the lamps and the oil in the entire apparatus
75 will be in motion, and, seeking its level from pressure of atmosphere, the continued consumption will soon bring the level of the oil down to a level or point below the dotted line
80 *y*. At this point the opening in the three-way faucet becomes untrapped, and air will naturally pass through and up into the reservoir, which will force an amount of oil to again perfectly trap the outlet from the reservoir, when
85 the proper amount of oil will distribute itself to all the lamps, the pressure of atmosphere forcing the oil through the siphon pipe or tube D, ceiling-pipes F, and pipes G to each and every lamp, the process of trapping and untrapping of the opening in the faucet continuing until the oil is all consumed from the res-
90 ervoir.

Having now fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the reservoir A
95 and waste-pan *f*, having a suitable outlet for the escape of oil and introduction of air to the waste-pan, of the tubes B C D and three-way faucet *g*, arranged and constructed to operate substantially as and for the purpose set forth. 100
2. The combination, with the reservoir A, of the tubes B C D, faucet *g*, and the waste-pan
105 *f*, formed by the partition *d*, and the pipe *e*, extending up into said waste-pan, substantially as and for the purpose specified. 105
3. The combination, with the siphon pipe or tube D D', of the vessel E, for receiving the
110 air accumulating in the ceiling-pipe F, substantially as and for the purpose set forth.
4. The lamps H, having bodies *k*, containing
115 pipe *l*, in combination with the pipes G, ceiling-pipes F, and siphon-pipe D D', with vessel E, substantially as and for the purpose described.
5. An apparatus for illuminating with coal-oil
120 or other burning-fluid, consisting of the reservoir A, having partition *d*, to form a waste-pan, *f*, and the tube *e*, in combination with the tubes B C, faucet *g*, siphon-pipe D D', with vessel E, and pipe F, having connected thereto one or more pipes, G, and lamps H, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in presence of two witnesses.

J. B. WHITCOMB.

Witnesses:

E. H. THARP,
JOHN DIXON.