

No. 777,871.

PATENTED DEC. 20, 1904.

G. WASHINGTON.
SYSTEM FOR LIGHTING HYDROCARBON LAMPS.

APPLICATION FILED AUG. 3, 1899.

NO MODEL.

Fig. 1.

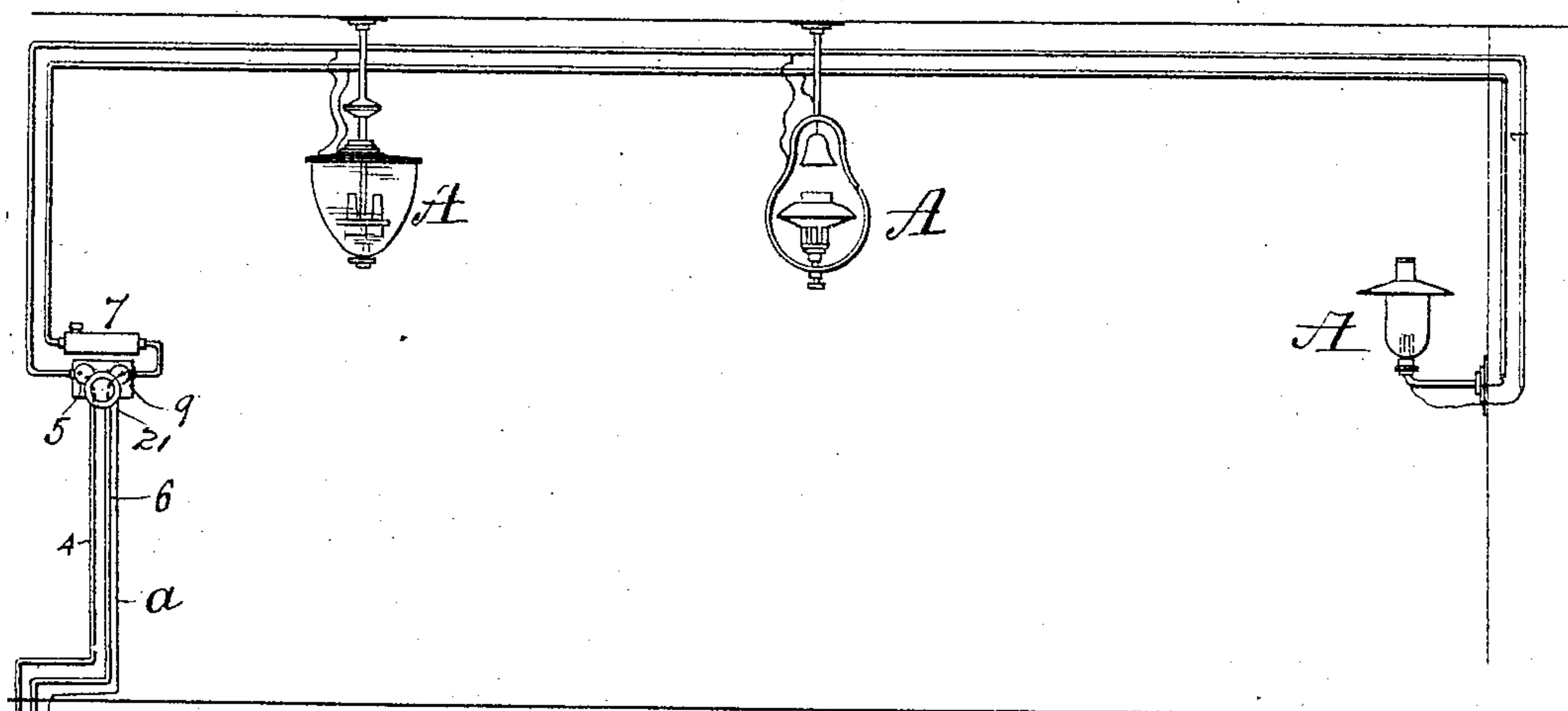


Fig. 2.

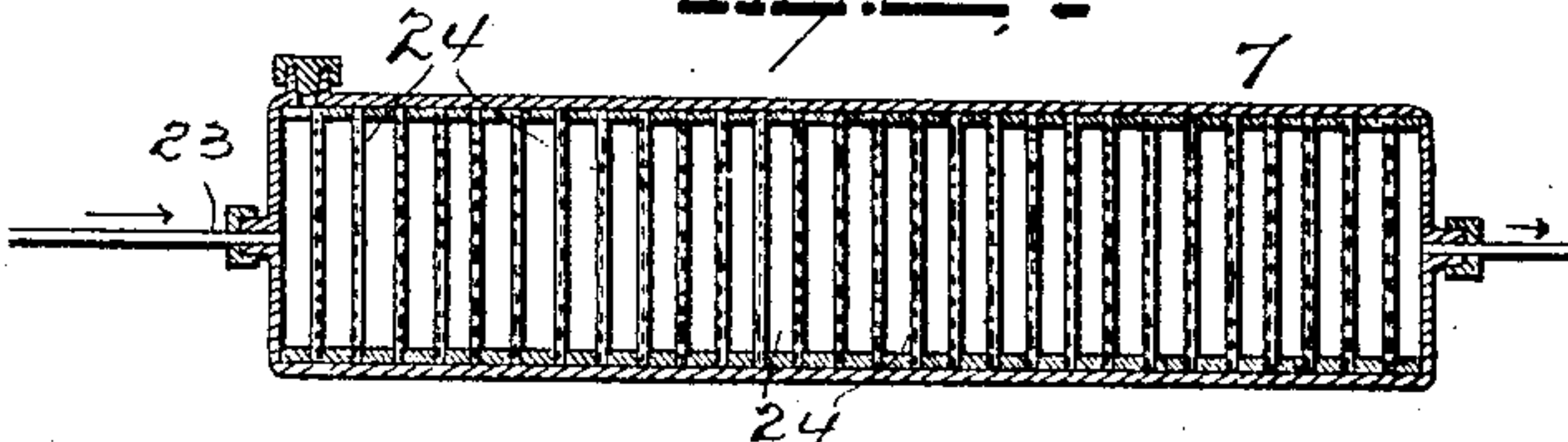


Fig. 3.

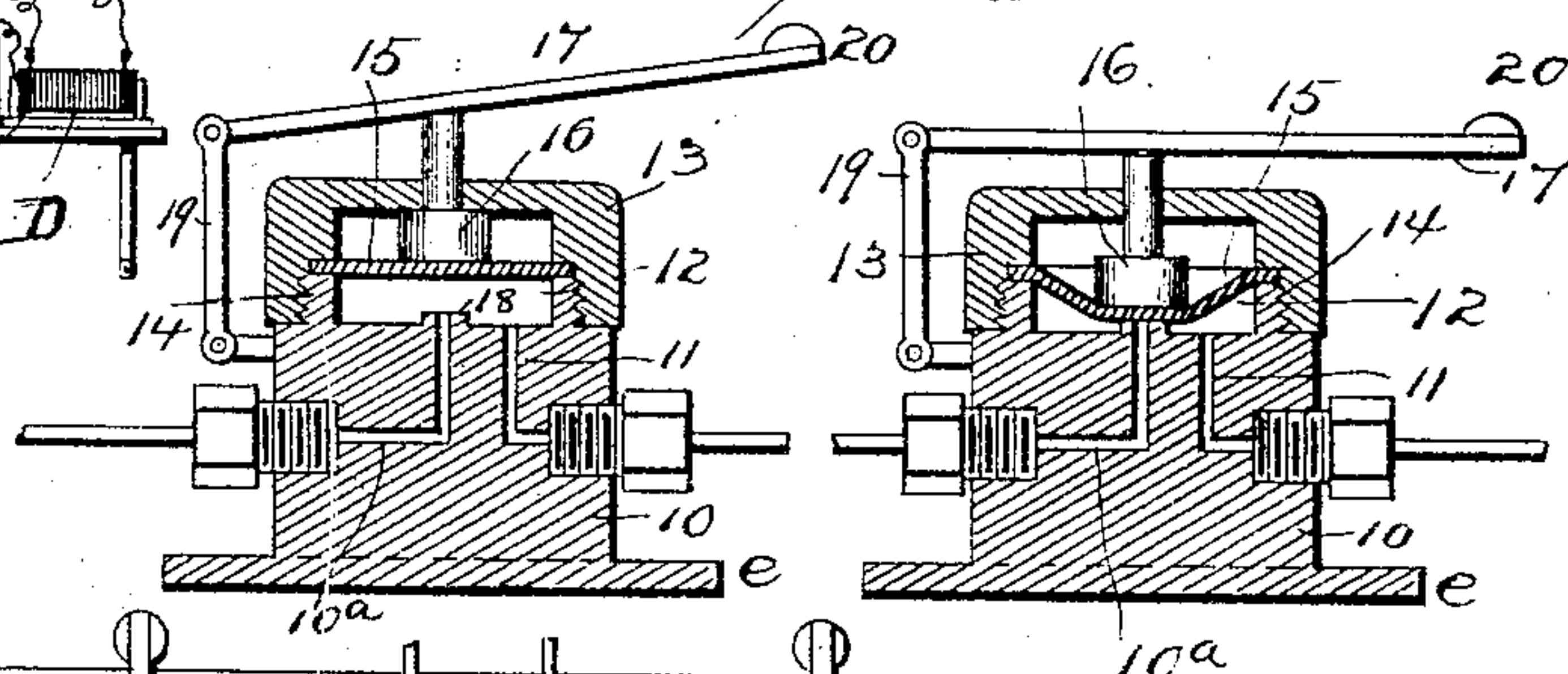
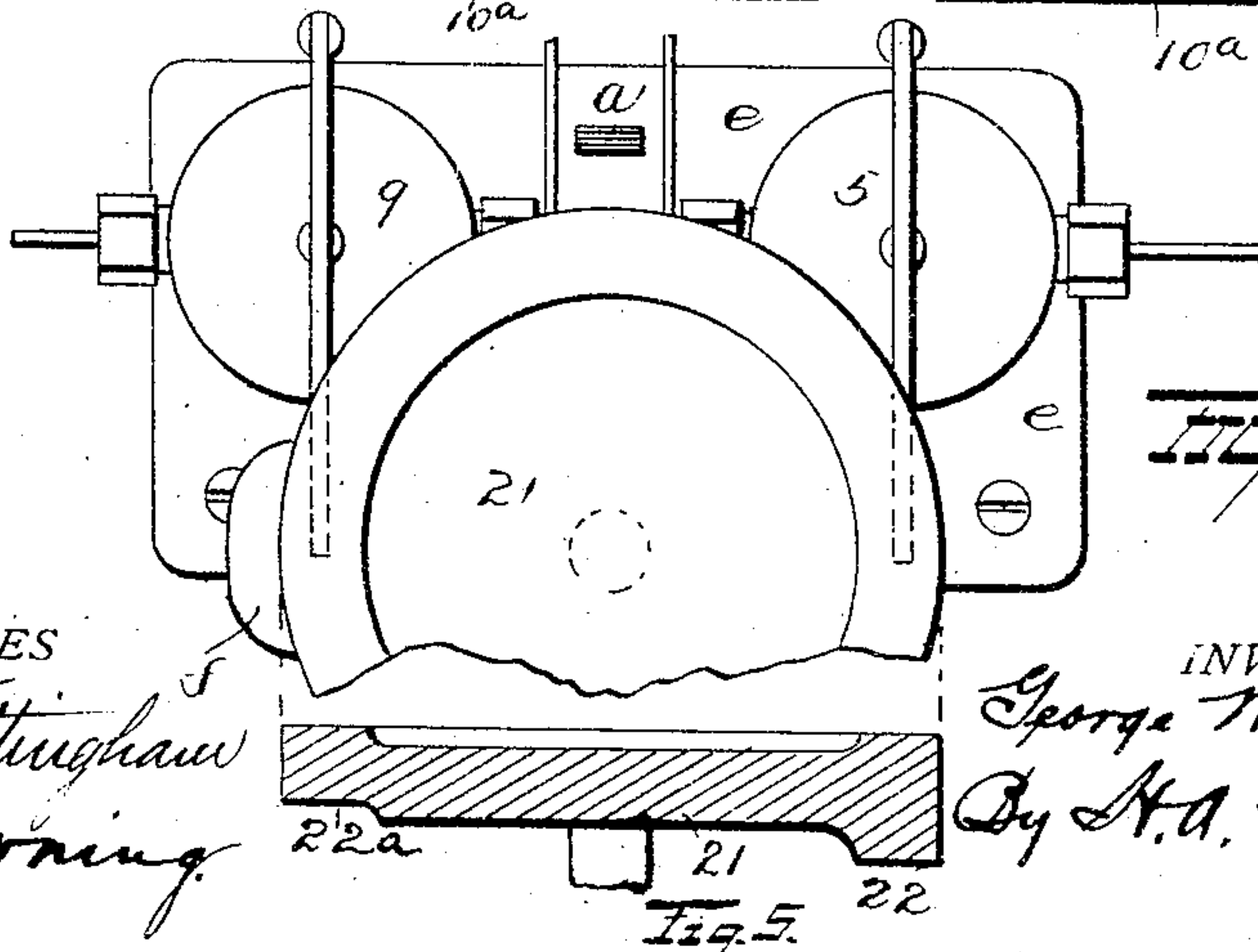


Fig. 4.



WITNESSES

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Fig. 5.

UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO JOSEPH N. PATTERSON, OF DEVON, PENNSYLVANIA.

SYSTEM FOR LIGHTING HYDROCARBON-LAMPS.

SPECIFICATION forming part of Letters Patent No. 777,871, dated December 20, 1904.

Application filed August 3, 1899. Serial No. 725,951.

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON, a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Systems for Lighting Hydrocarbon-Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved system for lighting and operating hydrocarbon-lamps, the object of the invention being to utilize carbureted air, which can be readily ignited to start the vaporizer of a lamp or series of lamps.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of devices, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating an apparatus for carrying out my method, and Figs. 2, 3, and 4 are details of portions of said apparatus. Fig. 5 is a view showing a sectional elevation of the part 21.

A represents hydrocarbon-lamps, and B an oil-tank for supplying hydrocarbon thereto. The tank B is provided with an air-pump 1, connected therewith, for compressing air in the tank to eject the oil through a pipe 2, extending nearly to the bottom of the tank and having a valve 3 at the top of the tank to shut off the supply of oil. The tube 2 is connected with the lamps A by a pipe 4, having a cut-off valve 5 therein, which will be more fully hereinafter explained.

A pipe 6 communicates with the tank B at its upper end and is adapted to convey compressed air to a carbureter 7 and from thence to a burner in proximity to the hydrocarbon-inlet of the lamp. The pipe 6 is provided with a valve 8 where said pipe joins the tank B and with a cut-off valve 9 between the carbureter and tank in proximity to and precisely like valve 5.

The valves 5 and 9 each comprise a block 10, adapted to be secured to the wall, and said

block is made with an L-shaped inlet-passage 10^a and an L-shaped outlet-passage 11, both communicating with a chamber 12, formed by a cap 13, screwed on an upwardly-projecting flange 14 on the block 10, and a flexible disk 15 is disposed between the upper end of the flange 14 and cap and held tight by the cap 13, screwed on the flange. The cap 13 is made with a central opening for the accommodation of a plunger 16, disposed upon the disk, and a lever 17 is adapted to press said disk downward against a bur 18 around the inlet-passage 10^a and close the valve. The lever 17 is fulcrumed at one end on a bracket 19, secured to the block, and is provided at its other end with an enlarged portion 20, against which a knob 21 bears. The knob 21 is revolvably mounted and is provided on its inner face with a cam 22 and a depression 22^a, which are oppositely disposed and adapted to alternately open and close the valves 5 and 9 by engaging the levers 17.

The carbureter 7, heretofore referred to, may comprise a horizontally-disposed tank having an inlet 23 for oil and provided with a series of vertically-disposed disks 24, of absorbent material, adapted to absorb the oil and through which the air forced through the pipe must pass and become thoroughly carbureted.

For the purpose of providing electrical means for igniting the carbureted air at the lamp for starting the same a battery C is located at a convenient point. One of the terminals of the battery is connected by a wire *b* with the pipe 6, and the other terminal of the battery is connected with one terminal of the primary winding of a spark-coil D. The other terminal of said primary coil is connected by a wire *a* with a contact-block *a'* on the frame *e* of the valve and insulated therefrom. The respective terminals of the secondary winding are connected by wires *c* *d* with the air and oil pipes and in electrical circuit with said pipes. The knob 21 and a contact-block *f* thereon are in a normally open circuit, which also includes the block *a'*, wire *a*, pipe 6, and battery C, said contacts *a'* and *f* being normally separated. The sec-

ondary circuit of the spark-coil includes (at the lamp or lamps) any suitable igniting device, such as a filament, to be rendered incandescent by the passage of the current, and thus
 5 ignite the carbureted air for starting the lamp, or the mantle of the burner may be made of or provided with such material as will be rendered incandescent by the gas and the electrical devices omitted. It will thus be seen
 10 that the knob 21 serves as an electric switch, which when the lamps are not in operation or have been started will serve to open the circuit; but when it is desired to start the lamps the knob 21 is turned to close the oil-pipe 4
 15 and open the air-pipe 6 and permit the air to be forced through the carbureter to a point in proximity to the vapor-inlet of the lamp, and at the same time the contact-block *f* on the knob will pass the insulated contact-block
 20 *a'* on the base *e* and cause the passage of a secondary current from the spark-coil over the secondary circuit, including the pipes 4 and 6 and the devices provided in proximity to the lamp for igniting the carbureted air,
 25 which will heat the oil in the lamp until it is hot enough to vaporize itself, when the knob 21 will be turned to close the valve 9 and open the valve 5, thus stopping the supply of air to the carbureter and permitting the supply of oil to the lamps.
 30

I would have it understood that I might light the carbureted air by other means than those above described.

Having fully described my invention, what
 35 I claim as new, and desire to secure by Letters Patent, is—

1. A lighting system, comprising a hydrocarbon-lamp, means for supplying air to the lamp, means for carbureting the air, an electric sparking mechanism to ignite the carbureted air to start the lamp, means for supply-

ing oil to the lamp and a single controlling device comprising valve mechanism to open and close the supply of carbureted air and of oil, and operate the sparking mechanism. 45

2. A lighting system comprising a hydrocarbon-lamp, means for supplying air to the lamp, means for carbureting the air, means for igniting the carbureted air to start the lamp, means for supplying oil to the lamp and a single valve mechanism common to all of said means for permitting the flow of carbureted air to the lamp to start the same and closing said supply of carbureted air and opening the oil-supply to the lamp. 55

3. A lighting system comprising a hydrocarbon-lamp, means for supplying air thereto, means for carbureting the air, an electric sparking mechanism to ignite the carbureted air to start the lamp and a single controlling device arranged to open and close the supply of carbureted air to the lamp, to operate the sparking mechanism and to open and close the supply of oil to the lamp. 60

4. In an apparatus for lighting hydrocarbon-burners, the combination with a compression-tank for air and hydrocarbon, of pipes for conveying air and hydrocarbon to a burner, cut-off valves in said pipes in proximity to each other, a knob, means on the knob 70 to engage the cut-off valves to alternately open one and close the other, a carbureter in the air-pipe and means for lighting the carbureted air at the burner.

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

GEORGE WASHINGTON.

Witnesses:

JEANNE WASHINGTON,
 H. C. H. WELLS, Jr.