

H. M. DOUGHERTY.
Carbureter.

No. 210,019.

Patented Nov. 19, 1878.

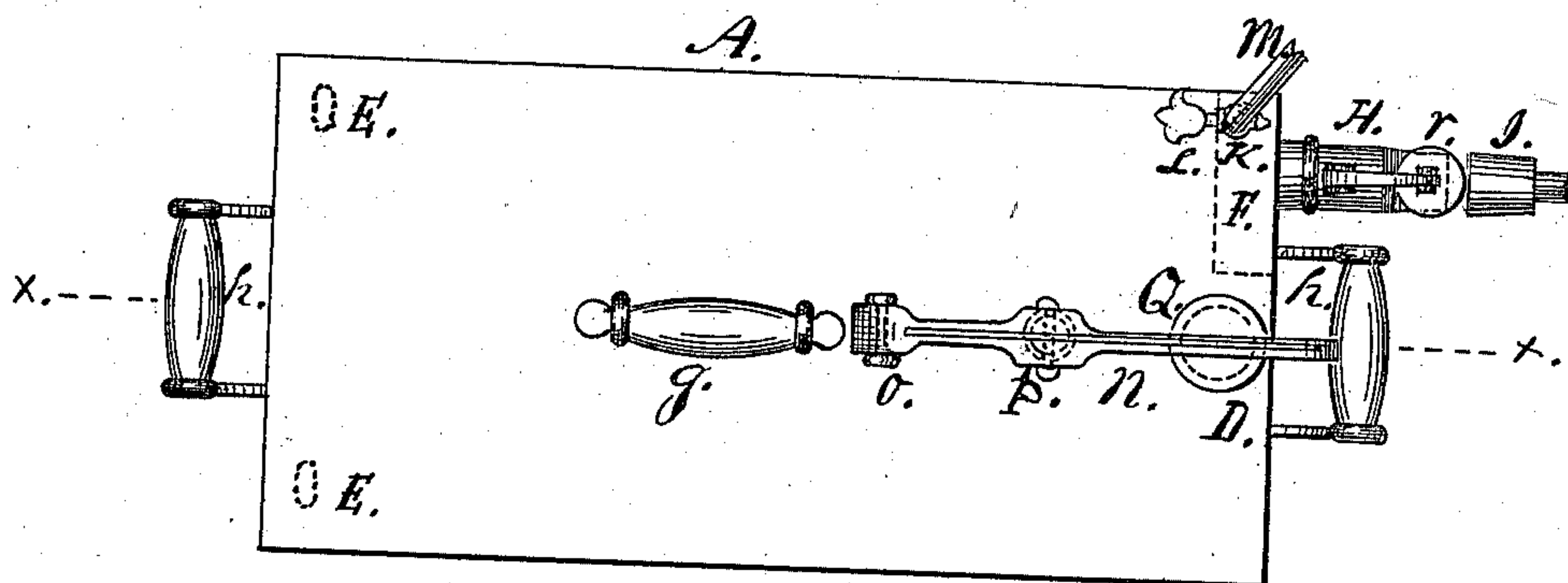


Fig. 1

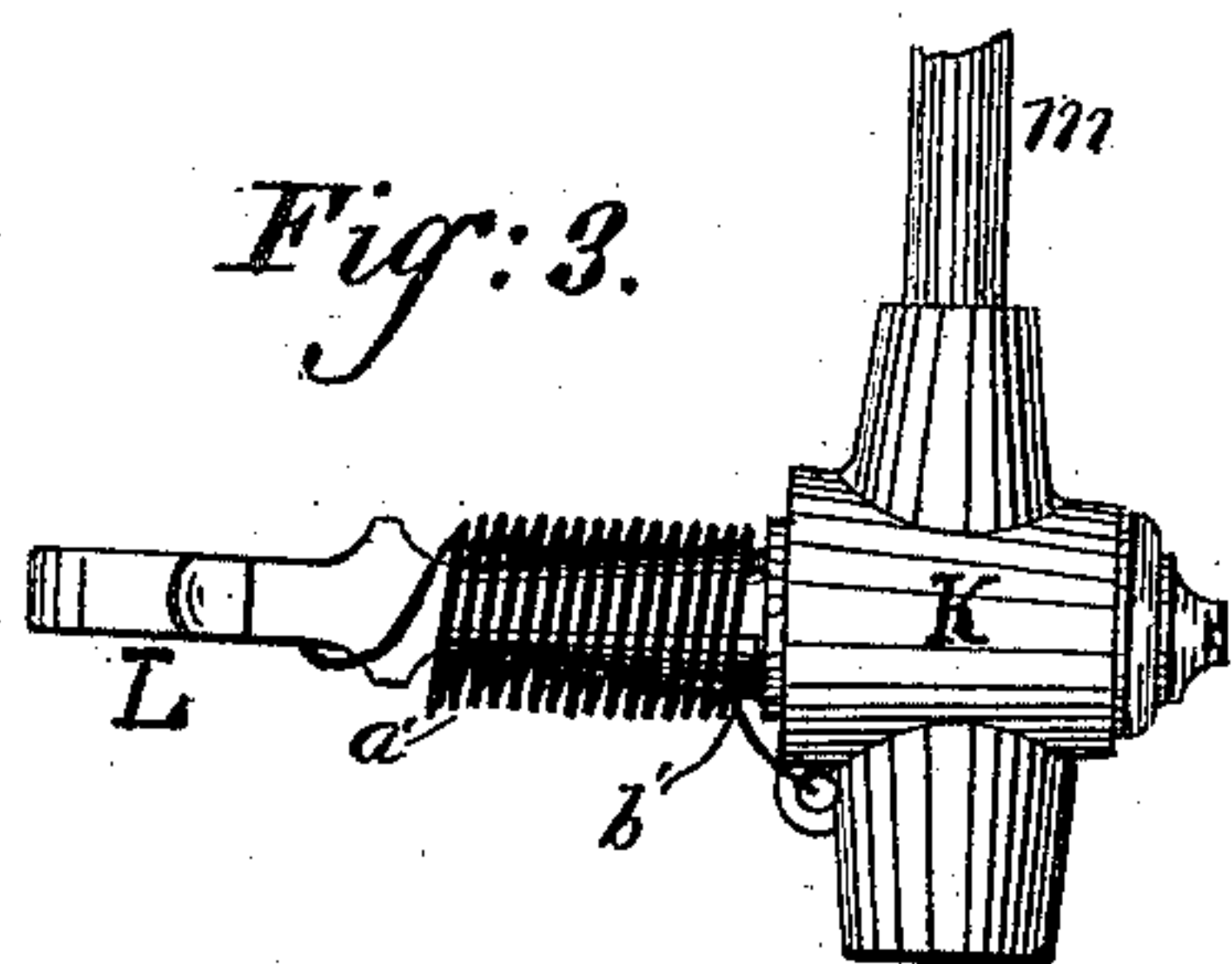


Fig. 3.

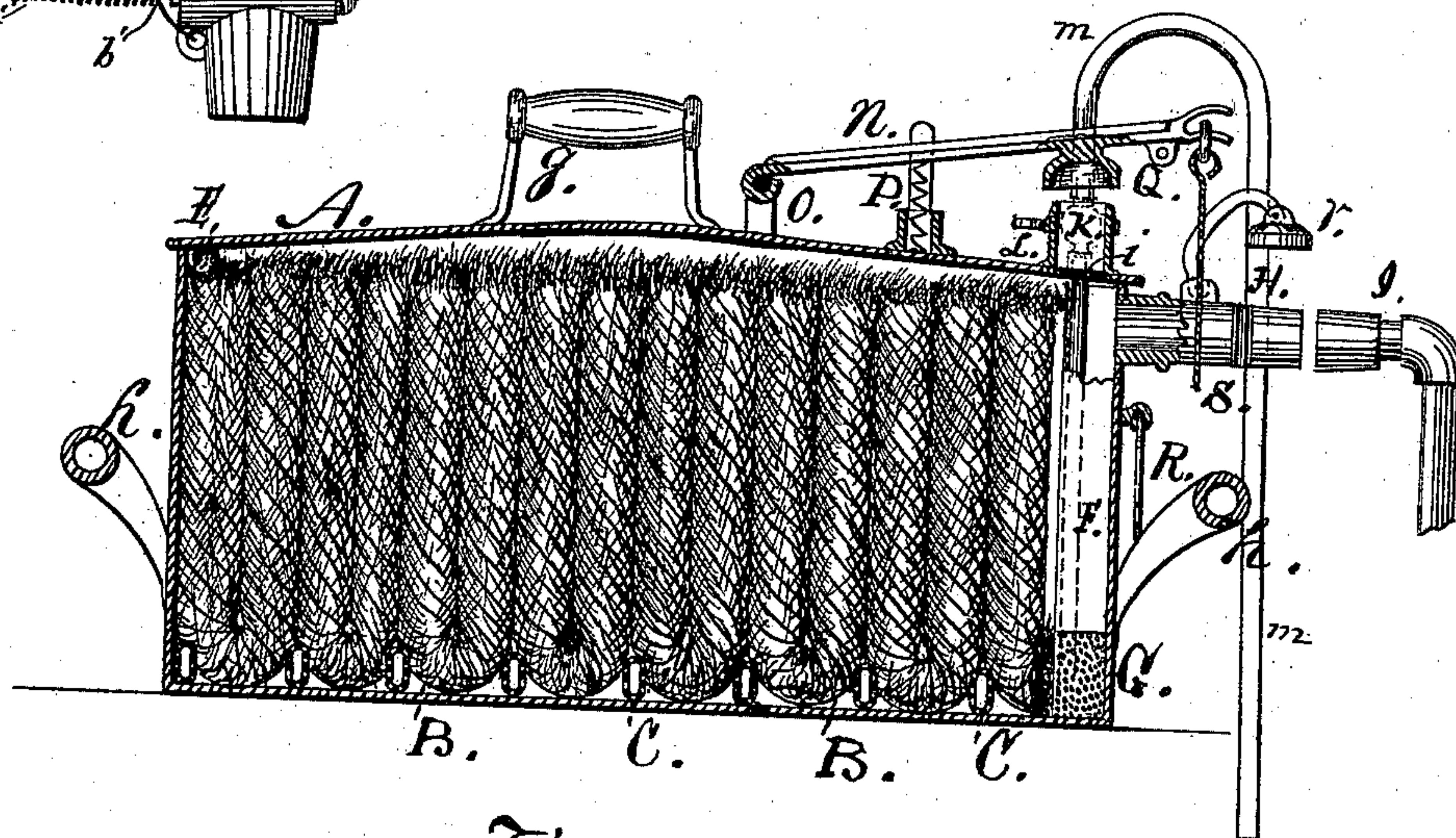


Fig. 2

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IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. **210,019**, dated November 19, 1878; application filed August 3, 1878.

To all whom it may concern:

Be it known that I, HENRY M. DOUGHERTY, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Carbureters, of which the following is a specification:

Figure 1 is a plan view. Fig. 2 is a longitudinal elevation on line of $x x$ of Fig. 1. Fig. 3 is a detailed view of the self-closing faucet.

My invention relates to the carbureting machines for the production and use of the vapor of gasoline, known as "illuminating-gas," having the air entering an opening in the top of the apparatus, to vaporize the fluid, which then, by its gravity, falls to the lower part of the carbureter through vertical tubes, and thence through tubes along the bottom into a chamber in the opposite end, whence it flows into pipes for use.

I am aware that it is not new to make portable carbureters, to be filled with a kind of packing, as cotton or bamboo, and to charge the same from the top, and to have a store-chamber, and have a valve or faucet to draw off the surplus of gasoline; but my case, provided with handles for carrying and lifting into an elevated position, to form a connection with the gas-pipe of a building, is an improvement in the portable carbureters heretofore used; and I use jute or the like materials in place of the substances formerly employed; and my mode of opening and closing the aperture in the top, used for charging, &c., is new, and the arrangement of the tubes in the case for the passage of the vapor to the chamber, and the siphon exhaust-pipe on the top, are new.

Heretofore such machines have been connected permanently with the gas-pipes at or near the top of a building, and have been increased or diminished in size in proportion to the number of lights used. This fixed position has necessitated carrying the gasoline—a dangerous fluid—up through the building for charging, to which insurance companies and property-owners seriously object.

The object of my invention is to provide a portable apparatus by which these objections may be entirely overcome, and yet have all the power required. My carbureters, as now

made, are nineteen inches long, six wide, and twelve high, and hold two gallons of fluid in absorption. This I find a convenient size for handling, but the size may be varied. This apparatus is made to be readily connected with or detached from the gas-pipes, and is never to be charged in the building, but is of convenient size and arrangement to be taken to the yard or street and be charged and closed up, and be entirely safe in carrying through the building. If increase of light is required, an additional carbureter may be used, attached to the same pipes.

In my carbureter I use jute rope for my filling, which, from its elasticity and power of capillary attraction, is far preferable to other articles known to the trade for filling. It absorbs the gasoline readily, which flows, by the capillary attraction, at once the whole length of the fibers, and it parts with the fluid rapidly, being so porous that the air penetrates it, and carries off the fluid in combination. The elasticity of the jute keeps it from a tendency to become closely packed.

I further provide a safety-tube, for blowing off any excess of fluid that may have been turned into the apparatus in charging. I also provide against the possibility of fire getting into the carbureter and producing an explosion.

In my construction, A is the carbureter-case, filled with jute rope B, cut in lengths, and bent so that the bend rests on the bottom and the cut ends extend up nearly to the top of the case. In the bottom, between the bends of the jute, are wire-cloth tubes C, or equivalent openings, to allow more open space for the air to pass than there would otherwise be. These tubes will usually be put in lengthwise of the carbureter, but may be put in across, as shown in Fig. 2. In the top of the case is an opening, D, for the introduction of air required in generation, and in the opposite end of the case are two vertical wire-cloth tubes, E, or equivalent passages, to provide currents for the air from the top to the bottom of the apparatus. In the end of the case having the opening D is a metal tube or chamber, F, the lower end, G, of which is perforated, to allow the gas to pass into the tube and out into the service-

pipe H, to connect with the pipe I of the building. The end of pipe H is provided with a packing, so that, this end being pushed into the end of pipe I, a close connection will be made in a very simple manner. The pipe H is also provided with a packed cover, *r*, hung to the end, to close the pipe when the apparatus is detached from the pipe I; and the pipe I may be closed by a cover or stop-cock, &c.

The perforated section G of tube F will prevent any fire from passing into the carbureter from the service-pipe. A perforated plate may be put across the opening of the case into the pipe H, to prevent the possibility of fire getting into the chamber F; and at the bottom of the opening D is a perforated plate, *i*, to prevent fire passing into the apparatus from this opening.

Connected with the tube or chamber F is a closed siphon, formed by the pipe K, inside of said chamber, having the lower end open, and near the bottom of the chamber and the upper end, extending up through the top of the case, in connection with the rubber tube *m*, which bends over, and has the lower end extending below the case, forming a siphon, for the discharge of any surplus fluid that may have been turned in when the apparatus was charged. This excess is removed by first blowing in the opening D to start it, when it will flow out of the siphon-pipe.

Connected with the pipe K above the case is a self-closing faucet, L, to prevent the liability of any fluid or gas escaping, except such excess of fluid above referred to. When the fluid is being discharged, the faucet is held open with the hand; but when the hand is released, the lever of the faucet will react by means of the spring *a'*, coiled around the spindle *b'*. This siphon and self-closing faucet are an improvement on the faucet placed at the bottom of the machines, as in present use, where they are liable to leak and do damage.

On the top of the case is a lever, *n*, pivoted to a post, O, and actuated by a spring, P, having the cap, Q, to cover the opening D and regulate the inflow of air. This cover may be closed when the apparatus is not required for use, and be held down by the hook R or the wire S, connecting the lever with the lower part of the building.

The carbureter is provided with a handle,

g, for carrying it about, and the handles *h* for use in lifting it up to or taking it off from a shelf, where it makes a connection with a gas-pipe. This, then, becomes a very simple and powerful generator, portable, entirely safe, and greatly economizing the expense of lighting a building. Therefore,

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The case A, having the opening D, for charging the apparatus and for the inflow of air to be carbureted, in combination with the spring-bar *n* and cap Q, for opening and closing the opening D, it being closed when not in use to prevent the evaporation of gasoline, the hook R, to hold the cap Q closed upon the opening D when the apparatus is being carried about, and the wire S, made to extend to the lower part of the building, so that in use the opening and closing may be effected without going to the apparatus, substantially as set forth.

2. The case A, filled with the vertical double folds of jute rope or jute packing B, having the bend at the bottom of the apparatus, in combination with the vertical perforated tubes E and horizontal tubes C, for conducting the carbureted air from the top of the apparatus to the bottom, and thence to a store-chamber, F, substantially as set forth.

3. In combination with the case A, filled with jute packing, and having the tubes E and C, the metal tube or chamber F, perforated at the lower end, G, to allow of the inflow of gas into the said chamber, to connect with the service-pipe H, substantially as specified.

4. The carbureter constructed substantially as set forth, with the jute packing B and tubes E and C, in combination with the perforated plate *i* in the bottom of the opening D and the perforated section G of the tube F, to prevent the possibility of any fire communicating with the interior of the carbureter, substantially as set forth.

5. The siphon, embracing the pipe K, self-closing faucet L, and rubber tube *m*, in combination with the case A and tube F, substantially as and for the purpose specified.

HENRY M. DOUGHERTY.

Witnesses:

HORACE HARRIS,
S. E. CARPENTER.