

(No Model.)

F. H. HOLMES.

HYDROCARBON APPARATUS FOR HEATING AND LIGHTING.

No. 279,760.

Patented June 19, 1883.

FIG. 1.

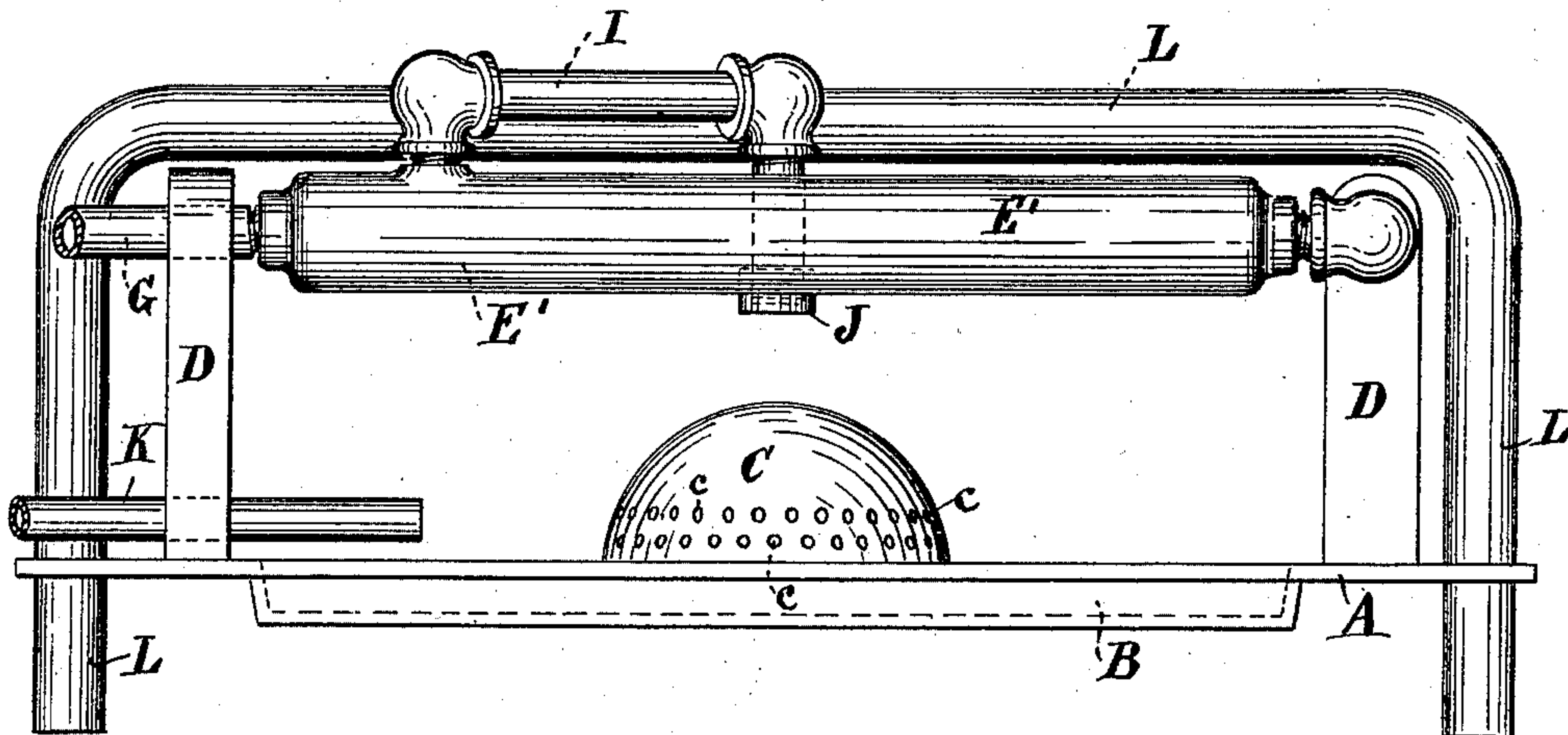


FIG. 2.

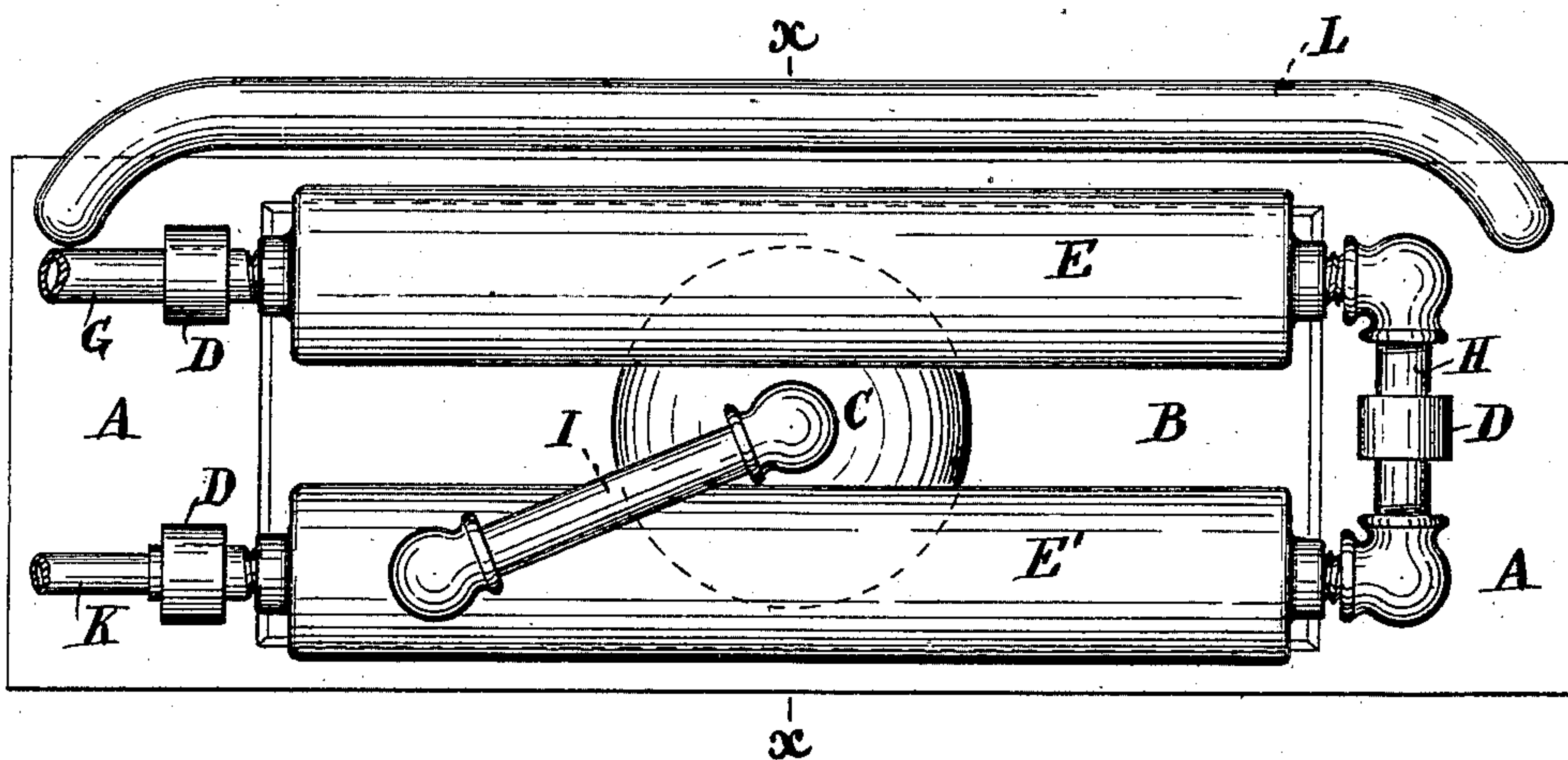
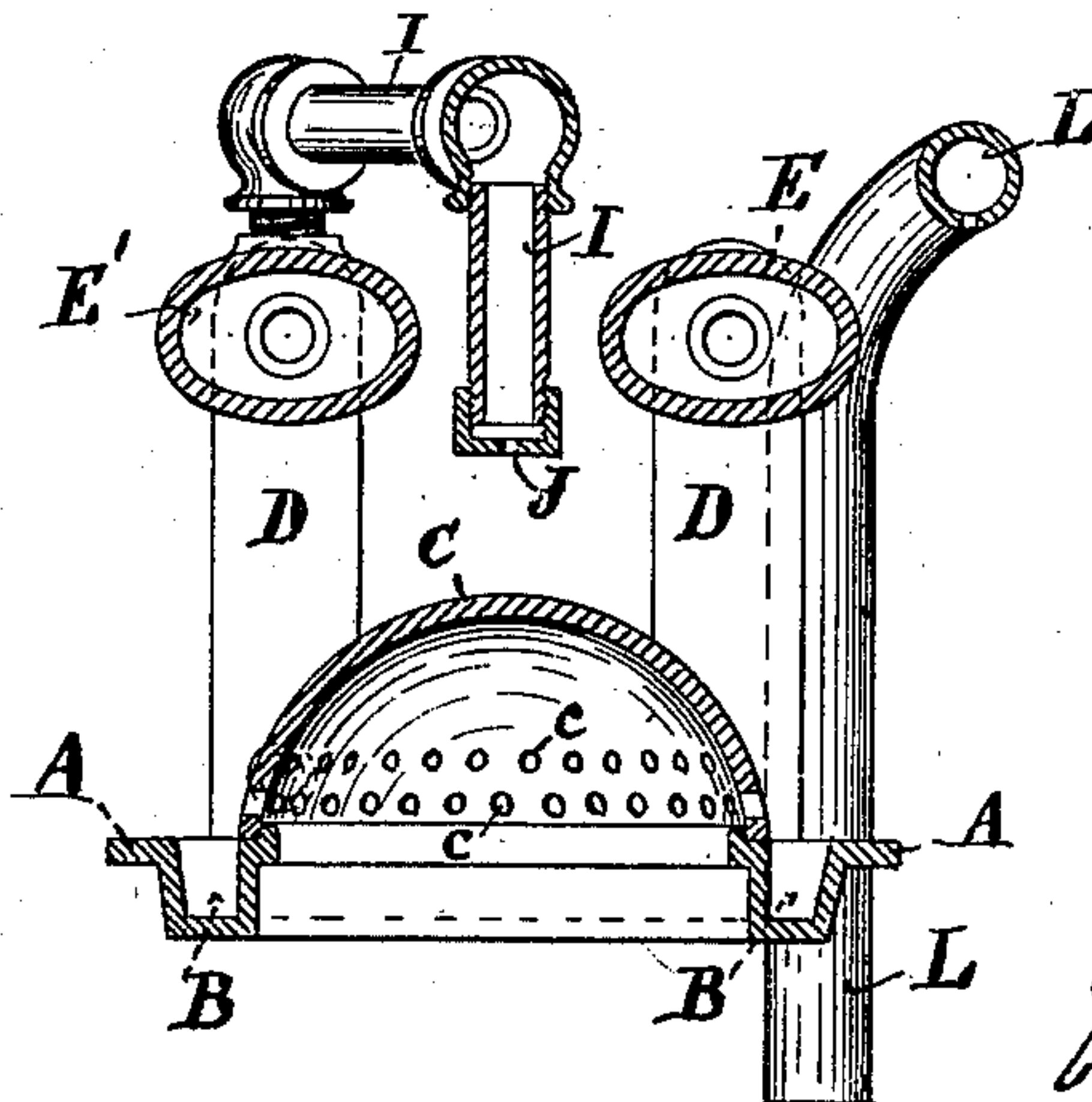


FIG. 3.



Witnesses.

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FRED H. HOLMES, OF HYDE PARK, MASSACHUSETTS.

HYDROCARBON APPARATUS FOR HEATING AND LIGHTING.

SPECIFICATION forming part of Letters Patent No. 279,760, dated June 19, 1883.

Application filed March 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRED H. HOLMES, a citizen of the United States, residing at Hyde Park, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Hydrocarbon Apparatus for Heating and Lighting Purposes, of which the following is a specification.

The object of my invention is to produce an apparatus capable of converting petroleum or other bituminous oil into gas to be burned in the fuel-space of an ordinary stove or range, so that when the flame is once started the heat can be regulated as desired.

The invention consists of two retorts mounted upon standards on a suitable bed-plate, which is provided with a trough, in the center of which is a dome. This dome is open at the bottom, and is provided with air-holes around its lower portion. A pipe leads from one retort to a point over the center of the dome. The other retort is connected with a tank or reservoir containing the oil, and a smaller pipe from the same source conducts oil into the trough in which the flame is started. An air-pipe leading from the space below the apparatus, and provided with a number of small holes, extends longitudinally across the apparatus, and supplies air, which commingles with the gases, so as to insure complete combustion.

Referring to the accompanying drawings, Figure 1 is front view of an apparatus embodying my invention. Fig. 2 is a plan or top view of the same, and Fig. 3 is a section on line *x x* of Fig. 2.

A is a bed-plate constructed with a well or trough, B, in the central portion of which is an aperture covered by a dome, C, provided with one or more rows of air-holes, *c*, near its base.

E E' are two cylindrical retorts, which, with their connections, are supported upon standards D D, connected to the bed-plate.

G is a supply-pipe leading from any suitable reservoir or other source to the retort E, which is connected by a pipe, H, to the retort E', from the upper part of which latter a pipe, I, leads to a point over the center of the dome C. On the lower open end of the pipe I is fitted a cap or cover, J, provided with a small hole for the escape of the gases.

K is a pipe leading from the oil-supply source to the trough B, which latter is designed to contain the oil required for starting the flame in the apparatus. The pipes G and K are to be provided with suitable stop-cocks.

The operation is as follows: The trough B is first supplied with a proper quantity of oil, which is then shut off. The oil is then allowed to trickle or pass in a small quantity at a time into the retort E. The oil in trough B is then ignited, and the heat therefrom will cause the oil in retort E to vaporize or be converted into gas, which will then pass through pipe H into retort E', where it becomes superheated or rarefied, and then passes through pipe I and out through the hole in the cap J, striking upon the dome C, which breaks up and scatters the stream of gas, when it ignites by coming in contact with the flame from the oil in trough B. After the oil in the trough B has been consumed, gas is generated in the retorts by the heat of the burning gas escaping from the pipe I, and thus a constant flame is maintained around the dome C. A sufficient quantity of air to produce and maintain combustion is supplied from below, passing through the holes *c* at the base of the dome.

For the purpose of preventing the escape of any unconsumed gases I employ an air-pipe, L, provided with a number of small holes and leading from the space below the apparatus. This pipe is open at both ends, into which the air enters, and, passing out through the small holes, commingles with the gases, and thus aids in producing their combustion.

In fitting my apparatus to a stove or range now in use I remove the grate and set in a frame suitable for holding the bed-plate A securely; but in new stoves or ranges a proper frame can be introduced for holding the apparatus, so that it can be readily removed, if necessary.

It will be seen that the flow of oil can be regulated so as to produce a greater or less amount of heat, as may be desired, and the apparatus is capable of producing a great degree of heat for cooking or heating purposes.

The apparatus can also be utilized for generating gas for lighting when desirable.

What I claim as my invention is—

1. The combination of the retorts E E', sup-

ply-pipe G, connecting-pipe H, pipe I, perforated cap J, and dome C, substantially as set forth.

2. The combination of the dome C, provided
5 with the perforations *cc* near its base, the bed-plate A, and trough B, and a gas-generating burner, substantially as specified.

3. The perforated air-supply pipe L, in combination with the retorts E E', pipe I, and per-
10 forated dome C, as and for the purpose set forth.

4. The combination of the retorts E E', connecting-pipe H, delivery-pipe I, and perforated dome C, substantially as set forth.

In testimony whereof I have signed my name
to this specification in the presence of two sub- 15
scribing witnesses.

FRED H. HOLMES.

Witnesses:

J. H. ADAMS,
E. PLANTA.