

No. 619,210.

Patented Feb. 7, 1899.

C. L. NEWBY.  
VAPOR BURNING APPARATUS.

(Application filed Feb. 21, 1898.)

(No Model.)

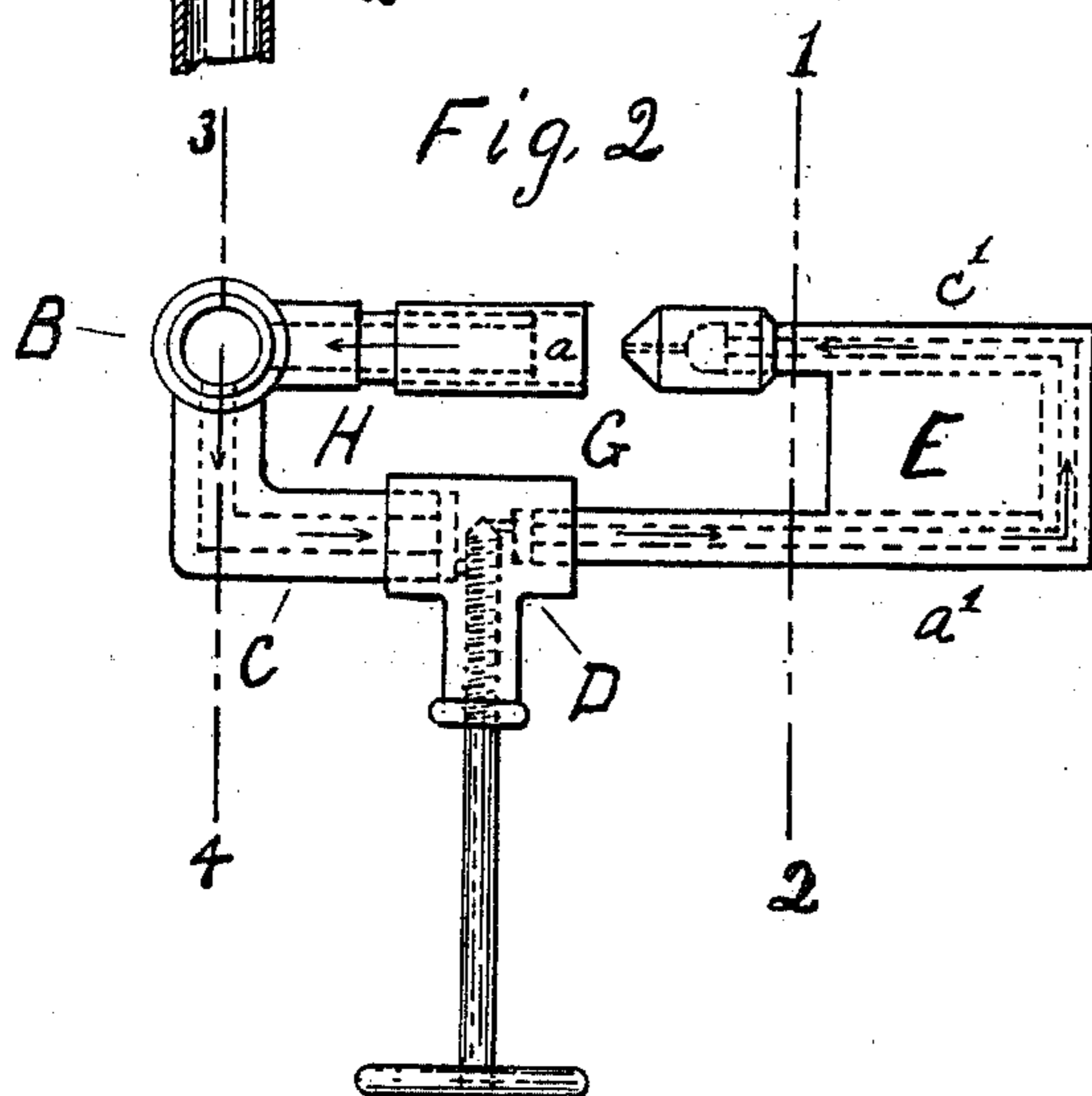
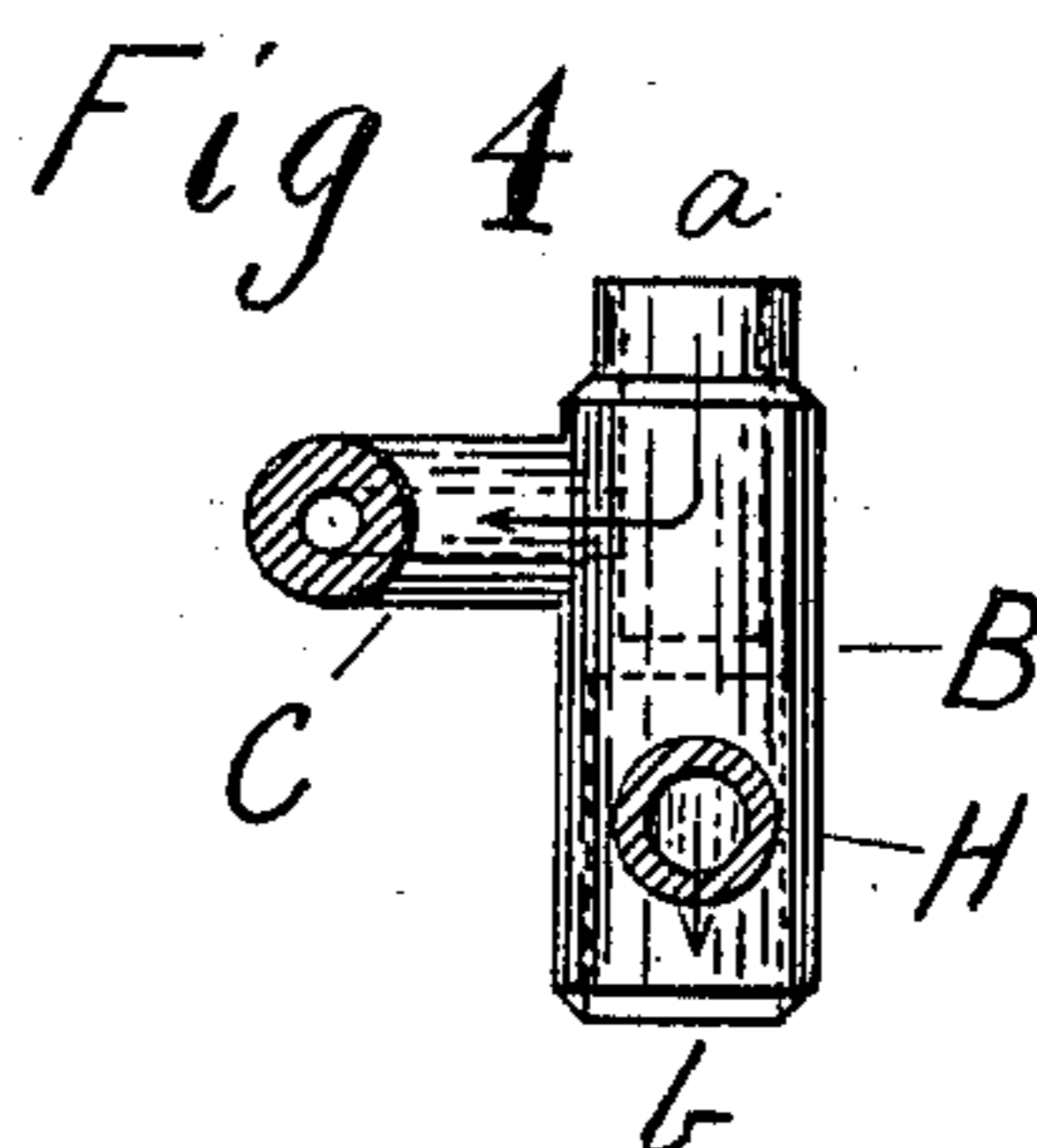
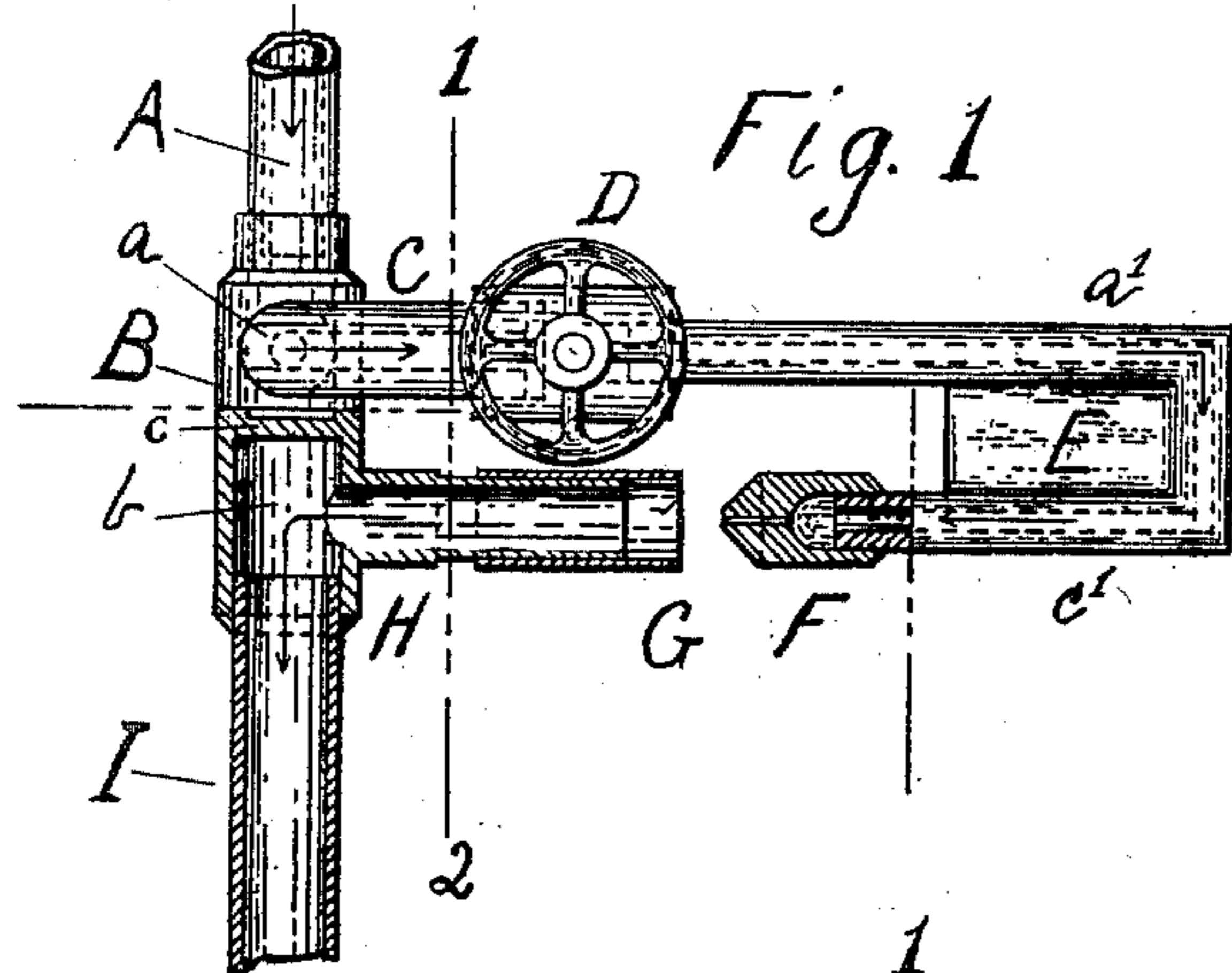
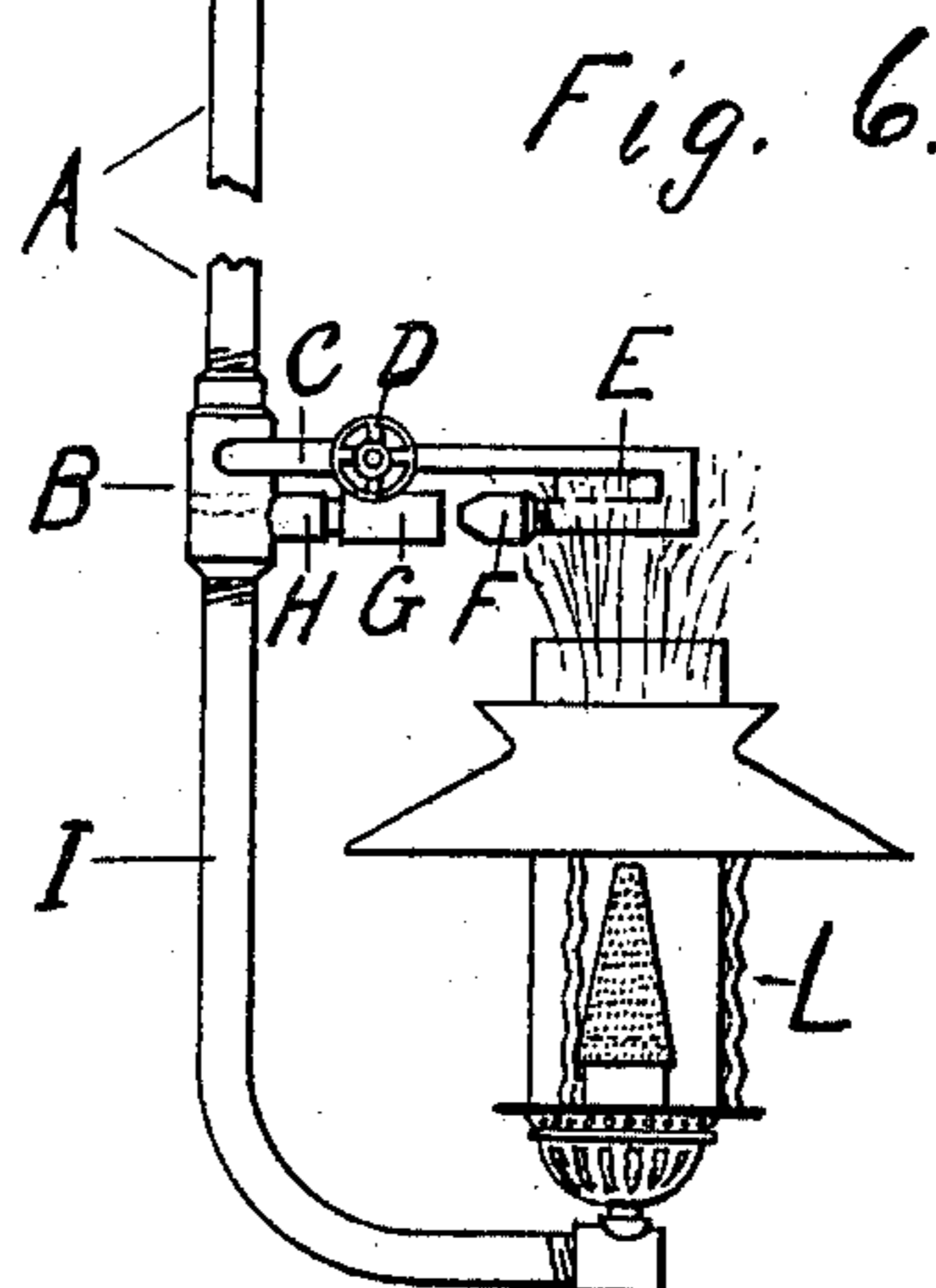
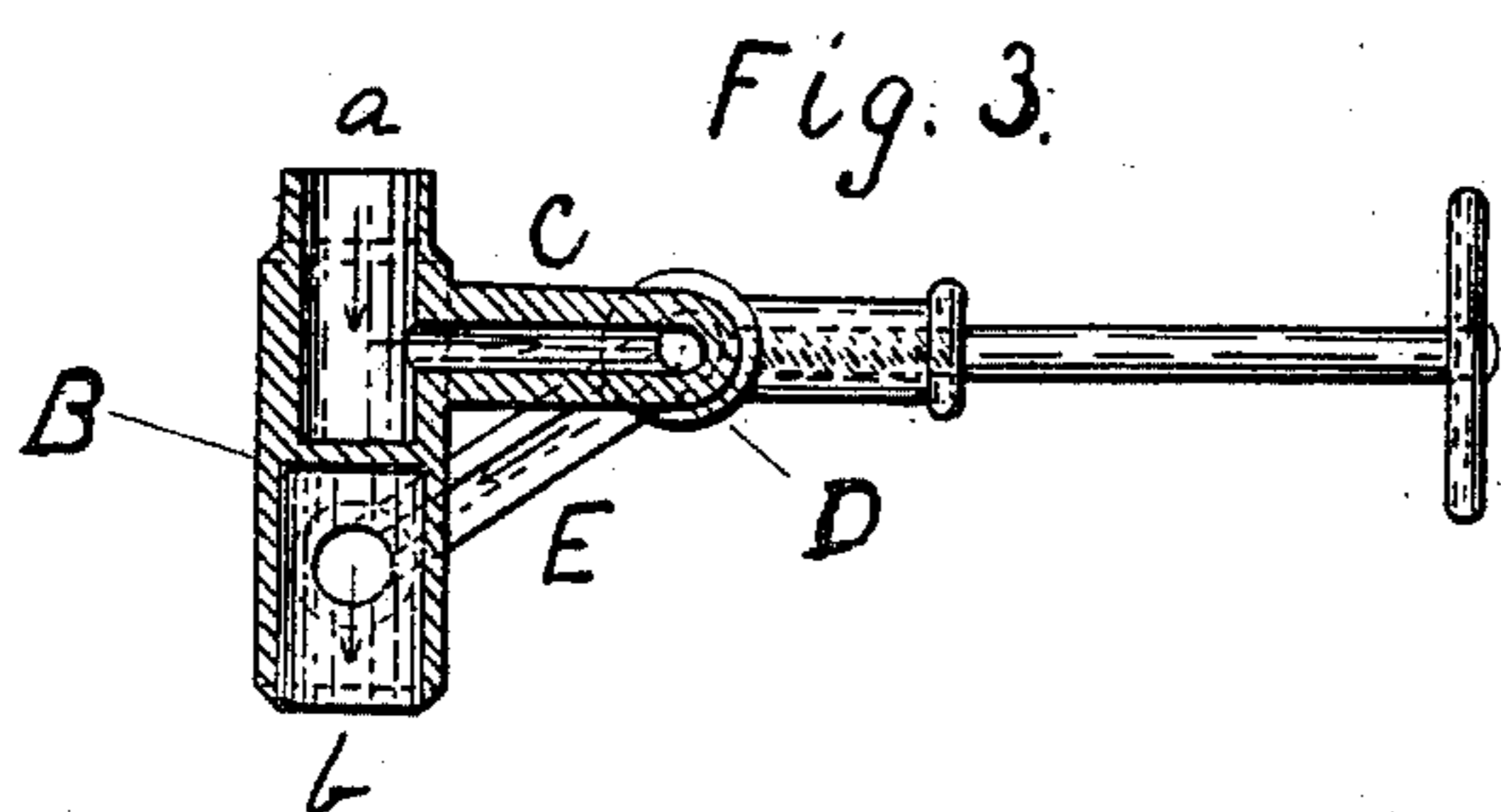


Fig. 5



WITNESSES:

John W. Lockhart  
John M. Perry

INVENTOR,  
C. L. Newby

BY

J. S. Brown  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

CLARENCE L. NEWBY, OF KANSAS CITY, MISSOURI.

## VAPOR-BURNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 619,210, dated February 7, 1899.

Application filed February 21, 1898. Serial No. 671,055. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE L. NEWBY, a citizen of the United States, residing at Kansas City, in the county of Jackson, in the State of Missouri, have invented certain new and useful Improvements in Apparatus for Generating and Burning Gas from Liquid Hydrocarbons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in apparatus for generating and burning gas from liquid hydrocarbons; and my invention consists in certain features of novelty hereinafter described, and pointed out in the claims.

Figure 1 represents an elevation, partly in cross-section, of my improved device. Fig. 2 represents a plan view of the same. Fig. 3 represents a cross-section on the line 3 4 of Fig. 2. Fig. 4 represents a view on the line 1 2 of Fig. 1. Fig. 5 represents a view on the line 1 2 of Fig. 2. Fig. 6 represents a lighting-fixture, embodying my improvements.

Similar letters of reference refer to similar parts throughout the several views.

B represents a T-union provided with the bridge c, forming the supply-chamber a above and the mixing-chamber b below said bridge.

A represents a supply-pipe connected with said T, communicating with said supply-chamber a and with a source of supply of liquid hydrocarbon. This source of supply, as shown in Fig. 6, may be a small tank R, arranged to be suspended from the ceiling or wall of the room to be lighted, the pipe A forming part of a fixture for lighting purposes, or the tank R may be more remotely situated and pipe A extended and connected therewith.

C represents a pipe communicating with the supply-chamber above the bridge in the T, provided with the shut-off valve D. With said pipe C is connected the generator, consisting of a tube bent upon itself, having its arm a' connected with said pipe C and upon its arm c' a gas-tip F.

E represents a heating-plate arranged between said arms a' and c'. H represents a pipe communicating with the mixing-chamber b below the bridge in the T. This pipe is

provided with a sleeve G, arranged to slide thereon.

I represents a tube communicating with chamber b, leading thence to the burner K, and forms a continuation of the mixing-chamber. L represents a chimney carried over the burner, and M a Welsbach or other incandescent mantle provided therefor.

In operation the liquid hydrocarbon, preferably gasoline, passes from the source of supply, through the pipe A and chamber a, to the generator a' c', the supply being regulated by the valve D. This generator, as shown in Fig. 6, is located immediately above the chimney of the burner and receives the heat therefrom. I am aware that it is not new to thus locate a generator over the chimney of a gasoline or liquid-hydrocarbon burner for the

purpose of vaporizing the gasoline for the formation of gas to be supplied to the burner, thus forming a self-generating gasoline or gas burner; but with such contrivances now in use there is simply a straight tube or two or more tubes carried over the chimney and receiving the heat therefrom. Now in such construction with a single tube or more than one tube forming such generator when the device is used in the open air or in rooms

where the doors are frequently opened the gusts of air passing over the chimney will carry the heat laterally away from the generator, and the tubes forming the generator, being of light material and subject also to such gusts of air, will be quickly cooled, causing fitful action of the generator and spluttering in the supply of gas delivered to the burner, resulting in a wavering and flickering light by the burner. To remedy and remove this difficulty and produce a light unaffected by the action of sudden drafts of cold air upon the generator, I provide the plate E between the two arms of the generator. This plate becomes intensely heated and in a manner serves to store the heat, so that the generator is not readily affected by passing currents of cold air, and, furthermore, a greater heating-surface being exposed than when simply the tubes are carried over the chimney better and more effective vaporization within the tube is maintained and carried on. In the generating-tube the liquid hydrocarbon is vaporized and delivered

through the gas-tip F to pipe H, carrying with it the supply of air necessary to form the desired gas, the supply and amount of air taken up being regulated by the sleeve G, arranged  
 5 to slide on pipe H nearer to or farther from the gas-tip, as may be required to admit the air required. The air and vapor thence pass through tube I to the burner, becoming thoroughly mixed in passage through tube I, which  
 10 thus becomes the mixing-chamber.

I thus provide a device which is very effective where subject to the cooling influences of air-drafts and air-currents.

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

1. In an apparatus for generating and burning liquid hydrocarbons, the combination with a T provided with a bridge forming a  
 20 supply and mixing chamber therein, a supply-pipe connected with said supply-chamber, a generator formed by a tube bent upon itself having one arm connected with said supply-chamber and provided with a shut-off valve,  
 25 and its other arm provided with a gas-tip, and a heating-plate arranged between said arms of the generator, of a pipe communicating with said mixing-chamber alining with said gas-tip, a sleeve on said pipe arranged  
 30 to regulate the air-supply, a tube connected with said mixing-chamber and constituting a continuation thereof, a burner carried on said tube, and a chimney on said burner arranged to concentrate the heat upon the generator,  
 35 substantially as set forth.

2. In an apparatus for generating and burning gas from liquid hydrocarbons, the combination of a T provided with a bridge forming a supply and mixing chamber therein, a

supply-pipe connected with said supply-chamber, a generator consisting of two parallel  
 40 arms having one arm connected with said supply-chamber and provided with a shut-off valve, a gas-tip on the other arm of the generator, a heating-plate arranged between said  
 45 arms, a pipe connected with said mixing-chamber alining with said tip and provided with a sliding sleeve to regulate the air-supply, and a pipe leading from said mixing-chamber; substantially as and for the purpose  
 50 set forth.

3. In an apparatus for generating and burning liquid hydrocarbons, the combination with a burner provided with a suitable chimney, and a gas-supply pipe for supplying the  
 55 burner, of a T provided with a bridge forming a supply and a mixing chamber therein, a supply-pipe connected with said supply-chamber, a two-armed generator arranged over  
 60 said chimney having one arm connected with said supply-chamber and provided with a shut-off valve, a gas-tip on the other arm of the generator, and a heating-plate arranged between said arms, and a pipe provided with  
 65 a sliding sleeve alining with said tip and communicating through said mixing-chamber with said gas-supply pipe to the burner; substantially as set forth.

4. In an apparatus for generating and burning liquid hydrocarbons, a generator consisting  
 70 of a tube bent upon itself, a gas-tip on one of the arms formed by such bend, and a heating-plate arranged between the two arms; substantially as and for the purpose set forth.

CLARENCE L. NEWBY.

Witnesses:

P. D. MYERS,  
 JOHN M. PARRY.