

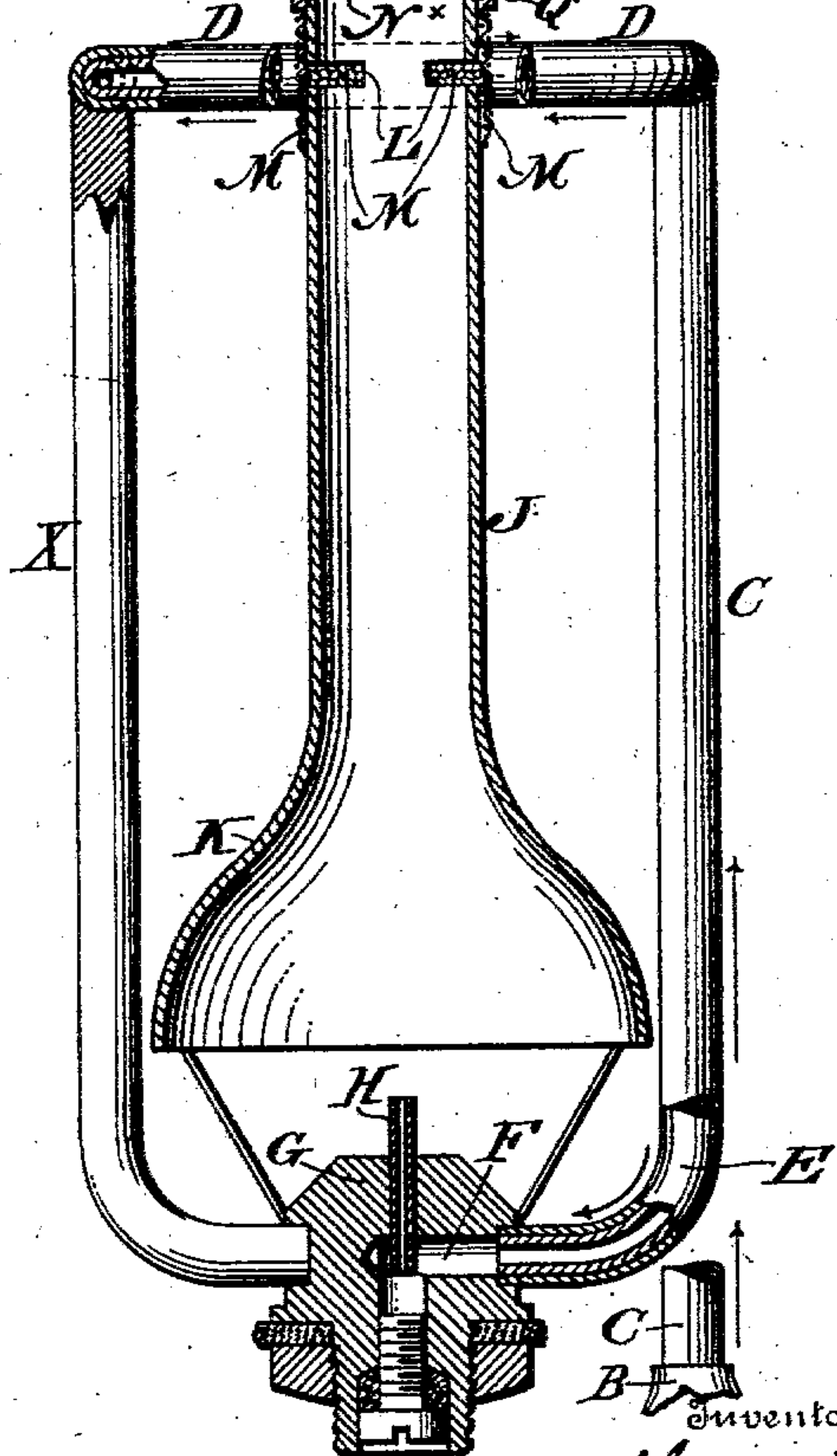
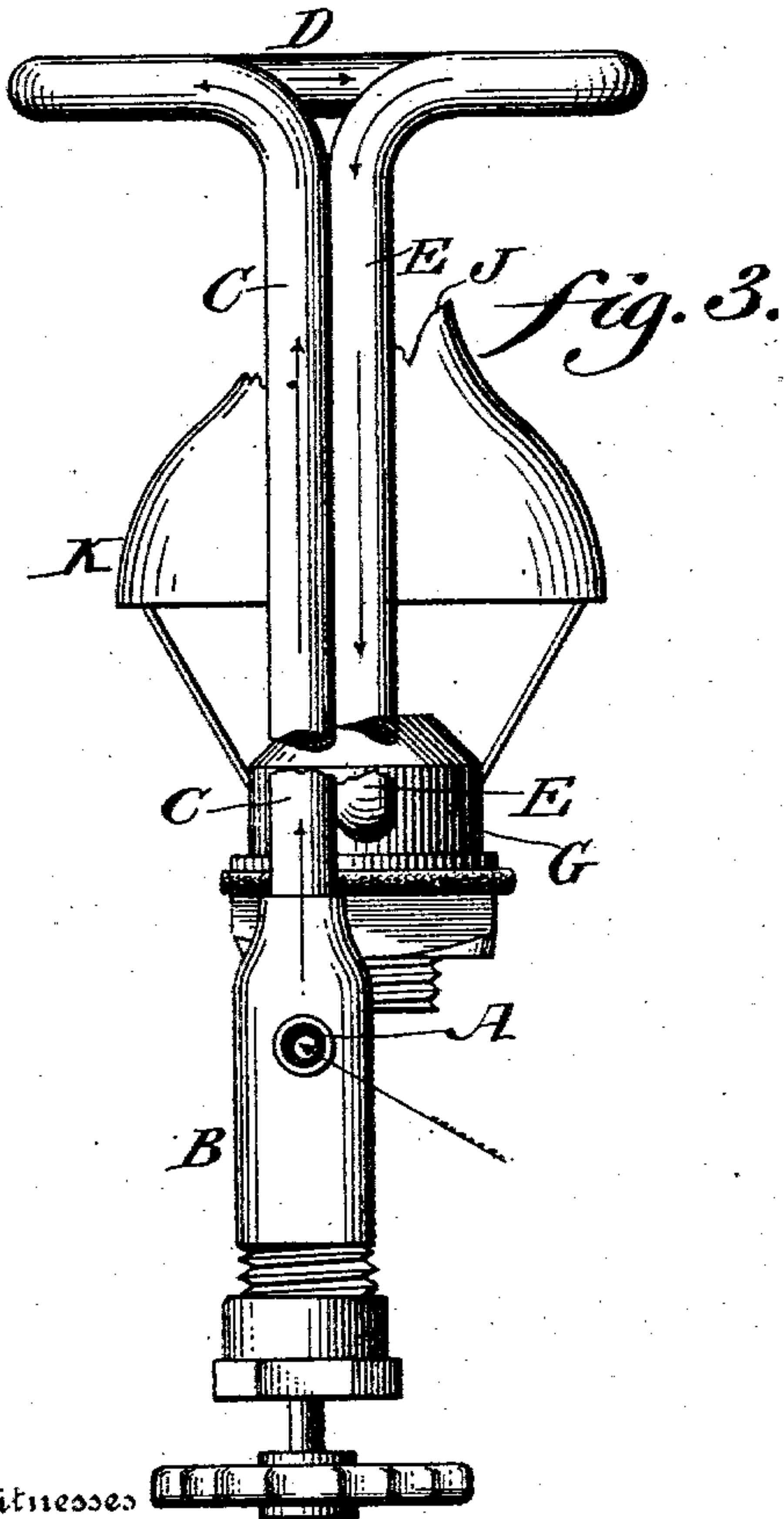
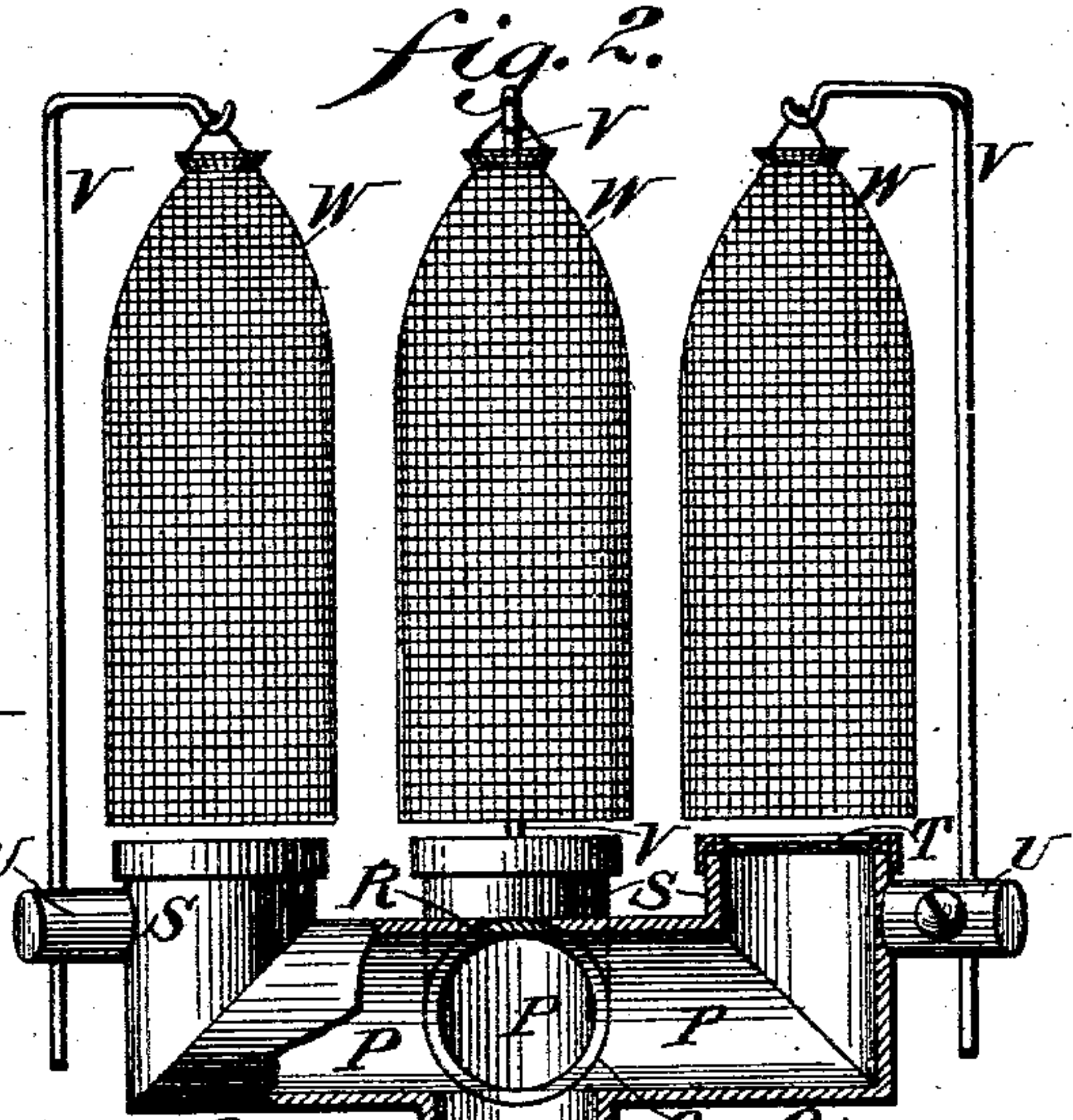
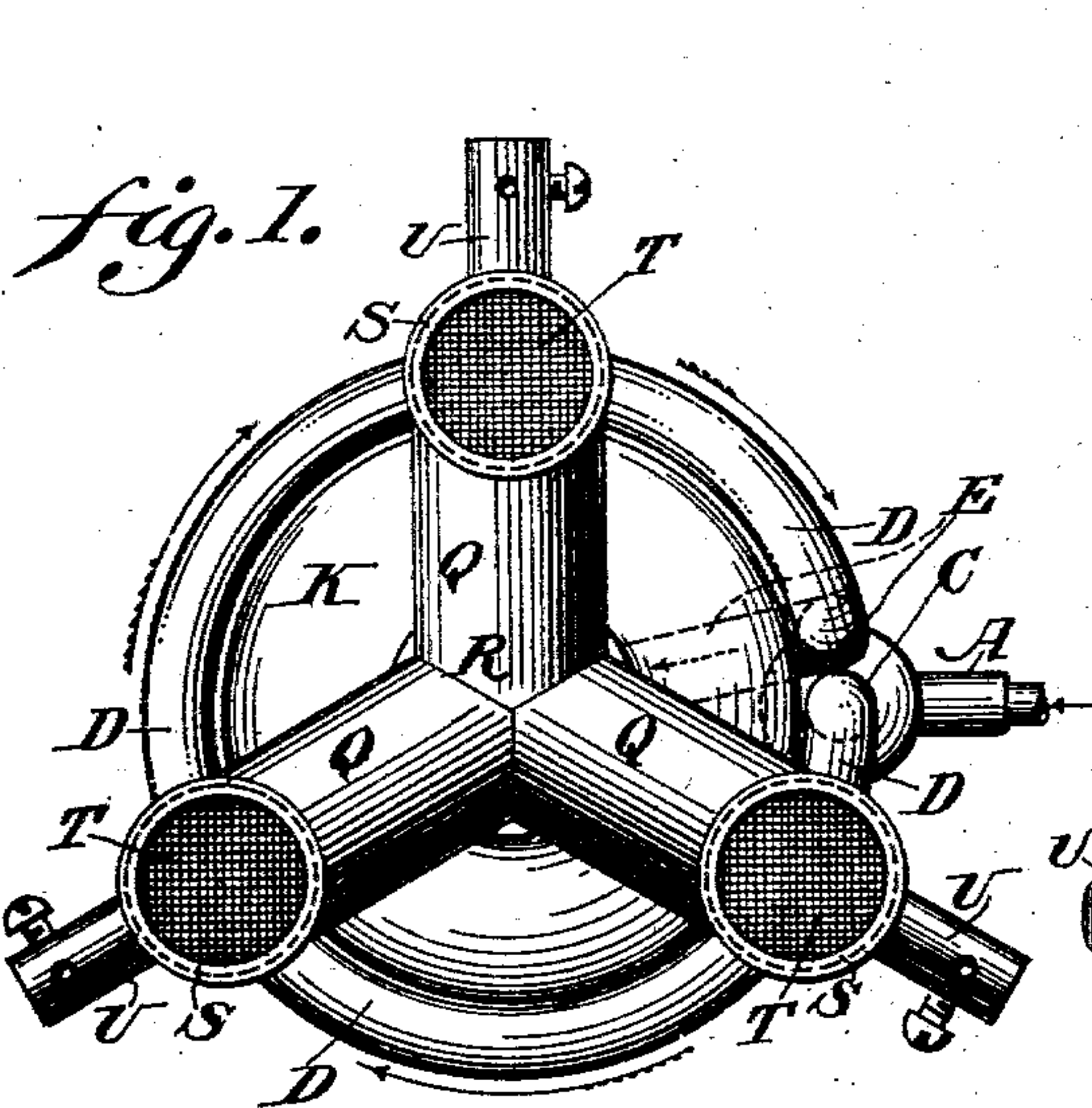
No. 629,355.

Patented July 25, 1899.

H. M. HAMRICK.
BURNER.

(Application filed Jan. 11, 1899.)

(No Model.)



Witnesses
L. D. Bowville,
P. H. Bagle.

Inventor
Harry M. Hamrick
BY Wiedersheim & Kreibitz
Attorneys

UNITED STATES PATENT OFFICE.

HARRY M. HAMRICK, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
INTERNATIONAL INCANDESCENT LIGHT COMPANY, OF WEST VIRGINIA.

BURNER.

SPECIFICATION forming part of Letters Patent No. 629,355, dated July 25, 1899.

Application filed January 11, 1899. Serial No. 701,782. (No model.)

To all whom it may concern:

Be it known that I, HARRY M. HAMRICK, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Burners, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to burners; and it consists in the employment of an auxiliary series of gas-superheating chambers which are located in such relation above and in proximity to the generator proper employed that the gas contained in said chambers becomes intensely heated and a plurality of flames are produced which are opposed to each other in such a manner that the intensity of the light is greatly increased thereby without adding to the consumption of vapor. It further consists in a novel manner of assembling the burners of the auxiliary gas-holding chamber, which latter are formed within a plurality of branches which have mantle-supporting devices thereon, whereby said auxiliary gas-chambers are subjected to a highly-increased degree of heat and the flow of the gas from the burner-tube by reason of the construction of said chambers is somewhat retarded, so that a maximum quantity of heat units are abstracted from each contiguous branch and serve to further heat the gas contained in said chambers prior to ignition.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a plan view of a burner employing my invention. Fig. 2 represents a side elevation thereof, partly in section. Fig. 3 represents a side elevation of a portion of Fig. 2.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a hydrocarbon-inlet which is controlled by a suitable valve B, said hydrocarbon passing upwardly through the pipe C to the generator D and thence out through the pipe E as

a gas or vapor to the gas-chamber F, contained within the casing G, the outlet from the latter being through the injector-tip H.

J designates a burner-tube which is made preferably flaring at its lower portion K and is in the present instance supported upon the casing G, the upper portion of said tube J being provided with openings L, around which is placed the gauze M, whereby heat can flow through said openings and thereby be imparted to the generator D, so that the latter is heated to a high degree being in practice almost a cherry-red.

N designates a gauze supported upon the upper portion of the burner-tube J, the latter having supported thereupon the auxiliary gas-superheating chambers P, which are contained within the casing Q, the same being shown in the present instance as being composed of branches, which are three in number, although it will, of course be evident that this number may be increased or diminished, according to requirements, said casing having a neck Q', by which it is secured to the tap of the burner-tube. The casing Q is provided with a top portion R, which serves to deflect and to a certain extent retard or check the egress of the hot gases, the same leaving said chambers P through the upwardly-turned outlets S, which latter have screens or gauze T thereon.

U designates bosses or projections secured to suitable portions of the casing Q, in which the rods V are supported, said rods sustaining the mantles W. The generator D is preferably provided with a supporting-post X of suitable conducting material, whereby a high degree of heat is conducted to the gas-chamber F, so as to assist in thoroughly volatilizing the hydrocarbon employed.

N^x designates a tuft of very fine wire or similar material interposed between the top portion of the burner-tube J and the under side of the gauze N, said tuft serving as a strainer and to thoroughly break up the gas before the same reaches the chambers P.

The operation is as follows: The hydrocarbon, which is preferably gasoline, is forced up the tube C to the generator D, down the tube

E into the chamber F, and thence into the burner-tube, at the same time drawing in the requisite supply of oxygen by reason of the flaring mouth K. When the hydrocarbon reaches the top of the burner-tube, it is momentarily retarded and escapes out the openings L, at which point it is ignited, and the heat here generated is imparted to the generator D, which becomes highly heated, and consequently the hydrocarbon which flows through the generator at this stage becomes converted into a gas, some of the heat being conducted from said generator to the lower gas-chamber F by means of the conductive port X. The hydrocarbon is in the meanwhile passing through the straining material N^x and the gauze N, after which it flows into the auxiliary heating-chambers B, and after impinging against the top R thereof it escapes through the gauzes T, at which points it is ignited and burns with a steady white flame of great brilliancy.

The casing Q of the auxiliary chambers is heated to a high degree by radiation from the generator D and also by the auxiliary flame adjacent the latter, whereby the contents of said casing are highly superheated prior to ignition, and the heat from each of the mantles being imparted to the burner immediately therebelow it will be apparent that the heat units are effectively utilized for the purpose of superheating the hydrocarbon prior to final ignition.

I have found by experiment that a cluster of two, three, or more lights arranged so that their reservoir or casing Q is subjected to the intense heat of the generator D substantially in the manner described will, while consuming only slightly more hydrocarbon than a single light or burner, give proportionately twice or three times as much light, according to the number of burners used, the advantage of this construction thus being apparent.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a burner-tube, a generator adjacent the upper portion of the latter and heated thereby, auxiliary gas-superheating chambers supported above said generator and heated thereby, a gas-chamber below said burner-tube and in communication with said generator and an injector-tip located in the outlet from said gas-chamber and projecting beyond the casing of the latter.

2. The combination of a burner-tube having ports in the upper portion thereof, a generator located adjacent to said ports and having a pipe leading therefrom to a gas-chamber below said tube, a supporting-post of conductive material common to said gas-chamber and to said generator, a casing containing auxiliary gas-superheating chambers supported above said tube and having gauze and straining material located in the path of the gas to said casing, burners leading from said casing, bosses or projections upon said burners, rods mounted in said bosses and mantles supported upon said rods.

3. The combination of a burner-tube, a generator adjacent the upper portion of the latter and heated by the flames issuing through ports in said tube, auxiliary gas-superheating chambers supported above said generator, the outer portions of said chambers being heated by radiation from said generator and the inner portions thereof being heated by the flames impinging on said generator, a gas-chamber below said burner-tube and in communication with said generator and an injector-tip located in the outlet from said gas-chamber and projecting beyond the casing of the latter.

HARRY M. HAMRICK.

Witnesses:

JOHN A. WIEDERSHEIM,
E. HAYWARD FAIRBANKS.