

(No Model.)

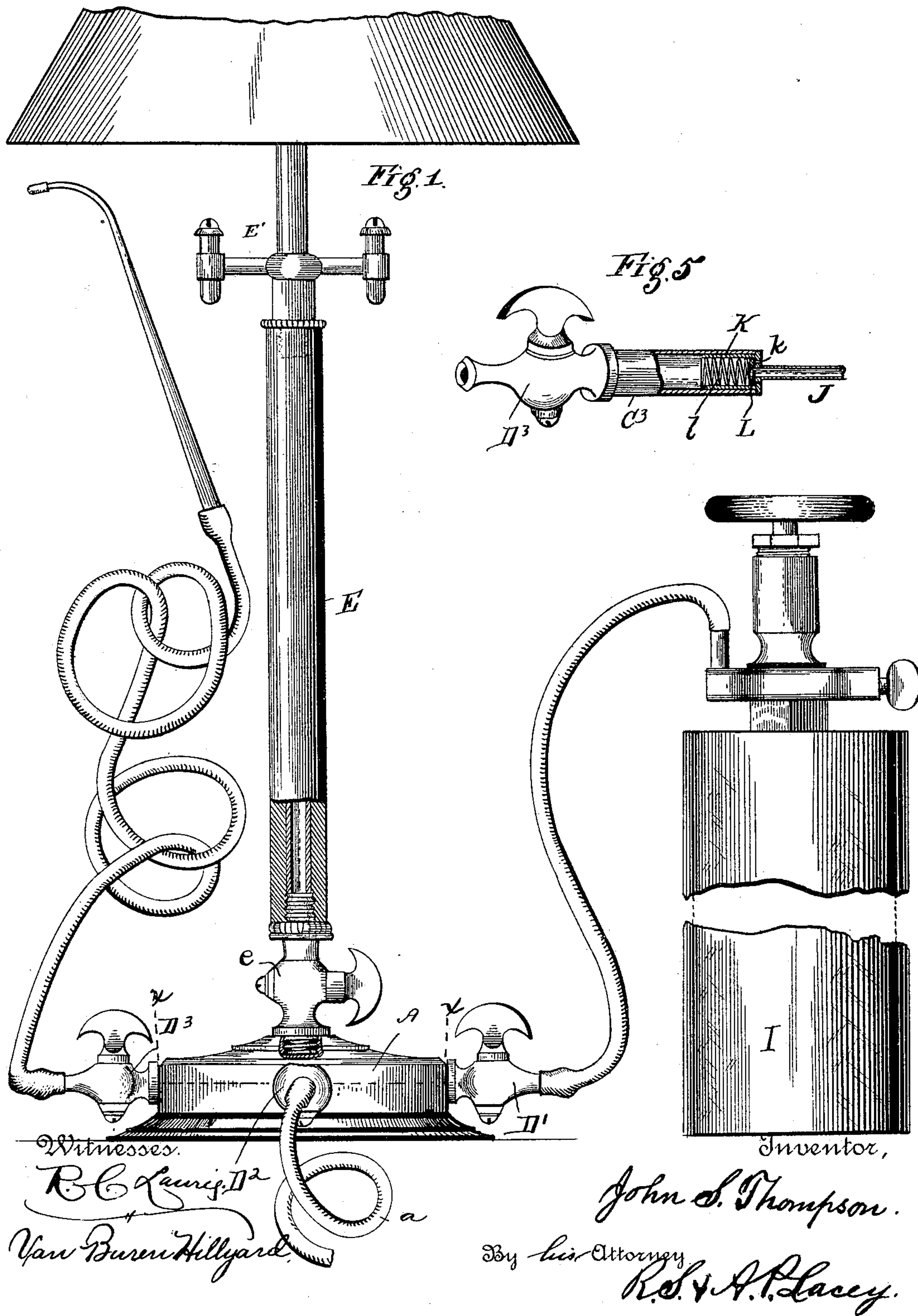
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J. S. THOMPSON.

COMBINED ILLUMINATOR, HEATER, AND BLOW PIPE.

No. 389,264.

Patented Sept. 11, 1888.



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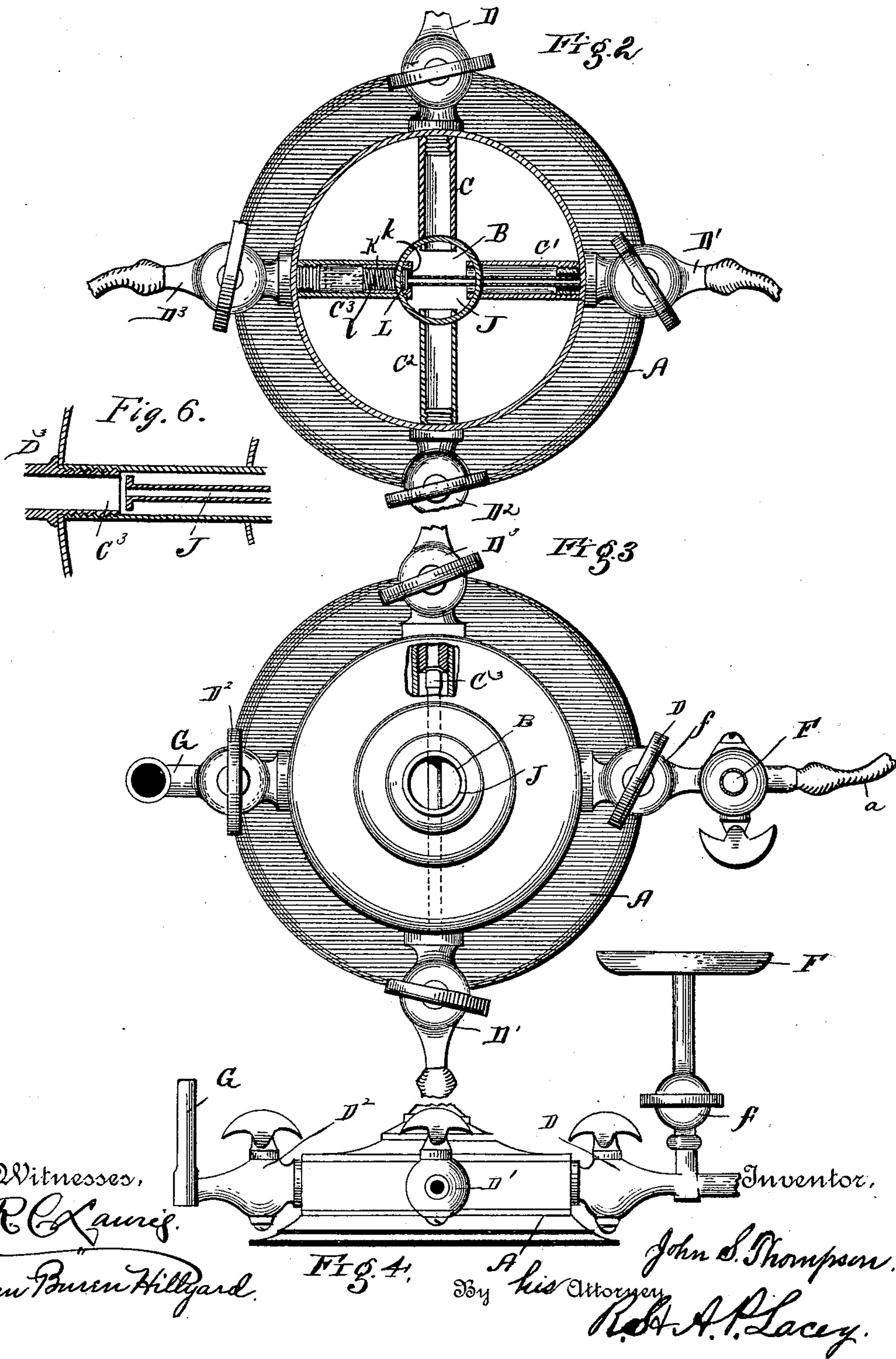
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Witnesses,
R. C. Lacey.
Van Buren Hilliard.

FIG. 4.

Inventor,
John S. Thompson.
By his Attorney,
R. A. Lacey.

UNITED STATES PATENT OFFICE.

JOHN S. THOMPSON, OF ATLANTA, GEORGIA, ASSIGNOR OF ONE-HALF TO
ROBERT A. HOLLIDAY AND JOHN S. HOLLIDAY, JR., BOTH OF SAME
PLACE.

COMBINED ILLUMINATOR, HEATER, AND BLOW-PIPE.

SPECIFICATION forming part of Letters Patent No. 389,264, dated September 11, 1888.

Application filed June 11, 1887. Serial No. 240,985. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. THOMPSON, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Combined Illuminator, Heater, and Blow-Pipe; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to a combined illuminator, heater, and blow-pipe, and has for its object the production of a simple, compact, and efficient device or organization capable of performing the work intended in a convenient, reliable, and expeditious manner; and to that end the improvement consists in the novel construction and combination of parts, which will be more fully hereinafter set forth and claimed, and shown in the annexed drawings, in which—

Figure 1 is a side view of a device embodying my invention; Fig. 2, a transverse section on the line X X of Fig. 1, showing a modification by dotted lines; Fig. 3, a top plan view, parts broken away, of the device turned one-quarter way around, showing a modified form of gas-regulating device; Fig. 4, a side view of the modified form shown in Fig. 3; Fig. 5, a perspective view, parts being broken away, of the cock and the mixing-tube; and Fig. 6, a detail view, on an enlarged scale, of the modified form of gas-regulating device shown by dotted lines in Fig. 2.

Within the base A is centrally located the compartment B, from which the tubes C C' C² C³ radiate and extend to the shell, where they are provided with the cocks D D' D² D³, respectively. The burner-tube E of the illuminator E' communicates with the compartment B, and is provided with the cock e, for regulating the flow of gas and turning it on and off. Either of the cocks D or D² may be connected with the street-main or suitable reservoir of gas by the tube a, which is shown ap-

plied to the cock D², which, when open, admits the gas to compartment B, and from it to the other cocks.

Each of the cocks D and D² is provided with a heater, the one heater being larger than the other, and the heater F is arranged between the gas supply or reservoir and the cock D, and is provided with the cock f, for controlling the supply of gas thereto, while the heater G is located beyond the cock D², so that the latter comes between it and the compartment B. The cock D' is in communication with and is connected with the tank I, containing a gas—such as nitrous oxide, oxygen, or any gas which will promote and produce a perfect combustion. A pipe, J, extends across the compartment B, and is secured at one end to the cock D', and at the other end communicates with the tube or mixing-chamber C³, and may extend therein some considerable distance, as shown in Figs. 3 and 6, and may terminate in a conical end, which is adapted to fit a valve-seat, as shown in Fig. 3, or approach close to the end of the cock D³, as shown by dotted lines in said Fig. 2 and full lines in Fig. 6; or it may terminate at the side of the compartment opposite to that at which it entered in a cap, K, which is fitted within the tube or mixing-chamber C³. The closed end of the cap is provided with a series of openings, k, which are arranged in a circle about the tube J, and are normally closed by the annular valve L, placed within the cap and held in position by the spring l, which is of sufficient tension to yield under the pressure of the gas from the compartment, but will force the valve to its seat in the event of back-pressure, or an excessive pressure of gas within the mixing-chamber or tube C³. The device being attached to a suitable source of gas-supply, and the cock being opened, the compartment B is filled with gas, and by opening cock e the illuminator may be used, or by opening cock D² the heater G is brought into operation. Cocks D' and D³ being opened, the nitrous oxide from reservoir I and the gas from compartment B, which are mixed in the tube or mixing-chamber C³, pass off to the blow-pipe. The heater F is supplied direct from the gas-reservoir,

and may be used independently of the illuminator, blow-pipe, and heater.

The heaters F and G are of ordinary construction, and are provided to produce a compact device which will combine the features of a drop-light, blow-pipe, and heater.

The device is connected with any suitable source for supplying the illuminating-gas—as the gas-pipes which are connected with the gas-mains in a city—by the flexible tube *a*, through which and tube C² the gas is conveyed into compartment B, from whence it passes into the illuminator and the tubes C, C', and C³. To use the blow-pipe the gas from I is let into J, and, passing into C³, commingles with the gas therein from B, the mixed gases from C³ being conveyed to the blow-pipe, where they are burned, the intensity of the flame being regulated by the proportion of the gas from I mixed with the gas from B.

It will be observed that the base A is hollow and contains the supplemental compartment B and the tubes C and *c*. The compartment B receives the illuminating-gas and supplies it to the illuminator, the heaters, and the blow-pipe. The base, in addition to forming a case for the supplemental compartment and a support for the illuminator and the heaters, forms a stand for the blow-pipe and a means of connection between the tank I, the illuminating-gas supply, and the said blow-pipe, as will be readily understood.

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

1. In a combined illuminator, heater, and blow-pipe, the combination, with the burner-tube E and the hollow base having the supplemental compartment located therein, of the tank I, the tubes extended laterally from the compartment and provided with cocks, the tube extended across the compartment and connected at one end with one of the cocks, and establishing communication at its other end with another of the cocks, substantially as and for the purpose described.

2. In a combined illuminator, heater, and blow-pipe, the combination, with the burner-tube E and the hollow base having the compartment B, the radial tubes provided with cocks, and the cap K, closing the end of one of the tubes and having openings *k*, of the pipe J, extending across the compartment B, and connected at one end with one of the cocks and at its other end with the said cap K, the apertured valve L, and the spring *l*, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN S. THOMPSON.

Witnesses:

E. H. THORNTON,
M. B. TORBETT.