

No. 631,425.

Patented Aug. 22, 1899.

J. GRAHAM.
TORCH.

(Application filed Nov. 22, 1898.)

(No Model.)

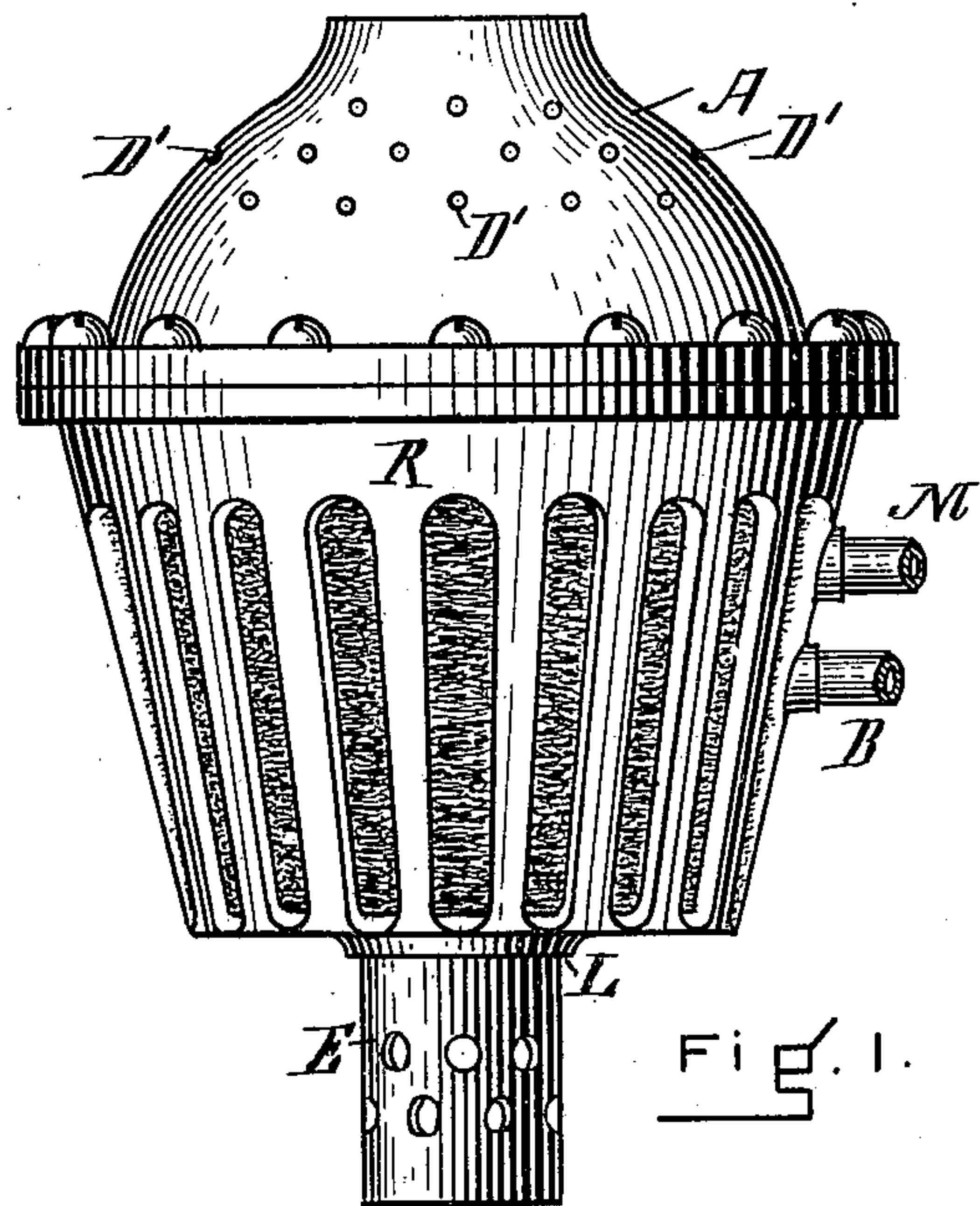


FIG. 1.

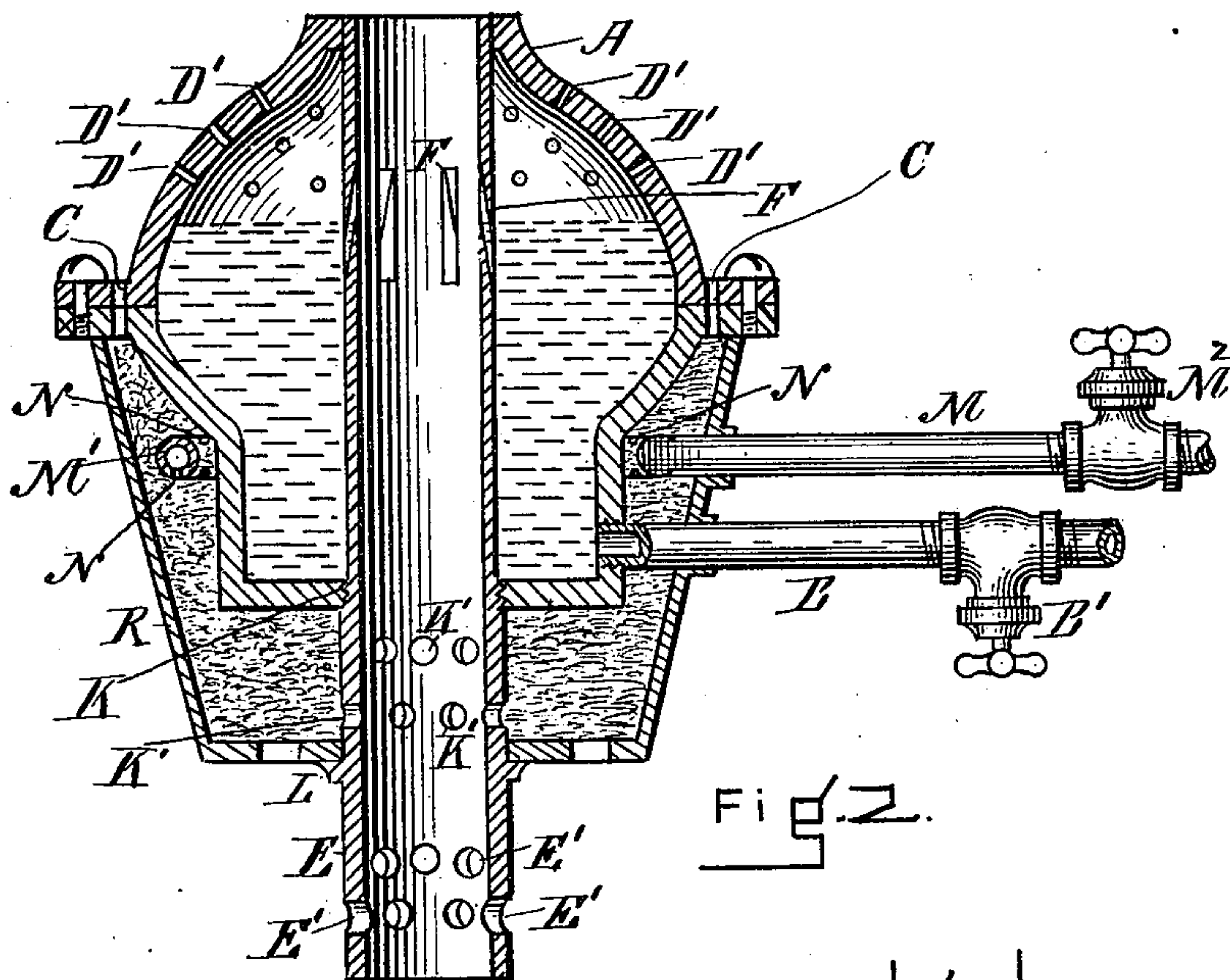


FIG. 2.

WITNESSES:

Frank G. Parker.

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UNITED STATES PATENT OFFICE.

JOHN GRAHAM, OF BOSTON, MASSACHUSETTS.

TORCH.

SPECIFICATION forming part of Letters Patent No. 631,425, dated August 22, 1899.

Application filed November 22, 1898. Serial No. 697,178. (No model.)

To all whom it may concern:

Be it known that I, JOHN GRAHAM, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Torches, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a device more or less portable and adapted to be used as a torch or for heating purposes; and it consists of an oil-tank of peculiar construction mounted upon an open-work cup containing oil-saturated asbestos or some similar material. A perforated tube centrally located passes through both the cup and the tank and is arranged to supply air for combustion and also to admit oil from the oil-tank to mingle with the inflowing air and add to the flame, and thus to greatly enhance the heat production.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 shows my invention in elevation. Fig. 2 shows the same in vertical section.

In the drawings, A represents the oil-tank, which may be made of any desired size and form. The upper part of this tank has small holes D' D', through which jets of gas may escape and become ignited. Oil or other inflammable liquid is introduced to the tank by the supply-pipe B, the flow being regulated by the stop-cock B'. The lower part of the tank A is surrounded by a packing of asbestos or some similar absorbing material, which is held in the cup R. This cup R is made with large and numerous openings, as shown in Fig. 1, and is held to the oil-tank A by means of the tube E, which is provided with a screw-thread at K and a collet at L, the screw-thread engaging with the lower part of the tank A and the collet abutting against the bottom of the cup R.

Oil is supplied to the asbestos in the cup R by the pipe M, which enters the cup and passes around the lower part of the tank, as shown at M', Fig. 2. This pipe has numerous perforations N N, which allow the oil to pass through and to saturate the packing in the cup R. The amount of oil admitted to the pipe M' is regulated by the cock M².

The tube E passes through the center of the device and is provided with sets of air-holes E' E' at its lower end, and below the

cup it also has holes K K, which admit vapor or gas from the contents of the packing of the cup R to pass into the interior of the tube and become ignited. A series of inclined openings F is made in the tube, through which oil in the tank A may flow when the oil has reached the required level.

The operation of my device is as follows: The tank A is filled up to the level of the holes F F and a sufficient quantity is admitted to the asbestos in the cup R to saturate it. The oil in the asbestos is ignited and a flame immediately envelops the entire device. Soon the vapor passing into the tube E through the openings K' K' becomes ignited and assists the exterior flame in heating the oil in the tank A, and as this oil becomes heated it generates vapor which, passing through the perforations D' D', also becomes ignited and acting with the flame from the asbestos creates a large body of intensely-heated flame. When the ignition has reached a certain point, an excess of oil may be turned into the tank A, so as to cause the oil to flow through the inclined opening F F and into the tube. This oil will be converted into an inflammable vapor and will at once create a fierce flame that will burn with great heat and intensity from the top of the tube. The supply of oil may now be cut off from the asbestos or other packing in the cup R and the amount flowing into the tank regulated to suit the requirements of the user.

Under certain conditions the device may be used without the aid of the oil-pipe M M'. For instance, oil may be allowed to flow into the tank to such a degree as to overflow and run out of the perforations D' D' and down through the openings C' C' into the packing in the cup R and saturate it.

I claim—

1. In a vapor-burning device, an oil-tank perforated as described and partly located in the upper part of a cup containing absorbent material; the said cup and absorbent material; a central tube passing through the said cup and tank and perforated as described; and means for supplying oil to said cup and tank; substantially as and for the purpose set forth.

2. In a vapor-burning device, an oil-tank placed immediately above a receptacle con-

5 taining absorbent material; a centrally-located perforated tube adapted to supply air for combustion as described, and having inclined perforations adapted to admit oil from the oil-tank to the interior of the said tube; and means for supplying oil to the said tank and absorbent material; substantially as and for the purpose set forth.

10 3. In a vapor-burning device, an oil-tank perforated as described; a perforated cup containing absorbent material partly enveloping said oil-tank; a perforated oil-supply tube

curved around said oil-tank and in the absorbent material; and means for supplying the device with oil; substantially as and for the purpose set forth. 15

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 11th day of November, A. D. 1898.

JOHN GRAHAM.

Witnesses:

FRANK G. PARKER,
FRANK G. HATTIE.