(No Model.)

P. SCHNEIDER & H. TRENKAMP.

Vapor Burner.

No. 231,973. **Patented Sept. 7, 1880.**

Fig. 1.

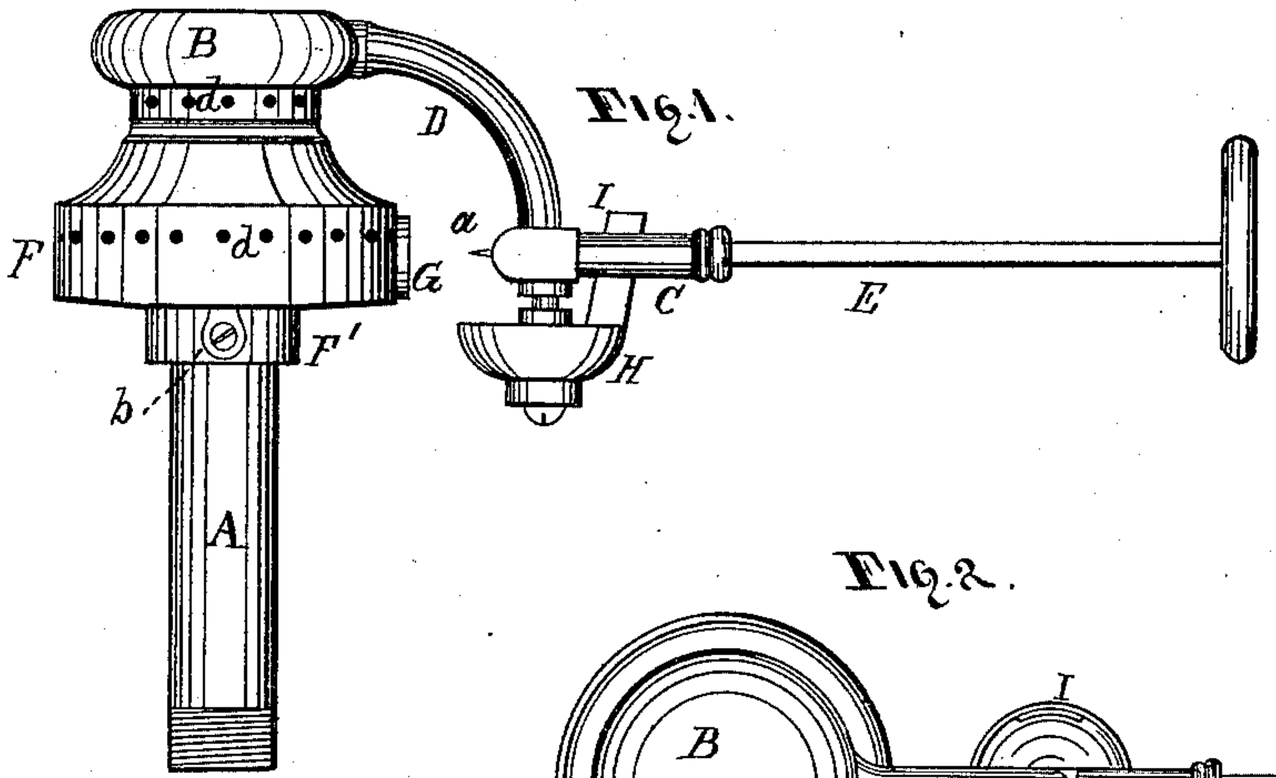


Fig. 2.

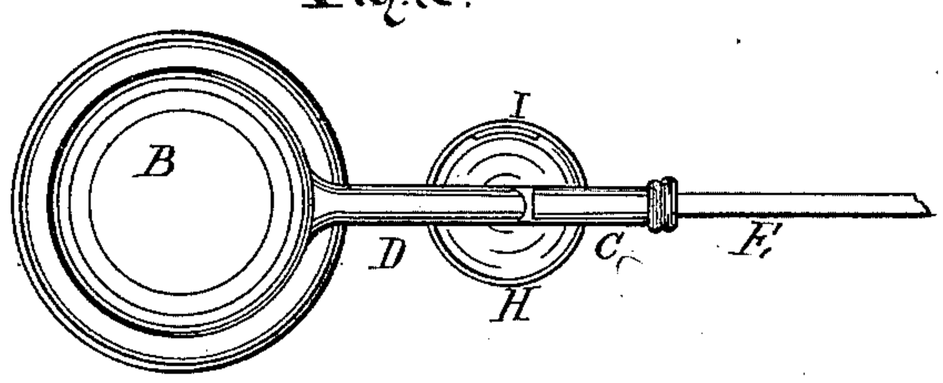
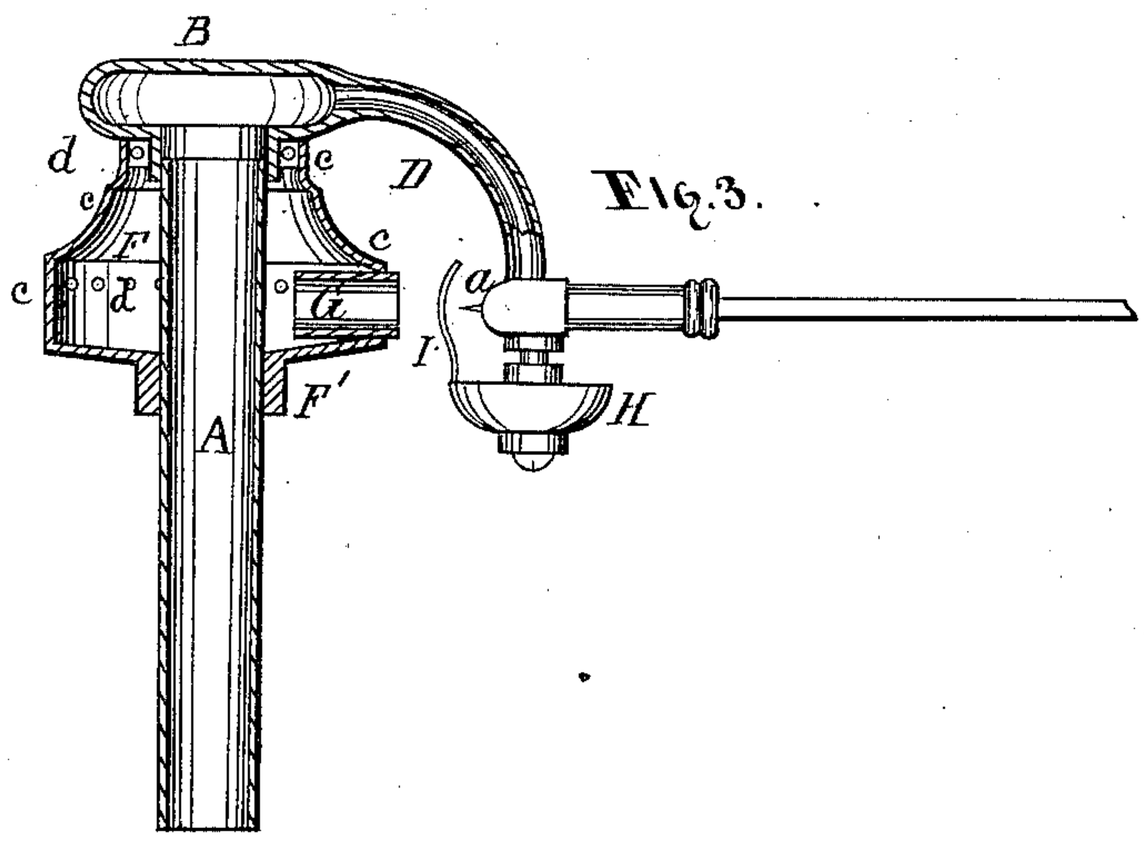


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

PAUL SCHNEIDER AND HENRY TRENKAMP, OF CLEVELAND, OHIO.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 231,973, dated September 7, 1880.

Application filed July 21, 1880. (No model.)

To all whom it may concern:

Be it known that we, PAUL SCHNEIDER and HENRY TRENKAMP, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Vapor-Burner; and we do hereby declare that the following is a full, clear, and complete description thereof.

This invention relates to vapor-burners; and the improvement consists of a vertical generating-tube surrounded at its upper part by a foraminous dome or chamber and terminating in a combustion-chamber above. In said tube the gasoline or its equivalent agent is partially vaporized in its passage through the tube to the main generating-chamber above the dome, in which chamber the partially-vaporized fluid is converted into gas. By the operation of this double generating feature, consisting of the vertical feeding-tube and gas-generating chamber, the gasoline is vaporized and heat is generated more readily than by the ordinary means.

For a more full description of the said vapor-burner, reference will be had to the following specification, and to the annexed drawings, making part of the same, in which—

Figure 1 is a side view. Fig. 2 is a top view of the same, and Fig. 3 a partial vertical section.

Like letters of reference refer to like parts in the several views.

In the drawings, A, Fig. 1, represents the upright or vertical feed-pipe of the burner, to the upper end of which is secured the generating-chamber B in open communication therewith, as seen in Fig. 3. The interior of this chamber is in open relation with the needle-valve mechanism C by means of the pipe D, the needle-valve *a* terminating in the stem E, provided with a screw fitting in the ordinary way, which is well understood.

The combustion chamber or dome F is of a circular form, the bottom of which is provided with a collar, F′, fitted to the feed-pipe A, and secured thereto by a set-screw, *b*. By this means the chamber F is made adjustable upon the pipe, and also detachable therefrom, without removing the chamber B. This removable feature of the chamber F is desirable for cleaning out the interior and perforations.

The upper part of the combustion-chamber is fitted closely to the under side of the generating-chamber B, but not to the feed-pipe, there being a space between the said pipe and the walls *c* of the combustion-chamber, as seen in Fig. 3. The wall of chamber F, immediately under the chamber B, is perforated, and also the enlarged lower part, as seen at *d*, Figs. 1 and 3.

In the side of the chamber F is inserted a tuyere-tube, G, extending in near to the feed-pipe A, as seen in Fig. 3, and in alignment with the needle-valve, so that a jet of gas issuing from the valve will pass directly through the tuyere-tube G into the chamber F, from which it issues through the perforations *d* in jets of flame when ignited.

An oil-cup, H, is pivoted to the under side of the needle-valve mechanism, as seen in the drawings. Projecting up from the side of the said cup is a check-plate, I, consisting of a strip of metal, which, on turning the oil-cup, can be brought directly in front of the needle-valve, as seen in Fig. 3, the purpose of which will hereinafter be shown.

The operation of the said burner is as follows: To the lower end of the pipe A is attached an oil-pipe leading from the reservoir, the pressure from which fills the tube A, chamber B, and pipe D, which connects the chamber B with the needle-valve. In order to light the burner, a small quantity of gasoline or other equivalent fluid is allowed to flow, on opening the needle-valve, into the cup, which is ignited. The heat from the burning oil generates gas or vapor from the oil in the pipe D and in the interior of the needle-valve mechanism, which issues from the needle-valve opening at *a*, and passes through the tuyere-tube G into the combustion-chamber F. The heat of the burning gas in this chamber partially vaporizes the oil in the pipe A, and is wholly vaporized by the continued heat in the chamber B, from which the gas passes through the pipe D to the needle-valve and from the needle-valve opening into the chamber F. At this time the burning-fluid in the cup is extinguished, as the fluid is vaporized in the tube A and chamber B for supplying the burner. The purpose of the check-plate I is to prevent the gasoline or other equivalent fluid from being ejected into the chamber F on opening the

needle-valve to allow the fluid to flow into the cup for the purpose before stated. The fluid, on opening the needle-valve, will impinge upon the check-plate and flow down thereon into the cup. When the gas is generated, or not needed for the purpose stated, it can be moved around out of the way, as seen in Figs. 1 and 2, by simply turning the cup.

We do not claim, broadly, a foraminous vapor-burner constructed and arranged with cavities, passages, chambers, or pipes for generating gas or vapor from gasoline, &c.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In vapor-burners, an improvement consisting of the combination of the generating-chamber B, combustion-chamber F, with a pipe, A, passing through the chamber F and terminating in the chamber B, pipe D, and needle-valve mechanism, constructed and arranged as described, for the purpose set forth.

2. The vertical pipe A, chamber B, detachable combustion-chamber F, and gas-tuyere G, in combination with the needle-valve and pipe D, constructed and arranged substantially as described, and for the purpose set forth.

3. The pivoted rotative oil-cup provided with a check-plate, and arranged in relation to the needle-valve substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

PAUL SCHNEIDER.
HENRY TRENKAMP.

Witnesses:
B. R. BEAVIS,
W. H. BEAVIS.