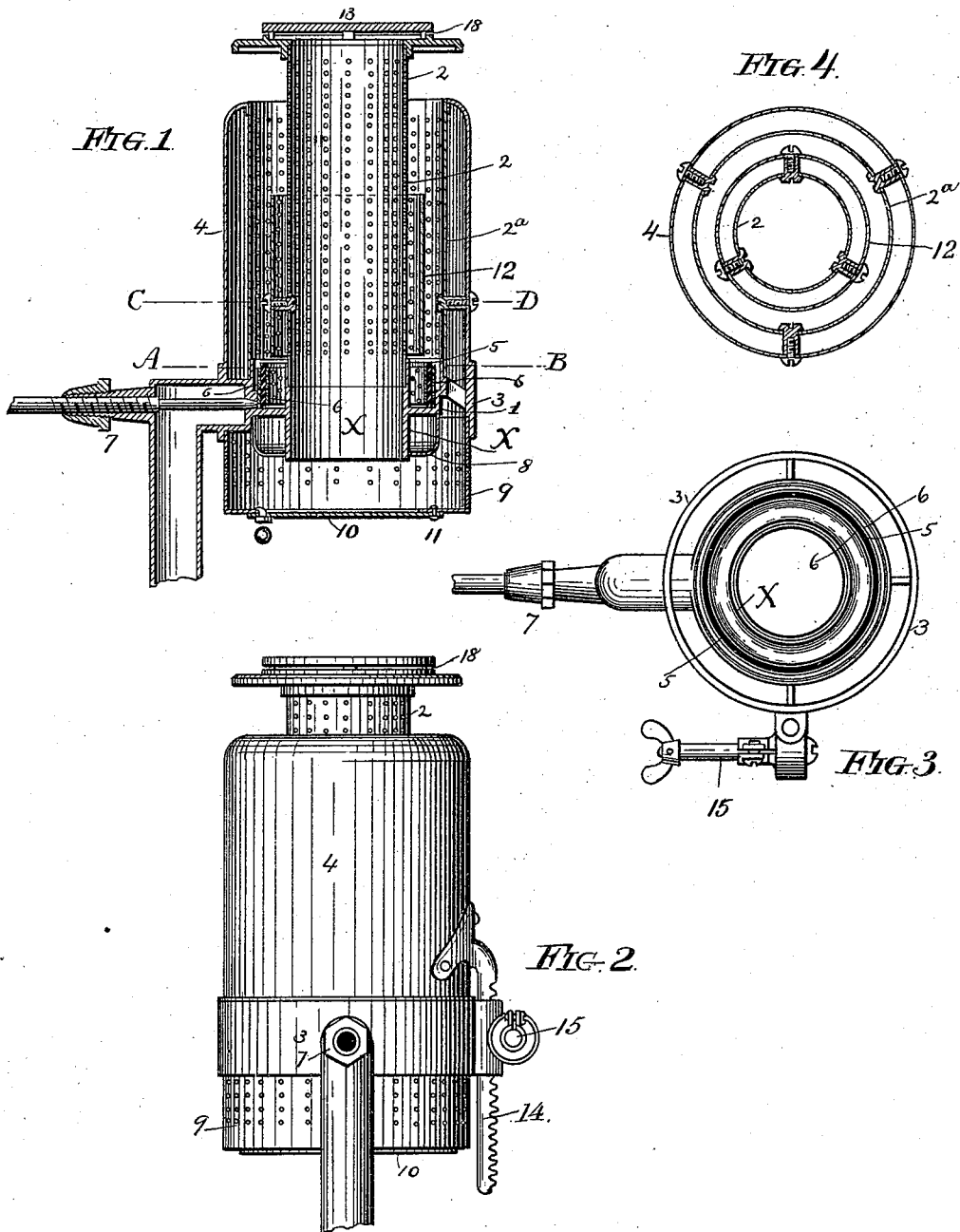


(No Model.)

A. GATEAU.
VAPOR BURNER.

No. 493,079.

Patented Mar. 7, 1893.



Witnesses:
J. Halpern
L. M. Hopkins

Inventor:
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UNITED STATES PATENT OFFICE.

ANTOINE GATEAU, OF CHICAGO, ILLINOIS.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 493,079, dated March 7, 1893.

Application filed July 15, 1892. Serial No. 440,157. (No model.)

To all whom it may concern:

Be it known that I, ANTOINE GATEAU, a citizen of the Republic of France, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vapor-Burners, of which the following is a specification.

Considered in its general aspect, the object of the present invention is to improve vapor burners, and especially vapor burners of the class shown and described in Letters-Patent No. 435,693, which were granted to me on the 2d day of September, 1892, and the particular features of novelty in which the invention resides, are particularly pointed out in the claims, being first fully described with reference to the accompanying drawings, which are made a part hereof, and in which,—

Figure 1, is a vertical section of a vapor burner embodying the invention. Fig. 2, is a side elevation thereof. Fig. 3, is a plan view of the oil cup. Fig. 4, is a horizontal section of the burner on the line C—D, the parts below the cutting plane being shown in plan.

The part of the burner which sustains all of the other parts, consists of a single casting, comprising an annular cup 1, a ring 3 concentric therewith, two or more struts located between them and extending from one to the other, and the shell or casing of a valve 7. The side walls of the cup consist of concentric rings, or short tubes, and the inner one of these is continued downward below the bottom of the cup, as shown at A. The interior surface of the outer wall of the cup is formed with an offset, thus making the cup of two diameters, with the greater at top. Within the portion of smaller diameter, is fitted a ring 6 of perforated sheet metal, and within this ring is a similar ring 6' of smaller diameter, a wick 5 of asbestos or similar material being arranged in the annular space between them. The object in forming the cup of two diameters, is to provide means for holding these wick tubes 6, 6' in place and at the same time leave between the outer one and the wall of the cup, an annular space into which air can enter.

2^a and 4 are two perforated tubes united at top and held concentric with each other by means of a number of struts interposed between them at a lower level. The former of

these tubes slips loosely over the upper end of the outer wall of the cup and the latter rests upon the top edge of the ring 3. To it is riveted, or otherwise suitably secured, a rack-bar 14, which passes downward through a corresponding socket formed through a projection on the side of the ring and is engaged by a pinion 15, secured to a shaft suitable for turning it. By turning it in one direction, the two tubes may be elevated high enough to afford access to the cup for charging it with gasoline or similar oil for starting the burner. While the burner may be started in this way, still I do not prefer it. I prefer to start it by placing a lighted lamp beneath it and allowing the heat escaping therefrom to pass up through the burner, as shown in the patent above referred to. In order to regulate the admission of air to the lower part of the burner, I secure to the ring 3 a perforated cap 9, which is closed at bottom save for a central opening, and I provide a door 10 pivoted at 11, whereby this opening may be closed when desired.

8 is a casing secured to the outside of the cup and to the bottom of the tubular extension A for the purpose of preventing loss of heat by radiation.

The central perforated air tube, 2, has its lower end slipped into the central opening of the cup 1 and carries at its upper end the spreader 16. As customarily constructed this tube discharges all of its air below the spreader, so that the air comes in contact with the flame before the flame comes in contact with the spreader. With this arrangement, the flame has a tendency to hug the spreader and curl inward over the top of it. According to my invention, I provide the spreader with an opening through which air from the central air tube may pass above it and I place opposite this opening a deflector 13 for throwing the air outward against the interior of the annular flame, as it passes upward around the spreader. As shown in the drawings, the spreader is provided with one large central opening (reducing it to the form of a ring) into which the upper end of the central air tube fits, and the deflector 13 consists of a disk held a short distance above the top of the spreader by means of a suitable number of struts or posts 17. Rising from the top of

the spreader, just beneath the periphery of the deflector, is an annular flange which terminates a short distance from the underside of the deflector, leaving a narrow opening or slot 18, through which the air escapes.

Secured to the central tube 2 and held concentric therewith by a suitable number of struts, is a short perforated tube 12, which extends downward to about the top of the oil cup.

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

1. In a vapor burner, the combination with the annular vaporizing cup 1 having a central opening for the admission of air, of the central perforated tube 2 fitting upon the inner wall of said cup, an annular spreader secured to the upper end of said tube, a deflector situated opposite the open end of said tube and above the spreader, the perforated tube 12

surrounding the tube 2, the perforated tube 2^a surrounding the tube 12 and fitting upon the outer wall of the annular cup, the non-perforated tube 4 surrounding the tube 2^a, the upper ends of said tubes 4 and 2^a being secured together, the annular ring 3, upon which the tube 4 rests, radial braces connecting the ring 3 and annular cup, and the perforated tube 9 secured to the under side of the ring 3, substantially as set forth.

2. The combination with a vapor burner, of the perforated cap 9 fitted over the bottom thereof, the bottom of said cap being provided with a central opening, and a closure pivoted to the bottom of the cap and adapted to close said opening, substantially as set forth.

ANTOINE GATEAU.

Witnesses:

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