F. A. SAWYER.

VAPOR-BURNER.

No. 187,915. Patented Feb. 27, 1877.

Fig. 1

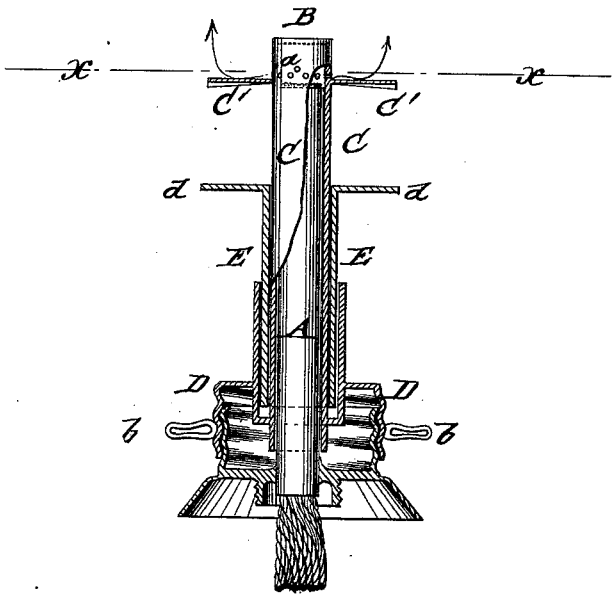
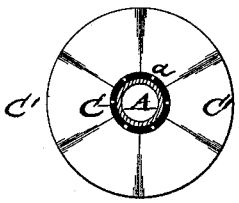


Fig. 2



WITNESSES:

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UNITED STATES PATENT OFFICE.

FREDERICK A. SAWYER, OF HOUSTON, TEXAS, ASSIGNOR TO HIMSELF, ADDISON H. BALDWIN, AND ARTEMAS N. CARTER, OF SAME PLACE.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **187,915**, dated February 27, 1877; application filed November 4, 1876.

To all whom it may concern:

Be it known that I, FREDERICK A. SAWYER, of Houston, in the county of Harris and State of Texas, have invented a new and Improved Vapor-Burner, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a sectional side elevation of my improved vapor-burner; and Fig. 2 a horizontal section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved construction and arrangement of vapor-burner, by which the same is readily lighted, adjusted to a larger or smaller flame, or extinguished.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

An outer sleeve or jacket with disk-shaped flange slides below the outer burner-tube for protecting the burner against a draft of cold air from below.

In the drawing, A represents the wick-tube through which the fluid is carried to the reservoir or gas-chamber B at the upper end of a closed tube, C, that is fitted snugly over the wick-tube A. The outer tube C is provided with a number of jet-holes, *a*, at suitable distances below the upper end of the same, and with a disk-shaped flange, C′, extending horizontally from tube C, immediately below the jet-holes.

Any number of jet-holes may be used, and the same be preferably arranged in circles at different distances from the disk-shaped flange, the upper circle of jet-holes containing a less number than the lower ones, for the purpose of adjusting the size of the flame by raising or lowering the outer burner-tube on the wick-tube.

The outer tube C is adjusted on the wick-tube by a screw or other connection, D, near the bottom, or by equivalent means. Suitable projections or knobs *b* at the lower screw-part of the tube C serves as steady pins or supports for the collar of a globe-stand and also as rests for the thumb and fingers for the purpose of raising or lowering the outer tube. A sleeve or jacket, E, slides over the outer tube C, below the disk-flange of the same, and has a corresponding flange, *d*, of disk shape, which may be moved up or down to be closer or farther from the upper burner-disk. The sleeve E is used for the burners of street-lamps, head-lights for railroad-engines, lanterns, &c., forming a protection of the burner against any draft of cold air. The burner is screwed by a base socket into any lamp in the customary manner.

The burner is lighted by raising the outer movable tube on the stationary wick-tube until the jet-holes are above the upper end of the wick-tube. The fluid is then allowed to run out upon the upper disk, where it is readily lighted.

When the light is turned out by screwing the outer tube down, the vapors in the upper chamber B are entirely consumed, so that a vacuum is produced, which causes the liquid to rise and fill the chamber, supplying thereby sufficient fluid for relighting the burner. The flame of the burner may be enlarged or diminished by using all or a few of the jet-holes only, the adjustable outer tube forming with the wick-tube a kind of valve by which the supply of fluid is established or discontinued.

The burner may be used for any of the light hydrocarbons, as gasoline, naphtha, &c., and constructed of any form or size according to the different applications of the same.

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

1. The outer tube C, made adjustable up and down on the wick-tube A, to close a greater or less number of the jet-holes *a*, as and for the purpose specified.

2. The combination of outer burner-tube C, having disk-shaped flange C′, with a sliding sleeve below the same provided with a corresponding disk flange, to prevent draft of cold air to the burner-flange, substantially as set forth.

FREDERICK A. SAWYER.

Witnesses:

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F. M. POLAND.