J. Q. JAYNES.

Vapor-Burner.

No. 162,076. Patented April 13, 1875.

Fig. 1.

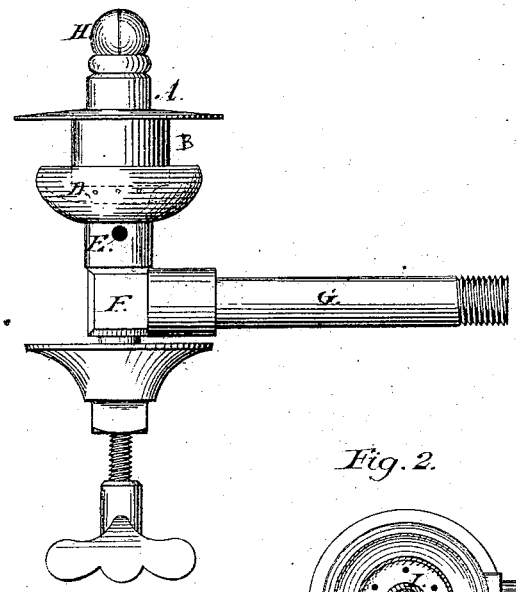


Fig. 2.

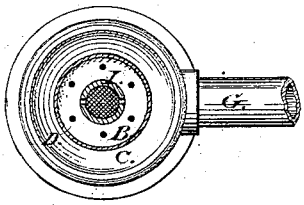
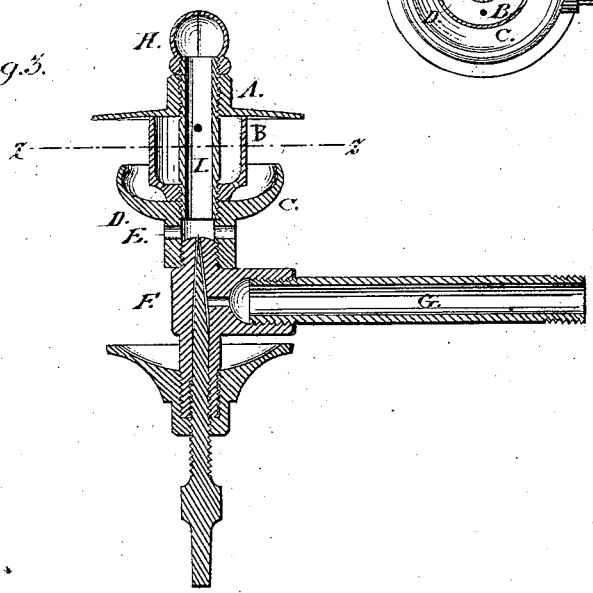


Fig. 3.



Witnesses:

S. H. Drew

Jacob Schroder

Inventor:

John Q. Jaynes

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

JOHN Q. JAYNES, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO SAMUEL B. MAYER, OF SAME PLACE.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **162,076**, dated April 13, 1875; application filed April 2, 1875.

To all whom it may concern:

Be it known that I, JOHN QUINCY JAYNES, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Vapor-Burners, of which the following is a specification:

The objects of my invention are to prevent the extinguishment of the "heaters," or the vaporizing-jets of flame, by drafts of air or wind, and to insure a steadier and continuous flame at the tip of the burner by devices which serve also to simplify the construction of the annular vapor-reservoir, which supplies the heaters or vaporizing-jets.

I attain these objects by means of my said improvement, which I now proceed to describe, reference being had to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is a side elevation of a vapor-burner embracing my invention. Fig. 2 represents a horizontal section on the line 2 2, Fig. 1. Fig. 3 represents a vertical longitudinal section of the same.

Like letters refer to corresponding parts in the several figures.

In its operation the improved burner does not materially differ from others of its class, save in the manner in which the heaters or vaporizing-jets are protected and confined, as hereinafter set forth. The light oil, naphtha, benzine, gasoline, or other hydrocarbon passes under pressure through the supply-pipe G and valve-casing F into the mixing-chamber within the central tube I of the burner, where it is mixed with air from apertures E at the top of the valve-casing, and from whence it passes to the tip H, and is ignited as it issues from the tip H, the oil or hydrocarbon being vaporized during its said passage by means of jets of flame issuing from orifices D at the base of an annular vapor-reservoir, B, which jets of flame heat the said reservoir, and all the other parts of the burner for the said purpose.

The orifices D, from which the vaporizing-jets or heaters issue, are formed obliquely in the nearly horizontal bottom of the vapor-reservoir B, so as to direct the jets downward, and they are inclosed by a cup, C, with inwardly-turned upper edges, to protect the jets against extinguishment, and to deflect the same against the sides of reservoir. This cup is small and deep, so as simply to accommodate the jets, and to project above the jet-orifices a considerable distance, as represented. The vapor-reservoir consists of a cylindrical bowl having the described perforated bottom. The central tube I, which forms the mixing-chamber and conducting-tube, renders the same annular, and is perforated for the discharge of a sufficient quantity of the aerized vapor into the chamber of the reservoir for the supply of the heaters. The top of the vapor-reservoir is closed by a horizontal disk, A, above which is the tip H. This disk is made of the same outline as the jet-cup C, but larger than the latter, so as to project beyond it on all sides. With a cup one inch in diameter, a disk five quarters wide has been found to be a proper size. The projecting rim of the disk is slightly downturned in the illustration to increase its primary effects, which are as follows: The disk operates in combination with the cup C to prevent the extinguishment of the heaters or vaporizing-jets by wind, whether it strikes from either side or upward or downward. This is accomplished not only by the shielding of the jets themselves, but by protecting the surfaces with which they impinge from the cooling effects of drafts.

In the improved burner these surfaces are kept so intensely hot as to relight the jets automatically. This is largely owing to the perfect inclosure of the jet-orifices by the small deep jet-cup with its inturned edge above the jet-orifices.

The disk operates also in said combination to prevent the heaters from leaping into contact with the main flame, and thus impairing its steadiness and illuminating power. At the same time, as before stated, this disk serves to form the top of the vapor-reservoir, by which the heaters are supplied, and thus to simplify the construction of the burner. The heat of the jet-cup is directly transmitted to the valve-casing F, and therethrough to the oil-pipe G.

The employment of a cup and disk in combination with the reservoir, by which the

vaporizing-jets of a vapor-burner are supplied, irrespective of the construction and utilization of the same, in the manner herein set forth, is not claimed as new.

The following is claimed as new, namely:

The combination, with the mixing and conducting tube I, of the disk A beneath the tip H, the bowl B, having the jet-orifices D therein, and the cup C, surrounding and inclosing the jet-orifices, said parts being constructed substantially as herein shown and specified, and operating to form the supply-chamber of the vaporizing-jets or heaters, and to deflect and shield the latter, and to prevent these jets from leaping into contact with the main flame, in the manner herein set forth.

JOHN Q. JAYNES.

Witnesses:

I. H. DREW,

JACOB SHRODER.