

HENRY FAYETTE.

Vapor Burner.

No. 123,879.

Patented Feb. 20, 1872.

Fig. 1.

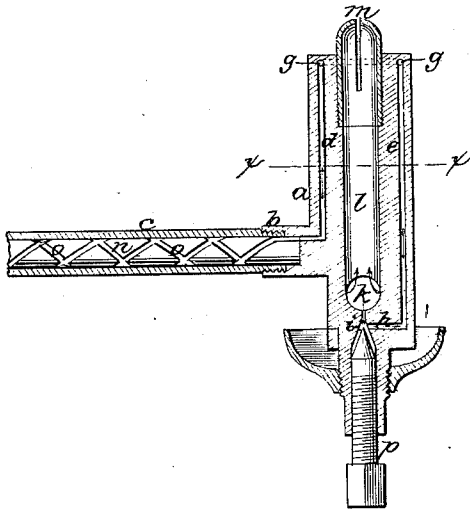


Fig. 2.

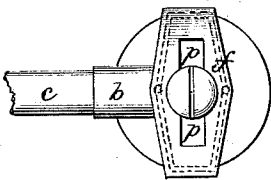


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY FAYETTE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. 123,879, dated February 20, 1872.

Specification describing certain Improvements in Vapor-Burners, invented by HENRY FAYETTE, of Brooklyn, Kings county, New York.

This invention belongs to that class of devices in which the light-giving flame vaporizing by its heat a hydrocarbon liquid, burns the vapor thus produced. The invention relates to an apparatus of the above-described kind, in which the hydrocarbon liquid is caused to flow through a series of peculiarly-arranged passages, all the time exposed to the heat of the flame, passing meanwhile directly through the flame.

Figure 1 is a longitudinal vertical section; Fig. 2, a top view; and Fig. 3, a horizontal section.

Referring to the drawing, *a* is a block of metal of any desired shape, from one edge of which projects a nozzle, *b*, into which screws the tube *c* that conducts the hydrocarbon liquid from the reservoir above. From the block *a*, a rod, *n*, extends outward through the nozzle *b* and tube *c*, said rod having grooves *o*, or threads in its surface. Within the block *a*, are formed in any suitable manner, passages *d e*, the former of which at its lower end communicates with the groove *o*, and thence ascends along one end of the block *a*, terminating at its upper end at the middle of one side of a plate, *f*, and opening there into a passage, *g*, which runs entirely around the plate *f*. At the opposite side of this plate the passage *e* opens out of the passage *g*. The passage descends along the other edge of the block *a*, and terminates near the lower end thereof. From it a horizontal passage, *h*, leads to a chamber, *i*, in the center of the lower part of the block *a*, which chamber opens by a minute orifice at its upper end into the lower side of the air-hole *k*, that runs through the block *a* from side to side, and communicates with the central chamber *l*, at whose top is the burner *m*, which burner passes through a central slot,

p, made lengthwise of the plate *f*, the slit of the burner being both above and below the plate. The oil in the passages being first vaporized, by application of external heat, sufficiently to start a flame at the burner, said flame at once begins to heat the block *a*, rod *n*, and pipe *c*. Hence, the heating of the oil commences as soon as it reaches the rod *n*. This rod takes the place of the wicking commonly employed as a packing, its grooves *o* serving to conduct the oil and heat it at the same time. The heated oil flows from the nozzle *b* through the passages *d, g, e*, and *h*, in the order named, which passages make a long journey for the liquid, during all of which it is also subjected to a greater or less heat, so that by the time it reaches the chamber *i* it is converted into vapor, whose flow into the chamber *l* is regulated by the usual conical-pointed screw *p*. The arrangement of the plate *f* in which is the passage *g* in respect to the burner *m*, is such that the flame completely incloses the plate, part of the flame being above and part below the plate, and the two parts combining at the ends of the plate, the latter occupying the dark part of the flame, so as not to diminish its light, while it is in constant and full reception of the heat of the flame which it transmits to the rest of the apparatus.

I claim as my invention—

1. The plate *f* provided with the passage *g* and slot *p*, and combined with the burner *m*, placed so that the flame incloses the plate *f*, as described.
2. The metal packing *n* provided with the grooves *o*, as explained.
3. The grooved packing-rod *n* in combination with the tube *c*, block *a* provided with the passages *d e h i*, and plate *f* provided with the passage *g*, all arranged as set forth.

HENRY FAYETTE.

Witnesses:

GEO. E. BROWN,
JOHN HITZ.