M. B. DYOTT.

Vapor-Burner.

No. 131,086. Patented Sep. 3, 1872.

Fig. 1.

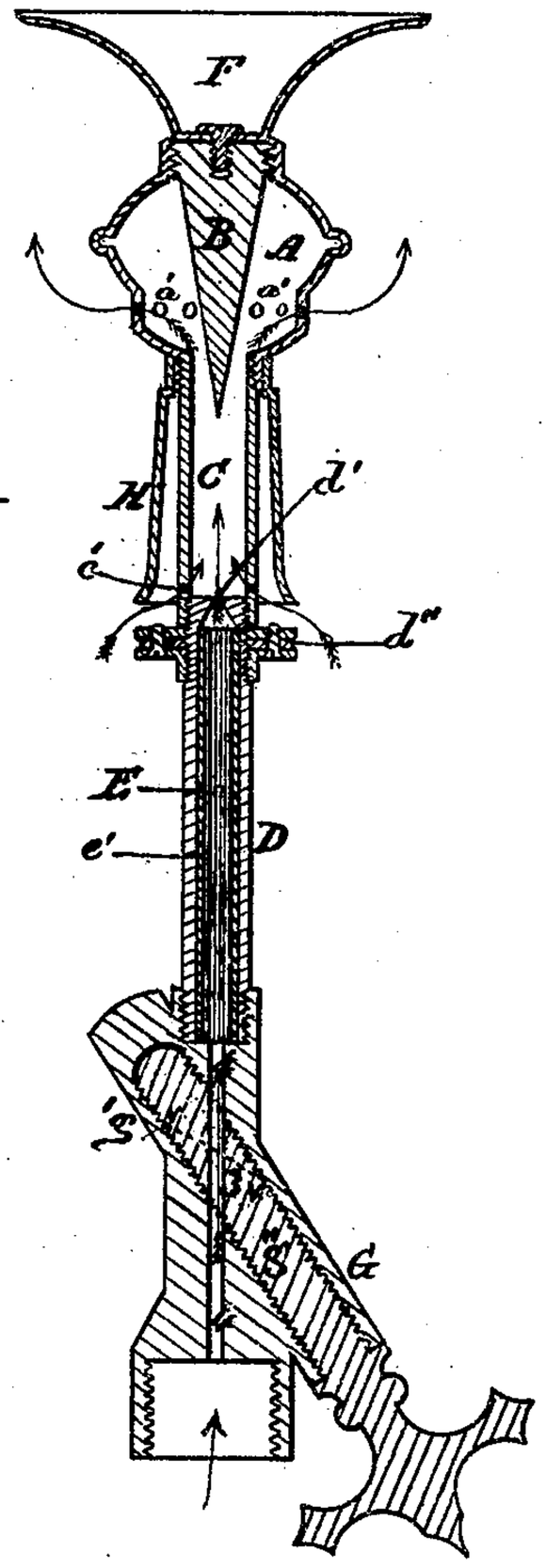

Fig. 2.

WITNESSES:

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MICHAEL B. DYOTT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **131,086**, dated September 3, 1872.

Specification describing certain Improvements in Burners, invented by MICHAEL B. DYOTT, of the city of Philadelphia, in the State of Pennsylvania.

The first part of my invention relates to the construction and arrangement in the supply-pipe, immediately below the generator, of a core of porous metallic packing of wire or wire-gauze, surrounded or lapped tightly around by muslin or other poor heat-conducting fabric, and inserted firmly in the said part of the pipe, so as to serve as an incombustible retarder therein, and at the same time be prevented by the lapping fabric from becoming unduly heated by the inclosing or surrounding pipe. The second part of my invention relates to the construction of the opening through the plug of the stop-cock in a direction oblique in relation to the supply and discharge openings in the vertical pipe below the generator and burner-head, for the purpose of more effectually preventing any leaking through the said openings when the plug is shut consequent upon the ridges which are produced around the plug and barrel by wear.

Figure 1 is a vertical central section of the vapor-burner embodying my invention. Fig. 2 is a modification of the stop-cock, shown in Fig. 1.

The head A of the burner is a hollow retort perforated with a ring of holes, *a'*, near its lower end. The heater B is screwed into the upper end of the hollow head A, and projects downward, as an inverted cone, to or into the upper end of a hollow mixer, C, through which mingled vapor and air rise. The vapor passes up into the mixer C through a generator or narrow hole, *d'*, made in the upper end of the supply-pipe D, while the atmospheric air enters C through a ring of holes, *c'*, at a point a little above the vapor-hole *d'*, and thus the vapor and air mingled together impinge against the surface of the heater B, and finally escape through the ring of jet-holes *a'*, which, being ignited, heat and keep heated both the head A and heater B. The reflector F is screwed fast upon the upper end of the burner-head A, or to that of the heater B, and is curved on its under side so as to reflect downward and outward the light of the ignited jets, which radiate from the ring of holes *a'* below it, the said jets of flame in radiating from the ring of holes *a'* curving upward toward the reflector F, as indicated by the arrows in Fig. 1. A bell-shaped guard or fender, H, is fixed around the outside of the mixer C, so as to project a little below the ring of air-holes *c'*, and thus form an annular guard for the purpose of protecting the said holes *c'* from sudden drafts or gusts of wind, substantially as described and shown, in the patent granted to me July 4, 1871.

The core of metallic packing E consists, in the present case, of a bundle of fine wire cut in lengths to correspond with the length of the chamber of pipe D, and lapped tightly around with muslin *e'*, so as to form a compact cylinder fitting the said pipe D. When the stop-cock G is opened the fluid from below rises and filters through the porous metallic core E, while the lapping of muslin *e'* prevents the warmth of pipe D from being transmitted to the core, and the fluid passing through the narrow hole *d'* becomes heated, volatilized, and mingled with atmospheric air in C, and finally escapes in flames from the jet-holes *a'* in the head A. The lower end of the mixing-chamber or pipe C and the upper end of the core-pipe D are connected together by a flange on each with an isolating layer of cork, *d''*, or other poor conductor of heat between, so as to prevent the chamber C from heating the contents in pipe D. The barrel *g'* of the stop-cock G is cast obliquely across the supply-pipe below D, and the hole 3 through the plug *g''* is made correspondingly oblique, so that when the cock is open the said hole 3 in the plug *g''* aligns with the bore 4, and allows the fluid to pass freely upward through the core E; but, if the plug be now turned half around the hole 3 in the same will come into the position indicated by the dotted line *v v*, and effectually prevent any leaking of the fluid through the cock. It will be readily seen that the obliquity of the position of the cock G will afford ready access for operating the plug *g''* by means of a wrench, when the cock is above reach by hand, as in street-lanterns.

Fig. 2 is a modification of the cock, with a plug having an oblique hole, when the latter is applied in a barrel at right angles to the supply-pipe, the bore 4 of the supply-pipe being obliqued both above and below the plug

so that the parts will operate together precisely as in the cock in Fig. 1. In Fig. 1 the plug of the cock is a cylindrical screw, and therefore retained in the barrel without any collar. In Fig. 2 the plug is tapered, and retained in the barrel by a collar, in the usual manner. The burner-head A and the reflector F are both in this instance made of iron, and coated on the outer surfaces with nickel and then burnished, thus producing a brilliant reflecting surface that will not be impaired by the flames. The head A and reflector F may be made of white porcelain, for the same purpose.

I claim as my invention—

1. The incombustible porous core E, lapped around with muslin or other poor conductor of heat, and inserted within the pipe D, the said lapping of muslin or other poor conductor of heat serving to prevent the said incombustible core E from becoming heated by the hot inclosing pipe D, substantially as and for the purpose hereinbefore described and set forth.

2. The oblique direction of the hole 3 in the plug of the stop-cock of a burner, whether the plug and barrel be arranged either at a right angle across the vertical supply-pipe in stem of a burner, as shown in Fig. 2, or obliquely across the same, as shown in Fig. 1.

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Witnesses:

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