

(No Model.)

A. P. JACOB.
SELF LIGHTING GAS BURNER.

No. 487,744.

Patented Dec. 13, 1892.

Fig.1.

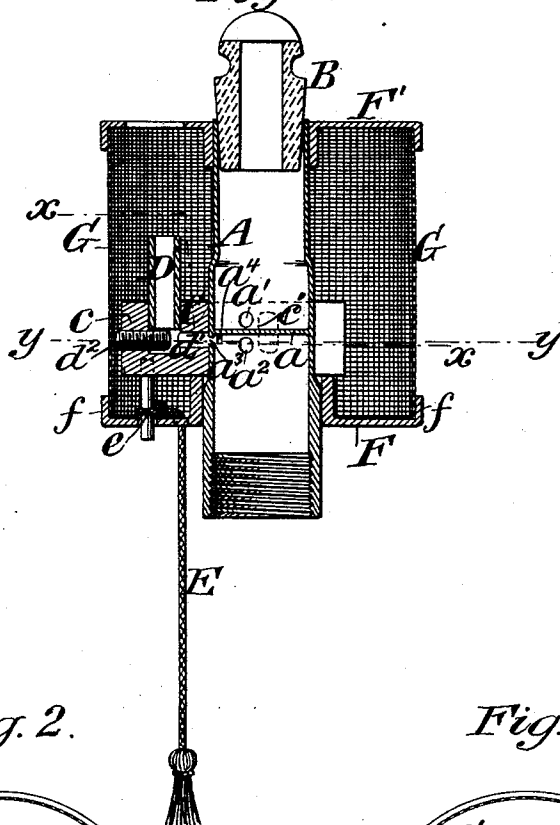


Fig. 2.

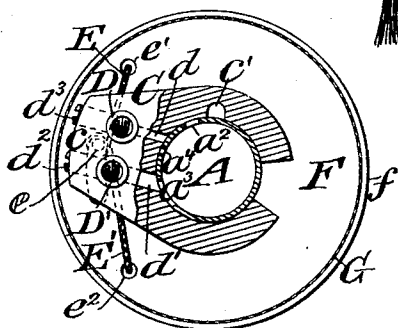
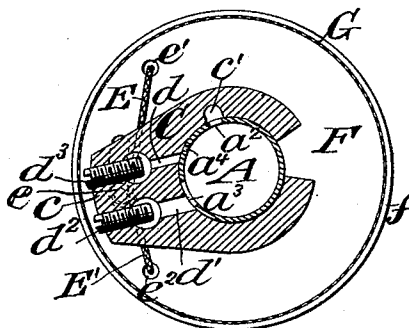


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALFRED P. JACOB, OF BROOKLYN, NEW YORK.

SELF-LIGHTING GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 487,744, dated December 13, 1892.

Application filed December 26, 1891. Serial No. 416,248. (No model.)

To all whom it may concern:

Be it known that I, ALFRED P. JACOB, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Self-Lighting Gas-Burners, of which the following is a specification.

My invention relates to an improvement in self-lighting gas-burners, in which a small jet of gas is left permanently burning when the gas from the main burner is turned off, the said jet serving to light the gas at the main burner when the gas is turned on.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a view in vertical central section through the tip, pillar, switch, and surrounding gauze jacket. Fig. 2 is a view in horizontal section, partly in plan, on the line xx of Fig. 1, showing the switch in position to turn off the gas from the main burner; and Fig. 3 is a view in horizontal section on the line yy of Fig. 1, showing the switch in the position which it assumes when the gas is turned on to the main burner.

The pillar of the burner is represented by A, and may be either constructed originally with a view to its adaptation to the self-lighting mechanism or it may be an ordinary pillar of a gas-burner fitted to the purposes of self-lighting mechanism.

An ordinary lava tip is represented at B.

The pillar A is provided, preferably near its base, with an internal diaphragm a , dividing it into an upper and lower chamber, which communicate with each other through openings a' and a'' , one located above and the other below the diaphragm a and extending through the wall of the pillar. The pillar is further provided with an elongated opening a^3 , spaced, preferably, about a quadrant from the opening a^2 and conveniently located in the same horizontal plane therewith, and with a small opening a^4 , extending through its wall intermediate of the openings a^2 and a^3 . The openings a^3 and a^4 are below the diaphragm a .

The part which I have referred to as the "switch" is represented as a whole by C, and consists of a block of metal or other suitable material fitted snugly to the exterior of the base of the pillar, so as to rock freely thereon

in a horizontal plane and form a gas-tight joint with the exterior wall of the pillar.

The switch C is provided with an extended neck portion c , in which are set, side by side, two short upwardly-extending jet-tubes D and D'. The sockets in which the tubes D and D' are fixed communicate by means of channels d and d' with the interior wall of the switch where it comes in contact with the exterior wall of the pillar and in the plane with the openings a^3 and a^4 . The interior wall of the switch is further provided with an elongated recess c' , which is in position to register with and form a connecting-conduit between the openings a' and a^2 through the wall of the pillar when the switch is turned "on," and when the switch is turned "off" the said elongated opening in the switch will rest in a position opposite the wall of the pillar, as shown in Fig. 2, and communication between the lower and upper portions of the pillar through the openings a' and a^2 will be completely cut off. The channels d and d' , leading to the jet-tubes D and D', are so located with respect to the openings a^4 and a^3 through the wall of the pillar that the channel d' will be in communication with the elongated opening a^3 through the wall of the pillar whether the switch be turned on or off and during its transit from one position to the other, and hence gas will at all times be fed to the jet-tube D' and a continuous flame will burn at its upper end. The size of such flame may be determined by means of an adjusting-screw d^2 , extending from the end of the neck of the switch inwardly across the channel or socket communicating with the bottom of the tube D'. The channel d is so located with respect to the opening a^4 that when the switch is turned off the wall of the pillar will shut off the entrance to said channel; but during the turning of the switch from "off" to "on" the said channel will pass the opening a^4 , and during the moment that it is passing it gas will issue through the said conduit d into the jet-tube D and, being ignited by the jet on the tube D', will produce a momentary flash reaching from the flame at the jet-tube D' upwardly to the burner-tip, at which point it will ignite the gas issuing from said tip, the recess c' in the switch

having formed communication between the upper and lower portions of the pillar slightly in advance of the transit of the conduit *d* past the opening *a*⁴. The size of said flash-jet may be determined by means of an adjusting-screw *d*³. As the switch reaches its "on" position the wall of the pillar will again cut off the entrance of gas into the conduit *d*. By this means I am enabled to locate the permanent jet at a considerable distance from the pillar and its tip, where it will not be liable to soot and obstruct the passage-way for the escape of gas from the pillar or tip, and reduce materially the size of the permanent jet.

The switch may be conveniently operated by cords passing outward, as at *E E'*, extending from a common point of attachment *e* on the neck of the switch in opposite directions and passing downwardly through openings *e'* *e*² in a base *F*.

I find it desirable to form the base *F* of a substantially-imperforate sheet of material and to surround the pillar and jet by a fine gauze cylinder or jacket *G*, the lower end of which is inserted within an upturned flange *f* within the margin of the base *F*, and the upper end of which is closed by a cap-sheet *F'*, having an opening immediately over the jet-tube *D*. The closed base *F* prevents the flaring of the permanent jet by induced currents of air, the necessary amount of air to support the combustion being taken laterally through the gauze jacket and the latter at the same time preventing the disturbance of the jet from wind or drafts.

It is obvious that slight changes might be resorted to in the form and arrangement of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the construction herein set forth; but

What I claim is—

1. The combination, with a main burner separated into chambers, one communicating with the burner-tip and the other with a gas-supply, of a switch adapted to open and close communication between the two chambers

and jet-tubes carried by the switch, one of said jet-tubes being in permanent communication with the chamber leading to the gas-supply and the other having a momentary communication with said chamber during the turning of the switch, substantially as set forth.

2. The combination, with the pillar of a gas-burner separated into two chambers, one communicating with the tip and the other with the gas-supply, said pillar being provided with openings through its wall, one of said openings communicating with the chamber leading to the tip and the other to the chamber leading to the gas-supply, of a switch seated on the pillar and having a rocking movement thereon forming a gas-tight connection between its inner wall and the pillar, said switch being provided with a recess adapted to bring the opening through the wall of the pillar leading to one of the chambers into communication with the opening through the pillar leading to the other chamber when the switch is turned on, and jet-tubes carried by the switch, each in communication with conduits opening to the inner wall of the switch, the conduit leading to one of the jets being at all times in communication with an opening leading through the pillar to the chamber in communication with the gas-supply and the conduit leading to the other jet having momentary communication with said chamber during the swinging of the switch, substantially as set forth.

3. The combination, with the main burner subdivided into separate chambers and the switch for opening and closing communication between the chambers, of a permanent jet-tube carried by the switch and means for regulating the supply of gas to said permanent jet-tube independent of the means of regulating the supply to the burner, substantially as set forth.

ALFRED P. JACOB.

Witnesses:

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