

No. 823,475.

PATENTED JUNE 12, 1906.

G. MACHLET, JR.

GAS BURNER.

APPLICATION FILED JULY 18, 1905.

Fig. 1.

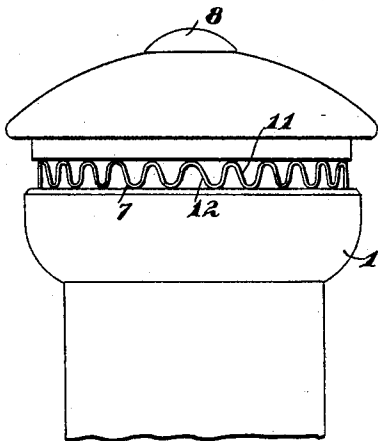
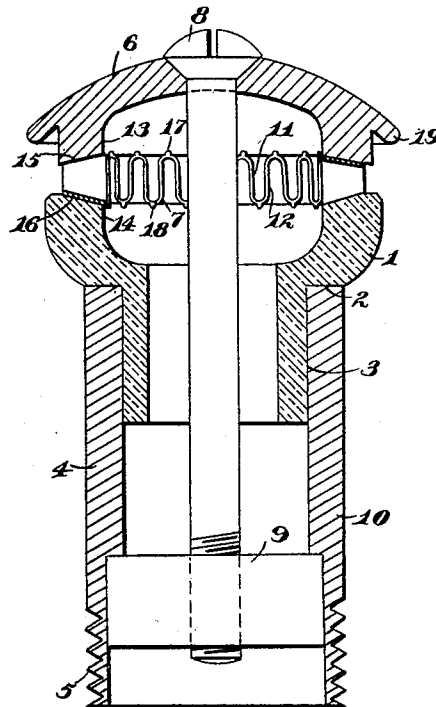


Fig. 2.



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GAS-BURNER.

No. 823,475.

Specification of Letters Patent.

Patented June 12, 1906.

Original application filed December 1, 1903, Serial No. 183,333. Divided and this application filed July 18, 1905. Serial No. 270,254.

To all whom it may concern:

Be it known that I, GEORGE MACHLET, JR., a citizen of the United States, residing in Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification.

This invention relates to improvements in burners used for heating purposes, the fuel consisting usually of mixed gas and air under pressure.

The object of the invention is to produce a high degree of heat by means of a relatively small burner and to eliminate all liability of flame entering the body of the burner and causing an explosion therein.

In carrying out my invention I employ a tubular body, a cap, and an intervening screen having jets which are sufficiently small to prevent flame from entering the burner. Said cap is formed so as to prevent the settling of dust or dirt within the jets or orifices of the screen. The screen consists in this instance of a single annular diaphragm which is provided with radiating flutes constituting the jets for the gas, said flutes being preferably formed by corrugating the annular strip which constitutes said diaphragm. Projections are also formed on said diaphragm extending up and down therefrom to interlock with both the cap and the tubular body of the burner, and means are provided for detachably connecting said cap, screen, and body.

In the accompanying drawings, Figure 1 is an elevation, and Fig. 2 a vertical central section, of my improved burner, said figures corresponding, respectively, with Figs. 3 and 4 of my application, Serial No. 183,333, filed December 1, 1903, (Patent No. 766,636,) of which this application is a division.

The burner comprises a tubular body 1, having a shoulder 2 and a neck 3, the latter inserted within a tube or pipe 4, threaded at its lower end at 5. The burner also comprises a cap 6 and a screen 7 intervening between the cap and the tubular body. A central screw 8 passes down through a cap within the tube 4 and is threaded into a nut 9, which engages a shoulder 10, formed in the lower end of said tube 4.

The screen 7 consists of a single annular

diaphragm having radiating flutes 11 and 12 formed alternately in its top and bottom surfaces. The screen is formed, preferably, of a strip of metal which is corrugated to form the flutes, these being outwardly directed or radiating and deeper at their inlet ends than at their outlet ends, the former being seen clearly at Fig. 2 and the latter clearly at Fig. 1. These flutes form jets for the escaping gas and are made deeper at their inner ends than at their outer ends in order that the capacity or area of the flutes at their inner ends shall be greater or at least as great as at their outlet ends, thereby to prevent liability of the flame entering through the flutes into the interior of the burner, said jets being of course sufficiently small for this purpose.

Owing to the difference in the height between the inner and outer ends of the flutes the latter taper outwardly, and the rims 13 14 of the cap and tube are respectively interiorly beveled, as at 15 16, to conform to the taper of the flutes in the screen, said adjacent rims being so shaped that a greater space is left between them at their inner edges than at their outer edges and the screen fitting closely between said rims.

Around its inner edges the screen is provided with upwardly and downwardly extending projections or teeth 17 18, which engage within the rims 13 14 and cause the screen to interlock with the cap and the tubular body 1. The cap is also provided with an exterior or border flange 19 immediately above the screen, which serves as a spreader for the flames and also as a protector for the screen, preventing dust or other sediment from settling in the corrugations or channels, which would tend to choke the same.

My improved gas-burner can be used for many purposes where a high degree of heat is desired and can be made in any desired form—round, square, hexagonal, &c. It may be made in different sizes, groups, or clusters, as required, and may be used at ordinary gas-pressure or under higher pressure from a blower. The burned-out diaphragms may be replaced at small expense and with great facility by simply disconnecting the screw 8 and exchanging the worn-out diaphragm for a new one, the projections 17 18 insuring that the new diaphragm shall be set or locked

properly between the cap and the body of the burner.

Variations may be resorted to within the scope of the invention—as, for instance, the body of the burner may consist simply of a plain tube 4 without using the head 1, and the single diaphragm between the cap and the tube may be otherwise formed. Said diaphragm may also be used in certain other forms of gas-burners.

Having thus described my invention, I claim—

1. A gas-burner comprising a hollow body, a cap, and a single intervening screen consisting of a single thin annular diaphragm corrugated to form outwardly-directed flutes in its top and bottom surfaces; the flutes being deeper at their inlet ends, than at their outlet ends; said diaphragm fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said diaphragm.

2. A gas-burner comprising a hollow member, a detachable cap, and a single intervening detachable screen consisting of a single annular diaphragm having radiating flutes formed alternately in its top and bottom surfaces, the flutes being deeper at their inlet ends than at their outlet ends; said diaphragm fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said diaphragm.

3. A gas-burner comprising a tube having a rim, a cap having a rim, and a single intervening screen consisting of a single annular sheet-metal diaphragm formed with outwardly-directed corrugations which are deeper at their inner ends than at their outer ends; the edges of the rims of both said tube and said cap being beveled to conform to the screen.

4. A gas-burner comprising a tube having a rim, a cap having a rim, and a single intervening screen consisting of a single annular diaphragm formed with outwardly-directed corrugations which are deeper at their inner ends than at their outer ends; one of said rims being interiorly beveled so that a greater space is left between the rims at their inner edges than at their outer edges, and the screen fitting between said rims.

5. A gas-burner comprising a tubular body having a rim, a cap having a rim, and a single intervening screen consisting of a single annular diaphragm having outwardly-directed flutes and also having both upwardly and downwardly directed projections to engage said rims.

6. A gas-burner comprising a tubular body having a rim, a cap having a rim, and a single intervening screen consisting of a single annular diaphragm having outwardly-directed

flutes formed alternately in its top and bottom surfaces, projections extending upwardly and downwardly from the ridges of said flutes to fit within said rims.

7. A gas-burner comprising a tubular body having an interior fixed nut, a cap, a single intervening screen consisting of a single ring having radial flutes, and a screw passing down through said cap and threaded into said nut; said ring fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said ring.

8. A gas-burner comprising a tubular body having a rim, a cap having a rim, a single intervening screen consisting of a single annular diaphragm having outwardly-directed flutes formed alternately in its top and bottom surfaces, and having projections extending upwardly and downwardly to fit within said rims, a fastening device passing down through said cap into said tubular body, and means within the tube engaged by said fastening device.

9. A gas-burner comprising a tube, a cap, a single intervening screen consisting of a single ring, means upon said ring interlocking with said cap and tube, a screw passing through the cap, and a support within the tube into which the screw is threaded.

10. A gas-burner comprising a tube, a cap, a single intervening screen consisting of a single ring, projections upon said ring serving to interlock with said cap and tube, a screw passing through the cap, and means within the tube and engaging a shoulder formed within the latter, and connected to said screw to enable the latter to hold the cap.

11. A gas-burner comprising a tubular body having an interior shoulder, a tubular head inserted within said body, a cap, a single screen consisting of a single annular diaphragm inserted between said cap and body and forming a screen, a screw passing down through said cap, and a nut into which said screw is threaded, said nut engaging said shoulder; said diaphragm fitted to the body, and said cap fitted to and resting directly upon said diaphragm.

12. A gas-burner comprising a hollow member, a detachable cap, and a single intervening detachable screen consisting of a single annular sheet-metal diaphragm corrugated to form radiating flutes in its top and bottom surfaces, all of the flutes being deeper at their inlet ends than at their outlet ends, said diaphragm fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said diaphragm.

13. A gas-burner comprising a tubular body having a rim, a cap having a rim, and a single intervening screen consisting of a single annular sheet-metal diaphragm corru-

gated to form outwardly-directed flutes, and also having both upwardly and downwardly directed projections to engage said rims.

5 14. A gas-burner comprising a tubular body having a rim, a cap having a rim, a single intervening screen consisting of a single annular sheet-metal diaphragm corrugated to form outwardly-directed flutes, and pro-

jections extending upwardly and downwardly from the ridges of said flutes to fit within said rims.

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