

[72] Inventor **Thayer C. Hinckley**
Inglewood, Calif. (P.O. Box 37218, Los Angeles, Calif. 90037)

[21] Appl. No. **779,493**

[22] Filed **Nov. 27, 1968**

[45] Patented **May 25, 1971**

[56]

References Cited

UNITED STATES PATENTS

1,024,443	4/1912	Gault.....	431/353X
1,047,392	12/1912	Deemar.....	431/352X
2,734,364	2/1956	Peterson.....	431/150
2,784,778	3/1957	Milton.....	431/353X
3,002,553	10/1961	Reed.....	431/353X
3,315,724	4/1967	Eggenstein.....	431/350

Primary Examiner—Carroll B. Dority, Jr.

Attorney—Miner L. Hartmann

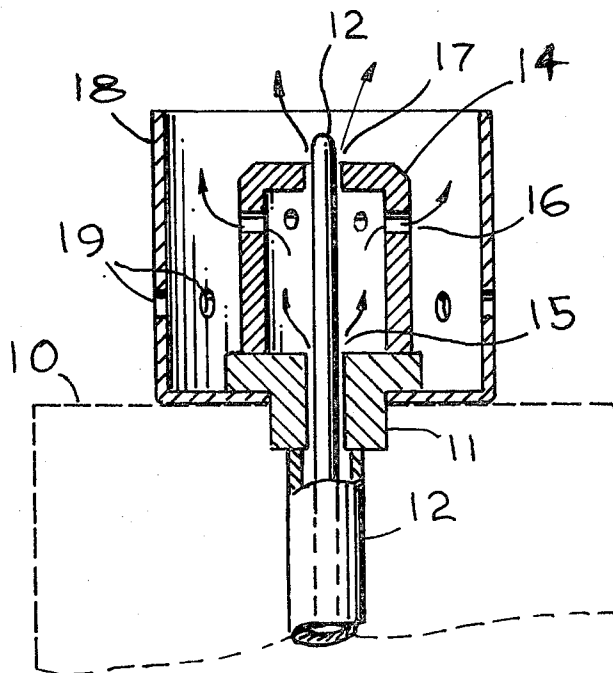
[54] **BURNER FOR CIGARETTE LIGHTER**
6 Claims, 7 Drawing Figs.

[52] U.S. Cl..... **431/344,**
431/150, 431/151, 431/353

[51] Int. Cl..... **F23d 13/04**

[50] Field of Search..... 431/150,
151, 350—355, 344

ABSTRACT: A burner for a gas fuel cigarette lighter is disclosed which provides a distributor to produce a plurality of gas jets, and an outer shield arranged so that a circular flame is produced which is windproof. This burner structure prevents deposition of carbon around the valve stem, due to incomplete combustion of the fuel, and avoids cleaning and repair.



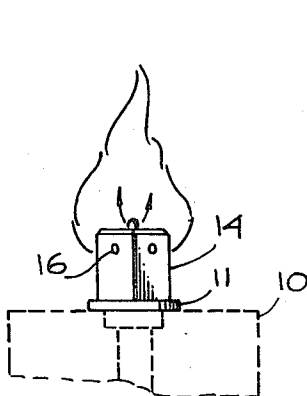


Fig. 1

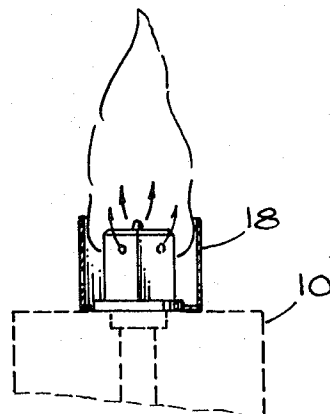


Fig. 3

Fig. 4

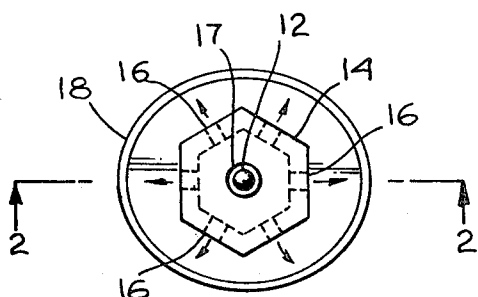


Fig. 2

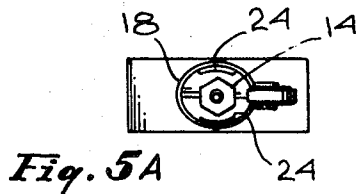
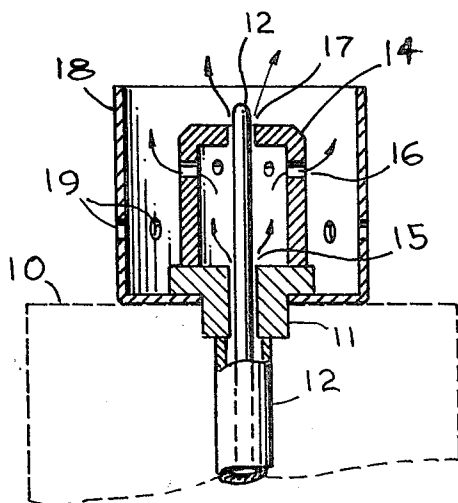


Fig. 5A

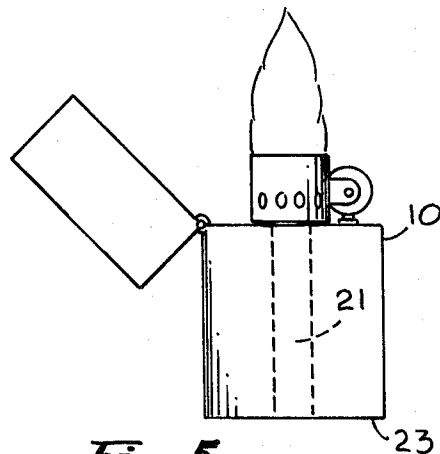


Fig. 5B

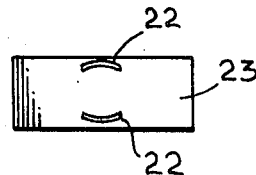


Fig. 5C

INVENTOR
 THAYER C. HINCKLEY
 BY
Wm. L. Hartmann
 ATTORNEY

BURNER FOR CIGARETTE LIGHTER**Background of the Invention**

This invention relates to a burner structure for a cigarette lighter which more effectively burns the gas generated or stored in a conventional lighter casing. One object of the invention is to provide a flame which is substantially windproof under any ordinary conditions. Another object is to provide a burner which does not become fouled with carbon deposition. A further object is to provide a burner which produces a flame effecting better combustion of the gas and which is hotter than that of conventional lighters.

These and other objects are attained by my invention, which will be understood from the following description, reference being made to the accompanying drawings.

Brief Description of the Drawing

FIG. 1 is a top plan view of the burner of this invention;

FIG. 2 is a side elevational view partly in section taken from the position indicated by line 2-2 of FIG. 1;

FIG. 3 is a side elevational view showing the burner of this invention without the outer flame shield, and a representation of the shape of the flame which results

FIG. 4 is an elevational view similar to FIG. 3 showing the shape of the flame when the flame shield is in place;

FIG. 5 is a side elevational view of a cigarette lighter having a shielded burner as shown in FIGS. 1 and 2, having side air ducts leading to the burner through the lighter body;

FIG. 5A is a top plan view corresponding to FIG. 5; and

FIG. 5B is a bottom plan view showing the open inlets to the side air ducts leading to the burner.

DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

Referring to the drawings, particularly FIGS. 1 to 4, which show a preferred form of my lighter burner, consisting of a tubular enclosure 11 for a valve stem 12, communicating with the gas container portion of a conventional lighter housing 10. A hexagonal (or other polygonal) cap or distributor 14 is disposed concentrically over the gas outlet 15 around the valve stem 12. A plurality of orifices 16 are provided in the wall of the distributor 14, there being preferably one orifice in each face of a hexagonal cap. The valve stem 12 extends through an opening 17 in the top of the cap or distributor 14, said opening 17 being larger than the stem to permit a restricted amount of gas to exist around the stem, and burn there.

A cylindrical metal flame shield 18 is provided around the distributor and spaced away from it to provide a mixing and combustion space. Ports 19 are provided in the shield 18 so that air for the combustion of the gas from the orifices 16 will

be available.

The character of the flame from the burner without the flame shield 18 is shown in FIG. 3, and in this form the burner gives improved combustion of the gas and a larger flame, and although the resistance to flame blow out from the wind is less than when the flame shield is used, the device is an improvement over the usual lighter. The preferred form of my invention, including the flame shield, gives a round compact hot flame of the type indicated in FIG. 4.

A modified form of the invention is shown in FIGS. 5, 5A and 5B. In this form, ducts 21 are provided which pass through the lighter housing 10, having openings 22 in the bottom 23 of the housing, and outlets 24 terminating in the space between the flame shield 18 and the gas distributor 14 near the bottom thereof. This arrangement provides a heat-induced flow of additional combustion air to the burner, and improves the combustion of the gas from the plurality of gas orifices 16.

I claim:

1. A burner for a portable self-contained cigarette lighter having a hollow body including a fuel gas container, said burner comprising

a gas conduit from said container to the burner;
a cap like gas distributor disposed over the outlet of said conduit, said distributor having a plurality of side ports for gas disposed around its sides whereby to produce a circular flame when the exiting gas is ignited, said cap being closed at its end remote from the container except for a restricted opening in the closed end, a valve stem extending through said opening.

2. The burner for a cigarette lighter as defined in claim 1 in which said distributor is also provided with a restricted opening for gas in the top thereof to produce a central flame within said circular flame.

3. The burner for a cigarette lighter defined in claim 1, and an enclosing shield having an open top disposed concentrically around and away from said caplike distributor, whereby to provide a chamber for supplying combustion air to the gas jets when exiting from said side ports.

4. The burner of a cigarette lighter defined in claim 3, in which ports are provided in said shield for the induction of air for combustion into the space between said distributor and said shield.

5. The cigarette lighter defined in claim 3, in which air ducts are provided leading from the space between said distributor and said shield, said ducts passing through said lighter body and opening outside said hollow body near the bottom thereof, whereby combustion air is induced into said space.

6. The burner for a cigarette lighter defined in claim 5, in which ports are provided in said shield for supplying additional air into said shield for combustion of the gas from said side ports in said distributor.

55

60

65

70

75