July 12, 1949. H. HORNING 2,476,148

CIGARETTE LIGHTER

Filed July 1, 1946

Fig1.

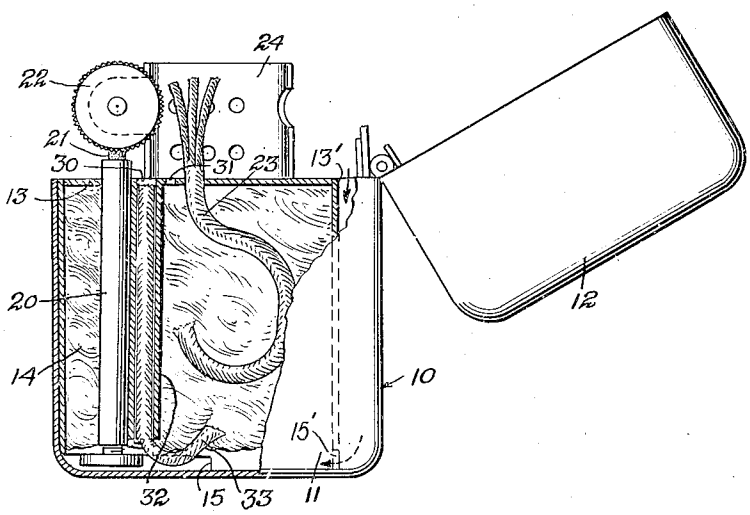
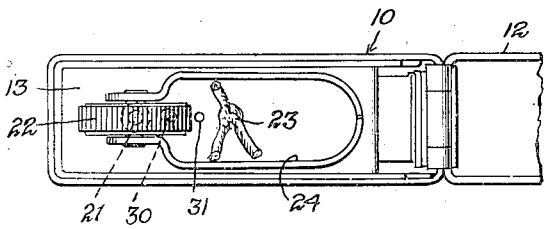


Fig2.



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CIGARETTE LIGHTER

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5 Claims. (Cl. 67—7.1)

1

This invention relates to cigarette lighters. It is an improvement over the cigarette lighter disclosed in my application Serial No. 657,270, filed on March 26, 1946, which is now abandoned.

The principal object of this invention is to provide a cigarette lighter in which a gas is ignited by the spark from the sparking wheel and the flame thus resulting, ignites the wick proper. The gas is a mixture of fuel vapor and air and it is highly inflammable in the presence of a spark. When this gaseous mixture is ignited, the flame resulting therefrom is better able to ignite the wick than the spark from the sparking wheel. There is accordingly a faster igniting action by reason of this indirect process, than is the case where the igniting action is direct, that is where the spark from the sparking wheel is required to ignite the wick.

A preferred embodiment of this invention is shown in the accompanying drawing in which—

Fig. 1 is a vertical section; and

Fig. 2 is a plan view.

The cigarette lighter 10 shown on the drawing is intended to represent any conventional type of cigarette lighter. It is provided with a casing 11 and a cover 12. Within the casing is a tank 13 which is open at the bottom. In this tank is the absorbent cotton 14 or other material into which the fluid is poured and which stores the fluid for future use. It will be noted that there is a cut-out 15 in the side walls of the tank 13 at the bottom thereof. A passageway is provided for admission of air to the bottom of the tank since the wall 13' of the tank is spaced from the adjacent wall of the casing to form a passage down which the air may pass and the bottom adjacent corner of the tank is cut away at 15' to permit the air to enter along the bottom thereof.

The conventional parts of the cigarette lighter as shown in Fig. 1 may be mentioned as follows:

There is a column 20 in the tank 13 which carries the flint 21. A sparking wheel 22 is disposed immediately above the flint for the usual purpose. A wick 23 is carried within the tank and its upper end extends outwardly through a small hole in the top wall of the tank. In the type of cigarette lighter shown in the drawing, there is a combination windshield and chimney 24 which performs the usual function of such member. In addition to these conventional elements are the following:

A pair of holes 30 and 31 respectively, in the top wall of the tank 13 between the flint and sparking wheel assembly and the wick 23. Hole 31 provides communication between the inside of

2

the tank 13 and the outside thereof. Connected to the top wall of tank 13 at hole 30 and concentric therewith is a tubular member 32. This tubular member stops short of the bottom of the tank as will be seen in Fig. 1. It contains a second wick 33 which extends from the inside of the tank through the tubular member 32 to the hole 30. This second wick 33 is considerably smaller in diameter than the tube 32 and therefore allows for flow of some air up the tube with the liquid fuel in the wick 33. This causes the tube to act somewhat as a chimney for the ultimate gaseous mixture of fuel vapor and air which is produced at the top of the tube 32 and passes out through the hole.

The hole 31 allows the vapor from the fuel tank in the cotton 14 to escape into the space between the sparking wheel and the wick. The size of the hole will determine the amount of vapor that will escape. A small hole is all that is necessary, since only a trace of the vapor is necessary for igniting purposes. A mixture of the fuel vapor and air will enter the same space between the sparking wheel and the wick through the hole 30. It will be understood that the wick 33 in the tubular member 32 will by capillary action absorb a substantial amount of the fuel contained in the fuel tank 13. Tubular member 32 will function in much the same way as does a chimney and a current of air will flow up through said tubular member out through the hole 30. As this current of air moves from the tubular member, the air will intermingle and intermix with the vapor from the fuel tank in the wick 33. In consequence a mixture of air and fuel vapor will escape through the hole 30. This mixture together with the vapor escaping from hole 31 constitutes a highly inflammable gas which will very readily ignite when a spark comes into contact with it.

It will be understood that the above described device is but a preferred embodiment of this invention and that it is susceptible to many constructional changes and variations within the spirit of the invention.

I claim:

1. A cigarette lighter which includes a fuel tank having an open bottom and with a passageway extending down between one wall of the tank and an enclosing casing to the bottom of the tank for admission of air to the bottom, a wick carried by said tank and extending partly therefrom, a sparking wheel and flint disposed opposite said wick, said tank having a hole therein between said wheel and said wick, a tubular

member carried within said tank and communicating with said hole, and a second wick loosely disposed within said tubular member and at the bottom thereof extending into said tank.

2. A cigarette lighter which includes a fuel tank having an open bottom and with a passageway extending down between one wall of the tank and an enclosing casing to the bottom of the tank for admission of air to the bottom, a wick extending outwardly from said tank, a sparking wheel and a flint situated opposite said wick, said tank having a hole in its wall between said wheel and said wick, a tubular member in said tank communicating with said hole and closing off all passage therethrough from the inside of the tank except through said tubular member, and a second wick loosely disposed in said tubular member and extending from the bottom thereof into said tank and terminating at the top just short of said hole.

3. A cigarette lighter which includes a fuel tank having an open bottom and with a passageway extending down between one wall of the tank and an enclosing casing to the bottom of the tank for admission of air to the bottom, a wick extending outwardly from said tank, a sparking wheel and a flint situated opposite said wick, said tank having a pair of holes in its wall between said wick and said wheel, one of said holes communicating directly with the inside of said tank, a tubular member carried within the tank and connected thereto at the other of said openings and providing communication between said second opening and the bottom of the tank, and a second wick loosely disposed within said tubular member and extending into the tank from the bottom of the tubular member and terminating just short of said second hole at the top of the tubular member.

4. A cigarette lighter which includes a fuel tank having an open bottom and with a passageway extending down between one wall of the tank and an enclosing casing to the bottom of the tank for admission of air to the bottom, said tank having three holes in its top wall, a wick carried by said tank and extending from the top wall through one of the end holes, a sparking wheel and flint unit on the top of the tank

opposite said wick, the other two holes in the top wall of the tank being disposed between said wick and said wheel, a tubular member carried within said tank and connected to the top of the tank at the middle of the three holes, and a second wick loosely disposed within said tubular member and extending into the tank at the bottom of the tubular member and terminating at the top just short of the middle hole, the third of said holes being adapted to allow fuel vapor to escape into the space between the first wick and the wheel, and the tubular member acting as a chimney to provide a current of air and fuel vapor flowing up into the same space between the first wick and the wheel.

5. A cigarette lighter which includes a tank having an open bottom and disposed in an enclosing casing, there being a passageway from the top of the casing to the bottom of the tank to permit passage of air thereto, a wick and a flint wheel spaced apart on the top of the lighter, said tank having a hole between the wick and the lighter, a tube within the tank communicating with said hole at one end and with the bottom of the tank at the other, and a second wick loosely disposed in said tube, at one end terminating just below the hole, and at the other end extending into the bottom of the tank.

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