

March 19, 1935.

H. C. LITTLE

1,994,720

IGNITION DEVICE

Filed Feb. 7, 1933

FIG. 1.

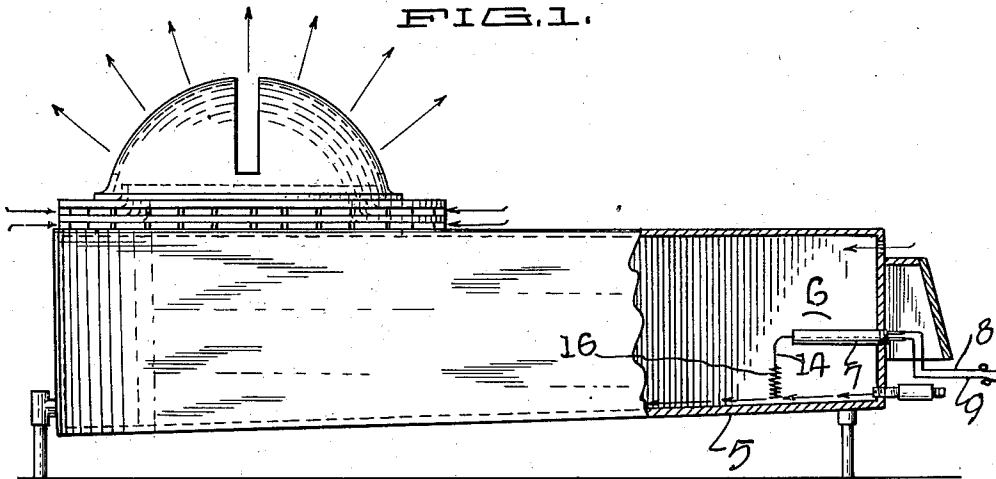
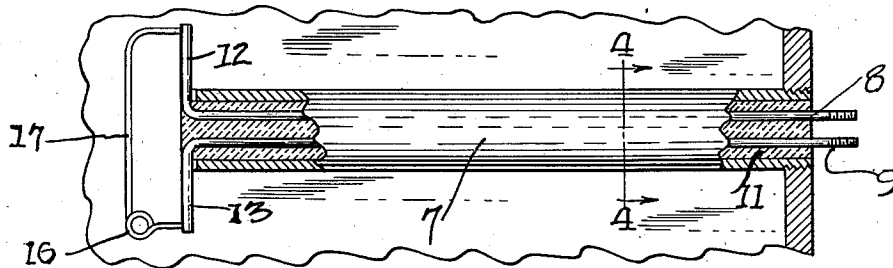


FIG. 2.

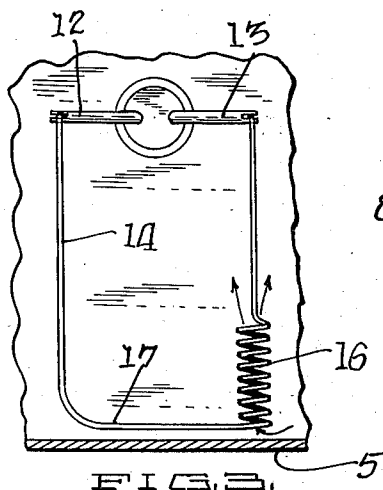


FIG. 3.

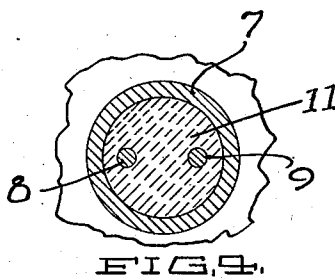


FIG. 4.

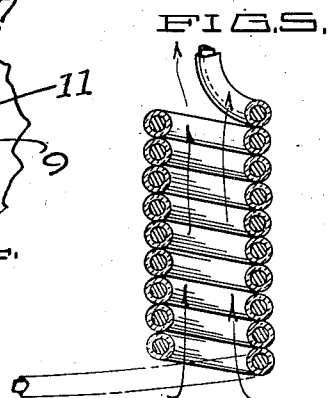


FIG. 5.

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IGNITION DEVICE

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2 Claims. (Cl. 175—115)

This invention relates to improvements in igniters and has particular reference to an igniter for oil burners.

The principal object of the invention is to produce an ignition device which is positive in operation.

A further object is to produce a device which will volatilize and ignite low gravity oils.

A further object is to produce a device which will prevent carbonization of the igniter.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevation of an oil burner having my invention applied thereto,

Fig. 2 is an enlarged fragmentary view of my heater,

Fig. 3 is an end elevation of Fig. 2,

Fig. 4 is an enlarged detail cross section on the line 4—4 of Fig. 2, and

Fig. 5 is a modified form of the coil.

Oil burners as a rule function periodically and are usually controlled by a distant thermostat, the result being that the burner may be ignited many times a day. Further these burners usually employ what is known as a heavy oil such as Diesel oil, stove oil and the like. These oils have a tendency to form carbon, particularly when first ignited. This carbon may deposit upon the heating coils and thus impair the igniting ability of the coil. Applicant has therefore devised a heating coil wherein the convolutions are vertically arranged so as to form a chimney effect. This chimney effect causes the gases arising from the oil to be further heated within the confines of the coil and to thus be raised to a temperature where they will ignite, thus igniting the main body of oil flowing to the burner. This draft caused by the chimney effect tends to keep the coils clean of soot or carbon, and to thus insure ignition each time the furnace is turned on.

In the accompanying drawing wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates the bottom of any burner having a chamber 6 in which my igniter is positioned. The igniter proper consists of a tube 7 within which is positioned conductor wires 8 and 9. These conductor wires are embedded in insulating material 11. The ends of the wires 8 and 9 are preferably bent as shown at 12 and 13, respectively. To these ends 12 and 13 I connect the opposite ends

of a heat resistant wire 14 within which is formed a coil 16 and a substantially horizontal leg 17. The leg 17 preferably parallels the bottom 5 but this is not absolutely essential, the essential feature being that the bottom convolution of the coil 16 is sufficiently close to the bottom 5 to generate a hot spot which will induce the vaporizing oil into the coil 16. As this vapor increases in temperature (that is, assuming that the coil 16 is heated to high temperature), the velocity will increase and the chimney effect is very pronounced, the result being that a healthy flame quickly ignites the main body of oil, from which time on the burner will function in the customary manner.

In Fig. 5, I have shown the coil embedded in insulating material, with the convolutions in close contact with each other.

It will thus be seen that by connecting my igniter to a suitable source of energy, the wire 14 and consequently the coil 16 will quickly ignite any fuel in close proximity thereto in the manner above described.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. An ignition device comprising in combination with a burner chamber and burner having a fuel supply therefor, of a heating element arranged in said chamber adjacent the fuel supply, said heating element embodying a current heated helical coil extending vertically within said chamber with the bottom end thereof touching the fuel and defining a centrally disposed chamber adapted to receive and permit passage there-through, the volatilized gas generated by said fuel engaging coil, and to thereafter ignite said gas from the heat of said coil within said chamber.

2. In an ignition device of the class described adapted to be positioned in a burner chamber adjacent the fuel supply and having its lower end touching the fuel and comprising, a heating element embodying a current heated helical coil arranged vertically within the burner chamber and defining a centrally disposed updraft chamber adapted to permit passage therethrough of gases formed by the heat of said coil touching said fuel and to thereafter ignite said gas from the heat of said coil.

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