

SPECIFICATION

Starting device for an oscillating burner

The invention relates to a starting device for an oscillating burner comprising a circuit which is to be closed by an ignition switch and in which an electrical power source and an ignition voltage generator are connected.

It is known with such a starting device to form the electrical power source from 4 x 1.5-volt transistor batteries and to use as the ignition voltage generator a mechanical ignition voltage generator which takes about 1.5 A from the electrical power source for about 10 to 20 seconds during starting. In conventional use the battery then has a discharge life of about two years.

The object of the invention is to provide a starting device whose electrical power source also drives an air pump assisting the starting operation, but has a substantially unchanged life.

According to the invention, there is provided a starting device for an oscillating burner comprising an ignition circuit including an ignition switch, an electrical power source comprising at least one battery, an electronic ignition voltage generator, and an electrical motor which drives a pump for supplying compressed air to a carburettor and to a fuel store.

Known available electronic ignition voltage generators take only about 0.4 A from the battery during the starting time of about 10 to 20 seconds. Consequently, a spare battery capacity is available to drive the pump. The electrical motor driving the pump is preferably a miniature electric motor, as is available per se; such a miniature electric motor takes only about 1.2 to 1.4 A from the battery during starting.

With an unchanged composition of the electrical power source, for example 4 x 1.5-volt batteries, both the ignition voltage generator and the electric motor for driving the pump can therefore be supplied during the starting operation. A double-bellows diaphragm pump has proved especially effective as the pump in the case of a relatively low efficiency. Preferably, the electric motor and pump are combined into a unit which is attached to the oscillating burner, for example, in place of a known air ball to be actuated by hand. An alkali battery is preferably used since the discharge life of the battery is thereby increased.

The invention is described below in an exemplary embodiment with reference to the attached drawing.

A starting device according to the invention has a circuit 6, 8, 10, 12, 14 which is to be closed by an ignition switch 2 including a pushbutton 4 and in which a battery 16 and an ignition voltage generator 18 are connected. The ignition voltage generator 18 is connected in a known way via a high-voltage line 20 to a spark plug 22 on the oscillating burner.

The ignition voltage generator 18 is an electronic ignition voltage generator. In the circuit

6, 8, 10, 12, 14 there is a miniature electric motor 24 which drives a double-bellows diaphragm pump 30 supplying compressed air to a carburettor 26 and to a fuel store 28. The switch 2 with pushbutton 4 can be attached to the housing of the pump 30, as suggested schematically by 2', 4'.

The fuel store 28 is situated in a syphon line 34 connected to a fuel tank 32. A relief valve 38 is linked to the connecting line 36 between the pump 30 and syphon line 34. A further relief valve 40 is situated in the line 36. Before the two relief valves 38, 40 a branch line 42 is guided to a Laval jet 44 of the carburettor 26.

The syphon line 34 is connected, on the one hand, via a line 46 to the fuel tank 32 and terminates within the fuel tank 32 in a filter head 48. On the other hand, the syphon line 34 is a filter head 48. On the other hand, the syphon line 34 is connected via a line 50 to the carburettor 26 via the Laval jet 44.

The fuel tank 32 is provided with an inlet to be closed by a screw cap 52 and a vent valve 54.

The fuel-air mixture enters the oscillating burner in a way not explained in detail since it is known and is adjusted on the carburettor 26 by means of a setscrew 56.

The oscillating burner is started by depressing the pushbutton 4 or 4', for example with the thumb of the left hand, and turning the setscrew 56 out of the closing position with the right hand so that a fuel-air mixture gradually enters the oscillating burner through the carburettor 26. If the mixture is ignitable, the oscillating burner starts up and, as is known per se, continues to run by itself. The pushbutton 4, 4', can then be released and the setscrew 56 turned until the oscillating burner works in the desired way. This can be heard by the low rattling noise emitted in the generation of aerosols. The relief valves 38, 40 have proved very important, in practice, for the starting operation. The syphon line 34, also, is of considerable importance. The compressed air delivered through the line 36 by the pump 30 is therefore not sent into the fuel tank 32. Due to the use of the syphon line 34 the compressed air coming from the pump 30 is substantially better utilised than in the large space above the fuel level in the fuel tank 32.

If a starting operation has been unsuccessful, the pushbutton 4, 4' must be released until the syphon line 34 has filled up again. So that this can be observed, the upper section 58 of the syphon line 34 is transparent.

CLAIMS

1. Starting device for an oscillating burner comprising an ignition circuit including an ignition switch, an electrical power source comprising at least one battery, an electronic ignition voltage generator, and an electric motor which drives a pump for supplying compressed air to a carburettor and to a fuel store.

2. Device according to claim 1, wherein the battery is an alkali battery.



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2. Device according to claim 1, wherein the battery is an alkali battery.

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3. Device according to claim 1 or 2, wherein the electric motor is a miniature electric motor.
4. Device according to any preceding claim, wherein the pump is a double-bellows diaphragm pump.
5. Device according to any preceding claim, wherein the fuel store is situated in syphon line connected to a fuel tank.
6. Device according to claim 5, wherein the
- 10 connecting line between the pump and the syphon line is provided with at least one relief valve.
7. Device according to any preceding claim, wherein the carburettor is a Laval jet carburettor.
8. Starting device for an oscillating burner
- 15 substantially as herein described with reference to the accompanying drawing.
9. An oscillating burner comprising a starting device as claimed in any preceding claim.

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