

UNITED STATES PATENT OFFICE

2,269,394

ELECTRIC LIGHTER FOR CIGARS,
CIGARETTES, ETC.

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Application September 12, 1936, Serial No. 100,406

6 Claims. (Cl. 219—32)

Our invention relates particularly to the plug or removable part of the lighter which is adapted to be mounted in a socket which is stationary.

The plug embodies a main insulating portion which carries the incandescible element and relatively movable contact members constituting parts of the switch. Certain of the conducting members are normally held separated by means of a spring and are adapted to be connected for closing the circuit by compressing the spring.

An object of our invention is to so construct the device that the parts can be readily made and assembled and will operate satisfactorily and yet they are assembled in such a manner that it is practically impossible to tamper with them or separate the parts. In other words, the parts when assembled are permanently connected.

Fig. 1 is a side view and partial longitudinal section of one form of device embodying our invention.

Fig. 2 is a transverse section on the plane of the line 2—2 of Fig. 1.

Fig. 3 is an exploded section and side elevation of the various parts of the device.

The main body 5 is in the form of a sleeve or tube of insulating material such for instance as porcelain or other suitable material so constructed that it can be economically made.

The incandescible member 6 is preferably in the form of a spiral ribbon of high resistance wire located at one end of the device.

A knob or handle 7 may be formed of translucent or transparent material or provided with one or more passages through which may be seen the light from the heater 6 when the same is heated.

The outer contact 8 is in the form of a metallic cup to the inner wall of which is preferably welded the outer end of the heater coil 6. This contact cup and the heater coil are carried by the tube 9 to the end of which they are secured by the rivet 10. This rivet electrically connects the inner end of the heater coil to the outer end of the tube 9. The cup 8 is insulated from the inner end of the heater coil and from the tube 9 by means of electrically insulating washers 11 and 12.

The metallic sleeve or tube 13 with the outer flange 14 constitutes the other contact of the plug in which the tube 9 slides and is also preferably rotatable. The inner end of the tube 13 is spun over or flanged at 15 against the shoulder 16 of the insulating body 5 so as to permanently secure the contact ring and tube in place. The inner end of the tube 9 is spun or flanged at 17

around the end of the flange 15 so that the tube 9 and attached contact and heater element cannot be removed.

Perforations or passages 18 may be provided for ventilation and also so that the condition of the heater element may be visible through the body and knob as previously mentioned. The helical spring 19 is housed within the insulating body 5 and presses against the flange 17 of the heater carrier tube. A ferrule 20 having an inturned flange 21 constitutes the opposite abutment for the spring 19. This ferrule is preferably in the form of a screw threaded sleeve which is permanently cemented inside of the body 5. Preferably an insulating washer 22 is interposed between the flange 21 and the end of the spring 19. A shoulder 23 in the body 5 forms a stop for the ferrule 20 so that when the parts are assembled they will be properly positioned to ensure a predetermined action of the spring.

The knob 7 is provided with a screw threaded portion 24 which is adapted to be screwed into the thread in the ferrule 20. Although the knob may be attachable or detachable in this manner, it will be seen that it is impossible to separate or tamper with the other parts of the plug. This is very important as it is necessary for the parts to be accurately made and properly assembled in order for the device to operate properly and in order that it may properly fit in the socket (not shown).

A feature of this invention includes the longitudinal rounding of the heater rim 8 as illustrated. The base contacts of the socket in which the plug illustrated is adapted to fit generally include radially outward and forwardly inclined contact portions, as shown for example by Ashton 2,060,783. These while comparatively stiff, may nevertheless become heated and deformed and the angle at which these outwardly inclined contacting portions are disposed may become changed with wear and use. Having the heater rim 8 curved as illustrated enables these inclined base contact portions to engage the rim 8 and form a good contact regardless of whether there may be some change in the angular arrangement of the base contacts. In short, the heater rim of the shape illustrated has been found to cooperate better with the base contacts and give improved results.

The heater rim 8 is preferably of stainless steel and as shown in the drawing is of substantially uniform thickness, the resistance wire 6 is preferably of nichrome which is not very heavily oxidized and the stud 10 receiving the inner end

