Oct. 9, 1928. 1,686,579

H. P. STAATS ET AL

CIGARETTE AND CIGAR LIGHTER

Filed Feb. 4, 1927

Fig. 1.

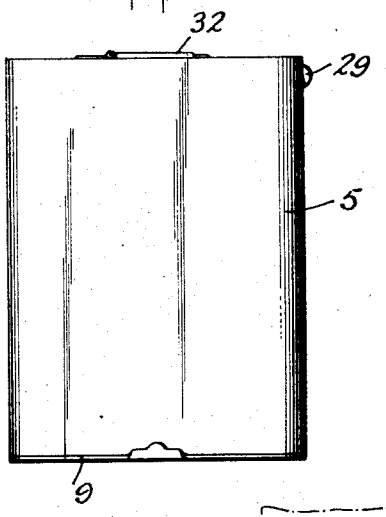


Fig. 2.

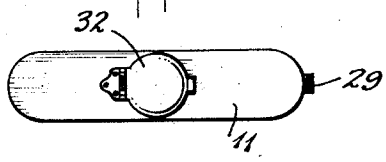


Fig. 3.

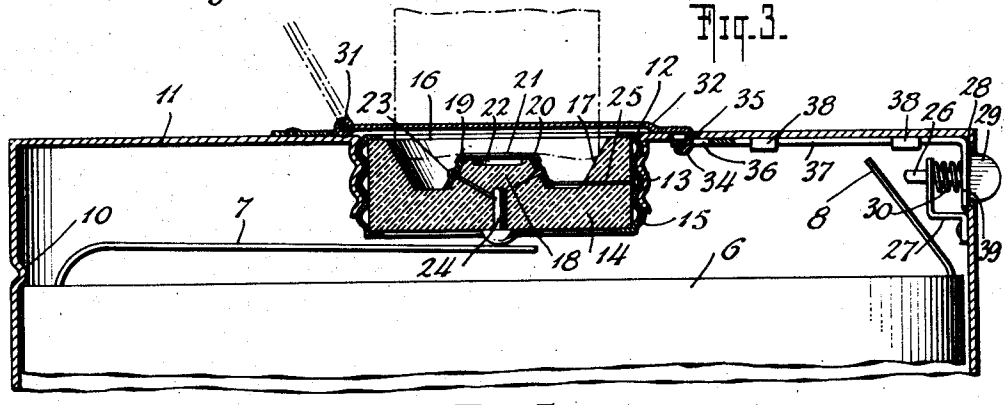
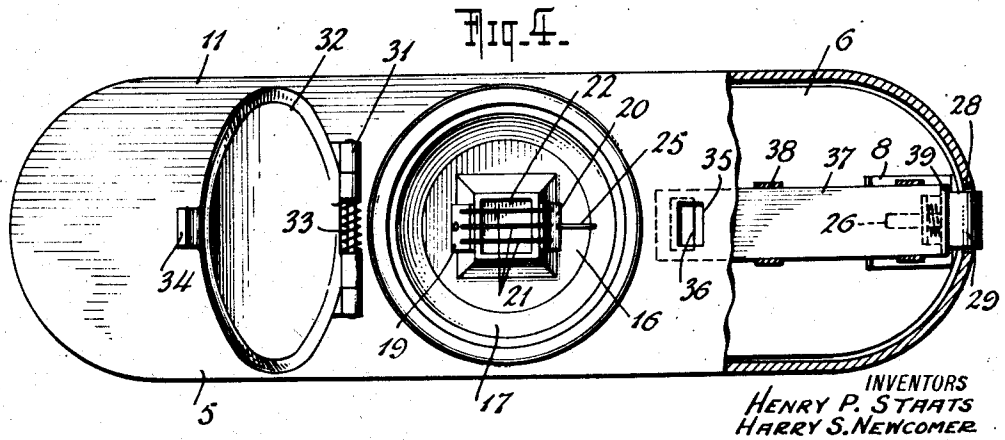


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CIGARETTE AND CIGAR LIGHTER.

Application filed February 4, 1927. Serial No. 165,850.

This invention relates to improvements in cigarette and cigar lighters of the type known as pocket lighters, and has particular reference to an ignition unit therefor and the means for mounting said unit in a casing and controlling the same.

An object of the invention is to provide an improved lighter of simple and practical construction wherein an ignition unit mounted within the casing of the lighter is connected in a normally open electric circuit the source of which is disposed within said casing and which is closed by a connector device carried by the casing so that it can be easily manipulated.

Another object is to utilize the operation of the connector device to release a normally closed cover for the ignition unit so that the latter will be exposed for engagement by the end of a cigarette or cigar to be lighted.

A further object is to provide an ignition unit wherein a portion thereof forms a guiding surface which, when contacted by the end of a cigarette or cigar, will be instrumental in properly centering said end in engagement with the heating elements of the unit.

The above and other objects will appear more clearly from the following detail description, when taken in connection with the accompanying drawing, which illustrates a preferred embodiment of the inventive idea.

In the drawing—

Figure 1 is an elevational view of a lighter constructed in accordance with the invention;

Figure 2 is an end view thereof;

Figure 3 is an enlarged fragmentary vertical longitudinal section; and

Figure 4 is an enlarged end view, partly broken away and shown in section.

Referring more particularly to the accompanying drawing, the numeral 5 indicates a casing of relatively flat formation and of suitable size to contain a battery 6 having the spring terminals 7 and 8, the battery being held in the casing against longitudinal movement therein by engagement with the hinged closure 9 at one end of the casing and a suitable stop 10 adjacent its other end. For purposes of the present invention the battery 6 is somewhat of the usual type, such as used in flashlights and the like, but has one cell only or its cells connected in parallel so that the current from the battery will have a relatively high amperage. The end 11 of the casing 5 remote from the closure 9 is provided centrally thereof with a circular opening 12 and extending inwardly from the edge of said opening is a screw threaded flange 13 utilized for the purpose of supporting an ignition unit within said opening.

The ignition unit of the present invention preferably comprises a disc-like body 14 of insulating material, such as bakelite. Extending around the periphery of the body 14 and engaged with the ends thereof is a ferrule 15 which is also screw threaded so that the unit may be engaged with the flange 13 and thus screwed into and out of a recessed position within the opening 12, the unit when in position preferably having its outer end flush with the end 11 of the casing. The outer end of the body 14 is provided with a central recess 16, the wall 17 of which is tapered inwardly with the outer end of the recess slightly greater in diameter than the end of a cigarette or cigar of usual size, while the inner end of the wall at the bottom of the recess is of less diameter than the cigarette or cigar. The wall 17 thus forms a guide for the end of the cigarette or cigar so that the latter are centered within the recess when inserted into the same and engaged with said wall. Extending outwardly from the center of the bottom of the recess 16 and forming a part of the body 14 is a support 18 in the form of a boss, which is preferably rectangular and also tapered outwardly with the outer end of the support disposed in a plane within the confines of the recess. To two of the opposed sides of the support 18 there are secured the conducting plates 19 and 20, preferably made of brass or other suitable conducting material. The outermost portions of the plates 19 and 20 extend slightly beyond the outer end of the support 18 and to these portions of the plates are secured, in any preferred manner, the ends of a plurality of heating elements 21 which extend across the end of the support in spaced relation thereto and which are electrically connected to each other through the plates 19 and 20. The central portions of the elements 21 are further spaced from the support by the formation of a depression 22 in the latter which will permit of a slight bending of the elements when pressure is exerted thereagainst by the end of a cigarette or cigar, and preventing contact of the elements with the body of insulating material.

Each of the elements 21 is made from a short piece of wire about .002 of an inch in diameter. The nature of the wire is such that the same will very quickly become heated

to the lower limits of incandescence when the current from the battery 6 is passed therethrough and which has a sufficiently high melting point and is sufficiently non-volatile at these temperatures to resist them. It is also of sufficient elasticity and durability to successfully resist breaking when slight pressure is applied thereto. Such a wire may be made from platinum or from platinum alloyed with a metal such as iridium, which materials have all of these properties and when used in appropriate and small diameters and lengths become rapidly heated without excessive current or energy consumption.

The plate 19 is secured to the support 18 by a suitable fastener 23 which also acts as a conductor to electrically connect the plate 19 to the terminal 24 mounted in the body 14 and engageable with the contact terminal 7 of the battery when the unit is mounted in position. The plate 20 is electrically connected to the ferrule 15 and consequently to the casing 5, which is of metal, by a conductor 25 extending from the plate 20 laterally through the body 14, the outer end of the conductor being soldered or otherwise secured to said ferrule. The normally open circuit for heating the wires or filaments 21 is closed through the casing by means of a spring pressed connector 26 slidably mounted in a bracket 27 secured to the wall of the casing 5 adjacent to the end 11 thereof. Said wall is provided with an opening 28 through which the head 29 of the connector projects, so that the operator may press said head inwardly to engage the inner end of the connector 26 with the terminal 8 of the battery 6 and thus close the circuit for the ignition unit. When the head 29 is released the connector is then restored to normal position by the coil spring 30.

It is desirable when the ignition unit is not in use that the same be covered and for this purpose there is pivotally mounted at 31 upon the end 11 a cover or closure flap 32, which is engaged adjacent its pivot by a coil spring 33 which normally has a tendency to retain the cover in open position. At a point opposite the pivot of the cover the same is provided with a hook or projection 34 which, when the cover is closed, projects through an opening 35 in the end 11 and a slot 36 formed in the adjacent end of a latch 37 slidably mounted in guides 38 carried by the inner surface of said end. In order that the operation of the connector 26 may also be utilized to control the release of the cover 32 the latch 37 is provided at the end opposite the slot 36 with a lateral extension 39 which is secured to the head 29 of said connector. Thus when the head 29 is depressed the latch 37 is moved to the left, as shown in Figure 3, to align the slot 36 with the opening 35 and thus release the end of the latch from the hook 34, whereupon the cover 32 will move to its open position under the influence of the spring 33. After the latch 37 has been restored to its normal position by the release of pressure on the head 29 the cover 32 may be restored to its closed position and in so doing the bent end of the hook 34 will project through the slot 36 and engage the underside of the latch, there being a slight movement of the latter as said hook contacts the end of the slot 36.

From the foregoing description, it will be apparent that the mounting of the ignition unit is such that the same may be readily removed and replaced and that a fresh battery may be disposed within the casing whenever needed.

What is claimed is:

1. An ignition unit for use as a cigarette and cigar lighter including a body of insulating material having a central recess, a centrally disposed support extending from the bottom of said recess and having a depression in its outer end, conducting plates secured to the sides of said support, and heating wires secured to said plates and projecting across the outer end of said support and the depression therein in spaced relation thereto whereby said wires will avoid contact with the support when pressure is applied to the wires by the end of the cigarette or cigar.

2. An ignition unit for use as a cigarette or cigar lighter including a body of insulating material having a central recess, a centrally disposed support extending from the bottom of said recess, conducting plates secured to the sides of said support and having portions projecting beyond the outer end thereof in a plane with said sides, and heating elements connected to said portions of said plates in spaced relation to said support and extending across the outer end thereof.

In testimony whereof we have affixed our signatures.

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