

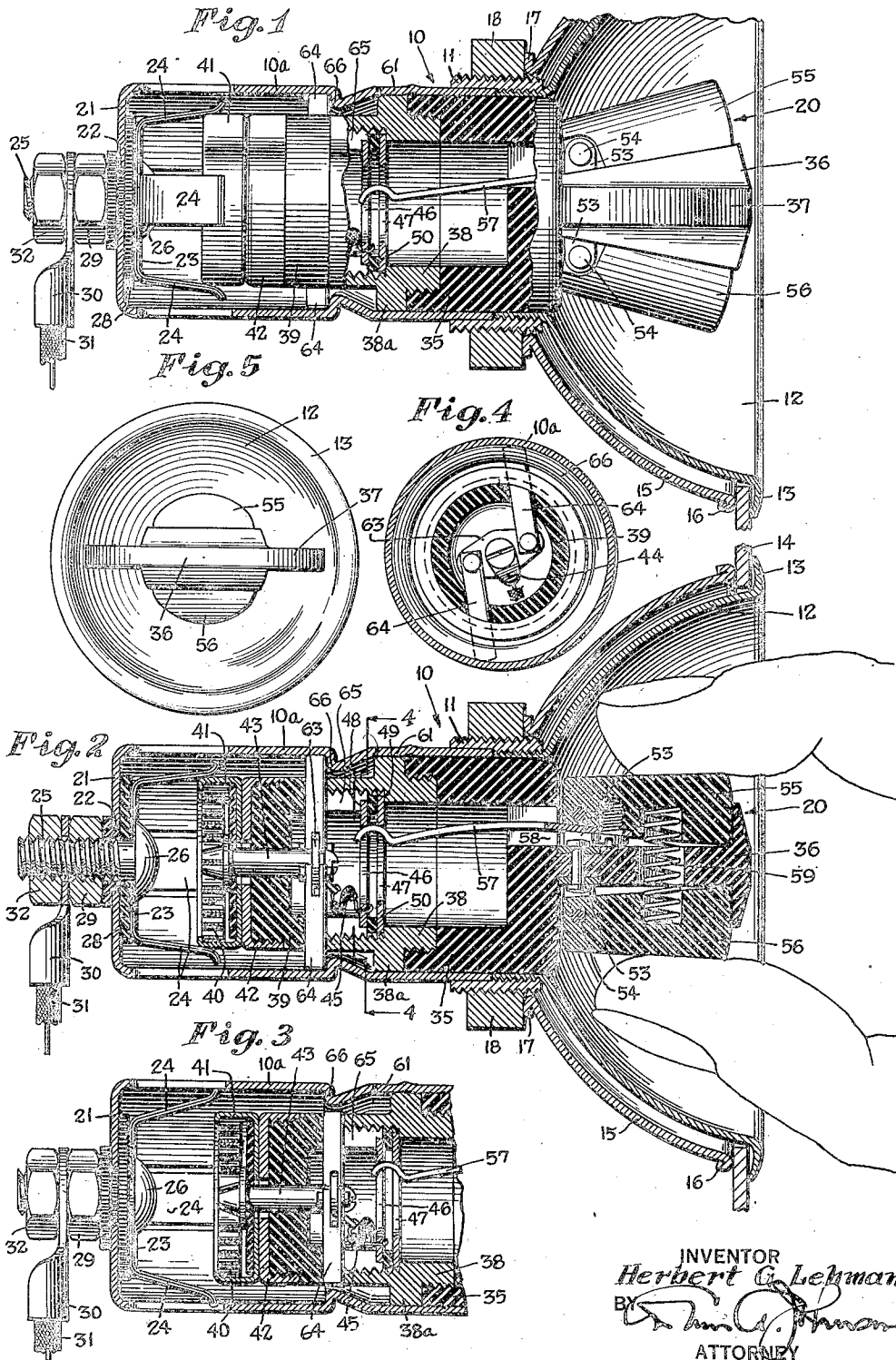
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CIGAR LIGHTER

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CIGAR LIGHTER

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The present invention relates to cigar lighters, and, more particularly, to the type in which the igniting unit is removable for use upon attaining a predetermined heat and is so disposed as to be nonprojecting and protected against accidental engagement.

The present trend in designing instrument panels for automobiles is to eliminate as much as possible any projecting elements which might cause injury should an accident occur and the persons in the machine be thrown thereagainst. Accordingly, the present invention provides a cigar lighter having a removable igniting unit which is disposed in a holding device mounted on the dashboard so as not to project in front of the dashboard and which is easily accessible for removal for use.

This is accomplished by disposing the handle of the igniting unit in the mouth of the holding device so as to be readily gripped when it is desired to remove the igniting unit from the holding device. Preferably, the handle is provided with means for closing and completing an energizing circuit through the heating element of the igniting unit upon the fingers being inserted and the handle gripped for withdrawing the igniting unit from the holding device.

The cigar lighter of the present invention is normally held in deep position in the holding device by means of heat-responsive latches, and in this position a circuit is established to the heating element of the igniting unit which can readily be closed as above noted. The latches will retain the igniting unit in deep position against the withdrawing pull until the heating element has attained the desired usable heat, at which time they will be released and the igniting unit freed for outward movement.

A feature of the invention resides in the location of the actuator for the switch means which is disposed within the outer face of the holding device and therefore protected against casual or accidental contact, which would serve to energize the heating element at a time when it was not desired to withdraw the igniting unit for use.

A further safeguard is provided in the form of heat-responsive contacts which open the circuit to the heating element should the latches fail to release and the circuit be opened when the heating element has attained its desired heat.

By forming the holding device with a wide mouth, the handle of the igniting unit can be readily gripped to be removed therefrom and the handle, if desired, can be shaped so as to extend radially beyond the body of the igniting

unit, whereby adequate gripping surfaces are provided so that the igniting unit can be passed from hand to hand without danger of contacting the hot element.

In the drawing:

Figure 1 shows a section of the holding device partly broken away with the igniting unit thereon partly in section and in open-circuit position.

Fig. 2 shows a longitudinal section of the holder and igniting unit, with the igniting unit in closed-circuit position.

Fig. 3 is a fragmentary view of Fig. 2, showing the igniting unit with the latches released and the unit partially withdrawn.

Fig. 4 is a transverse sectional view taken along line 4—4 of Fig. 2.

Fig. 5 is a front plan view showing the wide mouth and the relation of the handle thereon.

The cigar lighter of the present invention comprises a holding device 10 adapted to be mounted on the dashboard or other support of an automobile to receive and support a removable igniting unit 20.

In the illustrated form of the invention, a holding device comprises a tubular body 10a having a collar 11 secured thereto so as to project outwardly therefrom. An enlarged, outwardly flared, concave dish-shaped mouth 12 is provided at its inner end with a projecting portion adapted to be threaded into the collar and at its outer end with a flange 13 adapted to extend over and engage the front face of a dashboard or other support 14.

The holding device is locked in place on the dashboard by means of a locking member 15 having its forward end 16 adapted to engage the back of the dashboard and having its rearward edge 17 slidably mounted on the tubular member and locked in place by a nut 18. This construction not only locks the holding device in place on the dashboard, but also grounds it to one terminal of the source of energy of the automobile.

The tubular body portion 10a of the holding device is provided with a transversely extending wall 21 at its rear end having a central aperture 22 therein. Disposed adjacent the rear wall on the inner surface of the holder is a base contact 23 having forwardly extending arms 24 extending into the tubular body. The contact is held in place by a bolt 25 passing through and insulated from the central aperture in the rear wall and having the head 26 thereof overlying the contact and pressing it into engagement with a washer 28 exposed between the rear wall and

contact. The contact is locked in place by a nut 29 threaded on the bolt.

The contact is connected to the other terminal of the source of energy by means of a connector lug 30 disposed on the bolt and secured to a conductor 31 which leads to the source of energy. The connector is locked in place on the bolt by a nut 32.

The holding device is adapted to have the igniting unit 20 removably mounted therein and comprising a tubular body 35 of insulating material provided with a handle 36 adapted to be disposed in the mouth of the holding device. While the handle may be of any desired form, it is preferred to use a flat piece and provide it with flat winglike extensions 37 which project beyond the diameter of the tubular body as shown in Fig. 5. The flat handle will enable the fingers to be inserted into the mouth of the holder as shown in Fig. 2 and secure an adequate grip while the wings will provide for passing the lighter from person to person, when removed from the holding device for use, without danger of burning the fingers on heated parts of the igniting unit.

The inner end of the tubular body has secured thereto a conducting sleeve 38 provided with a projecting flange 38a adapted to engage the holding device and make electrical engagement therewith. The other end of the conducting sleeve has threaded thereon a cap 39 of insulating material. A heating element 40 is disposed within a contact cup 41 which is welded or otherwise secured to a securing cap 42 threaded on the end of the insulating cup. One end of the heating element is secured to the contact cup and the other end is secured to one end of a central stud 43 which is mounted in the cap of insulating material.

A clip 44 is secured to the other end of the central stud and a wire 45 extends therefrom to a contact ring 46 which is in parallel spaced relation to but insulated from a second contact ring 47. The second contact ring is electrically connected to the conducting sleeve and forms a gap in the circuit for the heating element when the base contact and contact cup are in engagement.

In the preferred form of the invention, the two contact rings are secured in place by being clamped between a shoulder 48 on the insulating cap and a shoulder 49 on the conducting sleeve, with a washer 50 of insulating material disposed between them as is clearly shown in Figs. 1 and 2.

Means are provided for closing the circuit through the heating element when it is desired to energize the same. This may be accomplished in many ways. In the preferred form of the invention, however, the handle is provided with a switch which is adapted to close the circuit upon the handle being gripped to remove the igniting unit from the holding device. As illustrated in the drawing, the handle 36 is provided with a pair of upstanding lugs 53 secured thereto and having pivot pins 54 mounted therein and passing through a pair of finger pieces 55, 56. Secured to the finger piece 55, as by a screw or other securing means, is a bridging contact 57 which extends from the finger piece through an opening 58 in the tubular body and into a position in which it engages both rings when the finger piece is in gripped position. A spring 59 carried by the handle holds the finger pieces in extended open-circuit position.

According to the present invention, the igniting unit is maintained on the holding device in a deep position in which a circuit is established from the conductor 31, through the base contact 23, to the contact cup 41, through the heating element 40, to the central stud 43, to contact 46, and from the other contact 47 through the conducting sleeve 38 to the holding device and to ground, the conducting sleeve being provided with lanced resilient fingers 61 for engaging the flange 38a when the igniting unit is in this position.

It is desired that the igniting unit be maintained in this position until it has been energized and brought to the desired heat. In the preferred form of the invention, this is accomplished by heat-responsive latches, which prevent outward movement of the igniting unit until the desired heat has been reached. While these latches may take any suitable form, the herein preferred form of the invention forms the heating element of bimetallic material and rotatably mounts the central stud in the insulating cap 39 so that the heating element, upon attaining a predetermined desired heat, will flex and the stud will be rotated. The stud has fixed thereon a transverse fiber arm 63 carrying a pair of latches 64 disposed in slots 65 in the insulating cap and extending into engagement with an abutment 66 formed on the holding device.

The heating element, when cool, normally urges the latches into engagement with the abutment. However, upon the heating element attaining its desired heat, the stud will be rotated and the latches withdrawn from the abutment. The heating element is preferably made quick heating so that upon the handle of the igniting unit being gripped for its withdrawal the heating element will be brought quickly to heat, the latches retaining it against withdrawal until it has attained its desired heat, whereupon the latches move to release position and the igniting unit is free to be withdrawn for use.

As is shown in the drawing, the igniting unit in normal position on the holding device is held so that it does not project beyond the outer surface of the holding device, and thus when used on an instrument panel of an automobile will not present a projection which will cause injury should a person riding in the automobile be thrown against the instrument panel in cases of accidents or other quick stops.

Further, the locating of the handle, which carries the switch to the heating element, within the mouth of the holding device also serves another function inasmuch as it prevents the switch from being actuated accidentally upon something being rested thereagainst.

A further protection for the lighter resides in the making of the contact fingers 24, where desirable, of bimetallic material so that if, for some reason, the bridging contact is moved into engagement with the two contact rings and closes a circuit to the heating element, without a withdrawing action on the igniting unit so that the circuit is always maintained closed, the contact arms will flex before the heating element has reached a dangerous temperature and opened the circuit.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others.

I claim:

1. In a cigar lighter, a holding device adapted to be mounted on a support so as to be substan-

tially flush with the front face thereof and having a tubular body and an enlarged mouth; and an igniting unit removably mounted in the holding device and having a handle provided with exterior lateral gripping surfaces disposed in the enlarged mouth so as not to project from the front face of the support.

2. In a cigar lighter, a holding device adapted to be mounted on a support so as to be substantially flush with the front face thereof and having a tubular body provided at one end with a forwardly and outwardly extending flange forming an enlarged concave mouth; and an igniting unit removably mounted in the holding device and removable therefrom for use and having a handle disposed completely in the concave mouth so as not to project from the front face of the support.

3. In a cigar lighter, a holding device adapted to be mounted on a support so as to be substantially flush with the front face thereof; and a removable igniting unit having a handle carried by the holding device so as not to project therefrom, said holding device having means whereby the sides of the handle of the igniting unit can be gripped and the unit removed from the holding device.

4. In a cigar lighter, a holding device adapted to be mounted on a support so as to be substantially flush with the front face thereof; and a removable igniting unit having a handle carried by the holding device so as not to project therefrom and the front face of the support, said holding device having a flared mouth surrounding the handle whereby the fingers can be inserted to grip the sides of the handle and withdraw the igniting unit from the holding device.

5. In a cigar lighter, a holding device adapted to be mounted in an opening in a dashboard with the outer end substantially flush therewith; and a removable igniting unit having a handle carried by the holding device and disposed so as not to project beyond the face of the dashboard, said holding device having means whereby the handle of the igniting unit can be gripped with a lateral pressure and the unit removed from the holding device.

6. In a cigar lighter, a holding device; a removable igniting unit having a heating element and a handle carried by the holding device so as not to project therefrom, said holding device having means thereon adjacent the handle whereby the fingers can be inserted to grip the handle and withdraw the igniting unit from the holding device; and means to close an energizing circuit for the heating element by the gripping of the handle.

7. In a cigar lighter, a holding device; a removable igniting unit having a heating element and a handle carried by the holding device in deep position so as not to project therefrom; means in the holding device for establishing a circuit to the heating element, said holding device having means thereon surrounding the handle whereby the fingers can be inserted to grip the handle for withdrawing the igniting unit; and means for completing the energizing circuit by gripping of the handle.

8. In a cigar lighter, a tubular body having an enlarged mouth; and an igniting unit removably mounted on the holding device so as not to project therefrom and having a substantially flat handle provided with wings extending into the enlarged mouth portion in the holding device, the enlarged portion forming a means whereby the

fingers can be inserted to grip the flat handle for removal of the igniting unit from the holding device.

9. In a cigar lighter, a holding device; a removable igniting unit having a heating element and a handle carried by the holding device in deep position thereon so as not to project therefrom; heat-responsive latch means for holding the igniting unit in deep position on the holding device, said holding device having means thereon surrounding the handle whereby the fingers can be inserted to grip the handle and withdraw the igniting unit; and means to close an energizing circuit as a result of gripping of the handle to withdraw the igniting unit from the holding device, said heat-responsive latches holding the igniting unit against withdrawal until the heating element has attained a predetermined usable heat.

10. In a cigar lighter, a holding device; a removable igniting unit having a heating element and a handle carried by the holding device in deep position so as not to project therefrom; means in the holding device for establishing a circuit to the heating element; means for retaining the igniting unit against withdrawal from the holding device, said holding device having means thereon surrounding the handle whereby the fingers can be inserted to grip the handle for withdrawing the igniting unit; and means for closing the energizing circuit by gripping of the handle, said retaining means comprising a heat-responsive latch adapted to be released upon the heating element being energized and brought to the desired heat.

11. In a cigar lighter, a holding device comprising a tubular body having an enlarged mouth; an igniting unit having a heating element removably mounted on the holding device and having a substantially flat handle provided with wings extending into the enlarged mouth portion in the holding device so as not to project therefrom, the enlarged portion forming a means whereby the fingers can be inserted to grip the flat handle for removal of the igniting unit from the holding device; and a switch actuator on the side of the flat handle and adapted to close a circuit to the heating element upon the fingers being inserted into the enlarged mouth to grip the handle, said switch actuator being protected by the holding device from accidental contact.

12. In a cigar lighter, a holding device adapted to be inserted in an opening in a dashboard and comprising a tubular body having an enlarged mouth provided with a flange adapted to engage a front face of the dashboard, a locking member having its forward edge engageable with the rear face of the dashboard and its rearward edge slidably mounted on the tubular body; a collar threaded on the tubular body and movable into engagement with the rear edge of the locking member for moving it into clamping relation with the dashboard to hold the holding device in position thereon; and an igniting unit having a handle carried by the holding device so as not to project beyond the holding device and dashboard, the handle being disposed in the enlarged mouth of the holding device.

13. In a cigar lighter, a holding device; a removable igniting unit having a heating element and a handle carried by the holding device; a pair of spaced parallel ring contacts carried by the igniting unit and insulated from one another, one of said contacts being connected to the heating element and through the heating element to

one side of a source of energy, and the other ring being connected to the other side of a source of energy; and means for closing a circuit between the rings to energize the heating element including a bridging contact actuated by gripping of the handle of the igniting unit.

14. In an electric cigar lighter, a holder having an enlarged mouth at one end; an igniting unit having a heating element thereon and a handle removably carried by the holding device so as not to project therefrom; and switch means on the igniting unit including an actuator disposed within the enlarged mouth of the holder for closing the circuit to the heating element, said actuator being exposed but protected against casual operation by the portion of the holding device surrounding the same.

15. In a cigar lighter, a sheet metal holding device connected to one source of energy and having a contact insulatedly mounted in the base and connected to the other terminal of the source of energy; a removable igniting unit having a heating element thereon carried by the holding device so as not to project therefrom and having a contact adapted to engage the contact in the base of the holder and a contact engageable with the tubular holding device to establish a circuit for the heating element; heat-responsive latches for retaining the igniting unit in position on the holding device in which circuit is established;

and means on the igniting unit and within the holding device for completing a circuit to the heating element as a result of gripping the igniting unit to remove the same from the holder, the heat-responsive latches moving to release position upon the heating element attaining a desired usable heat.

16. In a cigar lighter, a sheet metal holding device connected to one source of energy and having a contact insulatedly mounted in the base and connected to the other terminal of the source of energy; a removable igniting unit having a heating element thereon carried by the holding device so as not to project therefrom and having a contact thereon adapted to engage the contact in the base of the holder and the contact engageable with the tubular holding device to establish a circuit for the heating element; heat-responsive latches for retaining the igniting unit in position on the holding device in which circuit is established; and means on the igniting unit and within the holding device for completing a circuit to the heating element, the heat-responsive latches moving to release position upon the heating element attaining a desired usable heat; said contact in the base comprising a heat-responsive material adapted to flex and open the circuit should the latches fail to release and open the circuit.

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