

Jan. 30, 1934.

J. H. COHEN

1,944,925

CIGAR LIGHTER

Filed April 22, 1929

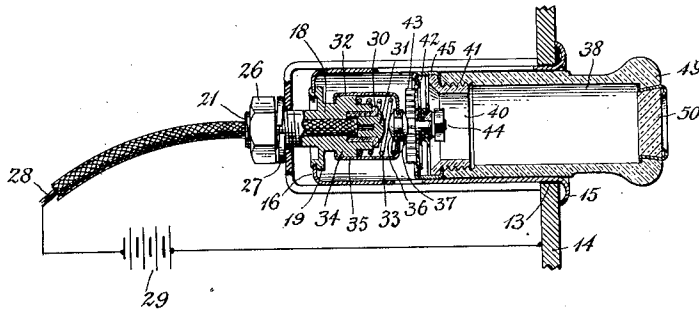


Fig. 1.

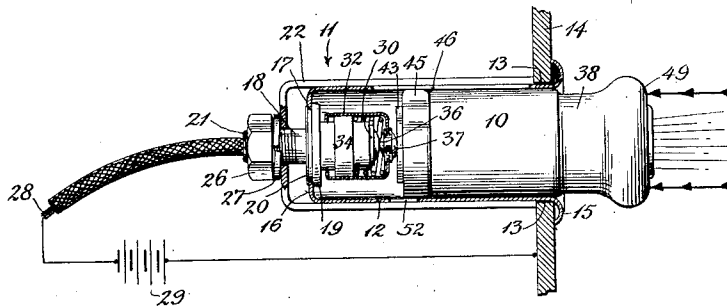


Fig. 2.

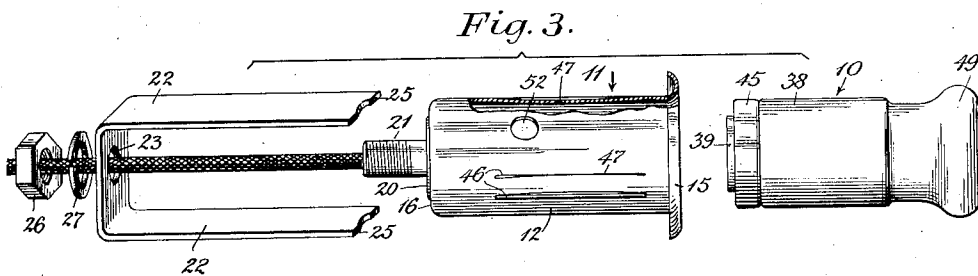


Fig. 3.

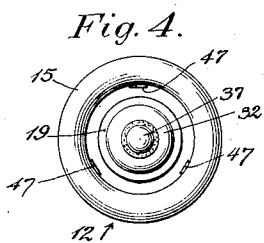


Fig. 4.

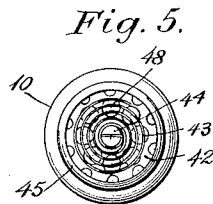


Fig. 5.

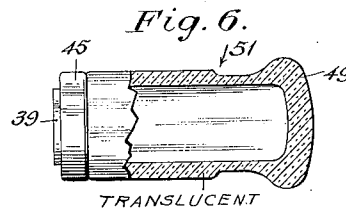


Fig. 6.

INVENTOR.

Joseph H. Cohen,
BY *John G. Johnson*
ATTORNEY.

UNITED STATES PATENT OFFICE

1,944,925

CIGAR LIGHTER

Joseph H. Cohen, Bridgeport, Conn.

Application April 22, 1929. Serial No. 357,030

8 Claims. (Cl. 219—32)

This invention relates to electric cigar-lighters, and more particularly, to that type of cigar-lighter which comprises a holding device adapted to be supported on an instrument board or other suitable support, and an igniting unit adapted to be mounted on the holding device for quick and complete removal and replacement after a heating element carried by the igniting device has been brought to incandescence so that the heating element may be applied to the end of a cigar or cigarette to ignite the same.

An object of the present invention is to provide an improved cigar-lighter of the kind referred to, in which the holding device comprises a socket and the igniting device a plug to be inserted in and supported by the socket, and provides means for facilitating the mounting of the socket on the instrument board of a motor vehicle.

Another object of the invention is to provide an automatic switch in the socket adapted to close a circuit through the igniting unit when the igniting unit, which is supported in two-pole engagement with the holding device, is moved inwardly on the holding device.

A further object is to provide improved means on the holding device for resiliently holding the igniting unit on the holding device against accidental or unintentional removal.

And a still further object of this invention is to provide an improved igniting unit and heating element therefor.

Other features and advantages will hereinafter appear.

In the accompanying drawing which illustrates one form of the invention, that at present preferred—

Figure 1 is a sectional view of the holding device and igniting unit mounted in position on a suitable support, such as the instrument board of a motor vehicle.

Fig. 2 is a view similar to Fig. 1, but showing the igniting unit in elevation, and showing the latter in the position which it occupies when a current-supply circuit through the heating element is closed.

Fig. 3 is a disassembled view of the igniting unit, the sleeve constituting the socket for it, and the plate and accompanying means for securing the socket to the instrument board.

Fig. 4 is a front elevation of the holding device with the igniting unit removed.

Fig. 5 is an elevation showing the end of the igniting unit which carries the heating element.

Fig. 6 is a sectional view of a modification of the igniting unit shown in Figs. 1 to 3.

The electric cigar-lighter of the present invention, as shown in the accompanying drawing, comprises an igniting unit 10 and a holding device 11, the former being mounted on the latter for quick removal and replacement. The holding device forms a socket for receiving the igniting unit which is cylindrical and constitutes a plug.

The holding device includes a sleeve 12 adapted to be inserted in a hole 13 in an instrument board 14 or the like and has an outwardly extending flange or bead 15 at its forward end adapted to engage the face of the instrument board at the margin of the hole 13 and limit the inward movement of the sleeve through the hole in the instrument board 14. At its inner end the sleeve 12 is provided with an end wall 16 having an aperture 17 in which a post-like member 18 is mounted. This post-like member 18 has a flange 19 engaging the inner side of the end wall 16 and another flange 20 engaging the outer surface of the end wall 16 and formed by peening over the material of the post adjacent the flange 19. The post 18 has a screw-threaded end portion 21 over which a clamping plate 22 is adapted to be placed after the sleeve 12 has been inserted in the hole in the instrument board, the clamping plate 22 having an aperture 23 fitting over the threaded portion 21 of the post. The clamping plate 22 is U-shaped and has forwardly extending arms 24 of such length that the edges 25 thereof are adapted to engage the rear face of the instrument board when the clamping plate is placed over the threaded portion 21 of the post. After receiving the clamping plate 22, the threaded portion 21 of the post is adapted to have placed thereon a nut 26 and a washer 27, and when the former is tightened, it drives the clamping plate 22 forwardly against the back of the instrument board and at the same time draws the sleeve 12 backwardly so that the flange 15 engages firmly against the front face of the instrument board while the ends 25 of the clamping plate 22 are firmly clamped against the back of the instrument board.

The holding device also includes means for carrying current to the igniting device and a switch mechanism for normally opening the circuit leading to the igniting device. These means comprise a wire 28 connected to a battery 29 or other suitable source of current, which passes through a central bore in the post 18 and is connected at its end to a contact 31 mounted in a

bushing of insulating material 30 mounted in the post 18. This contact terminal 31 is not, however, directly engaged by the igniting unit, but is located within a sleeve or cap 32 slidably mounted on the post 18 and normally held in the position shown in Fig. 1 by a spring 33 with a flanged inner end 34 thereon engaging against a flange 35 on the post. At the center of its end portion, the cap 32 is provided with a contact 36 adapted to engage the live contact 31 on the post when the cap is moved inwardly against the tension of the spring 33, as shown in Fig. 2. This contact 36 is electrically connected with an external contact 37 adapted to engage the heating element or some other part of the igniting device to make contact therewith, and the contacts 36 and 37 are insulated from the cap 32.

The other contact on the holding device comprises a sleeve 12 which, being in electrical engagement with the instrument board, is connected to the other side of the battery 29 through the ground of the vehicle. If the instrument board should be made of wood or other insulating material, the other side of the battery may be connected to the sleeve 12 by a wire placed between the washer 27 and the clamping plate 22.

The igniting unit 10 comprises a cylindrical body 38 carrying at one end a heating element 39. This heating element comprises a sleeve 40 of lava or the like having screw-thread engagement 41 with the end of the body 38. The lava sleeve 40 supports a disk 42 carrying a coil 43 of resistance wire the outer convolution of which is secured to the disk while the inner end is carried by a post 44 insulated from the disk 42 substantially as shown in my co-pending application, Serial No. 304,745, filed September 8th, 1928, to which reference should be had for a more complete understanding of the means for holding the heating element and plate together. In the present case, the plate or disk 42 is held to the lava sleeve 40 by a metal ferrule 45 spun around the outer edge of the plate 42 and over a flange on the lava body.

The diameter of the ferrule 45 is such that it has rubbing contact with the internal wall of the sleeve 12 when the igniting unit is supported in the sleeve; and the post 44 is located in line with the contact 37 so that when the igniting unit is placed in the holding device, as shown in Fig. 1, the post 44 engages the contact 37.

It will thus be seen that the igniting unit has two-pole electrical engagement with the holding device when supported on the holding device in normal position, as shown in Fig. 1, i. e., when not translating current.

To cause current to flow through the resistance wire 43 so that the heating element may be brought to incandescence, the igniting unit is pressed inwardly from the position shown in Fig. 1 to that shown in Fig. 2, and by this movement the cap 32 is caused to slide on the post 18 so as to bring the contact 36 into electrical engagement with the live contact 31 in the post 18. Current may then flow from the battery 29 through the wire 28, contact 31, contacts 36 and 37 to the post 44. Then, through the coil of resistance wire 43 to the plate 42, then to the ferrule 45 and from that to the sleeve 12 back through the ground to the battery 29.

So that the igniting unit may be held in the holding device, against accidental removal and yet without employing interlocking devices or detents which would cause in a jerky motion to result when trying to remove the igniting unit,

the present invention provides slits 46 in the sleeve 12 so that the strip 47 between the slits may be biased inwardly to frictionally engage the ferrule 45 and the body 38 of the igniting unit to resiliently hold the latter in the socket 12. In addition to having the friction above specified, the resilient strips 47 by engaging the ferrule 45 form good electrical contact therewith.

While the resilient strips 47 engage the igniting unit with sufficient force to hold it in the socket against accidental removal, its holding action is such that the igniting unit will be moved from the position shown in Fig. 2 to that shown in Fig. 1, where the circuit is opened, by the spring 33 against the resistance of the resilient strips 47. Hence, should the igniting unit be pressed inwardly and instead of being bodily removed from the holding device to be applied to a cigar or cigarette to ignite the same, is merely released again, the spring 33 will cause the igniting unit to be slid outwardly relative to the sleeve and permit the circuit to be opened between the contacts 31 and 36.

Since the igniting unit is slid into the holding device with the heating element foremost where it is concealed from the view of the user, the present invention provides means for enabling the user to ascertain when the resistance wire 43 has been brought to incandescence. To do this, the plate 43 is provided with apertures 48 and the lava body 40 and body 38 are made hollow, thus permitting light emanating from the incandescing resistance wire 43 to pass through the interior of the body 28. In one form of the invention, that shown in Figs. 1 to 3, the end wall 49 of the body 38 is provided with a window or lens 50 through which the glow of light may be seen by the user.

In the form of the invention shown in Fig. 6, however, the end wall 49 is closed and the body 38 is made, as indicated, of translucent material. When this material is employed, the entire head 51 of the igniting unit is caused to glow when the heating element has been brought to incandescence.

The sleeve 12 is provided with ventilating apertures 52 to dissipate the excess heat which may result from holding the igniting unit 10 in closed-circuit position for a longer period than is necessary to bring it to incandescence.

The invention shown herein is an improvement on my copending applications, Serial No. 325,877, filed December 13, 1928, and Serial No. 352,376, filed April 4, 1929, in which applications I have disclosed and broadly claim means for indicating the incandescence of the heating element.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others. Having thus described the invention, what is claimed as new and for which it is desired to obtain Letters Patent is:—

1. An electric cigar-lighter comprising a holding device having a sleeve adapted to extend through a hole in an instrument board of a motor vehicle or the like; a flange adapted to engage the face of the instrument board at the margin of the hole; a reduced threaded member at the inner end of said sleeve; a U-shaped plate fitting over said reduced threaded member and having forwardly extending arms surrounding said sleeve and having their forward ends facing the rear face of the instrument board; and a threaded member cooperating with the threaded member on the sleeve adapted to engage the

U-shaped bracket and draw the flange on the sleeve against the front face of the instrument board and push the ends of the U-shaped plate firmly against the back face of the instrument board to firmly hold the holding device in operative position on the instrument board.

2. In an electrical device of the class described, a holding device and an igniting unit adapted to be supported on the holding device for quick removal and replacement, one of said devices constituting a plug and the other constituting a socket to receive the plug, and one of said devices having resilient means to engage the other and frictionally hold the two devices together, said igniting device having a heating element and being held by said resilient means in two-pole electrical engagement with the holding device when not translating current; and a switch device on said holding device comprising a movable circuit closer movable to position to close a current supply circuit through said heating element by movement of the igniting device relative to the holding device against the resistance of said resilient means, said switch being normally biased to move the igniting unit to open circuit position and being adapted to move the igniting unit against the resistance offered by said resilient means.

3. In an electric cigar-lighter, an igniting unit adapted to be mounted on a tubular holding device for quick removal and replacement, said igniting unit comprising: a cylindrical body portion adapted to extend into said tubular holding device; and a heating element including a resistance element and support therefor removably mounted in the end of the body which extends into said tubular holding device, said heating element being adapted to be brought to incandescence while supported in said holding device, and said body and support for the heating element being hollow to permit light emanating from the incandescing heating element to be seen by the user while the igniting unit is still located in the holding device.

4. In an electric cigar-lighter, an igniting unit adapted to be mounted on a tubular holding device for quick removal and replacement, said igniting unit comprising: a cylindrical body portion adapted to extend into said tubular holding device; and a circular heating element removably mounted in the end of the body which extends into said tubular holding device, said heating element and body being in light conducting relation and the body being of translucent material so that the glow resulting from incandescence of the heating element can be viewed by the user without removing the igniting unit from the holding device.

5. An electric cigar-lighter comprising a holding device and an igniting unit adapted to be

mounted on the holding device for quick removal and replacement, said igniting unit comprising a cylindrical body portion and a heating element mounted at one end of said body portion and having a resistance wire and a ferrule in contact with one end of the resistance wire, and said holding device comprising a tubular member or sleeve of metal into which a substantial portion of the cylindrical body of the igniting unit carrying the heating element is adapted to extend to be supported therein, said metal sleeve being slit and normally biased to resiliently engage the ferrule of the heating element when the latter is located in the sleeve to retain the igniting unit within the sleeve against casual removal, current being conducted from said ferrule to said sleeve by said biased portions of the sleeve.

6. A heating element for cigar-lighters comprising a cylindrical body of insulating material having a reduced neck provided with means for securing it to an igniting element; a heater coil; mounting means therefor; means for securing the heater coil mounting means on the body of insulating material comprising a metallic ferrule engaging one end of the heater coil and constituting a contact thereof, said body being hollow and said mounting means being capable of allowing the passage of light therethrough into the hollow portion of the body.

7. In an electric cigar-lighter, an igniting unit adapted to be mounted on a tubular holding device for quick removal and replacement, said igniting unit comprising: a cylindrical body portion adapted to extend into said tubular holding device; and a heating element mounted on the end of the body which extends into the tubular holding device, said heating element and body being made in light conducting relation and the body being of translucent material so that the glow resulting from incandescence of the heating element can be viewed by the user without removing the igniting unit from the holding device.

8. In an electric cigar-lighter, an igniting unit adapted to be mounted on a tubular holding device for quick removal and replacement, said igniting unit comprising: a cylindrical body portion adapted to extend into said tubular holding device and having an operating knob protruding from the holding device; and a heating element mounted on the end of the body which extends into the tubular holding device, said heating element and body being in light conducting relation and the knob being of translucent material so that the glow resulting from incandescence of the heating element can be viewed by the user without removing the igniting unit from the holding device.

JOSEPH H. COHEN.