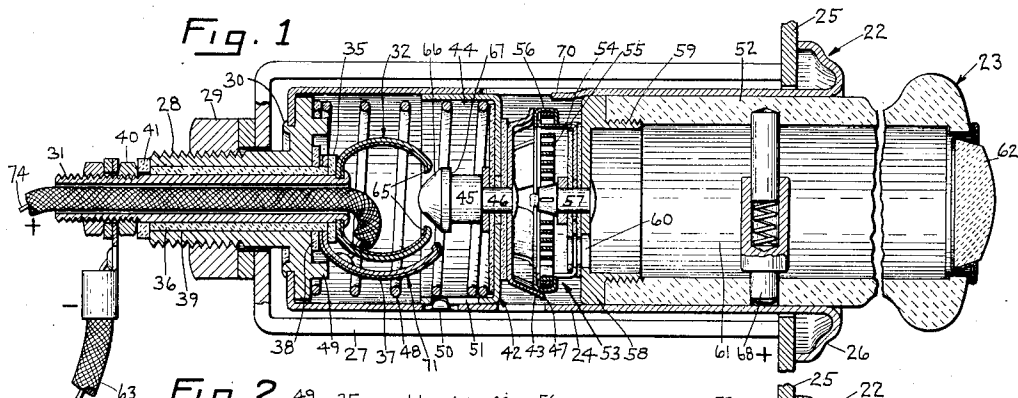
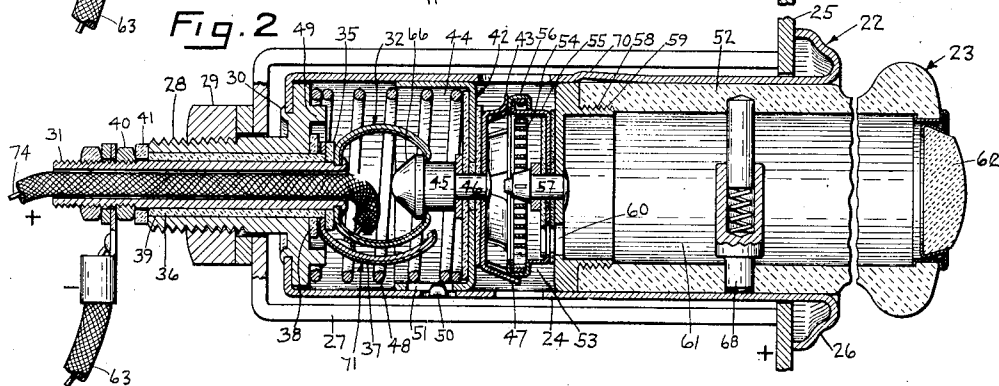
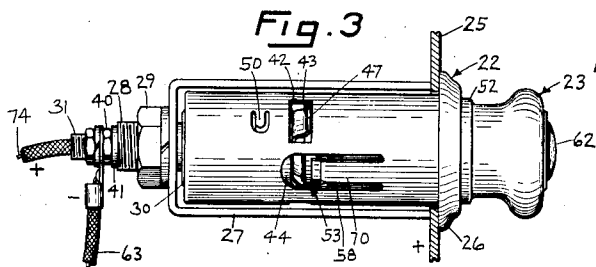
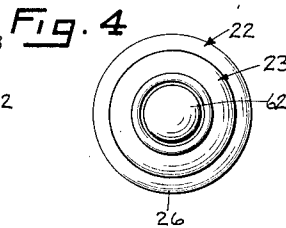
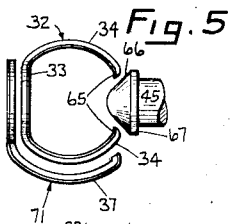
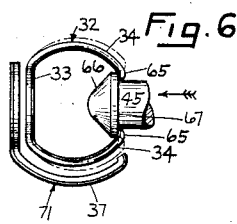
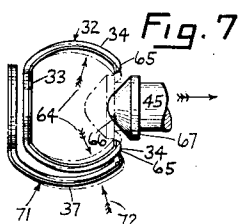
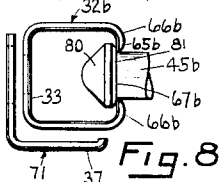
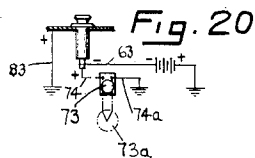


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Original Filed July 23, 1932 2 Sheets-Sheet 1



Inventor

Attorney

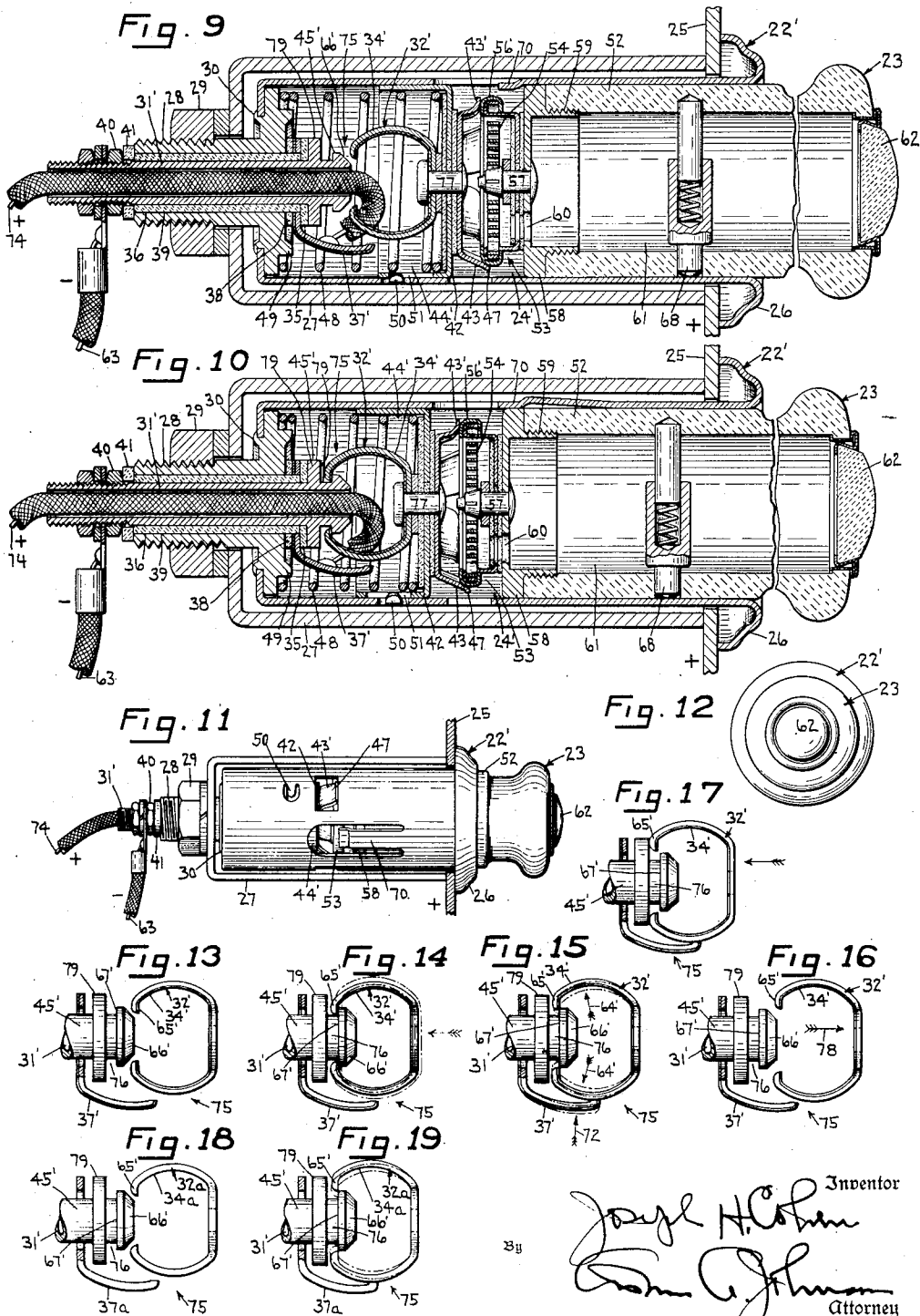
May 17, 1938.

J. H. COHEN

2,117,703

CIGAR LIGHTER

Original Filed July 23, 1932 2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,117,703

CIGAR LIGHTER

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Renewed August 5, 1937

17 Claims. (Cl. 219—32)

This invention relates to improved cigar and cigarette lighters, particularly of the types for use in automobiles.

Most lighters of this type, which have been manufactured heretofore, are so designed that it is necessary for the driver to push against a movable igniter unit or to press a switch button for an extended period of time in order to close an electrical circuit for the purpose of heating the lighter to incandescence. However, these lighters required the driver to continuously divert his observation from the road to the cigar lighter, in order to observe when the igniting unit thereon was heated to incandescence and in condition for use, the heated wire itself serving as an indicator. Besides diverting the driver's observance of the road it necessitated his driving with only one hand while forcing the movable member of the cigar lighter or forcing a push button to circuit closing position with his other hand over a somewhat extended period of time.

In order to overcome the latter disadvantage, some lighters have been constructed with a bayonet lock or its equivalent, which holds the removable unit of the cigar-lighter in circuit closing position so that the igniting coil would be heated to incandescence without the necessity of pushing and holding the removable unit or push button switch in circuit closing position. However, these cigar-lighters, with the bayonet lock, had the marked disadvantage of keeping the circuit closed for an extended time and sometimes even dead shorting the battery of the car for so long a time that complete recharging was necessary in the event of the driver forgetting that he locked the removable igniting unit in closed circuit condition.

With both of these types of lighters, with and without bayonet lock, which are the types most generally in use, there is a strong likelihood of keeping the circuit closed over too long a period of time; this, in addition to the hereinbefore mentioned disadvantages of requiring the operator or driver to take one hand from the wheel and hold the cigar-lighter in closed circuit condition for an extended period of time, and to divert his gaze from the road to the cigar-lighter in order to ascertain when it may be lifted from the instrument panel for use.

It is an object of the present invention to provide an electric cigar-lighter in which it is not necessary for the driver to divert his gaze from the road ahead nor to keep his hand away from the wheel for any considerable extent of time,

the elimination of which makes for greater safety while driving the car.

It is a further object of the present invention to provide a cigar-lighter which will be maintained in closed circuit condition just long enough to heat the igniting coil to incandescence, and with no danger of an excessive drain on the battery.

In its broader aspects, the present invention provides a cigar-lighter wherein it is merely necessary for the driver to move the same in one direction, whereupon the circuit to the igniting coil will be closed and the igniting unit will be automatically held in closed circuit position until the igniting coil is heated to incandescence whereupon the circuit will be broken automatically so that there is no further drain upon the battery; thus, minimizing the skill, care, and effort on the part of the driver.

Also, and of particular importance, the lighter of the present invention, is arranged to give a suitable warning to the driver when heated to incandescence and the circuit is opened, so that there is no danger of the igniting unit cooling after it is heated, as might occur if the driver inadvertently waits too long before picking it up for use.

A feature of the present invention is the provision of means for closing the circuit to the lighter in order to improve the thermal condition of the lighter even though the regular thermally responsive circuit closing contacts are still in the thermally separated and circuit opening position.

Other features and advantages will hereinafter appear.

In the accompanying drawings:

Figure 1 is a longitudinal sectional view of the cigar-lighter of the present invention in normal inoperative position.

Fig. 2 is a view similar to Fig. 1, but with the cigar-lighter in closed or operative position.

Fig. 3 is a plan view of the cigar-lighter.

Fig. 4 is a front view.

Fig. 5 is a detail view showing the thermostatic catch of the present invention in the inoperative position.

Fig. 6 is a detail, similar to Fig. 5, but shows the catch in the operative position.

Fig. 7 is a view similar to Figs. 5 and 6, but shows the catch in its partly released condition and in position to close a warning device circuit.

Fig. 8 is a detail view of a modified form of catch in the closed condition, similar to Fig. 6.

Fig. 9 is a longitudinal sectional view, similar

to Fig. 1, but with a modified form of catch and circuit closer, in the normal inoperative position.

Fig. 10 is a view similar to Fig. 9, but shows the parts in the operative position.

Fig. 11 is a plan view of the lighter shown in Figs. 9 and 10.

Fig. 12 is a front view.

Fig. 13 is a detail view of the circuit closer and thermostatic catch of this form of the invention in the open inoperative position, similar to Fig. 9.

Fig. 14 is a detail view, similar to Fig. 13, but shows the catch in closed circuit position.

Fig. 15 is a detail view, similar to Fig. 14, but shows the catch in its partially released position, and in position to close an auxiliary warning device circuit.

Fig. 16 shows the catch and circuit closing parts returned to the open inoperative position.

Fig. 17 is a view similar to Fig. 16 of the invention showing the catch used to effect an auxiliary closing of the circuit even though the catch is thermostatically maintained in an open position.

Fig. 18 is a view similar to Fig. 13, but shows the catch and circuit closer parts made of regular material, rather than bimetallic material.

Fig. 19 is a detail view, similar to Fig. 18, in the closed circuit position and about to be released.

Fig. 20 is a wiring diagram.

For convenience and clarity in the following description, the present invention is shown, as applied to what may be termed "sleeve-type" cigar-lighters for use with automobiles, similar to the lighter disclosed in my copending application, Serial No. 357,030, but it should be understood that it may also be used with other types of cigar-lighters. Broadly, the cigar-lighter comprises a base member 22 and a removable igniting unit 23 which may be mechanically and electrically separated from the base member for use.

The base member 22 comprises a socket 24 adapted to be passed through a suitable aperture in an instrument panel 25 of an automobile, or other convenient location, until a flange 26 at the front end thereof engages with the front face of the panel. The socket is rigidly secured in place with a U-shaped yoke 27 fitted over an outer sleeve 28 and a clamping nut 29. The outer sleeve is preferably rigidly secured to the socket 24 by a spun-over flange 30.

A contact carrying sleeve 31 is insulatedly mounted in the outer sleeve 28, and at its forward end there is secured a main contact 32 having a main body portion 33 shaped similar to a washer and one or more integral hook-shaped fingers 34 extending therefrom. The contact carrier sleeve is secured in place by passing a washer 35 and tube 36 of insulation over the contact sleeve 31, passing an auxiliary contact 37 and insulating washer 38 over the insulating sleeve 36, and then passing the entire assembly through a bore 39 of the outer sleeve 28, where it is rigidly secured to the latter part with the nut 40 and insulating washer 41. These various parts of insulation just described prevent electrical connection between the contact sleeve 31 and outer sleeve 28 and are preferably made of mica in order to be heat-resisting.

The base member is completed with a slide 42 which carries an intermediate contact 43. This slide comprises a cup 44 which has a free fit within the socket 24. Near its center the cup is provided with a contact and catch stud 45 which is insulated from the cup by suitable insulating washers. It is held in place by spinning or otherwise heading-over the end of the shank 46, and when this is done a contact washer with field-

ing fingers 47 forming the intermediate contact 43 is secured to the cup so that current may be passed from the contact 45 to the fingers. The cup also serves to hold a spring 48 in the socket 24, free from the side walls at one end, while the other end of the spring is located in the socket by a shoulder portion 49 of the outer sleeve 28. Longitudinal movement of the slide 44 is limited in two directions by a lanced finger 50 part of the socket 24 being bent into and engaging the ends of a slot 51 in the cup.

The removable igniting unit 23 comprises a body 52 preferably made of bakelite or some similar insulating material of a size to slide freely in the socket 24. At one end it supports a heater unit 53 comprising a spirally wound heating coil 54 in a cup 55. One end of the heating coil is connected electrically to the outer wall of the shell by means of a ring 56 which is spun thereover and the other end of the coil is connected to a stud 57 in the slot. This stud passes through a suitable hole in the shell 55 and is insulated from the latter with suitable insulating washers. It is mechanically and electrically secured to a ring 58 which has a threaded connection 59 with the igniting unit body. The heater unit 53 is provided with a series of holes 60 which allow the incandescent glow of the heating coil to pass through a bore 61 of the body 52 to the front end of the igniting unit 23 where they are magnified and projected by means of a ruby glass 62, or by a disk of Catalin or similar light-conducting material.

The wiring circuit for the cigar-lighter comprises a ground connection through the instrument panel 25, flange 26 and the yoke 27 extending one side 83 of the car battery circuit to the socket 24 portion of the base 22 and the other pole of the circuit comprises a wire 63 from the battery connected to the contact sleeve 31 and rigidly secured thereto with a nut.

Now, of particular importance, the cigar-lighter is, according to the present invention, arranged to prevent an excessive drain on the battery, and to lessen the amount of attention required from the driver. To this end, there is provided a novel catch for holding the igniting unit in energizing position and a novel circuit closer switching arrangement for automatically controlling the circuit between the sliding contact stud 45 and the stationary main contact 32.

This special catch and thermostatically controlled switch is, according to the present invention, made as a unitary structure; that is, both are embodied together and it is thereby possible to effect a marked economy in the cost of manufacture, because fewer parts are required and a single assembly and adjustment takes care of both the catch and the thermostatically controlled switch. In its present preferred form this combined catch and thermostatically controlled switch comprises the main contact 32, made of bimetallic material in order to be responsive to thermal conditions of the latter. The fingers thereon are of narrow width and slightly bowed so that there is a marked tendency for these fingers to spread or to open up in the direction of the arrows 64 in Fig. 7 to the solid line position shown in the latter figure under the influence of heat.

These fingers are provided with hooks 65 at their outer ends which are adapted to engage with a bevel 66 on the front end of the main contact stud 45 and be forced apart thereby and then snapped in back of a shoulder 67 portion of the stud when the sliding sleeve is pushed to-

ward the bottom of the socket into position shown in Fig. 2.

The contact finger hooks 65 thus positively lock the sliding sleeve 44 in the closed position and at the same time complete an electrical connection from the main contact sleeve 31, contact 32, and the stud 45 to the intermediate contact disk 43 and also through the ring 58 and stud 57 of the removable igniting unit 23 to complete the circuit to the heating coil 54 to energize the coil and bring it to incandescence.

As the heating coil 54 is brought to incandescence some of the heat is radiated from the front face of the coil against the inside of the disk 43 and follows through the ring and contact fingers 47. As the fingers are heated in this manner some of the heat follows through to the stud 45 and fixed contact fingers 34, and at the same time heats the air within the chamber formed by the socket 24 and shell 44, to cause the contact fingers to expand gradually in the direction of the arrows 64 (see Fig. 7) until the hooks 65 move clear or free of the shoulder 67 whereupon the spring 48 is free to again move the sliding sleeve 44 forwardly in the socket 24 until the movement is stopped by the lanced ear 50 engaging an end of the slot 51 as shown in Fig. 1. At the same time it pushes the removable igniting unit 23 forwardly in the socket and moves the contact 45 of the switch into open circuit or de-energizing position shown in Figs. 1, 5 and 7.

It should also be noted that the particular form of switching unit and contacts provided therefor by the present invention have the very desirable advantage of making it unnecessary for the operator to twist, push, or in any special manner rotatably align the removable igniting unit 23 relative to the base 22 when returning the unit to the inoperative position on the base, or to do any involved twisting or aligning when it is desired to move the removable igniting unit into the operative or energizing position. It is merely necessary to put the plug 23 into the socket 24 when placing one with the other and merely necessary to push against the end of the igniting unit in order to move it to energizing position.

Normally the igniting unit 23 is in the position shown in Fig. 1 for the driver or other occupant of the car, after using the unit, merely slides it into the socket 24 until the cup 55 and ring 56 thereon engages with the spring contact fingers 47 of the slide 44. The pressure of the spring 48 on the sliding member serves as a stop or indication that the unit has been slid fully into the inoperative position. A spring plunger 68 is located in the plug body 52 to impinge against the bore of the socket 24 and prevent the igniting unit 23 from working out of the socket even though the car vibrates badly.

When it is desired to use the cigar-lighter the driver merely grasps the knob portion of the igniter unit body 52 and pushes it deeper into the socket against the pressure of the yielding spring 48 whereby the bevelled end 66 of the contact plug 45, as the unit slides in the socket 24, engages with the hooks 65 to spread the fingers 34 until the hooks snap over the shoulder 67 as shown in Fig. 6, to lock the sliding unit in the back and switch closing position. Preferably a long finger 70 is lanced inwardly of the socket 24 with a raised portion adapted to engage and complete electrical connection between the socket 24 and igniting unit if the bore of the socket becomes worn considerably. The op-

erator may then release his grip on the igniting unit and again use both hands for driving while the coil 54 is being heated to incandescence.

As the coil comes up to heat, some of the heat travels through the stud 45 and gradually moves the fingers of the bimetallic contact member to open position while the hooks thereon ride over the shoulder portion 67 of the stud 45 until a release between the shoulder and hooks is effected and the igniting unit moved back into the inoperative position shown in Fig. 1 under the influence of the sliding sleeve 44 and spring 48. Thereafter, the driver pulls the lighter from the socket for use.

The light disk 62 at the outer end of the igniting unit 23 serves to transmit an incandescent glow from the heater coil and warn the operator that the lighter is in condition for use. However, this would necessitate the driver glancing at the lighter from time to time in order to know when it was properly heated.

According to the present invention, a positive warning is provided to help the driver and make it unnecessary for him to continuously or sporadically observe the lighter. This novel warning device comprises a switch 71 adapted to be closed automatically when the igniting unit has been brought to the desired degree of incandescence. This switch comprises the contact member 37 of bimetallic material so arranged that when the igniting unit is in the operative position shown in Fig. 2 and is being brought to incandescence, the heat thereof is transmitted to the contact member 37 which curves in the direction of the arrow 72 in Fig. 7, while the main contact arms or fingers 32 move in the direction of the arrows 64. This warning device contact member is located and adjusted so that it contacts with the finger 34 just before and during release of the contact stud 45 from the hooks 65 as shown in Fig. 7. The circuit is completed to a bell 73, or other preferably audible warning device, through a wire 74 connected to the contact 37, of one polarity, while current of the other polarity passes through the wire 74a to the warning device as shown in the wiring diagram, Fig. 20.

Thus, it is merely necessary for the operator or driver to give the igniter unit 23 a quick push into the operative position in Fig. 2, and thereafter continue driving, or otherwise using both heads, and without diverting his eyes from the road ahead, for the structure provided by the present invention automatically returns the igniting unit to inoperative and electrically disconnected positions, and at the same time warns the operator audibly that the lighter has been put into condition for use to light a cigarette, or the like. If preferred the warning device switch 71 provided by the present invention may be used to close the circuit to a lamp, such as the lamp 73a, shown by dot and dash lines in Fig. 20, located in a place remote from the cigar-lighter and close to the regular line of driving vision.

In Figs. 9 to 16 inclusive, there is shown a modified form of the present invention. The removable igniting unit 23 in this form of lighter is exactly the same as that shown in the first form of the invention. The base member 22', however, while like the base member 22 of the preferred form of the invention in many respects is provided with a different form of catch and switch unit 75 comprising a contact stud 45' made integral with a contact sleeve 31' and a sliding sleeve 44' is arranged to support and carry a yielding

bimetallic contact member 32' with bowed fingers 34' and hooks 65'.

The fingers 34' and hooks 65' are normally in the closed position shown in Fig. 9, and are adapted to ride over a bevel 66' on the end of the contact sleeve 31' and hook into a groove 76 in back of the shoulder 67', as shown in Figs. 10 and 14. With this form of the present invention, as with the preferred form, it is merely necessary for the operator to push the igniting unit 23 longitudinally into the bore of a socket 24' portion of the base 22' until the hooks snap into the groove 76 whereupon current is conducted to the outer end of the heater coil 54 through the stud 17, contact fingers 43', and ring 56', the circuit being completed by the closed line between the panel 25, shell 24', ring 58, and stud 57 to the inner end of the coil.

When the switch 75 is closed and as the heater coil is brought to incandescence the spring contact fingers 34' and hooks 65' gradually open from the position shown in Fig. 14 in the direction of the arrow 64' and into the position shown in Fig. 15 until the hooks are free of the shoulder 67' portion of the groove 76, whereupon the sliding unit and hook carried thereby, under the influence of the spring 48, travel in the direction of the arrow 78 shown in Fig. 16 to move the igniting unit again into the inoperative position shown in Fig. 9.

As with the preferred form of the invention, this form may be provided with a warning device, including the contact member 37' insulatedly mounted on the modified form of contact sleeve 31'. Here again the signal contact 37' is made of bimetallic material and curves inwardly in the direction of the arrow 72' (see Fig. 15) as the main contact member 32' carried by the sliding sleeve 44' moves outwardly under the influence of heat in the direction of the arrows 64' until engagement occurs with the signal contact, just before and during release of the switch, when the lighter has been brought to incandescence. The wiring for this signal contact is the same as for the preferred form of the invention already described.

This modified form of the present invention has the advantage of making it possible for the operator to manually manipulate the lighter to obtain a further degree of incandescence without waiting for the main contacts 32' to cool and resume their normal closed position, and to this end there is provided a flange 79 which contacts with the ends of the hook 65' when the igniter is pushed the full extent toward the back of the base member as shown in Fig. 17.

It should be particularly noted that, according to the present invention, the warning device need not be operated as the igniting unit is moving into the operative position, but will only be operated after the igniting unit is heated and ready for use. This is accomplished by arranging the signal device contact so that it moves toward the regular contacts 32 as the lighter is brought to the proper degree of incandescence. When the signal contact 37 or 37' is cold, as when the igniting unit 23 is moved to the operative position, the bevel at the end of the contact stud cannot spread the main contacts sufficiently for them to engage the signal contact and close the signal circuit. However, when the various contacts are heated and the main contacts spread sufficiently to clear the contact stud, for release, the heated signal contact 37, which has con-

tracted, is in a position to close the signal circuit.

In Figs. 18 and 19 there is shown a further modified form of the present invention comprising a yielding contact member 32a, having fingers 34a similar to and arranged to ride over the bevel 66' and snap into grooves 76 in much the same manner as the contact member 32', shown in Figs. 13 and 14, or the contact members 32 shown in Figs. 5 and 6. The parts are proportioned to expand the arms as the heater coil is brought to the desired degree of incandescence. This form of yielding contact member may be used in order to effect greater manufacturing economy and it may be more advantageous than the bimetallic form in lighters which are brought to incandescence only slowly, or if the cigar lighter construction is such that there is a quick flow of heat from the heater coil to the yielding contact member; in other words, where it is desired to have a slowly responsive device. Also, it may be preferred to use a solid contact member 37a as a signal contact rather than the bimetallic form. However, with this form, the contact 37a is shielded or mounted to prevent it from receiving a flow of heat from the heater coil and thereby cause it to remain stationary while the yielding contact members gradually expand from the heat of the coil 54.

If preferred, the catch and switch of the present invention may be, as shown in Fig. 8, arranged to close the circuit to the warning device only as the removable igniting unit is fully heated and is actually travelling to the inoperative position, and not at all prior to such movement. For this purpose, the yielding contacts 32b are provided with slightly longer hooks 65b and a contact stud 45b having two bevels 80 and 81. This arrangement is such that the hooks 65b on the contact fingers slide first over the bevel 80 and then down over the second bevel 81 to hook in back of a shoulder 67b when the operator pushes the igniting unit into place. When the heater coil is brought to incandescence the yielding contact member expands until the ends of the hooks 65b reach the bevel 81. Thereafter, the straight wall or shoulder 67b no longer holds the sliding sleeve back, and as the contact stud 45b is moved relative to the yielding contact member 32b the bevel 81 expands the heated yielding contact members a slightly greater extent to close the gap with the signal contact 37b. Thus, the bevel 81 and pressure of the spring 48 may be used to close the warning device circuit and makes unnecessary any close adjustment between the regular circuit control contacts and the warning device contact.

Cross reference is made to my copending application S. N. 118,838, filed January 2, 1937, which is a division of the present application and wherein are claimed certain features of the invention herein disclosed.

Other 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. In an electric cigar-lighter, the combination of a base member; a plug removably supported on the base member and movable thereon into longitudinally different operative and inoperative positions; an electrical heating coil on said plug; a warning device; and means, including thermostatically controlled means responsive to the tem-

perature of the heating coil, adapted to move said plug from its operative position longitudinally relative to the base to its inoperative position when said coil is heated a predetermined extent and to render said warning device operative.

2. In an electric cigar-lighter, the combination of a base member; a unit removably supported in operative and inoperative positions by said base member; a heating coil on said unit; means for moving the removable unit in the base member from its operative to its inoperative position; a bimetallic catch associated with said means; a warning device; a bimetallic element associated with said warning device, said bimetallic catch and bimetallic element moving into engagement one with the other in response to the increase in temperature of the heating coil and in this movement releasing the first-named means and moving the removable unit to its inoperative position and actuating the warning device.

3. In an electric cigar-lighter, the combination of a base member; a unit removably supported by said base member in operative and inoperative positions; a heating coil on said unit; means for automatically moving the removable unit in the base member; a thermostatic catch responsive to the increase in temperature of the heating coil to release the first-named means; a warning device; and a warning device contact, said thermostatic catch being adapted to automatically move into engagement with said contact and actuate the warning device.

4. In an electric cigar-lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on said unit; means for automatically moving the removable unit in the base member; a thermostatic catch responsive to the increase in temperature of the heating coil to release the first-named means; a warning device; a warning device contact; and means for effecting positive relative movement between the catch and the contact to actuate the warning device when the catch is released by the action of the heating coil.

5. In an electric cigar-lighter, the combination of a base member; a unit removably supported by said base member in operative and inoperative positions; a heating coil on said unit; yielding means for automatically moving said unit on the base member; a thermostatic unit influenced by the heating coil for controlling said yielding means; and warning means including a second thermostatic element influenced by the heating coil and adapted to give an audible warning when the heating oil is heated a predetermined extent and when the yielding means is released by said thermostatic unit.

6. In an electric cigar-lighter, the combination of a base member; a unit removably supported by said base member and having an operative and an inoperative position thereon; a heating coil on said unit means for automatically moving the removable unit; a thermostatically controlled unit for controlling said means; a warning device; and a thermostatic element for the warning device, said thermostatic catch expanding and said thermostatic element contracting in response to the increase in temperature of the heating coil, and adapted to simultaneously release the yielding means and give an audible warning when said coil has been heated a predetermined extent.

7. An electric cigar lighter comprising a holder; an igniting unit removably supported on the holder and having a heating element adapted to

be electrically connected to the holder to be brought to incandescence for use, said igniting unit being completely removable from the holder for use and having a body carrying said heating element and concealing the same from view; means on the igniting unit in light conducting relation with the heating element to indicate the degree of incandescence of the heating element when being heated for use; signal means responsive to the temperature of the heating element for indicating that the heating element has attained a predetermined temperature; and means, including means responsive to the temperature of the heating element, to electrically disconnect the latter from the holder when the heating element attains a predetermined temperature.

8. In an electric cigar lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on said unit; means slidable in the base for closing a circuit to energize the heating unit; means normally urging said means to open-circuit position; a thermostatic catch for holding the circuit closed and adapted to release the first-named means upon the heating element attaining its desired heat; a warning device; and means operated by the thermostatic catch upon movement into release position for actuating the warning device.

9. In an electric cigar lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on said unit; means slidable in the base for closing a circuit to energize the heating unit; means normally urging said means into open-circuit position; a thermostatic catch for holding the circuit closed and adapted to release the first-named means upon the heating element attaining its desired heat; and means for producing an audible signal, said means being operated upon movement of the thermostatic catch into release position.

10. In an electric cigar lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on said unit; means in the base member for closing a circuit to energize the heating unit; means normally urging said means into open-circuit position; a thermostatic catch for holding the circuit closed and adapted to release the first-named means upon the heating element attaining its desired heat; and means operated in response to the movement of the thermostatic catch to release position for producing an audible signal.

11. In an electric cigar lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on the unit; means slidable in the base for closing the circuit to energize the heating unit; means normally urging said means into open-circuit position; a thermostatic catch for holding the circuit closed and adapted to release the first-named means upon the heating element attaining its desired heat; and means actuated upon release of the thermostatic catch for producing an audible signal.

12. In an electric cigar lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on said unit; means slidable in the base member for closing the circuit to energize the heating unit; means normally urging said means to open-circuit position; heat-responsive means for holding the circuit closed and adapted to release the first-named means when the heating element has attained its desired heat; and means operated by the movement of the heat-responsive means

into release position for producing an audible signal.

13. In an electric cigar lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on said unit; means including a contact slidable in the base for closing a circuit to energize the heating unit; means normally urging said contact to open-circuit position; a thermostatic catch for holding the circuit closed and adapted to release the contact when the heating element has attained its desired heat; and means operable upon release of said contact by the catch for producing an audible signal.

14. In a cigar lighter, the combination of a base member; a unit removably supported by said base member; a heating coil on said unit; means slidable in the base for closing the circuit to energize the heating unit; means normally urging said means to open-circuit position; a thermostatic catch for holding the circuit closed and adapted to release the first-named means for movement into open circuit position upon the heating element attaining its desired heat; and means operated when the first-named means moves into open-circuit position for producing an audible signal.

15. In an electric cigar lighter comprising a holder; an igniting unit removably supported on the holder and having a heating element adapted to be electrically connected to the holder to be brought to incandescence for use, said igniting unit being completely removable from the holder for use and having a body carrying said heating element and concealing the same from view; means on the igniting unit in light-conducting relation with the heating element to indicate the degree of incandescence of the heating element when being heated for use; means including means responsive to the temperature of the heating element, to electrically disconnect the latter from the holder when the heating element attains a predetermined temperature; and signal means responsive to the temperature of the heating element for indicating that the heating element has attained a predetermined temperature and that

the heating element is electrically disconnected from the holder.

16. In an electric cigar lighter comprising a holder; an igniting unit removably supported on the holder and having a heating element adapted to be electrically connected to the holder to be brought to incandescence for use, said igniting unit being completely removable from the holder for use and having a body carrying said heating element and concealing the same from view; means on the igniting unit in light-conducting relation with the heating element to indicate the degree of incandescence of the heating element when being heated for use; means, including means responsive to the temperature of the heating element, to electrically disconnect the latter from the holder when the heating element attains a predetermined temperature; and signal means responsive to the temperature of the heating element for indicating that the heating element has attained a predetermined temperature or that the heating element is electrically disconnected from the holder due to the operation of the heat-responsive means.

17. In an electric cigar lighter comprising a holder; an igniting unit movably mounted on the holder and completely removable therefrom for use; a heating element carried by the igniting unit and adapted to be brought to incandescence for use, the body of the igniting unit concealing the heating element from view; means for closing a circuit through the heating element when moved to circuit-closing position; means for indicating the degree of incandescence of the heating element; heat-responsive means for opening the circuit when the heating element attains its predetermined temperature; and signal means actuated when the circuit-opening means operates to indicate that the circuit is open, said means operating during the time that the circuit is in open position due to the action of the heat-responsive means to indicate that the circuit cannot be closed by the normal movement of the igniting unit into circuit-closing position.

JOSEPH H. COHEN.

CERTIFICATE OF CORRECTION.

Patent No. 2,117,703.

May 17, 1938.

JOSEPH H. COHEN.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, second column, line 15, for "incandescence" read incandescence and for "whereup" read whereupon; line 23, for "incandescence" read incandescence; page 3, second column, line 50, for "heads" read hands; page 5, first column, line 55, claim 5, for "oil" read coil; and line 62, claim 6, after "unit" insert a semicolon; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of August, A. D. 1938.

(Seal)

Leslie Frazer,
Acting Commissioner of Patents.