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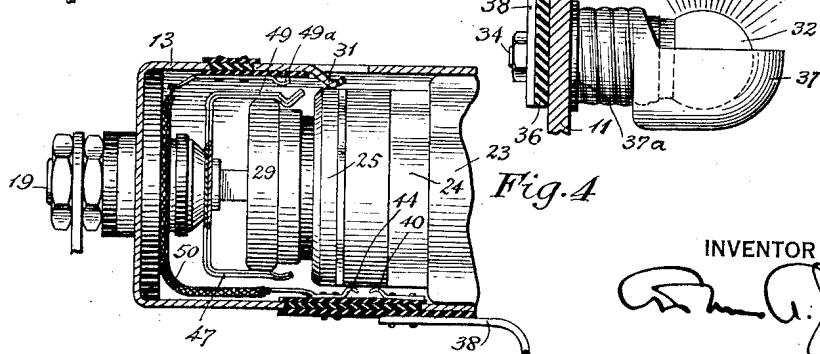
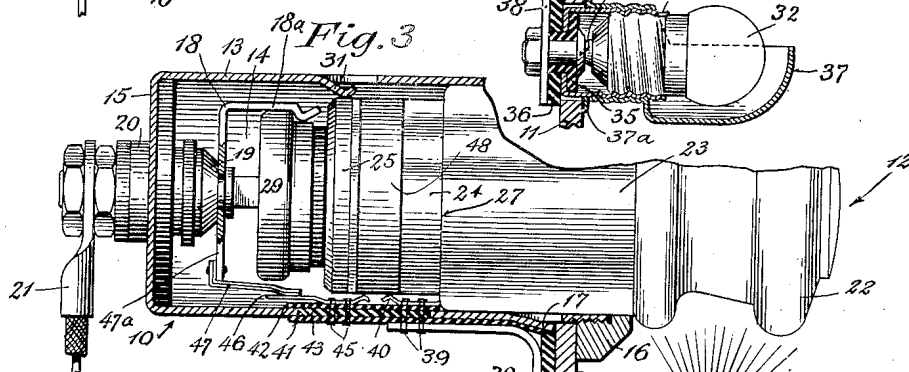
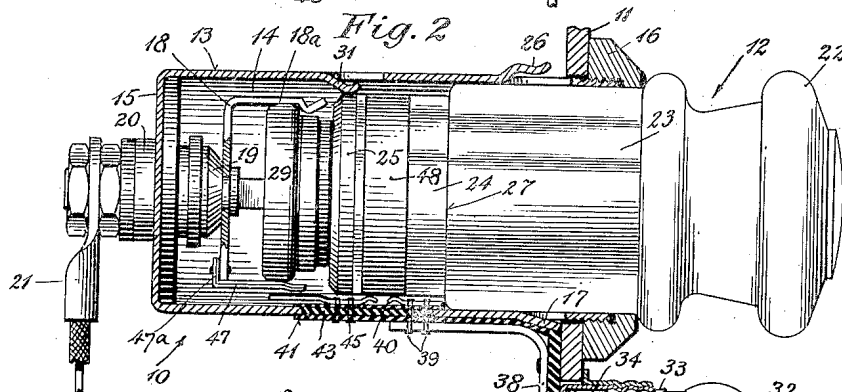
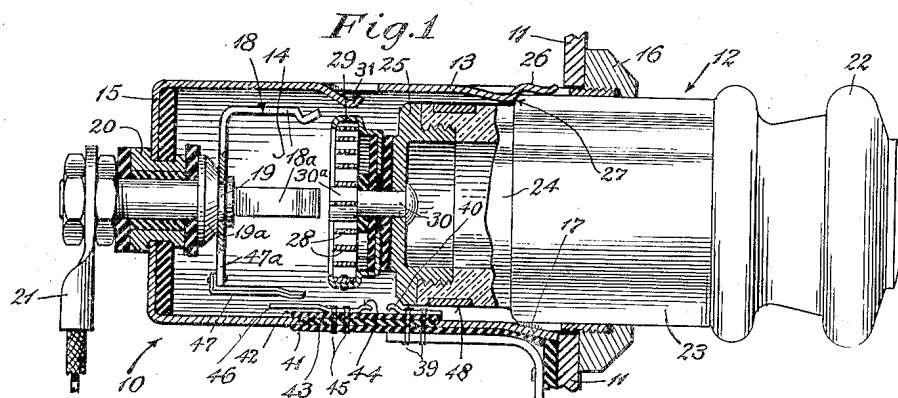
A. A. JOHNSON

2,251,611

CIGAR LIGHTER

Filed July 21, 1936

2 Sheets-Sheet 1



INVENTOR

A. A. Johnson

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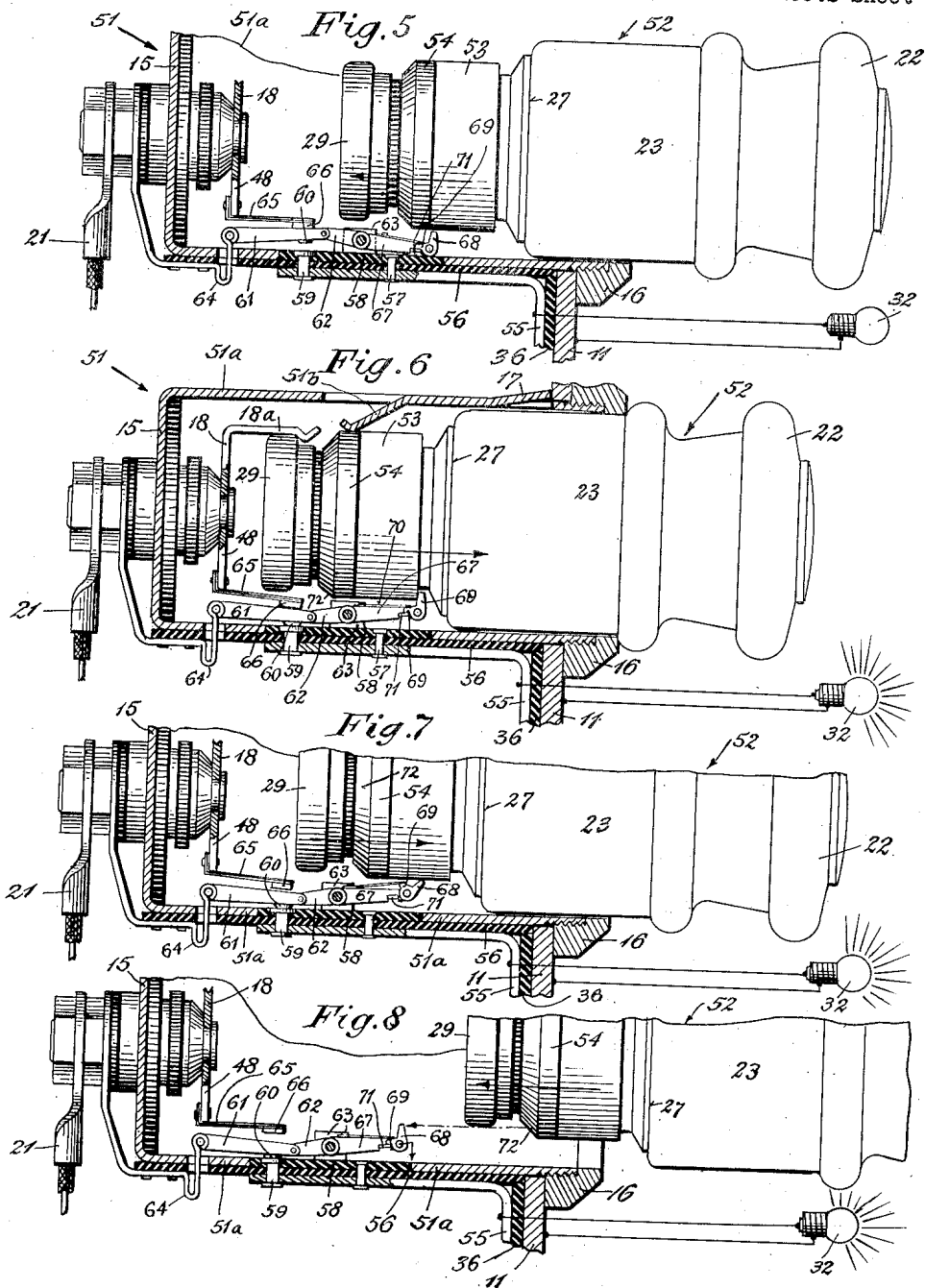
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INVENTOR

A. A. Johnson

UNITED STATES PATENT OFFICE

2,251,611

CIGAR LIGHTER

Arthur A. Johnson, Bridgeport, Conn., assignor to
Automatic Devices Corporation, Bridgeport,
Conn., a corporation of Connecticut

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29 Claims. (Cl. 219—32)

This invention relates to cigar lighters, and more particularly, to the kind in which an igniting unit is supported on a holding device so that it may be completely removed therefrom for use when the heating element of the igniting unit has been brought to a predetermined temperature.

With such lighters, it was proposed heretofore to indicate that the heating element was ready for use, by the glow of the heating element being made visible to the user. With many forms of such lighters, it is not necessary that the heating element be brought to such a degree of incandescence that its glow may be visible to the user, and, in many cases, especially when the lighter is not in a dark place, the glow resulting from the incandescent heating element is hardly visible.

An object of this invention is to indicate to the user the fact that the heating element is hot enough for use, and that the heating element is still in energizing position, independently of any glow which may result from the heating element itself.

In the form of the invention herein disclosed as exemplary thereof, this is accomplished by providing a separate source of illumination, preferably adjacent the handle portion of the igniting unit, and closing a circuit to this separate source of illumination, preferably by a heat-responsive element, such as a thermostat.

In the forms of lighters first referred to above, the igniting unit is usually manually held in energizing position, and, when released, returns to non-energizing position. This requires the user, usually the driver of the vehicle, to take his attention from the road while the lighter is becoming hot enough for use. This is to be avoided, and, according to the present invention, the igniting unit, when manually moved to energizing position, remains in that position until manually removed. Under these conditions there is special utility and advantage in the provision of a signal for apprising the user when the igniting unit is hot for use.

When, as in the embodiments of the invention herein illustrated, the separate source of illumination, such as an electric bulb, is placed closely adjacent the operating handle of the igniting unit, the light therefrom not only acts as a signal apprising the user that the device is ready for use, but also illuminates the handle so that it may be located by the user for the removal of the igniting unit without the user taking his eyes from the road.

One embodiment of the present invention dis-

closes an arrangement which provides an intermittent or flashing signal after the heating element of the igniting unit has become ready for use. By this arrangement, the signal will be given when the heating element is sufficiently hot for use, and, should the igniting unit be allowed to remain on the holding device after such signal is given, the heating element will be automatically disconnected before becoming dangerously hot, the signal however remaining operative until such disconnection causes the heating element to cool beyond its useable condition. When this happens, the signal will cease functioning and the heating element will again become hot, and the signal will be again given when the element is in readiness for use, this cycle repeating itself until the igniting unit is removed from the holding device. By properly forming the various parts of the device used in this embodiment it is possible to have the signal operate upon breaking of the circuit through the heating element in response to heat from the latter, and also possible to have the signal become inoperative when the heating element has cooled so as to be non-useable.

In the broader aspects of the invention, once the signal has been given and the igniting unit removed for use, the signal may be rendered inoperative either as a result of the removal of the igniting unit or in some other way. However, it is preferable that, after the igniting unit has been used and it is returned to the holding device, the signal should be inoperative, even though the heating element has not cooled off a great deal.

To accomplish this, in one form of the invention herein disclosed, the circuit through the signaling device cannot be closed except when the igniting unit is in energizing position on the holding device.

When the cigar lighter is so located on the instrument board of a motor vehicle that it is not illuminated, either naturally or artificially, it is sometimes difficult to relocate the igniting unit in the holder after the igniting unit has been used. In my copending application Serial No. 73,529, filed May 8, 1936, I have disclosed means for illuminating the holder while the igniting unit is removed so that it may be conveniently relocated therein, and claims broadly to this feature are to be found in said application and the patent eventuating thereon.

To facilitate the reinsertion of the igniting unit in the holder, in one form of the invention herein disclosed, the signal device, which operates to indicate that the heating element is ready for

use, remains operative after the igniting unit has been removed and until the igniting unit is replaced in the holder in its normal storage position.

To accomplish this, instead of merely closing a circuit when the heating element becomes ready for use, a two-position switch is operated, and this switch remains closed independent of the subsequent thermal condition of the heating element until the igniting unit is withdrawn from and replaced in the holder.

Various other objects and advantages will be hereinafter referred to or become apparent.

In the drawings, which show several embodiments of the invention:

Figure 1 is an axial sectional view of one embodiment of improved lighter, with the removable igniting unit partially in elevation and partially in section, said unit being in shallow or storage position in the holding device, and the illuminating signal not being shown.

Fig. 2 shows the holding device in axial section, and also shows the illuminating signal; in this figure the igniting unit, shown in elevation, is in deep or operative position, but the heating element is not yet fully heated.

Fig. 3 is a view similar to Fig. 2, but after the heating element has reached a temperature sufficient to cause closing of the signal bulb circuit.

Fig. 4, showing another embodiment of the present invention, is a fragmentary axial section with the igniting unit in side elevation, and in energizing position on the holder.

Fig. 5 shows yet another embodiment of the invention, with the igniting unit in elevation and in storage position on the holding device which latter is partially broken away and shown in axial section; the illuminating signal is shown in diagrammatic form in this figure.

Fig. 6 shows the lighter of Fig. 5 with the igniting unit in deep or operative position and ready to be removed for use, the signaling mechanism being operative in response to heat from the heating element.

Fig. 7 is a view similar to that of Fig. 6, but with the igniting unit partially removed.

Fig. 8 is a view similar to Fig. 7, but with the signal still functioning and with the igniting unit about to be restored to storage position on the holder.

The cigar lighter of the present invention, in the exemplary embodiment thereof shown in Figs. 1 through 3, includes a socket-carrying base member or holder 10 for attachment to a panel 11 of an automobile, and a removable igniting unit 12 which is normally supported by the holder, but which may be electrically disconnected and bodily removed therefrom for manual transportation within the car and for handling by various occupants therein for the purpose of lighting cigars, cigarettes and the like.

The removable igniting unit 12, as the parts are shown, ordinarily rests in the holder 10 so as prominently to protrude therefrom as shown in Fig. 1.

The holder 10 comprises a sleeve 13 forming a deep socket 14, said sleeve having at its inner end an integral transverse wall 15. This sleeve is adapted to pass through a suitable aperture in the panel 11 of the instrument board, and is held in this position by a cap 16 screwed onto the outer end of the sleeve. A plurality of tongues 17 are lanced from the sleeve 13, so that when the cap 16 is screwed up tight, the panel 11 is clamped between said cap and the outwardly

canted ends of said tongues, thus securely to mount the carrier on the panel 11. Any suitable form of holding means may be substituted for that shown herein if desired.

The holder 10 is preferably formed of sheet metal, and serves as a conductive element of the grounded portion of the energizing-current circuit when the removable igniting unit is in deep or operative position in the socket 14.

At the rear portion of the socket 14 there is provided a contact 18 which is mounted on a stud 19 by being riveted to the head 19a thereof, said stud being insulatedly carried in a reinforcing sleeve 20 attached to the wall 15 of the shell 13 as shown. The contact 18 is preferably in the form of a metallic spider having a plurality of forwardly extended arms 18a the forward ends of which are bent as shown to form clips.

The rear end of the stud 19 is threaded and carries nuts for securing said stud in the sleeve, and for securing an electrical connection lug 21 to the stud.

Thus, the holder 10 is provided with contact members (the socket sleeve 13 and the contact clip 18) constituting a gap in the electrical circuit from the car battery, each being insulated from the other.

The removable igniting unit 12 is shown as including a handle or knob 22 and a main or body section extended rearwardly from said knob, said body having a cylindrical portion 23 adapted to slidably fit within the shell 13, and having a cylindrical end portion 24 of slightly reduced diameter, and said body and knob are formed of suitable insulating material. On the end of the portion 24 of the body there is screwed a metal cap 25 having an outer diameter equal to that of the portion 24 of the handle.

The shell 13 is also provided with a plurality of tongues 26 lanced therefrom and biased inwardly to engage a shoulder 27 between the portions 23 and 24 of the igniting unit, and to engage the portion 23 thereof so as to hold the unit, when in normal storage position in the holder 10, from inadvertent shifting.

A heating element 28 is positioned within a metal cup 29, and said cup is insulatedly mounted on the metal cap 25 by means including a stud 30 headed-over at one end as shown and having at its other end a slotted or kerfed head 30a. This heating element is, in the present case, in the form of a spirally wound resistance wire or ribbon connected at its outer end to the periphery of the cup 29 and at its inner end in the slot of the head 30a of said stud. Thus the cup 29 is insulated from the cap 25, except by way of the heating element 28.

The holder sleeve 13 has a tongue 31 lanced therefrom, and resiliently biased inwardly so as to extend into the socket 14 and effect electrical connection with the cap 25 when the unit is thrust to the operative position, as shown in Fig. 2.

Referring to this figure, energization of the heating element 28 is effected by current passing through the connection lug 21, stud 19, contact arms 18a, shell 13, heating element 28, stud 30, cap 25, tongue 31, sleeve 13, and thence through the panel 11 to the grounded side of the circuit. Thus, when the igniting unit is in the position shown in Fig. 1, no energization of the heating element takes place, but when the unit is moved inwardly to the position shown in Fig. 2 the heating element is energized. It will be noted that the heating element is continuously energized

when in this position, and continues to be energized until the igniting unit is manually moved out of said position.

According to the present invention there is provided improved means for indicating to a user, independently of any glow from the heating element, that the latter is hot enough for use and that the igniting unit is still in energizing position.

As shown in Fig. 2 there is carried by the shell 13 at its lower forward portion an illuminating assembly including an electric bulb 32 mounted in an electric socket passing through a suitable aperture in the panel 11, said socket having a shell 33 and a central contact stud 34 insulated from the shell by a shouldered washer 35. The shell 33 is held by means of an internal flange at its rear end between the washer 25 and a flat insulating member 36 through which the stud passes. Screwed on the shell 33 is a cover and reflector 37 for the bulb 32, said reflector having an outwardly extending flange 37a engaging the panel 11 to provide for a firm support of the illuminating assembly while at the same time serving to insure positive electrical contact between said panel and shell.

The stud 34 also passes through a conducting and supporting angle bracket 38 disposed at the back of the insulating member 36, which bracket is insulated by said member from the panel 11, and said stud carries at its rear a nut which securely holds the socket assembly to said bracket, and further provides for positive electrical connection to the stud.

The arrangement as thus far described is such that an electrical connection between the bracket 38 and any part of the circuit associated with the connection lug 21 will cause energization and illumination of the bulb 32. The present invention provides for effecting such connection upon attainment by the heating element of a predetermined useful temperature, the igniting unit having been moved to operative position, and further provides for breaking said connection upon removal of the unit for use.

As shown, the bracket 38 is secured to the shell 13 by means of rivets 39 which also secure to the shell at the inside thereof a spring contact 40 for conducting current to the bracket, said bracket and contact being insulated from the shell by insulating strips 41 and 42 respectively, and by an insulating spacer 43 disposed in an aperture in the shell. Coacting with the contact 40 is a second spring contact 44, which is also insulatedly mounted on the inside of the shell 13 by rivets 45 passing through the insulating strips 41, 42, and 43, said contact 44 having a rearwardly extending arm 46 for engagement with a bimetallic contact 47 riveted to a depending arm 47a of the heating element contact 18.

For the purpose of electrically connecting the spring contacts 40 and 44 when the igniting unit 12 is in deep or operative position there is carried by the reduced portion 24 of said unit a circular metallic band 48 which is embedded to the extent of its thickness in the outer cylindrical surface of said reduced portion.

As will be seen in Fig. 2, when the igniting unit is in deep or operative position the spring contacts 43 and 44 are each touching the band 48, and are therefore electrically joined; when the igniting unit is removed from said position as when the igniting unit is in the storage position shown in Fig. 1 or is completely removed

from the holder, the contacts will be electrically separated from each other.

Operation of the lighter is as follows: The igniting unit 12 is normally held in the holder 10 in the storage position shown in Fig. 1, it being maintained in this position against accidental further insertion in the holder, or against movement out of the holder by the spring fingers 26 which engage the igniting unit. When it is desired to use the lighter, the igniting unit is manually moved by means of the knob 22 inwardly to the deep operative position in the holder, as shown in Fig. 2. This movement causes the contact arm 18a to snap over the cup 29 and make electrical connection thereto, resulting in energization of the heating element 28. Normally, the bimetallic contact 47, when cold, is not engaging the contact arm 46; however, in response to the heat from the heating element 28 the bimetallic arm 47 flexes so that its forward end moves downwardly and contacts with the arm 46. Thereupon the circuit through the bulb 32 is completed, and said bulb will become incandescent and will illuminate the handle 22 and also the surrounding supporting structure of the lighter, and will notify the user that the heating element is sufficiently hot for use, and this signal will continue to be given until such time as the user responds thereto by removing the igniting unit. Furthermore, there will be effected upon incandescence of the bulb 32 a bright illumination of the lighter knob 22 and surrounding structure, which illumination will permit the user of the lighter, if he be the driver of the automobile, to readily locate the knob without removing his eyes from the road. Immediately upon removal of the unit, the connection between the spring contacts 40 and 44 is broken and the signal thus ceases to function, even though the bimetallic contact 47 remain in engagement with the arm 46.

When the igniting unit is replaced to storage position in the holder, the circuit through the bulb 32 will not again be closed, regardless of the position of the bimetallic contact 47, since the spring contacts 40 and 44 will still be electrically disconnected.

It should be understood that without departing from the spirit of the invention other specific arrangements, independent of the glow which might come from the heating element itself, may be provided for indicating to a user that the lighter is in readiness for use, and for aiding a user to readily locate the lighter under adverse conditions.

The present invention also proposes an arrangement for giving an intermittent signal when the heating element is in readiness for use, said signal flashing or operating intermittently in response to the heated condition of the heating element, and the latter, after reaching a predetermined useful temperature, being alternately connected and disconnected until the igniting unit is removed for use.

According to the embodiment exemplifying this, illustrated in Fig. 4, there is provided a cigar lighter similar in all respects to the lighter shown in Figs. 1 through 3, except that the contact arm 18a of the lighter of these figures is formed of a bimetallic strip, and except that there is provided an additional signaling contact disposed within the shell 13 directly above the contact for the heating element.

As shown in Fig. 4, for connection with the

cup 29 of the igniting unit there is carried by the shell of the holding device a bimetallic contact 43.

Preferably the bimetallic arms 43 and 47 are so constructed that the latter functions to cause a signal to be given in response to a predetermined heating of the heating element slightly before the arm 49 functions to disconnect said element from its circuit. By this arrangement, upon cooling of the heating element the bimetallic arm 49 will again close the circuit through the heating element slightly before the arm 47 opens the signaling circuit.

Operation of the lighter of this embodiment is as follows: After the igniting unit has been moved to the deep operative position shown, the heating element will become hot by virtue of contact between the arm 49 and the cup 29, and as said element reaches a predetermined useful temperature the bimetallic arm 47, will, in flexing, cause a signal to be given. If at this point the igniting unit is removed, the signal will immediately be extinguished; if however, the igniting unit is not touched the signal will continue to be given, the heating element meanwhile becoming hotter and causing the bimetallic arm 49 to flex upward and open the circuit through said element. Thereupon the element will cool, and in cooling will allow the arm 49 to again contact with the cup 29 and reenergize the element. During cooling of the element the bimetallic arm 49 will remain in engagement with its associated signaling contact 43, causing the signal to function continuously. Because of a short time lag in the response of the heating element to reengagement of the bimetallic arm 49 with the cup 29, and because the bimetallic arm 49 is disposed above the heating element and the bimetallic arm 47 disposed below the heating element, it being kept in mind that heat rises, the bimetallic arm 47 will separate from its associated signaling contact 43 before reheating of the heating element, and this separation will cause the signal to cease functioning. In response to reheating of the element, the bimetallic arm 47 will again contact with the arm 43 and again cause operation of the signal.

There is also provided by this embodiment a signaling contact 43a carried within the shell 13 directly above the bimetallic arm 49, said contact 43a being secured to the shell by rivets and suitably insulated therefrom as shown, and being electrically connected with the contact 43 by a wire 53. Thus when the bimetallic contact arm 49 flexes upward to disconnect the heating element circuit in response to heat from said element, said arm 49 will engage the contact 43a and close the circuit through the signaling bulb.

It will be understood that the signaling contact 43a does not alter the functioning of the signal during normal operation of the contact arms 47 and 43, and therefore said contact 43a may be dispensed with if desired and the arms 43 and 47 employed to close the circuit. However should the arms 43 and 47 cease to function normally for any reason whatever, the signal will be operated by the contact 43a if this be retained. If the arms 47 and 43 were to be dispensed with and the contact 43a employed to cause functioning of the signal, the operation of the signal will be slightly different, inasmuch as now a signal will not be given until the circuit through the heating element is opened, and the signal will be discontinued immediately upon closing of the circuit through the heating ele-

ment. By this latter arrangement, the signal will be given alternately with energization of the heating element, and the parts may be so adapted that the heating element will be in condition for use at any time during operation of the signal.

The present invention also contemplates an illuminating signal device operating in response to heat from the heating element, which device remains operative until complete restoration of the igniting unit in the holder so that reinsertion of the unit is facilitated.

Accordingly there is shown in Figs. 5 through 8 another embodiment of the invention wherein such a signaling arrangement is provided. Referring to these figures, parts which are identical with those of the embodiments just described have been given similar reference characters.

As shown, a holder 51 having a shell 51a is mounted on a panel 11 and held thereto by a nut 16 and tongues 17 lanced from said shell. The holder carries a contact 13 having an arm 13a for engagement with an igniting unit cup, and said contact 13 is insulatedly carried by the rear wall 15 of the shell, and is connected with a connection lug 21.

An igniting unit 52 is shown having a knob portion 22, and also having a cylindrical body 23 and the cylindrical end portion 53 of smaller diameter than the body 23, said end portion carrying a metal cap 54 screwed thereon, and on which cap is insulatedly mounted a cup 29 containing the heating element of the igniting unit. The rear portion of the body 23 terminates in a shoulder 27 which is engaged by tongues 23 (as in Figs. 1 and 2) lanced from the shell, said tongues frictionally and yieldingly holding the igniting unit in normal storage position against inadvertent shifting therefrom.

When the igniting unit 52 is moved to the deep operative position of Fig. 6 the cup 29 will engage the contact 13 for energization of the heating element, the circuit through said element to the shell 51a being completed by a spring tongue 51b lanced from the shell and engaging the cap 54.

This embodiment includes an illuminating signal assembly to be carried by an angle bracket 55, said assembly being similar in all respects to that of Figs. 2 and 3, but being shown in Figs. 5 through 8 by the diagrammatic representation of a bulb 32 and connecting wires.

The angle bracket 44 is insulated from the panel 11 by an insulating member 56, and from the shell 51a by an insulating strip 55, and as in the embodiments already described when electrical connection is made between said angle bracket and the part of the circuit joined to the connection lug 21 the signal 32 will become incandescent.

For the purpose of operating the signal lamp 32 there is provided a toggle switch mechanism which closes a circuit through the bracket 55 in response to heat from the heating element, and which mechanism is actuated to open the circuit only upon restoration of the igniting unit to normal position in the holder.

As shown, the bracket 55 is attached to the shell 51a by means of a rivet 57 which passes through the strip 56, and passes through an insulating inset 58 carried in an aperture in the shell, and said bracket carries a contact stud 59 also passing through the members 56 and 58, the contacting face of said stud being substantially flush with the inner surface of the inset 58 and shell. For engagement with the stud 59 there

is provided a contact 60 carried by a toggle mechanism including a pair of toggle bars 61 and 62 pin-connected together. The toggle bar 62 is pivotally mounted between a pair of stationary plates 63 secured to the inset 58, and the associated bar 61, which carries the contact 60, is mounted to pivot on the extremity of a spring arm 64 which passes through aligned apertures in the shell 51a and insulating strip 53. The spring arm 64 is mounted by pins on the strip 58, said arm having a U-bend therein between said mounting and extremity to provide for free yielding movement of said extremity during throwing of the toggle, and said arm is biased so that the toggle bar 61 is urged forwardly at all times, causing a snap movement of the toggle bars in either direction from dead center position.

The spring arm 64 extends rearwardly of the shell 51a, and is bent upwardly and fastened under the nuts which secure the connection lug 21 to the lighter, thereby electrically joining the contact 60 to the lug 21.

When the toggle bars 61 and 62 are broken upwardly, as shown in Fig. 5, the circuit through the bulb 32 is open. However, when the bars are in the downward position shown in Fig. 6, current will flow through the connection lug 21, spring arm 64, toggle bar 61, contact 60, stud 59, bracket 55, and through the electric bulb 32 to the panel 11, thus causing a visible signal to be given. Thus there is provided, by the arrangement as described thus far, a toggle switch included in the circuit of the signal 32.

For the purpose of actuating the toggle switch from open-circuit to closed-circuit position in response to heat from the heating element, the contact 18 is provided with a depending arm 48 to which is riveted a bimetallic actuating strip 65 carrying at its forward extremity a shoe 66 adapted to engage the toggle bar 61.

Normally, as seen in Fig. 5, when the igniting unit is in storage position in the holder 51 and the parts are all cold, the circuit through the signal bulb 32 will be open, the toggle bars 62 and 61 being in open-circuit position and the latter bar engaging the shoe 66 carried by the bimetallic actuator 65. When the igniting unit is pushed to operative position in the holder as shown in Fig. 6, energization of the heating element will take place by virtue of the electrical connection between the contact 18 and the cup 29. As the heating element becomes warm, it will cause a flexing of the bimetallic actuator 65, the forward end of which will move downwardly. After a sufficient degree of heat has been experienced by the actuator, it will move the toggle bars 61 and 62 (downwardly) past dead center position whereupon said bars will snap to the closed-circuit position shown in Fig. 6, thus causing the electric bulb 32 to light and therefore signal the user that the unit is in condition for use.

For the purpose of causing extinguishment of the signal upon restoration of the unit in the holder, and for the purpose of preventing extinguishment of the signal upon removal of the unit for use, the toggle bar 62 is provided with a by-pass and trip mechanism actuated by movement of the igniting unit in the holder. The bar 62 has a forwardly extending arm 67 at the extremity of which is pivotally carried a trip member having fingers 68 and 69. The arm 67 also carries a flat spring strip 70 which engages the finger 68 of the trip member and yieldingly urges said finger against a lug 71 carried by the arm 67 so that the trip member is restrained from

counter-clockwise turning, but is permitted to turn in clockwise direction against the action of the spring strip. Therefore the finger 68 of the trip member is normally maintained in a vertical position as shown in Fig. 5 and pressure on the finger 68 will cause the trip member to turn in a clockwise direction.

When the toggle bars are in open-circuit position the trip member is normally close to the shell 51a, as shown in Fig. 5, there being thus avoided engagement with the igniting unit. After said unit has been moved to the deep operative position of Fig. 6 and has heated sufficiently to cause the toggle bars to snap to closed-circuit position, the trip member will have moved away from the shell 51a, and to a position wherein the finger 68 of said member extends into an annular groove provided between the portions 53 and 23 of the igniting unit. Upon removal of said unit from the holder for use, as shown in Fig. 7, the toggle bars will not be moved to open the signaling circuit because of the engagement of the finger 68 of said member with the portion 53 of the igniting unit, but rather the trip member will be caused to turn in a clockwise direction against the action of the spring strip 70 without movement of said bars. For this purpose the spring strip 70 is made of light material so that it will yield upon removal of the igniting unit from the holder before the toggle joint yields. Therefore, the circuit through the signal bulb 32 will be closed upon heating of the element, and will remain closed after removal of the igniting unit for use.

During utilization of the igniting unit to light one or more cigarettes, the bimetallic actuator 65 will, in cooling, again resume its normal position. As shown in Fig. 8, when the igniting unit is being restored to storage position in the holder, the toggle bars 61 and 62 will still be in closed-circuit position, and since for this position the signal bulb 32 is incandescent, the illumination resulting therefrom will have facilitated reinsertion of said unit. As the igniting unit is moved further to its storage position, the finger 68 of the trip member will engage a bevel 72 provided on the metal cap 64 and, since said member is prevented from turning in a counter-clockwise direction the end of the lever arm 67 will be depressed thus causing the toggle bars 61 and 62 to move and to snap to open-circuit position again.

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; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; means for closing a signaling circuit when the igniting unit is in energizing position and upon attainment by the heating element of a predetermined temperature; and means for automatically opening the signaling circuit by movement of the igniting unit from said energizing position on the holding device, said means for automatically opening the signaling circuit including a pair of contacts in the signaling circuit, carried by the holding device, and a bridging contact carried by the igniting unit and co-acting with said contacts.

2. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device and having a knob to be grasped by the hand of a user; an electric bulb; means for mounting the bulb on the holding device so that when energized it will externally illuminate the knob of the igniting unit when the latter is on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; means for energizing the bulb upon attainment by the heating element of a predetermined temperature; and means for discontinuing energization of the bulb in response to movement of the igniting unit on the holding device.

3. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; means for closing a signaling circuit when the igniting unit is in energizing position, and upon attainment by the heating element of a predetermined temperature; and means for automatically opening said signaling circuit at a point different from where it was closed, when the igniting unit is removed from the holding device.

4. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; means for completing a circuit for a signal when the igniting unit is in energizing position, and upon attainment by the heating element of a predetermined temperature; and means for automatically opening said signaling circuit when the igniting unit is removed from the holding device, said means for closing the signaling circuit including a thermally controlled switch in said circuit and said means for automatically opening the signaling circuit including a pair of contacts in the signaling circuit carried by the holding device, and a bridging contact carried by the igniting unit.

5. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; a contact on the holding device; a second contact on the holding device for connection to a signaling circuit; a third contact connected to the energizing circuit of the lighter; means for causing electrical connection between said first and second contacts only when the igniting unit is in energizing position on the holding device; and means for causing said first and third contacts to engage each other when the heating element reaches a predetermined temperature so as to effect energization of the signaling circuit.

6. In a cigar lighter, a holding device; an igniting unit supported by and completely removable

from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; a contact on the holding device; a second contact on the holding device for connection to a signaling circuit; a third contact connected to the energizing circuit of the lighter; a bridging contact carried by the igniting unit and adapted to connect the first and second contacts only when the igniting unit is in operative position on the holding device; and means for causing said first and third contacts to engage each other when the heating element reaches a predetermined temperature so as to effect energization of the signaling circuit.

7. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; an electrically operated signal; a contact on the holding device; a second contact on the holding device connected with the signal; a third contact connected to the energizing circuit of the lighter; means for causing electrical connection between said first and second contacts only when the igniting unit is in energizing position on the holding device; and means for causing said first and third contacts to engage each other when the heating element reaches a predetermined temperature so as to cause operation of the signal.

8. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit to the heating element; signal means; means responsive to movement of the igniting unit to energizing position to condition a circuit to the signal means for operation when the heating element attains a desired usable heat; and means for opening the circuit through the heating element when the latter reaches the predetermined usable heat and for closing the signaling circuit, said means operable to open the signaling circuit and close the heating element circuit when the heating element cools a predetermined extent.

9. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device, including means for opening the circuit through the heating element when the latter reaches a predetermined temperature, said means operable to close the circuit again when the element cools a predetermined extent; and heat-responsive means for closing a signaling circuit just prior to the opening of the heating element circuit, said heat-responsive means operable to open said signaling circuit just subsequent to the closing of the heating element circuit after the element has cooled a predetermined extent.

10. The invention as defined in claim 9, in which the means for alternately opening and closing the heating element circuit includes a bi-

metallic element, and in which the means alternately closing and opening the signaling circuit includes a bimetallic element adapted to respond to a temperature lower than that of the first-mentioned bimetallic element.

11. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; a pair of normally disengaged contacts in a signaling circuit; means for causing engagement of said contacts upon attainment by the heating element of a predetermined temperature; and means for causing disengagement of said contacts upon movement of the igniting unit on the holding device.

12. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; a pair of normally disengaged contacts in a signaling circuit; means for causing engagement of said contacts upon attainment by the heating element of a predetermined temperature; and means for causing disengagement of said contacts after removal of the igniting unit from the holding device and upon reinsertion of said unit in the holding device.

13. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; an electrically operated signal; means for causing operation of the signal upon attainment by the heating element of a predetermined temperature; and means for automatically discontinuing the signal in response to movement of the igniting unit on the holding device.

14. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; an electrically operated signal; a pair of normally disengaged contacts in circuit with the signal; means for causing engagement of said contacts upon attainment by the heating element of a predetermined temperature to cause operation of the signal; and means for causing disengagement of said contacts and discontinuance of the signal upon movement of the igniting unit on the holding device.

15. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; an electric toggle switch for connection with a signaling circuit, one terminal of which switch is con-

nected with the energizing circuit of the holding device; means for closing the toggle switch when the heating element reaches a predetermined temperature; and means for opening the switch in response to movement of the igniting unit on the holding device.

16. The invention as defined in claim 15, in which the igniting unit has a protuberance thereon, and in which the toggle switch has an actuating arm carrying a trip mechanism adapted to be actuated by the protuberance of the igniting unit when the latter is moved on the holder so that removal of the igniting unit will not actuate the switch, and so that reinsertion of the igniting unit on the holder will throw the switch to open-circuit position.

17. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; an electric toggle switch for connection with a signaling circuit, one terminal of which switch is connected with the energizing circuit of the holding device; means for closing the toggle switch when the heating element reaches a predetermined temperature; and means for opening the switch in response to movement of the igniting unit on the holding device, the means for closing the switch including a bimetallic actuating arm.

18. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use, said igniting unit being movable on the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element when the igniting unit is moved to energizing position on the holding device; an electric toggle switch for connection with a signaling circuit, one terminal of which switch is connected with the energizing circuit of the holding device; means for closing the toggle switch when the heating element reaches a predetermined temperature; and means for opening the switch in response to movement of the igniting unit on the holding device, the means for opening the switch including a protuberance on the igniting unit.

19. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device for use; a heating element carried by the igniting unit, at least a portion of the igniting unit being movable to close an energizing circuit to the heating element, said portion including a knob to be grasped by the hand of the user; an electric light; means for mounting the light so that when energized it will externally illuminate the knob of the igniting unit and the adjacent end of the holding device; a heating element carried by the igniting unit; means for energizing the light upon attainment by the heating element of a predetermined temperature; and means for deenergizing the light after removal of the igniting unit from the holding device and upon reinsertion of said unit in the holding device whereby the end of the holding device will be illuminated until the igniting unit has been restored thereto.

20. In a cigar lighter, a holding device; an igniting unit supported by and completely removable from the holding device; a heating element carried by the igniting unit; means for closing a circuit through the heating element

when the igniting unit is moved to energizing position on the holding device; a signal circuit including a pair of switch means therein, one of said switch means being closed upon movement of the igniting unit to the energizing position; and means for opening the circuit to the heating element when the latter reaches a predetermined

temperature, said means forming a part of the other of said switch means and closing the same just subsequent to the opening of the heating element circuit, movement of the igniting unit from the energizing position again opening the first-named switch means.

ARTHUR A. JOHNSON.