May 6, 1947. A. A. JOHNSON 2,419,950

HOLDER FOR CIGAR LIGHTERS

Original Filed May 15, 1940

Fig. 1

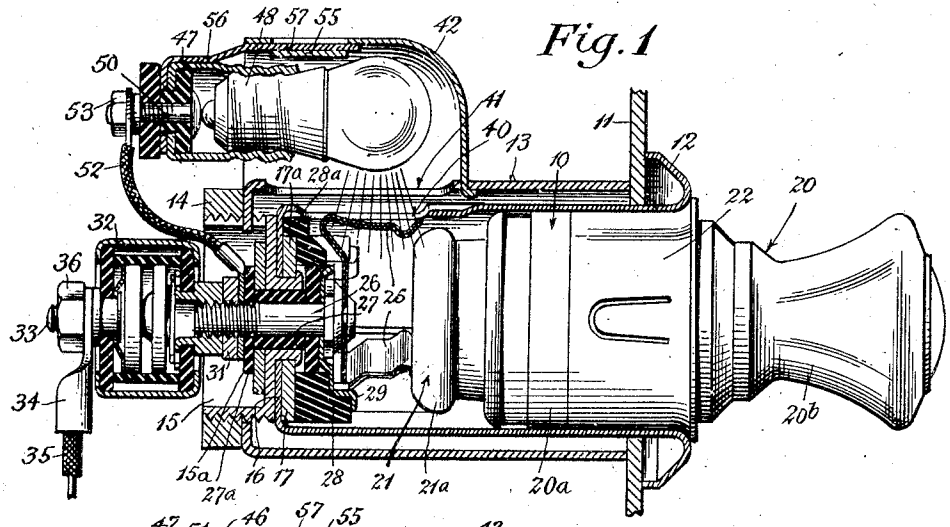


Fig. 2

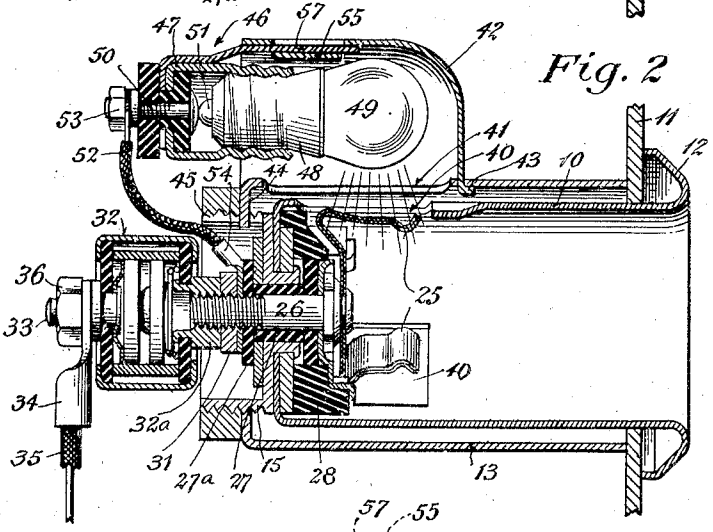
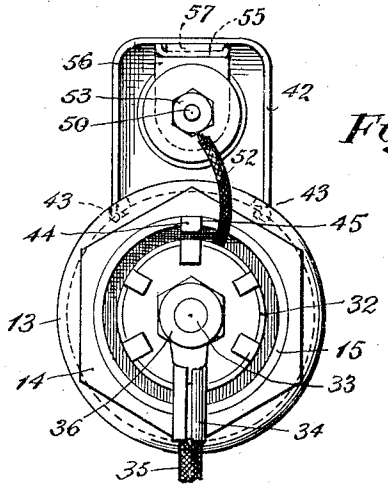


Fig. 3



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HOLDER FOR CIGAR LIGHTERS

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Continuation of application Serial No. 335,228, May 15, 1940. This application November 22, 1943, Serial No. 511,368

16 Claims. (Cl. 219—32)

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The present invention relates to cigar lighters, of the type having a holding device and a removable igniting unit, and more particularly, to a holding device having a combined illuminating and indicating means thereon.

In cigar lighters of the wireless type in which the igniting unit or plug is removed from the holding device for use, difficulty has been encountered at night in properly returning the plug to the holding device or well with the result that the heating coil which is still hot is put in contact with the instrument panel or the knobs carried thereby, thus causing them to be disfigured.

Efforts have been made to overcome this difficulty by providing a light to illuminate the well, which light is rendered operative by the removal of the igniting unit from the holding device to illuminate the holding device or well so that the user can readily see where to return the igniting unit or plug.

These devices, however, give rise to a problem in that they employed a switch to control the light, which makes another operation necessary in installing the device in that the switch must be installed and properly adjusted in order to insure its proper operation.

According to the present invention, these difficulties have been overcome by providing a light for illuminating the well which is connected in the circuit for the cigar lighter and will illuminate the well at all times when the circuit is connected to a source. Since a small amount of light is necessary to illuminate the well, a small bulb can be used so that the drain on the battery will be negligible.

A feature of the invention resides in the locating of the light in the circuit in such a manner that it will not only light the well but will also indicate whether or not the fuse carried by the cigar lighter is destroyed and/or whether electric current is being supplied to the contact terminals in the base of the holding device. This is important inasmuch as with present cigar lighter constructions the base contact comprises a plurality of delicately adjusted bimetallic fingers which cooperate with the igniting unit to hold the circuit closed.

When, for some reason, the cigar lighter does not operate promptly, the first impulse of the user is to adjust the contact fingers when, as a matter of fact, many times the contacts are properly adjusted but there is no current whatever being supplied to the fingers. This destroys the adjustment of the fingers and many times renders the cigar lighter inoperative. Then, too, the fuse, which is located at the back of the holding device, may have become destroyed due to overheating of the heating element, and the failure of the light to glow would indicate that the fuse should be replaced.

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In carrying out the present invention, the holding device is provided with one or more apertures and the clamping sleeve, which surrounds the holding device, is provided with an aperture and a reflector secured thereto over the aperture. The clamping sleeve and holding device are provided with means by which the apertures therein can be aligned and held in alignment with the reflector disposed over the apertures in the holding device and shell.

Preferably the clamping sleeve and holding device are locked in aligned relation by the means which draws the clamping shell into engagement with a supporting means upon which the holding device is mounted.

However, if the apertures in the sleeve and holder are not aligned, the interior of the holder will be illuminated indirectly by the reflection of light from the inner walls of the clamping sleeve through the apertures on the holder.

Inasmuch as the bulb is continuously energized, it may be necessary to, at intervals, replace the bulb. Accordingly the present invention provides a novel bulb-carrying unit which is detachably connected to the sleeve so that it can be readily removed and the bulb replaced without dismantling the entire cigar lighter or removing it from the support.

Other features and advantages of the invention will be apparent from the specification and claims when considered in connection with the drawing, in which—

Figure 1 shows a longitudinal sectional view of the holding device with the igniting unit or plug positioned therein.

Fig. 2 is a longitudinal sectional view of the holding device with the igniting unit or plug removed.

Fig. 3 is an end view of the holding device, looking from the left in Fig. 2.

The present invention relates to a holding device for a cigar lighter of the type having an igniting unit or plug which is completely removable therefrom for use.

This application is a continuation of my application Serial No. 335,228.

In the preferred form of the invention, as shown in the drawing, the holding device 10 comprises a tubular metal member or well adapted

to be mounted in an aperture in the supporting member 11 with the flange 12 at the forward end of the holding device 10 engaging the front face of the supporting member 11. A metallic clamping sleeve 13 surrounding the holding device or well 10 engages the back of the supporting member 11 and is moved into clamping relation therewith by means of a nut 14 threaded on a bushing 15 carried by the rear wall 16 of the well.

In the illustrated form of the invention, the bushing is mounted on the holding device by having a reduced neck portion 15*a* passing through a central aperture in the wall 16 and through an aperture in a reinforcing member 17 extending over the wall 16 with the end of the neck spun or turned over, as shown in Figs. 1 and 2. This effectively locks the bushing in position so as to project from the rear wall of the holder 10.

Removably positioned in the holding device is an igniting unit 20 comprising a tubular body 20*a* having a handle 20*b* at one end at which it may be grasped in order to remove the unit and otherwise manipulate the igniting unit. At the other end of the body 20*a* a heating element unit 21 is secured. This unit preferably comprises a resistance element (not shown) encircled by a contact 21*a* which cooperates with the base contacts as will be explained. The igniting unit is normally held in the position shown in Fig. 1 by means of a friction sleeve 22 surrounding the plug and engaging the bore of the well as is well known in the art.

The holder is provided with a plurality of bimetallic contact fingers 25 which cooperate with the heating unit contact 21*a* when the igniting unit is moved inwardly, in a manner well known, to close the circuit to the heating element and maintain it closed until the heating element has attained the desired heat, at which time the bimetallic fingers flex and open the circuit. These fingers are delicately adjusted so that they will operate accurately to release the heating element immediately upon its attaining the desired usable heat.

The bimetallic fingers are secured to the head of a stud 26 which passes through the reduced neck 15*a* of the bushing 15 and is insulated therefrom by insulation 27.

A block of insulating material 28 is positioned in the base and is provided with cutaway portions engaging the sides of the thermostatic arms to hold them against relative rotation, the block being held against relative rotation with the holder by means of a projection 28*a* extending into a cutaway portion 17*a* in the reinforcing plate.

A second set of contacts 29 are mounted under the head of the bolt and are spaced with respect to one another and the bimetallic contacts by the insulating block. The contacts 29 permit the circuit to be closed, even though the bimetallic contacts are heated and flexed, through the heating unit contact and the contacts 29 should a second light be required. The whole contact assemblage is locked in position by means of a nut 31 threaded on the projecting end of the stud 26 and bearing against an insulating washer 27*a*.

As is shown in Figs. 1 and 2, the end of the stud projects beyond the nut and provides a means for mounting a fuse 32 on the device and having a bushing 32*a* threaded to the end of the stud. This electrically and mechanically connects the fuse to the contacts. The fuse is provided with a threaded stud 33 at the opposite side

to which a connector 34, having a conductor 35 leading to a source of energy, is secured by means of a nut 36. The conductor may be connected to the source through the ignition switch or other control means if desired.

From the foregoing, it will be seen, then, that the contacts carried by the base are held in proper position thereon and are connected through a fuse mechanically and electrically connected to the contact to a source of energy.

According to the present invention, the holding device is provided with a plurality of apertures or openings 40 and the clamping sleeve 13 which surrounds the holding device is provided with an aperture 41 over which is positioned a reflector 42. While the reflector 42 can be connected to the sleeve by various means, in the preferred form of the invention, it is provided with a plurality of tangs 43 which pass through the sleeve and are bent over to extend under the sleeve and are disposed between the sleeve and holding device to lock the reflector in place thereon.

In order to insure that the apertures in the sleeve and holding device shall be in alignment, the present invention provides an inwardly bent tang or finger 44 adapted to slide in a slot 45 formed in the bushing 15. Thus, it will be seen, that after the holding device has been inserted in the aperture in the support, the clamping sleeve will then be slipped thereover from the back so as to engage the back face of the panel and the tang or finger 44 will be located in the slot 45. The nut 14 will then be tightened and will not only move the sleeve to lock the holding device to the support but will also lock the shell and holding device in aligned relation.

The illuminating means of the present invention comprises a bulb-carrying unit 46 consisting of a threaded shell 47 for receiving the threaded terminal 48 of a lamp 49. The end of the shell carries a bolt contact 50 passing through insulating means in the bottom of the shell with one end cooperating with the other terminal 51 of the lamp 49. The other end of the bolt contact has a conductor 52, secured thereto by means of a nut 53 threaded thereon. The other end of the conductor is connected to the stud 26 by means of a connector 54 disposed about the stud and clamped against the insulating washer 27*a* by the nut 31. Thus, it will be seen that the live terminal for the lamp is connected in the circuit between the fuse and the contacts.

With the live terminal connected to the stud 26, the lamp will be continuously operated to illuminate the well when the cigar lighter is connected in an energizing circuit. If the fuse should be destroyed or become ineffective to transmit current to the stud, the light will be extinguished. Thus, so long as the lamp remains lighted, the user of the device knows that the current is reaching the contacts and such a construction will, therefore, remove the temptation, upon the cigar lighter failing to operate, of adjusting the bimetallic latch contact fingers and destroying the accurate adjustment of the fingers which is made at the factory.

When the light is extinguished, the user of the cigar lighter will know that in all probabilities the safety fuse has been destroyed and can readily remove said fuse and replace the same to again cause the current to be supplied to the stud 26 carrying the contacts.

Inasmuch as the lamp is continuously operated, according to the present invention means are provided whereby the lamp-carrying unit can

be readily detached and the lamp replaced without requiring complete disassembling of the lighter and holding device.

While this detachable means may take various forms, in the illustrated form of the invention it comprises a loop or socket **55** struck from the reflector at the side opposite the aperture in the shell and the lamp unit is provided with a substantially L-shaped bracket **56** having one end clamped to the shell unit by the bolt contact **59** and the other end shaped as a tongue **57** to be frictionally received in the socket formed on the reflector.

When it is desired to replace the lamp, it is merely necessary to slip the tongue out of the socket and remove the unit **46** from within the reflector to a position in which the lamp is accessible and can be readily unscrewed and removed. After the new lamp has been secured in the lamp-carrying unit, the unit can be readily slipped back into the socket without requiring the cigar lighter or holding device to be disassembled or removed from its mounting.

It will also be seen that this construction provides for the completion of the circuit to the lamp, for it connects the other or threaded terminal of the lamp to ground through the reflector and clamping shell and the dashboard.

The circuit thus formed, it will be noted, will be in parallel to the circuit for energizing the heating unit of the cigar lighter when moved into energizing position, for this circuit extends from the contacts **25**, through the heating element unit, to the holder **10** and to ground. However, the resistance for the lamp circuit is so high in comparison to the heating element circuit that no appreciable effect in the energizing current will be noted.

In the broader aspects of the invention, I have provided a simple and effective means for illuminating the well so that the user can properly and easily replace the igniting unit therein and at the same time I have provided an indicating means for showing that the contacts of the cigar lighter are not receiving electrical energy and/or that the fuse for the cigar lighter has been destroyed.

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 having an aperture in the side walls thereof, a contact-carrying stud mounted in the holding device and having a contact thereon, said stud being connected to a source of energy; a member extending around the holding device and having a reflector thereon and supported thereby; means for aligning the member and holding device with the reflector disposed over the aperture in the holding device; means for locking the member and holding device in said aligned relation; a lamp-carrying unit, including a lamp detachably secured by frictional interengagement within the reflector so as to illuminate the interior of the holding device through the aperture; and a flexible connector electrically connecting said lamp-carrying unit to said stud to energize the lamp continuously therefrom.

2. In a cigar lighter, a holding device having an aperture therein; a sleeve surrounding the holding device and having a reflector rigidly secured thereon; means for positively aligning the sleeve and holding device with the reflector disposed over the aperture in the holding device; means for locking the sleeve and holding device in aligned relation; a lamp-carrying unit having a lamp therein and slidable, frictionally interengaging means on said unit and reflector for detachably securing the unit to the reflector so as to illuminate the interior of the well through the aperture whereby the lamp may be readily replaced.

3. In a cigar lighter, a holding device having an aperture therein; a clamping sleeve surrounding the holding device and having a reflector thereon; means for positively aligning the sleeve and holding device with the reflector disposed over the aperture in the holding device; means for locking the sleeve and holding device in aligned relation; and a lamp-carrying unit having a lamp therein, said reflector having a socket formed therein and said unit having a projection thereon extending into said socket to frictionally engage and detachably connect the unit thereto so as to illuminate the interior of the well through the aperture, said lamp-carrying unit being readily removed from the reflector for replacement of the lamp.

4. In a cigar lighter, a socket-forming holding device adapted to removably receive an igniting unit, said holding device having an aperture in a wall thereof; a contact in the base of the holding device for cooperation with the igniting unit to close an energizing circuit thereto; means for connecting the contact to a source of energy including a fuse electrically and mechanically connected to said contact; means for mounting the holding device on a support; and illuminating means mounted adjacent said aperture, including a lamp for illuminating the interior of the holding device, one terminal of the lamp being connected to the ground and the other terminal being electrically connected between the fuse and the contact whereby the lamp also indicates when the fuse has been destroyed.

5. In a cigar lighter, a socket-forming holding device having an aperture in a wall thereof to be mounted on a support and adapted to removably receive an igniting unit; an igniting unit, including an electrical heating element, movable on the holding device between open-circuit and closed-circuit positions; contact means in the base of the holding device comprising a plurality of bimetallic fingers accurately adjusted to grip and cooperate with the igniting unit to close an energizing circuit thereto, said fingers flexing to interrupt the circuit to the igniting unit upon the heating element attaining a predetermined useful temperature; means for connecting the contact means to a source of energy including a fuse electrically and mechanically connected to said contact means; and a lamp carried exteriorly by the holding device adjacent said aperture for illuminating the interior of the holding device, and having one terminal of the lamp connected to the ground and the other terminal electrically connected between the fuse and the contact means, whereby the lamp indicates when the contact means has been disconnected from the source of energy by destruction of the fuse and tampering with the accurately adjusted bimetallic fingers is avoided.

6. In a cigar lighter, a socket-forming holding device adapted to removably receive an igniting unit, said holding device having an aperture in at least one side thereof; a contact in the base of the holding device for cooperating with the igniting unit to close an energizing circuit thereto; means for connecting the contact to a source

of energy including a fuse electrically and mechanically connected to said contact; means for securing the holding device on a support including a sleeve surrounding said devise; illuminating means including a lamp-receiving unit and lamp therein, removably carried by the sleeve; positive means for aligning the sleeve and holding device with the lamp disposed over the aperture so as to illuminate the interior of the holding device, one terminal of the lamp-carrying unit being connected to the sleeve and to ground; and a flexible conductor connected to the other terminal of said unit and electrically connected between the fuse and the contact whereby the lamp illuminates the interior of the holding device and also indicates when the fuse has been destroyed, and the lamp-carrying unit is readily removable from the sleeve for replacing the lamp without disturbing the other parts of the cigar lighter.

7. In a cigar lighter having an igniting unit removable therefrom for use, a socket-forming holding device for receiving said igniting unit, having an aperture in the side walls thereof, a clamping sleeve surrounding the holding device and having an opening therein adapted to overlie the aperture in the holding device; interengaging means for positively aligning the sleeve and holding device with the opening in the sleeve disposed over the aperture in the holding device; means for locking the sleeve and holding device in said aligned relation; a reflector having means thereon cooperating with the sleeve for rigidly securing the reflector to the sleeve so as to be supported thereby and to overlie the opening therein; a lamp-carrying unit having a lamp therein detachably mounted in the reflector over the aperture in the holding device so as to illuminate the interior of the holding device, one terminal of said lamp being grounded through said holding device; and a flexible conductor connected to said lamp-carrying unit for electrically connecting the other terminal of the lamp to a source of energy, said lamp-carrying unit being readily removed for replacement of said lamp.

8. In a cigar lighter having an igniting unit removable therefrom for use, a socket-forming holding device for receiving said igniting unit having a plurality of apertures in the side thereof; a removable locking sleeve disposed around the holding device, said sleeve having an opening in the side wall thereof; means for moving the locking sleeve to secure the holding device in place on a support; a lamp exteriorly carried by the locking sleeve adjacent the opening therein; a finger carried by said locking sleeve extending inwardly thereof, said holding device having a slot for receiving said finger, the reception of said finger in the slot of the holding device retaining said locking sleeve in a predetermined position relative to said holding device, wherein the opening is in alignment with one of the apertures of said holding device and forms a light passage therewith from said lamp to the interior of said holding device.

9. In a cigar lighter having an igniting unit removable therefrom for use, a socket-forming holding device for receiving said igniting unit having an aperture in a side wall thereof; a sleeve disposed about said holding device, said sleeve having an opening in the side wall thereof; means for securing said sleeve to said holding device to clamp the holding device to a support; said means including means for aligning the opening of the

sleeve with the aperture of said holding device; a contact insulatedly mounted in the holding device and connected to a source of electrical energy for supplying current to said igniting unit; a lamp-carrying unit including a lamp; means carried by said sleeve for supporting said lamp-carrying unit adjacent said opening; means for detachably securing said lamp-carrying unit to said support means so that the said lamp illuminates the interior of said holding unit through the passage formed by said opening and aperture; and a flexible conductor electrically connecting said lamp-carrying unit to said contact so as to energize the lamp therefrom, said conductor being detachably connected to said unit so that the same may be detached from said unit to allow the unit to be removed from its support when it is desired to replace a bulb in said unit.

10. In a cigar lighter having an igniting unit removable therefrom for use, a socket-forming holding device for receiving said igniting unit having an aperture in a side wall thereof; a sleeve disposed about said holding device, said sleeve having an opening formed in the side wall thereof; means for securing said sleeve to said holding device to clamp the holding device to a support, said means including means for aligning the opening of the sleeve with the aperture of the holding device; a contact connected to a source of electrical energy insulatedly mounted in the holding device for supplying electric current to said igniting unit; a reflector; means for rigidly mounting the reflector exteriorly of the sleeve adjacent the opening therein; a lamp-carrying unit including a lamp; means on said unit for frictionally securing the lamp-carrying unit to the reflector, so that the lamp illuminates the interior of the holding device through the light passage formed by said opening and aperture; and a flexible conductor electrically connecting said lamp-carrying unit to said contact so as to energize the lamp therefrom, said conductor being detachably connected to said unit to permit its removal therefrom, whereby the unit may be detached from said reflector when it is desired to replace the lamp thereof.

11. In a cigar lighter, a socket-forming holding device having an aperture in the side walls thereof, a clamping sleeve surrounding the holding device and having an opening therein adapted to overlie the aperture in the holding device; interengaging means for positively aligning the sleeve and holding device with the opening in the sleeve disposed over the aperture in the holding device; means for locking the sleeve and holding device in said aligned relation; a reflector having projecting tangs thereon, the sleeve having apertures therein for cooperating with the tangs for securing the reflector to the sleeve so as to be supported thereby and to overlie the opening therein; a lamp-carrying unit having a lamp mounted in the reflector over the aperture in the holding device so as to illuminate the interior of the holding device, one terminal of said lamp being grounded through said holding device; and a flexible conductor connected to said lamp-carrying unit for electrically connecting the other terminal of the lamp to a source of energy, said lamp-carrying unit being readily removed for replacement of said lamp.

12. In a cigar lighter, a socket-forming holding device having an aperture in the side walls thereof, a tubular clamping sleeve surrounding the holding device and spaced therefrom, the sleeve having an opening therein adapted to overlie

the aperture in the holding device; interengaging means for positively aligning the sleeve and holding device with the opening in the sleeve disposed over the aperture in the holding device; means for locking the sleeve and holding device in said aligned relation; a reflector having a plurality of tangs extending into engagement with the inner surface of the sleeve for rigidly securing the reflector to the sleeve so as to be supported thereby and to overlie the opening therein; a lamp detachably mounted in the reflector over the aperture in the holding device so as to illuminate the interior of the holding device, one terminal of said lamp being grounded through said holding device; and a flexible conductor connected to said lamp-carrying unit for electrically connecting the other terminal of the lamp to a source of energy, said lamp being readily removed for replacement of said lamp without removing the sleeve from the holding device.

13. In a cigar lighter, a socket-forming holding device having at least one aperture in the side walls thereof, a tubular metal clamping sleeve having an opening in the side walls thereof and a light reflecting interior surface, the sleeve completely surrounding the holding device in spaced relation thereto; means for locking the sleeve and holding device in said assembled relation; and a lamp mounted on the exterior of the sleeve so as to project the light therefrom into the interior of the sleeve and directly, or indirectly from the light reflecting interior surface of the sleeve through the aperture in the holding device to illuminate the interior thereof, the aperture in the holding device being of such size and arrangement that, in at least one position relative to the sleeve, a major portion of the illumination in the interior is light reflected from the interior surface of the sleeve.

14. In a cigar lighter, a socket-forming holding device having a plurality of apertures in the side walls thereof, a tubular metal clamping sleeve having an opening in the side walls thereof and a light reflecting interior surface, the sleeve completely surrounding the holding device in spaced relation thereto; means for locking the sleeve and holding device in said assembled relation; a reflector having means thereon cooperating with the sleeve for rigidly securing the reflector to the sleeve so as to be supported thereby and to overlie the opening therein; and a lamp mounted in the reflector so as to project the light therefrom into the interior of the sleeve and directly, or indirectly from the light reflecting interior surface of the sleeve through the apertures in the holding device to illuminate the interior thereof, the apertures in the holding device being of such size and arrangement that, in at least one position relative to the sleeve, a major portion of the illumination in the interior is light reflected from the interior surface of the sleeve.

15. In a cigar lighter, a socket-forming holding device having a plurality of apertures in the side walls thereof, a tubular metal clamping sleeve having an opening in the side walls thereof and a light reflecting interior surface, the sleeve completely surrounding the holding device in spaced relation thereto; means for locking the sleeve and holding device in said assembled relation; a reflector having tangs thereon cooperating with the sleeve for securing the reflector to the sleeve so as to be supported thereby and to overlie the opening therein; a lamp detachably mounted in the reflector so as to project the light therefrom into the interior of the sleeve and directly, or indirectly from the light reflecting interior surface of the sleeve, through the apertures in the holding device to illuminate the interior thereof, one terminal of said lamp being grounded through said holding device; and a flexible conductor connected to said lamp-carrying unit for electrically connecting the other terminal of the lamp to a source of energy, said lamp being readily removed from the reflector for replacement without removing the sleeve from the holding device.

16. In a cigar lighter, a socket-forming holding device having a plurality of apertures in the side walls thereof, a tubular metal clamping sleeve having an opening in the side walls thereof and a light reflecting interior surface, the sleeve completely surrounding the holding device in spaced relation thereto; means for locking the sleeve and holding device in said assembled relation; a dome-shaped reflector having the side walls extending to and resting upon the sleeve and provided with tangs cooperating with the sleeve for securing the reflector to the sleeve to overlie the opening therein; a lamp detachably mounted in the reflector so as to project the light therefrom into the interior of the sleeve and directly, or indirectly from the light reflecting interior surface of the sleeve, through the apertures in the holding device to illuminate the interior thereof, one terminal of said lamp being grounded through said holding device; and a flexible conductor connected to said lamp-carrying unit for electrically connecting the other terminal of the lamp to a source of energy, said lamp being readily removed for replacement without disassembling the sleeve and holder.

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