July 2, 1929. A. F. LANGOS 1,719,228

CIGAR LIGHTER

Filed Nov. 28, 1927

Fig. 2

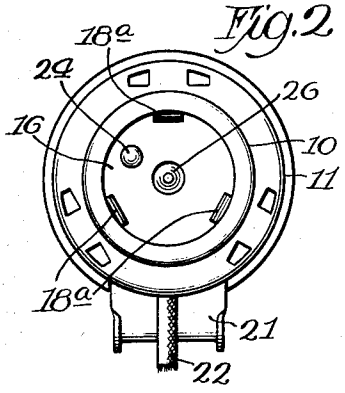


Fig. 1

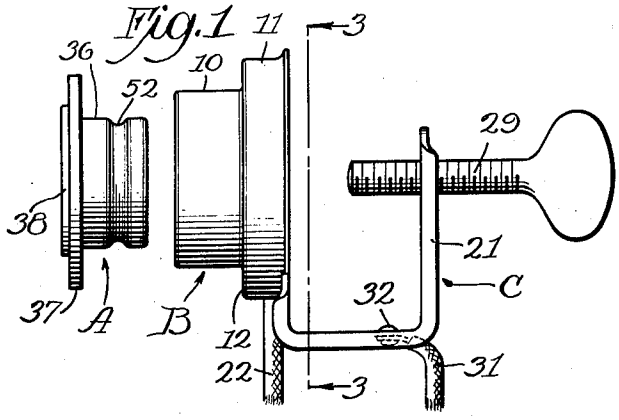


Fig. 4

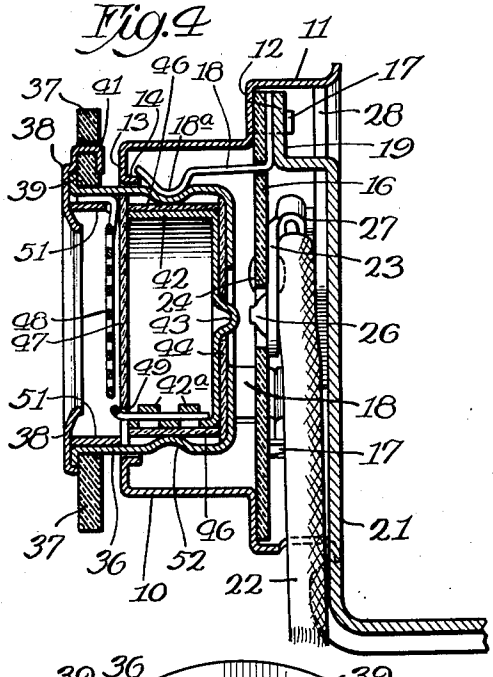


Fig. 3

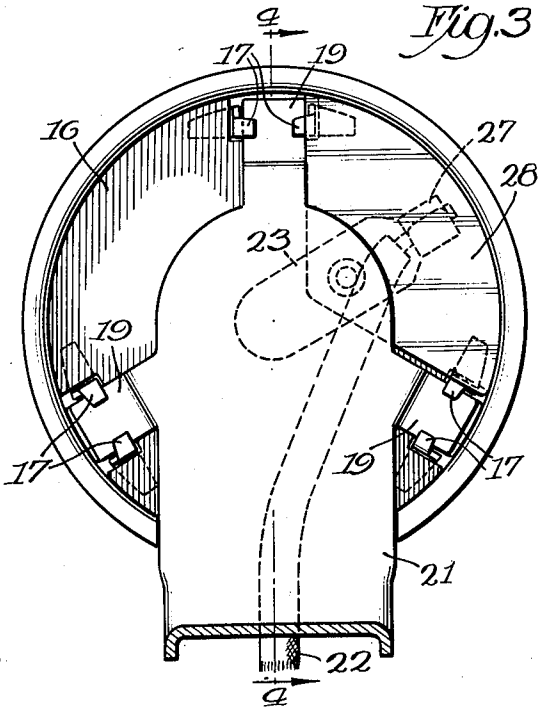
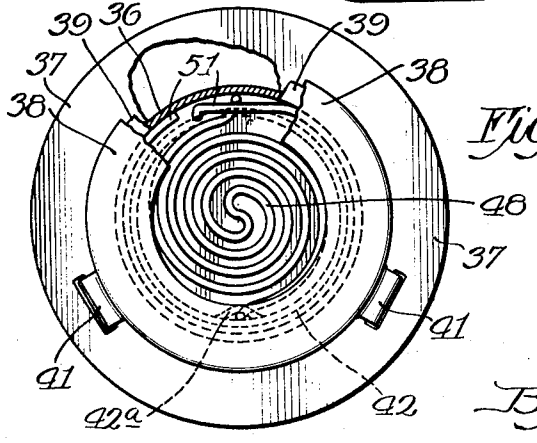


Fig. 5



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UNITED STATES PATENT OFFICE.

ALFRED F. LANGOS, OF CHICAGO, ILLINOIS.

CIGAR LIGHTER.

Application filed November 28, 1927. Serial No. 236,041.

My invention relates in general to electric cigar lighters.

It relates more particularly to a simplified lighter of the class wherein the lighting element may be entirely separated from its support and passed around from hand to hand, as for example, to the occupants of the rear seat of an automobile, without the use of a connecting cord of any kind, the lighter being so designed as to store up sufficient heat to light several cigars in this manner.

Cigar lighters are extra equipment on an automobile, since they are not necessary in any way for the safe and satisfactory operation of a motor vehicle. Equipment of this kind for this reason, must be economically produced or a manufacturer will not consider equipping his cars therewith. When the device is sold as auxiliary equipment to be attached by the car owner, it must also be inexpensive or obviously enough it will not have a ready sale.

Devices of this kind, heretofore produced have as a rule, contained special shapes of porcelain or other blocks, nicely machined portions held together by screws and the like, all of which adds very greatly to the cost of manufacture. Heretofore, such construction has been considered necessary in this class of device in order to obtain adequate results.

One of the principal objects of my invention is the provision of a simple, inexpensive lighter of the class described.

Another object is the production of a lighter which can be produced entirely of stamped metal.

Another object is the production of a lighter which when once heated will retain the heat for a great length of time.

Another object is the provision of a lighter which is easily applied to an instrument board or other suitable location.

Other objects and features of the invention will be apparent from a consideration of the detailed description taken with the accompanying drawings, wherein

Fig. 1 is a side elevational view of a device embodying the main features of my invention showing the plug containing the lighting element, separated from its socket;

Fig. 2 is a face view of the socket with the plug removed;

Fig. 3 is a rear view of the socket such as would be seen along the section line 3—3 of Fig. 1 looking in the direction of the arrows;

Fig. 4 is a sectional view through the socket and plug taken along the line 4—4 of Fig. 3, and

Fig. 5 is a face view of the plug partly broken away to show the construction thereof.

The invention comprises essentially three parts, namely, a plug A for containing the lighting element, a socket B for normally supporting the plug and housing the terminals for supplying current to the heating element in the plug, and a mounting bracket C which is assembled with the socket as an integral part thereof serves as a conductor, etc., all in a manner which will be described.

The socket has as its main portion, a shell or casing 10 with a base portion 11 of relatively great diameter and an integral superposed portion of lesser diameter and connected by a flange portion 12 which is integral with both of the cylindrical portions. An inturned flange 13 at the outer end of the casing extends inwardly at right angles to the cylindrical portion and has a downwardly extending portion 14 at right angles to said inturned flange portion.

The flange 12 separates the casing into two main parts. One part forming a hollow base, is relatively wide and narrow and is adapted to contain the conductor leads and the like. The opposite part has slightly restricted cross sectional area but is deeper and furnishes a socket for supporting the lighting plug A.

An insulating disc 16 preferably of fiber, is interposed between the two sections of the casing extending to the edge of the lower one and being secured thereto by tabs 17—17 struck from the flange 12. Secured with the disc are spring contacts 18—18, three in number, and projections 19 on a bracket 21 which serve to mount the lighter.

The spring contacts 18 are bent at right angles and passed through slots in the disc 16 thereby projecting into the outer chamber of the casing where they act as combination terminals and spring supporting members as will be described. The projections 19 on the bracket 21 are bent out of the normal plane of the bracket as shown in Fig. 4 thus allowing space between the bracket and the fiber disc 16 for the introduction of a conductor 22 and a terminal lug 23 which is secured to the disc by a rivet 24. One end of the terminal lug 23 has a projection 26 extending through a central aperture in the disc and

forming a contact for engagement with a corresponding contact in the block. The opposite end of the terminal lug 23 has two ears adapted to be bent over to form a clamp 27 for engaging the wire portion of the conductor 22. As a protection for the terminal lug, an insulating segment 28 of fiber or the like, is inserted partially under the bracket 21 as shown in Fig. 3.

The mounting bracket 21 extends from its center between the projections 19, downwardly through a cut away portion in the casing and then bends around in a U-shape and is provided with a threaded aperture in line with the center of the socket in which is threaded a thumb nut 29 by means of which the lighter may be attached to a suitable support. A conductor 31 is secured to the bracket by a rivet 32 thereby connecting this conductor electrically with the casing 10. It is obvious that if the device is mounted on a metal support, this terminal will be grounded. This is proper with a so-called single wire system and may be all right with a two wire system, the current passing only through a portion of the frame. However, if a straight conductor system is desired, insulating strips of any kind (not shown) may be disposed between the thumb screw 29 and the metal support, and between the socket and the metal support on the other side. This would serve to insulate the frame of the lighter entirely from the frame of the automobile.

A plug A containing the lighting element consists essentially of a casing 36, a washer 37 of insulating material, such as fiber, and a cap 38 serving to connect itself to the casing 36 and the washer 37 in place between the two. The manner of this construction is shown in Fig. 4, the casing having a narrow outward flange 39, the cap 38 having three projections 41 extending through slots in the insulating disc and being riveted around underneath the disc in the manner shown. The flange 39 extends between the disc and the cap 38 and is hence held in intimate relation with respect to these two members.

Within the casing 36, a supporting, spacing and terminal member is provided in the form of a cup 42 having drawn from its center, a teat 43, this teat projecting through an aperture in a mica-disc 44 and through a central aperture in the base of the casing. This teat is in line with the projecting terminal 26 and serves to form a contact therewith in a manner to be described. The outside of the cup 42 is insulated from the casing by a mica-cylinder 46 and a mica-disc 47 at the top of the cup insulates the top thereof and serves as a bed for a coil resistance element 48. This resistance element has one of its terminals extending through a side aperture 49 in the mica-disc 47, where it is clamped to the cup by a pair of tabs 42^a struck out of the material of the cup in the manner shown. The opposite terminal of the resistance element is clamped between the casing 36 and a split clamping ring 51 which is held between the cap 38 and the mica-disc 47. This clamping ring therefore not only serves to maintain the end of the resistance element 48 in position, but also anchors the cup 42 and other portions of the device in position, so that they are all securely held by the clamping action of the projections 41.

The spring contacts 18 project upwardly into the socket and extend along the sides of the plug A. They have inwardly extending rounded portions 18^a which are adapted to extend into an annular groove 52 impressed into the side wall of the casing 36. The spring contacts 18 tend at all times to move inwardly but are prevented from so doing when the plug is not in position by the downward projection 14 from the flange 13 on the socket casing. In this way considerable spring force is obtained but the contacts are prevented from moving inwardly so far that difficulty would be experienced in reinserting the plug.

One of the principal advantages of my lighter, is the simplicity with which it may be manufactured, particularly the ease of assembling the same. Consider first, the assembling of the socket. The casing is produced from a flat piece of metal by an ordinary drawing operation at which time and in the same operation, the tabs 17 are struck therefrom and are allowed to extend vertically from the casing. The bracket 21 is made by a single stamping operation and so are the spring contacts 18. The terminal lug is stamped and the disc 16 is prepared in a similar manner. With everything prepared, the terminal lug is first secured to the disc by a simple riveting operation, a single rivet 24 being employed. Next the disc, spring contacts and bracket are assembled with the disc and the tabs 17 bent over to secure all of them together.

All of the elements of the plug are made in simple operations. The entire assembling operation consists of placing the elements in the position shown in Fig. 4, and simply riveting over the projections 41. With the terminals then secured into position, the device is all ready to mount. The fiber segment 28 is simply forced under the bracket 21, and is held there by its own friction.

In using the lighter, it is simply necessary to grasp the washer 37 and force the plug downwardly until the portions 43 and 26 come in contact. As soon as the heating element glows, which takes about three or four seconds, the plug is removed for use by simply pulling it straight out. The construction makes use of the heat insulating quality of air and at the same time protects the heating element against the possibility of air flowing or blowing past it to cool the same. In other

words, anything in the nature of small convection currents which would quickly cool the heating element is avoided. For this reason my lighter stays hot considerably longer than the expensive lighters making use of porcelain plugs and the like.

What I claim as new and desire to secure by United States Letters Patent is:

1. In an electric cigar lighter of the class described, a plug receiving socket comprising a casing, a transverse insulating disc, a contact lug secured to the disc and having a contact point projecting from the center of the disc, a mounting bracket having a plurality of radial projections thereon, a plurality of spring contacts, and a plurality of tabs formed from the material of the casing and bent to engage and hold in immovable relation the mounting bracket, spring contacts and insulating disc and a plug carrying a heating element and having center and side terminals connected to the heating element and adapted to form electrical contact with the center terminal and spring contacts in said socket.

2. The combination of claim 1 wherein said socket casing has two integral parts of different diameter connected by a flange, the tabs being formed from the material of said flange by partially excising the same therefrom.

3. In an electric cigar lighter of the class described, and a plug adapted to be supported by said socket having spring contacts on the sides and a single central contact of opposite polarity to the spring contacts, said plug comprising a cup shaped casing with an annular groove into which said contacts engage, with a central aperture and an annular outwardly projecting flange, a cup shaped insert in the casing electrically insulated therefrom and having a projection extending through the aperture in the casing, and adapted to be brought into engagement with the central contact in the socket, a resistance heating element having one of its terminals connected to said cup shaped insert, and the other terminal grounded to the casing, a washer of relatively poor heat conducting material resting on the flange of said casing, and a cap with projections therefrom extending around a portion of said washer and serving to secure the casing, washer and cap together.

4. The combination of claim 3 wherein said cup shaped insert has a mica-disc at each end thereof and a cylindrical mica-insert on the outside thereof, the mica serving as a layer of insulation between the cup and casing, and one of said mica-discs acting as a bed for the resistance heating element.

5. The combination of claim 3 wherein said resistance element terminal is secured to said cup shaped insert by clamping tabs formed from the material of the cup by partially excising the same from the side wall thereof.

6. The combination of claim 3 wherein the grounded resistance element terminal is held in contact with the casing by a split clamping ring, said ring also functioning to secure the cup shaped insert, insulation and resistance element firmly in position.

7. In an electric cigar lighter a plug receiving socket comprising a casing, a transverse insulating disk, a contact lug secured to the disk and having a contact point projecting from the center of the disk, a mounting bracket having a plurality of radial projections thereon, a plurality of spring contacts, said socket casing having two integral parts of different diameters connected by a flange, and a plurality of tabs formed from the material of the flange and bent to engage and hold in immovable relation the mounting bracket, spring contacts and insulating disk and a plug adapted for operation with said socket and comprising a cup shaped casing with an annular groove into which said spring contacts engage, with a central aperture and an annular outwardly projecting flange, a cup shaped insert in the casing electrically insulated therefrom and having a projection extending through the aperture in the casing and adapted to be brought into engagement with the central contact in the socket, a resistance heating element having one of its terminals connected to said cup shaped insert and the other terminal grounded to the casing, a washer of a relatively poor heat conducting material resting on the flange of the casing and a cap with projections therefrom extending around a portion of the washer and serving to secure the casing, washer and cap together.

In witness whereof, I hereunto subscribe my name this 5th day of November, 1927.

ALFRED F. LANGOS.