May 23, 1933. J. SINKO 1,910,066

CIGAR LIGHTER

Filed Aug. 8, 1930

Fig. 1.

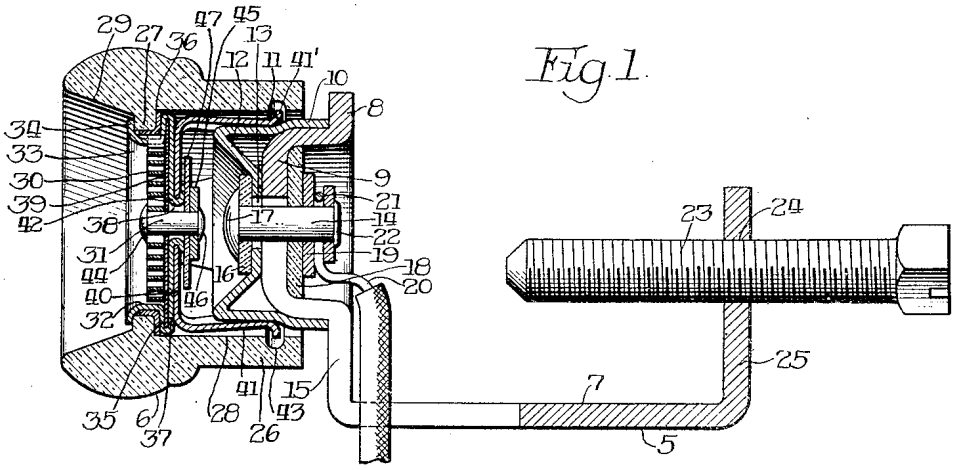


Fig. 2.

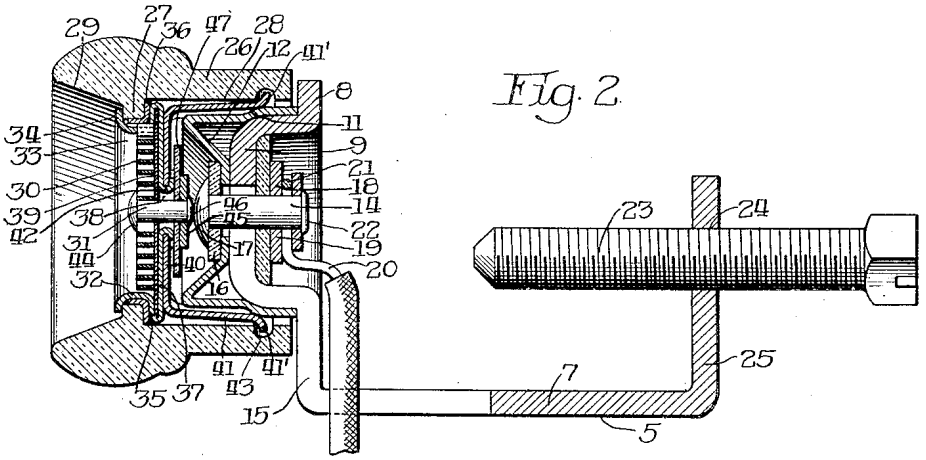


Fig. 3.

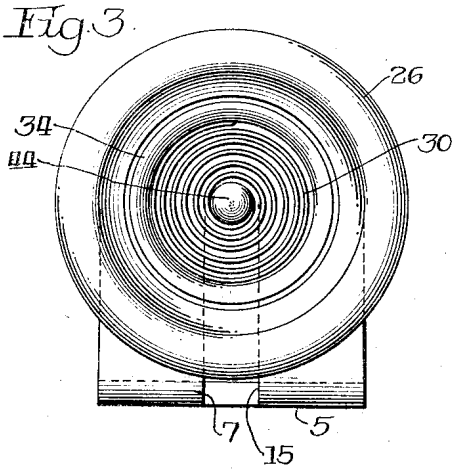
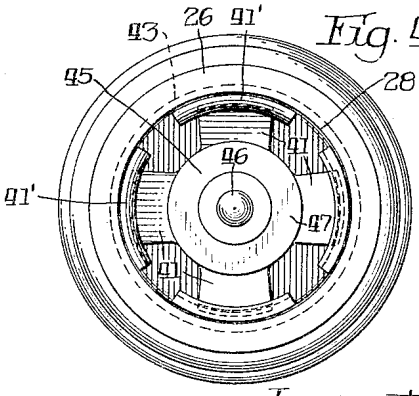


Fig. 4.



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UNITED STATES PATENT OFFICE

JOHN SINKO, OF CHICAGO, ILLINOIS

CIGAR LIGHTER

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This invention relates to cigar lighters and more particularly to cigar lighters of the type generally referred to as "wireless" cigar lighters, and which are often mounted on the instrument board of an automobile.

The main object of the invention is to provide a cigar lighter of the type referred to of simplified, yet durable construction and which may accordingly be manufactured with ease and at very low cost; to provide a lighter of the type referred to wherein there is a minimum of relatively movable parts and hence wherein the necessity of close and accurate fitting parts is eliminated; and in general, it is the object of my invention to provide an improved device of the class described.

Other objects and advantages of my invention will be understood by reference to the following specification and accompanying drawing in which I have illustrated a cigar lighter adapted to be mounted on the instrument board of an automobile, a preferred form of construction being illustrated.

In the drawing—

Figs. 1 and 2 are longitudinal sections through the axis of the device;

Fig. 3 is an elevation of the front end, i. e., igniter end of the device; and

Fig. 4 is an end elevation of the rear end of the portable (wireless) igniter unit.

Referring now to the drawing, my improved cigar lighter includes a stationary unit 5 and a portable unit 6. The stationary unit 5 comprises a generally U-shaped bracket member 7 which may conveniently be made of strap metal bent into the general form of a U. One of the upstanding legs 8 of the U is provided with an outwardly offset portion 9 which forms a protuberant boss on which a metal body or shell 10 is mounted.

The body or shell 10 is generally of tubular cylindrical construction having its rear end of slightly larger external diameter than its front end whereby an abutment or cam 11 is formed intermediate the length of the said body. The front end of the body 10 is provided with a depressed closure portion 12 formed integral with the body and centrally apertured as shown at 13.

The enlarged rear portion of the shell 10 fits snugly on the outwardly offset portion 9 of the bracket and hence is maintained in fixed position in respect to lateral displacement relative to the bracket. The shell 10 is fixed to the bracket against axial displacement therefrom by means of a contact member 14 which is in the form of a rivet. The contact rivet 14 extends through the opening 13 in the front wall of the shell 10 and through a suitable opening in the bracket portion 9, as clearly shown. The opening in the bracket 9 is preferably in the form of a slot 15 which extends from the axial position of the contact rivet 14 to a point intermediate the length of the bottom part of the bracket 7 as clearly shown in Figs. 1 and 2. Inasmuch as the body or shell 10 and the rivet 14 each constitute parts of the electrical circuit which energizes the igniter element, they must be insulated from each other and this is accomplished by means of an insulating washer 16 disposed between the head 17 of the contact rivet 14 and the front wall of the shell 10 and an insulating washer 18 disposed between the back of the bracket part 9 and a metal washer 19 disposed around the shank of the rivet 14. A conductor 20 is electrically connected to the rivet 14 by having a bared end portion wound around the shank of the rivet and by means of a second metal washer 21 which serves to clamp the bared end of the conductor against the washer 18, the rear end of the rivet being provided with a headed portion 22. It will be seen that the rivet-contact member 14 serves to clamp all of the parts constituting the stationary unit together in relatively fixed position. The conductor 20 may conveniently extend through the slot 15 in the bracket and the stationary unit may be mounted on the instrument board of an automobile by means of a clamp screw 23 which threadedly engages a suitable tapped opening 24 in the leg 25 of the bracket.

The igniter unit which may conveniently be termed the portable unit 6 comprises a main or tubular body 26 of material such as bakelite or other phenol condensation product which may conveniently be molded to the

desired shape and size. Of course, any desired material may be used, but it is preferably some material which is not a conductor of electricity and which is not apt to burn at such temperatures as are reached by the incandescent igniter element presently to be described.

The tubular body 26 is provided with an internal annular rib 27 intermediate its length, the rear end of the body 26 having a substantially cylindrical recess 28 and the front end having a frusto-conical recess 29 which affords easy access to the igniter element 30.

The igniter element 30 may be of any suitable resistance material which will become red hot or which will become incandescent when energized with an electric current from an electric storage battery or other source of current available on the vehicle on which the cigar lighter is mounted. In this instance, the igniter element is in the form of a ribbon of suitable metal which is wound into a spiral, the inner end thereof being suitably electrically connected to a center terminal 31 by being clamped tightly thereon, the outer end being electrically connected to a metallic supporting member 32 in any suitable manner.

The igniter element 30 is mounted in the portable unit body 26 through the agency of the metallic member 32 which comprises an annular front portion 33 having its front margin swaged outwardly as indicated at 34 to overlap the front of the internal rib 27. At its rear, the annular portion 33 is provided with a laterally extending annular part 35 which fits in back of the internal flange 27. A metal clamping ring 36 fits around the annular part 33 and serves to clamp the outer end of the igniter element 30 against the part 33 to insure the establishment of good electrical connection between the igniter element and metal member 32.

The laterally extending annular wall 35 is further extended by being rebent to provide a back portion 37 having a central opening 38, a sheet of mica or other suitable heat-resisting insulating material 39 being interposed between the said back wall 37 and the igniter element 30 to prevent the establishment of an electrical contact between the igniter element 30 and the metal member 32 at any point other than the outer end of the spiral igniter element.

For normally maintaining the portable unit in fixed position on the body 10 of the stationary unit, I provide a device which in this instance, consists of a spring metal member, preferably spring bronze, which comprises a back wall part 40, which is provided with a plurality, in this instance four, radially and laterally extending fingers 41. The back member 40 is centrally apertured to fit over a collar 42 formed integral with the back wall 37 and projecting rearwardly therefrom, the rear end of said collar being turned outwardly over the adjacent marginal portion of the spring back wall 40 to rigidly clamp the spring member to the metal member 32. The free ends of the spring arms or fingers 41 are preferably bent or rounded in an outward direction as indicated at 41′ and the rear part of the body 26 is provided with an annular recess 43 for receiving the out-turned ends 41′ when the fingers are spread outwardly in the manner shown in Fig. 2 and as hereinafter explained.

It will be understood from the above description of the portable unit structure and from an inspection of the drawing, that the metallic parts of the portable unit may be assembled independently of the body 26 and when so assembled, mounted in the portable body by swaging the marginal portion 34 outwardly over the internal rib 27 as previously described. It will be seen that the metallic member 32 and the spring fingers 41 constitute a terminal for the outer end of the igniter element 30 while the inner end of the igniter element is connected to the center terminal 31. In order to prevent the center part of the igniter element from springing forwardly, I provide the center terminal 31 in the form of a rivet having its front end headed over the inner end portion of the igniter element as shown at 44 and its rear end portion headed over a metallic washer 45 as indicated at 46. The metallic washer 45, while in electrical contact with the center terminal 31 is insulated from the metal member 32 by means of a disc 47 of mica or other suitable insulating material and it will be understood that the terminal 31 is insulated with respect to the metal member 32 by reason of the enlarged opening 38 through which the terminal 31 passes without contacting therewith.

By reference to Fig. 1, it will be seen that the spring fingers 41 which normally tend to spring inwardly, i. e., towards the center of the portable unit, frictionally fit over the smaller front end portion of the stationary unit body 10. By reason of the frictional holding power of the spring fingers on the body 10, the portable unit is removably mounted on the stationary unit. It will also be observed by inspection of Fig. 1 that the outwardly directed end portions 41′ of the spring fingers engage the abutment or cam surface 11 so as to limit telescopic movement of the portable unit over the stationary body 10 and thereby to prevent engagement of the central terminal 31 of the portable unit with the contact 14 of the stationary unit. However, inasmuch as the fingers 41 are resilient, they are capable of being spread outwardly by exerting slight additional force on the portable unit to cause the outwardly bent end portions 41′ of the spring fingers to ride up on the cam abutment 11 to the

position shown in Fig. 2. In the spread position, the outwardly bent ends 41′ are received by the annular recess 43. Because of the resiliency of the fingers, i. e., the tendency to restore themselves to their predetermined set position, the fingers tend to ride down the cam abutment 11 and as soon as the force applied to bring the center terminal 31 and contact 14 in engagement is released, the fingers operate to move the portable unit outwardly by riding down the said cam abutment. In this manner the center terminal 31 and contact 14 are disengaged. Of course it will be understood that when the portable unit is to be used for lighting a cigar or the like, it is first forced inwardly against the resiliency of the spring fingers 41 and there held until the igniter element 30 is suitably heated, whereupon the portable unit is bodily removed from the stationary unit to suit the convenience of the person desiring to use the same.

The stationary unit 5 is designed to be positioned on the instrument board of a vehicle, the leg 8 of the bracket 7 being positioned on the front surface of the instrument board and the leg 7 adjacent the bottom edge of said instrument board. Under such conditions, it will be understood that the leg 25 of the bracket projects upwardly in back of the instrument board and that the screw 23 may be adjusted to engage the back of the instrument board either directly or through a filler block interposed between the instrument board and the screw to clamp the stationary unit in place.

The above described construction of both the stationary and portable units of my improved cigar lighter are of simple but sturdy construction and hence the lighter may be made at an especially low cost without sacrificing the quality of the device. This fact is highly important because of the highly competitive nature of the commercial field of the device. I am aware that changes may be made in the form and construction illustrated and described herein without departing from the spirit of my invention, the scope of which should be determined by reference to the following claims, the same being construed as broadly as possible consistent with the state of the art.

I claim:

1. In a cigar lighter, a stationary unit for a portable igniter unit, said stationary unit comprising a mounting bracket having a protuberant boss with an opening therein, a metallic tubular body member seated on and electrically connected to said boss, a contact member disposed centrally of said body member, and a pair of insulation washers disposed respectively on opposite sides of said body and boss, said contact member extending through said washers, through said body member and the opening in said boss so as to be relatively insulated from said body and boss, and said contact member being provided with heads on its opposite ends for retaining the parts in assembled relation through the agency of said washers.

2. In a cigar lighter, the combination of a stationary unit including a tubular metallic shell and a relatively insulated contact member mounted centrally of said shell in fixed relation thereto, and a portable unit comprising a tubular body member having an internal rib, an igniter element, a metallic support for said igniter element, said support having spaced flange portions embracing said internal rib for mounting the support in said body, said igniter element having one end electrically connected to said support, a contact terminal electrically connected to the other end of said igniter element and extending through and insulated from said support, and a metallic member electrically connected to said support and having a plurality of circumferentially spaced, axially extending arms inside of said portable tubular body on one side of said internal rib, said arms being movable radially of said tubular body and adapted to frictionally embrace the shell of said stationary unit for removably mounting said portable unit on said stationary unit.

3. In a cigar lighter of the class described, the combination of a stationary unit including a tubular metallic body member and a relatively insulated contact member mounted centrally in said tubular body member, a portable unit including a tubular body member, an igniter element mounted in said last-named body member, and a terminal connected with said igniter element and adapted to engage the contact member of said stationary unit to effect electrical connection of said igniter element to said contact member, said portable body fitting telescopically over said stationary body, and means for normally maintaining said portable body in predetermined normal position relative to said stationary body with the terminal member separated from the contact member, said means comprising an annular cam formed on the outside of said stationary body, a plurality of integrally formed, circumferentially spaced, laterally yieldable, resilient cam-engaging members located inside of said portable body and anchored thereto against axial displacement, said cam-engaging members having outwardly flared end portions serving to engage said cam to normally limit telescopic movement of said portable body over said stationary body and said cam engaging members being outwardly yieldable to permit further inward telescopic movement of said portable member over said stationary member to permit said contact and terminal members to be brought into engagement, the resiliency of said cam-engaging members

serving to urge the same to assume their normal position relative to said cam and thereby to automatically retract said portable body to its normal position relative to said stationary body, said portable body member having an annular recess for receiving said outwardly offset end portions as an incident to outward displacement thereof.

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