July 23, 1963 J. G. BEHRENDT 3,098,923

BATTERY-OPERATED CIGARETTE LIGHTER

Filed March 26, 1962

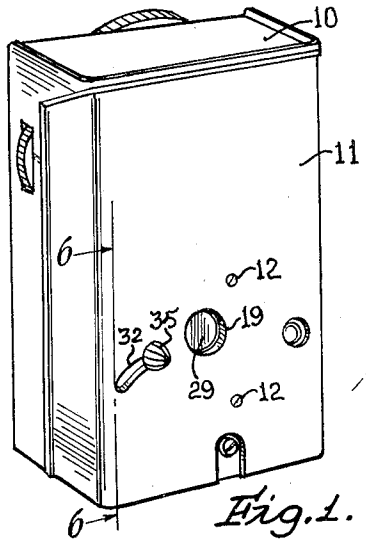


Fig. 1.

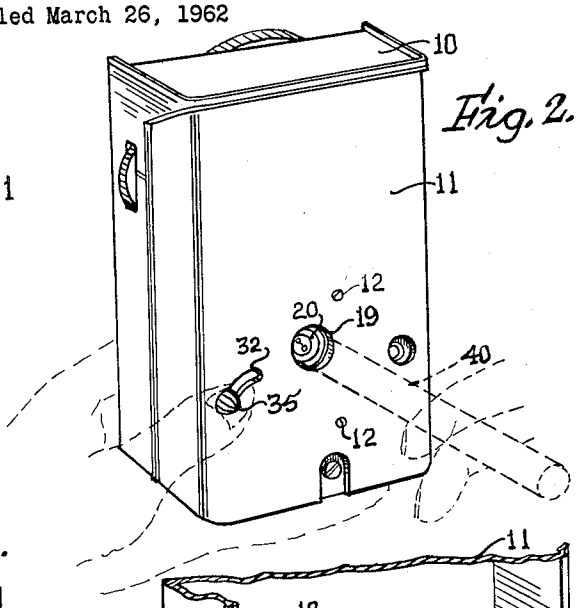


Fig. 2.

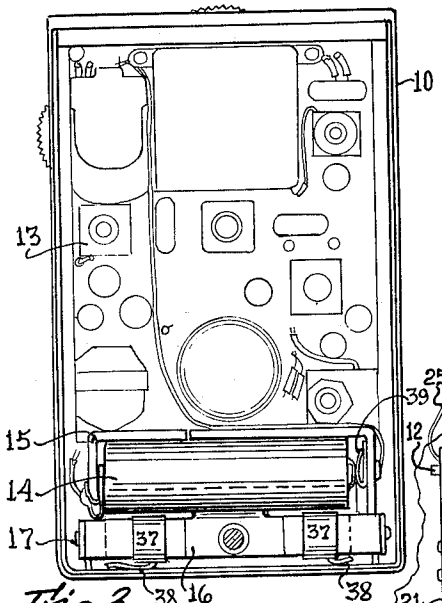


Fig. 3.

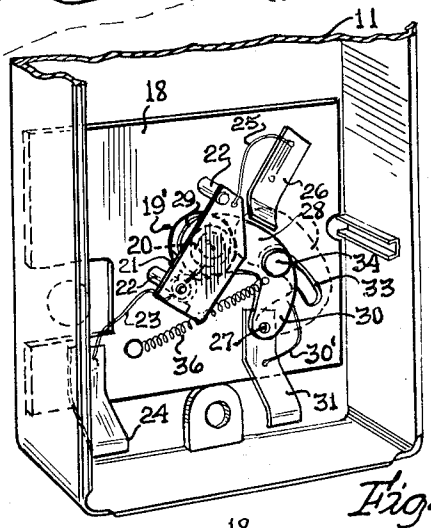


Fig. 4.

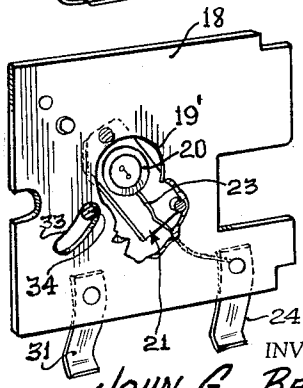


Fig. 5.

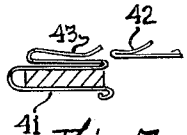


Fig. 7.

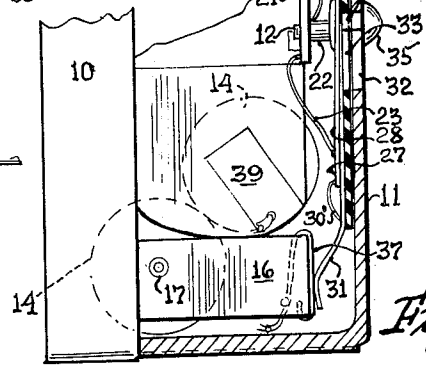


Fig. 6.

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BATTERY-OPERATED CIGARETTE LIGHTER

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3 Claims. (Cl. 219—32)

My invention relates to and has for its primary object that of associating with a standard type radio a cigarette lighter, using as the power source for the filament of such lighter that which operates the radio.

Another and equally important object of my invention resides in new and simplified means for concealing the filament of the lighter by means of a movable shutter, which shutter is also utilized for completing the circuit between the power source of the radio and the cigarette lighter.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

FIG. 1 is a rear perspective view of a radio with which my invention is associated;

FIG. 2 is a view similar to FIG. 1, but showing the parts in different position;

FIG. 3 is a plan view of the radio with the back plate removed;

FIG. 4 is a fragmentary perspective view of the interior of the back plate;

FIG. 5 is a perspective view of the latter assembly removed from the back plate;

FIG. 6 is a fragmentary sectional detail view taken substantially on line 6—6 of FIG. 1 to enlarged scale;

FIG. 7 is a detail view of a modified form of a connection to the power source of the radio.

The several objects of my invention are preferably accomplished by the preferred form of construction shown in the accompanying drawings and which will be presently described.

The radio with which my invention is associated includes a casing 10 having a removable back plate 11 normally secured in position upon the casing 10 by any suitable means.

Within the casing 10 are confined the components 13 of the radio. The radio power circuit includes a power unit 14 in the form of relatively small batteries. In the present instance, the batteries are arranged within a cradle 15 which includes a pivoted holding bar 16, which in the present instance is pivotally supported as at 17 and may be pivoted away from the batteries 14 to permit the removal of the batteries from the cradle.

To associate my cigarette lighter with the radio, I provide a mounting plate 18 formed of non-conductive material. This mounting plate 18 is mounted within the back plate 11 and secured thereto by suitable screws 12.

Formed in the back plate 11 is an opening 19 registering with an opening 19′ formed in the plate 18, to the rear of which openings and exposed therethrough is a lighter filament 20 of any approved construction. The filament 20 is carried by a non-conductive plate 21 supported in spaced relation from and by the mounting plate 18, by means of mounting studs 22. In the form of construction shown in FIGS. 1 to 4 inclusive, one side of the filament 20 by means of a conductor wire 23 is connected to a resilient contact plate 24. The other side of the filament 20 by means of a conductor wire 25 is connected to a resilient contact finger 26. The contact plate 24 and finger 26 are each carried by the mounting plate 18.

Pivotally carried by the mounting plate 18 as at 27 is

a shutter 28. The shutter 28 has an enlarged portion 29 which is adapted to be disposed between the filament 20 and the opening 19′ to conceal the filament 20. The shutter 28 includes an extension 30 which is pivotally connected to a contact plate 31 carried by the mounting plate 18. This extension 30 by means of a conductor wire 30′ has connection with the contact plate 31.

Formed in the back plate 11 is an elongated slot 32 which registers with an elongated slot 33 formed in the plate 18. A stud shaft 34 is carried by the shutter 28 and projects through the slots 32 and 33. Carried by this shaft 34 is a finger knob 35 by means of which the shutter 28 is pivoted from closing position with respect to the opening 19 to expose the filament 20. The shutter 28 is automatically returned to closing position with respect to the opening 19′ by means of a spring 36 (FIG. 4), one end of which is connected to the shutter and the opposite end of which is connected to the mounting plate 18. When the shutter is pivoted manually to expose the openings 19 and 19′, it contacts the contact finger 26 to complete a circuit between the batteries 14 and filament 20.

Arranged on the bar 16 and insulated therefrom in the event that the bar is made of conductive material are contact bands 37 which are connected by means of conductor wires 38 to the spring contacts 39 having contact with electrodes of the batteries.

When the back plate 11 with the cigarette lighter assembled therein in the manner shown in FIG. 4 is placed in position upon the casing 10, the spring contact plates 24 and 31 will have engagement with the bands 37, so that when the shutter 28 is in contact with the contact finger 26, a circuit will be completed between the batteries and the filament 20, energizing the same so as to permit the lighting of the end of a cigarette 40 when such end is brought into contact with the filament in the manner shown in FIG. 2. The filament 20 is exposed for this purpose by manually pivoting the shutter about its pivot 27, bringing the shutter 28 into contact with the finger 26. After the cigarette has been lit and removed from projection into the opening 19, the finger button 35 is released to allow the shutter under action of the spring 36 to pivot to a closed position with respect to the opening 19 as shown in FIG. 1.

From the foregoing description it is apparent that I have provided a cigarette lighter to be used in combination with a radio with only minor modifications of the latter.

As herein described and as shown in the drawings, the several parts of the lighter assembly are mounted upon the mounting plate 18. If desired, this plate may be omitted and the lighter assembly mounted directly upon the back plate, using proper insulation if it be necessary to insulate the parts of the assembly from the back plate.

The construction described herein is such as permits association with any conventional type of radio, and the simplicity of construction permits economical manufacture.

In FIG. 7 I have shown a modified form of construction for connecting the wires 23 and 30′ to the bar 16. In this form of construction, there is associated with the bar 16 adjacent each end thereof a suitable spring clip 41 to which is removably attached a connector finger 42 which is adapted to have frictional holding contact with a clip 43 preferably formed as an integral part of the clip 41. Other means for connecting the wires 23 and 30′ to the batteries may be employed without departing from the spirit of my invention.

In use, the user generally will hold the radio in one hand, placing the thumb upon the finger button 35, exerting a pressure thereon in a direction to pivot the shutter to a position to expose the filament 20. Upon such ex-

posure and while the shutter 28 is held in such position, the user will apply the tip of the cigarette to the filament while the filament is energized and effect lighting of the cigarette. Upon lighting of the cigarette, the pressure of the thumb is released from the finger button 35 and the shutter, under action of the spring 36, will return to closing position with respect to the opening 19.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In combination, a casing within which is arranged
(*a*) a power source,
(*b*) said casing having a wall having formed therein an opening and elongated slot adjacent said opening,
(*c*) a mounting plate having an opening and a slot formed therein and arranged in said casing against said wall with the opening and slot of the mounting plate in registration with the opening and slot in said wall.
(*d*) a lighting filament arranged in the casing and carried by the mounting plate to the rear of and exposed through said opening,
(*e*) a shutter pivotally carried by the mounting plate within the casing for closing said opening to conceal said filament,
(*f*) circuit means for connecting said filament with said power source, said circuit means including as an element thereof said shutter and a contact plate the latter carried by said mounting plate and engageable by the shutter when the shutter is moved from concealed position with respect to said filament, and
(*g*) a finger button carried by the shutter and extending through and operable in said slot to facilitate moving said shutter from and to concealing position with respect to said filament.

2. A cigarette lighter comprising
(*a*) a mounting plate having an opening formed therein and an elongated slot adjacent said opening,
(*b*) a filament carried by said mounting plate and exposed through said opening,
(*c*) a pair of contact plates carried by the mounting plate and adapted to be placed in contact with opposite poles of a battery,
(*d*) a shutter having an end portion for removably closing said opening to conceal said filament,
(*e*) a contact member carried by said mounting plate

in the path of movement of said end portion of said shutter plate and having connection with one side of said filament,
(*f*) means for connecting the other side of said filament to one of said pair of contact plates,
(*g*) means pivotally connecting the other end portion of said shutter plate to the other of said pairs of contact plates,
(*h*) finger engaging means carried by the shutter plate and extending through and movable in said slot to facilitate pivoting said shutter plate from a concealing position with respect to said filament and into contact with said contact member to complete the circuit between said poles and said filament, and
(*i*) spring means for moving said shutter into concealing position with respect to said filament.

3. In combination,
(*a*) a casing within which is arranged a battery providing a power source,
(*b*) said casing having a wall provided with an opening and an elongated slot at one side of said opening,
(*c*) a lighting filament arranged in the casing to the rear of and exposed through said opening,
(*d*) a pair of spring contacts adapted to have engagement with the poles of the battery,
(*e*) a shutter having one end portion pivotally connected to one of said spring contacts in planar relation with respect to said wall and normally closing said opening to conceal said filament,
(*f*) a circuit connection between the other of the spring contacts and one side of the filament,
(*g*) a resilient contact finger in the path of movement of said shutter and engaged thereby when the latter is pivoted from said concealing position,
(*h*) a circuit connection between said resilient contact finger and the other side of said filament,
(*i*) and a finger button carried by said shutter and operable in said slot for pivotally moving said shutter into contact with said resilient contact finger to complete a circuit between the filament and said battery with the shutter pivoted from said concealing position.

References Cited in the file of this patent

UNITED STATES PATENTS

2,516,843	Bakst et al.	Aug. 1, 1950
2,535,665	Boyarsky et al.	Dec. 26, 1950
2,689,902	Burtman	Sept. 21, 1954

FOREIGN PATENTS

354,559	Great Britain	Aug. 13, 1931
494,749	Great Britain	Dec. 31, 1938
137,092	Australia	May 1, 1950
1,203,030	France	July 27, 1959