June 10, 1952 E. J. NICORVO 2,600,070

DEMOUNTABLE ELECTRIC AUDIBLE DEVICE

Filed May 8, 1950

Fig. 1.

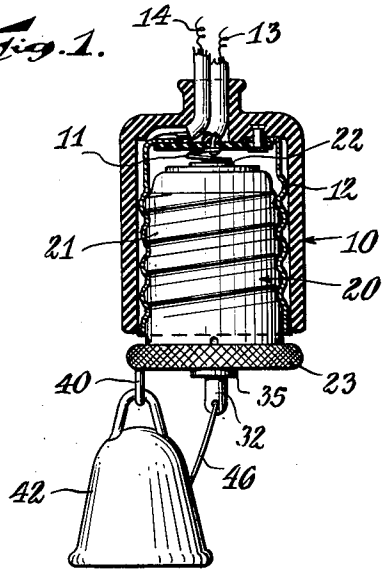


Fig. 2.

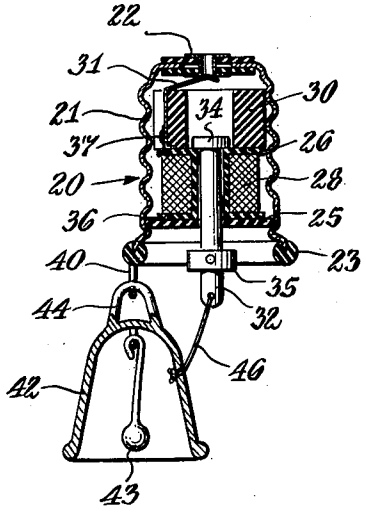


Fig. 3.

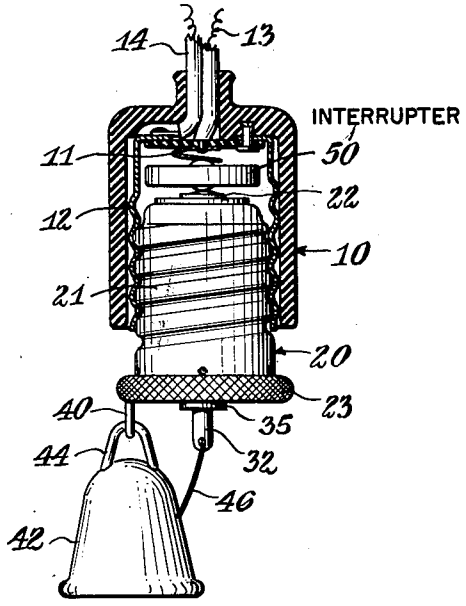
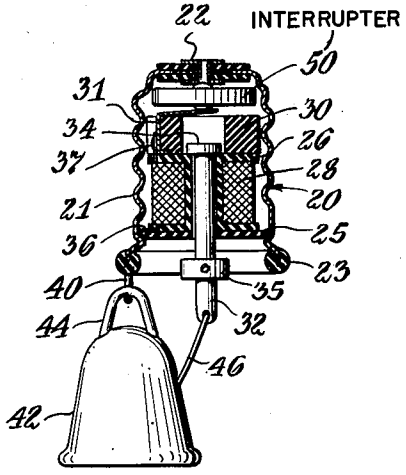


Fig. 4.



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DEMOUNTABLE ELECTRIC AUDIBLE DEVICE

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4 Claims. (Cl. 177—7)

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This invention relates to novel devices and particularly to audible devices of a decorative nature and finding especial uses at the Christmastide and other festive occasions. In one of its more specific aspects the invention is directed to novel compact assemblies which may be coupled with electric sockets.

The most prevalent electric socket in use is the so-called standard screw socket which in general consists of an inverted cup-shaped insulator having a central button-contact and a threaded shell-contact therein and insulated from each other. These contacts are respectively connected to the leads or conductors connected to a source of electric energy. These sockets are standardized in the particular sizes in which they are used, as for example, the miniature, regular, mogul, etc.

Briefly, this invention is directed to devices which are unitary assemblies which may be demountably secured to said sockets in the same general manner as are the ordinary electric incandescent lamps. Each of the novel devices comprises a base having a pair of contacts and adapted to be inserted in and connected to an electric socket, a solenoid winding electrically connected to said contacts, a bell element supported by said base, a striker element, and means controlled by the energization of said solenoid for actuating one of said elements.

Fig. 1 is a view partly in section to illustrate a standard screw socket and an embodiment of the invention coupled with the socket.

Fig. 2 is a view partly in vertical section of an embodiment of the invention.

Fig. 3 is a view similar to Fig. 1, but showing an interruptor in the socket.

Fig. 4 is a view similar to Fig. 2, but showing an interruptor as part of the assembly.

As shown in the drawings, there is illustrated a conventional lamp socket comprising an insulator housing 10 carrying a central button metal contact 11 and a threaded shell metal contact 12. The contacts 11 and 12 are insulated from each other and are electrically connected to conductors 13 and 14, which are also connected to a source of electric energy.

The novel embodiment of the invention shown in Fig. 1 comprises a screw base 20 which has a hollow screw shell metal contact 21 and a central metal contact 22 insulated from contact 21. The shell contact 21 terminates in a knurled flange 23 of insulating material. An insulating disc 25, having a central opening therethrough, is snapped into the lower open end of the hollow

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shell contact 21 and is frictionally maintained in position thereat. Mounted on the disc 25 and located in the shell 21 is an insulating spool 26 carrying a solenoid winding 28. Mounted on the spool 26 and located in the shell 21 is an insulator spacing collar 30 having a spring metal contact 31 coupled therewith. An elongated movable core 32 extends through the central opening in the spool 26 and disc 25 and has a pair of stop flanges 34 and 35. One terminal 36 of the winding 28 is electrically connected to the shell 21 and its other terminal 37 is electrically connected to the spring contact 31. Flange 34 is composed of insulating material.

A loop 40 extends downwardly from the flange 23. A bell element 42 having a free swinging striker element 43 suspended from the upper part thereof has a loop 44 at the central upper part thereof. It is to be understood that bell and striker elements other than the type shown may be employed. The conventional spherical bell with a ball striker therein and commonly called a sleigh bell may also be used. The loop 40 extends through loop 44 so that the bell and striker elements are supported by the base 20 for free swinging movement. Coupled to the lower end of the core 32 is an end of a flexible string or cord 46, and the other end of string 46 is coupled to one side of the bell element 42.

In another illustrative embodiment of the invention, as shown in Fig. 4, an interruptor 50 is located in the base 20. A terminal of interruptor 50 is electrically connected to contact 22 and its other terminal is electrically connected to the spring contact 31. In this embodiment the solenoid winding 28 in series with the interruptor 50 and the contacts 21 and 22 of base 20.

Both of the assemblies shown in Figs. 2 and 4 are compact combinations and either of them may be inserted in and demountably connected with the standard screw socket in the same manner that a screw base lamp is so connected thereto. The embodiment shown in Fig. 3 may be directly connected to such a socket whose terminals are connected to a source of electric energy as shown in Fig. 1, where the contact 21 is electrically connected to the shell 12 and the contact 22 is electrically connected to contact 11.

Instead of having the interruptor 50 as part of the assembly as shown in Fig. 4, the interruptor 50 may be placed in the socket as a separate element and then the assembly shown in Fig. 2 may be coupled therewith, as shown in Fig. 3. If desired, the assembly shown in Fig. 2 may be coupled with the socket as shown in Fig. 1 and

the interruptor **50** may in this instance be located outside of the socket and base and be in series with the source of electric energy.

The interruptors **50**, employed in the various manners heretofore set forth, are electrothermal responsive devices and are preferably of the bimetallic type which, due to the rise in temperature of their bimetallic element upon passage of current in the circuit including the solenoid windings, automatically break that circuit and upon cooling make the circuit. Interruptors for making and breaking a circuit are well known and for my purposes I may employ those known as the "Twinkle-Button" type.

When these various combinations are connected to a source of electric energy as found in the ordinary home, passage of current takes place in the circuit in which the interruptor **50**, the contacts and solenoid winding **28** are in electrical series relationship. In the course of passage of current through the winding **28**, core **32** is actuated upwardly and this movement of core **32** causes a pull on string **46** to swing bell **42** on loop **40**, whereupon the element **43** strikes the bell **42** to provide a musical note or ring. The interruptor **50** is in the circuit series to make and break the circuit.

I claim:

1. A device comprising a base having a pair of contacts and adapted to be inserted in and coupled to an electric socket for receiving such a base, a bell element near said base and normally depending therefrom, said bell element being pivotally supported by said base, a striker element therefor, a solenoid winding near said base and electrically connected to said contacts, and means for moving one of said elements with respect to the other upon energization of said winding.

2. A device comprising a screw base having a pair of contacts and adapted to be inserted in and coupled to an electric screw socket, a bell element pivotally supported by said base, a striker element therefor, a solenoid winding supported by said base and electrically connected to said contacts, and means for moving one of said elements with respect to the other upon energization of said winding.

3. A device comprising a screw base having a pair of contacts and adapted to be inserted in and coupled to an electric screw socket, a bell element swingably supported by said base and depending therefrom, a striker element therefor, a solenoid winding disposed in said base and supported thereby, said winding being electrically connected to said contacts and means for moving one of said elements with respect to the other upon energization of said winding.

4. A device comprising a screw base having a pair of contacts and adapted to be inserted in and coupled with an electric socket, a bell element pivotally supported by said base, a striker element therefor, a solenoid winding supported by said base and electrically connected to said contacts, electrothermal responsive means for automatically making and breaking an electric circuit, said means being in series with said winding and said contacts, and means responsive to energization of said winding for moving one of said elements with respect to the other.

EDWIN J. NICORVO.

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