Dec. 2, 1952 G. B. BENANDER 2,620,374

ELECTRIC SOCKET AND RECEPTACLE

Filed Aug. 4, 1949

Fig. 1.

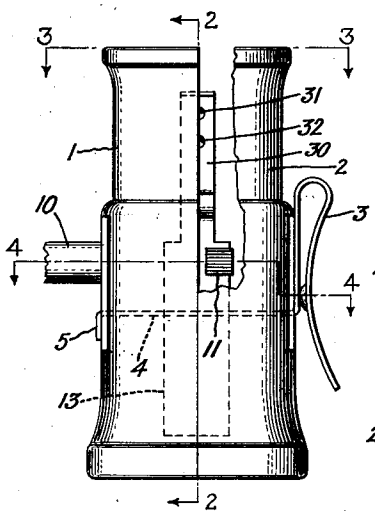


Fig. 2.

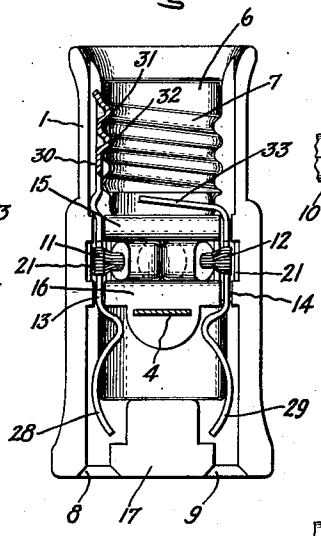


Fig. 3.

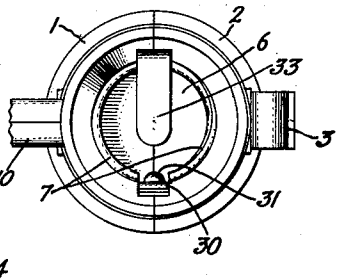


Fig. 4.

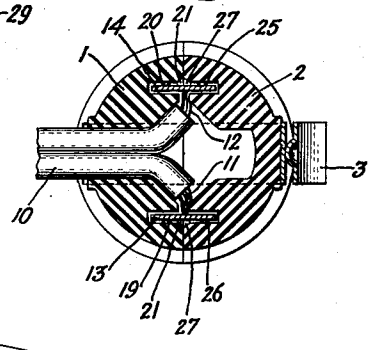
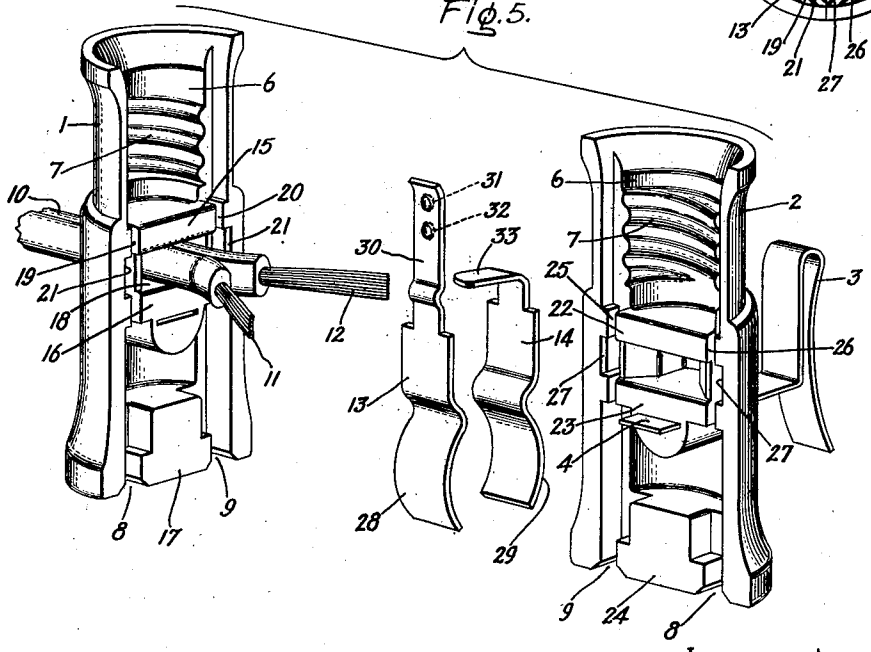


Fig. 5.



Inventor:
George B. Benander;
by Otto R. Knopp
His Attorney.

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ELECTRIC SOCKET AND RECEPTACLE

George B. Benander, Oaklawn, R. I., assignor, by mesne assignments, to General Electric Company, a corporation of New York

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4 Claims. (Cl. 173—334)

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This invention relates to an electric outlet of the type having both a screw-threaded socket and a receptacle for receiving a pronged plug.

A primary object of my invention is to simplify the construction of an electrical outlet so that it may be manufactured at a minimum cost.

A further object of my invention is to provide an electrical outlet adapted to receive not only a threaded plug or threaded lamp base but also a plug of the type having a pair of projecting prongs.

More specifically, it is an object of my invention to provide an electrical outlet fixture particularly suitable for decorative lighting outfits where low cost of each fixture is an important prerequisite.

In accomplishment of the foregoing objectives, a feature of my invention consists in enclosing the outlet in an insulated housing or case arranged at one end with a socket to receive a threaded electrical fitting and at its other end to receive a plug having projecting prongs. A pair of contact strips supported within the housing form contacts for both outlets of the device. A further feature of the invention, making this outlet particularly suitable for decorative, lighting outfits, is to retain the two-piece housing in assembled relation with a spring clip mounted on the outside of the housing and serving also as an outlet supporting member.

The features of my invention which I believe to be novel are set forth with particularity in the appended claims. My invention itself, however, both as to its organization and method of operation, together with further objects and advantages thereof, may be better understood from the following description taken in connection with the accompanying drawing.

Referring to the drawing, Fig. 1 is a front elevation with a portion of the fixture housing broken away; Fig. 2 is a cross-sectional view in elevation taken on the line 2—2 of Fig. 1; Fig. 3 is a plan view taken on the line 3—3 of Fig. 1; Fig. 4 is a cross-sectional view taken on the line 4—4 of Fig. 1; and Fig. 5 is an exploded view in perspective.

In the illustrated embodiment, I have shown an electrical outlet with a threaded socket type receptacle at its upper end and a receptacle adapted to receive a two-prong plug at its lower end. For convenience in assembly, the case or housing, which is formed from insulating material, is made in two parts, 1 and 2. These two halves of the housing may be retained in assembled relation by any suitable means such

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as rivets or threaded fastening devices. However, to make this outlet particularly suitable for decorative lighting outfits, I prefer to employ a spring clip 3 which includes a laterally extending portion 4 passing through both halves of the housing along a diameter of the assembled housing, and having sufficient length to permit a portion 5 to be staked over. This feature, involving the employment of the spring clip 3 which is adapted for supporting the receptacle and having a laterally extending portion 4 passing through both halves of the housing to hold the housing in assembled relationship, forms a portion of the subject matter described and claimed in my copending patent application for a Lamp Socket, Serial No. 171,915, filed July 3, 1950, and assigned to the same assignee as the present application. Thus this combination socket and receptacle may be readily supported from a branch of a Christmas tree or the like.

To increase the utility of this device it is formed as a combination socket and plug type receptacle. Referring to the drawing, particularly Figs. 2 and 5, the upper portion of the assembled housing is shaped to form a socket 6 having threads 7 for cooperation with a threaded base of an electric lamp or a threaded plug. The lower end of the housing is provided with a pair of slot apertures 8 and 9 to receive a pair of prongs of a plug. Such an arrangement lends itself particularly well for lighting outfits since a lamp may be threaded into the socket 6 and the outlet formed by slots 8 and 9 permits another similar device to be connected in parallel in the electrical circuit by insertion of a pronged plug.

Electric power is supplied to this combination socket and receptacle assembly through a two-conductor cord 10 whose bared conductors 11 and 12, shown in Figs. 2 and 5, are connected to contact strips 13 and 14, respectively. These contact strips are maintained in spaced apart relation by an upper central barrier 15, a lower central barrier 16, and an end barrier 17. As shown by Figs. 4 and 5, the electrical cord 10 enters the casing through an aperture 18 between the central barriers 15 and 16. Housing half 1 is provided with a pair of slots 19 and 20 extending longitudinally between central barriers 15 and 16 and the outside wall of the housing, as shown most clearly in Fig. 5. Intermediate the end of these slots, the housing edges and barrier edges are beveled as at 21. It is to be noted further that the slot depth is approximately equal to one-half the width of the contact strip. Therefore, contact strips 13 and 14 may be inserted

in position in housing half 1 after which the ends of conductors 11 and 12 are bent over their respective contact strips as shown by Fig. 1. Referring again to Fig. 5, housing half 2 is provided with central barriers 22 and 23 and end barrier 24. These barriers are similar and are intended to abut the corresponding barriers 15, 16, and 17 in housing half 1. Also, housing half 2 is provided with contact strip receiving slots 25 and 26 and the intermediate portion of each slot includes beveled edges as at 27. Therefore, with the contact strips 13 and 14 in position in housing half 1 and the electrical conductors 11 and 12 bent over each contact strip as shown in Figs. 1 and 2, housing half 2 may be forced into making engagement with housing half 1, this action wedging the electrical conductors 11 and 12 into firm contact with the contact strips 13 and 14. It is thus seen that with this construction there is no requirement for separate mounting screws for attaching the electrical supply lines to the current-carrying strips within the socket and receptacle assembly.

In accordance with my invention, a single pair of contact strips are employed not only for connection to the incoming supply line, but also for forming contact points in the electrical socket portion of the device and to form resilient contact elements to receive a pronged plug. Each of the contact strips 13 and 14 are made of resilient material with an electrical conducting property. The lower end of each strip is curved, as at 28 and 29, to form a pair of resilient contacts in alignment with the slotted apertures 8 and 9. Thus when a pronged plug is inserted in apertures 8 and 9 the prongs will contact these curved portions 28 and 29 to provide an electrical connection to the electric lines 11 and 12. Referring again to Fig. 5, contact strip 13 includes a portion 30 extending upwardly into the socket 6. This portion 30 is adapted to lie against the interior wall within the socket. A pair of dimples 31 and 32 are formed adjacent the end of portion 30 to project inwardly, and the spacing of these dimples corresponds to the pitch of thread 7 within the socket. Contact strip 13 is arranged within the housing so that the dimples 31 and 32 are in alignment with and form a continuation of the high portion of thread 7. Therefore, when a threaded lamp base or plug is screwed into the socket, these dimples will contact the base supplying power thereto. The other contact strip 14 has its upper end portion 33 bent over to form a central contact within the socket adapted to engage the central element of a threaded lamp base or plug.

From the above disclosure it is seen that I have provided a greatly simplified combination electric socket and receptacle. The entire assembly consists of merely an insulated housing in two parts, a pair of contact strips, a means for maintaining the device in assembled position, and an electrical supply cord. The usual cylindrical threaded copper member which forms the outside contact of the lamp base socket is eliminated by the use of a contact strip with dimples corresponding to the threads formed in the insulated housing. I find this construction particularly suitable for low cost outlets adapted to receive multiple small lamps, such as are frequently employed in decorative lighting outfits.

While the present invention has been described by reference to a particular embodiment thereof, it is to be understood that numerous modifications may be made by those skilled in the art without actually departing from the invention. I, therefore, aim in the appended claims to cover all such equivalent variations as come within the true spirit and scope of the foregoing disclosure.

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

1. A socket and receptacle outlet comprising a housing of insulating material having two halves with one end of the assembled housing forming a threaded socket and the other end an outlet to receive a pronged plug, a first contact strip extending longitudinally within said housing, a second contact strip extending longitudinally within said housing in spaced relation from said first contact strip, said housing including slot means retaining said contact strips in position, said contact strips each having an intermediate portion for connection to incoming electric leads extending into said housing and a curved end portion positioned in the receptacle outlet end of said housing to form spring contacts engageable with prongs of a plug, said first strip having its other end portion positioned within the socket end of said housing to form a side wall contact, said second strip having its other end bent to form the central contact button for the socket, and a spring clip having an end extending through said housing for retaining it in assembled relation and for engaging a support.

2. A combination electric socket and plug receptacle comprising an insulated housing formed from complementary parts to define an electric lamp socket, a plug receptacle, and slot means interconnecting said socket and plug receptacle, a pair of electrical conducting strips positioned in said slots with portions of each strip lying in both said socket and said receptacle to form electrical contacts for both said socket and plug receptacle, said housing having an aperture for receiving an electric cord electrically engageable with said conducting strips for supplying electric energy to both said socket and receptacle and means for retaining said housing in assembled relationship.

3. A socket and receptacle outlet comprising an insulated housing having two halves with one end of the assembled housing forming a socket and the other end an outlet to receive a pronged plug, a first contact strip extending longitudinally within said housing, a second contact strip extending longitudinally within said housing in spaced relation from said first contact strip, said housing including slot means retaining said contact strips in position, said contact strips each having an intermediate portion for connection to incoming electrical leads extending into said housing and each having an end portion positioned in the receptacle outlet end of said housing to form spring contacts engageable with prongs of an electric plug, said first strip having its other end portion positioned within the socket end of said housing to form a side wall contact, said second strip having its other end bent to form the central contact button for the socket portion, and a spring clip having an end extending through said housing for retaining the same in assembled relationship and for engaging a support.

4. A socket and receptacle outlet comprising an insulated housing having two halves with one end of the assembled housing forming a socket and the other end an outlet to receive a pronged plug, a first contact strip extending longitudinally within said housing, a second contact strip extending longitudinally within said housing in

spaced relation from said first contact strip, said housing including slot means retaining said contact strips in position, said contact strips each having an intermediate portion for connection to incoming electrical leads extending into said housing and each having an end portion positioned in the receptacle outlet end of said housing to form spring contacts engageable with prongs of an electric plug, said first strip having its other end portion positioned within the socket end of said housing to form a side wall contact, said second strip having its other end bent to form the central contact button for the socket portion, and means for retaining said housing in assembled relationship.

GEORGE B. BENANDER.

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