Aug. 30, 1932. H. E. SLADE ET AL 1,875,270

ELECTRIC SOCKET

Filed May 28, 1927

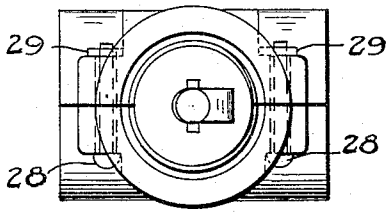


Fig. 4

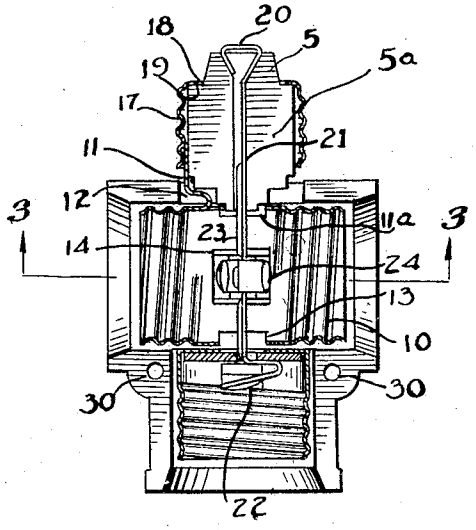


Fig. 1

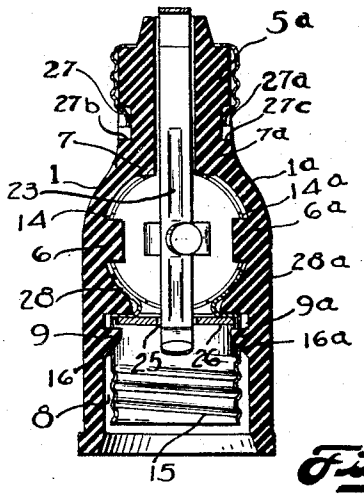


Fig. 2

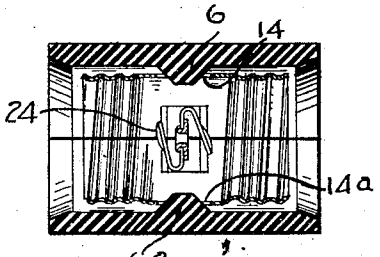


Fig. 3

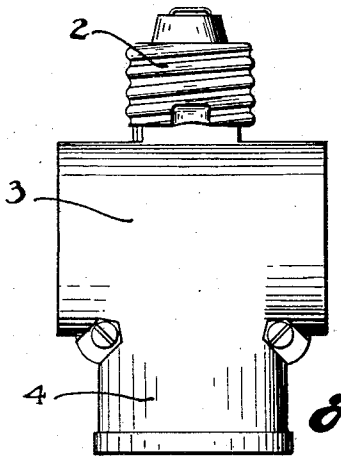


Fig. 5

WITNESSES

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UNITED STATES PATENT OFFICE

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ELECTRIC SOCKET

Application filed May 28, 1927. Serial No. 194,922.

Invention pertains to electric sockets of the class commonly known as plural sockets, that is, sockets having more than one outlet or receptacle from which current may be drawn.

The object of our invention is to provide a socket with three receptacles or outlets, that is small, compact, substantial in construction and of moderate cost.

The features that are new and novel in our invention are, the construction of the side outlets and the construction and assembling of the strip conductors within the casing.

In all sockets with which we are familiar the width or overall distance across the side shells is quite wide because of the positioning of these side shells and will not permit of the device being inserted in a base receptacle provided with doors or swinging covers.

In our device we place these two side receptacle screw shells back to back with their axis colinear, thus greatly reducing the overall horizontal dimension to such an extent that it is possible to insert our plural socket in the class of receptacles just described. Furthermore, the arranging of these two said shell receptacles back to back with their axis colinear permits our using a single double length threaded screw shell in place of the two conventional female screw shells. The reduction in size also tends to reduce the cost of the outer casing, makes for a sturdier casing, and also adds to the artistic appearance. The ability to use our socket in base receptacles fitted with covers is of large importance to the user as it affords the opportunity of using a third outlet whereas all previous devices were limited to two.

As generally made plural sockets are made up of individual shells in each of the outlets, some are very poorly designed and when any strain is placed on the shells short-circuiting is very apt to occur.

In our construction the possibility of short circuits, from any cause, is reduced to a minimum, as the side outlets are made of a single unit in our preferred construction as shown. By a system of apertures in the shells and a novel design of the thru conductor strip there is very little chance for destroying the interior parts of the socket, or of the parts being disarranged even though subjected to severe straining when lamps or attachment plugs are inserted in the device with undue force.

To more clearly describe our invention the accompanying drawing is provided and forms part of this specification.

Figure 1 is an elevation partially in section, thru the center line of the device.

Figure 2 is an elevation thru the center line taken at right angles to Figure 1.

Figure 3 is a cross section thru the double horizontal shell, taken along line 3—3 Figure 1.

Figure 4 is a plan of the lower shell section.

Figure 5 is a side elevation of the assembled device.

In carrying out our invention we employ a two part casing, the halves of which are identically alike. These halves are designated as 1, 1*a*.

In Figure 1 the casing is shown divided along the major axis of the horizontal receptacles. The device comprises three main divisions. The top or plug section 2, the central or horizontal receptacle section 3, and a lower or vertical receptacle section 4.

The plug section 2 of the casing has a tapered boss 5, somewhat smaller in diameter than the shell section 5*a*. The central section is substantially a centrally bored cylinder with tapered lugs 6, 6*a* adjacent the abutting surfaces. The mid section of the bore is interrupted at the top by the plane surfaces 7, 7*a*. The purpose of the lugs 6, 6*a* and plane surfaces 7, 7*a* will be explained farther along in the specification.

The lower section 4 is substantially a vertical cylinder with a central bore 8, the bottom of which terminates at the diameter of the bore of the horizontal cylinder. Tapered lugs, 9, 9*a* are provided within the bore 8 at a short distance from the bottom of the bore.

The horizontal receptacles are produced by a single cylindrical threaded member 10. This member is about double the length of the conventional shells generally used.

One side of this member 10 has a tongue 11

slit from it, forming an aperture 11*a*. The tongue 11 is turned upward and is formed to lie within the slot 12 in the casing and rest against the plug section 5*a*.

Diametrically opposite the tongue 11, the shell 10 is perforated as at 13. At points at right angles to the tongue 11, and perforation 13, perforations 14, 14*a* are made.

When assembled the lugs 6, 6*a* pass thru the perforations 14, 14*a*, and the interrupted plane surfaces 7, 7*a* lie within the aperture 11*a* locating the shell and effectively preventing it from rotating, when a lamp or attachment plug is screwed into the receptacles.

A second shell member 15 is perforated on the sides as at 16, 16*a* which permits the lugs 9, 9*a* to pass thru the shell in assembly, holding it in place and preventing it from rotating.

This shell 15 is also perforated so as to form tongues 28, 28*a*, which are turned up in such manner as to lie between the casing and shell 10, to make electrical contact between shells 10 and 15.

A third shell 17, has the bottom pierced at 18 to permit the boss 5 to pass thru it so the shell may come to rest against the shoulder 19. The proportioning of the boss 5*a* and the inside diameter of the shell 17 is such as to secure good electrical contact between the tongue 11 of shell 10 and the shell 17. It will now be apparent that the shells are all connected electrically. The shell 17 is maintained in place and prevented from rotating by pressing the sides as at 27, 27*a*, into the depressions 27*b*—27*c* in the boss 5*a*.

To form the positive side of the circuit (the shells form the negative side) a thru conductor member is provided comprised of a triangular head shaped section 20, a conductor section 21 and a resilient contact section 22. To obtain the necessary stiffness the conductor section 21 is ribbed as at 23. At a point corresponding to the center line of the horizontal shell 10 a resilient contact member 24 is securely fastened to the conductor section 21. To thoroughly insulate the contact section 22 from shell 8 an insulating disc 26 is slotted at 25 for the passage of the thru conductor and placed inside the shell 8.

Any slight variation in the vertical length of the casing is compensated for in assembling by the springiness of the head section 20.

It will be understood that suitable grooves and passages are provided in the casing for the proper accommodation of the conductor member.

The final assembling of the casing is made by fastening the two halves together by means of the screws 28 passing thru holes 30, and the nuts 29.

While the accompanying drawing and these specifications show a preferred form of this plural socket, we do not wish to limit ourselves to the details shown. For instance, we have pointed out that the arrangement of the two side receptacles is new and novel, and our present construction shows the screw shells for these side receptacles being made in one piece by utilizing a continuous piece of threaded metal tubing. It is obvious that the same result could be obtained by using two conventional female screw shells placed back to back. Such a construction, however, would make the piece horizontally wider, hence we do not prefer it, but it would obviously come within the scope of this invention.

In a similar way the central positive circuit could be varied in construction but still be within the scope of this invention.

Having described our invention we claim:—

1. In a socket of the class described, a plug section, a horizontal cylinder, a vertical shell member, a conductor member passing from the end of said plug section thru central apertures in said horizontal cylinder and thru the base of said vertical shell member, and elements connected therewith, said conductor member providing an electrical circuit path from said plug section to said elements removably housed within said horizontal cylinder and said vertical shell member.

2. A plural socket, comprising a two part casing, a plug member fitted with a male screw shell, a central section fitted with a female screw shell extending substantially the transverse length of said section, and having upper and lower enlarged openings therethrough with access from both ends, a lower vertical section aligning with said plug member and fitted with a second female screw shell, and a central conductor extending from the outer end of the plug section through said openings to the inside of the base of said second screw shell.

3. An electric socket of the plural type; comprising a male shell and female shell, the axes of which are in alignment; a second female shell located between said male and female shells, whose axis is disposed at right angles to the axes of said male and female shells; a strip slit from the second female shell engaging the male shell; a strip slit from the first female shell engaging the second female shell; whereby the three shells are electrically connected together to form one side of an electric connection; a housing of insulating material enclosing said shells which maintains them in fixed relationship with each other and a conductor strip held in said casing and passing through apertures in said shells but insulated therefrom and forming a second side of an electrical connection; said conductor being in alignment with the axes of the male shell and first female shell.

4. An electric socket comprising a casing,

a male shell mounted at one end of said casing, a female shell mounted at the opposite end of said casing, a second horizontally disposed female shell mounted in said casing between said male and female shells with its axis at right angles to said male and female shells internal lugs on said casing interlocked with said horizontal shell, and a conductor strip passing in a straight line from the male shell end, through said female shells and terminating within the female shell mounted at the opposite end substantially at its base, said conductor being insulated from all said shells.

5. A plural socket, comprising a two part casing, a plug member having a male screw shell, a central horizontal section having a female screw shell interlocked therewith to prevent rotation, a lower vertical section having a second female screw shell interlocked therewith to prevent rotation and a central conductor extending from the outer end of said plug member to the inside of the base of said second screw shell, said central conductor having a lower resilient contact section and oppositely disposed intermediate contact sections positioned within said horizontal female screw shell.

Signed at Newark, New Jersey, this 23rd day of May, 1927.

HAROLD E. SLADE.
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