Dec. 27, 1949 E. E. GRANGER 2,492,475

ADAPTER

Filed Feb. 20, 1948

Fig. 1.

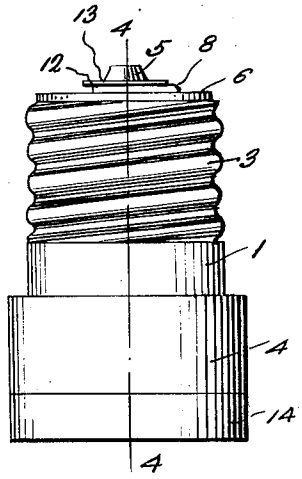


Fig. 2.

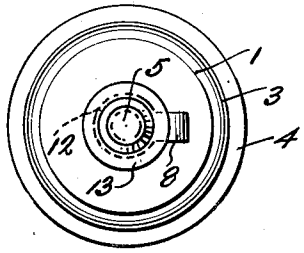


Fig. 3.

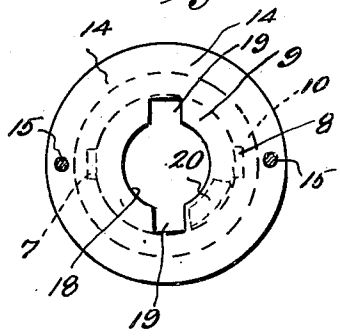


Fig. 4.

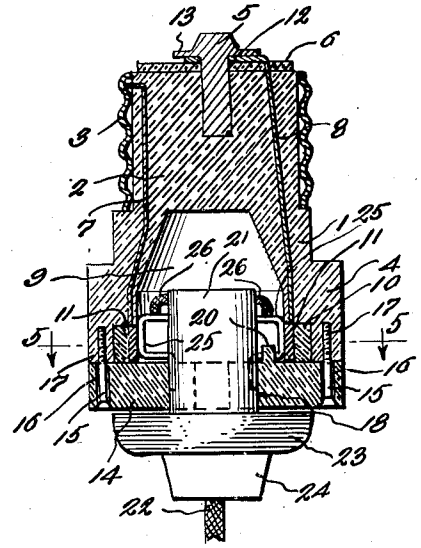


Fig. 5.

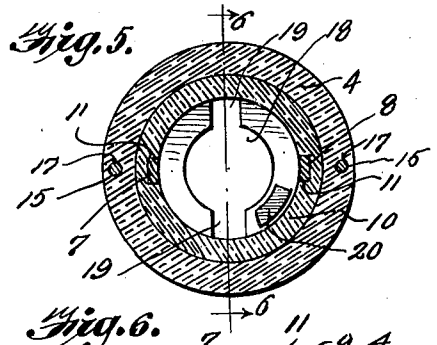
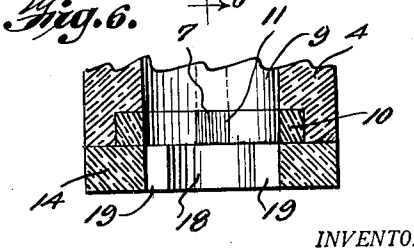


Fig. 6.



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ADAPTER

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1 Claim. (Cl. 173—343)

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This invention relates to an adaptor and it is one object of the invention to provide an adaptor so formed that it may be screwed into a socket of an electric outlet box or into a bulb-receiving socket of a lighting system and a terminal plug for an electric cord then thrust into the adaptor for supplying current to a fan, lamp, or other electric appliance.

Another object of the invention is to provide an adaptor of such construction that a terminal plug may be thrust into the outer end of the adaptor and then turned to a position in which it will make contact with conductors of the adaptor and be firmly held and prevented from slipping out of the adaptor.

Another object of the invention is to provide an adaptor having its outer or front end portion so constructed that the body portion of the adaptor may be formed of moulded insulating material and a face plate then applied and secured by screws passed through the face plate and into threaded sockets leading from the outer end of the body.

Another object of the invention is to provide an adaptor which is of simplified construction, very efficient in operation, and capable of being manufactured at low cost.

The invention is illustrated in the accompanying drawings wherein:

Fig. 1 is a side view of the improved adaptor.

Fig. 2 is a view looking at the rear end of the adaptor.

Fig. 3 is a view looking at the front end of the adaptor.

Fig. 4 is a sectional view taken longitudinally through the adaptor along the line 4—4 of Figure 1.

Fig. 5 is a transverse sectional view taken along the line 5—5 of Figure 4.

Fig. 6 is a fragmentary sectional view taken along the line 6—6 of Figure 5.

This improved adaptor has a body 1 which is formed of molded insulating material and is solid for a portion of its length to provide a shank 2. This shank is circular in cross section and surrounded by a threaded sleeve 3 formed of conductive metal. The outer or forward end portion of the body is enlarged to form a head 4 of such dimensions that it may be readily grasped and the adaptor screwed into or removed from a wall box or the bulb-receiving socket of a lighting fixture. A center terminal pin 5 extends longitudinally of the rear portion of the body with a portion projecting therefrom and about this pin fits a disk 6 of insulating material. Con-

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ductors 7 and 8, which are formed from strips of metal, extend longitudinally through the body with their forward end portions disposed at opposite sides of a socket 9 formed in the body and embedded in an insulating ring 10. Recesses 11 are formed in the ring 10 to receive the front ends of the conductor strips, and upon referring to Figures 4 and 5 it will be seen that the front ends of the conductor strips fill the recesses and are flush with the inner side face of the ring. The rear end of the conductor 7 is bent laterally so that it protrudes from a side portion of the body and engages the shell 3 and the conductor 8 is of greater length than the conductor 7 and has its rear portion passed through an opening in the disk 6 and formed with an enlarged end portion 12 which fits about the center contact or terminal pin 5 where it is confined between the disk 6 and a washer 13 through which the pin 5 passes. From an inspection of Figure 4 it will be seen that the conductors 7 and 8, the ring 10, the disk 6, the washer 13, and the terminal pin 5, may be assembled and placed in a mold together with a core for forming the pocket 9 and melted insulating material then poured into the mold and allowed to harden and form the body. After the body has hardened it is removed from the mold and the core withdrawn and the shell 3 applied. During formation of the body the insulating ring 10 becomes tightly fixed to the outer end portion of the body and forms a mouth for the socket 9. After withdrawal of the core from the body a circular disk or face plate 14 of the same size as the external diameter of the front end of the body is applied thereto and secured by screws 15 which are passed through openings 16 formed through the face plate and into threaded sockets 17 formed in the body at diametrically opposite sides of the front end thereof. The face plate or disk 14 is formed with a large center opening 18 having recesses or slots 19 in opposed relation to each other diametrically of the face plate, the relation of the slots 19 and the openings 16 to each other being such that when the face plate is applied to the body the slots 19 will extend at right angles to each other. Therefore a terminal plug for an electric cord may be inserted through the opening 18 and a quarter turn imparted to it to bring contacts of the terminal plug into engagement with front ends of the conductors 7 and 8 and a circuit will be established for a fan or other electrical appliance from which the electric cord extends. A lug 20 projects from the inner face of the face plate 14 and serves as

an abutment for limiting turning movement of the terminal plug in the adaptor.

This adaptor is intended for use in connection with a terminal plug of the construction shown in Figure 4. This plug 21 has an elongated body which is circular in cross section and bored longitudinally to form a passage for the electric cord 22. The diameter of the body of the plug is such that it may be passed through the opening 18 of the face plate or disk 14 and the outer end of the plug is formed with an outstanding collar 23 serving to limit inward movement of the plug through the opening 18 and carrying a knob 24 by means of which it may be conveniently grasped and applied to the adaptor and then turned to a circuit closing position. Contacts 25 which are formed from strips of conductive metal and are U-shaped extend longitudinally of the body of the plug and project laterally from opposite sides thereof. Wires 26 of the electric cord are secured to the contacts 25 and the location of these contacts upon the body of the plug is such that when the body portion of the plug is thrust inwardly through the opening 18 into the adaptor the contacts will be disposed close to the inner surface of the face plate. After the contacts have passed through the slots 19 a quarter turn may be imparted to the terminal plug and the contacts 25 will then have engagement with the outer ends of the conductor strips 7 and 8, further turning of the terminal plug being stopped by engagement of one of the contacts 25 with the abutment lug 20. Since the contacts 25 will then be located back of the face plate 14 and in spaced relation to the slots 19 the terminal plug will be firmly held in operative engagement with the adaptor and cannot accidently slip out of the adaptor. By imparting retrograde turning movement to the terminal plug the contacts 25 may be brought back into position for passing through the slots 19 and pull may then be exerted upon the terminal plug to withdraw it from the adaptor.

Having thus described the invention, what is claimed is:

An adaptor for an electric outlet socket comprising a body of insulating material having a rear portion of dimensions adapting it to fit in an outlet socket and a front portion formed with

a pocket open at its front end, a ring of insulating material embedded in the front end of said body and surrounding the front end of said pocket, a threaded shell of conductive metal surrounding the rear portion of said body, a disk of insulating material against the rear end of the body, a terminal pin passing through the disk centrally thereof and into said body, conductor strips extending longitudinally through the body at opposite sides of said pocket and having front ends mounted in recesses formed in the inner side face of said ring and flush with the said inner side face of the ring, the rear end of one conductor strip being attached to said shell and the other conductor strip having its rear end portion passing outwardly through said disk and fitting about the terminal pin, a face plate of insulating material fitting against the front end of the body and the outer face of said ring and formed with a central opening for rotatably receiving a circular terminal plug having contacts projecting from opposite sides thereof for engagement with the contact strips when the plug is turned in the opening of the face plate in one direction, there being slots leading from opposite sides of the opening and spaced from the contact strips circumferentially of said ring and through which the contacts of the plug pass during insertion and removal of the plug, screws passing through said face plate and into said body and removably securing the face plate to the body, and a lug projecting from the inner face of the face plate in position for limiting rotation of a terminal plug thrust through the opening of the face plate and holding the terminal plug in a set position with its contacts in engagement with outer ends of the conductor strips.

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