

June 24, 1947.

E. E. GRANGER
ELECTRIC OUTLET BOX
Filed Aug. 15, 1944

2,423,016

2 Sheets-Sheet 1

Fig. 1.

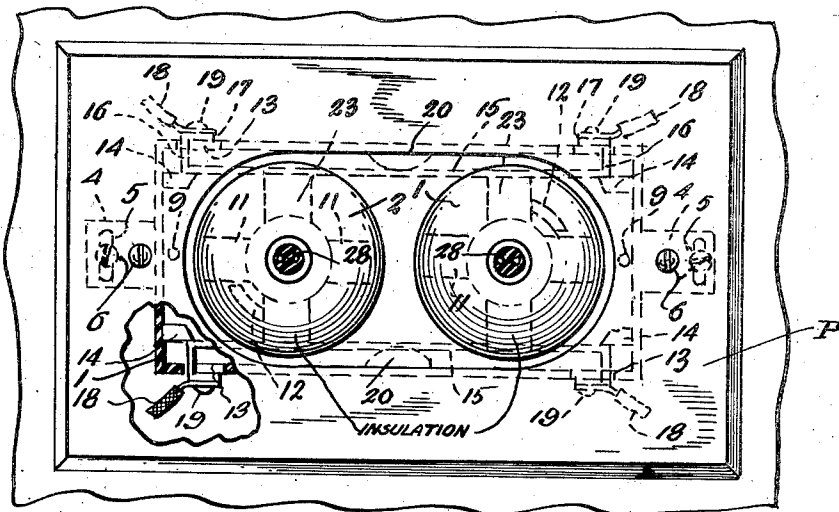
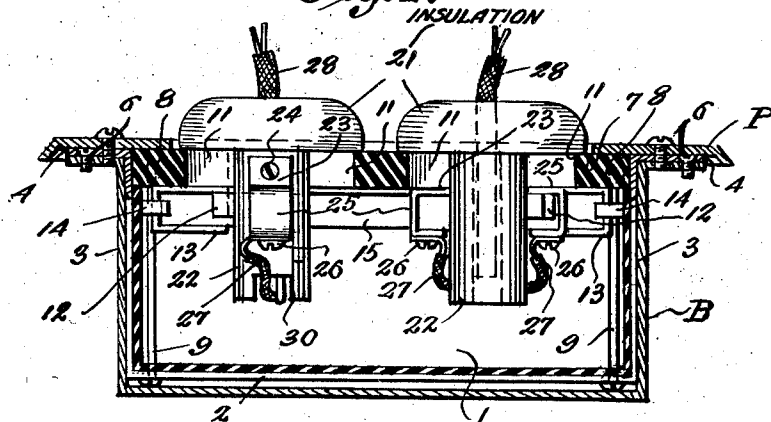


Fig. 2.



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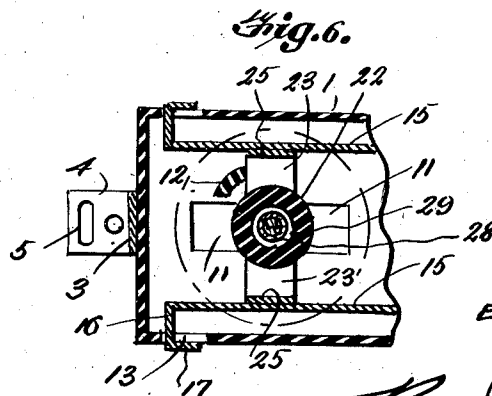
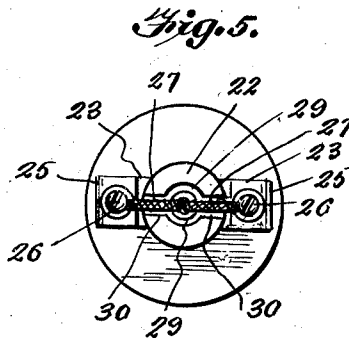
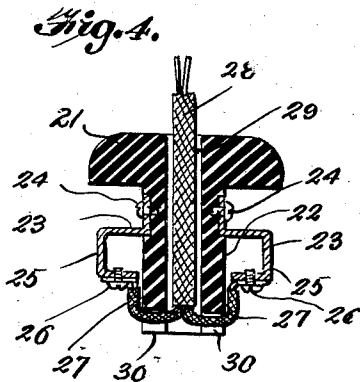
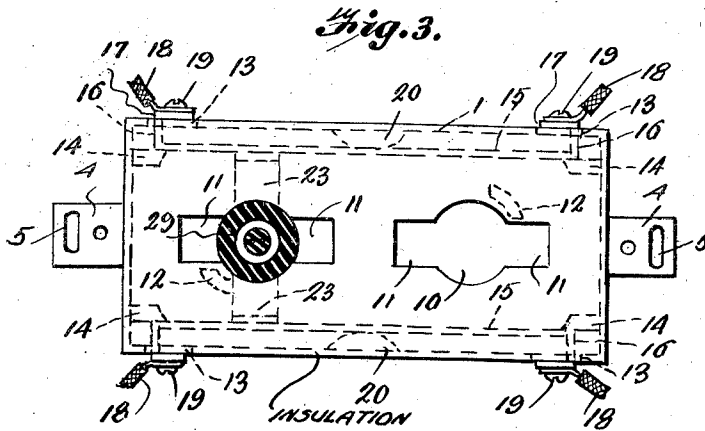
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2,423,016

ELECTRIC OUTLET BOX

Elmer E. Granger, Reno, Nev.

Application August 15, 1944, Serial No. 549,611

1 Claim. (Cl. 173—330)

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This invention relates to an outlet box of the type used in electric wiring for buildings and located in walls at points where it will be convenient to apply plugs of wires for floor lamps and other electrical appliances.

One object of the invention is to provide an outlet box of such construction that plugs of electric cords may be readily inserted and contact made with buss bars or strips at sides of the box without likelihood of a fuse being blown out or a person hurt by shock due to accidentally touching the buss strips.

Another object of the invention is to provide a cover plate for the outer end of the box or casing with openings through which plugs of special formation may be passed and then turned to a position in which they will be prevented from moving outwardly unintentionally, abutments being provided for limiting turning of the plugs after insertion through the openings.

Another object of the invention is to provide buss strips so mounted at sides of the box or casing that they will be firmly held in place but permitted of easy removal when desired.

Another object of the invention is to provide plugs having contact strips serving as means for retaining the plug in operative engagement with the box as well as for engaging the buss strips and so formed that wires of an electric cord may be very easily connected therewith.

Another object of the invention is to provide an outlet box and plugs which are simple in construction and which may be manufactured at small cost.

In the accompanying drawings:

Fig. 1 is a view looking at the outer face of the face plate of the improved outlet box, portions being indicated by dotted lines.

Fig. 2 is a sectional view taken longitudinally through the improved outlet box.

Fig. 3 is a view showing the outlet box with its face plate removed.

Fig. 4 is a sectional view taken longitudinally through a plug adapted to be applied to the outlet box.

Fig. 5 is a view looking at the inner end of the plug.

Fig. 6 is a sectional view showing the manner in which the plug is held in the outlet box.

The improved outlet box has a casing 1 which is formed of insulation, is fitted into a wall box of standard construction and has associated therewith an anchoring strip 2 which straddles the casing longitudinally thereof with its arms 3 bearing against end walls of the casing and

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terminating in outstanding ears 4 formed with transversely extending slots 5 to receive screws 6, by means of which the device is held in a wall box B covered by the usual cover plate P.

5 The outer end of the casing is closed by a cover plate or block 7 formed of insulation and provided midway the width of each end with a threaded socket 8 to receive the threaded end of a screw 9. The screws 9 pass through the bottom of the casing and end portion of the anchor strip, as shown in Fig. 2, and when they are tightened they serve to firmly hold the cover in place. This cover plate has been shown formed with two openings 10, each of which has slots or reduced portions 11 leading therefrom, but it is to be understood that there may be provided one opening 10, or more than two, according to the length of the block or cover 7 and the casing closed by the cover. Adjacent each opening, the cover carries a depending lug or stop 12 which is arcuate, as shown in Figs. 1 and 3, and of such dimensions that when a plug for an electric cord is inserted through the slot it may be given a one-quarter turn and stopped by contact with the abutment. Each side wall of the casing is formed near its ends with openings 13, and near these openings, the end walls of the casing carry tongues 14 which overlap the openings for engagement with end portions of buss strips 15. 30 These buss strips extend longitudinally of the casing at opposite sides thereof and have their end portions bent outwardly to form arms 16 which pass through the openings 13 and terminate in tongues 17 to which circuit wires 18 are 35 secured by screws 19. The openings 13 are of such size that the arms 16 and their tongues 17 may pass freely through them and be held in the extended position shown in Fig. 3, so that the wires may be readily attached or disconnected. 40 The buss strips are formed of resilient metal and have their mid-portions bearing against lugs 20 which project inwardly from side walls of the casing and have arcuate surfaces so that when the buss strips are applied with their mid-portions bearing against the lugs, they may be flexed longitudinally to project their arms through the openings 13 and dispose their ends under the tongues or shoulders 14. The buss bars will thus be firmly held in place and prevented from accidentally slipping out of place. It will thus be seen that when the device is in use, the circuit wires may be attached to the buss strips and the casing fitted into an outlet box of conventional formation and size, where it will be secured by screws 6 in the usual manner. 55

The plugs 21 which are used with this outlet are each formed as shown in Figs. 4 and 5, and referring to these figures, it will be seen that each plug has a shank 22 which is circular in cross section and of such diameter that it may be passed through an opening 10 and fits snugly therein. Terminals 23 are carried by the shank and are formed from strips of conductive metal. These contacts have rear ends secured by screws 24 and are bent to form U-shaped arms 25 which project radially of the shank from opposite sides thereof and have their outer or front ends free and provided with screws 26 by which wires 27 of the electric cord 28 are secured to the terminal strips. The electric cord passes through a bore or passage 29 formed longitudinally of the plug and its shank, and, at the front end of the shank, are side notches 30 through which the wires 27 are engaged.

When the plug is applied to the outlet box, its shank is thrust inwardly through the opening 10 and the arms of the terminal strips pass through the extensions 11 of the opening. The plug is then turned a quarter turn and, when one of the arms 25 engages the stop 12, the arms will be disposed transversely of the portions 11 of the opening 10 and their resiliency will cause them to frictionally bear against the under face of the cover plate or block 7 and prevent the plug from accidentally turning toward a position in which it may move outwardly through the opening of the cover. The fact that the terminal strips are formed of resilient metal also causes them to have binding engagement with the buss strips and, since they engage the buss strips in spaced relation to the fulcrums 20, the buss strips will be flexed somewhat and additional binding created between the terminal strips and the buss strips. Therefore, a good contact will be established and arcing prevented. Since the plugs must be thrust into the casing and then turned, in order to make contact between the terminal strips and the buss strips, the buss strips will not be exposed and a short circuit caused by a person thrusting a finger, coin, or the like through the opening of the cover plate or block. When the plug is to be removed, a reverse turn is imparted until such turning motion is again stopped by contact of a terminal strip with a side

of the stop 12, and outward pull exerted to withdraw the plug.

Having thus described the invention, what is claimed is:

- 5 An electric outlet comprising a casing open at its outer end, a cover for the casing formed with an opening having portions of reduced width extending longitudinally of the cover, buss strips in said casing extending longitudinally thereof adjacent its side walls and formed with terminal portions extending outwardly through openings in the side walls and adapted to have circuit wires connected therewith, lugs projecting inwardly from the side walls and engaging the
- 10 buss strips intermediate the length thereof, lugs projecting from end walls of the casing and overlapping ends of the buss strips to removably hold the buss strips in place, a plug inserted through the opening of the cover and having a wire passage, and terminal strips extending longitudinally of the plug at opposite sides thereof, said terminal strips having rear ends secured to the plug and their front ends free and adapted to have
- 15 wires of an electric cord passed through the passage connected to them, and said terminal strips being bent to form U-shaped arms projecting radially from the plug at opposite sides thereof for passing through the reduced portions of the openings in the cover and engaging under the
- 20 cover with their outer ends bearing against the buss strips when the plug is inserted and turned to a position disposing the arms transversely of the casing.

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