Oct. 3, 1933. C. NEWMAN ET AL 1,928,761

OUTLET RECEPTACLE

Original Filed July 5, 1928

Fig. 1.

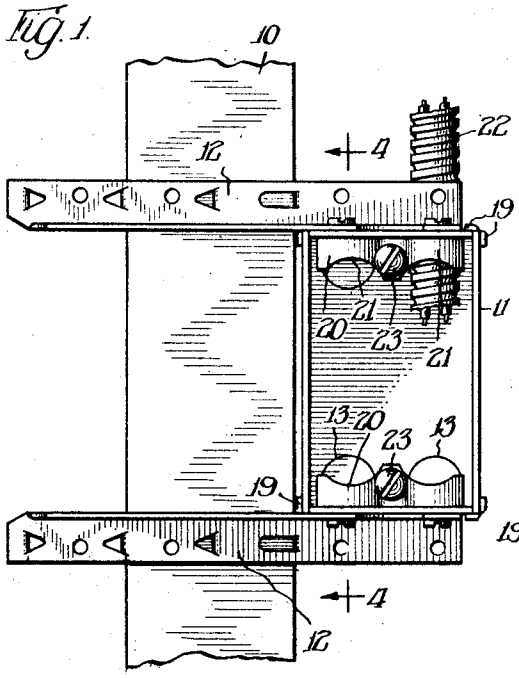


Fig. 2.

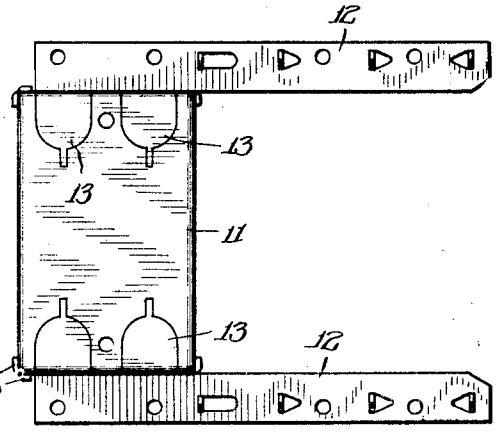


Fig. 3.

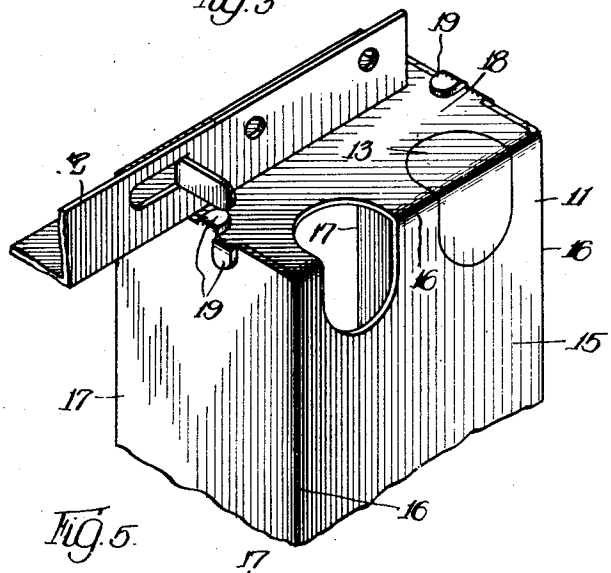


Fig. 4

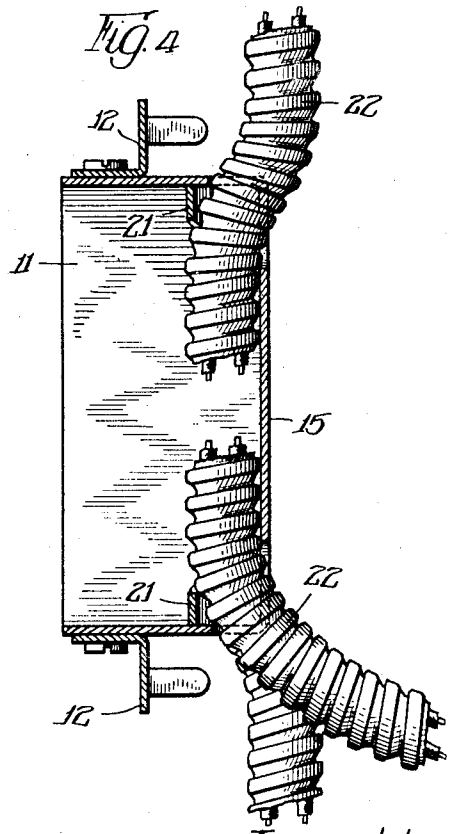
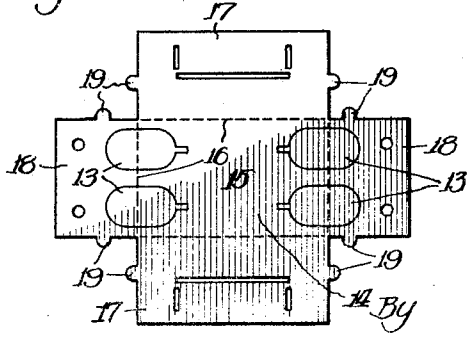


Fig. 5.



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UNITED STATES PATENT OFFICE

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OUTLET RECEPTACLE

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Original application July 5, 1928, Serial No. 290,473, now Patent No. 1,840,734, dated January 12, 1932. Divided and this application November 14, 1928. Serial No. 319,219

6 Claims. (Cl. 247—25)

The present invention relates to outlet receptacles, and is a division of the application filed by the present applicants July 5, 1928, Serial No. 290,473, which became Patent 1,840,734, Jan. 12, 1932.

More particularly the present invention relates to electric outlet receptacles such as are used in electric house wiring systems for receiving the electric wires and conduits enclosing said wires, and providing receptacles for the connections between said wires and the terminals of electric fixtures.

It has been common practice to provide the walls of outlet receptacles with knock-outs which may be readily displaced to provide entry for the conduit or loom protecting the electric wire. In order to provide accommodation for a conduit or loom coming from all angles at the side or rear of a receptacle, it has been common practice to provide a relatively large number of said knock-outs. Due to the fact that each of said knock-outs has been formed within a single wall of the various walls forming the receptacle, the walls defining said knock-outs have generally not provided gripping edges for the loom or conduit referred to to hold said loom or conduit against displacement.

An object of the present invention is to provide an outlet receptacle having knock-outs so disposed that a relatively small number of said knock-outs is necessary for accommodating loom approaching said receptacle at any angle at the sides or rear of said receptacle.

A further object is to provide an outlet receptacle having knock-outs so disposed that said receptacle may accommodate conduit or loom coming from any angle at the sides or rear of said receptacle and will grip said conduit or loom to hold same against displacement.

Further objects will appear as the description proceeds.

Referring to the drawing—

Figure 1 is a view in front elevation of an outlet receptacle secured to a building stud and having cooperatively associated therewith a conduit enclosing a pair of electric wires;

Figure 2 is a view of the rear of the outlet receptacle shown in Figure 1;

Figure 3 is a view in perspective, on an enlarged scale, parts being broken away, showing the outlet receptacle illustrated in Figures 1 and 2;

Figure 4 is a sectional view taken along the plane indicated by the arrows 4—4 of Figure 1, Figure 4 illustrating three different conduits entering said receptacle from three different angles; and

Figure 5 shows a blank from which the outlet receptacle shown in the preceding figures may be formed.

The numeral 10 indicates a wall stud, and the numeral 11 indicates a switch box or outlet receptacle supported upon said stud, box supporting ears 12—12 being provided for that purpose. Said receptacle is provided with knock-outs or cable entrances 13—13, through which electric house wires may be brought into the receptacle. Said electric house wires will be connected to an electric socket (not illustrated) through short connecting wires, in accordance with usual practice.

Referring to Figure 5, the numeral 14 indicates a sheet metal blank having a substantially rectangular portion 15 bounded by the lines 16—16. Outside of the lines 16—16 are the side wing portions 17—17 and the end wing portions 18—18. The side edges of said wing portions 17—17 and 18—18 are provided with fingers 19—19. Symmetrically disposed relative to certain of said lines 16—16 are the knock-outs or cable entrances 13. According to the present invention, said knock-outs or cable entrances 13—13 are of elongated form, having rounded end portions. The wings 17—17 and 18—18 are adapted to be swedged into substantially right-angular relationship with the portion 15 to form the electric outlet receptacle or switch box 11. The fingers 19—19 may be bent over adjacent walls, as illustrated in Figures 1 and 3, to hold said walls in rigid relationship with one another. When the wings 17—17 and 18—18 are bent up to form the receptacle 11, the portion 15 thus becomes the bottom wall of the receptacle, the wings 17—17 become the side walls thereof, and the wings 18—18 become the ends walls thereof.

The numerals 20—20 indicate clamping members having bowed portions 21—21 adapted to cooperate with a cable or loom 22 enclosing electric house wires. Screws 23 are provided, threaded into corresponding holes in the switch box 11, for holding said clamping members in clamping relationship with said loom or conduit.

As clearly indicated in the drawing, the elongated knock-outs or cable entrances 13—13 are disposed in such positions that the lines 16—16 cross said knock-outs transversely. Expressed in other language, said knock-outs 13—13 are so located that each of said knock-outs is disposed with part thereof in one wall and the remainder thereof in the adjacent wall. Expressed in still

different language, said knock-outs are so disposed that each of said knock-outs has part thereof disposed in the bottom wall 15 and the other part thereof in an adjacent wall, which in the illustrated embodiment of the present invention is one or the other of the end walls 18, though it will be understood, of course, that the side walls 17—17 may be utilized if desired.

Figure 4 shows how loom may be accommodated approaching the outlet receptacle 11 from different angles at the side or rear of said receptacle. By reason of the fact that each of the knock-outs or cable entrances 13 is disposed partly in the bottom wall and partly in an adjacent wall of the receptacle, the loom or conduit may be inserted into the receptacle by giving same a slight bend. The dimensions of the knock-outs or cable entrances 13—13 will preferably be so chosen that the opening in the end wall defined by each knock-out will be sufficiently restricted relative to the edge 16 so that loom or conduit 22 of usual size entering a receptacle must be given a slight bend, as indicated in Figure 4. Said knock-outs or cable entrances will also be designed, in a preferred embodiment of the present invention, so that in the bottom wall 15 of the outlet receptacle said knock-outs with the bowed portion 21 of the clamping member 20 present such a restricted entrance for loom or conduit of usual size that a bend must be given such loom or conduit, as also clearly indicated in Figure 4. Expressed in other language, the dimension of each knock-out or cable entrance normal or perpendicular to the edge 16 to either extremity of said knock-out or cable entrance is less than the diameter of the loom or cable 22 to be accommodated by said knock-out or cable entrance. As said loom or cable is round in cross section, the dimension of the cable entrance normal to the edge 16 to either extremity of said cable entrance is less than the dimension along said edge. Expressed in still other language, the long dimension of each cable entrance along the adjacent walls in which said cable entrance is located is less than twice the short dimension thereof. As clearly appears from Figure 1, the outside diameter of the cable or loom is substantially equal to the dimension of the cable entrance along the edge of the receptacle.

By reason of the construction referred to, the result is attained that, regardless of the angle at which the loom is presented, said loom will be gripped by the end walls of the knock-out through which it enters, or by one of said end walls and a bowed portion 21 of a clamping member 20. The artisan may then, at his convenience, turn down the screw 23 to clamp the loom or conduit 22 securely in position.

Though a preferred embodiment of the present invention has been described in detail, many modifications will occur to those skilled in the art. It is intended to cover all such modifications that fall within the scope of the appended claims.

What is claimed is—

1. In an electric outlet receptacle, in combination, a bottom wall and a wall adjacent thereto substantially perpendicular with said bottom wall, said walls having a cable entrance disposed partly in one of said walls and partly in the other of said walls, the dimension of said cable entrance from said edge defined by said walls and normal to said edge being less than the dimension of said cable entrance along said edge, said last mentioned dimension being substantially equal to the outside diameter of the cable to be used with said receptable.

2. In an outlet receptacle, in combination, a bottom wall and an adjacent wall angularly disposed relative to said bottom wall, said walls having an edge defining their line of connection, said outlet receptacle having a cable entrance through which said edge passes, the dimension of said cable entrance from said edge and normal to said edge to either extremity of said cable entrance being less than the dimension of said cable entrance along said edge, said last mentioned dimension being substantially equal to the outside diameter of the cable to be used with said receptacle.

3. In an outlet receptacle, in combination, a bottom wall and an adjacent wall, said walls having an edge marking their line of connection, and an elongated cable entrance disposed partly in one of said walls and partly in the other of said walls, the dimension of said cable entrance from said edge and normal to said edge to either extremity of said cable entrance being less than the dimension of said cable entrance along said edge, said last mentioned dimension being substantially equal to the outside diameter of the cable to be used with said receptacle.

4. In an outlet receptacle, in combination, a bottom wall and an adjacent wall, said walls having an edge marking their line of connection, and an elongated cable entrance disposed partly in one of said walls and partly in the other of said walls, said edge extending across a short dimension of said elongated cable entrance, the dimension of said cable entrance from said edge and normal to said edge to either extremity of said cable entrance being less than the dimension of said cable entrance along said edge, said last mentioned dimension being substantially equal to the outside diameter of the cable to be used with said receptacle.

5. An outlet receptacle comprising, in combination, two adjacent walls in angular relationship with each other, a cable entrance disposed partly in one of said walls and partly in the other of said walls, the dimension of said cable entrance from the edge defined by said walls and normal to said edge being less than the dimension of said cable entrance along said edge, a clamping member within said receptacle, said cable entrance and said clamping member being so related that said cable entering said receptacle through the cable entrance from positions parallel to either of said walls must be bent at the region of entry into said receptacle.

6. In combination, an outlet receptacle, a cable entering said receptacle, said receptacle comprising two adjacent walls in angular relationship with each other, said walls having a cable entrance disposed partly in one of said walls and partly in the other of said walls, the dimension of said cable entrance from the edge defined by said walls and normal to said edge to either extremity of said cable entrance being less than the diameter of said cable, and a clamping member within said receptacle, said cable entrance and said clamping member being so related that said cable entering said receptacle through said cable entrance from positions parallel to either of said walls must be bent at the region of entry into said receptacle.

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