

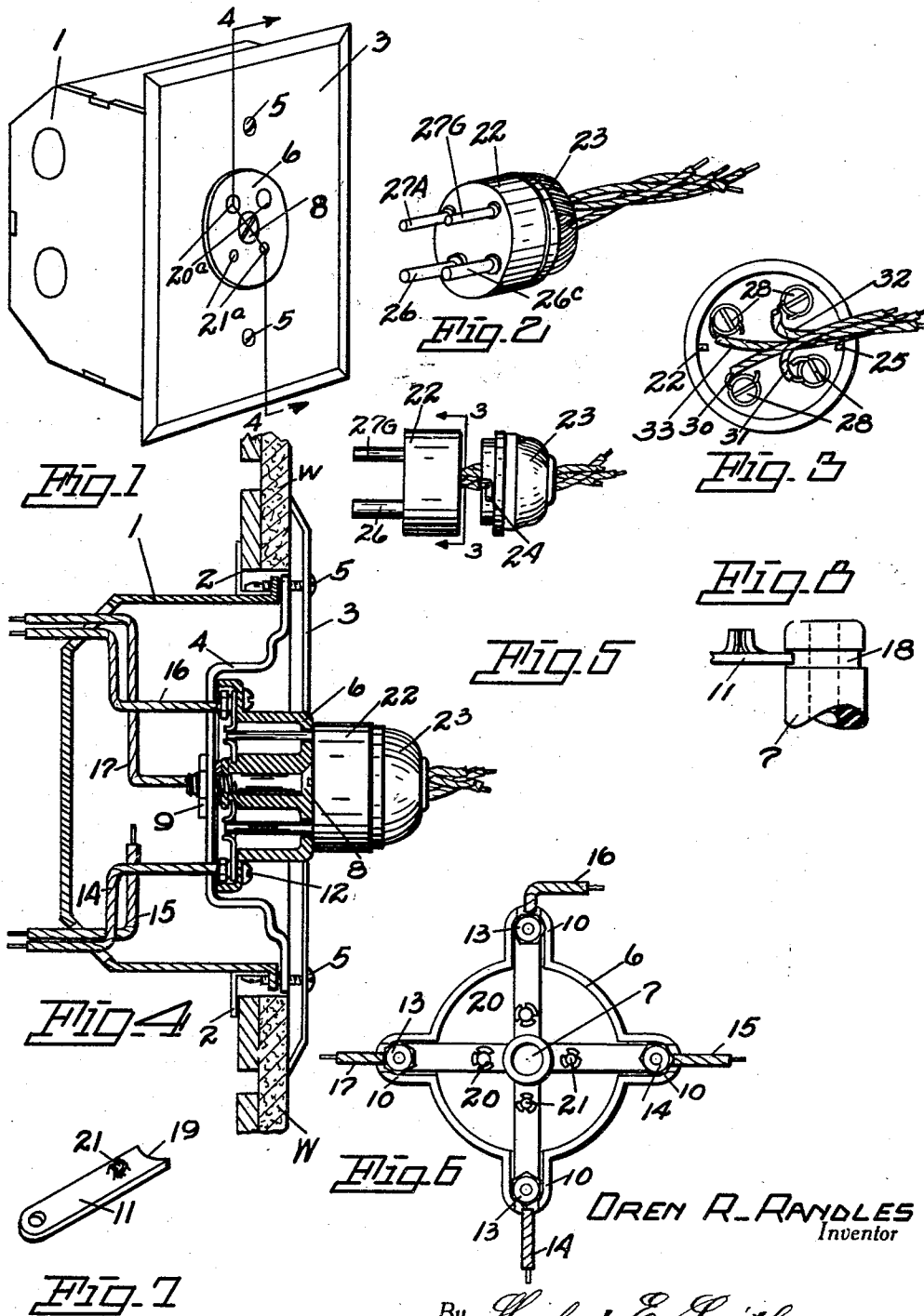
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OUTLET BOX AND PLUG

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OUTLET BOX AND PLUG

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My present invention relates to an improved outlet box and plug for electrical connections by means of which the usual connections may be made to the outlet box for lamps, vacuum cleaners and other electrical accessories for domestic use, as well as for the receiving set of a radio apparatus.

The invention consists in certain novel combinations and arrangements of parts in the outlet box whereby it is adapted for use with standard plugs in the usual manner, and also with a plug for the radio receiving set, and means are provided whereby an improper connection cannot be made, that is, the radio plug cannot be connected with its ground wire to a live wire, or vice versa. The invention also resides in the combination and arrangement of parts in the radio plug whereby it is adapted for making the proper connections for the aerial and ground wires to the outlet box.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention.

By the utilization of the device of my invention, the aerial and ground wires of the radio set are brought into the outlet box that may be located in usual places in the building wall, and thus the carrying of loose wires along the floor, over furniture and their location in other undesirable places is eliminated. When not desired for use, of course the radio plug may be withdrawn and the outlet box used for the electrical connection of other accessories.

Figure 1 is a perspective view of the outlet box as used in a building wall. Figure 2 is a perspective view of the radio plug with the conductor pins, of different sizes, for the aerial and ground wires. Figure 3 is an inner face view at line 3—3 of Figure 5 showing the attachment of the radio wires to the body of the plug. Figure 4 is an enlarged vertical sectional view of the outlet box at line 4—4, with the radio plug attached. Figure 5 is a side view of the radio plug, its

head being slightly separated from its body to give access to the latter, as when attaching the wires to their terminal screws. Figure 6 is a face view of the insulated cage or plug holder of the box, showing the conductor arms for the pins of the plug, and the wires connected to their terminals. Figure 7 is a perspective view of one of the conductor arms of the cage or receiver. Figure 8 is a detail view showing the attaching boss of the cage or receiver with an exterior groove for the four conductor arms, one of which arms is shown in position.

In carrying out my invention I employ a standard type of outlet box 1 that is secured as usual in the building wall W, as by cleats or angular retainers 2, and provided with the face plate 3 that projects slightly from the face of the wall W.

Within the box I arrange a countersunk supporting plate 4 that is secured by screws 5, which screws also secure the face plate to the box as seen in Figure 4. The countersunk plate is designed to support the insulated cage or plug-receiver 6 that is centered in a hole in the face plate with the face of the receiver or cage flush with the face plate as shown. The plug receiver or cage is of cylindrical shape and provided with a central hollow boss 7 through which the attaching screw 8 is passed, and the screw also passes through the countersunk plate where it is secured by a nut 9, thereby firmly anchoring the cage or receiver on the plate and within the box. The screw 8 is readily accessible for a screw driver when it becomes necessary to detach the cage or plug-receiver from the plate and box.

At its inner face and on its outer periphery, the cage or receiver is fashioned with four diametrically arranged, perforated lugs 10, which are flanged and designed to receive the outer ends of four complementary conductor arms 11 arranged diametrically from the center of the receiver from which center the arms radiate.

To the outer ends of the lugs and complementary arms are attached the terminals screws 12 with their nuts 13 and these screws form the terminals and electrical connections

between the four arms and four complementary wires 14, 15, 16, and 17 for the ground and aerial of the radio set and the house electric wires or connections.

5 As best seen in Figure 8 the central boss of the receiver is fashioned with an exterior groove 18 extending around its periphery and the inner ends of the arms 11 are curved as at 19 to fit snugly into the annular groove
10 for anchoring the inner ends of the arms, the outer ends of the arms being secured in place by means of the screws 12. Two of the arms are fashioned with large openings and upturned flanges 20 and two of the arms are
15 fashioned with smaller openings and upturned flanges 21, the flanges being struck up or punched from the arms, and located at predetermined distances from the center of the cage.

20 The radio plug is attached to the cage or receiver and the latter is provided with a pair of large holes 20a and a pair of smaller holes 21a corresponding to and registering with the flanged openings or sockets 20 and
25 21 of the arms.

The radio plug is fashioned with a round body 22 and a head 23, the latter being attached to the former by means of bayonet slots 24 and pins 25, the pins being located
30 on the body and the slots in the head, to form a quick detachable coupling for the body and head.

The body of the plug is provided with a pair of projecting contact pins 26 and 26c for the
35 current wires and also with a pair of smaller contact pins 27G and 27A for the ground and aerial wires of the radio receiving set, and of course these two pairs of pins or posts 26, 26C and 27A and 27G are designed to be
40 slipped through holes 20a and 21a of the cage or receiver and the flanged sockets 20, 20 and 21, 21 of the contact or conductor arms 11, in order to make the proper connections for the radio set, to the house or current wires
45 and to the aerial and ground wires of the radio extension.

Terminal screws 28 are employed with the posts 26, 26C, 27A and 27G to secure thereto the current wires 30, 31 and the aerial connection 32 as well as the ground connection 33
50 of the radio set.

By the utilization of the device of my invention the outlet box may be used in customary manner for connecting electrical appliances with the house wire, when the radio
55 plug is not used, and the radio set may be "plugged in" to the outlet box in the absence of any of the standard plugs for lights, vacuum cleaners.

60 Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The combination with a box having an attaching plate, of a plug-receiver having an
65 attaching boss and secured to the plate, a plu-

70 rality of conductor arms secured to the plug receiver and provided with sockets to receive posts, terminal screws securing the outer ends of the arms to the receiver, and co-acting means on the post and on the inner ends of the arms to insure stationary engagement between the arms and post.

2. In an outlet box, the combination with a supporting plate of a plug-receiver having a central attaching boss provided with an exterior annular groove, of a plurality of conductor arms having their inner ends located in the groove, terminal screws securing the outer ends of the arms to the receiver, and said arms having sockets therein.

3. In an outlet box the combination with a countersunk attaching plate, of a plug receiver having a central boss and means for securing the boss to the plate, said boss having an exterior annular groove, a plurality of diametrically arranged conductor-arms having curved inner ends located in the groove and a plurality of sockets one in each of said arms of varying diameter, and terminal screws at the outer ends of the arms securing the latter.

In testimony whereof I affix my signature.

OREN R. RANGLES.