

March 13, 1962

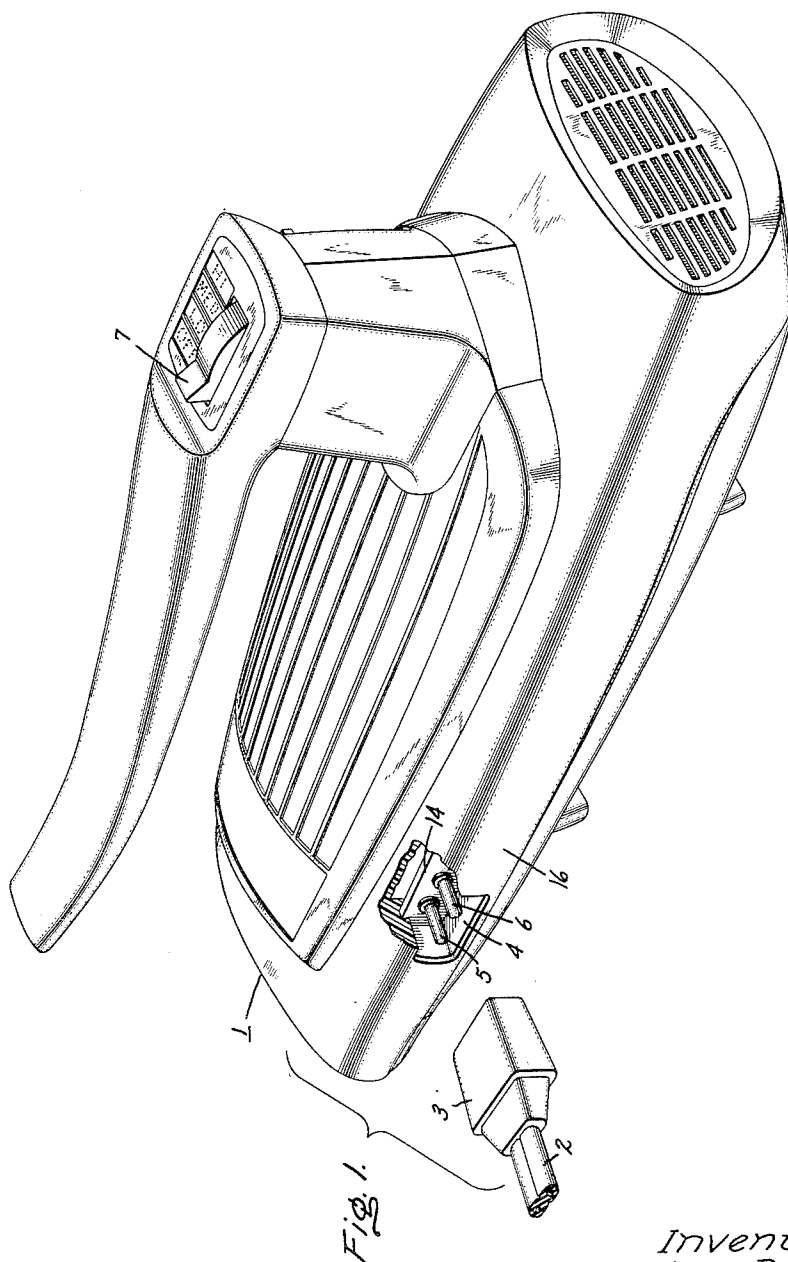
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3,025,490

ELECTRICAL PLUG RECEPTACLE STRUCTURE

Filed Nov. 21, 1960

2 Sheets-Sheet 1



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March 13, 1962

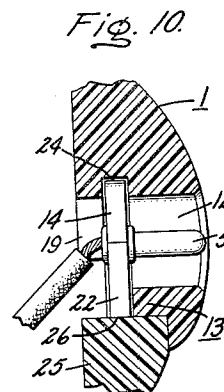
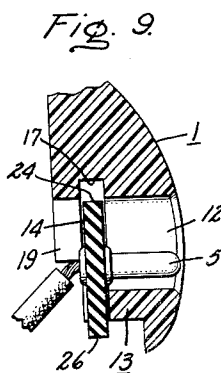
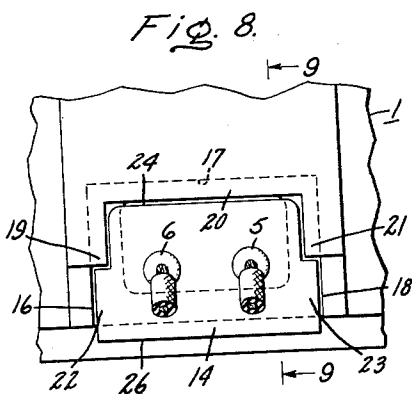
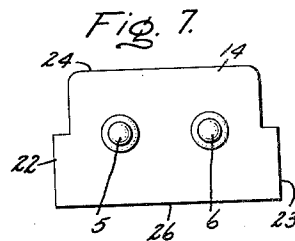
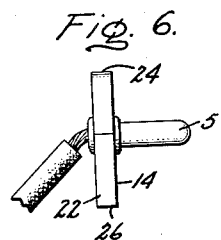
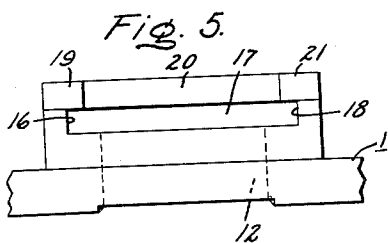
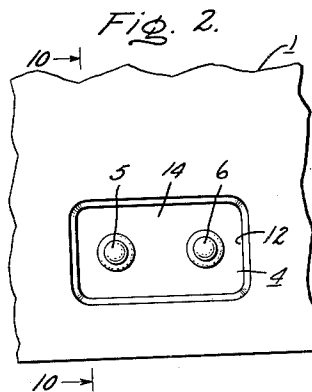
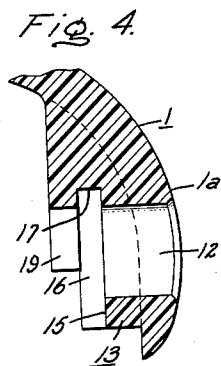
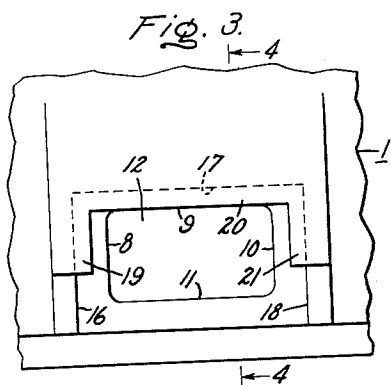
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3,025,490

ELECTRICAL PLUG RECEPTACLE STRUCTURE

Filed Nov. 21, 1960

2 Sheets-Sheet 2



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3,025,490

ELECTRICAL PLUG RECEPTACLE STRUCTURE
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 Electric Company, a corporation of New York
 Filed Nov. 21, 1960, Ser. No. 70,535
 2 Claims. (Cl. 339-119)

This invention relates to electrical plug receptacles adapted to be incorporated in portable household appliances and the like. The principal object of the invention is to provide an improved receptacle which is sturdy, easy to assemble under mass production conditions, pleasing in appearance and low in cost.

Further objects and advantages of the invention will become apparent as the following description proceeds, and the features of novelty which characterize the invention will be pointed out with particularity in the claims appended to and forming a part of this specification.

Briefly stated, in one embodiment of my invention a receptacle for the power cord plug of a portable mixer is provided in the casing thereof, the receptacle being formed in part by portions of the casing which define a rectangular opening therein shaped so as to receive the power cord plug. A generally rectangular terminal pin plate is supported in the opening by a guide frame portion integral with the casing, so that the terminal pins enter the plug when it is inserted in the opening. The guide frame, which is on the inner surface of the casing, surrounds three sides of the opening, and the opposing side edges of the frame and the plate are of stepped rather than straight configuration so that the plate may be placed adjacent the opening with the terminal pins extending therethrough after which the plate may be shifted laterally, i.e., in the plane of the plate, into its final position in engagement with the frame. Assembly of the receptacle is completed by securing a holding member, which may be another portion of the mixer body, in abutting relation to the edge of the plate not retained by the three side portions of the frame.

For a better understanding of this invention, reference may be made to the following description and the accompanying drawings in which:

FIG. 1 is a perspective view of a portable mixer including a cord receptacle constructed in accordance with the present invention, some of the parts being broken away to show details of construction;

FIG. 2 is a fragmentary side elevation view of the portion of the mixer shown in FIG. 1 in which the receptacle is located;

FIG. 3 is a fragmentary view of the portion of the mixer casing in which the receptacle is located, as viewed from the interior of the mixer;

FIG. 4 is a cross-sectional view taken along the line 4-4 in FIG. 3;

FIG. 5 is a bottom view of the portion of the mixer casing shown in FIG. 3;

FIG. 6 is a side elevation view of the terminal plate utilized in the receptacle structure shown in FIG. 1;

FIG. 7 is a front elevation view of the terminal plate shown in FIG. 6;

FIG. 8 is similar to FIG. 3 but shows the terminal plate in partially assembled relation to the structure shown therein;

FIG. 9 is a cross-sectional view taken along the line 9-9 in FIG. 8; and

FIG. 10 is a cross-sectional view taken along the line 10-10 in FIG. 2.

Referring first to the drawings, there is shown in FIG. 1 a portable mixer in which an embodiment of my invention is incorporated. The numeral 1 generally designates the casing of the mixer, which is, of course, provided with

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an electric motor (not shown) housed within the casing. Power is supplied to the motor by an electric cord 2 having a plug 3 which may be removably secured in the receptacle 4 in the side wall of casing 1. Preferably, the casing is made of a molded plastic material. Terminal pins 5 and 6 of the receptacle 4 are electrically connected to the motor within casing 1, and plug 3 is provided with a pair of spaced openings into which pins 5 and 6 extend when the plug is attached to the mixer. In this position, of course, the two conductors of cord 2 are electrically connected to terminal pins 5 and 6, and the mixer motor may be energized at the will of the operator, by actuating control switch 7. While the general arrangement described thus far is well known in the art, this brief description of a typical application of the invention is set forth by way of example, in order to provide a background setting for the following description of the details of the invention.

Receptacle 4 is formed in part by wall portions 8, 9, 10 and 11 which are integral with casing 1 and define a rectangular opening 12 therein. A frame portion 13, formed on the inner surface of casing 1 as an integral part thereof, surrounds the opening and is adapted to support a terminal plate 14 in overlying relation thereto. Terminal pins 5 and 6 are secured to plate 14 in perpendicular relationship therewith so that when the parts are assembled as shown in FIG. 1, the terminal pins extend through opening 12 in parallel relation to the axis of the opening. Frame portion 13 includes a flat peripheral surface 15 generally parallel to wall portion 1a of casing 1, and guide wall portions 16, 17 and 18 perpendicular to and bordering surface 15 along the two opposite sides and the upper edge of opening 12. A ledge, including ledge portions 19, 20 and 21, is formed on guide wall portions 16, 17 and 18 and extends inwardly toward opening 12, although as shown in FIG. 3 ledge portions 19 and 21 extend only partially along the sides of opening 12 defined by walls 8 and 10. Thus, the guide wall portions and the ledge portions of frame 13 form a slot adapted to receive and support plate 14 in its assembled position overlying opening 12.

While plate 14 is generally rectangular, the side edges 22 and 23 thereof are of stepped configuration so that the upper half of the plate as viewed in FIG. 7 is of lesser width than the lower half of the plate. Thus, as shown in FIG. 8, plate 14 may be placed in overlying relation to opening 12, with the terminal pins 5 and 6 extending therethrough and the upper half of the plate lying wholly within ledge portions 19, 20 and 21. In other words, the configuration of the edges of plate 14 and the ledge portions surrounding opening 12 permit the plate to be placed in engagement with peripheral surface 15, with terminal pins 5 and 6 extending through opening 12, after which the plate may be shifted laterally so that its upper edge 24 engages guide wall portion 17.

Assembly of the receptacle may then be completed by securing a holding member 25 to casing 1 in abutting relation to edge 26 of the plate. Portions of edges 22, 23 and 24 of the plate are then securely held between peripheral surface 15 and ledge portions 19, 20 and 21 and thus plate 14 is secured in fixed relation to casing 1. In the disclosed embodiment of the invention, holding member 25 may be the base of the mixer, and hence the need for separate fasteners for securing plate 14 in position is eliminated.

It is evident that assembly of the receptacle of the present invention is exceedingly simple, as is the structure itself. Terminal plate 14 may be a punched part made of sheet phenolic material and, as previously described, the frame structure is molded as an integral part of the casing 1. Opening 12 of the receptacle is completely sur-

3 rounded by case material thus giving a pleasing appearance, and the possibility of mismatched casing parts in the vicinity of the receptacle is eliminated.

While I have shown and described a particular embodiment of my invention, I do not desire the invention to be limited to the particular construction disclosed, and I intend by the appended claims to cover all modifications within the true spirit and scope of the invention.

What I claim is:

1. An electrical plug receptacle assembly comprising a casing wall having an opening therein, a terminal plate, a pair of terminals secured to said plate, said casing wall having an integral frame portion on one side thereof surrounding said opening and adapted to support said plate in overlying relation thereto, said frame portion including a flat peripheral surface generally parallel to said wall bordering said opening, a guide wall perpendicular to and bordering said surface along two opposite sides and an intermediate side of said opening, a ledge on said guide wall extending inwardly towards said opening, said ledge extending only partially along said opposite sides of said opening, said plate having edge portions on three sides thereof extending between said surface and said ledge when said plate is in said overlying relation to said opening, the side edges of said plate adjacent said opposite sides of said opening having inwardly stepped portions extending to the edge of said plate adjacent said intermediate side of said opening, whereby said plate may be passed between the opposite portions of said ledge and placed in partially overlying relation to said opening and then shifted laterally in abutting relation to said guide wall, and a holding member secured to said frame portion in abutting relation to the fourth side of said plate.

2. An electrical plug receptacle assembly comprising a casing wall having a rectangular opening therein, a gen-

4 erally rectangular terminal plate, a pair of terminal pins secured to said plate in perpendicular relationship thereto, said casing wall having an integral frame portion on one side thereof surrounding said opening and adapted to support said plate in overlying relation thereto so that said terminal pins extend through said opening in parallel relation to the axis thereof, said frame portion including a flat peripheral surface generally parallel to said wall bordering said opening, guide wall portions perpendicular to and bordering said surface along two opposite sides and an intermediate side of said opening, a ledge on said guide wall portions extending inwardly toward said opening, said ledge extending only partially along said opposite sides of said opening, said plate having edge portions on three sides thereof extending between said surface and said ledge when said plate is in said overlying relation to said opening, the side edges of said plate adjacent said opposite sides of said opening having inwardly stepped portions extending to the edge of said plate adjacent said intermediate side of said opening, whereby said plate may be passed between the opposite portions of said ledge and placed in partially overlying relation to said opening with said terminal pins extending therethrough and then shifted laterally in abutting relation to said guide wall, and a holding member secured to said frame portion in abutting relation to the fourth side of said plate.

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