July 21, 1953 H. M. COLE 2,646,485

COMBINED CONTACT AND TERMINAL MEMBER FOR ELECTRIC SWITCHES

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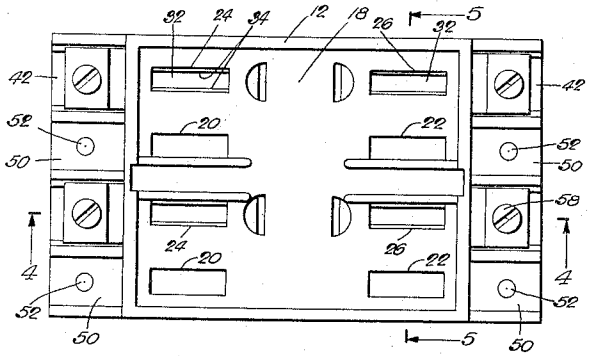

Fig. 1

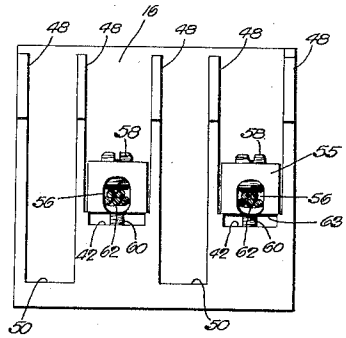

Fig. 3

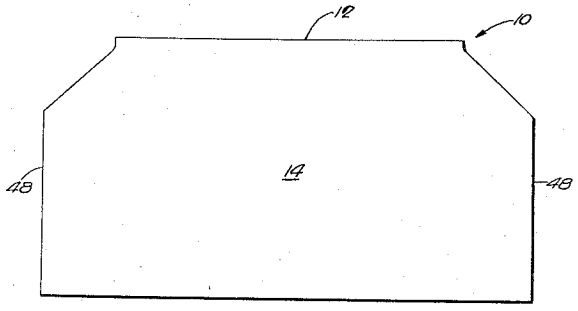

Fig. 2

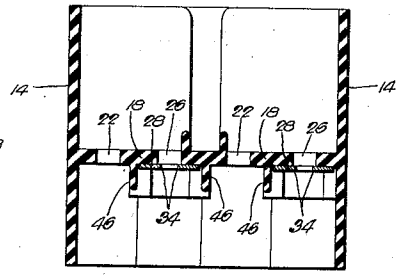

Fig. 5

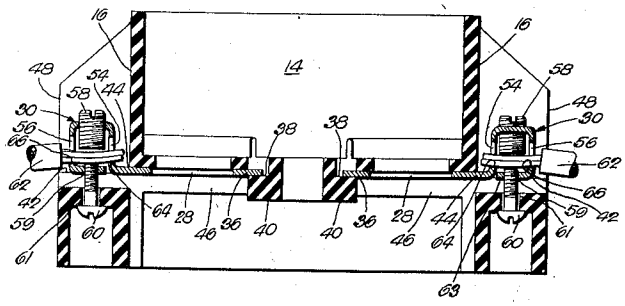

Fig. 4

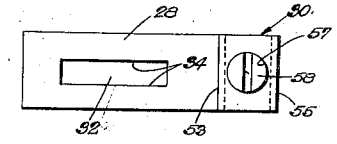

Fig. 6

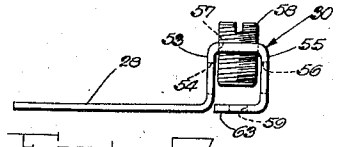

Fig. 7

INVENTOR.
Herbert M. Cole

BY Edwin Sevrosh
Harry Cole

Attorneys.

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COMBINED CONTACT AND TERMINAL MEMBER FOR ELECTRIC SWITCHES

Herbert M. Cole, Teaneck, N. J., assignor to Federal Electric Products Company, Newark, N. J., a corporation

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3 Claims. (Cl. 200—166)

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This invention relates to a combined electrical terminal and contact member which is well adapted for use in a switch of the type known as a pull-out switch.

One object of the invention is the provision of a combined terminal and contact member in which the terminal part of said member is constructed in such manner as to provide for an improved electrical and mechanical connection of the terminal end of a wire or cable therein.

Another object is to provide a one-piece terminal and contact member in which the terminal part of said member has provision for the securement of the one-piece member in position in the pull-out switch receptacle, said securement being effected by a screw which engages the receptacle and directly engages said terminal part.

A further object is generally to provide an improved and inexpensive stationary contact and terminal member for an electric switch.

The above and other objects, features and advantages will become apparent when considering the following description in connection with the accompanying illustrative drawings.

In the drawings:

Fig. 1 is a front view of a pull-out switch receptacle provided with the combined terminal and contact members embodying the present invention;

Fig. 2 is a side elevation view thereof;

Fig. 3 is an end view thereof;

Fig. 4 is a sectional view along the line 4—4 of Fig. 1;

Fig. 5 is a sectional view along the line 5—5 of Fig. 1;

Fig. 6 is a top plan view of the combined electrical terminal and contact member;

Fig. 7 is a side elevation view thereof.

Referring now to the drawings in detail, the receptacle 10 is of the same general type as that shown in U. S. Patent No. 2,423,227 granted on July 1, 1947, to Thomas M. Cole. As shown in said patent a removable frame (not here shown) carrying the fuse and movable contact unit is removably seated on the front peripheral edge 12 of the receptacle constituting a cover therefor. Receptacle 10, having side walls 14 and end walls 16, is preferably molded in one piece of a suitable plastic, for example, "Bakelite." The receptacle has a wall 18 offset inwardly from the front peripheral edge 12 in which are provided a plurality of pairs of openings or slots 20 and 22, and 24 and 26. The pair of openings 20 and 22, and 24 and 26 are in alignment longitudinally, and the pairs of openings are in alignment laterally of

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each other in laterally spaced relation, as illustrated in Fig. 1. Openings 20 and 22 are of the same construction and perform the same function as similar openings in the above mentioned patent.

Stationary contact member 28, which will hereinafter be more particularly described, is integral with terminal 30 and is positioned on the rear side of wall 18 of the receptacle 10, and is provided with an opening 32 which registers with companion openings 24 or 26. As explained in said Cole patent, the movable contact member of the switch enters in and releasably engages the companion stationary contact member in said opening 32. As illustrated in Fig. 1, the opposite edges 34 of the stationary contact member 28 are disposed inwardly of the adjacent edges of the openings 24 or 26 in the wall 18 of the receptacle 10. Said stationary contact member is supported adjacent to and in abutting surface relation with the rear side of wall 18, one end 36 of which is receivable in a recess 38 formed in integral projection 40 on the rear side of wall 18. The other end and terminal of said stationary contact member is mounted on an outer platform 42 of receptacle 10. An aperture 44 in end wall 16 permits the stationary contact to be inserted therethrough. The rear side of wall 18 also has integral guide and barrier walls 46 for positioning said stationary contact member so that its opposite edges 34 are disposed inwardly of the adjacent edges of the openings 24 or 26 of wall 18 (Fig. 5). Projection 40 extends between ends of companion guide walls 46 which terminate at their opposite ends at the adjacent end wall 16 of the receptacle 10.

As shown in Fig. 3, the terminal 30 is mounted on the outer platform 42 of receptacle 10. Partitions 48 made of insulating material extend forwardly from the end wall 16 of receptacle 10 and separate the terminals 30. Outer end wall portions 50 are each provided with an opening 52 to receive a screw for securing the receptacle or housing 10 in position.

The combined terminal and stationary contact is of integral construction providing the stationary contact member 28 and the terminal member 30 (Figs. 6 and 7). The stationary contact 28 has an opening 32 for receiving a movable contact when said movable contact is projected through the passages provided by the companion pair of openings 24 or 26. The terminal 30 has a pair of spaced, aligned openings 54 and 56 in the opposite side walls 53 and 55 of the terminal, a threaded opening 57 in the top for screw threaded

engagement by the clamping screw 58, and a threaded opening 59 in the bottom, reflexed or return bent portion 63 to register with aperture 61 in outer platform 42 and threadably engaging screw 60 (Fig. 4).

It is apparent that the combined contact and terminal embodying the present invention may be cut from flat sheet metal stock and stamped, and tapped as required, and then bent to the desired shape, all by conventional machining operations.

When it is desired to mount the combined terminal and stationary contact the end 36 thereof is slid through aperture 44 and into recess 38 in integral projection 40. The guide walls 46 position said stationary contact for engagement by the movable contact. The other end including the terminal 30 is mounted on the outer platform 42 of receptacle 10 and secured to the latter by means of screw 60 which is in alignment with the wire clamping screw 58 and directly holds the terminal itself firmly on the outer platform 42 and also secures the contact 26 in position. When screw 58 is clamped down upon the wire on cable terminal end 62 in the terminal 30, said terminal end is clamped against abutments 64 and 66 of terminal 30 formed by the lower edge portions of aligned openings 54 and 56, thereby firmly securing the end of the cable in terminal 30. It will be noted that the abutments 64 and 66 are spaced from the inner surface of the return bent portion or bottom part 63 whereby to space the clamped terminal end of the cable or wire above said inner surface to provide clearance for the fastening screw 60.

While I have shown and described the preferred embodiment of my invention it will be understood that various changes may be made therein with departing from the underlying idea or principles of the invention within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A combined switch contact and cable-terminal member for an electric switch having a housing, comprising a one-piece structure having an elongated flat switch contact part, provided with an opening extending therethrough to receive a companion movable contact of the switch, and a terminal part having one side wall bent up from said contact part at one end thereof, a top part, an opposite side wall bent down from said top part and a bottom part bent inwardly from the lower end of said opposite side wall and lying in the plane of said contact part forming a substantially rectangular member, said side walls having registering openings extending therethrough to receive the terminal end of a cable or wire and said top part having a threaded opening, a clamping screw engaged in said threaded opening for clamping the terminal end of the cable against lower edges of said openings of said side walls, and said bottom wall having a screw-threaded opening for engagement by a screw for securing said combined contact and terminal member in position in the switch housing.

2. In an electric switch having a receptacle provided with a wall having an opening therein, and another wall perpendicular to said first mentioned wall provided with at least one opening therein, a removable integral electrical terminal and elongatedly apertured stationary contact projecting through said opening of said first mentioned wall, and lying adjacent to the rear side of said other wall, the opposite edges of said aperture being disposed inwardly of said opening of the other wall a relatively small distance for receiving the complementary movable switch contact member, said electrical terminal having opposite upstanding sides with aligned openings for receiving a cable therethrough, a return bent portion longitudinally aligned with said stationary contact portion, means in said return bent portion for directly mounting said terminal portion adjacent to said first mentioned wall of said insulated receptacle, a clamping stud threaded into the top surface of said terminal portion for applying a force against said cable to secure said cable against the abutments formed by the bottom portions of said aligned openings.

3. A combined switch contact and cable-terminal member for an electric switch having a housing, comprising a one-piece structure having a flat switch contact part, provided with an opening to receive a companion movable contact of the switch, and a terminal part having one side wall bent up from said contact part at one end thereof, a top part, an opposite side wall bent down from said top part and a bottom part bent inwardly from the lower end of said opposite side wall and lying in the plane of said contact part forming a substantially rectangular member, said side walls having registering openings to receive the terminal end of a cable or wire and said top part having a threaded opening, a clamping screw engaged in said threaded opening for clamping the terminal end of the cable against edges of said openings of said side walls, and said bottom wall having a screw-threaded opening for engagement by a screw for securing said combined contact and terminal member in position in the switch housing, the cable-terminal engaging edges of said openings in the side walls being spaced from the inner surface of said bottom part whereby to space the terminal end of the cable away from said inner surface of the bottom part to provide clearance for the inner end of the fastening screw.

HERBERT M. COLE.

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