

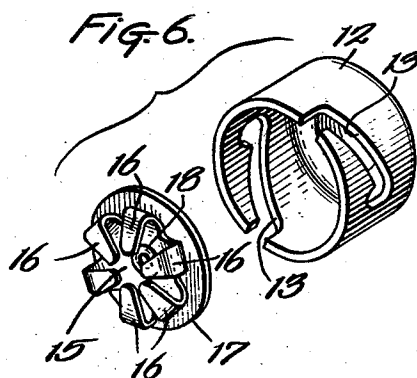
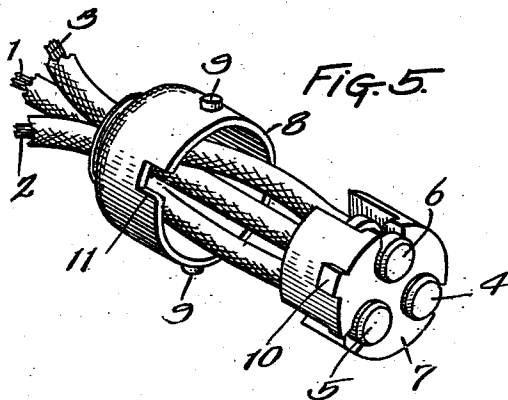
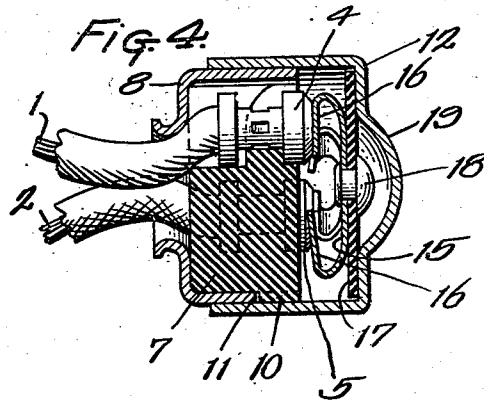
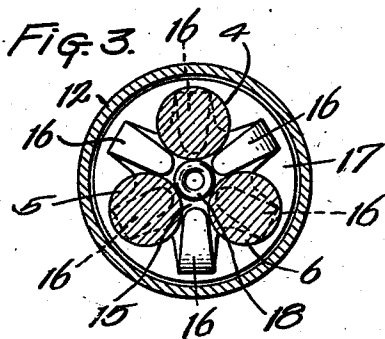
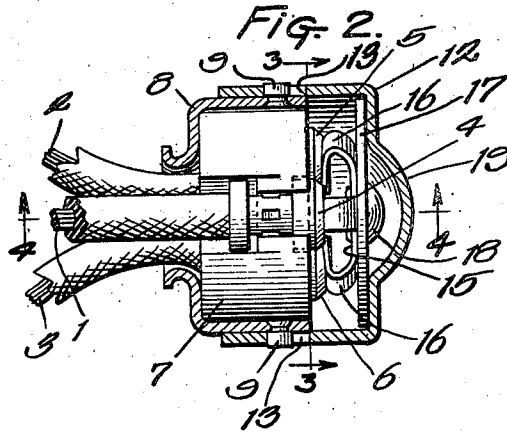
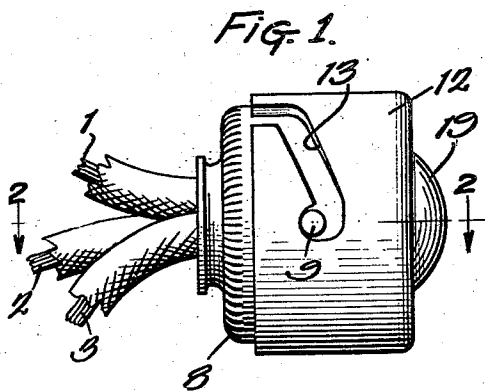
Nov. 23, 1937.

H. A. DOUGLAS

2,100,025

ELECTRICAL CONNECTING MEANS

Filed March 5, 1934



INVENTOR
HARRY A. DOUGLAS
BY *Ransom Wm*
ATTY.

UNITED STATES PATENT OFFICE

2,100,025

ELECTRICAL CONNECTING MEANS

Harry A. Douglas, Bronson, Mich., assignor to
Kingston Products Corporation, a corporation
of Indiana

Application March 5, 1934, Serial No. 714,081

2 Claims. (Cl. 173—328)

This invention relates to contact carriers and is an improvement upon the disclosure of my co-pending application, Serial No. 616,843, filed June 13, 1932, which became Patent No. 1,953,594, April 3, 1934, whereby such a contact carrier may also perform the function of a line connector.

Among other objects it aims to provide an improved insulating contact carrier having means for engaging a contact member or conductor and preventing accidental removal of the contact member or conductor from the carrier.

The invention is of particular utility in providing a contact carrier for the terminal plug of a conductor conduit, in which the wires passing through the conduit have permanently affixed to their terminations contact members which engage the contact carrier in the form of an insulating cylindrical block carried within a plug shell with detachable means to complete the circuit or circuits therethrough without actually applying the terminal plug to the purpose for which it was designed.

A more detailed explanation will be given in conjunction with the accompanying drawing, in which—

Figure 1 is an end view in side elevation of a structure embodying my invention.

Figure 2 is a longitudinal horizontal central section of the structure of Figure 1, with parts shown in elevation, taken on the line 2—2, Figure 1.

Figure 3 is a cross-section taken on the line 3—3 of Figure 2.

Figure 4 is a view similar to Figure 2 taken on the line 4—4 of Figure 2.

Figure 5 is a detailed perspective view of a contact carrier embodying my invention and employed in the embodiments of Figures 1, 2 and 3.

Figure 6 is a projected perspective view of a plug cap in which the carrier may be received as shown in Figures 1, 2 and 3 and the circuit continuing connector detached therefrom.

As illustrative of a preferred embodiment I have shown this invention as applied in connection with a contact carrier such as disclosed in my prior co-pending application, Serial No. 616,843, filed June 13, 1932, now Patent No. 1,953,594, April 3, 1934, in which a plurality of current conductors 1, 2 and 3 each terminating in metallic contact members 4, 5 and 6, respectively, are mounted in equally spaced apart relation about the axis of a cylindrical carrier block 7 of insulating material received in a metallic plug 8 having radially extending bayonet pins 9. To prevent rotation of the block 7 within the shell 8, a radial projection

10 is provided on the block for reception in a similarly shaped recess 11 formed in the wall surrounding the open end of the shell.

In a contact carrier of this type at least one of the current conductors is connected to a source of electricity, and each of the contact members 4, 5 and 6 project above the flat surface of the carrier block 7 for engagement with current continuing members when the plug shell is inserted in a socket therefor, not shown, in performing the function for which it was designed. There are conditions under which it is desirable to continue the circuit through the conductors so mounted in a plug without inserting the plug in the said socket.

To this end a metallic cap 12 which is similar in shape to a socket designed to receive the plug 8 and likewise provided with bayonet slots 13 for engagement with the pins 9 of the plug is provided with current continuing members adapted, when in engagement upon the plug 8, to continue the current therethrough. The current continuing members are preferably struck from a sheet of somewhat resilient metal, such as brass, to include a central substantially circular center 15 provided with a plurality of tapered radial integral fingers 16, preferably six in number, which are bent back upon themselves with their rounded extremities lying in a circle concentric with but spaced apart from each other and the center portion 15, as shown in Figure 6. The current continuing members are preferably mounted on a disc 17 of insulating material by passing a rivet 18 through the center of the disc 17 and circular portion 15 of said member and upsetting or riveting the metal of the ends thereof to secure the two together. The disc 17 is preferably snugly received within the cap 12 in contact with the end closure thereof which may be axially bulged outwardly to form a dome 19 to avoid contacting the head of the rivet 18, as shown in Figures 2 and 4.

The relation of the bayonet pins 9 and the bayonet slots 13 is such that when the cap 12 is seated upon said pins, the cap will maintain the insulated current continuing member carrying disc 17 at such a distance from the flat surface of the insulating block 7 that some of the in-turned fingers 16 will be held in resilient engagement with each of the contacts 4, 5 and 6, as shown in Figure 3, whereby the current entering through one of the conductors will be continued through its contact finger 16 in engagement therewith and integral portion 15 and then through the other integral fingers 16 to the other

contacts carried upon the other conductors. As shown in Figure 3, when the plug 8 mounts three contacts, it is preferable to provide six circuit continuing fingers 16, whereby the bent back portion of at least one finger may be held throughout in resilient engagement with the flat surface of a terminal, so that in the event of a rotative movement of the circuit continuing member about the rivet 18 from any cause, the relation between the fingers and the contacts will be such as to provide that portions of two fingers will be in engagement with each contact, thereby avoiding the necessity of the fine adjustment otherwise necessary to align the circuit continuing member with the conductor contacts.

What I claim is:

1. An electrical connecting device, comprising: a body; a plurality of electrical conductors insulatably carried by said body, each having a contact face disposed at one side of said body, said contact faces being insulated from each other; a first cup-shaped member, having its peripheral wall disposed about the edge wall of said body, and having its closure wall abutting the opposite side of said body, said closure wall having an aperture accommodating said conductors; a second cup-shaped member, enclosing said one side of said body, and having its peripheral wall disposed about the peripheral wall of said first cup-shaped member; connecting means, comprising parts respectively carried by the peripheral walls of said first and second cup-shaped members, said connecting means being constructed and arranged to detachably hold said cup-shaped members in assembled relation; an insulating disc, bearing against the closure wall of said second cup-shaped member; and a plurality of electri-

cally connected spring arms carried by said insulating disc, and constructed and arranged to resiliently engage said contact faces, so as to electrically connect said conductors to each other.

2. An electrical connecting device, comprising: a body; a plurality of electrical conductors insulatably carried by said body, each having a contact face disposed at one side of said body, said contact faces being insulated from each other; a first cup-shaped member, having its peripheral wall disposed about the edge wall of said body, and having its closure wall abutting the opposite side of said body, said closure wall having an aperture accommodating said conductors; a second cup-shaped member, enclosing said one side of said body, and having its peripheral wall disposed about the peripheral wall of said first cup-shaped member; connecting means, comprising parts respectively carried by the peripheral walls of said first and second cup-shaped members, said connecting means being constructed and arranged to detachably hold said cup-shaped members in assembled relation; an insulating disc, bearing against a part of the closure wall of said second cup-shaped member; a plurality of electrically connected spring arms; and securing means, for securing said spring arms to said insulating disc, the closure wall of said second cup-shaped member having a portion recessed to clear the adjacent part of said securing means; said spring arms being constructed and arranged to resiliently engage said contact faces, when said cup-shaped members are in assembled position, so as to electrically connect said conductors to each other.

HARRY A. DOUGLAS.