

Jan. 9, 1934.

J. M. WHITE

1,942,586

ELECTRICAL CONNECTION

Filed March 25, 1932

Fig. 1.

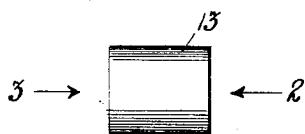


Fig. 2.

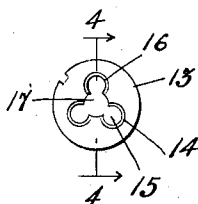


Fig. 4.

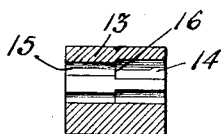


Fig. 3.

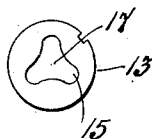


Fig. 5.

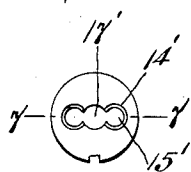


Fig. 7.

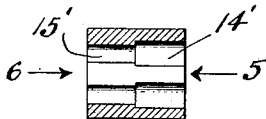


Fig. 6.

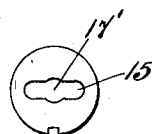
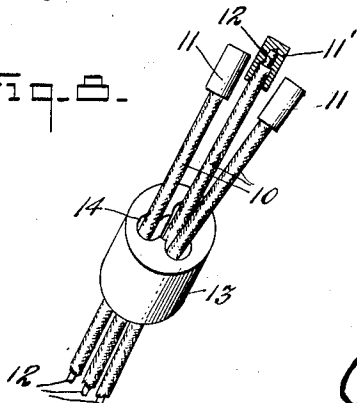


Fig. 8.



WITNESS:

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1,942,586

ELECTRICAL CONNECTION

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Application March 25, 1932. Serial No. 601,241

4 Claims. (Cl. 173—324)

This invention relates to electric connections, and has for an object to provide an insulating block for use in conjunction with electrical conductors and conduits therefor, embodying new and improved features of convenience and reliability.

A further object of the invention is to provide an insulating block having seats for conductor terminals, and so arranged that any one of the conductors may be unseated and moved through the insulating block.

The block of the present invention is intended more particularly for electrical insulation of automotive vehicles, although of course, it is not limited in its scope thereto. In the wiring installation of motor vehicles, the conductors are drawn or pushed through conduits of various types from the source of electrical supply to the point of use. At the point of use, as for instance the headlights, separable connections are provided so that the conductors, together with their conduits, may be released from such connection conveniently. Such type of conductors and conduits are well known in the art. The usual manner of making such connection is to seat the conductor with a contact terminal permanently in an insulating block which is contained in a shell, the shell in turn being connected with the conduit. It is to such a block that the present invention is directed.

An object of the invention further than above stated, is to provide a block having sockets therein, with shoulders in the sockets at such positions as to maintain the contact terminals of the conductors substantially flush with the ends of the block, and that when any one or more of such contact terminals are so seated, to prevent the withdrawal of any conductor, but when all of the terminals are unseated, any one of the conductors, together with its contact terminal, may be removed through the block for individual release therefrom.

The invention, therefore, comprises a block, which according to the present usage, will be cylindrical, and through which are provided a plurality of passages, such passages in one end of the block being of a diameter to receive the contact terminals of the conductors, and reduced in size to form shoulders, upon which such contact terminals rest the passage extending further to accommodate the conductor which itself is of smaller diameter than the contact terminals.

The drawing illustrates an embodiment of the invention and the views therein are as follows:

Figure 1 is a view of the block in side elevation.

Figure 2 is an end view of the block, as indicated by arrow 2 at Figure 1.

Figure 3 is a view of the opposite end of the block, as indicated by arrow 3 at Figure 1.

Figure 4 is a longitudinal diametrical sectional view, taken on line 4—4 of Figure 2.

Figure 5 is an end view of the block employing a lesser number of passages.

Figure 6 is an end view of the block shown at but disclosing the end opposite that at Figure 5.

Figure 7 is a sectional view taken on line 7—7 of Figure 5, and showing arrows 5 and 6 indicating the ends from which Figures 5 and 6 respectively are taken, and

Figure 8 is a perspective view of the block with conductors threaded therethrough in such position that any one may be withdrawn.

Like characters of reference indicate corresponding parts throughout the several views.

In the usual wiring of such insulations as are found in motor vehicles, conductors 10 are employed consisting of metallic wires with insulating coating thereon. The ends of these conductors 10 are provided with contact terminals 11. One of these contacts shown specifically as 11' is shown in section, with the metallic wire 12 secured therein in any approved manner. Such manner of securing is usually by soldering, but other means of securing may be employed. Such conductors as shown at 10 with their terminals 11, are well known in the art.

The block 13 has passages formed therethrough. As shown at Figures 2, 3 and 4, three of these passages are disclosed. At one end of the block, the passage as indicated at 14, is of such diameter as to properly receive the contact terminals 11.

The passages are reduced to the size shown at 15 to form a shoulder 16. This shoulder 16 is located relative to the end disclosed at Figure 2 at exactly the right distance, so that when the contact terminals 11 are seated upon these shoulders, the ends will be substantially flush with that end of the block. The several passages comprising the sections 14 and 15 are all united by a central aperture 17. This central aperture is of such size as to permit the contact terminals 11 to slide therethrough with reasonable freedom.

In employing such a block, the conductors 10 may be individually inserted through the block from the end shown at Figure 3 and through

the central uniting passage 17. As each one emerges from such passage, it is moved into one of the lateral passages, and a second and third conductor similarly passed through the central opening 17. When all are in the position shown at Figure 8, the block may be moved upwardly or the conductor downwardly, so that each of the contact terminals 11 will occupy one of the passage sections 14 and rest upon its shoulder 16. As will be noted from Figure 2, the circumference of each of the passage sections 14 is such that when it is occupied by one of the contact terminals corresponding to the diameter of said passage section, the terminal will project an arc into the central passage so that even though one of the conductors or terminals might become loosened from its seat, it could not pass through said central passage until all of the terminals had been unseated as shown at Figure 8 so that the lesser diameter of the conductors 10 would permit the passage of the terminals through such center passage.

By employing this type of block, any one of the conductors may at any time be removed or replaced without discarding the entire block, and the terminals 11 may be properly connected with the wires before being threaded into the conduits.

At Figures 5 and 6, a variation is shown in that the conductor passages are two in number instead of three as shown at Figure 2. In all other respects, the sections 14', 15' and 17' correspond identically with the passages 14, 15 and 17 as shown at Figure 2 and described relative thereto.

The operation will be identical in all respects, provision thus being made within the scope of this invention to accommodate any number of conductors which the installation may make necessary or desirable. While in the figures three conductors and two conductors have been especially provided, however, it is obvious that more or less fall equally within the terms of the present invention.

Of course, the electrical connection, herein illustrated, may be modified and changed in various ways without departing from the invention herein set forth and hereinafter claimed.

The invention is hereby claimed as follows:

1. An electrical connection comprising wires having terminals thereon greater in diameter than the wires, a block having an approximately

axial opening proportioned to provide passage for one terminal, lateral openings offset from and communicating with said axial opening and being constricted, the larger parts proportioned to fit the terminals and the constrictions forming shoulders, all so proportioned that a terminal seated upon a shoulder projects into and obstructs the axial opening to such an extent that another terminal will not pass therethrough.

2. An electrical connection comprising wires having terminals thereon greater in diameter than the wires, a block having an approximately axial opening proportioned to provide passage for one terminal, lateral openings offset from and communicating with said axial opening and being constricted, the smaller parts proportioned to fit the wires and the larger parts proportioned to fit the terminals and the constrictions forming shoulders, all so proportioned that a terminal seated upon a shoulder projects into and obstructs the axial opening to such an extent that another terminal will not pass therethrough.

3. An electrical connection comprising wires having terminals thereon greater in diameter than the wires, a block having an approximately axial opening proportioned to provide passage for one terminal, lateral openings offset from and communicating with said axial opening and being constricted, the larger parts proportioned to fit the terminals and the constrictions forming annularly segmental shoulders, all so proportioned that a terminal seated upon a shoulder projects into and obstructs the axial opening to such an extent that another terminal will not pass therethrough.

4. An electrical connection comprising wires having terminals thereon greater in diameter than the wires, a block having an approximately axial opening proportioned to provide passage for one terminal, lateral openings offset from and communicating with said axial opening and being constricted, the smaller parts proportioned to fit the wires and the larger parts proportioned to fit the terminals and the constrictions forming annularly segmental shoulders, all so proportioned that a terminal seated upon a shoulder projects into and obstructs the axial opening to such an extent that another terminal will not pass therethrough.

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