Sept. 4, 1945. T. W. DRURY 2,384,287

JUNCTION BLOCK

Filed Aug. 24, 1942

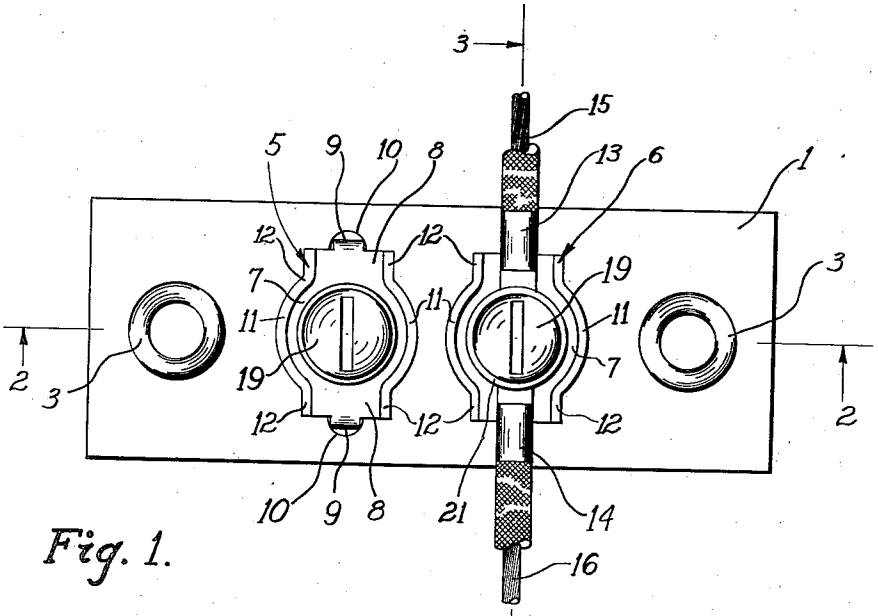

Fig. 1.

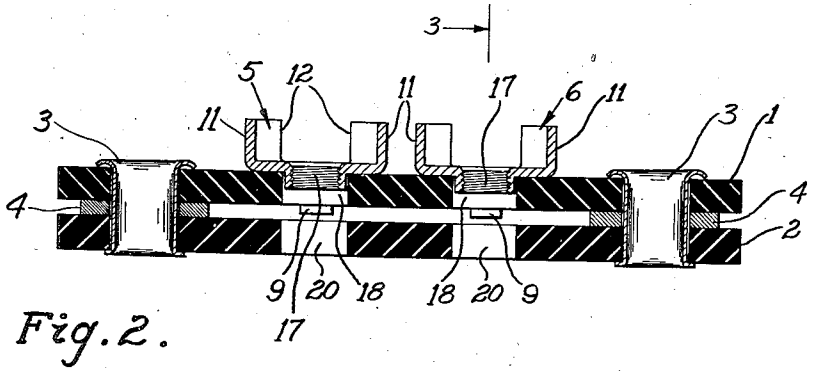

Fig. 2.

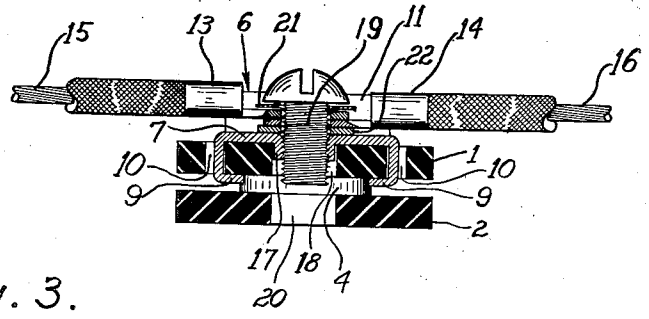

Fig. 3.

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BY

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JUNCTION BLOCK

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1 Claim. (Cl. 173—324)

This invention relates generally to electrical connection means and has to do more particularly with what is known in the trade as a junction block.

One important object of the invention is to provide a junction block consisting of very few parts which may be easily and quickly assembled together on a production basis. Another object is to provide a block with improved receptacle means for receiving the terminals of conductor wires.

A further object is to provide improved means for securing the receptacles with respect to the block and improved means for retaining the conductor terminals in a predetermined relation with respect to each other.

Other objects and advantages of the invention will be apparent after considering the description hereinafter set forth in conjunction with the drawing annexed hereto.

In the drawing:

Figure 1 is an enlarged top plan view of the junction block including a pair of conductor wires with terminals secured to one of the terminal receptacles;

Figure 2 is a vertical section taken substantially on line 2—2 of Figure 1 showing certain details of construction; and

Figure 3 is a transverse vertical section taken substantially on line 3—3 of Figure 1 showing certain details of construction and particularly the manner in which each receptacle is secured to the junction block and the manner in which the conductor terminals are secured to each receptacle.

The junction block briefly described above and illustrated is primarily adapted for use in conjunction with the electrical wiring system of an automotive vehicle, but of course has other applications.

The base or support for the terminal receptacles is preferably comprised of a top ply 1 of insulating material and a lower ply 2 which is preferably permanently secured to the top ply by means of tubular rivets 3. The plies 1 and 2 are preferably of uniform size and thickness and are preferably cut from stock known as sheet or canvas "Bakelite" or the equivalent. Obviously any suitable insulating material may be used. The plies of insulating material are preferably held in spaced apart parallel relation by means of spacer washers 4 which surround the rivets 3 and are disposed between the plies as clearly illustrated in Figures 2 and 3. The spacer washers 4 may be constructed of any desirable material, for example, metal. The rivets 3 are preferably made tubular so that fastening means may be projected through them whereby to secure the junction block to a suitable support, but it is to be distinctly understood that means other than the rivets 3 may be employed for securing the plies together and any desirable means may be employed for attaching the junction block to a support. It will be noted that the rivets 3 are insulated from the terminal receptacles 5 and 6 so that fastening means passing through the rivets will not in any way cause a short circuit.

The base of the junction block which is comprised of the plies 1 and 2 of insulating material may be provided with any number of terminal receptacles, but as herein illustrated the base is preferably provided with a pair of receptacles 5 and 6.

Each of the terminal receptacles includes a generally circular flat base portion 7 and diametrically disposed outwardly extending continuations 8, which continuations extend transverse to the longitudinal axis of the block base. The free extremity of each of the continuations 8 is preferably provided with a finger 9 which projects downwardly through a circular aperture 10 provided therefor in the ply 1 and is turned inwardly under and against the lower surface of the ply 1 for securing the receptacle to the ply as clearly illustrated in Figure 3. It should be noted that the receptacles are preferably secured to the ply 1 prior to attaching the plies together. The circular portion 7 of each receptacle is preferably bounded by upstanding spaced apart circular walls 11 and the continuations 8 with upstanding walls 12 which are substantially the same height as the walls 11. The walls 11 and 12 together with the base portions of each receptacle provide a construction which is primarily adapted to receive terminals of the eye type indicated at 13 and 14 secured to insulated conductor wires 15 and 16, respectively.

The generally circular flat base portion of each receptacle is preferably provided with a centrally disposed protuberance 17 which extends downwardly into an aperture 18 provided therefor in the ply 1. This protuberance 17 is preferably internally threaded as indicated and receives a screw 19 which is used to detachably secure the eye terminals 13 and 14 to the receptacle. A clearance aperture 20 is provided in the ply 2 opposite the aperture 18 for the free extremity of the screw.

In view of the foregoing it will be clearly evident that each receptacle is more or less elongated in form and that one side is open throughout its entire length including its extremities and that

the walls defining the extremities define channels or guides which are designed to preferably receive those portions of the eye terminals that receive the ends of the conductor wires and insulation. The terminals may be fitted into the receptacles in overlapping relation as illustrated in Figures 1 and 3 and firmly locked in place by the screw 19 and the lock washer 21, the screw passing through holes provided in the circular flat portions of the terminals 13 and 14.

Accordingly, it will be apparent that the invention provides means whereby terminals of a particular character may be easily and quickly locked with respect to a receptacle and that the receptacle is provided with means such as channels or guides which serve to restrict rotational movement of the terminals with respect to the receptacle and to the base upon which it is mounted. This arrangement is particularly advantageous where a plurality of receptacles are carried by a base so that there is no likelihood of the terminals or conductor wires coming in contact with each other in a manner not intended.

Having thus described my invention, it is obvious that various modifications may be made in the same without departing from the spirit of the invention; and, therefore, I do not wish to be understood as limiting myself to the exact form, construction, arrangement, and combination of parts herein shown and described.

I claim:

Means of the character described including, a first generally flat ply of insulating material and a second generally flat ply of insulating material corresponding substantially in size and shape to said first ply, corresponding spacer means disposed between said plies adjacent their extremities for spacing said plies, tubular means passing through said plies and through said spacer means with portions overlying the outer faces of said plies for permanently securing said spacer means and said plies together as a unit, a terminal receptacle disposed on said second ply, said receptacle having an enlarged central generally round cup shaped portion and a pair of diametrically disposed channel portions, said channel portions constituting continuations of the walls of the cup portion and extending outwardly with reference to the latter, said second ply being provided with a pair of apertures with a hole between said apertures, the extremities of said channel portions being provided with lugs projecting through said apertures and inturned toward each other against the lower surface of said second ply whereby to hold said receptacles thereto, the bottom wall of said cup portion being provided with a tubular portion projecting into said hole, said tubular portion being internally threaded for the reception of a screw whereby one or more conductors may be secured in the receptacle in a manner whereby the channel portions may limit the rotational movement of a conductor or conductors with respect to the receptacle, and an opening provided in said first ply of a size corresponding to the hole in said second ply disposed in axial alignment with said hole providing clearance for the inner extremity of said screw.

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