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F. W. POPEJOY ET AL
CONNECTOR FOR ELECTRIC WIRES

2,911,615

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Fig. 1

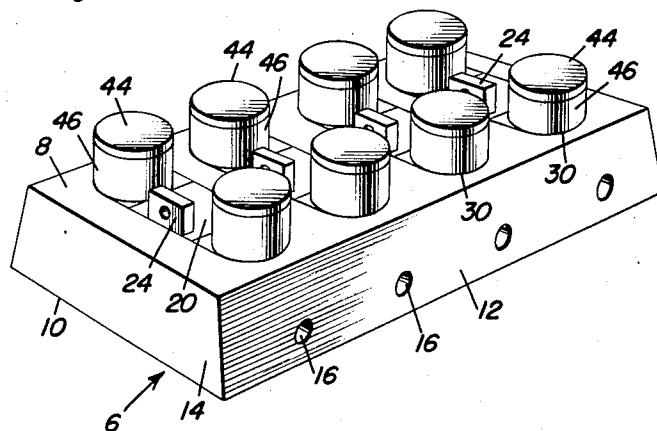


Fig. 2

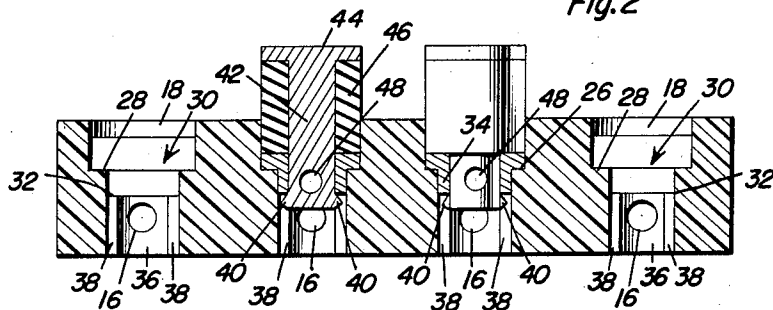


Fig. 3

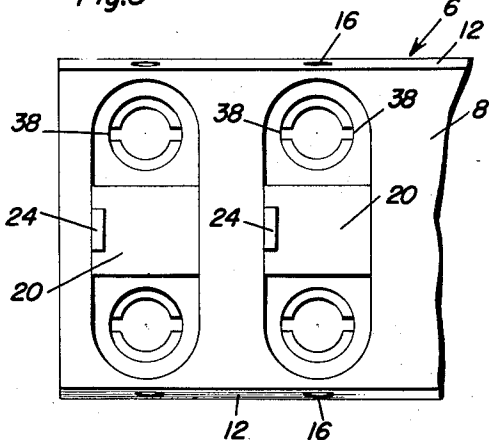
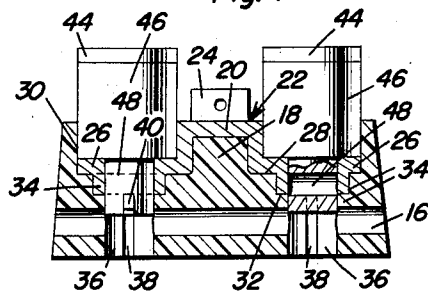


Fig. 4



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CONNECTOR FOR ELECTRIC WIRES

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3 Claims. (Cl. 339—198)

The present invention relates to a novel and improved device which is expressly designed and adapted to function in accommodating and releasably fastening a plurality of electric wires or conductors thereto, for example, wires which terminate at an outlet, splicing connection, a terminal board, switch or the like.

Inventions in this category are also and otherwise referred to as coupling devices, terminal blocks, and so on. In any event, the concept has to do with an improved construction; that is, one in which especially designed bores cooperate with each other. That is to say, vertical bores are provided and these are such that they open through the top and bottom surfaces of the block or body of insulation. Each vertical bore has its upper portion counterbored to provide upper level and lower level shoulders or ledges. The lower shoulder or ledge serves to seat a neck-like bushing carried by an end portion of a bus bar embedded in the body. The end portion itself rests atop the upper level shoulder and provides a stop for the lower end of an elastic sleeve surrounding a shank or stem on a depressible plunger.

The plunger is provided at its lower end with diametrically opposite lugs serving as keys and these are slidably keyed in keyways formed at the lower half-portion of the vertical bores. In addition, the block is provided with horizontal bores which intersect the vertical bores and which serve to permit the wire-ends to be inserted and detachably anchored, in a now generally well-known manner.

Instead of using coil spring equipped plungers the present concept involves the use of elastic or rubber sleeves. Each sleeve is preferably made from a suitable grade of resilient neoprene.

The block is also provided on its central top side with a rib to accommodate a U-shaped bend forming the intermediate portion of each bus bar, whereby to thus provide a simple practical and expedient construction of arrangement of parts.

Other objects, features and advantages will become more readily apparent from the following description and the accompanying sheet of drawing.

In the drawing, wherein like numerals are employed to designate like parts throughout the same:

Fig. 1 is a perspective view of a terminal block constructed in accordance with the principles of the present invention.

Fig. 2 is a view in section and elevation with portions omitted to bring out the construction and arrangement of the structural features.

Fig. 3 is a top plan view of the left hand end portion of either Figs. 1 or 2 with the insertable and removable plugs or plungers removed.

Fig. 4 is a view in section and elevation showing the structural details in greater particularity.

Referring now to the drawings, the block or body of insulation material is here shown as rectangular in form and is generally denoted by the numeral 6 and has a top surface 8 and a bottom surface 10 and marginal side

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and end surfaces 12 and 14. It will be noticed that above the bottom 10 horizontal bores, which are longitudinally spaced and parallel are provided and these bores are denoted by the numeral 16. They serve to permit passage of the wire ends, not shown. The top surface portion 8 of the block is formed with a lengthwise rib 18 over which the cooperating U-shaped bend or saddle 20 of each bus bar 22 is fitted. This bend is provided with an upstanding apertured lug 24 to accommodate jumpers (not shown). The end portions of the bus bar are the same in each instance and each end portion is denoted by the numeral 26 and is referred to as a centrally apertured stop or shoulder. It is seated at 28 on the uppermost ledge of the upper counterbored portion 30 of the coaxing vertical bore. The bore extends through the top and bottom surfaces 8 and 10 and the intermediate portion of the bore is provided with another so-called lower level shoulder or ledge 32 to accommodate the central depending neck or bushing 34 carried by the apertured portion of the shoulder 26. That portion of the bore beneath these ledges is reduced in diameter or cross-section, as at 36, and is provided with diametrically opposite keyways 38. As shown in Fig. 2 in particular the keyways serve to accommodate diametrically opposite outstanding lugs or keys 40 on the lower end of the stem or shank 42 of the button-like plunger. Actually, the plunger comprises a stem and a disk-like press-button 44 on the upper end of said stem. The aforementioned elastic or neoprene sleeve 46 surrounds the stem and is situated between the head or press-button 44 and the bus bar stop or shoulder 26. This sleeve obviously takes the place of what is commonly in the form of a coil spring (not shown). In fact, it has been found that the elastic-type-sleeve in the particular set-up illustrated and disclosed herein is a definite improvement in this line of endeavor. The stem is provided with a hole or passage 48 which is registerable with the bore 16 to accommodate the insertable and removable wire end (not shown). It will be evident, therefore, that the insulated block 6 has its upper portion formed with a rib and has the U-shaped bend 20 of the bus bar saddled or arched over the rib. The end portions extend beyond opposite sides of the rib, vertical bores being in requisite vertical parallelism to accommodate the bend-ends 26 of the bus bar.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A multiple terminal connector comprising a block of insulation material having top, bottom and side surfaces, said top having a central rib and said block being provided on opposite sides of said rib with vertical spaced parallel bores opening through said top and bottom surfaces, the upper portion of each vertical bore being counterbored and providing upper level and lower level ledges and also defining a socket, the lower reduced portion of each vertical bore being provided with diametrically opposite grooves opening through the bottom of the body and providing keyways, a bus bar having a U-shaped intermediate portion providing a saddle, said saddle positioned on said rib, the end portions of said bus bar being coplanar and centrally apertured and providing stop shoulders and being fitted and anchored in their respective vertical bores and resting atop the respective upper level ledges, each end portion having a central depending

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neck constituting a bushing and said bushing resting atop the lower level ledge.

2. A multiple terminal connector comprising a block of insulation material having top, bottom and side surfaces, said top having a central rib and said block being provided on opposite sides of said rib with vertical spaced parallel bores opening through said top and bottom surfaces, the upper portion of each vertical bore being counterbored and providing upper level and lower level ledges and also defining a socket, the lower reduced portion of each vertical bore being provided with diametrically opposite grooves opening through the bottom of the body and providing keyways, a bus bar having a U-shaped intermediate portion providing a saddle, said saddle positioned on said rib, the end portions of said bus bar being coplanar and centrally apertured and providing stop shoulders and being fitted and anchored in their respectively vertical bores and resting atop the respective upper level ledges, each end portion having a central depending neck constituting a bushing and said bushing resting atop the lower level ledge, a horizontally disposed bore in said block, said horizontally disposed bore intersecting a median portion of said vertical bores.

3. A multiple terminal connector comprising a block of insulation material having top, bottom and side surfaces, said top having a central rib and said block being provided on opposite sides of said rib with vertical spaced parallel bores opening through said top and bottom surfaces, the upper portion of each vertical bore being counterbored and providing upper level and lower level

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ledges and also defining a socket, the lower reduced portion of each vertical bore being provided with diametrically opposite grooves opening through the bottom of the body and providing keyways, a bus bar having a U-shaped intermediate portion providing a saddle, said saddle positioned on said rib, the end portions of said bus bar being coplanar and centrally apertured and providing stop shoulders and being fitted and anchored in their respectively vertical bores and resting atop the respective upper level ledges, each end portion having a central depending neck constituting a bushing and said bushing resting atop the lower level ledge, a horizontally disposed bore in said block, said horizontally disposed bore intersecting a median portion of said vertical bores, a plunger positioned in each of said vertical bores, each of said plungers having a stem with a head on its upper end, said stem having a transverse passage therethrough and having its lower end provided with diametrically opposite lugs constituting keys, said keys being slidable in said respective keyways, an elastic sleeve surrounding each stem and situated between the head on the upper end of the stem and the stop shoulder for spring-biasing the plunger to a normal released position.

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