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1,863,362

BUS BAR CONNECTER

Filed March 28, 1929

Fig. 1.

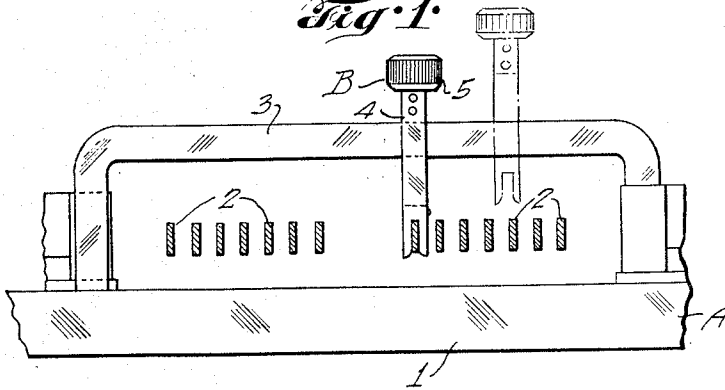


Fig. 2.

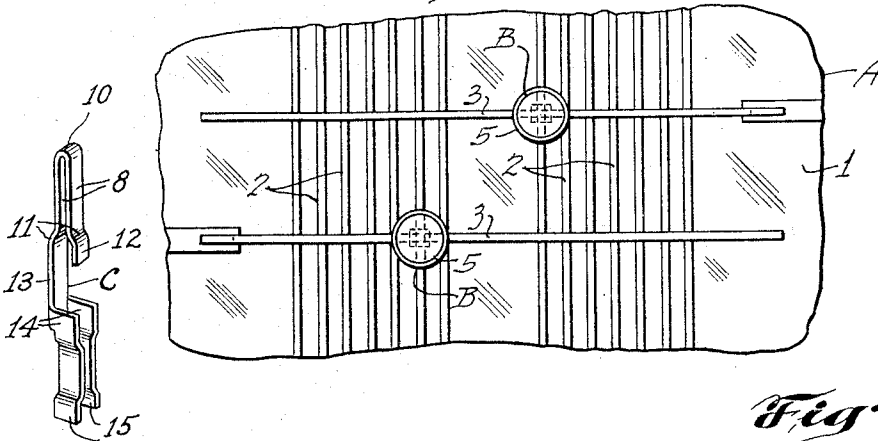


Fig. 6.

Fig. 5.

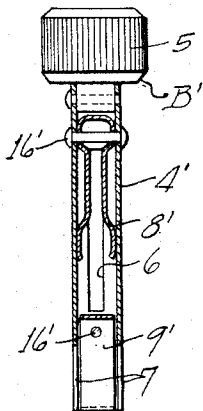


Fig. 4.

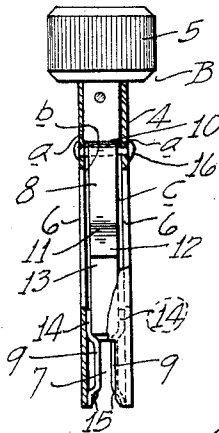
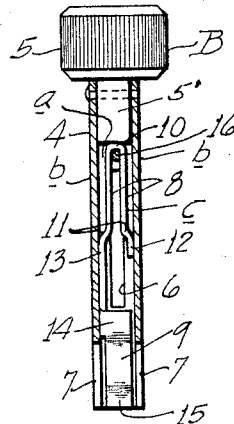


Fig. 3.



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BUS-BAR CONNECTER

Application filed March 28, 1929. Serial No. 350,626.

This invention relates generally to electric panel-boards. More particularly, my invention relates to a certain new and useful improvement in devices for electrically connecting the circuit and meter bus-bars of such panel-boards and has for its chief objects the provision of a device of the type and for the purpose stated which may be inexpensively manufactured, which is relatively simple, compact, and durable in construction, which is conveniently usable, and which is efficient in the performance of its intended functions, and the improvement and simplification generally of devices of the class mentioned.

And with the above and other objects in view, my present invention resides in the novel features of form, construction, arrangement, and combination of parts hereinafter described and pointed out in the claims.

In the accompanying drawing,—

Figure 1 and 2 illustrate fragmentally in end and plan view, respectively, an electric panel-board equipped with bus-bar connectors of my invention;

Figure 3 is an enlarged longitudinal sectional view of one of the connectors;

Figure 4 is a similar view of the connector taken approximately at right angles to Figure 3;

Figure 5 is a similar view of a slightly modified connector of my invention; and Figure 6 illustrates in perspective the jaw forming strip of the connector.

Referring now more in detail and by reference characters to the drawing, which illustrates practical embodiments of my invention, A designates an electric panel board of any standard or approved construction, of which, briefly for present descriptive purposes, it may be stated, 1 is the base, preferably of slate or other suitable insulation material, 2, 2 are the meter bus-bars, and 3, 3 are the circuit bus-bars. The bars 2 and 3 are preferably disposed on edge and suitably mounted and arranged on the base 1, the bars 3 being in superposed right-angular relation to the underlying bars 2, as shown and as will be clear to those skilled in the art. For electrically connecting with con-

venience and facility a bar 3 with any selected one of the underlying bars 2, the panel-board A is equipped with the connectors B or B' of my invention.

Each connector includes a suitably elongated hollow or tubular shell 4 preferably rectangular in cross-section, closed by the neck 5 of, and provided at its upper end with, a suitable manipulating-head 5, and having an opening, or open, as it may be said, at its lower end. It may be here stated that the shell 4 is preferably constructed of any suitable rigid material, for purposes presently appearing, and in the preferred form B of the connector may be either of conducting or insulation material. The head 5 may also be of insulation or other suitable material.

Intermediate its ends, the shell 4 is provided in two of its opposite walls, as walls *a, a*, with suitably elongated registering closed-end slots 6, 6, having a length equal to approximately twice the width or height of the respective bars 3, while at, and opening to, its lower end, the shell 4 is provided in its other opposite walls, as walls *b, b*, with a second pair of registering slots 7, 7, the slots 7 having a reduced length equal approximately to the width or height of the respective bars 2.

Forming part of the connector and housed within the shell 4, are pairs of bar-engaging spring-jaws 8 and 9 presented in linear alignment or so-called tandem relation, but with one pair of the jaws right-angularly disposed to the other pair of jaws, agreeable with the corresponding relation between the pairs of bar-accommodating slots 6 and 7.

In the preferred form B of the connector, shown in Figures 3 and 4, the pairs of jaws 8 and 9 are constructed as a unit, as best seen in Figure 6, from a suitably elongated strip or section *c* of metallic or other conducting material having yielding characteristics, such, for instance, as copper, which strip is bent upon itself, as at 10, to provide the bight of the one pair of jaws 8. The one end of the strip and the then opposite portion of the strip are suitably bent outwardly in opposed relation, as at 11, 11, and the strip thereby

provided with lips 12 and 13 for facilitating not only engaging relation between the jaws 8 and an interposed bar, but also cooperative relation between the strip *c* and the shell 4, as more fully presently appears.

The strip-portion or so-called lip 13 is, relatively to the opposite lip 12, extended in length to correspond approximately with the width or height of a bar 3 and at its end is marginally formed with right-angularly disposed flanges 14, 14, which, in turn, are extended in the longitudinal or linear direction of the jaws 8 to provide the other pair of jaws 9. The jaws 9 are thus disposed longitudinally of, and at right angles to, the jaws 8 and at their free ends are also preferably provided with oppositely disposed outwardly presented lips 15 adapted similarly for facilitating engagement by the jaws 9 with an interposed bar and co-operative relation between the strip *c* and the shell 4.

It will be understood that the conducting unit *c*, including its tandem-related and longitudinally spaced jaws 8 and 9, is of dimensions to fit snugly within the shell 4 and, in assembling the connector-parts, is inserted endwise to reside within the shell 4 with the bight 10 of the one pair of jaws 8 disposed somewhat beyond the upper end (reference being made to Figures 3 and 4) of the slots 6, with the jaws 8 substantially throughout their length in register with a corresponding portion, that is to say, the upper half portion, of the slots 6, and with the jaws 9 in register with the slots 7, all as best seen in Figures 3 and 4, the remaining or lower half portion of the slots 6 being thus free to accommodate a transversely presented bar 3. The formed strip *c*, so disposed, is then by means of a pin or the like 16 passed through the opposite shellwalls *a* and between the strip portions 8 at the bight 10 permanently suspended within and associated both mechanically and electrically with the shell 4. As will be noted, the neck 5' of head 5 is preferably suitably elongated to assist, in opposition to the pin 16, in retaining the unit *c* in fixed position within the shell 4.

Consequently, in use, a connector is first slidably fitted at the lower half portion of its slots 6 for adjustment upon and lengthwise of a bar 3 for electrically connecting the respective bar 3 selectively with any one of the underlying bars 2, as illustrated in dotted lines in Figure 1. The connector, being then laterally adjusted along the bar 3 to reside over the particular bar 2 selected, will, on suitable downward pressure exerted thereupon, be shifted longitudinally and simultaneously engage at its upper jaws 8 with the upper bar 3 and at its lower jaws 9 with the lower bar 2 and thereby electrically through the strip *c*, and also, if of conducting material, the shell 4, connect the same together, upward pull upon the connector in a like

manner disengaging the respective jaws and bars and thereby breaking the electrical connection therebetween.

The modified form B' of the connector, illustrated in Figure 5, differs from the preferred form B thereof, as just described, only in that the jaws 8' and 9' are separate one from the other and are, respectively, fixed to and within the shell 4' by individual securing pins 16' passed transversely therethrough, as shown, the shell 4' being of conducting material and the electrical connection between the jaws 8' and 9', when in engagement with a bar 3 and a bar 2, being wholly through the conducting shell 4'.

The conductor in either of its forms may be cheaply manufactured, is most convenient in manipulation, and is exceedingly efficient in the performance of its intended functions.

It is to be understood that changes and other modifications in the form, construction, arrangement, and combination of the several parts of my new connector may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

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

1. A bus-bar connector comprising an elongated rigid hollow shell open at an end, the shell being provided in its walls with a first pair of registering closed-end bar-accommodating slots intermediate its ends and a second pair of registering bar-accommodating slots disposed at an angle to the first pair of slots and opening at an end to the open end of the shell, and pairs of conducting jaws housed and fixed within the shell in co-operative relation to said slots for yieldingly engaging interposed bars, said jaws having electrical communication the one pair with the other.

2. A bus-bar connector comprising an elongated rigid hollow shell open at an end and of rectangular cross-section, the shell being provided in a pair of its opposite walls and intermediate its ends with registering bar-accommodating closed end slots and in the other pair of its opposite walls with a second pair of registering bar-accommodating slots opening at an end to the open end of the shell, and pairs of conducting jaws housed and fixed within the shell in co-operative relation to said slots for yieldingly engaging right-angularly presented interposed bars, the one pair of jaws having electrical communication with the other pair.

3. A bus-bar connector comprising an elongated rigid hollow shell open at an end and of rectangular cross-section, the shell being provided in a pair of its opposite walls and intermediate its ends with registering closed-end slots for accommodating a bar disposed transversely of the connector, and in the other

pair of its walls with a second pair of registering bar-accommodating slots opening at an end to the open end of the shell, and pairs of bar-engaging conducting spring jaws housed and fixed within the shell in co-operative relation to said slots for bar engagement, said first slots being elongated longitudinally of the shell for permitting shiftable movement of the connecter for engagement of its pairs of jaws with a pair of superposed right angularly related bars, the one pair of jaws having electrical communication with the other pair.

4. A bus-bar connecter including a section of conducting strip-material bent upon itself intermediate its ends to include a pair of spring bar-engaging jaws, one end-portion of said strip being longitudinally extended beyond the end of the other portion thereof and marginally formed with right-angularly disposed flanges, said flanges being longitudinally extended to provide a second pair of spring bar-engaging jaws disposed longitudinally of, and at right angles to, the first pair of jaws, and a rigid tubular shell disposed enclosingly about, and fixed to, said strip and provided with slots in its wall for registration with, and for permitting bar-engagement by, said pairs of jaws.

In testimony whereof, I have signed my name to this specification.

WILLIAM WURDACK, JR.

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