Nov. 5, 1929. A. G. STEINMAYER 1,734,537

BUS BAR STRUCTURE

Filed April 16, 1925

Fig. 1.

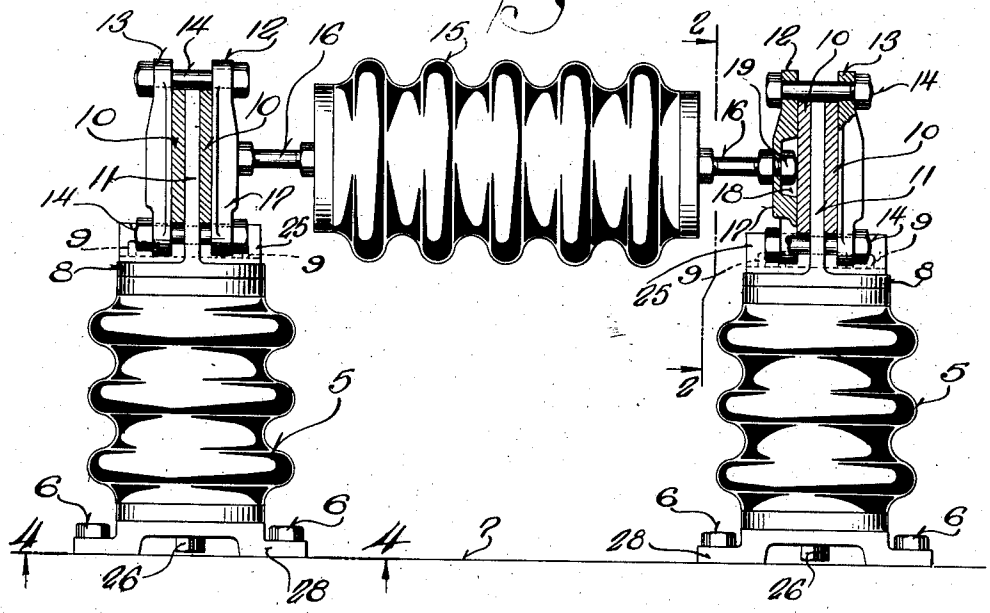


Fig. 2.

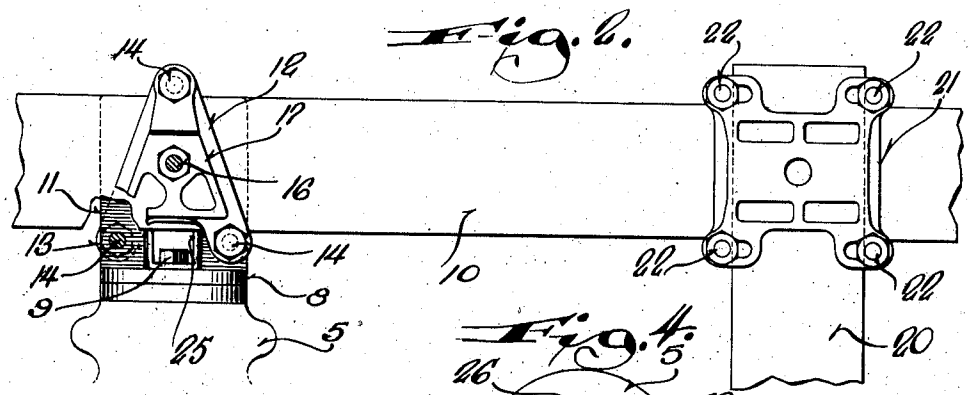


Fig. 4.

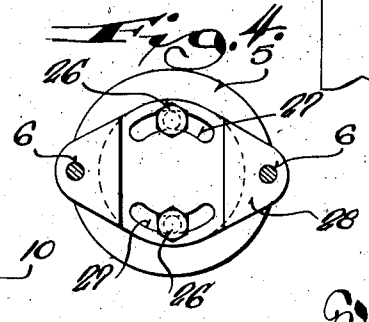
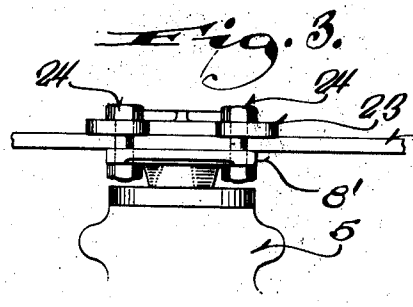


Fig. 3.



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UNITED STATES PATENT OFFICE

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BUS-BAR STRUCTURE

Application filed April 16, 1925. Serial No. 23,733.

This invention relates to certain new and useful improvements in bus-bar structures and has as its general object to improve and simplify such structures.

It is a more specific object of this invention to provide a bus-bar structure which is capable of ready assembly, which will have provision to accommodate expansion and contraction due to temperature changes and which will have increased rigidity and which will permit the convenient mounting of lead-ins at any point along the bus-bar proper.

With the above and other objects in view which will appear as the description proceeds, my invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

In the accompanying drawing, I have illustrated two complete examples of the physical embodiment of my invention constructed according to the best modes I have so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a view, partly in section and partly in elevation, taken transversely through a pair of parallel bus-bars;

Figure 2 is a view, partly in section and partly in elevation, taken through Figure 1 on the plane of the line 2—2 and illustrating the manner of mounting a lead-in,

Figure 3 is a side fragmentary view illustrating the manner of mounting the bus-bar in a horizontal position, and

Figure 4 is a detail view of the rotational adjusting means, said view being taken through Figure 1 on the plane of the line 4—4.

Referring now more particularly to the accompanying drawing, the numeral 5 designates insulator mountings adapted to be rigidly secured, as at 6, to a suitable support 7. A base member 8 is secured on the top of each mounting 5, as at 9, to provide means for mounting the bus-bar 10.

In Figures 1 and 2, the base 8 is illustrated as having a spacer member 11 formed integral therewith and extended upwardly therefrom to provide means for maintaining the bus-bars in spaced relation when mounted in pairs. The bus-bars are mounted one on each side of the spacer member and are secured thereto by a pair of clamping plates 12 and 13, the clamping plates in the present embodiment being of approximate V-shape and provided with clamping bolts 14 for drawing the plates, bus-bars and spacer member together to thus rigidly mount the bus-bars in position.

The clamping bolts 14 do not pass through the bus-bars, as best shown in Figure 1, although two of the clamping bolts 14 preferably pass through the spacer member 11. This construction permits the longitudinal movement of the bus-bars under contraction and expansion and thus eliminates tearing of the insulator mountings from their supports or the destruction of the insulator mountings, as is the case when the bus-bars are secured to the mountings by positive fastening means extending therethrough.

The bus-bar structure may be given added rigidity by providing a bracing and spacing member connecting adjacent mountings. The bracing members preferably comprise an insulator 15 from which bolts 16 extend to provide means of connection with the inner clamping plates 12 of adjacent pairs. The medial portions of the plates 12 are struck outwardly, as at 17, to provide spaces 18 to receive the nuts 19 for locking the ends of the bolts 16 thereto.

Lead-ins 20 may be electrically connected with the bus-bars 10 at any point by means of a pair of complementary plates 21 connected by bolts 22 which pass about the edges of the lead-in and bus-bars to frictionally hold the lead-in in firm electrical contact with the bus-bar. This construction permits the longitudinal movement of the bus-bars and lead-in during contraction and extension incidental to temperature changes.

The weight of the bus-bar is kept off the bolts 14 by channel pieces 25 extended beyond the sides of the members 11 and adapted to be secured in place by the bolts 9. The top edges of the pieces 25 extend above the top-

most portions of the lower bolts 14 and thus receive the entire weight of the bus bars.

The mountings 5 are capable of rotational adjustment as the securing bolts 26 thereof pass through arcuate slots 27 in the attaching plate 28 of the mountings.

In Figure 3, a slightly modified form of my invention is illustrated wherein the base 8′ forms one of the clamping plates which is disposed horizontally and the bus-bar 10 rests thereon, a second clamping plate 23 being engaged with the top surface of the bus-bar. Bolts 24 clamp the bus-bar in place between the base and plate, the bolts 24 passing over the edges of the bus-bar to permit its expansion and contraction when subjected to temperature changes.

From the foregoing description taken in connection with the accompanying drawing, it will be readily apparent to those skilled in the art to which an invention of this character appertains that I provide an improved bus-bar structure which permits contraction and expansion of the parts, is easily assembled, is rigid in construction, can be conveniently provided with lead-ins at any point and which provides means for spacing the bus-bars and transmitting their strains to the porcelain supports.

What I claim as my invention is:

1. In a bus-bar structure, a support, an attaching base mounted on the support, a bus bar supporting member, a spacer member extended upwardly from the attaching base and having an aperture to receive the bus bar supporting member, bus bars engageable with the spacer member, and means for clamping the bus bars to the spacer member whereby the bus bars are supported by the supporting member and are free to move upon expansion and contraction thereof.

2. In a bus bar structure, a pair of spaced supports, an attaching base mounted on each support, a spacer member extended from each attaching base, a bus bar supporting member mounted on each attaching base, a pair of parallel bus-bars, one of the bus-bars engaging each attaching base with its weight carried by its associated supporting member, pairs of clamping plates, means securing the clamping plates in position to clamp each bus-bar to its spacer member, and brace means connecting the adjacent clamping plates to rigidly connect the bus-bars.

3. In a bus bar structure, an insulator, an attaching base, a mounting member extended upwardly from the base, a bus bar, means clamping the bus bar to the mounting member, a supporting member engageable with the lower edge of the bus bar to support its weight, and means for securing the attaching base to the insulator, said means passing through the supporting member to retain the same in position.

4. In a bus bar structure, an insulator, an attaching base, a mounting member extended upwardly from the base and having an opening through its lower portion, a bus bar, means clamping the bus bar to the mounting member, a supporting member positioned transversely through the opening in the mounting member to support the weight of the bus bar, and common means securing the supporting member to the attaching base and the base to the insulator.

In testimony whereof I affix my signature.

ALWIN G. STEINMAYER.