May 27, 1924. 1,495,770

J. M. BROWN

BUS BAR SUPPORTING STRUCTURE

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Fig. 1

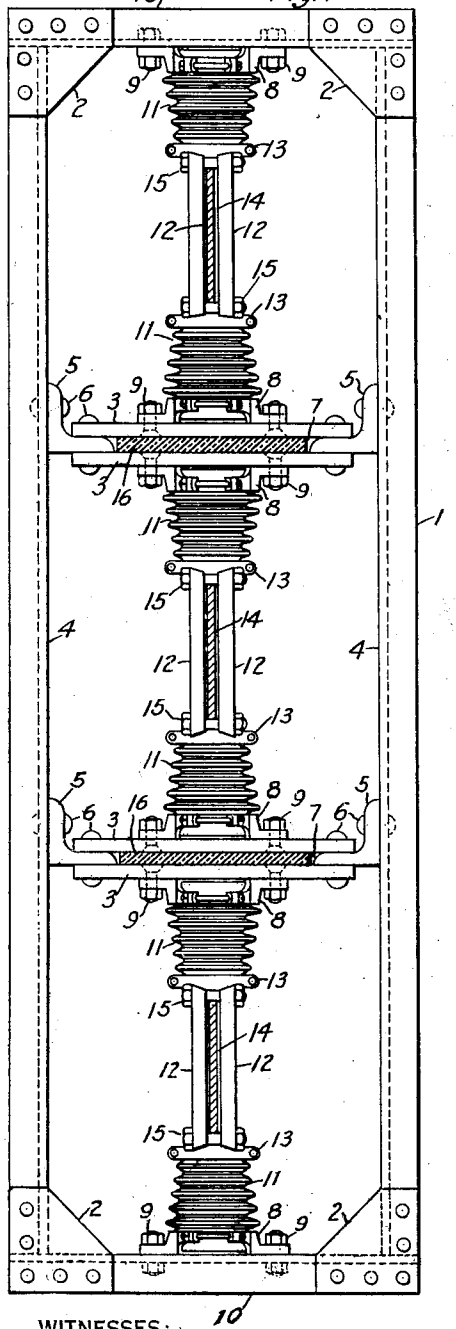
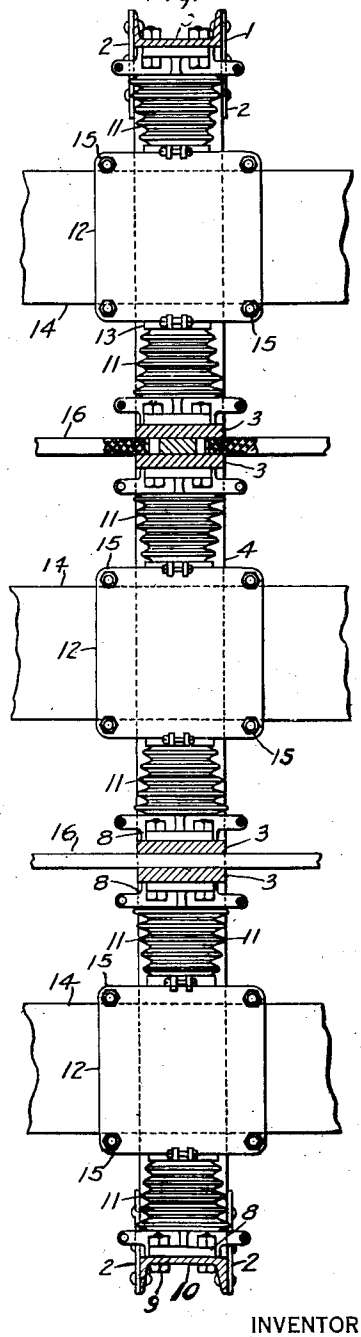


Fig. 2



WITNESSES:

Fred. C. Williams

Fred. H. Miller

INVENTOR

James M. Brown

BY

Wesley G. Carr

ATTORNEY

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Fig. 3

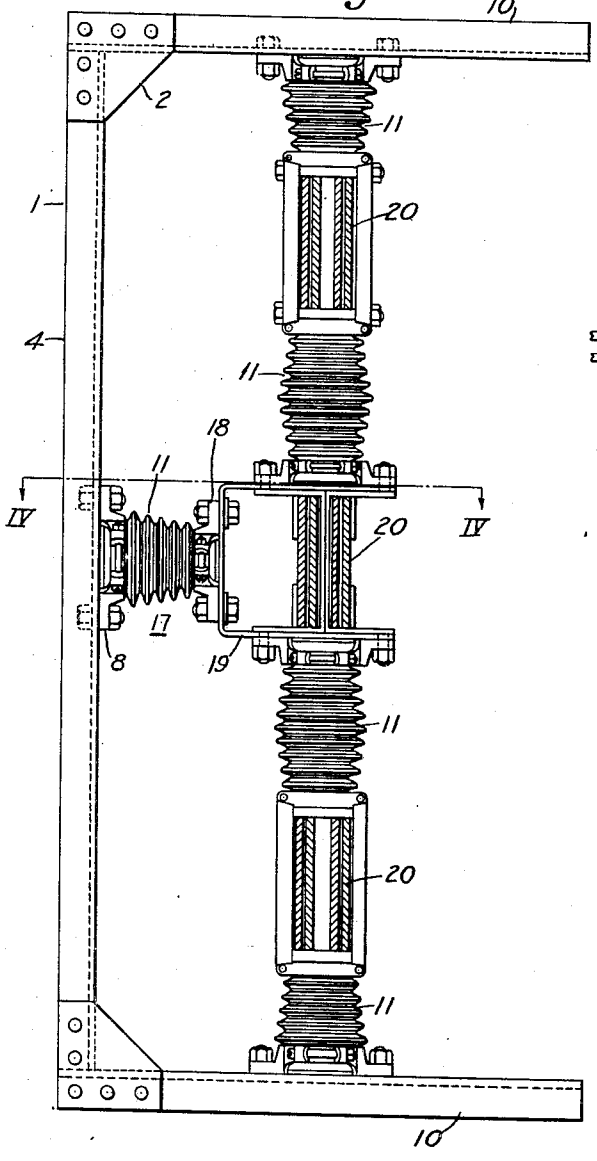
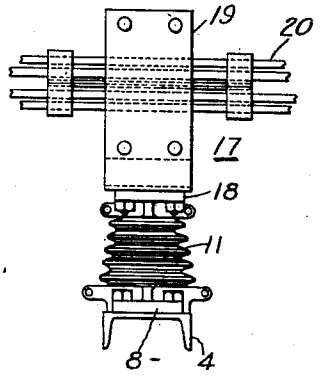


Fig. 4



WITNESSES:

Fred. C. Williams

Fred H. Miller

INVENTOR

James M. Brown

BY

Wesley G. Carr

ATTORNEY

Patented May 27, 1924. 1,495,770

UNITED STATES PATENT OFFICE.

JAMES M. BROWN, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

BUS-BAR-SUPPORTING STRUCTURE.

Application filed June 19, 1918. Serial No. 240,849.

To all whom it may concern:

Be it known that I, JAMES M. BROWN, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Bus-Bar-Supporting Structures, of which the following is a specification.

My invention relates to insulating supports and particularly to structures for supporting bus-bars.

One object of my invention is to provide a readily-transportable unitary structure of the above-indicated character that may be assembled at the place of manufacture.

Another object of my invention is to provide an assembled supporting unit that may be installed without requiring special skill and that may be positioned at a particular place, or readily removed therefrom and positioned elsewhere, as desired.

Heretofore, it has usually been the practice, in electric power stations and other places where extensive high-power electric apparatus has been installed, to construct the bus-bar structures thereof, piece by piece, at the place of installation. The employment of skilled workmen, at the place of installation, has thus been required to properly assemble the parts after which the assembled structure has been of such permanent nature as to not readily permit alterations therein or removal or transference thereof.

In practicing my invention, I provide a unitary structure that may be assembled at the place of manufacture, where such assembly may be most efficiently and accurately effected, and may be shipped, as a unit, and installed with a minimum expenditure of time and skill. That is, I provide a unitary structure that may be set up at any desired position for the support of certain bus-bars and later be readily removed to support other bus-bars of different lengths. Further, I provide for the ready addition to such structures already installed by the positioning of other of such units.

Figure 1 of the accompanying drawings is a side view of a device constructed in accordance with my invention, as viewed from the ends of a set of bus-bars; Fig. 2 is a front view, partially in section and partially in elevation, of the device shown in Fig. 1; Fig. 3 is a side view of a modified form of my invention, and Fig. 4 is a plan view of a portion of the same taken along the line IV—IV of Fig. 3.

A rectangular frame-work 1 of structural steel, such as channel or angle iron, but which may be of any other suitable structure or material, is rigidly fitted together in any suitable manner, as by riveting, bolting or welding, and may be reinforced at any desired part thereof, as by suitable plates 2. A plurality of intermediately-disposed transverse plates or bars 3 extend between side members 4 of the frame-work 1 to which they may be attached by angle irons 5 and rivets 6. The bars 3 are arranged in groups of two having spaces 7 therebetween for a purpose to be hereinafter set forth.

Brackets 8, secured by bolts 9 to the inside faces of each of the end members 10 of the frame and to the outside faces of the bars 3, support insulating pillars 11, preferably of porcelain and of the corrugated or long-leakage-path type. Bus-bar clamping members 12 extend between the opposing ends of the several co-operating bars or pillars 11 to which they may be suitably attached, as by clamping rings or cap members 13. The device thus far described constitutes a readily-transportable structure properly fitted together and ready for installation. When it is desired to install the same, after placing it, as a whole, in position, the clamps 12 may be removed for the reception of bus-bars 14 or the latter may be inserted longitudinally therebetween and the former secured together in place by bolts 15. Insulating barrier member 16, such as asbestos boards, may be placed in the spaces 7 between the bars 3 to extend between adjacent frame-work structures for the purpose of shielding the bars from objects that might fall from above them and for preventing operators from coming in contact with them.

A modification of my invention, shown in Figs. 3 and 4, is similar in structure to that described with the exception that one of the arms 4 of the frame-work 1 and the barrier members 16 are omitted. Further, the modification embodies an intermediate supporting structure 17 comprising an insulator 11 attached to the frame member 4 by a bracket 8 and provided, at its head end, with a clamping member 18 and a

member 19 of U-shape that embraces an intermediate set of parallel bus-bars 20. All of the finer adjustments of the different parts may be effectively made at the factory, where the facilities for such work are the best, and the device may be shipped, as a unit, to its destination. It may then be readily set up in a relatively short time and with substantially a minimum amount of labor.

While I have shown and described particular forms of my invention, it will be obvious to those skilled in the art that many changes may be effected therein without departing from the spirit and scope thereof, as set forth in the appended claims.

I claim as my invention:

1. A bus-bar device comprising a plurality of spaced unitary transportable supporting structures and means co-operating therewith and disposed in the space between the structures for shielding a bus-bar supported thereby.

2. A bus-bar device comprising a plurality of spaced unitary transportable supporting structures and readily-removable means co-operating therewith and disposed in the space between the structures for shielding a bus-bar supported thereby.

3. A unitary transportable bus-bar supporting device comprising a frame structure, insulating means for attaching a bus-bar thereto, and means for readily removably supporting a protective barrier member for said bus-bar.

4. A plurality of unitary transportable bus-bar supporting devices each comprising a frame structure, insulating means for attaching a plurality of bus-bars thereto, said devices being adapted to be disposed at any predetermined distance from each other, a plurality of insulating barrier members that extend between said devices for separating said bus-bars and means for removably supporting said barrier members.

5. In a unitary transportable bus-bar supporting device, the combination with a frame structure, of means for supporting a plurality of bus-bars thereon comprising a continuous pillar extending between opposite walls of said frame structure, said pillar comprising a plurality of insulating and conducting members.

6. In a unitary transportable bus-bar supporting device, the combination with a frame structure, of means for supporting a plurality of bus-bars thereon comprising a continuous pillar extending between opposite walls of said frame structure, said pillar comprising a plurality of insulating and conducting members and means for intermediately bracing said pillar.

7. In a unitary transportable bus-bar supporting device, the combination with a frame structure, of means for supporting a plurality of bus-bars thereon comprising a continuous pillar extending between opposite walls of said frame structure, said pillar comprising a plurality of insulating and conducting members, and means for intermediately bracing said pillar comprising an insulating member extending between the same and a wall of said frame structure.

8. A bus-bar device comprising a plurality of unitary portable supporting-frame structures disposed in spaced relation and supporting a bus-bar between them, and means co-operating therewith for shielding the bus-bar.

9. A bus-bar device comprising a plurality of unitary transportable structures for supporting a bus-bar, and separately transportable means for connecting the structures in spaced relation.

10. A unitary transportable bus-bar-supporting device comprising a frame structure, insulating means for attaching a bus-bar thereto, and a means having a slot therein for readily removably supporting a protective barrier member for said bus-bar.

In testimony whereof, I have hereunto subscribed my name this 31st day of May, 1918.

JAMES M. BROWN.