

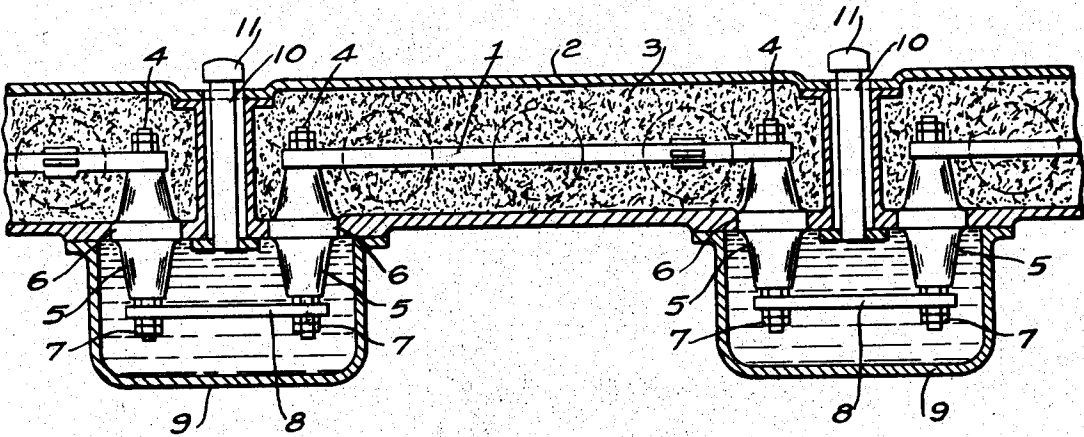
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SECTIONAL ELECTRICAL BUS BAR

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SECTIONAL ELECTRICAL BUS BAR

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My invention relates to sectional electrical bus-bars of the type in which the various sections are enclosed in metal casings or chambers filled with insulating material.

One object of the invention is to provide improved arrangements for coupling or connecting together the various bus-bar sections whereby an additional section may be readily connected to an existing bus-bar system and in some cases the improved coupling arrangements are adapted to provide a simple means for connecting either incoming or outgoing feeders to the bus-bar conductors.

According to the invention the various sections of conductor forming the bus-bars are provided at their ends with leads or lugs which project through the casing containing the section and said leads are provided with terminals of any suitable description by means of which adjacent leads may be connected together by a link so as to couple one bus-bar section to the next. The link and projecting leads and terminals are enclosed in a coupling box removably attached to the adjacent bus-bar chambers and arranged to be filled with insulating liquid, a suitable tube which may be furnished with an indicator showing the level of the liquid surface and a sight feed device, being provided for the purpose of filling the box.

Instead of being liquid the insulating filling material may have at normal working temperatures a heavy vaseline like consistency provided it can readily be liquefied by a relatively small increase of temperature.

The single figure of the accompanying drawings is a view partially in elevation and partially in section of a bus-bar construction embodying my invention.

Referring to the drawing, the conductor 1 forming a bus-bar section is enclosed in a metal casing or chamber 2 filled with an insulating compound 3. To the ends of the conductor 1 are attached leads 4 encased in rigid insulating members 5 which project through holes 6 in the under side of the casing 2, and are provided with terminals 7.

At each end of the chamber 2 the projecting lead 4 is connected to the corresponding lead of the adjacent bus chamber by a link

8, said link with the insulating members 5 and lead terminals 7 being enclosed in a coupling box 9 which is removably attached by oil-tight joints to the adjacent bus chambers 2, and is provided with a filling tube 10 by means of which the coupling box is filled with insulating oil. The tube 10 has a sight feed device consisting of a glass vessel 11 at the top of the tube.

It will be obvious that with this improved arrangement the connection of additional bus-bar sections or disconnection of existing sections is a very simple matter, it being necessary only to draw off the liquid from the coupling box after which the box can be removed or opened and the link between the bus-bar sections disconnected. A box may be provided adapted to enclose the free projecting lead from the last bus-bar section so as to seal off the end of said section.

The connecting links and coupling boxes may be arranged on the undersides of the bus-bar sections or the leads may project upwardly from said sections and the coupling boxes be arranged on the top and in the latter case the bus-bar chambers may be constituted by a tank of suitable dimensions to contain the section or sections removably attached to an upper plate forming the top of the chamber and the chambers may be filled with insulating liquid instead of with solid insulating material as is ordinarily the case. The coupling boxes must be arranged to form oil-tight joints with the top plates of the bus-bar chambers. In some cases the top plates of adjacent bus-bar chambers may be connected by a single plate on the top of which a flanged coupling box may be bolted so that an oil-tight joint will be readily obtained. Preferably, independent filling arrangements are provided for the bus-bar chambers and coupling boxes in such case. Where each chamber contains one conductor only such conductor may project through the end of the casing and the junctions between the coupling box and the coupled chambers be effected at cylindrical surfaces.

The conductors forming the bus-bars may be of bare metal or provided with a comparatively small amount of insulation.

The bus-bars forming a section for example the three sectional conductor bars in a three-phase system, need not be contained in the same bus-bar chamber but separate chambers may be provided for each phase conductor. 5 With such arrangements the several ends of the chambers may be arranged in stepped or staggered relation so that the incoming and outgoing feeder leads will enter each bus-bar chamber at a similar position with regard 10 to the ends of the chamber and at the same time will be spaced apart in correct relationship. Where the several chambers containing the bus-bars of a section terminate in the same plane a single coupling box may in some 15 cases be provided for containing all the coupling links.

In some cases the connections of the incoming or outgoing feeders to the bus-bars may be made through the links or terminals, said 20 feeders being led into the coupling box by suitable bushings, thus avoiding the entry of the feeders into the bus-bar chambers.

It is to be understood that such changes in the form, arrangement, and connection of the 25 component parts of my invention may be made as shall fall within the scope of the appended claims.

I claim as my invention :

30 1. A liquid-tight receptacle having a pair of insulated conductors extending through a wall thereof and having link attaching means thereon, a bus bar within the receptacle connected to and supported on said conductors, 35 a connecting link for connecting one of said conductors to an adjacent conductor of a similar receptacle and a liquid-tight receptacle enclosing the link and the last said conductors.

40 2. A liquid-tight receptacle having a pair of insulated conductors mounted in a wall thereof extending within and without said receptacle, a bus bar connected to the said conductors within the receptacle, a second bus 45 bar connected to one of said conductors exterior of said receptacle and to another conductor and a second receptacle enclosing the last said conductors and bus bar in a liquid-tight manner.

50 3. A plurality of liquid-tight receptacles each having a pair of insulated conductors extending through a wall thereof, a bus bar in each of the receptacles supported on the said conductors and a plurality of conduct- 55 ing links connecting the conductors of adjacent receptacles to form a continuous circuit through said enclosed bus bars.

In testimony whereof, I have hereunto subscribed my name this 15th day of February, 60 1927.

DAVID REGINALD DAVIES.