April 27, 1943. W. C. ANDERSON 2,317,710

BRANCH BOX CONNECTOR

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Fig. 1.

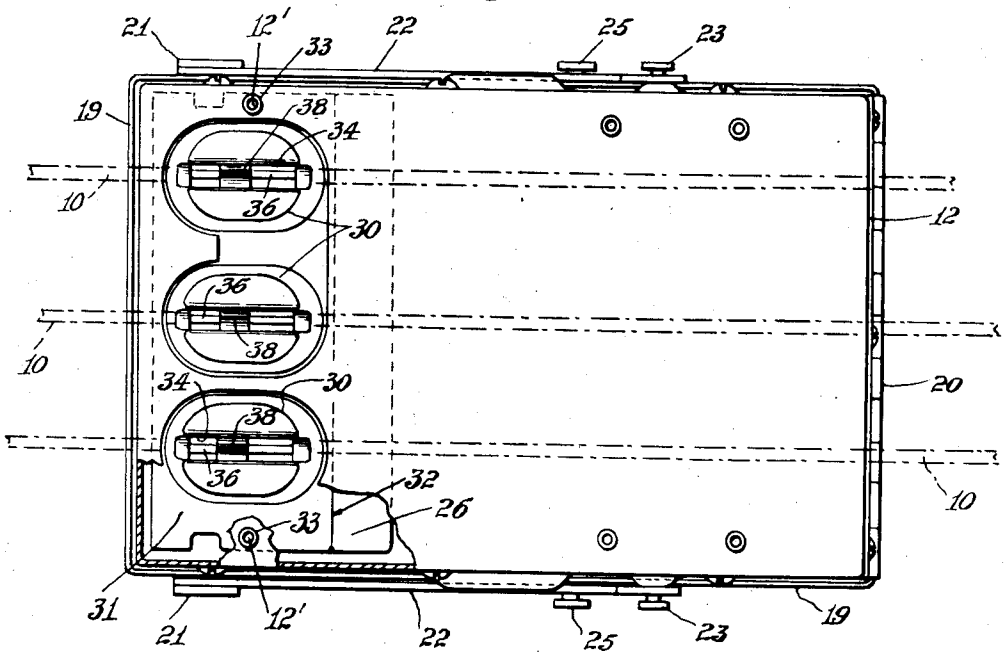
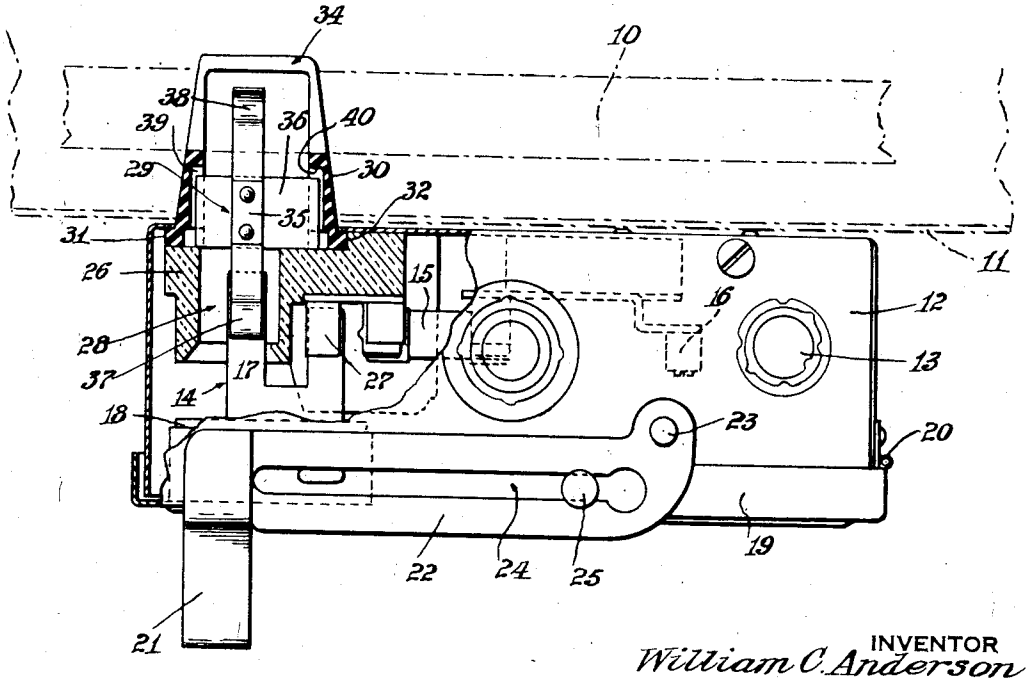


Fig. 2.



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Fig. 3.

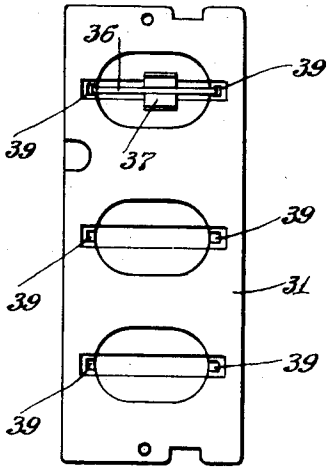


Fig. 4.

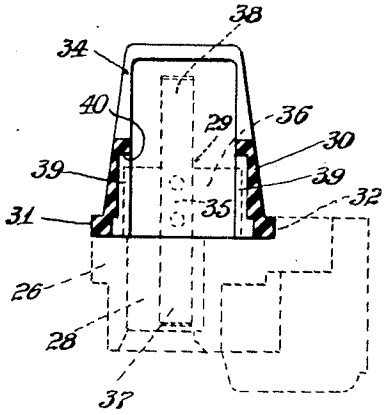


Fig. 5.

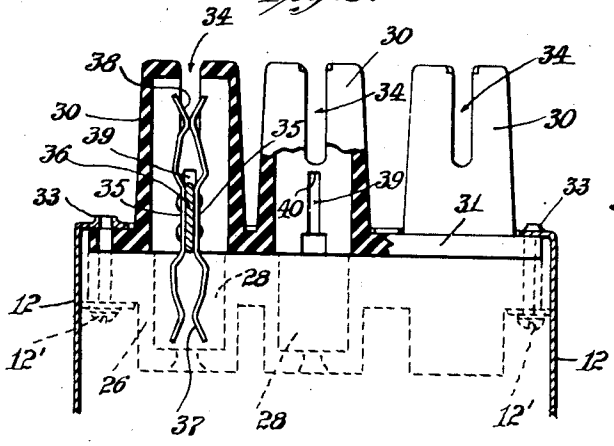


Fig. 6.

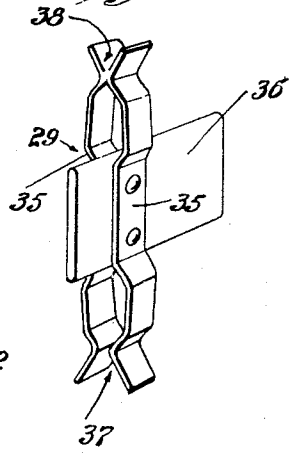


Fig. 7.

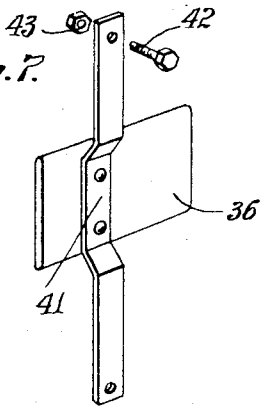
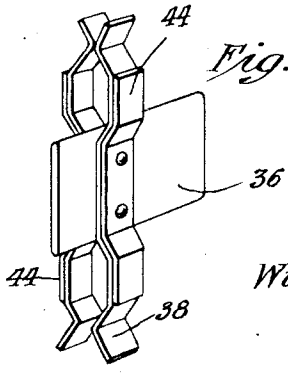


Fig. 8.



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BRANCH BOX CONNECTOR

William C. Anderson, Bromley, Ky., assignor to The Trumbull Electric Manufacturing Company, Plainville, Conn., a corporation of Connecticut

Application March 21, 1942, Serial No. 435,615

5 Claims. (Cl. 173—334.1)

My invention relates to what are sometimes called branch box connectors and particularly to the contact stabs or conductors and the method of mounting them.

The main object is to provide a simple but effective construction which can be readily assembled.

Another object is to provide simple but positive means for insulating the conducting parts from each other and from the metal casing.

Another object is to mount the conducting parts floatingly for automatic self-alignment.

Fig. 1 is a plan view of a device embodying my invention showing in dotted lines bus bars in place, parts being broken away.

Fig. 2 is a side and longitudinal sectional view of the same.

Fig. 3 is a plan view of the insulating shield support with one conductor in place.

Fig. 4 is a transverse sectional view of a shield.

Fig. 5 is a part elevational and part sectional view of the device of Fig. 3.

Fig. 6 is a perspective view of one of the conductors.

Fig. 7 is a perspective view of another form of conductor.

Fig. 8 is a perspective view of still another form of conductor.

The bus bars 10 are usually mounted in a duct 11. The branch box 12 is mounted adjacent the duct in any suitable manner and has suitable means such as knockouts 13 for attaching branch cables. The box contains suitable switching means 14, a protective device 15 and terminals 16 for each bus bar connection.

In the form shown, the movable switch members 17 are carried by an insulating block 18 mounted on the inside of the cover 19 which is hinged to the box at 20. A handle 21 has side bars 22, each of which is hinged at 23 to the box and has a slot in which a stud 25 carried by the cover slides when the handle is pulled down.

An insulating block 26 is detachably mounted in the box and supports a number of stationary contacts 27 one for each switch member. This block has a passage 28 for each conductor 29.

Each conductor has an individual shield 30 and all the shields may be molded into a single piece as shown in Figs. 3 and 5, with a base 31 which fits against a shoulder 32 of the block 26. The shield member and insulating block may be secured in the box by screws 12' passing through said members and through lugs such as 33. Each shield is hollow and has a slot 34 to accommodate a bus bar 10.

Each conductor consists of two contact strips 35 secured to a cross piece 36. Each pair of strips has a pair of gripping jaws 37 for engaging a movable switch member 17 within a passage 28 when the cover of the box is closed and a pair of jaws 38 for engaging a bus bar.

The cross bar 36 is loosely mounted in the hollow of the shield with its ends projecting loosely into grooves 39 in the shield. One edge rests on the insulating block 26 and movement of the other edge is limited by shoulders 40 in the shield.

When the block 26 is removed the conductors may be readily removed and replaced.

It will be noted that each conductor is loosely and floatingly mounted inside its shield thereby permitting automatic self-alignment of the conductor relative to its bus bar 10 and relative to its movable switch member 17, respectively. This novel mounting also permits the use of conductors having stabs at both ends. It will also be noticed that the conductors are entirely encased in insulating material and that all conducting parts are fully insulated from each other and from the metal box.

In Fig. 7 is shown a cross piece 36 with a modified form of conductor member comprising a plate 41 with a bolt 42 and nut 43 for attachment of conductor wires.

In Fig. 8 metal springs 44 are shown attached to the jaws 38 for reinforcement purposes.

It will be understood also that if desired the cross bars 36 may be provided with a plurality of pairs of contact strips 35 and jaws 38.

I claim:

1. In a bus bar connector plug-in having a box with a slotted insulating shield projecting therefrom for embracing a bus bar, a contact member detachably mounted in said shield and comprising a cross bar positioned in grooves in the shield and contact strips secured to the opposite sides of said cross bar, one end of each strip projecting into said shield to engage a bus bar and the other end projecting from the shield to engage a contact in the box.

2. In a bus bar connector plug-in having a box with a slotted insulating shield projecting therefrom for embracing a bus bar and with grooves formed therein, a contact member detachably and floatingly mounted in said shield and comprising a cross bar positioned in said grooves and oppositely disposed contact strips secured to said cross bar and projecting beyond the top and bottom edges of said bar.

3. A bus bar connector plug-in device including

a box having spaced openings in its wall, an insulating plate secured to the inside of said wall and having hollow shield members projecting through said openings and being provided with slots, an insulating block mounted adjacent said plate and having openings in alignment with said shield members and detachable and floatable contact members projecting into said shields for engaging bus bars and projecting into the openings in said block for engaging contact members in the box.

4. A bus bar connector plug-in device including a box having spaced openings in its wall, an insulating plate secured to the inside of said wall and having hollow shield members projecting through said openings and being provided with slots, an insulating block mounted adjacent said plate and having openings in alignmet with said shield members, detachable and floatable contact members projecting into said shields for engaging bus bars and projecting into the openings in said block for engaging contact members in the box and means for limiting the floating movement of said contact members including shoulders on said shield members.

5. A bus bar connector plug-in device including a box having spaced openings in its wall, an insulating plate secured to the inside of said wall and having hollow shield members projecting through said openings and being provided with slots, an insulating block mounted adjacent said plate and having openings in alignment with said shield members, and detachable and floatable contact members, said contact members having conductor embraceable jaws at both ends, the jaws at one of their ends projecting into said shields for embracing bus bars and the jaws at the other ends projecting into the openings in said block for embracing contact members in the box.

WILLIAM C. ANDERSON.