United States Patent [19]

Horwell

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[45] **Jan. 9, 1973**

[54] **INSULATING BASE AND NEUTRAL WIRE CONNECTOR ASSEMBLY FOR CIRCUIT BREAKER PANELBOARD**

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[73] Assignee: **Square D Company,** Park Ridge, Ill.

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[52] **U.S. Cl.** .....**339/198 N**

[51] **Int. Cl.** **H01r 9/00**

[58] **Field of Search**.....339/198, 19, 22, 242, 244, 339/272, 217; 174/59

[56] **References Cited**

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[57] **ABSTRACT**

An insulating base of an electrical panelboard has a pair of spaced parallel wall portions straddling a branch neutral wire connector bar. A pair of main neutral wire connectors have connector body portions disposed respectively on the outer sides of the wall portions and mounting strap portions extending respectively through the wall portions and secured respectively to opposite end portions of the branch neutral wire connector bar.

3 Claims, 4 Drawing Figures

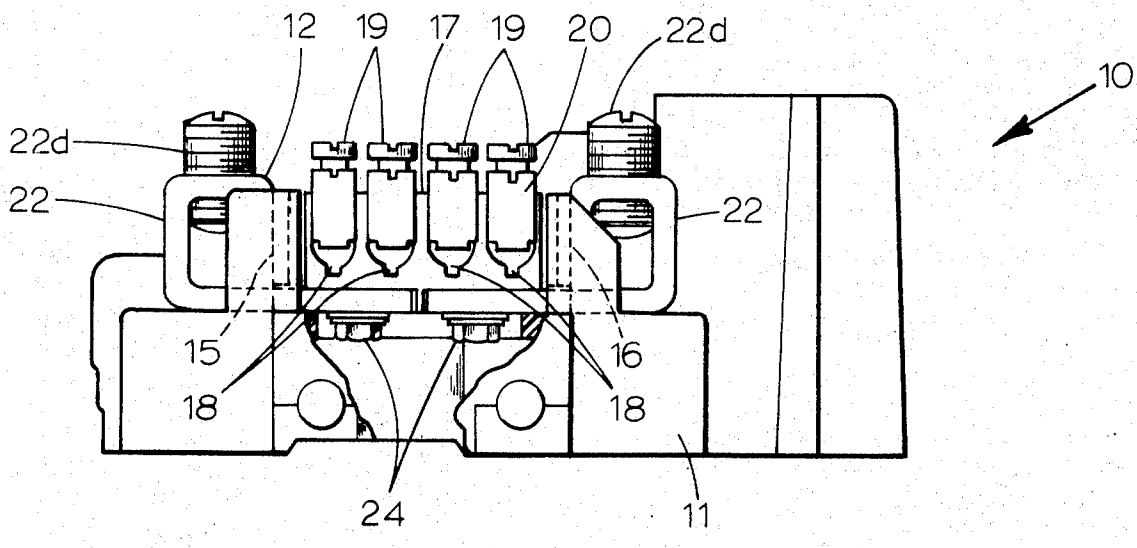


FIG. - 1

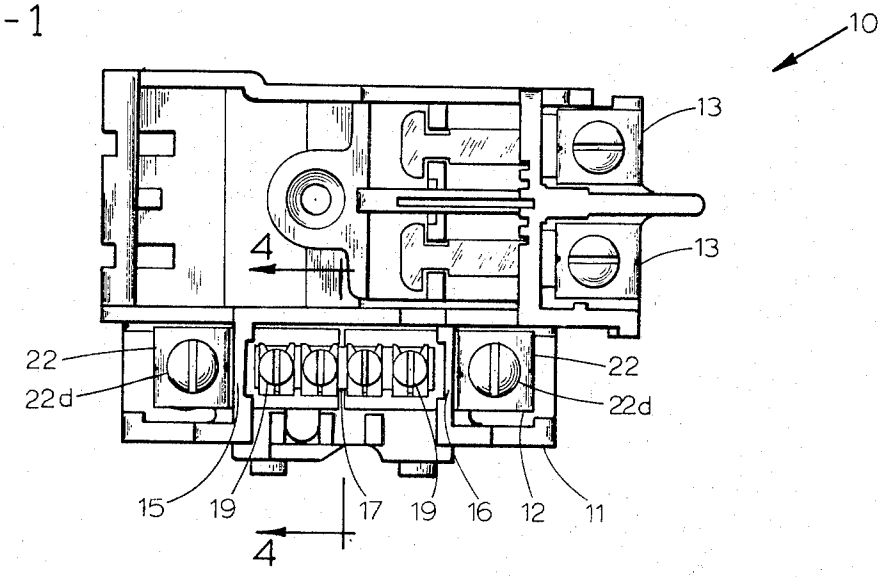


FIG. - 2

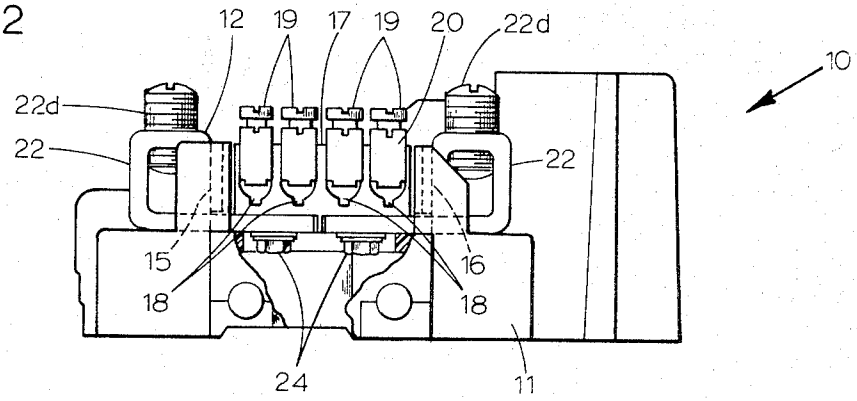


FIG. - 3

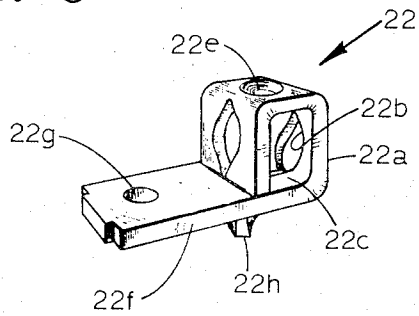
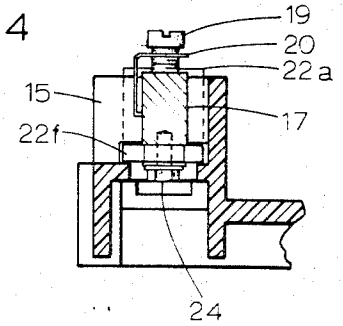


FIG. - 4



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INSULATING BASE AND NEUTRAL WIRE CONNECTOR ASSEMBLY FOR CIRCUIT BREAKER PANELBOARD

This invention relates generally to electrical panelboards or load centers, and more particularly to an improved arrangement for securing main and branch neutral wire connectors to an insulating load center base.

Formerly neutral wire connectors were secured to an insulating base by screws threaded into the material of the base. In accordance with the present invention, fastening screws securing neutral wire connectors to an insulating base do not pass through the material of the base, and contraction of the base material has no loosening effect on electrical connections.

An object of the invention is to provide an improved means of securing main and branch neutral wire connectors to an insulating base of a circuit breaker panelboard.

Further objects and advantages of this invention will become apparent when the following specification is considered along with the accompanying drawings, in which:

FIG. **1** is a top plan view of an insulating base and neutral wire connector assembly constructed in accordance with the invention;

FIG. **2** is a front view of the assembly of FIG. **1**, a portion of the base being broken away;

FIG. **3** is a perspective view of a main neutral wire connector of the assembly of FIG. **1**; and

FIG. **4** is a fragmentary sectional view taken substantially along the line **4—4** of FIG. **1**.

With reference to the drawings, an insulating base and neutral wire connector assembly **10** constructed in accordance with the invention is shown in FIGS. **1** and **2**. The assembly **10** includes an insulating base **11** and a neutral wire connector assembly **12**. Two integral plug-on bus bar and connector body members **13**, forming no part of the present invention but described in copending application, Ser. No. 151,216, filed June 9, 1971, now U.S. Pat. No. 3,694,701, issued Sept. 26, 1972, are secured to the base **11**.

The base **11** is more fully described in the aforementioned copending application, to which reference may be had if desired. The base **11** includes a pair of spaced parallel upstanding wall portions **15** and **16** between which is disposed a branch neutral wire connector in the form of a bar **17** forming part of the neutral wire connector assembly **12** and constructed in accordance with U.S. Pat. No. 3,228,094, issued Jan. 11, 1966. The bar **17** is provided with four branch neutral wire receiving holes **18** and corresponding clamping screws **19** having snap-on generally U-shaped clamping shoes **20** as disclosed in U.S. Pat. No. 3,426,319, issued Feb. 4, 1969. Between a first and a second hole **18**, and also between a third and a fourth hole **18**, the bar **17** is provided on its underside respectively with a pair of threaded openings (not shown) for a purpose to be described.

The neutral wire connector assembly **12** also includes a pair of main neutral wire connectors **22** one of which is shown in detail in FIG. **3**. Each connector **22** includes a connector body portion **22*a*** having appropriate main neutral wire receiving holes such as a hole **22*b*** and a hole **22*c***, a clamping screw **22*d*** (FIGS. **1** and **2**) threaded into a hole **22*e*** in the body portion **22*a***, and a mounting strap portion **22*f*** provided with a hole **22*g***. The body portion **22*a*** and mounting strap portion **22f** are integrally formed from a flat strip of metal into a generally P-shaped member the loop of which is secured by a tang **22*h*** twisted after being inserted through a slot (not shown).

The assembly **12** is secured to the base **11** by inserting the mounting strap portions **22*f*** of the connectors **22** toward each other respectively through aligned holes (not shown) in the wall portions **15** and **16**, and inserting a pair of fastening screws **24** respectively through the holes **22*g*** from the underside of the base **11** and threading them into the threaded openings (not shown) in the underside of the bar **17**. The bar **17** and connectors **22** are thus secured to the base **11** in such a manner that shrinkage of the base material can occur without causing loosening of any electrical connections.

Various modifications may be made in the structure shown and described without departing from the spirit and scope of the invention.

I claim:

1. An insulating base and neutral wire connector assembly comprising an insulating base having a pair of spaced parallel wall portions, each wall portion having an opening extending therethrough and aligned with an opening in the other wall portion, a pair of main neutral wire connectors each having a connector body portion disposed on an outer side of one of said wall portions and a mounting strap portion extending from the connector body portion through the opening in the respective wall portion toward the other main neutral wire connector, and a branch neutral wire connector bar disposed between the wall portions, having a longitudinal axis extending generally perpendicularly to the wall portions, having a plurality of branch neutral wire receiving holes spaced longitudinally therealong, having a corresponding plurality of clamping screws threadedly mounted therein and extending respectively into the wire receiving holes, and having spaced portions secured respectively to the mounting strap portions of the main neutral wire connectors.

2. An assembly as claimed in claim **1** wherein the strap portion of each main neutral wire connector is provided with a hole and the branch neutral wire connector bar is provided on its underside with a pair of spaced threaded openings respectively aligned with the holes in the strap portions, and including a pair of fastening screws extending respectively through the holes in the strap portions and threaded into the openings in the branch neutral wire connector bar.

3. An assembly as claimed in claim **1** wherein the mounting strap portion and connector body portion of each main neutral wire connector are integrally formed as a generally P-shaped strap member.

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