Oct. 9, 1951 H. J. HAMMERLY ET AL 2,570,229

ELECTRIC SWITCH FOR PANELS, ETC

Filed Sept. 14, 1948

Fig. 1

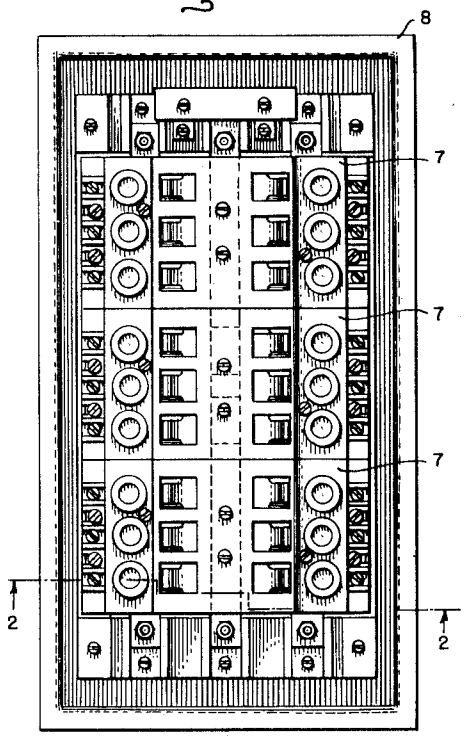
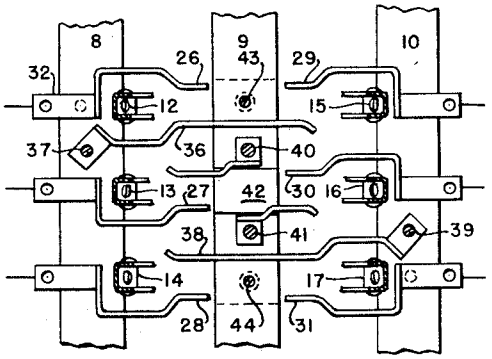


Fig. 3



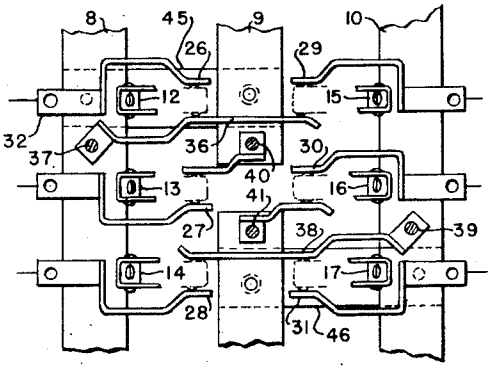


Fig. 4

Fig. 2

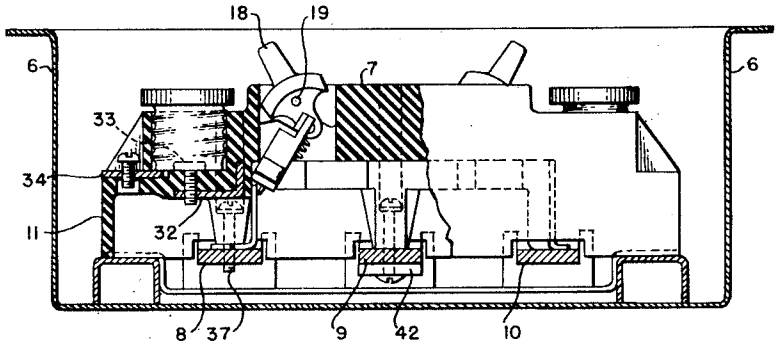


Fig. 6

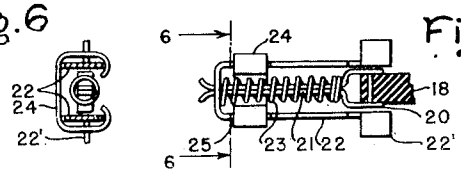


Fig. 5

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ELECTRIC SWITCH FOR PANELS, ETC.

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Application September 14, 1948, Serial No. 49,175

2 Claims. (Cl. 175—369)

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Our invention relates to electric switches and particularly to the contact mechanism and the arrangements for a distribution panel.

One object is to provide an arrangement of bus bars and switch units which is adapted to be used in conjunction with a three-phase four-wire system or a two-phase three-wire system with a minimum of changes.

Another object is to provide a toggle type switch member suitable for panel switches which is self-aligning so as to ensure excellent contact engagement notwithstanding somewhat irregular assembly of the parts.

Fig. 1 is a front view of a panel assembly embodying one form of our invention.

Fig. 2 is a transverse sectional view taken along the plane of the line 2—2 of Fig. 1 on a larger scale.

Fig. 3 is an enlarged diagrammatic view showing a section of a switch unit arranged on the bus bars for a three-phase system of distribution.

Fig. 4 is a view similar to Fig. 3 showing the same parts connected for two-phase distribution.

Figs. 5 and 6 are details of the switch member.

We have shown a panel arrangement embodying three sections 7, 7, 7 mounted in a receptacle 6 on bus bars 8, 9 and 10 to be supplied by a two phase three-wire system or a three-phase four wire system in which the neutral would be connected in a conventional manner.

Each section has an insulating body 11 secured in the receptacle and has three switch units arranged along each side of the center with a movable switch member such as 12, 13, 14 on the left and 15, 16 and 17 on the right. Each movable switch member is of the toggle snap action type with a finger piece 18 pivoted at 19 in the body and hinged at 20 to a rod 21 which passes through the bottom of a yoke 22 which has ears 22' hinged in the body and in which a spring 23 is mounted on the rod 21 between the bottom of the yoke and the head of the rod in the usual manner. Instead however of using the side arms of the yoke as the contact surface of the movable switch member we employ a copper, silver or other suitable contact ring or band 24 which is loosely mounted in notches 25 in the sides of the yoke 22 and adapted to be brought into perfect alignment with the stationary contacts of its switch unit.

Each switch unit has a stationary contact such as 26, 27 and 28 at the left and 29, 30 and 31 at the right. Each of these contacts has an extension, like 32 (see Fig. 2), which is connected to the center contact 33 of a fuse plug socket

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whose shell contact 34 provides for a branch circuit connection.

The other contacts for switches 12 and 15 are provided by a blade 36 which is connected by screw 37 to the left hand bus bar 8. The contacts opposite contacts 28 and 31 of switches 14 and 17 are provided by the blade 38 which is connected by screw 39 to the right hand bus bar 10.

The contacts opposite 27 and 30 of switches 13 and 16 are connected by screws 40 and 41 to the center bus bar 9.

Such an arrangement is suitable for use with three phase four-wire distribution circuits and by simple changes may be adapted to supply two phase three-wire distribution circuits. For this purpose, bus bar 9 is divided into upper and lower sections connected by a strip 42 which is connected at 43 to the upper section of bar 9 and at 44 to the lower section of bar 9. We then connect the upper section of 9 to bar 8 by a strip 45 and connect the lower section of bar 9 to the right hand bar 10 by strip 46.

With this arrangement, the same panel board can be readily transformed from a form suitable for use with a three phase four-wire distribution system to a form suitable for use with a two phase three-wire distribution system.

The invention of the switch structure per se is claimed in copending application Serial Number 238,512 filed July 25, 1951.

We claim:

1. In a panel board construction, three parallel bus bar members, the central bar member having sections spaced apart, a switch contact member mounted on each of said sections of the central bus bar member, one of said contact members extending toward one of said side bus bar members and the other contact member extending toward the other side bus bar member, a contact member mounted on each of the side bus bar members for cooperating with one of the previously mentioned contact members, a switch member movable between each pair of the respective cooperating contact members, conducting straps detachably connecting the spaced sections of the central bus bar member to the respective side bus bar members and a conducting strip for connecting said sections when said straps are disconnected.

2. In a panel board construction, three parallel bus bar members consisting of a central bus bar member and a side bus bar member supported at each side of said central bus bar member, the central bar member having sections spaced

apart, a central conducting strip detachably connecting said spaced sections, a switch contact member on each of said spaced sections of the central bus bar member, one of said contacts extending toward one of said side bus bar members and the other contact extending toward the other side bus bar member, a contact member mounted on each of the side bus bar members and extending parallel to one of the previously mentioned contacts, a switch member movable between each of the respective parallel contacts and conducting straps for connecting the spaced sections of the central bus bar member to the respective side bus bar members when the central strip is disconnected.

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ALBERT H. VEITCH.

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