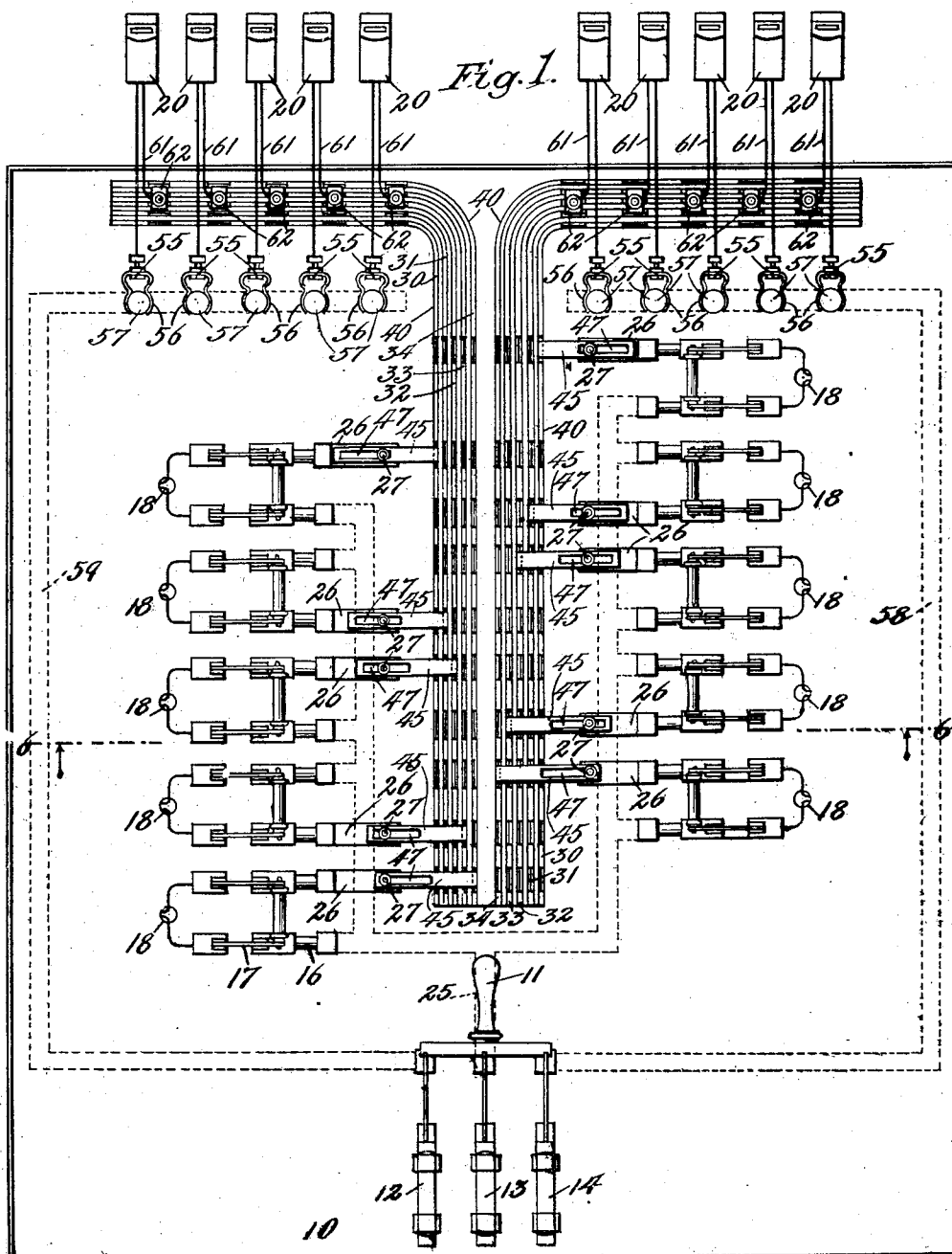


H. A. ROBINSON.
METERING PANEL BOARD.
APPLICATION FILED JAN. 18, 1908.

961,464.

Patented June 14, 1910.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

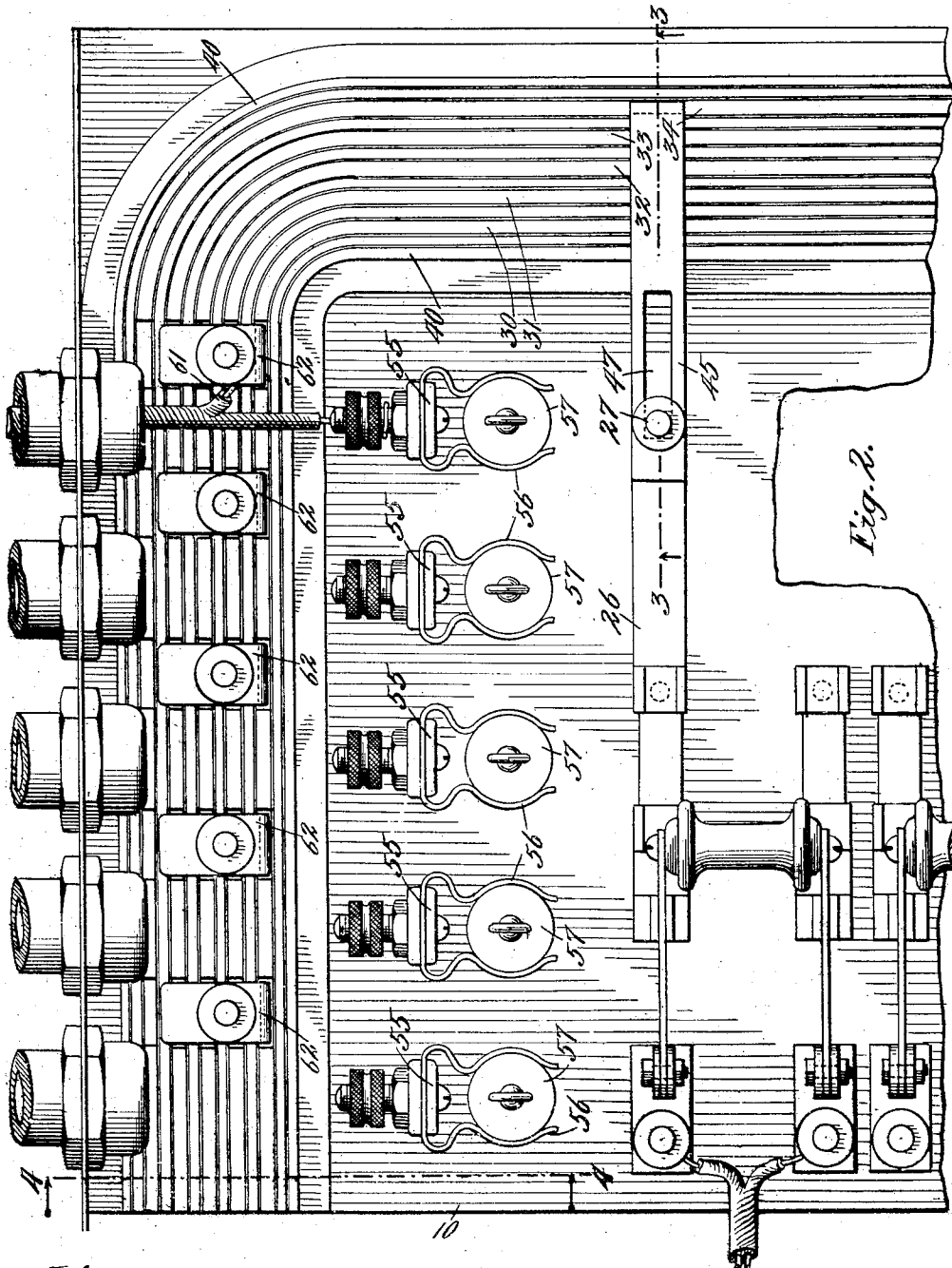


Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 3.

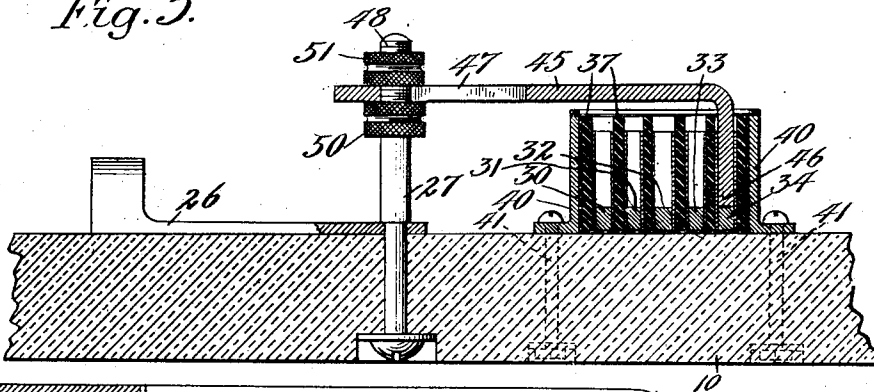


Fig. 4.

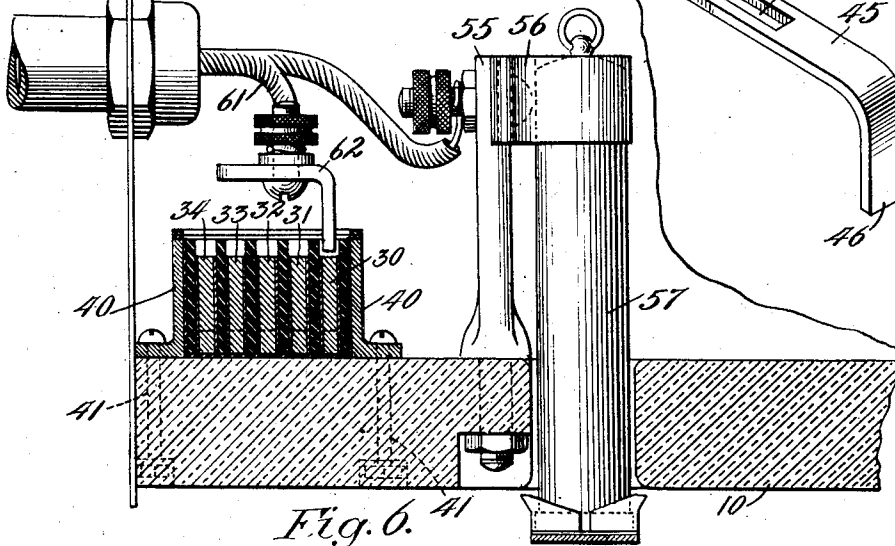


Fig. 5.

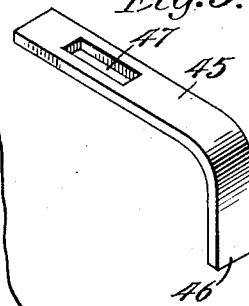
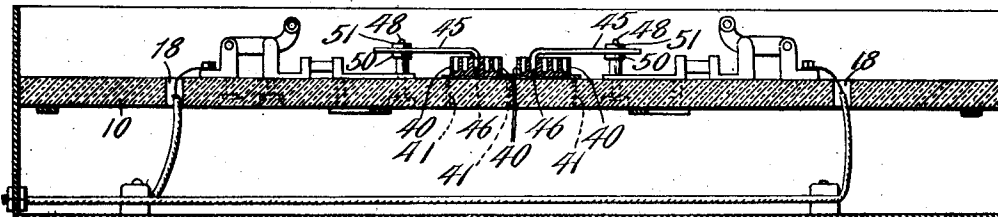


Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY A. ROBINSON, OF CHICAGO, ILLINOIS.

METERING PANEL-BOARD.

981,484.

Specification of Letters Patent. Patented June 14, 1910.

Application filed January 18, 1908. Serial No. 411,389.

To all whom it may concern:

Be it known that I, HARRY A. ROBINSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Metering Panel-Boards, of which the following is a specification.

This invention relates to metering panel boards of the class now in quite general use throughout the United States, whereby the load in any particular room or other part of a building may be switched onto any one of several meters for measuring the amount of electric current consumed in that particular room. As panel boards are usually installed in relatively small closets or cabinets, any means for saving space is of vital importance.

The invention consists in a panel board which can be easily and cheaply built, installed in compact space and which is conveniently efficient in operation and not readily liable to get out of order.

The invention more specifically consists in the use between the meter and load circuits of the device of a plurality of relatively wide bus bars, thereby of large capacity, placed side by side insulated from each other in combination with a bridge piece capable of being connected to any one of the bus bars, said bridge piece being adjustably connected to an adjacent binding post.

The invention further consists in means for insulating successive bus bars so that there is no arcing between them and in other details of construction which will be hereafter more fully described and claimed.

Figure 1 is a front view of a metering panel board of this construction normally placed in upright position upon the wall of a cabinet containing the device. Fig. 2 is an enlarged view of the upper left hand portion of the board shown in Fig. 1. Fig. 3 is a vertical sectional detail view on the line 3—3 of Fig. 2. Fig. 4 is a sectional detail view on the line 4—4 of Fig. 2. Fig. 5 is a perspective detail view of a bridge piece hereafter described. Fig. 6 is a detail view throughout the entire board on the line 6—6 of Fig. 1.

Referring again to Fig. 1 the entire device is mounted upon a board 10 of slate or other suitable insulating material such as is ordinarily used in boards of this class. Upon the lower or other convenient portion of the board is located the main feed switch 11 having the branches 12, 13 and 14 to which are connected the main circuit wires leading to the mechanism, the device here shown being on a three wire circuit but it may be used just as well on a two wire circuit. Mounted upon the board are a plurality of fuses 16 and switches 17 leading off in the usual manner to the load circuits 18 whose consumption of power is to be measured in the meters 20. These are arranged in approximately equal sized groups: in the particular case here illustrated five circuits—on each side of the board. One side of each switch 17 and consumption circuit 18 is as shown connected by the conductor 25 to the central branch 13 of the main feed switch. The other side of the consumption circuit is connected by means of a suitable plate or block 26 to a suitable post or other connecting member 27. As is shown the consumption circuits located on opposite sides of the board and their corresponding posts 27 are located in two vertical rows adjacent to the center of the board.

Between the two rows of posts 27 are two groups of vertically extending bus bars each comprising five bars 30, 31, 32, 33 and 34, one for each meter to be hereafter described. The grouping of the bus bars in two parts is of course a matter of design forming no part of the invention. These bus bars are as shown placed on edge so that their narrowest faces are upward and they therefore occupy as little space as possible across the board. They are insulated from each other by insulating material 37. The groups of bus bars thus insulated from each other are suitably supported on the board proper by means of the angle members 40 and the bolts or screws 41, although this specific form of construction is not essential to the invention. Each post 27 is provided with a bridge piece 45 as shown with one end 46 adapted to be selectively fitted in between the insulating members 37 and into contact with the intervening bus bar and adapted to be moved by

hand out of contact with that particular bus bar and into contact with another bus bar. Each bridge piece contains a slot 47 as shown through which the upper screw threaded portion 48 of the post 27 passes. This slot 47 is so shaped that the bridge piece may be moved backward or forward horizontally over the post 27 as the angular end 46 of the bridge piece is moved into contact with any desired bar or group of bus bars to which it belongs. The bridge piece bears upon a nut or other enlargement upon the post 27 and is detachably secured in position thereon by a nut or other equivalent member 51. In the operation of this part of the device the nut 51 is loosened partially and the bridge piece 45 is lifted sufficiently so that its end 46 is removed from contact with a particular bus bar and out from between the insulating members adjacent to it. The bridge piece is then moved horizontally until the end 46 is over the next bus bar to which it is to be connected. The bridge piece is then lowered until the end 46 is in contact with said bus bar and the nut 51 is tightened in position. This tightening forces the bridge piece into good electrical contact with the particular bus bar and secures it in good contact with the post to which it is connected with the result that there is a good electrical connection between the selected bus bar and the particular post to which the bridge piece is connected with the result that that particular bus bar is electrically connected to the block 26 and to the particular fuse 16, switch 17 and consumption circuit 18 which it is desired to connect with the desired bus bar to which the bridge piece is connected.

The bus bars as shown extend up the board and those belonging to the consumption circuits on the right hand side of the board are preferably angularly turned to the right and those on the left hand side of the board are preferably angularly turned to the left though manifestly these turns may be omitted without departing from the spirit of this invention. At the upper portion of the board thus constructed there are placed a group of meters 20 to be used in measuring the amount of current consumed in the various consumption circuits. There are here shown as many meters as consumption circuits but in practice only as many meters are used as it is thought there will be parties desiring to independently pay for power, while many such parties will ordinarily use several consumption circuits, with the result necessarily that there are more consumption circuits than meter circuits. One side of each meter is as shown connected to a suitable binding post or connecting member 55 suitably

mounted upon the board 10, each of said posts being connected by the clip mechanism 56 to the fuse 57 which in turn passes through the board 10. One half of these fuses 57 are connected to the conductor 58, while the other half of the fuses 57 are connected to corresponding conductor 59. The bar 58 is connected to one side as 14 of the switch 11 and the other bar 59 is connected to the other side as 12 of the switch 11. As the consumption circuits are connected by the wires 25 to the central branch of the switch 11 it readily appears that the meters are on two sides of the consumption circuit or in other words that the device is connected up for a three wire system of the ordinary type.

The opposite side of each of the meters 20 which is not connected to a fuse 57 heretofore described is connected by a conductor 61 to a suitable block or bridge piece 62, very much like the bridge piece 45 heretofore described and adapted to be adjustably placed in contact with the upper portions of different bus bars in the manner shown in Fig. 4 very much in the same manner that the bridge piece 45 is connected to the other bus bars 56 as heretofore described. In practice however, the adjustments are preferably made with the bridge pieces 45.

What I claim as new and desire to secure by Letters Patent, is:

1. In a metering panel board, a plurality of bus bars placed side by side and insulated from each other, an adjacent terminal, a slotted bridge piece adapted to connect said terminal to any one of said bus bars, and a pin adapted to pass through the slot in said bridge piece and adjustably secure said bridge piece to said terminal.

2. In a metering panel board, a plurality of bus bars placed side by side and insulated from each other, an adjacent terminal, a bridge piece slotted in its portion adjacent to said terminal to fit over said terminal, means for detachably connecting said bridge piece to said terminal, and means for detachably securing the opposite end portion of said bridge piece in selected engagement with any desired adjacent bus bar.

3. In a metering panel board, a plurality of bus bars placed side by side, insulating material between the bus bars extending beyond their edges, a bridge piece having one end adapted to go in between two adjacent projecting pieces of insulating material and connect with a selected bus bar, an adjacent terminal, and means for adjustably securing said bridge piece to said terminal.

4. In a metering panel board, a set of parallel bus bars, pieces of insulating material between said bars rising to a greater

height than said bus bars, a terminal located
at the side of said bus bars, and a rigid con-
ductor bar adjustably secured to said ter-
minal and having its end bent downward
5 so as to pass down between said pieces of
insulating material to reach and contact the
different bus bars as selected.

In witness whereof, I have hereunto sub-
scribed my name in the presence of two
witnesses.

HARRY A. ROBINSON.

Witnesses:

DWIGHT B. CHEEVER,
C. J. CHRISTOFFEL.