March 29, 1932. J. H. ALLEN 1,851,341

ELECTRIC SWITCH

Filed Feb. 23, 1929

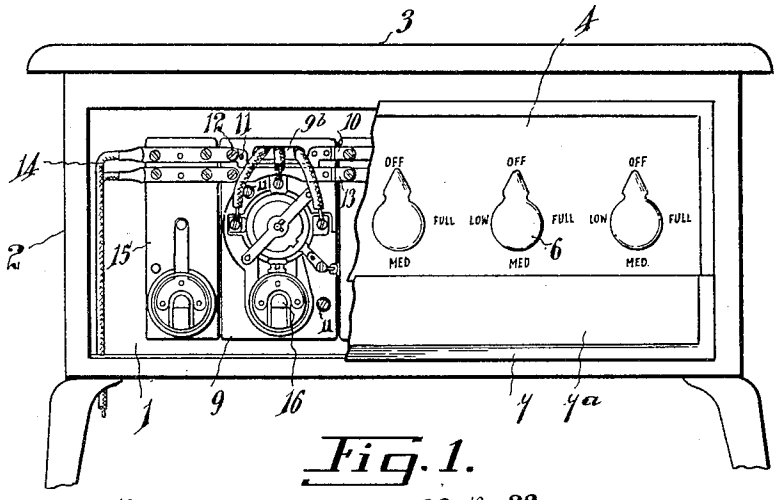

Fig. 1.

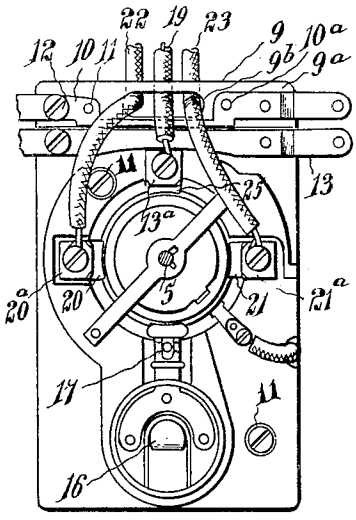

Fig. 2.

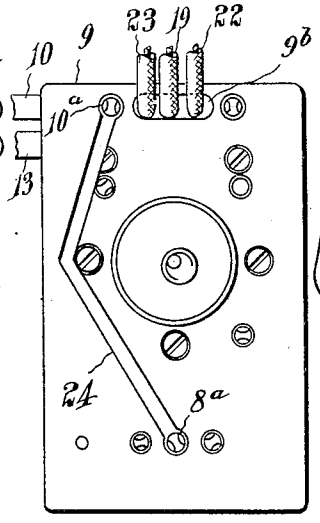

Fig. 3.

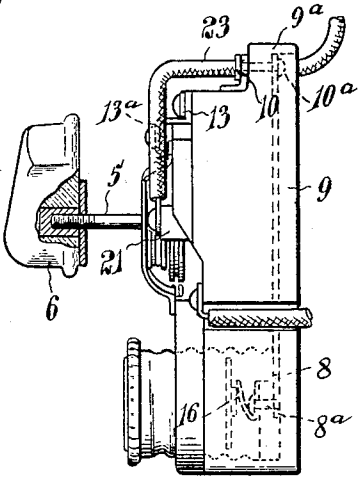

Fig. 5.

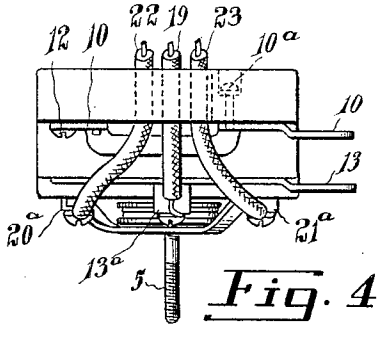

Fig. 4.

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Patented Mar. 29, 1932

1,851,341

UNITED STATES PATENT OFFICE

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ELECTRIC SWITCH

Application filed February 23, 1929. Serial No. 342,127.

This invention relates to electric switches, and more particularly to the construction, arrangement and connection of electric switches of the type commonly used on electric ranges and stoves.

The object of this invention is to so construct and arrange the switches, busbars and terminals that the connections are easily accessible on the front for the installation, removal, or repair of each switch, individually or collectively, and to simplify the construction of individual switches.

I attain my objects by providing a panel or other support for a switch or a series of switches which are arranged adjacent one another across the front of the stove. Two busbars run from the source of power across the upper front part of each switch block, and are in stepped relationship. Each of these busbars is arranged in sections, each section of which is secured to the switch block and connected with the switch terminals. Each of these sections is detachably securable to the sections of the adjacent switches. At the lower part of each switch block is located a fuse, which is thus safely removed from the busbars so that danger of contact is avoided when it is desired to remove or replace a fuse. Leads to the element are insulated and pass over the busbars through a slot in the switch block to the stove element. These may be enclosed in a flexible casing.

The invention is hereinafter more particularly described and illustrated in the accompanying drawings in which

Fig. 1 is a front elevation of part of a stove with the switch panel partly broken away to show my improved switch;

Fig. 2 is a plan view of the switch;

Fig. 3 is a rear elevation of my improved switch;

Fig. 4 is a top plan view of my improved switch; and

Fig. 5 is a side elevation.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

My improved switch or switches are secured to a structure 1 which extends across the front of a stove 2 immediately beneath the cooking top 3. In Figure 1 of the drawings a plurality of such switches is shown. In front of the row of switches a removable switch panel 4 is secured, having openings therein through which pass the stems 5 of the switches, the handles 6 being secured to the stems in front of the switch panel in a known manner and adapted to indicate the positions of the switches; namely, "off", "full", "medium", or "low". Below this panel is a removable tray 7 having an upturned portion 7^a at the front thereof adapted to enclose the lower part of the switch block, where is located the fuse 8.

The switch itself comprises a switch block 9 which is stepped at one end, the stepped portion being indicated by 9^a. A slot 9^b is formed in the stepped portion 9^a and passes through the block. A busbar 10 passes across the front of the switch block and is secured to the stepped portion. Adjacent the slot 9^b the busbar 10 is flattened against the fall of the step. This enables the slot to be formed close to the fall, and permits the use of a narrow step, so that a very compact construction is obtained. At one side of the switch block the busbar is provided with a threaded hole and at the other side of the busbar extends beyond the edge of the switch block and is provided with a hole adjacent its end. In assembling a series of switches they are placed side by side on the panel 1 and secured thereto by screws or bolts 11. The busbars 10 on each switch are thus adapted to be secured together, the hole in the extension of the busbar being adapted to cooperate with the threaded hole of the adjacent busbar and to be clamped together by a screw 12.

A busbar 13 constructed similarly to the busbar 10 passes across the front of the upper end of the switch block adjacent the stepped portion and is likewise provided with an extension having a hole therein at one end and likewise has a threaded hole at the other end so that the busbar on the adjacent switch may be similarly connected therewith. Wires 14 lead from a source of power to the busbars. 15 is an alternative section or block of similar type of construction, the

switch mechanism omitted but fuse mechanism retained, the busbars being attached to the block in the manner similar to that in which they are secured to the regular switch block.

The busbar 10 has a terminal 10^a which extends through the switch block and connects the busbar 10 with a conductor 24 which extends across the back of the switch block in a channel or groove to the terminal 8^a at the lower end of the block. This terminal extends through the block to the central contact point 16 of the fuse 8. The shell of the fuse 8 is connected directly with an adjacent stationary switch contact 17.

The busbar 13 has a lug 13^a formed thereon which forms a terminal therefor and a terminal for the lead 19 to the stove element. A stationary switch contact 25 is secured to and supported by the said lug 13^a. Stationary contacts 20 and 21 are each supported by lugs or brackets 20^a and 21^a respectively, secured to and extending to the front of the switch block and forming terminals on the face of the switch block for leads 19. The leads pass over the busbars 10 and 13 through the slot 9^b and from thence to the stove element. The leads 19, 22 and 23 are heavily insulated to prevent contact with the busbars. For greater safety the three leads may be enclosed in a flexible casing.

Details of the construction of the switch proper being old in the art are not described, the switch, however, being provided with the usual movable contacts which are adapted to contact with the stationary contacts.

It will be seen from the above description that I have devised a switch, all the connections of which are easily accessible from the front thereof and which is very simple in construction, since a number of conductors and connections of various kinds that are usually necessary in ordinary types of switch are eliminated. Although the busbars are conveniently arranged at the front of the fuse, the switch is nevertheless safe in use because the fuse, which is the only part likely to require handling, is located at a place remote from the busbars and there is no danger of the user touching any live connections when removing or replacing fuses. Moreover the removal or replacement of one switch of a series is facilitated by the construction of the busbars in sections, each section of which may be easily disconnected, this construction being a departure from the usual construction in which continuous one piece busbars extending the whole length of the switch assembly are used.

What I claim is:

1. A switch including a switch block stepped at one end and having a slot in the stepped portion; a busbar extending across the stepped portion; a conductor connected therewith; a fuse located at the end of the block remote from the said busbar, one contact of said fuse being connected with the conductor; a contact point in said switch adjacent the other contact of said fuse and connected therewith; another busbar running across the front of the said switch block at the end thereof remote from the fuse; a fixed contact point in said switch adjacent the last mentioned busbar and connected therewith; switch contact points having terminals thereon; and leads connected to the terminals and extending across the busbar and through the slot in the block to the element.

2. A switch block in which is mounted a switch having movable and stationary contacts, and terminals; bus bars extending across the front of said block; and a lug on one of the bus bars adapted to form a terminal and having one of the stationary contacts supported thereby.

3. A switch block having one end thereof stepped and a slot extending through the stepped portion; a busbar extending across the front of said switch block at one end thereof adjacent the stepped portion; another busbar extending across the stepped portion and being flattened against the fall of the step adjacent the slot; and a switch mounted in the block and having movable and stationary contacts.

4. A switch block within which is mounted a switch, having movable and stationary contacts mounted within the block; lugs supporting the stationary contacts and extending to the front of the switch block to form terminals on the face thereof; sectional bus bars extending across and secured to the face of said switch block and adapted to be secured to the bus bars on adjacent blocks; a slot in one end of the switch block extending from back to front thereof; and leads secured to the terminals and extending over the bus bars and through the slot to the rear of the switch block.

Signed at London, Ontario, this 18th day of February, 1929.

JOHN H. ALLEN.