

Feb. 19, 1929.

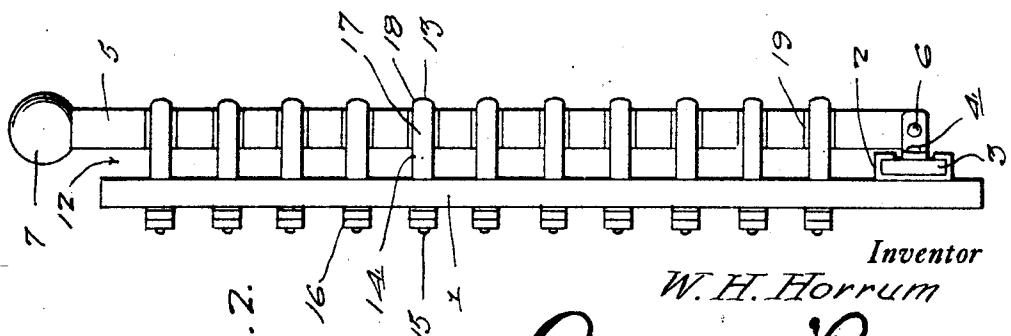
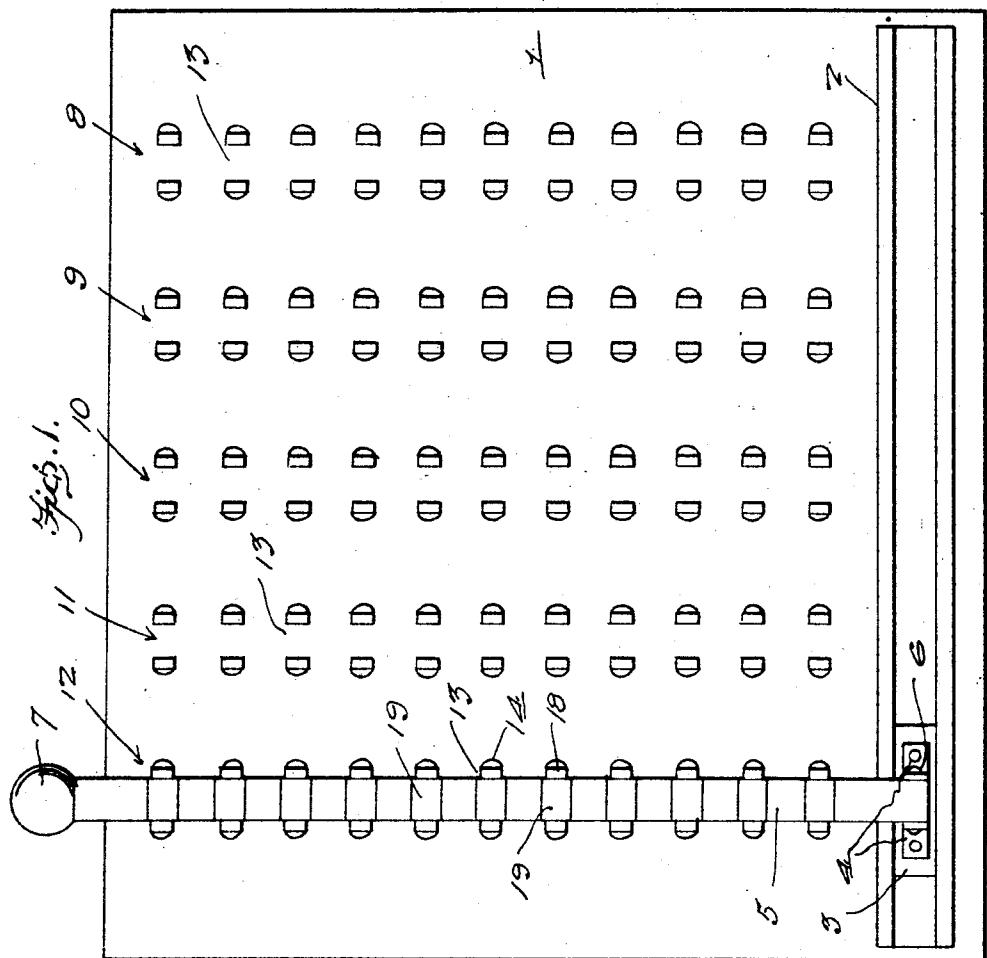
1,702,829

W. H. HORRUM

SWITCH

Filed May 29, 1926

2 Sheets-Sheet 1



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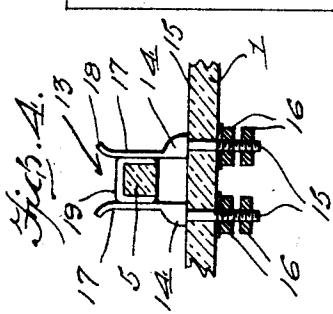
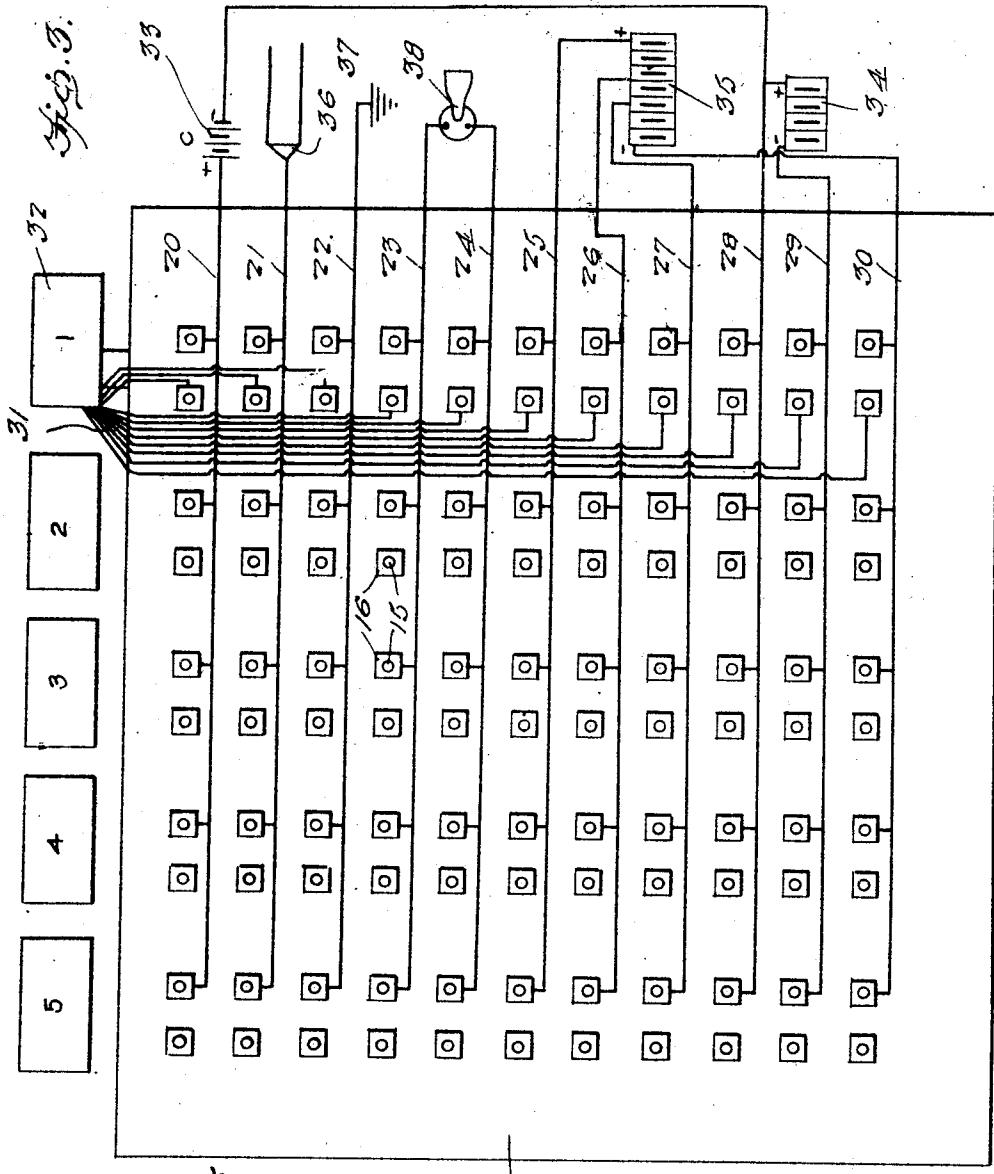
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# UNITED STATES PATENT OFFICE.

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## SWITCH.

Application filed May 29, 1926. Serial No. 112,694.

This invention relates to improvements in switches and particularly to a switch adapted for use in controlling the supply of energy to radio receiving sets, and for controlling this energy in such a manner that it may be supplied to any one of a plurality of receiving sets.

An object of the invention resides in providing a switch construction more particularly adapted for use in radio studios and sales rooms for controlling a plurality of radio sets in a simple manner in order that any one of a plurality of sets may be connected in the circuit with a group of batteries, a loud speaker, the antenna and ground for the operation of the set and so that the difficulty is eliminated of connecting up sets with batteries, and so forth, each time the customer desires a demonstration of a particular set, and also for eliminating the use of a large number of batteries such as is now the case in numerous studios where a number of sets are supplied with separate batteries for demonstration at any desired time.

The invention further comprehends the provision of a simple means for controlling the energy supplied to any of a plurality of receiving sets so that any one of the sets may be operated independently of the other in which a single control member effectively controls the circuit to all of the sets.

The invention comprehends numerous other improvements residing in the specific construction and relation of the parts of the switch for carrying out the invention, and more particularly pointed out in the following detailed description and in the claim directed to a preferred form of construction, it being understood however, that various changes in the size, shape and arrangement of these parts may be made without departing from the spirit and scope of the invention as herein set forth.

In the drawings forming part of this application:—

Figure 1 is a plan view of the switch constructed in accordance with this invention.

Fig. 2 is an end elevation thereof.

Fig. 3 is a rear elevation of the switch with the diagrammatic representation of the circuit connected thereto for controlling the circuit between a plurality of receiving sets and other apparatus operated thereby.

Fig. 4 is a detail sectional view through the switch construction, showing on an enlarged

scale, one of the pairs of contacts with the movable control member engaged therebetween.

Referring to the drawings in detail, 1 indicates a base plate for the switch which is made of suitable insulating material of suitable size, preferably rectangular in shape, as clearly illustrated in Fig. 1. A channel member 2 is mounted adjacent the lower edge of this plate 1 as shown in Fig. 1, and slidably mounts a runner 3 adapted to move longitudinally of the channel member 2, and which is provided with a pair of angle brackets 4 having one end of each secured to the runner 3 and the opposite ends extending in spaced parallel relation laterally from the face of the runner 3 for receiving and pivotally mounting the switch member 5 thereon, which is secured by the pivot pin 6 to these brackets.

This switch member 5 is of a length substantially the same as the base plate 1 and is formed at its end opposite to the pivot pin 6 with a handle 7 by which it may be conveniently operated in a manner which will be hereinafter described.

A plurality of pairs of stationary contact members are mounted in rows as indicated at 8, 9, 10, 11 and 12 respectively. While five rows of the pairs of contacts are shown, it is to be understood that any desired number of rows may be provided according to the amount of apparatus to be controlled by the switch and that there may be any number of pairs of contacts in a row that may be desirable for the purpose for which the switch is designed.

In the switch construction as illustrated in Fig. 1, there are eleven pairs of contacts in a row in which each pair may be indicated by the numeral 13. These stationary contacts include base members 14 having projections 15 adapted to extend through openings in the base plate 1, and receive the lock nut 16 for securing the contact on the base plate with the base portion 14 seated against the base thereof. One of the lock nuts also serves to secure a wire or cable to the extension 15 for interposing the contact in the circuit which it controls. As clearly shown in Fig. 4, these stationary contacts are of identical construction and arranged in opposite relation in a pair, and have resilient fingers 17 projecting from the body portions 14 which are curved outwardly as indicated at 18 for purposes which will hereinafter be described.

As clearly illustrated in Fig. 1, the switch member 5 is adapted to be aligned with the pairs of contacts in any one of the rows which extends substantially at right angles to the channel member 2, so that it may be moved between the contacts of each pair in any one row. At the points of engagement of the switch member 5 with the pairs of contacts in any one of the rows, the same is recessed 10 to receive a plurality of U-shaped metallic contacts 19. This switch member 5 is constructed of suitable insulating material while the U-shaped contacts 19 are of suitable metal and are adapted to close the circuit between the contacts of a pair as clearly illustrated in Figs. 1 and 4, when the switch member 5 is moved into the closed position as illustrated in Figs. 1 and 2.

It will be seen that the circuits of the pairs 20 of contacts in any one row may be closed by the operation of the switch member through the positioning of the runner 3 in alignment with the row of contacts to be closed and the pivotal movement of the switch member in 25 the position to engage all of the contacts of the row as shown in Figs. 1 and 2.

This switch construction has been particularly designed for use in radio studios and sales rooms in order to place one of any number 30 of sets in operation through the use of the same set of batteries, loud speaker and antenna and ground connections. To illustrate the application of the switch construction in this manner, reference is made particularly to Fig. 3, in which it will be noted that one contact of each pair of corresponding pairs in each row are connected in common circuit as indicated at 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30 respectively, while 40 each of the remaining contacts of each pair in a row are connected by a separated insulated wire connection as indicated at 31 with one radio receiving set as indicated at 32 in Fig. 3.

For the purpose of illustration, five radio 45 receiving sets of any conventional form are indicated by the numerals "1", "2", "3", "4", "5". It will be seen from an examination of Fig. 3, that all of the circuit connections for the radio set 32 are made by the wires 31 with one contact of each pair in a row of contacts. The common wire 20 is illustrated in Fig. 3, as connected with the plus terminal of a C battery 33 while the negative terminal of this 50 battery is connected to the wire 28, which forms the positive connection for the A battery 34. The negative terminal of the A battery is connected to the wire 29 while the B battery 35 has four terminals in which the negative terminal is connected to the wire 30 and the three positive terminals connected to the wires 25, 26, and 27 respectively.

The antenna connection for any one of the

five sets is made with the wire 21, the antenna being indicated diagrammatically at 36 while the ground connection 37 is connected with the wire 22. The wires 23 and 24 provide the circuit connections for the output circuit of the receiving set and the loud speaker or other sound reproducer 38 is operated in a well known manner.

From Fig. 3, it will thus be appreciated that this switch mechanism provides a construction which may be made of suitable size in order to control any number of radio receiving sets, by which any one may be operated through the operation of the switch to close the circuit through the pairs of contacts in one of the rows corresponding to the set desired, and that one loud speaker, one set of batteries, and a single antenna and ground connection are used at all times for the operation of any one set.

From this it will be observed that it will substantially simplify the expense in connection with the demonstration of radio receiving sets in sales rooms and similar places where several sets have to be maintained in operative condition for demonstrating purposes. It economizes battery consumption and apparatus required to be in constant use and therefore effectively economizes in the operation and demonstration of a number of receiving sets.

It should thus be clearly understood that the invention as above set forth contemplates the provision of a simple and efficient switch construction which will control a plurality of series of independent circuits for securing operation of the devices incorporated in any 100 one series of circuits in a simple and efficient manner.

Having thus described my invention, what I claim as new is:—

A circuit closer, comprising a base, having 105 a plurality of groups of contacts mounted thereon in spaced parallel relation, each group of contacts being formed of a plurality of pairs of contact members mounted in equal spaced and aligned relation on said base, 110 a channel shaped side carried by the base extending at right angles to the aligned groups of contacts, a block slidably mounted in said guide, a rod member formed of insulating material and pivotally attached at one end to 115 said block for movement therewith and adapted for selective engagement with said aligned groups of contacts whereby to simultaneously bridge all of the contacts of a predetermined group, and a plurality of contact bands mounted on said rod member in spaced 120 relation and adapted to respectively engage the contacts of each pair for closing the circuit therebetween.

In testimony whereof I affix my signature.  
WILLIAM HENRY HORRUM.