Oct. 25, 1927. 1,646,924

F. M. MAUK

ELECTRIC SWITCH

Filed July 29, 1926

Fig. 1.

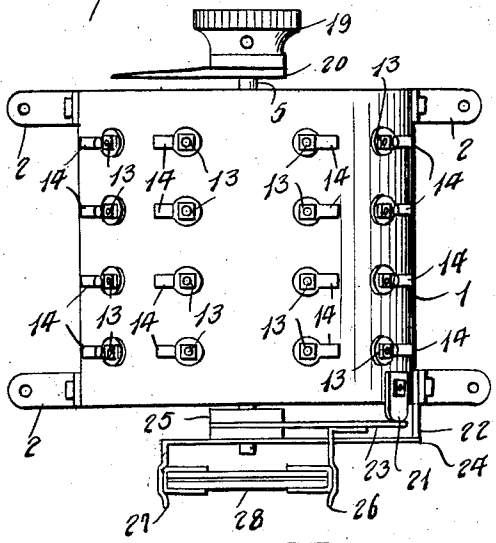


Fig. 2.

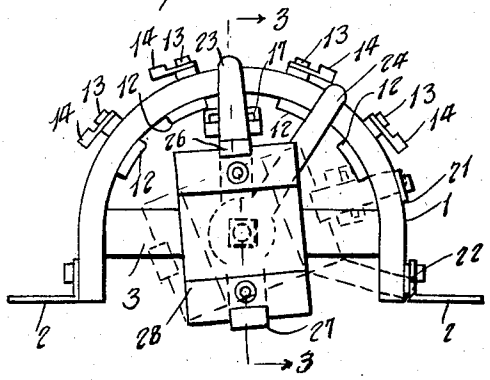


Fig. 5.

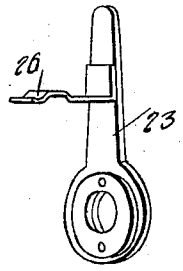


Fig. 3.

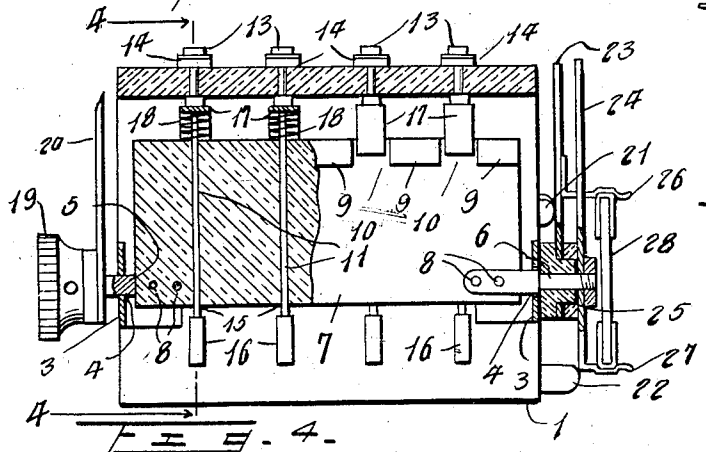


Fig. 6.

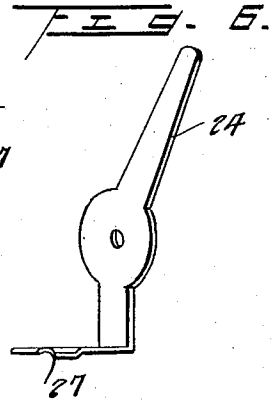
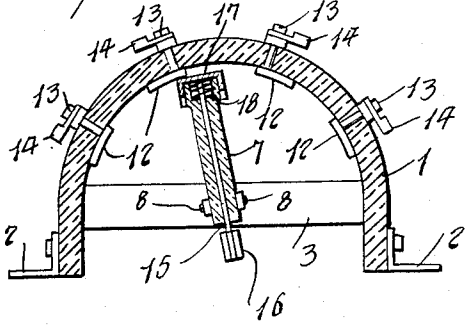


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ELECTRIC SWITCH.

Application filed July 29, 1926. Serial No. 125,731.

This invention relates to electric switches, and has for one of its objects to provide a novel, simple and highly efficient device of this character through the medium of which one series of a plurality of series of tuning instruments, the tuning instruments of the respective series being of different inductance, may be simultaneously connected in the circuit of a radio receiving apparatus.

A further object of the invention is the provision of a switch of this character through the medium of which one series of the tuning instruments and a fixed condenser may be connected in the circuit of a radio receiving apparatus.

With the foregoing and other objects in view, the nature of which will become apparent as the description proceeds, the invention consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of the switch adjusted to connect one series of the tuning instruments and a fixed condenser in the circuit of a radio receiving apparatus,

Figure 2 is a view in rear elevation of the switch,

Figure 3 is a longitudinal sectional view taken on the vertical plane indicated by the line 3—3 of Figure 1,

Figure 4 is a transverse sectional view taken on the vertical plane indicated by the line 4—4 of Figure 3,

Figure 5 is a detail perspective view of one of the blades of the switch, and

Figure 6 is a similar view of the other blade of the switch.

Corresponding and like parts are referred to in the following description, and designated in the several views of the accompanying drawing, by similar reference characters.

The switch comprises a base 1 which may be made of any suitable insulating material and is of substantially semi-cylindrical formation. The base 1 is hollow and is provided with brackets 2 to permit it to be readily secured in applied position. Bars 3 are secured to and extend across the ends of the base 1, and are provided with bearing openings 4 in which a front shaft 5 and a rear shaft 6 are journaled. The inner ends of the shafts 5 and 6 are forked, and positioned in said ends are the ends of a brush carrier 7. The carrier 7 may be made of any suitable insulating material, and is secured to the shafts 5 and 6 by rivets 8 or other suitable elements. The carrier 7 is preferably of rectangular formation, and is secured to the shafts 5 and 6 adjacent one of its longitudinal edges. Adjacent the other longitudinal edge thereof, the carrier 7 is provided with relatively spaced lugs or projections 9 which extend laterally from its opposite sides. The lugs 9 at one side of the carrier 7 are alined with those at the other side of the carrier, and such parts provide guide ways or grooves 10. The carrier 7 is provided with bores 11 which extend transversely therethrough and are located in alinement with the guide ways or grooves 10.

Series of contact blocks 12 are secured to the base 1 by means of bolts 13 to which are also secured wire retaining clips 14. Each series of contact blocks 12 extend longitudinally of the base 1, and the respective series of contact blocks are preferably equally spaced. The contact blocks 12 are located within and the clips 14 externally of the base 1. Rods 15 are slidably mounted in the bores 11 of the carrier 7, and secured to certain adjacent ends thereof are wire retaining clips 16. Brushes 17 are secured to the other ends of the rods 15, and are preferably of inverted U-form. The side members or parts of the brushes 17 are positioned in the guide ways or grooves 10, and due thereto the rods 15 and the parts carried thereby are held against turning movement with respect to the carrier 7. The brushes 17 are urged in the direction of the contact blocks 12 so as to establish a good electrical contact between these parts, and this is accomplished by springs 18 mounted on the rods 15 between the brushes and the adjacent edge of the carrier 7.

The number of brushes 17 mounted on the carrier 7 corresponds to the number of contact blocks in each series, and the brushes are adapted to be moved into contact with each series of blocks 12 through the medium of a knob 19 secured to the front shaft 5. There is also secured to this shaft, a pointer 20 which in conjunction with a dial on the panel of the radio receiving instrument in connection with which the switch is used, is adapted to indicate with which series of the blocks 12 the brushes 17 are in contact.

Contact strips 21 and 22 are secured to the base 1 and project beyond the rear end thereof. Blades 23 and 24 are secured to

the rear shaft 6, and are adapted in one position of the carrier 7 to contact with the strips 21 and 22, respectively. The blades 23 and 24 are resilient and are insulated from each other as shown at 25. Spring clips 26 and 27 carried by the blades 23 and 24, are adapted to support a fixed condenser 28 and electrically connect the same to the blades.

In practice, a set of two tuning instruments of the same or different inductance, are connected to each series of the contact blocks 12, the circuit wires are connected to the brushes 17, and a variable condenser is connected to the contact strips 21 and 22. By turning the carrier 7 through the medium of the knob 19, the brushes 17 can be moved into contact with the series of blocks 12 to which are connected the tuning instruments that are to be switched into the circuits. The brushes may be moved into contact with any series of the blocks 12 without switching the condenser 28 in circuit with the variable condenser. By moving the carrier 7 so as to position the blades 23 and 24 in contact with the strips 21 and 22, the condenser 28 will be switched in circuit with the variable condenser, and at the same time one of the sets of tuning instruments will be switched into the circuits, this being brought about by reason of the fact that, when the blades 23 and 24 are in contact with the strips 21 and 22, the brushes 17 are in contact with the adjacent series of blocks 12. The switch structure shown will enable two circuits to be tuned to any one of four different wave bands. For each additional circuit that is to be controlled by means of the switch, two additional contacts are added to the carrier 7 and an additional series of contact blocks is added to the base 1. If desired, the base 1 may be made of cylindrical formation in order to adapt it to carry the maximum number of series of contact blocks. The switch may be used for purposes other than that set forth, as will be readily apparent to those skilled in the art.

Where a variable condenser is desired in place of the fixed condenser 28 such condenser is removed from the clips 26 and 27 and flexible leads connected to a variable condenser fastened to the panel are soldered to the clips. In order to provide each wave band with a condenser of suitable capacity, a set of strips like 21 and 22 are provided for each wave band and the leads which run from the tuning condenser to 21 and 22 are changed to the clips on the switch blades, where they are soldered, and the leads from all the other variable condensers are attached to the wave bands to which they belong through strips such as 21 and 22 which are placed on the edge of the base in the same position relative to their own tuning instruments as 21 and 22 are placed relative to theirs. This arrangement makes it possible for one radio set to contain permanent coils and condensers necessary to cover all wave bands.

It should be understood that the drawing is merely illustrative and does not pretend to give exact proportions. Furthermore the said drawing is illustrative of a preferred construction, it being my expectation that various changes and modifications may be made without departing from the spirit and scope of my invention.

What is claimed is:

1. A switch comprising a base, contacts carried by the base, blades, means movably supporting the blades from the base, means insulating the blades, and an instrument supporting clips carried by the blades.

2. A switch comprising a base, contacts carried by the base, blades, means movably supporting the blades on the base, means insulating the blades, and a condenser carried by and electrically connected to the blades.

3. A switch comprising a base, a plurality of relatively spaced series of contact blocks secured to the base, a carrier, brushes supported by the carrier, means for mounting the carrier to permit the brushes to be moved into contact with any series of blocks, contact strips carried by the base, blades insulated from each other and supported by the carrier for cooperation with the contact strips, and a condenser carried by and electrically connected to the blades.

4. A switch comprising a base, a series of contact blocks secured to the base, a carrier, brushes supported by the carrier, contact strips secured to the base, blades insulated from each other and supported by the carrier, means for mounting the carrier to permit the brushes and blades to be simultaneously moved into contact with said blocks and strips, and a condenser carried by and electrically connected to the blades.

5. A switch comprising a base, a rotatably supported carrier, contact blocks secured to the base, rods extending through and slidably supported by the carrier, brushes secured to corresponding ends of the rods and contacting with the carrier to prevent the rotation of the rods with respect to the carrier, clips carried by the other ends of the rods, and springs urging the brushes in the direction of the contact blocks.

In testimony whereof I affix my signature.

FREDERICK M. MAUK.