Dec. 22, 1931. E. B. EKSTRAND 1,837,900

ELECTRICAL SWITCH PLUG

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Fig. 1.

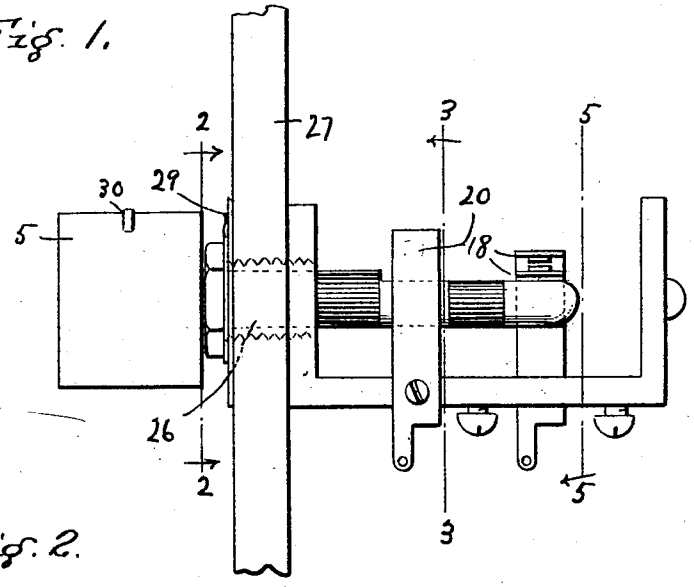


Fig. 2.

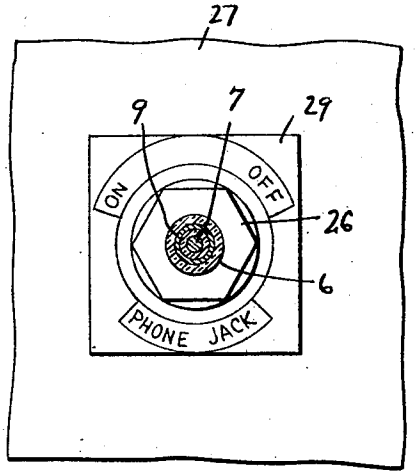
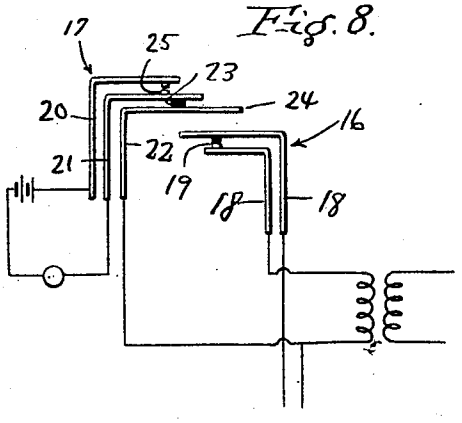


Fig. 8.



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Fig. 3.

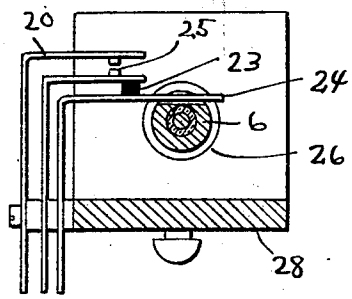


Fig. 4.

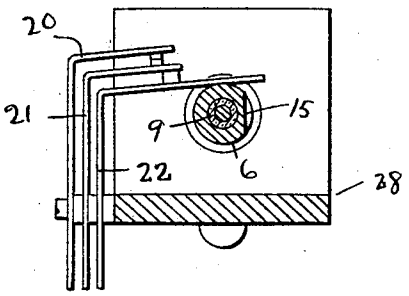


Fig. 7.

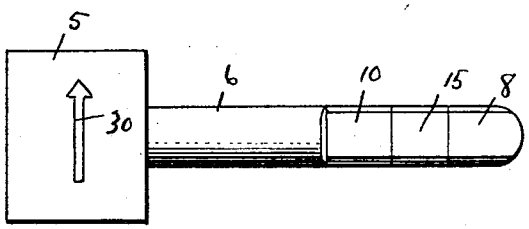


Fig. 5.

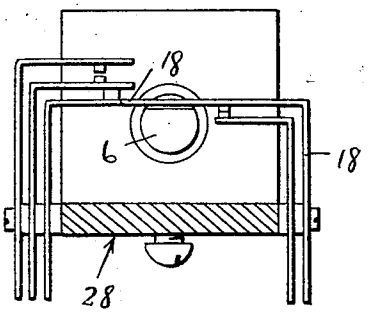
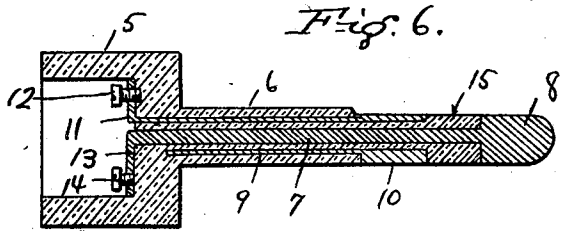


Fig. 6.



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UNITED STATES PATENT OFFICE

EDWARD BERGER EKSTRAND, OF WEST SOMERVILLE, MASSACHUSETTS

ELECTRICAL SWITCH PLUG

Application filed April 23, 1929. Serial No. 357,498.

The present invention appertains to new and useful improvements in circuit makers and breakers and more particularly to a novel switch plug especially useful in the reduction of volume in radio receiving apparatus.

Another important object of the invention is to provide a device of compact and simple construction which, by its use, conserves much space and materials that would otherwise be required to obtain the same result.

These and other objects of the invention will become more apparent as the invention is better understood from the following specification and claims.

In the drawings:

Figure 1 represents a side elevation of the improved switch mechanism.

Figure 2 represents a vertical sectional view on the line 2—2 of Figure 1.

Figure 3 is a vertical sectional view, taken substantially on the line 3—3 of Figure 1, and showing the switch fingers in open circuit position.

Figure 4 represents a vertical sectional view, taken on the same line as Figure 3 and showing the switch element in closed circuit position.

Figure 5 represents a vertical sectional view, taken substantially on the line 5—5 of Figure 1.

Figure 6 represents a longitudinal sectional view through the plug.

Figure 7 represents a side elevation of the plug.

Figure 8 represents a diagrammatic view showing the switch element for actuation by the said plug.

Referring to the said drawings, wherein like numerals designate like parts, the invention includes a block shaped knob 5 of hollow construction and being provided with a cylindrical shank 6 of suitable insulating material. Extending longitudinally through the shank 6 is a conductor 7, which has an enlarged head 8, at its outer end of substantially the same circumference as the shank 6.

Embedded longitudinally within the shank 6 is a tube 9, circumscribing the conductor 7. The conductor tube 9 terminates at a point spaced from the point 8 and has a relatively enlarged portion 10. The periphery of the enlarged portion 10 is substantially flush with the outer surface of the shank 6. The opposite end of the tube has a lug 11 which extends into the hollow knob 5 and is secured by a suitable set screw 12. The adjacent end of the conductor 7 is likewise provided with a lug 13, and this is also secured to the knob by a set screw 14. The screws 12 and 14 serve as means for making connections between the conductors 7 and 9 and the electrical devices involved. It is obvious that this type of switch may be interposed in various systems for controlling multiple circuits.

As is clearly shown in the drawings, the plug has substantially one-half portion thereof cut inwardly to provide the reduced end portion as well as a plane surface, generally referred to by numeral 15. Although the conductors will be exposed through this plane surface, the tension of the switch element hereinafter described is not sufficient to cause contact with the plug at this plane surface.

A switch, generally referred to by the numeral 16 is engageable with the head 8 of the plug, while a switch generally referred to by the numeral 17 is engageable with the enlarged portion 10 of the conductor tube 9. As is clearly shown in Figure 8, the switch 16 comprises the two parallel disposed L-shaped fingers 18—18, which have normally spaced contacts 19 at their plug engaging ends. The other ends of the switch elements are connected to the radio circuit in the manner shown or in any other advantageous manner.

The switch 17 comprises three fingers 20, 21 and 22, each of these fingers being of spring material and of L-shaped and interposed between the fingers 21 and 22 at their plug engaging ends is a plug 23 of suitable insulating material. The plug engaging end of the finger 22 extends upwardly and as at 24 is engaged by the plug. Normally spaced contacts 25 are carried by the fingers 20 and 21 and these are adapted to be closed by the rotation of the plug and the cam like action thereof against the extension 24 of the finger 22.

In Figure 1, the support shown includes a

bushing 26, threadedly engaged through the usual panel 27 of a cabinet. The inner end of the bushing 26 is secured to one leg portion of a U-shaped bracket 28, through which the switch devices 16 and 17 are secured in the manner shown. The face of the panel 27 has a plate 29 thereon to indicate the various positions of the knob 5, which carries an arrow 30 to indicate the direction the same must be turned.

Obviously, in the construction of this novel switch device, numerous changes in the specific shape, size and materials may be resorted to, without departing from the spirit or scope of the invention as claimed hereinafter.

What is claimed as new is:

1. A switch of the character described comprising a rotatable plug, one side of the plug being reduced, spring contact fingers, one of said fingers being engageable into the reduced portion of the plug, and exposed conductors circumferentially disposed around the plug and adapted for engagement by suitable switch elements associated with the plug.

2. A switch of the character described comprising a cylindrical plug, a knob at one end of the plug, means for rotatably supporting the plug, circumferentially extending conductors on the plug, said plugs and conductor being reduced as one side of the said plug, spring fingers adapted for engagement with the conductors and being in normally disengaged position when disposed across the reduced portion of the plug.

3. A switch of the character described comprising a cylindrical plug, a knob at one end of the plug, means for rotatably supporting the plug, circumferentially extending conductors on the plug, said plugs and conductor being reduced at one side of the said plug, spring fingers adapted for engagement with the conductors to close independent circuits and being in normally disengaged position when disposed across the reduced portion of the plug, and means for supporting said spring fingers.

In testimony whereof I affix my signature.

EDWARD BERGER EKSTRAND.