No. 884,775. PATENTED APR. 14, 1908.

A. R. SWOBODA.

ELECTRIC SWITCH.

APPLICATION FILED MAR. 8, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

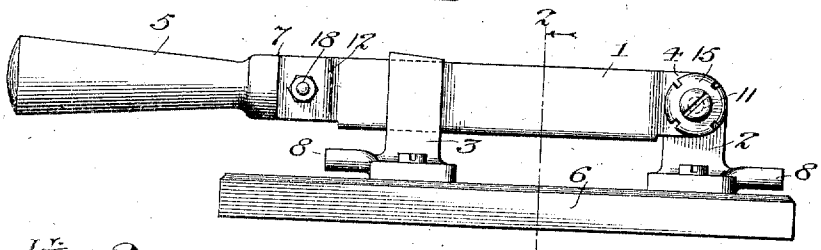



Fig. 2.

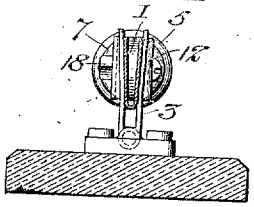



Fig. 4.

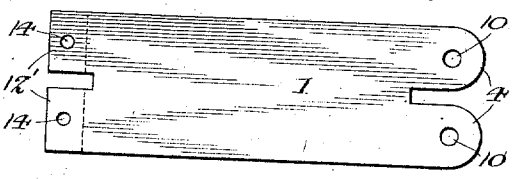



Fig. 3.

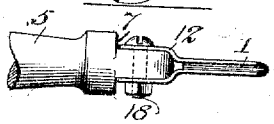
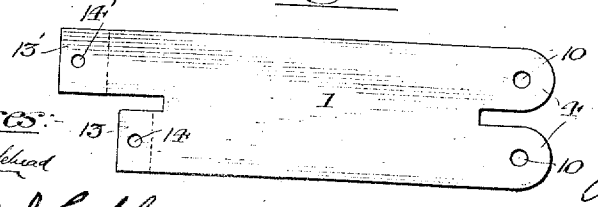



Fig. 5.




Fig. 6.




Witnesses:
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2 SHEETS—SHEET 2.

Fig. 7.

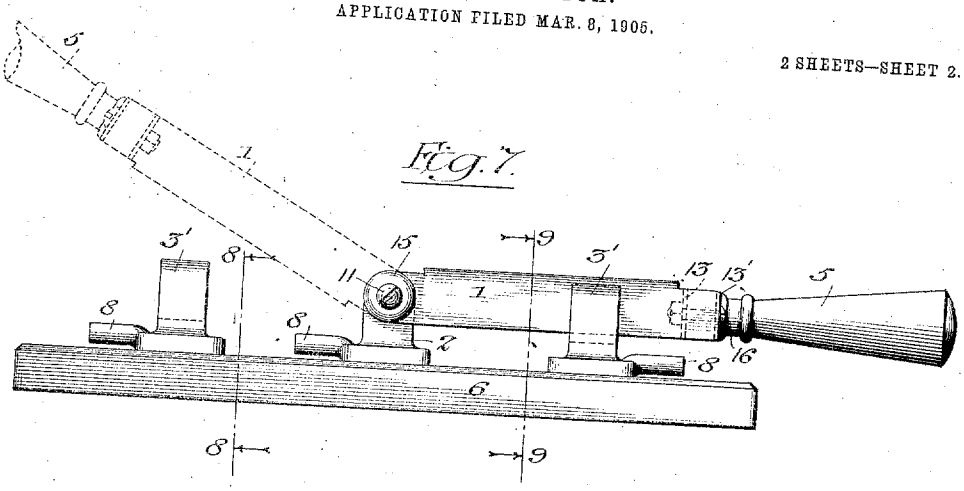



Fig. 8.

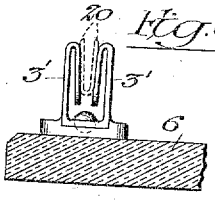



Fig. 9.

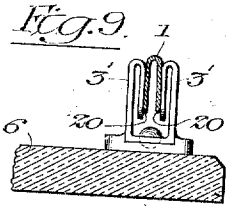
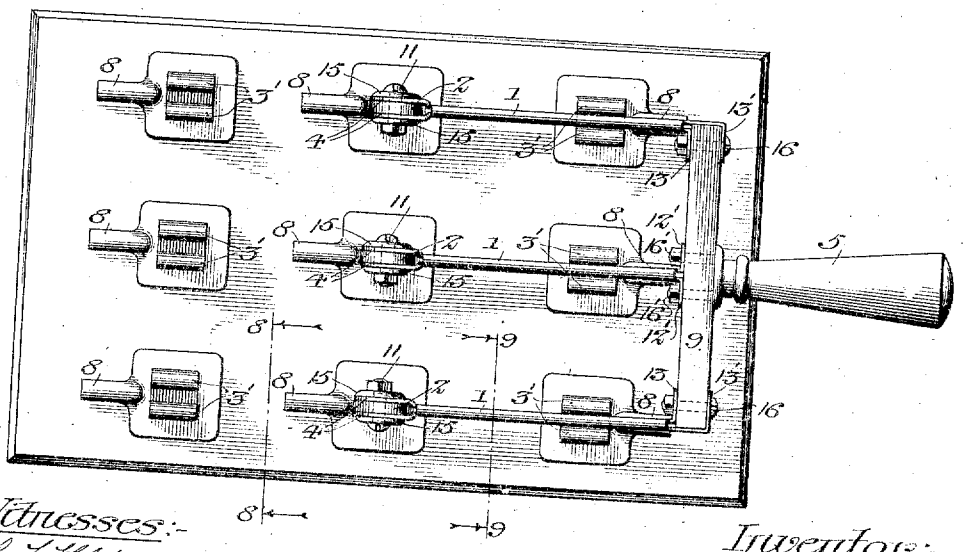



Fig. 10.




Witnesses:-

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Charles I. Cobb.

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# UNITED STATES PATENT OFFICE.

ADOLPH R. SWOBODA, OF LOUISVILLE, KENTUCKY.

## ELECTRIC SWITCH.

No. 884,775.

Specification of Letters Patent. Patented April 14, 1908.

Application filed March 8, 1905. Serial No. 249,004.

*To all whom it may concern:*

Be it known that I, ADOLPH R. SWOBODA, a citizen of the United States of America, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Electric Switches, of which the following is a description.

My invention belongs to that class of devices relating to electric circuit making and circuit breaking devices, and has for its object the production of a cheaper and more efficient switch for electrical purposes. The resiliency of the blade allows it to conform to the part into which it fits when the circuit is closed giving a smooth and perfect contact. Greater strength and increased radiating surface are obtained from the amount of material used as compared with the ordinary form of switch blade. Also by this construction one end of the blade can be conveniently and efficiently pivoted to a fixed member, and a handle attached in one effective and convenient manner to the other end for either a single or multipolar switch.

To this end my invention consists in the novel construction, arrangements and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts; Figure 1 is a view in elevation of a single pole switch. Fig. 2 is a section taken on line 2—2 of Fig. 1. Fig. 3 is a plan view of one end of the blade showing means for fastening the handle, part of the blade being broken away. Fig. 4 shows the blade as punched before it is bent into shape. Fig. 5 is a plan view of a multipolar switch. Fig. 6 shows the preferred shape of blade as punched for the side bars on a multipolar switch. Fig. 7 is a view in elevation of a multipolar double throw switch. Fig. 8 is a view in section taken on line 8—8 of Fig. 7. Fig. 9 is a view in section taken on line 9—9 of Fig. 7, and Fig. 10 is a plan view of a three pole double throw switch.

As shown in the drawings, 1 is a switch blade connecting a supporting standard 2 with a coöperating standard or clip 3 when the circuit is closed. The clip 3 and supporting standard 2 are insulated from each other in any suitable way preferably by making the base 6 of insulating material.

The connecting blade 1 is first made in a shape corresponding to that shown in Fig. 4, and then bent into a substantially U-shape as shown in Fig. 2. As a U-shaped and a V-shaped construction would obviously operate in substantially the same manner, by U-shape I wish to be understood as including a construction in which the sides are substantially parallel to one another in cross-section or in which the sides slightly diverge from the connecting means, which might tend towards a V-shape. When the blade is made slightly V-shaped, and forced into the clip, the sides tend to become parallel to each other in cross-section. In practice a slight divergence from the connecting section is preferable inasmuch as it insures more resiliency and at the same time tends toward more perfect contact with the side of the clip, permitting the sides of the blade to adapt themselves in contact with the sides of the clip, overcoming any tendency to a loose fit caused by long use or wear. The ends 4—4 preferably embraces the supporting standard 2, and is pivotally secured thereto by the bolt 11 passing through holes 10—10 and a hole in the standard or other suitable means. It is obvious however, that the ends 4—4 of the blade may be pivoted in the groove of the well known supporting standard (not shown).

A spring washer 15 or other means may be used to prevent tightening the nut on the bolt too much, thus causing the blade to bind. In a single pole switch as shown in Fig. 1 the end 12—12 is bent to embrace a handle 5 made of some insulating material or otherwise suitably insulated from the blade. The handle may be attached to the blade in any preferred manner, as shown in Fig. 3 it is held in place by the bolt 18 passing through the holes 14—14 of the blade, a shoulder 7 preventing a pivotal movement of the handle about the bolt 18.

A supporting standard 2 is made in any convenient form, as shown it is an upright of thickness permitting it to be embraced by the ends 4—4 of the blade, and provided with a suitable base. The clip or grooved standard 3 is adapted to receive the blade 1, the distance between the bearing surfaces being such as to give good contact between the blade and the clip, and is provided with a suitable base which may be similar to that of the supporting standard. These standards 2 and 3 may be attached to the base 6 in any suitable manner as shown in the drawings

bolts or screws 17 are used. The conductors are attached to the standards in any preferred manner 8—8 being shown in the drawings to receive them.

For a two pole switch the blade is preferably formed of a blank substantially as shown in Fig. 6, one portion 13′ being made longer than the other 13. It is then bent to a substantially U-shape and the ends 13 and 13′ are bent in form substantially as shown in Fig. 5 to embrace a cross-bar between them and fastened thereto by bolts 16, or other convenient means. The blades 1—1 are suitably insulated from each other by using an insulating material for the cross-bar 9 or other insulating means. A handle 5 may be fastened to the cross-bar in any convenient way, as shown in the drawings a bolt and nut 19 is used, the other end of the bolt being secured to the handle 5. For a multipolar switch, consisting of more than two blades the two outside blades are preferably formed and attached to the cross-bar 9 substantially as shown in Fig. 5, while the intermediate blades are fastened to the cross-bar as shown by the middle blade in Fig. 10, where the ends 12′ 12′ are bent at rightangles to the blade and fastened to the cross-bar by bolts 16′ 16′ or any preferred means.

In Fig. 7 is shown a double throw switch, having two clips 3′ 3′ for each blade. The clips may be of the form in which the receiving groove is similar to that shown in Fig. 2, or the preferred form 3′ 3′ shown in Figs. 8 and 9. In either case in the double throw switch it is preferable to round the corners of the blade as shown at points 20—20 in Fig. 9.

Having thus described my improvement, it is obvious that various immaterial modifications may be made without departing from the spirit of my invention, hence I do not wish to be understood as limiting myself to the exact form and construction shown.

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

1. A multipolar switch of the character described including oppositely disposed double contacting blades, each of said blades consisting of a strip of metal bent longitudinally to form substantially U-shaped members, the inner arms of said U-shaped members being laterally offset and engaging the inner surface of a connecting bar extending between the blades, and the outer arms extending over the end of said bar and offset to engage the outer surface of the said bar, and means for connecting the offset portions of the arms of the U-shaped members to the bar.

2. A multipolar switch of the character described including oppositely disposed double contacting blades, each of said blades consisting of a strip of metal bent longitudinally to form substantially U-shaped members, the arms of said U-shaped members having lateral offset portions arranged to engage respectively opposite surfaces of a connecting bar extending between the blades in combination with the said bar and means for connecting said offset portions thereto.

In testimony whereof, I have hereunto signed my name in the presence of two (2) subscribing witnesses.

ADOLPH R. SWOBODA.

Witnesses:
WM. H. TUMBRINK,
LEO F. DORN.