

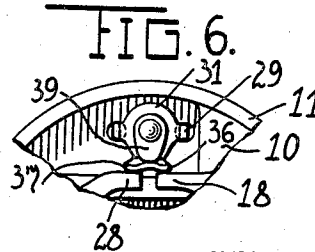
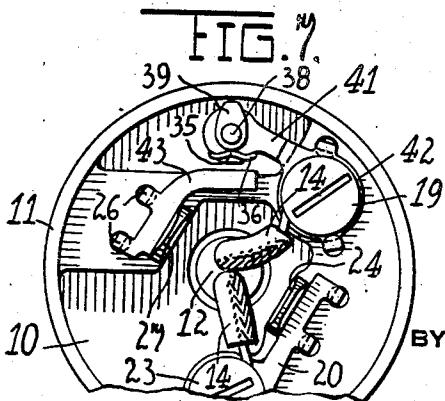
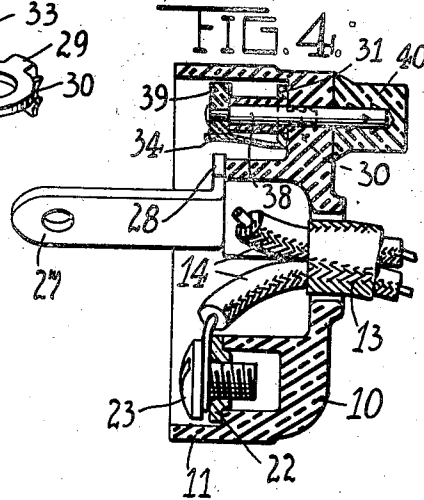
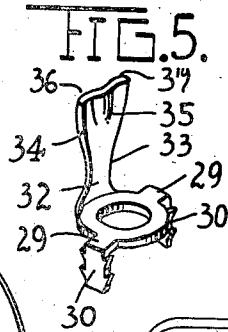
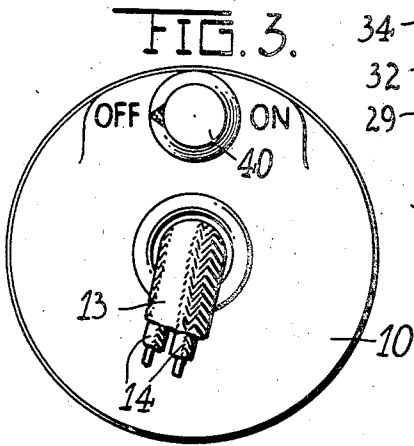
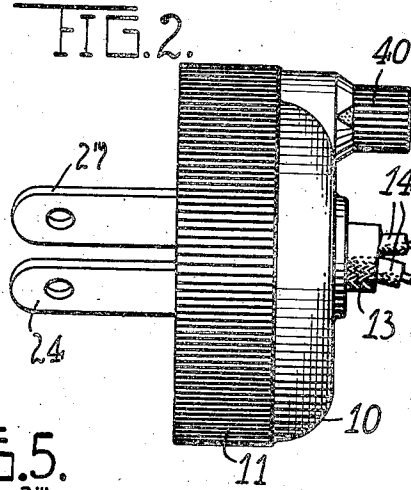
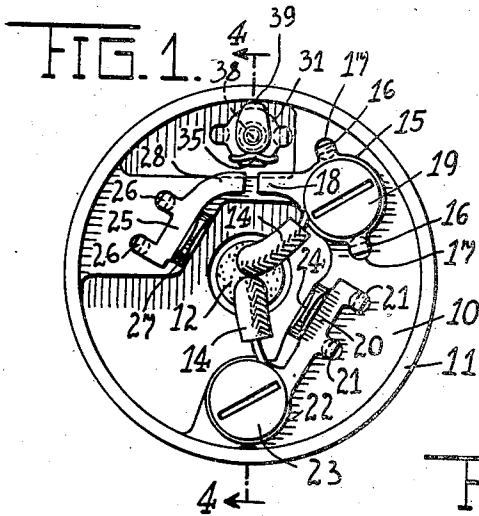
July 11, 1933.

H. V. STRYKER

1,917,909

ELECTRICAL PLUG

Filed Oct. 13, 1932



INVENTOR
H. V. STRYKER

BY his ATTORNEY J. Ledermann

UNITED STATES PATENT OFFICE

HAROLD V. STRYKER, OF BROOKLYN, NEW YORK

ELECTRICAL PLUG

Application filed October 13, 1932. Serial No. 637,570.

The main object of this invention is the provision of an improved plug for flexible electric cords such as are used to connect electrical appliances to socket outlets in walls and the like, the aim of the invention being to equip such a plug with a switching mechanism so that the current flowing through the cord may be switched on or off at the source of supply at the outlet.

Another object of the invention is the provision of an electric plug such as above-mentioned with a handle or knob readily accessible on the face of the plug for actuating the switch contained in the plug.

Still another object of the invention is the provision of a novel structure for such a switch so that the operability of the switch at all times is assured, and so that the opening and closing of the circuit by the switch are at all times positive.

A still further object of the invention is the provision of a novel contact making and breaking member used as part of the above-mentioned switch.

The above and other objects will become apparent in the description below, in which characters of reference refer to like-named parts in the drawing.

Referring briefly to the drawing, Figure 1 is a bottom plan view of a plug equipped with the switch.

Figure 2 is a side elevational view of the same.

Figure 3 is a top plan view of the same.

Figure 4 is a cross-sectional view taken on the line 4-4 of Figure 1.

Figure 5 is an enlarged perspective view of the contact making and breaking element of the switch.

Figure 6 is a fragmentary bottom plan view of the plug showing the switch in closed position.

Figure 7 is a bottom plan view of a slightly modified form of the plug.

Referring in detail to the drawing, the numeral 10 represents the body of the plug, which is surrounded by an integral peripheral wall 11. The usual central opening through the wall of the plug is indicated at 12, and through this opening a flexible

conductor 13 passes containing the two wires 14. On one side of the wall 10, a substantially disc-like metallic base 15 is mounted by having its ears 16, extending from the base, imbedded in holes 17 in the wall 10. An arm 18 extends from one side of the base 15 and is integral with the latter. The usual terminal screw 19 is provided for locking the end of the wire 14 against the base 15. At a short distance from the base 15, a substantially elongated arm 20 is mounted in the wall 10 by means of projecting ears 21 which are imbedded in the material forming the wall. At one end of the arm 20, a disc-like base 22 similar to the base 15 is provided, and a locking screw 23 is threadably engaged with the base 22. A socket prong 24 extends integrally from, and at right angles to, the arm 20. Diametrically opposite the arm 20, a second arm 25 is mounted in the wall 10 by means of prongs 26 imbedded in the material of the wall. A contact arm 28 extends from the arm 25 and is curved slightly to bring its end in alignment with the end of the arm 18.

Adjacent the spaced-apart ends of the arms 18 and 28 the switching mechanism is mounted. This comprises a metallic ring 31 having oppositely-disposed ears 29 from which prongs 30 extend at right angles; the latter are imbedded in the composition forming the material of the plug. Rising substantially midway between the ears 29 and at right angles to the plane of the ring 31, is a flexible tongue 32 whose thickness is least at its base and increases progressively toward its tip. Just above its base this tongue is narrowest in width as indicated at 33, and above the point 33 the tongue 32 increases in width as well as thickness. It is therefore apparent that if pressure is applied against the upper end of the tongue while the ring is mounted stationary, the tongue will tend to bend at approximately the point 33. The increased thickness of the upper part of the tongue is indicated by the numeral 34. The upper end of the tongue is bent into a wave-like cross-section, thus causing a central boss 35 to appear on one side of the tongue, and on the opposite side of the tongue on either side

of the boss 35, outwardly extending arcuate lips 36 and 37 are thereby formed. A pin or shaft 38 is rotatably mounted in the wall 10 and extends through the central opening of the ring 31. At one end of this shaft 38, a cam 39 is rigidly mounted, and the resiliency of the tongue 32 normally urges the boss 35 at the upper end of the tongue against this cam. On the face of the plug a knurled knob or handle 40 is mounted, and in the latter the free end of the shaft is imbedded.

It is obvious that, assuming the connections shown in Figure 1 to be made and the plug mounted in a current outlet socket, no current will flow while the switch is in the open position shown in Figure 1. If, however, the shaft 40 is rotated 180°, the cam 39 will, near the end of its rotation, strike against the boss 35 and thus push the upper end of the tongue 32 against the ends of the arms 18 and 28 until the lips 36 and 37 lie in contact with these ends as shown in Figure 6. Thus the gap between the arms 18 and 28 is bridged and current will flow from socket prong 27, through arm 25 and 28, tongue 32, arm 18, base 15, one wire 14, into the electrical appliance, back through the other wire 14, base 23, arm 20, and prong 24.

In Figure 7 is shown a modification in which the tongue 32 carries the current directly from the terminal base 42 to the prong arm 43 without closing any gap in the arm itself. It is to be noted that in this modification the ring 31 is omitted, but instead the shaft 38 is rotatably mounted in an extension 41 of the base 42. When, in this form, the switch is rotated 180° from the position shown in Figure 7, the cam 39 will cause the tongue 32 to be thrown against the arm 43, thereby closing the circuit.

Obviously, modifications in form and structure may be made without departing from the spirit and scope of the invention.

I claim:

1. An electric plug having terminal posts adapted to receive the ends of an electrical cord, prongs extending from said plug adapted to be inserted into an electrical socket, one of said prongs being electrically connected to one of said terminal posts, the other of said prongs being electrically insulated from the other of said terminal posts, and a switch adapted to electrically connect or disconnect said last-named prong and said last-named terminal post, said switch comprising a pair of spaced-apart arms mounted in said plug in electrical series with said last-named prong and post, a shaft rotatably mounted in said plug and having a cam rigid thereon, a resilient tongue mounted at one end in said plug and having its free end lying between said cam and the space between said arms, the width of said free end of said tongue being greater than the space between said arms, said free end of said tongue hav-

ing its central portion pressed out to form a boss and a lip on each side of said boss, said boss being normally urged by said tongue against said cam, said shaft upon rotation causing said cam to push said boss away from said shaft and said lips into contact with said arms to close the gap between said arms.

2. In an electrical plug having a terminal adapted to receive the end of a wire, a prong protruding from said plug and adapted to be inserted into an electrical socket, an arm extending integrally from said terminal, a second arm extending integrally from said prong, the free ends of said arms being mutually spaced-apart and lying adjacent each other a shaft rotatably mounted in said plug, a cam rigid with said shaft, a resilient tongue mounted at one end in said plug and having its free end lying between said cam and said adjacent ends of said arms, the width of the free end of said tongue being greater than the distance between said arms, said free end of said tongue being curved to form a pair of spaced-apart arcuate lips thereon on one side and a pressed-out boss on the other side, said shaft upon rotation causing said cam to push said boss and tongue toward said arms to cause said lips to bridge the gap between said arms.

3. An electrical plug having a terminal adapted to receive the end of a wire, a prong protruding from said plug adapted to be inserted into an electrical socket, an arm extending integrally from said terminal, a second arm extending integrally from said prong, the free ends of said arms being mutually spaced-apart and lying adjacent each other, a resilient tongue mounted at one end in said plug and having its other end lying adjacent the ends of said arms, the width of the free end of said tongue being greater than the distance between said arms, the thickness of said tongue increasing progressively from the base toward the free end thereof, the upper end of said tongue lying adjacent said arms and being curved to form a pair of arcuate lips on opposite sides thereof, the central portion of the upper end of said tongue being pressed outward to form a boss, a shaft rotatably mounted in said plug and having a cam rigid with one end thereof, said boss being normally urged by said tongue against said cam, said cam upon rotation of said shaft pushing said boss away from said shaft and causing said end of said tongue to be pushed toward said ends of said arms until said lips contact with said arms and close the gap between said arms.

4. An electrical plug having a terminal adapted to receive the end of a wire, a prong protruding from said plug adapted to be inserted into an electrical socket, an arm extending integrally from said terminal, a second arm extending integrally from said

prong, the free ends of said arms being mutually spaced-apart and lying adjacent each other, a resilient tongue mounted at one end in said plug and having its other end lying
5 adjacent the ends of said arms, the width of the free end of said tongue being greater than the distance between said arms, the upper end of said tongue lying adjacent said arms and being curved to form a pair of arcuate
10 lips on opposite sides thereof, the central portion of the upper end of said tongue being pressed outward to form a boss, a shaft rotatably mounted in said plug and having a cam rigid with one end thereof, said boss being
15 normally urged by said tongue against said cam, said cam upon rotation of said shaft pushing said boss away from said shaft and causing said end of said tongue to be pushed toward said ends of said arms until said lips
20 contact with said arms and close the gap between said arms.

5. An electrical plug having a terminal adapted to receive the end of a wire, a prong protruding from said plug adapted to be in-

serted into an electrical socket, an arm extending integrally from said terminal, a second arm extending integrally from said prong, the free ends of said arms being mutually spaced-apart and lying adjacent each
70 other, a resilient tongue mounted at one end in said plug and having its other end lying adjacent the ends of said arms, the width of the free end of said tongue being greater than the distance between said arms, the upper
75 end of said tongue lying adjacent said arms and being curved to form a pair of arcuate lips on opposite sides thereof, a shaft rotatably mounted in said plug and having a cam rigid with one end thereof, said tongue being
80 normally urged against said cam, said cam upon rotation pushing said tongue toward said ends of said arms until said lips contact with said arms and close the gap between said arms.

In testimony whereof I affix my signature.

HAROLD V. STRYKER.