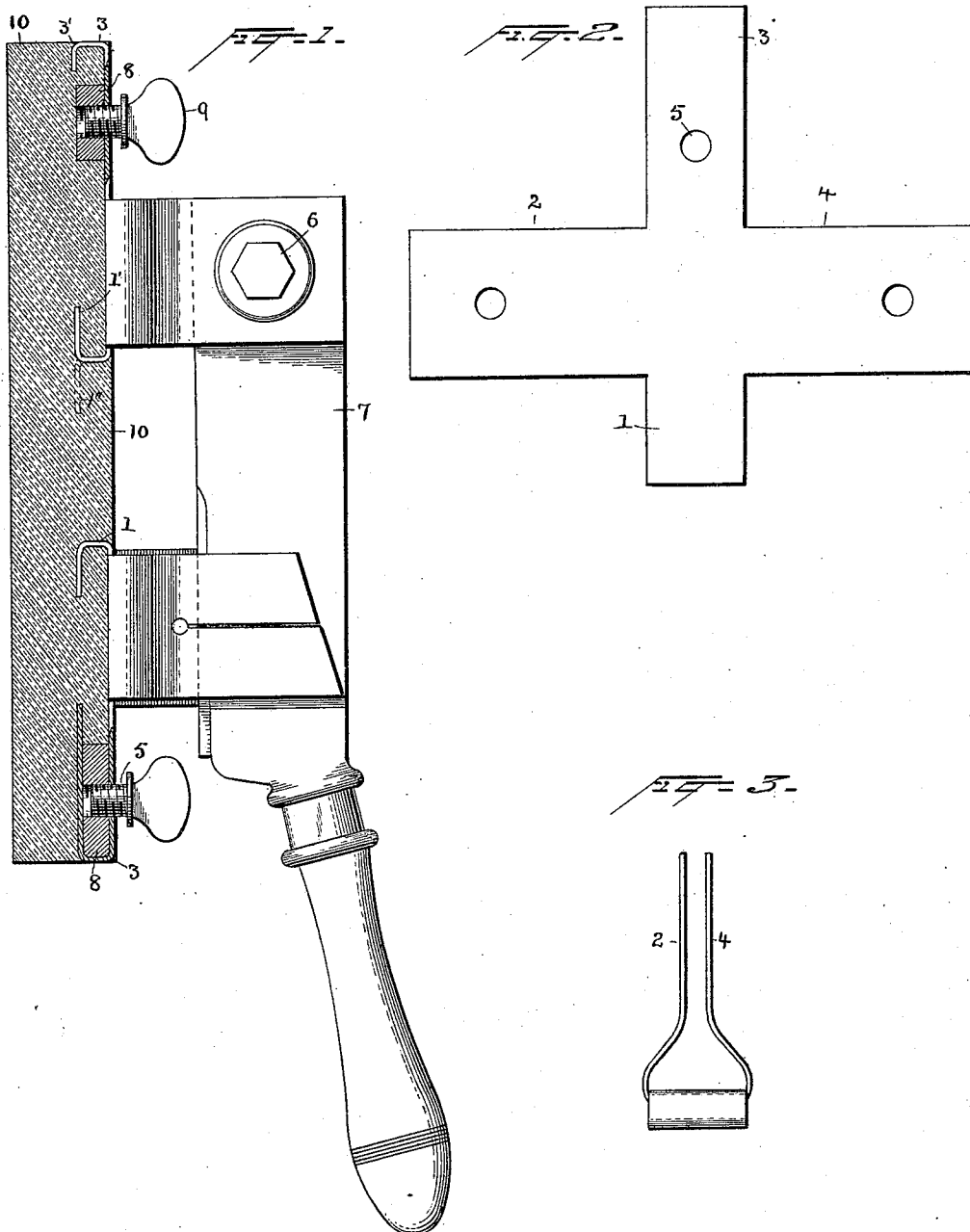


(No Model.)

A. METZGER.
ELECTRIC SWITCH.

No. 471,271.

Patented Mar. 22, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

AMANDUS METZGER, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 471,271, dated March 22, 1892.

Application filed June 6, 1891. Serial No. 395,313. (No model.)

To all whom it may concern:

Be it known that I, AMANDUS METZGER, a citizen of the United States, residing at New York, in the county and State of New York, have invented a certain new and useful Improvement in Electrical Switches, of which the following is a specification.

The present invention relates to switches for making and breaking electrical circuits; and the object of my invention is to provide a switch which shall be strong and at the same time shall be simple to construct and shall be made of the fewest possible number of parts.

The invention consists in the improved mode of making switches and in the improved switch hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a view, partly in section, of a complete switch. Fig. 2 is a plan view of a sheet-metal blank used in the switch, and Fig. 3 is an end view of the same blank bent into shape for use.

I will first describe the manner in which I form the contact springs or terminals of the switch. From a sheet of brass or other suitable metal I cut a blank, preferably in the form of a cross, having arms 1 2 3 4, as clearly shown in Fig. 2, although, of course, the length and shape of the several arms, as well as the number of arms, may be varied. I then bend the two arms 2 4, so that they stand at about a right angle to the main body of the blank, as shown in Fig. 3, and I bend the arms 1 3 in the opposite direction, giving them also a reverse bend, thereby forming the hook-shaped extensions clearly shown in Fig. 1 at 1' 3'. Instead of bending the arm 1 back, as shown in full lines, it may be bent forward, as shown in dotted lines at 1''. In the blank is formed a screw-hole 5. In the upright arms when the terminal is to be used at the rear end of the switch-arm—that is, at the top in Fig. 1—holes are provided for the reception of the bolt 6, which forms the pivot of the switch-arm 7. The terminal at the opposite end of the switch is formed in the same manner as that already described, except that the ends of the vertical extensions are preferably inclined, as shown, and do not have the pivot-holes. Since these terminals are made of thin sheet metal, it is found necessary, or at least advisable, to provide reinforcing-blocks 8 at points where the binding-screws 9 are in-

serted for the purpose of securing circuit-wires to the terminals. At the left in Fig. 1 such a block is shown in position and a screw partly inserted. The arm 3 is not long enough to extend under the reinforcing-nut. At the right, however, the arm 3 is longer and the reinforcing block or nut is held directly between the body of the blank and the bent end. The base of the switch is made of artificial stone or other insulating material or composition which can be molded or otherwise formed around the downward extensions of the terminals.

In making up the switch I form the blanks as already described, support them in the desired relation to each other, and then mold the base-block 10 in the desired shape around the bent arms 1 3, whereby the integral sheet-metal terminals are by this single act secured in place and rigidly held. As already indicated, an entire terminal consists of a single piece of sheet metal with the addition of a slight reinforcing-block for reception of the connecting-screw, and the amount of metal employed is reduced to the minimum. So, also, is the labor required in manufacturing the switches, and the construction is such that it is impossible for the terminals of the switch to get disarranged without actually breaking the material of which the base is formed.

What I claim is—

1. The combination, with an insulating switch-base, of a circuit-terminal consisting of a single piece of sheet metal having two arms extending from the base and having an arm embedded in the base, a second terminal, and a switch-arm adapted to connect said terminals, substantially as described.

2. The combination, in a switch, of a composition base, a switch-arm, and a circuit terminal or contact having in an integral piece hook-shaped extensions projecting from the main body of the terminal and embedded within the body of said base, and extensions projecting in the opposite direction from the body of the terminal and connected or adapted to be connected with the switch-arm, substantially as described.

3. The combination, in a switch, of an insulating-base and circuit terminals or contacts, each consisting of a single piece of sheet metal having extensions projecting from the

base and having other extensions embedded within the body of the base, and a pivoted switch-arm adapted to co-operate with both said terminals or contacts, substantially as described.

5 4. The combination, in a switch, of an insulating-base, a circuit terminal or contact secured to the base and consisting of a single piece of sheet metal having extensions projecting from the base and having other extensions embedded within the body of the
10 base, a second terminal or contact, and a pivoted switch-arm adapted to co-operate with both of said terminals or contacts, substantially as described.
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5. The combination, in a switch, of an insulating-base, a sheet-metal terminal provided with a screw-hole and having extensions embedded in said base, a screw for connecting a circuit-wire thereto, and a reinforcing metal
20 block having a screw-hole in line with the first-mentioned hole, substantially as described.

This specification signed and witnessed this 2d day of June, 1891.

AMANDUS METZGER.

Witnesses:

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