

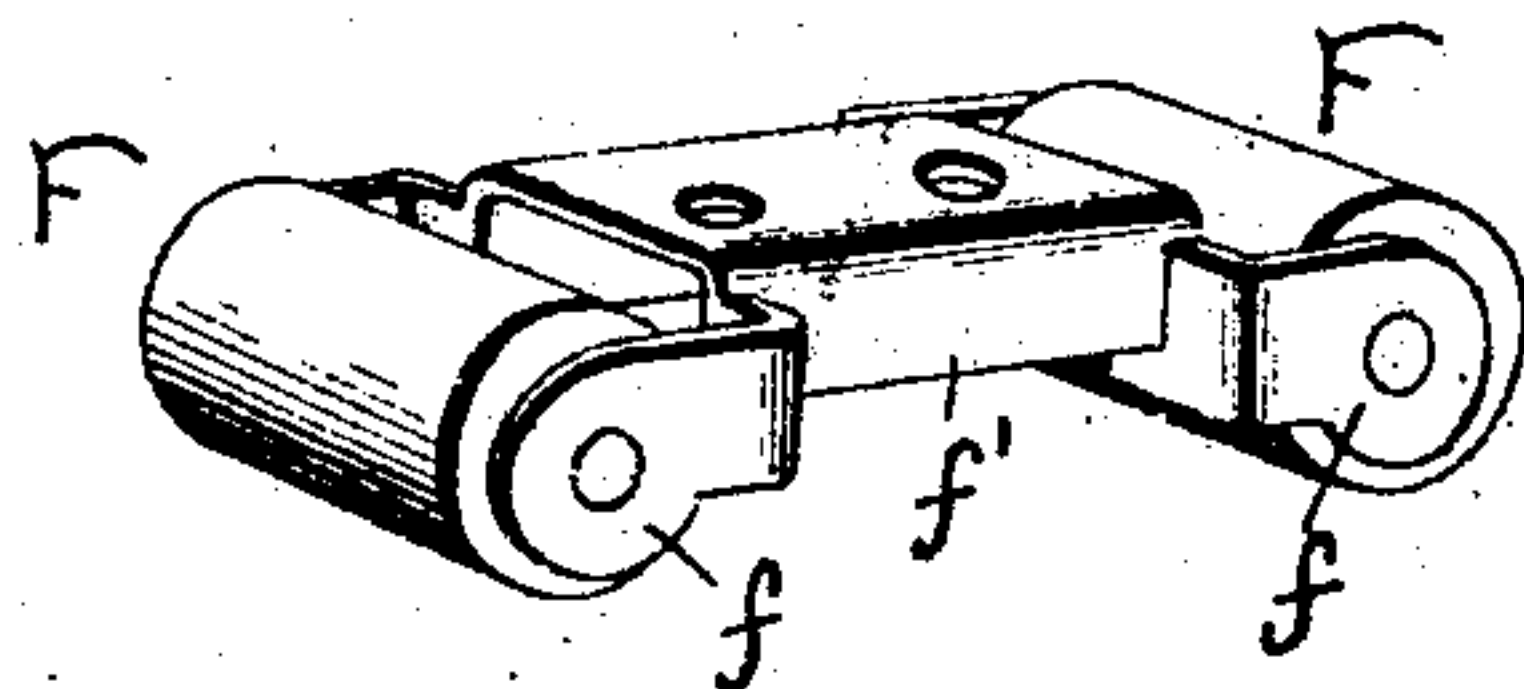
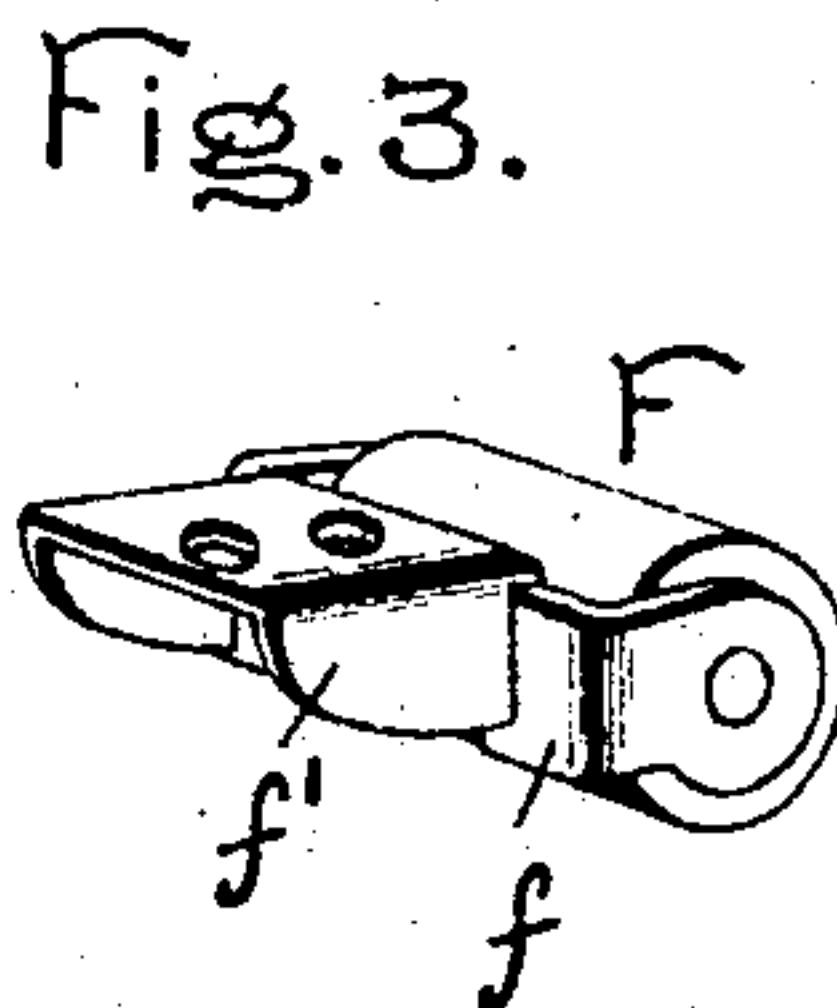
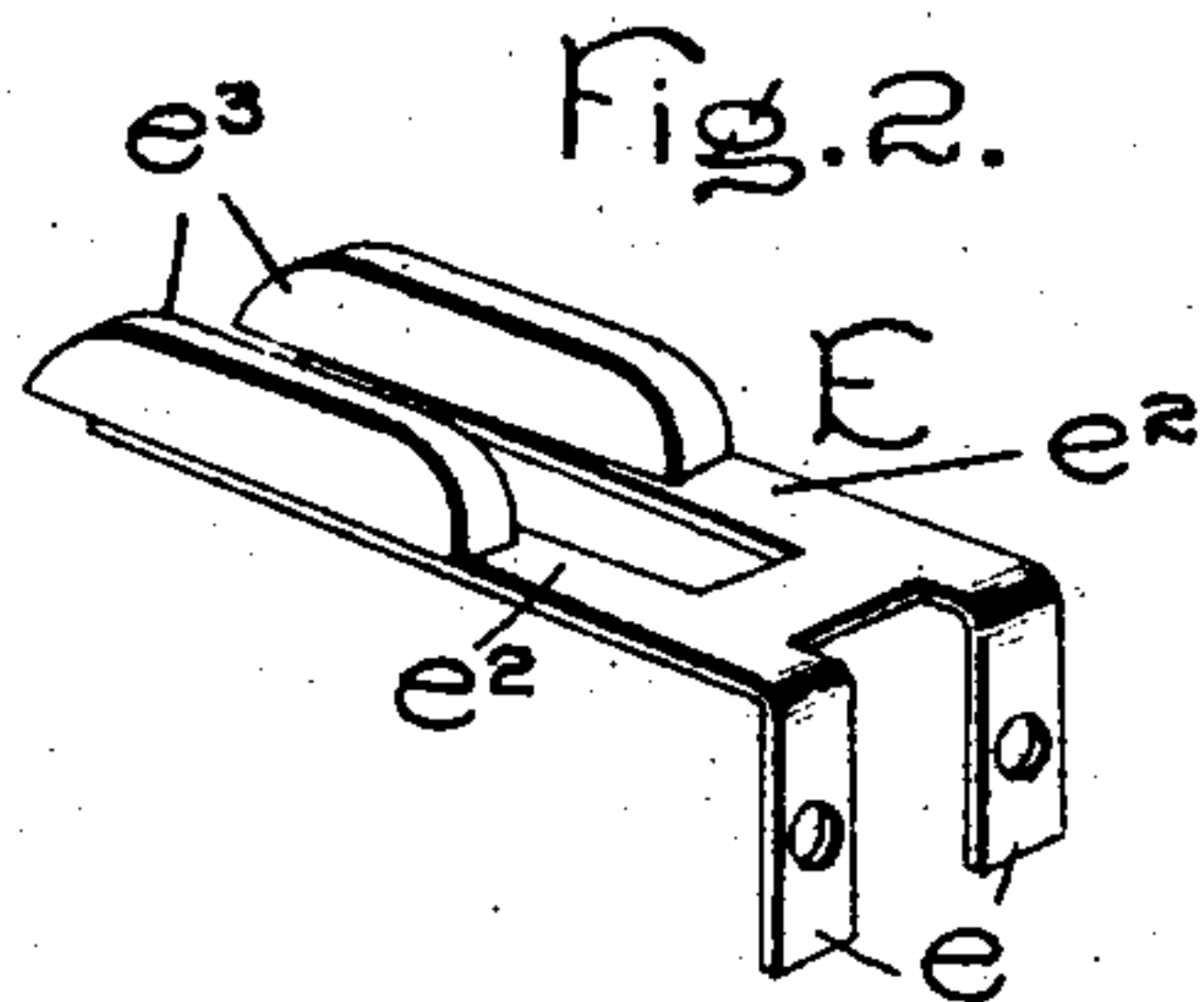
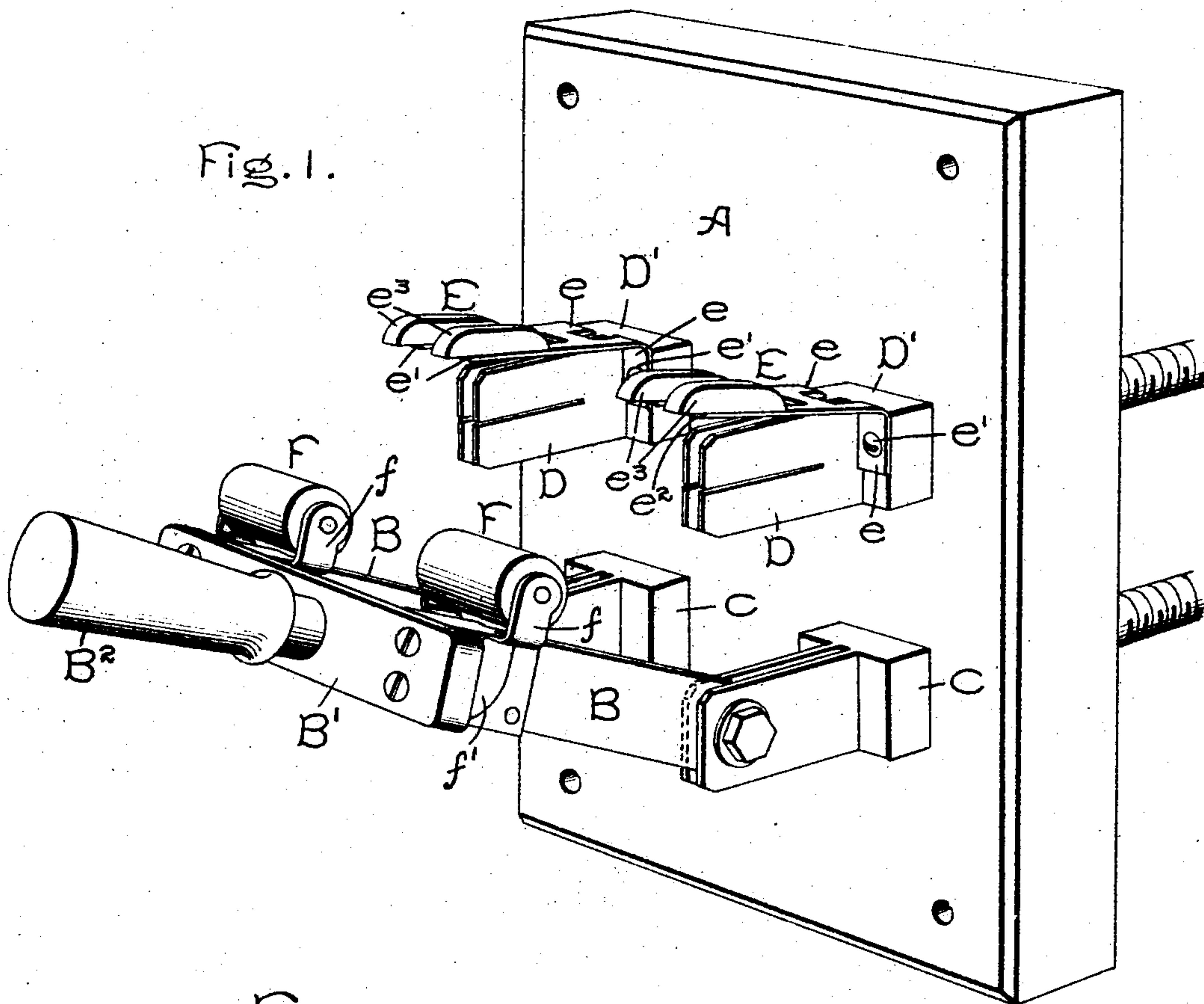
No. 765,609.

PATENTED JULY 19, 1904.

C. C. BADEAU.
CARBON BREAK SWITCH.

APPLICATION FILED SEPT. 16, 1901.

NO MODEL.



Witnesses:

Marcus L. Byng.

Alex. H. Macdonald.

Inventor:
Charles C. Badeau.

by

Albert S. Davis

Att'y.

UNITED STATES PATENT OFFICE.

CHARLES C. BADEAU, OF SCHENECTADY, NEW YORK, ASSIGNOR TO
GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

CARBON BREAK-SWITCH.

SPECIFICATION forming part of Letters Patent No. 765,609, dated July 19, 1904.

Application filed September 16, 1901. Serial No. 75,503. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. BADEAU, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Carbon Break-Switches, of which the following is a specification.

This invention relates to switches for opening and closing electric circuits; and its object is to provide such a device with means for preventing injury to the switch-contacts by the arc which follows the movable contact when the circuit is opened.

The invention consists in certain improvements in the auxiliary carbon-contact circuit-breaker which has been used to accomplish this purpose, the arrangement being such that the circuit is closed through said carbon contact before the main contacts close and is broken through said carbon contact after the main contacts have separated.

The object is to cause all arcing to take place at the auxiliary carbon contact rather than between the main contacts, so that the latter are preserved from injury.

My invention aims to provide an improved auxiliary carbon contact device the parts of which can be readily applied to existing switches, can be easily renewed when burned out, and which do not add materially to the cost of the switch. Moreover, it does not alter the standard distance between the blades of a double-pole switch.

I shall illustrate my improvement in connection with an ordinary hand-switch; but it will be evident to those skilled in the art that the invention is capable of much wider application.

In the accompanying drawings, Figure 1 is a perspective view of a double-pole single-throw switch embodying my invention. Figs. 2 and 3 are detail views of the auxiliary contacts. Fig. 4 is a detail view of one of said contacts for a double-throw switch.

The switch comprises the base A of insulation, on which are mounted the switch-blades B, pivoted to the terminal blocks C and adapt-

ed to close the circuit through the contact-clips D. These parts are all of the usual construction.

The auxiliary contacts are lettered E and F. The former is a resilient finger attached to the clip D, and the latter is a carbon block attached to the switch-blade B. I prefer to construct these parts as follows: The resilient finger E is a strip of sheet metal having two downwardly-bent legs e fitting on each side of the clip D and secured to the clip-base D' by screws or rivets e' . The finger portion proper is double, and each finger e^2 carries a thin contact-block e^3 , preferably of copper and having rounded ends and a straight edge. The fingers incline upwardly above the clip D and extend somewhat beyond the end of the clip.

The auxiliary contact F is preferably a roller of carbon long enough to engage with both blocks e^3 and journaled in the projecting arms of a bracket f , made of sheet metal and having a middle portion f' , which is clamped between the end of the blade B and the cross-bar B' of insulation, which connects the two blades and carries the handle B². This mode of constructing and attaching the auxiliary contacts renders it possible to add them to existing forms of switches. The roller form of contact reduces the wear of the carbon and affords a constantly-changing surface for the arc.

When the switch is closed, the blades B pass into the clips D and between the fingers e^2 , the carbon roller F striking the rounded ends of the blocks e^3 and pressing them downward as it moves over their edges. When the switch is opened, the auxiliary contacts remain closed until after the main contacts have separated, the contacts E projecting far enough beyond said clips to keep in contact with the carbon rollers until the switch-blades have entirely cleared the clips D. The circuit is therefore broken through the auxiliary contacts, and all arcing which occurs takes place between the blocks e^3 and the carbon rollers. As these auxiliary contacts can be readily replaced when worn or burned out, it is evident that my invention provides a simple and desirable

means for preserving intact the main contacts of a switch.

I have illustrated the application of the invention to a double-pole single-throw switch; 5 but it is evident that it is equally applicable to single-pole or multiple-pole single-throw switches and also to double-throw switches either single, double, or multiple pole. In double-throw switches the auxiliary carbon 10 contact must be double, as shown in Fig. 4.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A contact for a knife-switch, consisting of a strip of sheet metal having two bent legs 15 at one end, and two resilient parallel fingers each carrying a thin metal block having rounded ends.

2. In a carbon break-switch, the combination with the switch-blade, of a detachable 20 bracket, a carbon roller journaled in said bracket and an elastic arcing contact support-

ed on the switch-clip and extending beyond its outer edge.

3. A carbon break-contact for a switch consisting of a punching of sheet metal having 25 bent lugs adapted for attachment to the blade of a knife-switch, arms projecting therefrom, and a carbon roller journaled in said arms.

4. In a switch, the combination with the contact-clip and switch-blade, of a resilient finger 30 removably attached to said clip and lying side by side therewith and carrying a metallic contact in advance of said clip, and a carbon roller supported on the switch-blade and remaining in contact with the finger after the blade and 35 clip have separated.

In witness whereof I have hereunto set my hand this 11th day of September, 1901.

CHARLES C. BADEAU.

Witnesses:

ALEX F. MACDONALD,
MABEL H. EMERSON.