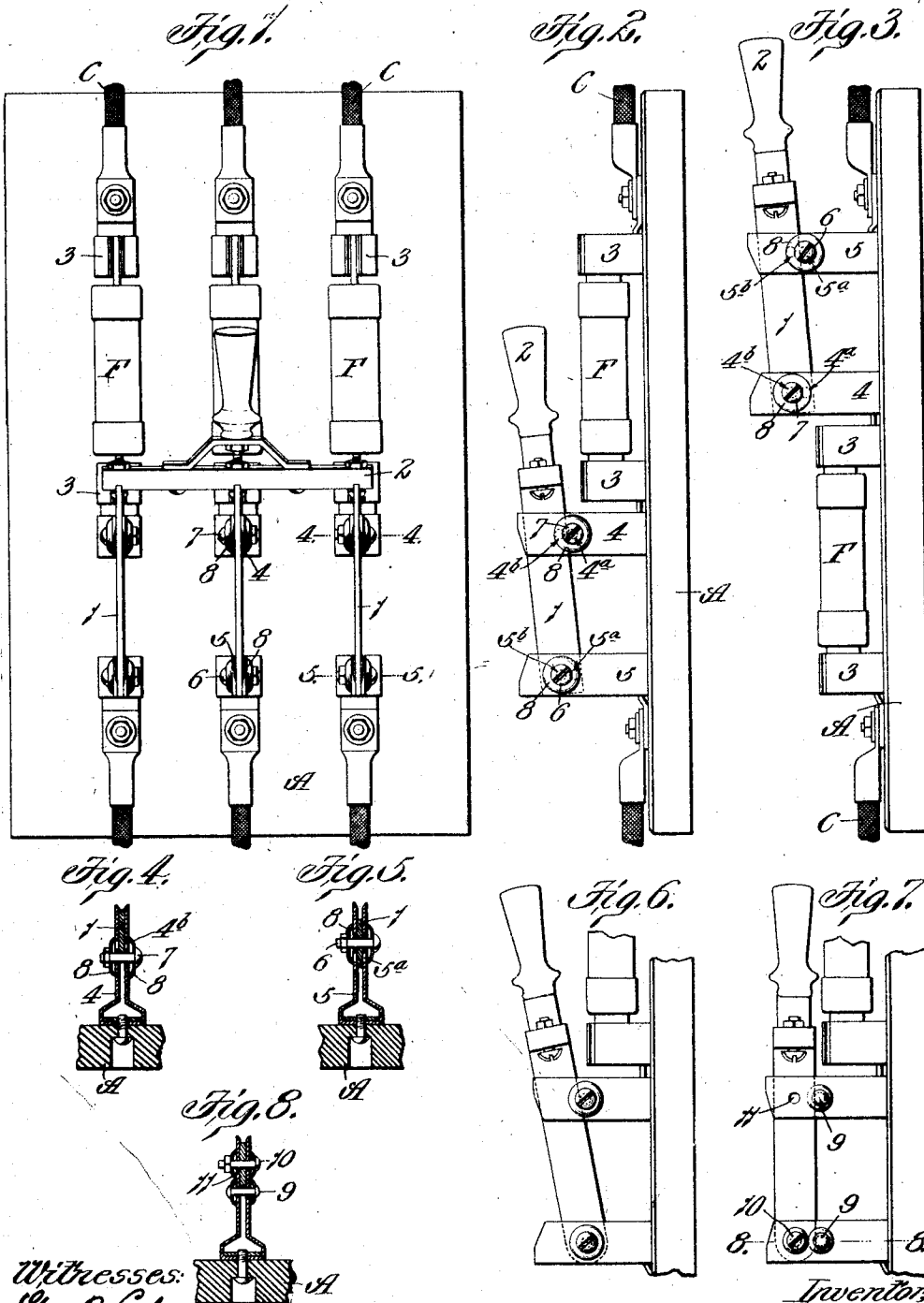


H. L. PEAT.
KNIFE SWITCH.
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1,010,069.

Patented Nov. 28, 1911.



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UNITED STATES PATENT OFFICE.

HARRY L. PEAT, OF ST. LOUIS, MISSOURI, ASSIGNOR TO FRANK ADAM ELECTRIC COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

KNIFE-SWITCH.

1,010,069.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY L. PEAT, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Knife-Switches, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to knife switches.

The national code standard rules which govern the construction and installation of electrical apparatus, provide that a knife switch must be installed in such a manner that the tendency of the handle will be to drop downwardly and thus carry the free end of the blade away from the spring clip with which it coöperates whenever the switch is left open. Another provision of the rules above-referred to is that a knife switch provided with a fuse must be so constructed that the fuse will be located between the service wire and the blade of the switch so as to protect the switch. These requirements have made it necessary for manufacturers and contractors to keep supplied with several different kinds of knife switches, namely, switches in which the fuse terminals are arranged above the pivoted end of the blade and switches in which the fuse terminals are located below the pivoted end of the blade, because in some instances the service wires lead from above and in other instances from below the point where the switch is to be installed. In addition to the objectionable feature of having to keep on hand different kinds of switches for doing the same kind of work, a great deal of trouble and delay is caused by mistakes in sending out the wrong kind of switch, for example, a switch having fuse terminals arranged above the pivoted end of the blade instead of below the pivoted end of the blade, it being, of course, understood that the mounting of the switch cannot be inverted because this would locate the pivot of the blade at such a point that the tendency of the blade would be to move into closed position whenever the switch was open.

The object of my invention is to provide

a knife switch with fuse connections that will conform to the requirements of the national code standard rules and which is so constructed that it can be used either with service wires that lead from above or from below the point at which the switch is to be installed.

Figure 1 of the drawings is a front elevational view showing my improved knife switch coöperating with service wires that lead from above the point where the switch is installed; Fig. 2 is a side elevational view of Fig. 1; Fig. 3 is a side elevational view showing my improved switch coöperating with service wires that lead from below the point where the switch is installed; Figs. 4 and 5 are horizontal sectional views taken on the lines 4—4 and 5—5, respectively, of Fig. 1; Figs. 6 and 7 are side elevational views illustrating slight modifications of my invention; and Fig. 8 is a sectional view taken on the line 8—8 of Fig. 7.

Referring to the drawings which illustrate the preferred form of my invention, A designates the mounting of the switch which may be slate, marble or any other suitable material, 1 designates the blades, 2 the handle to which the free ends of the blades are connected, 3 the fuse connections which are adapted to receive fuses F, and 4 and 5 designate two sets of spring clips with which the blades 1 coöperate. Each of the clips 4 has two holes 4^a and 4^b and each of the clips 5 has two holes 5^a and 5^b, said holes being shown in broken lines in Figs. 2 and 3 and also in full lines in Figs. 4 and 5.

When the switch is used with service wires C that lead from above the point where the switch is installed, the lower ends of the blades are pivotally connected to the clips 5 by means of removable fastening devices, preferably bolts 6, which pass through the holes 5^b in the clips 5, as shown clearly in Fig. 2. Removable fastening devices, preferably bolts 7, are arranged in the holes 4^a in the clips 4 so as to form stops which limit the inward movement of the blades 1 toward the mounting A of the switch. I prefer to arrange washers 8 on the bolts 6 and 7 which are of sufficient diameter to

cover the openings 4^a, 4^b, in the clips 4 and also the openings 5^a, 5^b, in the clips 5, as shown in Fig. 2. If it is desired to use the switch with service wires C that lead from below the point where the switch is to be installed the mounting A is inverted, as shown in Fig. 3, and the blades 1 are disconnected from the clips 5 and thereafter pivotally connected to the clips 4 by the fastening devices 7 which are arranged in the openings 4^b of said clips, the fastening devices 6 being inserted in the openings 5^a of the clips 5 so as to form stops which limit the inward movement of the free ends of the blades 1 toward the mounting A of the switch. In both adjustments of the switch, the blades 1 are so arranged that the lower ends of same are pivotally connected to the clips on the mounting so that the tendency of said blades is to swing downwardly away from the clips with which the upper or free ends of the blades cooperate in case the switch is left open, and, furthermore, in both adjustments of the switch the fuses F are located between the blades and the service wires. Consequently, a switch of the construction above-described complies with the requirements of the national code standard rules, and it can be used either with service wires that lead from above or from below the point where the switch is installed.

While I prefer to provide the clips 4 and 5 with two sets of holes for receiving the fastening devices which pivotally connect the blades 1 to the clips and which form stops for said blades, still I do not wish it to be understood that my invention is limited to such a structure for if desired single holes can be formed in the clips 4 and 5 for receiving the fastening devices 6 and 7, as shown in Fig. 6. The construction first-described and shown in Figs. 1 to 6, inclusive, is preferable, however, because it permits the stops which limit the inward movement of the blades to be located closer to the mounting A of the switch than the lower ends or pivoted ends of the blades.

In Fig. 7 I have illustrated another slight modification of my invention wherein the clips 4 and 5 are provided with permanent stops 9, and separate and distinct removable fastening devices 10 are used for pivotally connecting the lower ends of the blades to the clips, it being, of course, understood that both sets of clips are provided with openings 11 for receiving the fastening devices 10 so as to enable the blades 1 to be pivotally connected to either set of clips in the manner previously described.

While I have herein illustrated my invention embodied in a three-pole switch it will, of course, be understood that a single or double-pole switch could be constructed in the same manner without departing from the spirit of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A knife switch consisting of a mounting provided with fuse connections and spring clips arranged in alinement with each other, a pivotally mounted blade cooperating with said clips and detachably connected to one of them, and means for permitting said blade to be detachably connected to the other clip when the mounting is inverted.

2. A knife switch consisting of a vertically disposed mounting, fuse connections on said mounting, spring clips on the mounting, a blade cooperating with said spring clips, a removable fastening device which pivotally connects one end of said blade to one of said clips, and a removable stop in the other clip which is adapted to act as a pivot for said blade when the mounting is inverted.

3. A knife switch consisting of a mounting, a set of blade clips on said mounting, a set of fuse connections on said mounting arranged in longitudinal alinement with said clips, a removable pivotally mounted blade detachably connected to one of said clips, and means in the other clip which permits said blade to be pivotally connected to same when the mounting is inverted.

4. A knife switch consisting of a mounting provided with fuse connections, blade clips on said mounting, each of said clips being provided with two holes or openings located different distances from the mounting, a blade cooperating with said clips, a removable fastening device arranged in the opening in one clip which is farthest from the mounting for pivotally connecting one end of the blade to said clip, and a device in the hole of the other clip which is nearest to the mounting that acts as a stop to limit the inward movement of the free end of the blade toward the mounting.

5. A knife switch consisting of a mounting provided with fuse connections, blade clips on said mounting, each of said clips being provided with two holes or openings located different distances from the mounting, a blade cooperating with said clips, a removable fastening device arranged in the opening in one clip which is farthest from the mounting for pivotally connecting one end of the blade to said clip, a device in the hole of the other clip which is nearest to the mounting that acts as a stop to limit the inward movement of the free end of the blade toward the mounting, and devices which cover the holes in said clips that are not in use.

6. A knife switch comprising a vertically disposed mounting provided with fuse connections, upper and lower spring clips on said mounting, removable blades cooperating with said clips, removable fastening devices

which pivotally connect one end of said blades to the lower set of spring clips, and removable fastening devices in the upper spring clips which act as stops to limit the inward movement of the upper free ends of the blades toward the mounting.

In testimony whereof I hereunto affix my

signature in the presence of two witnesses, this twenty-eighth day of June 1911.

HARRY L. PEAT.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKEWELL.