(No Model.)

C. H. CROCKETT & C. C. ALLEN.

ELECTRIC CUT-OUT.

No. 493,755. Patented Mar. 21, 1893.

Fig. 1.

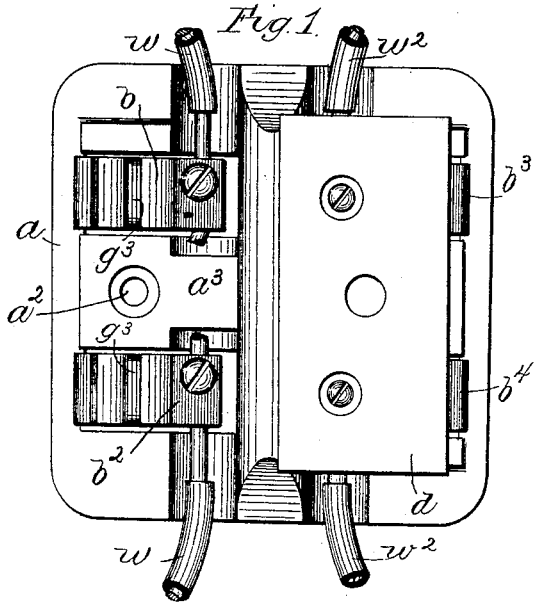


Fig. 4.

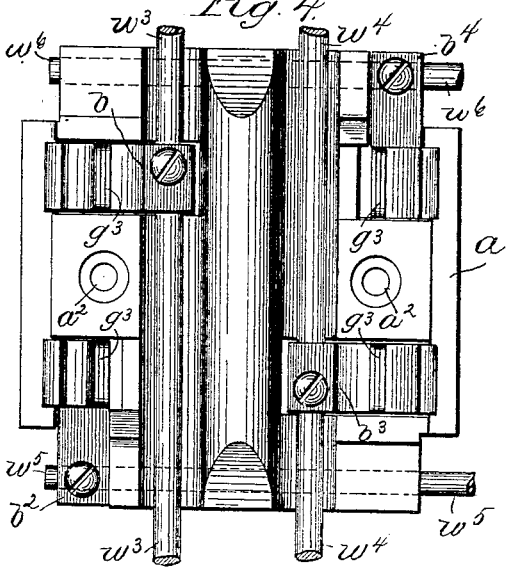


Fig. 2.

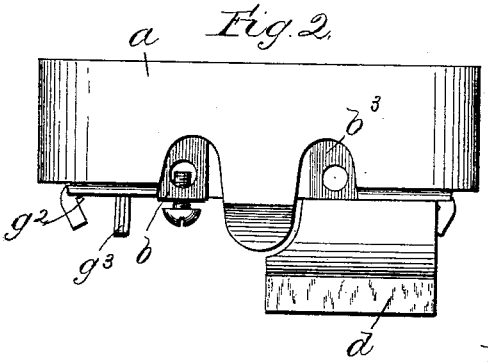


Fig. 5.

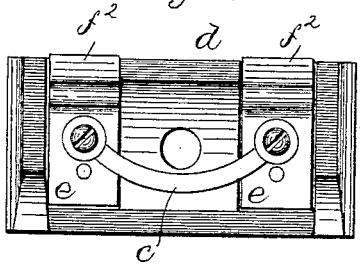
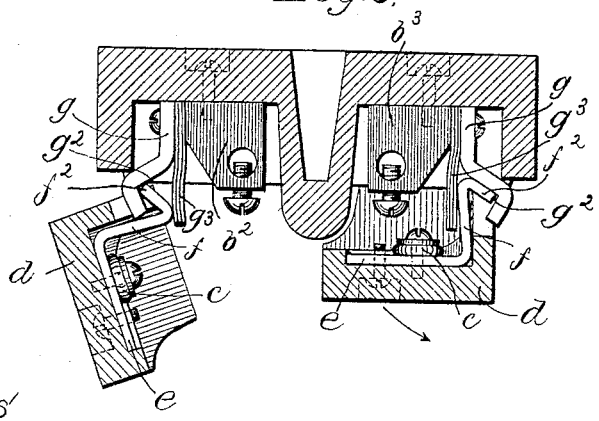


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 493,755, dated March 21, 1893.

Application filed April 8, 1892. Serial No. 428,364. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. CROCKETT and CHANCELLOR C. ALLEN, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Electric Cut-Outs, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Our invention is embodied in an electric cut-out by which an easily destructible or fusible conductor is interposed in an electric circuit so as to be destroyed and open the circuit in case of a dangerous increase in current. The cut-out comprises a base portion adapted to be fastened to the walls of a building and provided with wire clamps to make connection with the circuit wires, which are interrupted between the said wire clamps but are normally connected to complete the circuit by fuse wires supported in cap pieces that are detachable from said base portion for the purpose of inspecting and introducing the said fuse wires. The base portion and wire clamps thereon may be so arranged that the connections through the fuse wires normally complete the two main lines of the circuit, or such connection through the fuse wires may be made between the two wires of the main circuit respectively and the terminals of a branch circuit to be supplied with current from said main circuit, in which latter case the main circuit wires are unbroken at the cut out.

The invention relates especially to the means by which the cap portions of the cut-out are connected with the base portion, and the electrical connections made between the wires in the base portion and the fuse wires in the cap portions. The cap portion of the cut-out is made in two parts each containing a fuse wire that connects together two of the wire terminals in the base portion, and the said cap portions are connected with the base portion, by a spring coupling that enables the cap to be applied or removed without the use of tools and which makes an efficient electrical connection between the clamp member on the cap piece and the corresponding clamp member on the base portion.

Figure 1 is a plan view of a main wire cut-out embodying this invention, with one of the cap pieces removed, Fig. 2 an end elevation thereof, Fig. 3 a transverse section thereof, showing one of the clamp members in position assumed when it is just about to be applied thereto, or removed therefrom, Fig. 4 a plan view of a branch wire cut-out, and Fig. 5 a plan view of the inside of one of the cap members.

The base a is made of insulating material, preferably of porcelain, and is provided with openings a^2, to receive screws or other fastenings, by which it may be connected with the wall or the ceiling, of the building. The said base is provided with recesses in which are secured wire clamps b, b^2, b^3, b^4, which as best shown in Figs. 1, 2, and 3, are arranged to receive the several terminals of the main feed wires w, w^2, the wire w being thus broken between the clamps b, and b^2, and the wire w^2 between the clamps b^3, and b^4, and there being a barrier a^3 of the material of the base portion between the severed terminals of the said wires. Electrical connection is afforded, between the clamps b, b^2, and the clamps b^3, b^4, through fuse wires c contained in the cap portions d of the cut out, the said cap being made in two separate parts each containing a fuse wire to make connection between a corresponding pair of wire clamps on the base portion.

The two cap portions are detachably connected with the base portion and electrical connection at the same time is maintained between the terminals of the fuse wires in the cap portion and the wire clamps on the base portion by coupling pieces which will now be described. The cap pieces d which may be made of the same material as the base, have fastened to them metal pieces e, which are provided with wire clamps to make connection with the ends of the fuse wires and are also properly constructed to constitute one member of a coupling to co-operate with a corresponding coupling member on the base portion. The said coupling member on the cap portion consists essentially of a shank or arm f having at its end an inclined offset f^2. The coupling member on the base portion comprises a rigid arm g having recesses or seat portions g^2 that receive the offset portion f^2

of the clamping member f as shown, and opposite the said seat g^2 is a flat spring g^3 which by its engagement with the shank portion of the coupling member f forces the said coupling member firmly into the seat g^2 as shown at the right hand in Fig. 3. The portions g^2, g^3, of the clamp member on the base portion of the cut-out are connected with the wire clamps b, b^2, &c., and are thus in electrical connection with the wires secured in said wire clamps, and when the coupling member f is introduced into the corresponding coupling member g, g^2, g^3, the said member f is thus brought into electrical connection with the corresponding wire clamp in the base portion.

The operation of the coupling device is best shown in Fig. 3. The seat portion of the coupling member g inclines toward the spring g^3 as shown so that when the parts are coupled together it is almost impossible to separate them by a direct pull in the line of the shank f, of the removable coupling member, but by turning the said coupling member or by swinging the entire cap piece in the direction of the arrow at the right hand of Fig. 3, the extremity of the offset f^2, of the removable coupling member will pivot or fulcrum in the apex of the seat recess in the stationary coupling member, and the angle between the shank f and offset f^2 will have a cam action upon the spring g^3 forcing it aside enough to permit the offset f^2 to be moved from the position with relation to the other coupling member shown at the right hand of Fig. 3, to the relative position shown at the left hand of Fig. 3, when the said offset portion f^2 can be freely withdrawn from between the spring and seat portion of the other coupling member.

In applying the cap, or engaging the coupling, the offset f^2 is placed in the seat of the other coupling member by holding the cap about in the position shown at the left hand in Fig. 3, after which the cap is pressed down toward the base portion, turning on the point of engagement between the end of the offset and the seat of the other clamp member, and prying back the spring g^3 which in the last part of the movement will act upon the angle between the shank f and offset f^2 and tend to throw the said parts around into proper engagement with the seat as shown at the right hand in Fig. 3.

This coupling device is extremely simple but at the same time strong and durable, making a very secure mechanical fastening for holding the cap on the base and also an extremely efficient electrical connection.

By having the cap made in two parts as shown, either one of the fuse wires may be replaced without disturbing the other, and either portion of the cap may be opened or turned to the position shown at the left hand in Fig. 3, so as to expose the fuse wire for inspection without breaking the electrical connection between the coupling members.

The base portion shown in Fig. 4, is arranged to make connection between the two main wires w^3, w^4, of a feed circuit and the terminals w^5, w^6, of a branch to be supplied. The said main wires in this construction are not broken but pass wholly through channels formed in the base portion as shown, one wire connecting with the wire clamp b and the other with the wire clamp b^3 while the branch wires w^5, w^6, are also introduced in channels forming the base portion at right angles to those that receive the main wire said branch leading off to either side of the base as may be preferred. One of said branch wires connects with the clamp b^2 and the other with the clamp b^4 which clamps are provided with coupling members the same as in the main line cut-out shown in Fig. 1, so that cap pieces of the same construction as already described may be used to connect the clamps b, b^2, through a fuse wire, and the clamps b^3, b^4, through another fuse wire, thus connecting the positive and negative wires of the main circuit with the corresponding terminals of the branch circuit through the said fuse wires.

We claim—

1. The herein described cut-out comprising the base portion provided with two sets of wire clamps, insulated from one another by said base portion and each provided with a spring coupling member, combined with a cap composed of two parts each provided with two coupling members cooperating with a pair of the coupling members on the base, said coupling members on each part of the cap being connected by a fuse wire which thus completes the circuit between the corresponding pair of wire clamps on the base portion when the said coupling members are engaged, substantially as described.

2. The coupling members provided with a seat recess as g^2, and a spring as g^3, opposite thereto, combined with the cooperating coupling member having a shank and offset inclined thereto, co-operating with said seat and spring as described, said coupling being engaged and disengaged by a rocking or pivotal movement of one member relative to the other, substantially as described.

3. The combination of the base portion of an electric cut out composed of insulating material and provided with recesses and a barrier between the same; with two pairs of wire clamps secured in the said recesses, and a cap composed of two independently movable parts, each of said parts having two wire clamps connected by a fuse wire and adapted to engage with one pair of the wire clamps on the base portion to provide electrical connection between the same through the fuse wire, substantially as described.

4. The base portion for an electric cut-out provided with two pair of metallic wire clamps, each provided with one member of a spring coupling having a seat recess and a spring opposite thereto, said coupling mem-

bers of one pair of wire clamps being in line with one another and a two part cap each part having a pair of coupling members connected by a fuse wire and adapted to cooperate with the coupling members of one pair of wire clamps, on the base portion, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES H. CROCKETT.
CHANCELLOR C. ALLEN.

Witnesses:
JOS. P. LIVERMORE,
CHARLES E. LOWD.