(No Model.)

J. C. CHAMBERLAIN.

ELECTRICAL CUT-OUT DEVICE.

No. 375,476. Patented Dec. 27, 1887.

Fig. 1.

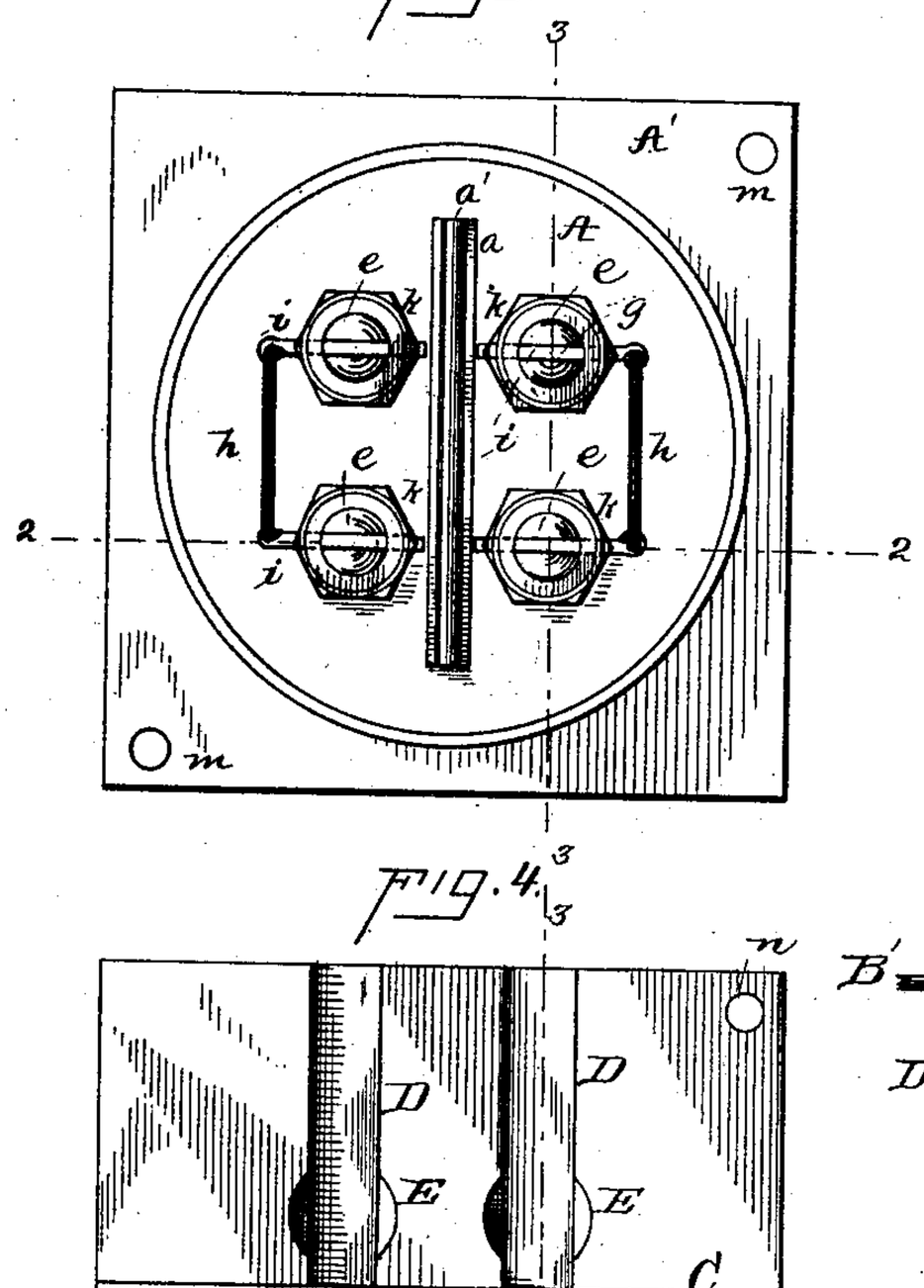


Fig. 2.

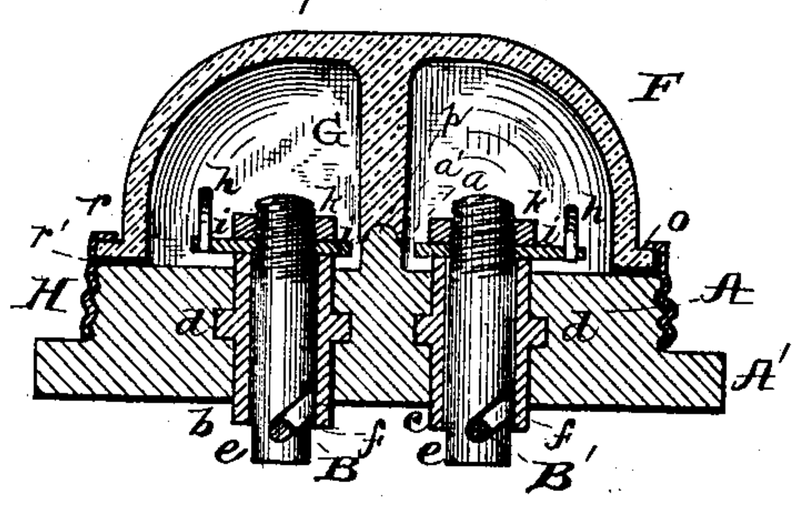


Fig. 3.

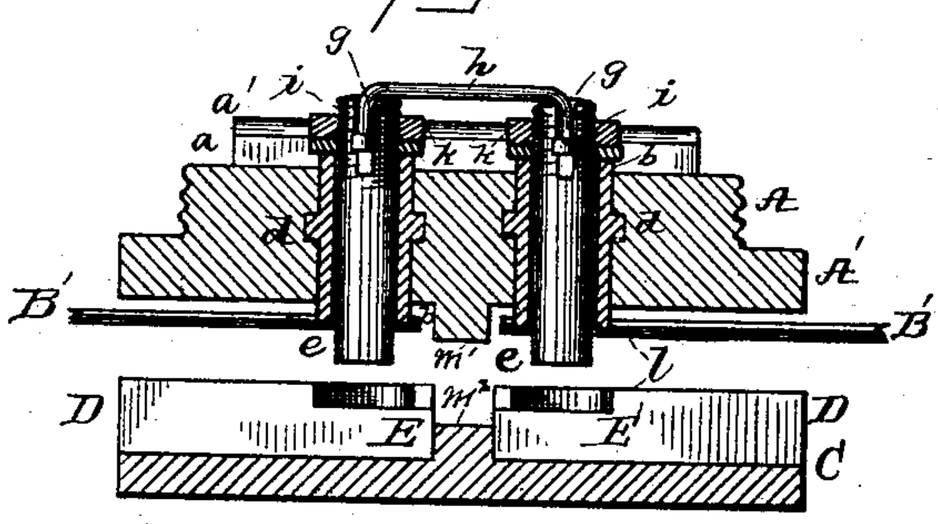


Fig. 4.

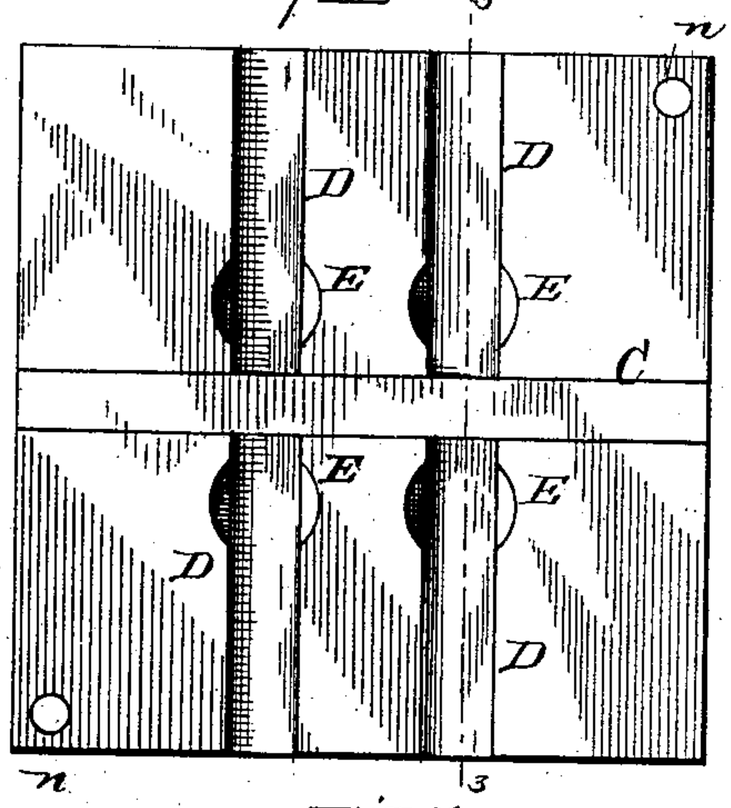


Fig. 5.

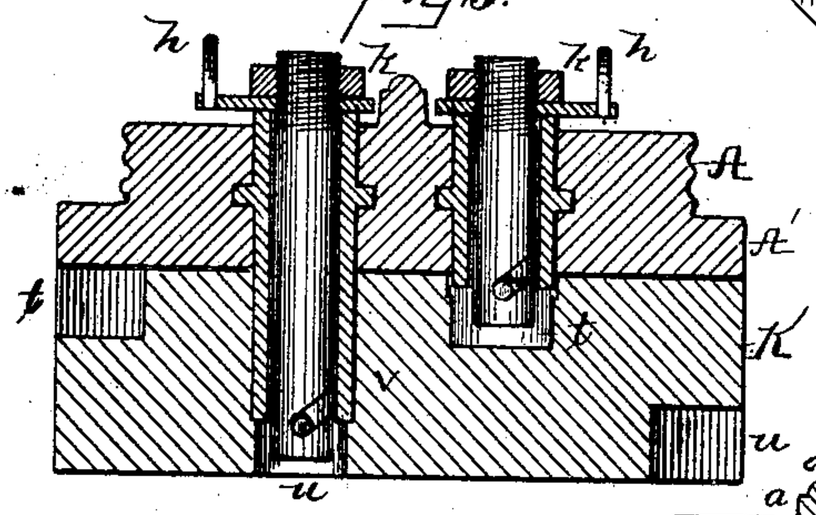


Fig. 6.

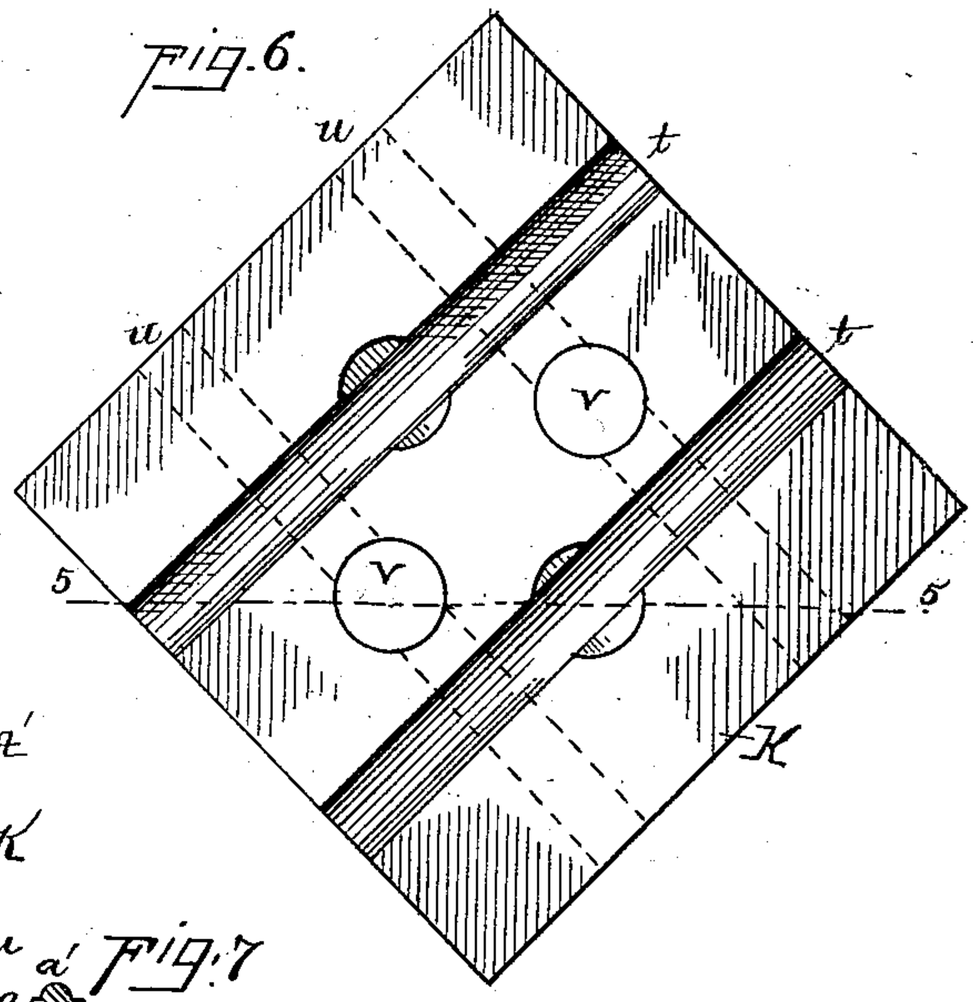
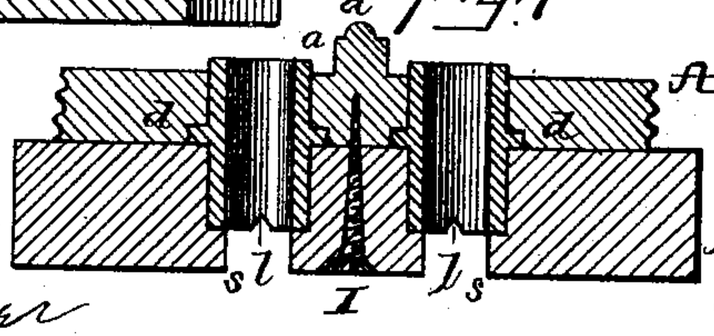


Fig. 7.



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UNITED STATES PATENT OFFICE.

J. CHESTER CHAMBERLAIN, OF NEW YORK, N. Y.

ELECTRICAL CUT-OUT DEVICE.

SPECIFICATION forming part of Letters Patent No. 375,476, dated December 27, 1887.

Application filed June 29, 1887. Serial No. 242,829. (No model.)

To all whom it may concern:

Be it known that I, J. CHESTER CHAMBERLAIN, of the city of New York, in the county and State of New York, have invented a certain new and useful Improvement in Electrical Cut-Out Devices, of which the following is a specification.

My invention relates to the safety-catch blocks or supports for fusible safety-catch links used in house-wiring for electric lighting which carry the safety-catches, and within or upon which the connections between the circuit-wires and the safety-catches are made.

The object of my invention is to provide a simple, cheap, and effective construction for the blocks and connecting devices, whereby good electrical and mechanical connections will be made, and the parts, while readily accessible for observation and for repair, will be protected from accidental contact or injury.

My invention consists in the novel devices and combinations of devices employed by me in accomplishing the above-named object, as hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a top view of a safety-catch block embodying my invention with its cover removed; Fig. 2, a section with the cover on, on line 2 2 of Fig. 1; Fig. 3, a section of the block on line 3 3 of Fig. 1, looking from the right, showing also the lower protecting-block in section on line 3 3 of Fig. 4; Fig. 4, a top view of said lower block; Fig. 5, a section of a double block for crossing or branching circuits on line 5 5 of Fig. 6; Fig. 6, a top view of the lower block of Fig. 5; and Fig. 7 a section of a modified form of the block shown in Figs. 1, 2, 3, and 4.

Referring first to Figs. 1, 2, 3, and 4, the insulating safety-catch block is composed of a circular screw-threaded upper portion, A, and a square lower portion, A′. These are made in one part, preferably of baked and glazed pottery or earthenware. Extending across the circular portion A is formed a rib, *a*, with a smaller rib, *a′*, upon it. Within the block and extending through it are four cylindrical metal barrels, *b b* and *c c*, each provided with a squared or polygonal flange or shoulder, *d*. These are set in the clay before baking and baked therein, and the flanges *d* hold them in place and keep them from turning. The block thus formed is readily transported from place to place, and is prepared to receive the circuit-wires, connecting devices, and safety-catches.

The block as so far described is for the interpolating of a safety-catch in each side of a continuous circuit.

B represents the wires of one side of the circuit, and B′ those of the other side.

The connecting devices are hooks each consisting of a cylindrical stem, *e*, with an oblique slot, *f*, at its lower end and screw-threaded, and provided with a longitudinal slot or split, *g*, at its upper end. The several ends of the circuit-wires being bared of insulation are placed in the slots *f* of the appropriate hooks, so that the wires of the same side of the circuit are in line with each other, the hooks being brought up through the barrels *b* and *c*. Each safety-catch consists of a bent fusible wire, *h*, soldered to elongated copper terminals *i*, extending at right angles from the end of said wire.

One safety-catch is connected between the severed wire B B by inserting its terminals *i i* in the slots *g g* of the hooks connected with said wire, and then screwing down upon said terminals the nuts *k k*. These nuts draw the split ends of the hooks together upon the terminals and clamp said terminals against the heads of the barrels and also draw the wires closely up against the lower ends of said barrels, which are preferably provided with notches, as indicated at *l l* in Fig. 3 and also in Fig. 7, in which the wires lie. Good and firm electrical and mechanical connections are thus formed between the wires and safety-catch. The other safety-catch is similarly connected between the severed ends of wires B′ B′, whereby both sides of the circuit are completed, each through a safety-catch.

The barrels and connecting-hooks being, as shown, so long as to extend below the block, I prefer to provide a covering-block, C, of insulating material, preferably baked clay, Figs. 3 and 4, having in its upper side slots D D, in which the wires lie, and circular cavities E E, which are entered by the connecting devices. I prefer to make the safety-catch block with a cross-rib, *m′*, on its lower side, which prevents the ends of the severed wires from

being brought into contact, and which enters a slot, m^2, in the protecting-block C. The block is designed to be secured to a wall or ceiling by screws passing through holes *m* in the main block, and holes *n* in the covering-block.

After the parts are placed in position I place upon the block, in order to protect the connecting devices and safety devices from external contact or injury, a cover or cap, F. This is a dome-shaped cover, with a flange, *o*, at its lower side, and is transparent, being preferably made of glass. This cover has a cross-bridge, G, made in one piece with it, which, when the cover is placed in position, rests upon the rib *a*, being provided with a groove, *p*, which fits over the smaller rib *a'*. The cover is held by a metal screw-ring, H, screwed upon the part A of the block, and having an inward flange, *r*, resting on the flange *o* of the cover. Thus while the safety-catches can be readily inspected through the transparent cover, they are protected from any injury, and from dust, moisture, insects, &c. The cross-bridge completely separates the two sides of the circuit upon the block and prevents any short circuit or arcing between them, and engaging, as it does, with the rib *a'*, the cover is prevented from turning. I may provide a rubber gasket or washer, *r'*, under the edge of the cover.

In the form shown in Fig. 7 the two parts of the block are separate pieces and may be made of wood or any suitable insulating material, though I prefer a non-combustible material. The barrels are made, as before described, with flanges *d*, and the block A has squared recesses for receiving said flanges. For convenience of transportation, a screw, I, may be provided, holding the parts together; but when the block is in use no such device is necessary, since the connecting devices perform the same office. In the form shown in this figure no lower covering-block is provided; but the barrels do not extend through the block, and the lower side of the block has slots *s s* for receiving the wires.

Figs. 5 and 6 show a block for joining multiple-arc branches to a main circuit, through safety-catches, one for each side of the circuit. The block A A' is as before. The block K is placed below it, having in its upper side parallel slots *t t*, and in its lower side parallel slots *u u* at right angles to *t t*. Apertures *v v* extend through the block K at the middle of slots *u u*. Long barrels extend through the upper block and through apertures *v v* to the slots *u u* and long connecting-hooks extend through said barrels and connect the wires which are laid in the slots *u u* to the safety-catches, in the same manner as already explained.

The wires of the crossing circuit pass through the slots *t t*, and short connecting-hooks extend from them to the top of the block. The safety-catches each connect a long barrel to a short one, and are thus interpolated in the connections between the two sides of the two circuits. It will be seen that the top view of this form of block will be the same as Fig. 1.

What I claim is—

1. The safety-catch block of pottery or earthenware, having the metal barrels inserted and baked therein and extending through the block, substantially as set forth.

2. The combination of an insulating safety-catch block, metal barrels extending through such block, and connecting devices extending through such barrels engaging with wires on the under side of said block, and connected with safety-catches on the upper side, whereby the safety-catches are interpolated in the circuit and the wires are held to the block, substantially as set forth.

3. The combination of the insulating safety-catch block, the metal barrels extending through the same, and the connecting-hooks passing through said barrel, adapted to engage circuit-wires on one side of the block, and provided with means for connection with safety-catches at the other side of said block, substantially as set forth.

4. The combination, with a safety-catch block, of the connecting devices extending through the same, each adapted to engage a circuit-wire at one end, and having a screw-thread and a longitudinal slot for receiving safety-catch at the other end, and nuts upon said screw-threaded ends, substantially as set forth.

5. The combination, with the block carrying two safety-catches, of the rib on said block between them, and the cover having a grooved cross-bridge fitting upon said rib, substantially as set forth.

6. The combination, with the block carrying a safety-catch, and having a screw-threaded portion, of the circular cover, and the screw-threaded ring for holding said cover on said block, substantially as set forth.

7. The combination, with a block carrying a safety-catch upon one side, wires placed in grooves on the other side of said block, and connecting devices extending through said block and joining said wires to said safety-catch, of a protecting-block placed against said safety-catch block, so as to cover and protect said wires and connecting devices, substantially as set forth.

This specification signed and witnessed this 25th day of June, 1887.

J. CHESTER CHAMBERLAIN.

Witnesses:

WILLIAM PELZER,

E. C. ROWLAND.