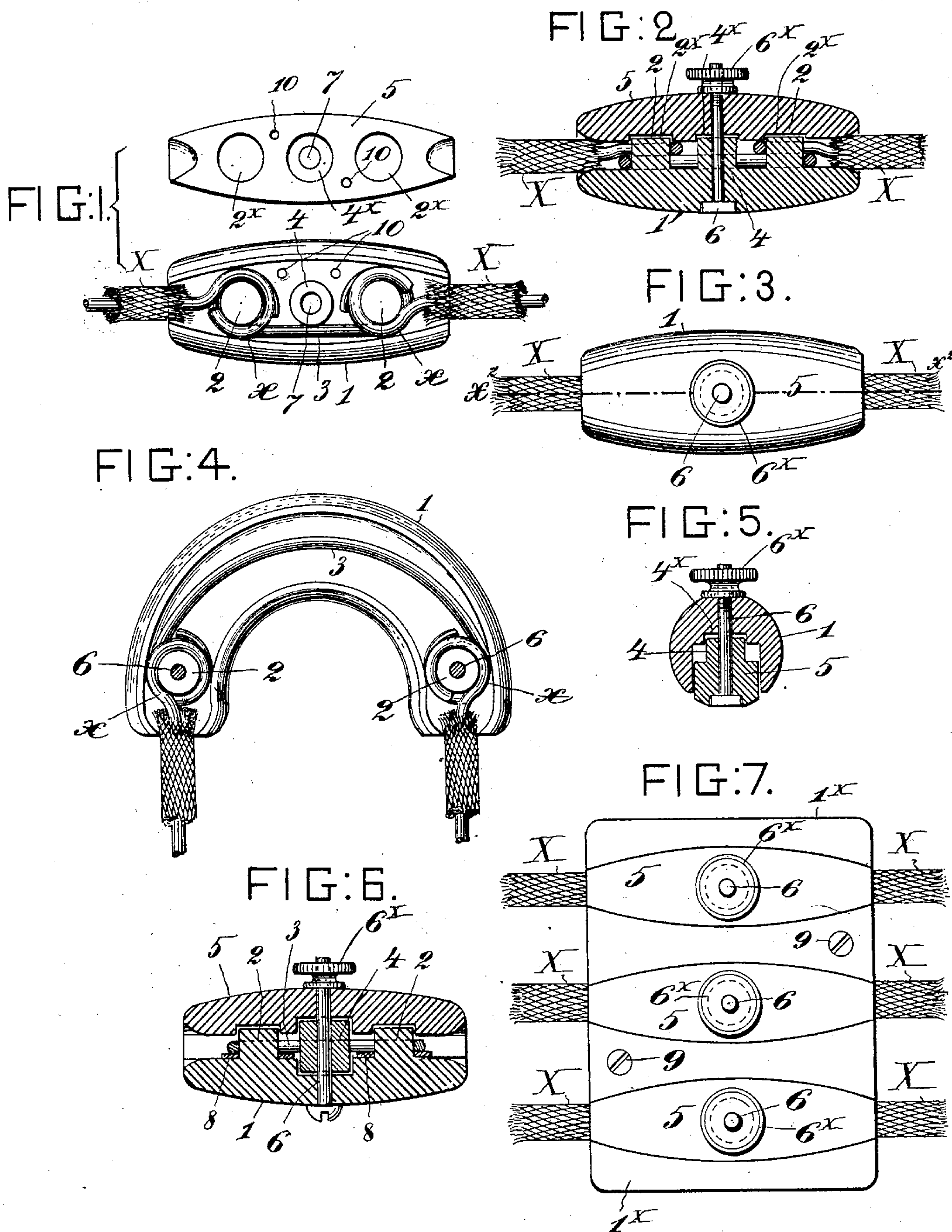


(No Model.)

J. C. REYNOLDS.  
ELECTRIC CUT-OUT.

No. 560,821.

Patented May 26, 1896.



WITNESSES:

*F. H. Winman*  
*Peter A. Ross.*

INVENTOR:

*John Clarkson Reynolds*  
By *Henry Connel*  
Attorney.



# UNITED STATES PATENT OFFICE.

JOHN CLARKSON REYNOLDS, OF NEW YORK, N. Y.

## ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 560,821, dated May 26, 1896.

Application filed January 25, 1896. Serial No. 576,776. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN CLARKSON REYNOLDS, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Cut-Outs for Electrical Uses, of which the following is a specification.

This invention relates to the class of devices much used in wiring for electric lighting, &c., and known as "cut-outs," "safety devices," and "bugs." A cut-out of this general character consists of a base piece or block, to which the ends of the circuit-wires are secured and which carries a piece or pieces of fuse-wire connecting the ends of said circuit-wires at the block. The fuse-wire is usually of lead or of some readily-fusible alloy, and the object is to provide for automatically cutting out a fixture, lamp, &c., by the melting of the fuse-wire when from any cause the volume of the electric current becomes excessive.

The ordinary cut-out has some defects. The screws used to clamp the wires to the block are not insulated from the wires and in most situations it is necessary to wrap the cut-out with some insulating fabric, such as rubber tape. If this wrapping is not carefully done, the screws will not be wholly covered, and trouble ensues from their contact with metal parts. On the other hand, if the fuse-wire melts it is apt to ignite the wrapping and a fire is the result. The larger multiple cut-outs are quite expensive also.

The object of the present invention is to provide a simple, neat, and inexpensive cut-out wherein the wires are coupled to studs of insulating material and are pressed into contact by a cap or inclosing cover, also of insulating material. The clamping is effected by a bolt or the like, which is wholly insulated from the naked wires. The naked ends of the conductors and the fuse-wire are wholly inclosed in a casing of refractory insulating material, and the frayed insulating-coverings of the conducting-wire are housed in the casing, thereby insuring insulation and greatly enhancing the neatness of the device.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 is a face view of the simple cut-out as it appears with the clamping cap or cover

removed, the under side of the detached cap being also shown in the same view. Fig. 2 is a longitudinal section of the cut-out in the plane indicated by line  $x^2$  in Fig. 3. Fig. 3 is a plan of the cut-out as it appears when in use. Fig. 4 is a view similar to Fig. 1, showing a construction of the simple cut-out wherein two insulated clamping-bolts are employed in a casing of curved form. Fig. 5 is a cross-section of the cut-out device, illustrating a reversal of the construction seen in Fig. 2. Fig. 6 is a longitudinal section of the cut-out, showing the central insulating-boss for the clamping-bolt detachable or non-integral. Fig. 7 shows how several of the cut-outs may be combined to form a multiple or compound cut-out.

Referring, primarily, to the first three figures of the drawings, 1 represents a casing, preferably rounded in cross-section and somewhat spindle-shaped, as this form imparts a neat appearance and avoids angles and corners. This casing is hollowed or trough-shaped and open-ended, and it will be made from some hard refractory insulating material, preferably porcelain or glass.

From the bottom of the cavity in the casing rise two studs 2 2, formed integrally with the casing. About these studs are coiled the hooked naked extremities  $x$  of the respective conducting-wires X. About these studs also are hooked or coiled the respective extremities of the fuse-wire 3, the extremities  $x$  of the conducting-wires being, of course, in electrical contact with the respective extremities of the fuse-wire.

Rising from the bottom of the cavity in the casing at a point between the studs 2 2 is a boss 4, of insulating material. Preferably this boss will also be formed integrally with the casing; but it may be non-integral, as seen in Fig. 6.

5 is the clamping cap or cover of the casing, said cap having recesses  $2^x$  and  $4^x$ , which, when the cap is in place, Fig. 2, take over the respective studs 2 and the central boss 4 and permit the cap to press together the loops or hooks of wire about the studs 2 and insure a perfect contact. The casing 1 and cap 5 form the major parts of the cut-out.

6 is the securing and clamping bolt, which is passed through coinciding holes (7 in Fig. 1)



in the cap 5 and the boss 4 of the casing, and 6<sup>x</sup> is the nut on said bolt.

It will be obvious that when the wires X are coupled up with this cut-out the clamping-bolt 6 will be thoroughly insulated from said wires and from the fuse-wire 3.

The cap 5 fits down into the trough-like recess in the casing 1 and a single centrally-arranged screw or bolt suffices to keep it in place. If desired, however, two insulated bolts may be used, as shown in Fig. 4, wherein the studs 2 are made to serve as insulating-bosses, the boss 4 being omitted as unnecessary. This construction adds one extra bolt, but it will be found advantageous where the casing is very long or is curved, as in Fig. 4, as it applies the clamping pressure to insure contact directly at the points where the pressure is required; but two bolts may be used in the cut-out of Fig. 1 as well.

The studs 2 and boss 4 might be on the cap 5 and the recesses 2<sup>x</sup> and 4<sup>x</sup> be in the casing, as indicated in Fig. 5; but this is a mere reversal of the construction of Fig. 2, and the latter construction is preferred.

Small metal washers 8 (see Fig. 6) may be slipped on the respective studs 2 2, if desired, to aid in insuring contact.

The object in the construction of Figs. 1 and 2 is to insulate the clamping-bolt 6 from the fuse-wire, which extends from one stud 2 to the other, and as this wire may pass at either side of the bolt it is preferable to have the material of the insulating-boss extend entirely around the hole 7 through which the bolt passes.

My invention is applicable to multiple or compound cut-outs, as shown in Fig. 7. This construction is equivalent to connecting two or more casings integrally and arranged abreast to form a plate or block 1<sup>x</sup>, the several caps or clamping-covers 5 being separate or individual, so that either may be removed without disturbing the others. The plate or block 1<sup>x</sup> may have screw-holes in it to receive screws 9 for securing it in place.

It will be noted that my cut-out is self-insulating, requiring no extraneous insulating devices or coverings. It will also be noted that the cover 5 is not merely a cap or cover to house the terminals, but a clamp-plate which presses the terminals into contact with the fuse-wire. The two terminals are substantially alined with each other and with the casing, and they form no necessary part of the device itself; they may be simply the ends of the circuit-wires.

In order to avoid any risk of the cracking or bursting of the porcelain from excessive heat when the fuse-wire is melted, the casing and cap, one or both, may have holes formed in them for the escape of gases and heat generated. Such holes are seen at 10 in Fig. 1.

I do not wish to limit myself to the exact construction herein shown, as this may be

varied to some extent without departing materially from my invention.

Having thus described my invention, I claim—

1. As an improved article of manufacture, a cut-out for electrical uses comprising an open-ended hollowed casing of insulating material, provided with studs of insulating material in the hollow thereof for the attachment of the conductors, a cover of insulating material adapted to press upon and clamp together the conductors at each of the respective studs so as to effect electrical contact between the terminal and fuse-wire at the stud, and means for binding the cover firmly to the casing, substantially as set forth.

2. A cut-out for electrical uses comprising a hollowed casing of insulating material, open at the ends to receive the terminals of the circuit-wires, a clamping-cover of insulating material which fits onto said casing, two studs of insulating material within said casing and integral with one of the above-named major parts, said studs serving for the attachment of the conductors and said cover serving to clamp together the conductors at the point of attachment, and a clamping-bolt and nut for clamping the cover down upon the casing and conductors, said bolt extending transversely through said casing and cover and being insulated from the conductors within the casing, substantially as described.

3. A cut-out for electrical uses comprising an open-ended, hollowed casing of insulating material, having two studs of insulating material in its hollow and integral therewith, said studs being for the attachment of the circuit-terminals and the fuse-wire, the said fuse-wire attached at its ends to the respective studs, a clamping-cover of insulating material having recesses to take over the respective studs, and means, insulated from the circuit-terminals and fuse-wire, for clamping said cover down upon the wires at the studs whereby electrical contact is assured, substantially as set forth.

4. As an improved article of manufacture, a cut-out for electrical uses comprising a trough-like, open-ended casing, 1, of insulating material, having formed integrally with it two studs 2, 2, for the attachment of the conducting-wires, a cap 5, also of insulating material and provided with recesses 2<sup>x</sup>, 2<sup>x</sup>, to take over the studs 2 when the cap is in place, a fuse-wire 3, connecting the said studs 2, a securing and clamping bolt 6, which extends transversely through the said casing and cap between the studs 2, the nut on said bolt, and an insulating-boss 4, in the hollow of the casing and about said bolt, substantially as set forth.

5. A cut-out for electrical uses comprising a hollowed, elongated, open-ended casing 1, of insulating material having integral studs 2, near its respective open ends for the attachment of the respective circuit-terminals and the attachment of the fuse-wire, and in-



5 insulated means for pressing into electrical contact the ends of the fuse-wire at said studs and the respective terminals of the circuit-wires thereat, whereby all the naked metallic parts of the conductors are housed within the casing and are insulated from exterior metal parts, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN CLARKSON REYNOLDS.

Witnesses:

HENRY CONNETT,  
PETER A. ROSS.