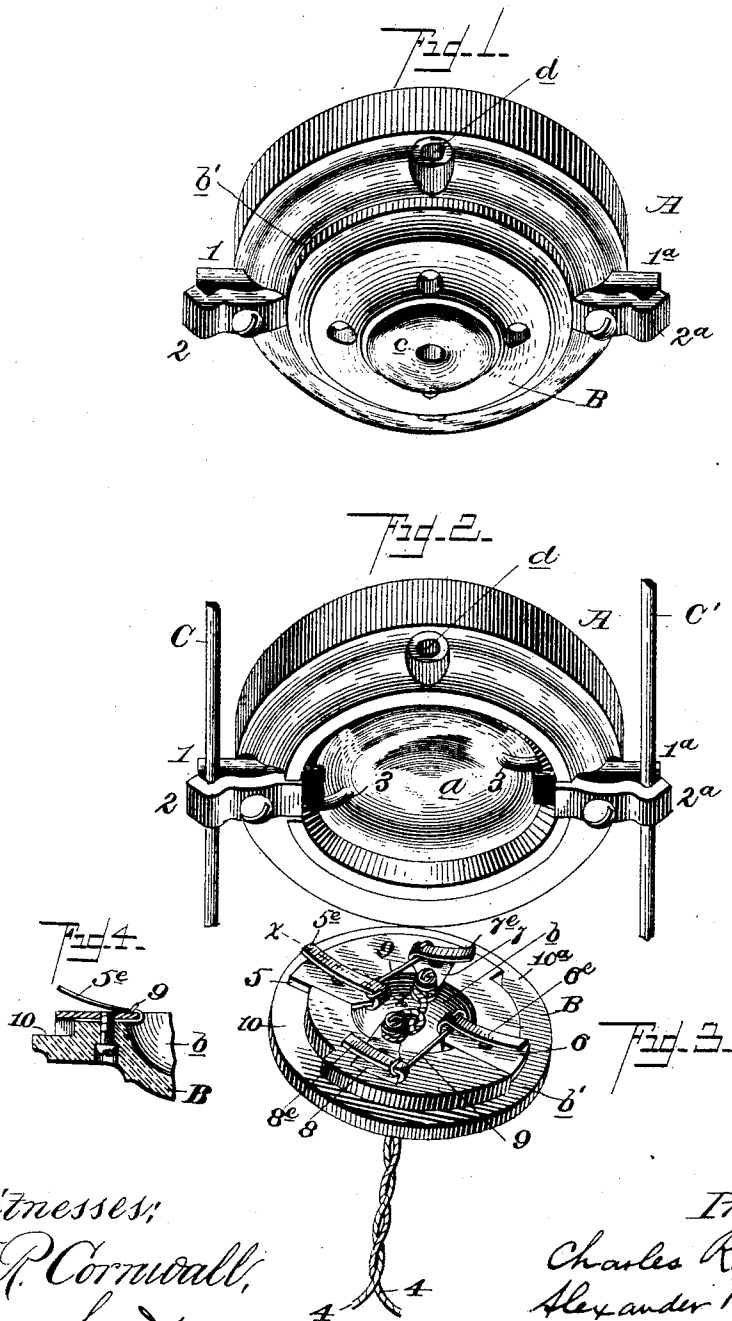


(No Model.)

C. R. & A. W. MESTON.  
ELECTRIC CUT-OUT AND SAFETY DEVICE.

No. 470,204.

Patented Mar. 8, 1892.



Witnesses:  
F. R. Cornwall,  
Aly. Scott

Inventors:  
Charles R. Meston  
Alexander W. Meston  
By F. W. Ratter Jr  
Att'y

# UNITED STATES PATENT OFFICE.

CHARLES R. MESTON AND ALEXANDER W. MESTON, OF ST. LOUIS, MISSOURI,  
ASSIGNORS TO THE EMERSON ELECTRIC MANUFACTURING COMPANY,  
OF SAME PLACE.

## ELECTRIC CUT-OUT AND SAFETY DEVICE.

SPECIFICATION forming part of Letters Patent No. 470,204, dated March 8, 1892.

Application filed January 12, 1891. Serial No. 377,451. (No model.)

### *To all whom it may concern:*

Be it known that we, CHARLES R. MESTON and ALEXANDER W. MESTON, citizens of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Electric Cut-Outs and Safety Devices; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a circular cut-out embodying our invention and of a form suitable for pendent incandescent lamps and various other electrical connections. Fig. 2 is a perspective view of the base, showing the cavity therein for the reception of the contact-pieces and fuse-clips carried by the cover. Fig. 3 is a similar view of the cover, showing the contact-pieces and fuse-clips attached thereto; and Fig. 4 is a detail sectional view of one of the contact-pieces and fuse-clips, taken on the line *x x*, Fig. 3.

Like symbols refer to like parts wherever they occur.

Our invention relates to the construction of thermal cut-outs or electrical cut-outs of that class wherein fusible connections are interposed between the terminals and the leads or main conductors, and has for its object to simplify the devices, insure perfect connection and contact, and facilitate the attaching and detaching of the devices and the insertion and renewal of the fusible connections.

To this end the main feature embraces the combination, with a base having metallic contact-pieces, of a cover having metallic contact-pieces and provided with reflexed spring-tongues bent around under said contact-pieces and held in place thereby, so as to form with said contact-pieces wedge-shaped grooves or notches, into which the fusible connections are drawn, the spring-tongue holding the same in place and maintaining electric contact between the fusible connection and the contact-piece. These spring-tongues also serve to insure perfect contact with the engaging contact-pieces of the base, at the same time perfecting by their compression contact of the fusible connection.

A second feature embraces the combination, with a base having metallic terminals and ridges or projections, of a cover having metallic terminals and yielding or spring tongues adapted to engage the ridges on the base and preserve this contact between the contact-pieces and prevent the accidental displacement of the cover.

There are other minor features of invention, all as will hereinafter more fully appear.

We will now proceed to describe our invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the base-block and B the cover, of some suitable insulating material and preferably of the circular form shown in the drawings. The base-block A is dished out or recessed, as at *a*, for the reception of the cover and to allow sufficient room for the terminals and fusible strips attached to the inner surface of said cover and may be radially grooved at opposite points for the reception of the metal contact-pieces 1 1<sup>a</sup> and 2 2<sup>a</sup>, by which connection is made with the usual leads or main conductors C C'. The metallic contact-pieces 1 1<sup>a</sup> are fastened to the base A in the radial grooves or recesses by means of screws or in other suitable manner, so as to lie in a plane parallel with and about midway between the planes of the bottom and top of the cavity *a*, and said pieces 1 1<sup>a</sup> overhang or project into said recess *a* some distance to form catches to coact with the metallic contact-pieces of the cover in securing the cover to the base.

2 2<sup>a</sup> are metal clips or binding-pieces secured by screws as shown, or in other suitable manner, and said clips are employed to bind the contact-pieces 1 1<sup>a</sup> to the leads C C'.

Within the cavity *a* of the base-block A, and preferably at points adjacent to the metal contact-pieces, (which serve as catches,) are small ridges or projections 3 3, for a purpose which will hereinafter appear. The base-piece A is also provided with screw-holes *d* or some equivalent means of attaching it to a ceiling, wall, or other support.

B indicates the cover of the device, which, like the base-block, is of some insulating ma-

terial, and is preferably formed with a central recess *b*, having a hole *c* for the passage of the terminals 4 4, and with radially-arranged seats for the metallic contact-pieces 5 5, 6 6, 7 7, and 8 8, said contact-pieces being held in position in any suitable manner, but preferably by screws, as indicated in the drawings.

5° 5°, 6° 6°, 7° 7°, and 8° 8° indicate a series of spring-tongues corresponding in number with the metallic contact-pieces of the cover B, and preferably of U form, or reflexed over said contact-pieces, for securing the fusible strips 9 9, which springs are compressed when the cover is in position on the base-block and thus insure perfect contact of the said strips 9 9 with the contact-pieces. These springs have also additional functions, as will hereinafter appear.

20 The cover B is preferably provided with a circumferential shoulder *b'* to abut against the base-block A, and is recessed at opposite points, as at 10 10<sup>a</sup>, to permit the passage of metallic contact-pieces 1 1<sup>a</sup> of the base-block. 25 Two of the metallic contact-pieces which are attached to the cover—viz., 5 and 6—are oppositely placed, or so placed as to correspond with the metallic contact-pieces 1 1<sup>a</sup> of the base-block, and are allowed to overhang the 30 recesses 10 10<sup>a</sup> or to project beyond the cover in such manner that when the cover B is applied to the base-block A they will take under the contact-pieces 1 1<sup>a</sup> and form there-with a catch for securing the base-block A 35 and cover B together. The remaining metal contact-pieces of the cover—viz., 7 and 8—need not project, but are provided with binding-screws, or some other provision is made for attaching the terminals 4 4.

40 9 9 indicate fusible strips, which are interposed between the terminals and the main conductors by passing the ends thereof between the springs 5° 5°, 6° 6°, 7° 7°, and 8° 8° and the respective contact-pieces 5 5, 6 6, 7 7, and 8 8, substantially as indicated in Fig. 3 of the drawings.

45 In applying the cut-out hereinbefore described the base-block A is secured in position by suitable means—such as screws—and the contact-pieces 1 1<sup>a</sup> secured to the leads C C' by the binding-clips 2 2<sup>a</sup>. The terminals 4 50 4 are passed through the hole *c* of the cover B and secured to the metal contact-pieces 7 8, and the fusible strips 9 are passed under the springs 5° 5° 6° 6° 7° 7° 8° 8°, as indicated in Fig. 3, after 55 which the cover B is placed on the base-block A, so that the recesses 10 10<sup>a</sup> will register with the metallic contact-pieces 1 1<sup>a</sup>. The cover is forced down and rotated until the projecting ends of contact-pieces 5 and 6 of cover B pass 60 under the contact-pieces 1 1<sup>a</sup> of the base-block A, thus locking the parts together. In this rotation the springs 5° 5° and 6° 6° will pass beyond the ridges 3 3 and serve as a ratchet or check to prevent the accidental reverse rotation of 65 cover B and the displacement or disconnection of the parts, though the resistance will not be sufficient to prevent the ready separation

of the parts when desired. The springs 5° 6° 6°, &c., will have another function—viz., a tendency to force the cover away from the base-block and thus insure perfect contact between the contact-pieces 1 1<sup>a</sup> and 5 and 6—and the compression of the springs between the base-block and cover when said springs are reflexed over the contact-pieces 5 6, &c., and 75 used as spring-clips for the fusible strips 9 9, will force the fusible strips down on the contact-pieces and insure perfect electrical connections between the leads and the terminals and throughout the device. 80

By the means hereinbefore described we are enabled to use the fusible connections in the form of wire, which is the cheapest and most convenient form, and we are also enabled to renew the said fusible connections 85 readily without the aid of tools. We are enabled to provide rigid contact-pieces, whereby the cap is attached to the base which is necessary for proper strength if any considerable weight is suspended from the cut-out, and at 90 the same time, by means of the spring-tongues, perfect contact is at all times secured between said pieces, and by the engagement of said tongues with the ridges in the base accidental displacement of the cap is rendered 95 impossible.

Having thus described the nature, operation, and advantages of our invention, what we claim, and desire to secure by Letters Patent, is— 100

1. In an electric cut-out, the combination, with a base-block having projecting contact-pieces and a projection or ridge, of a detachable cover having projecting contact-pieces adapted to take under the contact-pieces of the base-block and an interposed spring-tongue arranged to engage with the ridge or projection on the base-block when the contact-pieces are in juxtaposition, substantially as and for the purposes specified. 105 110

2. In an electric cut-out, the combination, with a base-block having projecting contact-pieces, of a detachable cover having a series of contact-pieces each provided with a reflexed spring-tongue forming spring-clips 115 therewith, two of said contact-pieces projecting and arranged to take under the contact-pieces of the base-block, and said spring-tongues arranged and adapted to press against the interior of the base, substantially as and 120 for the purpose specified.

3. In an electric cut-out, the combination, with a base-block having projections or ridges and projecting contact-pieces, of a detachable cover having projecting contact-pieces adapted to take under the contact-pieces of the base and provided with reflexed spring-tongues, and fuse-clips arranged to engage with the projections or ridges on the base-block when the contact-pieces are in juxtaposition, substantially as and for the purposes specified. 125 130

4. In an electric cut-out, the combination, with a base-block having projecting contact-

pieces, of a detachable cover having a series of contact-pieces each provided with a reflexed spring-tongue clip, which form with said contact-pieces spring fuse-holding devices, two of said contact-pieces projecting and arranged to take under the contact-pieces of the base-block, and the spring-tongues of said two contact-pieces arranged and adapted to press against or engage ridges on the interior of the base, substantially as and for the purposes specified.

5. In an electric cut-out, the combination, with a base-block having a central recess with radially-arranged projections or ridges and rigid contact-pieces which project into said central recess, of a detachable cover having a recessed periphery and rigid contact-pieces radially arranged to take under the contact-pieces of the base-block, and reflexed spring-tongue clips adapted to engage with the projections or ridges on the base-block, substantially as and for the purposes specified.

In testimony whereof we affix our signatures, in presence of two witnesses, this 10th day of January, 1891.

CHARLES R. MESTON.  
ALEXANDER W. MESTON.

Witnesses:  
WALTER ATKINSON,  
CHAS. McCUNE.