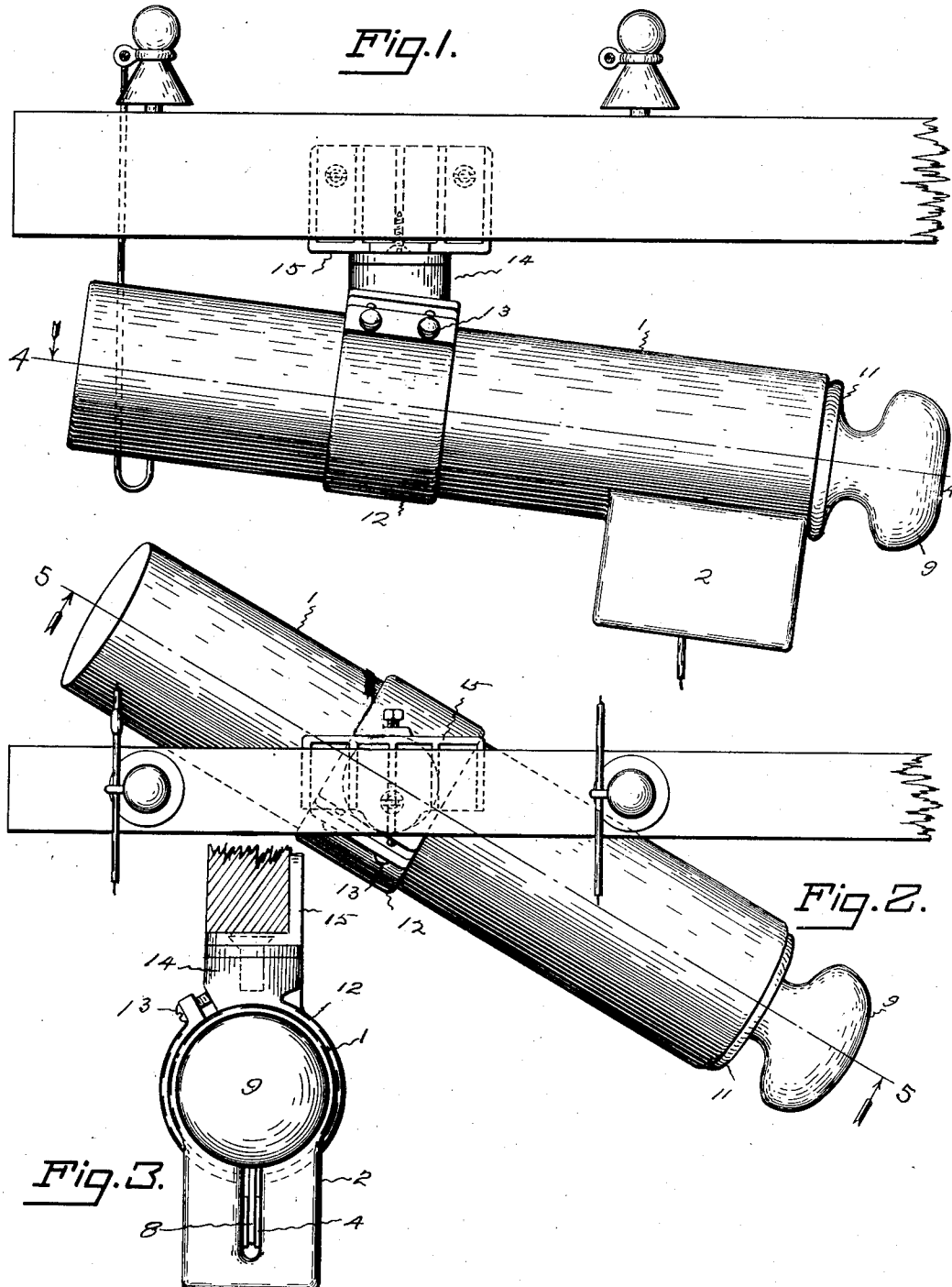


R. C. COLE.
CUT-OUT.
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1,275,391.

Patented Aug. 13, 1918.
2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

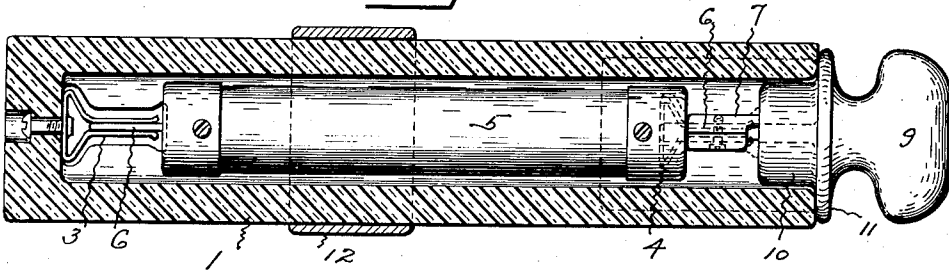


Fig. 5.

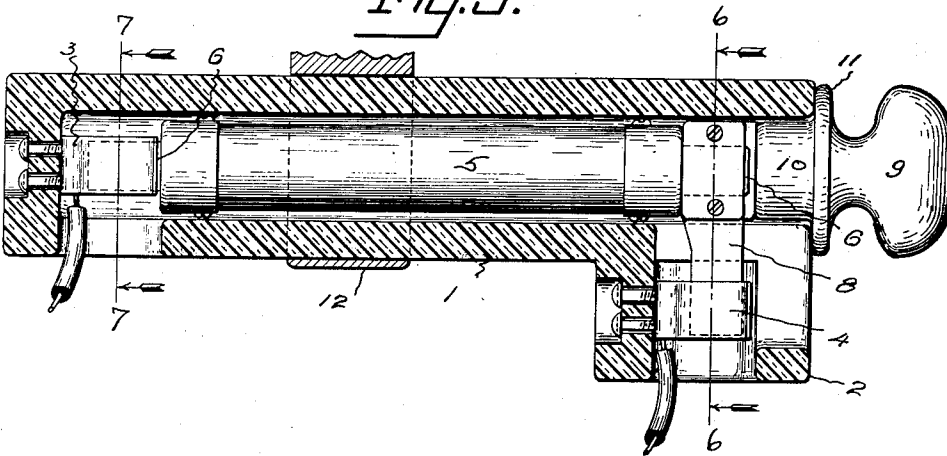


Fig. 7.

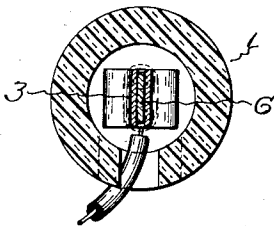
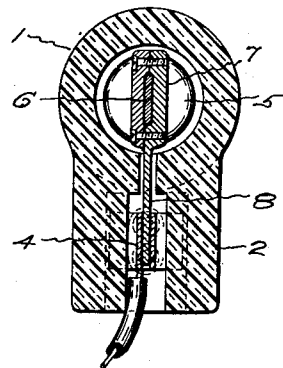


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CUT-OUT.

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To all whom it may concern:

Be it known that I, ROBERT C. COLE, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Cut-Outs, of which the following is a specification.

This invention relates to electrical cut-outs of the thermo-mechanical or fused-switch class, which are particularly adapted for use between main lines and transformer or branch circuits.

The object of the invention is the production for commercial transmission lines carrying relatively high tension current, of a simple, compact and safe cut-out having a cheap and readily obtained member provided with means which will fuse and automatically open the circuit upon the flow of excess current, and which can be easily mechanically manipulated at any time when it is desired to open the circuit or replace a fused member with a live member.

In carrying out this object an insulating casing is provided with a common form of spring clips located in such manner that the terminals of the circuit wires may be readily attached and a fuse of the standard knife-blade type may be thrust longitudinally into the casing for closing the circuit between the clips or withdrawn longitudinally from the casing for opening the circuit, the contacts being so arranged that the fuse cannot be wrongly entered into the casing and the casing being provided with swiveled supporting means by which it may be firmly attached to a cross arm or other support and yet be turned into a position which will facilitate the connection of the circuit wires and allow the convenient entry or withdrawal of the fuse which requires the exercise of considerable strength as the contacts necessarily fit tightly to insure proper electrical conductivity and eliminate liability of heating.

Figure 1 of the accompanying drawings shows a side view of a cut-out which embodies the invention, attached to a cross arm as in use. Fig. 2 shows a plan of the same with the cut-out turned at an angle to the

arm. Fig. 3 shows an end view of the cut-out. Fig. 4 shows a longitudinal horizontal section on line 4—4 on Fig. 1. Fig. 5 shows a longitudinal vertical section on line 5—5 on Fig. 2. Fig. 6 shows a transverse section on the dotted line 6—6 on Fig. 5. Fig. 7 shows a transverse section on the dotted line 7—7 on Fig. 5.

The casing 1 of the cut-out is preferably formed of porcelain and is tubular in shape with one end open and the other end closed and with a protuberance 2 from the side at the open end. Fastened against the inner wall of the closed end of the tube and projecting therefrom longitudinally of the bore toward the open end of the tube are the metallic spring-clip fingers 3. An opening is made through the side wall of the tube adjacent to the closed end to permit the insertion of this spring-clip and the attachment thereto of the end of one of the circuit wires. In the protuberance, at one side of the bore of the tube but extending longitudinally of the tube in the same direction as the spring fingers at the closed end, metallic spring-clip fingers 4 are fastened. An opening is made through the bottom of the protuberance for the insertion of the clip and for the attachment thereto of the end of one of the circuit wires.

The removable connecting member is a common form of inclosed fuse 5 having knife-blade terminals 6. Fastened on one of the knife-blades is a clamp 7. This clamp has a blade 8 that projects at right angles to the knife blade, and it also has a handle 9 of insulating material by means of which the member may be safely handled. The handle has a hub 10 that fits and a flange 11 that closes the open end of the tubular casing when the removable member is thrust into the casing.

To close the circuit between the spring clips, to which the terminals of the line wires are fastened, the removable member, consisting of a knife-blade inclosed fuse with the attached auxiliary blade and handle, is thrust into the bore of the tubular casing until the regular blade of the fuse enters between the spring fingers at the closed end of

the casing and the auxiliary blade projecting from the clamp fastened to the other regular fuse blade enters between the spring fingers in the protuberance at the open end of the casing. With the parts in this position the circuit is closed through the fuse and the hub and flange of the handle close the open end of the casing. For closing the circuit in this manner the fuse is thrust longitudinally straight into the casing and for opening the circuit the fuse is pulled longitudinally straight out of the casing. Any common type of inclosed knife-blade fuse of the proper size and capacity may be used for the purpose of establishing the circuit and if the fuse blows the clamp with the auxiliary blade and handle may be removed and applied to an unblown fuse.

In order to support this cut-out, which is of considerable size and weight for it is designed for service with circuits, for example, carrying 2500 volt current, a band 12 is placed about the tubular casing and clamped in proper location by the screws 13. This band has a hub 14 and pivoted on this hub is an angle bracket 15 provided with screw holes by means of which the bracket may be fastened to a cross arm or other support either horizontally, vertically or on an incline, preferably on an incline with the handle end of the cut-out down so that water will drip therefrom and not run into the casing when the cut-out is exposed to the weather as it usually is when in use. With the cut-out supported in this manner it can be turned around into suitable position for the convenient running of the circuit wires, and furthermore, what is more important, it can be turned to such a position that a lineman can easily reach the handle for pushing the fuse in or pulling it out. This latter feature is of advantage for the reason that with cut-outs of this character designed for high tension currents the spring fingers must be of such size and stiffness and so tightly grasp the blades of the fuse that the contact will be sufficient to prevent heating when the current is flowing across the junctions between the blades and clips.

The invention claimed is:

1. A cut-out comprising an insulating tubular casing having one end closed and the other end open with spring fingers fastened in the casing near the closed end and extending toward the open end, and spring fingers fastened in the casing near the open end and extending in the same direction as the first mentioned spring fingers but out of line therewith, and an inclosed fuse having a longitudinally extending knife blade at each end with a transversely projecting blade fastened to one knife blade, whereby the fuse may be thrust into the casing and said blades and fingers connected, and drawn

from the casing and said blades and fingers disconnected, by a straight longitudinal movement.

2. A cut-out comprising an insulating tubular casing having one end closed and the other end open with spring fingers fastened in the casing near the closed end and extending toward the open end and spring fingers fastened in the casing near the open end and extending in the same direction as the first mentioned spring fingers but out of line therewith, an inclosed fuse having a longitudinally extending knife blade at each end with a transversely projecting blade fastened to one knife blade, whereby the fuse may be thrust into the casing and the blades and fingers connected, and drawn from the casing and said blades and fingers disconnected, by a straight longitudinal movement, and a handle attached to the fuse adjacent to the transversely projecting blade, said handle when the blades are connected with the fingers closing the open end of the casing.

3. A cut-out comprising an insulating tubular casing having one end closed and the other end open with spring fingers fastened in the casing near the closed end and extending toward the open end and spring fingers fastened in the casing near the open end and extending in the same direction as the first mentioned spring fingers but out of line therewith, and an inclosed fuse having a longitudinally extending knife blade at each end with a handle and a transversely projecting blade clamped to one knife blade, whereby the fuse may be thrust into the casing for engaging and drawn out of the casing for disengaging said blades and fingers by a straight longitudinal movement.

4. A cut-out comprising an insulating tubular casing with one end closed and the other end open with spring fingers fastened in the casing near the closed end and extending toward the open end and spring fingers fastened in the casing near the open end and extending in the same direction as the first mentioned spring fingers but out of line therewith, and an inclosed fuse having longitudinally projecting knife blades at its ends, a clamp attached to one knife blade, a blade extending transversely from the clamp and a handle fastened to the clamp, said fuse being adapted to be thrust into the casing and have its normal blade engage the spring fingers at the closed end of the casing and the attached transverse blade engage the spring fingers at the open end of the casing.

5. A cut-out comprising an insulating tubular casing having one end closed and the other end open with spring fingers fastened in the casing near the closed end and extending toward the open end and spring fingers fastened in the casing near the open end and

extending in the same direction as the first mentioned spring fingers but out of line therewith, a removable inclosed fuse having a longitudinally projecting blade at one end adapted to engage the spring fingers at the closed end of the casing and a transversely projecting blade at the other end adapted to engage the spring fingers at the open end of the casing, a handle attached to the fuse at the end adjacent to the transverse blade, a band clamped about the tubular casing, and a bracket pivoted to said band.

ROBERT C. COLE.