

(No Model.)

2 Sheets—Sheet 1.

A. WRIGHT.
ELECTRIC CUT-OUT.

No. 496,807.

Patented May 2, 1893.

Fig. 1.

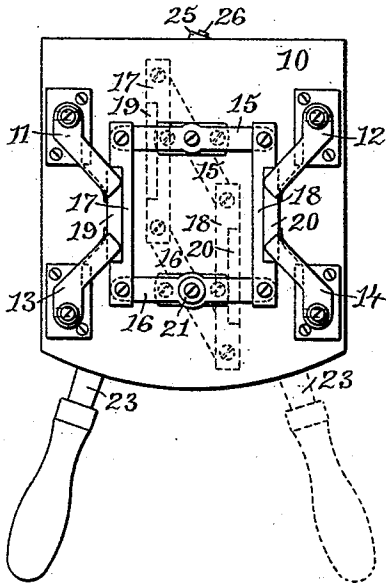


Fig. 2.

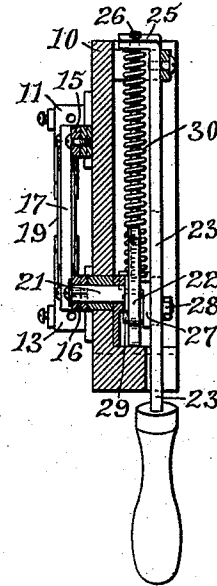
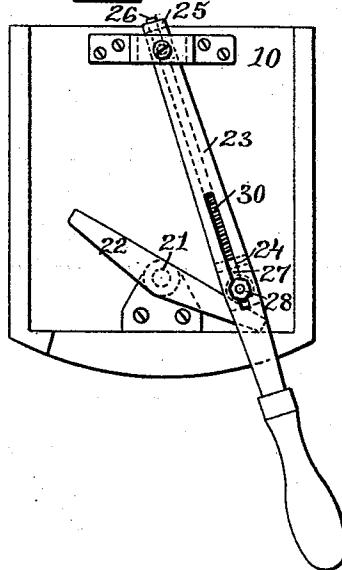


Fig. 3.



WITNESSES:

Henry J. Miller
Chas. H. Luther Jr.

INVENTOR:

Augustus Wright,
by Joseph A. Miller & Co.,
attys.

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Fig. 4.

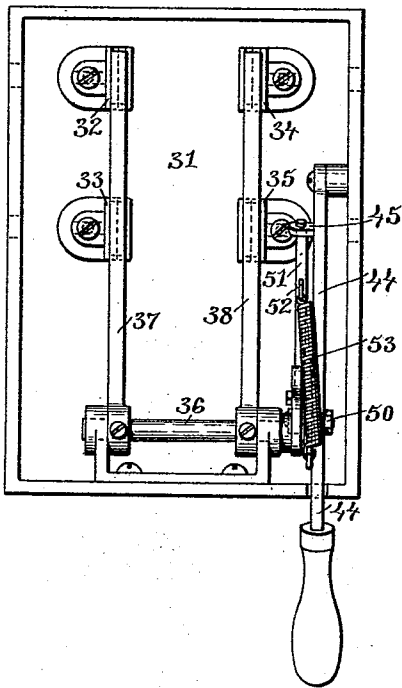


Fig. 5.

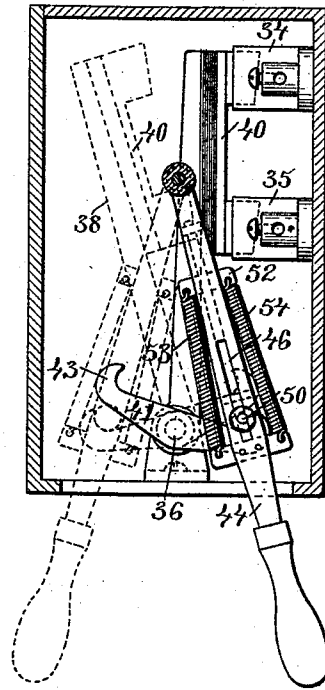
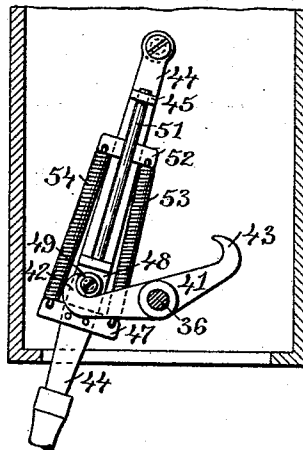


Fig. 6.



WITNESSES:

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Chas. H. Luther Jr.

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Augustus Wright,
by Joseph A. Miller & Co.
Attys.

UNITED STATES PATENT OFFICE.

AUGUSTUS WRIGHT, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
HOPE ELECTRIC APPLIANCE COMPANY, OF SAME PLACE.

ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 496,807, dated May 2, 1893.

Application filed November 9, 1892. Serial No. 451,444. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS WRIGHT, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Electric Cut-Outs; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in cut-out switches which are particularly adapted for use in electrical-circuits of high intensity.

The object of the invention is to produce a cut-out by means of which both sides of an electric-circuit are simultaneously and abruptly completed or broken.

The further object of the invention is to produce an electric-switch in which the movement of the connecting-plates toward or from the contact-posts will be automatically completed when once started.

The invention consists in the peculiar and novel construction of the operating-lever and its combination with an electric-switch.

The invention further consists in the novel connecting-mechanism for completing or disrupting the circuit between the contact-points.

The invention also consists in the peculiar combination with an electric-switch, adapted to be operated by the rotating of a shaft, of an oscillating-member secured to said shaft and adapted to be rapidly oscillated by spring-pressure.

Figure 1 represents a front view of my improved switch, the operation of the connecting-plates being indicated in broken lines. Fig. 2 represents a vertical sectional view of the same. Fig. 3 represents a back view to more clearly show the construction of the operating-lever and the oscillating-member. Fig. 4 represents a front view of a modified form of an electric cut-out showing my improved operating-mechanism in connection therewith. Fig. 5 being a vertical sectional view through the casing to show a side view of the switch and operating-mechanism and to indicate the operation of the same. Fig. 6 is an inner end view of a portion of the case to which the operating-lever is pivoted, the

oscillating-member being shown in connection therewith.

Similar numbers of reference designate corresponding parts throughout.

In the drawings 10 indicates a base having a recessed back. On this base are mounted the binding-posts 11 and 12 at the upper portion of the base and 13—14 at the lower portion thereof. Each of these posts has contact-arms extending toward the central portion of the base. When the base is made of non-insulating material the binding-posts are suitably insulated therefrom.

Pivotally mounted on the base 10 are the cross-arms 15 and 16 the ends of which are pivotally connected by the insulating-bars 17 and 18 carrying connecting-plates 19 and 20 which are adapted to make electrical-contacts with the contact-arms when brought against them. The pivot on which the cross-arm 16 turns is formed by the shaft 21 which extends through a bearing in the base 10 and on the under side thereof is secured to the member 22. This member may have a straight upper edge, as shown in Fig. 3, or each end of the member may be furnished with a stop, as shown in Fig. 6.

The operating-lever 23 is pivoted at the upper rear portion of the base 10 and has a longitudinal-slot 24 and the stop 25 at the upper end, this stop being perforated to allow the guide-rod 26 to pass. The lower end of the guide-rod is secured to the bracket 27 which has a slide movable in the slot 24, being secured therein by the nut 28 and a roller-bearing 29 adapted to travel over the upper edge of the member 22. Surrounding the guide-rod 26 is a coiled-spring 30 one end of which bears against the stop 25 and the other end against the sliding-bracket 27.

When the lever is thrown to the opposite side of the case from where it rests it is obvious that no movement of the connecting-plates 19 and 20 will take place until the roller-bearing 29 has passed the center of the shaft 21. If, when at this point, the lever be released the spring 30 will act to force the roller-bearing against and depress that end of the member 22 toward which movement has commenced, the oscillation of the member 22 will be conveyed by the shaft 21 to the

cross-arm 16 throwing the same to the position shown in dotted lines in Fig. 1, and the connecting-arms 17 and 18 and the cross-arm 15 being pivotally connected with the arm 16, will be abruptly drawn away from and the contact-plates with a minimum of drag and consequently a small tendency to draw an arc, the movement still being in a direction to establish a good rubbing contact between the plates 19 and 20 and the contact-plates carried by the binding-posts.

It is obvious that in place of the spring 30 any other device may be used for depressing the bracket 27 and that this operating-mechanism may be used on any switching-mechanism operated by a shaft.

To further illustrate the application of my invention I have illustrated the modifications shown in Figs. 4, 5, and 6 of the drawings, in which 31 is the base of a switch-box and 32, 33, 34, and 35 are contact binding-posts mounted on said base and insulated from one another.

Mounted in suitable bearings at the lower portion of the switch-box is a shaft 36 having the arms 37 and 38 rigidly secured thereto. These arms carry contact-plates 39 and 40 suitably insulated from the metal of the arms and adapted to connect the post 32 with 33 and that marked 34 with 35. On one end of the shaft 36 is secured the member 41 having turned-up ends to form stops 42 and 43.

Pivoted to the side or end of the switch-box is a lever 44 which extends downward through a slot in the bottom of the box and is provided with a handle. This lever has a perforated-stud 45 near its upper end and a longitudinal-slot 46 below which the cross-arm 47 is secured to the lever. Longitudinally movable in the slot of the lever is a bracket 48 carrying the roller-bearing 49. The bracket is secured in the slot by the nut 50 and extending upward from the bracket is the guide-rod 51 the upper end of which slides in the perforation of the stud 45. Secured to the guide-rod is a cross-arm 52 which is connected by the springs 53 and 54 with the cross-arm 47. As the lever 44 is brought forward from the position shown in the drawings, the roller-bearing ascends the inclined-member 41 thus forcing the cross-arm 52 away from that marked 47 and elongating the springs 52 and 53. When the center of the shaft 36 has been passed by the roller-bearing the lever is released and the springs acting to draw the cross-arm 52 downward will suddenly throw the member 41 in the opposite direction and the roller-bearing will move along the now oppositely-inclined member until it

rests against the stop 43. At the same time the member 41, being secured to the shaft 36, will partially rotate the same by a sudden movement and the arms 37 and 38 carrying the contacts 39 and 40 will be moved away from the contact-posts and the circuit will be broken.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an electric cut-out having contacts and means operated by a rotatable-shaft for electrically connecting and disconnecting the same, the combination with such shaft and a cross member secured thereto of a lever, and a spring-operated roller bearing carried thereby, adapted to bear on said member and to alternately depress the ends of the same to rotate the shaft, as described.

2. The combination in a cut-out, with a base and insulated binding-posts carrying contact-plates secured to said base, of cross-arms pivoted to said base, connecting-bars pivotally secured to the ends of the cross-arms and carrying connecting-plates, and a spring-actuating device carried on a lever and adapted to impart a vibratory motion to the cross-arms, as described.

3. The combination with the base 10 and the insulated posts 11, 12, 13, and 14 mounted thereon and having contact-plates, of the cross-arms 15 and 16 pivoted to said base, the bars 17 and 18 carrying the contact-plates 19 and 20, pivotally secured to the ends of the cross-arms, the cross-member 22 mounted on the pivot of the arm 16, and a pivoted lever having a spring-operated roller bearing adapted to bear on the upper edge of the member 22, as described.

4. In an electric cut-out having insulated contact posts, and means operated by a shaft for connecting said posts in pairs, the combination with such shaft and a cross-member secured thereto and having stops formed at its ends, of the lever 44 pivoted above said shaft and having the slot 46, the perforated-stud 45, and the cross-arm 47, the bracket 48 carrying the roller-bearing 49 movable in said slot, the guide-rod 51 secured to said bracket and extending through the perforation in the stud 45, the cross arm 52 on said rod and the springs 53 and 54 secured to the cross-arms 47 and 51, as and for the purpose described.

In witness whereof I have hereunto set my hand.

AUGUSTUS WRIGHT.

Witnesses:

HENRY J. MILLER,
M. F. BLIGH.