

No. 677,843.

Patented July 2, 1901.

F. H. ROGERS.
AUTOMATIC ELECTRIC CUT-OUT.

(Application filed Aug. 14, 1900.)

(No Model.)

Fig. 1

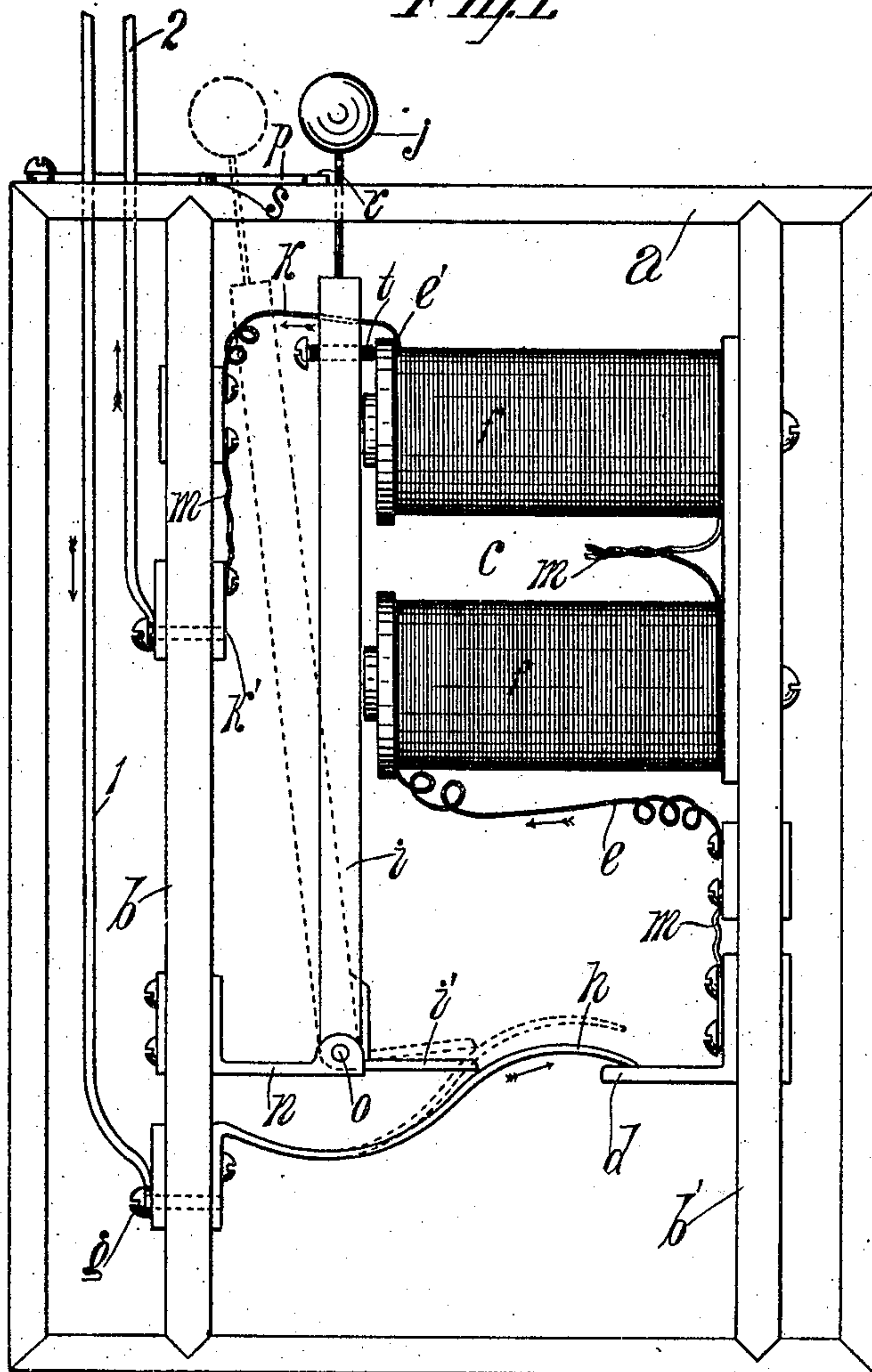
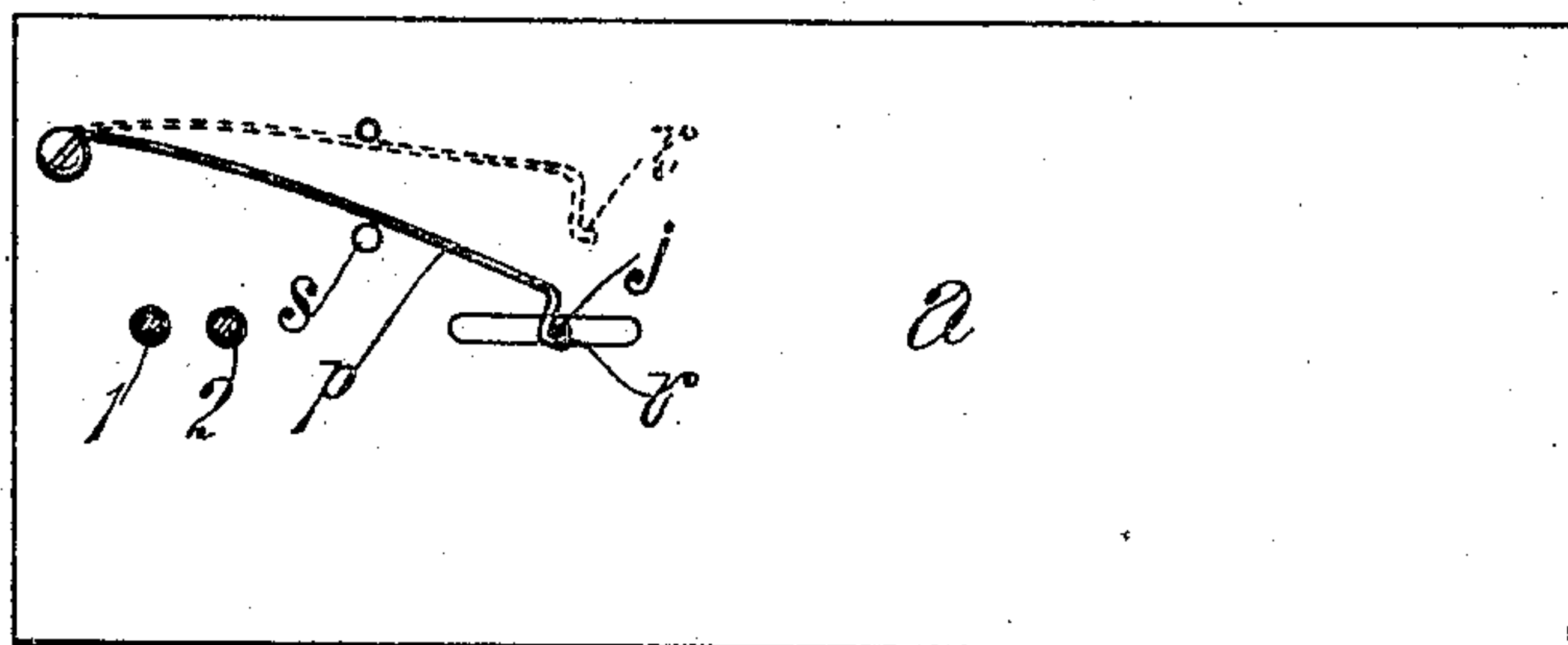


Fig. II



Witnesses
 Percy Ingman.
 J. Townsend.

Frederick H Rogers.
 Townsend Bros.
 his attys

UNITED STATES PATENT OFFICE.

FREDERICK H. ROGERS, OF SAN JACINTO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO THOMAS T. PORTEOUS, OF SAME PLACE.

AUTOMATIC ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 677,843, dated July 2, 1901.

Application filed August 14, 1900. Serial No. 26,897. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. ROGERS, a citizen of Great Britain, residing at San Jacinto, in the county of Riverside and State of California, have invented a new and useful Automatic Electric Cut-Out, of which the following is a specification.

One object of my invention is to provide a simple and cheap appliance for automatically cutting out the electric circuit whenever the current is cut off and leaving the circuit open until it is again intentionally closed by the attendant.

Another object is to enable the attendant to so set the appliance when the current is off that when the current is again turned on the lights will be lighted and will remain lighted until the current is again turned off, and then the electric circuit will again be automatically cut out and the circuit again left open until intentionally set or closed by the attendant. This device is intended for ready application to electric service-lines for electric lights in stores and other buildings, where by the service can be cut out at any time by cutting off the current at the power-station or other stations.

The invention is designed to prevent waste of current by burning electric lamps in the daylight hours through the negligence of attendants and also to avoid the necessity of attendance upon the lights for the purpose of extinguishing them.

The accompanying drawings illustrate my invention.

Figure 1 is an elevation of the invention in use with the electric current on. Dotted lines indicate the position when the current is cut out. Fig. 2 is a view illustrating the automatic setting device, by means of which the attendant can set the apparatus ready to throw the lights into operation when the current is turned on and which will allow the circuit to be cut out when the current is cut off. The upper end of the handle *j* of the armature is omitted from this view.

a indicates the box or case; *b b'*, the two insulating-supports, of wood fiber, porcelain, or other insulating material.

c indicates an electromagnet; *d*, a contact-

point connected with the terminal *e* of the coils *f* of said magnet.

h indicates an armature-throwing circuit closing and breaking spring, connected by the screw *g* with one side *l* of the service-wire and arranged to be sprung into contact with the contact-point *d* and to normally stand free from said contact-point.

i indicates a pivoted armature with a handle *j* and having an arm *i'* projecting at right angles from the side of the main body of the armature, which is presented toward the magnet and arranged to engage the spring *h* to bring it into contact with the contact-point *d* when the armature is held by the said magnet and to be thrown by said spring to normally hold the armature away from said magnet. The terminal *e'* of the coils *f* of the magnet is connected with the negative side 2 of the service-wire through the conductor *k* and electrical connections *k'*.

m indicates safety-fuses.

n indicates a support for the pivot *o* of the armature.

In practice when the attendant desires to cut in the electric current he will move the insulated handle *j* to bring the armature *i* toward the magnet. This causes the arm *i'* to force the spring *h* into contact with its contact-point *d*, and the circuit through the device and through the coil is completed. The magnet becomes energized by the current and holds the armature in the position shown in the drawings.

In case the current is cut off between the generator and the lights or other apparatus where used the magnet will be deenergized, and the spring *h* will instantly throw the armature away from the magnet and into the position shown in dotted lines, thus breaking the circuit, which will remain cut out until the armature is again brought into the operative position shown in the drawings. When the current is to be cut in again, the attendant will move the insulated handle *j* to bring the parts again into the position shown in solid lines.

p indicates a temporary holder for the insulated handle *j*. This holder may be variously constructed. I have shown it as a

spring furnished with a catch *r* to retain the handle *j* to hold the armature in position to cause the spring *h* to close the circuit while the armature is within the effective field of the magnet and far enough from the end of its path toward the magnet to escape the catch and allow the holder to be thrown out of the path of the handle whenever the current is turned on and the magnet is thus energized to draw the armature toward the magnet.

When the holder-spring *p* has been released by the escape of the handle by reason of the movement of the armature under the attraction of the magnet, the catch flies out of the path of the handle, so that when the current is again turned off and the magnet releases the armature the armature will be free to be thrown by spring *h*, and said spring will open the circuit, so that when the current is again turned on the lamps will not be lighted.

s indicates a stop to stop the holder when thrown to catch the handle.

t indicates a stop in the form of an adjusting-screw to prevent the armature from coming into contact with the core of the magnet. The object of this is to prevent the armature from becoming permanently magnetized and to insure the release of the armature whenever the current is turned off of the line.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. An automatic electric cut-out comprising an electromagnet; a contact-point connected with one terminal of the coil of said magnet; the other terminal of said coil being connected with one side of the service-wire; a spring connected with the other side of the service-wire and arranged to be sprung into contact with said contact-point and to normally stand free from said contact-point; a pivoted armature for said magnet, arranged to engage the spring to hold the spring in contact with its contact-point, and normally held away from the magnet by said spring; and an insulated handle for moving the armature independently of the spring.

2. An automatic electric cut-out comprising

an electromagnet; a contact-point connected with one terminal of the coil of said magnet; the other terminal of said coil being connected with one side of the service-wire; a spring connected with the other side of the service-wire and arranged to be sprung into contact with said contact-point and to normally stand free from said contact-point; a pivoted armature provided with a handle and having an arm projecting at right angles from the side of the main body of the armature which is presented toward the magnet, and arranged to engage the spring to throw it into contact with its contact-point when the armature is held by said magnet, and to be thrown by said spring to normally hold the armature away from said magnet, substantially as set forth.

3. In an electric cut-out the combination of an electromagnet; a contact-point connected with one terminal of the coil of said magnet; the other terminal of said coil being connected with one side of the service-wire; a spring connected with the other side of the service-wire and arranged to be sprung into contact with said contact-point and to normally stand free from said contact-point; a pivoted armature for said magnet, arranged to hold the spring in contact with its contact-point, and normally held away from the magnet by said spring; and a spring-operated catch to hold the armature within the effective field of the magnet and in position to close the circuit and being at sufficient distance from the magnet to allow the armature to be withdrawn from the catch to release the catch when the magnet is energized; the tendency of said spring being to withdraw the catch from the path of the armature when the armature is withdrawn from the catch.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 7th day of August, 1900.

FREDERICK H. ROGERS.

Witnesses:

JAMES R. TOWNSEND,
F. M. TOWNSEND.