(No Model.)

R. WATKINS.

AUTOMATIC REPEATER.

No. 474,706. Patented May 10, 1892.

Fig. 1.

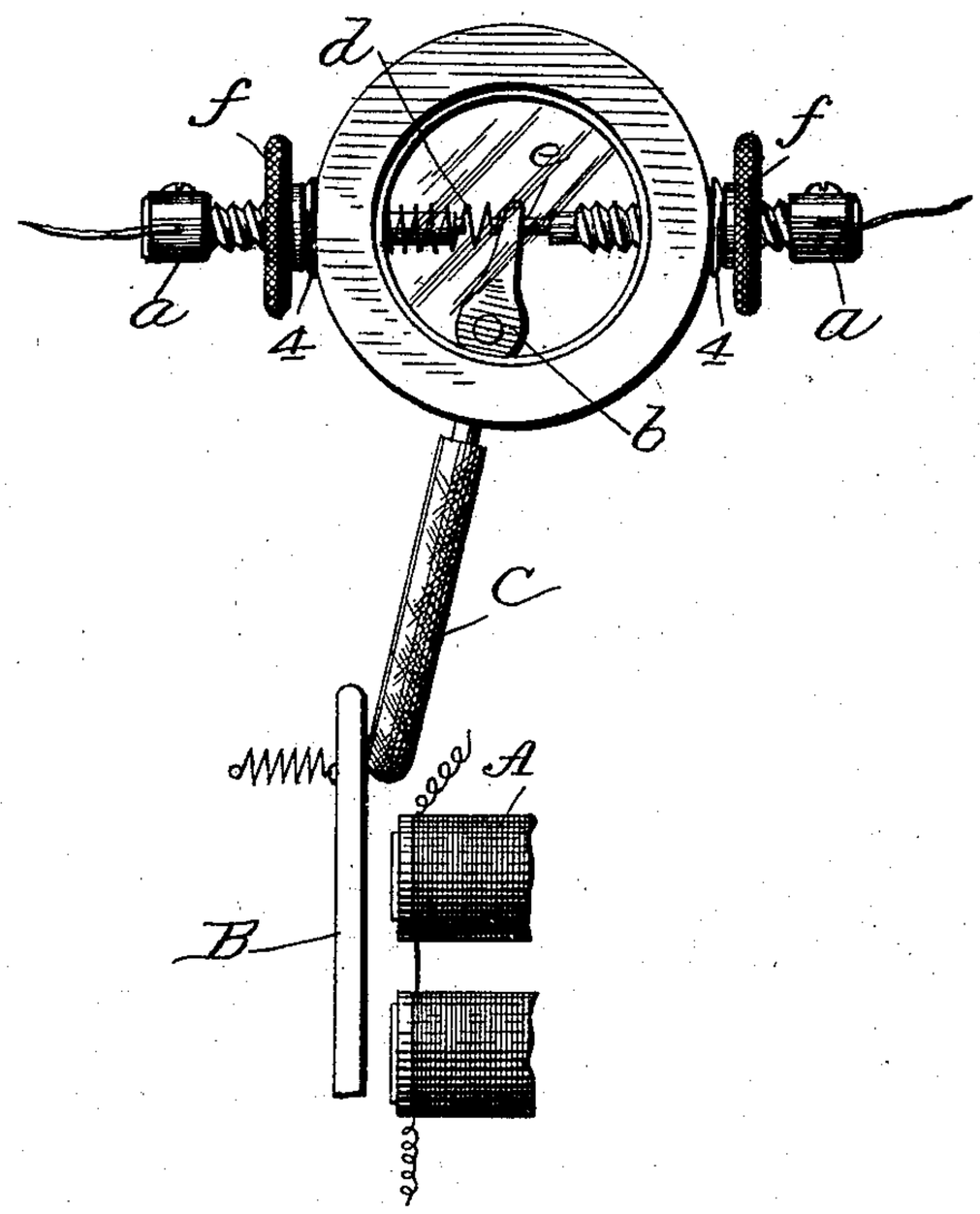
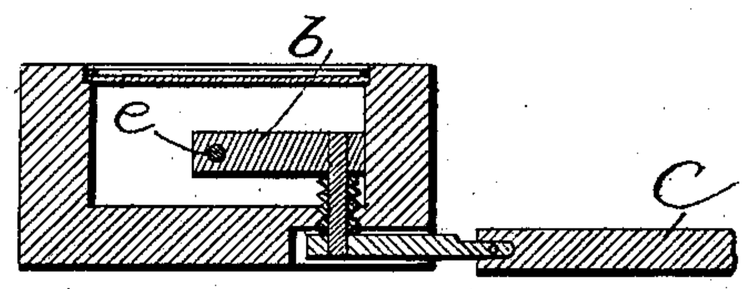


Fig. 2.



Witnesses
Walter D. Edmonston
F. L. Middleton

Inventor
Richard Watkins
by Ellis Spear
Atty.

UNITED STATES PATENT OFFICE.

RICHARD WATKINS, OF SACRAMENTO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO WILLIAM H. DEVLIN, OF SAME PLACE.

AUTOMATIC REPEATER.

SPECIFICATION forming part of Letters Patent No. 474,706, dated May 10, 1892.

Application filed February 2, 1892. Serial No. 420,054. (No model.)

To all whom it may concern:

Be it known that I, RICHARD WATKINS, a citizen of the United States of America, residing at Sacramento, in the county of Sacramento and State of California, have invented certain new and useful Improvements in Automatic Mechanical Repeaters, of which the following is a specification.

My invention is an automatic mechanical repeater for electrical circuits and relates to the mechanical construction of the repeater, which is placed in the secondary circuit and is adapted to be operated from the main circuit by means of the reciprocating armature or other mechanism of the instrument.

The invention consists in the simple construction and arrangement of the parts of the repeater, all as hereinafter fully set forth in the accompanying drawings.

Figure 1 shows the armature controlled by the primary circuit and my improved repeater in proximity thereto, adapted to be operated thereby, with a part of the secondary circuit in which the repeater is included also shown. Fig. 2 is a section through the repeater.

In the drawings, A represents the coils of the electro-magnet in the primary circuit, and B represents the armature, which is connected to a gong or other instrument controlled by the main circuit. This armature is arranged so that it is directly in the path of the lever C, and this lever is pivoted upon an insulated case, which carries binding-screws *a a* upon its periphery, and from these screws extend the wires of the secondary circuit. These screws which carry the ends of the wires pass through the sides of the casing, being threaded into nipples 4, and their inner ends serve as contacts, the circuit being completed between them through a lever *b*, the end of which is interposed between the ends of the screws, this lever being carried upon a pin, which has its bearing in the casing, extending through the bottom of it, where it is connected to the eye of the lever C, the end of the lever C being covered with an insulating material or composed of an insulating material. A spring *d* encircles the end of one of the screws bearing against the interposed end of the lever *b* and is prevented from slipping off by means of a pin *e*, which passes through the lever, projecting on either side thereof and forming on each side a seat for the spring and at the same time contacts for the ends of the screws. As the screws pass through the screw-threaded nipples they are adjustable, so as to increase or diminish the space between their ends, and each screw carries thereon a jam-nut *f*, which, after the screw has been properly adjusted, fixes the screw and holds it in its adjusted position.

The operation of the device is very simple. The lever C projects into the path of the armature of the gong or other moving part of an instrument, and as this armature is moved under the attraction of the coils or the reversed movement of the spring it imparts a like movement to the end of the lever C, which makes or breaks the circuit against the pressure of the spring encircling one of the screws. This spring may be arranged to keep the contacts together or to keep them separated, and the moving part may operate the lever to close the circuit or to break the circuit, as may be desired.

My invention is of great simplicity and is economical to make, and, as there are no coils, offers no resistance to the circuit. It is very easy of adjustment and the contacts are absolutely sure.

I claim as my invention—

1. A repeater for the secondary circuit, consisting of adjustable screws forming terminals of the circuit and extending within a casing, an interposed contact-lever between the terminals, a circuit-carrying spring in contact with said lever, and means of operating said lever by a moving part of the main circuit, substantially as described.

2. In combination, a casing, contact-screws forming terminals of the secondary circuit extending into said casing, a lever interposed between the terminals, a circuit-carrying spring in contact with said lever, and an insulating-lever connected with the first lever and in the path of the armature of the gong or other instrument in another circuit, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD WATKINS.

Witnesses:
HENRY C. ROSS, Jr.,
R. M. CLARKEN.