

(No Model.)

J. Z. MILLER.

AUTOMATIC ELECTRIC CUT-OUT FOR MAGNETO BELLS.

No. 576,372.

Patented Feb. 2, 1897.

Fig I.

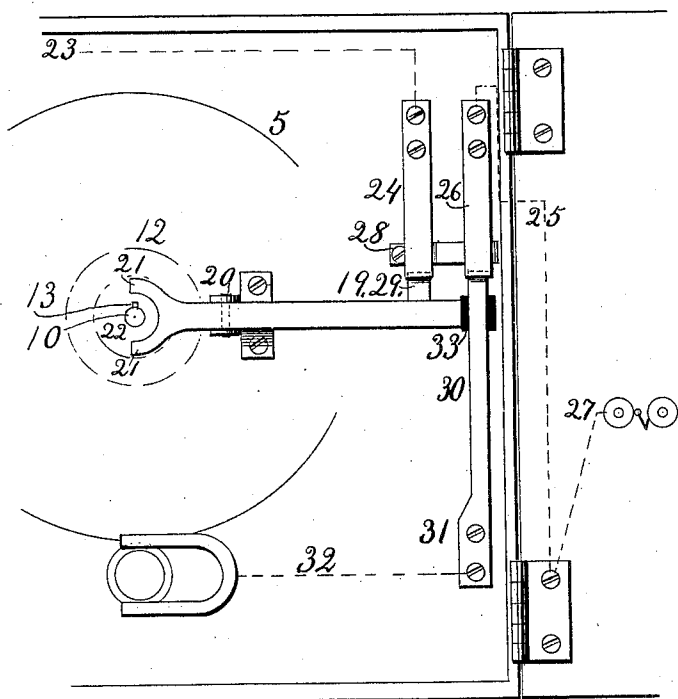


Fig II.

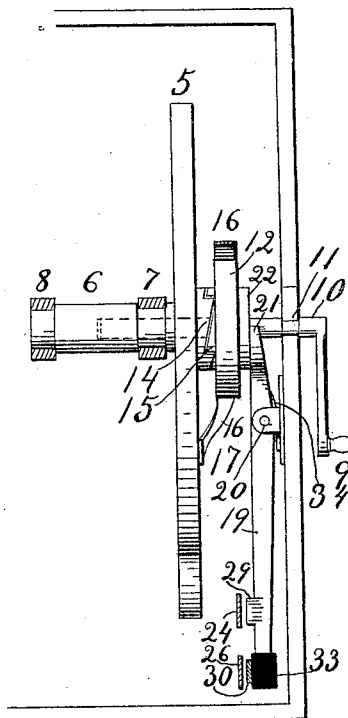
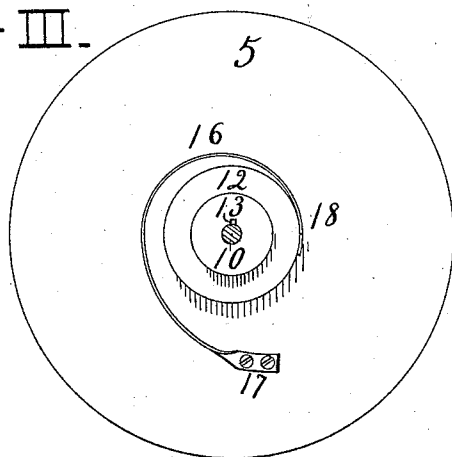


Fig III.



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AUTOMATIC ELECTRIC CUT-OUT FOR MAGNETO-BELLS.

SPECIFICATION forming part of Letters Patent No. 576,372, dated February 2, 1897.

Application filed September 23, 1896. Serial No. 606,746. (No model.)

To all whom it may concern:

Be it known that I, JOHN Z. MILLER, a citizen of the United States, residing in the city of Baltimore, State of Maryland, have invented a new and useful Improvement in Automatic Electric Cut-Outs for Magneto-Bells; and I do 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 I represents a portion of my electric cut-out in rear view. Fig. II represents portions of the cut-out in top view, partly in longitudinal section; and Fig. III is a front view of the main wheel and shifting-cam.

This invention relates to that class of electrical appliances in which a magneto-generator is operated by a crank to produce a current, and a switch of some kind is used to introduce this current to the wire of the call-bell of a telephone-circuit; and the object of the invention is to produce mechanical means adapted for attachment to any bell for automatically cutting into the telephone-circuit both sides of the magneto-generator bell by the act of turning the magneto bell-crank and of cutting out the said generator by the act of releasing the bell-crank.

To this end my invention consists in the construction and combination of parts forming an automatic electric cut-out for magneto-bells hereinafter described and claimed, reference being had to the accompanying drawings.

5 represents the main drive-wheel to be connected with a magneto-generator for mechanically rotating the same by suitable gearing for the purpose of generating a magnetic current.

6 represents the shaft of the drive-wheel, journaled in any suitable bearings 7 8. The crank 9 is fixed to a small shaft 10, which may have one bearing 11 in the casing, but its body is fitted to revolve freely within the main shaft 6. On the shaft 10 is fitted a cam-wheel 12, having a longitudinal slot in which may play a feather 13, that is fixed to the shaft 10, so that the cam-wheel 12 may have free longitudinal movement on the shaft 10, but will be forced to revolve with the shaft.

Upon the adjacent faces of the wheels 5 and 12 are arranged interlocking wedge-shaped

projections 14 and 15, and the wheel 12 is connected with wheel 5 by a spring 16, one end of the latter being secured at 17 to wheel 5 and the other end being secured at 18 to the wheel 12. A lever 19 is pivoted at 20 to a fixture of the frame and provided with forks 21, bearing against the end of the hub 22 of the cam-wheel 12. The incoming line-wire 23 terminates in a spring 24, and 25 represents a wire extending from a terminal spring 26 in any direction, as 27, to the ringer.

28 is a metallic piece upon which both the springs 24 and 26 normally rest, completing the main-line circuit.

The lever 19 is metallic and has connection with one of the generator-terminals at 21 and is provided with a contact-point 29, located opposite to the spring 24.

A spring 30, secured to the casing at 31 and provided with a wire 32, leading to the other generator-terminal, stands normally opposite to the spring 26, and the lever 19 is provided with an insulating-shield 33, adjacent to the spring 30.

The action is as follows: When an operator turns the crank 9, the cam 12 is rotated, and by means of the cam-teeth 14 and 15 the cam is also wedged longitudinally upon its shaft away from wheel 5 and carries with it the end 21 of lever 19, whereby the contact-point 29 of the same lever raises the spring 24 from the shunt-circuit connection 28, and the insulated end 33 of the lever 19 raises the spring 30 into contact with the spring 26, also raising that spring from contact with the piece 28. Now both poles of the generator are in circuit with the main line and the ringer, so that if the revolving of crank 9 be continued the spring 16 will be wound taut and pull the main wheel 5 around with it. Thus the magneto-generator will be operated, while electric connection with the ringer and line is maintained without any skill or memory on the part of the operator. Then as soon as the crank is released the spring 16 will return the cam 12 to its normal position, leaving the lever 19 free, and its return may be insured by a spring 34, acting to disconnect it from the springs 24 and 30, whereby the springs 24 and 26 will be permitted to return to connect with the shunt-circuit piece 28, the main-line circuit will be restored, and the magneto-gener-

ator will be cut out at both sides automatically.

The application of this device to telephone-circuits now in service and having magneto-bells is very simple and inexpensive, and it enables them to be used with greater certainty and with more satisfaction by the unskilled public in general.

Having thus fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is the following:

1. In electric cut-outs, the combination of a main line parted; each of the parted ends provided with a spring contact-point; a metallic shunt-piece normally in contact with the said spring-points; a third spring located opposite to one of the said two springs and electrically connected with one terminal of a magneto-generator; a lever electrically connected with the other terminal of the said generator and provided with a contact-point located opposite to the other of the said two springs, and further provided with an insulated shield opposite to the third spring; a magneto-generator drive-wheel and a crank

therefor having a shaft loosely connected therewith; a cam-wheel mounted upon the crank-shaft to be rotated therewith but with free longitudinal movement thereon, the adjacent faces of the cam and drive wheel being cam-shaped, a spring freely connecting the said wheels, and an arm of the aforesaid lever bearing against the end of the cam-wheel, substantially as described.

2. In electric cut-outs, the combination of a magneto-generator drive-wheel; a crank provided with a shaft loosely connected with the drive-wheel; a cam-wheel loosely mounted upon the shaft to rotate therewith, the adjacent faces of the cam and drive wheel being cam-shaped; a lever bearing against one end of the cam, and connections substantially as described.

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

JOHN Z. MILLER.

Witnesses:

WILLIAM S. PACA,
LOUISE FRINK.