F. W. GRISWOLD.

ELECTRO-MAGNETIC BELL-STRIKING APPARATUS.

No. 183,665. Patented Oct. 24, 1876.

Fig. 1.

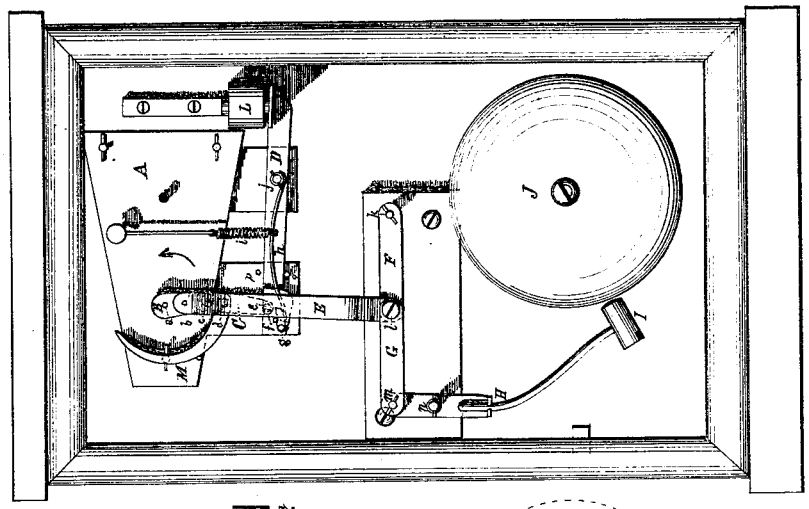


Fig. 4.

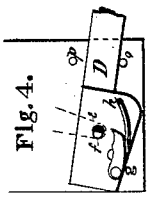


Fig. 5.

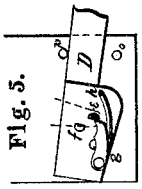
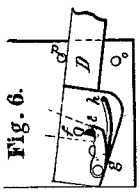


Fig. 6.



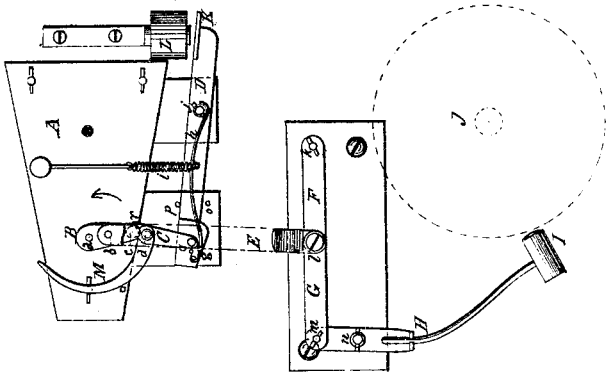


Fig. 2.

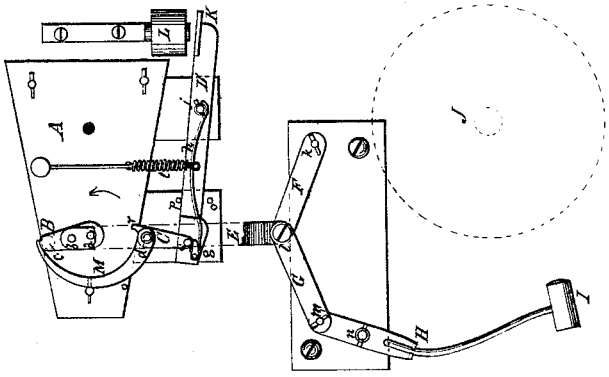


Fig. 3.

WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

FRANK W. GRISWOLD, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO HIMSELF AND DEXTER L. PIERCE, OF SAME PLACE.

IMPROVEMENT IN ELECTRO-MAGNETIC BELL-STRIKING APPARATUS.

Specification forming part of Letters Patent No. **183,665**, dated October 24, 1876; application filed June 6, 1876.

To all whom it may concern:

Be it known that I, FRANK W. GRISWOLD, of Providence, county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Mechanism for Striking Fire-Alarm Signals; and I do declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of these specifications.

My invention consists of an improved mechanism for striking fire-alarm signals, hereinafter fully described, and pointed out in the claims.

In the accompanying drawing, Figure 1 represents a general view of mechanism for striking fire-alarm signals, constructed according to my improvement, showing the same at rest when in a closed circuit of telegraph-line. Fig. 2 is a view of the same with the circuit broken, and after the blow has been delivered. Fig. 3 is a view of the same with circuit broken, when about to deliver a blow. Figs. 4, 5, and 6 are detailed parts.

Similar letters of reference indicate corresponding parts.

I make use of an ordinary clock-work train (which I do not deem necessary to show) to run the mechanism, the front plate of which is lettered A. B is a crank, actuated by train through arbor *a*, and at a proper distance from center is placed the wrist *b* and pin or roller *c*. To the wrist is attached the connecting-rod E, which communicates motion, through levers F and G, to lever H and hammer I. C is the escapement-lever, with a circular arm, M, stop *r*, and locking-pin *e*, and moves upon the pivot *d*. The object of said lever is to prevent the striking of more than one blow when the circuit is broken. D is a lever, with armature K attached, pivoted at *j*, and having upon its long arm locking-pin *f* and click *g*. *i* and *h* are tension-springs to lever and click. *p* and *o* are pins to regulate the motion of the lever D. *k* and *n* are fixed pivots for levers *f* and *h*. *l* and *m* are joints between E, F, G, and H. J is the bell, and L a magnet.

Upon breaking the circuit, the spring *i* draws the lever D up, thus freeing the pin *e* from the locking-pin *f*. The pressure of train on crank forces the lower end of escapement-lever away from pin *f*, and releases the crank from the stop *r*, allowing it to revolve in the direction of the arrow. A one-half revolution of the crank raises the connecting-rod E and levers F and G, thus bringing the short arm of the lever H toward the fixed pivot *k*, and raising the hammer I from the bell, and at the same time the roller *c* comes in contact with the circular arm M of the escapement-lever, as shown in Figs. 3 and 6. The crank still revolving in the direction indicated, the roller *c* forces the circular arm of the escapement-lever back, bringing the locking-pin *e* in contact with the click *g*. The click depresses and allows the pin *e* to pass. At this time the roller *c* comes in contact with the stop *r*, reversing the motion of the escapement-lever, and stopping it on the click *g*, as shown in Fig. 5. This second half-revolution of the crank reverses the action of the levers F and G, delivering a blow, and leaves them as shown in Figs. 2 and 5. Upon closing the circuit the pin *e* is drawn off the click *g* and locks with pin *f*, as shown in Figs. 1 and 4.

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

1. The circular-armed escapement-lever C, with its locking-pin *e* and stop *r*.

2. In combination with the crank B, escapement-lever C, and armature-lever D, the roller or pin *c* and click *g*.

3. The levers F and G, in combination with the lever H, connecting-rod E, and crank B, the whole constructed and arranged substantially as and for the purposes specified.

FRANK W. GRISWOLD.

Witnesses:

J. S. G. COBB,

WM. R. DUTEMPLE.