T. S. HALL.

Electric Railroad-Signal.

No. 97,505. Patented Dec. 7, 1869.

Fig. 1.

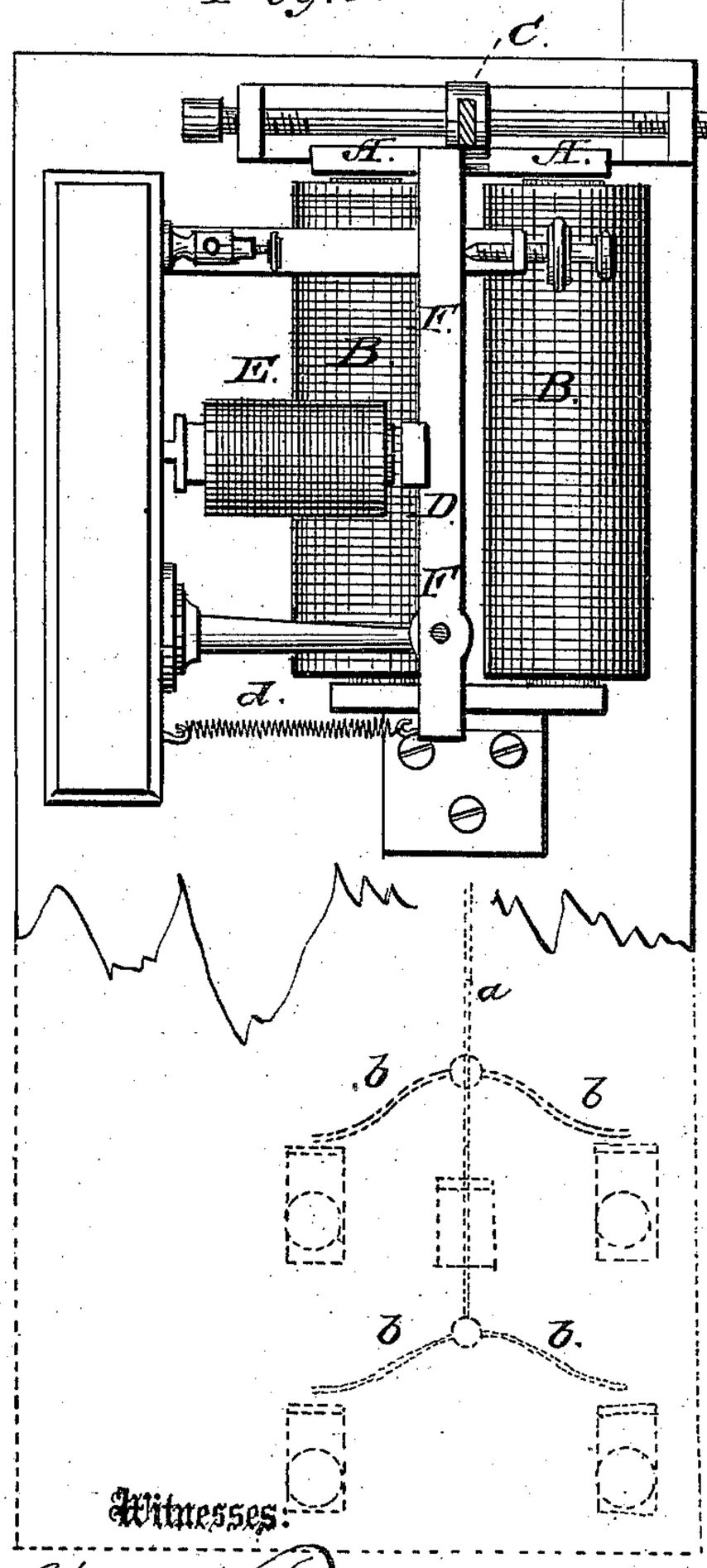
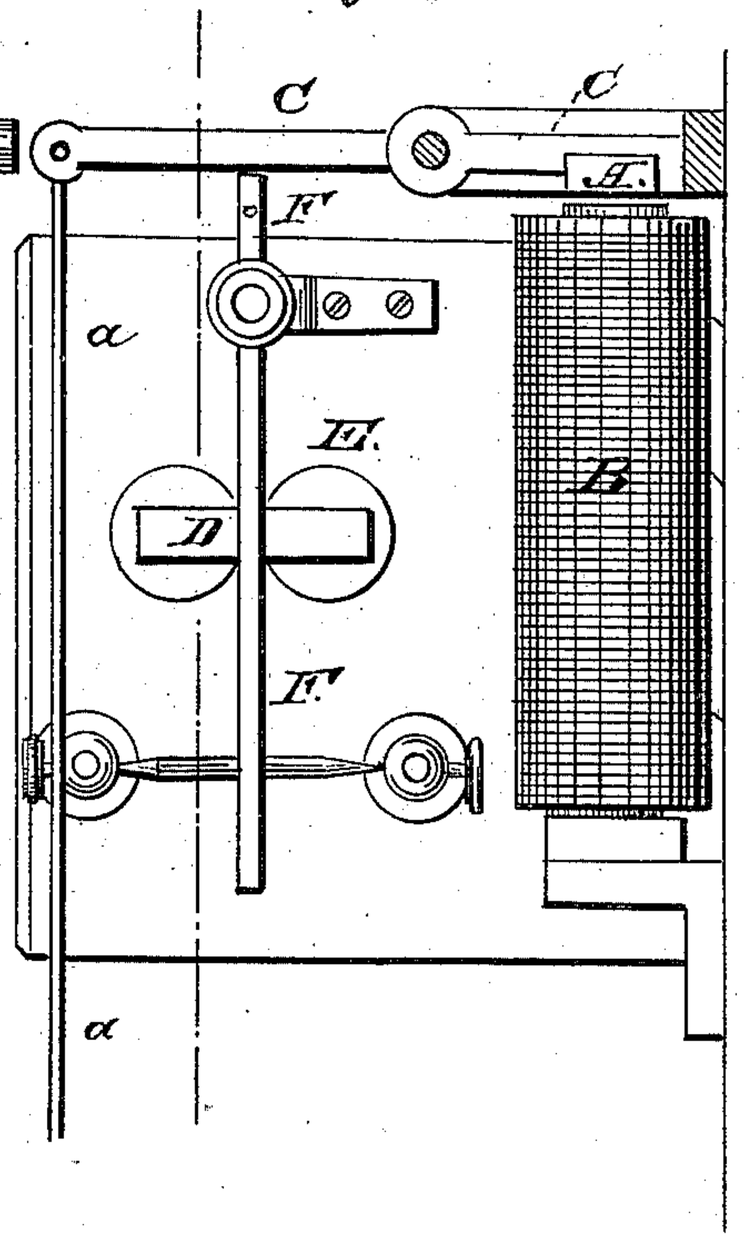


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS S. HALL, OF STAMFORD, ASSIGNOR TO HALL'S PATENT ELECTRIC RAILWAY SWITCH AND DRAW BRIDGE COMPANY, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN ELECTRO-MAGNETIC RAILROAD-SIGNALS.

Specification forming part of Letters Patent No. **97,505**, dated December 7, 1869.

To all whom it may concern:

Be it known that I, THOMAS S. HALL, of Stamford, Fairfield county, State of Connecticut, have invented a new and Improved Electric Signal for Railroad-Crossings; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

Figure 1 represents a face view of my improved electric apparatus. Fig. 2 is a side view of the same.

Similar letters of reference indicate corresponding parts.

This invention has for its object to provide means by which an electric visible or audible signal, operated by a passing train, can be held displayed for a suitable length of time, until the train acts on a different magnet than that at first set in motion.

The invention consists in the arrangement of a spring-lever which is the armature of an electro-magnet, and which springs in to hold the main armature on its magnets even after the current that closed the same has been interrupted. The signal set in motion or displayed when such main armature is attracted as aforesaid is thus kept in display or action as long as the spring-lever armature holds the main armature on the magnet. The signal will be arrested or withdrawn as soon as the spring-lever armature is attracted by its magnet.

A in the drawing represents the armature of an electro-magnet, B, the said armature being attached to a pivoted lever, C. The said lever is, by suitable means, connected with a signal, which is displayed or set in motion whenever the armature A is attracted by or held in contact with said magnets. The lever C may, by a rod, *a*, be connected with pivoted spring or other bars *b b*, which will move simultaneously with it, to close the currents of other batteries whenever the armature A is attracted.

D is an armature-plate for another electro-magnet, E, and is attached to a pivoted lever, F, which is at one end connected with a spring, *d*, or weighted, to have one end held against the lever C. Whenever the armature A is attracted the spring throws the lever F under the outer arm of the lever C, and locks thereby the armature A to the magnets B. When a current is then passed through the magnets E the armature D is attracted, and the lever F thereby withdrawn to release C.

The operation is as follows: The train, by means of its wheels or in any other suitable manner, serves, by moving a metal plate or otherwise, to close the circuit through the magnets B, and thereby to display a signal at a crossing before such crossing is reached. As soon as the armature A is attracted it will be locked to the magnet by the lever F, as aforesaid. The signal will now remain displayed as long as the lever F retains its position.

After the train has passed the crossing, and at a suitable place, it serves, by its contact, weight, or power, to close another circuit, which, passing through the magnet E, will cause the same to attract the armature D and to thereby withdraw the lever F from the lever C. The weight of the signal or lever, or the power of a spring, will then cause the armature A to be withdrawn from the magnet B and the signal to be withdrawn from view or arrested.

By connecting the lever C with the plates *b b*, as aforesaid, the devices may be used to operate any desired number of signals for two or more crossings at once, and also to simultaneously arrest or conceal the same.

I claim as new and desire to secure by Letters Patent—

1. The lever F, connected with the armature D, substantially as herein shown and described, for the purpose of retaining the armature A in contact with its magnet B as long as the current through the magnet E remains open, as set forth.

2. An electric signal provided with a lever, F, which will keep it displayed automatically after the electric circuit through the magnet which set the signal is broken, as set forth.

The above specification of my invention signed by me this 7th day of September, 1869.

THOMAS S. HALL.

Witnesses:

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