

(No Model.)

C. E. SCRIBNER.
ELECTROMAGNETIC SIGNAL.

No. 544,387.

Patented Aug. 13, 1895.

Fig. 1

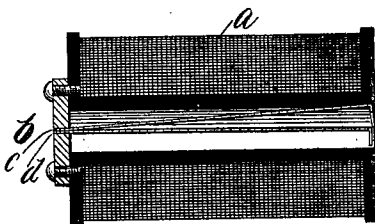
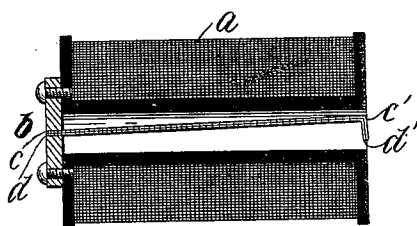


Fig. 2.

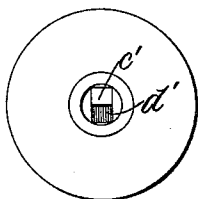


Fig. 3.

Witnesses:

George L. Gragg.
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UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN
ELECTRIC COMPANY, OF SAME PLACE.

ELECTROMAGNETIC SIGNAL.

SPECIFICATION forming part of Letters Patent No. 544,387, dated August 13, 1895.

Application filed January 8, 1895. Serial No. 534,210. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Electromagnetic Signals, (Case No. 371,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to an electromagnetic signal, and its object is to produce a signaling device or annunciator which may be of the simplest construction, possess no pivoted parts to get out of order, and which shall offer a low self-induction to the current.

In the preferred form of my invention I provide a solenoid or helix of wire, through the opening of which extend two thin parallel strips of soft iron supported at one end, each strip carrying upon its opposite end a target of characteristic color. When a current traverses the helix the strips of soft iron become magnetized similarly and repel one another, thus causing a relative movement of the targets carried upon the ends of the strips to thereby convey the signal. I preferably arrange the targets so that when the helix is unenergized one of the targets covers and hides the other from view, the targets being moved apart when the helix is energized to uncover the hidden target or disclose both to view. The normally-hidden target may alone possess a distinctive color, so that the signal consists in displaying the color by the removal of the other target, or both targets may be characteristically colored, the signal then consisting in the appearance of the contrasting colors.

Referring to the accompanying drawings, Figure 1 is a sectional view of a signal device embodying my invention, the helix being unenergized. Fig. 2 is a similar view showing the helix energized. Fig. 3 is an end view of the signal device, the helix being energized.

Like letters refer to like parts throughout the several figures.

Upon one end of the solenoid or helix of wire *a* is provided a block or support *b*, in which are mounted the ends of the thin strips of soft iron *c d*, which extend through the

opening of the helix and carry upon their ends, respectively, the targets *c'* and *d'*. The strips normally rest so that target *d'* covers target *c'*, the target *d'* alone being visible. When a current traverses the helix *a*, a magnetic field is produced which separates the strips *c* and *d*, as shown in Figs. 2 and 3, both targets being thus disclosed to view. When the helix is de-energized, the strips return to their normal positions. By this construction the movable parts are reduced to a minimum and these such as do not require the employment of pivoted parts. As there is very little metal forming the core of the helix, the inductive effect offered to the passage of the current is very small. The low self-inductance of the signal renders it particularly applicable for telephone-annunciators, especially where the annunciator is to remain in series in the talking-circuit, as thereby but slight resistance is offered to the passage of talking-currents.

Instead of making both targets movable, one of the targets may remain stationary and the other alone be moved through the agency of the magnetic field to display the signal.

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

1. In an annunciator, the combination with a solenoid or helix, of two bars or strips of soft iron extending through the opening or bore of said helix, and an annunciator target adapted to be displayed by the relative movement of said strips, substantially as described.

2. In an annunciator, the combination with a solenoid or helix, of a pair of thin strips of magnetic material mounted at one end in a support and extending through the opening or bore of said helix, said strips carrying upon their opposite ends targets, one normally covering and hiding the other from view, said strips being adapted to be moved transversely when said helix is energized to separate said targets and disclose the normally covered target to view; substantially as described.

In witness whereof I hereunto subscribe my name this 5th day of December, A. D. 1894.

CHARLES E. SCRIBNER.

Witnesses:

ELLA EDLER,

DUNCAN E. WILLETT.