

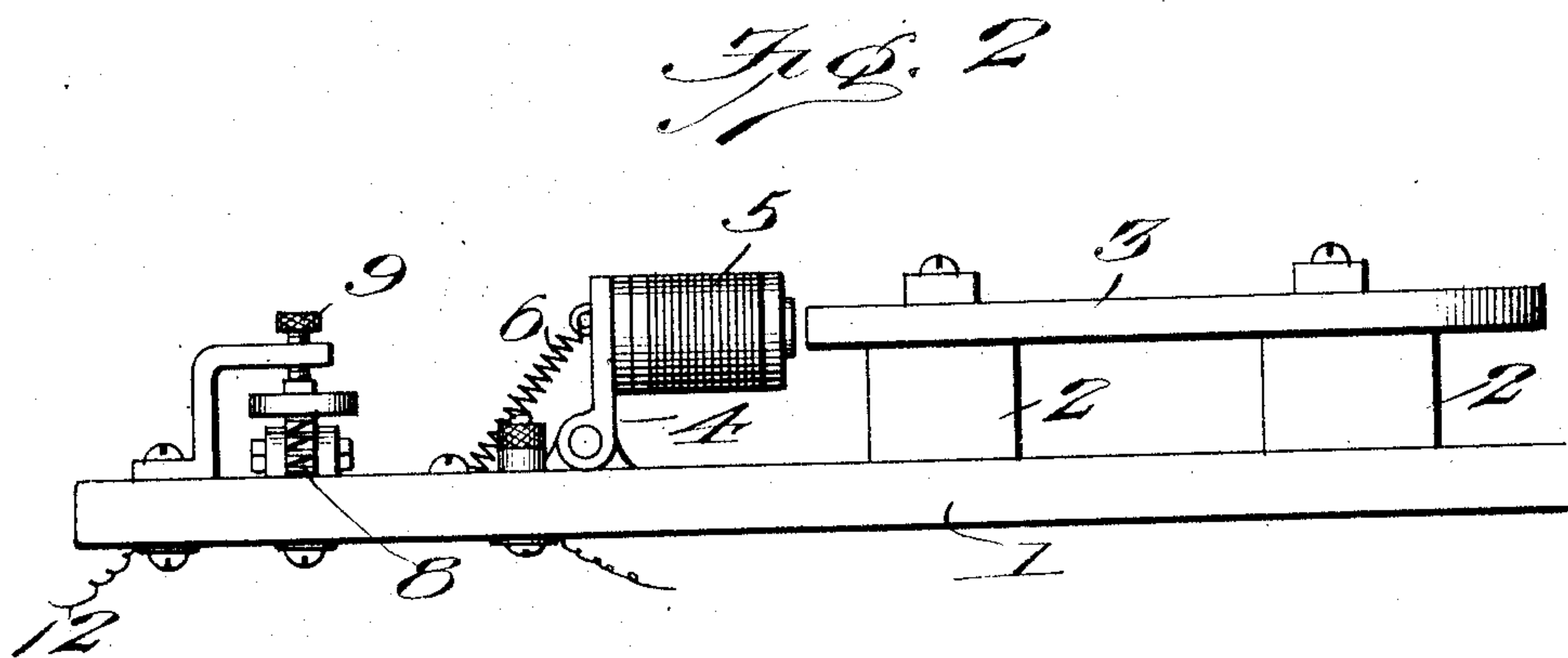
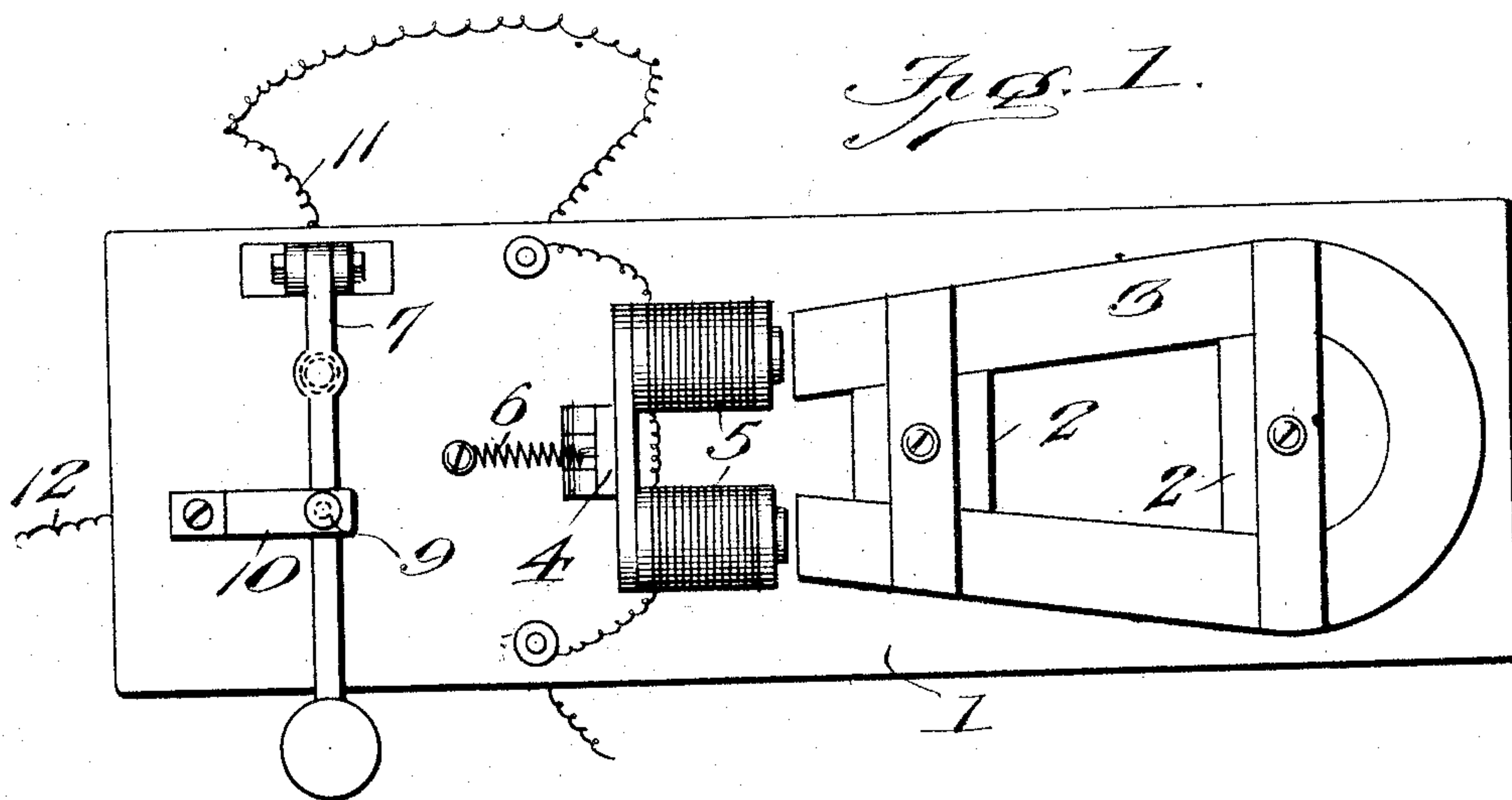
No. 885,545.

PATENTED APR. 21, 1908.

J. J. THOMAS & A. G. CHRISTOPHERSON.

TELEGRAPH SOUNDER.

APPLICATION FILED JAN. 23, 1907.



Witnesses

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# UNITED STATES PATENT OFFICE.

JAMES J. THOMAS, OF WHITING, IOWA, AND ALBERT G. CHRISTOPHERSON, OF SCRIBNER, NEBRASKA.

## TELEGRAPH-SOUNDER.

No. 885,545.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed January 23, 1907. Serial No. 353,754.

*To all whom it may concern:*

Be it known that we, JAMES J. THOMAS and ALBERT G. CHRISTOPHERSON, citizens of the United States of America, residing, respectively, at Whiting, in the county of Monona and State of Iowa, and at Scribner, in the county of Dodge and State of Nebraska, have invented new and useful Improvements in Telegraph-Sounders, of which the following is a specification.

This invention relates to telegraphic sounding instruments, and it has for its objects to simplify and improve the construction and operation of this class of devices.

A special object of the invention is to enable the telegraphic sounding apparatus to be efficiently operated with the least possible expenditure of electrical energy, and especially without the use of local batteries; a permanent magnet being substituted for the latter, as will be hereinafter described.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention; it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to, when desired.

In the drawings:—Figure 1—is a top plan view of a telegraph sounder constructed in accordance with the principles of the invention. Fig. 2—is a side elevation of the same.

Corresponding parts in the several figures are denoted by like characters of reference.

A suitable base, 1, is provided with uprights, 2, 2, supporting a permanent magnet 3, which has been illustrated as a horseshoe magnet, 3.

Pivotaly mounted upon the base, in front of the permanent magnet, is a lever, 4, carrying an electro-magnet, 5, the winding of which is included in the line circuit. Said electro-magnet is disposed facing the permanent magnet, and in such a manner that, when energized, it will be repelled by said

permanent magnet; a spring, 6, being preferably connected with the lever 4 to support the weight of the electro-magnet, so that the parts will operate very freely; when the electro-magnet is deenergized, it will be obviously attracted by the permanent magnet. The base 1 supports a pivoted key, 7, which is normally forced in an upward direction by a spring, 8, into engagement with a contact screw, 9, supported by a bridge-piece, 10. The key 7 and the bridge-piece 10 are respectively connected with the line-wires 11 and 12; the circuit being normally closed, as will be seen.

When the line circuit is closed, the electro-magnet 5, being energized, is repelled by the permanent magnet 3; when, by depressing the key 7, the line circuit is broken, the electro-magnet 5 is deenergized, and is consequently attracted by the permanent magnet, with an audible and distinct click.

It will be seen that by the use of this improved apparatus local batteries may be dispensed with, the work being performed by the permanent magnet in conjunction with the electro-magnet, which latter may be so delicately poised that the apparatus may be successfully operated with a current of much less intensity than is ordinarily required.

Having thus described the invention, what is claimed is:—

In a telegraphic sounding apparatus, a base having uprights, a permanent magnet supported upon the uprights, a lever pivoted upon the base, an electro-magnet supported by the lever adjacent to the permanent magnet and normally repelled by the latter, a spring connecting the lever with the base to support the weight of the electro-magnet and a breaking circuit including the electro-magnet.

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

JAMES J. THOMAS.

Witnesses:

ERNEST McBEATH,  
W. G. BROWN.

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

ALBERT G. CHRISTOPHERSON.

Witnesses:

NORA R. KIDDER,  
LULU B. LOCKE.