H. FONTAINE.

Electro-Magnets.

No. 146,444. Patented Jan. 13, 1874.

Fig. 1.

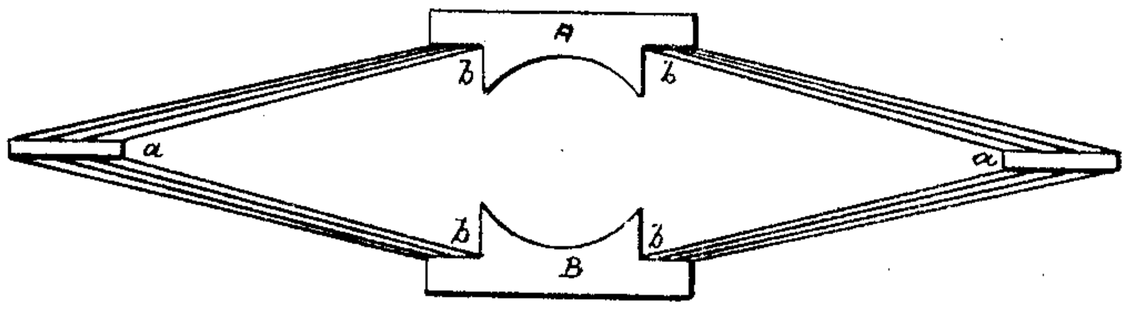


Fig. 2.

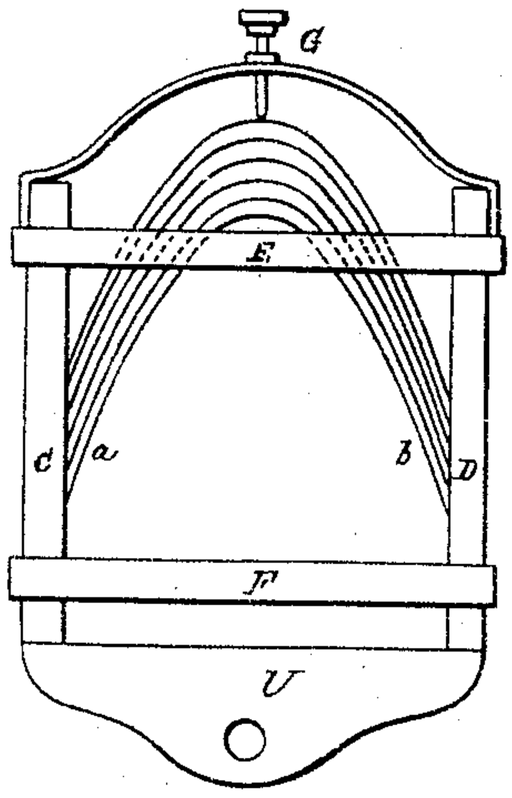


Fig. 3.

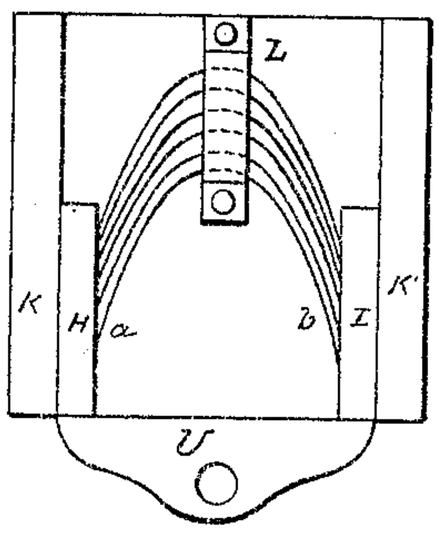


Fig. 4.

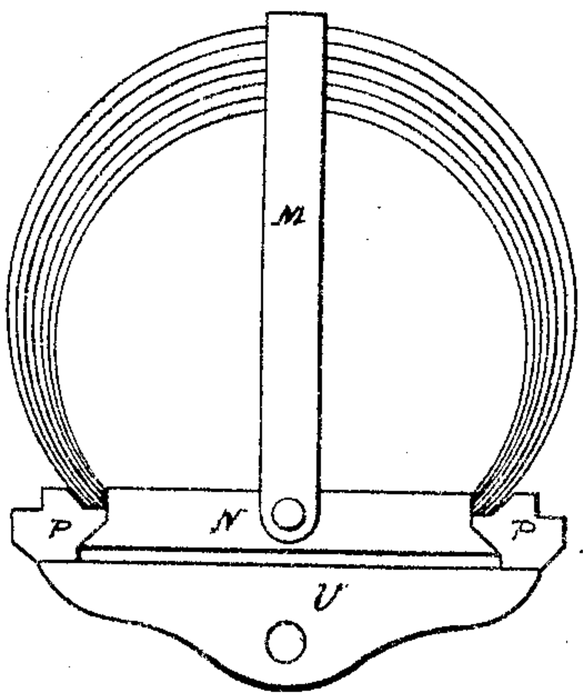
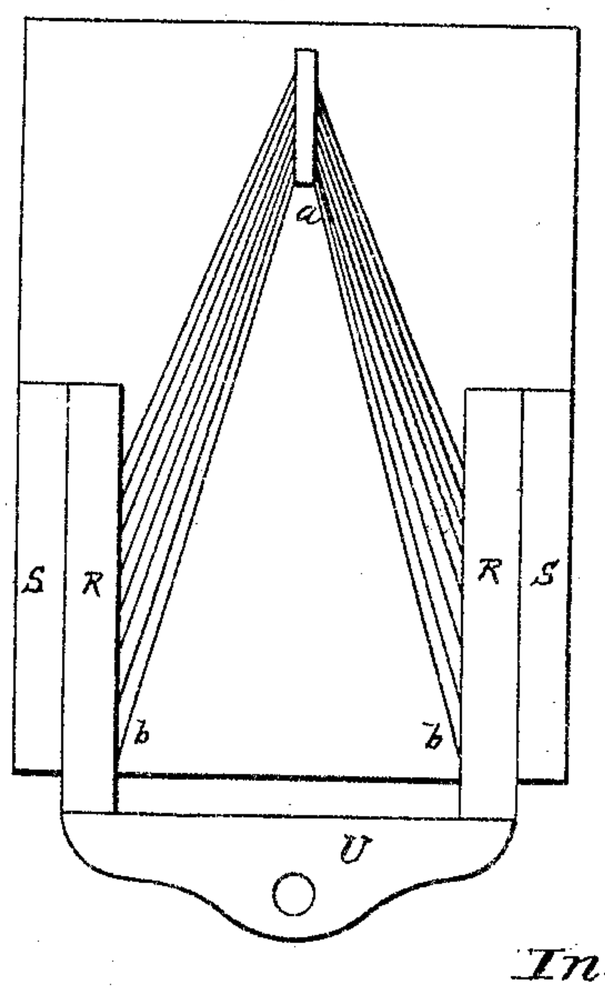


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

HIPPOLYTE FONTAINE, OF PARIS, FRANCE.

IMPROVEMENT IN ELECTRO-MAGNETS.

Specification forming part of Letters Patent No. **146,444,** dated January 13, 1874; application filed October 2, 1873.

To all whom it may concern:

Be it known that I, HIPPOLYTE FONTAINE, of Paris, France, have invented certain new and useful Improvements in Magnets, of which the following is a specification:

My invention consists of a magnet which, instead of being made of a rigid bar or bars, is formed of a series of very thin flexible blades or strips assembled and united together. This peculiar construction of the magnet enables me to concentrate in a small amount of steel much greater magnetic power than would otherwise, or under the old method of construction, be practicable. These blades or strips should be bound together either with pieces of copper or of soft iron, or of malleable cast-iron, of which the function is to receive and distribute the magnetism. A magnet of this character I term the "Jamin magnet," in recognition of the scientific exposition given by Jamin of the law that underlies this invention. In lieu of blades or strips, I can also employ steel threads or wires, assembled together and supported and held by pole-pieces of soft iron, or by binding-pieces of non-magnetic metal.

The drawing accompanying this specification represents several of the ways in which my invention may be carried into effect.

In Figure 1, which represents an arrangement adapted for the "Gramme" machine, A and B are armatures of soft iron, designed to surround the Gramme helix. *a b* represent an assemblage or bundle of steel blades or strips, forming at A and B two poles doubled.

Fig. 2 represents an arrangement in which the bundle of steel blades or strips *a b* is supported and held laterally by two magnets, C D, connected together by bands of copper E F. A pressure-screw, G, bears on top of the bundle of blades *a b*.

In Fig. 3 the bundle *a b* bears laterally against the bars of magnetized iron H I, which are held in place by exterior pieces K K′, of wood or metal, and it is supported at the center by the strap L.

Fig. 4 represents the magnet formed of steel blades, and approximating a circular form. M is a copper tie or band fixed at its lower end to a copper piece, N, which is held in the iron base P.

In Fig. 5 the blades of steel *a b* are stiff, as in Fig. 1, and are held between two bars, R, of magnetized iron, held in a wooden frame, S.

In Figs. 2, 3, 4, and 5, U represents the armature of the magnet.

Other arrangements of the magnet can be readily devised, but those already represented and described are sufficient to indicate the manner in which my invention may be carried into effect.

Magnets thus made are well adapted for use in any connection in which an electro-magnet is required, and are especially applicable to the Gramme, Wilde, Siemens, Holmes, and other electro-magnetic machines.

What I claim as my invention is—

A magnet formed of a series of thin flexible metallic blades, strips, or their equivalent, assembled and bound together by pieces of copper, soft iron, or malleable cast-iron, substantially as shown and described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

H. FONTAINE.

Witnesses:

EMILE BARRAULT,

ANTHONY BROSSETT.