

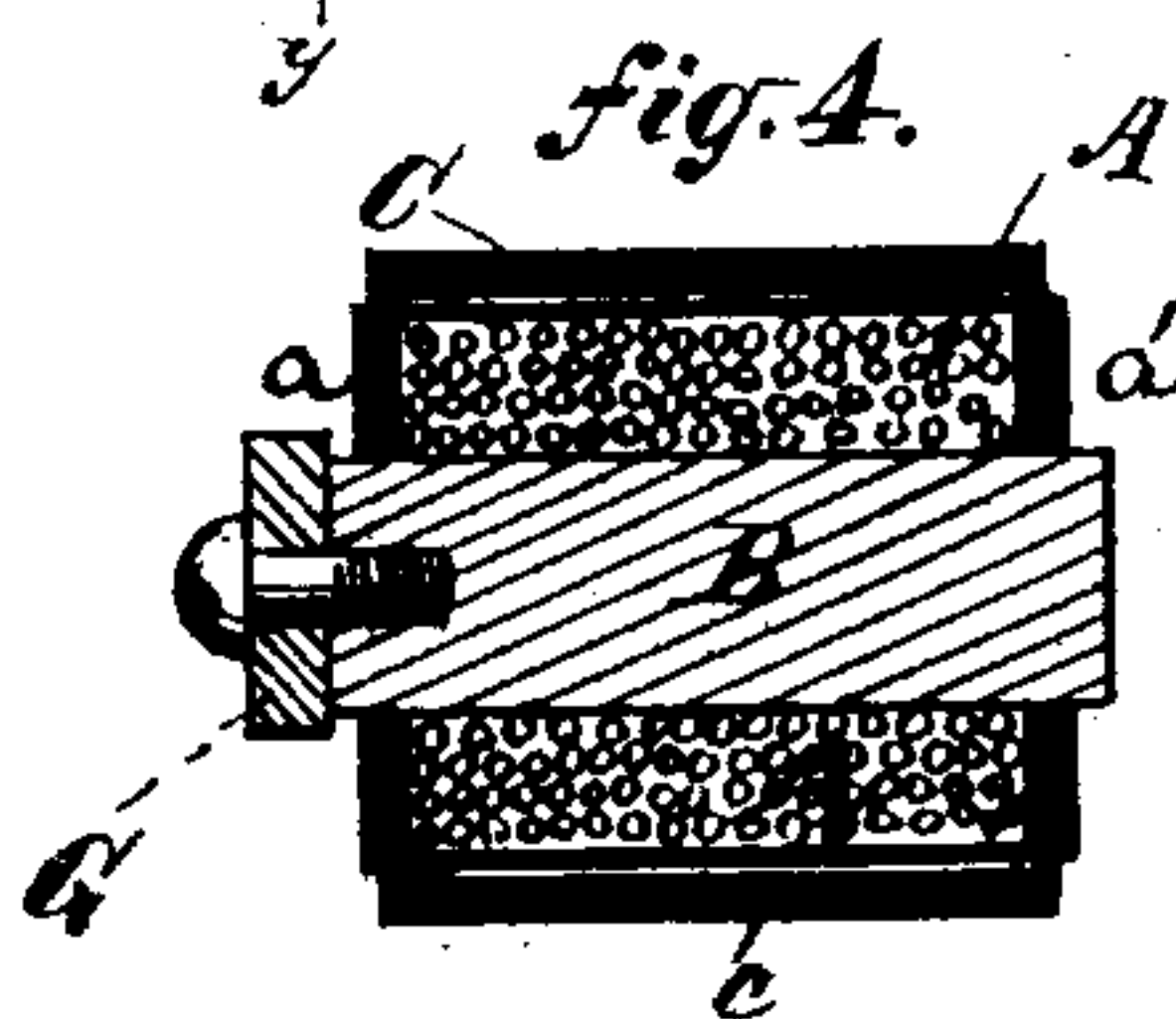
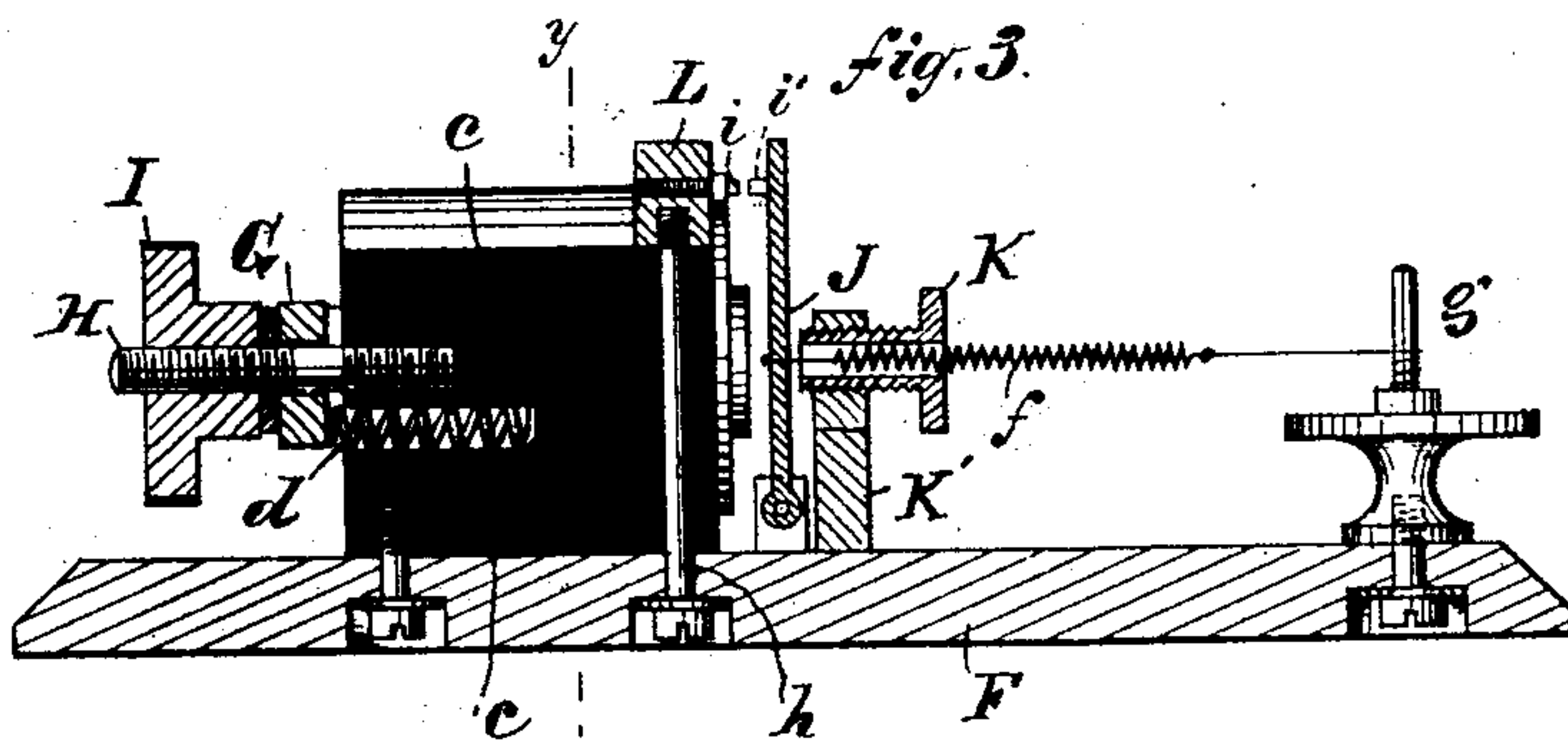
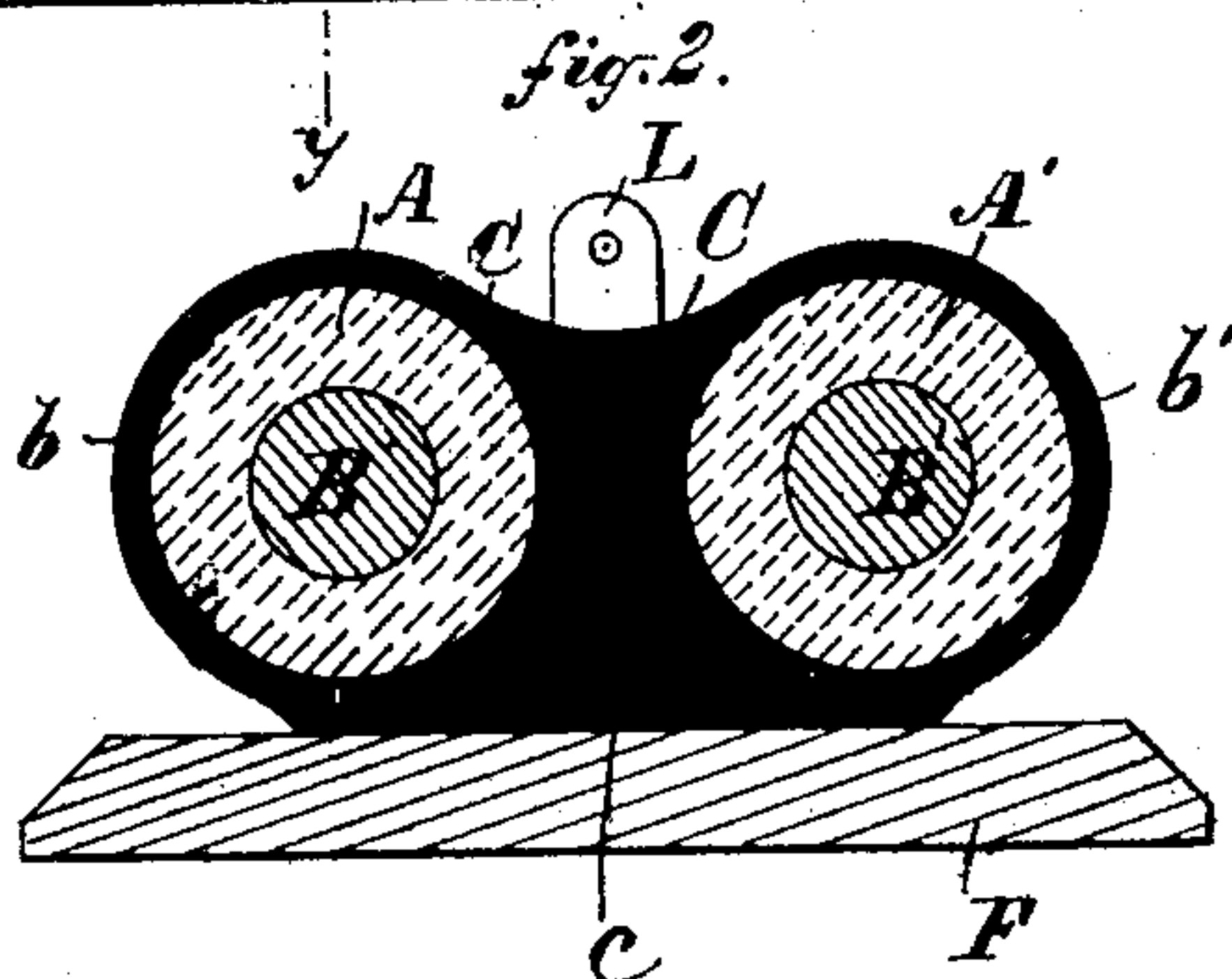
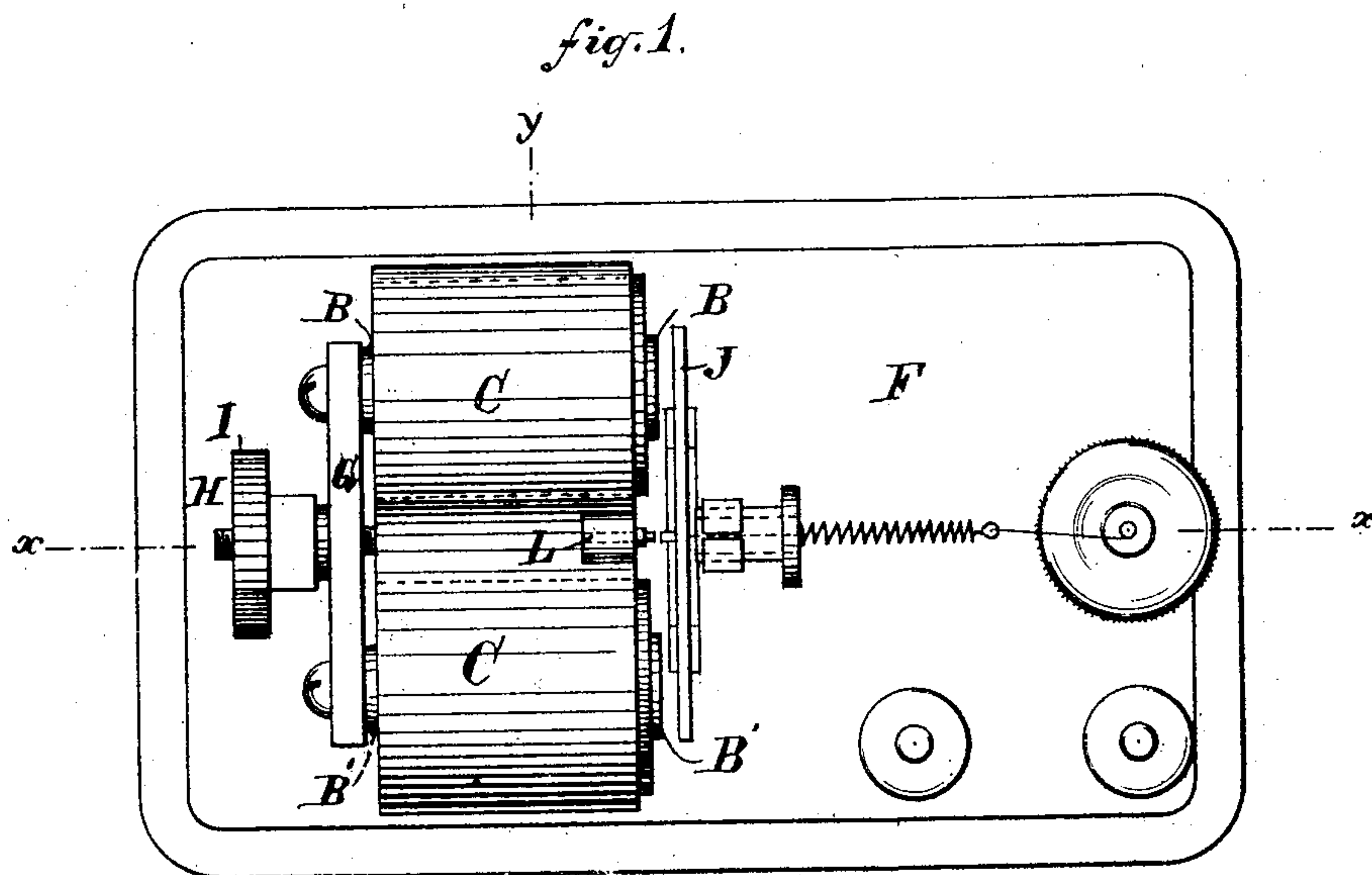
(No Model.)

E. M. HAMILTON.

TELEGRAPHIC RECEIVING INSTRUMENT.

No. 273,728.

Patented Mar. 13, 1883.



Witnesses:

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UNITED STATES PATENT OFFICE.

EMERY M. HAMILTON, OF NEW YORK, N. Y., ASSIGNOR TO LOUIS GOLDSMITH,
OF SAME PLACE.

TELEGRAPHIC RECEIVING-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 273,728, dated March 13, 1883.

Application filed July 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, EMERY M. HAMILTON, of the city of New York, in the county and State of New York, have invented a new and
5 useful Improvement in Telegraph Transmitters and Receivers, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof, in which—

10 Figure 1 is a plan or top view of a telegraph-receiver containing my improvement. Fig. 2 is a section on line *y y*, Fig. 1. Fig. 3 is a longitudinal vertical section on line *x x*, Fig. 1; and Fig. 4 is a section on line *z z*, Fig. 2, of
15 one of the spools of the magnet.

In this class of instruments as heretofore constructed the spools of the magnet, when fixed immovably on the base, are supported on a post set in the base, the cores of the spools
20 being secured to the cross-bar connecting the cores, and this bar being screwed rigidly to the said post. Then another post, fixed in the base at the opposite ends of the spools, carries the devices—a bar, a yoke, and set-screw or set-
25 screws—for limiting the movement of the armature. In instruments thus constructed there is no provision made for the longitudinal adjusting of the magnet to the armature, it being fixed rigidly in its place; but instruments
30 have been constructed in which the magnet has been made adjustable. In these instruments the cross-bar before mentioned connecting the cores of the magnets, instead of being fixed rigidly to a post set in the base of the instrument,
35 is fixed on a short shaft or spindle, which passes through a hole in the said post, then by means of a spiral spring placed on said shaft between the post and the cross-bar and a nut and screw in the end of the said shaft on the
40 opposite side of the post the magnet may be adjusted to or from the armature. With this construction the front or polar ends of the spools have to be provided with a suitable support on or in which they may move back and
45 forth. This support is usually a metal plate fixed on its edge to the base of the instrument at the front ends of the spools, through which openings are made into which the ends of the spool fit loosely, and the set-screws and stop
50 devices for limiting the movement of the arma-

ture are supported on the upper part of this plate. It is a common practice to provide the spools with a double insulating-covering, the inner one being properly-prepared cloth wound around the spools, and the outer one being a
55 separate tube of hard rubber for each spool, the same being placed on the spools, the heads of the latter fitting lightly into the tubes, thus fixing the tubes rigidly on the spools.

The object of my improvement is to dis-
60 pense with several of the above-named parts, and thereby greatly cheapen and simplify the instrument, while the adjustability of the magnet is preserved and the efficiency of the instrument and the protection of the magnet re-
65 main unimpaired.

I will proceed to describe my improvements.

A A' represent the spools of the magnet; B, their cores. The spools are preferably enveloped in the usual cloth covering.
70

C represents a casing or inclosure, into which the spools of the magnet are fitted, the heads *a a'* of the spools, which are preferably made of hard rubber, fitting therein snugly but loosely, so that the spools may slide in the case. The
75 casing C is also made preferably of hard rubber. The casing for the two spools is made entire, the tubes *b b'*, that inclose the spools, being integrally of one piece with the central portion, *c*. It is secured rigidly to the
80 base plate F by screws or otherwise. The spools are supported entirely by the said rigidly-fixed casing.

Provision is made for the longitudinal adjustment of the spools to and from the arma-
85 ture by the following devices: The cross-bar G, that connects the rear ends of the cores B B', is provided with an aperture intermediate its ends, through which passes a stem, H, that is screwed fast into the said central part, *c*, of the
90 casing C. A spiral spring, *d*, located in a recess in said casing and projecting from the rear end, acts to force the bar G outward on the stem H, and thus move the spools in the casing away from the armature. A screw-
95 thread is cut on the outer end of the stem H, and a nut, I, on said stem acts, when turned up, to force the spools against the spring *d* toward the armature.

J is the armature, pivoted in any suitable
100

way so as to be capable of vibrating in front of the poles of the magnet.

K is a set-screw for limiting the movement of the armature, and K' is a post fixed in the base F and provided with a screw-threaded aperture in which the said set-screw works. This screw is formed of a hollow tube, as shown in Fig. 3, within which is located one end of a spiral spring, *f*, that is connected to the armature, the other end being connected by a thread to the rotary spindle *g*, by which the tension of the spring is regulated. This spring and spindle, as well as the set-screw, are common devices for drawing the armature from the magnet and limiting the movement of the latter. The only novel feature in the said parts above described is the making of the set-screw hollow and passing the spring through it, as shown in Fig. 3, thereby rendering the parts more compact and simple than the ordinary construction.

L is a short metal bar, located and secured on the top of the solid part *c* of the casing C, at the forward end of the same, by means of a screw-bolt, *h*, that extends up through the base F and the solid part *c* of the case into a screw-tapped hole in the underside of said bar. In this bar is fixed the contact-point *i*, opposite to the contact-point *i'* in the upper end of an arm extending from the armature.

By the construction of the instrument thus described it is obvious that several expensive parts necessarily employed in similar instru-

ments as heretofore made are dispensed with, thereby greatly cheapening it and rendering it much more simple.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the casing C, fixed rigidly on the base F, and the electro-magnet composed of the spools A A', provided with the heads *a a'*, fitted movably into said casing and supported thereby, as and for the purpose described.

2. The combination of the base F, casing C, provided with the stem H, spools A A', cores B B', bar G, nut I, and spring *d*, all constructed to operate as and for the purpose described.

3. The combination of the electro-magnet, the vibrative armature, the spring *f*, spindle *g* for regulating the tension of said spring, post K', and the hollow set-screw K for limiting the distance of the vibration of the armature, the said spring passing through the said set-screw, all as and for the purpose described.

4. The combination of the magnet A A', the casing C, the bar L, secured to the said casing and provided with the contact-point *i*, and the vibrative armature provided with the contact-point *i'*, as and for the purpose described.

Witness my hand July 8, 1882.

EMERY M. HAMILTON.

In presence of—

P. B. VERMILYA,
A. G. N. VERMILYA.