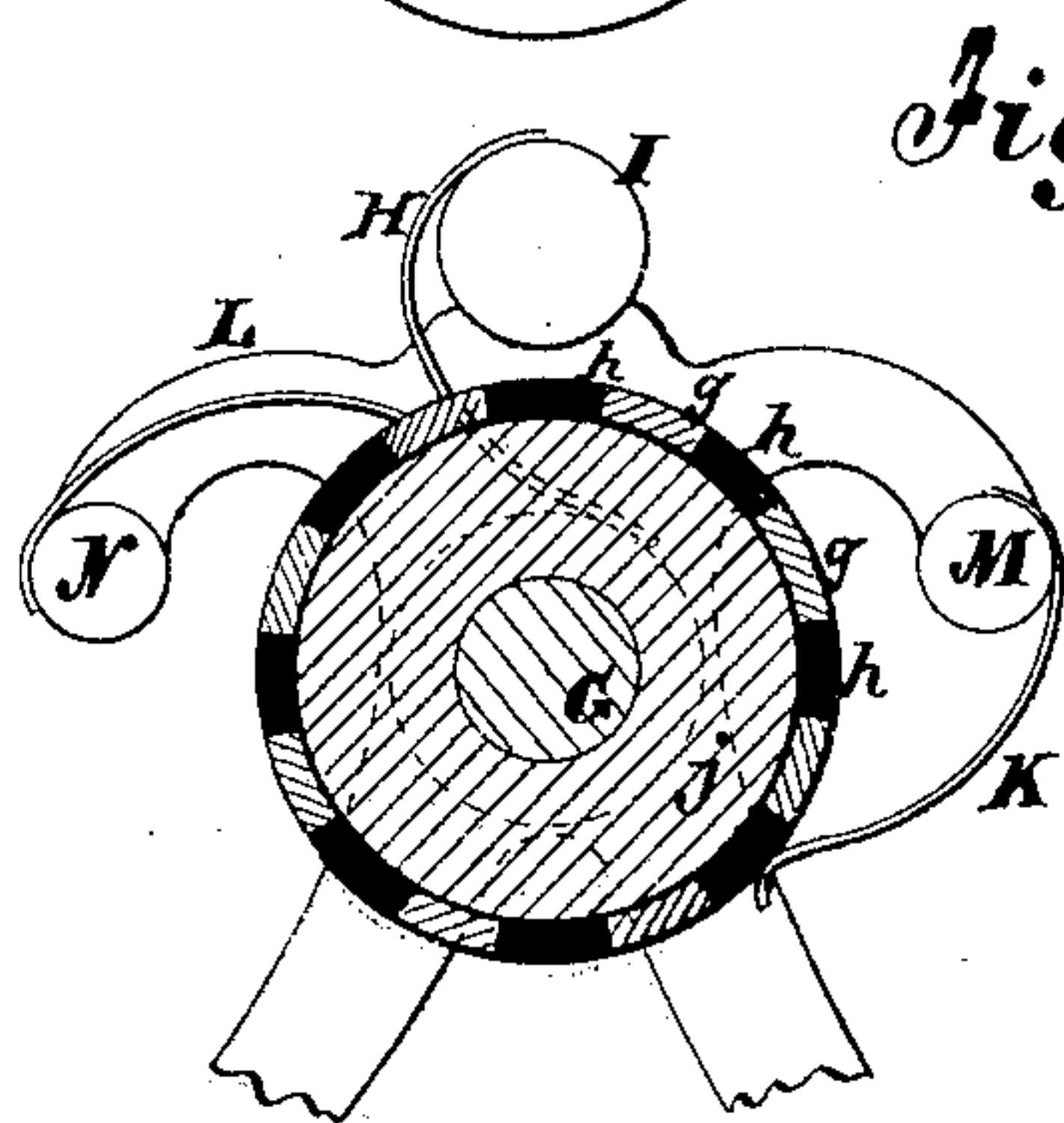
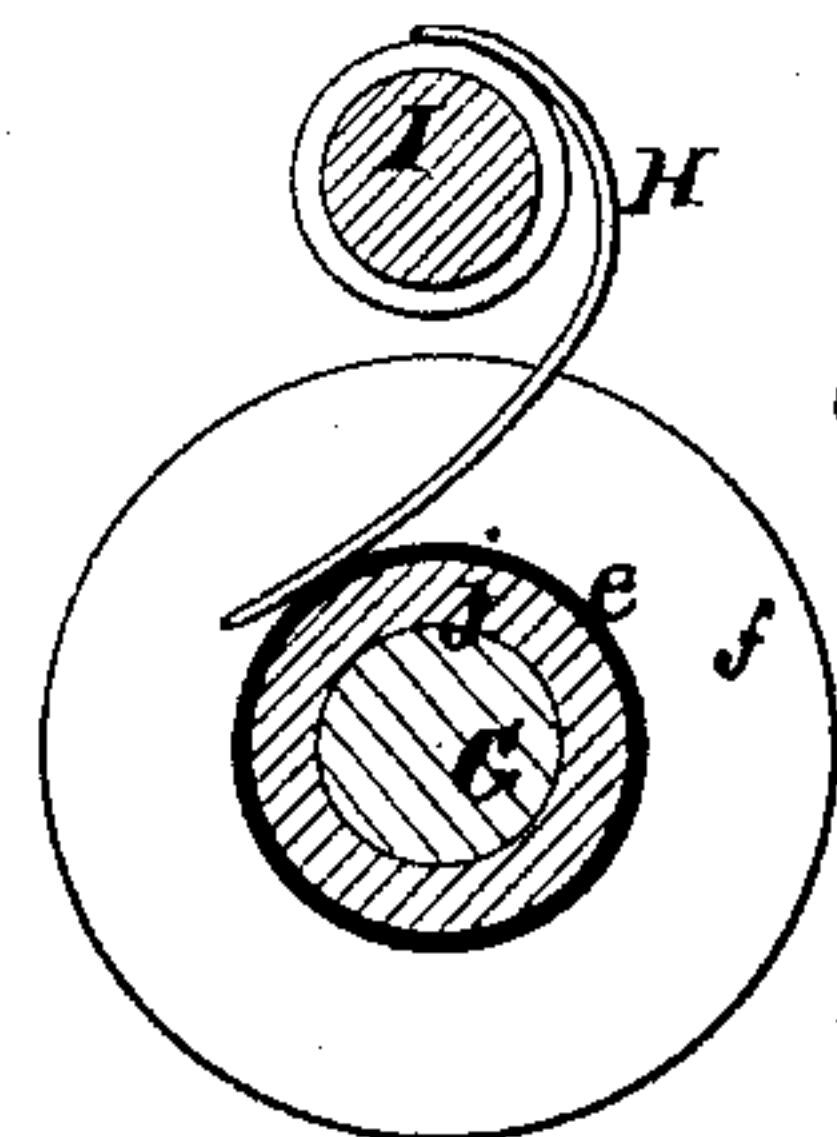
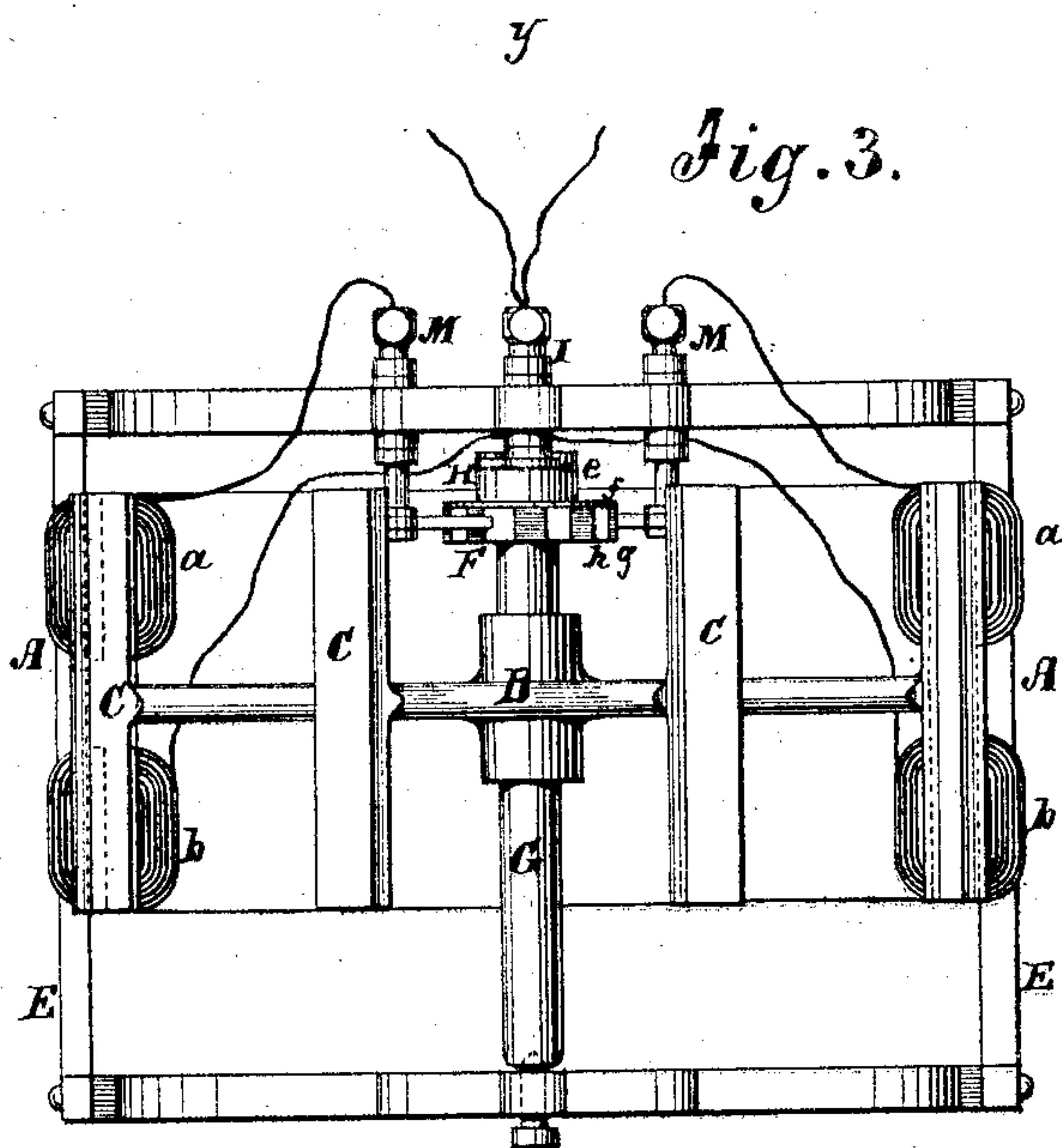
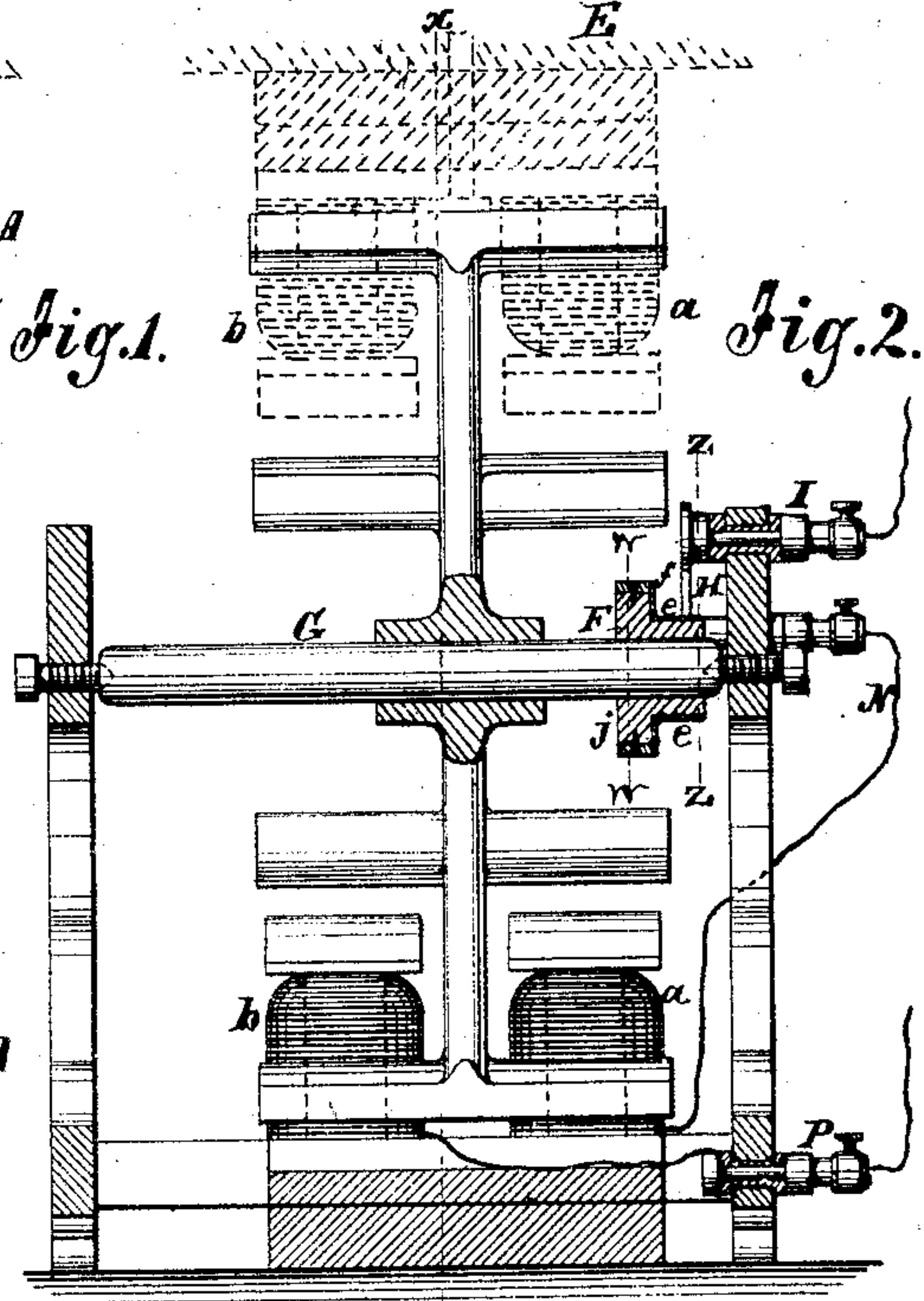
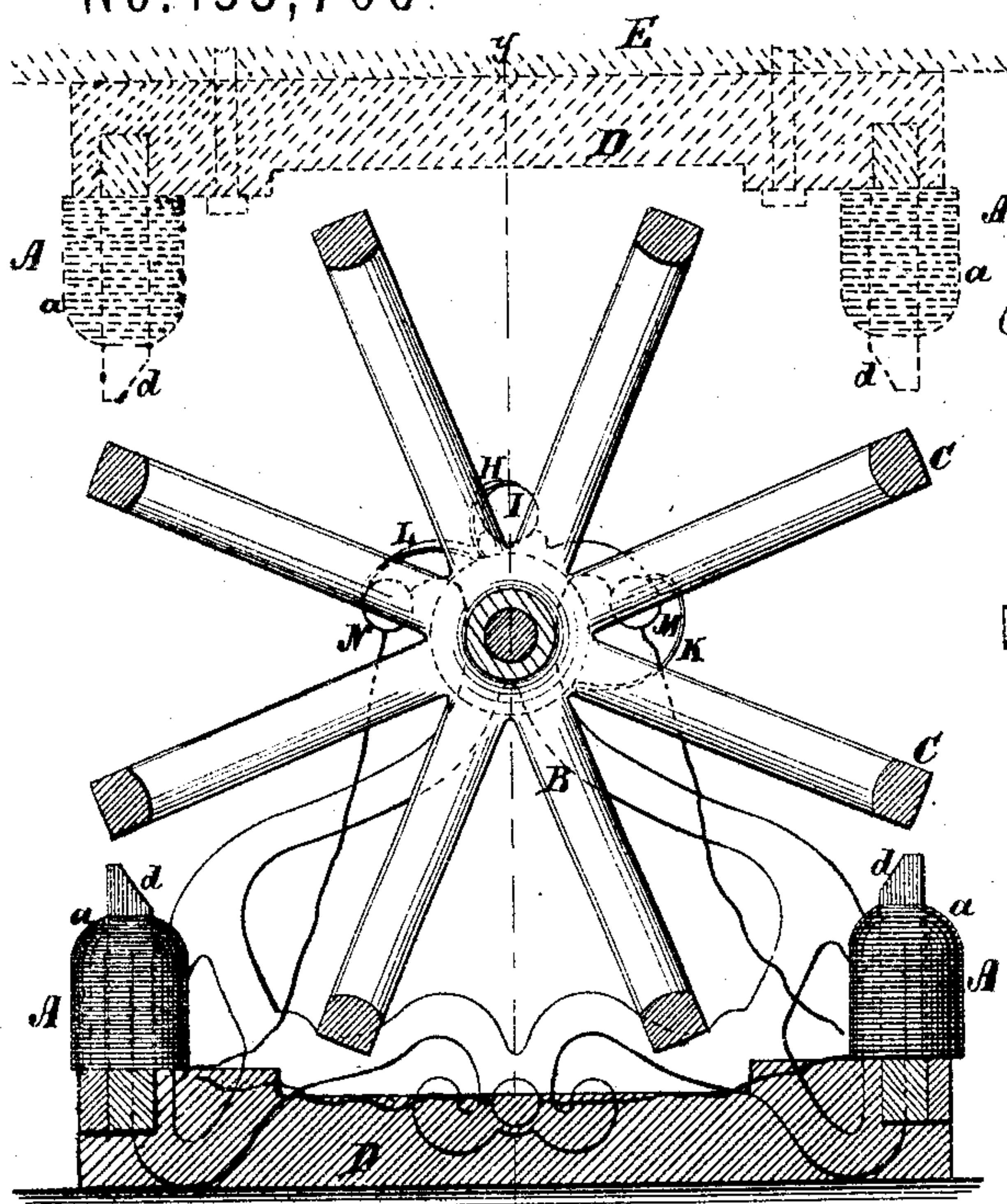


L. BASTET.
Electro-Magnetic Engines.

No. 153,700.

Patented Aug. 4, 1874.



Witnesses:

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UNITED STATES PATENT OFFICE.

LOUIS BASTET, OF NEW YORK, N. Y.

IMPROVEMENT IN ELECTRO-MAGNETIC ENGINES.

Specification forming part of Letters Patent No. **153,700**, dated August 4, 1874; application filed August 24, 1872.

To all whom it may concern:

Be it known that I, LOUIS BASTET, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Electro-Magnetic Engines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention consists in the combination, with the magnets of an electro-motor, of a rotary shaft or hub provided with a suitable number of T-shaped armatures, consisting of radial spokes or arms, terminating in rectangular ends or cross-heads, each of said armatures being separate and distinct in itself, and having no metallic connection with any other armature, except what may exist through a common hub, whereby I am enabled to produce an electro-magnetic motor which is free from any "back pull," and, consequently, one which is very powerful and efficient in all respects.

In the accompanying drawing, Figure 1 is a vertical cross-section of an electro-magnetic motor containing my improvement, taken on the plane of the line *x x*, Fig. 2. Fig. 2 is a vertical axial section of the same, taken on the plane of the line *y y*, Fig. 1. Fig. 3 is a plan or top view of the motor. Fig. 4 is a transverse section of the hub of the distributing-wheel, taken on the plane of the line *z z*, Fig. 2; and Fig. 5 is a transverse section of the said distributing-wheel, taken on the plane of the line *w w* of Fig. 2.

A A designate the electro-magnets, which are arranged at opposite ends of the base D of the frame, and which, preferably, have T-shaped cores *p p*, (see Fig. 2,) thereby presenting extended surfaces to the armatures. The bodies or legs of the said cores are wound with insulated wire in the usual way, forming a north pole, *a*, and a south pole, *b*, for each magnet. The two wires from the north poles *a* of the magnets are, respectively, fastened in the binding-screws M M, which, by means of two contact-springs, K K, communicate with the keys of a distributing-wheel, F, having its periphery made up of a series of metallic keys, *g g*, and intervening circuit-breaking

surfaces *h h*, (see Fig. 5,) and also having a hub, *e*, provided with a metal facing, *f*, which connects with the keys *g g*, and communicates, through a contact-spring, H, with the binding-screw I, in which the wire from the positive pole of the battery is fastened. The wires from the south poles *b b* of the magnets are both secured in the common binding-screw P, in which the wire from the negative pole of the battery is also fastened. Thus the electric circuit through the magnets is intermittently completed by the keys of the distributing-wheel and the contact-springs K K, and the magnets are magnetized and demagnetized, so as to alternately attract and release the armatures B C, B C. The contact-springs K K are, respectively, arranged so that, when one is in electrical contact with a key, *g*, of the distributing-wheel, the other rests on one of the non-conducting surfaces *h h*, (see Fig. 5,) and therefore the magnets A will attract the said armatures B C alternately, and will impart a more uniform motion to the rotary shaft G, on which such armatures are arranged. The rotary shaft G, in this instance, is journaled in the side frames or standards O O of the machine; but it is obvious that, in many cases, such shaft may constitute the driving-shaft of the machine to be driven—of a sewing-machine, for instance—and in such case the magnets A A will be arranged on some convenient part of such machine, the standards O O not being required. Such arrangement of the magnets is illustrated by the dotted outlines in Figs. 1 and 2.

Each armature B C consists of a radial arm, B, which extends from a common hub, S, mounted upon the rotary shaft G, and is provided, at its outer end, with a cross-head, C.

It will be observed that these several armatures B C are entirely isolated from each other, having no connection of any kind with each other, except the common hub S or shaft G. This absolute magnetic isolation of the armatures, one from the other, is a most important feature in an electro-magnetic engine, because in such cases the magnetism, which, in greater or less quantity, always remains in the magnets during the intermissions in the electric current, is deprived of any body or substance on which to exercise its attractive force, and

thus the so-called back pull or retardation, which so impairs the effectiveness of other electro-magnetic motors, is obviated.

It is preferred to make the cross-heads C deep and narrow, so that they will present a sufficient surface to the magnets without offering any unnecessary width of surface; and hence no retardation of the armatures themselves, by reason of their construction, can take place; and it is preferable, also, to cast the armatures B C in one piece with the hub S, in which case the construction of the motor is much simplified.

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

In an electro-magnetic motor, the combination, with the rotary shaft G or hub S, of the series of T-shaped armatures B C, consisting of radial arms B and axially or laterally extending cross-heads C, the said T-shaped armatures being magnetically isolated from each other, and having no connection of any kind one with another, except through their common hub S on the shaft G, substantially as herein specified.

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Witnesses:

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