

No. 66,001.

PATENTED JUNE 25, 1867.

S. G. CABELL.
ELECTROMAGNET.

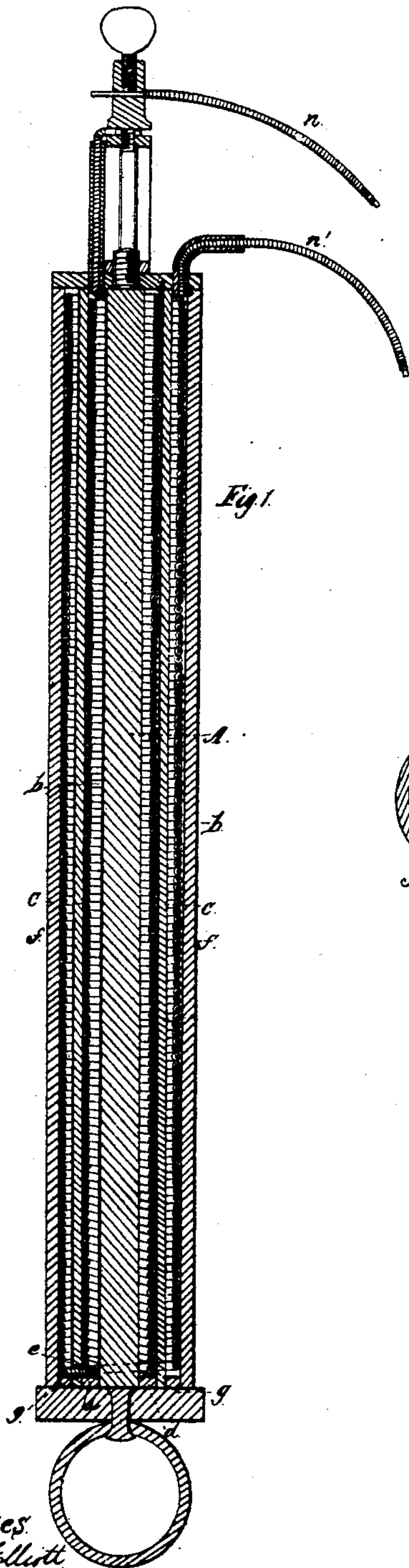


Fig. 1.

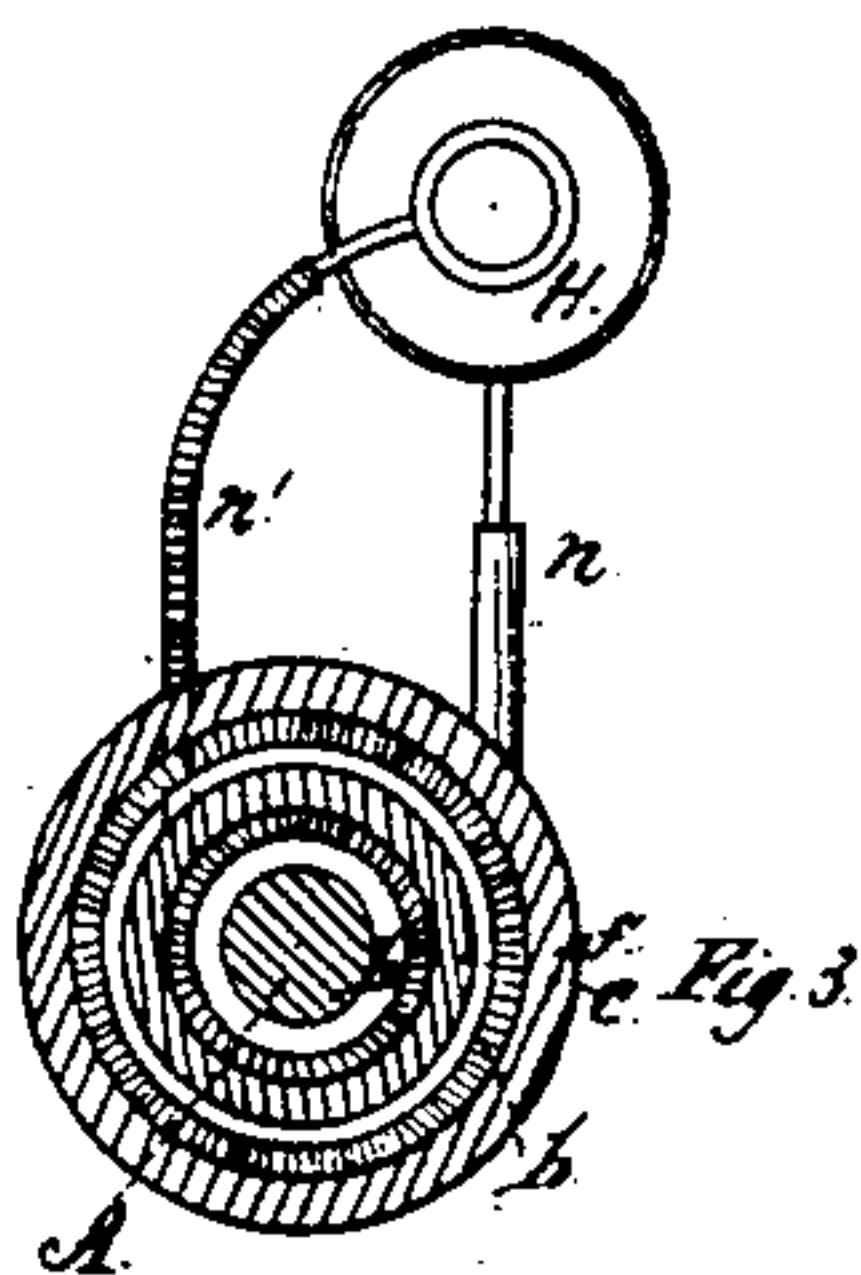


Fig. 3.

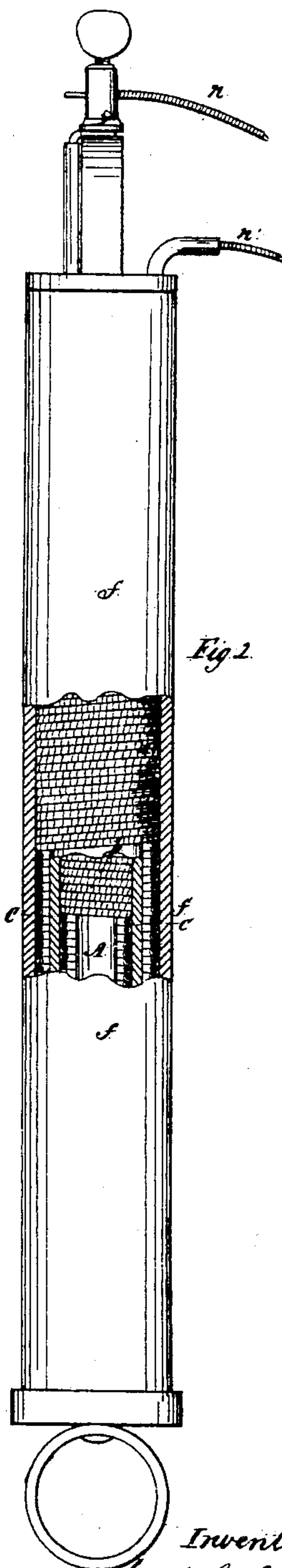


Fig. 2.

Witnesses
H. C. Elliott
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SAMUEL G. CABELL, OF QUINCY, ILLINOIS.

Letters Patent No. 66,001, dated June 25, 1867.

IMPROVEMENT IN ELECTRO-MAGNETS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL G. CABELL, of Quincy, in Adams county, and State of Illinois, have invented a new and useful Improvement in "Electro-Magnets;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification, in which—

Figure 1 represents a longitudinal section of a single electro-magnet constructed according to my invention.

Figure 2 is a view of the same partly in section and partly in elevation.

Figure 3 is a transverse section of the same.

The same letters occurring upon the several figures indicate corresponding parts.

The nature of my invention consists in combining with the central soft iron core of a helical electro-magnet a sheath or casing to the helix, of the same or similar suitable material, and using said sheath as a core for the extension of the helix to be again sheathed in like manner, which may be repeated any number of times, thus increasing the attractive power of the magnet *ad libitum*.

To enable others to make and use my invention, I will proceed to describe its construction and operation by referring to the drawings, in which—

A represents the core, preferably of soft iron or other suitable material, around which is coiled a copper wire, *b*, insulated by being wrapped with thread, or coated with gutta percha or any like suitable substance, and which is coiled closely over the entire length of the core, and over this coil is placed a sheath or tube, *c*, also preferably of soft iron, which is connected at its one end by an annular collar, *d*, with the central core. The insulated wire passing through an aperture, *e*, at or near the end of the sheath *c*, is coiled around it in like manner for its entire length, and is then sheathed by the tube *f*, which is connected with the tube *c* by an annular collar, *g*, or in any suitable manner. Thus alternately the helix and sheath may be repeated *ad infinitum*, and the power of the magnet compounded in proportion. The two ends of the helix are connected with the battery H in the usual manner, and need no further description here.

It is obvious that a horse-shoe magnet may be constructed on the same plan by simply connecting two of the legs thus constructed by a suitable bar, and properly arranging the wires to form the necessary connections.

It will be evident that this magnet may be constructed so as to be mounted horizontally or in any suitable position for operating on an armature for telegraphing or other purposes.

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

A compound magnet consisting of two or more helices enclosed in soft iron tubes, with the tubes so arranged as to separate the helices, and both tubes and helices arranged concentrically around a central tube or bar, as herein described.

S. G. CABELL.

Witnesses:

W. MORRIS SMITH,

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