J. C. VETTER.

Induction Coils.

No. 166,488. Patented Aug. 10, 1875.

Fig. 1.

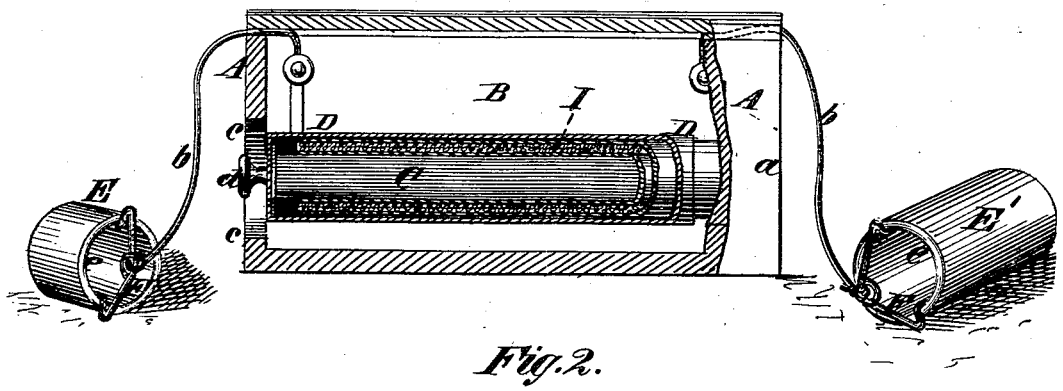


Fig. 2.

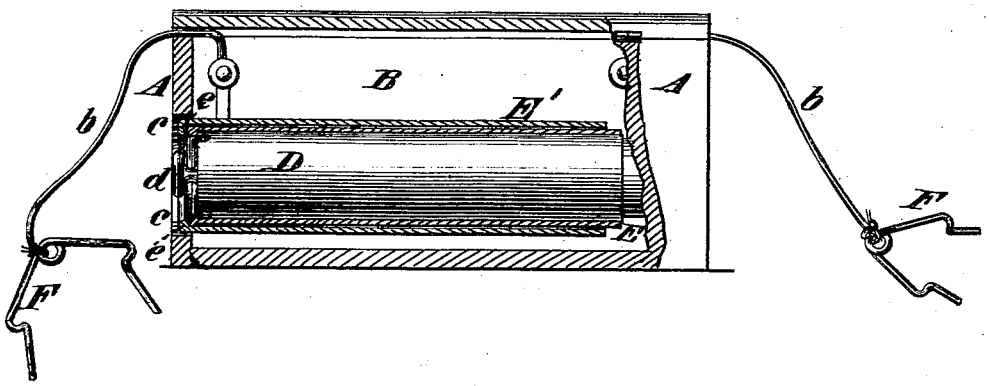
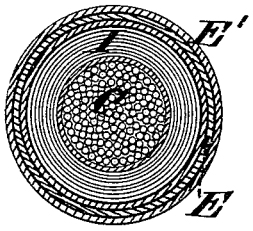


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH C. VETTER, OF NEW YORK, N. Y.

IMPROVEMENT IN INDUCTION-COILS.

Specification forming part of Letters Patent No. **166,488**, dated August 10, 1875; application filed August 27, 1874.

To all whom it may concern:

Be it known that I, JOSEPH C. VETTER, of the city, county, and State of New York, have invented certain Improvements in Electrical Apparatus, of which the following is a specification:

This invention relates more particularly to electrical apparatus for operation on the human system; but one portion of it relates to induction-coils, whether used in apparatus for that purpose or for other purposes.

The invention consists in certain construction of parts, whereby the handles through which the current is received by the human body are stowed within the box containing a portable apparatus for medical purposes, in such manner as to occupy less than the usual space. It further consists in certain novel means of attaching the handles to the conductors, whereby, while they are attached securely enough for actual use, they are easily detached by any pull of the patient, and his liability to accidentally pull the apparatus off the table is obviated.

Figure 1 in the accompanying drawing is a longitudinal elevation, partly in section, of a portable electrical apparatus for medical purposes, illustrating all the features of my invention, and representing the parts in condition for use. Fig. 2 is a similar partly-sectional elevation, showing the handles stowed away within the box. Fig. 3 is a transverse section of the magnet, the induction-coil, and the handles corresponding with Fig. 2, but on a larger scale.

Similar letters of reference indicate corresponding parts in the several figures.

A is the box which contains the apparatus, having the battery B arranged in the back part, and having the magnet C and induction-coil I both firmly secured to the end *a*. The induction-coil is permanently wound upon the magnet, and both are stationary. The conductors *b b* are connected in the usual or any suitable manner. D is a movable sleeve of brass other non-magnetic metal, which is fitted to the exterior of the induction-coil, and capable of moving longitudinally thereon. This sleeve is furnished with a knob, *d*, which can be reached through an opening, *c*, suitably provided in the contiguous end of the box A for the purpose of drawing the said sleeve more or less off the coil, and thereby varying the force of the induced current of electricity. This sleeve accomplishes what has heretofore been accomplished by moving the magnet lengthwise within the coil or by a longitudinally-movable tube interposed between the magnet and coil, while it does not involve so expensive a construction. E E′ are the handles made to fit one within the other in a common manner for putting away. They and the sleeve D and the hole *c* in the box are made of such relative size that the said handles can be passed through the said hole and over the said sleeve, as shown in Fig. 2, when the apparatus is not in use, so that they occupy very little room, and require no special space provided for them within the box, which is thus enabled to be made smaller. F F are elastic bails of wire, which serve the purpose of attaching the handles E E′ to the conductors *b b* for use. The handles have small internal flanges *e e* at their attachable ends, and the bails have their ends turned slightly outward, so that they will, when passed outward by their elasticity against the flanges *e e*, connect the handles to the conductors with sufficient security for ordinary use, but allow them to be detached by a slight pull, so that the patient by his writhings or contortions will not be liable to pull the electrical apparatus off the table.

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

1. The handles E E′, constructed to telescope and to pass over the exterior of the induction-coil through an opening in the box, substantially as herein set forth.

2. The elastic bail-like attachments F F, in combination with the handles E E′ and conductors, substantially and as for the purpose specified.

JOSEPH C. VETTER.

Witnesses:
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