

(No Model.)

2 Sheets—Sheet 1.

C. L. CLARKE.

ELECTRO THERAPEUTIC APPARATUS.

No. 305,894.

Patented Sept. 30, 1884.

FIG:1.

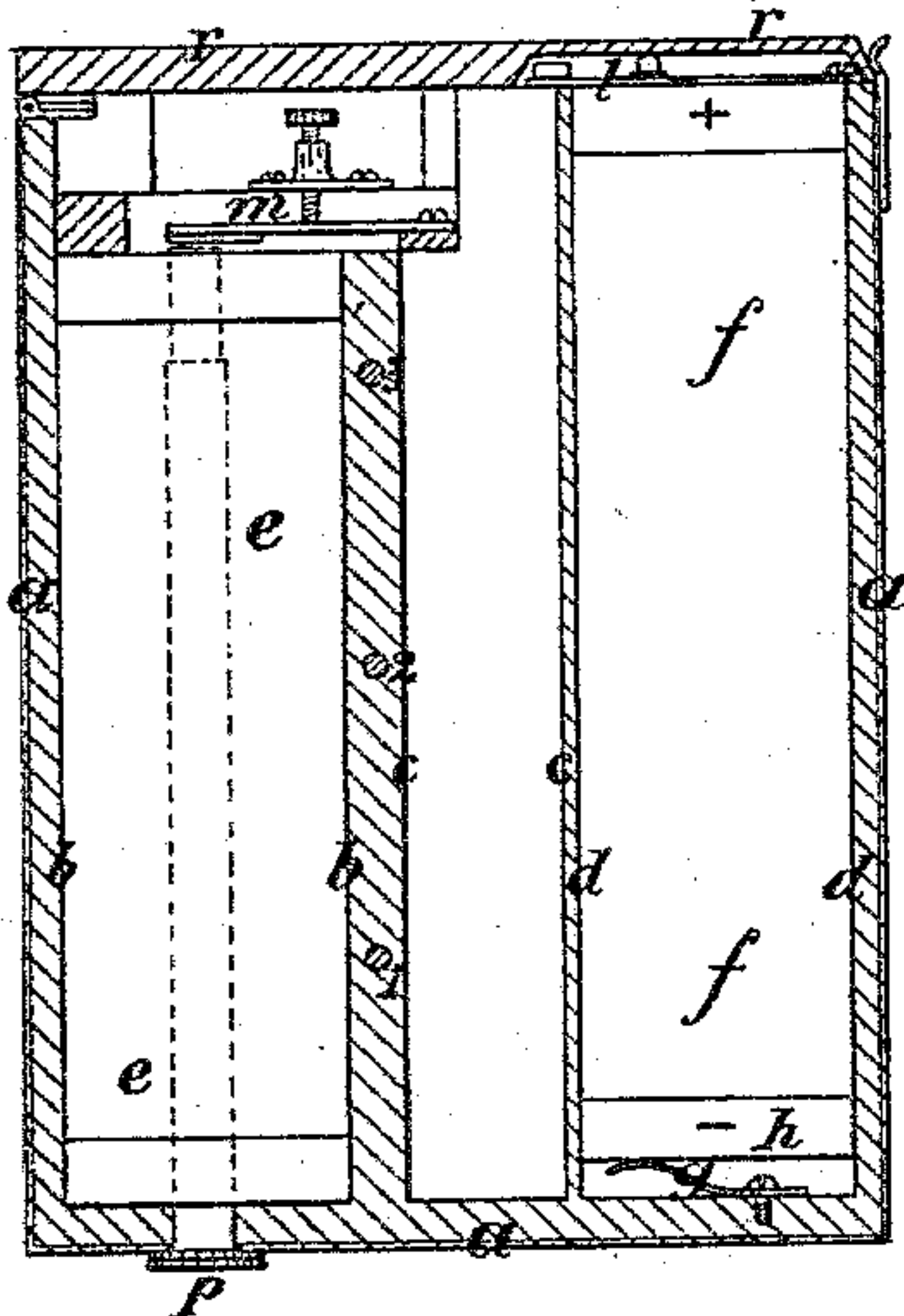


FIG:2.

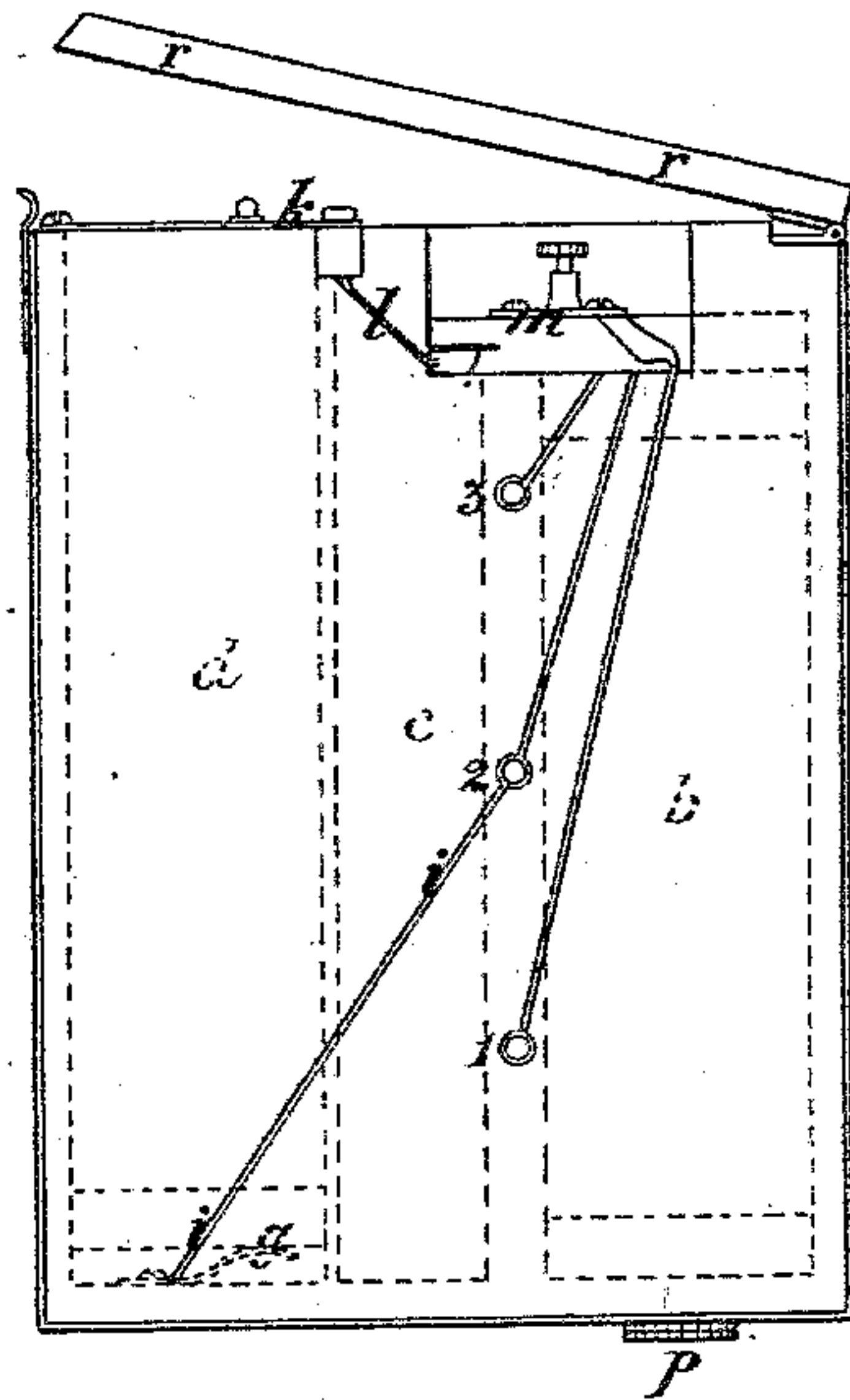


FIG:3.

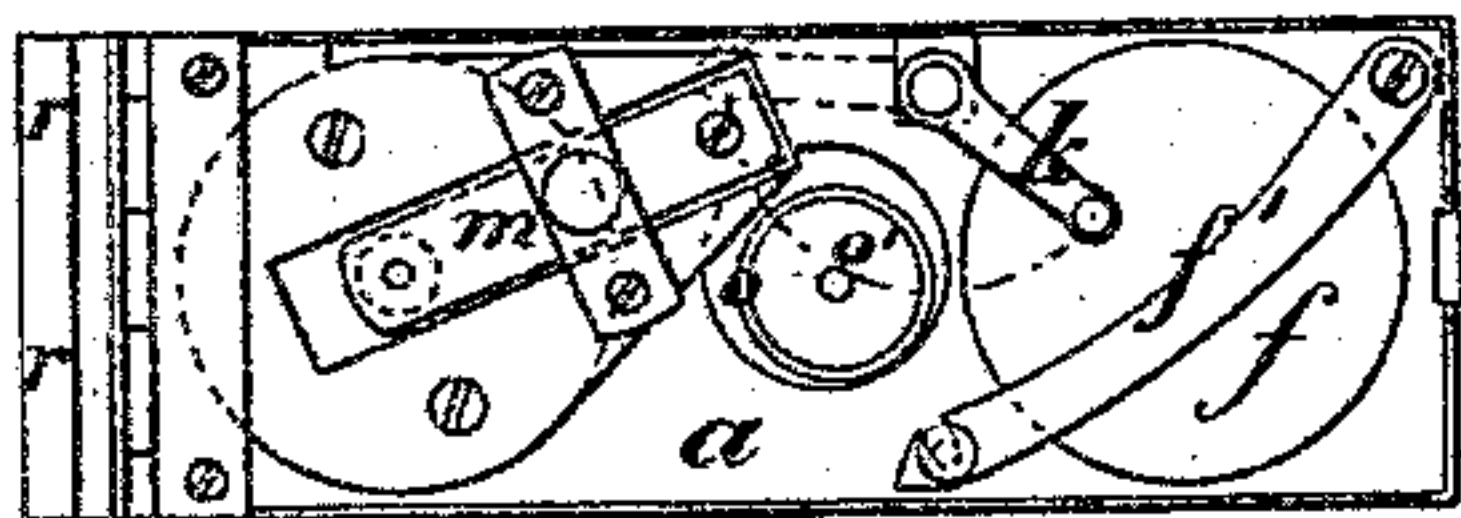


FIG:4.

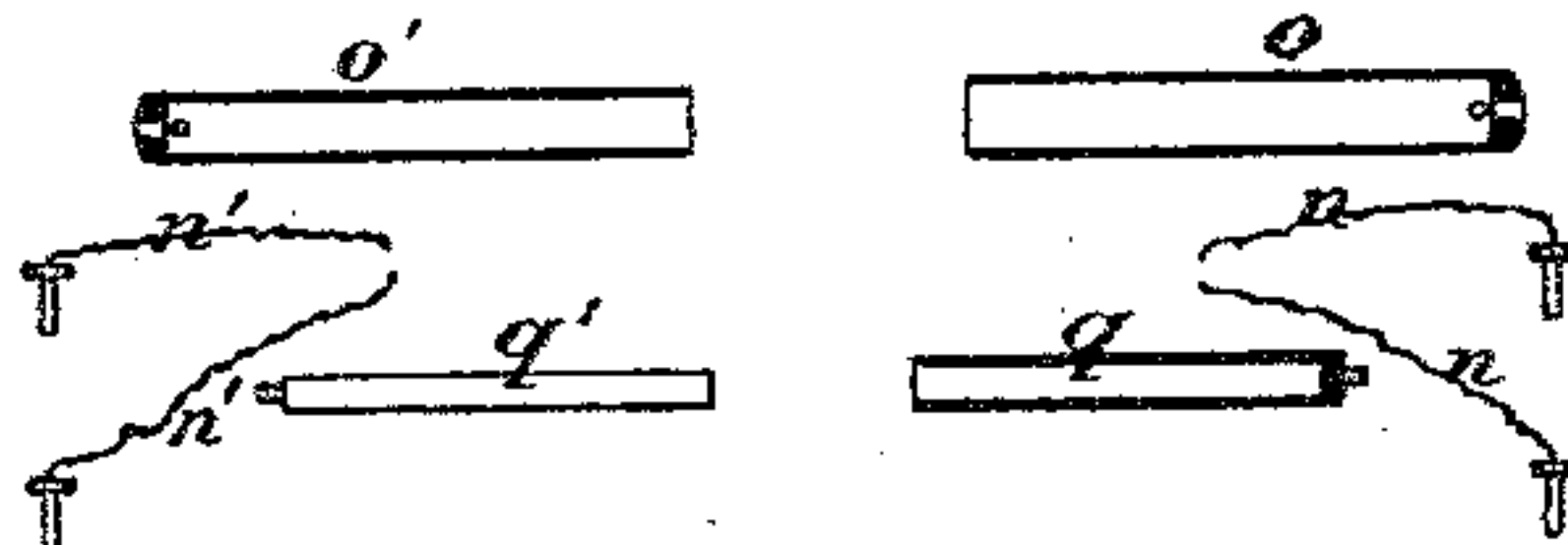


FIG:5.

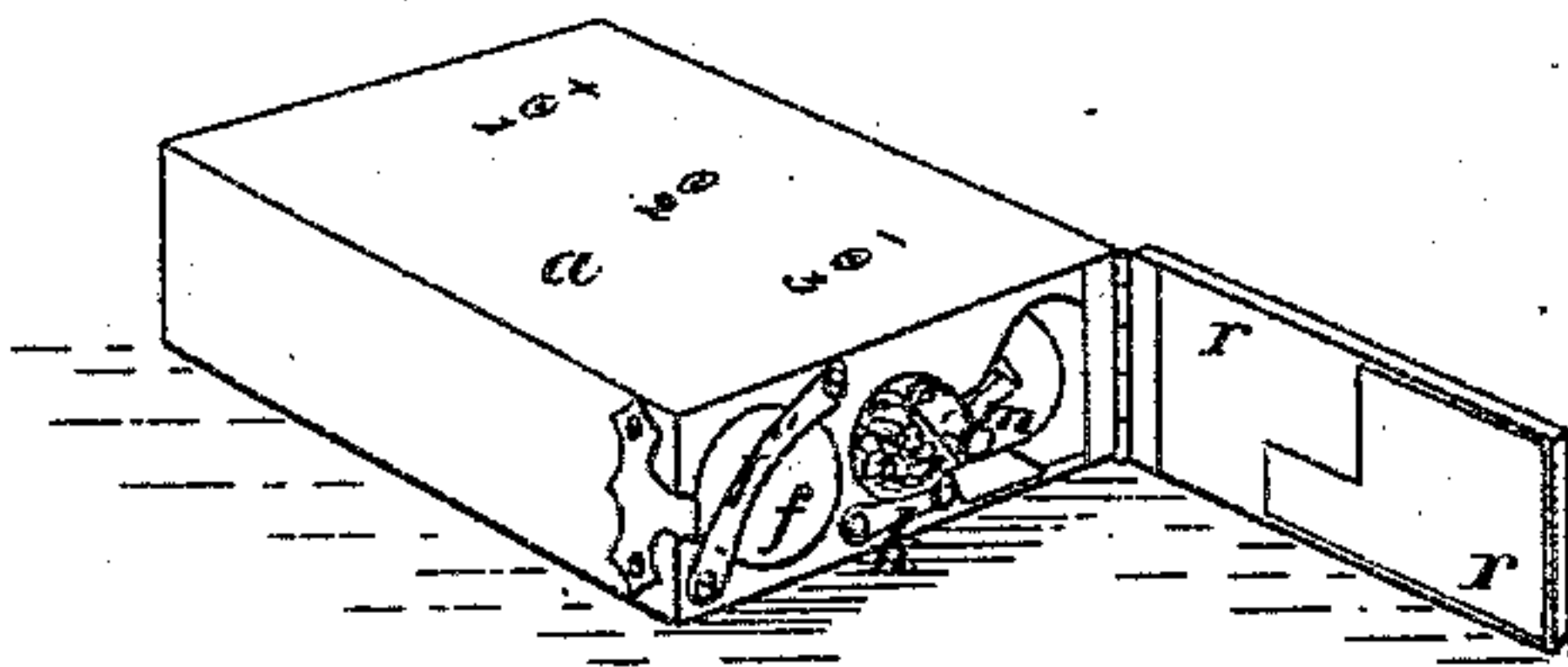
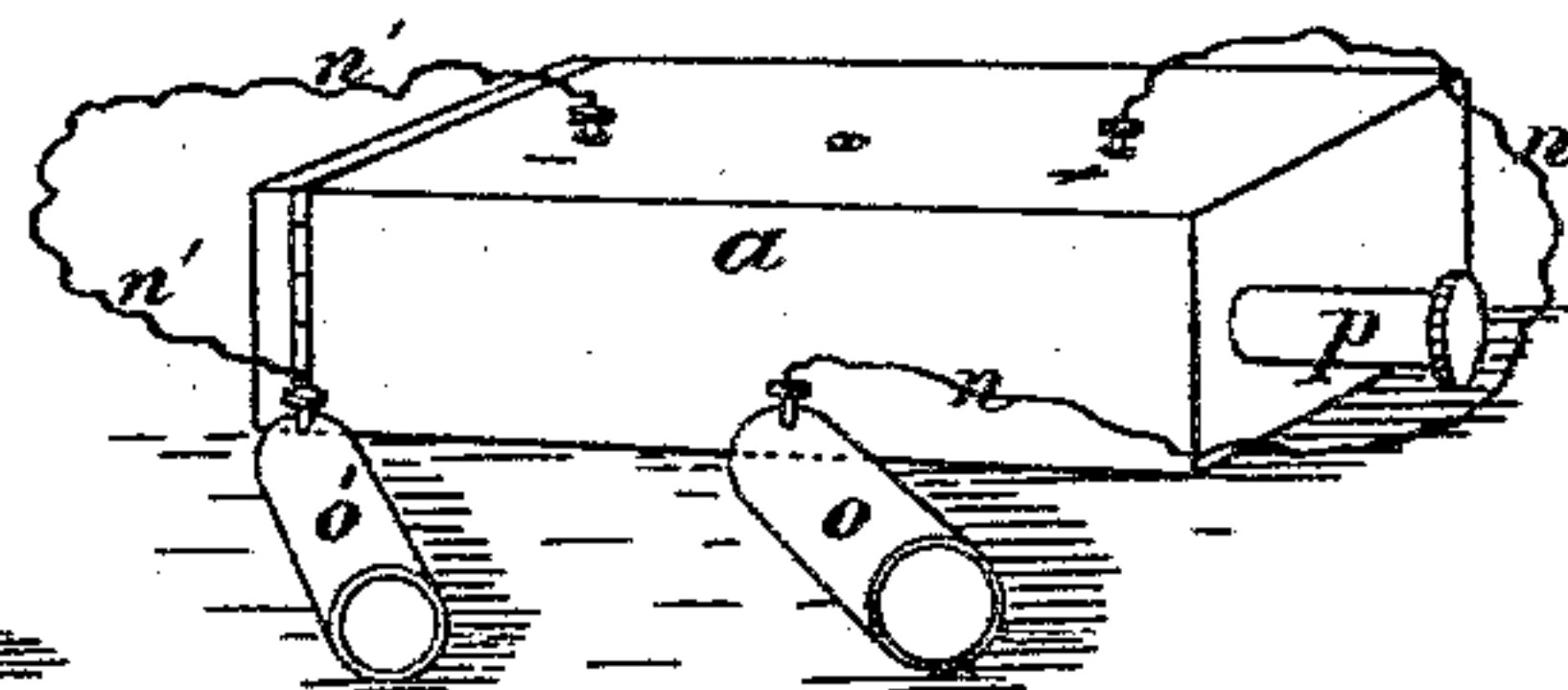


FIG:6.



WITNESSES.

John E. Parker:
James F. John

INVENTOR.

Charles L. Clarke
by his Attorneys
Hawson & Sons

(No Model.)

2 Sheets—Sheet 2.

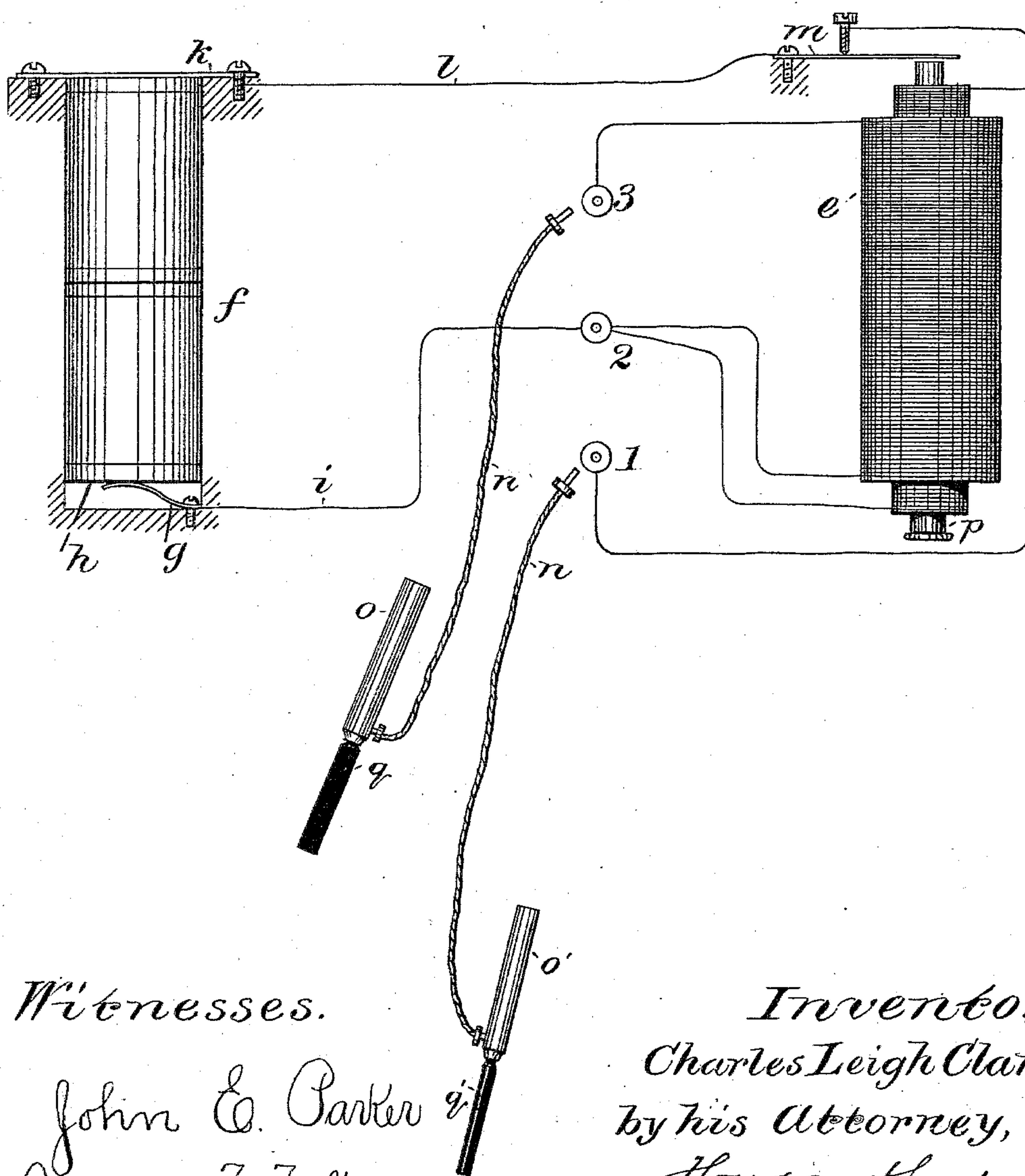
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Fig. 7.



Witnesses.

John E. Parker
James F. Tobin

Inventor,
Charles Leigh Clarke,
by his Attorney,
Howson & Sons

UNITED STATES PATENT OFFICE.

CHARLES L. CLARKE, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND,
ASSIGNOR TO THE DOMESTIC ELECTRICAL MANUFACTURING COMPANY,
OF BOSTON, MASSACHUSETTS.

ELECTRO-THERAPEUTIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 305,894, dated September 30, 1884.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEIGH CLARKE, a subject of the Queen of Great Britain, and residing at Manchester, county of Lancaster, England, have invented an Improved Electro-Therapeutic Apparatus, of which the following is a specification.

The object of this invention is to produce in a minimum size and at a minimum cost, for the use of all medical men and others employing galvanism as a remedial agent, a pocket medical battery and induction apparatus capable of producing the maximum effect, compact and simple in construction, easily and quickly prepared for use, and as readily repacked for the pocket.

In carrying my invention into effect I construct the improved portable galvanic apparatus as illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the apparatus complete. Fig. 2 is a reverse side view with the veneer or other covering removed. Fig. 3 is a plan view with the lid open; Fig. 4, detached views of handles and other accessories; Fig. 5, a perspective view of the apparatus packed for the pocket, but with the lid open. Fig. 6 is a similar view of the apparatus as arranged for use, and Fig. 7 is a diagrammatic view illustrating the circuit-connections.

I make the containing-case *a a* out of a solid block of wood or other non-conducting material, in which are bored longitudinally three holes or cells, *b e d*, side by side, the first, *b*, being to contain the induction-coil *e*, the second hole, *e*, being to receive the handles and other accessories, and the third, *d*, to receive the hermetically-sealed battery-cell *f f*, which, when in place, is retained by a suitable hasp, *f'*. The three holes with their contents are closed by a hinged lid, *r*.

The sealed batteries, which are in the form of cartridges, are made interchangeable—that is, they may be readily changed one for another. Thus on releasing the hasp *f'* the battery may be removed and a fresh one readily substituted without the manipulation of any connecting-screws.

Instead of using one battery *f*, two short

sealed batteries may be inclosed in the hole *d*, their interchangeable character being further illustrated by the facts that these batteries are identical in construction and character, and that it is immaterial which is inserted first.

The connections are made as follows: At the bottom of the hole *d d*, for the reception of the battery *f f*, is secured a contact-spring, *g g*, on which the brass cap *h h*, which forms one pole of the battery, rests. This spring *g* is connected with the end of the primary coil by a wire, *i i*, placed in a groove on the outside of the block. (See Fig. 2.) Connection with the other pole of the battery is made by a small lever or switch, *k k*, which is connected by a short wire, *l l*, Fig. 2, running in a groove in the outside of the block *a a* to one side of the contact-breaker *m m*. This lever or switch is movable, (as is well understood,) and is shown in action in Fig. 3, and out of action in Fig. 5. A movable peg or other equivalent device will answer this purpose. The other side of the contact-breaker *m m* is connected to the beginning of the primary coil. For collecting the induced currents from the primary and secondary coils, three studs are provided, each drilled to receive a peg attached to the connecting cords or wires *n n'*, used with the handles *o o'*. These studs, Nos. 1, 2, and 3, are screwed through the block *a a*, the drilled ends being brought flush with the surfaces thereof, and to the other ends the connections are made as follows, Fig. 7: The commencement of the primary coil is connected to No. 1, and is also connected to the contact-breaker, the end of the primary and the beginning of the secondary coil to No. 2, and the end of the secondary to No. 3.

By attaching the conducting cords or wires *n* and *n'* to Nos. 1 and 2, the induced extra current of the primary can be used. Nos. 2 and 3 give the secondary current, and by using Nos. 1 and 3 the combined effect of primary and secondary (that is, the whole force of the induction-coil *e e*) is obtained.

When these connections have been made, as shown in Fig. 2, the whole of the outside is finished with a covering of veneer or other suitable material.

To regulate the strength of the induced cur-

rents a brass tube or "intensifier," *p p*, slides over the core of the induction-coil, and can be drawn out more or less, as desired.

5 I make the handles *o o'* and one of the ebonite insulators *q q'* hollow, as shown in Fig. 4, and so that they will "nest" one inside the other when required to be packed into the hole or cell *c c*.

10 The handles or electrodes *o o'* are detachable from the conducting-cords, and the insulators or non-conducting extensions *q q'* may be screwed into the handles or electrodes, as shown in Fig. 7. The flexible conductors *n* are united with the metal electrodes *o o'* by their
15 tags, which are inserted in small holes provided for them in the sides of the electrodes.

I claim as my invention—

The herein-described electro-therapeutic apparatus, consisting of a solid non-conducting casing having three holes or receptacles there- 20 in side by side, one containing an induction-coil, one an interchangeable battery, and the third adapted for the reception of the handles and accessories, and the whole closed by a lid, substantially as described. 25

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. L. CLARKE.

Witnesses:

GEORGE DAVIES,
JOHN HUGHES.