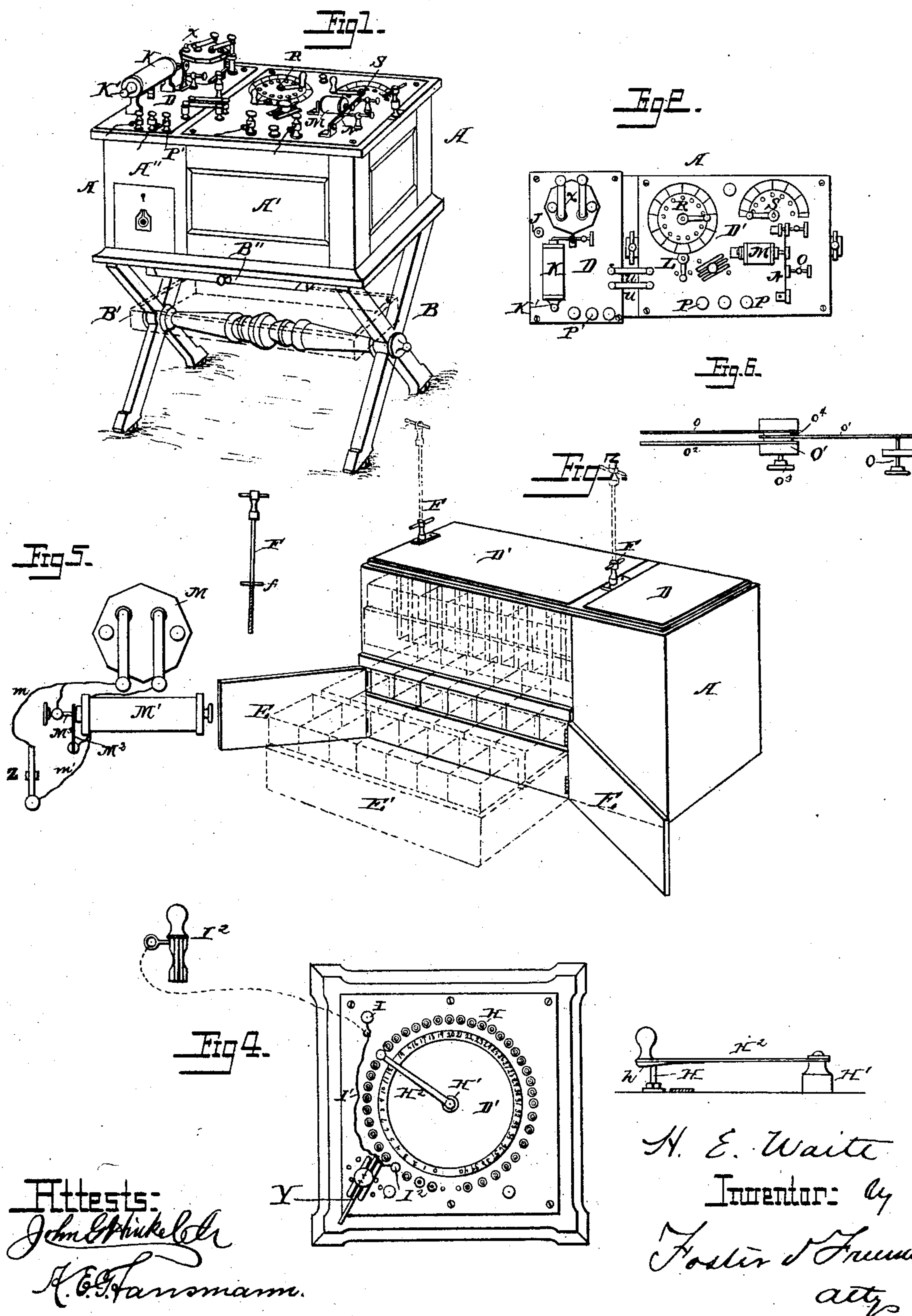


(No Model.)

H. E. WAITE.  
CABINET BATTERY.

No. 360,934.

Patented Apr. 12, 1887.



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# UNITED STATES PATENT OFFICE.

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## CABINET-BATTERY.

SPECIFICATION forming part of Letters Patent No. 360,934, dated April 12, 1887.

Application filed September 11, 1885. Serial No. 176,820. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. WAITE, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Cabinet-Batteries, of which the following is a specification.

My invention relates to cabinet-batteries such as are adapted to be used for medical and other purposes; and it has for its object to produce a light and compact form of battery and to arrange the same on a suitable base, whereby it may be moved or wheeled about the consultation-room.

To this end my invention consists in a portable battery constructed and arranged substantially as hereinafter set forth.

It also consists in the details of construction of some of the parts of the device, as more particularly pointed out hereinafter.

Referring to the accompanying drawings, forming a part of the specification, Figure 1 is a perspective of the battery. Fig. 2 is a plan view of the same; Fig. 3, a rear view of the battery-case, and Fig. 4 is a plan of the switch-board which I prefer to use in connection with the battery. Figs. 5 and 6 are details.

The case A of the battery, which may be of any desired construction, is divided into two interior compartments, one, A', of which contains the galvanic cells, and the other, A'', contains the cell used for producing the faradic current, as hereinafter set forth. This case is mounted upon a suitable frame-work, B, of any proper design, and this frame is provided with casters, so that the whole may easily be moved from place to place about the room or office. This feature is found to be a very valuable and convenient one, as it permits the ready use of the battery in any position, as when the patient is upon the operating chair or lounge, or when it is desired to use it in connection with any fixed apparatus, as the laryngoscope, &c.

A tray, B', is arranged in the frame, upon which may be placed the extra electrode and other appliances to be used in connection with the battery, and a sliding shelf, B'', is conveniently arranged under the case to support the implements and materials to be used in the treatment of any particular case.

The top of the case is formed by two plates or sections, D and D', and is preferably composed of some non-conducting and inert material—as hard rubber—and these sections fit recesses or moldings around the top of the case.

Upon the upper side of the sections are secured the switches, pole-changer, rheotome, and other connections whereby the various currents may be controlled, and to the under side of plate or sections D' are secured the elements—as zinc and carbon—of the battery-cells that are used for producing the galvanic current.

The rear portion of the case is provided with doors E, and a box or tray, E', which is adapted to hold the jars or cells of the battery, fits into the case, and may be removed therefrom through the doors. Passing through the section D' at opposite sides are the two rods F, and these extend down the sides of the case and are screwed into sockets in the edges of the tray E'. A metal plate is secured to the section D' on each side, through which the rods pass, and the opening in the plate is key-shaped. The rods F are provided with cross-pieces or projections *f* at a proper distance from their handles, and when the battery is in use the tray is lifted by the handles until the elements upon the under side of the cover or section D' are properly immersed in the fluid in the cells, when the rods are turned partially around, so that the pins *f* will rest upon the plates and support the tray in this position. When the battery is not in use, the rods are turned so that the pins *f* will pass through the key-slots, and the tray is lowered to the bottom of the case. The switches R and S upon the top of the plate are connected to the various battery-cells, and may be adjusted to include more or less of the cells in any circuit.

L is a switch to interrupt the whole current of the cells. M is an electro-magnet. N is the vibrating spring, and O the platina point, of the rheotome. P P are the binding-posts.

The plate D is arranged to support the devices used when it is desired to treat the patient with the faradic currents, in which P P' are the binding-posts; K, the induction-coil; K', the core of the induction-coil; J, the interrupter. X is the battery with the usual



connections. U are straps used to connect the currents and devices upon the two sections.

I have not deemed it necessary to show in detail all the connections, nor to specifically describe the various modes of operating with the continuous and interrupted galvanic currents, nor the secondary or faradic currents, as they are substantially like those contained in the usual construction and arrangements, and are well understood by those skilled in the art. It will be observed, however, that the batteries and connecting devices are arranged in different portions of the box, and either one of the currents may be used independent of the other, or both may be used at the same time, and the two sections of the cover form supports for the devices used in each and can be separately removed for cleaning or filling the cells without disturbing the other.

In Figs. 1 and 2 I have illustrated a conventional form of switches R and S which may be used; but I prefer to use the improved switch shown in Fig. 4. This switch consists of a series of pegs or pins, H, preferably arranged in a circle and extending through the cover or plate D', the lower ends being each separately connected to one or more cells of the battery. One of the terminals of the battery-cells is connected to a standard, H', upon which is pivotally connected the hand-lever H<sup>2</sup>, the outer end of which is provided with a spring-finger, h, adapted to rest upon the top of any of the pins H and to make good electrical contact therewith. Suitably connected to one of the binding-posts of the external circuit is a post, I, to which is attached a flexible conductor, I', having a spring-jack, I<sup>2</sup>, which is adapted to fit upon and embrace any of the pins H.

The current-reversing switch Y, of usual construction, is interposed between the post I and the battery-cells, and by adjusting it upon the various contacts the current from the different cells in circuit may be caused to pass through the external circuit connected to the binding-posts P in any desired direction. It will thus be seen that the two terminals of the battery-cells are practically formed by the spring-jack I<sup>2</sup> and the hand-lever H<sup>2</sup>, and by placing the spring-jack upon any one of the pins H and moving the hand-lever the number of cells required to give the strength of current desired may be quickly and easily included in the circuit.

If a certain number of the cells have been in constant use, or for other reasons have lost power, the spring-jack may be placed upon any one of the pairs connected to the remaining cells, as No. 10, and the hand-lever may then be adjusted to include the desired number of fresh cells, and meanwhile the first cells may be regaining their strength. It is also practical to use cells of different character and to have them connected to the various pins, and by means of the spring-jack and the hand-lever any desired cell or number of cells may be included in the circuit.

Other connections are obvious to those skilled in the art, and need not be particularly described here, as it will be readily seen that by this construction of switch-board many and various connections may be almost instantly made to suit the requirements of any particular case. It is usual to have the battery connected with the coil of the inductorium through the vibrator or circuit-breaker and the platinum point, so that the primary current is continuously interrupted by the vibrator. Sometimes it is desirable to send a single secondary current through the patient, as in diagnosing the case, and for this purpose I form a branch circuit around the vibrator and platinum point, and place an ordinary circuit-breaking key therein, and by adjusting the platinum away from the vibrator, so that the latter will not operate, the circuit, through the primary of the inductorium, may be made and broken by the key one or more times at the will of the operator. By this means I am able to give a single impulse in one direction only, thus making the current similar to a high-tension galvanic current.

In Fig. 5 I have shown such an arrangement, in which M represents the battery; M', the inductorium; M<sup>2</sup>, the vibrator, and M<sup>3</sup> the platinum point, as usually arranged. I take a branch circuit in from the battery, and connect a branch, m', to the primary of the inductorium, and place a key or circuit-breaker, Z, between the terminals of the branch wires, when it will be seen that the currents through the external circuit may be readily controlled. This arrangement may be placed on the cover of the cabinet in any convenient position.

The vibrator as usually constructed is capable only of a limited adjustment, so that the rapidity of the makes and breaks are confined within a certain range, outside of which it is often desirable to go; and to enable this to be done I form the vibrator with a number of springs of varying size or resiliency, and so connect them to the support that any one of them may be used at pleasure.

In Fig. 6 I have indicated such an arrangement, in which O is the platinum point, and O' is the standard slotted at the top to receive the ends of the vibrators o o' o<sup>2</sup>, which are constructed so as to normally vibrate at different rates and are held in the standard by a screw, o<sup>3</sup>, passing through their ends, which may be separated by washers o<sup>4</sup>.

It is evident that any one of the vibrators may be brought into operative position and the platinum point adjusted in proper relation thereto to produce the character of interruptions desired.

It is evident that this switch-board may be used in connection with various arrangements of electrical devices other than those herein shown with equal facility and advantage.

Having thus described my invention, what I claim is—

1. The combination, with a battery, of a switch consisting of a number of conducting-



pins connected to the various battery-cells, a flexible conducting-cord provided with a spring-jack to fit over the pins, a pivoted hand-lever having a spring-finger arranged to bear  
5 upon the pins, and a current-reversing switch, whereby circuits may be quickly and easily formed to produce the various kinds and quantities of current desired, substantially as described.  
10 2. In a medical battery, the combination, with the battery, inductorium, and interrupter in the primary circuit, and means for permanently rupturing the circuit through the interrupter, of a branch circuit around the in-  
15 terrupter, also in the primary circuit and including a circuit-breaker key, whereby the said key may be manipulated to make and break

the primary circuit at will and thereby send a single impulse through a patient included in the secondary circuit, substantially as described. 20

3. In combination with the battery, inductorium, and platinum point, the adjustable interrupter consisting of a standard supporting a number of vibrators having various rates, 25 any one of which may be used in controlling the circuit, substantially as described.

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

HENRY E. WAITE.

Witnesses:

CHARLES HARMAN,  
HENRY LEHN.