No. 869,599. PATENTED OCT. 29, 1907.

W. THOMPSON & J. C. MARTIN.

HYGIENIC CARTRIDGE BATTERY.

APPLICATION FILED JULY 26, 1906.

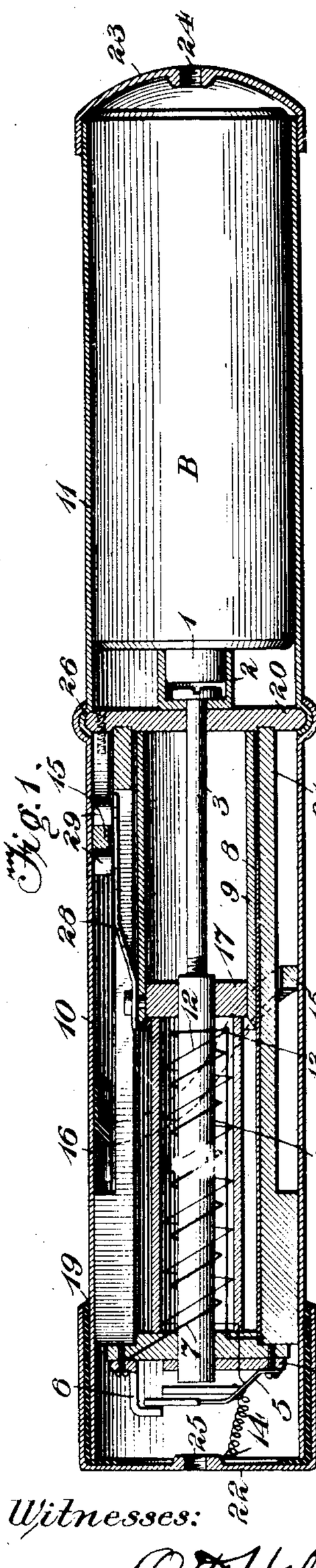

Fig. 1.

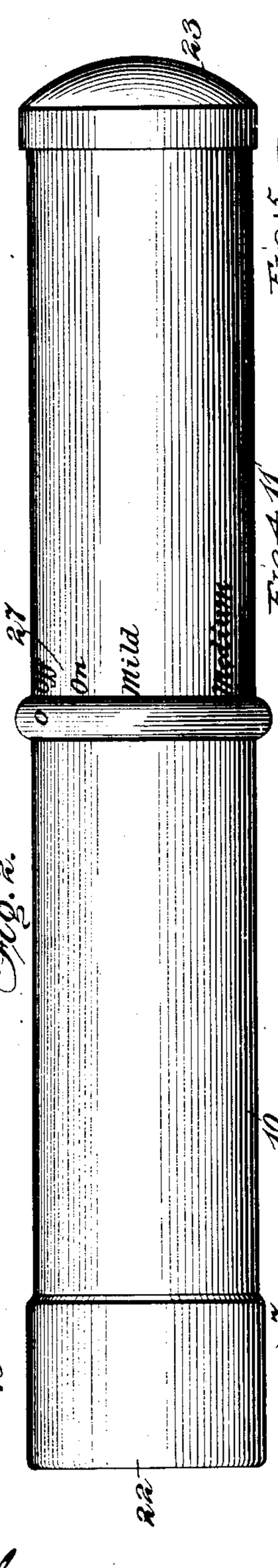

Fig. 2.

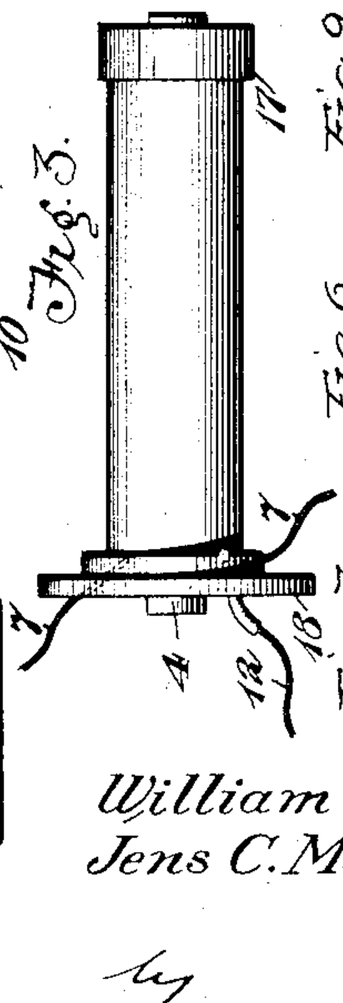

Fig. 3.

Fig. 4.

Fig. 5.

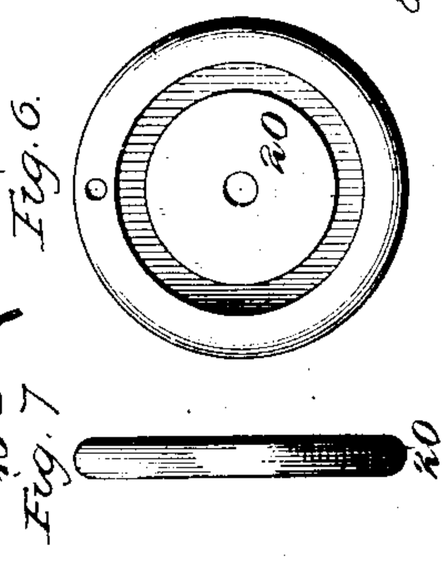

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

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UNITED STATES PATENT OFFICE.

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HYGIENIC CARTRIDGE-BATTERY.

No. 869,599. Specification of Letters Patent. Patented Oct. 29, 1907.

Application filed July 26, 1906. Serial No. 327,969.

To all whom it may concern:

Be it known that we, WILLIAM THOMPSON, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, and JENS C. MARTIN, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have jointly invented a new and useful Medical Battery, of which the following is a specification.

Our invention relates to improvements in medical batteries in which an induction coil or an induction coil and a dry cell or other suitable cell is inclosed in a sectional cylinder, the electric current being controlled by rotating either or both of the sections of the cylinder on its axis; and the objects of our improvement are to provide: 1st., a simple, quick and effective method of turning on and off and increasing and diminishing the strength of the electric current; and 2nd., a portable medical battery in the most convenient form. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an axial cross-section showing the interior mechanism; Fig. 2, an exterior view of the cylindrical shell or casing; Fig. 3 is a side view of the induction coil. Fig. 4 is a side view and Fig. 5 an end view of the slotted cylinder. Figs. 6 and 7 are face and edge views, respectively, of the partition. Figs. 8 and 9 are side and end views, respectively, of the reducing sleeve. Fig. 10 is a perspective view of the spiral and Figs. 11 and 12 are edge and face views, respectively, of the contact strip.

The same reference characters indicate the same parts in all the views.

Fig. 2 shows a metallic cylinder in two sections, 10 and 11, Fig. 1, connected together in such a manner at 26 as to be rotatable one on the other, and provided with metallic cap 23 and insulated metallic cap 22. The cylinder "B" is a dry cell having its zinc element in contact with the inner surface of the sectional metallic cylinder, and its carbon element 1 in contact with a metal clip 2 attached to a partition 20 which is solidly attached at 26 to the section 11. To the partition 20 the slotted cylinder 21 is fastened, extending into section 10 and supporting at its extremity and inclosing an induction coil, the soft core 4 of which is connected with the metal clip 2 by threaded shaft 3. The partition 20 and slotted cylinder 21 may be constructed of wood or any suitable non-conducting material. The various parts of the induction coil are the soft core 4, the current interrupter 5 and 6, the primary coil 7, the secondary coil 12, and the metallic bands or thimbles 17 and 18. For convenience in applying to this device, the primary coil 7 and secondary coil 12 are united at post 13. The secondary coil is also attached to the insulated metallic cap 22 at 14. The primary coil is attached to the current interrupter and also to a metal strip 8 which is fastened to the end of slotted cylinder 21 and extends on the inside of the cylinder a sufficient distance to maintain a constant contact with metal reducing sleeve 9. To this reducing sleeve 9 is attached a metal arm 28 to which are attached the metal blocks or lugs 29 and 29, which are held against the interior surface of the metallic cylinder 10 by the arm 28, and are spaced apart a sufficient distance to form a groove or slot which incloses and rides over the spiral 15. This spiral 15 begins at the partition 20 in a short bar which acts as a shoulder or stop to the lugs 29, and from there winds around the interior surface of the metallic cylinder 10 and terminates in a strip of insulating material 16. The metallic cap 22 is insulated from the sectional cylinder at 19 with rubber or any suitable insulating material. 24 and 25 are threaded apertures by which to connect insulated wires, enabling the electric current to be applied conveniently to any part of the body.

In this construction, the primary low potential current passes from the dry cell at the carbon element 1 to the clip 2, the bar 3, the soft core 4, the primary coil 7, the strip 8, the reducing sleeve 9, the arm 28, the lugs 29, and the sectional cylinder 10—11 to the zinc element of the dry cell. The high potential induced current is conducted to the insulated cap 22 at 14, and from post 13 to strip 8, reducing sleeve 9, arm 28 and lugs 29 to cylinder 10, the sectional cylinder 10—11 and the insulated cap 22 forming the two poles of the battery.

Having described the mechanism in detail, the method of operation is as follows: By rotating either cylinder, or both cylinders in opposite directions, the lugs 29 will ascend the spiral 15 from the position occupied in Fig. 1, moving the reducing sleeve 9 over the induction coil, gradually reducing the strength of the electric current, and if continued the lugs 29 will terminate at the insulating strip 16, when the reducing sleeve 9 will entirely cover the primary and secondary coils of the induction coil, the lugs 29 riding up on insulating strip 16 and breaking the circuit and turning the electric current off. Then by rotating the cylinders in the opposite direction, the lugs 29 are moved from the insulating strip 16, coming in contact with the metallic cylinder 10, forming the circuit and turning the electric current on, and moving the reducing sleeve slightly off of the induction coil, and if continued the lugs descend on the spiral 15, gradually moving the reducing sleeve 9 off of the reduction coil and strengthening the electric current until it reaches its maximum, when the lugs are again in the position shown in Fig. 1 and the reducing sleeve is entirely off

of the induction coil. The points at which the electric current is turned off and on, and the strength of the current, may be indicated on the outside of the sectional cylinder by a graduated scale or by the words as shown at 27, Fig. 2.

Having thus fully described our invention, we claim and desire to secure by Letters Patent—

1. A medical battery consisting of two cylindrical sections rotatably joined together, one section containing a dry cell, and the other section containing an induction coil and having an insulated cap, the sectional cylinder and insulated cap being respectively in circuit with the terminals of the secondary coil of the induction coil.

2. A medical battery consisting of two cylindrical metallic sections rotatably and electrically joined together, one section containing a battery, and the other section containing an induction coil and having an insulated cap, the sectional cylinder and insulated cap being respectively in circuit with the terminals of the secondary coil of the induction coil; and means for connecting the induction coil with the battery.

3. A medical battery consisting of a dry cell and an induction coil inclosed in two cylindrical sections rotatably joined together, an insulated cap on one end of the sectional cylinder, the said sectional cylinder and insulated cap being respectively in electric connection with the induction coil and dry cell, and means for controlling the electric current by rotating one or both of the sections of the cylinder on its axis.

4. A medical battery consisting of two cylindrical sections rotatably joined together, one section containing a dry cell, and the other section containing an induction coil and having an insulated cap, the sectional cylinder and insulated cap being respectively in circuit with the terminals of the secondary coil of the induction coil, means for connecting the induction coil with the dry cell, and means for controlling the electric current by rotating one or both of the sections of the cylinder on its axis.

5. A medical battery consisting of two cylindrical metallic sections rotatably joined together, an insulated metallic cap on one end of said sectional cylinder, a dry cell inclosed in and in zinc contact with one of the sections, an induction coil connected with the carbon element of the dry cell and inclosed in the other section, the secondary coil being connected with the insulated cap and the primary and secondary coils with the sectional cylinder, and means for controlling the electric current by rotating one or both of the sections of the cylinder on its axis.

6. A medical battery consisting of two cylindrical sections rotatably joined together, one section containing a dry cell and the other section an induction coil, and means for controlling the electric current by rotating one or both of the sections of the cylinder on its axis, consisting of a fixed diaphragm or partition in one end of the first section at its junction with the second section, a slotted cylinder attached to the partition and extending into the second section and inclosing the induction coil, a reducing sleeve within the slotted cylinder having an arm extending through the slot at the end of which arm is a grooved rider, and a spiral attached to the inside of the cylinder engaging the grooved rider.

7. A medical battery consisting of two cylindrical metallic sections rotatably joined together, an insulated metallic cap on one end of the sectional cylinder, a dry cell inclosed in and in zinc contact with one of the sections, a fixed diaphragm or partition in the end of the said section at its junction with the other section, a slotted cylinder attached to the partition inclosing an induction coil, its core being connected with the carbon element of the dry cell by a metal clip and bar, and extending into the section having an insulated cap, the secondary coil being connected with the insulated cap and the primary and secondary coils being connected with a metal strip inside of the slotted cylinder, a metal reducing sleeve inside the slotted cylinder in contact with said metal strip having a metal arm extending through the slot, at the end of which arm is a grooved metal rider in contact with the interior surface of the cylinder, and a spiral attached to the inside of the cylinder engaging the grooved rider, the said spiral terminating in an insulated strip.

8. In combination with a medical battery, a device for controlling the electric current, consisting of two cylindrical sections revolubly joined together, an insulated cap on one end of the sectional cylinder, the said sectional cylinder and insulated cap being respectively in electric connection with the induction coil and dry cell, and means for turning on and off and increasing and diminishing the electric current by revolving one or both of the sections of the cylinder on its axis.

9. In combination with a medical battery, a device for controlling the electric current, consisting of two cylindrical sections rotatably joined together, and means for increasing and diminishing the electric current by rotating one or both of the sections of the cylinder on its axis, consisting of a fixed diaphragm or partition in the end of one section at its junction with the other section, a slotted cylinder attached to said partition and extending into the second section and inclosing an induction coil, a reducing sleeve within the slotted cylinder having an arm extending through the slot at the end of which arm is a grooved rider, and a spiral attached to the inside of the cylinder engaging the grooved rider.

10. In combination with a medical battery, a device for controlling the electric current, consisting of two cylindrical metallic sections revolubly joined together, an insulated metallic cap on one end of the sectional cylinder, an electrical connection between the zinc element of a cell or battery and the metallic sectional cylinder, a fixed diaphragm or partition in the end of the section at its junction with the other section, a slotted cylinder attached to the partition and extending into the section having an insulated cap and inclosing an induction coil, the core of which is connected with the carbon element of a cell or battery, the secondary coil being connected with the insulated cap and the primary and secondary coils being connected with a metal strip inside of the slotted cylinder, a metal reducing sleeve inside of the slotted cylinder in contact with said metal strip having a metal arm extending through the slot, at the end of which arm is a grooved metal rider in contact with the interior surface of the sectional cylinder, and a spiral attached to the inside of the sectional cylinder engaging the grooved rider, the said spiral terminating in an insulating strip.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM THOMPSON.
JENS C. MARTIN.

Witnesses:
M. PECK GRIVAT,
M. C. KNOWLES.
Witnesses:
B. M. BRANFORD,
GRACE MAYS.