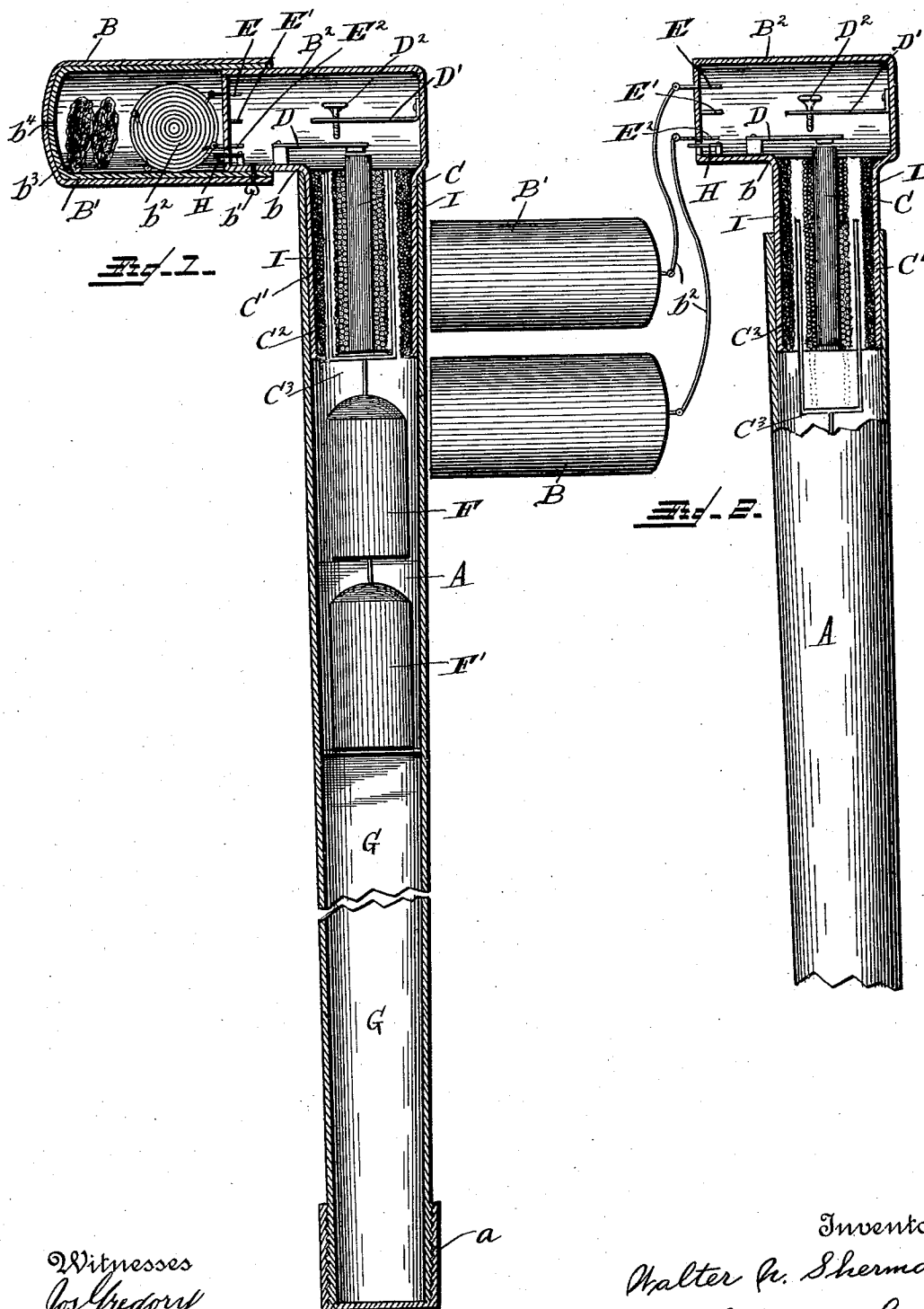


(No Model.)

W. N. SHERMAN.
ELECTRICAL CANE.

No. 578,471.

Patented Mar. 9, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER N. SHERMAN, OF MERCED, CALIFORNIA.

ELECTRICAL CANE.

SPECIFICATION forming part of Letters Patent No. 578,471, dated March 9, 1897.

Application filed April 2, 1896. Serial No. 585,875. (No model.)

To all whom it may concern:

Be it known that I, WALTER N. SHERMAN, a citizen of the United States, residing at Merced, in the county of Merced and State of California, have invented certain new and useful Improvements in Electric Canes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in walking-canes.

It has for its objects, among others, to provide a walking cane or stick combining therewith a novel, practical, and portable faradic battery. It is intended primarily for the use of physicians. Of course it will be understood that it can be used and applied by any one, being made on well-known electrical and scientific principles. The contents of the cane or walking-stick comprise small galvanic cells, known as "dry" cells, in which is generated the electric current for actuating or setting up the action in the primary and secondary faradic coils or induction apparatus. The latter is made in accordance with well-known physical laws governing the construction of all similar apparatus, as are also the electrical connections from the battery or the cells. The induction apparatus is supported within the cane by a skeleton cylinder adapted to slide therein or otherwise arranged so as to be readily removed when desired. The cells are also so arranged that any desired number, from one to six, may be used, and they also can be readily removed and replaced when occasion requires. It is always ready for instant use and is not liable to get out of working order. The length of the coils can be varied according to the current effect or the tension desired. The improvement may be applied to canes with or without crooked handles.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a central longitudinal section

through the cane with the battery therein. Fig. 2 is a sectional detail showing means for increasing the tension or quantity of the current when desired.

Like letters of reference are employed to indicate like parts in the two views.

Referring now to the details of the drawings by letter, A designates a cane of any desired material and form, being shown as provided at its end with a ferrule *a*, of metal, held thereon in any suitable manner, as by screw-threading. The cane in this instance is shown as provided with a handle at right angles to the length thereof, but it is evident that this is not necessary, as the improvement may be applied to canes in which this handle portion is not present. The metal electrodes B and B' are nested and fit on a skeleton frame B², terminating at the shoulders *b* within the handle portion of the cane and locked in position by any suitable means, as, for instance, a slot and set-screw *b'*. These metal electrodes and cylinder are a part of the handle of the cane when in position, as shown, and when detached form the electrodes for the battery. On the inside thereof are the battery-cords *b*² and two small sponges *b*³ for use with the same and for applying current to the human body in the ordinary manner. *b*⁴ is an opening in the end for the attachment of the battery-cords.

The body portion of the cane and a part of the handle also contain complete faradic induction-coils constructed on well-known principles of electromagnets and induction-coils.

C is the central core of soft iron.

C' is the primary coil of coarse wire, and C² the secondary coil of fine wire.

C³ is a metallic tube arranged between the primary and secondary coils and adapted to slide within the space therebetween, and when drawn out, as illustrated in Fig. 2, it increases the current or the inductive action of the coils.

D is the interrupter, and D' the arm which supports the adjusting or regulating screw D², adapted to cooperate with said interrupter in the usual way.

E, E', and E² are the poles or connections for the battery-cords, E and E' being connected with the primary current and E' and E² with the secondary current.

Within the body of the cane are arranged two small dry cells F and F', ordinary capsule-cells, one or both of which are connected with and actuate the coils.

5 G is a space near the lower end of the cane for the reception of additional cells, extra electrodes, or other paraphernalia which it may be desired to carry.

10 In Fig. 2 the handle-electrodes are shown as removed from the handle and applied ready for action in the hands of the patient.

H is a switch, of well-known construction and operation, arranged for closing or opening the circuit of the battery, starting and 15 stopping the action of the same when desired. The coils may be supported by skeleton arms I, of thin steel or other suitable material and fitting snugly in the upper part of the cylinder or body portion of the cane.

20 The convenience and advantages of a combined cane and electric battery constructed and arranged substantially as hereinbefore specified will be readily appreciated. The handles can be removed in a moment and 25 connections made and the battery set up for use. The connections of the cells to the coils are made in the usual way, and the cells can be renewed at small cost when exhausted. The cylinders may be straight or tapered and 30 of various sizes suited to the coils and cells, and the tube, the cylinder, or cane may be made of metal or any other desired substance, such as wood, hard rubber, or paper. The size and length of the wire and winding of 35 the coil may be varied according to the strength of the current and the purpose for which it is to be used.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. 40 What I claim as new is—

1. A walking-stick having a chamber therein and a hollow handle, combined with an electric battery, the parts of which are arranged within said chamber and nested metallic electrodes attached to the handle of the cane, and 45 forming a part thereof, substantially as shown and described.

2. The combination with a walking-stick, of a cylinder forming a part of the handle 50 thereof, carrying the electrodes and the cords and the sponges, and the cells and coils and connections arranged within the body portion of the cane, substantially as specified.

3. The combination with a walking-stick, 55 of a cylinder forming part of the handle thereof, carrying the electrodes, and the cords and the sponges, and the cells and coils and connections arranged within the body portion of the cane, and detachably and removably supported therein, substantially as described. 60

4. The combination with a cane having a chamber therein, of the primary and secondary coils and their supports, and the cells within said cane, the interrupter and adjusting-screw, and the removable cylinder carrying electrodes, substantially as described. 65

5. The combination with a cane, having a chamber therein, of the primary and secondary coils and their supports, and the cells 70 within said cane, the interrupter and adjusting-screw, and the removable cylinder carrying electrodes, and a switch for controlling the current, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 75

WALTER N. SHERMAN.

Witnesses:

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