

(No Model.)

A. & A. ROOVERS.

ELECTRIC CANE.

No. 287,170.

Patented Oct. 23, 1883.

Fig. 2.

Fig. 1.

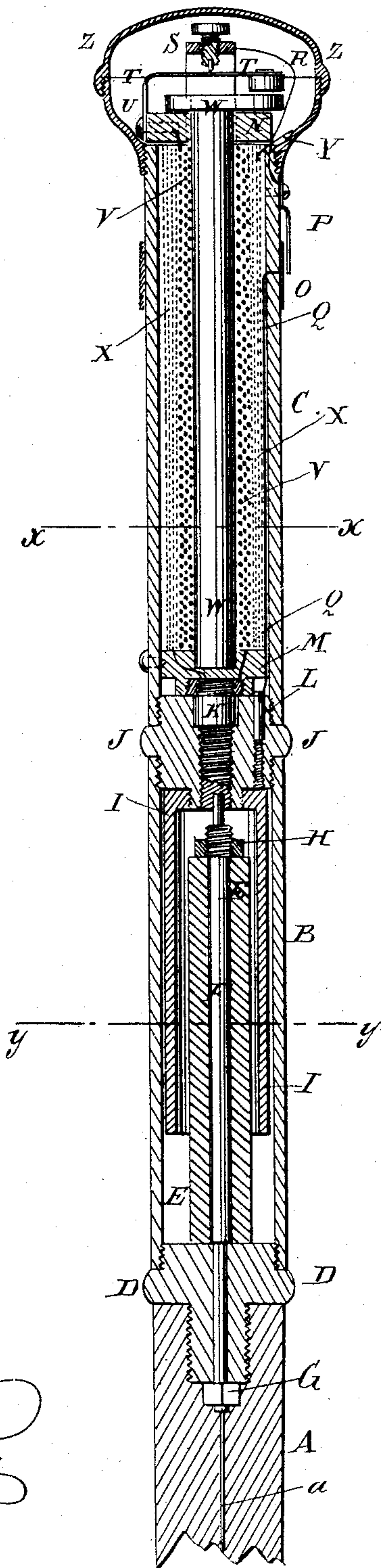
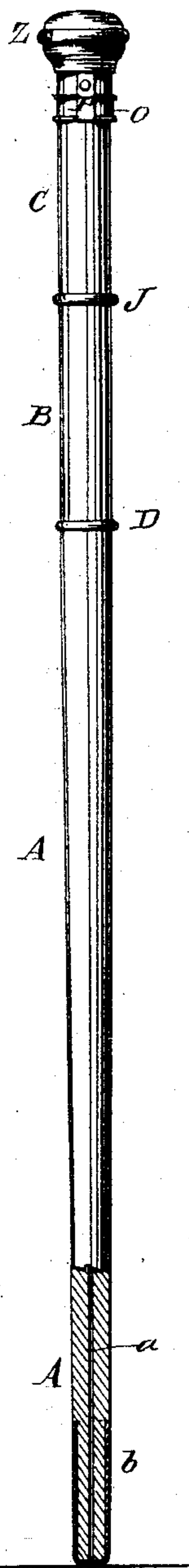


Fig. 3.

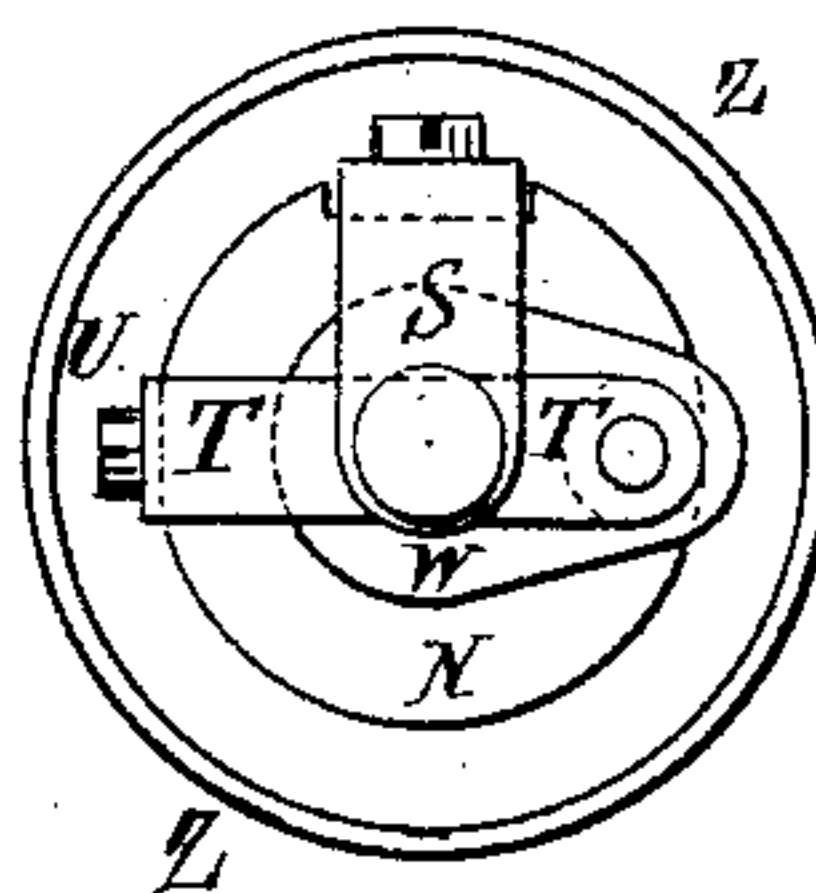


Fig. 4.

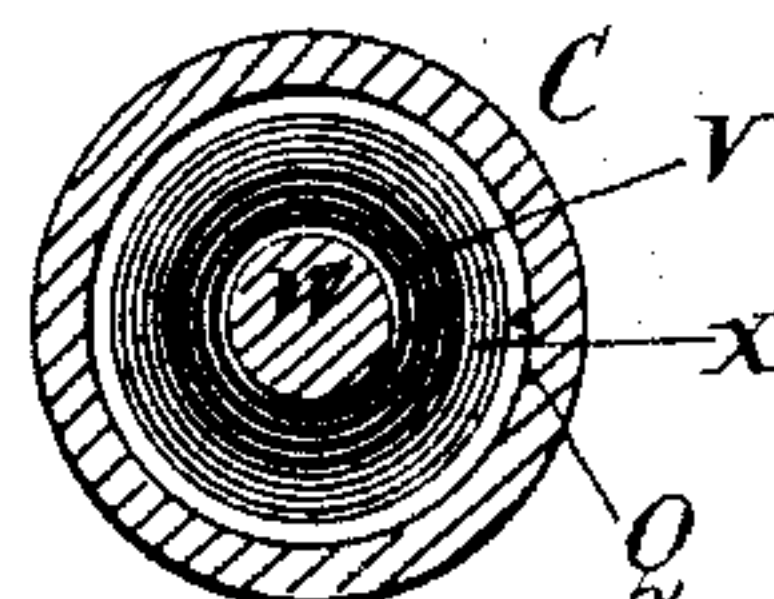


Fig. 5.

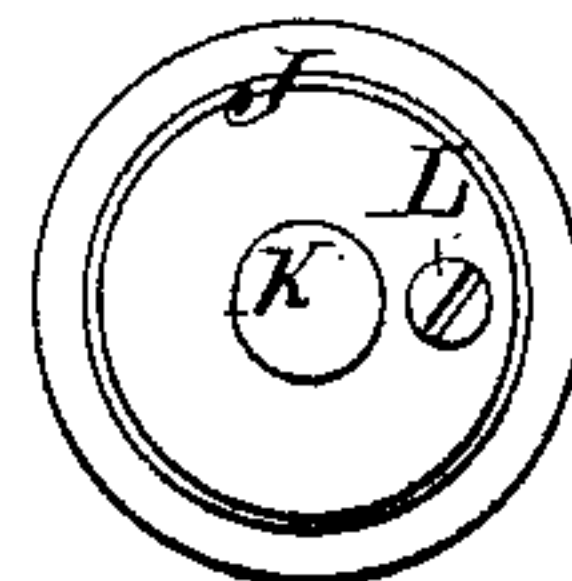
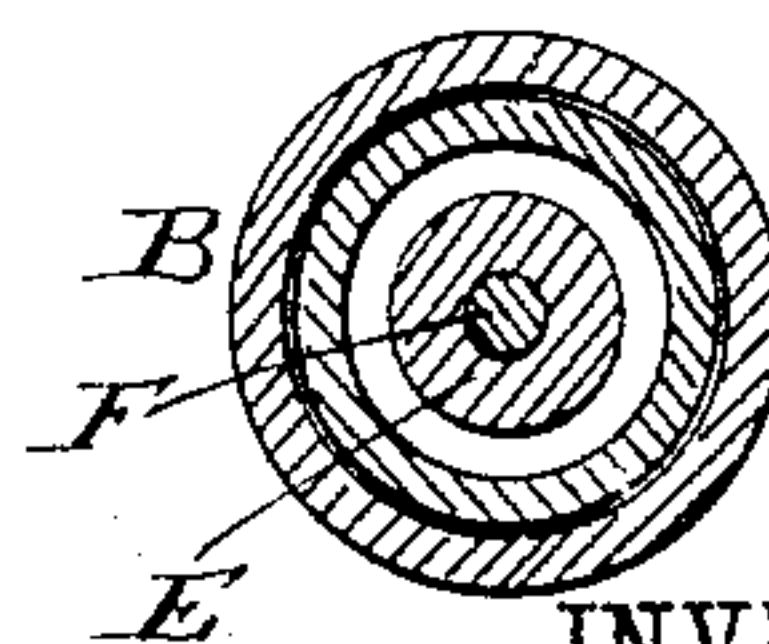


Fig. 6.



WITNESSES:

Chas. Nida.
C. Sedgwick

INVENTOR:

A. Roovers

A. Roovers

BY

Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALFRED ROOVERS AND ALEXANDER ROOVERS, OF NEW YORK, N. Y.

ELECTRIC CANE.

SPECIFICATION forming part of Letters Patent No. 287,170, dated October 23, 1883.

Application filed April 21, 1883. (No model.)

To all whom it may concern:

Be it known that we, ALFRED ROOVERS and ALEXANDER ROOVERS, both of the city, county, and State of New York, have invented a new and useful Improvement in Electric Canes, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of our improvement, the lower part of the cane being shown in section. Fig. 2 is a sectional elevation of the upper part of the improvement. Fig. 3 is a plan view of the upper end of the same, the cap being removed. Fig. 4 is a sectional plan view of the same, taken through the line *x x*, Fig. 2. Fig. 5 is a plan view of the same, the part that contains the induction-coil being removed. Fig. 6 is a sectional plan view of the same, taken through the line *y y*, Fig. 2.

The object of this invention is to connect a galvano-electric machine for remedial purposes with a cane, so that the said machine can be conveniently carried.

The invention consists in an electric cane constructed with two tubular sections connected with each other and the lower section by non-conducting couplings, and provided with a battery and an induction-coil connected by a screw, a rod, and wires with the metallic head and ferrule of the cane, as will be hereinafter fully described.

The cane is made in three parts or sections, A B C. The lowest section, A, is the longest, and is made of wood or other suitable material. The short upper sections, B C, are tubular, and are made of hard rubber or other suitable non-conducting material. In the upper end of the section A is formed a screw-hole to receive the smaller lower part of the coupling-plug D, the upper part of which is screwed into the lower end of the middle section, B, and forms the bottom of the battery.

E is the carbon, which is made in tubular form, and is secured in place by a rod, F, which passes longitudinally through it and through the coupling D. The rod F has a nut, G, screwed upon its lower end to rest against the lower end of the coupling D, and has a nut,

H, screwed upon its upper end, which rests against the upper end of the carbon E.

The zinc I is in the form of a cylindrical cup of such a size as to fit loosely into the section B, and to receive within it the carbon E. The upper end of the zinc I has a screw-hole formed in it, and is screwed upon a screw formed upon the lower end of the coupling J, that connects the sections B C with each other, and that is screwed into the adjacent ends of the two sections. K is a screw which passes through the coupling J, and the lower end of which is perforated to receive and form an electric contact with the upper end of the rod F. Through the coupling J also passes a screw, L, the lower end of which is in electric contact with the zinc I. The sections B C and the couplings D J are made of hard rubber or other non-conducting material, so as to serve also as insulators. Within the upper section, C, is placed an ordinary induction-coil, which is kept in place by hard-rubber disks M N, secured to the section C by set-screws or other suitable means.

The primary circuit, when the switch O P is closed, passes from the battery along the screw L and wire Q, through the switch O P, along the wire R to the point S, along the hammer-spring T and screw U to the primary coil V, and through the said coil V, the screw K, with which the said coil is in connection, and the rod F, to the battery. The passage of the current of electricity through the coil V causes the magnet W to attract the hammer T, breaking the circuit, which destroys the magnetism of the magnet W and allows the hammer T to spring back into contact with the point S and again close the circuit, and so on continuously as long as the switch O P is kept closed. The passage of the current of electricity through the coil V induces a current of electricity in the secondary coil X, which is connected at one end by a wire, Y, with the metallic cap Z, screwed upon the end of the section C, and serving as a head to the cane. The other end of the secondary coil X is connected by the screw K, rod F, and wire *a*, passing down through the section A, with the metallic ferrule *b*, placed upon the lower end of the cane, so that when the head Z and ferrule *b* are grasped with the hands, or are

otherwise brought into contact with a human body or other conductor, a secondary circuit will be established, and will pass through the said body or conductor.

5 We are aware that a cane electric apparatus is not broadly new; but

What we do claim as new and of our invention is—

10 1. An electric cane constructed substantially as herein shown and described, and consisting of the sections A B C, the non-conducting couplings D J, the battery E I, the induction-coils V X, the magnet W, and the circuit-connections, as set forth.

15 2. In an electric cane, the upper sections, B C, made tubular, and connected with each other and the lower section, A, by non-con-

ducting couplings J D, substantially as herein shown and described, to adapt the said sections to receive a battery, and an induction- 20 coil, as set forth.

3. In an electric cane, the combination, with the sections A B C, the couplings D J, and the secondary coil X, of the screw K, the rod F, the wire *a* and the metallic head and ferrule 25 Z *b*, substantially as herein shown and described, whereby the secondary current can be sent through the body of a patient, as set forth.

ALFRED ROOVERS.

ALEXANDER ROOVERS.

Witnesses:

JAMES T. GRAHAM,
C. SEDGWICK.