(No Model.)

P. HAERRY.

INDUCTION MACHINE.

No. 316,143. Patented Apr. 21, 1885.

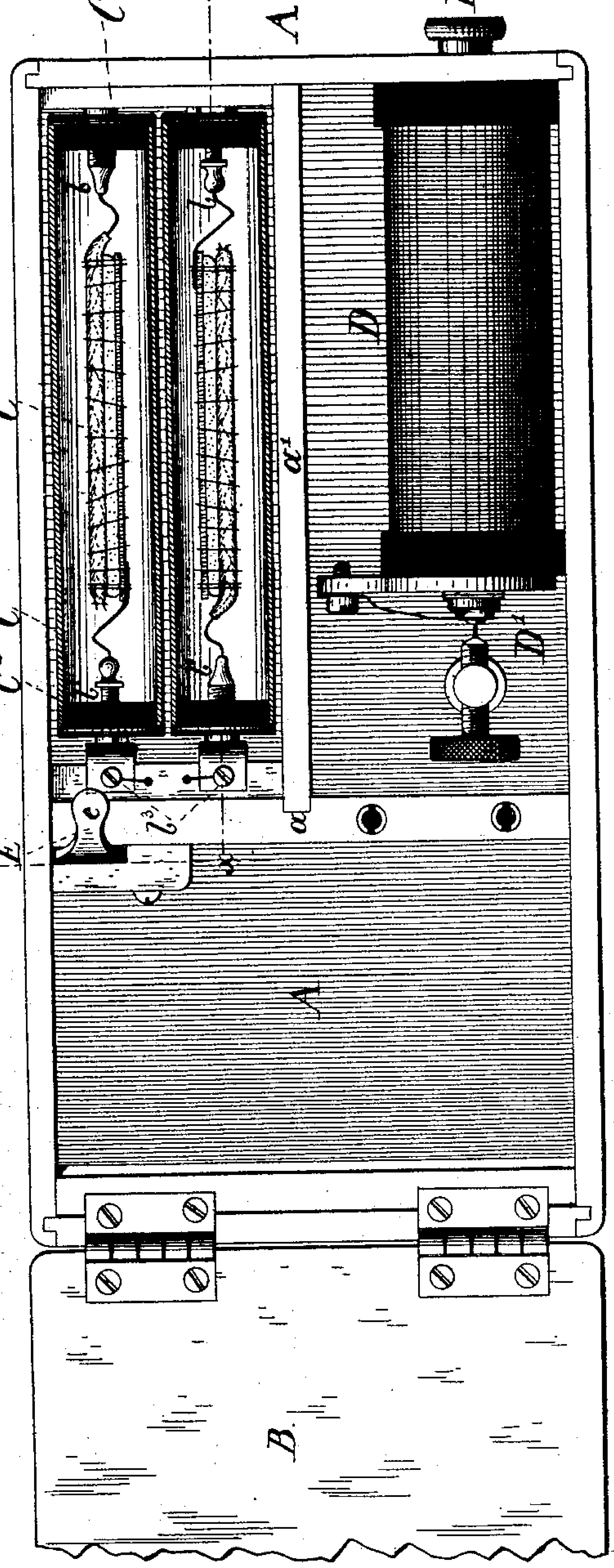

Fig. 1.

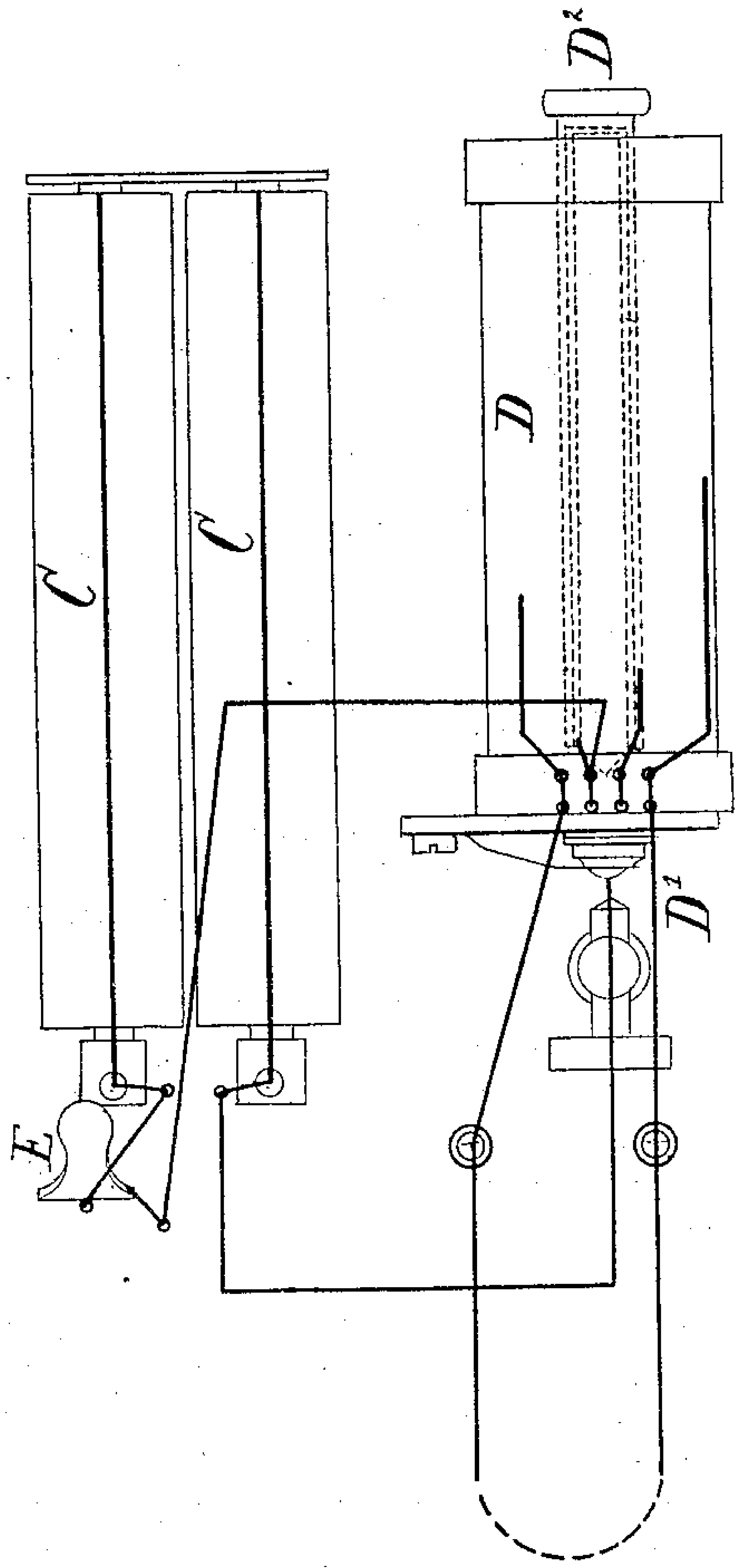

Fig. 4.

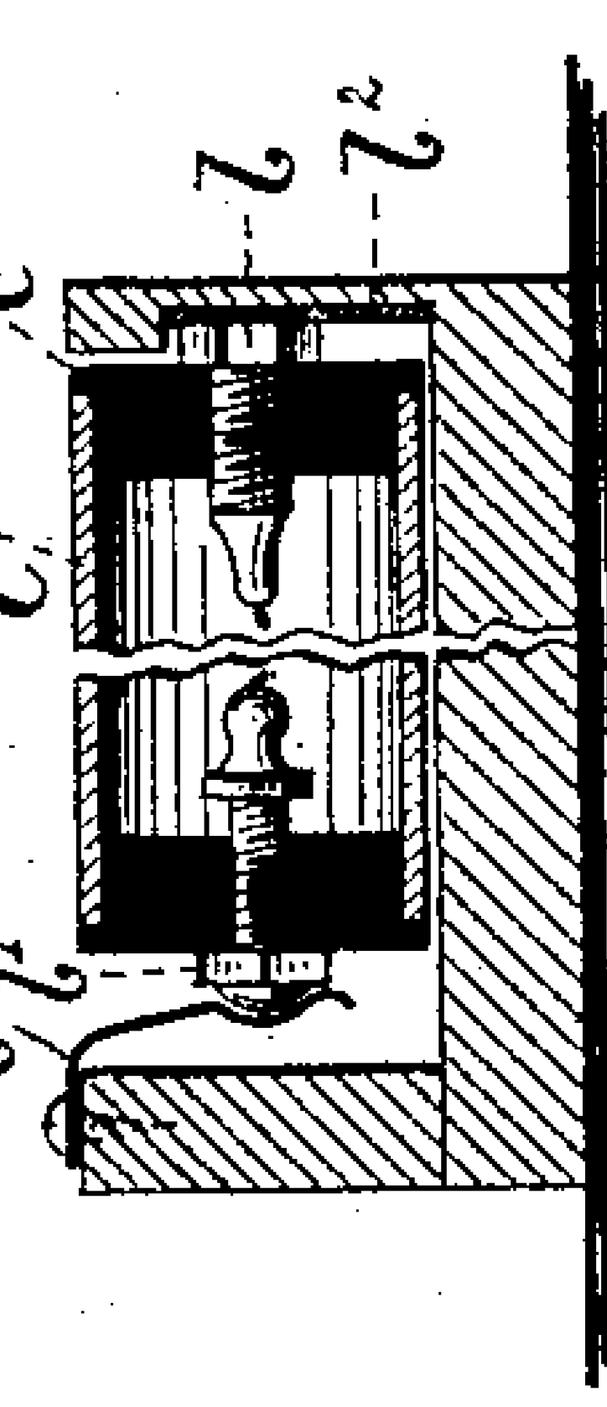

Fig. 2.

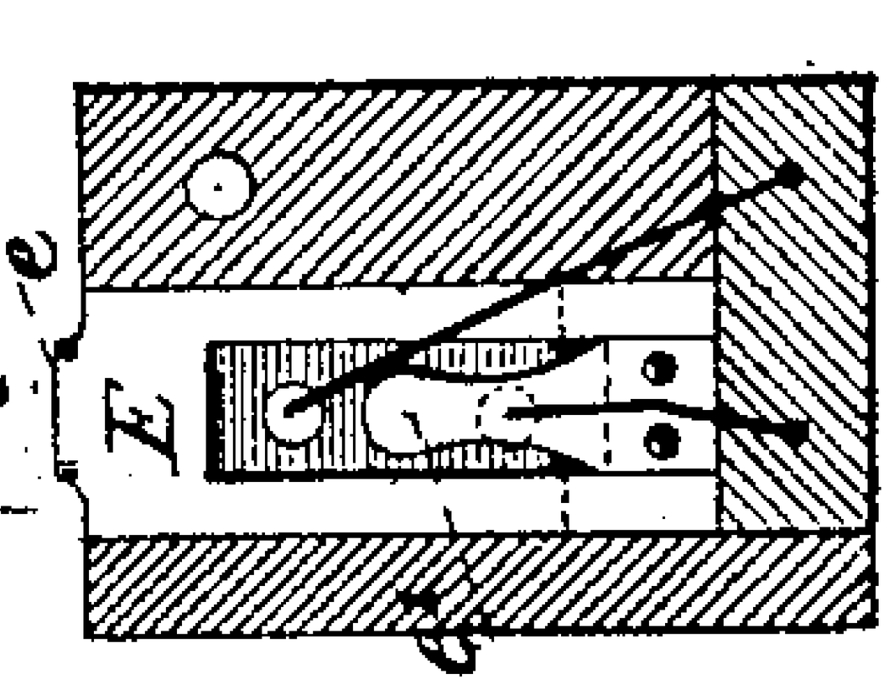

Fig. 3.

WITNESSES:

Jos. H. Rosenbaum.

Carl Karp

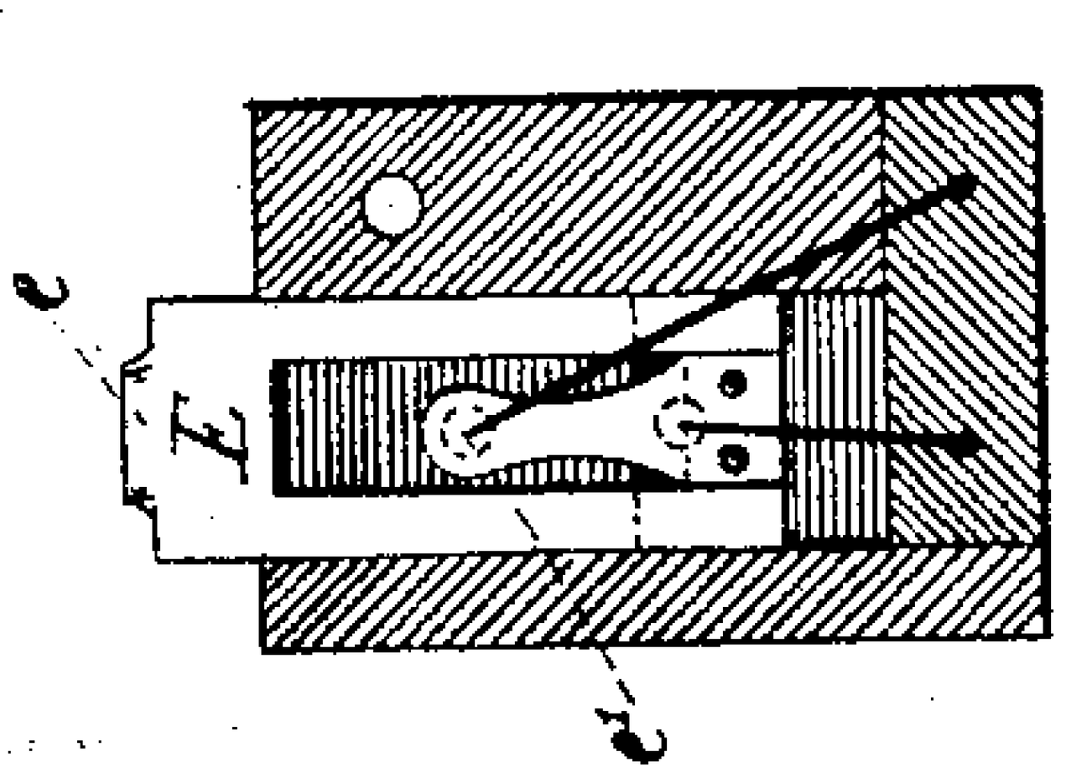

Fig. 3a.

INVENTOR

Paul Haerry

BY Goepel & Raegener

ATTORNEYS.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

PAUL HAERRY, OF NEW YORK, N. Y.

INDUCTION-MACHINE.

SPECIFICATION forming part of Letters Patent No. 316,143, dated April 21, 1885.

Application filed March 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, PAUL HAERRY, of the city, county, and State of New York, have invented certain new and useful Improvements in Induction-Machines, of which the following is a specification.

This invention has reference to an improved induction-machine for electro-medical purposes, which is arranged without the use of a moist battery and in a very compact form, so as to be specially adapted for physicians' and family purposes; and the invention consists of an induction-machine divided by a longitudinal and transverse partition into three compartments, within one of which the dry piles or batteries are arranged, and in the second the induction-coil and its interrupter, the third compartment serving as a storage-compartment for the different electrodes and attachments. The dry piles are inclosed in cylindrical glass tubes having rubber heads, through which the conducting-wires are passed and placed in contact with a metallic lining of the recessed front wall of the box and with spring-sockets of the partition. A vertically-sliding switch establishes or interrupts the connection of the battery with the induction-coil, as will more fully appear hereinafter.

In the accompanying drawings, Figure 1 represents a plan of my improved induction-machine shown with the lid in open position. Fig. 2 is a detail vertical longitudinal section on line *x x*, Fig. 1. Figs. 3 and 3ª are detail views of the switch, showing it respectively in lowered or raised position; and Fig. 4 is a diagram showing the electric connections of the piles, switch, and induction-coil.

Similar letters of reference indicate the same parts throughout the several views.

A in the drawings represents the oblong case of my improved induction-machine, and B the hinged lid of the same. The case A is divided by a transverse partition, *a*, and a longitudinal partition, *a'*, extending from said transverse partition to the front wall of the box into three compartments, of which the compartments at both sides of the partition *a'* serve, respectively, for the storage of the dry piles C C and for the induction-coil, while the shorter transverse compartment serves for the storage of the customary electrodes and other accessories.

For the dry piles C employed in my machine chloride-of-silver piles or other piles of approved construction may be used. I prefer to use a pile formed of a plate of chloride of silver inclosed in a covering or wrapper of linen or other textile fabric, a plate of zinc, and several intermediate layers of blotting-paper which retain the moisture for exciting the plates. Each pile C is inclosed, so as to be protected against too rapid evaporation of the acidulated liquid by which the wrapper is moistened by a glass cylinder, C', the ends of which are closed by hand rubber stoppers or heads C^2. The dry piles C are placed in opposite direction to each other and connected in series by bringing the poles at one end by means of metallic screws in contact with a transverse metallic plate, b^2, set into a recess of the front wall of the box. The opposite poles of the piles C C are connected by screws b' b' with contact-springs b^3, having depressions for the heads of the contact-screws b' b', as shown in Fig. 2. The electrodes of the piles C C are inserted by first placing the screws b b in position in the recess of the front wall and then dropping the opposite ends, so that they are firmly retained by the contact-springs b'. The piles are removed by first detaching the contact-springs and then lifting the cylinders out of the compartment.

The induction-coil D is provided with the usual interrupter, D'. Its core is surrounded by a longitudinally-sliding brass tube, D^2, which is moved outward or inward, so as to throw a greater or smaller portion of the induction-coil into operation and produce currents of greater or less strength. A vertically-sliding switch, E, is arranged alongside of the transverse partition *a*, close to the piles C, said switch being made of U shape, and provided at the upper end with a bent handle, *e*, and at the lower end with a tongue, *e'*, so that when it is raised it brings the primary coil into circuit with the battery. When the switch is lowered, the current is interrupted.

The induction-coil is connected in the usual manner with the electrodes. The upper end or handle *e* of the switch E is bent forward

over the partition *a*, and so that the lid B in closing presses on the same and lowers the switch automatically, so as to interrupt the current in case the same should have remained in raised position.

As the action of induction-machines of this class is well known, it is not necessary to describe the course of the current, the diagram shown in Fig. 4 indicating the same to any one conversant with electric induction-machines.

The piles require to be moistened from time to time. They take up considerably smaller space than wet batteries, and furnish a neat, clean, and compact machine for electro-medical purposes.

I am aware that dry piles have been used heretofore in connection with induction-machines, and I therefore do not claim this feature, broadly; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. The combination of an inclosing case or box, a metallic contact-plate located in a recess of the wall of the box, a transverse partition having contact-springs, dry piles, or batteries, and inclosing-cylinders having detachable heads, said heads having contact-screws to which the electrodes are connected, substantially as set forth.

2. The combination of an inclosing case or box, a metallic contact-plate located in a recess of the wall of the box, a transverse partition having contact-springs, dry piles or batteries supported in said box and connected to the contact plates and springs, an induction-coil, and a vertically-sliding switch by which the induction-coil is thrown in or out of circuit with the piles, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

PAUL HAERRY.

Witnesses:

CARL KARP,

SIDNEY MANN.