(No Model.)

H. F. WAITE.

INFLUENCE MACHINE.

No. 514,524. Patented Feb. 13, 1894.

Fig. 1.

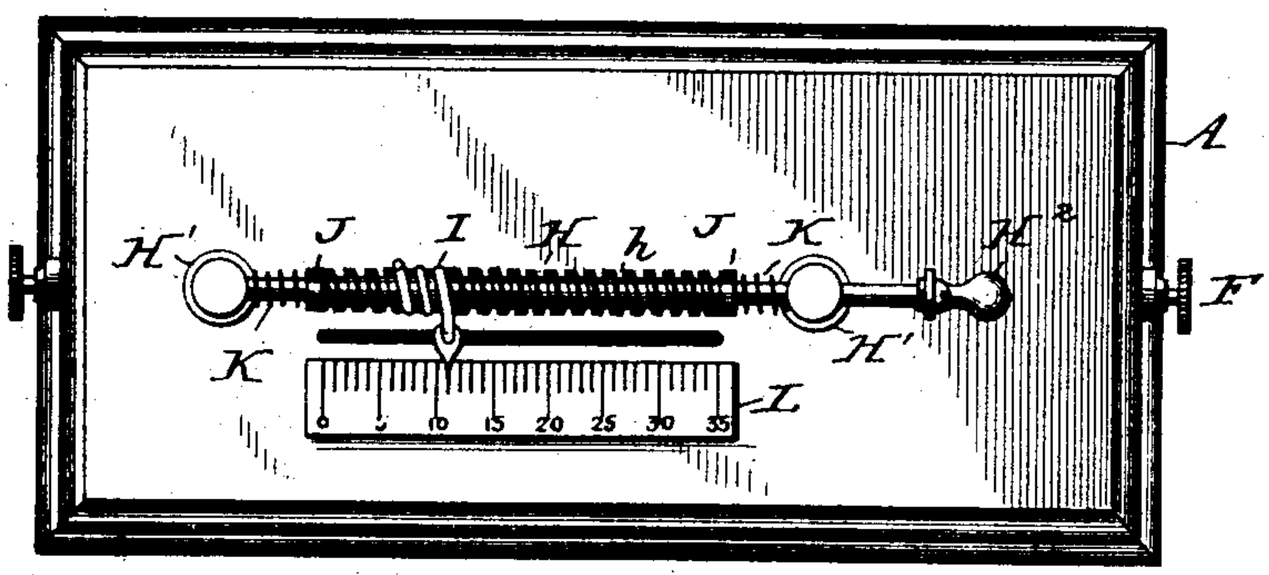


Fig. 2.

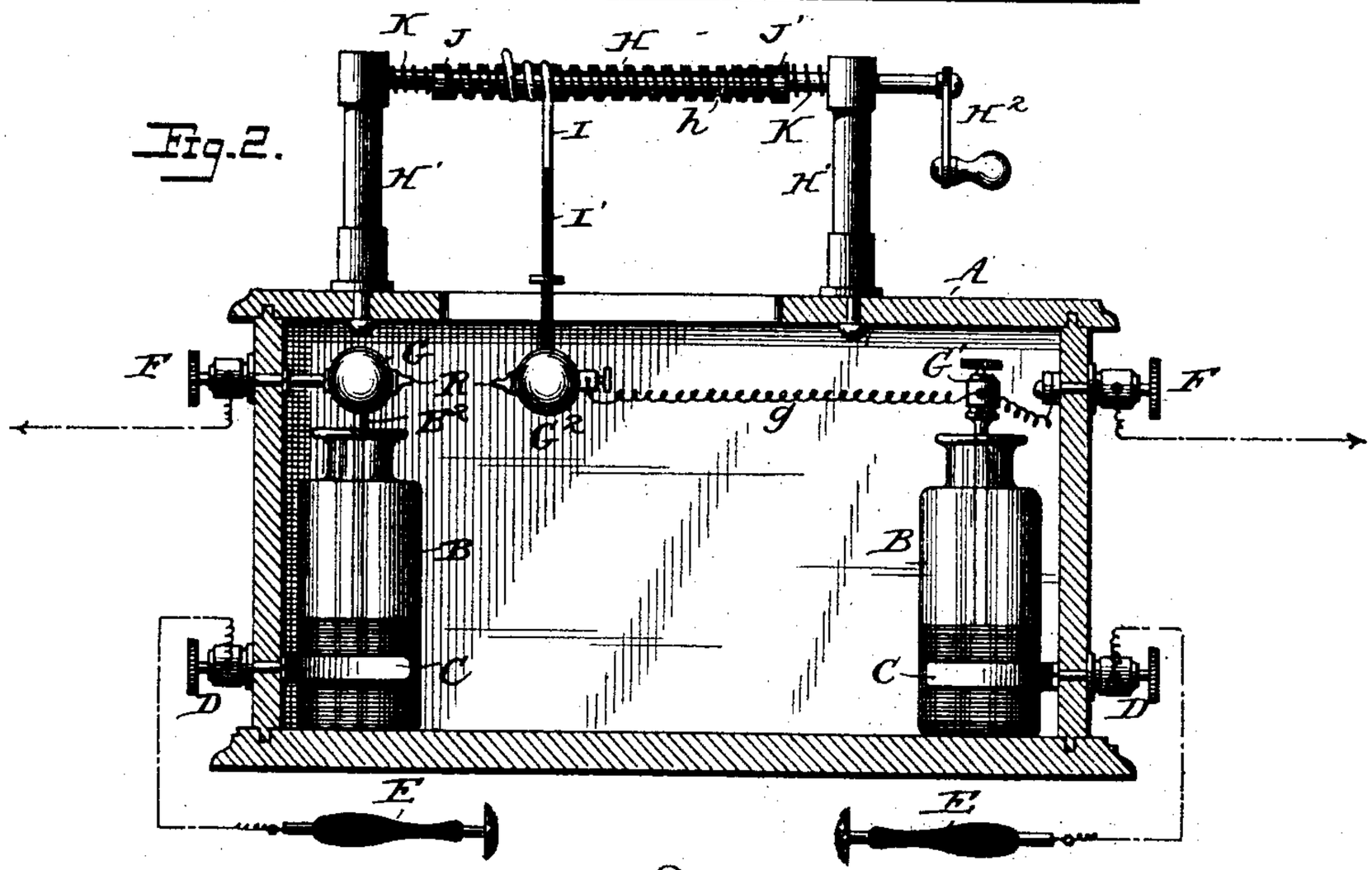
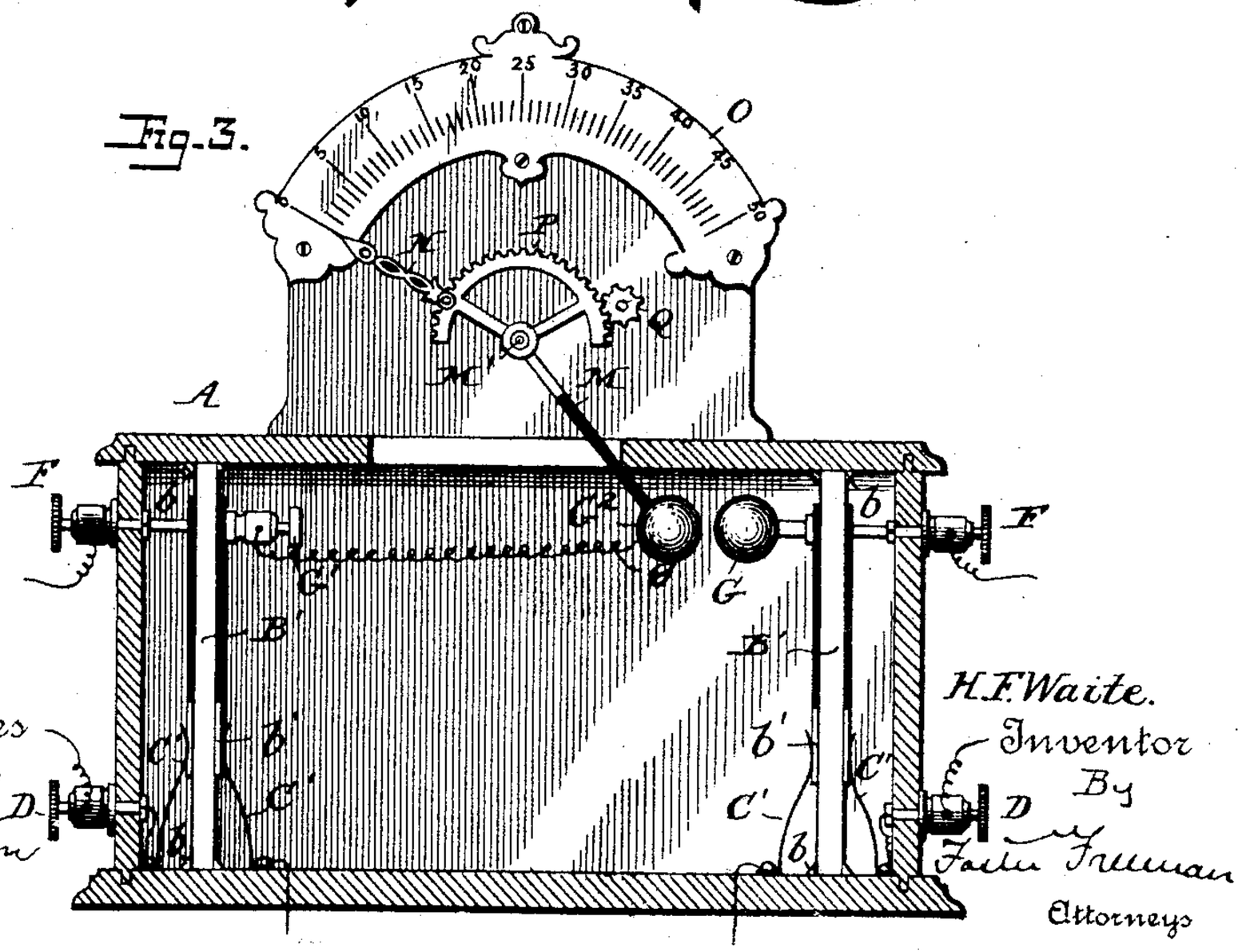


Fig. 3.



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INFLUENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 514,524, dated February 13, 1894.

Application filed October 28, 1893. Serial No. 489,398. (No model.)

To all whom it may concern:

Be it known that I, HARRY FULLER 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 Influence-Machines, of which the following is a specification.

My invention relates to a device or attachment adapted to be used in connection with influence machines, and it has for its object to provide a simple, cheap and compact device, whereby static electricity may be readily controlled and manipulated, especially in connection with therapeutical treatment, and to these ends my invention consists in a device having certain features of construction and arrangement, as well as the mode of operation, substantially as hereinafter more particularly pointed out.

Referring to the accompanying drawings, Figure 1, is a plan view of a device embodying my invention. Fig. 2, is a longitudinal, vertical section of the same; and Fig. 3, is a sectional view of a device showing a modification embodying the principle of my invention.

In the use of static electricity for various purposes in the arts, and especially in therapeutical treatment, it is often desirable to apply the electricity without exposing the spark or disruptive discharge to the view of the patient, or otherwise, as it often causes nervousness of the patient, and is otherwise unpleasant. More than that, it is desirable to have the electrodes and other appliances of the machine protected from the influence of the elements, and it is further desirable to have the charged portions of the machine inclosed or surrounded with insulating material, so that accidental discharges shall not take place, either through the person or otherwise. It is with the view of supplying a device which will accomplish all these results, that my present invention is made.

My invention consists essentially of a case A, which may be of any suitable size, or configuration, and which is preferably made of insulating material and tightly closed, and this case is adapted to receive the condensers or Leyden jars B, B, which are ordinarily used in connection with influence machines. These jars are arranged so as to be suitably supported in the case and preferably are adapted to fit the clips C, C, which are secured to the walls of the case, and connected with suitable binding-posts D, on the outside thereof, which in turn are adapted to receive the electrodes E, E, by means of which the electricity is applied to the patient or otherwise. These spring-clamps C, not only serve to maintain the jars in proper position, but also complete the connection between the binding-posts and the outer, condensing surface of the jar. In some instances, however, instead of using jars, I use condensers B′, comprising a central plate having tin-foil, or other material on its opposite sides, which plates are arranged to slide in grooves *b* arranged in the case, and springs or other suitable connections C′ are arranged to bear upon the metallic surface of the condenser and make electrical connection therewith. As, however, the rubbing of the springs upon the foil or other metal surface, might injure them, I preferably connect a metallic strip *b′* with the metal foil, and arrange the springs to bear on the metallic strip, so that when they are moved, the rubbing surface will keep the contacts bright and prevent the destruction of the foil, or other thin metal of the condenser. Of course, it will be seen that any other well-known form of condenser may be used, those illustrated being typical and generally preferable, especially in using the device therapeutically.

The jars or condensers are connected with the electrodes or terminals of a suitable static or influence machine, in any suitable way, and I have provided the binding-screws F, F, to which the terminals are adapted to be connected. These binding-screws are connected, of course, to one side of the condenser, and when it is in the form of a jar, they are connected to the central standard or post B^2, and when they are in the form of plates, of course, they are connected to the metallic foil on one side of the plate, as is well understood. These jars are arranged in the casing at a suitable distance apart, corresponding to the longest spark or disruptive discharge intended to be used, and one of the jars is preferably provided with a ball or terminal G, which is shown as mounted on a standard or piston B^2, while the other jar is provided with a binding-screw G′, also mounted on the correspond-

ing standard. Connected to this binding-screw, as by a flexible conductor G, is another ball or terminal G^2, and this is adapted to be adjusted to and from the terminal G, to regulate the length of the spark or disruptive discharge, and consequently, the induced current flowing through the electrodes E.

Some means must be provided by which the ball or terminal G^2 is moved with relation to the terminal G, and while various means may be employed, I have shown a screw H, having a suitable thread *h*, mounted upon the standards H′, secured to the case and provided with a handle H^2, or other means by which it may be turned. Connected to the screw is a suitable traveling nut or carrier I, and while this may be in various forms, I have shown it simply as a coiled, brass or other wire, having one or two turns adapted to fit the grooves *h* of the screw, and this wire is connected by insulating material I′ to the ball G^2, this insulating material or rod passing through a slot in the top of the case.

In order to prevent damage to the nut or carrier by turning the screw too far, I provide means whereby the carrier will pass out of the thread of the screw at either end, and in the present instance I have shown loose washers J, J′, mounted on the shaft of the screw H, and provided with springs K, K′, which normally hold the washers against the ends of the screw, but which will permit the washers to yield when, for instance, the carrier is turned too far in either direction, allowing the carrier to pass beyond the thread of the screw, so that the screw can be rotated without danger, but when it is rotated in the opposite direction, the springs will press the washer, and hence the carrier, toward the center of the screw, so that the carrier will enter the thread of the screw, and be adjusted as before. It will be seen that with this arrangement, very fine and accurate adjustments can be obtained by a very simple mechanism.

Mounted on the case, in some suitable position may be an index L, which will be graduated to show the relative positions of the balls G, G^2, and indicate the length of the spark or disruptive discharge.

In Fig. 3, I have shown another means of adjusting the relations of the balls or electrodes G, G^2, in which the electrode G^2 is connected to an arm M of insulating material, preferably, which is pivoted on a suitable support M′, and is provided with an index-hand N, arranged to pass over an index or scale O, and which is provided with a segmental rack P, operated by a pinion Q, by means of which the relative positions of the balls can be adjusted.

While the balls or electrodes G, G^2 may be made spherical, as is common, in some instances I find it advantageous to provide projections R on their adjacent faces, as these aid in insuring discharge from the central and opposite points of the balls, and tend to make the discharges more continuous and uniform. With this construction, the operation of the device will be readily understood, and when it is to be used, the terminals F, are connected to the suitable source of static electricity, and the electrodes E are applied to the patient or thing to be electrified, and then by properly adjusting the relation of the balls, a spark or discharge of the desired size can be produced, thereby insuring uniformity in the induced current received by the patient, and more than that, the disruptive discharge takes place inside the box or casing, out of sight of the patient, and the parts being entirely insulated, there is no danger of the operator or other person receiving an accidental shock, or the parts becoming injured from the elements, or otherwise. Moreover, this case can be readily placed upon an operating table, or used at a distance from the generator, and forms a convenient and efficient mode of applying static electricity for various purposes.

While I have thus described the general principles of my invention and illustrated the preferred embodiments thereof, it is evident that the details of construction can be varied by those skilled in the art, without departing from the principles of my invention, and I do not, therefore, limit myself to the precise construction and arrangement shown.

What I claim is—

1. A device adapted to be used with influence machines, comprising a case of insulating material, condensers arranged within the case, connections with the condensers extending to the outside of the case, and means for regulating the discharge between the condensers, substantially as described.

2. In a device adapted to be used with influence machines, the combination with the case, the condensers therein and connections with the condensers, of electrodes movable with relation to each other, and means outside of the case for moving the electrodes, substantially as described.

3. In a device adapted to be used with influence machines, the combination with the case, the condensers mounted therein and connections, of a stationary electrode connected to one of the condensers, a movable electrode connected to the other condenser, and means arranged outside the case for adjusting the movable electrode, substantially as described.

4. In a device adapted to be used with influence machines, the combination with the case, condensers and connections, of a movable electrode, a screw mounted on the case, and a carrier mounted on the screw and connected with the movable electrode, substantially as described.

5. In a device adapted to be used with influence machines, the combination with the case, condensers and connections, of a movable electrode, a screw mounted on the case, a carrier mounted on the screw and connected with the movable electrode, and spring-

pressed washers mounted on the shaft of the screw, substantially as described.

6. In a device adapted to be used with influence machines, the combination with the case, condensers and connections, of a movable electrode, a shaft carrying a screw mounted on the case, a carrier mounted on the screw and connected to the movable electrode but insulated therefrom, washers arranged at the ends of the screw, and springs bearing on the washers, substantially as described.

7. In a device adapted to be used with influence machines, the combination with the case having grooves therein, of a condenser consisting of a plate having metal foil on its sides and having a metallic strip connected with said metal foil, and a spring connection bearing on the said metal strip, substantially as described.

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

HARRY FULLER WAITE.

Witnesses:

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