

No. 684,225.

Patented Oct. 8, 1901.

G. GRAYBILL.
ELECTROMEDICAL DEVICE.

(Application filed Mar. 6, 1901.)

(No Model.)

Fig. 1.

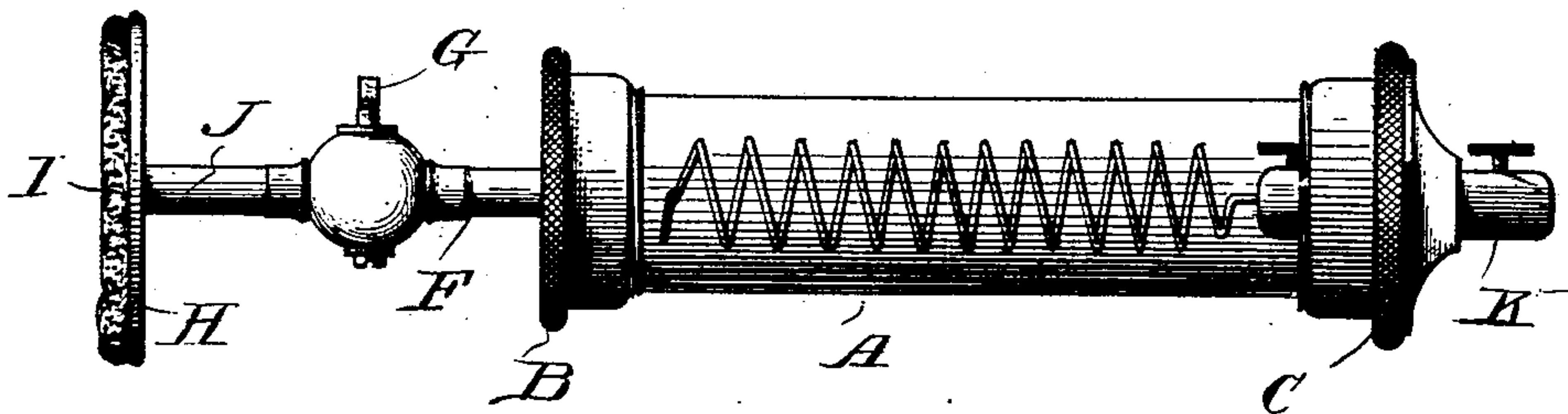


Fig. 2.

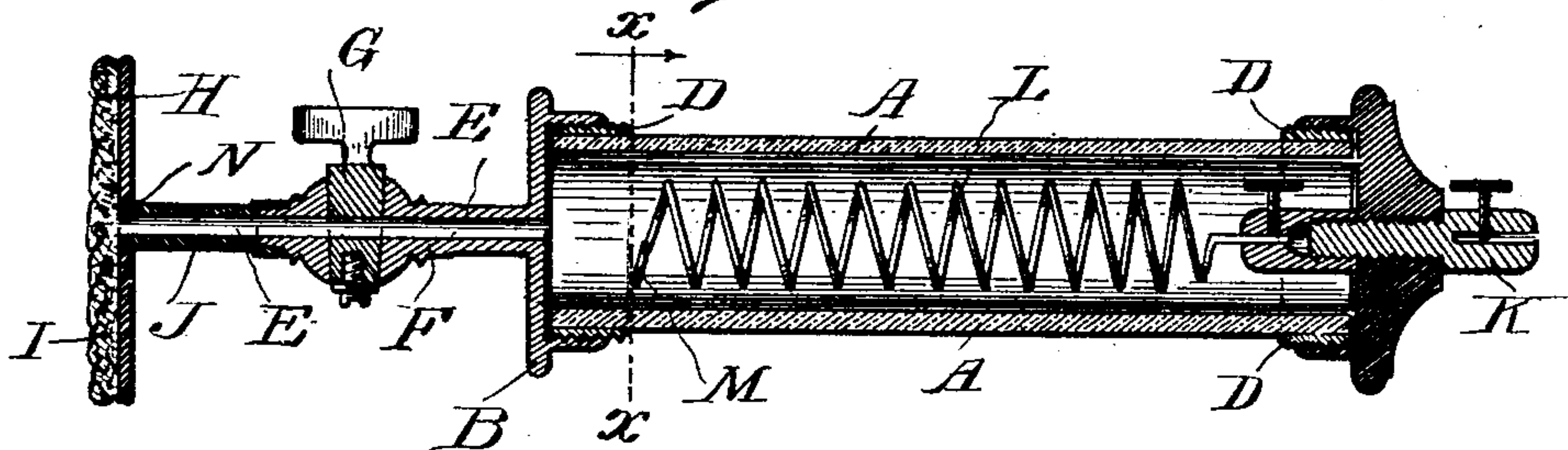
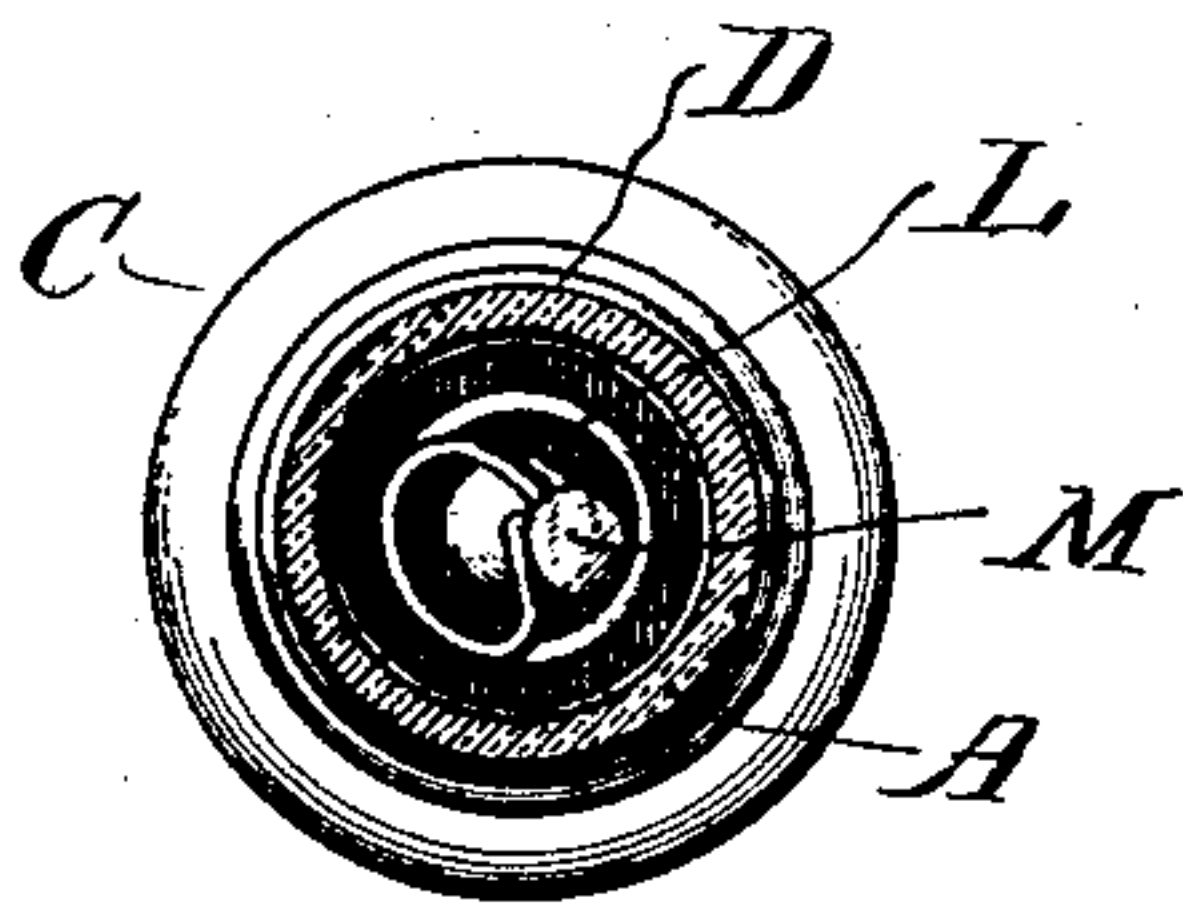


Fig. 3.



Witnesses

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GEORGE GRAYBILL, OF YORK, PENNSYLVANIA.

ELECTROMEDICAL DEVICE.

SPECIFICATION forming part of Letters Patent No. 684,225, dated October 8, 1901.

Application filed March 6, 1901. Serial No. 50,028. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GRAYBILL, a citizen of the United States, residing at York, in the county of York, State of Pennsylvania, have invented certain new and useful Improvements in Electromedical Devices, of which the following is a specification.

The present invention relates to improvements in electromedical devices.

It is well known that if an electric current is passed through an electrode containing a medicinal preparation the beneficial effects of both the current and medicament will be simultaneously applied to the body against which the electrode is placed.

The object of the invention is to provide such an electrode, in which a relatively large proportion of the medicinal liquid will be exposed to the action of the electric current.

With this object in view my invention consists in the peculiar construction and arrangement of parts, which will be hereinafter described.

In the accompanying drawings, Figure 1 is an elevation of a device embodying my improvements. Fig. 2 is a longitudinal sectional view of the same, and Fig. 3 is a transverse sectional view taken on the line $x x$ of Fig. 2.

Referring to the drawings, A designates a tubular body or container made of any suitable non-conducting material, preferably of glass. This body is provided at its ends with detachable caps or heads B C, which may be secured to the body A in any suitable manner. As shown, the tube A is provided at its ends with bands or sleeves D, the exterior surfaces of which are suitably threaded and are engaged by internally-threaded flanges formed on the heads B C. The head B is provided with a central aperture that communicates with a passage in a stem F, which may be formed integral with or suitably secured to the head. A valve G is provided in said stem for controlling the passage of liquid from the body A through the duct or passage therein.

To the outer end of the stem F is detachably connected the head of the electrode, which may be made in any of several forms. The one shown consists of an apertured disk H, provided on its outer face with a sponge

or other absorbent pad I. The disk is so connected with the stem F that when the valve G is opened liquid from the body A will pass to the absorbent pad I. As shown, it is provided with a tubular support J, which is of such diameter that the end of the stem F will enter and fit snugly therein. As stated, the electrode-head is preferably made separate and detachable from the stem F, so that it can be easily removed and another substituted, if desired. In some cases it may be preferable to employ a hypodermic needle or similar device instead of the form of electrode-head herein illustrated and above described.

A binding-post K is secured in the head C and adapted to have connected thereto one of the wires of an electric circuit. Said post is provided with a shank or body that extends through the head in which it is mounted, and to the inner end of the shank, within the body A, is electrically connected one end of a conductor L. The latter, preferably a platinum wire, is made in the form of a coil, so as to provide a large contact surface on a relatively short conductor. Preferably it is of the spiral form illustrated. It does not extend the entire length of the tube A, but terminates within a short distance of the head B. At its free end the spiral conductor L is enlarged into or otherwise provided with a disk M.

A suitable quantity of the desired medication, preferably in liquid form, is introduced into the body A, the head H attached, and the binding-post K connected to one of the wires of an electric circuit.

When the device is not in use, the valve G is turned to prevent the escape or passage of liquid through the duct E.

In using the appliance the yielding pad I is applied to the surface to be treated and another electrode connected with the other wire of the electric circuit is also placed in contact with the body in the usual manner. When the valve G is turned to open the duct E, liquid will flow from the holder A to the absorbent pad I and, as will be seen from the drawings, the liquid flowing through said duct will be exposed to the action of the electric current.

The head C is preferably made of insulat-

ing material and the other head B and stem F connected therewith may be formed of similar material, or in case it is preferred to make the last said parts of metal the plate H
5 may be insulated from the stem F, to which it is connected in any suitable manner. For example, as shown in Fig. 2, the tubular support J may be insulated from its plate H by a non-conducting sleeve or washer N.
10 The electric current passes through the coiled conductor I, which by its form exposes a large portion of the liquid in the holder A to the action of the current. As the said conductor does not extend the entire length of the body A the current is caused
15 to pass through the body of the liquid situated between the end of the conductor and the adjacent head B, and the liquid absorbed by the pad I is also subjected to the action
20 of the current. Thus I am enabled to simultaneously apply to the body with which the pad I contacts both liquid medicament and electricity. It will also be noticed that by employing a conductor of coiled form I am
25 enabled to obtain a large amount of contact surface within a relatively short distance. This enables me to make the entire device compact and of such form that it will occupy but little space.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The herein-described electromedical device, consisting of a liquid container or receiver having its side walls formed of non-conducting material and having at one end a valved outlet, and a conductor of coil form arranged within said container and extending from a point near the outlet therein to a binding-post supported by the container.

2. A device for the purpose described, consisting of a tubular body of non-conducting material, detachable heads closing the ends of said body, and one of which is provided with an outlet opening or passage, a binding-post secured in the other of said heads, and a conductor electrically connected at one end with said binding-post and extending toward the outlet in the opposite head, said conductor being of less length than the distance between said heads.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE GRAYBILL.

Witnesses:

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CHAUNCEY GIBSEN.