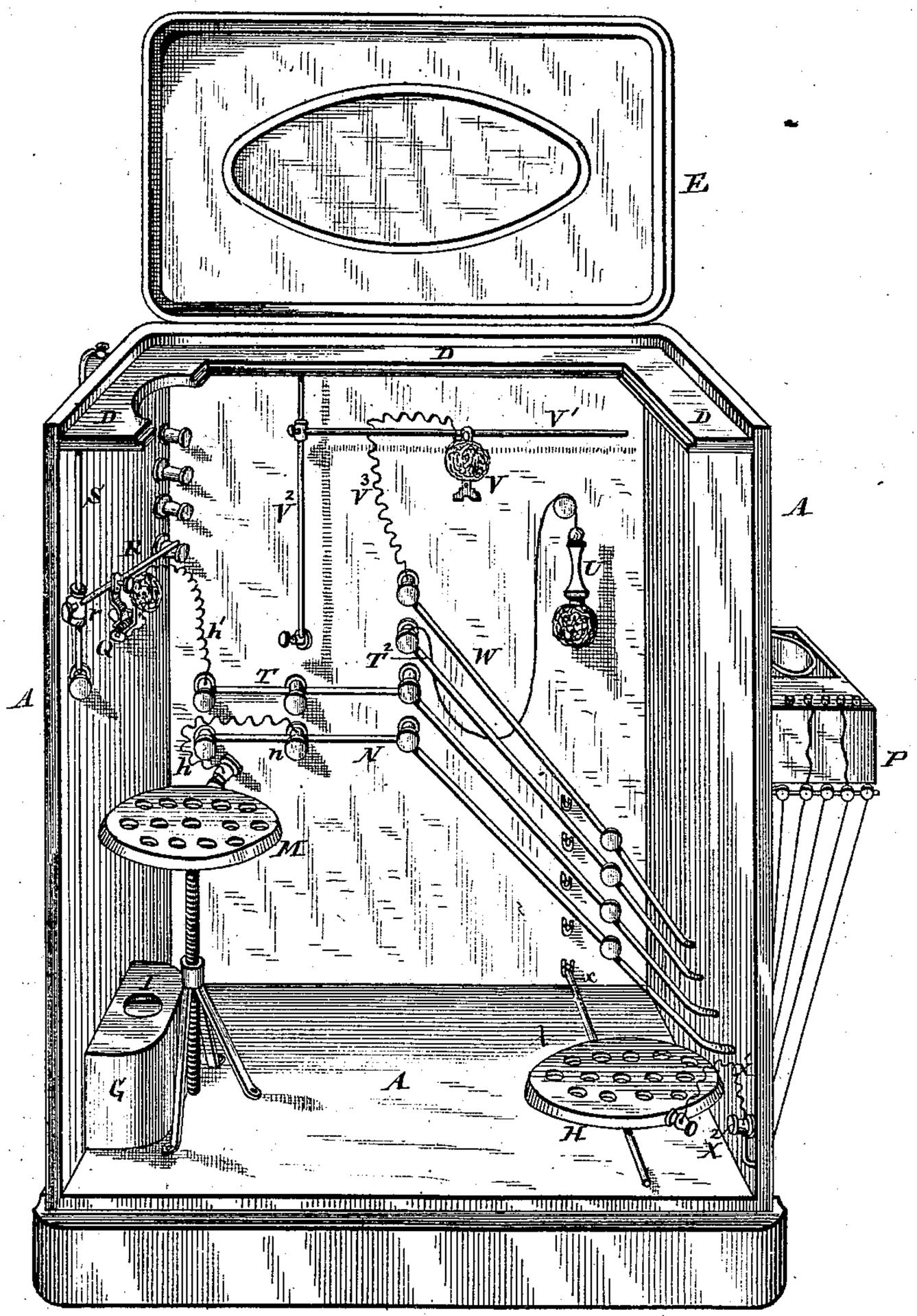
(No Model.) 2 Sheets—Sheet 1.

W. D. HOFFMAN & J. D. PALMER.

Electric Vapor Bath.

No. 236,030. Patented Dec. 28, 1880.

Fig. 1.



Witnesses:
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N. B. Grafton.

William D. Hoffman Inventors.
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(No Model.) 2 Sheets—Sheet 2.

W. D. HOFFMAN & J. D. PALMER.

Electric Vapor Bath.

No. 236,030. Patented Dec. 28, 1880.

Fig. 2.

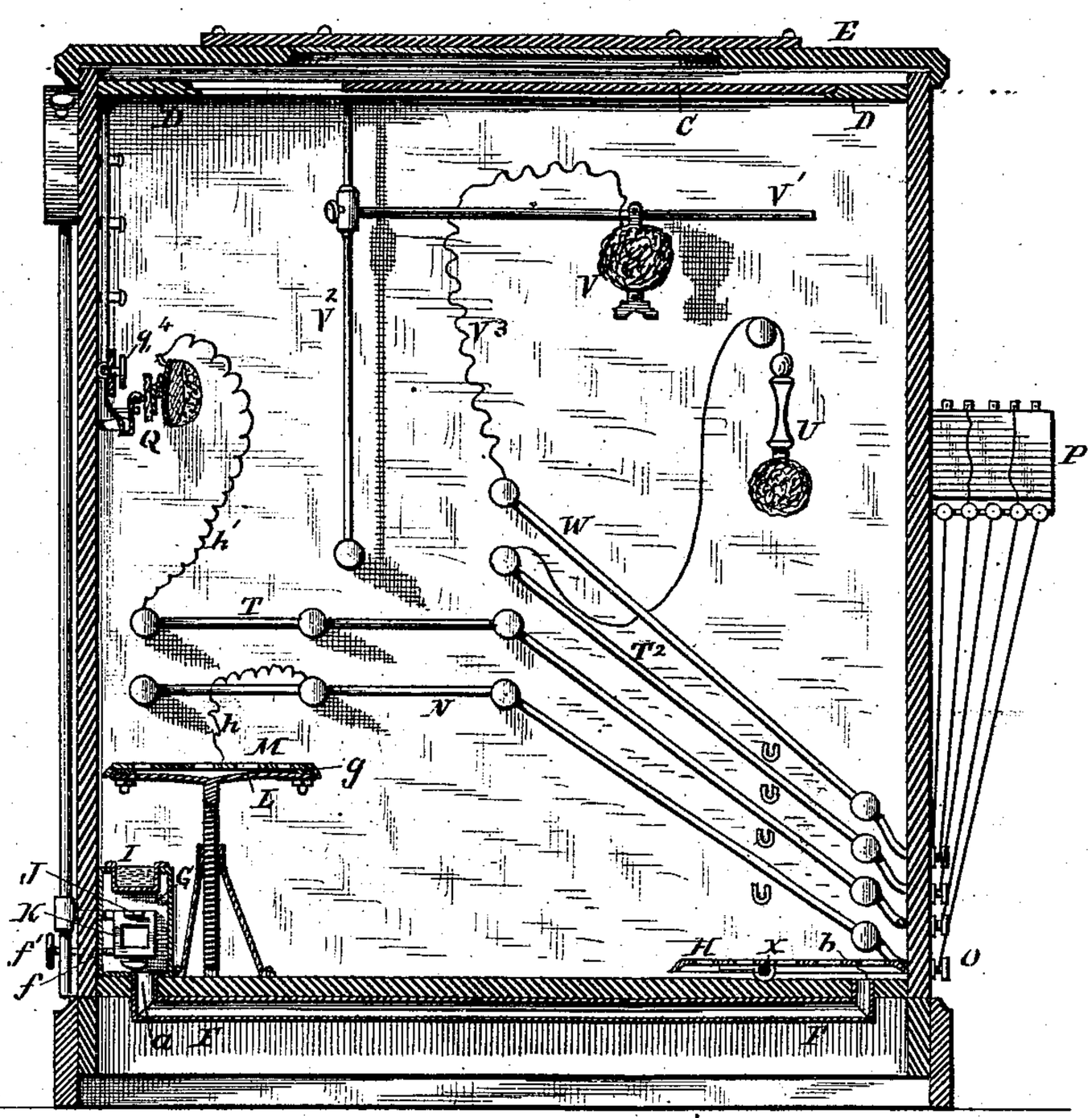
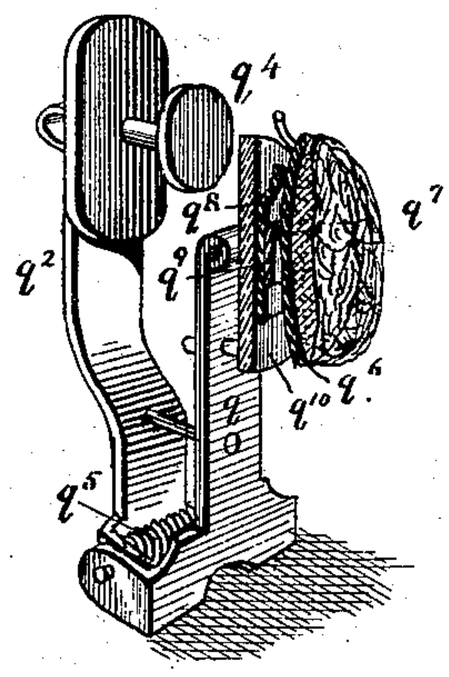


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM D. HOFFMAN AND JAMES D. PALMER, OF SIGOURNEY, IOWA.

ELECTRIC VAPOR-BATH.

SPECIFICATION forming part of Letters Patent No. 236,030, dated December 28, 1880.

Application filed October 29, 1880. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM D. HOFFMAN and JAMES D. PALMER, citizens of the United States, residing at Sigourney, in the county of Keokuk and State of Iowa, have invented certain new and useful Improvements in Electric Vapor-Baths; and we 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The object of the present invention is to provide an improved electro vapor-bath designed for the application of the electric current to the human system for the cure of diseases.

The invention consists in the construction and combination of parts, which will be hereinafter more fully described, and then set forth in the claims.

In the drawings, Figure 1 shows the open bath cabinet or closet with the front side removed. Fig. 2 is a vertical sectional view of our invention. Fig. 3 exhibits an electrode of improved construction.

The letter A denotes a cabinet or closet, which is designed for the reception of the patient, and provided with a front door (not shown) and a removable top board, C, having a cut in its edge, which, in connection with a similar cut in the permanent top board, D, of the closet, forms an opening for the reception of the neck of the patient. A hinged cover or lid, E, is closed down on the cabinet when the bath is not in use. The interior of the cabinet is lined with a suitable composition or substance, so as to render the same vapor and air proof.

The bottom of the cabinet is made with two openings, *a b*, having fitted into the same the ends of a bent tube, F. The object of this tube is to convey the surplus heat from the furnace or heating-chamber G to the foot stool or rest H.

The furnace G is constructed of a sheet-metal casing arranged inside the cabinet or closet, and having a top opening for the reception of a vessel, I, generally containing a medicated liquid for vaporization. The side wall of the furnace is apertured and is fitted in proper relation to a suitable opening in the cabinet, through which a heating appliance is introduced into the furnace-chamber. In the present instance we make use of a vapor-burner, J, which receives oil through a vertical tube and reservoir arranged on the outside of the cabinet. The burner J is constructed with a return-chamber, K, so as to properly vaporize the oil or fluid conveyed to the burner.

For the purpose of regulating the force and pressure of the gas so as to maintain the bath at any desired degree of temperature we provide a regulating-valve operated by means of a rod, *f*, which extends outside the furnace and cabinet, and is provided with a hand-wheel, *f'*, for operating said valve.

Immediately above the heating furnace or chamber is arranged a seat or stool constructed of a bottom stand and a vertical screw-rod working in a nut of said stand, and constructed with a top spider or series of arms, L. To these arms the seat M is attached by means of bolts and nuts, and is separated or insulated from the base or attaching-arms by means of hard-rubber or other insulating-plates *g*, interposed between said seat and the arms L. By these means the seat becomes an electrode, an electric conducting-wire, *h*, being connected therewith. The seat is constructed of brass or other inferior metal, the properties of which as an electric conductor are increased or augmented by compressing the metal of the seat while at a white heat by means of hydraulic or other powerful pressure. This operation will tend to compress the metal and increase its density, thereby causing an electrode or electric conductor (described as a seat in the present instance) to possess conducting powers equal to platinum, gold, or other expensive metals. The seat is suitably perforated, so as to permit the passage of vapors through the same.

The conducting-wire *h* of the seat is connected with the stationary conducting-rod N, secured to the interior wall of the cabinet by means of suitable binding-posts, *n*. A series of these conducting-rods, all made of compressed metal, in the same manner as the seat, are grouped together and secured to the cabi-

net-wall in the same manner as the rod N, and all the rods extend through the cabinet, and terminate in external binding-posts, O, to which the electric conducting-wires of a suitable battery, P, are properly attached.

The battery may be of any preferred form and construction, and is generally placed on a shelf or bracket secured to the end wall of the cabinet.

Above the seat, and in rear of the same, is arranged an electrode, Q, designed for application to the back of the patient. This electrode Q is constructed of a movable arm or plate, *q*, pivoted at its lower end to a plate or arm, q^2, adjustably secured to the horizontal supporting-arm R by means of a sleeve and set-screw, q^4. A coiled spring, q^5, encircles the pivot-pin of the arm *q*, and is connected therewith, so as to force the same in a forward direction. To the upper end of the arm *q* is connected, by means of a loop and eye or other form of connection, the insulating back plate, q^{10}, of the electrode head or button q^6. This head or button carries a sponge, q^7, or other suitable filling, and is provided with a tongue, q^8, on its rear side, which fits into a loop, q^9, of the aforesaid insulating back plate, q^{10}. This plate is made of india-rubber or other suitable material, and its object is to concentrate or localize the electric current in the button or head by acting as an insulator interposed between said head and the supporting-arm. The electrode-head just described is made of compressed metal, for the reason already stated. The arm R carries a socket or collar, *r*, which fits on a vertical stationary rod, S, and is adjustably secured thereon by means of a set-screw.

From the described construction of the back-electrode it will be understood that means are provided for applying the electrode to any portion of the back between the base of the spine and the neck. By having the pivotal and spring connection of the electrode the pressure thereof can very readily be adjusted, and by permitting the electrode head or button to oscillate on the insulating-plate by means of the hinge-connection between these two parts it will easily adapt itself to any inequality of surfaces to which it may be applied.

The conducting-wire h' of the electrode just described is connected with the solid connecting-rod T, constructed and arranged in the manner set forth in the description of the rod N. A third conducting-rod, T^2, receives the conducting-wire of a loose hand-electrode, U, which is generally provided with an insulated handle, and is specially designed for use in treatment of vaginal and other diseases.

An electrode, V, constructed in all particulars like the electrode Q, is arranged in front of the patient, and is adjustable upon the horizontal arm V′, which is itself adjustably secured to the vertical rod V^2. The conducting-wire V^3 of the electrode V is attached to the binding-post of the conducting-rod W. A foot stool or rest, X, having pivots or gudgeons *x* fitted in bearings on the side walls of the cabinet, is constructed in the same manner as the seat—namely, of perforated compressed brass or other inferior metal—and is provided with a binding-post, which receives the conducting-wire *x*′. This wire is received by a binding-post, x^2, arranged inside the casing and passing through the same. A solid conducting-rod is not necessary in the present instance.

It will, of course, be obvious without further description that the conducting-wires described run from the opposite poles of the battery to the seat and foot-rest, so that the patient's body completes the circuit.

We do not desire to claim anything in the present instance which is embodied in Patents Nos. 158,890 and 191,432, granted January 19, 1875, and May 29, 1877; but

What we do claim, and desire to secure by Letters Patent, is—

1. An electrode-head connected with an insulating-plate by a hinge-joint, in combination with a supporting-arm and an electric conductor, substantially as and for the purpose set forth.

2. The combination of an electrode-head with a pivoted supporting-arm and spring acting thereon, as and for the purpose set forth.

3. In an electric vapor-bath, the combination of a heat-conducting tube with the furnace or heating-chamber bottom of the cabinet and foot-rest, as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM D. HOFFMAN.
JAMES D. PALMER.

Witnesses:
FRANK MILLER,
W. H. MOTTER.