(No Model.) 2 Sheets—Sheet 1.

L. VON DOLCKE.

ELECTRIC BATHING CABINET.

No. 303,959. Patented Aug. 19, 1884.

Fig. 1.

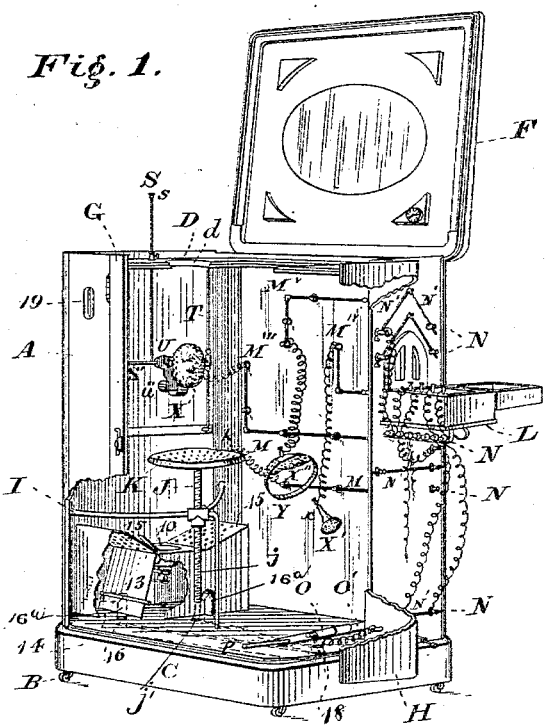
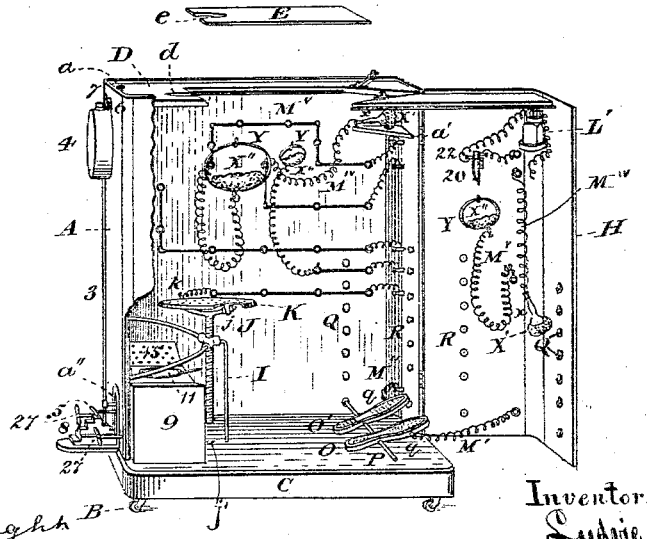


Fig. 2.



Attest:
A. P. Knight
Geo. L. Wheelock.

Inventor:
Ludwig von Dolcke
By Knight Bros. Attys.

(No Model.) 2 Sheets—Sheet 2.

L. VON DOLCKE.

ELECTRIC BATHING CABINET.

No. 303,959. Patented Aug. 19, 1884.

Fig. 3.

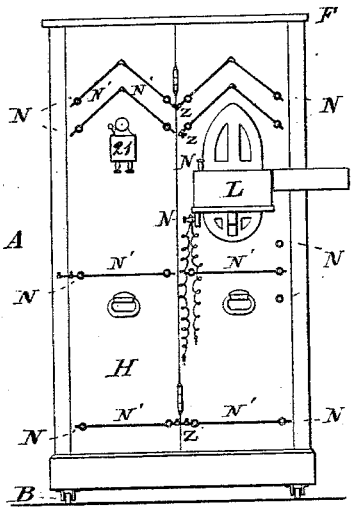


Fig. 4.

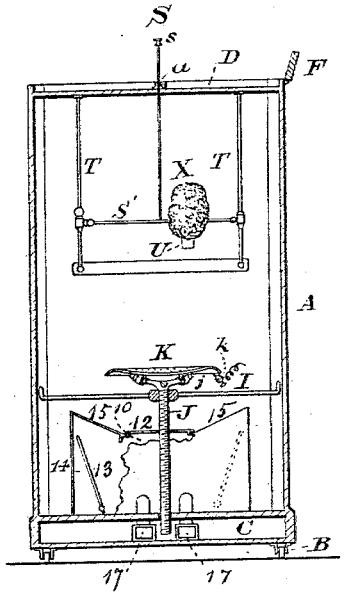


Fig. 6.

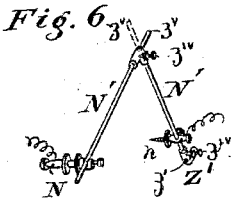


Fig. 7.

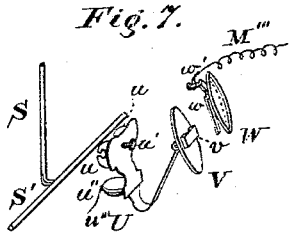


Fig. 10.

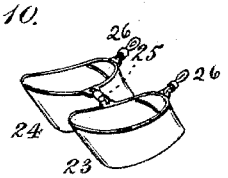


Fig. 8.

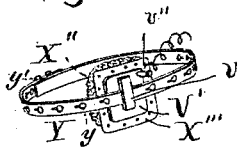


Fig. 9.

Fig. 12.

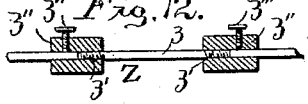


Fig. 11.

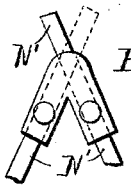
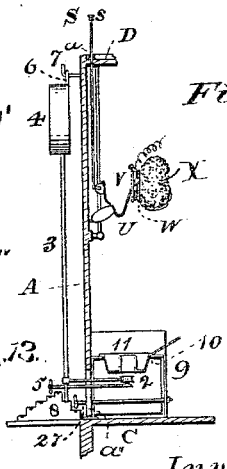


Fig. 13.

Fig. 5.



Attest: A. P. Knight
Geo. L. Wheelock

Inventor:
Ludvig von Dolcke
By Knight Bros Attys.

UNITED STATES PATENT OFFICE.

LUDVIG VON DOLCKE, OF CINCINNATI, OHIO.

ELECTRIC BATHING-CABINET.

SPECIFICATION forming part of Letters Patent No. 303,959, dated August 19, 1884.

Application filed November 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, LUDVIG VON DOLCKE, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Bathing-Cabinets, of which the following is a specification.

My invention relates to improvements in those apparatus which contain means for applying electricity, either alone or in conjunction with medicated air or vapor, to the human body for curative purposes.

My invention includes provisions for enabling easy introduction to the cabinet and removal therefrom of any patient, however debilitated or unwieldy, provisions which enable the operator to apply or modify any or all of the therapeutic agents without opening the cabinet or exposure of the patient's person, and other useful features hereinafter explained.

In the accompanying drawings, Figure 1 is a perspective view of an electro-therapeutic bath embodying my improvements, the bath being shown in its open condition and with portions of the walls and doors broken away. Fig. 2 is another perspective view of the cabinet in its open condition, the cover being omitted and portions of the walls being broken away. Fig. 3 is an external elevation of the cabinet, viewed on its battery side. Fig. 4 is a vertical section parallel to Fig. 1. Fig. 5 is a partial vertical section at right angles to Fig. 4. Fig. 6 represents a portion of my external system of conductor-rods. Fig. 7 shows my spine-electrode in detail. Figs. 8 and 9 represent two electrode-bands. Fig. 10 represents my foot-bath electrodes. Fig. 11 is a side view of my external binding-post. Fig. 12 is a longitudinal section of my straight coupling for connecting the conductors. Fig. 13 is a longitudinal section of my elbow-coupling.

I provide, of suitable size and shape to receive a patient in the sitting position, a case, closet, or cabinet, A, of square or box form, preferably constructed of wood and coated interiorly with a substance that renders it impervious to air and moisture. Said cabinet is preferably mounted upon wheels or casters B, so as to be easily shifted from place to place, and has, at bottom, the form of a shallow chamber or air-space, C, for thermal insulation from the external air.

D and E represent, respectively, the stationary and removable top boards, whose semi-circular notches *d e* constitute, when the boards are in place, the usual circular opening for the patient's neck. These boards, while leaving the breathing organs free, protect from exposure or sight all of the patient's person below the neck.

F may represent a customary, or any suitable lid or cover, designed to be closed down, so as to completely shut in the cabinet when not in use.

G H represent two doors, of which the door G constitutes part of the cabinet-front, and of which the door H constitutes a contiguous part of said front, and also a portion of one side of the cabinet, said door being for this purpose of the represented L-formed horizontal section. This construction of doors permits a paralyzed or unwieldy patient to be lifted bodily into the cabinet without inconvenience, and facilitates adjustment of the desired electrodes, &c., to the patient's person before the cabinet is closed.

I is a stand or tripod, whose screw-threaded orifice receives the correspondingly-screw-threaded stem J, whose branched head *j* has insulated attachment to a seat, K, of nickel-plated metal of high conductivity, (preferably of an alloy of fifty-six parts copper, forty-three parts zinc, and one part platinum,) in order to enable it to do duty as an electrode.

j' is an aperture or orifice in the floor to receive the lower end of the stem when the latter is lowered to bring the seat nearer to the floor.

The seat K has numerous perforations, as shown, and, being turned to right or to left, is adapted in height to the requirements of each particular patient. A binding-post or plug, *k*, on said seat enables it to be placed in communication with a voltaic battery, L, through the represented or any suitable conductors, M, which, like all the conductors in my cabinet, are placed under instant control of the operator (without the necessity of opening the cabinet) by means of external binding-posts, N, and connecting-rods N'.

My external binding-post is more clearly shown in Fig. 11. *n* is a screw by which the post is secured to the cabinet; *n'*, a slot to receive the conductor, which is held in desired position by set-screw *n''*. *n'''* is an orifice to receive the plug or end of the connecting-wire, and n^{iv} a set-screw to hold the plug or end in place.

Of like construction and offices to the seat K are two electrodes, O O', which serve as foot-rests. Each foot-rest is independently pivoted upon a bearing-shaft, P, whose ends are capable of being placed in any one of a series of sockets, Q, in the back wall and the L-formed door, respectively. The toes of the foot-rests are supported by projections R from the front wall and the L-formed door, respectively. Each foot-rest is provided with a plug or binding-post, *q*, from which a suitable conductor, M' M''—one for each rest—communicates with the aforesaid battery L. The said foot-rests are electrically insulated from their supports and from one another by any suitable means. The construction used and preferred by me is to form each rest of either hard rubber or dry varnished wood, and cover the top surfaces with perforated plates of the same metallic alloy as described for the seat-electrode, each plate being provided with a suitable plug, or binding-post, as stated.

An orifice, *a*, in the top of the cabinet, near the furnace side thereof, is traversed by a rod, S, which terminates above (and consequently outside) the cabinet in a knob or other convenient handle, *s*, and below, in a cross-rod, S', which is restrained to a vertical path by guides T on the cabinet-wall. Hooked projections *u*, and a set-screw, *u'*, on spring-bracket U, enable attachment of the latter to any part of the cross-rod S', so as to slide easily thereon or be fixed in any desired position. A stud, *u''*, that projects from the rear of the spring-bracket, having a rubber cushion, N''', serves to hold the latter away from the cabinet-wall. Spring-bracket U terminates in a disk, V, of vulcanite or other suitable non-conducting material, having a staple, *v*, of the same material formed thereon, which receives the hook *w* of a perforate metallic electrode-head, W, for attachment of a sponge, X. A plug or post, *w'*, on the head W communicates through suitable conductors, M''', with the battery L, before spoken of.

The slidable rod S serves as a handle, by means of which the operator is enabled to shift the electrode-sponge X to any desired part of the patient's back without opening the cabinet. Two other like electrode-sponges, X', provided with vulcanite or other insulating-handles *x*, and having suitable electrical communications, M^{iv}, with the battery, being, one or both of them, grasped by the patient, may be applied to any part of the person. These hand-electrodes may, when not in use, rest upon shelves *a'*, conveniently located within the cabinet, still other electrode-sponges X'' being secured to a plate, X''', insulated from and secured to metallic bands Y by a vulcanite disk and staple, V' *v'*, having binding-post *v''*, the bands having orifices *y* that engage over studs *y'*, and which have electrical communications M^{v} with the battery, enable application of electrical currents to any part or parts of the person encircled by such band or bands. Coupling-pieces Z and Z' (see Figs. 12 and 13) enable both hands, arms, or feet to be placed in multiple connection with the battery, or (these coupling-pieces being removed) enable direction of the current series-wise through two or more members in succession, as may be deemed most appropriate to each particular case undergoing treatment.

Z is a straight coupling, consisting of a short rod, *z*, having screw-threaded ends *z'*, received by sleeves *z''*, having set-screws *z'''*, by which the conductors on each side are connected. The elbow-couplings Z' have openings z^{v} through them, which permit the conductors to slide through them and be secured therein by set-screws z^{vi}.

A perforation, *a''*, in the cabinet-wall permits insertion of the represented or any suitable burner, 1. The form here shown and which I prefer for general use is a gasoline-nozzle, 2, having communication by supply-tube 3 with an elevated reservoir, 4. The burner-flame is controlled by customary valve, whose handle, 5, is located conveniently to the operator outside the cabinet, the said burner having an eye, 6, by which it is engaged over a hook, 7, on the cabinet-wall, and, being lifted to any desired height, is retained thereto by one or other step of the notched block 8. That portion of the burner within the cabinet is inclosed within a hot-air chamber, 9, a hole, 10, in whose top receives a pan, 11, for either water or any liquid or solid medicament. This hole when the pan is not in use may be closed by a lid, 12. Dampers 13, controlled by external handles, 27, enable the central portion of the hot-air chamber to be either shut off from the outer portions, 14, as shown in Fig. 1, or enable communication from said central portion to one or both outer portions, as shown in Fig. 4. These means enable the use of the apparatus either as a "Russian" bath, (employing vapor,) or as a "Turkish" bath, (employing hot air,) or with both systems in combination. To facilitate ascent of hot air the top plates, 15, of the side compartments are perforated, and are preferably slightly up-canted toward the patient's person in the manner shown. Two orifices, 16, in the floor of the hot-air chamber communicate by ducts 17 with an orifice, 18, in that part of the floor which is immediately beneath the foot-rests, in order to transmit a portion of the furnace-heat to the patient's feet, by withdrawing the colder air from beneath the foot-rests toward either or both of the chambers 14 through the ducts, so as to create a continuous circulation of air through the bath from the top of the fur-

nace downwardly through and beneath the floor toward the furnace instead of from beneath the furnace in the form of a blast to instead of by suction from the foot-rests, as in a previous form of bath.

16ª are the tubes which connect the ducts through orifices 16 16 with the furnace-chambers above the floor, so as to create a draft through the ducts.

A thermometer, 19, in contact with the interior of the cabinet, and having a glazed window on the outside of the same, enables the operator to inform himself of the interior temperature at any moment.

A thermostat, 20, located at any convenient point within the cabinet, is placed in communication with an electric bell, 21, which on impingement of the thermostat limbs, gives audible notice of whatever maximum temperature indication the thermostat has been set to. This thermal annunciator may be vitalized either by the battery L or by an independent battery, L′.

23 24 represent two foot-tubs of identical pattern designed to hold either hot water or any other liquid. Each tub is supported by and has electrical contact with the plated top of its respective foot-rest, so as to convert it into an electrode. The tubs are connected to each other and to the cabinet-wall by non-conducting braces 25 26.

It will be observed that all the binding-posts and their attachments are by the construction represented readily removable for inspection, cleansing, and repair. Complete control of the interior instrumentalities at points exterior to the apparatus is had, thus enabling prompt action in or on the right place and right quantity without exposure of the patient's person below the head.

I claim as new and of my invention—

1. The combination of vertically-slidable rod S, carrying cross-rod S′, and extending through the cabinet, guides for the cross-rod, and an electrode to slide horizontally on the said cross-rod, as set forth.

2. In an electrical and vapor bathing-cabinet of box or square form, the combination, with the vertical sides thereof, of the front door, G, and combined front and side door, H, of L shape in horizontal section to permit the front and portion of the side of the cabinet to be opened, as set forth.

3. In a bathing-cabinet, the combination of floor having an aperture, *j*′, and the seat having screw-threaded stem *j*, whose lower end is received in said aperture, as set forth.

4. The combination, in a bathing-cabinet, of hot-air chamber 9, divided into a central and two side compartments by dampers 13, the central compartment containing a burner, 1, and being surmounted by a perforate top for pan 11 or lid 12, the side compartments having the perforate upsloped tops 15, substantially as set forth.

5. In a vapor and hot-air bathing-cabinet, the stepped support 8 for the heating-lamp, for the purpose designated.

6. The pair of independently-insulated foot-rest electrodes O O′, arranged and adapted to operate in the manner explained.

7. The combination, with the foot-rests O O′, of the foot-tub electrodes 23 24, as set forth.

8. In a bathing-cabinet, the combination, with the furnace and floor, of the air-outlet 18, ducts 17 17, leading therefrom, and tubes 16ª 16ª, connecting the ducts to the chambers of the furnace above the floor to create a circulation of air through the cabinet toward the furnace from beneath the foot-rests, as set forth.

9. In a bathing-cabinet, the combination of thermostat 20 and magneto bell or annunciator 21, as set forth.

10. The combination, with a cabinet, of two series of conductors and coupling-pieces whereby the corresponding right and left members of the patient may be subjected to either series or multiple currents, as set forth.

In testimony of which invention I hereunto set my hand.

LUDVIG VON DOLCKE.

Attest:

GEO. H. KNIGHT,

SAML. S. CARPENTER.