

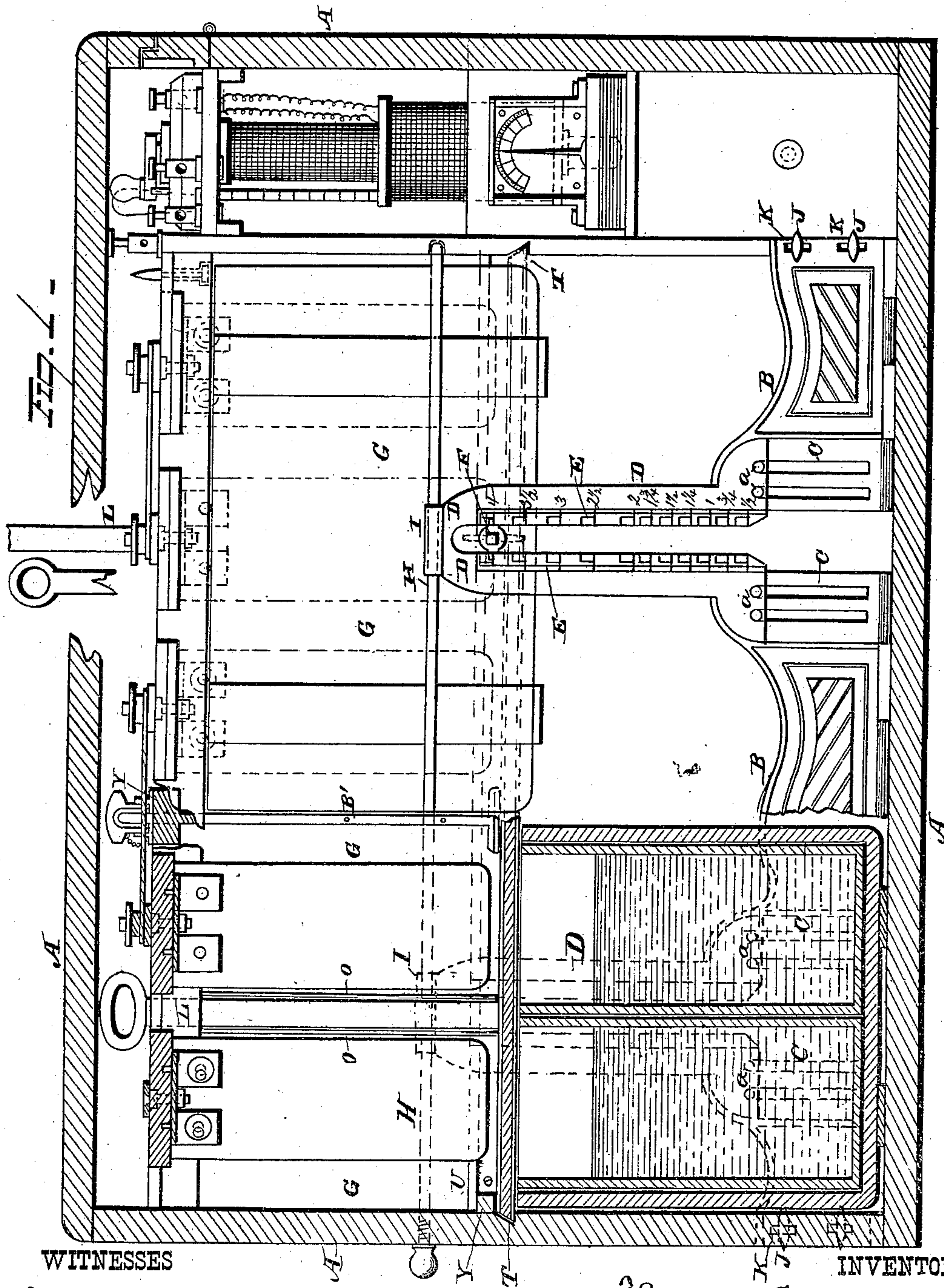
(No Model.)

2 Sheets—Sheet 1.

T. SCHMAUSER.
COMBINATION BATTERY.

No. 246,036.

Patented Aug. 23, 1881.



WITNESSES

Geo. D. Seymour.
Herman Moran

INVENTOR

Theodore Schmauser
by *H. A. Seymour*
ATTORNEY

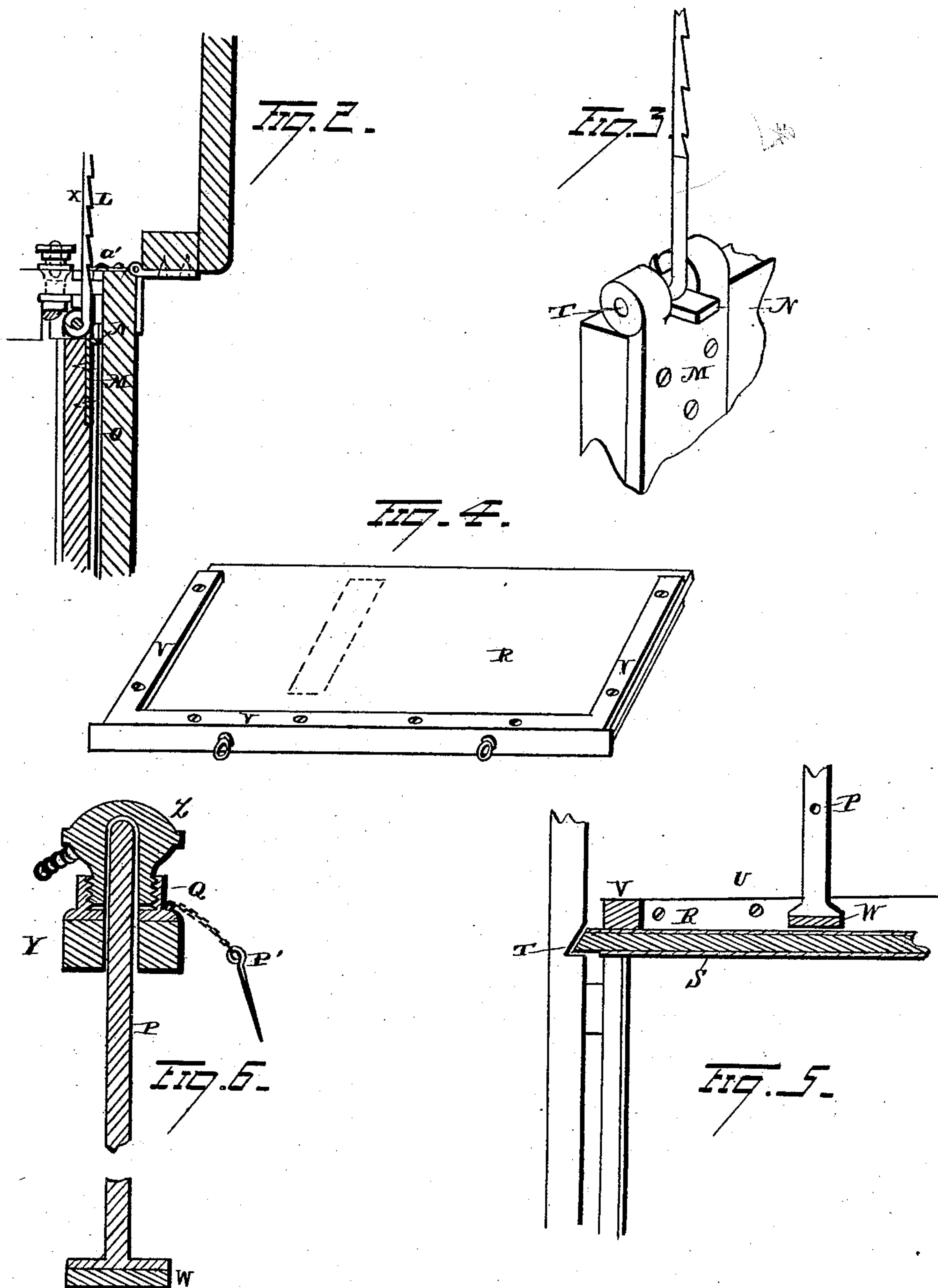
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UNITED STATES PATENT OFFICE.

THEODORE SCHMAUSER, OF ALLEGHENY, PENNSYLVANIA.

COMBINATION-BATTERY.

SPECIFICATION forming part of Letters Patent No. 246,036, dated August 23, 1881.

Application filed June 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, THEODORE SCHMAUSER, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain
5 new and useful Improvements in Combination-Batteries; and I 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 pertains to make and use
10 it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in combination-batteries, and is especially designed to be used in connection with those in
15 which the cells are movable and are adapted to be adjustably disposed with relation to their elements, the object of the invention being to enable the different combinations of which the battery is capable to be more readily effected
20 than has been before possible, and also to enable the battery to be transported with absolute safety without removing the exciting-fluid from the several cells.

With these ends in view, my invention consists in improved devices for elevating the boxes containing the cells and retaining them at any desired height, in an improved form of hydrostat, and in improved mechanism for pressing the same down upon the cells to prevent the escape of exciting-fluid therefrom.
30

My invention further consists in certain details of construction and combinations of parts, as will be herein shown, described, and pointed out in the claims.

35 In the drawings, Figure 1 is a view, partly in section and partly in elevation, of a battery embodying my improvements. Fig. 2 is a view in side elevation of my improvements in the lifting apparatus attached to the rear of the cell-boxes. Fig. 3 is a detached view thereof. Fig. 4 is a view in perspective of a hydrostat constructed in accordance with my invention. Fig. 5 is a view showing the hydrostat in position in the battery-case, and with an improved
40 presser-foot in adjustment upon it; and Fig. 6 is a detached view of the said presser-foot.

A represents the battery-case, provided in front with a hinged plate, B, adapted to be opened to enable the cells to be removed when
50 desired.

The front elevating apparatus consists, essentially, of plate B, provided with four sets of vertical slots, C; of plates D, having pins *a*, adapted to reciprocate in the said slots, secured

to their lower ends and provided with two 55 graduated series of notches, E; of buttons F, secured to the front faces of the cell-boxes G, and provided with laterally-projecting pins arranged to engage with the notches E of the plates D, and of a horizontal rod, H, adapted 60 to pass through tubes I, attached to or made integral with the said plates D, to secure them in vertical adjustment when the cells are being raised or lowered.

The particular feature of the lifting apparatus above described which I desire to claim in this application is the plate B, hinged to the front edge of the bottom of the case A, and held in upright position by means of thumb-nuts J, or their equivalents, which pass through 70 elongated slots K formed in the ends of the plate. As the remaining features of this lifting apparatus are more fully explained and claimed in another application, further allusion to them is unnecessary. 75

The rear elevating apparatus consists of toothed or serrated rods L; of engaging device M, secured to the rear faces of the cell-boxes, and with which the hooked lower ends of the said rods are adapted to be temporarily 80 engaged; of catches *a'*, arranged to engage with the different teeth of the rods L to hold them in desired adjustment, and of guides N and guideways O to steady the cell-boxes as they are raised and lowered. 85

The particular features of the rear elevating apparatus which it is here desired to claim are the guides and guide-rods, in combination with the other elements of the lifting apparatus, which are separately claimed in another ap- 90 plication for a patent.

In the drawings the devices M are shown as identical in shape with half of a hinge, through the knuckles of which a pin, T, is inserted, with which the hooked ends of the rods L are 95 engaged when the boxes are being raised or lowered. The guides N are also shown as being formed by simply bending the strips left between the knuckles at right angles to the plate, which form, as it were, the straps of the 100 hinges.

The guideways O consist in strips of any desired material, vertically secured to the inner face of the back portion of the case, and are arranged to have the guides in their upward 105 and downward passages with the cell-boxes reciprocate between them.

It is apparent that the guides and guide-

ways need not be arranged or constructed exactly as shown, but may be modified and changed as necessary. However, the devices shown are compact and simple and fully answer their requirements.

The hydrostat, which is interposed between the cells and their elements when the battery is not in action for the purpose of sealing the mouths of the cells and preventing the escape of their exciting-fluid, consists of a hard, flat board, or an equivalent therefor, having its upper face covered with thin rubber or canvas, R, and having its lower face provided with a rubber cushion or pad, S. The ends of the said board or body-piece are beveled, adapting it to be received in the angular grooves T formed in the sides of the case, while its inner edge is adapted to be received under and to be pressed down by a horizontal bar, U, secured to the rear wall of the case. The front ends and sides of the hydrostat are provided with strips V, of vulcanized rubber or other similar material, which, together with the horizontal bar U and the body-piece proper, form a shallow basin to receive any fluid which may drain from the elements after they are removed from the cells. If desired, sheets of blotting-paper may be laid in the said basin to absorb the fluid falling into it.

It has been stated that the primary function of the hydrostat is to temporarily seal the mouths of the cells when the battery is not in action, and thus permit it to be transported without the inconvenience of emptying the cells. In order that the hydrostat may be the better adapted to fulfill this function, I employ a presser-foot which is adapted to be forced down upon it, and thus force the cushion or pad S, secured to its lower face, in close contact with the cells, thereby decreasing the chances of the escape of their fluid. The said presser-foot consists in a disk, W, of an elliptical shape, secured to rod P, the upper end of which passes through an aperture in a horizontal bar, Y, located near the top of the battery-case. A cap-shaped screw, Z, adapted to fit over the upper end of the said rod P, and provided with an exterior screw-thread arranged to engage with an interiorly-screw-threaded ring, Q, secured to the bar Y, is adapted to regulate the pressure of the disk W upon the hydrostat. When the battery is not in action, and before the hydrostat is removed from the case, the cap-screw Z must be removed and the rod P raised and held in an elevated position by any suitable device provided therefor. It is simply done in one way by horizontally perforating the rod, as at B', and securing it in an elevated position by means of a pin passed through the said perforations.

In view of the explanation of the operation of the different devices given, together with a description of them, and in view, also, of their extreme simplicity, a further exposition of their operation is not thought necessary.

I would have it understood that I do not limit myself to the exact construction of parts shown and described, but hold myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a combination-battery, the combination, with a plate hinged to the front edge of the bottom of the battery-case, arranged to support elevating devices, and having slotted ends, of thumb-screws secured to the case, and by engagement with the slots of the plate adapted to secure it in vertical position, substantially as set forth.

2. In a combination-battery, the combination, with toothed rods removably secured to the back of the cell-boxes, of guides and vertical guideways, between which they are interposed, substantially as set forth.

3. The combination, with a hydrostat having its opposite faces covered with rubber or equivalent material, and having strips secured to the front edge and ends of its upper face, of a horizontal bar secured to the rear wall of the battery-case, substantially as set forth.

4. In a combination-battery, the combination, with a hydrostat having its upper face covered with rubber or equivalent material, of strips secured to the front edge and ends of its upper face, and of a horizontal bar secured to the rear wall of the battery-case, the rear edge of the hydrostat being received under said bar and forming with it a fluid-basin, substantially as set forth.

5. The combination, with a hydrostat, of a presser-foot adapted to force it into closer contact with the mouths of the battery-cells, substantially as set forth.

6. The combination, with a hydrostat, of a presser-foot adapted to exert an adjustable pressure thereupon to force it into close contact with the mouths of the battery-cells, substantially as set forth.

7. The combination, with a hydrostat, of a presser-foot consisting of a disk secured to a rod, a cap fitting over the upper end of said rod, and a screw-threaded ring, with which the cap engages, substantially as set forth.

8. The combination, with a hydrostat, of a presser-foot consisting of a disk secured to a rod and adapted to be elevated and held in an elevated position, and a screw-cap fitting over the upper end of the said rod, and by engagement with a screw-threaded ring to exert a variable pressure upon it, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 18th day of June, 1881.

THEODORE SCHMAUSER, M. D. [L. S.]

Witnesses:

ALBERT E. LUTY,

ALFRED W. KREDEL.