

No. 706,340.

W. L. PANIKOFF.  
BATTERY.

Patented Aug. 5, 1902.

(No Model.)

(Application filed Mar. 18, 1902.)

2 Sheets—Sheet 1.

Fig. 1.

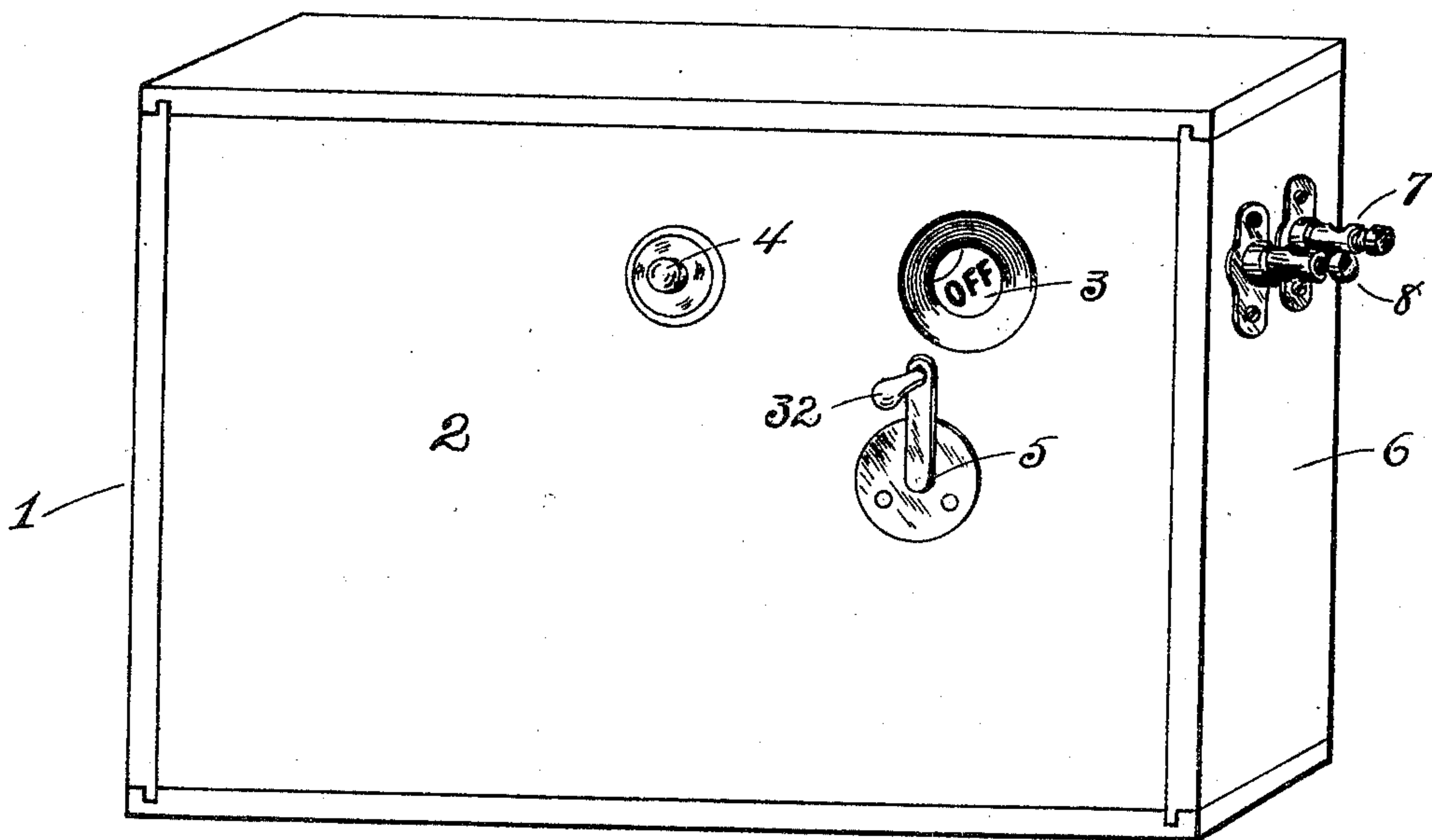
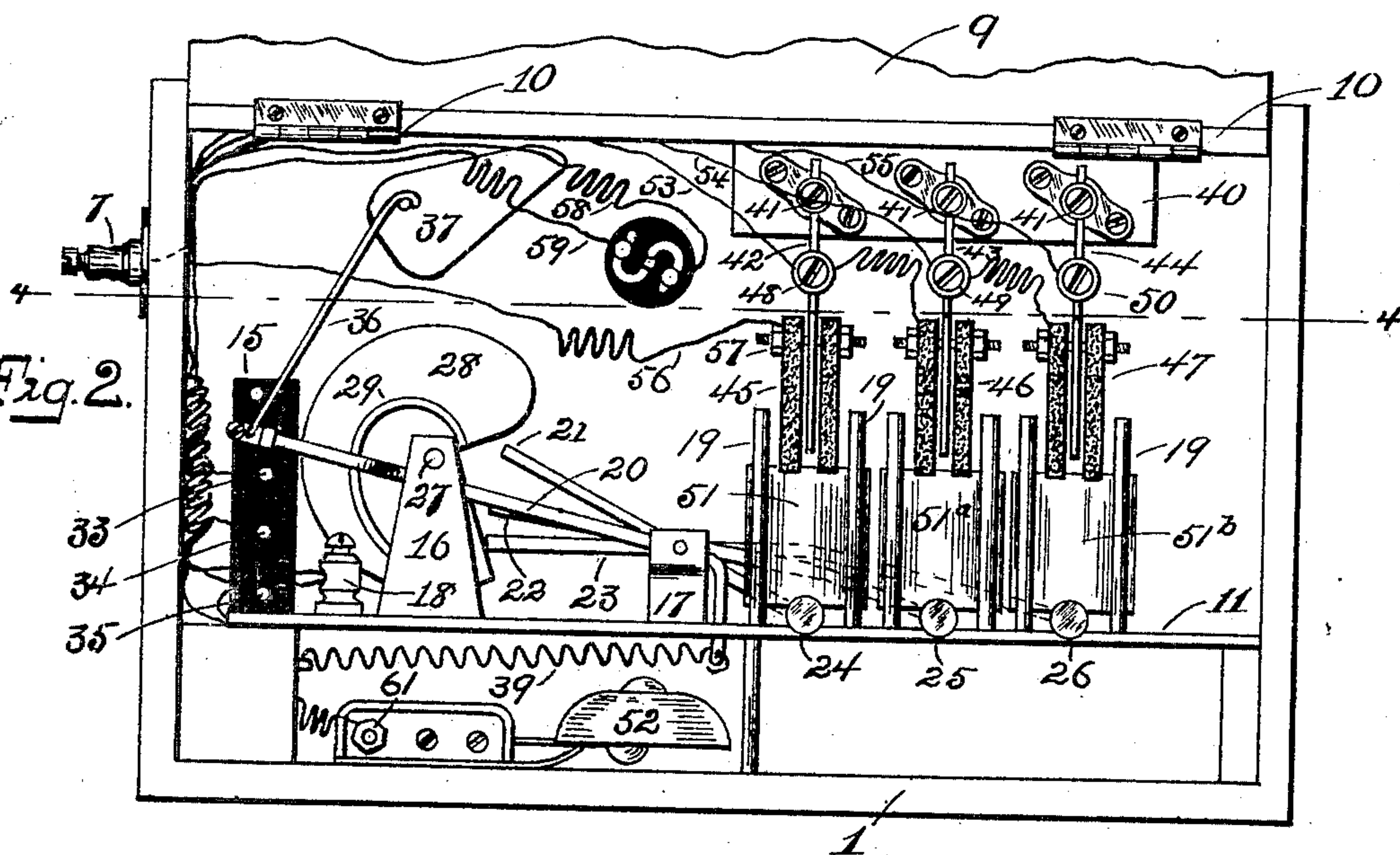


Fig. 2.



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Fig. 3.

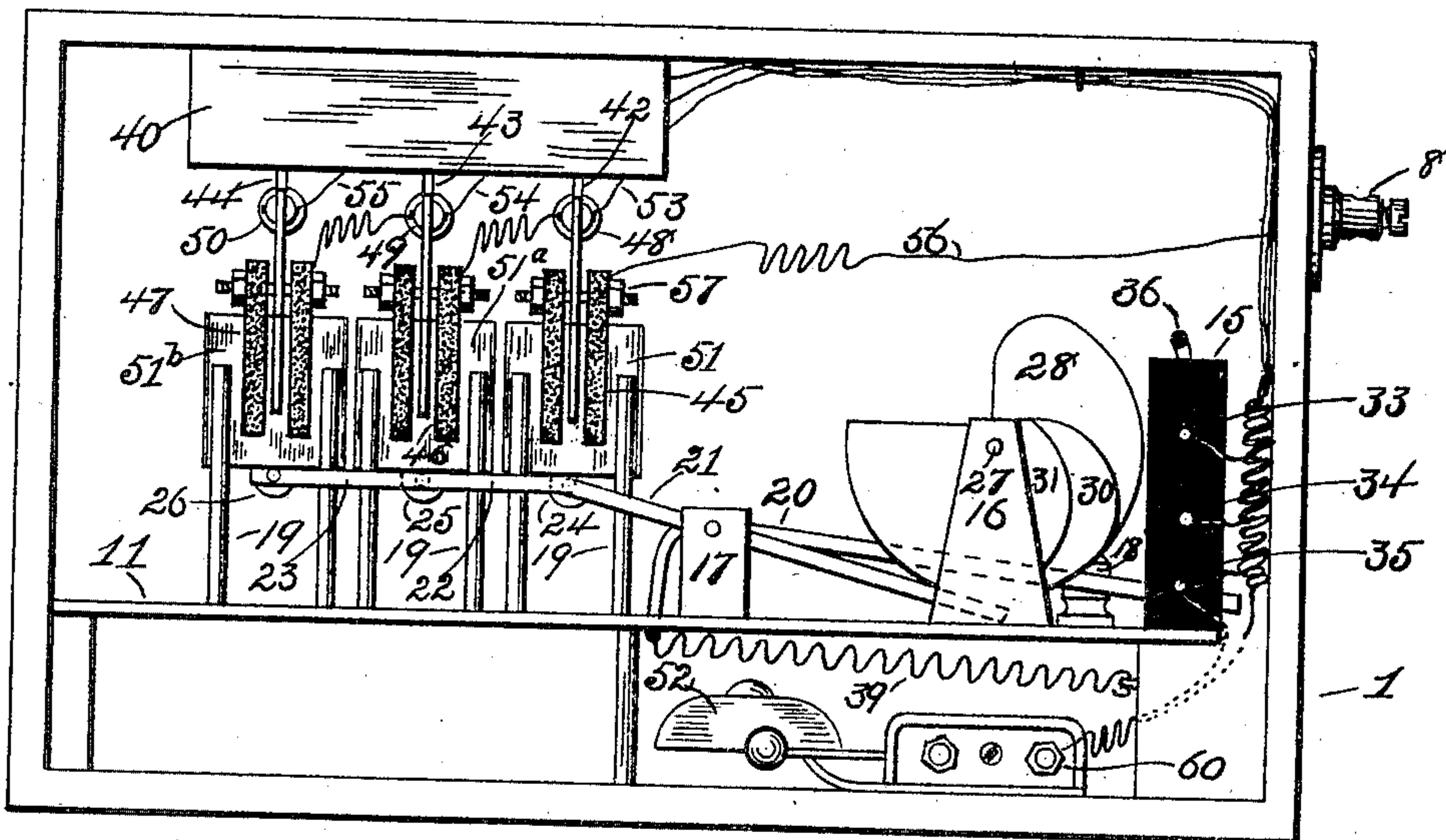
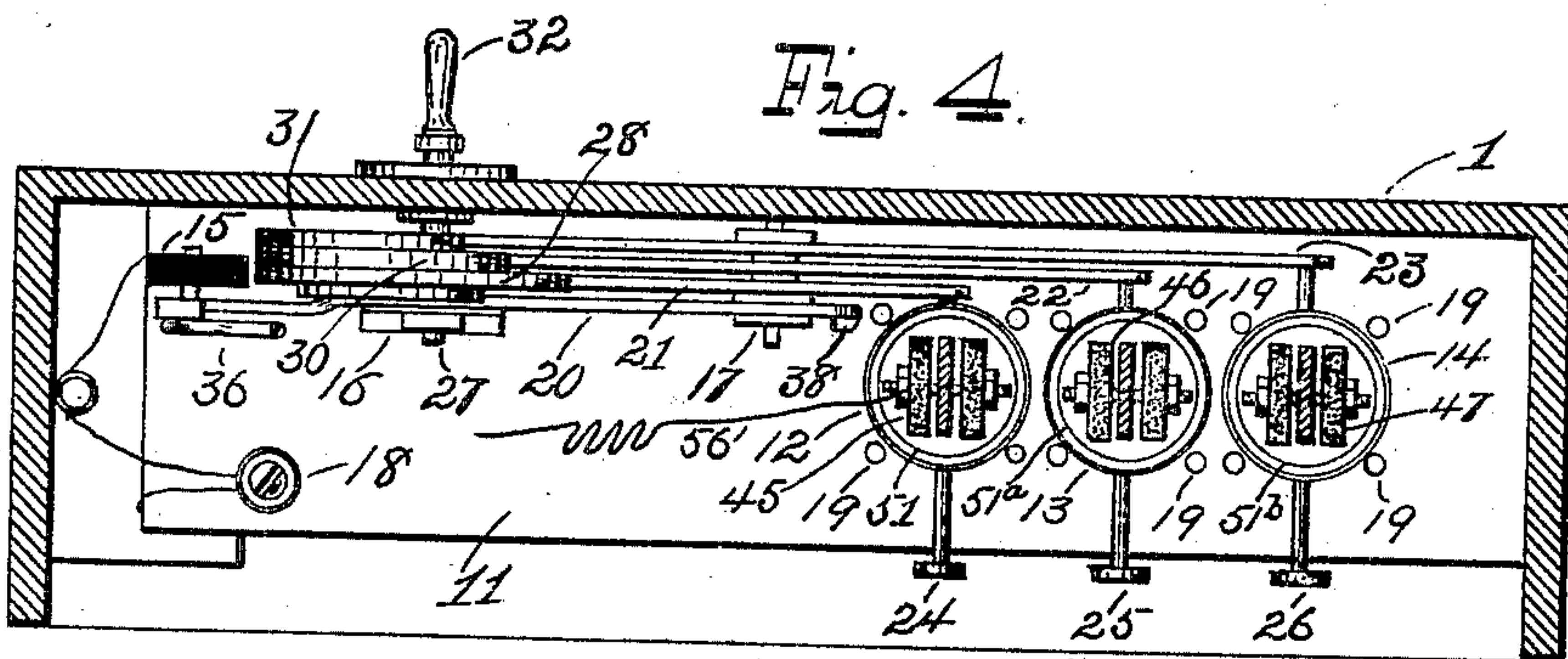


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## BATTERY.

SPECIFICATION forming part of Letters Patent No. 706,340, dated August 5, 1902.

Application filed March 18, 1902. Serial No. 98,821. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. PANIKOFF, a citizen of the United States, and a resident of the city and county of New Haven, in the State of Connecticut, have invented a new and useful Improvement in Batteries, which is fully set forth and described in the following specification, taken in connection with the drawings which form a part thereof, and in which—

Figure 1 represents an elevation in perspective of casing; Fig. 2, a side elevation with rear of casing opened; Fig. 3, a front elevation with front of casing removed, and Fig. 4 a section through Fig. 2 on lines 4 4.

In all figures similar numerals represent like parts.

This invention relates to batteries, and more particularly to that class of batteries in which it is desired to use different strengths of current, and has for its object the construction of a device by which a series of batteries are adapted to be used singly or in series, according to the wish of the operator, and that when not in use the plates of the batteries may be held in position free from the fluid contained in the jars themselves, and thus save the reduction in electrical strength of the batteries from local action, and other features fully described and claimed hereinafter.

To this end my invention consists of a casing 1, in the front 2 of which is an aperture 3, an electric push-button 4, and a crank 5, while to the side 6 of said casing 1 are secured terminal or binding posts 7 and 8, for purposes more fully set forth hereinafter, and as shown in Fig. 1.

The back 9 of the casing 1 is hinged at 10, as shown in Fig. 2, and may be locked when closed in well-known manner.

Secured within the casing 1 is a shelf 11, provided with circular openings 12, 13, and 14, and to the top of said shelf 11 is secured a vertical contact-plate 15, standards 16 and 17, a binding-post 18, and vertical rods 19, as shown in Figs. 2, 3, and 4. Pivoted in said standard 17 is an L-shaped contact-lever 20 and elevating-levers 21, 22, and 23, said levers 21, 22, and 23 having at their outer ends laterally-extending removable pins 24, 25, and 26. Journaled in the standard 16 is a shaft 27, having secured thereto a cam 28,

said cam having formed integral therewith cams 29, 30, and 31, while the outer end of said shaft 27 extends through a perforation in the front 2 of said casing 1, and has rigidly secured thereto a handle 32 for the purpose of operating said cams 28, 29, 30, and 31, as more fully described hereinafter. As herein shown and described, said shelf 11, standards 16 and 17, contact-lever 20, elevating-levers 21, 22, and 23, removable pins 24, 25, and 26, shaft 27, and cams 28, 29, 30, and 31 are constructed of brass or other suitable conducting metal to form a conductor from binding-post 18 to contact-lever 20 for the purpose of allowing said contact-lever 20 more freedom of movement upon the operation of the cams 28, 29, 30, and 31 than would be the case if a wire connection were made directly to said contact-lever in well-known manner, as more fully described hereinafter.

The outer end of the contact-lever 20 is adapted to be adjacent to and come in contact (upon the operation thereof) with laterally-extending lugs or contact-points 33, 34, and 35 of contact-plate 15. Secured to the outer end of said contact-lever 20 is an L-shaped rod 36, the other end of which is secured to a plate 37, having on one side thereof suitable words or numbers which are adapted, upon the operation of said contact-lever 20, to pass before the inner side of the aperture 3, in the front 2 of the casing 1, to show the operator if the batteries are in or out of use and denote how many of the batteries are being used, as more fully described hereinafter. The lower end of said contact-lever 20 is adapted to pass through a perforation 38 in the shelf 11, and has secured thereto a spiral spring 39, the other end of which is secured to one side of the casing 1 in well-known manner, so that the tension thereof will tend to keep said lever in its normal position, with its upper end above the contact-point 33 of contact-plate 15.

A block 40 is secured to one side of the front 2 of the casing 1 in well-known manner and has secured thereto binding-posts 41, adapted to receive and hold in position the outer ends of vertical rods 42, 43, and 44, forming a part of battery-plates 45, 46, and 47, to which are secured terminal or binding posts 48, 49, and 50, said posts 41 being



adapted to hold plates 45, 46, and 47 in the desired position above the battery jars or cells 51, 51<sup>a</sup>, and 51<sup>b</sup>, which are adapted to set between vertical rods 19 (which form a guide therefor) and rest on the removable pins 24, 25, and 26, as shown in Fig. 2. Secured to one side of the bottom of said casing 1 is an electric bell 52, connected with the electric push-button 4, more fully described hereinafter.

The battery-plates 45, 46, and 47 having been connected in series in well-known manner, the connection between the battery-plates 45, 46, and 47, vertical contact-plate 15, binding-posts 7 and 8, push-button 4, binding-post 18, and electric bell 52 is as follows: Wires 53, 54, and 55 are secured within the casing 1 and are connected at one end with the binding-posts 48, 49, and 50 and the other end with the contact-points 33, 34, and 35 of contact-plate 15, while a wire 56 is connected with a binding-screw 57 of battery-plate 45 and binding-post 7. A wire 58 is connected with push-button 4 and binding-post 8, and a wire 59 with push-button 4 and one of the binding-screws 60 of the electric bell 52, another wire being connected with the other binding-screw 61 of the electric bell 52 and binding-post 18, and a wire one end of which is connected with the binding-post 18 and binding-post 8, as shown in Figs. 2 and 3.

In operation the normal position of the device is that shown in Figs. 1 and 2, Fig. 1 showing the handle 32 attached to shaft 27, which operates the cam 28 in vertical position, while the plate 37, having the word "Off," shows through the aperture 3 in the front 2 of the casing 1, and the battery jars or cells 51, 51<sup>a</sup>, and 51<sup>b</sup> are resting on the removable elevating-pins 24, 25, and 26, thus allowing the plates 45, 46, and 47 to be out of contact with the chemicals in said cells. When it is desired to operate the device, the operator turns the handle 32 to the left until the cam 28 comes in contact with the elevating-lever 21, and upon the further revolution of the handle 32 cam 28 causes the end of said lever to be pressed downward, thus raising the other end of said lever and removable pin 24, on which rests the jar or cell 51 of the battery between rods 19, which act as a guide therefor, to a sufficient height to immerse the battery-plates 45. Upon further movement of the handle 32 and rotation of the cam 28 cam 29 will come in contact with contact-lever 20 and force the same in contact with contact-point 33 of the plate 15, at the same time rod 36, secured to plate 37, is drawn downward, thus causing figure "1" on the surface of said plate to come opposite the aperture 3, thus denoting to the operator that one cell is in use and that the connection is made. The further movement of the handle 32 causes the shaft 27 to further revolve the cam 28 until cam 30 comes in contact with elevating-lever 22, which forces cell 51<sup>a</sup> upward, so that the plates 46 would be immersed in the liquid therein at

the same time said cam 29 further forces said contact-lever 20 downward into contact with contact-point 34 of contact-plate 15, thus drawing downward by means of rod 36 plate 37 until the figure "2" is opposite the aperture 3 of said front 2 of the casing 1, which denotes that two cells are in use and the connection is made. Further movement of the handle 32 causes the shaft 27 to further revolve the cam 28 until cam 31 comes in contact with elevating-lever 23, which forces cell 51<sup>b</sup> upward, so that the plates 47 would be immersed in the liquid therein at the same time cam 29 further forces said contact-lever 20 downward into contact with contact-point 35 of contact-plate 15, thus drawing downward by means of rod 36 plate 37 until the figure "3" is opposite the aperture 3 of said front 2 of the casing 1, which denotes that three cells are in use and the connection is made. The path of the current from contacts 33, 34, and 35 to post 18 is through the contact-lever 20, standard 17, and shelf 11, said contact-lever 20 being pivoted in said standard 17, which is formed integral with shelf 11. Said contact-lever, pivot, standard and shelf being of brass or other suitable conducting metal causes the path of the current to pass from the contacts to posts 18. The reverse movement of the handle 32 will operate the device in well-known manner to allow device to return to its normal position. It will further be seen that when one or more batteries are in contact the electric bell 52 will also be in circuit, and the operator may, by use of the push-button, see whether the battery or batteries are in working order, in which case the bell will ring. When it is desired to remove the cells 51, 51<sup>a</sup>, and 51<sup>b</sup> for refilling or any other purpose, the removable pins 24, 25, and 26 may be unscrewed from the elevating-levers, when the cells will drop through the circular openings of shelf 11 to the bottom of the casing, when they can be removed by hand.

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

1. In a battery the combination with the plates thereof; of a cell; a rest upon which said cell is adapted to stand so that the mouth thereof will be under said plates and in a line therewith; an elevating-lever one end of which is secured to said rest; and means for operating the other end of said lever so that said cell may be raised to contain said plates, substantially as described.

2. In a battery the combination with a series of plates; of cells; rests upon which said cells are adapted to stand so that the mouths thereof will be under said plates and in a line therewith; an elevating-lever secured to each of said rests; and means for raising said levers so that said cells may be raised to contain said series of plates, substantially as described.

3. In a battery the combination with the plates thereof; of a cell; a rest upon which



said cell is adapted to stand so that the mouth thereof will be under said plates and in a line therewith; an elevating-lever secured to said rest; a cam adapted to come in contact, upon the revolution thereof, with said lever to force said cell upward to contain said plates; and means for operating said cam, substantially as described.

4. In a battery the combination with a series of plates; of cells; rests upon which said cells are adapted to stand so that the mouths thereof will be under said plates and in a line therewith; elevating-levers secured to each of said rests; cams adapted to come in contact with said levers upon the revolution thereof to force said cells upward to contain said plates; and means for operating said cams, substantially as described.

5. In a battery, the combination with the plates thereof, of a cell; a rest upon which said cell is adapted to stand so that the mouth thereof will be under said plates and in a line therewith; an elevating-lever secured to said rest; a contact-plate; a contact-lever; connection between said battery and said contact-plate; connection between said contact-plate and said contact-lever; and means for elevating said rest and said cell, and forcing said contact-lever into connection with said contact-plate, substantially as described.

6. In a battery the combination with a series of plates; of cells; rests upon which said cells are adapted to stand so that the mouths thereof will be under said plates and in a line therewith; elevating-levers secured to said rests; a contact-plate; a contact-lever; connection between said battery and said contact-plate; connection between said contact-plate and said contact-lever; and means for elevating said rests and said cells, and forcing said contact-lever into connection with said contact-plate, substantially as described.

7. In a battery the combination with the plates thereof; of a cell; a rest upon which said cell is adapted to stand so that the mouth thereof will be under said plates and in a line therewith; an elevating-lever secured to said rest; a contact-plate; a contact-lever; a cam adapted to come in contact with said elevating-lever and said contact-lever, to force said cell upward to contain said plates, and said contact-lever into contact with said contact-plate, and means for operating said cam, substantially as described.

8. In a battery the combination with a series of plates; of cells; rests upon which said cells are adapted to stand so that the mouths thereof will be under said plates and in a line therewith; elevating-levers secured to said rests; a contact-plate; a contact-lever; cams adapted to come in contact with said elevating-levers and said contact-lever, to force said cells upward to contain said plates, and said contact-lever into contact with said contact-plate; and means for operating said cams, substantially as described.

9. In a battery the combination with a casing containing therein a shelf; battery-plates;

a cell; a standard secured to said shelf; an elevating-lever pivoted in said standard; a rest secured to one end of said lever upon which said cell is adapted to stand so that the mouth thereof will be under said plates and in a line therewith; a second standard secured to said shelf; a cam journaled in said second standard, adapted to come in contact with the other end of said lever to elevate said cell; and a handle adapted to operate said cam from the outer side of said casing, substantially as described.

10. In a battery the combination with a casing containing therein a shelf; battery-plates; cells; a standard secured to said shelf; elevating-levers pivoted in said standard; rests secured to one end of said levers upon which said cells are adapted to stand so that the mouths thereof will be under said plates and in a line therewith; a second standard secured to said shelf; cams journaled in said second standard, adapted to come in contact with the other end of said levers to elevate said cells; and a handle adapted to operate said cams from the outer side of said casing, substantially as described.

11. In a battery the combination with a casing containing therein a shelf; battery-plates; a cell; a standard secured to said shelf; an elevating-lever pivoted in said standard; a rest secured to one end of said elevating-lever upon which said cell is adapted to stand; a contact-lever pivoted in said standard; a contact-plate secured to said shelf; a second standard secured to said shelf; a cam or cams journaled in said second standard; a handle adapted to operate said cam or cams to come in contact with said elevating-lever to raise said cell in a position to contain said plates, and to force said contact-lever in connection with said contact-plate, substantially as described.

12. In a battery the combination with a casing containing therein a shelf; battery-plates; cells; guides for said cells; a standard secured to said shelf; elevating-levers pivoted in said standard; rests secured to one end of said levers upon which said cells are adapted to stand; a contact-lever pivoted in said standard; a contact-plate secured to said shelf; a second standard secured to said shelf; a cam or cams journaled in said second standard; a handle adapted to operate said cam or cams to come in contact with said elevating-levers to raise said cells in a position to contain said plates, and to force said contact-lever in connection with said contact-plate, substantially as described.

13. In a battery the combination with a casing containing therein a shelf; battery-plates; a cell; a standard secured to said shelf; an elevating-lever pivoted in said standard; a rest secured to one end of said lever upon which said cell is adapted to stand; a second standard secured to said shelf; a cam or cams journaled in said second standard, adapted



to come in contact with the other end of said elevating-lever to elevate said cell; a contact-plate secured to said shelf; a contact-lever pivoted in said first-mentioned standard, 5 adapted to be forced into connection with said contact-plate by said cam or cams; a rod one end of which is secured to the upper end of said contact-lever; a plate secured to the other end of said rod having on its inner surface denoting characters, adapted to pass before a perforation in said casing upon the operation of said contact-lever, substantially as described.

14. In a battery the combination with a casing containing therein a shelf; battery-plates; 15 a cell; a standard secured to said shelf; an elevating-lever pivoted in said standard; a rest secured to one end of said lever upon which said cell is adapted to stand; a second 20 standard secured to said shelf; a cam or cams journaled in said second standard, adapted to come in contact with the other end of said elevating-lever to elevate said cell; a contact-plate secured to said shelf; a contact-lever 25 pivoted in said first-mentioned standard, adapted to be forced into connection with said contact-plate by said cam or cams; a rod one end of which is secured to the upper end of said contact-lever; a plate secured to the 30 other end of said rod having on its inner surface denoting characters, adapted to pass before a perforation in said casing upon the operation of said contact-lever; a bell within said casing; a push-button on the outer side of said casing connecting with said bell, substantially as described.

15. In a battery the combination with a casing containing therein a shelf; battery-plates; a cell; a standard secured to said shelf; an elevating-lever pivoted in said standard; a 40 rest secured to one end of said lever upon which said cell is adapted to stand; a second standard secured to said shelf; a cam or cams journaled in said second standard adapted to come in contact with the other end of said 45 elevating-lever to elevate said cell; a contact-plate secured to said shelf; a contact-lever pivoted in said first-mentioned standard, adapted to be forced into connection with said contact-plate by said cam or cams; 50 a rod one end of which is secured to the upper end of said contact-lever; a plate secured to the other end of said rod having on its inner surface denoting characters, adapted to pass before a perforation in said 55 casing upon the operation of said contact-lever; a bell within said casing; a push-button on the outside of said casing; binding-posts secured to the outer side of said casing, and conducting connection between said plates, 60 contact-plate, contact-lever, push-button, bell, and binding-posts, substantially as described.

In witness whereof I have hereunto set my hand, at New Haven, in the county of New 65 Haven and State of Connecticut, this 14th day of March, 1902.

WILLIAM L. PANIKOFF.

Witnesses:

M. A. SEGAR,  
JOHN B. KIRBY.