

No. 656,558.

Patented Aug. 21, 1900.

G. LOISELET.
ELECTROLYTIC APPARATUS.

(Application filed Nov. 7, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

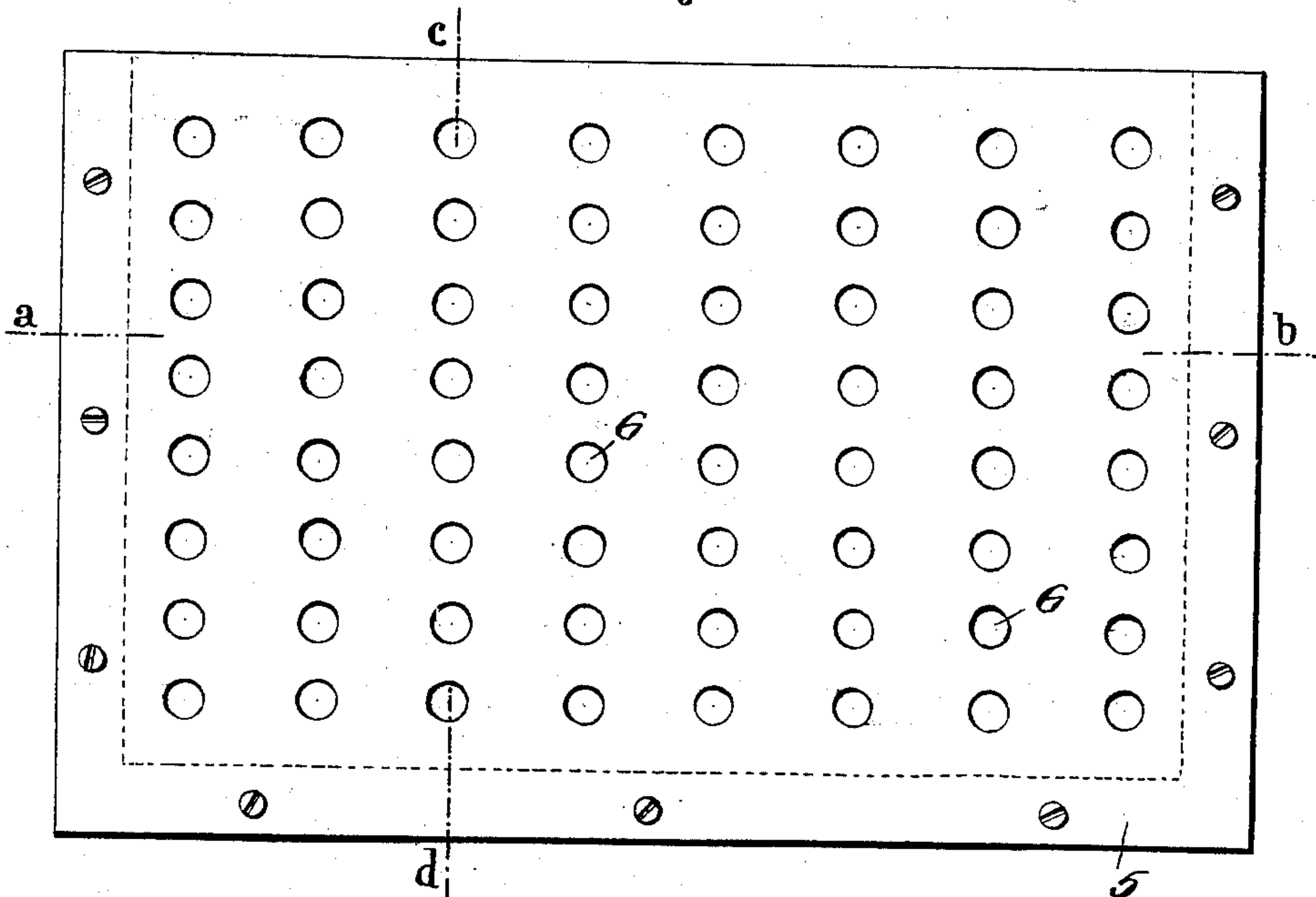
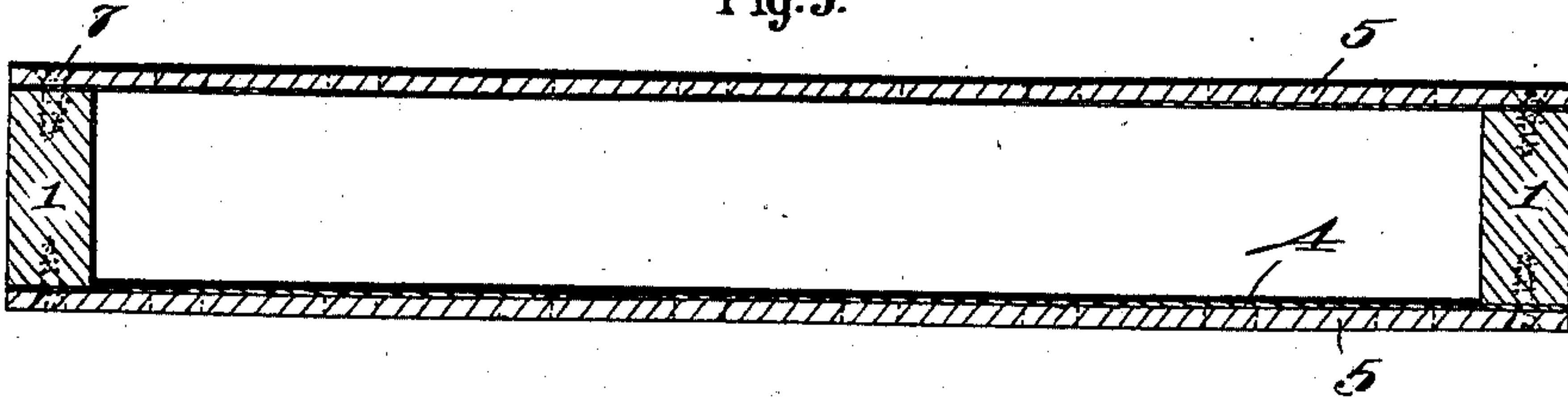


Fig. 3.



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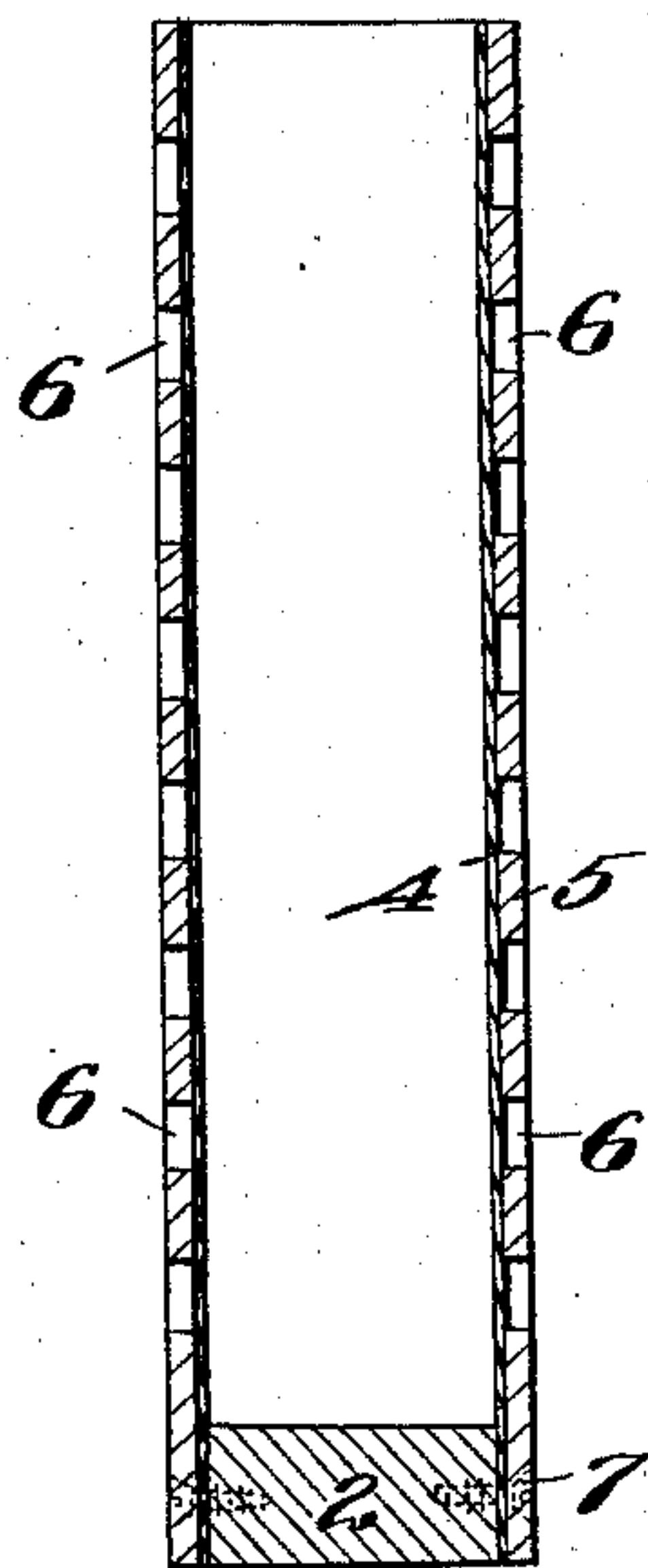
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Fig. 2.



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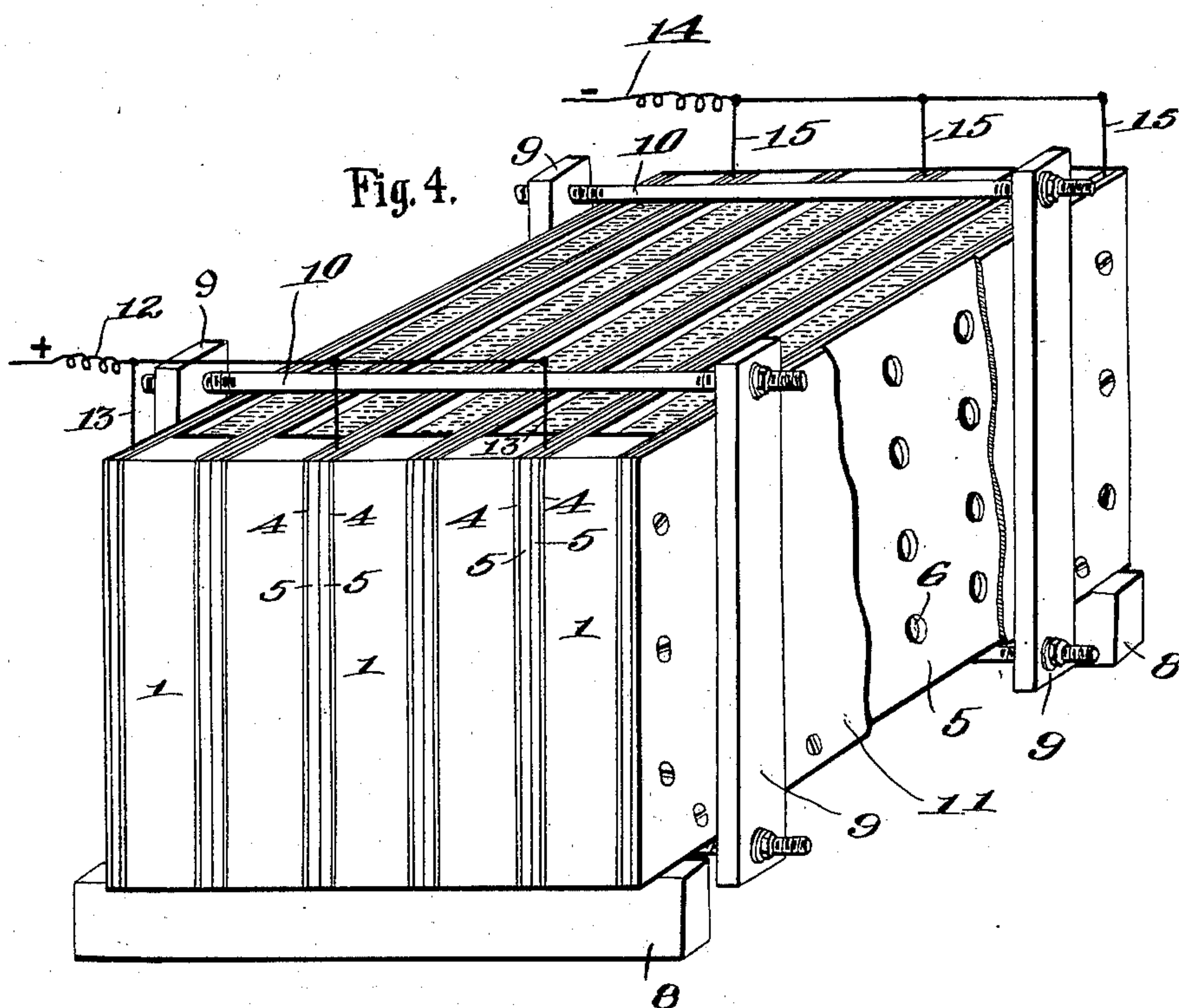
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3 Sheets—Sheet 3.



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GÉRÔME LOISELET, OF PARIS, FRANCE.

ELECTROLYTIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 656,558, dated August 21, 1900.

Application filed November 7, 1898. Serial No. 695,783. (No model.)

To all whom it may concern:

Be it known that I, GÉRÔME LOISELET, a citizen of France, residing at Paris, France, have invented certain new and useful Improvements in Electrolytical Apparatus, of which the following is a specification.

My invention relates to electrolytic apparatus, the object of the same being to provide a cell in which the internal resistance is reduced to a minimum and means for preventing the buckling of the thin porous diaphragm thereof.

The invention consists of a cell whose bottom and end walls are made of non-conducting material and whose side walls are constructed of narrow strips of vulcanized fiber or other porous material secured to said bottom and end walls and also secured and held in place by perforated metallic plates, to which are connected, respectively, the positive and negative poles of a source of electrical energy.

The invention also consists in certain details of construction, which will be herein after more fully described and claimed.

In the drawings forming part of this specification, Figure 1 is a side elevation of a cell constructed according to my invention. Fig. 2 is a vertical transverse section of the same on the line *c d* of Fig. 1. Fig. 3 is a horizontal section on the line *a b* of Fig. 1, and Fig. 4 is a perspective view showing a number of cells assembled to form a complete operative apparatus.

Like reference-numerals indicate like parts in the different views.

Each cell of the apparatus is formed with an open upper end, and the ends 1 1 and bottom 2 are constructed of wood or other suitable non-conducting material. The opposite sides of each cell are made of a narrow strip 4, of vulcanized fiber or other porous material, and plates 5, of iron or other suitable conducting material, having a series of perforations 6 6 therein. The porous strips 4 are secured to the inner surfaces of the metallic plates 5, and both of these parts are secured to the ends and bottom 1 and 2, respectively, by countersunk screws 7 or other analogous devices.

In the cell formed as above described a narrow compartment is formed for the elec-

trolyte, and the plates 5 5 on opposite sides of the cell, which constitute the electrodes, are comparatively close one to the other.

When a number of cells are connected together for the purpose of producing a complete apparatus, such as shown in Fig. 4 of the drawings, the same are mounted upon blocks 8 or other suitable supports and are connected together and prevented from lateral displacement by means of the vertical bars 9 9 and the tie-rods 10 connecting said bars. In this way the perforated metallic plates 5 of two adjacent sections are held in close contact one with the other. The outer metallic plates 5 of the end cells of the apparatus are shown in Fig. 4 as being perforated. These perforations of course are not necessary in these end cells; but in order that all of the cells may be made exactly alike I prefer to leave the end cells with the perforated side plates and cover the same by supplemental plates 11, against which the bars 9 9 bear for the purpose of protecting the plates 5 themselves.

The positive wire 12 from a suitable source of electrical energy is formed with branches 13 13, which connect the alternate pairs of metallic plates 5 of the adjacent cells at one end of said plates. The negative wire 14 from the source of electrical energy is in turn provided with branch wires 15, which connect at the opposite end of the apparatus the plates 5 of the adjacent cells between those which are connected by the branch wires 13. The current is thus caused to traverse the electrolyte from one set or pair of plates 5 to the next adjacent set. One of the metallic plates 5, therefore, or one pair of said plates serves as a cathode and the next adjacent plate or pair of plates serves as the anode.

My improved apparatus is particularly designed for the treatment of the juices of sugar to remove therefrom certain acids and oxids, as well as albuminous matter. The sugar-juice is introduced into each one of the cells making up the apparatus, as shown in Fig. 4 of the drawings, and the electric current caused to pass through the apparatus, as above described and as usual in devices of this kind. Decomposition is caused to take place, the acids produced thereby going to the anode and the oxids to the cathode, the same being

thereby separated from the juice itself. At the same time the albuminous substances which are dissolved in the juice are coagulated, and after precipitation the contents of the cell are collected in a tank in any suitable manner and the precipitated particles removed by filtration or by other means.

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

In an electrolytic apparatus, the combination of a series of cells arranged side by side, each having its ends and bottom constructed of insulating or non-conducting material and having its sides each made of an inner strip of porous material, and an outer perforated metallic plate, the said strip and the said plate being secured to each other and to said ends and bottom, the adjacent plates of each cell

lying in contact with each other without an intervening space, the alternate pairs or sets of plates at one end of the apparatus being connected with the positive pole of an electric generator, and the alternate sets or pairs of plates at the opposite end of the apparatus being connected with the negative pole of the electric generator, the sets or pairs of plates connected to the negative pole of the generator being located between the sets or pairs of plates connected to the positive pole of the generator.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GÉRÔME LOISELET.

Witnesses:

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