

No. 672,229.

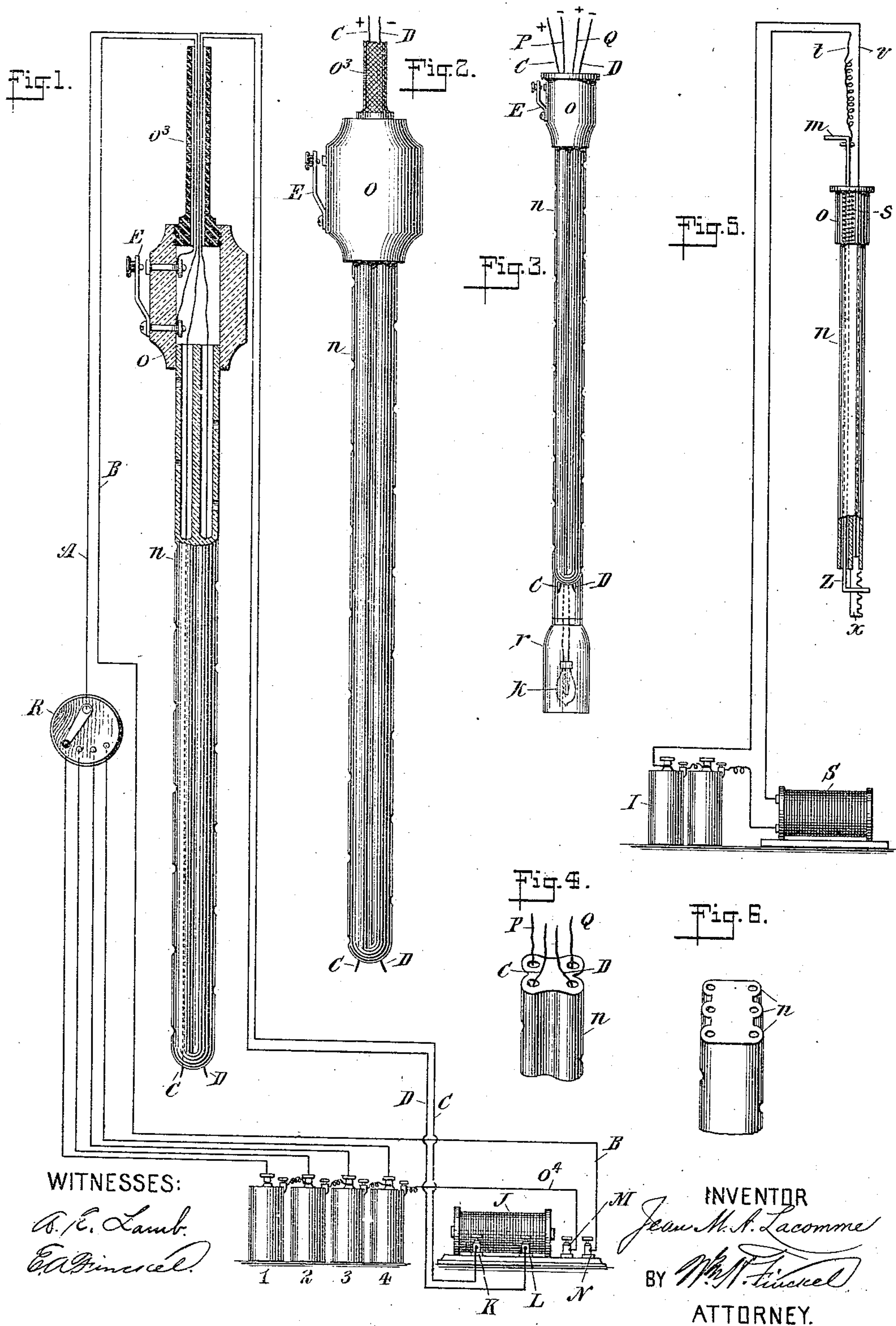
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J. M. A. LACOMME.

APPARATUS FOR THE PURIFICATION OF WATER OR OTHER HYGIENIC PURPOSES.

(Application filed July 13, 1900.)

(No Model.)



UNITED STATES PATENT OFFICE.

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TO WALTER LAUDER, OF SAME PLACE.

APPARATUS FOR THE PURIFICATION OF WATER OR OTHER HYGIENIC PURPOSES.

SPECIFICATION forming part of Letters Patent No. 672,229, dated April 16, 1901.

Application filed July 13, 1900. Serial No. 23,428. (No model.)

To all whom it may concern:

Be it known that I, JEAN MARIE AUGUSTE LACOMME, a citizen of the Republic of France, residing at New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Apparatus for the Purification of Water or other Hygienic Purposes, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple and efficient apparatus by means of which potable fluids, food substances, and the like may be purified and rendered free from inherent disease-germs, bacteria, and the like, and thereby fitted for harmless introduction into the human system and their alimentary condition improved or perfected or regenerated or revived.

Broadly stated, an electric current has heretofore been employed in the treatment of some fluids at least, and while my invention utilizes the electric current for the accomplishment of its purposes the invention itself consists in the means or apparatus by which electricity may be locally applied for improving or correcting the pathogenic character of fluid and solid food and other substances.

Having thus stated the principle of my invention, I will proceed now to describe some of the various best modes in which I have contemplated applying that principle and then will particularly point out and distinctly claim the part, improvement, or combination which I claim as my invention.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a partial section of one form of apparatus, showing one means of supplying an electric current. Fig. 2 is a side elevation of another form of apparatus. Fig. 3 is a side elevation of the electrode, showing the application of an electric light. Fig. 4 is a perspective view of a portion of a four-wire apparatus such as shown in Fig. 3. Fig. 5 is a partial section of my apparatus equipped for producing sparks. Fig. 6 is a perspective view of part of a holder arranged to combine the three forms of electric discharge.

An electric conductor A is connected with

a switch R and the latter in turn with any number of battery-cells, as 1 2 3 4, any number of which cells may be utilized through the switch, and this wire is connected in any suitable manner with any suitable circuit-closer E on the electrode by which the current is to be applied.

B is an electric conductor which leads from a binding-post N of an induction-coil J and also to the circuit-closer E, said induction-coil being constructed in the ordinary way and having its primary and secondary coils respectively connected with the binding-posts K and L. The cells are connected with the induction-coil by a wire ϕ^1 , secured to the binding-post M, thus completing the circuit through the induction-coil J when the circuit-closer is operated.

C and D are electric conductors respectively leading from the binding-posts K and L of the induction-coil into the electrode.

The electrode comprises a casing of non-conducting material, preferably glass, porcelain, hard rubber, or other substance, made as or formed with tubes n , connected with a socket ϕ , which socket carries the circuit-closer E, and this circuit-closer may be, as already indicated, of any desired form, such as a push-button. The wires C D, preferably of gold, silver, or platinum, extend through the tubes n and are insulated from each other and project from the ends of the tubes, so as to utilize the substance into which the electrode is immersed as the agent for establishing the circuit between these wires. The wires above the electrode may be insulated or covered by the flexible wrapping, as indicated at ϕ^3 ; but this wrapping or covering has been omitted in Figs. 3 and 5 in order to show or illustrate the conducting-wires. The wires A B from the battery or batteries are for the purpose of exciting an induced current in the induction-coil J, from which coil lead the wires C D to the electrode, it being understood that the conducting-wires A B are solely for the purpose of exciting the induced current in said coil.

The tubes n may be perforated laterally at different altitudes and upon opposite sides at various points throughout their lengths, so as to expose the internal wires C D, and thus

establish a series of contact-points through the medium being treated and throughout the length of the electrode in order the more quickly to purify or regenerate or revivify the substance under treatment. Opposite perforations are here shown as out of horizontal alinement, and ordinarily they may so be in order that a larger quantity of liquid or fluid may be utilized for completing the circuit, and thus a larger quantity of said liquid or fluid be treated or influenced by the current, and also that all portions of the column of liquid or fluid may be treated throughout the depth of the column, which might not be the case were the opposite perforations in the tubes in the same horizontal plane.

The socket *o* is solidly mounted on the perforated non-conducting tube or tubes and itself is made of porcelain or other non-conducting material and forms the handle or end piece for using the device, and said socket is longitudinally perforated to receive the several conducting-wires.

As already stated, the circuit-closer is hand-operated, and for this purpose may be any simple form of ordinary push-button, so that when released from pressure the circuit will be broken.

As shown in Fig. 2, only the wires *C D* are carried by the electrode, the battery-current being supplied from a distance. In Fig. 3 four wires are employed, and in this form of the invention double tubes might be employed, in which case the wires *C D* would be led through separate holes in the tubes and be exposed externally, while electric-light wires *P* and *Q* would be led through other separate holes in the tubes and connected with a lamp *k*, which may be arranged at the bottom of the electrode and, if desired, surrounded by a protecting-shield *r*, so that with an electrode of this character two effects may be obtained—namely, that of the current taken off of the wires *C D* and the heat or the illumination of the electric light. Such a device may be used in wells or other dark places wherein light or heat would be destructive of those forms of life to which such light or heat is noxious.

Fig. 4 shows in perspective the double construction of tubes last described.

If to such an electrode as heretofore described is to be added a sparking apparatus, then a third tube may be joined with the other two, as shown in Fig. 6. Such a combined apparatus may be employed in the treatment of wine, beer, cider, and other beverages, and when plunged or immersed in the liquid to be treated the induced electric current will thoroughly permeate the volume of liquid. If the electric light be used, it will increase the temperature of the liquid, and this to any desired degree, any further increase being provided for by the multiplication of lamps.

Intermittent electrical sparks may be found to be a useful addition to the ordinary light

or heat or other electric currents, or any two of them, with the result of improving in a very marked degree the condition of impure or vitiated wines, beers, ciders, and other fluids or beverages. Such a sparking apparatus is illustrated in Fig. 5, wherein are used an electrically non-conducting tube *n*, at one end of which is a stationary make-and-break contact-piece *x*, to which one of the conducting-wires is connected, and *Z* is a sliding contact-rod which extends upwardly within the tube *n* and into the holder or socket *o*, where it is provided with a spring *s*, which normally tends to draw said rod upwardly, and above the spring and outside of the socket this rod is provided with a button or knob *m*. The sliding rod *Z* is connected with the other conducting-wire. The wires *t* and *v*, which are connected, respectively, with the sliding rod *Z* and the stationary contact *x*, proceed, respectively, from the battery *I* and the sparking-coil *S*, which coil is also connected in circuit with the battery *I*. By downward pressure upon the button *m* the sliding contact-rod *Z* is moved over the stationary contact member *x*, thereby producing a series of sparks, and likewise upon release of pressure upon said button or knob the spring *s* in retracting the sliding contact-rod effects the production of the corresponding series of sparks.

The application of sparks will increase the temperature of a beverage and at the same time oxygenize the same and will increase effervescence in beer and other beverages and render them more palatable.

I do not limit my invention to the source of electricity, as it may be generated from batteries or taken from wires employed for street or other lighting purposes. It is important, however, that such current be employed for the purpose of exciting an induced current in the induction-coil from which the induced current is led to the electrodes.

It is within the possibilities of my invention to treat fluids in bulk, as in casks, hogsheads, mains, or the like, and also in wells of greater or less depth, and in cisterns, tanks, and other receptacles.

Not only does my invention suffice to sterilize and purify water and other potable fluids, but it will also serve to maintain such fluids in or to restore the same to normal condition. I have used my invention also to hinder butyric fermentation in such substances as butter, cheese, lard, and other fatty and oily substances and to preserve meat and render it tender before cooking and also to oxygenize or regenerate water which has been injuriously heated or exposed to contamination.

What I claim is—

1. An apparatus for use in the treatment of liquids, consisting of a portable electrode-holder, electric conductors arranged in said holder in position to act as electrodes, means to convey an induced current to said conductors, an electric lamp and a sparking device

also carried by said holder, and means to supply said lamp and sparking device with electric current from a suitable source, substantially as described.

5 2. In an apparatus for use in the treatment of liquids, an electrode-holder consisting of a series of tubes of electrically-non-conducting material, one of said tubes being perforated at various intervals in its length for the purpose described, and electric conductors arranged in said tubes, substantially as and for the purpose set forth.

10 3. In an apparatus for use in the treatment of liquids, an electrode comprising a casing
15 of electrically-non-conducting material, per-

forated longitudinally and supplied with contact-points at its ends, electric conductors leading through said perforations to said contact-points; means to make and break the circuit through said conductors, and means 20 to expose the conductors in said perforations at various intervals in their lengths so as to make additional electrical contact with the liquid in which the electrode is immersed, substantially as described.

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Witnesses:

WALTER LAUDER,
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