

No. 672,074.

Patented Apr. 16, 1901.

G. D. BURTON.

APPARATUS FOR ELECTRICAL LAUNDRYING.

(Application filed June 27, 1898.)

3 Sheets—Sheet 1.

(No Model.)

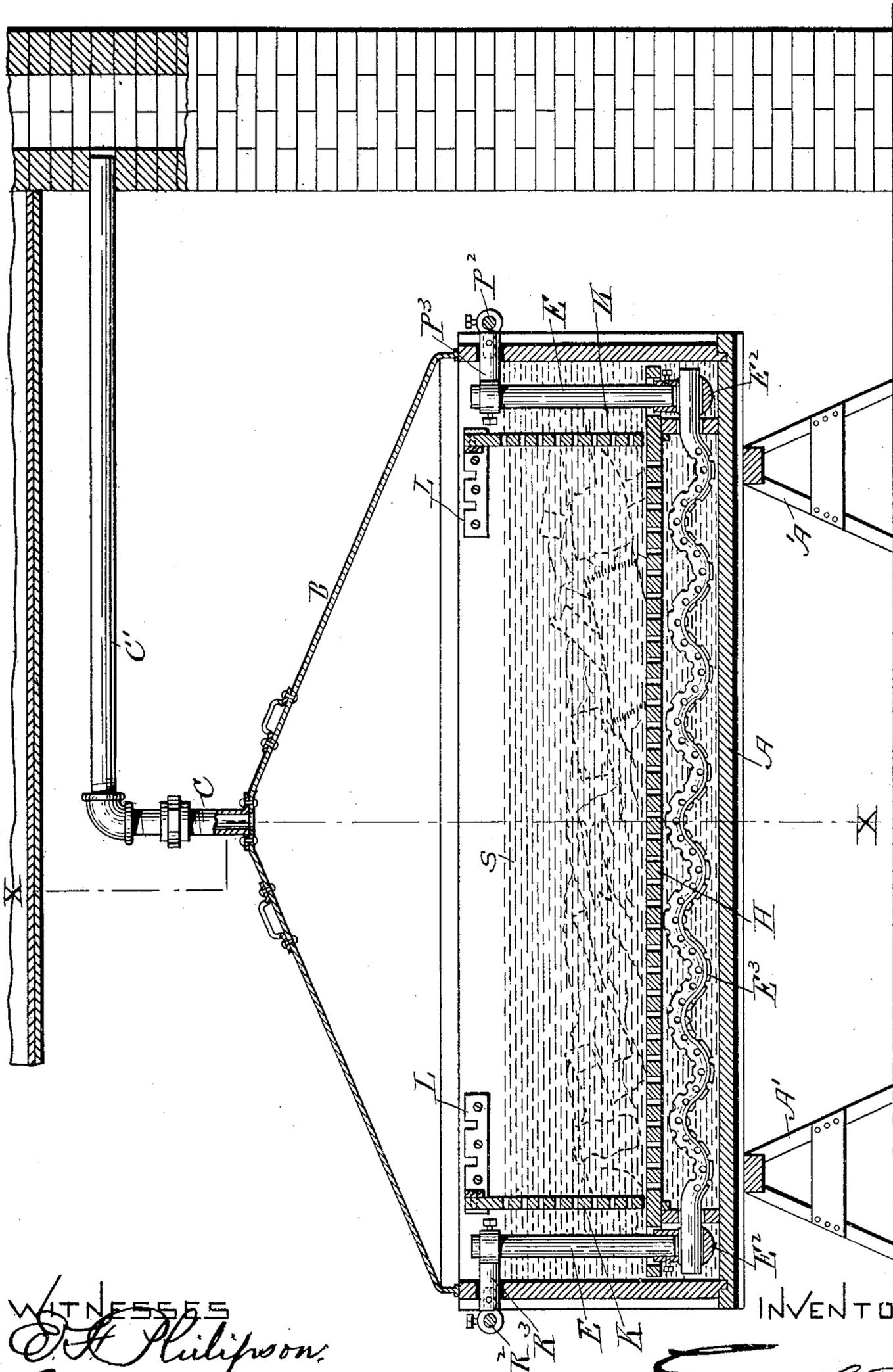


FIG. 1.

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3 Sheets—Sheet 2.

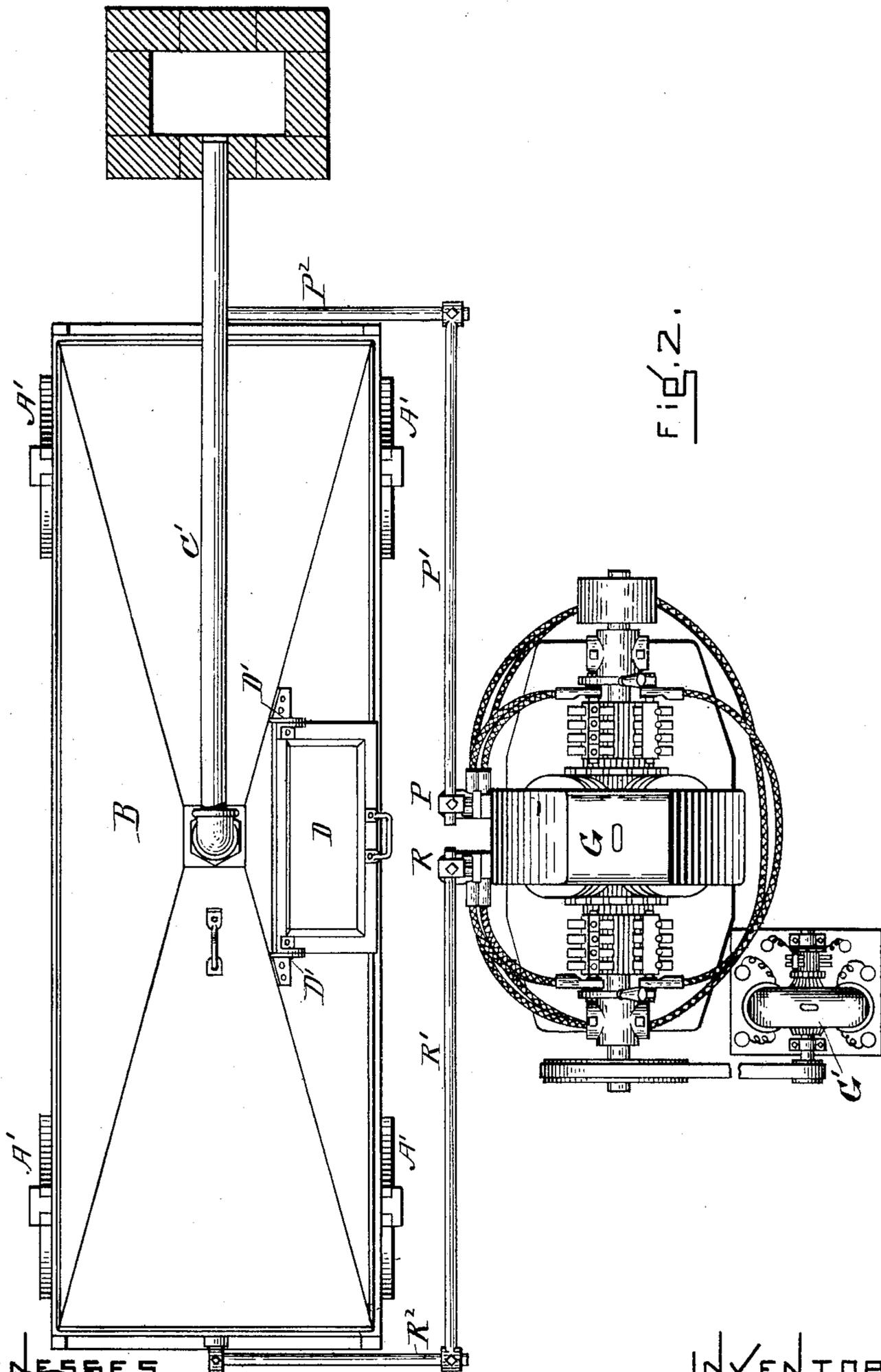


FIG. 2.

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(No Model.)

3 Sheets—Sheet 3.

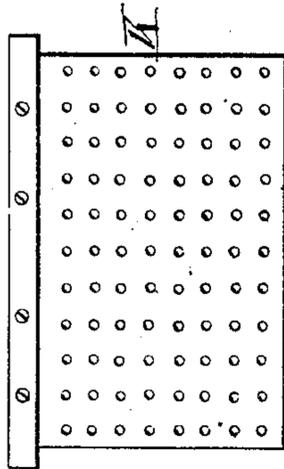


FIG. 5.

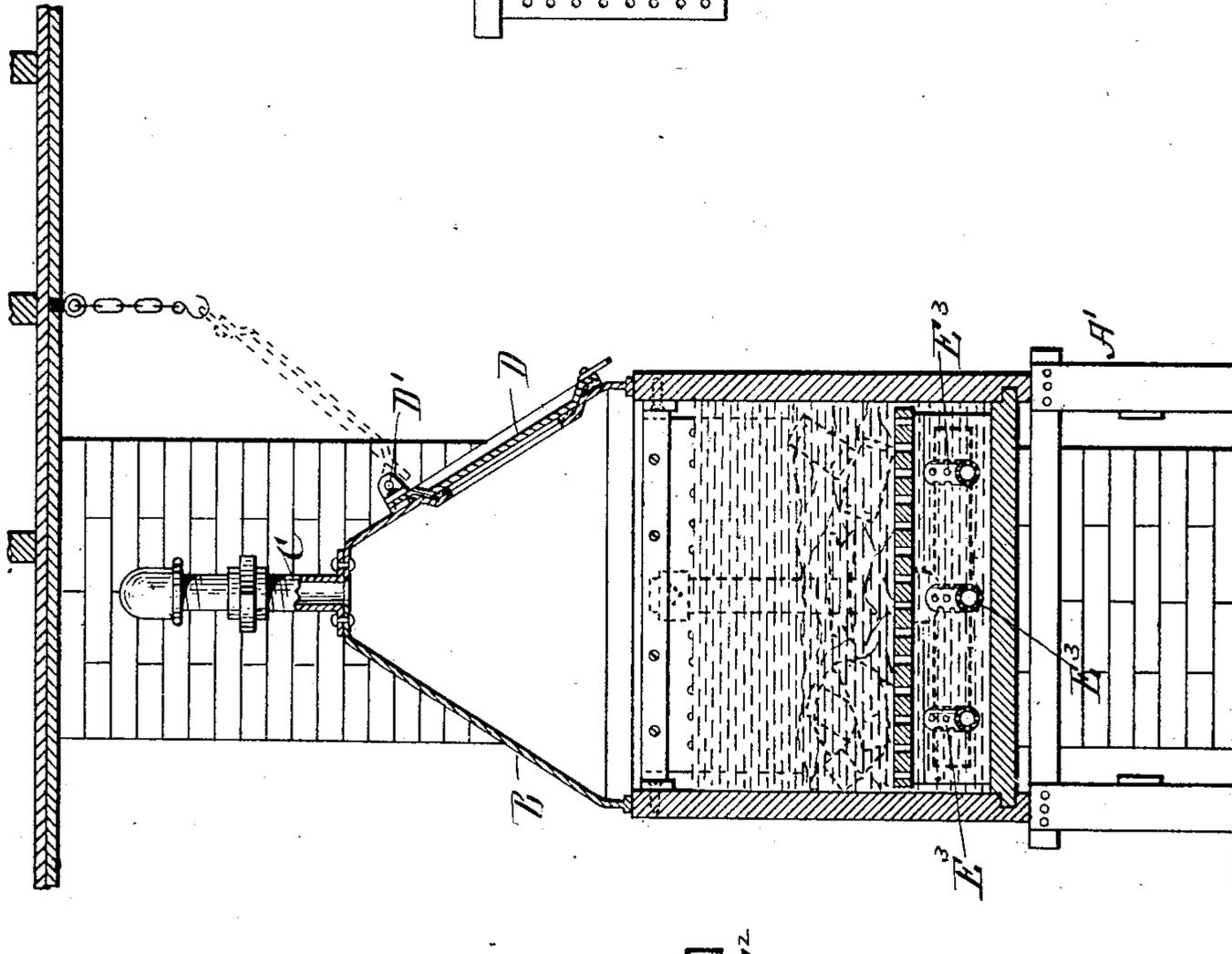


FIG. 3.

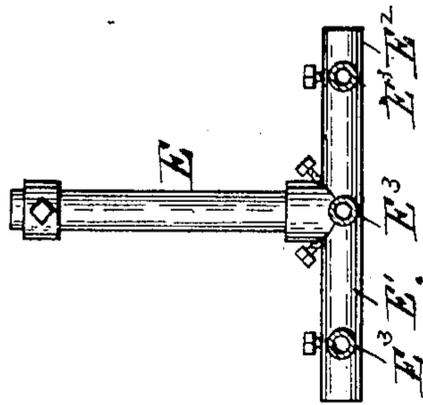


FIG. 4.

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UNITED STATES PATENT OFFICE.

GEORGE D. BURTON, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR ELECTRICAL LAUNDRYING.

SPECIFICATION forming part of Letters Patent No. 672,074, dated April 16, 1901.

Application filed June 27, 1898. Serial No. 684,594. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. BURTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Apparatus for Electrical Laundrying, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to an apparatus in which currents of electricity are used in connection with a saponaceous fluid for cleansing clothing, wool, cotton, yarns, or other articles; and it consists in applying to a tank containing a suitable detergent solution electrical appliances for generating and distributing working currents of electricity.

The construction and arrangement of my device are shown in the accompanying illustrations, in which—

Figure 1 is a vertical longitudinal section of the tank and its connecting parts, which together constitute an essential part of my apparatus. Fig. 2 is a plan showing my apparatus. Fig. 3 is a cross vertical section taken on line *xx* of Fig. 1. Fig. 4 is a detail showing a part of the electrical connections. Fig. 5 is a detail.

In the drawings, A represents a tank, composed of wood or any suitable non-conducting material, mounted upon benches A' A'. A system of electric conductors is placed within the tank and consists of vertical rods E E at each end, having horizontal cross rods or tubes E' E². (See Figs. 1 and 4.) These horizontal cross-rods are at each end of the tank, as shown, and are connected by a number of perforated rods or tubes E³.

To prevent the articles in the solution from coming in contact with the electric conductors, I place guards H K K, of wood or any non-conducting material, as shown in Fig. 1. One of these guards, H, is placed just above the horizontal conductors E³, and two guards K K are placed at the ends. The end guards are suspended from racks L L and are adjustable. All of the guards are made of non-conducting material and are perforated or may have any suitable openings. One of the end guards is shown in elevation in Fig. 5.

A hood B covers the tank and serves to confine the vapor that rises from the tank, causing more or less of it to condense and return

to the tank. A pipe C C' leads from the top of the hood and serves to conduct the vapor that is not condensed to the chimney or other receptacle. An opening is made in the hood for inserting and removing the articles to be cleansed, and a door D is provided for closing this opening. This door is hinged at D' and is held open by a chain D².

Electricity is supplied, by means of a dynamo G and an exciter G', through the conductors P P' P² P³ and R R' R² R³, (see Fig. 2,) or from any suitable source of current-supply. The positive conductors are preferably composed of aluminium and the negative conductors of copper, or both the positive and the negative conductors may be constructed of copper and platinum plated. The bars E³ are composed of suitable conductive material, preferably aluminium, which does not color the liquid. These bars may be of proper size to convey fifty per cent., more or less, of the current, while the other fifty per cent., more or less, passes through the solution.

The effect of the electric currents in this apparatus is modified by the fact that large electric conductors E³ E³ E³ pass directly through the solution S, thus taking most of the amperage of the current and utilizing it for heating; but still a large percentage will pass through the solution and the immersed articles to be cleansed and cause an electrochemical action to take place in the solution and in the articles being cleansed. It will be noticed that the conductors E³ E³ E³ are perforated. This allows a circulation of the solution S through and through the conductors and greatly facilitates the heating. The current of electricity that leaves the conductors and passes directly through the solution itself acts upon the solution and the articles to cleanse and improve them. This current may vary from one hundred and ten to five hundred volts and from sixty to two hundred amperes. The current heats the bath, destroys all germs of disease lurking in the articles under treatment, and has a cleansing effect upon said articles. The higher the voltage of the current the quicker will the solution be heated and the faster the work completed, and the amount of cleansing ingredients required will also be less. The current passes from one pole to the other through the

solution and the articles being treated and agitates and keeps in motion both the solution and the articles, thereby exposing all parts of said articles to the cleansing action of the solution and the current. The restorative action is due to that part of the current that passes directly through the solution and the articles, as that part that passes through the conductors $E^3 E^3 E^3$ acts thermally.

10 In this apparatus I may use a special current of electricity generated for this purpose. A current of two and one-half to five volts and from eight hundred to fifteen hundred amperes will operate to heat the solution quickly, so that in fifteen minutes the articles are 15 cleansed ready for removal from the solution, and the operation may then be repeated, if desired.

In this form of apparatus it will be observed 20 that a direct electric conductor E^3 is used, so that currents of low voltage and large amperage may be employed, and the solution may be a comparatively poor conductor. This arrangement will admit of the liquid in the 25 tank being water alone or of a very weak solution of sal-soda, borax, concentrated lye, or any other saponaceous or alkaline solution may be used if desired.

I claim—

30 1. In an electric apparatus for cleansing laundry and other articles, the combination of a tank for containing a saponaceous solution in which the articles to be cleansed are immersed, electric conductors extending into 35 and through said solution, and adjustable guards for preventing injury to the articles under treatment.

40 2. In an electrical apparatus for cleansing laundry and other articles, the combination of a tank for containing a saponaceous solution in which the articles to be treated are immersed; electric conductors extending into

and through said solution, adjustable guards for said conductors, a series of perforated conductors disposed near the bottom of said tank, 45 and perforated guards supported above said conductors.

3. In an electrolytic apparatus, the combination of a tank for containing a saponaceous solution into which the articles to be treated 50 are immersed, electric conductors disposed at opposite ends of said tank and connected to opposite electric poles, adjustable guards therefor, a series of perforated serpentine electrodes disposed at or near the bottom of said 55 tank and connected to said conductors at the end of the tank, and a guard disposed over said electrodes.

4. In an electrolytic apparatus, the combination of a tank for containing a saponaceous 60 solution into which the articles to be cleansed are immersed, a system of electric conductors disposed in said tank comprising vertical electrodes disposed at opposite ends of said tank and connected to opposite electric poles, horizontal electrodes connected to said vertical 65 electrodes and extending across said tank near the bottom thereof, and a series of hollow perforated electrodes disposed longitudinally of said tank near the bottom thereof 70 and connected to said horizontal electrodes, a perforated guard disposed over said longitudinal electrodes, and adjustable perforated guards disposed in front of the vertical electrodes. 75

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 24th day of June, A. D. 1898.

GEO. D. BURTON.

Witnesses:

ALBERT W. MANN,
FRANK G. PARKER.