No. 617,543. Patented Jan. 10, 1899.

# O. SCHNEIDER.

## ELECTROTHERAPEUTIC AND MASSAGE APPARATUS.

(Application filed Aug. 17, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig: 2.

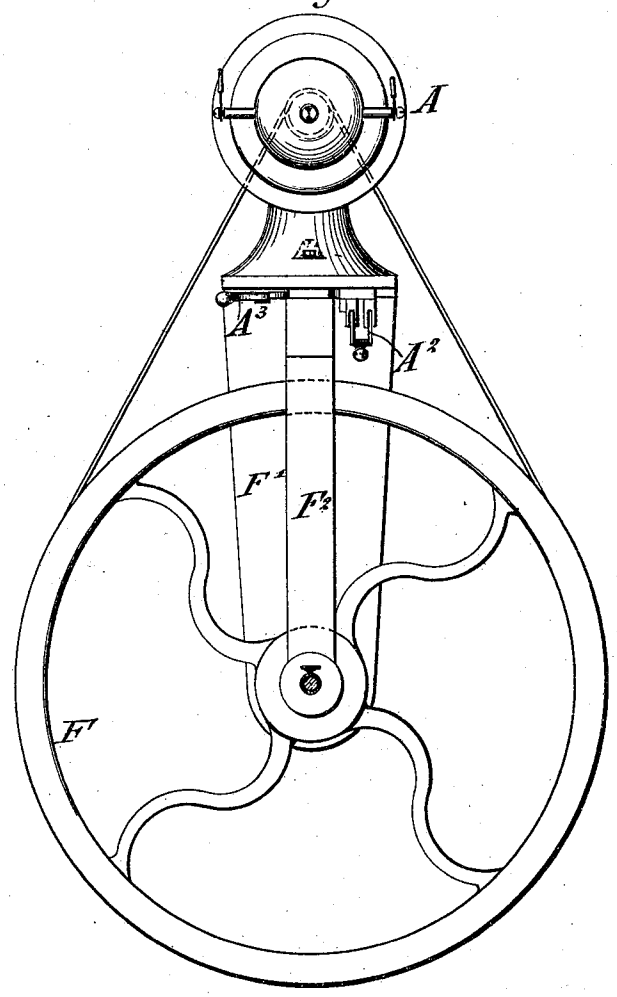


Fig: 1.

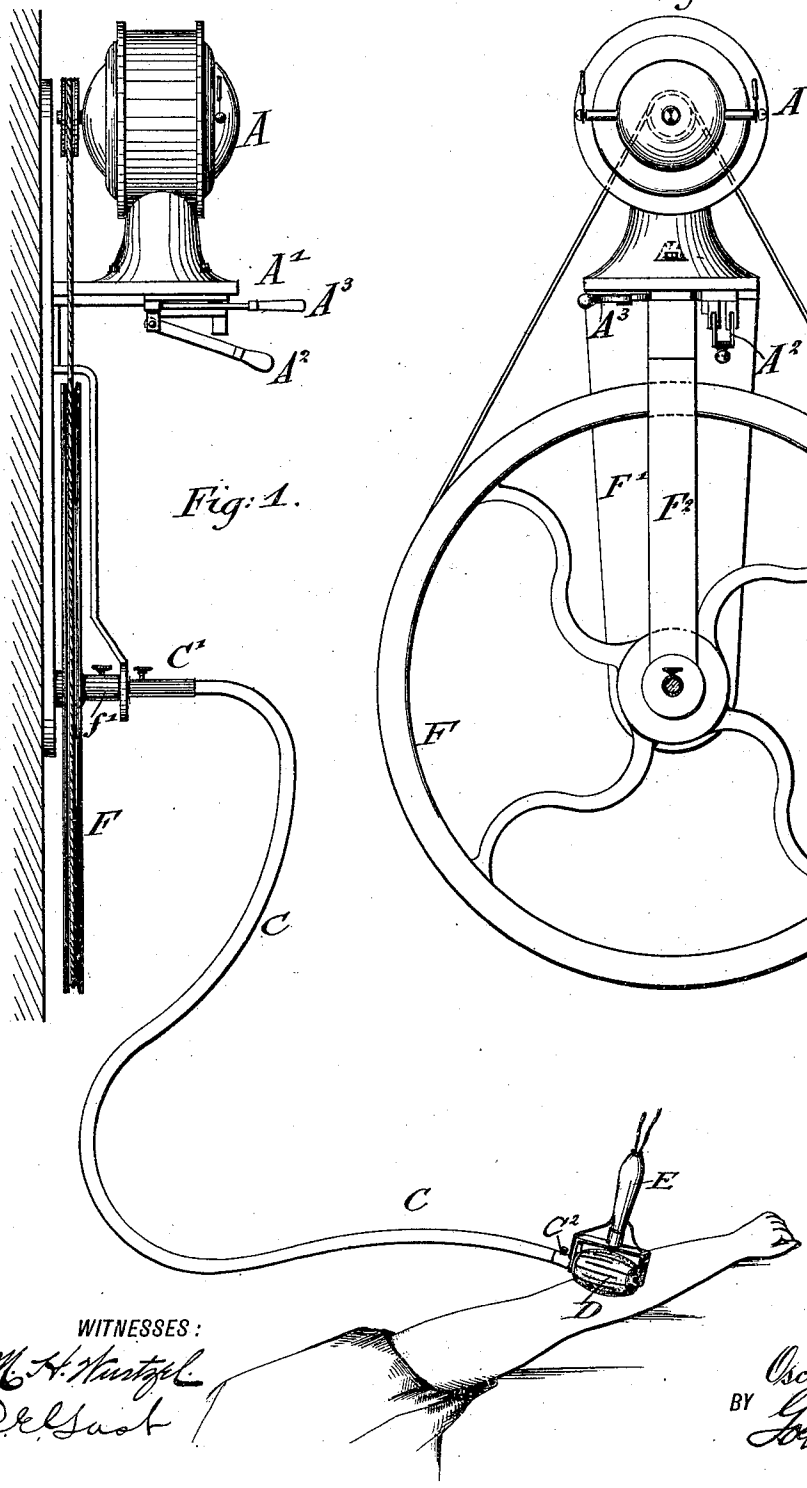


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Fig: 7.

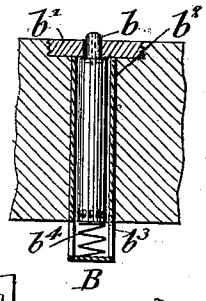
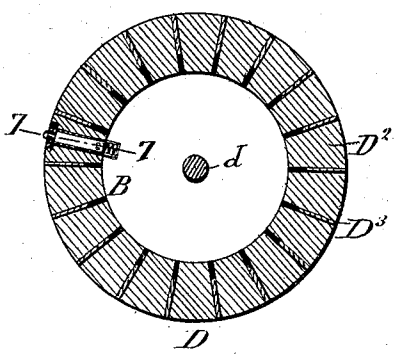
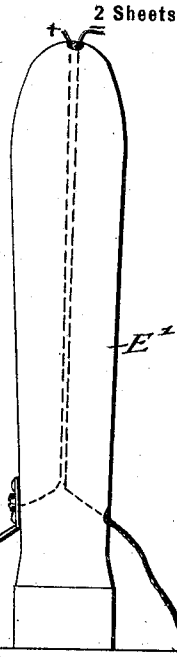



Fig: 6.



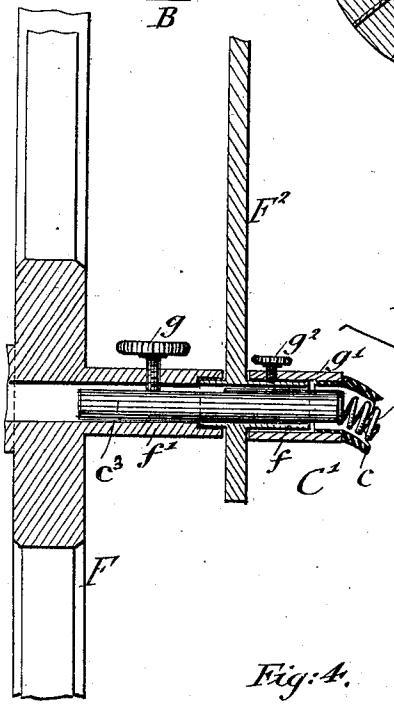




Fig: 3.

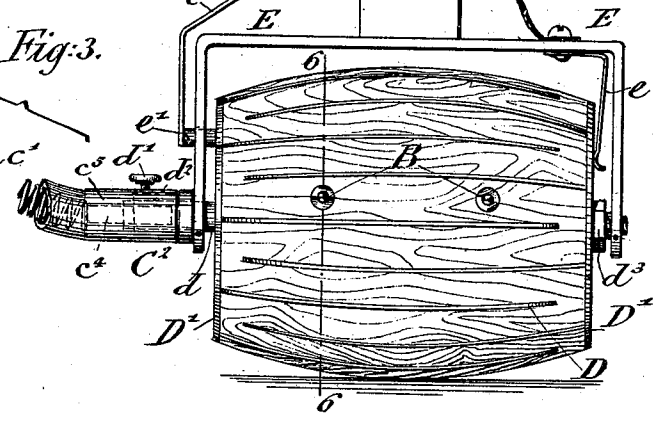
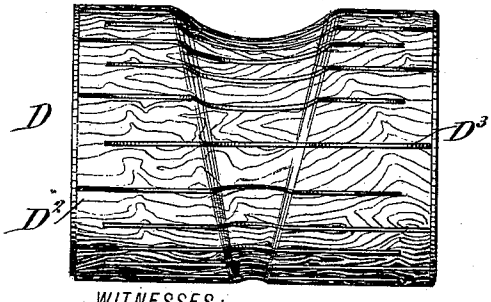



Fig: 4.

Fig: 5.



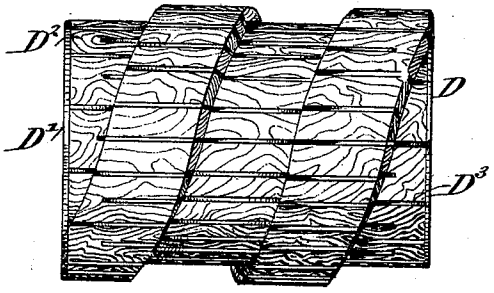




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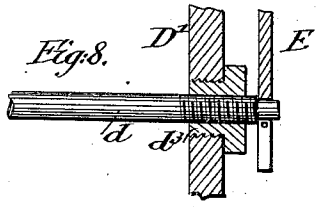
Fig: 8.




INVENTOR

Oscar Schneider

BY Church & Kaegener

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# UNITED STATES PATENT OFFICE.

OSCAR SCHNEIDER, OF NEW YORK, N. Y.

## ELECTROTHERAPEUTIC AND MASSAGE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 617,543, dated January 10, 1899.

Application filed August 17, 1898. Serial No. 688,769. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR SCHNEIDER, a citizen of the United States, residing in the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Apparatus for Electrotherapeutical and Massage Treatment, of which the following is a specification.

This invention relates to an improved apparatus for electrotherapeutical and massage treatment of various local diseases by the faradic or galvanic current, so as to improve the circulation of the blood and oxidize the fatty matter in the cells of the skin, with a view to the reduction of weight; and the invention consists of an apparatus for massage treatment of local diseases which comprises a motor, a roller-electrode, a flexible shaft connecting the fly-wheel driven by the motor with the roller-electrode, couplings for connecting said flexible shaft with the fly-wheel and the shaft of the roller-electrode, respectively, a handle-frame for said roller-electrode, and means for supplying an electric current to said roller-electrode, and the invention consists, secondly, in the construction of the roller-electrode, and, lastly, in the charging of medicinal preparations to the interior of said roller and in means for intermittently discharging said preparations from the same.

In the accompanying drawings, Figure 1 represents a side elevation of my improved apparatus for galvano-faradic massage treatment, showing the roller-electrode applied to the arm of a person. Fig. 2 is a front elevation of the motor and fly-wheel by which motion is transmitted to the roller-electrode. Fig. 3 is a side elevation of the roller-electrode and its connection with the flexible driving-shaft and with the fly-wheel. Figs. 4 and 5 are side views of modified forms of my improved roller-electrode adapted for treatment of different parts of the body. Fig. 6 is a vertical transverse section of the roller-electrode on line 6 6, Fig. 3. Fig. 7 is a vertical transverse section on line 7 7, Fig. 6, drawn to a larger scale; and Fig. 8 is a detail view showing the removable plug for permitting the introduction of medicinal preparations into the roller-electrode.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents an electromotor of any suitable construction, which is supported on a suitable bracket A′ on the wall or other convenient point of support and which receives its current from any suitable source of electricity. The current is switched into or cut off from the motor A by a switch $A^2$, and the speed of the motor A is controlled by suitable resistance, which is thrown in more or less by means of a switch $A^3$ in any of the well-known ways. From the shaft of the motor A the power is transmitted by a belt and pulley to the fly-wheel F, which turns in bearings in a suitable wall-support F′ and bracket $F^2$ below the motor A, the hub of the fly-wheel being connected with a flexible shaft C of any approved construction by means of the coupling C′. To connect the shaft C to the fly-wheel, the shaft end $c^3$ of the core $c'$ of the shaft is inserted through the fixed sleeve $f$ of the bracket $F^2$ and into the hub $f'$ of the fly-wheel and the thumb-screws $g$ of the hub and $g^2$ of the coupling-piece $g'$ of the shaft-tube $c$ tightened. To connect the flexible shaft with the roller-electrode, the square shaft end $c^4$ is inserted into the end of the shaft $d$ of the roller D, said shaft being provided with a square socket for this purpose and the thumb-screw $d'$ of the coupling-piece $c^5$ tightened, so as to connect the same with the fixed sleeve $d^2$ of the handle-frame E. The forms of couplings C′ and $C^2$ and of the flexible shaft may, however, vary from those described, and shown in the drawings, without departing from the essential features of the invention.

The roller-electrode D is made of any suitable cross-section, either of convex surface, as in Fig. 3, or of other form more adapted to the particular part to be treated—as, for example, the forms shown in Figs. 4 and 5. The electrode is composed of a hollow body provided with metallic heads D′ at the ends, said roller being constructed of wooden strips $D^2$ and intermediate metallic strips $D^3$, which are alternately connected with the opposite heads of the roller. The shaft of the roller D turns in suitable bearings of a fork-shaped handle-frame E. The handle-frame is con-

nected by an insulated contact-spring *e* with one metallic head of the roller, while the opposite head is in contact with a pin *e'*, that is attached to a spring $e^2$, applied to the handle E' of the handle-frame, said pin being pressed by the spring through an opening in the frame E against the roller-head. The contact-spring *e* and pin *e'* are connected, preferably by wires extending through the handle E', with any suitable source of electricity, such as a galvano-faradic induction-coil or any other source of electricity adapted for medical treatment, so that when the roller is moved over the parts to be treated the contact of two adjacent metallic strips of the roller with the part closes the circuit and produces the passage of the current through the skin, while simultaneously by the rapid rotation of the roller and the frictional contact of the same with the skin frictional heat is produced, which jointly with the electric current produces the therapeutical treatment of local diseases in a more effective and curative manner than by the galvano-faradic treatment separately or by massage treatment such as has been heretofore performed by hand or by hand-operated rollers. In operation the roller-electrode rotates at a speed slightly higher than the passage of the same over the skin would produce, so as to produce frictional contact between the electrode and the parts. By regulating the speed of the motor this friction and consequent heat may be increased or diminished.

The apparatus is particularly adapted for therapeutical treatment of local diseases of children, in which case the hollow interior of the roller-electrode forms a chamber or compartment which can be charged by means of the removable plug $d^3$ with suitable medicinal preparations, such as cod-liver oil or other emulsions, &c. These emulsions are discharged from the interior of the roller by means of two or more exit-valves B, which are shown in detail in Figs. 6 and 7. This valve consists of a tubular nipple *b*, that projects through an aperture in a washer *b'*, inserted in one of the wooden sections of the roller, said nipple being provided with openings $b^3$ at its lower end and incased in a suitable sheet-metal socket $b^2$, having openings at the ends and acted on by a helical spring $b^4$, interposed between the inner end of the tubular nipple and the bottom of the socket, as shown in Fig. 7. As the roller is rotated the nipple or nipples are moved inwardly into the socket at each rotation of the roller, and thereby a certain quantity of the medicinal preparation in the roller ejected on the skin, so as to be absorbed by the pores of the same during the frictional contact of the rapidly-rotating roller-electrode. To prevent the current from passing through the liquid and forming an interior connection between the metallic strips, the strips are shown in Fig. 6 extending only partially through the roller, or they may extend entirely through the roller and the interior of the roller be coated with shellac or similar material to insulate the liquid from the metallic strips. Insulating-washers or other means are also employed to prevent the current from passing through the axle *d*.

The advantages of my improved apparatus are that owing to the heat generated by the rapidly-rotating roller-electrode, together with the pressure of the roller and the application of the electric current, a quicker and more effective therapeutical treatment of local diseases is obtained than has heretofore been possible.

My improved apparatus is especially adapted for diseases of the respiratory and digestive organs and for improving the circulation of the blood and reduction of adipose tissue.

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

1. The combination of an electromotor, a roller-electrode, a flexible shaft connecting the fly-wheel driven by the motor with the roller-electrode, couplings for connecting said flexible shaft with the fly-wheel and the shaft of the roller-electrode respectively, a handle-frame for said roller-electrode, and means for supplying an electric current to said roller-electrode, substantially as set forth.

2. A roller-electrode for galvano-faradic massage apparatus, consisting of wooden sections, metallic heads for said sections, and intermediate metallic strips connected alternately with the opposite heads of the roller, substantially as set forth.

3. A roller-electrode provided with an interior compartment and composed of wooden sections, intermediate metallic strips and metallic heads with which the strips are alternately connected, and a spring-actuated nipple guided in a suitable socket in said roller-electrode and adapted to eject liquid charged in the same, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

OSCAR SCHNEIDER.

Witnesses:
PAUL GOEPEL,
M. HENRY WURTZEL.