

No. 647,687.

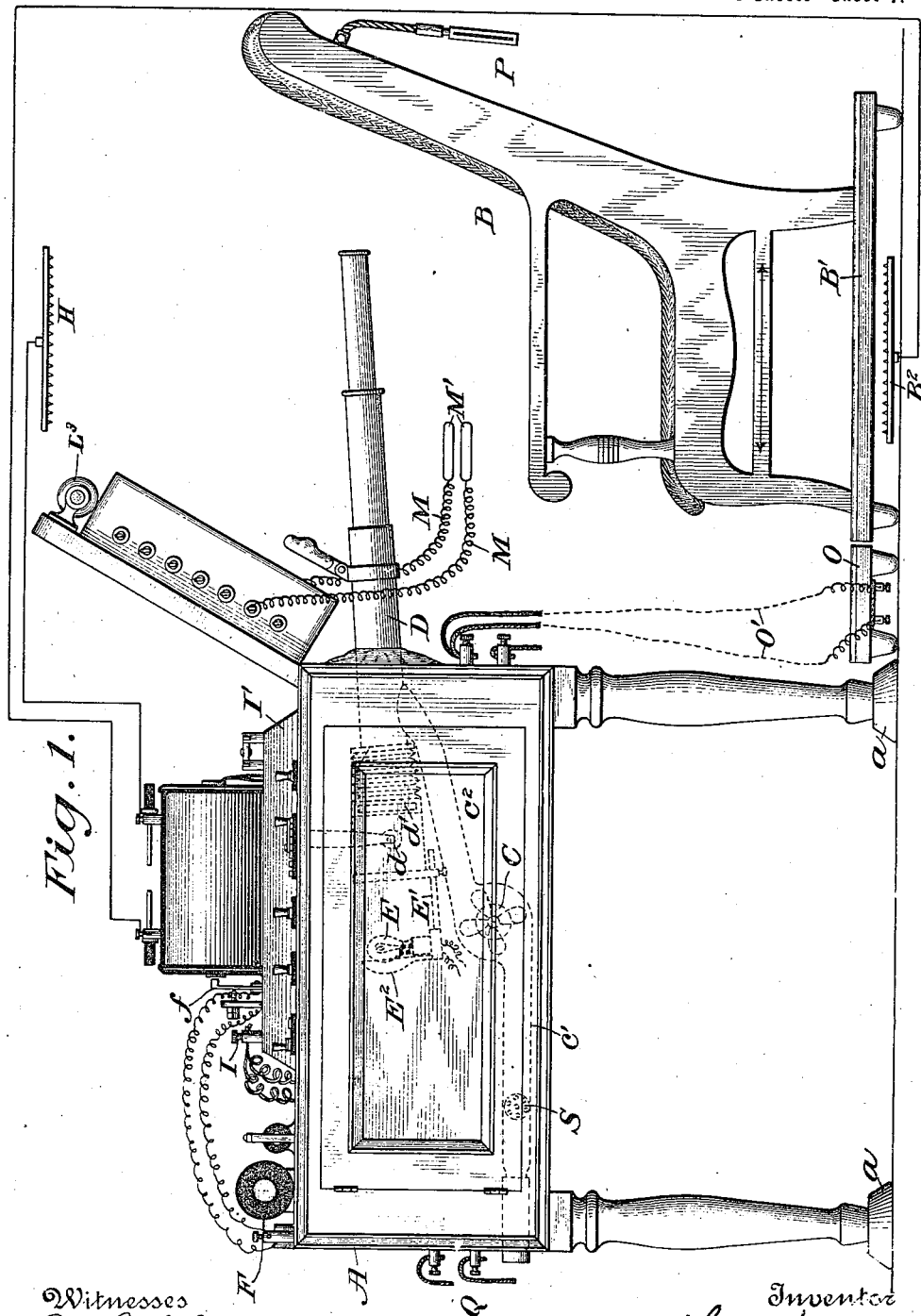
Patented Apr. 17, 1900.

T. W. TOPHAM.
ELECTROTHERAPEUTIC DEVICE.

(Application filed Dec. 19, 1899.)

(No. Model.)

6 Sheets—Sheet 1.



Witnesses
C. W. Smith
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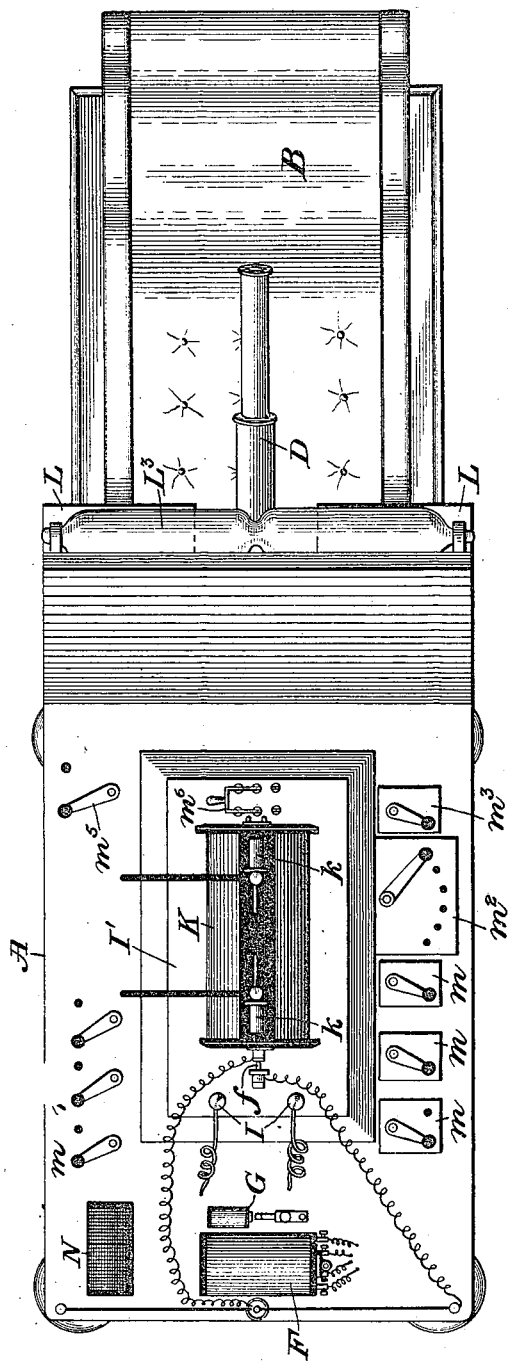
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Fig. 2.



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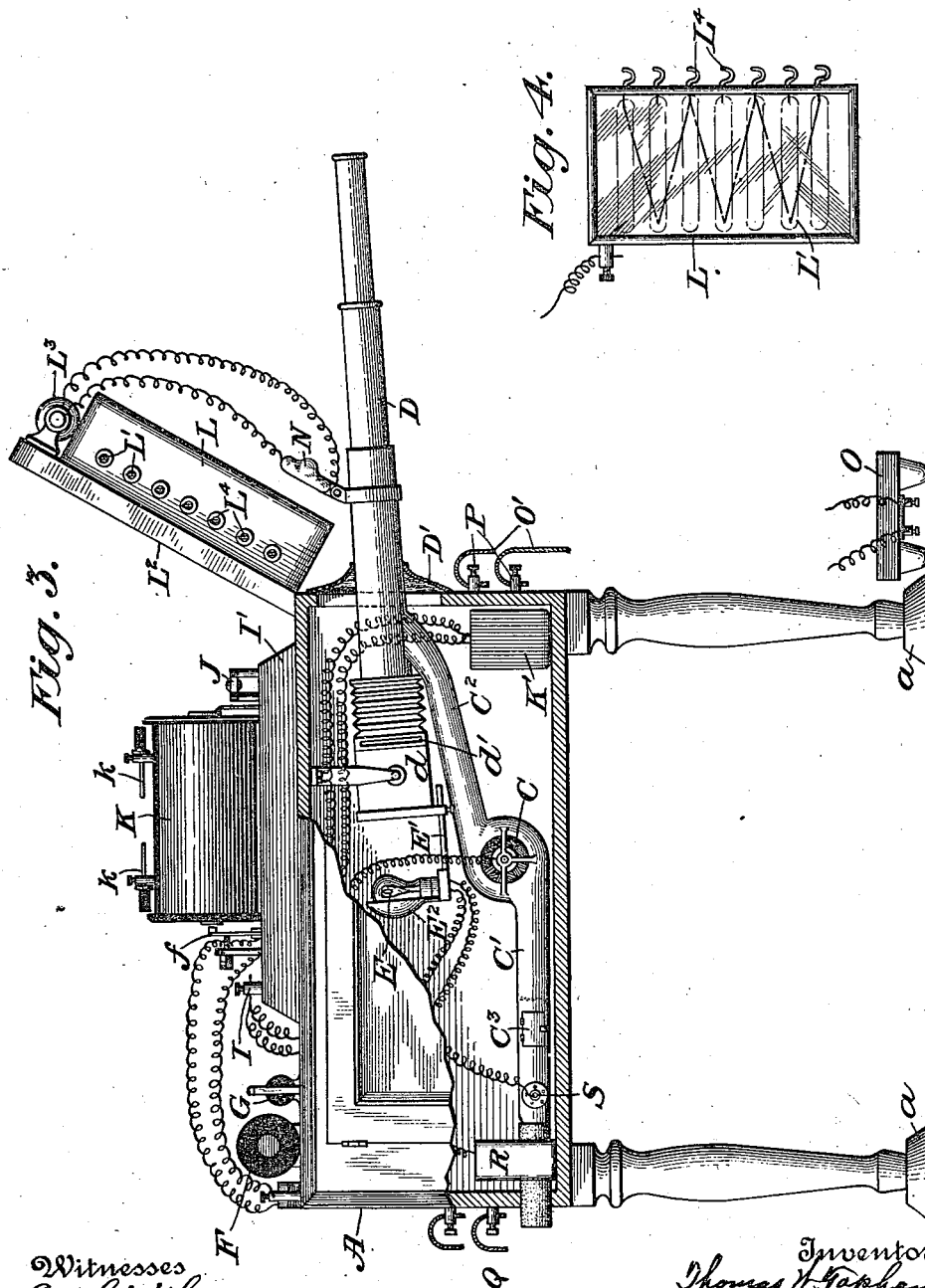
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Fig. 5.

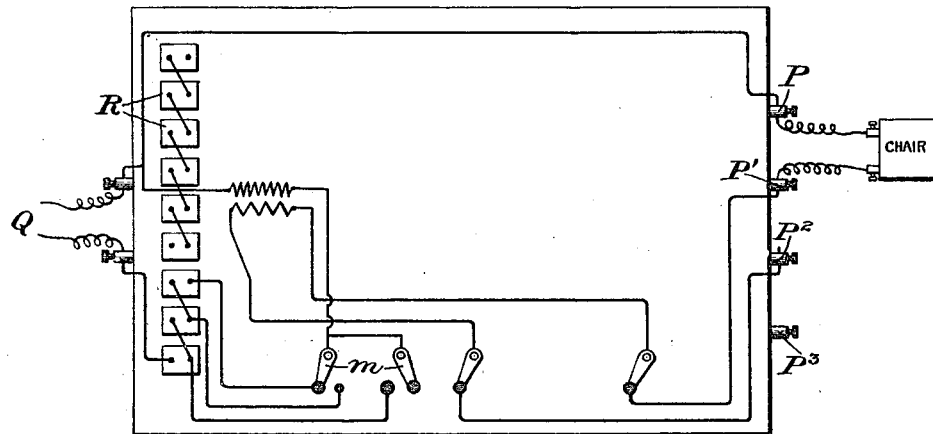
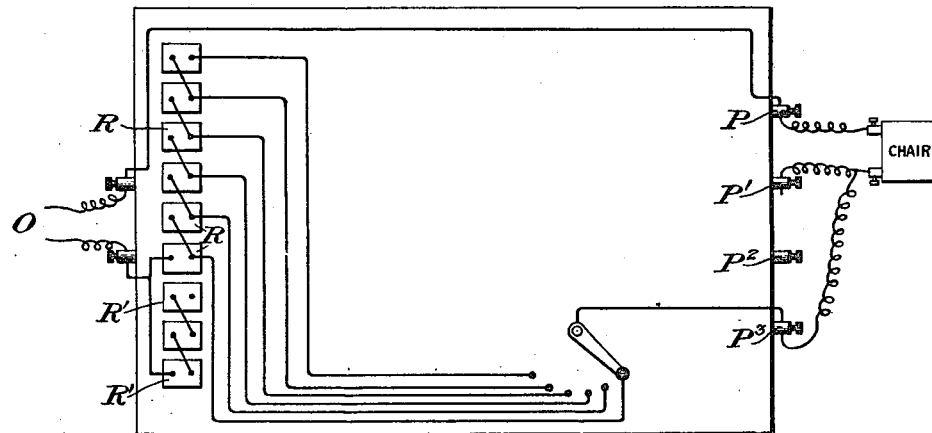


Fig. 6.



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Fig. 7.

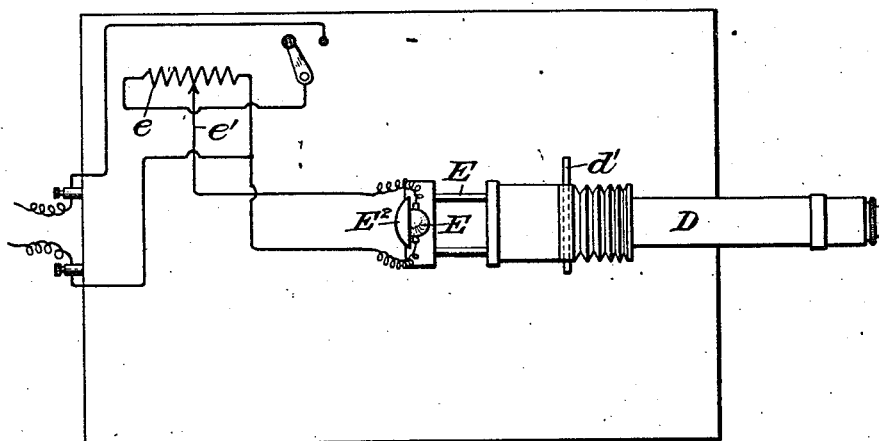
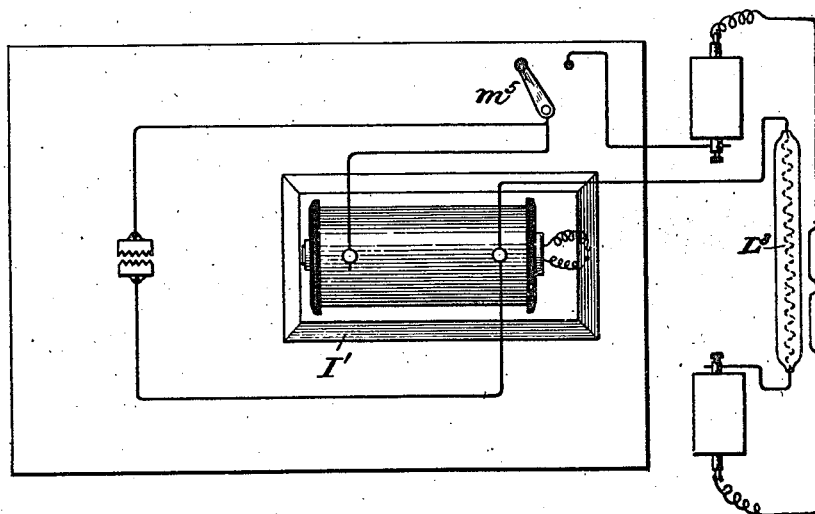


Fig. 8.



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Fig. 9.

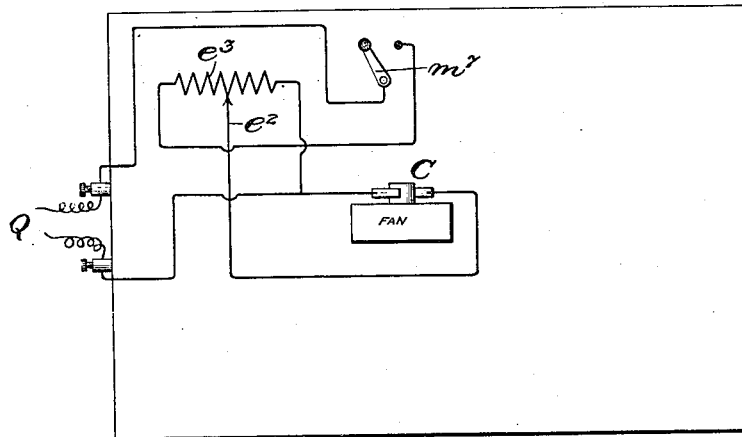
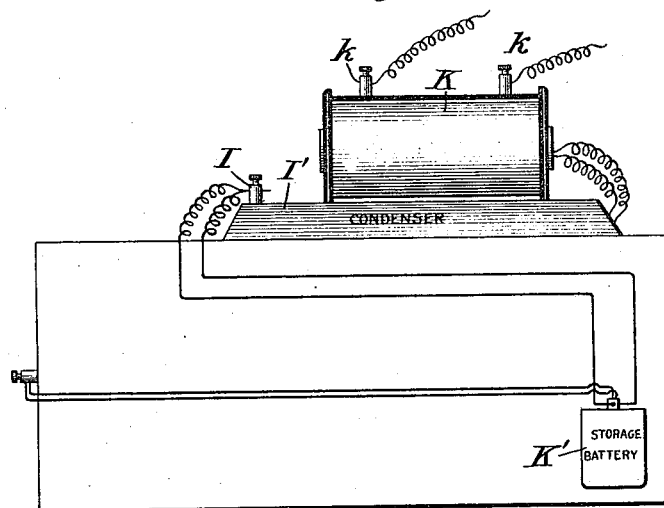


Fig. 10.



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UNITED STATES PATENT OFFICE.

THOMAS W. TOPHAM, OF NEW YORK, N. Y.

ELECTROTHERAPEUTIC DEVICE.

SPECIFICATION forming part of Letters Patent No. 647,687, dated April 17, 1900.

Application filed December 19, 1899. Serial No. 740,882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. TOPHAM, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electrotherapeutic Devices, of which the following is a specification.

My invention relates to a device containing various electrical apparatus combined in such a way as to enable them to be brought to bear upon a patient so as to exert a beneficial influence upon both his mental and physical system.

My invention comprises the novel features and combinations of parts which will be hereinafter pointed out.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my device. Fig. 2 is a plan view. Fig. 3 is a side elevation and partial section of the cabinet. Fig. 4 shows a face view of one of the cases containing the vacuum-tubes; and Figs. 5 to 10, inclusive, show diagrammatically the wiring of parts of the device.

With my invention it is designed to make it possible to place the patient under the influence of electric and light currents of various kinds, intensities, and amounts, which may be varied to suit the circumstances and requirements of each case, also to create a blast of air which shall be charged with ozone by means of electric sparks and to cause the patient to breathe this air, and thus to purify the blood and kill disease-germs. The means used for accomplishing these results will appear from an inspection of the accompanying drawings and description.

The apparatus used consists of two principal parts or groups—the cabinet A and the mechanisms mounted thereon and the chair B, which is occupied by the patient. The major part of the apparatus is within or upon the cabinet A. The cabinet is insulated from the floor by resting it upon porcelain or other suitable insulators *a*. Within this cabinet, which is provided on one or more sides with doors for ready access to its interior, are

placed various pieces of apparatus. At C is a combined motor and fan, the fan being connected with pipes C' and C², so as to draw air from outside the cabinet and discharge it through a telescopic tube D. In the air-suction pipe C' is placed an electric sparking device S, which when the device is in use creates a constant stream of sparks within the tube, thus charging the air flowing through the tubes with ozone. This tube also has a slide or door C³, by means of which volatile medicines may be inserted in the draft, so as to charge the air therewith.

The telescopic tube D projects from one end of the cabinet and is hinged at *d*, so that its outer end may be raised or lowered to adjust its end in front of the patient's nose and mouth. The front of the cabinet has a slot accommodating the tube and a flexible covering D' therefor, which permits movement of the tube and keeps the opening closed. The inner end of this tube has an arm or arms E' adjustably secured thereto and carrying an incandescent lamp E and a reflector E², which are in line with the tube, so as to throw the light outward therethrough. The tube D is also provided with means for the insertion of a color-slide *d'*, of colored glass, gelatin, or any suitable material, so that the light emanating from the tubes may be made anything desired by changing the slides, and the rapidity of the light vibrations be thereby controlled from the ultra-violet to the deep red. Storage batteries are charged by the service-current through wires Q. This current is divided, part being used direct, as described before, and part going to charge the storage batteries.

Electric current for operating the fan-motor, light, and for any other desired purpose is supplied over the wires Q. Rheostats R and R' are placed within the cabinet, the rheostats R being used to vary the strength of the current for direct application to the subject. The rheostats R' are used to control the strength of the current flowing to the induction-coil F. The rheostats R are controlled by the six-point switch *m*² and the rheostats R' by the switches *m*.

A high-tension current is supplied by passing current from storage (or galvanic) bat-

teries K' through the Ruhmkorff coil K, the current induced thereby being used to operate the sparker S. The same induced current of high tension or a part thereof may be passed through series of vacuum-tubes L', contained in two cases L, placed upon the face of a board L², which extends upward from the end of the cabinet next to the chair and facing said chair. A single large vacuum-tube L³ is placed above and between these cases and connected in the circuit. These tubes will produce the ultra-violet colors and the Roentgen or X rays and constitute a source of high-tension or rapid light vibrations. These may be cut out, if desired, by the switch m⁵. The circuit is completed through these tubes by means of chains or other flexible conductors connected with handles M', which are to be grasped by the patient, who will thus receive the benefit of a current of electricity passing through his body. For these handles I prefer to use vacuum-tubes similar to the tubes L', although other forms might be used. The chains M may be shifted so as to connect with part or all of the vacuum-tubes L', so as to vary the intensity of the current by shifting them from one to another of the hooks L⁴, which project from the sides of the cases L and are directly connected with the tubes. The intensity of the current passing through the body will thus be varied. A Crookes tube N is mounted upon the telescopic tube D in front of the vacuum-tubes L and is connected by conductors N' with the ends of the vacuum-tube L³. In Fig. 9 a resistance-coil e², adjustable connection e³, and switch m⁷ are shown, by means of which the fan is controlled.

At f a vibrator or current-breaker is shown which breaks the current to the sparker S and causes a rapid succession of sparks. At G is shown another interrupter or vibrator which is in the induced current from the induction-coil F, leading to the binding-posts P, from whence it is led either to the footstool O or to the chair.

In front of the patient and where he can place his feet upon it is a low stool O, which is supported upon low insulating-legs and has two separated metallic plates upon its upper surface, to which the wires O' are connected, which lead from the binding-posts P and induction-coil F. This may be disconnected and not used, if desired, and the wires connected to various parts of the chair, so that low-tension current may be passed through various portions of the body. In using the stool each foot should be placed upon its respective plate, whereby the current will be forced to pass through the legs and body.

Suspended over the head of the patient while seated in the chair is a plate H, which has a series of fine points projecting downward and is connected with the induced current of the Ruhmkorff coil. Beneath the platform B', upon which the chair stands, is placed

a similar plate B², which is connected with the other pole of the Ruhmkorff coil. Instead of the above form of plates one or both may consist of a glass plate with tin-foil covering the larger part of its surface. This plate may also be placed just beneath the seat of the chair instead of beneath the platform. This places a zone of electrical influence or waves about the patient. The plate B² may be removed from beneath the chair by sliding it out.

At T, back of the chair, is shown a means by which a light of any desired kind may be attached. This would ordinarily be red light or one differing widely in character from that given off by the tubes L', that is occupying the opposite end of the spectrum.

The outer binding-posts P and P³ (shown in Figs. 5 and 6) are supplied with current from the direct or service wires, while the inner posts P' and P² are supplied with current from the induction-coil F. In both figures the wires are shown as connecting both circuits. It is designed at times to use these different circuits separately or in combination in any possible manner, the same being varied as circumstances warrant. It is designed to most frequently use the devices described in such a way as to have the high-tension currents, both of electricity and light or those of more rapid vibrations, opposed to the low-tension currents or those of less rapid vibrations, the high-tension currents thus being encouraged to pass to the low, and as the subject is placed between the terminals or sources of the two kinds the currents are caused to pass through the body, and thereby to exert a beneficial effect.

I claim—

1. In an electrotherapeutic machine, the combination of an air-blast-producing mechanism, a guiding pipe or nozzle receiving the air-blast, and a light located to throw its rays out through said pipe, with an electric sparking device located in said blast, substantially as described.

2. In an electrotherapeutic machine, the combination of an air-blast-producing mechanism, a guiding pipe or nozzle receiving the air-blast, and a light supported from the blast-receiving end of said pipe and adapted to throw its rays through the pipe, with an electric sparking device located in said blast, substantially as described.

3. In an electrotherapeutic machine, the combination of an air-blast-producing mechanism, a pivoted pipe or nozzle receiving the air-blast, and a light carried by the pipe at its blast-receiving end and adapted to throw its rays through the pipe with the air, with an electric sparking device located in the air-blast, substantially as described.

4. In an electrotherapeutic machine, the combination of an air-blast-producing mechanism, a pivoted pipe or nozzle receiving the air-blast, and a light carried by the pipe at

its blast-receiving end and adapted to throw its rays through the pipe with the air, and a color-slide insertible in said pipe, with an electric sparking device located in the air-blast, substantially as described.

5 5. An electrotherapeutic device, comprising an electric circuit adapted to be closed through the body and a series of vacuum-tubes adapted to be inserted in said circuit, substantially as described.

10 6. An electrotherapeutic device, comprising an electric circuit adapted to be closed through the body and a series of vacuum-tubes adapted to be inserted in said circuit, and means by which the number of said tubes in the circuit may be varied.

15 7. An electrotherapeutic device, having devices for producing lights widely separated in the spectrum, and adapted to receive the subject between said light-producing devices, substantially as described.

20 8. In an electrotherapeutic device, high and low tension current generating devices in combination with plates adapted to be placed at opposite sides of the subject, and means for connecting said plates with the sources of said currents, as desired, substantially as described.

25 9. An electrotherapeutic device, comprising a feeding or service circuit connected with

a suitable source of supply of electricity, a storage battery adapted to be connected in said service-circuit, means for applying current from said circuit to the subject, adjustable resistance devices insertible in said means, an induction-coil connected in the service-circuit and adapted to produce a current of different intensity, and means for applying the induced current to the subject, substantially as described.

35 10. An electrotherapeutic device, comprising means for producing electric currents of different intensities, means for producing lights of different colors, and means for subjecting the patient to the influence of the said lights and electric currents, substantially as described.

40 11. An electrotherapeutic device, comprising means for producing electric currents of different intensities, means for producing lights of different colors, means for subjecting the patient to the influence of the said lights and electric currents, and means for producing a supply of air charged with ozone, substantially as described.

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