

UNITED STATES PATENT OFFICE.

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ELECTROMEDICAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 708,365, dated September 2, 1902.

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To all whom it may concern:

Be it known that we, JOHN H. KLIEGL, a citizen of the United States, and ANTON T. KLIEGL, a subject of the Emperor of Germany, both residing at the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Electromedical Appliances, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The invention which forms the subject of our present application is an improvement in apparatus for the treatment of disease by means of actinic light-rays artificially produced by electric agency, and comprises an apparatus for producing, controlling, and directing the rays from an electric arc in such manner as to permit of their being readily applied to any part of the body of a patient and to surfaces of any desired extent.

To this end our invention consists in an arc-lamp or apparatus of similar nature in a casing or hood of suitable character, mounted so as to be capable of universal adjustment and combined with a system of condensing and focusing lenses, by which the field or circle of light-rays may be adjusted to any desired diameter, and means for intercepting the heat-rays produced by the arc when so desired. The features of novelty for which we now seek protection by Letters Patent reside in the construction and combination of the parts or elements of the said apparatus and will be described more in detail by reference to the accompanying drawings, in which—

Figure 1 is a side view in elevation of our improved apparatus; Fig. 2, a sectional diagram of the same, exhibiting the essential elements; and Fig. 3, a similar view of a modification.

The apparatus is mounted on a base A, containing a rheostat, the controlling-switch for which is mounted on any convenient part of the same.

The arc-lamp, which may be of any-suitable kind, is contained in a casing B, attached to a cylindrical hood C, of iron or any other suitable material. This hood is mounted by trunnions at the end of arms D, extending from a stem swiveled in the bracket-support

E, by means of which the said hood and arc-lamp possess the capability of universal adjustment. Within the hood and in front of the arc is a double convex condenser F, which is adjustable for focusing purposes by means of a rack and a pinion G. Two rods H H extend out in front of the hood C and parallel with the longitudinal axis of the same, and upon these is supported, with the capability of longitudinal adjustment thereon, a double-convex focusing-lens L. By means of these lenses a circle of light of any size can be readily obtained upon any part of the body of a patient which it is desired to treat, and the position of such light spot may be adjusted as desired by the lateral or vertical movement of the hood and its connected parts. Between the condenser and focusing-lenses is a cell K for intercepting the heat-rays. This cell may be filled with distilled water, with alum, methylene-blue, or other suitable agent in solution therewith, and in order to render its action more effective a circulation of the fluid may be provided for by using two bags or receptacles O P of the solution, connected, respectively, by flexible tubes N with ports M at opposite sides of the cell. By alternately raising and lowering the bags the solution is transferred from one to the other, thus producing a continuous flow of heat-absorbing fluid through the cell K. The receptacles may be raised and lowered by means of suitable mechanism—as, for example, that shown in Fig. 1—in which Q is a standard carrying a support R, having pulleys S S at its ends. Over these pulleys are suspended the bags by cord T, so that when one is raised the other will be lowered.

Instead of using a cell K in connection with the condenser we may combine these two elements in one by utilizing the space between the lenses as a cell for the solution. This construction is shown at F' in Fig. 3, the inlet and outlet for the solution being indicated by M'.

The value of actinic light-rays as a therapeutic agent is well established; but the apparatus heretofore employed for their production and application has been crude and impracticable.

The advantages of our apparatus reside mainly in affording a simple device, which