No. 853,829. PATENTED MAY 14, 1907.

C. M. ROBINSON.

THERAPEUTIC AND OTHER ELECTRIC LAMP.

APPLICATION FILED FEB. 18, 1907.

Fig. 1.

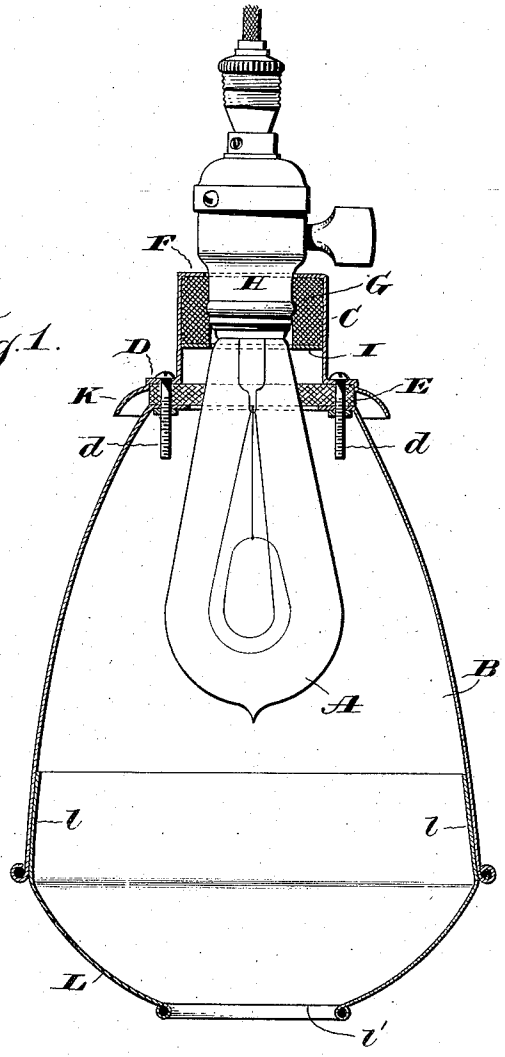
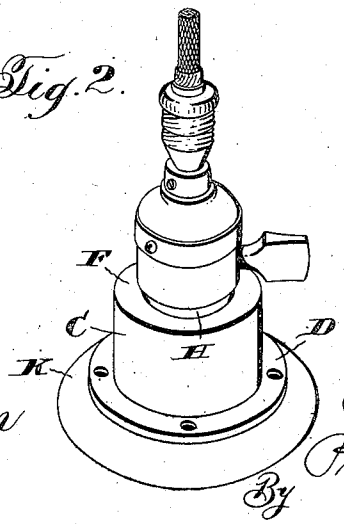


Fig. 2.



Witnesses:

Jas. E. Hutchinson

J. L. Taylor

Inventor:

Charles M. Robinson

By Prindle and Williamson

Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES M. ROBINSON, OF NEW YORK, N. Y.

THERAPEUTIC AND OTHER ELECTRIC LAMPS.

No. 853,829. Specification of Letters Patent. Patented May 14, 1907.

Application filed February 18, 1907. Serial No. 358,005.

To all whom it may concern:

Be it known that I, CHARLES M. ROBINSON, of New York, in the county of New York, and in the State of New York, have invented a certain new and useful Improvement in Therapeutic and other Electric Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a therapeutic lamp embodying my invention; Fig. 2 a perspective view of the combined coupling device and handle of holding means detached from the reflector and lamp.

My invention relates more particularly to electric lamps for therapeutic purposes, but there are certain features of it which are applicable to incandescent electric lamps generally, and the objects of my invention will be found set forth in the following description of its construction, and for the attainment of such objects, my invention consists in the features of construction substantially as hereinafter claimed.

I have illustrated my invention as embodied in a therapeutic electric lamp, which comprises an ordinary incandescent lamp A and a parabolic reflector B, the lamp being attached to the smaller end of the reflector. For securing the lamp and the reflector together, I employ a coupling C that consists of a metal cylinder or tube having at one end an outwardly projecting ring or flange D, between which and the flattened end surface of the reflector I interpose a gasket or washer E of asbestos or other material that is a non-conductor of heat, screws *d* being passed through said flange, gasket and the end of the reflector, and nuts being applied to the ends of the screws within the reflector. At its opposite end the coupling has an inwardly projecting flange or annulus F, and within the coupling is a ring G of rubber or other elastic material, whose internal diameter is slightly less than the internal diameter of said flange F, while its external diameter is such that it snugly fits the coupling. The internal diameter of the elastic ring normally is slightly less than the diameter of the portion H of the lamp socket next the lamp, so that when such portion of the lamp socket is passed into the elastic ring their surfaces will fit closely or tight enough together to make a virtually air-tight joint between them and secure the socket and the lamp attached thereto to the coupling with all requisite firmness.

It will be understood that the lamp is attached to the socket after the socket has been inserted into the elastic ring. The elastic ring has one end placed against the inwardly turned coupling flange F, and it has such length that a considerable space exists between its other end and the end of the coupling which has the external flange D, which space is provided as an air chamber or space to prevent the passage of heat from the lamp to the coupling C. As I prefer to construct it, such space is a dead air space, it being closed at one end by the elastic ring G or a metal washer I, which I prefer to apply to the end opposite that engaging the flange F, and at the other end by the asbestos gasket E and by means of the lamp socket and the lamp. If desired, however, the sides of the coupling may be provided with holes or perforations for the circulation of air through such space to prevent heating of the coupling. Besides the presence of this air space to prevent the transmission of heat from the lamp to the coupling, the asbestos gasket prevents the transmission of heat to the coupling from the contiguous end of the reflector. As a result of the provision I have made to prevent the transmission of heat from the lamp, the coupling C, which serves as the handle of the apparatus, by which it is handled or manipulated, is prevented from being heated to a degree which will render it uncomfortable to the hand; escape of heat from the lamp within the reflector is avoided, and heat, therefore, utilized, which would otherwise be wasted; and the parts of the lamp in the socket that are injured or damaged by overheating are protected, so that the life of the lamp is prolonged.

To conceal the asbestos gasket, so as to enhance the appearance of the lamp, I provide the outwardly extending flange D with a rim-like member K, which extends over the outer periphery of the gasket toward the reflector, and I give it an outwardly flaring or inclined form to prevent its coming in contact with the reflector, which would be undesirable, as heat would thereby be transmitted to the coupling from the reflector. It will be evident that this rim may be given a configuration that will add to the appearance of the apparatus. Besides these uses of said rim, it is important in that it serves as a

guard or shield to prevent contact of the hand grasping the coupling or handle with the more or less heated surface of the adjacent end portion of the reflector.

In order to render the same reflector adaptable for use with lamps of different size or form, I make the connection between the coupling and the reflector an adjustable one that will permit longitudinal adjustment of the lamp relative to the reflector, which with a parabolic reflector is of importance, in order to have the lamp and the reflecting surfaces in the relation which is necessary to secure the best results. In the embodiment of my invention illustrated, such adjustment is provided for by making the screws or bolts *d* of considerable length and employing asbestos gaskets of different thicknesses to fill the spaces of different degrees between the end of the reflector and the flange D of the coupling, or by using gaskets of uniform thickness and varying the number employed, according to the space between the reflector and the coupling flange. The screws or bolts, being of a length to suit the greatest distance apart of the reflector end and the coupling flange, which may be found necessary in order to secure proper adjustment of the lamp and reflector, it will be seen that the matter of such adjustment is very simply provided for, by interchanging asbestos gaskets of various thicknesses or varying the number of them used at a time.

For therapeutic purposes, it is often necessary to treat parts of the body of much less area than the area of the reflector opening, and it is desirable, under such conditions, to limit the application of light and heat to the affected parts, both to avoid action thereof upon the unaffected surfaces, and to concentrate as much of the power as possible upon the affected or diseased part. I, therefore, provide means for circumscribing or limiting the area to be treated, which, as I prefer to do, comprises the use of a sereis of interchangeable caps or heads having an external diameter corresponding substantially with that of the internal diameter of the open end of the reflector and having apertures of graduated size, according to the area or form of the surface of the body to be treated. Said cap or head comprises a diaphragm L having an annular flange or rim *l* adapted to snugly fit the interior of the open end of the reflector with sufficient friction to hold it in place and yet permit its ready separation when necessary to permit the use of the apparatus without the reducer, or to permit the substitution of another one for it. Preferably at its center, coincident with the longitudinal axis of the reflector, the diaphragm is provided with an aperture or opening *l'*, which is given a size and form suited for the particular part of the body to be treated. The diaphragm may be flat or plane, but I prefer to make it dished or concavo-convex with the convex surface outward, and for two reasons. First, for application to such parts of the body as the ear or nose, the surfaces which recede from the opening by reason of the convexity of the diaphragm, render more convenient the application of the apparatus, because there are no surfaces to touch adjacent portions of the body, and little or no surface is in contact with the adjacent surfaces of the body. Second, by reason of the concavity of the inner surface of the diaphragm rays from the reflecting surfaces of the reflector which might strike a plane or flat surface and so be practically lost, may pass through the aperture *l'* and thus utilized. The inner concave surface of the reducer is preferably a non-reflecting surface.

It will be evident that many features of my invention are applicable to incandescent lamps, whether they are used for therapeutic purposes or not, and I therefore embrace as within the scope of my invention the use of such features as are of general utility, irrespective of the employment therewith, or in the same structure, of all the features of my invention. And it is to be understood that changes may be made in the form and construction of parts which will involve no departure from the scope of my invention.

Having thus described my invention, what I claim is:—

1. The combination of a reflector for electric lamps a lamp coupling consisting of a shell, a body of yielding friction-producing material in the shell having a lamp-socket-receiving opening, the surfaces of which frictionally engage the socket, said shell having an outwardly extending flange at one end, and a detachable connection between said flange and the reflector.

2. The combination of a reflector, a coupling adapted to receive a lamp socket, a body of yieldable friction-producing material in the coupling to engage the lamp socket, an air space existing between said body and the reflector, and a gasket or washer of non-conducting material interposed between the coupling and the reflector.

In testimony that I claim the foregoing I have hereunto set my hand.

CHARLES M. ROBINSON.

Witnesses:

CHAS. J. WILLIAMSON,

F. J. EHLERS.