No. 772,877. PATENTED OCT. 18, 1904.

G. F. FISCHER.

ELECTRIC LAMP.

APPLICATION FILED JULY 9, 1902.

NO MODEL.

Fig: 1

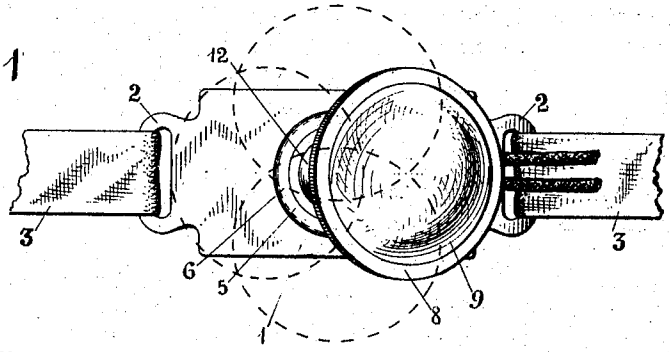


Fig: 2

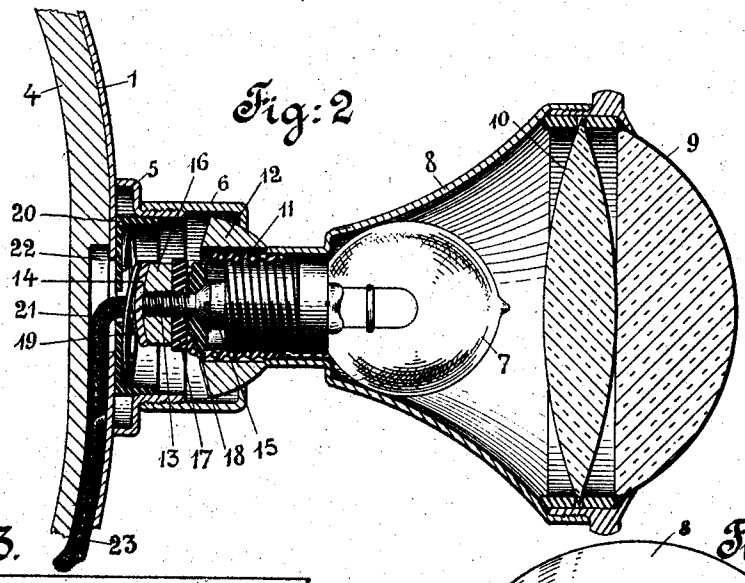


Fig: 3.

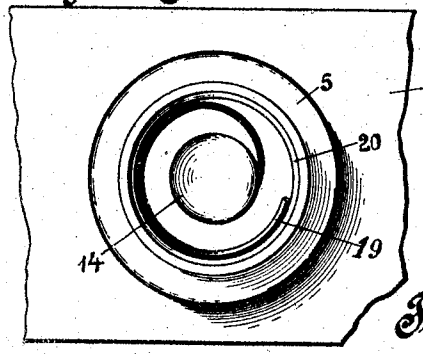


Fig: 4.

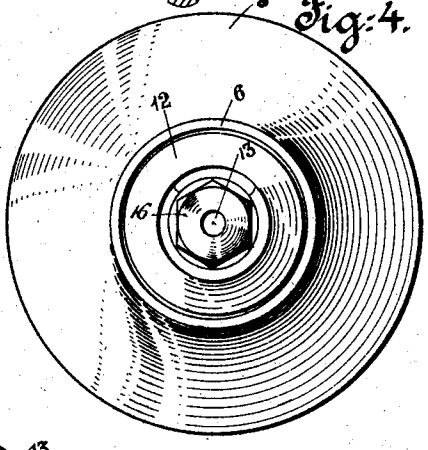
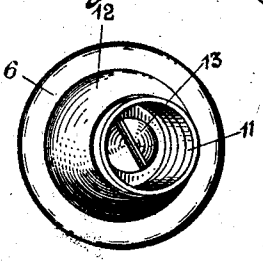


Fig: 5.



WITNESSES:

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PHOTO-LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 772,877. Patented October 18, 1904.

UNITED STATES PATENT OFFICE.

GEORGE F. FISCHER, OF NEW YORK, N. Y., ASSIGNOR TO THOMAS J. BULL AND HENRY D. SCHAAD, OF NEW YORK, N. Y.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 772,877, dated October 18, 1904.

Application filed July 9, 1902. Serial No. 114,853. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. FISCHER, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification.

My invention relates to electric lamps, and more particularly to an electric lamp adapted to be used by the medical profession to facilitate examinations, the performance of operations, &c.

My invention is for an object to provide a support for a lamp which may be readily adapted to the head of the operator and on which the lamp may be moved in any desired direction without interfering with the electrical connections.

Other objects of my invention are to provide a construction which is neat in appearance and which is simple and not apt to get out of order.

These and other objects of my invention will more fully appear from the following description.

My invention consists in the novel parts, improvements, and combinations herein shown and described.

The accompanying drawings, which are referred to herein and form a part hereof, illustrate one embodiment of the invention and serve, in connection with the description herein, to explain the same.

Of the drawings, Figure 1 is a front view illustrating the lamp and support as placed upon the head of the operator. Fig. 2 is a transverse central section of the lamp and its support and parts connected therewith, the lamp itself being shown in elevation. Fig. 3 is an elevation of the base portion of the support with the lamp removed. Fig. 4 is a similar view of the lamp-socket and the parts connected therewith removed from the support, and Fig. 5 is a similar view illustrating the device with the lamp and the reflector and lenses removed.

A device constructed in accordance with my invention comprises in combination a support, a lamp-socket movably mounted on said support and electrically connected therewith, a contact-piece carried by and insulated from said lamp-socket, and a yieldingly-mounted contact member carried by and insulated from said support and arranged to engage said contact-piece. The lamp-socket is preferably so connected with the support as to permit of a universal movement or a movement in every direction between said parts, and in order that the electrical connections between the contact-piece carried by the socket and support may be rendered permanent the yieldingly-mounted contact member is preferably connected directly to a flexible conductor forming part of the circuit, the conductor forming the other pole of the circuit being connected to the support upon which the lamp is mounted.

Referring now to the drawings in detail, 1 represents the base-plate of the support upon which the lamp is mounted, said plate being preferably provided at its opposite ends with openings or eyelets 2, in which a strap or band 3 may be secured to fasten the device upon the head of the operator. The plate 1 is also preferably provided with a suitable pad 4, of soft material, adapted to prevent the irritation of the part of the operator to which the device is applied. In accordance with the construction shown a suitable hollow casing is affixed to the base-plate, said casing preferably being made of two separable parts 5 and 6, part 5 being permanently secured to the base-plate 1.

7 represents a suitable incandescent lamp, the same usually being of such a size and having such a resistance as will adapt it to be operated by a small portable battery. The lamp 7 is preferably inclosed in a hollow casing 8, which is flared outwardly with relation to the lamp and is provided at its outer end with suitable lenses 9 and 10. These parts may be of any suitable construction adapted to reflect and condense the rays of light in a single direction. As these devices form no part of my present invention, they will not be further described herein.

The lamp 7 is removably mounted in a suitable socket 11, which is preferably so mounted in the casing 5 and 6 that it may be moved in

any direction and will remain in any position to which it is moved. In accordance with the construction shown the socket 11 is provided near its outer end with a ring 12, having an annular convex bearing-surface which is preferably substantially spherical in form—that is to say, the convex surface of the ring 12 is so shaped as to form a spherical zone. The removable member 6 of the casing is provided with an opening in which the spherical bearing-surface of the ring 12 is adapted to fit.

For the purpose of yieldingly holding the bearing-surface of the ring 12 in the opening of the member 6 and to provide sufficient friction to hold the parts in any position to which they may be moved and at the same time to form the electrical connections with the opposite pole of the lamp the socket 11 is provided with an inwardly-projecting contact-piece 13, which is adapted to be engaged by a yieldingly-mounted contact member or plate 14. In accordance with the construction shown the contact-piece 13 is made in the form of a screw, the head of which is adapted to be engaged by the contact-pole 15, formed at the inner end of the lamp. Upon the opposite end of the screw 13 is threaded a nut 16, between which and the head of the screw two pieces of insulation 17 and 18 are arranged, the same being adapted to firmly clamp between them an inwardly-turned flange of the socket 11, so as to hold the contact-piece 13 and the members connected therewith firmly in position on the socket. The plate 14 is pressed against the contact-piece 13 with a suitable amount of force to hold the lamp in any position to which it may be moved by a coiled spring 19, which is seated in a cup 20, of insulated material, fitted in the member 5 of the casing. In order that the contact between the plate 14 and the piece 13 may not offer too much resistance to the movement of the lamp, the plate 14 is preferably provided with a substantially spherical concave surface, and in order that the area of contact between the two members may be sufficiently great to prevent rapid wear of the parts the inner surface of the nut 16 is preferably made flush with the end of the contact-piece 13 and the surface of both parts is given a convex form corresponding to the concave form of the plate 14.

The plate 14 is electrically connected with one pole of the circuit, and in order that the slight lateral movement which is inevitably imparted to the plate 14 when the lamp is moved one of the flexible conductors 21, forming the connections between the lamp and the battery, is preferably connected directly to the plate 14, the same being led from the battery through a suitable recess 22 in the pad 4 and suitable enlarged openings in the base-plate 1 and in the insulating-cup 20. The other flexible conductor, 23, is preferably soldered directly to the base-plate 1, the electrical connection between it and the lamp-socket being formed by the casing members 5 and 6 and the bearing-ring 12.

It will be seen that by reason of the described construction the lamp may be readily moved in any direction within the limits prescribed by the bearing-surface of the ring 12 and by the space provided within the hollow casing formed by the members 5 and 6.

In its broader aspects my invention is not limited to the precise construction shown and described, as many changes may be made in the details thereof without departing from the main features of the invention and without sacrificing its chief advantages.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a medical lamp, the combination of a support adapted to be secured to the head of an operator, a lamp-socket movably mounted directly on said support and electrically connected therewith, a contact-piece carried by and insulated from said lamp-socket and adapted to make contact at one end with one pole of a lamp, a yieldingly-mounted contact member carried by and insulated from said support and arranged to engage the opposite end of said contact-piece, whereby the lamp-socket may be moved without breaking the circuit.

2. In a medical lamp, the combination of a support adapted to be secured to the head of an operator, a lamp-socket mounted for universal movement directly on said support adjacent thereto and electrically connected therewith, a contact-piece carried by and insulated from said lamp-socket and adapted to make contact at one end with one pole of a lamp, a yieldingly-mounted contact member carried by and insulated from said support and arranged to engage the opposite end of said contact-piece, at least one of the adjacent surfaces of the contact-piece and contact member being substantially concentric with the center of movement of the lamp-socket, whereby the lamp-socket may be easily moved in any direction without breaking the circuit.

3. In combination, a support, a lamp-socket movably mounted on said support and electrically connected therewith, a contact-piece carried by and insulated from said lamp-socket, a spring-mounted contact member carried by and insulated from said support and arranged to engage said contact-piece, whereby the lamp-socket may be moved without breaking the circuit and a flexible conductor directly connected to said spring-mounted contact member.

4. In combination, a support, a lamp-socket mounted for universal movement on said support and electrically connected therewith, a contact-piece carried by and insulated from said lamp-socket, said contact-piece having a convex contact-surface, a spring-mounted con-

tact member carried by and insulated from said support and arranged to engage said contact-piece, said member having a concave contact-surface corresponding to the convex surface of the contact-piece, whereby the lamp-socket may be easily moved in any direction without breaking the circuit, and a flexible conductor directly connected to said spring-mounted contact member.

5. In combination, a lamp-socket having a substantially spherical exterior bearing-surface, a hollow casing having an opening in which said bearing-surface is fitted for universal movement, a contact-piece carried by and insulated from said lamp-socket and adapted to make contact at one end with one pole of a lamp, a spring-mounted contact-plate located in and insulated from said hollow casing and having a concave surface arranged to engage the opposite end of said contact-piece, the concave surface of said contact-plate being substantially concentric with the spherical surface of the lamp-socket, whereby the lamp-socket may be easily moved in any direction without breaking the circuit, and a flexible conductor directly connected to said contact-plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE F. FISCHER.

Witnesses:

EDWIN SEGER,

J. H. FREEMAN.