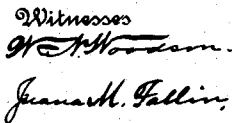


1,047,299.

2 SHEETS—SHEET 1.



By

C. F. Rodgers

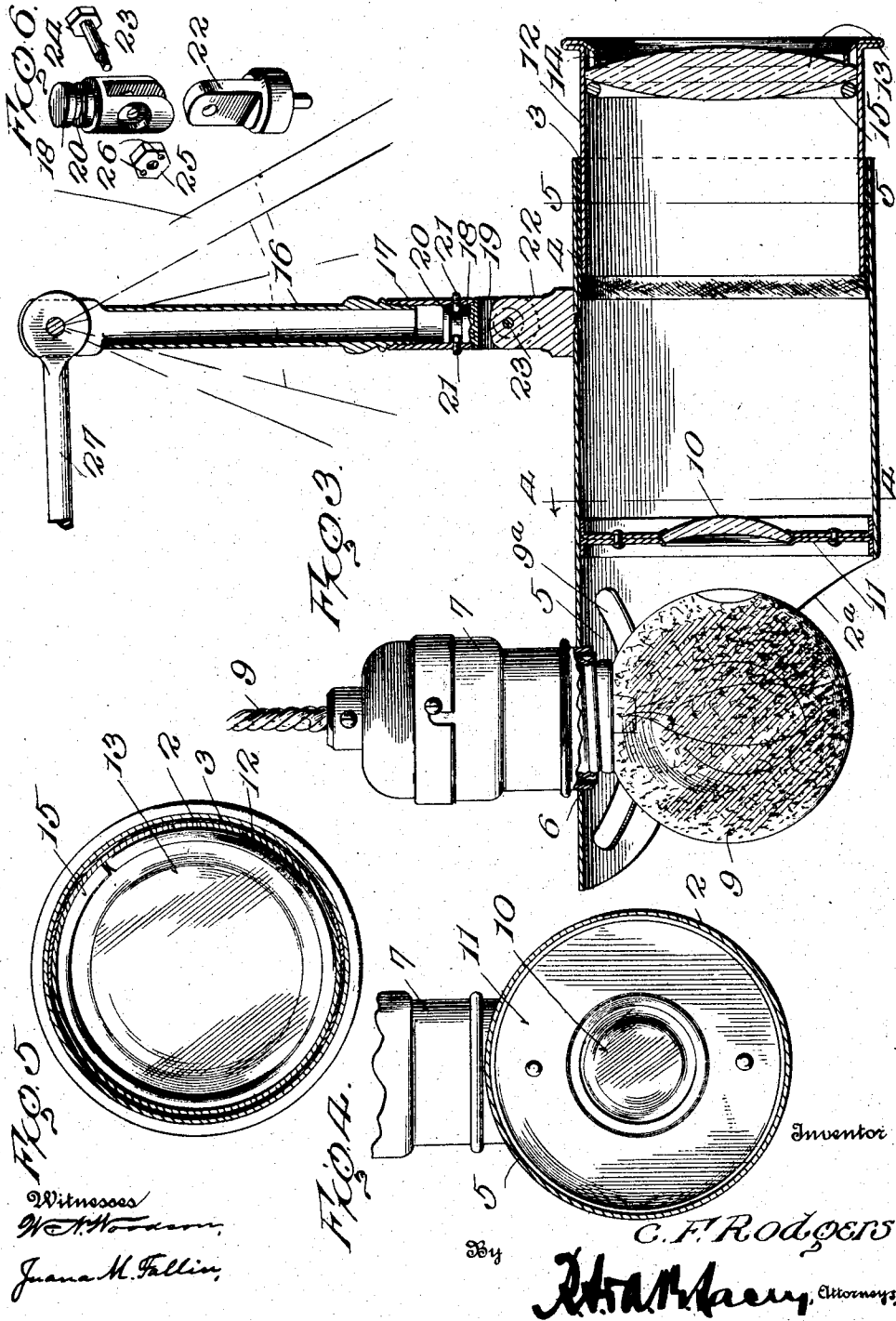
Attorneys,

C. F. RODGERS.
DENTAL AND SURGICAL LAMP.
APPLICATION FILED MAR. 21, 1910.

Patented Dec. 17, 1912.

2 SHEETS—SHEET 2.

1,047,299.



Witnesses
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UNITED STATES PATENT OFFICE.

CLARENCE F. RODGERS, OF CONNEAUT, OHIO.

DENTAL AND SURGICAL LAMP.

1,047,299.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed March 21, 1910. Serial No. 550,792.

To all whom it may concern:

Be it known that I, CLARENCE F. RODGERS, citizen of the United States, residing at Conneaut, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Dental and Surgical Lamps, of which the following is a specification.

My invention relates to lamp holders for surgeons' and dentists' use and the object of my invention is to provide an improved lamp and holder therefor designed to throw concentrated rays of light in one direction upon a desired object by means of telescopic tubes and a system of lenses mounted in the tubes, these lenses being of such form and so arranged that they may throw the parallel rays of light within a desired space and within a certain degree of adjustability.

A further object is to improve the dental and surgical lamp described and set forth in my Patent No. 811,442 of January 30, 1906, whereby a support may be provided for the lens and lamp holder so as to take all strain upon the electric light cords or conductors and permit the lamp and lamp holder to be held in any adjusted position with relation to the patient.

A further object of the invention is to provide a system of two lenses for this purpose, one of these lenses being adjustable with relation to the other so that the distance to which the concentrated rays may be thrown shall be adjustable. Further to provide means for carrying off the heated air immediately surrounding the lamp and further to improve the details of construction in a manner as will be hereafter more fully pointed out.

My invention is shown in the accompanying drawings, wherein:

Figure 1 is a perspective view of my improved illuminator and its support; Fig. 2 is a top view of the illuminator; Fig. 3 is an enlarged longitudinal section of the body of the lamp holder and showing the lamp in place; Fig. 4 is a section on the line 4-4 of Fig. 3; Fig. 5 is a section on the line 5-5 of Fig. 3; and, Fig. 6 is a perspective de-

tail view of the parts forming the swivel connection between the body of the lamp holder and its support.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to these figures, 2 designates a cylindrical body of sheet metal forming a lens carrier, one end of the body being open, as at 3, and lined on its interior with velvet, felt or black cloth 4, whereby the slip tube may be moved easily into the outer tube or body 2. The other end of the tubular body 2 is cut away on its underside, as at 2^a, to such a distance from that extremity of the body that a lamp may be accommodated beneath the projecting hood 5 so formed, and so that it will tend to shade the lamp and prevent the too great upward diffusion of the light therefrom. The center of the hood 5 formed as above described is provided with a central opening 6 within which a lamp socket 7 is adapted to snugly fit so that the lamp when inserted in this opening 6 will be held firmly in place with the lamp 8 projecting down below the hood 5 and in axial alignment with the tubular body 2. The socket 7 is made precisely as any other electric lamp socket and is provided with the usual conductors 9 and the incandescent lamp 8 of any suitable or desired character. This lamp 8, however, is preferably relatively small in size, though of high candle power.

Mounted in the body 2 immediately in front of the lamp 8 is the lens 10. This is preferably a plano-convex lens. This lens 10 is relatively small in diameter and is mounted in a wall or diaphragm 11. The axis of the lens is, of course, to be directly opposite to the central or brightest portion of the lamp 8. Shiftably mounted in the open end of the tubular body 2 is the shifting lens carrier 12 which is tubular in form and carries at its outer extremity the lens 13 which is preferably a double convex lens. This lens is carried between an inwardly turned flange 14 and an inner ring 15. The flange 14 is knurled on its edge to permit the

sleeve or carrier 12 to be easily manipulated to properly focus the lens. It will be, of course, obvious that the carrier 12 shall fit snugly within the tubular body 2 so that it may move with ease and accuracy. By adjusting the lens 13, the powerful parallel ray given out by the lamp 8 and the lens 10 may be focused to any distance from six up to eighteen inches or more, thus permitting the lamp to be placed from six to eighteen inches from the patient, thus enabling the positioning of the lamp in the most advantageous location to obtain a desired result. In order to secure a proper concentration of the light, it is only necessary to move the lens in or out.

In order to provide positive means for supporting the illuminator without placing any strain upon the electric light carried thereby and to permit the illuminator to be turned to any desired angle or to be vertically adjusted to any desired extent I preferably provide the supporting rod 16 which at its lower end is screw threaded into a socket 17. This socket fits over the reduced end 18 of a bifurcated knuckle 19. This reduced end 18 of the knuckle is formed with a groove 20 and the socket 17 or sleeve is provided with the inwardly projecting pins 21 which engage in said groove. Thus the rod 16 can have free rotation relative to the knuckle. Projecting upwardly from the body 2 is the ear 22 adapted to engage in the diaphragm knuckle 19. A pintle 23 passes through the knuckle and ear, one end of the pintle being formed with a head 24 and the other being provided with a nut 25 and recesses 26 for engagement with the wrench. By adjusting this nut the frictional engagement between the ear and the knuckle may be adjusted so that the lamp may be held in any desired angular relation to the rod 16. In order to provide for the raising and lowering of the lamp as a whole, I preferably use the supporting device as shown in the figures and comprising the rod 27 to which the upper end of the rod 16 is pivotally connected, the end of this rod 27 being curved, as at 28, and passing through an eye 29 on a bracket arm 30. A set screw 31 holds the arm 27 in any desired angular position. It will be obvious that by loosening the set screw and turning the arm 27, the illuminator may be raised or lowered and that by swinging the arm 16 laterally to one side or the other, a lateral adjustment of the illuminator may be secured. By rotating the illuminator upon its swivel connection with the rod 16 and by turning the body 2 upon the pintle 23, any desired angular direction of the lamp may be secured. It will be seen that by my invention no strain will be placed upon the lamp or upon the lamp socket and further that at the rear end of

the lamp the light is prevented from being diffused upwardly, but is thrown downward, where it may be used to illuminate an implement table or for any other purpose.

In order to permit the heat generated by the lamp 9 to pass away, the hood 5 is provided with a plurality of openings 9^a preferably concentric to the central opening 6.

Having thus described the invention, what is claimed as new is:

1. A light-concentrator and projector, including a projecting tube open at opposite ends, diagonally cut away at one end to form a hood, a light supported beneath the hood, an objective lens mounted in one end of the tube, and a concentrating lens mounted in the tube between the light and the condensing lens.

2. A dental and surgical lamp, including a cylindrical section forming a projecting tube, a lens fixedly located in the cylindrical section, said section projecting beyond the lens to form a hood, the under side of said hood being cut away, a lamp supported beneath the hood, a section telescopically adjustable into the first named section, and a lens therein.

3. A dental and surgical lamp, including a cylindrical section, a lens fixedly located in the cylindrical section, the said section projecting beyond the lens to form a hood, the under side of said hood being cut away and said hood being provided with an opening for engaging a lamp socket, a section telescopically adjustable in the first named section, a lens therein, and means for supporting the first named section for angular or rotative adjustment.

4. The combination with a dental and surgical lamp, including a tubular section, a lens therein and means for supporting a lamp in alinement with the lens, of a support therefor comprising a sectional rod, one section of the rod being swiveled to the other section and one section being formed with ears, an upwardly projecting lug on the lamp, a bolt passing through said lug and through said ears, and means for clamping the ears together.

5. A dental and surgical lamp, including a cylindrical section, a lens fixedly located in the cylindrical section, said section projecting beyond the lens to form a hood, the under side of the hood being cut away and the head being provided with an opening for engaging a lamp socket, said hood being further provided with perforations surrounding the opening for the lamp socket permitting the escape of hot air.

6. A dental and surgical lamp, including a cylindrical section, a lens fixedly located in the cylindrical section, said section projecting beyond the lens to form a hood, the under side of the hood being cut away on a

line extending outwardly to the longitudinal axis of the section, a source of illumination supported beneath said hood, a lens carrying section telescopically adjustable in the first named section, and means for supporting the first named section for angular or rotative adjustment.

In testimony whereof, I affix my signature in presence of two witnesses.

CLARENCE F. RODGERS. [L. s.]

Witnesses:

ELMER D. LOOSE,
GEORGE HENRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."