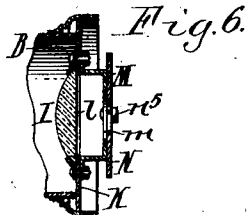
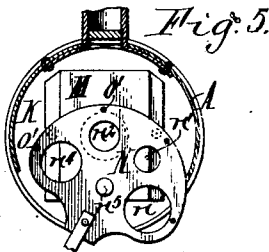
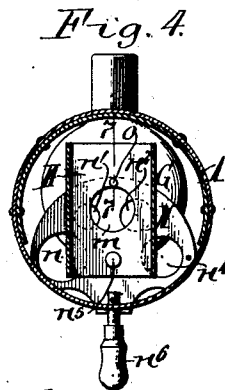
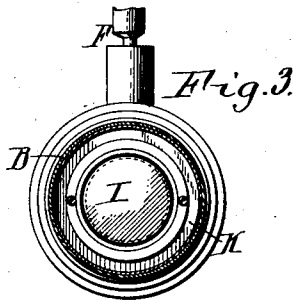
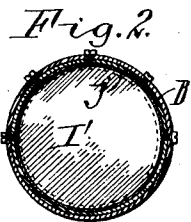
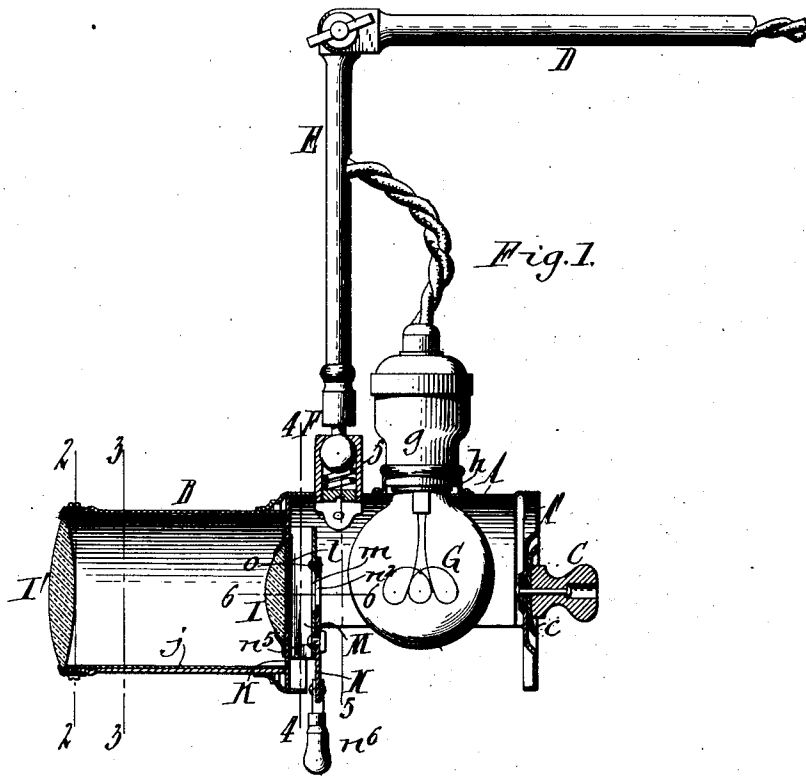


T. G. LEWIS.
MOUTH ILLUMINATOR.
APPLICATION FILED JUNE 30, 1910.

978,910.

Patented Dec. 20, 1910.



Witnesses:-
Richard Sommer.
Alfred Borkenhagen

Inventor
Theodore G. Lewis
by Geyer & Popp
Attorneys.

UNITED STATES PATENT OFFICE.

THEODORE G. LEWIS, OF BUFFALO, NEW YORK, ASSIGNOR TO BUFFALO DENTAL MANUFACTURING COMPANY, OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

MOUTH-ILLUMINATOR.

978,910.

Specification of Letters Patent.

Patented Dec. 20, 1910.

Application filed June 30, 1910. Serial No. 569,688.

To all whom it may concern:

Be it known that I, THEODORE G. LEWIS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Mouth-Illuminators, of which the following is a specification.

This invention relates to lamps of the class employed more especially by dentists for illuminating the mouth of a patient in performing dental work at night or on dark days.

One object of the invention is the production of a simple, effective and convenient lamp of this type which shall throw a clear white field of light free from filament-images or other objectionable features.

Another object is to provide the lamp with simple means for readily increasing or reducing the diameter of the field of light, as desired.

In the accompanying drawings: Figure 1 is a sectional elevation of the improved lamp or mouth illuminator. Figs. 2, 3, 4 and 5 are transverse sections on the correspondingly numbered lines in Fig. 1. Fig. 6 is a fragmentary longitudinal section on line 6—6, Fig. 1. Fig. 7 is a fragmentary cross section on line 7—7, Fig. 4.

Similar letters of reference indicate corresponding parts throughout the several views.

The body of the illuminator comprises a rear section or hood A preferably of semicircular form, closed at its top and sides and open at its bottom, and a cylindrical front section or lens-tube B of somewhat smaller diameter than the rear portion, which is riveted or otherwise secured to the latter. To the rear end of the semicircular hood is secured a circular head A¹ provided on its outer side with a knob or handle C of wood or other non-conductive material. A cup-shaped washer c of vulcanized fiber is preferably interposed between the knob and the head A¹ to further protect the fingers.

The body is suspended from a suitable bracket D by a rod or hanger E having its upper end pivotally and adjustably attached to the bracket, while its lower end is connected with the lamp body by a universal or ball-and-socket joint F of any suitable construction, giving the lamp a wide range of adjustment in all directions.

G indicates a suitable lamp, preferably an

incandescent electric lamp having its bulb arranged within the hood A on the rear side of the joint F. In the construction shown, the neck of the lamp passes through an opening in the top of the hood and the lamp-socket g is seated in a collar h secured to the upper side of the hood around said opening.

Arranged in the rear end of the lens-tube B in line with the bulb of the lamp G is a condensing lens I, and in the front end of said tube is a somewhat larger lens I¹, preferably of double convex form, which latter intensifies the light thrown by the lamp and also eliminates the image of the lamp-filament from the field of light, producing a pure white field. To reduce the absorption of light, the lens-tube preferably has a white lining j of asbestos or other suitable material.

In the preferred construction shown in the drawings, the condensing lens I is carried by a diaphragm K which is seated in the enlarged rear portion of the lens-tube and confined between the latter and the front end of the hood A, as shown in Fig. 1. The diaphragm has a central aperture l to the front side of which the condensing lens is applied.

Secured to the rear side of the diaphragm K is a raised upright plate or bracket M having a comparatively large aperture m for the passage of the light-rays, said aperture being substantially in line with the loops of the lamp-filament, and concentric with the condensing lens, as shown in Fig. 1. To this apertured bracket M is applied a shutter N of any suitable construction having a plurality of different-sized openings n, n¹, n², n³, n⁴ any one of which may be brought into register with the aperture m, to confine the light to a field of greater or less diameter, as desired. In the construction shown, the shutter has a swinging or oscillating movement, being pivoted at n⁵ to the bracket M, and it is provided with a handle n⁶ which extends a short distance below the lens-tube B. The shutter-apertures are arranged in an arc concentric with the pivot n⁵, so that by turning the shutter to the right or the left any of its apertures can be brought into coincidence with the bracket-aperture. In the construction shown in the drawings, the shutter has four openings, the largest being of the same size as the bracket-

aperture m while the remaining three are progressively smaller, enabling the operator to control a field of light of four diameters ranging from about two to six inches in a lamp twice the size of that shown in the drawings. However, the shutter may be provided with a greater or less number of apertures than that illustrated in the drawings, if desired.

- 10 A catch or stop device is preferably employed for retaining the shutter in place and determining its several positions. The device shown in the drawings consists of a pin o projecting from the rear side of the bracket M and adapted to interlock with openings or recesses o^1 in the shutter, one opposite each light-aperture thereof. The projecting end of this pin is rounded and the shutter has sufficient elasticity to allow its locking openings to spring into and out of engagement with said pin.

By means of the handle C the illuminator can be tilted or adjusted to any desired angle or position, it being unnecessary to place the hand on any heated metallic parts of the device for this purpose.

The lenses have a fixed focus and no adjustment is therefore necessary to obtain the proper light. It has been found that the illuminator can be placed from eighteen to twenty-four inches from the patient and that the light will be equally effective at either of the distances.

This improved lamp while projecting a clear white light into the mouth of a patient or other desired place, also throws the light upon the instrument table through the open bottom of the hood A. At the same time, the eyes of both the patient and operator are shaded and protected from the glare of the lamp by the hood.

In addition to the advantages stated, the lamp is strong and durable in construction and neat in appearance.

45 I claim as my invention:

1. An illuminator of the character described, comprising a hood, a lamp arranged therein, a diaphragm arranged in the hood in front of the lamp, a lens carried by said diaphragm, and a shutter mounted on the

diaphragm and interposed between said lens and the lamp.

2. An illuminator of the character described, comprising a hood, a lens located at the front end of the hood, a lamp arranged in the hood behind said lens, a bracket arranged between the lens and the lamp and having an aperture in line with the lens, and a shutter applied to said bracket and having a plurality of different-sized openings cooperating with said bracket-aperture.

3. An illuminator of the character described, comprising a hood, a lens located at the front end of the hood, a lamp arranged in the hood behind said lens, a bracket arranged between the lens and the lamp and having an aperture in line with the lens, and an oscillating shutter pivoted to said bracket and having a plurality of different-sized openings cooperating with the bracket aperture.

4. An illuminator of the character described, comprising a hood, a lens located at the front end of the hood, a lamp arranged in the hood behind said lens, a bracket arranged between the lens and the lamp and having an aperture in line with the lens, a shutter applied to said bracket and having a plurality of different-sized openings cooperating with said bracket-aperture, and means for retaining the shutter in its several positions.

5. An illuminator of the character described, comprising a hood, a lens located at the front end of the hood, a lamp arranged in the hood behind said lens, a bracket arranged between the lens and the lamp and having an aperture in line with the lens and a locking-pin, and an oscillating shutter pivoted to said bracket and having a plurality of different-sized apertures cooperating with the bracket-aperture and corresponding locking openings adapted to interlock with said pin.

Witness my hand this 28th day of June, 1910.

THEODORE G. LEWIS.

Witnesses:

C. F. GEYER,
E. M. GRAHAM.