

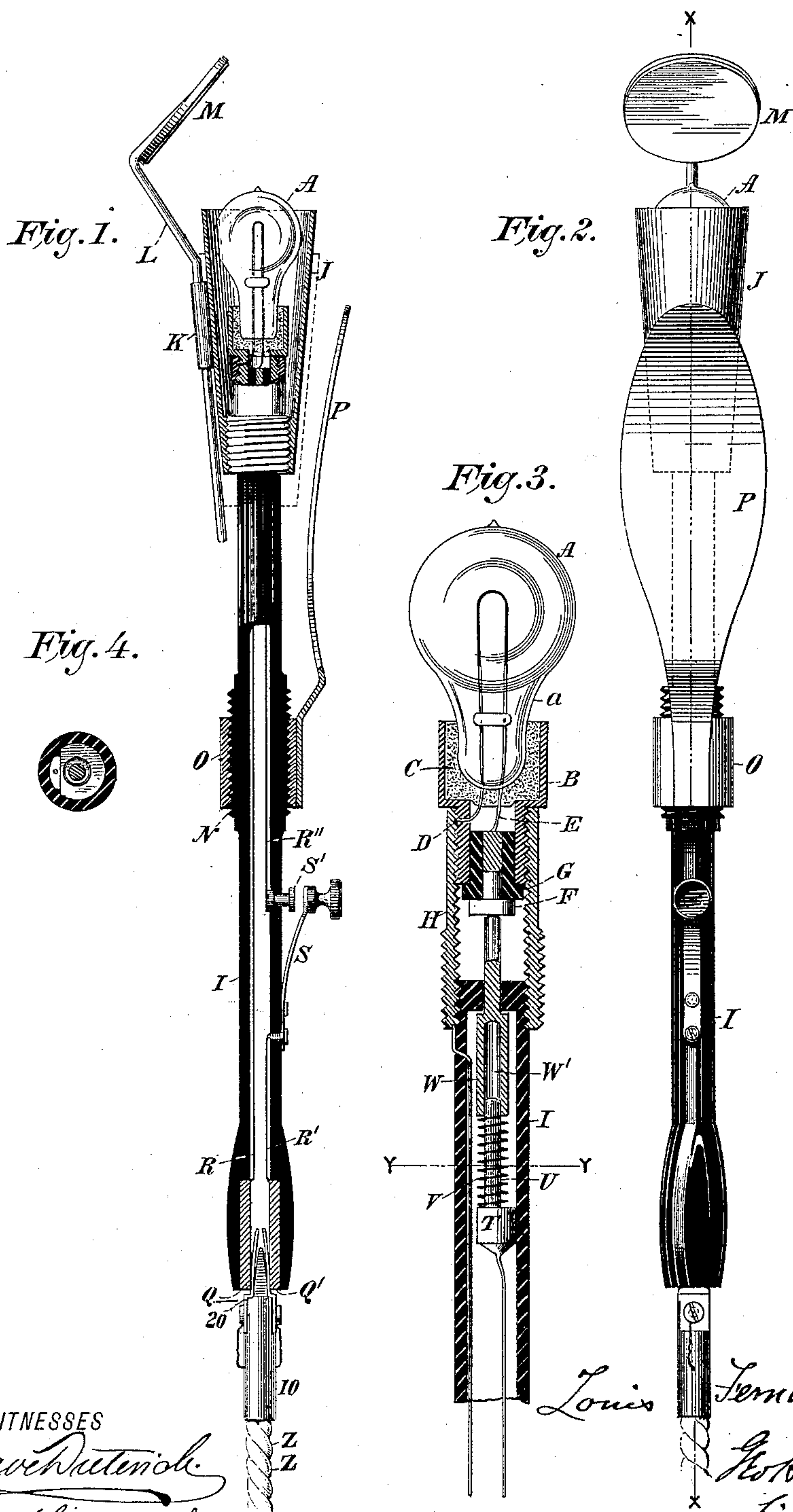
(No Model.)

L. F. CRIADO.

ELECTRIC MOUTH AND THROAT ILLUMINATOR.

No. 336,510.

Patented Feb. 16, 1886.



WITNESSES
Gustave Nutenich
Fred Heintz

Louis Fernandez Criado
INVENTOR
Geo. H. Jennings
his Attorney

UNITED STATES PATENT OFFICE.

LOUIS FERNANDEZ CRIADO, OF BROOKLYN, ASSIGNOR TO STOUT, MEAD-
OWCROFT & CO., OF NEW YORK, N. Y.

ELECTRIC MOUTH AND THROAT ILLUMINATOR.

SPECIFICATION forming part of Letters Patent No. 336,510, dated February 16, 1886.

Application filed June 20, 1885. Serial No. 169,332. (No model.)

To all whom it may concern:

Be it known that I, LOUIS FERNANDEZ CRIADO, a resident of the city of Brooklyn, county of Kings, State of New York, have in-
5 vented certain new and useful Improvements in Electric Mouth and Throat Illuminators, of which the following is a specification.

My invention relates to a device comprising
10 an electric incandescent lamp, a staff or holder for the same, through which the necessary circuit-connections are made, a tongue-depressor, also arranged upon the shaft, and a suitable reflector and mirror.

The object of my invention is to provide a
15 means for thoroughly illuminating the mouth and throat and at the same time to depress the tongue, and thereby allow a more perfect examination without inconvenience or injury to the patient; and, further, to so protect the
20 lamp that it cannot readily be broken or cause discomfort by reason of the heat generated. The arrangement of the device is such that it can be used as a whole—as in the examinations of the throat or larynx—or it may be taken
25 apart and the lamp, with its reflector, connected to the shaft or holder used in connection with a speculum for the examination of any of the cavities of the body. The lamp and its reflector are so arranged that the lamp can be
30 projected from and thus the light increased or diffused or drawn into its hood or reflector and its rays concentrated. With these objects in view I have devised the improvements which are particularly claimed by me at the
35 close of the specification.

In the accompanying drawings, which illustrate my invention, similar letters of reference indicate like parts.

Figure 1 is a view, partly in elevation and
40 partly in vertical section, taken on the line x of Fig. 2, showing the relation of the different parts to each other, and also illustrative of the circuit-connections through the holder. Fig. 2 is a view in elevation, looking at the
45 under side or bottom of the tongue-depressor. Fig. 3 is a vertical section. Fig. 4 is a transverse section of the staff or holder, taken through the line $y y$ of Fig. 3.

In the drawings, A indicates an electric
50 lamp, which may have any convenient shape.

That shown in the drawings is spherical, and provided with the neck a at its lower part.

In order to support the lamp, and to allow of its ready adjustment to the staff or holder, it is mounted in a holder, of metal or other ma-
55 terial, B, and secured therein by being surrounded with plaster-of-paris, C, or other suitable cement. One terminal, D, of the lamp is electrically connected to the side of the metallic holder, or, if the holder be of insulating
60 material, to a plate of metal set in the side of the holder; or the upper portion of the holder may be of insulating material and provided with a metallic screw. The other terminal, E,
65 is carried downward and electrically connected to the metallic plug F, (shown partially in section of Fig. 3,) and provided with a shoulder at its lower end. The plug F is insulated from the metallic holder by a rubber or vulcanite tube, G. The lower portion of the holder
70 B has a screw-thread cut thereon, adapted to fit into the threaded cap H, arranged upon the top of the staff or holder I. The cap H is also provided with the screw-thread at its lower
75 portion, and on its exterior surface near where it is connected to the staff I. Arranged over the cap and lamp is a hood or reflector, J, conical in form and provided with a screw-thread on its inner and smaller end, which is adapted to fit over the screw on the end of the cap H,
80 as shown in Fig. 1.

I do not wish to limit myself to any particular shape or material of the enveloping-
hood, as it may be made of metal or of a non-conducting material, and changes may be made
85 in the form thereof without departing from the intent of my invention. The hood may be of hard rubber and provided with a reflecting inner surface, or it may be of metal, and plated within and without and have pol-
90 ished surfaces, or it may be covered with any material—such as a Japan varnish—to have a black and dead exterior, the interior being polished and reflective; or both surfaces may be covered with any material, so that it shall
95 not be reflective. Upon one side of the hood I arrange a tube, K, adapted to hold the arm L of the mirror M. The arm L may be bent or turned, and is arranged to work loosely in the tube K, so as to allow it to be readily ad-
100

justed to any desired position. The material of which the hood J is made is preferably slightly thicker at its lower end, at which the screw-thread is cut. I prefer to arrange it in this way, so that when the hood is held stationary and the staff rotated the lamp A will be projected from the hood or drawn therein, as shown in the dotted lines, Fig. 1. At about the middle of the staff I, which is made of non-conducting material, I provide a screw-thread, N, which may be cut in the body of the staff itself, or may be made of metal and in the form of a sleeve, and suitably secured to the staff. Adapted to fit over this screw-thread I provide the ring O, to which is attached a tongue-depressor, P, which may be of metal or hard rubber, and given any convenient shape. In the lower end of the staff I arrange two plates of metal, Q Q'. To the plate Q, I connect a copper wire, R, which is carried upward through the staff or handle, and electrically connected in any suitable manner (as shown in Fig. 3) to the metallic cap H, on the top thereof. To the metallic plate Q', I also connect a copper wire, which is carried upward and connected by a screw to a spring contact-switch, S, arranged on the outer side of the instrument. Below the end of the contact-switch is a button, S', to which is connected the wire R², which is carried through the shaft to the brass plug T, suitably secured in the staff. Arranged upon the plug, or forming a part of it, is a pin, U, and around the pin a spiral spring, V, one end of which bears upon the top of the plug T and the other end upon the bottom of the plunger W. The plunger is provided with a tubular orifice, W', sufficient in size to admit the pin U. The upper part of the plunger Y is made somewhat smaller, and passes through an orifice provided therefor in the top of the staff, and is so adjusted that when the cap or mounting B of the lamp A is screwed into the cap H the plunger is slightly depressed, and the tension of the spring causes it to make good electrical contact with the plug F in the lamp-holder.

The circuit-connections through the holder are as follows: The path of the current through the instrument is from one of the poles of the source of electric energy and through one of the wires Z Z of the connecting-cord to the contact-plug 10, which consists of a cylindrical portion of insulating material having a tapering end, and provided with two plates of spring metal, 20, on opposite sides, and to which the respective conducting-wires are connected. The current then follows the plate Q, wire R, cap H, holder B, by terminal D, through the lamp, thence by terminal E to plug F, plunger Y, spring and pin U V, plug T, wire R², and, when the switch is closed, by switch S, wire R', plate Q, and thence by return lead to the other pole of the source of electric energy. As the thread N at the cen-

ter of the staff is somewhat longer than the ring O, which holds the tongue depressor P, the position of the tongue-depressor relative to the end of the instrument can be changed, and thus allow for its adjustment relative to the lamp at the end of the staff. The contact-spring S is preferably so formed that the resiliency of its spring shall be such as to throw the contact point outward, and thus preserve the circuit open.

I do not limit myself to any particular form of switch. That which is shown in the drawings is the one, however, which I have found best adapted for use.

I claim as my invention—

1. An electric mouth and throat illuminator comprising a handle carrying a circuit-make-and-break device, an incandescent electric lamp, and a longitudinally-adjustable guard or casing surrounding the lamp-globe, substantially as described.

2. An electric mouth and throat illuminator comprising a handle carrying a circuit-make-and-break device, an incandescent electric lamp, and a reflecting guard or casing adjustable in relation to said lamp-globe, substantially as described.

3. In an electric mouth and throat illuminator, an adjustable hood or reflector surrounding the lamp-globe, the end of which is open, and having a general conical form, and provided with a screw-thread upon the smaller end, substantially as described.

4. In an electric mouth and throat illuminator, a hood or reflector surrounding the lamp-globe and adjustable in relation thereto, and provided on its outer surface with a point of attachment for a reflecting-mirror, and a mirror adapted to be attached thereto.

5. The combination, in an electric mouth and throat illuminator, of a handle carrying a circuit-make-and-break device, an incandescent electric lamp, an adjustable guard or casing surrounding said lamp, and an adjustable tongue-depressor upon said handle, substantially as described.

6. In an electric mouth and throat illuminator, a reflecting-hood longitudinally and circumferentially adjustable relative to the lamp in the end thereof.

7. In an electric mouth and throat illuminator, a non-conducting hood longitudinally and circumferentially adjustable relative to the lamp in the end thereof.

8. In an electric mouth and throat illuminator, and in combination with the handle thereof, an electric lamp and a removably-adjustable tongue-depressor.

In testimony whereof I have hereunto subscribed my name this 29th day of May, A. D. 1885.

LOUIS FERNANDEZ CRIADO.

Witnesses:

A. E. SEXTON,
GEO. H. BENJAMIN.