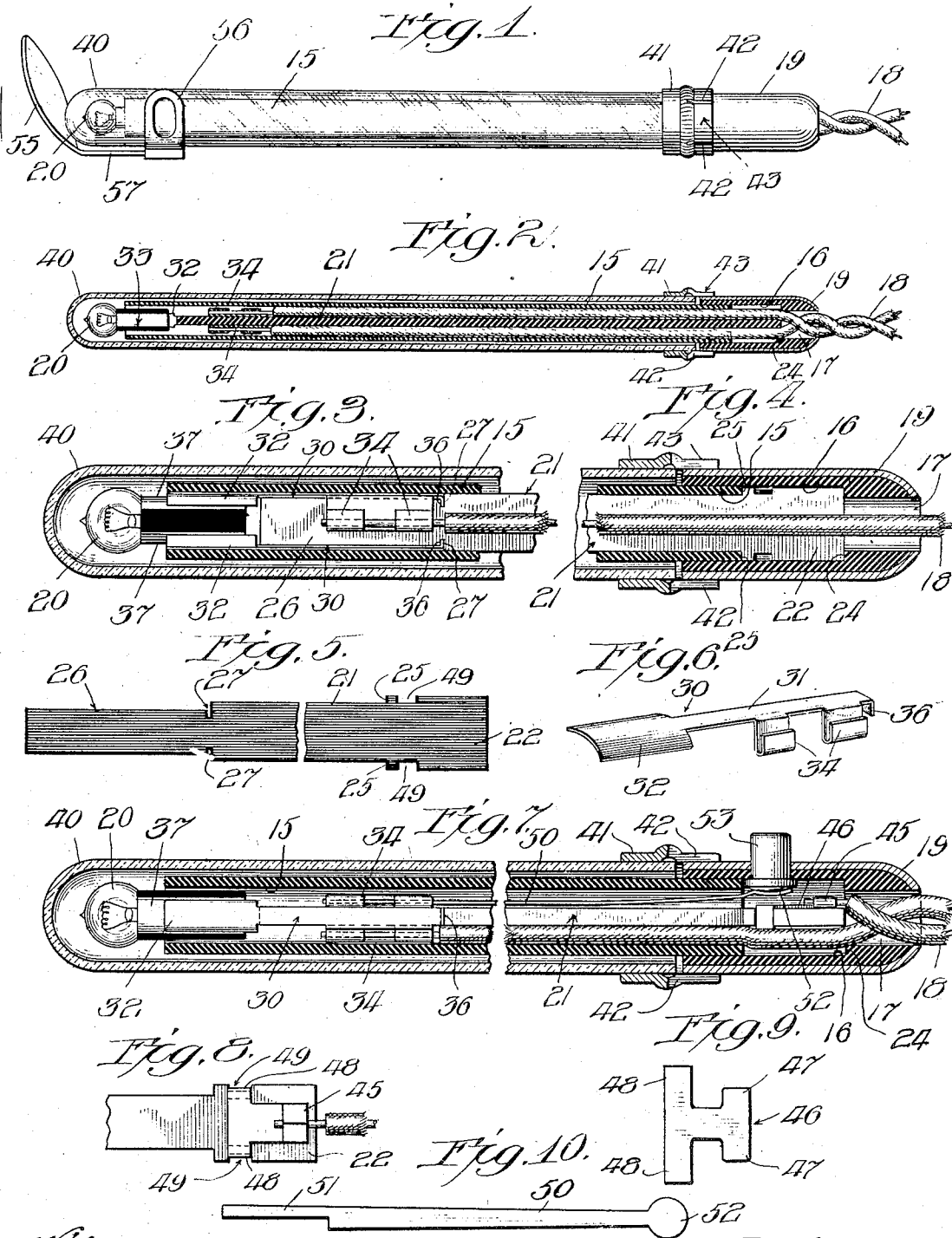


E. G. K. ANDERSON.
LAMP.
APPLICATION FILED AUG. 29, 1913.

1,122,843.

Patented Dec. 29, 1914.



Witnesses:
Harry S. Gaither
George C. Higham.

Inventor:
Ernst G. K. Anderson.
by William H. Hall
Att'y

UNITED STATES PATENT OFFICE.

ERNST G. K. ANDERSON, OF CHICAGO, ILLINOIS.

LAMP.

1,122,843.

Specification of Letters Patent.

Patented Dec. 29, 1914.

Application filed August 29, 1913. Serial No. 787,263.

To all whom it may concern:

Be it known that I, ERNST G. K. ANDERSON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to a novel electrical lamp for use by dentists and surgeons.

The invention refers to a removable transparent shield for inclosing the lamp and lamp body, whereby the shield may be removed and sterilized for sanitary purposes, and also to the general construction of the lamp.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings:—Figure 1 is a side elevation of a lamp fixture embodying my invention. Fig. 2 is a longitudinal axial section thereof. Figs. 3 and 4 are enlarged sectional views of the ends of the lamp, taken in planes at right angles to the sectional plane of Fig. 2. Fig. 5 is a side elevation of an insulating strip embodied in the lamp fixture structure. Fig. 6 is a perspective view of one of the lamp engaging terminals. Fig. 7 is a longitudinal axial section of a modified form of lamp fixture. Fig. 8 is a detail of the switch embodied in the fixture shown in Fig. 7. Fig. 9 is a plan view of the switch terminal shown in Figs. 7 and 8. Fig. 10 is a plan view of the switch bar shown in Fig. 8.

As shown in the drawings 15 designates an elongated fiber or other insulating tube which extends from front to rear of the lamp fixture and fits at the base of the fixture within a short insulating, hollow base member 16 which is provided at its outer end with an opening 17 to receive the insulating conductors 18 of the lamp circuit. The said socket member is inclosed by a ferrule 19 made of metal or like material.

20 designates a lamp which is slidably fitted into the forward end of the tube 15.

21 designates an insulating partition member, separately shown in Fig. 5, which extends longitudinally through the tube 15 and fits at its edges closely against the inner

wall of the tube so as to hold the partition member in place. Between the partition member and the tube 15 are provided passages through which extend the conductors 18. The said partition member is widened at 22 to fit closely within the insulating base member 16, and the said base member is provided with a shoulder 24 against which the widened end of the partition member 22 fits, as shown in Figs. 4 and 7. The tube 15 which fits within the base member 16, engages at its rear end shoulders 25, 25 between the wider and narrower portions of the partition member. The said partition member is made narrowest at its front end 26 and is provided at the base of said narrowest portion with notches 27, for a purpose hereinafter to be described.

The conductors 18 are attached at the lamp end of the fixture to lamp terminals designated, as a whole, by 30, separately shown in Fig. 6. Each of said lamp terminals comprises a narrow portion 31 which overlies the edge of the insulating partition 21 at its narrowest portion 26, and a widened portion 32 which extends beyond the end of the said insulating partition. The extended widened portions of the said terminals are slightly curved to constitute a socket to receive the base 37 of the lamp 20. The said narrower portions 31 of the terminals are each provided with hook shaped lugs 34, 34 which receive the terminals of the conductors 18, the said conductors being inserted into the hook lugs and soldered or otherwise permanently attached thereto. The narrowest portions 31 of the said terminals are provided with inturned lugs 36 which fit into the notches 27 of the insulating partition 21 so as to hold the terminals from endwise displacement on the partition.

In assembling the device, after the conductors have been fixed to the terminals 30, the terminals are fitted to the insulating partition with the lugs 36 engaging the notches 27 thereof and with the hook-lugs 34 overlapping the opposite flat faces of the partition. The tube 15 is thereafter slid down over the assembled parts into the position shown in Figs. 2 and 3, and the tube 15 serves to hold the terminals in assembled position with respect to the insulating partition or terminal support. The widened portions of the terminals terminate at about the end of the tube 15 and constitute a slit sleeve or socket to receive the base of the lamp;

the lamp base being provided with the usual lamp terminals 37 for contact with the circuit terminals 32.

The construction described provides a compact and readily assembled structure which is made of a length to enable the lamp to be readily inserted into the mouth or other part to be illuminated, and may be made of such small diameter as to be conveniently and readily manipulated by the operator.

As a further improvement I provide means for maintaining the fixture at all times in a sanitary condition. To this end, I provide a shield 40 which is removably fitted over the lamp and tube. Said shield is made of transparent material such as glass and preferably extends throughout the length of the shank or body of the fixture. It is closed at its outer end and open at its inner end so as to be applied over the fixture. In some uses of the fixture the length of the shank may be shortened, it being, however, necessary to cover the lamp and a portion of the fixture body or shank; but, when used as a dental or like lamp, the shield covers substantially the entire length of the lamp fixture body or shank. The said shield is attached to the fixture body by means of a union collar 41 which is permanently fixed in any suitable manner, to the end of the tube like shield. The said collar may be detachably fixed in any suitable manner to the ferrule 19, which surrounds the base socket of the fixture. As herein shown, the sleeve is slitted at 42 so as to provide spring arms 43 which readily fit over the ferrule and also permits the sleeve to be readily slipped off of said ferrule. The said inclosing shield is made of an internal diameter slightly greater than the external diameter of the tube 15 and the lamp 20 and extends at its closed end slightly beyond the lamp, so that there is provided a dead air space between the shield and the lamp which prevents the shield from becoming unduly heated when the lamp is illuminated for a considerable period of time. A chief advantage of the removable shield is that the same may be removed from the fixture after the use of the lamp and sterilized so as to thereby keep the same in sanitary condition. Thus when the lamp is required for continuous use, with different patients, a number of such shields may be provided for use with a single lamp and fixture, so as to insure a sanitary shield to be always at hand for use when required.

The construction of the fixture before described lends itself readily to the use of the transparent shield and enables the shield to be quickly applied without changing the construction of the fixture.

In the construction shown in Figs. 1, 2, 3 and 4, the fixture is adapted for use in a circuit having a controlling or cut-off switch (not shown) exterior to the fixture. In

Figs. 7, 8, 9 and 10 is shown a fixture having a self contained switch which is adapted to be used in connection with dry batteries as a source of electrical current. In this construction, one of the conductors 18 is attached to a loop 45 which is carried by the rear end of the insulating partition 21, which loop constitutes one of the terminals of the switch. The said terminal is made of a sheet metal blank 46, shown in Fig. 9, which is provided at one end with arms 47 that are folded upwardly to constitute the loop 45, and at the other end with arms 48 which lie flat on the wider end of said partition and are folded downwardly through notches 49 so as to thereby hold the terminal in place on the insulating partition. 50 designates a spring switch member which is adapted for contact at its front, narrower end with the hook lug of one of the lamp socket terminals 30, as shown in Fig. 7. The other or rear end of the switch member extends rearwardly beyond the terminal 46 and is widened at 52 to engage said terminal 46. The free end of the resilient socket member 50 is normally held away from the terminal 46 by its resiliency, and is adapted to be pressed toward the said latter terminal by a push button 53, so as to thereby close the circuit through the lamp. In other respects, the lamp fixture shown in Fig. 7 may be made like that before described, and in similar parts bear like reference characters.

As a further improvement I may provide the shield 40 at the closed end thereof and adjacent to the lamp with a mirror 55 in position to reflect the light of the lamp, said mirror being arranged at an angle in front of the closed end of the shield and with the axis of the lamp in line with the base portion of the mirror. As herein shown the mirror is detachably fitted to the shield by means of a clasp 56 which embraces the shield, and to which the shank 57 of the mirror is fixed.

The structural details of the lamp described may be varied within the spirit and scope of the invention, and the invention is not limited to said details except as such details are made the subject of specific claims, and as imposed by the prior art.

I claim as my invention:—

1. A lamp for dental and surgical uses, comprising an elongated fixture body provided at its front end with a lamp, a transparent tubular shield closed at its front end and open at its rear end and fitted over said lamp body throughout substantially the entire length of the latter, a collar fitted to the open rear end of the shield and spring arms carried by said collar and frictionally engaging the rear end of the fixture body only whereby said shield is readily attachable to and detachable from said body, for the purpose set forth.

2. A lamp fixture for the purpose set forth, comprising an insulating tube, an insulating partition extending longitudinally therethrough, socket terminals fitted to the forward end of said partition and extending therebeyond to constitute a lamp socket, there being provided between the sides of the partition and the inner wall of the tube passageways for conductors of the lamp circuit, and conductors extending through said passageways and connected to said terminals.

3. A lamp fixture for the purpose set forth, comprising an insulating tube, an insulating partition extending longitudinally therethrough, socket terminals fitted to the forward end of the said partition and extending therebeyond to constitute a lamp socket, there being provided between the sides of the partition and the inner wall of the tube passageways for conductors for the lamp circuit, conductors extending through said passageways between said partition and the inner wall of the tube and connected to the said terminals, an insulating base socket fitted over the rear end of the tube having a shoulder to engage one end of the partition, said partition being provided with shoulders to contact with the end of the said tube and said insulating socket member being provided with an opening through which the conductors extend.

4. A lamp fixture for the purpose set forth, comprising, in combination with a tube, an insulating partition extending longitudinally therethrough to divide the tube into separate conductor passages, with conductors extending therethrough, and lamp socket terminals fitted to the outer edges of the said partition and provided with lugs adapted to engage notches in said partition.

5. A lamp fixture for the purpose set forth, comprising, in combination with a tube, an insulating partition extending longitudinally therethrough to divide the tube into separate passages for the conductors of

a lamp circuit, with conductors extending therethrough, and lamp socket terminals fitted to the opposite edges of said partition, and provided with lugs adapted to engage notches in said partition, said terminals being provided with lugs to which the end of the lamp circuit conductors are connected.

6. A lamp fixture for the purpose set forth comprising, in combination with a tube, an insulating partition extending longitudinally therethrough to divide the tube into separate passages for the conductors of a lamp circuit, with conductors extending therethrough, and lamp socket terminals fitted to the opposite edges of said partition and provided with lugs adapted to engage notches in said partition, said terminals being provided with lugs to which the end of the lamp circuit conductors are connected, one side of said lamp circuit being divided, and a switch carried by the fixture to bridge said divided side of the circuit.

7. A lamp for dental and surgical uses comprising, a tube, an insulating partition therein, lamp socket terminals carried by said partition to constitute a lamp socket, a conductor extending longitudinally through one of the passages between the partition and the tube wall and connected to one of the lamp socket terminals, a switch terminal carried by the end of said partition to which the other lamp conductor is connected, and a movable switch member connected to one of the lamp socket terminals and extending in overlapping relation to and having means to press it against the first mentioned switch terminal, for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 27th day of August, A. D. 1913.

ERNST G. K. ANDERSON.

Witnesses:

W. L. HALL,
A. POTASCH.