

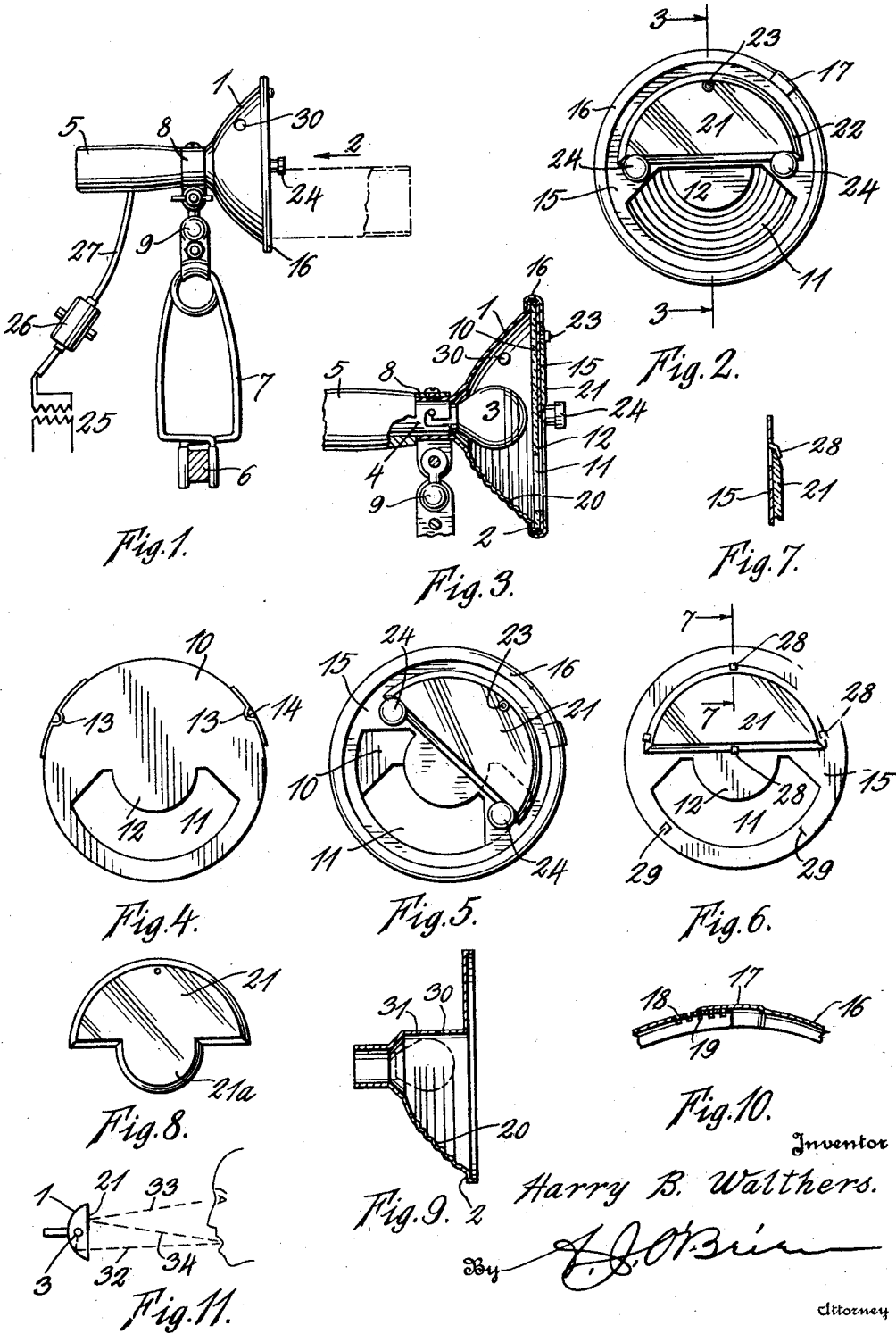
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DENTIST'S AND DOCTOR'S LAMP

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DENTIST'S AND DOCTOR'S LAMP

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This invention relates to improvements in lamps and has reference more particularly to a lamp adapted for use by dentists and doctors for illuminating cavities of the body and for simultaneously reflecting the illuminated surfaces in a mirror.

Dentists often find it necessary to show the patients the condition of their mouth and teeth and to point out cavities and other defects and also to show the appearance of appliances after they have been put in place. Without some special means for illuminating the mouth and for reflecting an image so that the patient may see the inside of his mouth while it is brightly illuminated, it is very difficult to show a patient the appearance or condition of his own mouth.

It is the object of this invention to produce a lamp of a simple construction that can be held in the hand or which can be fastened to a stationary support attached to the dental unit and which shall be so constructed that it will throw a strong beam of light forwardly and at the same time shield the light source from the eye of the observer. A lamp is provided with a mirror whose reflecting surface is in the direction of the beam of light and in which the patient can see the surface illuminated when he holds the lamp in front of his face.

This invention, briefly described, consists of a hollow reflector within which is located an incandescent lamp. The open end of the reflector is closed by means of an asbestos cover that is provided with an opening located between the lamp and the edge of the reflector. A metal cover of substantially the same shape and size as the asbestos cover is placed on the outside of the latter, and the two fastened to the edge of the reflector so as to hold the two covers securely in place thereon. Secured to the outer cover is a mirror that is located above the center of the lamp and when the lamp is held in front of the face, light will be projected through the openings in the two covers and by looking into the mirror a good view can be obtained of the surface illuminated. Instead of an ordinary lamp a therapeutic lamp may be employed for the purpose of projecting ther-

apeutic rays into the throat or onto other portions of the body.

Having thus briefly described the invention, the same will now be described in detail, and for this purpose reference will be had to the accompanying drawings in which the invention has been illustrated in its preferred form, and in which:

Fig. 1 shows a side elevation of the improved lamp showing the same in place on a stationary support;

Fig. 2 is a front elevation of the lamp housing showing the covers and the mirror;

Fig. 3 is a section taken on line 3—3, Fig. 2;

Fig. 4 is a plan view of the asbestos cover;

Fig. 5 is an elevation corresponding to the one shown in Fig. 2 and shows the two covers rotated relative to each other;

Fig. 6 is a front elevation showing a slightly modified form of cover;

Fig. 7 is a section taken on line 7—7, Fig. 6;

Fig. 8 is a plan view of a mirror of a slightly different form;

Fig. 9 is a vertical section through a reflector of a modified construction;

Fig. 10 is a section showing the joint in the ring by means of which the covers are secured in place; and

Fig. 11 is a diagrammatic view showing the manner in which the device is used.

In the drawings reference numeral 1 represents a reflector which may be of the ordinary parabolic type and which is provided with an outwardly extending flange 2. Located within the reflector is a lamp 3 that is secured in a socket 4 of ordinary construction. The lamp and reflector are secured to the end of a handle 5 by means of a bayonet connection shown in the drawings and where the lamp is to be secured to a stationary member like that indicated by reference numeral 6, a clamping device 7 is provided. This clamping device is connected to the handle by means of a strap 8 and a ball and socket joint connection 9 is provided between the clamping device and the strap. Located in front of the lamp so as to close the open end of the reflector is an asbestos cover 10. This cover has an opening shaped like the one in-

indicated by reference numeral 11. This opening is practically semicircular, but the upper straight wall has a semicircular downwardly extending projection 12 that covers the lamp. For the purpose of preventing the asbestos cover from rotating in the reflector, it has been provided with notches 13 that are engaged by indentations 14 formed in the reflector or by drops of solder that are attached to the reflector to form stops. Located outside of the asbestos cover is a metal cover 15 that is substantially the same size and the same shape. The two covers are held in place in the open end of the reflector by means of a ring 16 which has a channel shape cross section and extends over the flange 2 of the reflector and over the edges of the covers. The two ends of the ring are connected by means of a joint like that shown in Fig. 10 from which it will be seen that the end 17 is slightly enlarged so as to enclose the other end of the ring. Notches 18 are provided in one end and the end 17 has an inwardly extending tooth 19 that engages in one of the notches so that the tension of the ring can be adjusted.

The surface of the reflector directly back of the opening 11 is corrugated as indicated by reference numeral 20 in Fig. 3, and therefore the light that is reflected will be dispersed to a considerable extent. Secured to the outer surface of the metal cover 15 is a mirror 21. In the form shown in Fig. 2 this mirror has the shape of a segment of a circle and is also provided with bevelled edges 22. The mirror is held in place by means of a bolt 23 and two lugs 24. The lugs 24 also serve as handles for rotating the metal cover about the asbestos cover so as to decrease the size of the opening, all as shown in Fig. 5. The lamp 3 is preferably a low voltage lamp of six volts and is connected to the lighting circuit of the building by means of a transformer 25 that reduces the voltage. A switch 26 is connected in the lead 27 from the transformer to the lamp and controls the flow of current to the lamp.

In Fig. 6 I have shown a slightly modified form of holding means for securing the mirror to the metal cover. In this modification, instead of employing the bolt 23 and the lugs 24, the cover has been constructed with a plurality of tongues 28 that are cut from the metal and which overlap the edges of the mirror and serve to hold the mirror in proper relation with respect to the metal cover. The asbestos cover is quite thick and serves to absorb the heat so as to prevent a large amount of heat from being radiated from the lamp and it also protects the mirror against the heat. When the lamp is in operation, a considerable amount of heat is projected outwardly through the opening 11 and if this should be sufficient to cause discomfort the opening can be closed by means of a trans-

parent piece of celluloid or glass which is held in place in front of the opening by means of lugs 29. The reflector is also provided with two or more openings 30 that serve as ventilators and which permit air to circulate through the reflector for the purpose of carrying away the heat. When a therapeutic lamp is employed, it sometimes becomes necessary to decrease the size of the opening so as to diminish the amount of light that is projected, and this is accomplished by turning the metal cover with respect to the asbestos cover until the two assume a position somewhat like that shown in Fig. 5. When the two covers are to be rotated relative to each other, clamping ring 16 must be adjusted so that this rotation can be effected as readily as desired.

In Fig. 8 a slightly different form of mirror has been shown. The mirror shown in this figure has a downwardly extending semicircular portion 21a that covers the corresponding part 12 of the covers. With the form of mirror shown in Fig. 8 a little larger field of view is obtained but the operation of the device remains the same.

Since the upper portion of the reflector is covered by the opaque portions of the two covers, it is evident that it is practically without effect for the purpose of projecting light, and it is therefore possible to modify the reflector as shown in Fig. 9. In the form shown in Fig. 9 the upper portion of the reflector instead of being curved is bent inwardly so as to form a flat surface 31 that is parallel with the axis of the reflector. The covers and other parts may be secured to this reflector in the manner described above.

In Fig. 11 I have shown the manner in which the lamp can be employed for inspecting the inside of the mouth and from this it will be seen that the light from the lamp 3 is projected through the opening along the line designated by numeral 32 and the image in the mirror is viewed along lines 33 and 34. The covers form shields that protect the eye from the glare of the lamp or reflector and also intercept the heat rays so that the device can be employed with comfort and without affecting the eyes as would be the case if strong beams of light were permitted to strike the eyes.

A lamp like the one described above is especially well adapted for use by dentists, but is also useful for surgeons and physicians generally. Lamps constructed as above described are also well adapted for home use because with the ordinary arrangement of lights and mirrors provided in the usual residence, it is practically impossible for a person to inspect his teeth and for this reason the teeth are seldom kept in as good condition as they would be if a convenient and satisfactory means were at hand for viewing them properly illuminated. When the lamp is

used for giving heat or other therapeutic ray treatment it is sometimes desirable to provide a conduit that extends from the lamp to the mouth or other part that is to be treated so as to prevent undue dispersion of the rays with consequent loss of effect. In Fig. 1 such a conduit has been indicated by dotted lines.

Having described the invention what is claimed as new is:

1. A device of the character described, comprising, in combination, a concave reflector, a lamp located within the reflector, an asbestos cover secured to the open end of the reflector, the asbestos cover having an opening extending on a curved line partly but not wholly around the edge of the reflector through which a portion of the reflector between the lamp and the outer edge thereof can be seen, another cover located on the outside of the asbestos cover, means for holding the asbestos cover against rotation, means for securing both covers against the open end of the reflector, the outer cover being rotatable on the asbestos cover and a mirror secured to the outer cover.

2. A device of the character described, comprising, in combination, a concave reflector, a lamp located within the reflector, an asbestos cover secured to the open end of the reflector, the asbestos cover having an opening extending on a curved line partly but not wholly around the edge of the reflector through which a portion of the reflector between the lamp and the outer edge thereof can be seen, another cover located on the outside of the asbestos cover, means for holding the asbestos cover against rotation, means for securing both covers against the open end of the reflector, the outer cover being rotatable on the asbestos cover, a mirror secured to the outer cover and lugs projecting from the metal cover for use in turning the same.

In testimony whereof I affix my signature.

HARRY B. WALTHERS.