

H. S. HOWER.

LAMP.

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1,217,945.

Patented Mar. 6, 1917.

Fig. 2

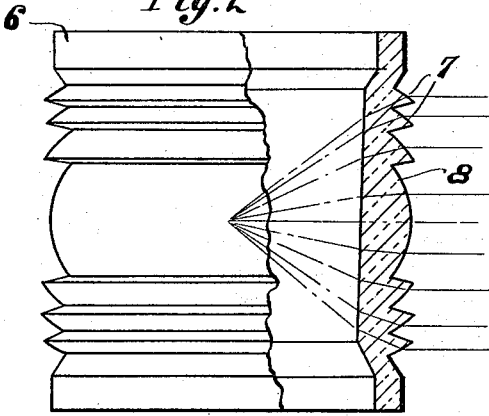


Fig. 3

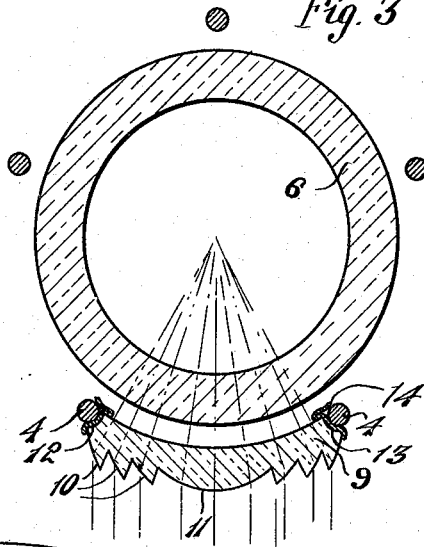
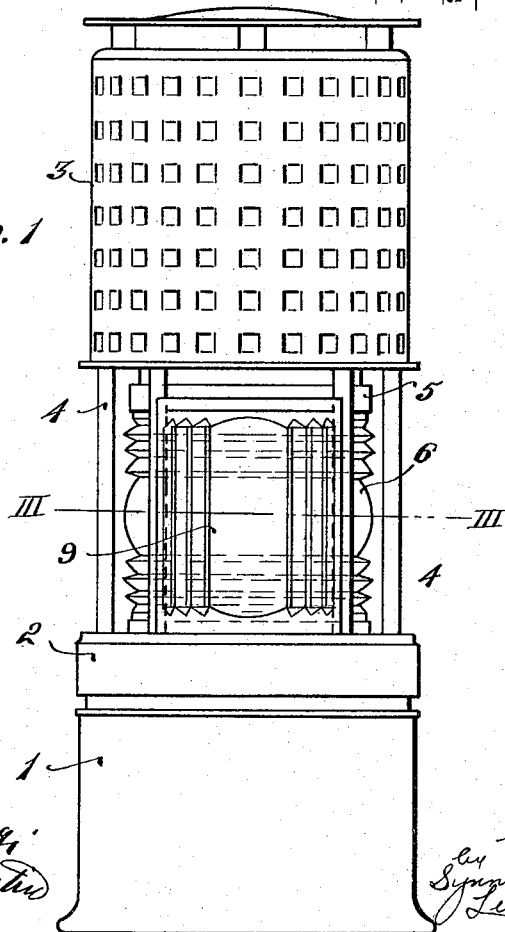


Fig. 1



WITNESSES

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HARRY S. HOWER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO MACBETH-EVANS GLASS COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

LAMP.

1,217,945.

Specification of Letters Patent.

Patented Mar. 6, 1917.

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To all whom it may concern:

Be it known that I, HARRY S. HOWER, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

The invention relates to lamps and particularly to miners' lamps or lanterns. It has for its primary objects the provision of a cheap and effective lens construction which can be substituted for the usual cylindrical glass which is now employed; the provision of an improved arrangement whereby a bull's eye effect is secured upon one side of the lantern, and wherein the cost of the parts is low and the parts readily removable for cleaning or replacement; and the provision of a construction which is readily applicable to the common type of lantern as now generally used. One embodiment of the invention is illustrated in the accompanying drawings wherein—

Figure 1 is a front elevation of the lamp, Fig. 2 is an enlarged side elevation of one of the lamp glasses, such glass being partially in section, and Fig. 3 is a horizontal section on an enlarged scale taken on the line III—III of Fig. 1.

The body of the lamp comprises the container 1, a collar 2 screw-threaded to the container and a foraminous shield 3 supported from the collar 2 by means of the vertical rods 4, such shield containing the usual gauze.

Clamped between the container 1 and the collar 5 at the lower end of the gauze is the lamp glass or lens 6, shown partially in section in Fig. 2. This glass or lens is provided with a plurality of circumferential ridges 7 and a convex central portion 8, the purpose of which is to bring the rays of light into horizontal planes. This glass is so proportioned at its lower and upper edges that these edges will fit into the grooves as provided for the ordinary cylindrical glass which has hitherto been used in lamps of this character.

Located between the pair of rods 4—4 is a second glass 9 (Fig. 3) such glass being provided with the vertical ridges 10 and the central convex portion 11, so that the horizontal divergent rays of light are brought into parallelism as indicated in Fig.

3. By the use of these two lenses a bull's eye effect is secured so that a strong light is available at this point.

In order to hold the glass 9 releasably in position the clips 12 and 13 are employed, such clips being made of spring metal and partially embracing the edges of the glass and the rods 4—4 as illustrated in Fig. 3. In order to remove the glass 9, as illustrated in Fig. 3, the right hand edge of the glass is pushed outward or away from the glass 6, the spring edge 14 yielding to permit this action. After the lip 14 has been moved past the rod 4 the parts, of course, are released. In reassembling the parts the left hand edge of the glass is positioned in its clip against the left hand rod 4 and the right hand edge of the glass carrying its clip 13 is forced into position, the lip 14 resisting such movement, but springing into holding position as illustrated in Fig. 3, after it has been forced past the rod 4.

It will be seen from the foregoing that the glass 9 is held yieldingly in position, and that it may be readily removed for replacement or cleaning when desired. Also that the glass 9, as well as the glass 6, can be applied to the ordinary miners' lamp. The lenses thus applied greatly improve the light effect secured from the lamp and yet can be applied in place of the ordinary plain cylindrical glass at small cost. The two glasses are easily removable for cleaning. Other advantages incident to the construction will be readily apparent to those skilled in the art.

What I claim is:

1. In combination in a lamp, a source of light, a cylindrical glass surrounding such source and provided with circumferential refracting ridges for bringing the rays of light into horizontal planes, and a separate second glass located outside the first glass and in substantial parallelism therewith and provided with vertical refracting ridges, such second glass extending around only a fraction of the circumference of the cylindrical glass.

2. In combination in a lamp, a source of light, a cylindrical lens surrounding such source of light, a pair of spaced vertical rods located outside the first lens, a second lens between said rods, and yielding spring clips embracing said rods and the edges of

the second lens and slidable along the rods, whereby it is retained releasably and adjustably in position.

3. In combination in a lamp having upper and lower metallic portions connected by spaced vertical rods, an inner cylindrical lens lying inside the rods, and a second lens supported between the two adjacent rods and adjustable vertically along such rods.

4. In combination in a lamp having upper and lower metallic portions connected by spaced vertical rods, an inner cylindrical lens lying inside the rods, and a second lens lying between a pair of adjacent rods and mounted for sliding adjustment therealong.

5. In combination in a lamp having upper and lower metallic portions connected by spaced vertical rods, an inner cylindrical lens lying inside the rods, a second lens lying between a pair of adjacent rods, and holding clips between the vertical edges

of the second glass and the pair of rods, the said clips partially embracing the said rods and being of spring material whereby the second lens is releasably and adjustably supported.

6. In combination in a lamp, a source of light, a cylindrical lens surrounding the source of light and formed so as to bring the divergent rays of light into substantially horizontal planes, and a separate second lens located outside the first lens and adapted to bend the rays of light which diverge laterally into substantially parallel vertical planes, said second lens extending around only a fraction of the circumference of the first lens.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HARRY S. HOWER.

Witnesses:

ARCHWORTH MARTIN,

M. L. JONES.

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