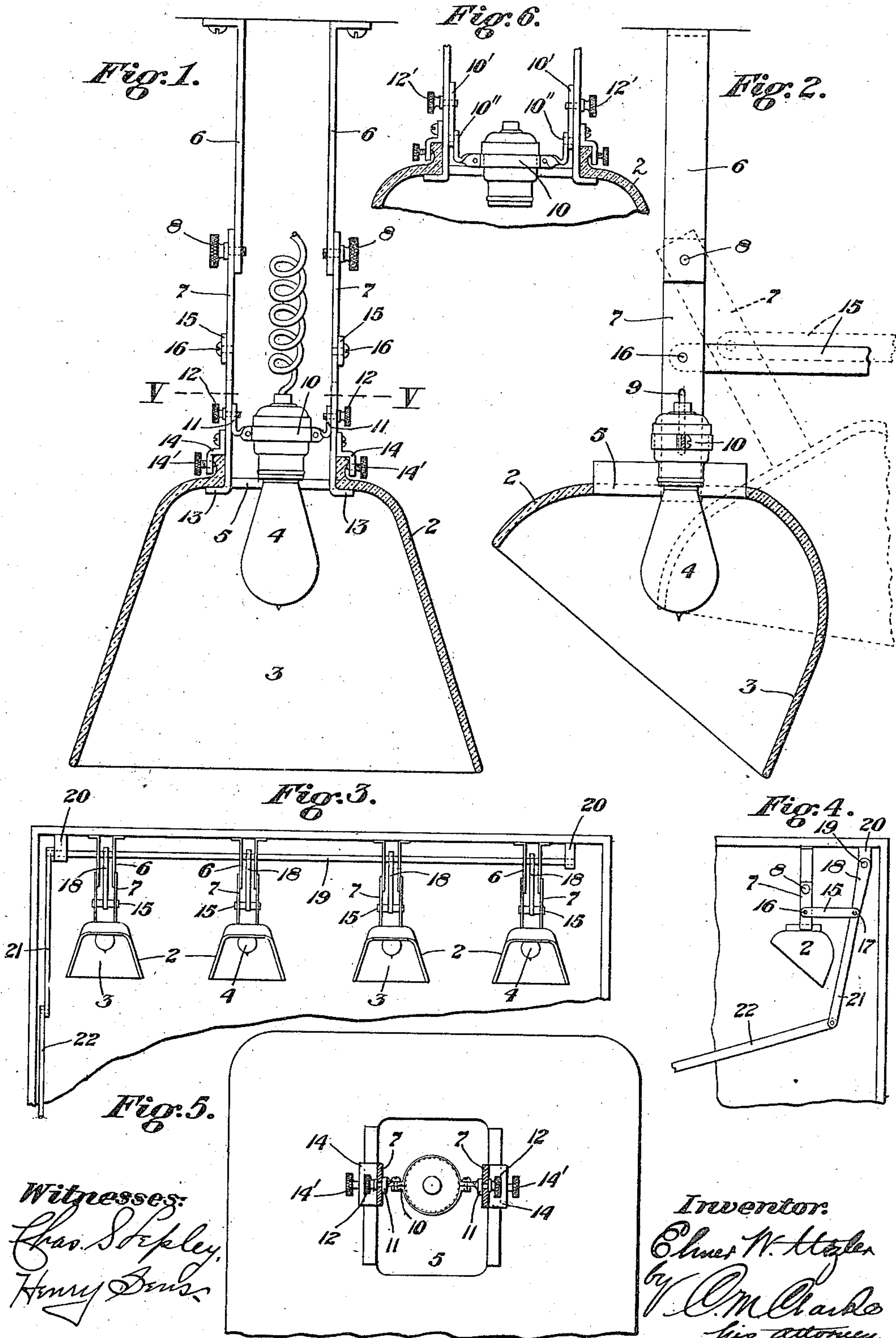


E. W. UTZLER.  
REFLECTOR.

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# UNITED STATES PATENT OFFICE.

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## REFLECTOR.

995,739.

Specification of Letters Patent. Patented June 20, 1911.

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*To all whom it may concern:*

Be it known that I, ELMER W. UTZLER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Reflectors, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to the class of reflectors and has for its object to provide an adjustable reflector and a combined independently adjustable lamp, whereby the reflector and lamp may be adjusted together or independently of each other, together with other features of construction and operation as shall be more fully hereinafter described.

The invention is designed to provide means for illuminating any particular area or space, as portions of a show window and to focus the light to the best advantage and with a view of securing economical and effective results to the highest degree.

In the drawings illustrating the invention:—Figure 1 is a vertical sectional view of a reflector and its supporting frame and lamp. Fig. 2 is a view in side elevation of Fig. 1, the reflector being shown in transverse section. Fig. 3 is a view in elevation of a plurality of reflectors mounted for operation together. Fig. 4 is a view at right angles to Fig. 3. Fig. 5 is a plan view of the reflector shown in Fig. 1, the lamp supporting mechanism being in section on the line V. V. of Fig. 1. Fig. 6 is a detail view showing a flexible adjustable lamp bracket.

2 is the reflector shell or shade, which may be of any suitable or desired shape or construction, but which is preferably of a single piece of glass or other suitable material, properly curved and arranged as to its side walls to reflect the light therefrom, and having its interior covered with a suitable reflecting material providing an interior mirror 3. The reflector as thus made is generally bell-shaped, and is designed to be suspended by a suitable bracket construction from the ceiling of any supporting frame.

In the construction shown in the drawings, the bracket is designed to permit of suitable variations of position of the reflector 2, and also of independent movement of the lamp 4 which normally occupies a posi-

tion in the middle interior portion of the reflector, being introduced through an elongated opening 5 in the top thereof.

6, 6, are depending arms secured by terminal flanges and screws or otherwise upwardly against any supporting surface or means, as the ceiling. To said depending arms 6 are pivoted the adjustable arms 7, said arms being secured together at their terminals by any suitable means, as pivoting screws 8, 8, preferably having knurled heads, and operable to fixedly secure the depending arms 7 and reflector in different positions with relation to the supporting arms 6, as indicated in dotted lines in Fig. 2.

Arms 7 are vertically slotted as at 9, and between the arms extending across from one to the other is a lamp supporting bracket 10 having terminals 11 which bear against the inner side of arms 7 and are secured thereto at varying heights or at angular positions forwardly or backwardly, whereby to position the lamp 4, by means of thumb screws 12, 12. Said screws extend inwardly through slots 9 and into the terminals 11, and by loosening them the bracket 10, which embraces the lamp socket as shown, may be set and secured in any desired position either vertically or angularly. The bracket 10 may conveniently be made of semi-circular clamping portions, secured together by one or more screws as indicated whereby to fixedly hold the lamp socket between them. Ordinarily however, it is desirable that the lamp 4 shall be free to swing from its supporting bracket, so as to hang vertically independently of whatever position the bracket may assume. For such purpose, the bracket 10 is provided with pivotally connected securing terminals 10' having securing screws 12' and jointed as at 10'', as clearly shown in Fig. 6. By this arrangement, the lamp is free to assume a vertical position at all times, irrespective of whatever positions the reflector or its supporting frame may assume, and thus the best efficiency of the lamp as to focusing and time of service is assured.

The lower terminals of arms 7 are bent in opposite directions as indicated at 13, engaging underneath the inner edges of the reflector around the opening 5, companion clamps 14 engaging the upturned reflector edges and securing it in the desired position by thumb screws 14', whereby to fixedly



hold the reflector forwardly or backwardly with relation to the normal position of the lamp.

By reason of the elongated opening 5, the clamping terminals of the arms 7 may be adjusted forwardly or backwardly of the reflector thereby adjusting the lamp bracket and lamp likewise. By this means the lamp and reflector are accurately adjusted with relation to each other and set to the desired focus, and this adjustment may be secured quite independent of the other adjustments referred to. This adjustment of the lamps with relation to the reflector is of especial advantage in adjusting lamps of varying efficiency or candle power to the reflector, whereby to secure the best results in focusing the reflected light. By this construction, it will be seen that the reflector may be tilted forwardly or backwardly on its pivotal joints 8 and secured thereby in any desired position; also that the lamp 4 may be set forwardly or backwardly, and raised or lowered or likewise tilted forwardly or backwardly with relation to the reflector. By such adjustment of the reflector and lamp, the reflected light may be focused to the best advantage and within a very extensive range, due to the ample range of adjustment of the parts.

When it is desired to employ a number of reflectors and to adjust them all together for uniformity of distribution of the combined lights over an extended area, the arrangement shown in Figs. 3 and 4 may be utilized. In such construction, each pair of arms 7 is pivotally connected with the terminals of a Y-shaped arm 15 at 16 and the other end of said arm is connected at 17 with the end of a lever 18, one for each reflector. Each of said levers 18 is secured to a common rock shaft 19 mounted at 20, 20, in suitable bearings and having at one or both ends an operating lever 21 and a handle extension 22 of any desired construction. By this or other equivalent means it will be seen that all of the reflectors and their lamps may be uniformly adjusted forwardly or backwardly on their pivotal joints 8 by manipulation of the lever mechanism, without in any way impairing the efficiency of each reflector, as to its individual adjustment or that of its lamp.

The advantages of the invention reside in its amplitude of adjustment and utilization of the reflected rays to the best advantage; the ease for directing or focusing the rays of each individual reflector upon any desired point or area, and the simplicity and ease of manipulation, together with the general advantages arising from substantially complete utilization of all of the light.

The invention may be changed or varied in construction or different features of detail by the skilled mechanic but all such

changes are to be considered as within the scope of the following claims.

What I claim is:—

1. The combination of a double-sided supporting frame, a reflector carried thereby, and a separately adjustable lamp bracket carried by said frame adapted to adjust the lamp vertically and laterally.

2. The combination of a supporting frame consisting of pivotally jointed sections, means for securing the reflector thereby at varying positions, and a separately adjustable lamp bracket carried by said jointed sections.

3. The combination with a reflector having an opening therethrough, of a double-sided support engaging the reflector at each side of the opening, and a freely pendent lamp carried by said support and extending through the opening into the interior of the reflector.

4. The combination with a reflector having an opening therethrough, of a double-sided support engaging the reflector at each side of the opening, and a lamp bracket carried by said support and adjustable with relation thereto.

5. The combination with a depending bracket, of a reflector, mechanism connecting the bracket and reflector adapted to be adjustably set and secured with relation to said bracket, and a separately adjustable lamp bracket.

6. The combination with a depending bracket, of a reflector, connecting mechanism adapted to be adjustably set and secured with relation to said bracket, and a separately adjustable lamp bracket having a freely swinging lamp attachment.

7. The combination with fixed supports, of supplemental arms pivoted thereto, means for securing said arms in varying positions, and a reflector secured to the terminals of said arms, having a clearance opening for the lamp.

8. The combination with fixed supports, of supplemental arms pivoted thereto, means for securing said arms in varying positions, a reflector secured to the terminals of said arms, and a pivoted lamp bracket adjustably secured in said arms.

9. The combination with fixed supports, of adjustable arms and means for fixedly securing said arms with relation to said supports, an apertured reflector secured to the terminals of said arms, an adjustable lamp bracket having a slotted engagement with said arms, and a lamp secured therein and extending into the interior of the reflector, substantially as set forth.

10. The combination with fixed supports, of adjustable arms and means for fixedly securing said arms with relation to said supports, an apertured reflector secured to the terminals of said arms, an adjustable lamp



bracket having a slotted engagement with said arms, and a lamp pivotally secured therein and extending into the interior of the reflector, substantially as set forth.

5 11. The combination with a plurality of pivotally supported reflectors and means pivotally supporting said reflectors, of means provided with an operating handle and connections to each of the reflector supporting means for adjusting all of the reflectors together, substantially as set forth.

10 12. The combination with a plurality of pivotally supported reflectors and means

pivotally supporting said reflectors, of mechanism consisting of a rock shaft and 15 levers connected with each of said reflector supports, and means for operating the lever to adjust all of the reflectors together, substantially as set forth.

In testimony whereof I affix my signature 20 in presence of two witnesses.

ELMER W. UTZIER.

Witnesses:

C. M. CLARKE,

CHAS. S. LEPLEY.

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

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