Jan. 28, 1941. R. I. JOHNS ET AL 2,230,186

ADJUSTABLE LAMP SHADE

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Fig. 1.

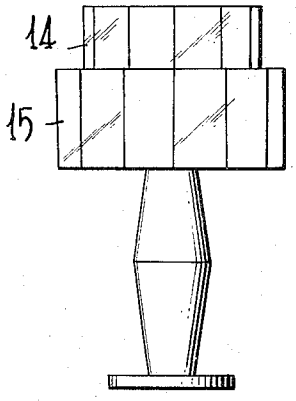


Fig. 1A

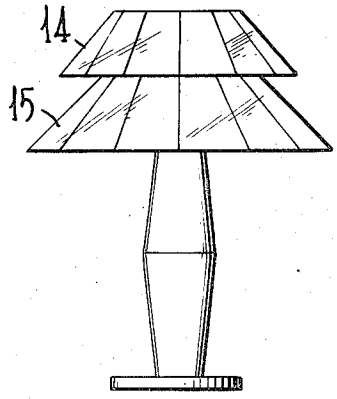
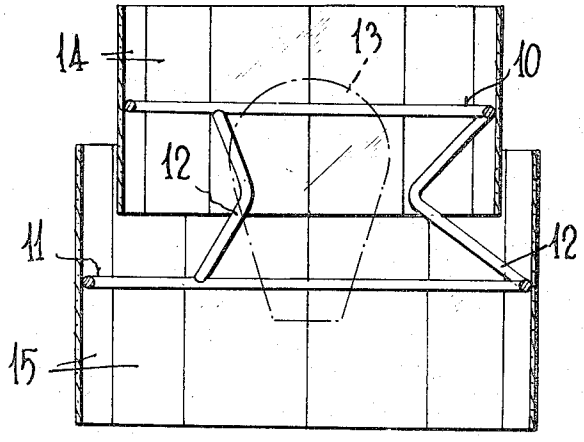


Fig. 2.



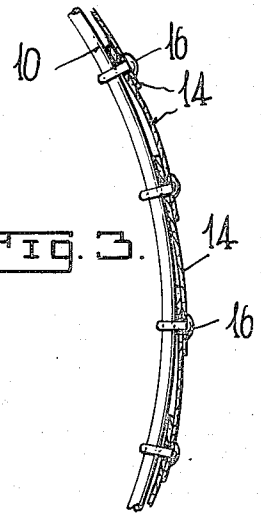


Fig. 3.

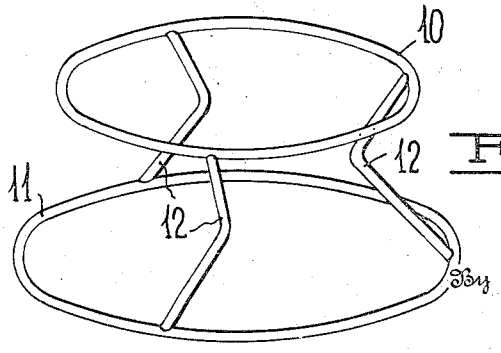


Fig. 4.

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Fig. 5.

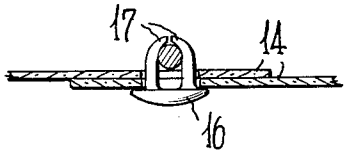


Fig. 6.

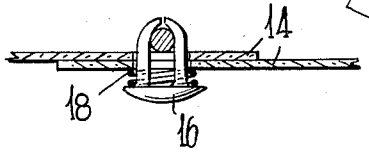


Fig. 7.

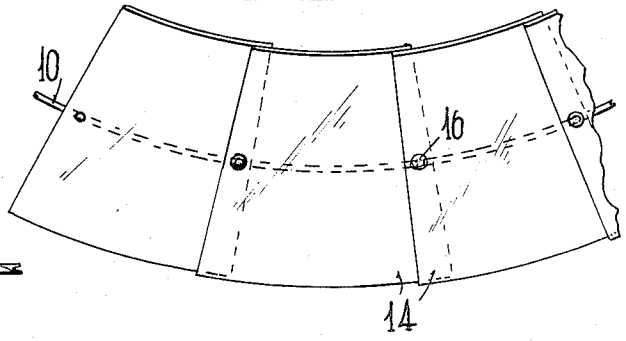


Fig. 8.

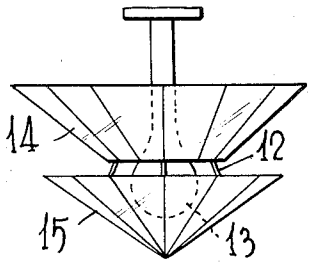


Fig. 9.

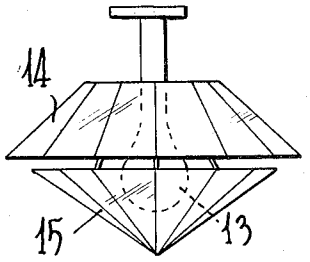


Fig. 10.

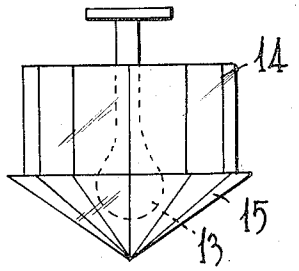


Fig. 11.

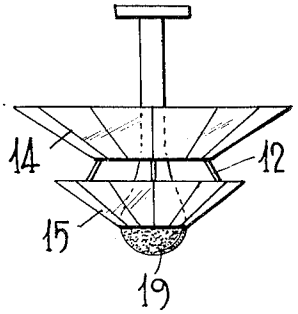


Fig. 12.

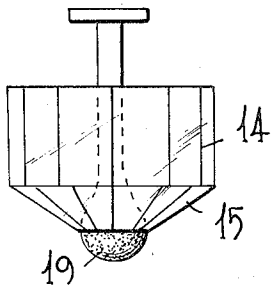
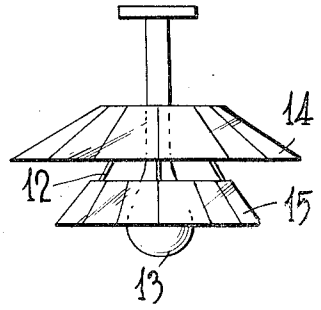


Fig. 13.



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ADJUSTABLE LAMP SHADE

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Brooklyn, N. Y.

Application February 25, 1939, Serial No. 258,486

9 Claims. (Cl. 240—108)

This invention relates to a new form of lamp shade with the special advantage that the form may be changed at will, without reconstruction or reassembly, to make different shapes or to adapt it for either direct or indirect lighting. Also the field of light diffusion may be increased or diminished at will to embrace a wider or more limited area. Also the method of construction lends itself to easy assembly by unskilled persons so that the shade may be readily sold in knock-down or separate-parts form.

Primarily the shade consists of one or more rows, or tiers, of small plates. These plates overlap or closely adjoin, laterally, and form together a band or row of such plates attached near the middle, and to one side, to a horizontal frame wire. Thus the tops or bottoms of the plates may be inclined inward or outward at will, thus changing their angles and consequently the form of the shade. There may be several of these tiers or rows of articulated plates, each with its horizontal sustaining frame wire.

Lighting falls generally into two classes, direct and indirect. To secure both, at present, two fixtures must generally be used; or if both types are combined in one fixture, additional bulbs, reflectors and switches are needed. The new type of shade according to the present invention allows either type of lighting at will, either wholly direct, wholly indirect, or a number of degrees in between.

The relationship of parts according to the invention is readily adaptable to various forms of illumination, such for example as table lamps, ceiling fixtures, and the like.

On the accompanying sheets of drawings, illustrating the details of presently preferred embodiments of the invention—

Figs. 1 and 1*a* are elevational views of the device according to the invention as applied, for instance, to a table lamp;

Fig. 2 is a vertical cross section through the said device as shown in Fig. 1;

Fig. 3 is a view, on an enlarged scale and partly in section and partly in elevation, of a detail.

Fig. 4 is a perspective view of the supporting frame which constitutes an important constructional element of the device of the invention;

Fig. 5 is a detail view of one manner of and means for integrating the lamp shade elements and the supporting frame;

Fig. 6 is a detail view of a modified method of integrating the said elements and frame;

Fig. 7 is a partial perspective view, on an enlarged scale, showing the relationship of parts of the lamp shade of the invention;

Figs. 8, 9 and 10 are diagrammatic showings of the lamp shade as used on a ceiling fixture, closed at the bottom; and

Figs. 11, 12 and 13 are diagrammatic showings of the lamp shade as used on a ceiling fixture, in combination with a silvered bottom bulb.

Corresponding parts are indicated by like reference numerals throughout the several figures of drawings.

The lamp shade according to the invention includes essentially, in any of the many modifications which it may assume, a wire supporting frame. In the two-section shade which constitutes the preferred form of the device, this wire frame is composed of two rings 10 and 11, spaced from each other and supported by braces 12, as shown.

The wire supporting frame is preferably associated in any suitable or desired conventional manner with conventional means for attaching the shade to either the bulb upon which it is to be mounted or to the socket, generally provided on the lamp base, ceiling fixture or the like, with which the shade is to be associated. Thus, for example, use may expediently be made of conventional spring clips attached to frame ring 11 and clamping on the bulb 13, or of a threaded ring attached to frame ring 10 and screwing on the socket.

Each section of the lamp shade preferably consists of a plurality of overlapping arcuate strips or plates 14, 15. These overlapping strips fit evenly about frame rings 10 and 11 and overlap to a substantial extent, as shown, to allow for increased continuous circumference when the section is flared either at the top or at the bottom.

The overlapping strips are severally attached to the frame rings by means of clip means which may assume any one of a number of designs. As shown more particularly, in Figs. 5 and 6, this means may advantageously assume the form of a rivet 16, the prongs 17 of which extend through adjacent plates 14, 15 at juxtaposed points a short distance from the edges thereof. Each plate is thus attached at two points, one on each side thereof. The prongs 17, after traversing the plates, are bent around the corresponding frame ring and adjustably encompass the same. The relationship of the parts is such that the plates can turn on the shanks of the respective rivets 16 while the prongs can slide around the corresponding frame ring. It is thus possible to

adjust the plates of each section to alter the diameter at each end thereof from minimum to maximum and vice versa. The diameter of the section at the middle of the plates, where the clip means is located, remains constant and substantially equal to the diameter of the particular frame ring plus four times the plate thickness. Any desired degree of upward or downward flare may thus be achieved.

The amount that the plates of a section overlaps can be adjusted to suit the design of the shade.

The plates, when made of relatively soft or rough material, retain their adjusted position owing to the compressive action of the attaching rivets and their friction on each other. When the plates are of relatively hard or smooth material, a small coil spring or spring washer 18 may advantageously be arranged under the rivet head, as shown more particularly in Fig. 6.

The number of sections may be varied, the number of rings of the supporting frame being correspondingly varied. The diameters of the frame rings as well as the distance therebetween, the length, width, shape and point of attachment of the plates or strips are all, to some extent at least, variable and may be adjusted to suit the preferred design of shade. By way of example, Figs. 1 and 1*a* show two of the numerous possible shapes of a two section shade on a table lamp.

The vertical spokes or spacing braces 12 which hold the horizontal frame wires in fixed relation to each other and to the central ring engaging the lamp base or socket, or supporting fixture, may be curved or angled to permit the swing or play of the outer plates when tilted inward or outward.

The holes in the plates may be lined with grommets or small eyes, so as to protect the plates from cutting or enlargement of the holes due to frequent changes in position of the plates. These grommets are similar to the eyes used in uppers of shoes through which to pass shoe strings.

The shade may be made of any material. If translucency is required, it may be made of spun glass treated with plastic resinous solution, or coated with any translucent material as a lacquer or varnish. It may be made also of plastic sheet, parchment paper, glass plates, fabric treated or untreated, or any other translucent material.

If translucency is not required (as in use for indirect lighting purposes, when the shade really functions as a reflector) then metal or any other opaque material may be used.

It may also be coated on inside with a translucent reflecting material or coating, and may be decorated in any design and made in any color or combinations thereof, and with any necessary decorative bindings, or trimmings.

Figs. 8 to 13, inclusive, show the invention as applied to ceiling lighting. Here again, the device consists essentially of a supporting frame and of tiers of adjustable plates mounted thereon, substantially as hereinbefore described. Conventional attaching means for supporting the shade on the bulb or on the fixture are again employed.

In Figs. 8, 9 and 10, the lower tier of plates converges to an apex to given an indirect lighting effect. A similar effect may be obtained by using a bulb with a silvered bottom 19, as in Figs. 11 and 12. When metal plates are used as the bottom row or tier, the latter forms a reflector to throw the light against the upper tier and thence downward to the room.

A direct lighting effect is obtained by the arrangement according to Fig. 13.

Having described the invention, what is claimed and desired to be protected by Letters Patent is:

1. A shade of the character described comprising essentially a supporting frame including a supporting annulus, and an annular tier of shade-defining plates arranged in mutually overlapping relationship on said annulus, and clip means movably interconnecting adjacent plates to each other and to said supporting annulus, said clip means extending through the overlapping portions of each pair of adjacent plates into encompassing relationship with the adjacent portion of said supporting annulus.

2. A shade of the character described comprising essentially a supporting frame including a plurality of spaced supporting annuli, brace means interconnecting said annuli and retaining the same in spaced relationship, an annular tier of shade-defining plates arranged in mutually overlapping relationship on each said annulus, and clip means movably interconnecting adjacent plates of each tier to each other and to the corresponding supporting annulus, said clip means extending through the overlapping portions of each pair of adjacent plates of each tier into encompassing relationship with the adjacent portion of the corresponding annulus.

3. A shade of the character described comprising essentially a supporting frame including a plurality of spaced supporting annuli, brace means interconnecting said annuli and retaining the same in spaced relationship, an annular tier of shade-defining plates arranged in mutually overlapping relationship on each said annulus, and clip means movably interconnecting adjacent plates of each tier to each other and to the corresponding supporting annulus, whereby a variable degree of flare may be imparted to said tiers, said brace means being inwardly offset intermediate the ends thereof to provide an unobstructed path of movement for said tiers.

4. A shade of the character described comprising essentially a supporting frame including a plurality of spaced supporting annuli of respectively different diameters, inwardly offset supporting braces extending between and interconnecting consecutive annuli and retaining them in spaced relationship, an annular tier of shade-defining arcuate plates arranged in mutually overlapping relationship on each said annulus, clip means movably interconnecting adjacent plates of each tier to each other and to the corresponding supporting annulus, whereby a variable degree of upward or downward flare may be imparted to said tiers and a plurality of shade configurations achieved, and means for mounting said shade onto a supporting fixture, said means being attached to one of said annuli.

5. A shade of the character described as defined in claim 4 in combination with a depending light fixture including a depending bulb, the lowermost of said tiers being of upwardly opening conical configuration and wholly enclosing said bulb, whereby an indirect lighting effect is achieved.

6. A shade of the character described as defined in claim 4 in combination with a depending light fixture including a depending bulb having a silvered bottom, the lowermost of said tiers being of upwardly open, upwardly flaring frusto-conical configuration, the lower edge of said tier encompassing said bulb intermediate the ends thereof, whereby only the silvered portion is exposed and an indirect lighting effect is achieved.

7. A shade of the character described as de-

fined in claim 4, said plates being made of light-penetrable material capable of being variously colored and ornamented.

8. A shade of the character described as defined in claim 4, the plates of at least one tier being made of light-impenetrable material, whereby the interior surfaces thereof function as reflecting surfaces.

9. A shade of the character described as defined in claim 4 in combination with a light fixture including a silvered bulb, one of said tiers partially encompassing said bulb.

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