Feb. 5, 1935. S. KOHN 1,989,869

DISPLAY DEVICE

Filed Dec. 30, 1933

Fig. 1.

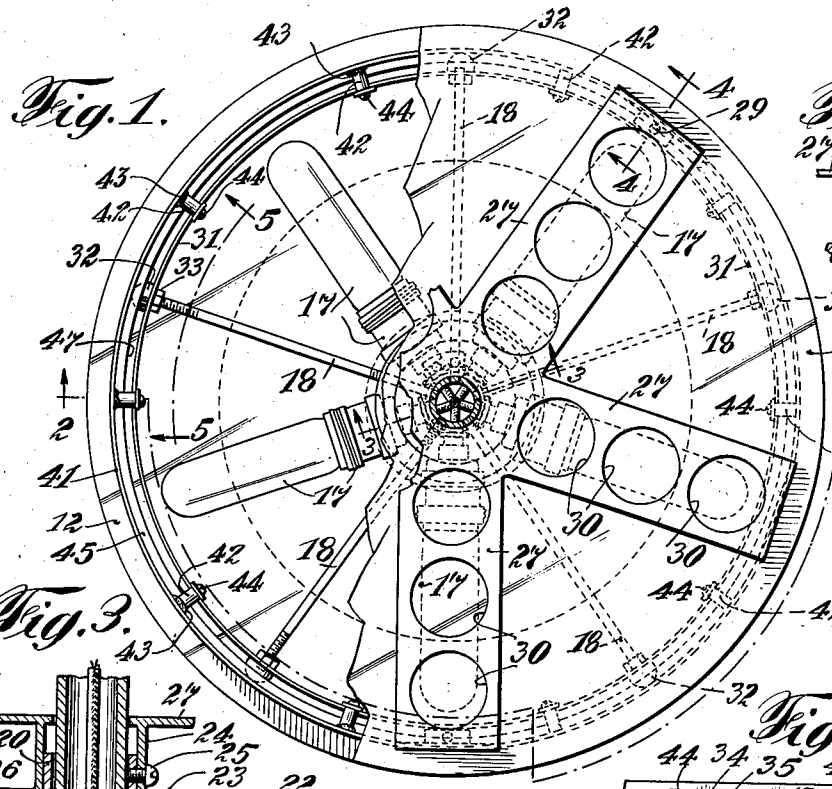


Fig. 4.

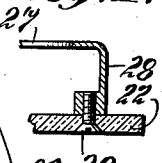


Fig. 3.

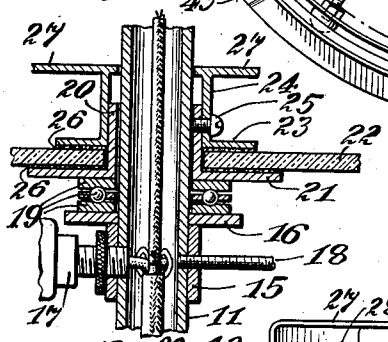


Fig. 5.

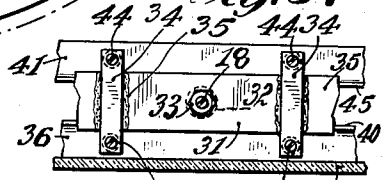
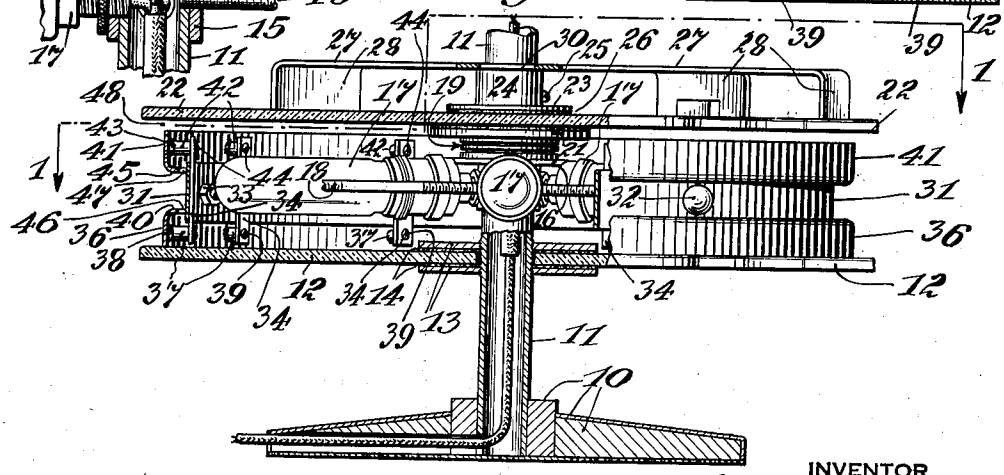


Fig. 2.



INVENTOR
Samuel Kohn
BY
Howard Freeman
his ATTORNEY

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UNITED STATES PATENT OFFICE

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DISPLAY DEVICE

Samuel Kohn, New York, N. Y.

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14 Claims. (Cl. 240—10.1)

My invention relates to display devices and refers particularly to display stands of the kind adapted for placement upon a store counter or the like for attractively displaying bottles of perfume or other articles.

The attractive lighting of such display devices together with the articles displayed thereon has presented a rather difficult problem. Commonly display stands of the kind to which my invention relates and the articles carried thereby have been lighted from some exterior source of illumination, either mounted upon the display stand or otherwise. With this external system of illumination, dependence is mainly had upon light reflected from the displayed articles and from the display stand. Glass bottles and other glass containers may be transparent, translucent, or colored.

In many cases the contained liquid, such as perfume, is colored. The possibilities for display effects provided by these colors have not commonly been adequately utilized.

The display stand of my invention overcomes this lighting deficiency and produces soft, glowing, colored and uncolored lighting effects by means of light which is transmitted and diffused from the interior of the device to the outside and also through the liquid-containing glass containers which are displayed thereon. The displayed articles, such as bottles of perfume or other containers having liquid contents, are supported and displayed with their bottoms resting directly upon a translucent, colored or uncolored, glass plate with electric lights disposed below this plate to shine upwardly through it and through the bottles or other glass containers which have been placed thereon.

The eyes of observers do not receive direct rays from these illuminating lights, which are shielded upwardly by the above noted translucent display plate, these lights being also shielded peripherally or horizontally by means of surrounding shield plates, and downwardly by a lower plate which is desirably of translucent glass. An interior enclosed space or chamber is thus provided within which these electric lights are housed and from which their light escapes only indirectly by transmission and diffusion followed by or together with refraction and reflection of the diffused rays.

An important feature of the display device of my invention resides in the cooling means provided for the light-containing housing or chamber, particularly for its upper glass display plate. Were no cooling means provided, the heat from the electric lights adjacently below this display plate would result in rapid evaporation of volatile liquids such as perfumes and the like, and also would have a tendency to destroy their delicate valuable properties. This would be particularly true in view of the mentioned fact that, in order to obtain a fine illuminated display effect, the bottles or the like rest upon and have their bottoms in direct contact with the upper face of this translucent glass display plate.

In accordance with my invention, such cooling is produced by the provision of efficient means for circulating air within and through the enclosed light-containing chamber, and particularly along the lower face of the superposed top plate thereof, which constitutes the above noted translucent glass display plate. Also the desired cooling result is accomplished by means which accentuate, and in no manner detract from, the attractive appearance of the display device of my invention.

More particularly, in carrying out my invention along these lines, three peripherally extended air circulating openings are provided at different levels or heights and extend around the enclosed chamber. The largest of these openings is the uppermost, which extends freely along and around the lower surface of the display plate, which is spaced upwardly a considerable distance above the upper edge of the underlying portion of a surrounding lateral upright wall, without the latter having any contact with this superimposed display plate, which itself is supported without any direct contact with any metal parts of the device.

For effectively carrying out my invention in a practical manner, the display plate, together with parts mounted thereon, is made to be freely rotatable about a central standard, while all of the mentioned underlying parts of the device are stationary. The electric lights are disposed circumferentially around the standard, while the air-circulating plates, forming the outer upright wall, extend peripherally around these electric lights.

My invention further includes various features of construction and combinations of parts, as will appear from the following description taken in connection with the accompanying drawing and as set forth in the appended claims.

One form of the display device of my invention will now be particularly described with reference to the accompanying drawing in which similar parts are designated by similar numerals.

Figure 1 is a horizontal section on the offset line 1—1 of Figure 2 and shows a broken plan

view of the lower part of one form of the display device of my invention.

Figure 2 is a vertical section as viewed from the front on the irregular line 2—2 of Figure 1.

Figure 3 is an enlarged partial central vertical section on the inclined line 3—3 of Figure 1.

Figure 4 is a similar partial vertical section on the inclined line 4—4 of Figure 1.

Figure 5 is a partial inside development of a vertical section on the arcuate line 5—5 of Figure 1.

The particular form of the display device of my invention illustrated in the accompanying drawing comprises a solid circular base member 10 from the center of which there rigidly rises a cylindrically hollow standard 11, the upper portion of which is omitted from the drawing, thus indicating that such upper portion may be utilized for carrying display elements which are not shown. A stationary lower circular translucent plates glass disc 12 is shown as of larger diameter than the base 10 and is centrally fixedly mounted upon the standard 11 in suitably spaced relation above the base 10 by means of a pair of similar annular flat lower and upper collar-discs 13—13, these discs 13—13 being fixed upon the standard 11 and holding the central portion of the large glass disc 12 between them by means of interposed cushions 14—14 which may be of such material as felt, for example.

A sleeve-like collar 15 is fixed upon the standard 11 above the upper glass-holding annular disc 13, being shown as spaced therefrom. The upper end of this collar or sleeve 15, is provided with a horizontal annular flange 16 forming a disc-collar, shown as formed in a separate piece from the underlying sleeve-collar 15, and this annular flange-collar 16 is fixed upon the standard 11, such as by means of a force fit thereon. The standard 11, at its reinforcement provided by the sleeve-collar 15, fixedly carries a circular series, shown as five, of radially projecting elongated electric lights 17—17. The standard 11 also similarly fixedly carries a horizontal radiating series of spoke-like rods 18—18 which are interposed in spaced relation between the respective electric lights 17—17. These radiating rods 18—18, of which five are shown, will be further described later.

A thrust bearing 19 of the ball bearing type is carried upon the top of the flange member 16 and surrounds the standard 11. A collar 20 which is loose upon the standard 11 has a rather wide lower annular flange 21 by means of which it is supported upon the top of the ball bearing 19. A large circular translucent plate glass disc 22 forming a display platform is centrally supported upon the top of the annular flange 21 and is there held in place by means of an overlying flange 23 formed upon the lower end of an upper collar 24 which is loose upon the standard 11 and which telescopes over and is fixed to the upstanding collar 20, being shown as secured thereto by means of a screw 25. Annular cushions 26—26, which may be of felt, are interposed respectively between the lower and upper faces of the platform disc 22 and the underlying flange 21 and overlying flange 23.

Horizontally flat display arms 27—27, shown as five in number, radiate horizontally from the top of the outer and upper loose sleeve 24, being shown as formed in the same piece therewith and as collectively forming an upper flange thereon where these arms centrally come together. Each of these arms 27—27 has a down-turned outer end portion 28, which if desired may be attached, as shown in Figure 4, to the outer margin of the circular platform disc 22, such as by means of a screw 29. These radiating display arms 27—27 are respectively provided with a radial series of large circular openings 30—30, shown as three, through which bottles or other containers may be inserted downwardly to rest upon the translucent glass display platform 22, while other bottles or containers may be placed upon this display platform 22 between these radiating arms 27—27 if so desired.

The lower translucent circular glass plate 12 and the upper translucent circular glass plate 22 are desirably of the same diameter, as shown in the drawing. The upper glass plate 22 forming the display platform together with its display arms 27—27, is freely and easily rotatable upon the standard 11 by reason of having its weight together with that of any articles which have been placed thereon, supported upon the ball bearing 19, the lower glass plate 12 being stationary as above described. The radiating electric lights 17—17 and the radiating spoke rods 18—18 are disposed at a level substantially midway between these two vertically spaced glass plates 12 and 22.

The outer ends of the spoke rods 18—18 are attached to and fixedly carry a vertically flat annular plate forming a band or rim 31. The inner ends of these spoke rods are shown as screwed through the fixed collar 15 and through the wall of the hollow standard 11, whereby these rods are fixedly supported. The outer ends of these rods are shown as attached to the band 31 by means of outer heads 32—32 and inner nuts 33—33 upon these respective rods. The band 31 is thus supported along a median line thereof by the rods 18—18, this band having its lower edge rather widely spaced above the upper face of the lower stationary glass plate 12, while the upper edge of this band 31 is somewhat more widely spaced below the lower face of the upper rotatable glass plate 22, it being noted that this annular band 31 is spaced some distance inwardly beyond the outer edges of the two circular plates 12 and 22.

It will be brought to mind that the electric lights 17—17 and the spoke rods 18—18 are stationary by reason of being fixed upon the standard 11, and hence the annular band 31 is also stationary. The outer ends of the radiating elongated electric lights 17—17 terminate in spaced relation with this band 31. An annular series of relatively short vertical bars 34—34, shown as ten in number, are fixedly mounted upon the band 31 at its inner side and are shown as secured to the band 31 by means of solder 35. The opposite ends of these bars 34—34 similarly extend respectively downwardly below the lower edge of the band 31 and upwardly above its upper edge.

An annular plate forming a lower outer band or ring 36 is fixedly mounted upon the lower ends of the bars 34—34 by means of spacers 37—37. In the particular construction shown the outer ends of these spacers 37—37 are fixedly secured upon the inner face of the ring 36 by means of solder 38 and their inner ends are secured to the bars 34—34 by means of screws 39—39. This lower ring 36 lightly rests at its lower edge upon the top face of the stationary glass plate 12 in spaced relation inwardly from the outer edge of the latter. The upper edge portion of this lower ring 36 is turned inwardly to provide an annular inner flange 40, the inner edge of which is spaced outwardly from the rim or band 31 at a level above the lower edge of the latter.

The upper end portions of the vertical bars 34—34, above the upper edge of the band 31, fixedly carry an annular plate forming an outwardly spaced upper outer annular band or ring 41, by means of interposed spacers 42—42 shown as secured by means of solder 43 on the inner side of the band 41 and as secured to the bars 34—34 by means of screws 44—44. The otherwise vertically flat ring 41 is provided along its lower edge with an inturned flange 45, the edge of which is spaced outwardly from the inner band 31 at a level below the upper edge of the latter.

It will be noted that the lower and upper outer bands 36 and 41 are of similar form, being shown as of the same size and shape, and that they are mounted upon the bars 34—34 in vertically reverse relation to one another, thus with their respective inturned flanges 40 and 45 in vertically opposed rather widely spaced relation relatively to each other, as is clearly shown in Figures 2 and 5.

In this connection it is to be noted that the upper edge of the upper outer ring is spaced a substantial distance downwardly from the lower face of the rotatable glass disc 22 which forms the display platform. It is to be further noted that this upper ring 41 is annularly spaced inward from the outer edge of this circular glass plate 22 and that the two outer rings 36 and 41 are in vertical annular alignment with each other.

The open space between the upper edge of the upper ring 41 and the lower face of the translucent glass display platform 22 ordinarily will be concealed by the overhanging edge of the latter so as not to be visible when viewed at a usual downward angle in perspective, as will be clear from Figure 1 taken in connection with Figure 2. As already noted, there is no space between the lower edge of the lower ring 38 and the lower translucent glass plate 12, while the overlapping telescopic relation of the lower and upper ring bands 36 and 41 beyond the edges of the inner rim band 31 is effective to conceal from sight the spacing of the inturned ring flanges 40 and 45 from the outer face of the band 31.

Thus an attractive appearance is presented, as will in part be realized from an inspection of the right hand parts of Figures 1 and 2. It will also be noted that the electric lights 17—17 are hidden from view. These lights, it will be noted, are housed within an enclosure or chamber, the bottom of which is formed by the stationary lower circular translucent glass plate 12 and the top of which is formed by the circular rotatable upper translucent glass plate 22, while a peripherial wall is formed for this chamber by the interconnected bands 31, 36 and 41.

It is now to be noted that three annular air passages or air-circulating openings at different levels are provided between the outer air and the enclosed space or chamber formed as above described between the lower and upper plates 12 and 22. There is a lower annular opening 46 formed between the inner edge of the flange 40 and the band 31 inwardly around the edge of the latter. An intermediate annular opening 47 is provided between the flange 45 and the band 31 upwardly over and inwardly around the upper edge of the latter. An uppermost annular opening 48 is provided between the lower face of the glass plate 22 and the upper edge of the upper ring 41.

The operation of the display device constructed as above described is as follows:

It is obvious that at all times air may freely pass through and that it will circulate through all of the annular openings 46, 47 and 48. When the electric lights 17—17 are lighted, the heat thus produced will increase this circulation in accordance with well known principles. The air thus circulating through these annular openings 46, 47 and 48 into and out of the light-containing enclosure or chamber will have a cooling effect upon the upper glass plate 22 which will prevent this plate from becoming too much heated by the lighted electric lights 17—17.

It has been found in practice that this circulation of cooling air keeps the upper display plate 22 sufficiently cool that bottles of perfume and the like resting upon this plate will not be subjected to any deteriorating effects from the heat generated by the electric lights 17—17, at the same time an attractive display effect is produced by the subdued light which passes through the translucent glass plates 12 and 22, particularly that which passes through the latter and is diffused through and around the perfume bottles, or other similar articles, carried thereby.

Some of this diffused and reflected light is received by the outer surfaces of the encircling band 31 and rings 36 and 42, these outer surfaces having a high finish in any desired color or colors. Also all visibly exposed parts of the display stand are highly finished, in any colors desired. Thus it will now be evident that the housed electric lights 17—17 will cause the entire display stand together with the articles displayed upon the upper rotatable glass platform 22 to present an artistically attractive glowing ensemble, while at the same time the displayed bottles of perfume or other articles are kept in a cool condition.

I do not limit myself specifically to the particular size, shape, number, arrangement, particular relationship or material of parts as shown and described, as these are given simply as a means for clearly describing the display device of my invention.

It is obvious that various modifications may be made in the construction shown in the drawing and above particularly described, within the principle and scope of my invention as defined in the appended claims.

What I claim is:—

1. In a display device, in combination, an enclosure having bottom and top walls and a surrounding lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a plurality of plates telescoped together in spaced relation relatively to each other and thereby providing air passages between said plates extending between the outer air and the interior of said enclosure.

2. In a display device, in combination, an enclosure having bottom and top walls and a surrounding lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a plurality of plates telescoped together in spaced relation relatively to each other and thereby providing air passages between said plates extending between the outer air and the interior of said enclosure, the upper edge of said surrounding wall being spaced downwardly from the lower face of said top plate and thereby providing a surrounding air passage extending be-

tween the interior of said enclosure and the outer air.

3. In a display device, in combination, an enclosure having bottom and top walls and a surrounding upright lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a surrounding vertically intermediate band plate having its lower edge spaced above the upper face of said bottom wall and having its upper edge spaced below the lower face of said top plate, and lower and upper surrounding band plates spaced from each other and having telescopic relation with said intermediate band plate in spaced relation therewith.

4. In a display device, in combination, an enclosure having bottom and top walls and a surrounding upright lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a surrounding vertically intermediate band plate having its lower edge spaced above the upper face of said bottom wall and having its upper edge spaced below the lower face of said top plate, and lower and upper surrounding band plates spaced from each other and having telescopic relation with said intermediate band plate in spaced relation therewith at the same side of the latter.

5. In a display device, in combination, an enclosure having bottom and top walls and a surrounding upright lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a surrounding vertically intermediate inner band plate having its lower edge spaced above the upper face of said bottom wall and having its upper edge spaced below the lower face of said top plate, and lower and upper surrounding outer band plates having outwardly spaced telescopic relation with said inner intermediate band plate with their opposed edges vertically spaced from each other.

6. In a display device, in combination, an enclosure having bottom and top walls and a surrounding upright lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a surrounding band plate having its lower edge spaced above the upper face of said bottom wall and having its upper edge spaced below the lower face of said top plate, and lower and upper surrounding band plates spaced from each other and having telescopic relation with said intermediate band plate in spaced relation therewith, the upper edge of said upper band plate being spaced downwardly from the lower face of said top plate.

7. In a display device, in combination, an enclosure having bottom and top walls and a surrounding upright lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a surrounding vertically intermediate inner band plate having its lower edge spaced above the upper face of said bottom wall and having its upper edge spaced below the lower face of said top plate, and lower and upper surrounding outer band plates having outwardly spaced telescopic relation with said inner intermediate band plate with their opposed edges vertically spaced from each other, the upper edge of said upper outer band plate being spaced downwardly from the lower face of said top plate in inwardly spaced relation with the outer edge of the latter.

8. In a display device, in combination, an enclosure having bottom and top walls and a surrounding upright lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a surrounding vertically intermediate band plate having its lower edge spaced above the upper face of said bottom wall and having its upper edge spaced below the lower face of said top plate, lower and upper surrounding band plates spaced from each other and having telescopic relation with said intermediate band plate in spaced relation therewith at the same side of the latter, and surrounding flange members extending only part way across the spaces formed between said telescopically related band plates.

9. In a display device, in combination, an enclosure having bottom and top walls and a surrounding upright lateral wall, said top wall being a translucent glass plate upon which articles to be displayed may be placed, and electric lights mounted within said enclosure, said surrounding wall comprising a surrounding vertically intermediate inner band plate having its lower edge spaced above the upper face of said bottom wall and having its upper edge spaced below the lower face of said top plate and lower and upper surrounding outer band plates having outwardly spaced telescopic relation with said inner intermediate band plate with their opposed edges vertically spaced from each other, the upper edge of the said upper band plate being spaced downwardly from the lower face of said top plate in inwardly spaced relation with the outer edge of the latter, the upper edge portion of said outer lower band plate and the lower edge portion of said outer upper band plate each being turned inward and forming an inner flange which extends only part way across the telescopic space toward said inner band plate.

10. In a stationary central display device, in combination, a supporting standard, a bottom-forming lower plate centrally mounted upon said standard, a plurality of electric lights surrounding and extending outwardly from said standard and supported thereby above said bottom plate, an upper top-forming plate centrally rotatively mounted upon and supported solely by said standard in spaced relation above said electric lights, said top plate being a translucent glass plate upon which articles to be displayed may be placed, said electric lights being interposed directly between said top and bottom plates, and an encompassing stationary lateral wall surrounding said electric lights between said top and bottom plates, said top plate and bottom plate and encompassing wall forming an enclosure for said electric lights, said encompassing wall being spaced inwardly from the outer edge of and downwardly from the lower face of said top plate.

11. In a display device, in combination, a standard, a bottom-forming lower plate centrally mounted upon said standard, a plurality of electric lights surrounding said standard and supported thereby above said bottom plate, an upper top-forming plate centrally mounted upon said standard in spaced relation above said electric lights, said top plate being a translucent glass

plate upon which articles to be displayed may be placed, and an encompassing lateral wall surrounding said electric lights between said top and bottom plates, said top plate and bottom plate and encompassing wall forming an enclosure for said electric lights, said encompassing wall comprising a plurality of horizontally endless vertical plates telescoped together in spaced relation relatively to each other and thereby providing for the passage of air between these plates through said enclosure in contact with the lower face of said top plate.

12. In a display device, in combination, a standard, a bottom-forming lower plate centrally mounted upon said standard, a plurality of electric lights surrounding said standard and supported thereby above said bottom plate, an upper top-forming plate centrally mounted upon said standard in spaced relation above said electric lights, said top plate being a translucent glass plate upon which articles to be displayed may be placed, and an encompassing lateral wall surrounding said electric lights between said top and bottom plates, said top plate and bottom plate and encompassing wall forming and enclosure for said electric lights, said encompassing wall comprising a plurality of horizontally endless vertical plates telescoped together in spaced relation relatively to each other and thereby providing for the passage of air between these plates through said enclosure in contact with the lower face of said top plate, the upper edge of the uppermost plate of said encompassing wall being spaced downwardly from the lower face of said top plate and thereby providing an air passage between the upper edge of said uppermost encompassing wall plate and the lower face of said top plate.

13. In a display device, in combination, a supporting standard, a lower bottom-forming plate stationarily centrally mounted upon said standard, a circular series of electric lights radiating from said standard and fixedly carried thereby in spaced relation above said bottom plate, a top-forming translucent glass plate centrally rotatively mounted upon said standard in spaced relation above said electric lights and upon which articles to be displayed may be placed, a stationary wall surrounding said electric lights between said top and bottom plates, said wall comprising a lower band above the upper face of said bottom plate, an upper band spaced above said lower band and having its upper edge spaced below the lower face of said top plate, an intermediate band having telescopic spaced relation with said lower and upper bands with its lower edge spaced above the lower edge of said lower band and with its upper edge spaced below the upper edge of said upper band, thereby providing spaces for the circulation of cooling air in contact with the lower face of said top plate, and means whereby said lower and upper bands are fixedly attached to said intermediate band.

14. In a display device, in combination, a supporting standard, a lower translucent bottom-forming glass plate stationarily centrally mounted upon said standard, a circular series of elongated electric lights radiating from said standard and fixedly carried thereby in spaced relation above said bottom plate, a top-forming translucent glass plate centrally rotatively mounted upon said standard in spaced relation above said electric lights and upon which articles to be displayed may be placed, a stationary opaque annular vertical wall surrounding said electric lights between said top and bottom plates, said annular wall comprising a lower outer band above and having its lower edge in engagement with the upper face of said bottom plate, an upper outer band spaced above said lower outer band in alignment therewith and having its upper edge spaced below the lower face of said top plate, an intermediate inner band having telescopic spaced relation within both of said outer bands with its lower edge spaced above the lower edge of said lower outer band and with its upper edge spaced below the upper edge of said upper outer band, thereby providing annular spaces for the circulation of cooling air in contact with the lower face of said top plate, means whereby said lower and upper outer bands are fixedly attached to said intermediate inner band, and means whereby said inner band is fixedly connected to said standard.

SAMUEL KOHN.