

May 12, 1942.

H. L. LOGAN ET AL
STORE LIGHTING APPARATUS

2,283,010

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2 Sheets-Sheet 1

Fig. 1.

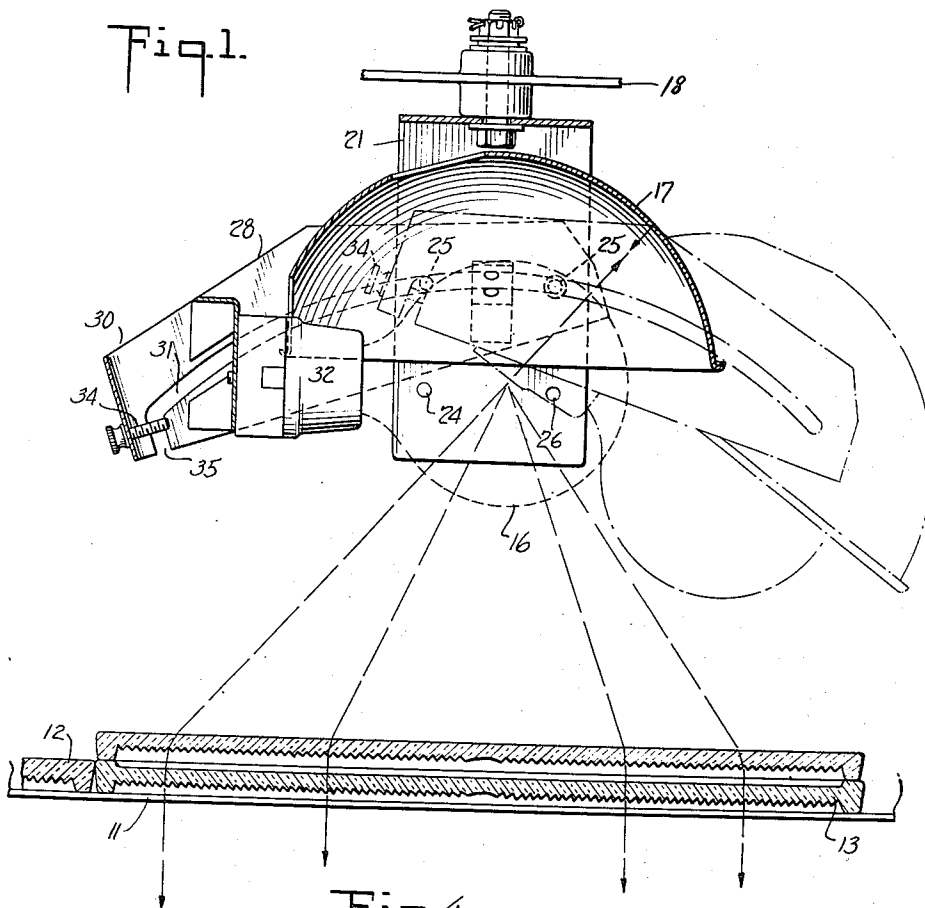
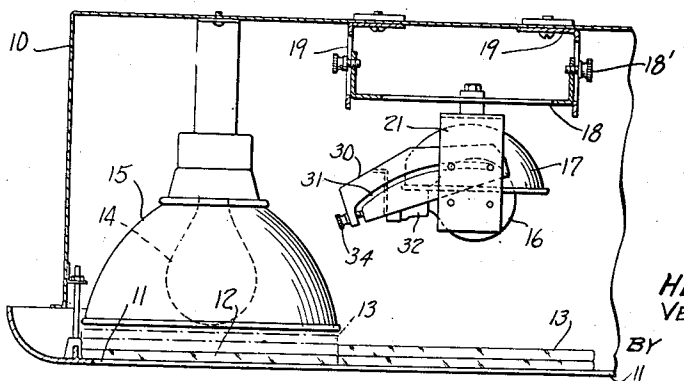


Fig. 4.



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Fig. 2.

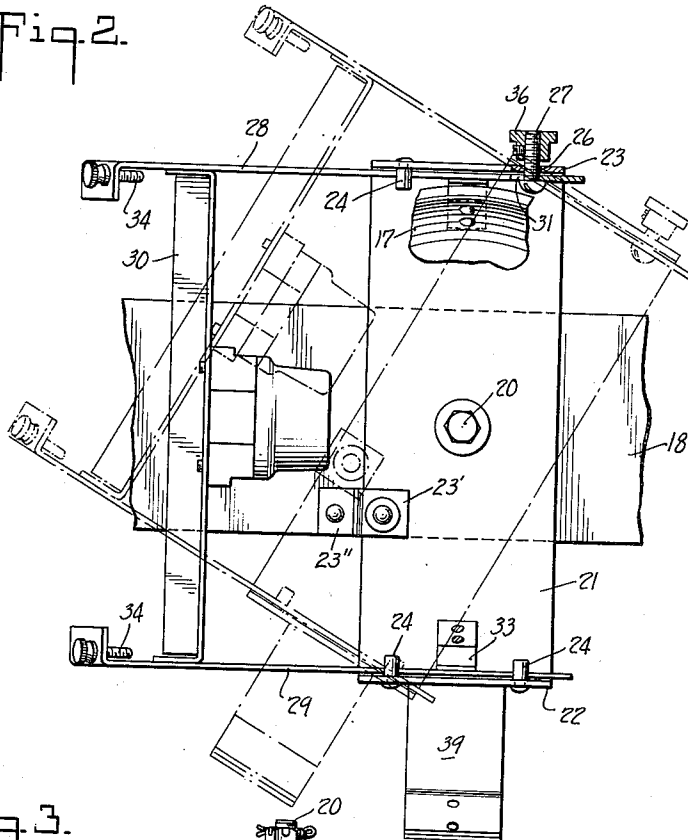
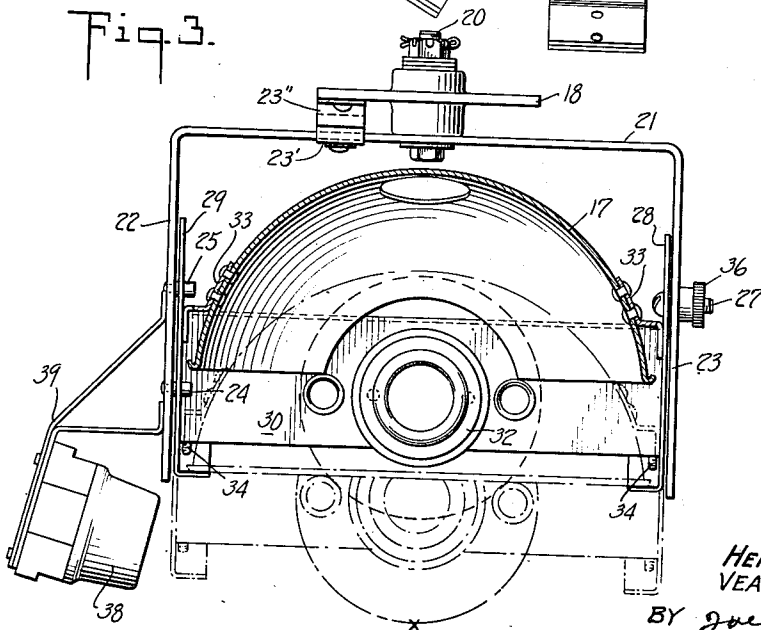


Fig. 3.



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STORE LIGHTING APPARATUS

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Application August 2, 1940, Serial No. 349,588

7 Claims. (Cl. 240-78)

The present invention relates to store lighting apparatus, and is more particularly directed toward lighting apparatus arranged to facilitate accent lighting of merchandise on display.

In stores, display rooms and the like the lighting apparatus is usually fixedly mounted in or near the ceiling, and the displays are placed in various locations relative to the lighting units.

The present invention contemplates improvements in lighting fixtures whereby the light beam from the relatively fixed lighting unit may be projected toward the display in whatever location it may be placed so as to accent the lighting of this display.

The present invention also contemplates the provision of lighting units of the type referred to having a fixed horizontal lens and a movable light source and reflector above the lens arranged so that they can be shifted away from the lens axis and turned about the lens axis, so that the projected beam has varying angles of obliquity in selected directions. The lens, light source and reflector above referred to may form part of a piece of lighting apparatus which also embodies a general lighting luminaire having a lens plate somewhat similar to the one used with the first light source mentioned. The two luminaires may be mounted in a single housing with the lens plates forming the bottom of the housing, and in this case the lens plate under the adjustable lamp and reflector may be moved over on to the other lens plate and supported there to give access to the adjustable lamp and reflector so that the same may be shifted about manually.

Other and further objects will hereinafter appear as the description proceeds.

The accompanying drawings show, for purposes of illustrating the present invention, an embodiment in which the invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a vertical sectional view through the lighting unit with the lamp and reflector shown in full lines in the lens axis and in dot-and-dash lines shifted out of the lens axis;

Figure 2 is an inverted plan view of the lighting apparatus;

Figure 3 is a side elevational view with parts in section and showing in dotted lines the reflector in lowered position for general lighting; and

Figure 4 is a sectional view more or less diagrammatic of store lighting apparatus embodying a general lighting luminaire and the luminaire of Figures 1 to 3.

In Figure 4 a box 10 is diagrammatically illustrated. It may be mounted in or on the ceiling and it carries a pair of parallel trim members 11 adapted to support lenses 12 and 13. The lens 12 cooperates with a lamp 14 and reflector 15 to produce general illumination. The lens 13 is designed to cooperate with a lamp 16 and reflector 17 to produce a concentrated beam of light for display lighting. The lens 13 may be shifted to the left on top of the lens 12, as indicated in dotted lines in Figure 4, to provide access to the lamp and reflector above the lens 13.

The lamp 16 and the reflector 17 are supported from a bar 18. The ends of this bar carry thumb screws 18' passing through slotted brackets 19 suitably secured to the top of the box so that the elevation of the bar and parts carried thereby may be adjusted. The bar 18 has a vertical opening in the center to receive a bolt 20. This bolt passes through a yoke 21 having depending sides 22 and 23. The yoke can be turned through substantially 360°, suitable stops 23' and 23'' being provided to prevent complete rotation.

The side 22 of the yoke is provided with a lower pair of pins 24, 24 and an upper pair of pins 25, 25. The side 23 of the yoke is provided with upper and lower pins similar to the pins 24 and 25 and having the same reference characters and has upper and lower openings 26 to receive a bolt 27. The upper pins 25 and the bolt 27, when in the upper hole, form four guides to receive the sides 28 and 29 of a second substantially horizontal yoke 30. The pins and the screw pass through slots 31 in the sides 28 and 29. The yoke 30 supports a lamp socket 32 for the lamp 16. The yoke also has brackets 33 for the spherical reflector 17.

When the lamp and reflector are in the full line position of Figure 1 the lamp filament is at the focal point of the lens system 13, and a very concentrated beam of light is projected vertically downward. To tilt the beam the second yoke 30 is shifted from the full line position toward the dot-and-dash line position of Figure 1. This will cause the lamp and reflector to traverse a curved path as indicated so as to be kept at the proper distance from the lens. Accidental removal of the second yoke is prevented by screws 34 which pass close by the openings 35 of the slots 31. The second yoke can be clamped in any radial position by the thumb nut 36 carried on the bolt 27. The yoke can be turned round about the axis of the bolt 20, as indicated in the dot-and-dash lines of Figure 1, so that the beam will be oriented.

In some instances it may be desirable to obtain general illumination instead of special illumination from the lighting apparatus above the plate 13. This may be had by removing the lamp 16 from the socket 32, shifting the second yoke from the upper position shown in Figure 1

to the lower position which is shown in dot-and-dash lines in Figure 3. A lamp having its light source at X is then inserted in the socket 38 carried on a bracket 39 secured to the sides 22 of the yoke 21. With this change the light source will be brought closer to the lens with the result that the light is spread wider by the lens.

It is apparent that, within the scope of the invention, modifications and different arrangements may be made other than is herein disclosed, and the present disclosure is illustrative merely, the invention comprehending all variations thereof within the scope of the claims.

What is claimed is:

1. Lighting apparatus adapted to produce a light beam orientable about a vertical axis and of varying angle of obliquity of the axis of the projected beam, comprising a yoke pivoted to swing about said vertical axis and having downwardly extending arms, a second yoke having generally horizontal arms received within the first arms, guiding and coupling means between the vertical and horizontal arms whereby when the second yoke is moved in a generally horizontal direction it is caused to traverse a downwardly concave path, a downwardly acting spherical reflector secured between the arms of the second yoke with its center positioned to move through a path radial with respect to its vertical axis, a lamp socket and lamp carried by the second yoke with its filament at the center of the reflector, and a lens whose axis is under the vertical axis of the first yoke adapted to receive the divergent direct and reflected light and transmit it in a beam at reduced angles of divergence with obliquity and orientation as determined by the offsetting of the light center with respect to the said vertical axis and its orientation about said axis.

2. Lighting apparatus such as claimed in claim 1, wherein the guiding and coupling means include curved slots in the horizontal arms and pins in the arms of the first yoke.

3. Lighting apparatus comprising a yoke pivoted to swing about a vertical axis and having downwardly extending arms, a second yoke having generally horizontal arms received within the first arms, guiding and coupling means between the vertical and horizontal arms whereby when the second yoke is moved in a generally horizontal direction it is caused to traverse a downwardly concave path, a downwardly acting spherical reflector secured between the arms of the second yoke with its center positioned to move through a path radial with respect to its vertical axis, a lamp socket carried by the second yoke with its axis passing through the reflector center, alternative coupling means for securing the second yoke to the first yoke at a lower elevation, a second lamp socket carried by the first yoke with its axis passing through the said vertical axis, and a lens whose axis is under the vertical axis of the first yoke adapted to receive the divergent direct and reflected light and transmit it in a beam at reduced angles of divergence with obliquity and orientation as determined by the offsetting of the light center with respect to the said vertical axis and its orientation about said axis when the yoke is in the upper position and a lamp in the first socket only, and adapted, when

a lamp is in the second socket only, to receive more divergent direct and reflected light and transmit it in a symmetrical beam at less reduced angles of divergence.

4. Lighting apparatus adapted to produce a light beam orientable about a vertical axis and of varying angle of obliquity of the axis of the projected beam, comprising a yoke pivoted to swing about said vertical axis and having downwardly extending arms, inwardly extending pins carried by the arms of the yoke on the opposite side of a vertical plane through the axis, a second yoke having generally horizontal arms within the first arms, a downwardly acting spherical reflector between the arms of the second yoke, a lamp carried by the second yoke with its filament at the center of the reflector, the arms of the second yoke being provided with elongated slots which receive the pins and along which the second yoke may be moved radially, the slots being located so that when the second yoke is at one end of its movement, the light center is substantially in the said vertical axis.

5. Lighting apparatus such as claimed in claim 4, wherein the slots extend obliquely downwardly when the second yoke is in said position so that when the second yoke is moved to shift the light center away from said axis the light center is lowered.

6. In a lighting fixture yoke pivoted to swing about a vertical axis and having opposed guides disposed in a horizontal plane, a second yoke having cooperative guides downwardly concave in vertical planes whereby the second yoke may be moved radially in a curving path, a light source and concentric spherical reflector carried by the second yoke and placed thereon so that it is at the highest elevation and substantially in said vertical axis when the second yoke is at one extreme position.

7. Apparatus for general lighting and display lighting of stores and the like, comprising a downwardly opening enclosure carrying a lens supporting frame with parallel rails below the bottom of the enclosure, a lamp and a downwardly acting reflector mounted in the enclosure above and midway between the rails, a square lens carried on the rails and normally directly below the lamp and reflector and cooperable therewith to produce a downward beam of wide spread light for general illumination, a yoke supported from the top of the enclosure for movement about a vertical axis midway between the rails and laterally of the said source and reflector, a second yoke slidably carried by the first yoke for lateral shifting relative to said vertical axis, a lamp and downwardly acting spherical reflector carried by the second yoke, a second square lens carried by the rails in abutting relation with the first lens and having its center in said vertical axis, the second lens, reflector and source cooperating to produce a narrow, concentrated beam emitted in a direction determined by the adjustment of the yokes, the extent of said adjustment being substantially coextensive with the area of the second lens, each lens being laterally shiftable on top of the other lens to provide sufficient space for access to the corresponding source and reflector for adjustment, removal or lamp renewal.

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