Sept. 9, 1947. H. B. ALDERMAN 2,427,084

LIGHTING FIXTURE

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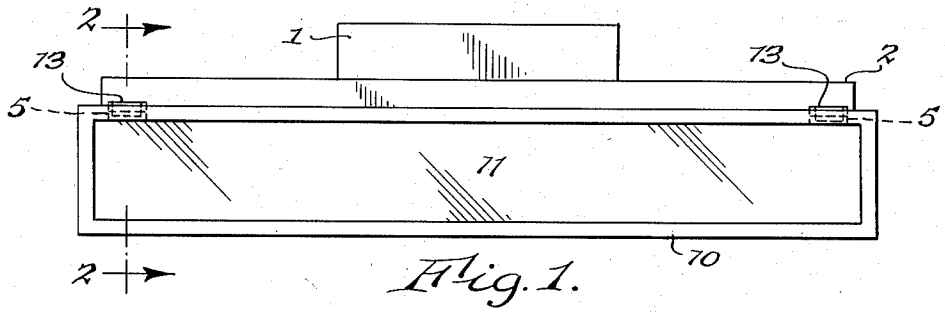


Fig. 1.

Fig. 2.

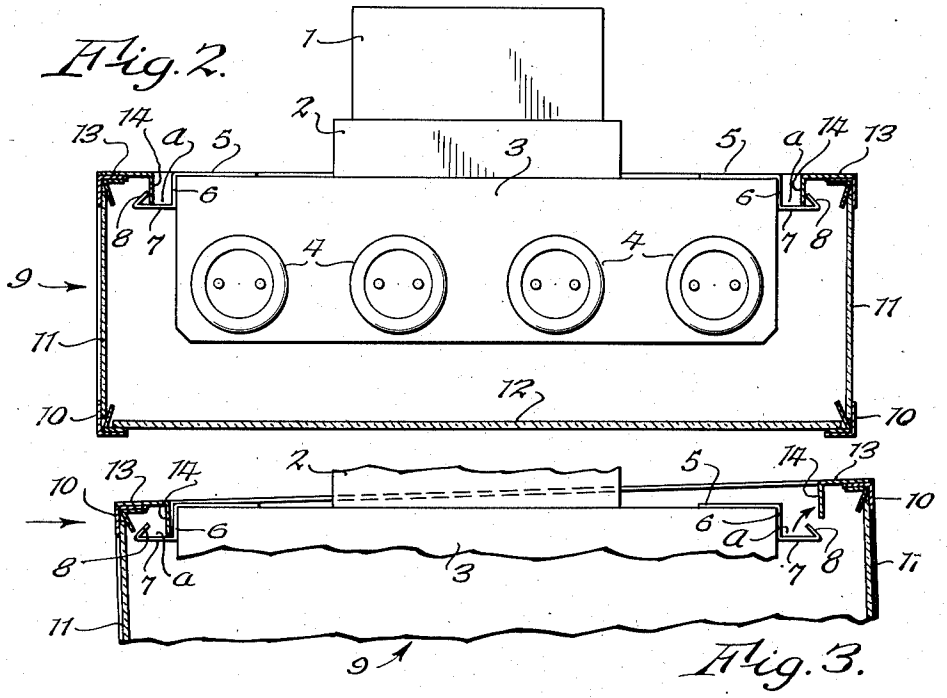


Fig. 3.

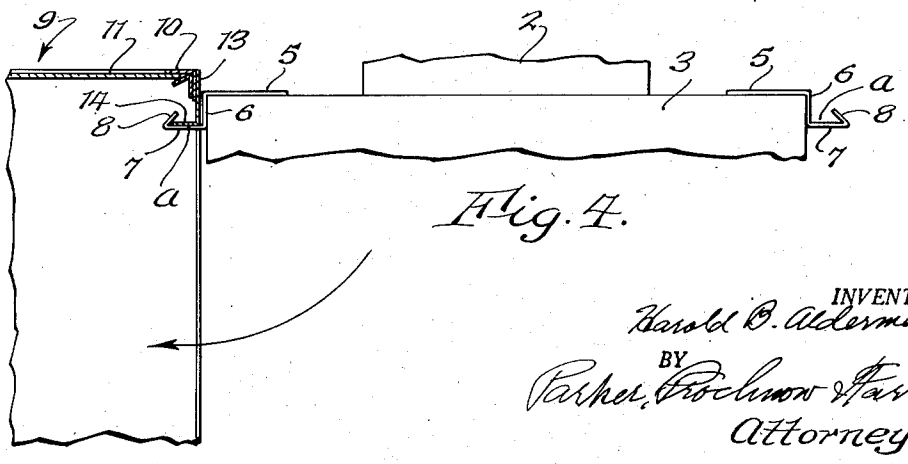


Fig. 4.

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Fig. 5.

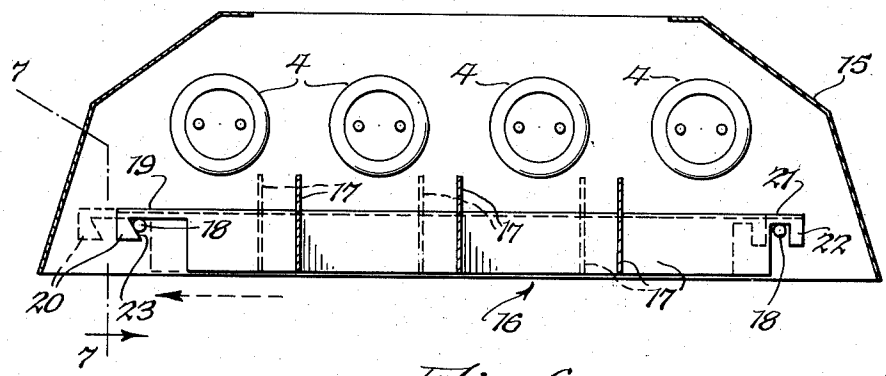


Fig. 6.

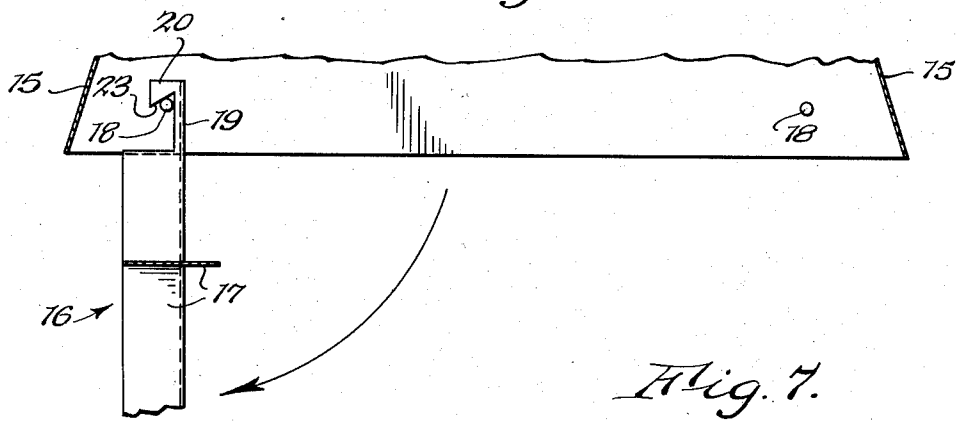


Fig. 7.

Fig. 8.

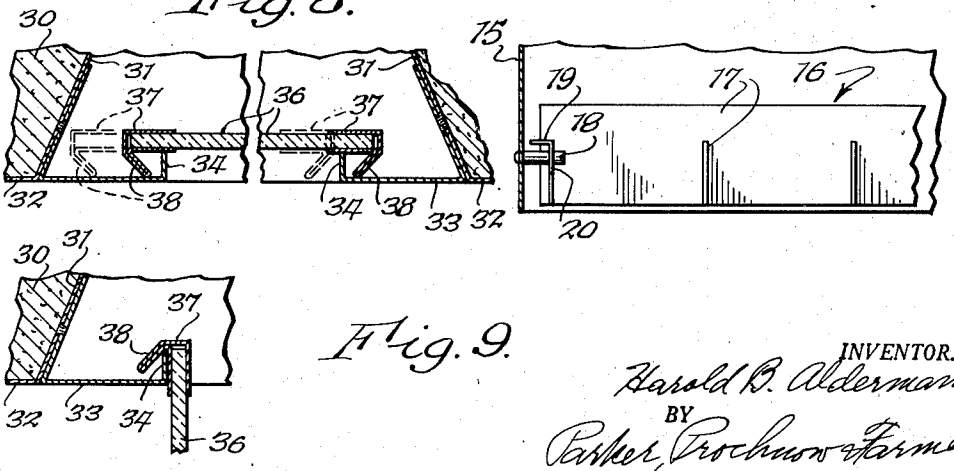


Fig. 9.

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Patented Sept. 9, 1947

2,427,084

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2,427,084

LIGHTING FIXTURE

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Application October 23, 1944, Serial No. 559,879

9 Claims. (Cl. 240—51.11)

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This invention relates to lighting fixtures of the type having an upper member, which may be supported from a ceiling or other support, and a lower member removably supported on the upper member, and more particularly to improved means for supporting a screen or lower member of the fixture from the upper member. The invention is particularly useful in connection with fixtures for fluorescent lamps, but may be used on fixtures for other lamps.

An object of the invention is to provide an improved, simplified and inexpensive mounting for the lower member or light screen on the upper member of the fixture, which enables easy access to be had to the lamps or other parts for servicing.

Another object of the invention is to provide an improved lighting fixture having illuminating means mounted thereon and a screen or lower member beneath the illuminating means, with which the screen may be easily and quickly moved into a position in which it exposes the illuminating means or lamps for servicing and replacement, with which this movement of the screen may occur without complete detachment of the screen from the upper member of the fixture, so that the screen may be supported entirely from the upper member while servicing or replacement of the lamp or illuminating means is taking place, with which the screen may be completely detached from the remainder of the fixture in a simple manner, whenever desired, and which will be relatively simple, strong, durable, safe, convenient and inexpensive.

Other objects and advantages will be apparent from the following description of three embodiments of the invention, and the novel features will be particularly pointed out hereinafter in connection with the appended claims.

In the accompanying drawings:

Fig. 1 is a side elevation of a lighting fixture of the fluorescent type, constructed in accordance with this invention;

Fig. 2 is a transverse sectional elevation of the same on an enlarged scale, the section being taken approximately along the line 2—2, of Fig. 1;

Fig. 3 is a sectional elevation similar to Fig. 2, but illustrating an intermediate step in moving the screen or lower member into a position to expose the interior of the fixture;

Fig. 4 is a similar sectional elevation, but with the screen in its fully opened position;

Fig. 5 is a transverse sectional elevation similar to Fig. 2, but illustrating a modification of the fixture;

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Fig. 6 is a view similar to Fig. 5 but with the screen swung downwardly into open position;

Fig. 7 is a sectional elevation of a portion of the same, the section being taken approximately along the line 7—7, Fig. 5;

Fig. 8 is a fragmentary transverse sectional elevation of another modified form of this invention; and

Fig. 9 is a fragmentary view thereof showing the screen or lower member in open position.

In the drawings, I have illustrated my invention by way of example as applied to a fluorescent lighting fixture, but it will be obvious that this invention may be applied to any other type of lighting fixture. In the embodiment of the invention disclosed in Figs. 1 to 4, the fixture includes an upper member or casing which may be secured to a ceiling or other support. This upper member may, for example, include a channel 2 of any suitable type, that shown having the ballast 1 and the wiring arranged in the channel. Flanges 3 extend downwardly from opposite ends of the channel, from which flanges any number of fluorescent lamps 4 may be supported in any usual or suitable manner, for example, from sockets carried by the flanges 3, the details of which form no part of this invention. Other illuminating means may, of course, be employed in place of fluorescent lamps. The parts thus far described constitute the upper member of the fixture, which may be suspended from or secured to a ceiling or other support in any usual or desired manner.

The lower member of the fixture is supported at opposite sides thereof from the upper member by means of hangers each comprising a part secured to one member of the fixture and another part secured to the other member. In the particular construction shown in Figs. 1 to 4, the upper member of the fixture has secured thereto a plurality of hanger parts or supports 5 which extend crosswise of and are secured to the upper member adjacent to the ends of the channel 2. The outer ends of these hanger parts or supports are flanged downwardly at 6 and then horizontally in directions away from each other, as indicated at 7, and then upwardly and at an inclination extending toward the center of the fixture as shown at 8, to provide hook-shaped parts having upwardly opening recesses or ledges *a* at opposite sides of the upper member of the fixture. These hook-shaped hanger parts may be relatively short, as shown in Fig. 1, or they may be of any desired length, or a single hook member of substantially the length of the upper member

of the fixture may be employed in place of the two separate hanger parts shown.

The lower member of the lighting fixture forms an enclosure or screen 9 for the lamps and this screen has a frame 10 which supports side panels 11 and a bottom panel 12, the lower member or screen being open at its top. These panels as shown are of translucent or transparent material, so that light from the lamps 4 may pass downwardly and horizontally from the lamps to illuminate the surrounding space, but obviously louvers may be used in place of such material. Any other type of screen or lower member may be used, if desired.

The screen or lower member has hanger parts 13 secured thereto which extend toward each other and then are flanged downwardly as at 14, so as to provide depending tongues that engage in the upwardly opening recesses *a* provided by the angular portions 6, 7 and 8 of the hanger parts 5. The engagement of the depending flanges 14 with the hanger parts 5 supports the screen or lower member in the proper position relatively to the upper member, and the depending flanges 14 normally engage with or are in close proximity to the upstanding flanges 8 of the hanger parts 5, so that no substantial sidewise movement of the screen 9 will occur. The upstanding flanged ends 8 preferably make an acute angle with the horizontal portions 7 of the hangers 5.

When one desires to move the screen 9 to expose the lower portion of the upper member or the lamps 4 for servicing or replacement, one merely lifts the screen 9 at one side sufficiently to disengage the flange 14 of the hanger 13 at that side, from the recess *a* in the related hanger part 5 as shown in Fig. 3, and then the entire screen 9 may be shifted bodily horizontally towards that side. To enable this, each recess *a* in the hanger part 5 which is formed by the flanges 6, 7 and 8 has a width much greater than the thickness of the flange 14, so that when one edge of the screen is lifted in the direction of the curved arrow in Fig. 3, the flange 14 of the hanger part 13 at the opposite side of the screen may slide horizontally in the direction of the straight arrow in Fig. 3, sufficiently to allow the lifted flange 14 to clear the hanger part 5 from which it has just been disengaged. The disengaged edge of the screen can then be lowered in the direction of the arrow in Fig. 4 into the position shown in Fig. 4, where the screen remains supported by its flange 14 which remains engaged in the recess *a* of the hanger part 5 at the opposite side of the fixture. The attendant then may use both hands to service or replace the lamps 4, and at the conclusion of his work, the screen 9 is swung back upwardly into the position shown in Fig. 3 and then shifted to the left until the flange 14 is over the recess of the adjacent hanger part 5 after which it is lowered to engage the flange 14 in that recess, which will be the position shown in Fig. 2.

It will be observed that while the construction for supporting the screen from the upper member of the fixture is very simple and inexpensive, the screen is firmly and safely supported, and is also held against shifting sidewise, since the parts 8 are in engagement with the downwardly extending parts 14 at opposite sides of the fixture. The lower member or screen 9 may be easily and quickly released and swung downwardly into a position to enable servicing or replacement of the lamps 4 and then swung backwardly and be

engaged by relatively simple operations and without the necessity of using any tools, not even a screwdriver. If one desired to fully disengage the screen, when the screen is only partly down, the tongue 14 still engaged can be lifted from its recess *a* which completely releases the screen. It will be obvious that the supporting means may be applied to the fixture so that the hanger parts 5 are secured to the screen or lower member, and the hanger part 13 is secured to the upper member.

In the embodiment of the invention shown in Figs. 5, 6 and 7, the upper member of the fixture includes a depending, skirt-like shell 15 within which the lamps 4 are mounted in any suitable manner, such as by flanges 3 carried by the channel 2 as in Figs. 1 to 4 which are not shown in these views. The screen 16 may have the transparent or translucent light transmitting panels, but in this embodiment of the invention, the screen or lower member is shown as of the louver type in which the louvers 17 extend between end and cross members of the frame. The end walls of the shell 15 carry hanger parts in the form of pins 18 which extend in a direction from end to end or generally parallel to the length of the fixture. This screen 16, at one side, adjacent its ends, has hanger parts in the form of hook-like parts 19 with depending noses 20, and these hook parts 19 engage over the adjacent pins 18 as shown. The opposite side of the screen frame 16 is also provided with hook parts 21 each of which terminates in a downward extending nose 22, and each hook part 21 engages with the adjacent pin 18. There is a hook part 19 and a hook part 21 at each end of the frame 16, and a pin 18 is adjacent each corner of the shell 15. The hook parts at one side of the shell 15 are the parts 19, and those at the other side are the parts 21.

When the screen is supported as shown in Fig. 5, the depending noses 20 and 22 are in close proximity to the adjacent pins 18 which they engage, and the screen 16 is supported in normal position without opportunity for sidewise movement. Each hook part 19 is longer than the hook part 21, as shown in Fig. 5, so that when the hook parts 21 are lifted from their pins 18 until the noses 22 are above the level of the pins 18, the entire screen 16 may then be shifted sidewise, which would be to the left in Fig. 5, to the extent shown by the dash lines in Fig. 5 which is sufficient to clear the noses 22 from their pins 18. The right hand side of the screen 16 in Fig. 5 may then be swung downwardly about the hinge, formed by the pins 18 at the opposite side of the screen and the hook parts 19, in the direction of the arrow in Fig. 6. The screen 16 will then depend from the shell 15 in a position in which the lamps 4 are exposed for servicing and replacement.

The inner face 23 of each nose 20 makes an acute angle with the adjacent portion of the hook part 19, so that when the screen 16 is suspended vertically from the nose 20 as shown in Figs. 6, the inclined face 23 of each nose 20 will prevent unintentional disengagement of the hook parts 19 from their pins 18. When the servicing has been completed, the screen is swung backwardly into approximately the horizontal position shown in Fig. 5, and then the right hand edge of screen 16 (Fig. 5) is lifted to clear the noses 22 above the related pins 18, after which the screen 16 may be shifted bodily to the right, and the hook parts 21 engaged over the pins 18,

which will place the screen in the position shown in full lines in Figs. 5 and 7.

It will be observed that in both embodiments of the invention, each lower member or screen has a hook part engaging with a ledge or support on the upper member of the fixture, and to release the screen for movement to expose the lower portion of the upper member and the parts mounted thereon, it is merely necessary to lift one edge of the screen to disengage it from its support, shift the screen sidewise slightly to the extent permitted by the lost motion in the hangers at the opposite side of the screen, and then downwardly to expose the lamps or other parts. To return the screen to a normal position, it is merely swung upwardly into approximately normal position and shifted sidewise to re-engage the hanger parts at the opposite side of the screen from the hinged edge, and when thus engaged, the screen or lower member will be supported with a minimum of sidewise movement. In this construction, as in Figs. 1 to 4, the hanger parts may be reversed so that those parts mounted on the upper member of the fixture are on the lower member, and those parts mounted on the lower member shown are on the upper member.

In Figs. 8 and 9, I have illustrated my invention as applied to a fixture of another modified form. In these views only the lower portion of the fixture is illustrated, the fixture shown being of a type intended to be recessed in a ceiling **30**. The upper member or housing of the fixture includes a shell **31** in which the lamps (not shown) are supported. The lower edge of the shell or housing has an outwardly extending flange **32** which may be secured to the ceiling for holding the fixture in place. The lower edge of the shell also has on opposite sides of the fixture a plurality of hanger parts or supports each comprising an inwardly extending projection or web **33** having an upwardly extending flange **34**. This hanger part or hook member may extend substantially throughout the length of the fixture on each side thereof or it may be in the form of two or more relatively short hanger parts on each side of the lower member of the fixture.

The lower member or screen of the fixture is in the form of a glass plate **36** having the edges thereof bound or covered by a metal binding or frame **37** which is substantially of U-shape. This metal binding rests at opposite sides thereof on the upstanding flanges or projections **34** and has downwardly converging flanges or hook portions **38** which are formed to cooperate with the lower hanger parts. When the parts are in the position shown in Fig. 8, the screen or lower member of the fixture is securely held against accidental shifting or movement out of its operative position and may readily be moved into an inoperative position, in which the interior of the fixture is accessible, by lifting one side of the glass plate or lower member, so that the downward projection **38** clears the upward projection **34**, whereupon the lower member is moved sidewise to clear one side thereof from the upper projections **34** on that side, whereupon that side of the lower member may be swung downwardly into the position shown in Fig. 9, in which position the lower member will hang from the hanger parts of the upper member along one side thereof without danger of becoming accidentally unhooked or disengaged. When the lower member is in this position, it can be easily

lifted and unhooked so that it can be removed from the upper member of the fixture.

It will be understood that various changes in the details and arrangements of parts, which have been herein described and illustrated in order to explain the nature of the invention may be made by those skilled in the art within the principle and scope of the invention as expressed in the appended claims.

I claim as my invention:

1. In a lighting fixture of the type having an upper member by means of which the fixture may be supported, illuminating means supported by said upper member, and a screen supported from said upper member beneath said illuminating means, that improvement in the mounting of said screen on said upper member which comprises supports carried by said upper member at opposite sides thereof and each having an upwardly opening recess, downwardly extending tongues carried by said screen at its opposite sides and which extend into said recesses when said screen is supported from said upper member, said tongues being normally located in close proximity to the opposite sides of said recesses to limit sidewise movement of said screen relatively to said upper member when said screen is in operative relation to said upper member, either of said tongues being liftable upwardly out of its recess by swinging one side of said screen upwardly with the other tongue acting as a pivot, said recesses being of sufficient width to permit the tongue acting as a pivot to be moved to the opposite side of its recess to a distance sufficient to enable the tongue which is out of its recess to swing downwardly clear of its support when the raised side of the screen is swung downwardly into a position in which said screen is suspended by the tongue acting as a pivot.

2. A lighting fixture according to claim 1 characterized in that said tongues are in engagement with the opposite sides of said recesses when said screen is mounted in its operative position on the upper member to prevent lateral shifting of said screen relatively to said upper member.

3. In a lighting fixture of the type having an upper member by means of which the fixture may be supported, illuminating means supported by said upper member, and a screen supported from said upper member beneath said illuminating means, that improvement in the mounting of said screen on said upper member which comprises supports carried by said upper member at opposite sides thereof and extending outwardly therefrom and each having an upwardly opening recess, downwardly extending tongues carried by said screen at its opposite sides and which extend into said recesses when said screen is supported from said upper member, each tongue being normally located adjacent to the outer portion of its recess and extending into close proximity to the outer wall of each recess to limit sidewise movement of said screen relatively to said upper member when said screen is in operative position relatively to said upper member, either of said tongues being liftable out of its recess by swinging said screen upwardly about the other tongue to disengage the first tongue from its recess, said recesses being of sufficient width to permit that tongue which is in its recess to be moved sidewise toward the longitudinal center of the fixture to a sufficient extent so that the first tongue can clear its support when said screen is swung downwardly about said other tongue, whereby

said screen may hang from said other tongue to render said illuminating means accessible.

4. A lighting fixture according to claim 3, in which the outer wall portions of said recesses extend angularly inwardly and overlie the ends of the tongues to prevent lifting of the screen when in a downwardly swung position.

5. In a lighting fixture of the type having an upper member by means of which the fixture may be supported, illuminating means supported by said upper member, and a screen supported from said upper member beneath said illuminating means, that improvement in the mounting of said screen on said upper member which comprises supports carried by said upper member and extending inwardly from the opposite sides thereof and each having an upwardly opening recess, downwardly extending tongues carried by said screen at its opposite sides and which extend into said recesses when said screen is supported from said upper member, each tongue being normally located adjacent to the inner portion of its recess and extending into close proximity to the inner wall of its recess to limit sidewise movement of said screen relatively to said upper member when said screen is in operative position relatively to said upper member, either of said tongues being liftable out of said recess by swinging said screen upwardly about the other tongue to disengage the first tongue from its recess, said recesses being of sufficient width to permit that tongue which is in its recess to be moved in a direction away from the longitudinal center of said fixture to a sufficient extent to permit the first tongue to clear its support when said screen is swung downwardly about said other tongue, whereby said screen may hang from said other tongue to render said illuminating means accessible.

6. A lighting fixture according to claim 5, characterized in that said tongues incline downwardly toward each other to form hooks engaging the inner edges of the recesses of said supports when said screen is hanging from either support.

7. A lighting fixture comprising an upper supporting member which provides a mounting for an illuminating means, means at opposite sides of said upper member for providing substantially parallel, upwardly-opening channels, and a screen for said illuminating means supported by said upper member, said screen having marginal portions thereof formed to provide downwardly-extending flanges which occupy said channels, the thickness of the flanges on said screen being substantially less than the width of said channels with one of the flanges on said screen being located in close proximity to one of the walls of one of said channels to prevent substantial lateral shifting of said screen in one direction and with the other flange on said screen being located in close proximity to one of the walls of the other of said channels to prevent substantial lateral shifting of said screen in the opposite direction, either side of said screen being liftable upwardly to move the flange on said side out of the channel which it occupies, whereby said screen may thereafter be shifted laterally a distance sufficient to enable the elevated flange on the screen to clear the wall of the channel with which it normally cooperates and thereby enable the side of said screen which is raised and shifted in the manner described to thereafter be lowered to provide ready access to said supporting member and the illuminated means carried thereby, the flange on the opposite side of said screen, during manipulation of the latter in the manner described, being movable laterally in its channel away from the wall of the channel with which it normally cooperates and thereafter being movable toward and engageable with said wall as the freed side of the screen is lowered to provide a hinge connection about which said screen may turn and by which it may be supported in an open position by said upper supporting member.

8. A lighting fixture comprising a housing which provides a mounting for an illuminating means and which has an opening in the bottom thereof, said opening being defined by spaced-apart, inwardly directed wall portions having their marginal edges terminating in upwardly extending flanges, and a screen supported by said housing for normally closing said opening, said screen having marginal portions which overlie said upwardly extending flanges and which are formed to provide downwardly extending flanges, the width of said wall portions being substantially greater than the thickness of the flanges on said screen with one of the flanges on said screen being located in close proximity to one of the flanges on said wall portions to prevent substantial lateral shifting of said screen in one direction and with the other flange on said screen being located in close proximity to the other flange on said wall portions to prevent substantial lateral shifting of said screen in the opposite direction, either side of said screen being liftable upwardly to move the flange on said side, upwardly out of the channel which it occupies, whereby the screen may thereafter be shifted laterally a distance sufficient to enable the elevated flange on the screen to clear the flange with which it normally cooperates and thereby enable the side of said screen which has been raised and shifted in the manner described to thereafter be lowered to provide ready access through said opening to said mounting and the illuminating means carried thereby, the flange on the opposite side of said screen, during manipulation of the latter in the manner described, being movable laterally away from the flange with which it cooperates and thereafter being engageable with said flange as the freed side of the screen is lowered to provide a hinge connection about which said screen may turn and by which it may be supported in an open position by said housing.

9. A lighting fixture according to claim 8, in which the flanges on said screen also extend inwardly.

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