

Oct. 10, 1961

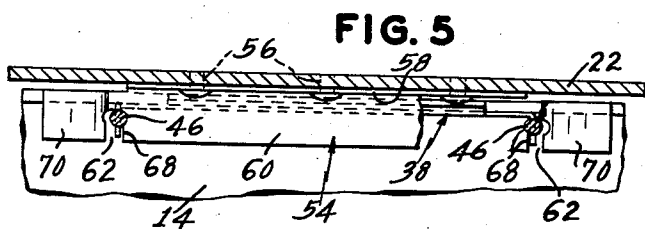
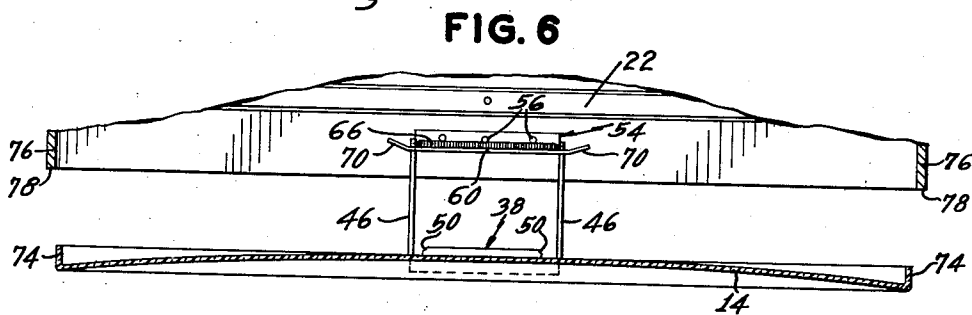
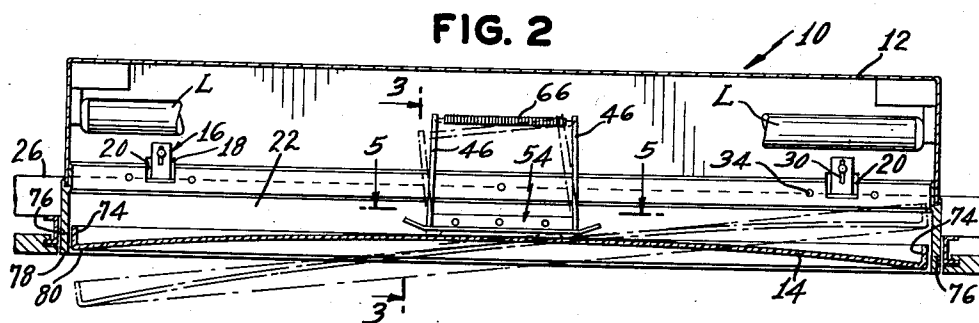
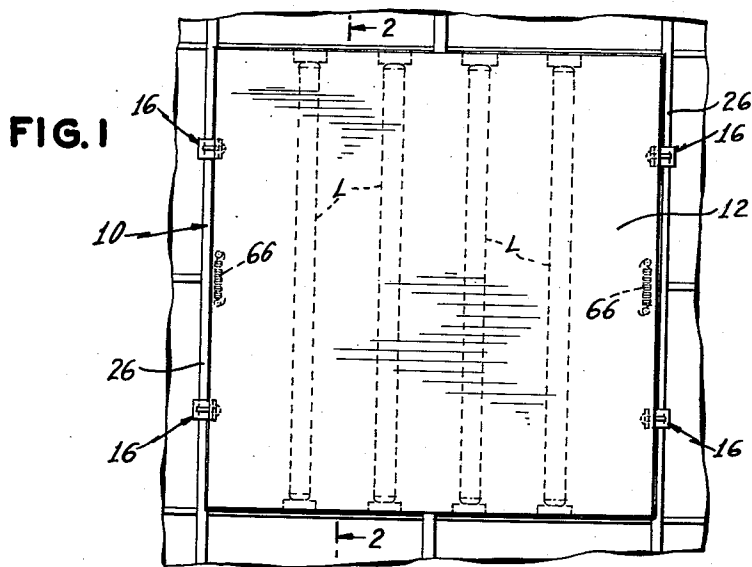
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3,004,148

MEANS FOR MOUNTING A DIFFUSER IN A LIGHTING FIXTURE

Filed March 23, 1959

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

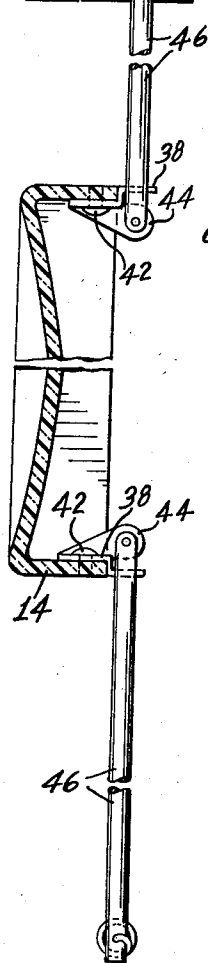
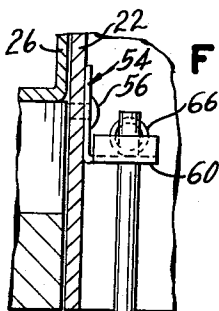
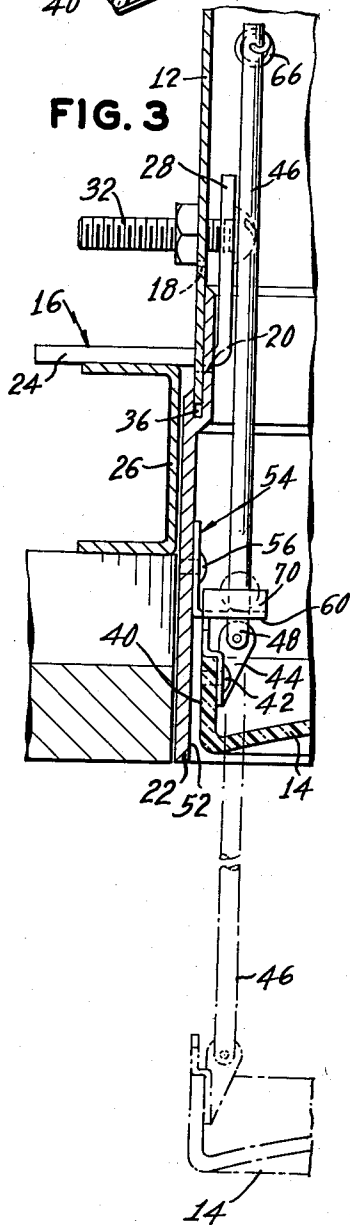
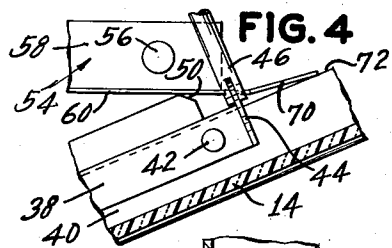


FIG. 8

FIG. 7

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MEANS FOR MOUNTING A DIFFUSER IN A LIGHTING FIXTURE

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3 Sheets-Sheet 3

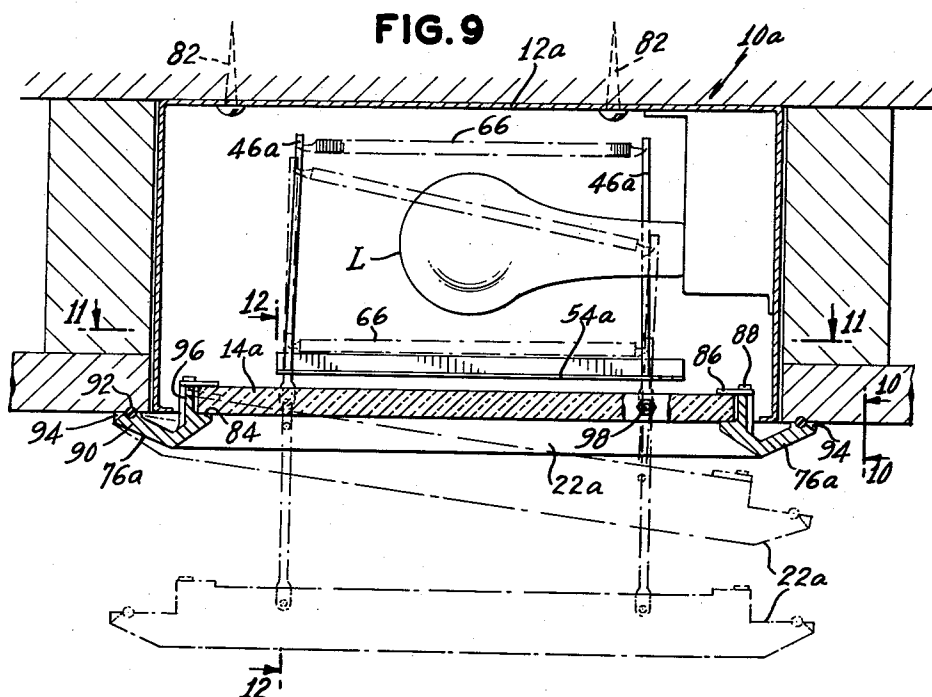


FIG. 12

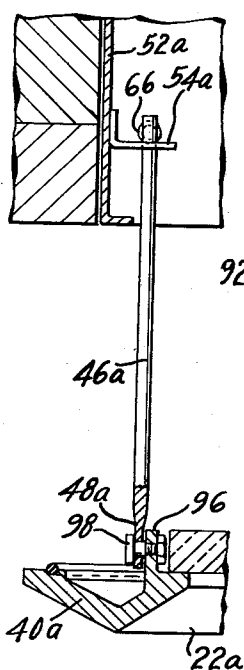


FIG. 11

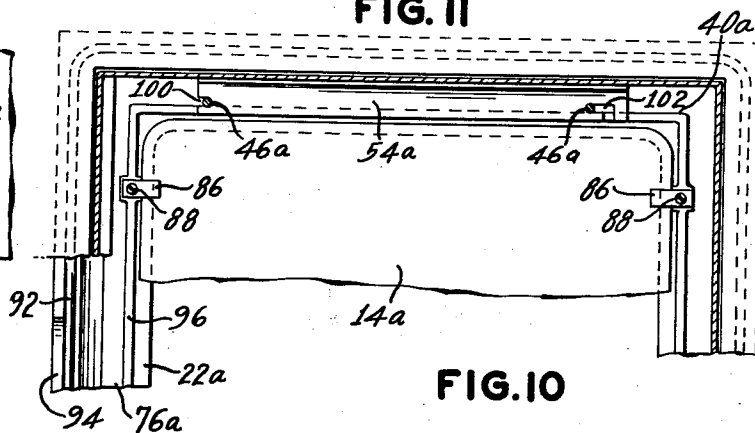
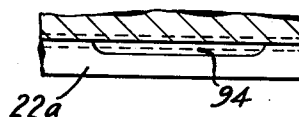


FIG.10



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3,004,148

MEANS FOR MOUNTING A DIFFUSER IN A LIGHTING FIXTURE

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Filed Mar. 23, 1959, Ser. No. 801,302
5 Claims. (Cl. 240-147)

This invention relates to lighting fixtures and, more particularly, to means for releasably mounting a diffuser to a housing or frame of a lighting fixture.

One of the objects of the present invention is to provide improved means for releasably mounting a diffuser to the housing or frame of a lighting fixture.

Another object of the present invention is to provide improved means for preventing the disengagement of the diffuser from the housing of the lighting fixture as said diffuser is withdrawn from the housing during the opening of the lighting fixture.

Another object of the present invention is to provide improved means for opening a lighting fixture to permit the ready access to the interior thereof for maintenance and other purposes.

The above and other objects, features and advantages of this invention will be fully understood from the following description considered in connection with the accompanying illustrative drawings of the presently preferred embodiment of this invention.

In the drawings:

FIG. 1 is a plan view of a lighting fixture embodying the present invention;

FIG. 2 is a sectional view, on an enlarged scale, taken on line 2-2 of FIG. 1;

FIG. 3 is a sectional view, on an enlarged scale, taken on line 3-3 of FIG. 2;

FIG. 4 is a fragmentary detailed view, on an enlarged scale, showing part of the diffuser in the tilted position shown in dashed lines in FIG. 2;

FIG. 5 is a fragmentary detailed view, on an enlarged scale, taken on line 5-5 of FIG. 2;

FIG. 6 is a fragmentary view showing the diffuser in the withdrawn position from the housing;

FIG. 7 is a fragmentary elevational view showing one side of the diffuser being disengaged from the housing of the lighting fixture;

FIG. 8 is a view similar to FIG. 7 showing the diffuser suspended from the housing in the open position of the lighting fixture;

FIG. 9 is a sectional elevational view of another embodiment of a lighting fixture pursuant to the present invention;

FIG. 10 is a fragmentary sectional elevational view taken on line 10-10 of FIG. 9;

FIG. 11 is a sectional plan view, of part of the lighting fixture, taken on line 11-11 of FIG. 9; and

FIG. 12 is a fragmentary elevational view, on an enlarged scale, taken on line 12-12 of FIG. 9.

Referring now to the drawings in detail, and particularly to the embodiment of the invention shown in FIGS. 1-8, the lighting fixture 10 comprises a housing 12 and a diffuser 14, made of a translucent material, to permit the passage of light therethrough from the light source L mounted in the housing. The lighting fixture is preferably of the recessed type and is mounted in the apertures of a wall or ceiling by lugs 16 which pass through slots 18 and cut-outs 20 in housing 12 and frame 22, respectively. Horizontal leg 24 of lug 16 is supported on a beam 26 in the wall or ceiling and vertical leg 28 of lug 16 is provided with a slot 30 therein through which passes securing element 32, for the securement of the

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housing of the lighting fixture to lugs 16, as best seen in FIG. 3. The frame 22 is mounted to housing 12 by securing elements 34 (see FIG. 2), said frame being provided with peripheral extending longitudinal slots 36 in which the lower edges of the housing project.

Pursuant to the present invention, means are provided for releasably mounting the diffuser to the housing or frame of the lighting fixture to permit ready access to the interior of said lighting fixture for the maintenance thereof. It will be understood that, in the embodiment of the invention shown in FIGS. 1-8, the previously mentioned frame 22 may be made integral with the housing 12, if so desired, to form a complete unitary housing member. The mounting means comprises a bracket 38 fastened to each of the opposite sides 40 of the diffuser 14 by securing elements 42. At each end of bracket 38 there is provided an extending lug member 44 to which is pivotally mounted a pair of elongated rod members 46 at each of the lower ends 48 thereof. Also, at each end of bracket 38, along the upper edge thereof, there is provided chamfered portions 50 which act as a pivot point for the pivotal movement of the diffuser with respect to the housing of the lighting fixture during the initial movement of said diffuser for the withdrawal thereof from said housing, as will be more clearly understood from the description hereinafter.

Secured to the frame 22, at each opposite side 52 thereof, corresponding to the sides 40 of the diffuser 14, is an L-shaped bracket 54 secured to the frame side 52, by securing elements 56, along the vertical leg 58 of said bracket. The horizontal leg 60 of bracket 54 is provided with open ended slots 62 therein, proximate each end thereof, for receiving rod members 46, the upper ends 64 thereof being biased toward each other by tension spring 66 disposed therebetween. It will be noted that spring 66 biases each of rod members 46 toward each other so that said rod members engage the side edges 68 of slots 62 to releasably retain and support the diffuser within the frame and housing of the lighting fixture, as best seen in FIG. 5. It will be noted in said figure that the slots 62 are wider than the rod members 46 to permit side to side movement of said rod members within their respective slots, which is necessary for the initial pivotal movement of the diffuser with respect to the housing when said diffuser is being withdrawn from said housing, as will be clearly understood from the description hereinafter.

The horizontal leg 60 of housing or frame bracket 54 is provided, at each end thereof, with upstanding bent portions 70 which prevents the cutting of the upper edge 72 of side 40 of the diffuser during the pivotal movement of said diffuser with respect to the housing, as best seen in FIG. 4.

Referring now to FIG. 2, which shows the diffuser fully disposed entirely within the housing of the lighting fixture, wherein the sides 74 of the diffuser are in juxtaposition with the sides 76 of the frame 22 and, wherein the lower edges 78 thereof are approximately flush with the lower edges 80 of the diffuser. It will be apparent from the foregoing that since the outer surface of the diffuser is smooth there is no portion thereon for the manual gripping thereof by the operator to withdraw the diffuser from the housing to gain access to the interior of the lighting fixture. However, by pushing in an upwardly direction against either side 74 of the diffuser, as for example, the right side as shown in FIGS. 2 and 4, the diffuser may be pivoted about the chamfered portions 50 of bracket 38, abutting against horizontal leg 60 of housing bracket 54, to the position shown in dotted lines in said FIG. 2, wherein the left side 74 of the diffuser may be grasped by the operator to completely withdraw the diffuser from

the housing to the position shown in FIG. 6. In the initial pivotal movement of the diffuser with respect to the housing the rod members 46 take the position shown in dotted lines in FIG. 2, the width of slots 62 in bracket 54 permitting the movement of the rod members therein and, as shown in FIG. 4, the bent portion 70 of said bracket prevents the cutting of the edge 72 of the side 40 of the diffuser.

In the withdrawn position of the diffuser shown in FIG. 6, it will be noted that the tension spring 66 overlies leg 60 of bracket 54 of the frame or housing to support said diffuser in the withdrawn position thereof and to prevent said diffuser from being pulled out from said housing during the withdrawal thereof from said housing. To release either side of the diffuser from the housing to permit full access thereto, rod members 46 are pivoted about their lower ends 48, wherein the upper ends 64 thereof will move through the open ended slots 62 of bracket 54 for disengaging the rod members from said bracket, as best shown in FIG. 7, permitting the diffuser to pivot downwardly about the pivotal connection at the lower ends 48 of the other pair of rod members 46 on the opposite side of the diffuser, to attain the suspended position shown in FIG. 8. In said suspended position, it will be noted that the tension spring 66 supports the diffuser suspended from the housing of the lighting fixture.

Referring now to FIGS. 9-12, there is shown another embodiment of a lighting fixture 10a pursuant to the present invention in which a unitary housing 12a is provided mounted in a recess of a horizontal wall by securing elements 82. The frame 22a of the lighting fixture is provided with a peripheral extending inner flange 84 which supports the diffuser 14a, said diffuser being secured to said frame by lugs 86 which are secured to peripheral extending wall 96 by bolts 88. The frame is provided with an outer peripheral extending flange 90 having a peripheral extending seal 92 therein to provide a light-tight fit between the frame and the undersurface of the wall. As best seen in FIG. 10, the frame is provided with a cut-out portion 94 along each of the opposite sides 76a thereof to permit the grasping of the frame to withdraw the diffuser from the housing of the lighting fixture.

As best shown in FIG. 12, each of the sides 40a of frame 22a is provided with pivot pins 98 which pass through the peripheral extending wall 96 of the frame and which have pivotally mounted thereto the lower ends 48a of the rod members 46a. It will be understood that the pairs of rod members are similarly mounted to each side 40a of the frame of the lighting fixture in a manner similar to the embodiment of the lighting fixture 10 shown in FIGS. 1-8. An L-shaped bracket 54a is suitably mounted to the sides 52a of the housing 12a of the lighting fixture. The said bracket is provided with a pair of open ended slots to receive rod members 46a, one of said slots 100 permitting the passage of the rod therein through the end of the housing bracket and the other slot 102 being L-shaped, permitting the passage of the rod member through the edge of the bracket, as best shown in FIG. 11. For biasing the rod members toward each other in their respective slots 100 and 102 to releasably retain the diffuser within the housing a tension spring 66 is provided, similarly to the previously described embodiment of the invention.

To withdraw the diffuser from the housing of the lighting fixture 10a to permit access therein for the maintenance thereof, the cut-out portion 94 may be gripped at either side 76a of the frame, as for example the right side of the frame as shown in FIG. 9, to pivot the frame and diffuser to the position shown in dotted lines in FIG. 9, wherein the lighting fixture is partially open to permit access therein through the right side thereof. If desired, both cut-outs 94 on the sides 76a of the frame may be grasped simultaneously by the operator and pulled downwardly to withdraw the frame and diffuser from the housing to the position shown in dotted lines in FIG. 9, where-

in the tension spring 66 overlies the housing bracket 54a to support the diffuser and frame in its withdrawn position and to prevent the frame and diffuser from being pulled out completely from the housing and disengaged therefrom. It will be noted that slots 100 and 102 are wide enough to permit the pivotal movement of the rod members 46a therein during the initial pivotal movement of the diffuser with respect to the housing, in the same manner as previously described with respect to the lighting fixture 10. With the diffuser and frame in its completely withdrawn position, as shown in FIG. 12, either side of the diffuser and frame may be released from the housing by pivoting rod members 46a from their respective slots 100 and 102, wherein the released side of the diffuser and frame will pivot downwardly into their suspended position, similar to the position shown in FIG. 8 for lighting fixture 10, for completely opening lighting fixture 10a.

While we have shown and described the preferred embodiment of our invention, it will be understood that the invention may be embodied otherwise than as herein specifically illustrated or described, and that in the illustrated embodiment certain changes in the details of construction and in the form and arrangement of parts may be made without departing from the underlying idea or principles of this invention within the scope of the appended claims.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. In a lighting fixture having a housing member and a diffuser member, said diffuser having a normally closed position in which it is disposed entirely within the interior of said housing and approximately flush with the lower edges of said housing and with the sides of said diffuser being in juxtaposition with the sides of said housing; means for releasably mounting said diffuser member to said housing member, comprising a bracket carried by one of said members, a pair of elongated rods, each of said elongated rods being pivotally mounted at one end thereof to said other member, said bracket having slots therein through which said elongated rods extend, and means for biasing said elongated rods toward each other and against the side edges of said slots to releasably retain said diffuser member within said housing member, said biasing means being connected at one of opposite ends thereof to one of said elongated members and at the other of said opposite ends thereof to the other of said elongated members, to engage said bracket and provide a stop limiting the displacement of said diffuser member from said housing member to prevent said diffuser member from being pulled out and disengaged from said housing member during the opening of said lighting fixture, each of said slots being open ended to permit the pivotal movement of said elongated rods out of their respective slots for the release of said diffuser member from said housing member.

2. In a lighting fixture having a housing member and a diffuser member, said diffuser having a normally closed position in which it is disposed entirely within the interior of said housing and approximately flush with the lower edges of said housing and with the sides of said diffuser being in juxtaposition with the sides of said housing; means for pivotally mounting said diffuser member to said housing member, comprising a pair of elongated rods pivotally connected at one end thereof to one of said members, and being provided with means at the other end thereof for resiliently biasing said elongated rods toward each other and into engagement with said other member to releasably retain said diffuser member within said housing member, said mounting means having means directly responsive to the application of external force to either side of said diffuser member for pivoting said diffuser member with respect to said housing member to expose a gripping edge on the other side of said diffuser

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member for the subsequent displacement of said diffuser member from said housing member.

3. In a lighting fixture having a housing and a diffuser disposed therein in the closed position thereof; means for releasably and pivotally mounting said diffuser within said housing wherein said diffuser is within the interior of said housing and approximately flush with the lower edges of said housing and the sides of said diffuser are in juxtaposition with the sides of said housing, comprising a bracket carried by said housing, another bracket carried by said diffuser, a pair of elongated members pivotally mounted to said diffuser bracket, said housing bracket having slots therein through which said elongated members extend, and means for biasing said elongated members toward each other and against the side edges of said slots to releasably retain said diffuser within said housing, said slots having enlarged portions, said elongated members being movable sideways within said enlarged portion during the pivotal movement of said diffuser relative to said housing, said housing bracket being provided with upstanding and substantially flat bent portions at each end thereof to engage the edge of the diffuser and prevent the cutting of said diffuser edge by said housing bracket during the initial pivotal movement of said diffuser relative to said housing to expose a gripping edge on said diffuser for the subsequent displacement of said diffuser from said housing.

4. In a lighting fixture having a housing and a diffuser, said diffuser having a normally closed position in which it is disposed entirely within the interior of said housing and approximately flush with the lower edges of said housing and with the sides of said diffuser being in juxtaposition with the sides of said housing; means for releasably and pivotally mounting said diffuser to said housing, comprising a bracket carried by said housing, another bracket carried by said diffuser, a pair of elongated members pivotally mounted to said diffuser bracket, said housing bracket having slots therein through which said elongated members extend, and means biasing said members toward each other for releasably retaining said diffuser

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within said housing, said slots having enlarged portions, said elongated members being movable sideways within said enlarged portions during the pivotal movement of said diffuser relative to said housing, said housing bracket being provided with upstanding bent portions at each end thereof to prevent the cutting of said diffuser by said housing bracket during the initial pivotal movement of said diffuser relative to said housing to expose a gripping edge on said diffuser for the subsequent displacement of said diffuser from said housing, said diffuser bracket having chamfered portions at each end thereof for engaging said housing bracket to provide a pivot about which said diffuser moves relative to said housing.

5. In a lighting fixture having a housing member and a diffuser member; means for releasably mounting said diffuser member to said housing member, comprising a bracket carried by one of said members, a pair of elongated rods, each of said elongated rods being pivotally mounted at one end thereof to said other member, said bracket having slots therein through which said elongated rods extend, and means for biasing said elongated rods toward each other and against the side edges of said slots to releasably retain said diffuser member within said housing member, said biasing means being connected at one of opposite ends thereof to one of said elongated members and at the other of said opposite ends thereof to the other of said elongated members, to engage said bracket and provide a stop limiting the displacement of said diffuser member from said housing member to prevent said diffuser member from being pulled out and disengaged from said housing member during the opening of said lighting fixture, each of said slots being open ended to permit the pivotal movement of said elongated rods out of their respective slots for the release of said diffuser member from said housing.

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