

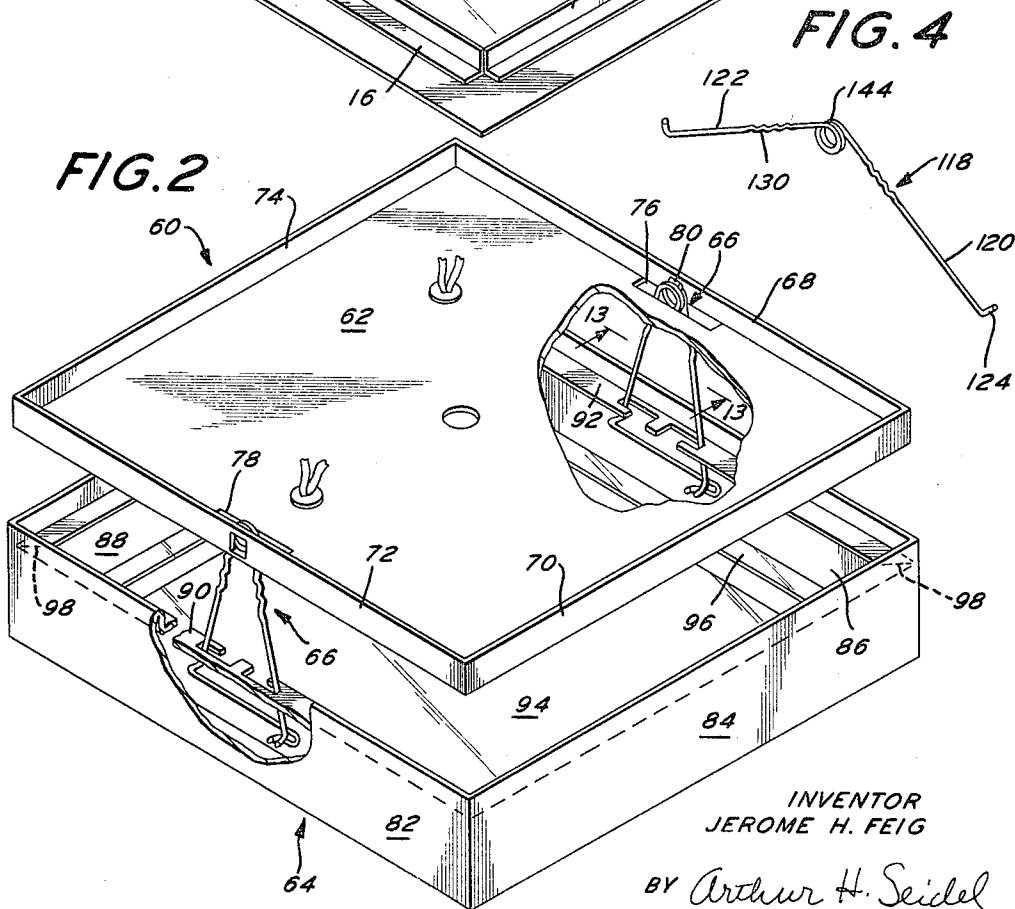
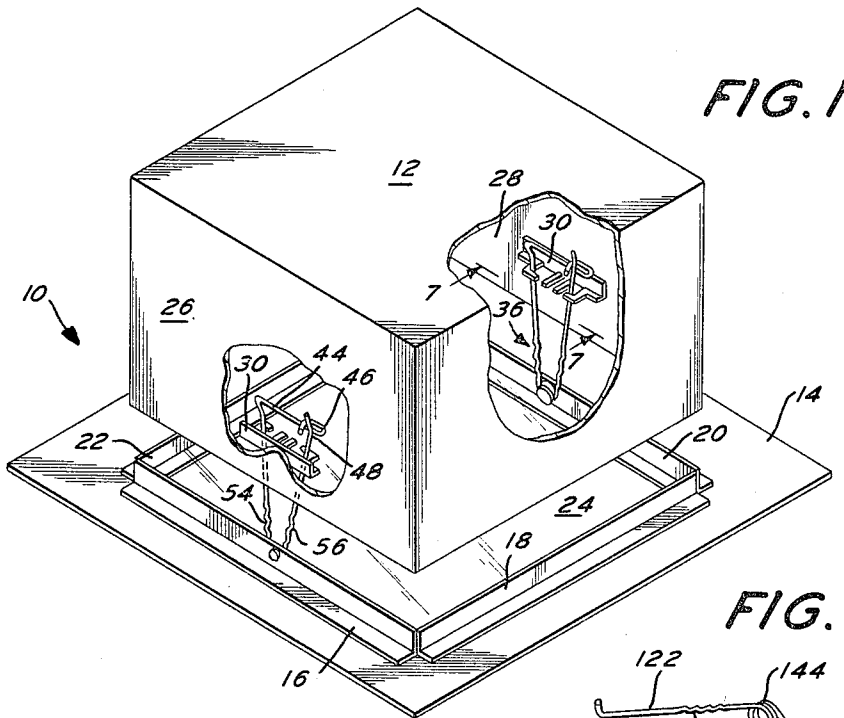
**Nov. 29, 1966**

J. H. FEIG  
LIGHT FIXTURE

**3,288,991**

Filed March 24, 1964

3 Sheets-Sheet 1



INVENTOR  
JEROME H. FEIG

BY *Arthur H. Seidel*

ATTORNEY

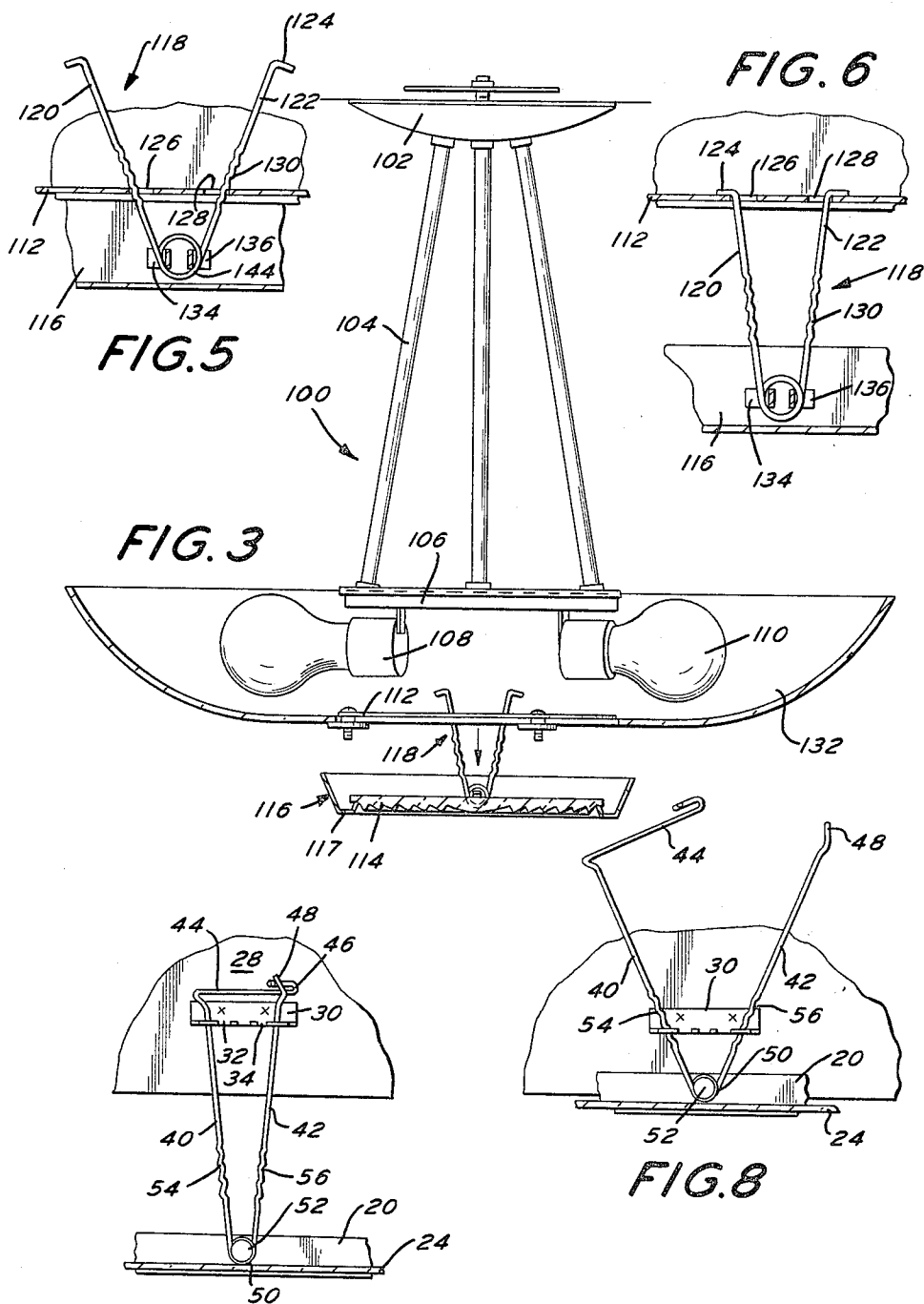
Nov. 29, 1966

J. H. FEIG  
LIGHT FIXTURE

3,288,991

Filed March 24, 1964

3 Sheets-Sheet 2



INVENTOR  
JEROME H. FEIG  
BY *Arthur H. Seidel*

ATTORNEY

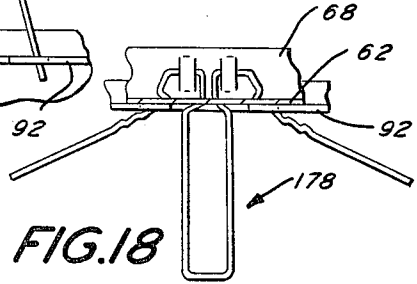
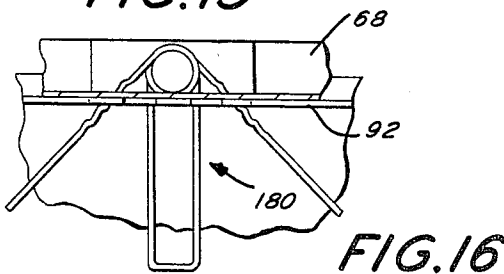
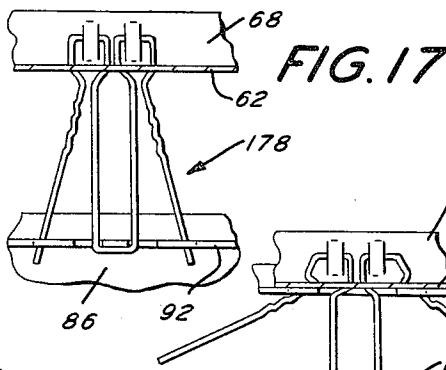
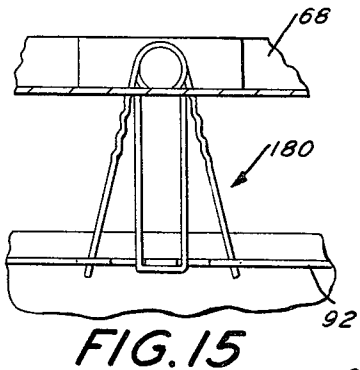
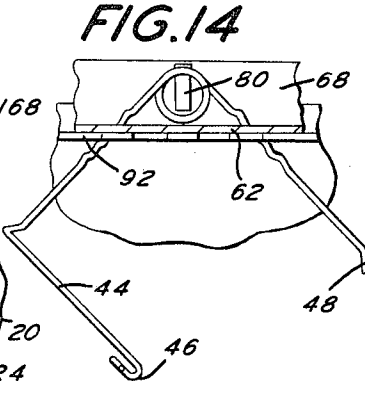
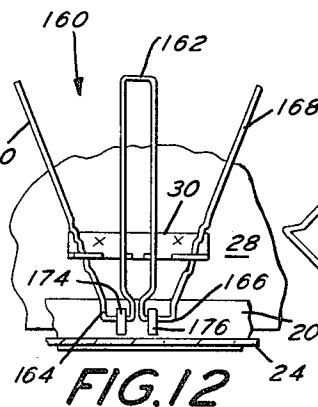
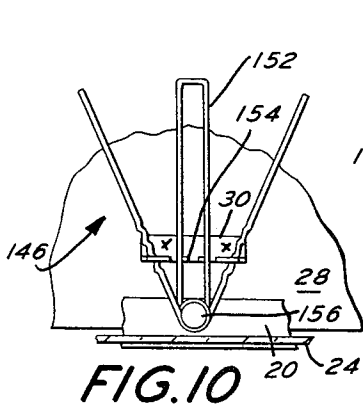
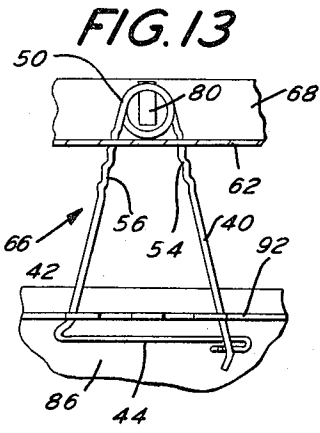
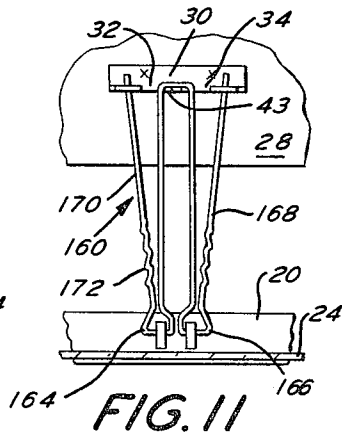
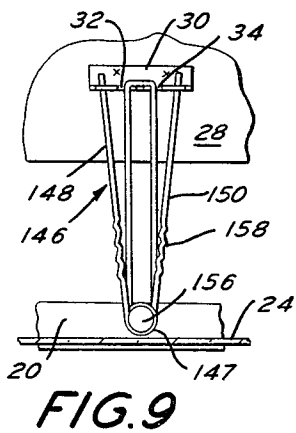
Nov. 29, 1966

J. H. FEIG  
LIGHT FIXTURE

3,288,991

Filed March 24, 1964

3 Sheets-Sheet 3



INVENTOR  
JEROME H. FEIG  
BY *Arthur H. Seidel*  
ATTORNEY

1

3,288,991

## LIGHT FIXTURE

Jerome H. Feig, Beverly Hills, Calif., assignor to Marvin Electric Manufacturing Co., Los Angeles, Calif., a corporation of California

Filed Mar. 24, 1964, Ser. No. 354,301

6 Claims. (Cl. 240-147)

This invention relates to a light fixture, and more particularly to a light fixture which may be either flush mounted, recess mounted, or suspended on or from a ceiling or other supporting surface.

The light fixture of the present invention is directed to a lamp carrying member and a bezel structurally interrelated by way of a diffuser holding means. Such structural interrelationship facilitates reciprocation of the bezel with respect to the lamp carrying member whereby electric bulbs may be readily replaced and whereby the components may be readily assembled during installation.

Accordingly, it is an object of the present invention to provide a novel light fixture.

It is another object of the present invention to provide a light fixture wherein a lamp carrying member and a bezel are structurally interrelated by means of a diffuser holding means.

It is another object of the present invention to provide a light fixture wherein the diffuser holding means extending between a lamp carrying member and a bezel is provided with auxiliary engaging means which will aid the resiliency inherent in the diffuser holding means to frictionally engage and maintain the bezel in fixed relation upon the lamp carrying member and prevent accidental disengagement of the bezel therefrom.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there are shown in the drawings forms which are presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIGURE 1 is an exploded perspective view of a recessed light fixture in accordance with the present invention.

FIGURE 2 is an exploded perspective view of another embodiment of the present invention wherein the light fixture is a flush mounted fixture.

FIGURE 3 is an exploded perspective view of still another embodiment of the present invention wherein the light fixture is suspended from a ceiling.

FIGURE 4 is a perspective view of a diffuser holding means which can be used with the fixtures disclosed in the present invention.

FIGURE 5 is a view partly in side elevation and partly in section illustrating the position of the diffuser holding means disclosed in FIGURE 4 when used with the fixture disclosed in FIGURE 3 when the bezel is flush with the lamp carrying member.

FIGURE 6 is a view similar to FIGURE 5 but illustrating the components in their open disposition.

FIGURE 7 is a view taken substantially along the plane of the line 7-7 of FIGURE 1 and illustrating the diffuser holding means used in conjunction with the light fixture of FIGURE 1.

FIGURE 8 is a view similar to FIGURE 7 but illustrating the components in their closed disposition.

FIGURE 9 is a view similar to FIGURE 7, but illustrating another embodiment of the diffuser holding means.

FIGURE 10 is a view similar to FIGURE 9, but illustrating the components in their closed disposition.

FIGURE 11 is a view similar to FIGURE 7, but illustrating still another embodiment of the diffuser holding means.

2

FIGURE 12 is a view similar to FIGURE 11, but illustrating the components in their closed disposition.

FIGURE 13 is a view taken substantially along the plane indicated by the line 13-13 of FIGURE 2, and particularly illustrating the diffuser holding means used in the embodiment of the light fixture shown in FIGURE 2.

FIGURE 14 is a view similar to FIGURE 13, but illustrating the components in their closed disposition.

FIGURE 15 is a view similar to FIGURE 13, illustrating the use of the diffuser holding means disclosed in FIGURES 9 and 10 in the embodiment of the light fixture illustrated in FIGURE 2.

FIGURE 16 is a view similar to FIGURE 15, but illustrating the components in their closed disposition.

FIGURE 17 is a view similar to FIGURE 13, illustrating the use of the diffuser holding means illustrated in FIGURES 11 and 12 in the embodiment of the light fixture shown in FIGURE 2.

FIGURE 18 is a view similar to FIGURE 17, but illustrating the components in their closed disposition.

Referring to the drawing in detail, wherein like numerals indicate like elements, there is shown in FIGURE 1 a light fixture designated generally as 10.

The light fixture 10 is a type which is adapted to be mounted within a recess or the like. Fixture 10 includes a housing or lamp carrying member 12 having a bezel 14 which is adapted to be flush with the ceiling or other supporting surface.

The bezel 14 includes angle plate members 16, 18, 20 and 22 fixedly secured thereto and spaced radially outwardly from the inner peripheral surface of the bezel 14. The bezel 14 has a centrally exposed aperture over which lies a light diffusing member 24. The periphery of member 24 is supported by the inner periphery of the bezel 14.

The housing 12 is provided with walls forming a rectangle which is larger than the rectangle formed by the upstanding portion of the members 16, 18, 20 and 22. Thus, the last-mentioned upstanding portions are adapted to enter into the housing 12 in the assembled disposition of the housing and bezel. Housing 12 includes oppositely disposed side walls 26 and 28.

Each of the walls 26 and 28 is structurally interrelated with the bezel 14 by means of a diffuser holding means 36. Since each of the diffuser holding means 36 is identical, only one such means and its structural interrelationship with a side wall of housing 12 and bezel 14 will be described in detail.

A bracket member 30 having an inwardly extending flange portion is secured to the side wall 28 in any convenient manner. The inwardly extending portion is provided with spaced notches 32 and 34. The diffuser holding means 36 includes a torsion spring 50 having legs 40 and 42. Leg 40 terminates in a leg extension 44.

Extension 44 is substantially at right angles to the leg 40. Extension 44 has a generally V-shaped terminal 46. Leg 42 has a leg extension 48 disposed substantially at right angles to the leg 42. Extension 48 is adapted to interlock with the terminal 46 as shown more clearly in FIGURE 7.

The torsion spring 50 of each diffuser holding means is coupled to the bezel 14 in any suitable manner. Thus, a suitable fastener such as a rivet 52 may extend through the torsion spring 50 joining the legs 40 and 42 and secure the spring to the upstanding portion of the angle iron 20.

When assembling the bezel 14 to the housing 12, the worker need only compress the legs 40 and 42 towards each other and align the same with the peripheral notches 32 and 34 and then permit the legs to resume their normal disposition. This eliminates the necessity for the

worker having to search for blind holes through which the legs will extend. When the bezel 14 is coupled to the housing 12 in its closed disposition, the diffuser holding means 36 assumes the position illustrated in FIGURE 8.

When it is desired to have access to the interior of the housing 12 for maintenance or replacing a burnt out bulb, one need only pull down on the bezel 14 thereby causing the legs 40 and 42 to move towards each other until the leg extension 48 is interlocked with the V-shaped terminal 46. The provision of an interlock between the free ends of the legs 40 and 42 prevents inadvertent pulling on the bezel 14 with such a force as to physically separate the holding means 36 from the housing 12. When the bezel 14 is in the open disposition as illustrated in FIGURES 1 and 7, it may be rotated, through a limited angle, about an axis extending through the longitudinal axis of the spring 50 thereby increasing the space from which one's hand may extend to replace a bulb or perform any maintenance function.

As discussed previously, any accidental engagement against the bezel 14 will cause the legs 40 and 42 to collapse towards each other thereby causing the bezel 14 to slide down away from the housing or lamp carrying member 12. This is usually due to a certain jarring of the bezel. In order to prevent such accidental disengagement, each of the leg members 40, 42 intermediate their ends is roughened to form a plurality of crimps such as 54 and 56 which may comprise notches, serrations, or indentations. Each series of crimps extends along each leg member. In the closed disposition of the bezel 14, the resiliency of the legs 40 and 42 will force the crimps 54 and 56 to form a seat and bite into the adjoining edges of the bracket 30 surrounding the notches 32 and 34. This added seated engagement of the spring 50 will preclude accidental disengagement of the bezel 14 from the housing 12. That is, if a certain jarring force is imparted to the bezel 14, and the legs 40, 42 are caused to move towards each other momentarily, the edges of the bracket 30 surrounding the notches 32 and 34 will bind against the crimps 54 and 56 when the bezel 14 attempts to pull away from the housing 12. If the jarring force is great enough, the bezel 14 may slip slightly, but since the crimps are formed in a series on each leg, the spring 50 will quickly rebound against the adjoining edges of the bracket 30. That is, even if the slippage of the bezel 14 is initiated, the effect of the crimps is to prevent any prolonged movement since they present a roughened engaging surface to the bracket rather than a smooth surface.

Referring now specifically to FIGURES 9 and 10, a diffuser holding means generally designated by the numeral 146 may be used in lieu of the diffuser holding means 36 in conjunction with the bezel 14 illustrated in FIGURE 1.

The diffuser holding means 146 includes a torsion spring 147 having legs 148 and 150 and a U-shaped loop portion 152. As illustrated more clearly in FIGURE 9, the loop portion 152 is shorter in length than the legs 148 and 150. In the closed disposition of the bezel 14 with respect to the housing 12, the bight portion of the loop portion 152 is spaced further from the torsion spring 147 than the vertical distance between the free ends of the legs 148 and 150 and the torsion spring 147.

The bight portion of the loop portion 152 is adapted to extend around a lug 154 centrally located and extending perpendicular from the bracket 30, and limits the extent to which the bezel 14 can be reciprocated with respect to the housing 12. As shown in FIGURES 9 and 10, the torsion spring 50 is coupled to the upright portion of the member 20 by means of a rivet 156, if desired or any other suitable means.

The legs 148 and 150 of the diffuser holding means 146 are each formed with a series of crimps 158 which function in the same manner as the crimps 54 and 56

disclosed in conjunction with the diffuser holding means 36.

When it is desired to assemble the bezel 14 to the housing 12, the worker will first couple the loop portion 152 of each diffuser holding means 146 to its respective lug 43. Thereafter, the housing 12 will support the weight of the bezel 14 and the light diffusing member 24. Thus, the worker's hands will be free to compress the legs 148 and 150 until they snap into the notches 32 and 34, respectively. Thus, the diffuser holding means 146 does not rely on the terminal portions of the legs 148 and 150 to act as limit stops. The bezel 14 may then be pushed upwardly until the crimped portions 158 on each of the leg members is engaged on the edges of the bracket 30 adjoining the notches 32 and 34. In all other respects, the use of the diffuser holding means 146 is comparable to the diffuser holding means 36.

Referring now to FIGURES 11 and 12, there is illustrated yet another embodiment of a diffuser holding means generally designated by the numeral 160 which may be used with the recess mounted light fixture 10 of FIGURE 1. The diffuser holding means 160 can be constructed and oriented with respect to the bezel 14 and lamp carrying member 12 in a manner which is simpler and cheaper than the diffuser holding means 36 and 146.

The diffuser holding means 160 includes a U-shaped loop 162 similar to loop 152. The free ends of the U-shaped loop 162 are formed into traction springs 164 and 166. A spring leg 170 is integral with one side of the traction spring 164. A spring leg 168 is integral with one side of the traction spring 166.

When the bezel 14 and housing 12 are spaced from one another as illustrated in FIGURE 11, it will be noted that the length of the U-shaped loop 162 is slightly less than the length of the spring legs 168 and 170. The bight of the U-shaped loop 162 overlies the lug 43 in the open disposition of the housing 12 and bezel 14 as is the case with the diffuser holding means 146. A pair of spaced tabs 174 and 176 are struck from the upstanding portion of member 20. Each of the traction springs 164 and 166 extends through one of the tabs 174 and 176.

When assembling bezel 14 to the housing 12, the worker will first couple a diffuser holding means 160 to opposite sides of the bezel 14. Such coupling may be effected by threading spring leg 170 through tab 174 and spring leg 168 through tab 176. Since the diffuser holding means is preferably made from spring wire, a deformed spring holder means damaged during transit or storage may be discarded. Hence, the entire bezel and/or lamp carrying member need not be discarded when the diffuser holding means has been damaged.

Thereafter, the worker will support the bezel 14 with one hand and couple each of the diffuser holding means 160 to the housing 12 by placing the bight of the U-shaped loop 162 over the juxtaposed lug 43. When this has been accomplished, the housing 12 will support the weight of the bezel 14 and the light diffusing member 24. Thus, the worker's hands will be free to compress the legs 168 and 170 until they snap into the notches 32 and 34, respectively. Each of the legs 168 and 170 are provided with a series of crimps 172 which will function in the identical manner and for the identical purpose as the crimps 158, 54 and 56. In all other respects, the operation of the diffuser holding means 160 is similar to the diffuser holding means 146. It should be noted that movement of the bezel 14 with respect to the housing 12 is also accomplished with less resistance due to the fact that the legs 168, 170 as well as the U-shaped loop 162 lie in the same plane. Thus, any twisting effect which will cause a binding action between the diffuser holding means and housing 12 will be eliminated. The assembled disposition of the housing 12 and bezel 14 is accomplished by merely pushing upwardly on the bezel 14 until

the components assume the disposition illustrated in FIGURE 12.

Referring now to FIGURE 2, there is illustrated another embodiment of the present invention wherein the light fixture is the surface mounted fixture designated generally by the numeral 60. Fixture 60 includes a tray or lamp carrying member 62 structurally interrelated with a bezel designated generally as 64 by diffuser holding means 66. Diffuser holding means 66 is preferably identical with the diffuser holding means 36, and therefore need not be described in detail.

The tray or lamp carrying member 62 may be flat sheet metal or the like having upstanding peripheral flanges 68, 70, 72 and 74. Tray 62 is provided with an aperture 76 adjacent flange 68 and an aperture 78 adjacent flange 72. A portion of each diffuser holding means 66 extends through the aperture so that the torsion spring is above the tray 62 for facilitating coupling of the torsion spring to one of the flanges 68 and 78. Each of the flanges 68 and 78 is provided with a struck-out portion. The member 80 comprises a hook having a bight portion spaced sufficiently from the plane of the upstanding peripheral flange 68 so that at least one coil of spring 50 extends therebetween and may be coupled thereto. The simplicity of this means for coupling the spring 50 to the tray 62 eliminates manufacturing steps, necessity for manufacturing equipment such as welders or riveters, and enables the diffuser holding means 66 to be readily replaced when desired. Thus, if the diffuser holding means 66 is bent or broken, it may be readily replaced without the necessity for production equipment.

The bezel 64 is provided with side walls 82, 84, 86 and 88. Each of the side walls is provided at its upper edge with a turned-over portion which terminates in an inwardly directed flange. Thus, side wall 70 is provided at its upper edge with a portion turned back on itself and an inwardly extending flange 90. Side wall 86 is similarly provided with a flange 92. The flanges 90 and 92 are provided with notches which cooperate with the leg of the diffuser holding means 66 in the same manner as notches 32 and 34 cooperate with the diffuser holding means 36, 146, and 160.

Each of the side walls of the bezel 64 are provided at their lower edge with an intumed flange. Thus, wall 86 is provided with a flange 96. The flanges at the lower edge of each of the walls of the bezel 64 provide a supporting surface for a light diffuser member 94.

The bezel 64 may be formed from an elongated member having a length corresponding to the combined lengths of the walls 82, 84, 86 and 88. Thereafter, the strip may be bent to form a rectangular bezel as illustrated with means being provided at one of the corners to facilitate joining the free ends in any convenient manner well-known to those skilled in the art to which the present invention pertains. It will be noted that the flanges such as flange 90 are cut away at their ends so as not to be integral with the corresponding flange on the other side walls. Thus, flange 90 is provided with a cut 98. A similar cut should be provided in the flanges such as flange 92. These cuts are preferably at 45° angle with respect to the leading edge of the flanges so that they mate with cooperating flanges on the other side walls. The fixture 60 is utilized in the same manner as described above with respect to the fixture 10. Reference should be made to FIGURES 13 and 14 illustrating respectively, the open and closed dispositions of the bezel with respect to the lamp carrying member 62.

Referring now specifically to FIGURES 15 and 16, it will be seen that the diffuser holding means 180, identical to the diffuser holding means 146 may be used in the lighting fixture 60. FIGURE 15 illustrates the open disposition of the bezel and FIGURE 16 illustrates the closed disposition of the bezel. The diffuser holding means 180 performs the same function in an identical manner as the

diffuser holding means 146 and accordingly, a further explanation is not thought necessary.

Referring now specifically to FIGURES 17 and 18, a diffuser holding means 178, identical in every respect to the diffuser holding means 160, is shown in the manner in which it would be used with the lighting fixture 60. The diffuser holding means 178 is identical in every respect and functions as the diffuser holding means 160. FIGURE 17 illustrates the open disposition of the bezel and FIGURE 18 illustrates the closed disposition of the bezel. No further explanation is deemed to be necessary as it would readily be apparent to one skilled in the art as to how the structure of FIGURES 17 and 18 will be used.

Referring now to FIGURES 3-6, a more or less conventional suspended ceiling fixture is generally designated by the numeral 100. The fixture comprises a ceiling plate 102, rods 104, and a base plate 106 mounting the various sockets 108, which accommodate light bulbs 110. A support disc 112 is adapted to be connected to a housing or lamp shade 132 surrounding the bulbs 110.

The fixture 100 further includes a bezel 116 having an intumed flange 117 on which seats a light diffusing member 114. Extending radially inwardly from opposite diametrical portions of the bezel 116 are a pair of arms 134 and 136 for supporting the torsion spring 144 of a diffuser holding means 118. The arms 134 and 136 extend through the spring 144 and provide a convenient means on which the spring 144 seats. In the event that the diffuser holder means 118 is damaged, it may readily be removed from the bezel and replaced.

Each of the diffuser holding means 118 includes a pair of legs 120 and 122 extending outward from the torsion spring 144 at a large angle. Each of the legs includes an outwardly extending stop such as 124 bent at substantially right angles to the ends of each of the legs. Further, extending along each of the legs is a series of crimps such as 130.

The support disc 112 is preferably formed with two pairs of nearly diametrically opposed elongated slots 126, 128 adjacent to each other. The legs 120 and 122 of each torsion spring are pressed together to introduce them into said adjacent slots. As the bezel 116 is moved upwardly as far as it will go toward the support plate 112, the legs 120 and 122 are urged apart by the coils of the torsion spring 144 for engagement with the outer ends of the respective slots 126, 128. When the bezel is in its closed disposition as illustrated in FIG. 5, the crimps 130 will frictionally bind and catch the edges of the slots 126 and 128, whereby the bezel 116 will become securely retained in operative position to prevent it from sliding downwardly into the open disposition as illustrated in FIGURE 6 by the application of a jarring force on the bezel.

The upwardly extending legs 120 and 122 of the diffuser holding means 118 are concealed by the lamp shade 132.

For access, bezel 116 may readily be pulled downward. In this downward movement, as will readily be seen in FIGURE 6, the stops 124 limit the downward movement so that the bezel and its light diffusing member 114 remain on and will not become physically separated from the fixture. In the open disposition of the bezel as illustrated in FIGURE 6, the worker may readily replace the diffuser 114 or perform other servicing. Thereafter, the bezel 116 with its diffusing member 114 are simply pushed back into position.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. In a light fixture comprising a lamp carrying member, a light diffusing member, means connected to at least one of said lamp carrying member and light diffusing member for supporting and limiting the extent of dis-

placement of said light diffusing member with respect to said lamp carrying member, said means including at least one diffuser holding means concealed from view in the operative position of said members, said diffuser holding means including a single continuous length of resilient wire having a pair of legs, spring means joining said legs at one of their ends for urging said legs away from each other, and each of said legs including a series of crimps extending therealong intermediate their ends for frictionally binding said light diffusing member to said lamp carrying members in their operative disposition.

2. In a light fixture comprising a lamp carrying member, a light diffusing member, means connected to at least one of said lamp carrying member and light diffusing member for supporting and limiting the extent of displacement of said light diffusing member with respect to said lamp carrying member, said means including at least one diffuser holding means concealed from view in the operative position of said members, said diffuser holding means including a pair of resiliently biased legs and roughened means on at least one of said legs intermediate the ends of said leg members for frictionally binding said light diffusing member to said lamp carrying members in their operative disposition, and stop means adjacent said end of each of said legs for limiting the extent of displacement of said light diffusing member with respect to said lamp carrying member, said stop means including a cooperating structure on the terminal portions of said legs for interlocking said legs with respect to each other, said roughened means including at least one crimp in said one leg spaced from its ends.

3. In a light fixture comprising a lamp carrying member, a light diffusing member, means for supporting and limiting the extent of displacement of said members, said means including at least one diffuser holding means concealed from view in the operative position of said members, said diffuser holding means including a pair of resiliently biased legs, each leg being coupled to a U-shaped loop by a traction spring, said U-shaped loop limiting the displacement of said light diffusing member with respect to said lamp carrying member, means coupling each traction spring to one of said members, and roughened means on at least one of said legs intermediate the ends of said leg member for frictionally binding the other of said members to said one member.

4. A lighting fixture comprising a lamp carrying member, a bezel member, a first diffuser holding means for connecting one side of said members, a second diffuser holding means for connecting an opposite side of said members, each diffuser holding means including a spring having a pair of legs, means mounting each spring to one of said members, a series of crimps extending along at least one of the legs of each spring intermediate the ends of said leg member for frictionally binding said one member to the other member, and means on the legs of each diffuser

holding means for limiting the extent to which the bezel member may be separated from the lamp carrying member.

5. In a light fixture comprising a lamp carrying member, a light diffusing member, means connected to at least one of said lamp carrying member and light diffusing member for supporting and limiting the extent of displacement of said light diffusing member with respect to said lamp carrying member, said means including at least one diffuser, holding means concealed from view in the operative position of said members, said diffuser holding means including a pair of resiliently biased legs and roughened means on at least one of said legs intermediate the ends of said leg members for frictionally binding said light diffusing member to said lamp carrying members in their operative disposition, said roughened means including at least one crimp in said one leg spaced from its ends, and stop means for limiting the extent of displacement of said light diffusing member with respect to said lamp carrying member, said stop means including a U-shaped portion between and separate and apart from said legs, one arm of said U-shaped portion being joined to an end of one of said legs and the other arm of said U-shaped portion being joined to the end of the other of said legs, the bight of said U-shaped portion being adjacent the free ends of said legs.

6. In a light fixture comprising a lamp carrying member, a light diffusing member, means connected to at least one of said lamp carrying member and light diffusing member for supporting and limiting the extent of displacement of said light diffusing member with respect to said lamp carrying member, said means including at least one diffuser holding means concealed from view in the operative position of said members, said diffuser holding means including a pair of legs, spring means joining said legs at one of their ends for urging said legs away from each other, and at least one of said legs including a series of crimps extending therealong intermediate their ends for frictionally binding said light diffusing member to said lamp carrying members in their operative disposition.

#### References Cited by the Examiner

##### UNITED STATES PATENTS

45	2,701,299	2/1955	Florence	240—78
	2,960,361	11/1960	Boutelle	240—146 X
	3,024,356	3/1962	Florence	240—147

##### FOREIGN PATENTS

50	1,218,748	12/1959	France.
	987,244	3/1965	Great Britain.

NORTON ANSHER, *Primary Examiner*.

55 C. CHALMERS LOGAN II, *Assistant Examiner*.