

Aug. 22, 1961

M. W. SCHWARTZ
RECESSED LIGHTING FIXTURE

2,997,575

Filed July 23, 1954

2 Sheets-Sheet 1

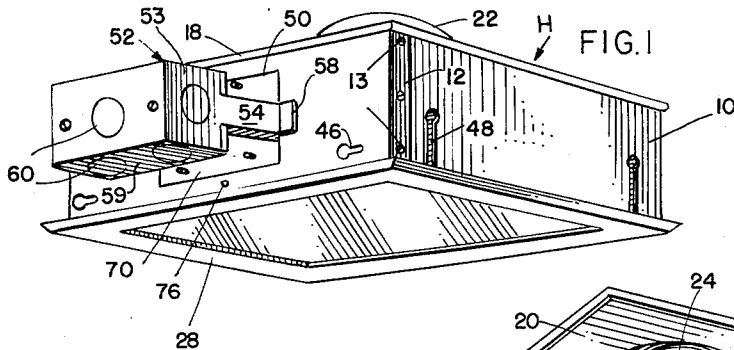


FIG. 2

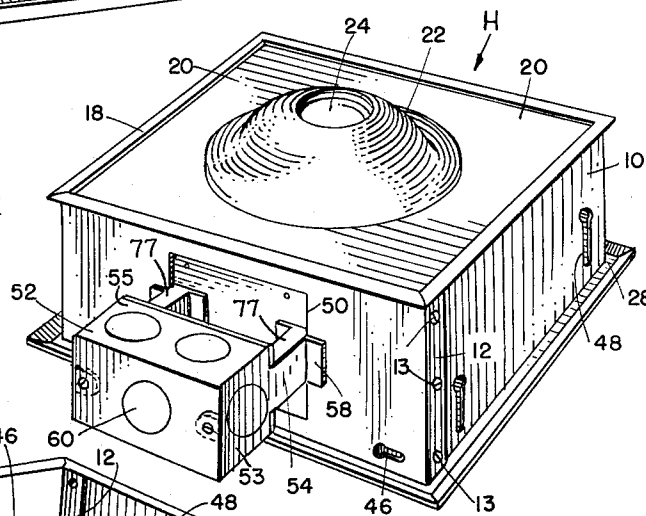
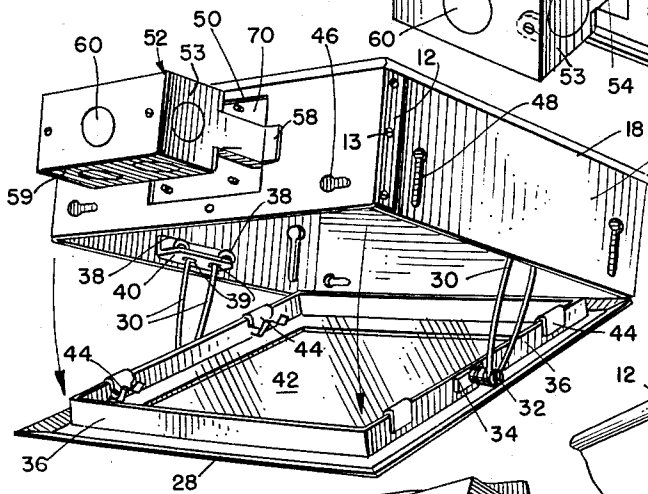


FIG. 3

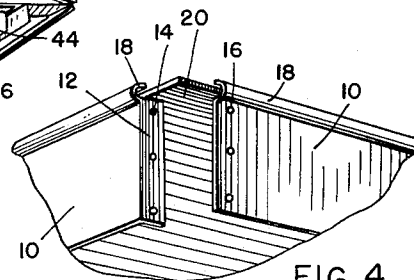


FIG. 4

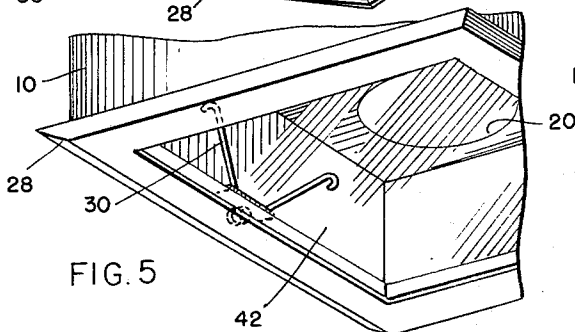


FIG. 5

INVENTOR:

MARTIN W. SCHWARTZ

BY

Kent W. Wornell

ATT'Y

Aug. 22, 1961

M. W. SCHWARTZ

2,997,575

RECESSED LIGHTING FIXTURE

Filed July 23, 1954

2 Sheets-Sheet 2

FIG. 6

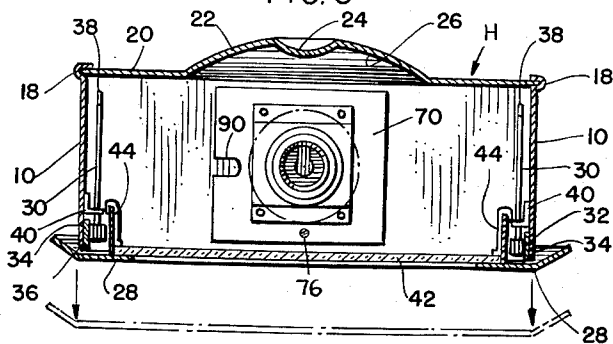


FIG. 7

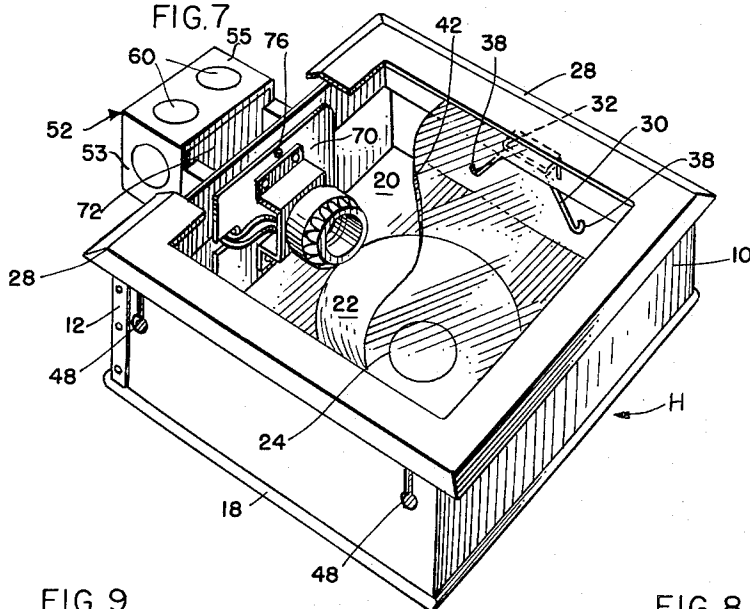


FIG. 9

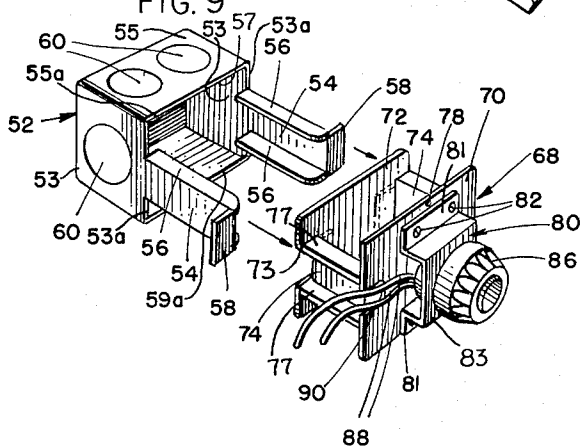
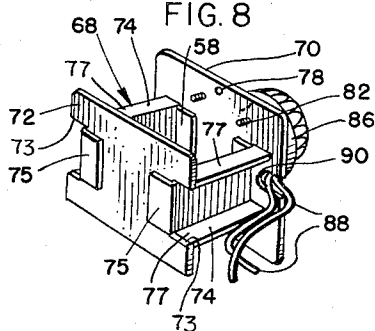


FIG. 8



INVENTOR:

MARTIN W. SCHWARTZ

BY

Kent W. Womell

ATT'Y

1

2,997,575

RECESSED LIGHTING FIXTURE

Martin W. Schwartz, Chicago, Ill., assignor to Markstone Manufacturing Company, a corporation of Illinois

Filed July 23, 1954, Ser. No. 445,301

5 Claims. (Cl. 240-78)

This invention relates to a lighting fixture of the recessed type, and in particular it relates to such a fixture which has a junction box attached in spaced relationship to one of its side walls.

The present fixture is of the type in which a lamp housing may be mounted within a ceiling with its lower margin flush with the ceiling surface, and in which an attached junction box facing an opening in the housing wall for easy access is sufficiently insulated from the interior of the housing to comply with temperature restriction of the National Board of Fire Underwriters.

The principal object of the invention is to provide a recessed lighting fixture with attached junction box in which a double closure assembly for the opening in the housing wall and for the facing side of the junction box provide heat baffle means insulating the interior of the box.

Another object of the invention is to provide a recessed lighting fixture which has a double closure assembly consisting of two spaced closure plates mounted on opposite ends of parallel arms, one plate to close the side of an attached junction box and the other to close an opening in a sidewall of the lamp housing, and in which a bracket mounted on the housing closure plate has a lamp socket supporting portion in spaced relationship to said plate.

Yet another object of the invention is to provide a recessed lighting fixture which has an attached junction box mounted in spaced relationship to an opening in a wall of the lamp housing, and in which mounting arms for the junction box cooperate with the connecting arms to the double closure assembly to provide a circumferentially enclosed wireway through which the lamp lead wires extend from the lamp housing into the junction box.

A further object of the invention is to provide a recessed lighting fixture with a lamp housing having a top plate in which an integral reflector is formed.

Other objects of the invention will appear in the specification and will be apparent from the accompanying drawings in which:

FIG. 1 is a perspective view of a recessed lighting fixture constructed in accordance with the invention, the fixture being viewed from below as installed in a ceiling;

FIG. 2 is a perspective view of the recessed lighting fixture as seen from above;

FIG. 3 is a view similar to FIG. 1 with the diffuser frame and plate swung downwardly away from the lamp housing for access to the interior of the housing;

FIG. 4 is a fragmentary perspective view on an enlarged scale showing the means of attaching a top plate to the sidewall of the housing;

FIG. 5 is a fragmentary perspective view showing the diffuser retaining means in the closed position of the diffuser plate;

FIG. 6 is a central vertical sectional view through the lamp housing, to show a preferred shape of the integral reflector which is formed in the top plate of the housing;

FIG. 7 is a perspective view of the lighting fixture as viewed from the underside, with the fixture inverted, and a portion of the diffuser frame broken away to illustrate the attachment of the junction box and the mounting for the lamp socket;

FIG. 8 is a perspective view of the double closure assembly which provides the heat baffle means for the junction box; and

2

FIG. 9 is an exploded perspective view showing the connection and relationship between the double closure assembly, the junction box, and the junction box mounting arms.

Referring to the drawings in greater detail, the recessed lighting fixture of the present invention includes a lamp housing, indicated generally at H, said housing having an upright marginal wall 10 which is preferably formed of a single strip of metal folded at right angles to form three corners, and leaving a corner open with a projection 12 (FIG. 4) which overlaps the adjacent free end of the metal strip so that fastening means 13 may be inserted through registering openings 14 and 16 in the projection 12 and the adjacent end.

At the upper end of the marginal wall is an inwardly open U-shaped channel 18 in which is seated a top plate 20 which is closely enclosed by the channel when the corner of the marginal wall 10 is fastened. It is obvious that a cylindrical lamp housing might be similarly constructed with a circular top plate 20, and that instead of making the marginal wall 10 in one piece, it may be made in several pieces suitably connected with one another.

To simplify the manufacture and assembly of the lamp housing, and to reduce the cost of the entire unit, top plate 20 has an integral reflector 22 in the form of an outwardly convex central portion which may be spherical, parabolic, or of such other shape as to suitably reflect light from a lamp in the housing H. Preferably integral reflector 22 has a reversely curved, inwardly extending center area 24, and the inner surface of reflector 22 is preferably provided with a reflective coating 26.

A diffuser frame 28 has an upright flange 36 which seats within marginal wall 10, and a pair of hairpin springs 30 secured to studs 32 of brackets 34 at the opposite outer sides of flange 36 have arms which make sliding engagement with slots 39 in angle plates 40 at opposite sides of marginal wall 10 of the housing. The arms of hairpin springs 30 are provided with hooks 38 to prevent accidental disengagement of the springs from the flanges 40. As seen in FIGS. 3 and 5, the spring arms are biased outwardly so that they may hold the diffuser frame firmly against the lower edge of marginal wall 10, as seen in FIG. 5, or may be pulled downwardly, as seen in FIG. 3, to provide access to the interior of the housing. A glass diffuser plate 42 is releasably confined in the diffuser frame by metal clips 44 which are secured to upright flange 36 of the diffuser frame and bear upon the diffuser to hold it in place.

The fixture assembly is mounted in a ceiling in a conventional manner by means of keyhole slots 46 and 48 in marginal wall 10 which may be engaged by any required fasteners to secure the fixture to a conventional plaster frame.

As best seen in FIGS. 2 and 6 to 9, marginal wall 10 of the housing is provided with a rectangular opening 50, and a junction box 52 has side walls 53 provided with integral arms 54 of reduced height which flank opening 50 and have outturned flanges 58 soldered or spot welded to wall 10. Thus, the inner margins 53a of the side walls are spaced from the housing wall; and box 52 also has a top wall 55 and a bottom wall 59 the respective inner margins 55a and 59a of which are spaced from the housing wall so that the box has an open side 57 confronting and spaced from opening 50. The arms 54 are best seen in FIG. 9 to be channel-shaped in cross section, with inwardly extending flanges 56 which project into the area in front of open side 57 of junction box 52. The walls of junction box 52 are provided with the usual partially severed knockouts 60 which may be removed to provide openings through which conduit or

flexible tubing carrying electrical supply wires may enter into the interior of the junction box.

As best seen in FIGS. 8 and 9, a double closure assembly, indicated generally at 68, includes a closure plate 70 which closes the opening 50 in housing wall 10, a junction box closure plate 72 which covers the open side 57 of the junction box, and a pair of connecting channel-shaped arms 74 to the opposite ends of which the closure plates are secured. Channel-shaped arms 74 have outwardly extending flanges 77 which embrace flanges 56 of junction box mounting arms 54; and as seen in FIGS. 8 and 9 junction box closure plate 72 has notches 73 registering with the ends of channels 74 so that the double closure assembly may be slidably mounted upon junction box arms 54 to provide a pair of circumferentially enclosed wireways between the junction box and the housing wall.

At one end of channel arms 74 are inturned ears 58 to which housing closure 70 is spot welded, while junction box closure 72 is clamped between the ends of channel arm flanges 77 and a pair of inturned ears 75 formed on the ends of the channel arms.

A lamp socket bracket 80 has coplanar attaching flanges 81 to receive screws or other fasteners 82 by means of which the socket bracket is attached to housing closure plate 70, and an offset socket carrying plate 83 receives a lamp socket 86 of conventional construction. Lamp socket lead wires 88 extend from lamp socket 86 through a notch 90 which is formed in a margin of housing closure plate 70, in register with one of the wireways, so that the wires 88 may extend through the wireway into the junction box where they are spliced to electric supply leads. Although the frictional interfitting of channel arms 74 with channel arms 54 is normally adequate to prevent accidental displacement of the double closure assembly, the assembly is preferably detachably fastened to peripheral wall 10 by a screw 76 which extends through a hole 78 in housing closure plate 70, and into a hole in peripheral wall 10.

When the double closure assembly is in place as illustrated in FIG. 7 of the drawing, lamp socket 84 is so positioned with respect to the center of dome-like reflector 22 that a lamp bulb of specified size may be screwed into the socket and have the central portion of the bulb directly beneath the reversely curved central area 24 of the reflector.

The arrangement of junction box 52 with the inner margins of its top and bottom walls spaced from the housing wall leaves a space between the connecting arms 74 of closure assembly 68 which is open to the ambient atmosphere for free circulation of air between the housing and the junction box when the closure assembly is in place.

While a preferred construction has been described in some detail, it should be regarded as an example or an illustration rather than as a restriction or limitation of the invention, as various changes in the construction, combination, and arrangement of the parts may be made without departing from the spirit and scope thereof.

I claim:

1. A recessed lighting fixture, comprising: a fixture housing having a continuous upright marginal wall and an integral top plate, there being an opening in said wall; a pair of mounting arms secured to said wall flanking opposite sides of said opening, said arms being perpendicular to the plane of the opening and one of said mounting arms being channel-shaped with inwardly extending flanges; a junction box secured to said arms, said

box having an open side confronting and spaced from the opening; a closure assembly having a junction box closure plate and a housing closure plate mounted at opposite ends of a pair of connecting arms, there being aligned holes in said plates adjacent one of the connecting arms, said connecting arms making a snug sliding fit between the mounting arms, and the connecting arm adjacent said holes being channel-shaped with outwardly extending flanges slidably embraced by the flanges on the channel-shaped mounting arm and cooperating with said channel-shaped mounting arm to form a circumferentially closed wireway which is open to the housing and the junction box through said holes; and a lamp socket in the housing.

2. A recessed lighting fixture, comprising: a fixture housing having a continuous upright marginal wall and an integral top plate, there being an opening in said wall; a pair of mounting arms secured to said wall flanking opposite sides of said opening, said arms having their outer ends spaced outwardly from said opening and being perpendicular to the plane of the opening; a junction box secured to the outer ends of said arms, said box having a top and a bottom wall the inner margins of which are spaced from the housing and defining an open side confronting and spaced from the opening; a closure assembly having a junction box closure plate and a housing closure plate mounted at opposite ends of a pair of connecting arms, there being aligned holes in said plates adjacent one of the connecting arms, said connecting arms making a snug sliding fit between the mounting arms to removably position the housing closure plate closing the opening in the housing wall and the junction box closure plate closing the open side of the junction box, and the connecting arm adjacent said holes having means adjacent said mounting arm forming a circumferentially closed wireway which is open to the housing and the junction box through said holes, the space between said connecting arms and said junction box and housing closure plates being open to the ambient atmosphere; and a lamp socket in the housing.

3. The device of claim 2 in which the lamp socket is mounted on the housing closure plate.

4. The device of claim 2 in which one of the mounting arms is channel-shaped, and the adjacent connecting arm closes the open side of the channel when the closure assembly is in position on the housing.

5. The device of claim 2 in which a bracket is secured to the inner face of the housing closure plate with a mounting plate in spaced relationship to the closure plate, and the lamp socket is supported on the mounting plate.

References Cited in the file of this patent

UNITED STATES PATENTS

1,361,354	Arnett	Dec. 7, 1920
1,473,742	Schaefer	Nov. 13, 1923
2,094,670	Rambusch	Oct. 5, 1937
2,179,161	Rambusch et al.	Nov. 7, 1939
2,226,670	Pratt et al.	Dec. 31, 1940
2,232,276	Schepmoes	Feb. 18, 1941
2,258,354	Doane	Oct. 7, 1941
2,544,708	Margolis	Mar. 13, 1951
2,625,290	Kice et al.	Jan. 13, 1953
2,630,521	Kirlin	Mar. 3, 1953
2,639,368	Pryne	May 19, 1953
2,644,602	Ross	July 7, 1953
2,701,299	Florence	Feb. 1, 1955
2,717,955	Schwemmer et al.	Sept. 13, 1955