Aug. 2, 1966 M. BODIAN 3,264,470

FRAMED DIFFUSER PLATE FOR A LIGHTING FIXTURE

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FIG. 1.

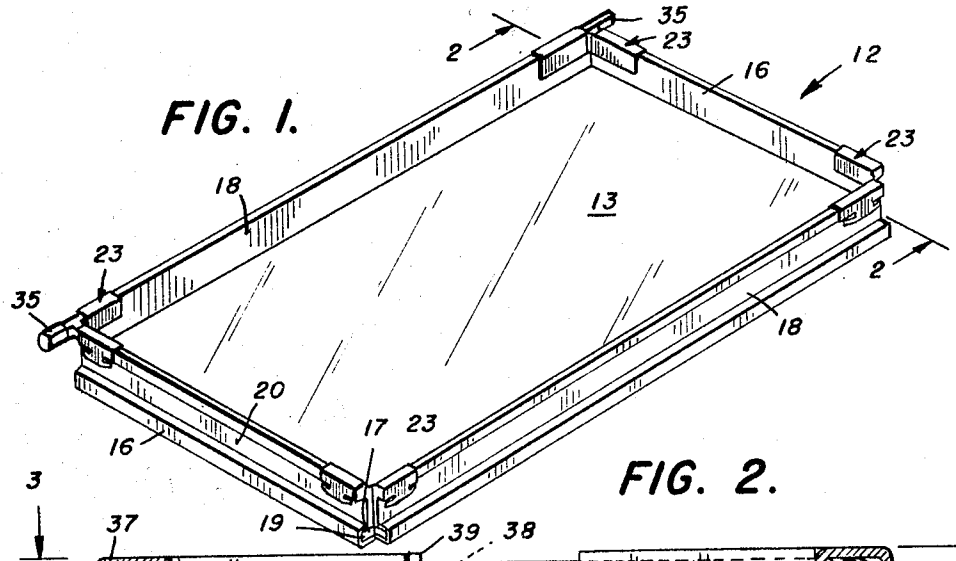


FIG. 2.

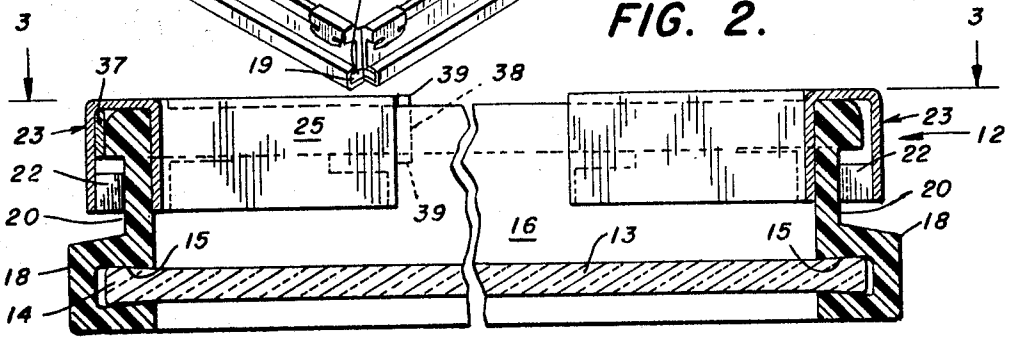


FIG. 3.

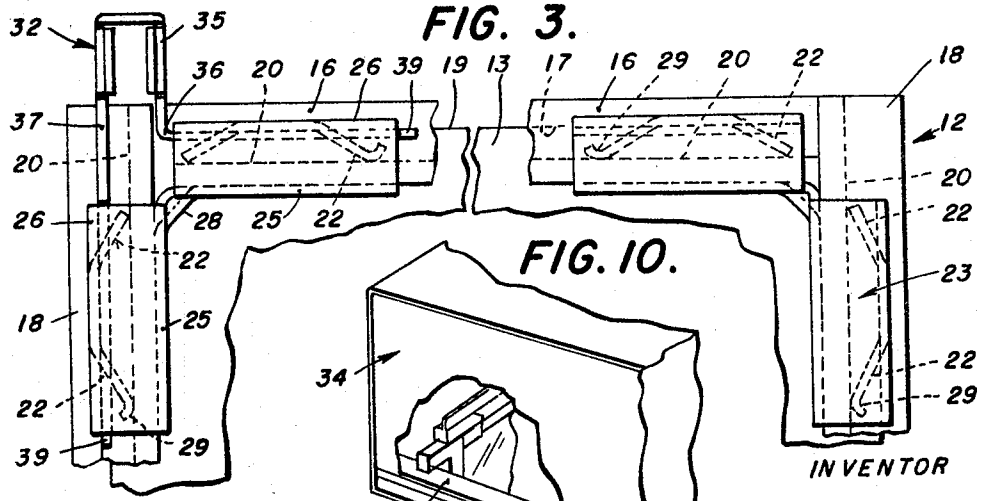
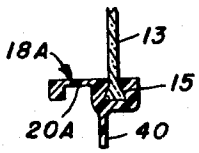


FIG. 10.

FIG. 11.



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FIG. 4.

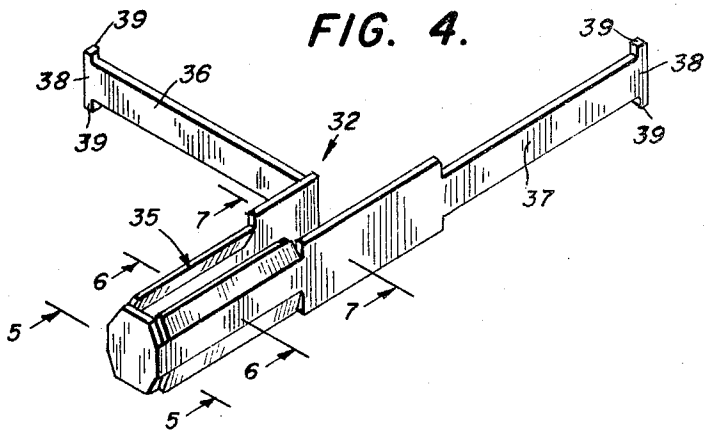


FIG. 5.

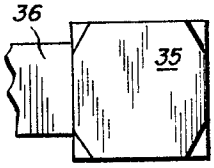


FIG. 6.

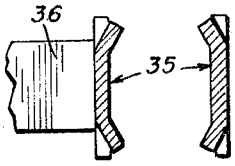


FIG. 7.

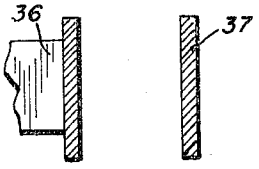


FIG. 8.

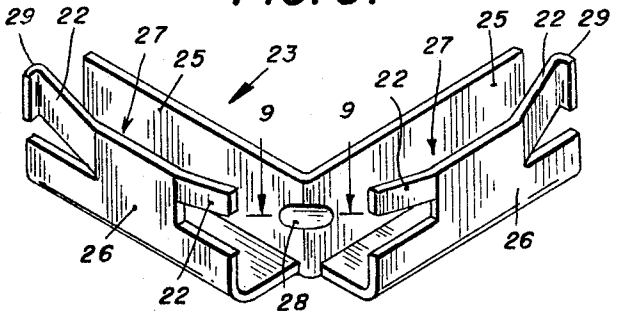
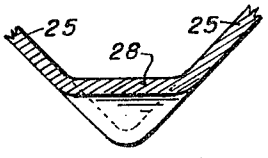


FIG. 9.



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FRAMED DIFFUSER PLATE FOR A LIGHTING FIXTURE

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Filed May 22, 1964, Ser. No. 369,394
4 Claims. (Cl. 240—147)

This invention relates to an assembly forming a rectilinear framed diffuser plate particularly adapted for use as a closure for a lighting fixture.

One object of the invention is to provide means for assembling side strips, end strips and diffuser plate into a framed rectilinear closure of any selected dimensions, for use on a light fixture. Another object is to provide spring tab corner clips, frame side strips, frame end strips, and a rectangular diffuser plate of any selected dimensions in an assembly forming a closure for a ceiling lighting fixture. Another object is to provide an assembly of a diffuser plate of any selected dimensions with end strips, side strips, and removable corner clips to form a rectilinear ceiling light fixture closure. Another object is to provide formed sheet metal pivots removably attached to corner clips in an assembled framed closure for a ceiling light fixture. A still further object is to provide removable spring-tab corner clips for a diffuser plate frame for a ceiling light fixture.

These and other objects are attained by my invention which will be understood from the following description, reference being made to the accompanying drawings in which

FIG. 1 is a perspective view of an assembled framed light fixture diffuser plate;

FIG. 2 is a cross-sectional view taken on the line 2—2 of FIG. 1;

FIG. 3 is a fragmentary top plan view of the frame shown in FIG. 1;

FIG. 4 is a perspective view of a pivot or member removable attachable to corner clips of an assembled frame;

FIG. 5 is a cross-sectional view taken on the line 5—5 of FIG. 4;

FIG. 6 is a cross-sectional view taken on the line 6—6 of FIG. 4;

FIG. 7 is a cross-sectional view taken on the line 7—7 of FIG. 4;

FIG. 8 is a perspective view (open side up) of a corner clip, which holds the end and side strips together;

FIG. 9 is a fragmentary cross-sectional view taken on the line 9—9 of FIG. 8;

FIG. 10 is a fragmentary perspective view showing the framed diffuser plate hingedly mounted on the structural members of the light fixture housing; and

FIG. 11 is a cross-sectional view taken on the line 11—11 of FIG. 10, showing an alternative form of the side framing extrusion members.

Referring to the drawings, a rectangular diffuser plate closure **12** consists of a glass or synthetic plastic diffuser plate **13** of any selected surface pattern or finish which will provide the required diffusion of the light generated in the fixture, and framing members attached to said diffuser plate. The edges or rim portions **14** on the sides of the diffuser plate **13** are preferably slightly thickened or "upset," to form more rigid engagements in the inwardly facing grooves **15** of side framing members **18**. The grooves **15** are preferably slightly tapered or provided with a narrowed opening to better hold the edges of the diffuser plate. The framing members **16** and **18** are preferably elongated extrusions which may be made of plastic material or metal (for example, aluminum), and which are cut to the proper length to provide framing members for a diffuser plate of any selected dimensions.

The plastic extrusion pieces which form the end framing members **16** are provided with an inwardly facing groove **17** which is adapted to receive the end edges **19** of the diffuser plate **13**.

The plastic extrusion pieces which form the side framing members **18** are provided with inwardly facing tapered slots or grooves **15** for receiving the "upset" edges of the diffuser plate **13** as above described. The side framing members **18** and end framing members **16** are also provided with an outwardly facing groove **20** disposed adjacent the edges of said framing members opposite the grooves **15** and **17**, the said outwardly facing grooves **20** being arranged to receive the spring tabs **22** of the corner clips **23** as will be described.

Each corner clip **23** consists of two angularly disposed channel members **27** having a connecting integral side strip **25** common to the two adjoining channel members **27**, and facing inwardly relative to the closure **12**. An integral pressed-out corner brace **28** may be formed in the angular portion of the connecting strip **25** as shown particularly in FIGS. 8 and 9. The outer side strips **25** of each of the channel members **27** of a corner clip **23** are partly severed and formed into an opposed pair of longitudinally disposed spring tabs **22**. To facilitate mounting of the corner tabs over the free edges of the framing members **16** and **18**, one of the tabs **22** away from the corner may be provided with a reverse curvature **29** at its end so that the corner clip **23** may be easily mounted by moving it along the groove **20** in one direction whereas the other tab (without reverse curvature at its end) tends to resist sliding along the groove **20** in the opposite direction.

Pivot members **32** by which the assembled closure **12** may be hingedly mounted with respect to a light fixture casing **34** may be provided at selected adjacent corners. Each pivot member **32** consists of an elongated narrow sheet metal strip bent into a looped or return bend to form a pivot pin **35** having two extended legs, one of which **36** is bent outwardly at right angles to the pivot axis, both legs **36** and **37** being arranged to fit under the outer side strips **26** of the channel portions of a corner clip **23**. The outer ends **38** of the legs **36** and **37** are provided with end tabs **39** which after assembly under the clips **23**, abut the ends of the channel portions and prevent the endwise movement of the pivot pins **35**. The pivot pins **35** may be more or less roughly shaped to cylindrical form (as shown particularly in FIGS. 4, 5 and 6) or left as a squared form (as shown in FIG. 10). The pivot pins **35** may be mounted in holes or notches suitably provided in the end members of a fixture casing, or as shown in FIG. 10, they may merely rest on the upper surface of an end structural member **42** of the fixture casing **34**.

The side framing members may alternatively be provided with an outside rim or flange, as shown in the alternative (cross-sectional) structure of FIG. 11, in which the extruded side framing member **18A** has a tapered groove **15** for receiving the edge of the diffuser plate **13**, an outwardly facing groove **20A** for receiving the spring tabs **22** of the corner clips **23**, and, intermediate these grooves, an outwardly extending flange **40** which serves to make a better seal between the edges of the closure and the edges of the fixture casing.

While a typical rectangular closure has been shown and described, it will be clear that the invention may be applied to any rectilinear closure in which the angles between adjacent sides may be more or less than 90°, with corresponding angles between the two channel pieces forming the angle clips.

The advantages of my assembly will be apparent. Closures of any dimensions may be readily fabricated from the standardized elements, and the closure may be pivotally supported on any selected edge.

The objectives stated in the beginning have been attained.

I claim:

1. A framed closure for a lighting fixture comprising a rectilinear diffuser plate; frame members corresponding in lengths to the straight line edges of said diffuser plate, and enclosing said plate, each of said frame members having a lower inwardly facing groove engaging the edges of said plate and having an upper outwardly facing groove adapted to engage the holding tabs of corner clips; and corner clips fastened over the rims of adjacent end portions of said frame members, each of said clips consisting of two angularly disposed channel-shaped sheet metal members held together by the connecting metal side strip which forms the inner side of said channel members, the outer side strip of said channel members having spring tabs engaged in said upper groove of said frame members.

2. A framed closure for a lighting fixture comprising a rectilinear diffuser plate; frame members corresponding in lengths to the straight line edges of said diffuser plate, and enclosing said plate, each of said frame members having a lower inwardly facing groove engaging the edges of said plate and having an upper outwardly facing groove adapted to engage the holding tabs of corner clips; corner clips fastened over the rims of adjacent end portions of said frame members, each of said clips consisting of two angularly disposed channel-shaped sheet metal members held together by the connecting metal side strip which forms the inner side of said channel members, the outer side strip of said channel members having spring holding tabs engaged in said upper grooves of said frame members; and pivot members attached to adjacent corner clips and extending outwardly therefrom.

3. A framed closure for a lighting fixture comprising a rectilinear diffuser plate; frame members corresponding in lengths to the straight line edges of said diffuser plate, and enclosing said plate, each of said frame members having a lower inwardly facing groove engaging the edges of said plate and having an upper outwardly facing groove adapted to engage the holding tabs of corner clips; corner clips fastened over the rims of adjacent end portions of said frame members, each of said clips consisting of two angularly disposed channel-shaped sheet metal members held together by the connecting metal side strip which forms the inner side of said channel members, the outer side strip of said channel members having spring holding tabs engaged in said upper grooves of said frame members; and pivot members attached to adjacent corner clips and extending outwardly therefrom, said pivot members including a pivot pin and a pair of legs disposed angularly and each leg being engaged between said frame members and one of said angularly disposed channel members of said corner clips.

4. In a framed closure for a lighting fixture having a rectilinear diffuser plate, and frame members corresponding in lengths to the straight line edges of said diffuser plate, and enclosing said end portions of said frame members, said clips consisting of two angularly disposed channel-shaped sheet metal members held together by the connecting metal side strip forming the inner side of said channel members, the outer side strip of each of said channel members having spring holding tabs engaging the sides of said frame members, and a pivot member attached to a corner clip and extending outwardly therefrom, said pivot member comprising a pivot pin and a pair of legs disposed angularly therefrom and adapted to be engaged between said frame members and the channel members of said clips.

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CHARLES R. RHODES, *Assistant Examiner.*