Sept. 2, 1969 H. C. SCHIFFER 3,465,141

LIGHTING FIXTURE HAVING MEANS FOR VENTILATION

Filed March 17, 1966

Fig. 1.

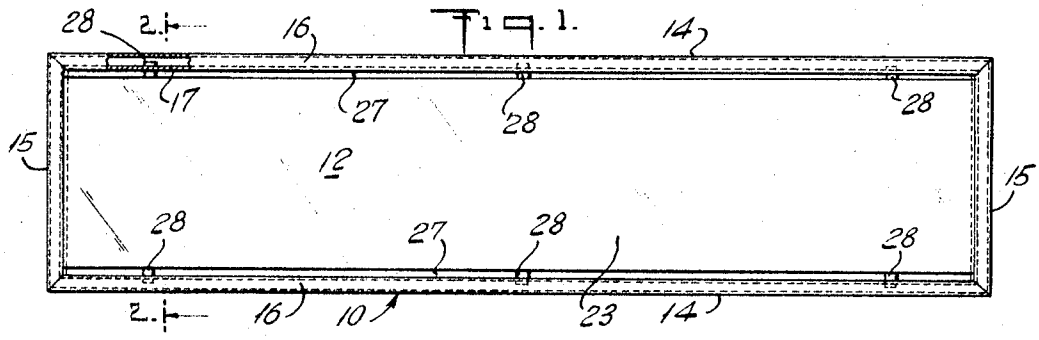


Fig. 2.

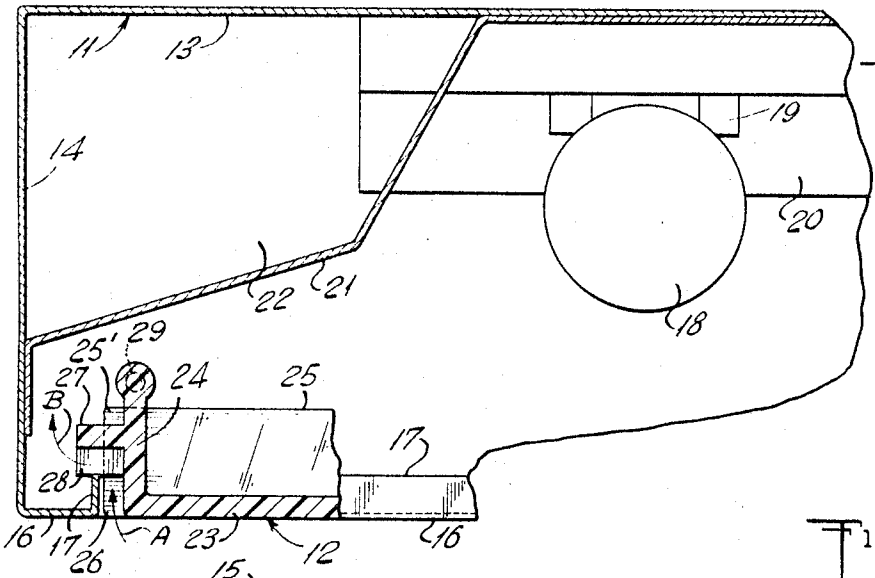
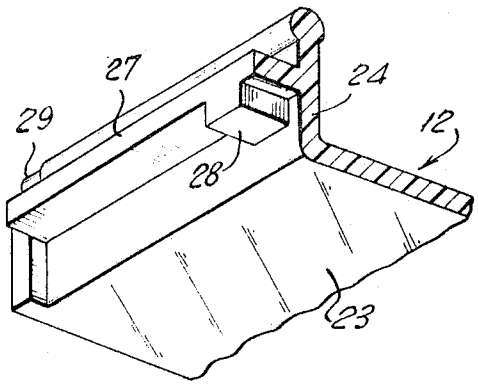


Fig. 4



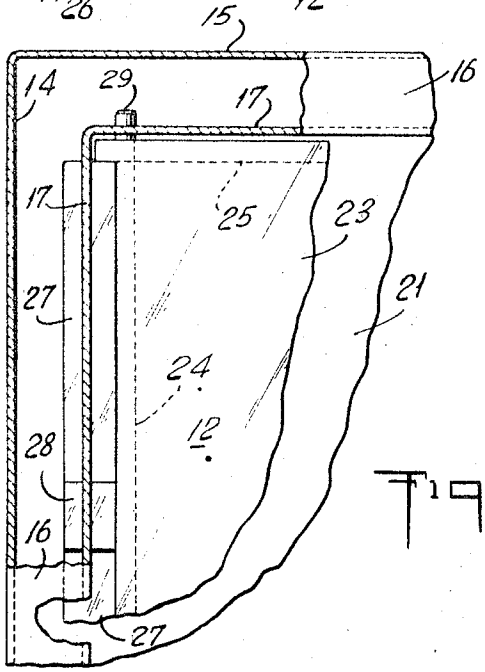


Fig. 3.

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LIGHTING FIXTURE HAVING MEANS FOR VENTILATION

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U.S. Cl. 240—47 1 Claim

ABSTRACT OF THE DISCLOSURE

A lighting fixture has a housing having a top wall from which side and end walls extend downwardly. About the lower periphery of the side and end walls a rim extends substantially perpendicularly inwardly. An upwardly extending ledge extends along the inner edge of at least one pair of opposing rim portions. A light transmitting closure member has a planar bottom wall from which side walls extend upwardly from at least two opposing edges. The side walls of the closure member are parallel to and spaced inwardly from the upwardly extending ledges of the housing and at the upper edge of the closure walls a rib extends outwardly such that it overhangs and is supported by the upwardly extending ledges. Each rib has spacers for centering the closure member and for spacing the rib from the upwardly extending ledge to provide an air passageway.

This invention relates to lighting fixtures and more specifically to a novel and improved lens or light transmitting closure for lighting fixtures such as fluorescent fixtures and the like to provide ventilation therefor.

Ventilation of lighting fixtures embodying closure lenses has presented considerable difficulty in the past, and various structures were devised for the attainment of this end. These prior structures, however, have not been found satisfactory principally because of the added cost of fabrication. This invention overcomes the difficulties heretofore entailed and has as one of its objects the provision of an improved lens structure and cooperating lighting fixture housing which affords excellent ventilation of the fixture without materially affecting the cost of the resultant product.

Another object of the invention resides in the provision of a novel and improved lens for a lighting fixture which is characterized by its simplicity, ease of manufacture and relatively low cost.

Still another object of the invention resides in the provision of a novel and improved air breathing lens for lighting fixtures.

A still further object of the invention resides in the provision of a novel and improved lighting fixture and light transmitting lens therefor which permits the flow of air into and out of the fixture housing.

The above and other objects of the invention will become more apparent from the following description and accompanying drawings forming part of this application.

In the drawings:

FIGURE 1 is a plan view of the improved lens and fixture structure in accordance with the invention.

FIGURE 2 is a fragmentary cross sectional view of FIGURE 1 taken along the line 2—2 thereof.

FIGURE 3 is a fragemntary bottom view of the structure shown in FIGURE 2 with portions broken away.

FIGURE 4 is a fragmentary perspective view of a section of the light transmitting lens in accordance with the invention.

While the lens in accordance with the invention may be utilized with a wide variety of lighting fixtures, both fluorescent and incandescent, for illustrative purposes the lens is shown with a fluorescent lighting fixture containing two fluorescent lamps.

Referring now to the drawings, the lighting fixture generally denoted by the numeral **10** is provided with an outer housing **11** and a cooperating lens **12**. The housing **11** may assume any desired shape or configuration and in the instant embodiment of the invention is generally rectangular and provided with a top wall **13**, side walls **14**, and end walls **15**. The side walls **14** in the instant embodiment of the invention terminate in an inwardly extending wall **16** having an upwardly extending flange **17** along the inner edge thereof as shown more clearly in FIGURE 2. The end walls **15** may be similarly formed to provide a uniform facing or escutcheon about the edge of the fixture which is adapted to be installed within a recessed ceiling.

The fluorescent lamps **18** disposed lengthwise of the fixture **10** are carried by sockets **19** secured by end wall brackets **20** which may be of any desirable configuration. A longitudinal light reflecting member **21** is disposed within the housing and forms a pair of longitudinal wireway channels **22** to accommodate ballasts and other electrical elements required in the operation of the fixture. It is to be understood of course that the particular structure of the fixture described above is for purposes of illustration only, it being merely necessary in the design of a fixture for use with this invention to provide appropriate means about the edge thereof for support of the lens **12** in the manner now to be described.

The lens **12**, which may be formed of any suitable material such as plastic, glass, or the like, has a bottom portion **23** and peripheral upwardly extending side walls **24** and end walls **25**. The bottom or light transmitting portion **23** of the lens may be provided with any suitable type of light distributing elements and may be of any plain or curved configuration, it being merely essential that the lens be provided with a pair of upwardly extending walls such as side or end walls **24** and **25**.

In accordance with the invention, the width of the lens **12** as measured between the outer surfaces of the side walls **24** of the lens is made slightly narrower than the distance between the opposing side wall flanges **17** of the fixture housing **11** to provide an elongated channel **26** on each side of the fixture and between the side wall **24** of the lens and the associated housing flange **17**. Each side wall **24** of the lens **12** is provided with an outwardly extending rib **27** which preferably extends throughout the entire length of the associated side wall. Each rib **27** includes a plurality of spacer elements **28** which may be in the form of blocks secured to or formed integrally with the rib **27**. The members **28**, when the lens is in place in the fixture, rest on the top surfaces of the side wall flanges **17** of the housing, thereby spacing the ribs **27** above the inner edges of the flanges **17** to provide for the free flow of air between the side edges of the lens **12** and the upper edges of the flanges **17** as illustrated by the arrows A and B as shown in FIGURE 2.

In order to insure proper positioning of the lens **12** between the flanges **17** of the housing **11**, the end walls **25** extend beyond the side walls **24** of the lens **12** as shown at **25'**. The small gap illustrated between the extending portions **25'** of the lens and flanges **17** as observed in FIGURE 2 is to allow for expansion of the lens with changes in temperature.

With the structure as described above, the lens may be readily removed from the housing by moving one end of the lens upwardly until the bottom surface clears the top of one of the flanges **17** whereupon the lens may be shifted sidewise to permit removal from the fixture. If desired, the lens **12** may be provided with pins **29** on the

ends of one of the side walls **24** for engagement with the end flanges **17** or other suitable supporting means carried by the housing. With this arrangement, as the side of the lens carrying the pins **29** is raised to shift the lens sidewise, the other side of the lens may be dropped downwardly at which time the pins **29** will engage the flanges to pivotally support the lens for replacement of the lamps **18.**

It is evident from the foregoing that the lighting fixture and cooperating lens may assume any desired configuration and that the air channels may be provided on either the side or the end walls of the lens or may be provided about the entire periphery thereof. Furthermore, it is apparent that the upwardly extending side wall flanges **17** of the housing need not be continuous and any suitable means may be employed to space the outwardly extending lens supporting ribs **27** in such a manner as to provide an adequate air gap between the housing and the lens.

While only one form of the invention has been illustrated and described, it is apparent that alterations, modifications and changes may be made without departing from the true scope and spirit thereof as defined by the appended claim.

I claim:

1. A lighting fixture comprising a housing having a top wall and depending side and end walls, a rim extending about the whole periphery of said side and end walls and extending substantially perpendicularly inwardly from said walls, and an upwardly extending ledge along the inner edge of at least one pair of opposing rim portions, illuminating means in said housing, a light transmitting closure supported by said ledges, said closure

having a bottom wall and side walls extending upwardly from at least two opposing edges of said bottom wall, said side walls of said closure being parallel to and spaced inwardly from said upwardly extending ledges to form a gap therebetween, outwardly extending ribs carried by the last said upwardly extending walls and spaced upwardly from the bottom wall of said closure, said ribs overlying said ledges when said closure is in place in said housing, a first spacer at each end of each rib said spacers extending between said ledges and said ribs to hold said ribs in spaced relationship to said ledges to provide for the free flow of air between said closure and said ledges, and a second spacer at each end of each rib said second spacer being substantially perpendicular to said rib and to said side walls of said closure such that by means of said second spacers the closure is positioned substantially centrally within the opening bounded by said rim.

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