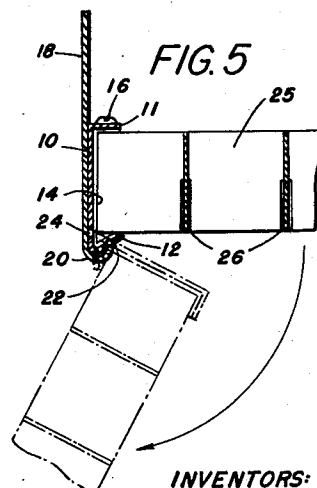
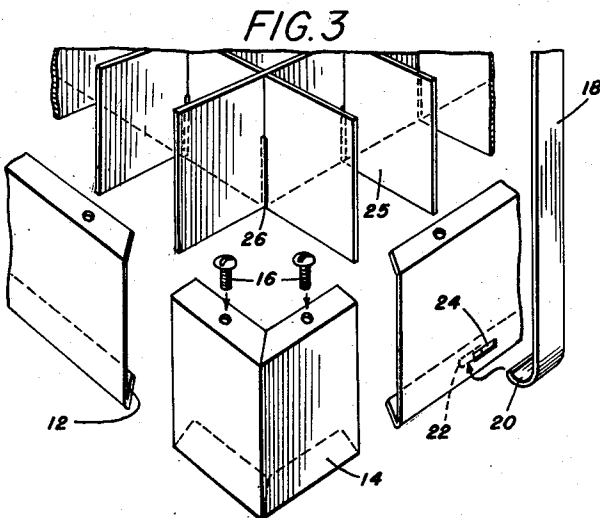
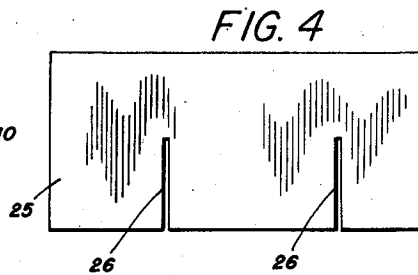
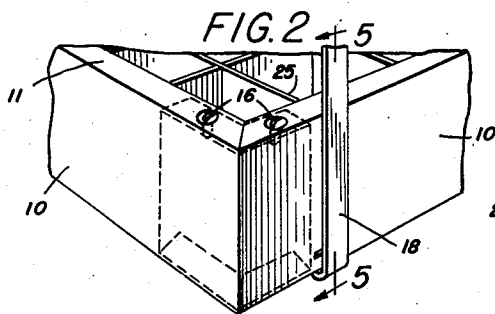
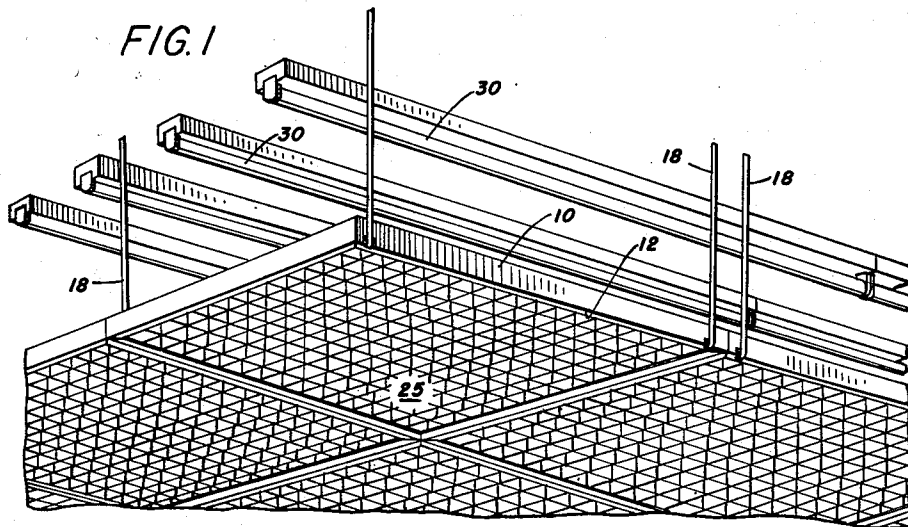


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LIGHTING FIXTURE LOUVER

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LIGHTING FIXTURE LOUVER

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5 Claims. (Cl. 240—9)

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This invention relates in general to the reflection and diffusion of light from lighting fixtures and is more particularly described in connection with electric lighting fixtures of the tubular lamp type.

In present lighting practice, glare may be avoided and light directed particularly in the places or direction desired by providing a grid or louver interposed between the lamps and the surface or space to be illuminated.

These grids or louvers being located without protection soon become soiled, dirty and inefficient. Because of the many cells, they are difficult and expensive to clean and are objectionable for their weight and bulky construction.

The present invention overcomes these difficulties by providing a light-weight metal lower frame of aluminum or similar light, strong metal and inserting a disposable paper louver of highly calendered or reflecting paper to which dirt does not readily adhere and very thin so that it is of very light weight. The louver is made of paper strips similarly slitted from one edge thereof and oppositely inserted together in egg crate style, collapsible flatly for shipment and storage.

These paper strips should be made flame-proof and as nearly fireproof as possible so that they will not burn readily and will pass underwriters' requirements.

An important object of the invention is to provide a replaceable louver grid of light-weight reflecting material such as paper which may be easily inserted within and removed from a marginal frame.

A further object of the invention is to provide a light-weight marginal frame which may be swung downwardly about one side thereof for inserting or removing the louver grid.

Still a further object of the invention is to provide a replaceable louver grid for a frame having supporting strips curved at the ends to mount the entire louver for hinging movement.

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 louvers in accordance with this invention supported below a number of tubular lighting fixtures;

Fig. 2 is a perspective view of the corner of one louver and the support therefor;

Fig. 3 is an exploded perspective view of the parts shown in Fig. 2;

Fig. 4 is a side view of one end of a louver strip; and Fig. 5 is a sectional view illustrating the hinging action of the louver and its support.

In carrying out this invention, a frame preferably rectangular in form, is made up of a metal strip or strips 10 having a straight flange 11 at the top and an inwardly and upwardly inclined flange 12 at the bottom. At each corner or at the connected corners an angular corner piece 14 of similar cross section is provided which fits within the strips 10 and is secured to them in any suitable manner as by fastening screws 16.

This frame is supported in any suitable manner preferably by thin metal strips 18 secured to the ceiling or any other support and having bent upwardly curved hinges 20 at the lower end. Each hinge is adapted to engage in a slot 22 in the bottom flange portion 12 and when in this position, the strip 18 will lie closely adjacent the outer face of the frame to occupy as little space and to be as unobjectionable as possible. In the outer face of the frame is a slot 24 opposite the slot 22 and in such a position that when the frame is swung downwardly about the curved hinge 20, the inner extremity of the hinge will project through the slot 24 thereby firmly anchoring the frame in its hinged position as shown in Fig. 5.

The louver grid comprises a plurality of similar strips 25 of thin flat material such as paper, plastic, fiber, and the like, which is relatively inexpensive and may therefore be used for a short time if desired, and then when the material becomes dirty, they may be thrown away or otherwise disposed of and other similar clean units installed. Each strip has slots 26 cut inwardly from one edge thereto at spaced distances apart and extending about halfway through the strip so that when a number of strips are placed parallel and corresponding strips are inverted and placed at right angles, the strips will interengage and will form a louver grid of many cells, depending upon the length of the strips and the spacing of the slots therein.

In placing flexible paper louvers in the frame, it is not necessary to disassemble the frame at the corners as the strips are sufficiently resilient so that they may be inserted and the entire louver unit placed in position without dismantling the frame. The lower edges of the louver grid are supported upon the upturned flange 12 which reduces and minimizes the portion of the frame which is visible from the under side thereof, thus making the entire enclosed grid unit neat and attractive in appearance and free from heavy shadow lines.

This louver unit is preferably placed at a distance below lamps 30 which may be supported by

the ceiling or any other suitable support and although electric tubular lamps are shown, incandescent lamps and other types of lighting fixtures may be used, the louvers operating in the same manner.

While a preferred construction has been described in some detail, it should be regarded by way of illustration or example and not as a restriction or limitation of the invention as various changes may be made in the construction, combination and arrangement of the parts without departing from the spirit and scope of the invention.

We claim:

1. A lighting fixture louver, comprising a horizontal marginal supporting frame having a flange at the lower edge turned inwardly and angularly upward toward the inside of the frame, a paper grid having rectangular cells formed by paper strips intersecting each other at right angles and the ends of the strips engaging the inwardly turned edges of the frame flange and means to support the frame at the edges thereof for downward hinging movement, said means comprising corresponding slots in the flange and the wall of the marginal frame, and supporting strips each having a curved hinge at the bottom adapted normally to lie flatly against the outer face of the frame to cover the slot therein and the curved hinge extremity of the supporting strip engaging in the slot in the flange allowing the frame to swing downwardly about the supporting strips at one side thereof with the curved hinges engaging in the corresponding slots in the flange and in the wall of the frame.

2. A lighting fixture louver, comprising a horizontal rigid frame of metal having inwardly and reversely turned upward flanges with slots in the flanges and corresponding slots in the outer walls of the frame, a disposable louver grid of flexible strip material having light reflecting and directing cells and the ends of the strips resting upon the flanges within the frame, and means to support the frame for downward hinging movement comprising hinging strips supported above the frame and having curved lower hook ends adapted to engage in the slots of the flange for holding the frame in a horizontal position and the hook ends one side forming hinges about which the frame may be swung downwardly for inserting and removing grids, the hook ends also engaging in the slot in the outer wall of the frame.

3. A lighting fixture louver, comprising foldable grids composed of slotted paper strips arranged transversely when extended and may be foldable flatly together, a supporting frame having a lower flange turned inwardly and reversely upward to engage the bottoms of the extremities of the grid strips and an upper flange to extend inwardly over the tops of the ends of the strips, the ends of the strips being flexible for removably inserting them in place between the flanges of the frame, and means for supporting the frame in horizontal position, the supporting means at one side having hooks at the lower ends about which the frame is hinged to swing downwardly.

4. A lighting fixture louver, comprising a frame made of connected strips having side flanges one turned inwardly and the other turned inwardly and reversely upward to provide a thin outer edge, an angle brace and means securing it to the strips at the corners thereof for holding the frame together, a disposable lighting grid of flexible strips of reflecting material slotted from one edge and the strips intersecting to provide light reflecting and directing cells, the ends of the strips being insertable within the frame between the flanges and the grid being supported by the reversely turned flange, and means comprising straps with hook ends engaging in the under side of the flanges for mounting the frame to swing downwardly about one edge thereof so that the ends of the flexible grid units may be inserted and removed into and from the assembled frame.

5. The combination with a plurality of lighting fixtures supported at a substantially common horizontal level, of a plurality of louvers and means for supporting them at a spaced distance below the fixtures, each louver comprising a frame and means individually supporting it in close spaced relation to an adjacent frame, each frame having a lower flange turned inwardly and reversely upward to present a thin lower edge, a removable grid insertable within the frame and supported by the flange, the grid comprising a plurality of strips intersecting each other to form rectangular cells with flexible extremities adapted to be flexed to insert and remove the grid from within the frame, the louvers together engaging and directing illuminating rays from the lighting fixtures at a predetermined space below the lighting fixtures for guiding and directing illumination downwardly therefrom, and the supporting means comprising depending straps with hook ends and the frame having slots engaged by the hook ends and upon which each frame may be swung downwardly.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,804,719	Timmons	Oct. 17, 1929
1,956,773	Pfueger	May 1, 1934
1,962,648	Pfueger	June 12, 1934
2,280,534	Masterson et al.	Nov. 9, 1940
2,345,947	Parks	Apr. 4, 1944

FOREIGN PATENTS

Number	Country	Date
319,224	Germany	Mar. 6, 1920
211,796	Great Britain	Mar. 11, 1924
308,625	Great Britain	Mar. 22, 1929
587,744	Great Britain	May 5, 1947

OTHER REFERENCES

Publication "Benjamin Shedule 2-F," pages 312 and 338, published January 15, 1941. A copy may be found in Division 65 of this Office. 240-78 L. D. T.

Publication "Benjamin 'Sky-Glo' Louver System"; pp. 502 and 509; issued May 17, 1948; copy in Div. 65.