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2,485,133

FLUORESCENT LIGHT SCREEN

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2 Sheets-Sheet 1

Fig. 1

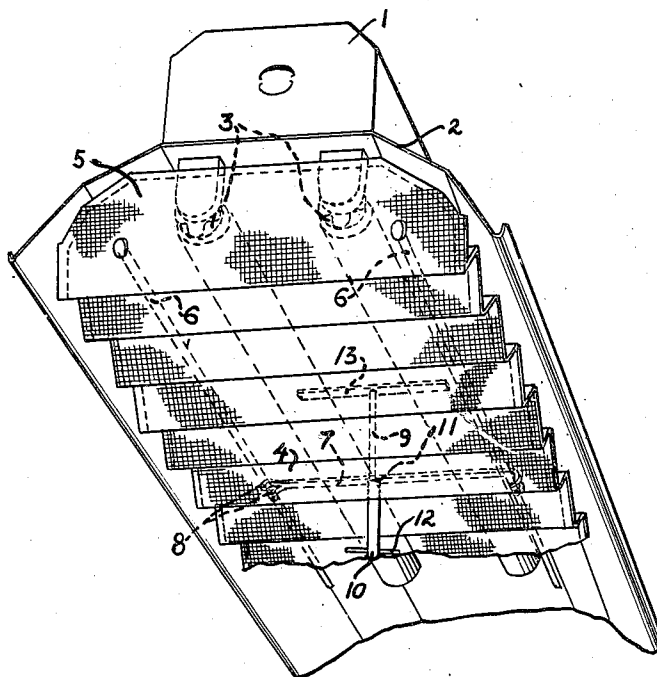
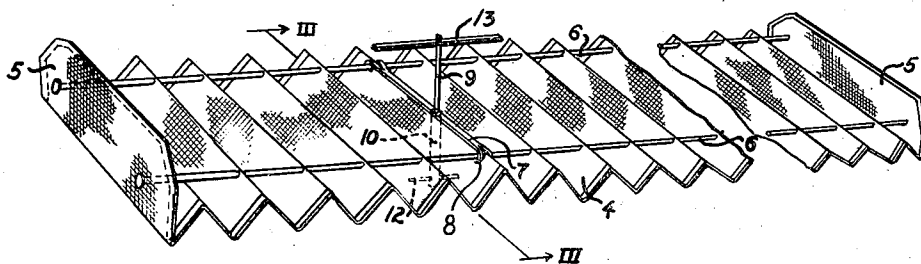


Fig. 2



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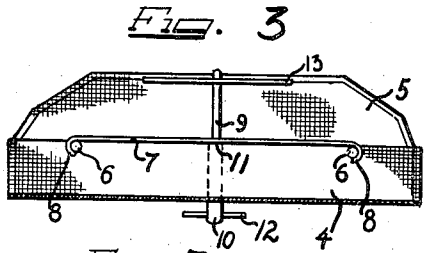
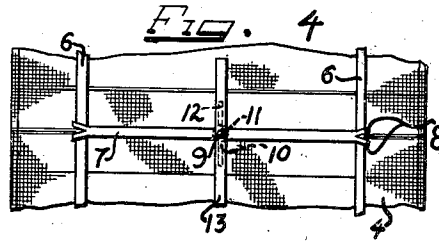
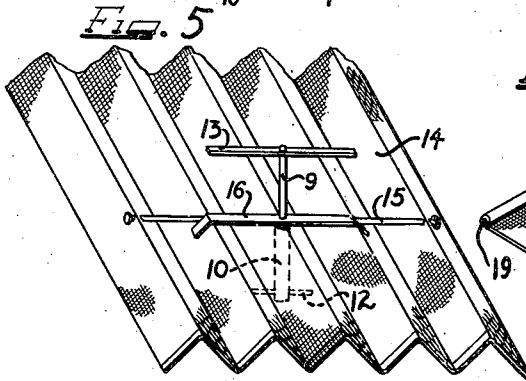
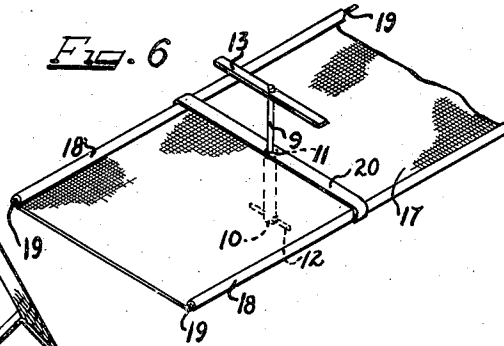
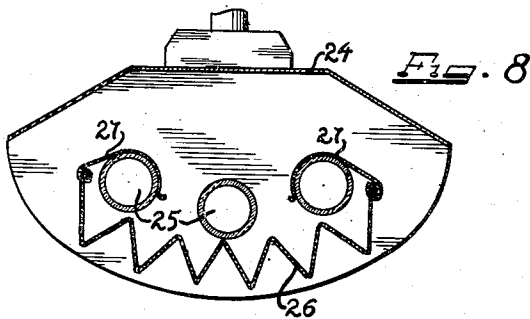
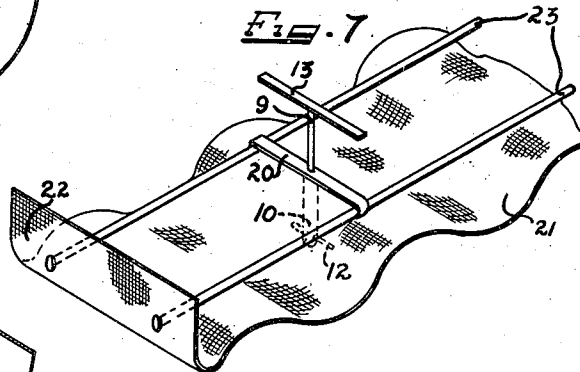
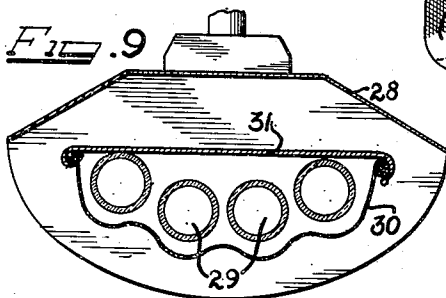
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FLUORESCENT LIGHT SCREEN

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2 Sheets-Sheet 2



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FLUORESCENT LIGHT SCREEN

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8 Claims. (Cl. 240—51.11)

1

In the use of fluorescent lights, the light tubes are usually exposed so that when they are lighted they produce a considerable glare accompanied by intermittent light flickerings, which are not only annoying, but which also have a bad effect on the eyes of certain individuals so that they cannot comfortably work or read by means of the ordinary exposed types of fluorescent light tubes in fixtures or lamps.

The present invention has been devised to provide suitable and efficient wire mesh or apertured light screens, constructed of a wire screening or the like which may be either accordion pleated, scalloped, or in some cases plain. The screen forming material may be suitably painted or enameled to assist in the dissemination and filtering of light through the screen with a minimum loss of luminosity when the wire mesh screens are supported directly on the fluorescent tubes of a light fixture or lamp. With the use of the improved wire mesh screens supported directly on the fluorescent light tubes, the effect of the quivering or flickering motions occurring in fluorescent light tubes, and the direct glare from said tubes is substantially eliminated, with very little loss of light so that persons who usually are affected by the flickering and glare produced when fluorescent light tubes are used may work or read by means of fluorescent lighting without being subjected to objectionable disturbances and light glare such as encountered by the use of exposed fluorescent light tubes.

It is an object of this invention to provide an improved and simplified form of a wire mesh or perforated fluorescent fixture or light screen, and more particularly provide a mesh screen which may be quickly and conveniently supported directly on the fluorescent light tubes of fixtures or lamps without necessitating any alternations in or attachments to the fixtures or lamps.

It is also an object of this invention to provide an improved and simplified form of a fluorescent light screen constructed of a wire mesh material and provided with means whereby the screen may be readily attached to or removed from supporting engagement with fluorescent tubes of light fixtures or lamps.

A further object of the invention is the provision of an effective and inexpensive type of an apertured light disseminating shade of either predetermined scalloped or plain construction and having means whereby the shade may be easily and quickly supported in position without requiring any alternations in or attachments to the fixtures or lamps carrying the fluorescent tubes.

2

It is furthermore an object of this invention to provide a corrugated wire mesh screen adapted for securement directly on the fluorescent light tubes of fluorescent fixtures or lamps.

Still another object of the invention is the provision of pleated or scalloped finely apertured light screens equipped with means for readily supporting or hanging the screens directly on the fluorescent tubes of light fixtures and lamps.

The invention also includes the object of providing a transversely or longitudinally pleated or scalloped wire mesh light screen adapted to be conveniently supported and carried beneath the fluorescent tubes of fluorescent light fixtures or lamps whereby a person using the screened fluorescent lights is not subjected to tube glare or flickerings.

It is an important object of this invention to provide an efficient type of wire mesh accordion pleated screen adapted for direct support on fluorescent light tubes by manually accessible means independent of contact with the fixtures in which the tubes are supported.

Other objects and features of the invention will be more fully apparent from the disclosures in the specification and accompanying drawings, which illustrate preferred embodiments thereof.

In the drawings:

Figure 1 is a fragmentary isometric view of a fluorescent light ceiling fixture having a light screen, embodying the principles of this invention, removably supported on the tubes of the fixture;

Figure 2 is a fragmentary isometric view of the light screen removed from the fixture and illustrating the supporting and reinforcing means for the light screen;

Figure 3 is a transverse sectional view of the light screen taken on line III—III of Figure 2;

Figure 4 is a fragmentary top plan view of one of the screen supporting mechanisms connected with a screen brace member;

Figure 5 is a fragmentary isometric view of the upper or inner side of a modified form of fluorescent light screen in which the pleats run longitudinally of the screen;

Figure 6 is a fragmentary isometric view of the upper or inner side of another modified form of fluorescent light screen constructed of flat wire mesh;

Figure 7 is a fragmentary isometric view of the inner side of another modified form of a scalloped fluorescent fixture light screen;

Figure 8 is a transverse sectional view of a three-tube fluorescent light fixture having a lon-

3

gitudinal pleated light screen provided with modified supporting members for engaging certain of the light tubes to support the screen in position;

Figure 9 is a transverse sectional view of a four-tube fluorescent light fixture having a scalloped or sinuous type of wire mesh or apertured light screen supported on the tubes by another modified type of support.

As shown in the drawings:

The reference numeral 1 indicates a fluorescent light ceiling fixture including a downwardly directed reflector 2. The fixture has two fluorescent light tubes 3 removably supported longitudinally therein. For the purpose of reducing the glare and the vibratory impulses frequently produced in fluorescent light tubes, an improved fluorescent fixture light screen is the primary object of this invention. The improved screen is of a light weight and effective construction and is adapted to be easily and quickly supported on the fluorescent light tubes of the fixture without requiring any modifications or changes in the fixture.

The improved fluorescent light screen comprises a screen body 4 constructed out of light weight wire mesh or of a material which is closely perforated. The wire mesh body 4 is corrugated or accordion pleated, transversely of the body, and the two ends of the screen body are bent upwardly to provide walls or end shields 5. The wire screen or perforated screen body is coated with a selected type of luminous paint or enamel, preferably of a light color. The pleated wire screen has the marginal edges thereof bent over and formed into finishing hems. If preferred, the edges may be covered in any suitable manner to provide a finished construction.

For the purpose of reinforcing the wire mesh pleated screen, a pair of reinforcing rods or bars 6 are spaced longitudinally on the inner side of the wire mesh screen and are secured to the transverse ridges of the pleats so that the pleats and the reinforcing rods form a rigid structure. The ends of the reinforcing rods 6 project through and are rigidly secured to the end shields 5 of the screen, as illustrated in Figure 2.

Quick attachable and demountable mechanisms are provided on the pleated screen for the purpose of easily associating a wire mesh pleated screen with the fluorescent light fixture 1 without necessitating any modification or changes in the fixture. The supporting mechanisms for the screen are spaced at desired intervals along the length of the screen and each of said mechanisms comprises a transverse bar 7, the ends of which are split or bifurcated to provide hooked prongs or fingers 8 which are rigidly clamped around the parallel reinforcing bars 6 to secure the supporting mechanism in place. Rotatably projecting through an opening in the middle portion of the transverse supporting bar 7 is an upper reduced shaft section 9 which is integrally formed on one end of an enlarged lower shaft section 10 of an operating shaft. The shaft includes a supporting shoulder 11 where the two shaft sections 9 and 10 join one another. Securely engaged diametrically through the lower portion of the lower shaft section 10 is the handle 12 by means of which the shaft of the supporting mechanism may be rotated. Rigidly secured on the upper end of the upper shaft section 9 is a head or cross bar 13 which together with the operating shaft forms a T-member which is rotatable by means of the handle 12 so that the cross bar 13 may be rotated from the bottom or exposed side of the

4

wire mesh screen to permit the T-head to be positioned parallel to the fluorescent fixture light tubes 3 to permit the cross bar to be projected upwardly between the tubes. After the cross bar 13 has been projected upwardly between the tubes, the shaft is rotated to rotate the cross bar 13 so that the ends of the bar will be engaged transversely across the top portions of the parallel fluorescent tube 3 to rest thereon. The wire mesh screen is thus supported in position to close the lower portion of the fixture reflector 2 without any direct contact with the fluorescent light fixture 1 or the reflector 2 forming a part thereof.

When the supporting units are engaged in position as described to support a wire mesh screen on the fluorescent tubes, the body portion of the screen is permitted to seat on the shoulders 11 of the lower sections 10 of the shafts. Two or more supporting units may be connected with the pleated wire mesh screen, depending upon the length of the fixture and the screen which is to be supported on the fixture tubes 3. When a pleated wire mesh screen is engaged in a fluorescent light fixture as illustrated in Figure 1, the end shields 5 project upwardly into the reflector 2 to the outside of the ends of the fluorescent tubes 3 to enclose the ends of said tubes.

When it is desired to remove the wire mesh screen from a fluorescent light fixture for the purpose of either cleaning the screen or for the purpose of removing the fluorescent light tubes from the fixture, it is only necessary to rotate the shafts of the supporting units by means of the handles 12 to permit the supporting cross bars 13 to be positioned parallel to the tubes thereby permitting the cross bars to be drawn downwardly between the tubes. The corrugated or pleated screen may be easily remounted by merely projecting the cross heads 13 upwardly between the tubes and then rotating the shafts to permit the cross bars 13 to rest on the tubes and thereby support the screen in position.

Figure 5 illustrates a modified form of wire mesh or apertured fluorescent light fixture screen consisting of a screen body 14 which may be constructed out of wire mesh or apertured material. The screen body 14 is accordion pleated or corrugated to provide a fluorescent fixture shade or screen in which the pleats run longitudinally of the fixture instead of transversely. Rigidly secured to the ridges on the inner side of the screen body 14 are a plurality of spaced supporting units each of which comprises a supporting bar 15 having an apertured bracket piece 16 molded or otherwise rigidly secured to one side thereof. The bracket piece 16 has integral deflected end pieces which are secured to two of the inclined walls forming the body pleats. A rotatable handle-operated supporting mechanism is associated with each of the supporting bracket pieces 16 and is constructed similar to the arrangement illustrated in Figures 1 to 4. It will thus be noted that the modified form of longitudinally pleated wire mesh screen may be easily and quickly engaged for support on the fluorescent light tubes of a fixture.

Figure 6 illustrates a fragmentary portion of another modified form of fluorescent fixture light screen comprising a flat body 17 constructed of wire mesh or closely perforated material. The body 17 is flat and has the longitudinal margins thereof curled to form reinforcing beads, or sleeves 18 having reinforcing rods or bars 19 engaged therein to stiffen the body structure.

For the purpose of quickly and easily support-

5

ing the modified form of fluorescent light screen on the fluorescent tubes of a fluorescent light fixture, the body 17 is provided with a plurality of spaced supporting units each of which consists of a transverse bar 20, the ends of which are curled or hook-shaped and are rigidly engaged around the rolled beads or sleeves 18 forming the longitudinal edges of the screen body 17. Rotatably projecting through the transverse bar 20 is a rotatable supporting means similar to that illustrated in Figures 1 to 4 inclusive and comprising members 9 to 13 inclusive. It will thus be noted that the modified form of light screen shown in Figure 6 may be easily and quickly mounted in position within a fluorescent light fixture suspended from the fluorescent tubes.

Figure 7 illustrates a fragmentary portion of another modified form of fluorescent fixture light screen comprising a body 21 constructed of wire screening or closely perforated material which is scalloped or waved to produce a sinuous or corrugated effect. The ends of the body portion 21 are turned upwardly to provide end walls 22. Rigidly secured at spaced intervals to the inner side of the body section 21, by spot welding or other suitable means, are a pair of reinforcing bars or rods 23, the ends of which are rigidly secured in the end walls 22 of the light screen. Secured transversely upon the reinforcing bars 23 are a plurality of spaced supporting units of the type illustrated in Figure 6, thereby providing an arrangement whereby the scalloped wire screen may be quickly and easily mounted to be suspended from the tubes of an electric light fixture.

Figure 8 is a transverse sectional view illustrating still another modified form of fluorescent light screen for use in connection with a three-tube fluorescent light fixture or with fluorescent light fixtures of more than three light tubes. This modified form of light fixture is shown associated with a fluorescent light fixture 24 having three longitudinally disposed fluorescent light tubes 25 removably supported therein.

The modified form of light screen comprises a longitudinally corrugated or pleated wire mesh body 26, the longitudinal margins of which are rolled to provide reinforcing beads having reinforcing rods or bars engaged therein to strengthen the screen similar to the arrangement illustrated in Figure 6. Pivotally supported at spaced intervals on each longitudinal margin of the screen body 26 are a plurality of supporting hooks 27 which are adapted to be engaged transversely across the two outermost tubes to hold the screen supported in position free from contact with the fluorescent light fixture.

Figure 9 illustrates another modified form of fluorescent light screen shown supported in a fluorescent light fixture 28 equipped with four fluorescent light tubes 29. The fluorescent light screen shown in Figure 9 may be used in connection with fixtures carrying more or less than the four tubes illustrated. This modified form of fluorescent light screen consists of a longitudinally scalloped or waved wire mesh body 30 which may be readily curved or shaped to engage beneath the tubes 29. The longitudinal margins of the body 30 are rolled or hemmed to enclose reinforcing rods or bars.

For the purpose of supporting the scalloped type of fluorescent light screen on a fixture of the type shown in Figure 9, one margin of the screen body 30 has pivotally supported at spaced intervals thereon a plurality of supporting bars or brackets 31. The opposite ends of the sup-

6

porting bars 31 are curved or hook-shaped to permit the same to be removably engaged or latched around the bead on the opposite side of the light screen, after the supporting bars have been engaged over the two uppermost tubes as illustrated in Figure 9. If desired the latching ends of the supporting bars 31 may be equipped with any suitable type of cam latch members in place of the hooks.

From the foregoing description it will be noted that the present invention provides an improved type of light screen for use in connection with fluorescent light fixtures, and that provision is made whereby the wire mesh screen may be quickly and simply supported in place suspended from the fluorescent light tubes out of direct contact with the fluorescent light fixture. The improved arrangement permits the screen to be readily removed so that the light screen may be cleaned or refinished. The easy mounting and removal of the screen permits access to be had to the fluorescent light tubes.

The improved fluorescent light screens are preferably constructed out of wire mesh or if preferred a light weight closely perforated material may be used in the construction. The perforations in the screen and the pleats or scallops provide an arrangement whereby the light from the fluorescent light tubes is evenly distributed and disseminated thereby eliminating glare and also providing an arrangement whereby the agitations or flickerings which frequently occur within fluorescent light tubes is obscured so that fluorescent light fixtures can be used with a greater degree of ease and comfort, and without the ordinary objections which have been encountered in the use of fluorescent light fixtures in which the light tubes are exposed.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention, and it is, therefore, not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. The combination with a fluorescent light fixture and the fluorescent light tubes thereof, of a light disseminating screen comprising a corrugated wire mesh body section, and means for removably supporting the body section on the fluorescent light tubes.

2. In combination with a fluorescent light fixture including fluorescent light tubes, a light disseminating unit comprising an accordion pleated wire mesh screen, means secured thereto for reinforcing the screen, and supporting members for engagement with the fluorescent light tubes to hold the screen suspended in position.

3. In a fluorescent light fixture wherein fluorescent light tubes are removably supported, a light disseminating unit adapted to be suspended from the fluorescent light tubes and comprising a corrugated screen body section, reinforcing members secured thereto, and supporting units connected with the reinforcing members for engaging the fluorescent light tubes to hold the screen suspended in position in the fixture and free from contact therewith.

4. A fluorescent light fixture screen mechanism comprising a corrugated screen body section, reinforcing members secured thereto, cross bars connected to the reinforcing members, shafts projecting through the screen and through the cross bars, handles on said shafts, and cross members

on said shafts adapted to be projected upwardly between the fluorescent light tubes and rotated by means of the handles into position to engage the fluorescent light tubes to support the screen in place.

5. A light disseminating screen mechanism for use with fluorescent light fixtures and the light tubes thereof, said mechanism comprising a transversely pleated wire mesh body section, end walls integral therewith, reinforcing bars secured to the body section and to the end walls, and rotatable supporting units supported on the reinforcing members and operable for engagement with the fluorescent light tubes to support the body section in the fluorescent light fixture to enclose the fluorescent light tubes.

6. A light disseminating screen mechanism for use in connection with fluorescent light fixtures and the fluorescent light tubes therein, said mechanism comprising a pleated wire mesh screen section, reinforcing means secured to the screen section, bracket means secured to the reinforcing means, and rotatable supporting units projecting through the screen section and through the bracket means and rotatable from the under side of the screen section to move the supporting unit into position to hang the screen section on the fluorescent light tubes, said supporting unit also rotatable to permit removal of the screen section.

7. A light disseminating screen mechanism for use with fluorescent light fixtures and the light tubes therein, said screen mechanism comprising a corrugated wire mesh body section, end walls integrally formed thereon, reinforcing bars secured on the inner side of the body section and to the end walls to reinforce the screen mechanism, bracket bars attached to the reinforcing bars, and a supporting unit carried by each of the bracket bars and comprising a lower shaft section and an upper shaft section of less diameter than the lower shaft section and provid-

ing a shoulder at the junction of said sections for engagement against the body section to hold the same in place, a cross head rigidly secured diametrically across the free end of the upper shaft section, and a handle connected with the lower shaft section for rotating the lower and upper shaft sections and the cross head for moving the cross head into supporting engagement with the fluorescent light tubes and out of engagement therewith to permit release of the screen mechanism.

8. A light disseminating screen mechanism adapted to be suspended from the fluorescent light tubes of a fluorescent light fixture, said mechanism comprising a perforated corrugated body section, means for reinforcing the same, bracket means connected for support on the reinforcing means, T-head units carried by the bracket means, and means for rotating the T-head units for suspending the screen section on the fluorescent light tubes to disseminate the light from the tubes and obscure the wave flickerings when the same occur in the fluorescent light tubes.

AUGUST ADOLPH BEHNKE.

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