

July 9, 1957

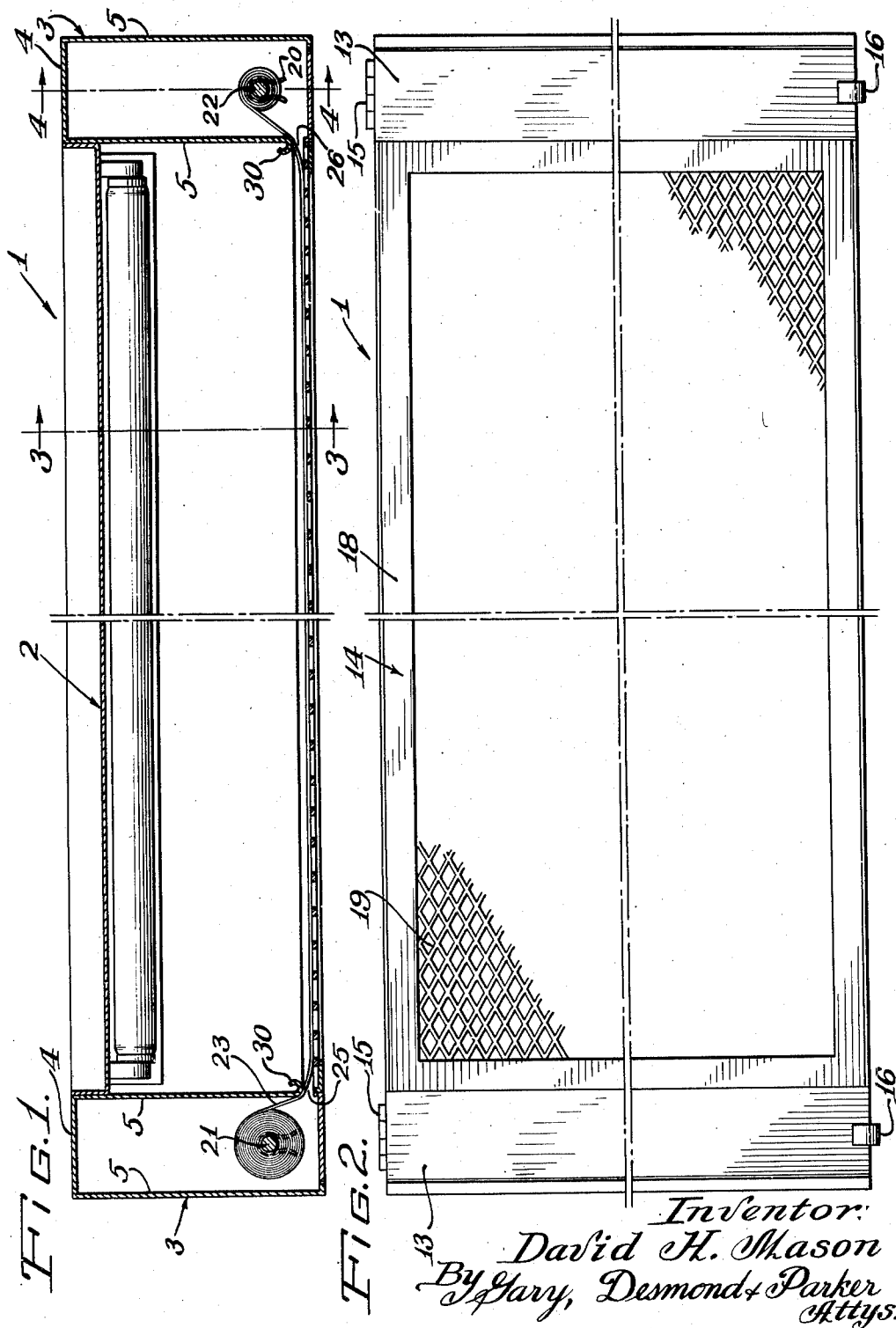
D. H. MASON

2,798,942

ILLUMINATING FIXTURE WITH CHANGEABLE SCREEN

Filed Jan. 27, 1954

2 Sheets-Sheet 1



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FIG. 3.

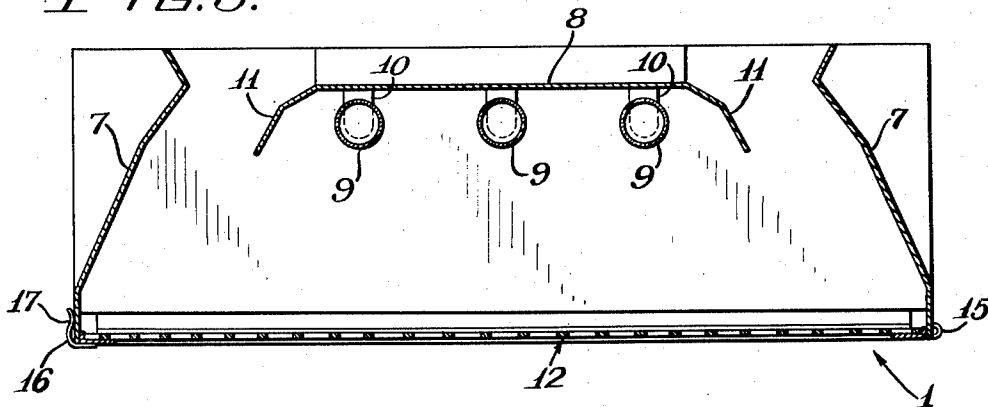


FIG. 4.

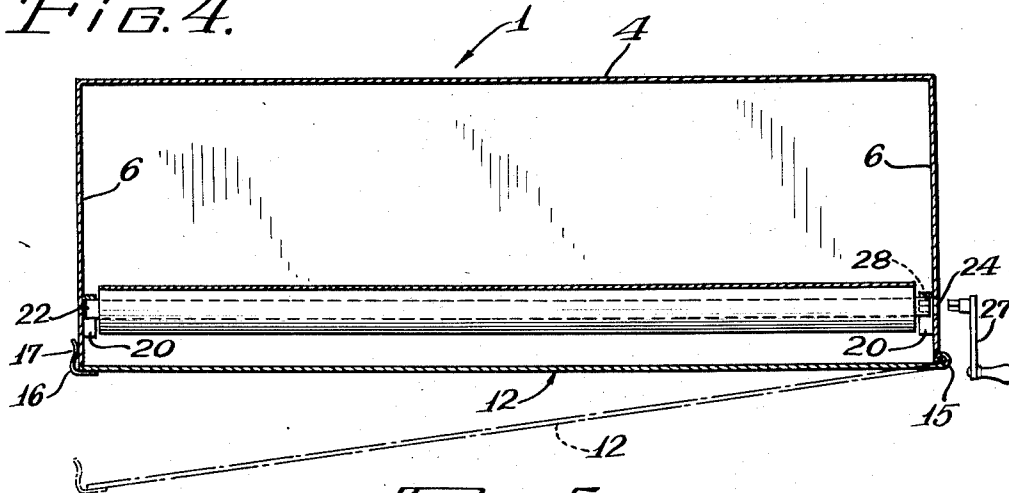
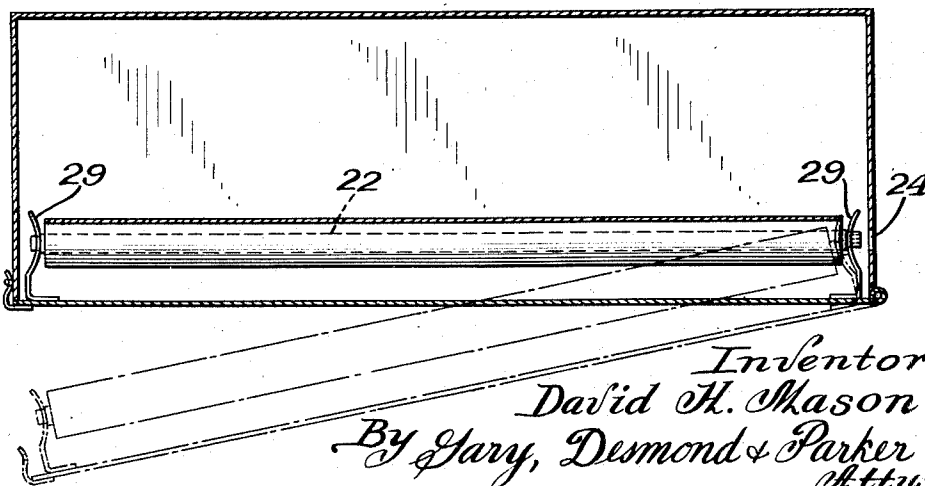


FIG. 5.



Inventor:
David H. Mason
By Gary, Desmond & Parker
Attys.

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ILLUMINATING FIXTURE WITH CHANGEABLE SCREEN

David H. Mason, Chicago, Ill.

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4 Claims. (Cl. 240—46.17)

This invention relates to improvements in an illuminating fixture wherein a movable or changeable translucent screen may be carried in front of a light source to modify the light from the light source as by diffusion, coloring or the like.

In light fixtures wherein a screen is disposed in front of the light source to diffuse or color the light, the diffusing screen has heretofore comprised a glass plate, such as, a ground glass, opal glass plate or the like. After continued periods of use it becomes necessary to wash or clean such plates which usually is a time-consuming task involving the dismantling of the fixture and the reassembling of the same with attendant possibility of breaking a relatively expensive plate.

The present invention is directed to a light fixture having a light-modifying screen constructed of a flexible, translucent web material which may be drawn from a roll of such material at one end of the fixture and be disposed in light-modifying position in front of the light source.

One of the advantages of the present invention resides in a fixture having a flexible, translucent screen which may comprise a disposable material whereby when said material becomes dirty it can be removed from light-modifying position and be disposed of while simultaneously a new screen portion may be drawn from the roll of such material and disposed in light-modifying position in place of the removed material.

Another important feature of the invention resides in a light fixture which carries a roll of light-modifying flexible translucent material which may be used as a light-modifying screen, the roll of material being of such nature that sections thereof may impart the same or different light-modifying effects, the arrangement being such that a section of any desired light-modifying character may be drawn into light-modifying position merely by rolling a desired section into light-modifying position.

Other objects and advantages of the present invention will be apparent from the accompanying drawings and following detailed description.

In the drawing,

Fig. 1 is a longitudinal sectional elevational view of a light fixture embodying the concepts of the present invention.

Fig. 2 is a bottom plan view of the fixture shown in Fig. 1.

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a view similar to Fig. 4 of a modification of the invention.

Referring in detail to the drawings, 1 indicates generally a lighting fixture embodying the concepts of the present invention. The lighting fixture 1 comprises essentially three sections, a central section 2 and opposite end sections 3.

Each of the end sections is similar and comprises a

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top wall 4, opposite side walls 5 and opposite end walls 6. The central section 2 comprises opposite side walls 7 and a light supporting channel 8.

The frame portion of the lighting fixture 1 comprising the various walls hereinbefore described, are preferably constructed of sheet metal, but, if desired, may be constructed of wood, plastic, or any other desired material which possesses the adequate structural strength. For purposes of illustration, the light source of the fixture comprises fluorescent tubes 9 which are held at their opposite ends by suitable lamp holders 10 which, in turn, are mounted upon the channel 8. The wall 8 at each of its sides may be flared downwardly as indicated at 11 in Fig. 3 to function as a reflector for the tubes 9. For purposes of description the lighting fixture is shown and described as employing fluorescent tubes as the light source. As will be readily understood as the description of the invention proceeds, any type of light source is contemplated, for instance, the light source may comprise the usual incandescent electric lights or the like.

The side walls 7 of the central section 2 are illustrated as being tapered, conforming, more or less, with the flared reflector walls 11. The tapered side walls 7 are so formed as to acquire greater light reflection and to impart a more ornamental appearance to the outer portion of the fixture. If desired, however, the wall 7 may be squared with respect to the plane of the bottom of the fixture, in which case, the central section of the fixture will be of rectangular section.

A bottom wall 12 is positioned beneath the tubes 9 and comprises opposite opaque end portions 13 and a central grill portion 14. The grill portion 14 and the end portions 13 are rigidly secured together and the bottom 12 as a unit is connected by means of hinges 15 to the end walls 6 of the end sections 3. If desired, the hinges 15 may be replaced by the usual piano hinge (not shown) which may be substantially coextensive in length with the fixture. Opposite each hinge 15 a spring clip 16 is carried upon the sections 13, said spring clips being adapted to resiliently engage a keeper 17 positioned upon one of the end walls 6 adjacent its lower edge. The arrangement is such that the bottom 12 may be moved into operative position wherein the spring clips 16 engage the keepers 17, as illustrated in Fig. 4 or the bottom 12 may be swung about hinges 15 as indicated in broken lines in Fig. 4.

The grill portion 14 of the bottom 12 may comprise bordering frame members 18 and a central open-work grill 19. The grill 19 may conveniently be constructed of expanded metal or said grill may comprise any type of reticulated member through which light may pass.

As a feature of the present invention, substantially U-shaped spring clips 20 may be mounted upon opposite walls 6 of each of the end sections 3, said clips being positioned adjacent the bottom of the sections 3. The spring clips 20 are adapted for the reception of shafts 21 and 22, said shafts functioning as cores upon which flexible, translucent, web-like sheet material 23 may be wound. An aperture 24 may be provided in one of the walls 6 of an end section 3, said aperture being disposed in alignment with shaft 22, whereby said shaft may be rotated by a removable implement, as hereinafter described. As will be hereinafter more fully described, the shaft 22 is adapted to comprise the take-up roll whereas the shaft 21 is adapted to comprise the feed roll.

In employing the present invention, a predetermined length of the flexible sheet material 23 may be wound upon the shaft 21. The end of the web wound upon shaft 21 may be carried through a slot 25 provided below the lower edge of the inner wall 5 of the section adjacent the shaft 21. Said web material may be drawn parallel to the upper face of the bottom and may be

passed through slot 26 provided between the lower edge of the inner wall 5 of the opposite end section 3. The web may then be wound around the take-up shaft 22.

The width of the web 25 is slightly greater than the width of the grill 19 and hence when the web is carried from the feed roll to the take-up roll above the grill 19, said web, being of translucent nature, forms a translucent screen through which light emanating from the light source passes in its travel through the apertures of the grill 19. The web material 23 may be of any desired translucent character, for instance, said web may be of a diffusing character such as to diffuse the light emanating from the light source. When the web 23 is of this character, the light which emanates from the fixture will be of the characteristic diffused or soft nature which is provided by the conventional use of a ground glass or opal glass screen. Of course, the web 23 may be of a desired pre-determined color which would desirably modify the light emanating from the light source. If desired, the entire length of the web carried upon the feed shaft 21 may comprise sections, each of which may be of a different light-modifying character. Of course, if the total length of the web is divided into sections each section will be slightly longer than the length of the grill 19.

In employing the present invention, a handle 27 may be used to engage a recess 28 provided at one end of the take-up shaft 22. When it is desired to move a section of the web 23 from its position about the grill 19, the handle 27 may be employed to rotate the take-up shaft 22 whereby the removed section of the web will be rolled upon the take-up shaft 22 and a fresh section of the web may be disposed in operative position over the grill 19. To prevent too free rotation of the shafts 21 and 22, the spring clips 20 resiliently bear upon said shafts and impart sufficient friction thereto as to eliminate the possibility of spinning of either of the shafts.

Any desired length of web material may be employed upon the feed roll and as the section of the material in operative position above the grill 19 becomes dirty, said section may be removed to the take-up roll and a fresh, clean section will replace it over the grill. To mount the feed roll or to remove the take-up roll, the bottom 12 may be hingedly swung from its operative position, as shown in dotted lines in Fig. 4, whereby access may be had to the rolls.

The fixture 1 may be mounted with its upper portion flush with the ceiling; with its lower portion flush with the ceiling, in which case the light source will be recessed in the ceiling or, if desired, it may be employed as a hanging fixture. In the latter case it may be desired to insert and remove the rolls through the top of the end sections 3 rather than at the bottom of the fixture. For accomplishing this, the top walls 4 may be hingedly mounted upon the fixture and the U-shaped spring clips may be inverted, that is, the open portion of the clips may face upwardly.

Referring particularly to Fig. 5, a modification of the invention is shown. In the form of the invention illustrated in Figs. 1 to 4 inclusive, the shafts 21 and 22 are carried by the end walls 6 of the end sections 3. If desired, substantially U-shaped spring clips 29 may be mounted upon the end sections 13 of the bottom 12, said spring clips being adapted to carry the feed shafts 21 and the take-up shaft 22 in the opposite end sections 3. In this form of the invention, when it is desired to mount a roll of the web material 23 in the fixture or to remove a roll of said material from the fixture, the bottom is swung about the hinges 15 as indicated in Fig. 5 in dotted lines whereby the clips 29 will be readily accessible to either mount or remove the shafts 21 and 22.

In either form of the invention the lower edge of each of the inner walls 5 of the end sections 3 may be rounded, as indicated at 30 in Fig. 1, whereby the possibility of tearing the web 23 where it passes through slots 25 and

26 is greatly reduced. It is not necessary to tension that portion of the web which lies above the grill 19 so that it will not sag into contact with the upper face of the grill since the light-modifying characteristics of the material will not be adversely affected if the web section sags into contact with the grill. As a matter of fact, having the major portion of the web lying in supported relationship upon the upper face of the grill frequently improves the outward appearance of the arrangement since it more clearly resembles the conventional light-modifying glass screen.

It is to be understood that the material comprising web 23 may be of any desired nature so long as it is flexible, translucent and has sufficient tensile strength to be pulled from the feed shaft 21 to the take-up shaft 22.

I claim as my invention:

1. An illuminating fixture which comprises, a casing having opposite side walls, a bottom for said casing, hinges for connecting said bottom to the lower edge of one of the walls of the casing whereby said bottom may be swung away from the opposite wall to expose the interior of the casing, a light-permeable relatively rigid grill comprising a major portion of said bottom, means in said casing for holding a light source in spaced relationship to said grill, a light source carried by said holding means, a feed roll positioned in one end of said casing for carrying a flexible, translucent web and a take-up roll for receiving said web from said feed roll positioned in the opposite end of said casing, said web extending between said rolls being supported upon said grill, said supported portion of said sheet material being substantially coextensive in area with said grill to modify light from the light source.

2. An illuminating fixture which comprises, a casing having opposite side walls, a bottom for said casing, hinges for connecting said bottom to the lower edge of one of said side walls whereby said bottom may be swung away from the opposite side wall to expose the interior of the casing, a light-permeable relatively rigid grill comprising a major portion of said bottom, means in said casing for holding a light source in spaced relationship to said grill, a light source carried by said holding means, means carried by said bottom adjacent one end thereof for rotatably supporting a feed roll for carrying a flexible, translucent web, and means carried by the opposite end of said bottom for rotatably supporting a take-up roll for receiving said web from said feed roll, said web extending between said rolls being supported upon and substantially coextensive in area with said grill to modify light from said light source, and means for rotating said take-up roll to remove the web from the feed roll adjacent the grill.

3. A room illuminating ceiling fixture which comprises, a casing of greater width and length than thickness, means for holding a light-source in said casing, a light-permeable relatively rigid grill carried by said casing on a side thereof of greatest area, said grill being in spaced relationship to said light-source holding means, a light-source carried by said light-source holding means, said grill being thin relative to the distance between the light-source and the grill so that a major portion of the light from the light-source passes through the grill unobstructed thereby, a roll of flexible, translucent sheet material carried in said casing adjacent one end of said grill, a portion of said sheet material being drawn from said roll and being disposed in plane-parallel supported relationship upon said grill between the grill and light-source holding means to modify the light from the light-source, and means in said casing for anchoring the end of said material remote from said roll adjacent the opposite end of said grill, said means comprising a take-up roll upon which the sheet material may be wound.

4. A room illuminating ceiling fixture which comprises, a casing of greater width and length than thickness, means for holding a light-source in said casing, a light-

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permeable relatively rigid grill carried by said casing on a side thereof of greatest area, said grill being in spaced relationship to said light-source holding means, a light-source carried by said light-source holding means, said grill being thin relative to the distance between the light-source and the grill so that a major portion of the light from the light-source passes through the grill unobstructed thereby, a roll of flexible translucent sheet material carried in said casing adjacent one end of said grill, a portion of said sheet material being drawn from said roll and being carried in plane-parallel supported relationship upon said grill between the grill and light-source holding means to modify the light from the light-source, said portion of the sheet material carried by said grill

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being substantially coextensive in area with said grill, and means in said casing for anchoring the end of said material remote from said roll adjacent the opposite end of said grill.

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