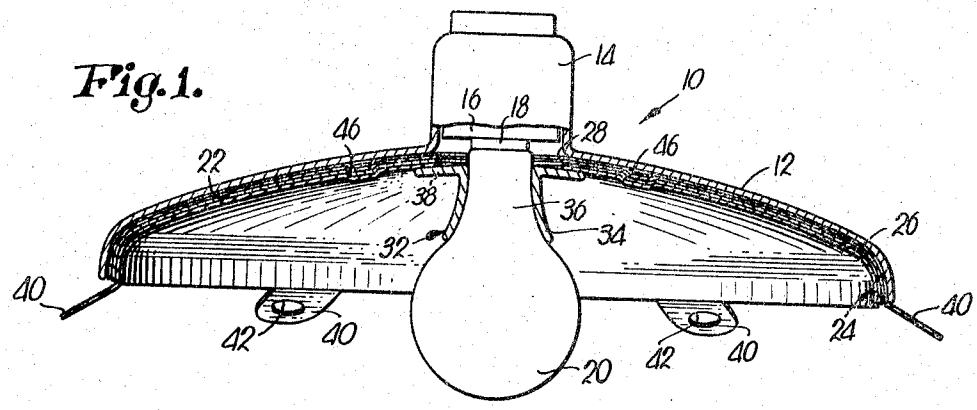
May 9, 1967 C. T. FALK 3,319,062

DISPOSABLE NESTED REFLECTORS FOR LIGHTING FIXTURES

Filed Jan. 25, 1965

Fig. 1.



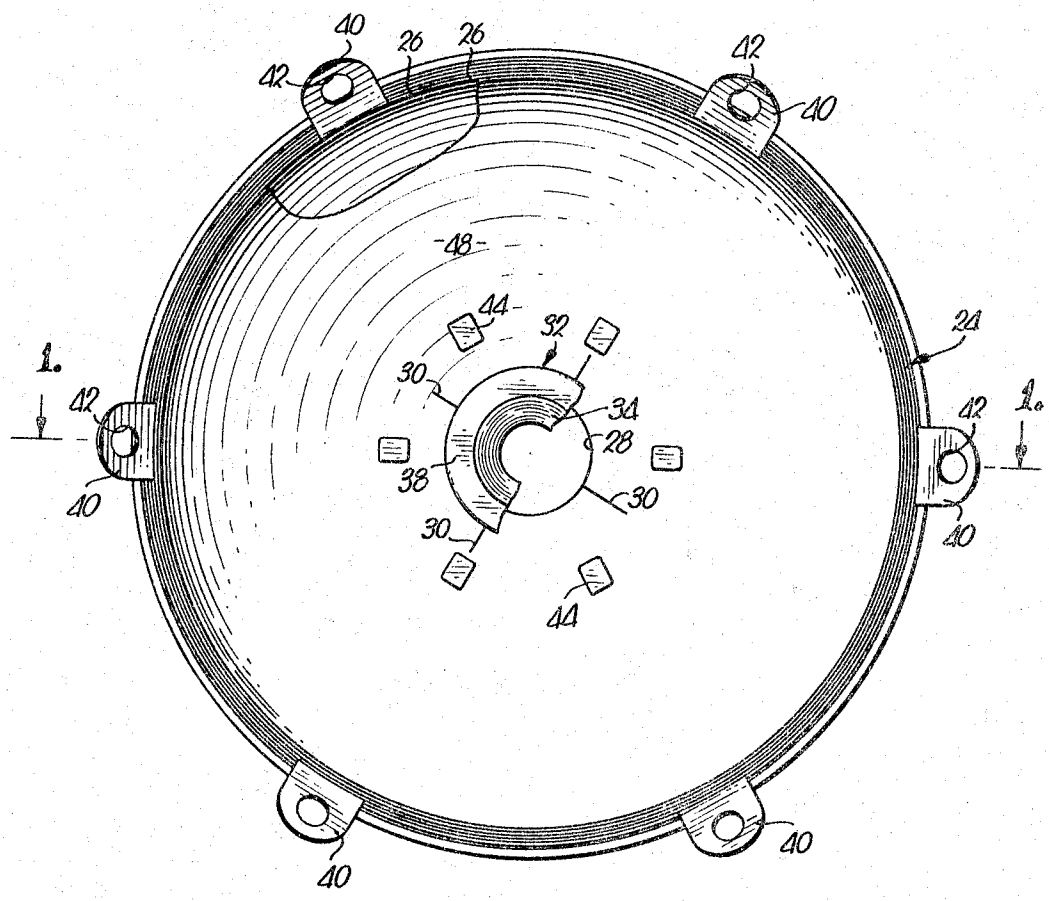


Fig. 2.

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DISPOSABLE NESTED REFLECTORS FOR LIGHTING FIXTURES

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This invention relates to light fixtures and, more particularly, to a disposable reflector for such a fixture.

In industrial plants and other establishments the lower faces of the light reflectors of overhead light fixtures need to be cleaned at periodic intervals in order for the reflector to be effective. Some light fixtures are spaced a considerable distance above a working surface and beyond the reach of a workman standing on the surface. Hence, some difficulty is encountered each time the reflectors of such fixtures need to be cleaned not only because time and effort is required to clean the reflectors, but a workman must stand on an elevated platform in order to accomplish this task.

The present invention provides structure which eliminates having to clean reflectors of light fixtures of the aforesaid character and, to this end, a plurality of nested reflector elements are coupled to a light fixture in a dispositive such that the outer reflector element effectively replaces the main reflector unit of the fixture. When the outer reflector element requires cleaning it is merely removed from nested relationship with the other reflector elements and the next adjacent outermost element then is disposed in light-reflecting relationship to the light source of the fixture.

It is, therefore, the primary object of the present invention to provide replacement reflectors for a light fixture which would eliminate the problem of cleaning the main or primary reflector thereof.

Another object of the instant invention is the provision of a plurality of nested reflectors which can be coupled to the main or primary reflector of a light fixture in a disposition such that the outermost reflector of the nested group serves as the reflector for the fixture and the nested reflectors can be removed one-by-one from the fixture when cleaning of the outermost reflector is required.

Yet another object of this invention is the provision of a nested reflector assembly of the type described wherein the reflectors of the assembly can be removed one-by-one from a light fixture by means of a tool or the like manipulated by a workman standing at a location remote from the fixture.

A further object of the present invention is the provision of replacement reflector means which can be utilized with existing light fixtures without modifying the same.

In the drawing:

FIGURE 1 is a cross-sectional view of a light fixture taken along line 1—1 of FIG. 2 and illustrating a plurality of nested reflector elements associated with an overhead light fixture; and

FIG. 2 is a bottom plan view of the light fixture and reflector elements with the light source of the fixture removed.

The present invention is directed to a light source having a concave, downwardly facing reflector member provided with means mounting a light source, such as a light bulb or the like, thereon. A plurality of nested reflector elements, complemental to the reflector member of the fixture, are disposed within the latter and in light-reflecting relationship to the light source coupled with the mounting means on the reflector member. A retainer releasably secures the group of nested reflector elements on the fixture, the retainer including a sleeve of rigid material having a continuous flange engaging the inner periphery of the lower or outermost reflector element. The sleeve is carried by the source and, in the case of a conventional light bulb, surrounds the neck portion of the bulb so as not to interfere with the light transmitting capabilities thereof.

Light fixture 10 includes a main or primary reflector member 12 having a housing 14 for containing a socket 16 which threadably receives the base 18 of a conventional light bulb 20. Reflector member 12 has a transversely arcuate, light-reflecting, inner surface 22 in partially surrounding relationship to bulb 20 as illustrated in FIG. 1.

A stack 24 of nested reflector elements 26 is coupled to the assembly comprised of reflector member 12 and bulb 20. Each element 26 is substantially complemental to inner surface 22 of member 12 and is formed from a yieldable material capable of reflecting light, such as sheet aluminum or aluminum foil. Each element has a central opening 28 and a number of slits 30 extending toward the outer periphery thereof and terminating a short distance outwardly of the opening 28 thereof as illustrated in FIG. 2.

A retainer 32 in the nature of a sleeve 34 is carried by the neck 36 of bulb 20 and has a continuous flange 38 on the end thereof adjacent to base 18 for engaging the continuous margin of the proximal element 26 adjacent to its opening 28. Retainer 32 is preferably of a rigid material which is not sensitive to the heat generated by the operation of bulb 20.

Each element 26 has a tab 40 integral therewith and projecting laterally from the outer periphery thereof. Each tab 40 has an aperture 42 therethrough into which a tool may be disposed for applying an outwardly directed force to the corresponding element 26. Preferably, tabs 40 of the elements 26 in stack 24 are staggered with respect to each other as shown in FIG. 2 to facilitate the removal of elements 26 one-by-one from stack 24. To this end, each element 26 is stamped on its convex face to provide projections 44 on its concave face as shown in FIG. 2. The projections 44 of one element 26 mates with and is received within the corresponding recesses 46 of an adjacent element 26, recesses 46 being formed by the stamping operation. Hence, elements 26 are restrained against rotation with respect to each other when the same are in the nested relationship shown in FIG. 1. Each element 26 has a light-reflecting surface 48 which reflects light in a direction outwardly of bulb 20 when the element is adjacent to the latter. When the proximal element 26 is removed from stack 24, the next adjacent element 26 is in position for reflecting the light radiating from bulb 20.

In use, stack 24 is coupled to the assembly defined by reflector member 12 and bulb 20 by placing stack 24 within member 12 before base 18 is threaded into socket 16. Retainer 32 is coupled to neck 36 of bulb 20; then base 18 is coupled with socket 16 so that flange 38 retains stack 24 adjacent to member 12 as shown in FIG. 1.

When it is necessary to clean surface 48 of the outermost element 26, such element 26 is removed from stack 24 in lieu of cleaning its surface 48. This is accomplished by inserting a tool or the like in the aperture 42 of its tab 40 and then applying an outwardly directed force to the tab. This causes the corresponding element to be removed from stack 24 inasmuch as it is of yieldable material and slots 30 thereof permit it to be deformed under the influence of the force applied at tab 40 thereof. Such deformation of the outermost element 26 in no way affects the next adjacent element 26 and surface 48 of this last-mentioned element then becomes the reflector for the

light from bulb **20** immediately upon removal of the first-mentioned outermost element **26**. No damaging stresses are placed on bulb **20** by application of the force to tabs **40** inasmuch as elements **26**, by virtue of their yieldable characteristics, deform and thereby pass around flange **38** before sleeve **34** imparts any relatively large stress to neck **36**.

As soon as the elements **26** of stack **24** are depleted, a new stack **24** is inserted in place and the elements **26** thereof are removed one-by-one in the foregoing manner as required. Member **12** provides an effective backing or support for stack **24** at all times so that elements **26** effectively retain their shapes so as to be in condition for reflecting light radiated from bulb **20** when the elements are successively at the outermost end of stack **24** adjacent to bulb **20**.

By the use of stack **24**, surface **22** of reflector member **12** is not required to be cleaned at periodic intervals as has been required heretofore. Fixture **10** may be spaced a considerable distance above the floor while still utilizing reflectors **26** inasmuch as a long tool can be used to strip or otherwise remove individual reflectors **26** one-by-one from stack **24**. It will be appreciated that the elements **26** may assume any desired configuration whereby the same may correspond to the shape of virtually any type of lighting fixture, the particular configuration shown in the drawing being merely illustrative.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a lighting fixture having a light source and a reflector member in light-reflecting relationship to said source, the improvement of which comprises:

a plurality of reflector elements disposed in nested relationship to each other;

means for positioning said elements in light-reflecting relationship to said source and disposed to permit the elements to be removed one-by-one therefrom; means on each element respectively for removing the same from the elements remaining on said member, said removing means including a tab secured to and extending outwardly from the periphery of the corresponding element; and

aligment means on said elements for nesting the latter in respective positions to stagger the tabs thereof, whereby to facilitate the removal of each element from the means including a recess in one face of each element and a projection on the opposite face thereof, the projection of one element being received within the recess of an adjacent element when the elements are in said nested relationship.

2. A lighting fixture comprising:

a reflector member having a light-reflecting surface; a light bulb having a neck and a base;

means releasably mounting the base of said bulb on said reflector member with the major portion of the bulb being spaced outwardly from said surface of the member;

a stack of reflector elements disposed in nested relationship to each other and in a location between said major portion of the bulb and said surface with the outermost element in a light-reflecting disposition relative to said bulb, each element having an opening, the neck of said bulb extending through the openings of said elements; and

means carried by said bulb and engageable with the outermost element for retaining said stack at said location and to permit the elements to be removed one by one from the stack.

3. A lighting fixture as set forth in claim **2**, wherein is provided means on each element respectively for removing the same from the stack.

4. A lighting fixture as set forth in claim **2**, wherein is provided a tab on each element respectively for removing the latter from the stack, and wherein is provided alignement means on said stack for orienting the elements thereof in positions with the tabs of said elements in staggered relationship to each other.

5. A lighting fixture as set forth in claim **2**, wherein said retaining means includes a flange carried by the neck of said bulb and extending laterally therefrom.

6. A lighting fixture as set forth in claim **2**, wherein said retaining means includes a sleeve on the neck of said bulb and provided with a continuous, element-engaging flange extending laterally therefrom.

7. A lighting fixture as set forth in claim **6**, wherein each of said elements is formed from a yieldable material, and is provided with a slot extending thereinto from said opening thereof.

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