Sept. 1, 1959 W. L. LIPSCOMB 2,902,591

LIGHTING FIXTURE

Filed Sept. 11, 1956 3 Sheets-Sheet 1

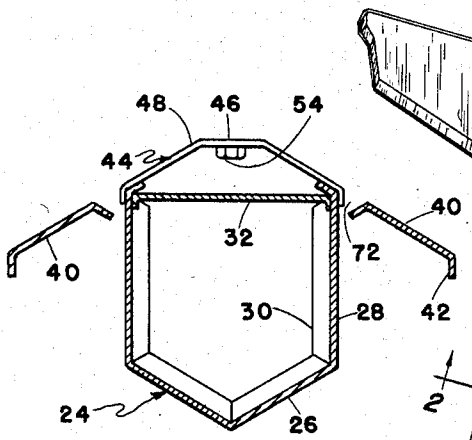


Fig. 2

Fig. 1

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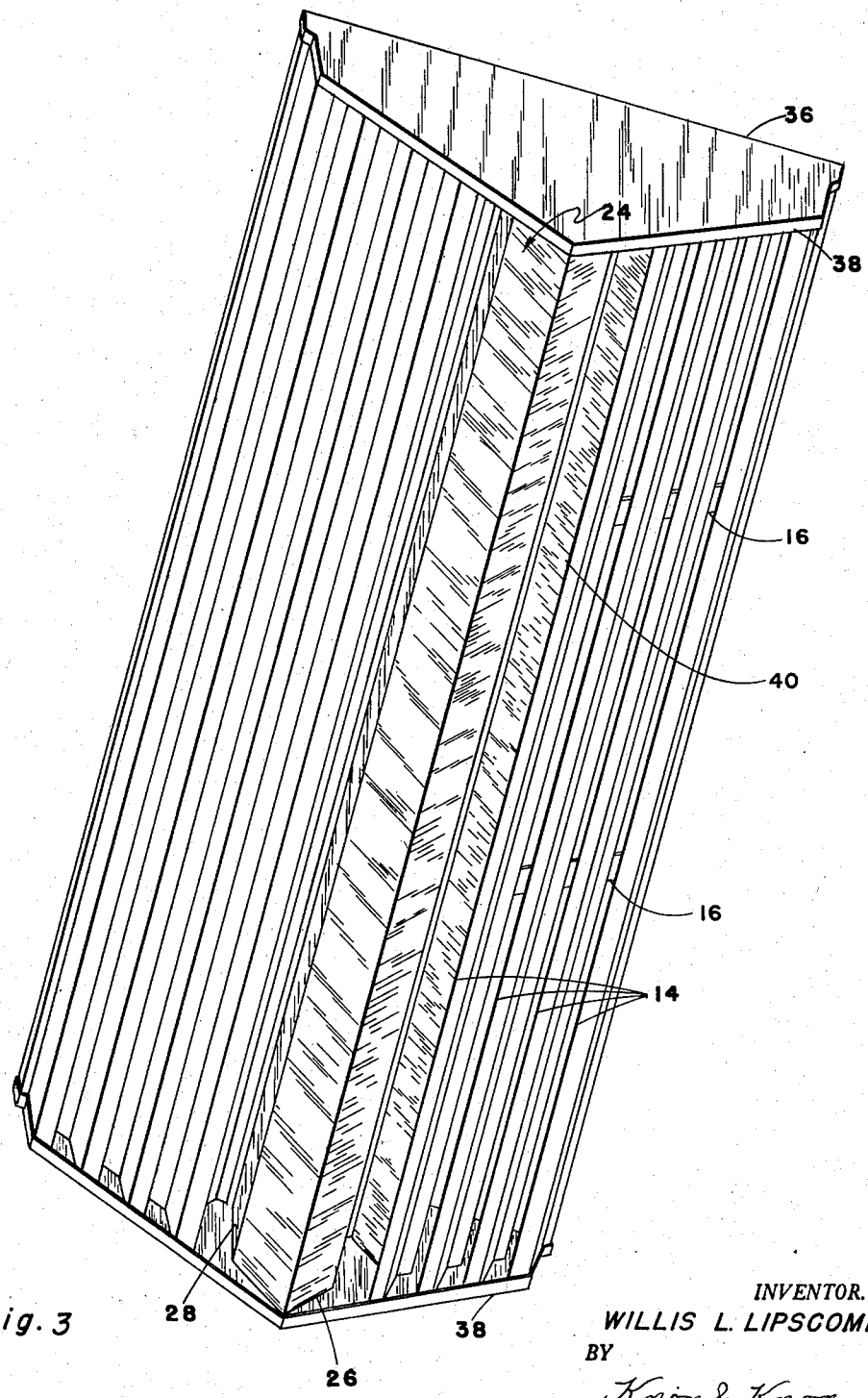


Fig. 3

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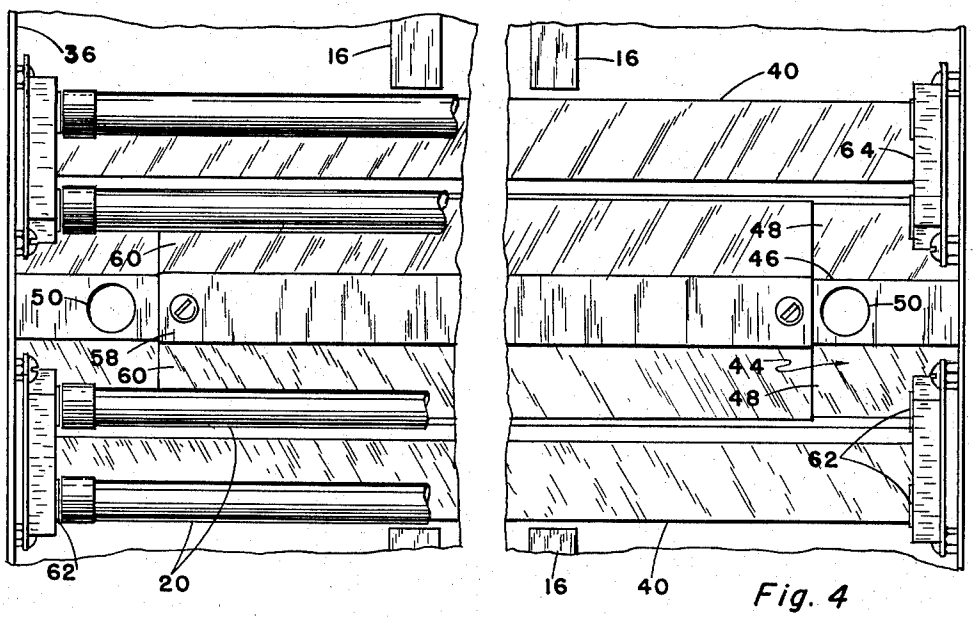


Fig. 4

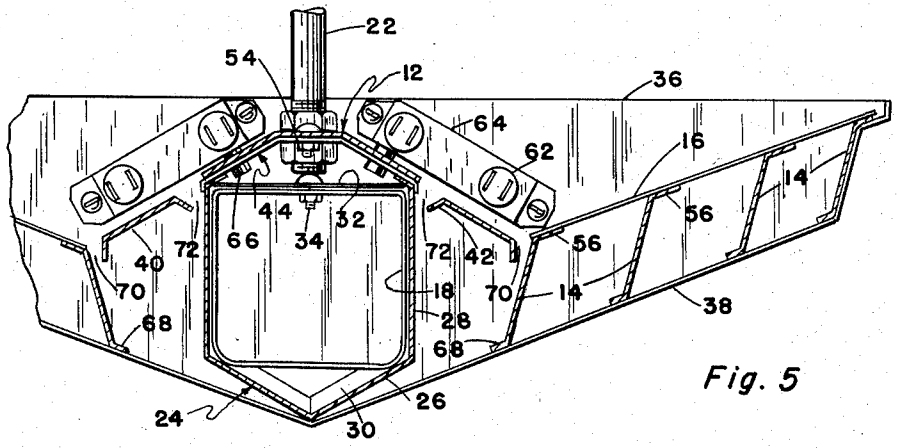


Fig. 5

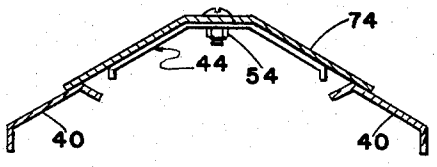


Fig. 6

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LIGHTING FIXTURE

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Application September 11, 1956, Serial No. 609,114

3 Claims. (Cl. 240—51.11)

This invention relates generally to lighting fixtures and more particularly to a lighting fixture characterized by a novel frame and a novel combination of this frame with other elements of the fixture.

A primary object of this invention is to provide an indirect lighting fixture wherein a V-channel is so shaped, dimensioned and positionally related with other elements of the fixture to provide for illumination of the lower portions of the V-channel, thus preventing the existence of a "dark spot" in the fixture, while retaining almost complete indirect lighting characteristics, easy accessibility to the lamps as well as the ballast and wiring, and meanwhile providing for maximum rigidity and a high degree of general efficiency in the fixture.

Another object of this invention is to provide novel and improved means for mounting the hanger stems and a removable center reflector which also serves as a cover for the V-channel.

Yet another object of this invention is to provide a novel arrangement of a V-channel, fixed elongated reflecting plates which also act as braces for the end caps, along with slats disposed laterally of both said plates and V-channel and with the lower portions of the slats positioned so as to reflect light which is directed onto the V-channel so that the same is suitably illuminated, even though the fixture remains primarily an indirect lighting fixture.

Certain other objects and advantages will appear hereinafter as this description proceeds, and it is a general object of this invention to provide a lighting fixture which is simple, safe and convenient to install and to use, and which will give generally efficient and durable service.

With these and other objects definitely in view, this invention consists in the novel construction, combination and arrangement of elements and portions as will be hereinafter fully described in the specification, particularly pointed out in the claims, and illustrated in the drawings which form a material part of this disclosure and in which:

Figure 1 is an isometric view of the frame of this novel fixture;

Figure 2 is a vertical cross-sectional view, taken on the line 2—2 in Figure 1, the end cap being removed;

Figure 3 is an isometric view of the underside of the assembled fixture;

Figure 4 is a fragmentary top plan view of the assembled fixture, the hanger stems being removed;

Figure 5 is a fragmentary, cross-section view of the assembled fixture, the wiring and lamps being removed; and

Figure 6 is a vertical cross-sectional view of a modified removable reflector and of the corresponding shelf and plates upon which this modified reflector rests, this view being clearly understandable if it is compared to the showing of like parts in Figure 5.

Similar characters of reference indicate similar elements or portions throughout the specification and throughout the different views in the drawing.

Referring now to the drawings in detail, it may facilitate the explanation of this invention if the principal parts are first enumerated. These principal parts include the frame 10, which is shown clearly in Figures 1 and 2, the other parts of the fixture being deleted from these two figures. Aside from the frame, the other principal portions include the removable reflector 12, the slats 14, the slat-supporting straps 16, and conventional elements such as the ballast 18, lamps 20 and hanger stems 22 are used in a manner which requires no explanation in this disclosure.

Referring now to the frame 10, this frame is characterized by an elongated V-channel 24, which houses the ballast 18 and the necessary wiring. The V-channel 24 comprises upwardly and outwardly divergent walls 26, confronting vertical wall portions 28 and attaching flanges 30. Disposed transversely across the top of the V-channel 24 are a plurality of ballast-supporting straps 32, the actual securing means whereby the ballast 18 is secured to these straps being indicated at 34 in Figure 5.

A pair of opposing end caps 36 are rigidly secured to the attaching flanges 30, as by welding or the like, and these end caps are provided with marginal flanges 38 extending inwardly for a purpose which will be made clear hereinafter. A pair of combined shield and reflector plates 40 are terminally secured by means of their flanges 42 to the end caps 36, these plates being disposed laterally of and parallel to the V-channel and spaced a short distance therefrom. It will also be noted that these plates 40 are disposed in outwardly and downwardly inclined relation, the upper surfaces of the plates being more or less co-planar with the lateral panel portions 48 of a shelf 44, the latter being secured to each end cap immediately above the V-channel. The two shelves 44 have flat central portions 46 with apertures 50 therein for the hanger stems 22 and smaller apertures 52 for screws to hold the removable reflector in place. As illustrated, nuts 54 are welded or otherwise secured to the shelves 54, immediately beneath the apertures 52, and the screws holding the removable reflector are threaded into these nuts 54.

Having described the frame 10, the manner in which the remaining portions of the fixture are combined with this frame will now become apparent. The removable reflector 12 constitutes a cover for the V-channel and is of a length slightly shorter than said V-channel, the cross-sectional shape corresponding generally with the shape of the shelves 44, there being a flat central panel 58 and unitary lateral wing panel portions 60. Lamp sockets 62 are operatively mounted on the end caps with socket covers 64 provided with necks 66 through which the socket wires may extend from the V-channel, these necks 66 extending through the shelves 44, as best indicated in Figure 5. In the particular fixture illustrated in the drawings, there are four slats 14 on each side of the fixture, these slats being inclined upwardly and outwardly at a small angle with the vertical and having outwardly inclined flanges 56 at their upper edges secured rigidly to slat-supporting straps 16, as indicated in Figures 4 and 5.

The lower ends of the slats 14 are provided with angulated portions 68, the end portions of which rest on the flanges 38 of the end caps, and it will be obvious that the flanges 56 and the angulated portions 68 add considerably to the rigidity of the slats, the angulated portions having a secondary function as will now be described.

The longitudinal edges of the plates 40, or more particularly the flanges 42 on these longitudinal edges, are spaced from the innermost slats 14 to provide a light channel 70 therebetween, and they are also spaced from

the shelves 44 and removable reflector 12 as indicated at 72 in Figure 5. Light from the lamps 20 passes downwardly through the light channel 70 and is reflected from the central portion of the innermost slat 14 and from the angulated portion 68 thereof onto the corresponding side of the V-channel. Only a small percentage of the light from the lamps 20 is transmitted through the light channels 70 but this small qauntity of light is sufficient to illuminate the inclined walls 26 and the vertical walls 28 of the V-channel, so that no "dark spot" is existent in the fixture during the operation thereof. Of course, light escaping downwardly through the light channel 72 is directed against the vertical confronting wall portions 28 of the V-channel and the spacing of the plates 40 from the walls 28 is a principal factor in determining the intensity of the illumination of said walls. In certain instances this extra light from the light channels 72 is not desirable, and in these instances a wider removable reflector 74, illustrated in Figure 6, may be used in place of the removable reflector 12, the modified reflector being wide enough to extend over the light channels 72, and the total illumination of the V-channel is then accomplished by light escaping downwardly through the light channels 70. Use of the wider removable reflector 74 does not require any change whatever in the frame or in other portions of the fixture and the functioning of the fixture remains the same, except that the illumination of the V-channel is diminished when the wider reflector is used. The wattage of the lamps and the character of the ceiling, and possibly other conditions, will determine which of the reflectors should be utilized in any particular installation.

The operation of this invention will be clearly understood from a consideration of the foregoing description of the mechanical details thereof, taken in connection with the above recited objects and further description would appear to be unnecessary.

It will be understood that minor variation from the form of the invention may be without departure from the spirit and scope of the invention, and that the specification and drawing are to be considered as merely illustrative rather than limiting.

I claim:

1. A frame for a lighting fixture, said frame comprising: a V-channel having walls extending upwardly and divergently outwardly from a longitudinal, vertical plane of symmetry of the V-channel and a pair of confronting wall portions extending vertically upwardly from the top edges of said walls; opposed, substantially vertical end caps secured to the ends of said walls and disposed transversely thereof; a pair of combined shield and reflector plates, one on each side of said V-channel and in parallel relation to said walls and terminally fixed to said end caps; said plates being disposed adjacent to the upper edges of said confronting wall portions; said combined shield and reflector plates having inner longitudinal edges thereof spaced only a short distance from the corresponding walls of said V-channel to define a limited light channel between said edges and said confronting wall portions, said combined shield and reflector plates having light reflective upper surfaces; and means for attachment of hanger stems to said frame.

2. In a lighting fixture: a frame comprising a V-channel having walls extending upwardly and outwardly from a longitudinal, vertical plane of symmetry of the V-channel and a pair of confronting wall portions extending vertically upwardly from the top edges of said walls; opposed, substantially vertical end caps secured to the ends of said walls and disposed transversely thereof; a pair of combined shield and reflector plates, one on each side of said V-channel and in parallel relation to said walls and terminally fixed to said end caps; said plates being disposed adjacent to the upper edges of said confronting wall portions and being inclined downwardly and outwardly with respect to said plane; said combined shield and reflector plates having inner longitudinal edges thereof spaced only a short distance from the corresponding walls of said V-channel to define a limited light channel between said edges and said confronting wall portions, said combined shield and reflector plates having light reflective upper surfaces; and opposing shelves, one shelf being secured to each end cap and to adjacent upper edge portions of said confronting wall portions and extending horizontally and inwardly between end portions of said plates; an easily removable cover for said V-channel, said cover being removably secured to and supported by said shelves; said plates and said cover having light reflective upper surfaces; and said end caps having means for mounting elongated tubular lamps over said plates and over said cover so that said plates and cover function efficiently in achieving an increased upward component of light; said shelves comprising means for securement thereto of hanger stems; and both said shelves and cover having lateral panel portions extending downwardly and outwardly from said plane; certain of said means for mounting said lamps being disposed above said panel portions.

3. In a lighting fixture: a frame comprising a V-channel having walls extending upwardly and outwardly in symmetrically spaced relation to the longitudinal, vertical plane of symmetry of the V-channel and a pair of confronting wall portions extending vertically upwardly from the top edges of said wall, and opposed vertical end caps secured to the ends of said walls and disposed transversely thereof; elongated, light-reflecting slats secured to said frame and extending parallel to said plane and on each side thereof; combined shield and reflector plates mounted on said frame and extending laterally of and parallel said walls; a light source mounted on the frame above said plates; said combined shield and reflector plates constituting means to control downward transmission of light from said light source onto said V-chanel and being spaced from said slats to provide light channels between said plates and said slats; said plates being also slightly spaced from the upper portions of said confronting wall portions the lower portions of said slats being disposed to reflect light escaping through said light channels onto the outer surfaces of said V-channel.

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