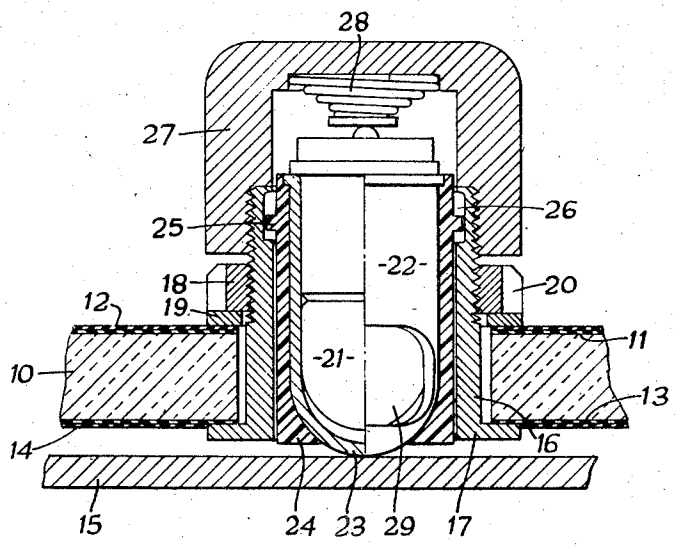
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ILLUMINATED INSTRUMENT PANEL

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ILLUMINATED INSTRUMENT PANEL

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The present invention relates to lamp-holders for trans-illuminated panels and is particularly, although not exclusively, suitable for use with panels such as are described in the specification of co-pending application Serial No. 554,329, filed December 20, 1955.

One difficulty met with in providing lamp-holders for trans-illuminated panels is the small space that is usually available at the back of the panel to accommodate any part of the lamp-holder, such as a locking nut, or electrical connections to the lamp-holder.

The principal object of the present invention is to provide an improved lamp-holder which takes up either no space, or only a very limited amount of space, at the back of the panel.

A further object of the invention is to provide a lamp-holder specially adapted for use with the panel described in the aforementioned earlier specification.

According to the present invention a lamp-holder for a trans-illuminated panel comprises an outer metal sleeve adapted to be fixed in an aperture in the panel, projecting wholly or almost wholly forwards from the panel, an insulating sleeve mounted for limited sliding movement within the metal sleeve, an inner metal sleeve fixedly mounted within the insulating sleeve and adapted to support a lamp, to make electrical contact with the cap of the lamp, and to project rearward beyond the lamp to make electric contact with an electric supply member, and a cover member containing a spring adapted to urge the lamp in a rearward direction and to provide an electric connection between the conter contact of the lamp and the outer metal sleeve, the arrangement being such that light from the lamp can pass through the three sleeves into the panel.

The insulating sleeve may be a colored light filter and the inner and outer metal sleeves may be provided with suitable windows defining limited areas for passage of light.

When the panel has, as described in the aforementioned earlier specification, a conducting layer adapted to constitute one terminal of the electric supply, the outer metal sleeve may have a flange on the rear side of the panel adapted to make electric contact with the said layer. The outer metal sleeve may then be fixed within the panel aperture by means of a nut on a thread on this sleeve, the panel being clamped between the flange and the nut.

One embodiment of the invention will be described by way of example, with reference to the accompanying drawing which is a view of the embodiment in sectional elevation. The embodiment is assumed to be for use with a panel as described in the aforementioned earlier specification and comprising a relatively thick light-transmitting layer **10**, for example of methyl methacrylate, having on its front face a thin white layer **11** overlaid by a thin black layer **12** and on its rear face a thin layer **13** of perforated aluminium sheet overlaid by a thin black layer **14**. Behind and close to this panel is

mounted an aluminium panel **15** in which instruments (not shown) whose dials have to be illuminated are mounted. The layers **11**, **12** and **14** may be of vinyl plastic. The two panels are fixed together and spaced apart either by washers or by making the rearmost layer **14** of the trans-illuminated panel of sufficient thickness.

The lamp-holder to be described comprises an outer metal sleeve **16** having a flange **17** at one end and threaded externally at the other end. The trans-illuminated panel **10** is apertured to allow the sleeve **16** to pass through it and the rearmost layer **14** of the trans-illuminated panel is apertured to allow the flange **17** to seat upon the perforated aluminium layer **13** which constitutes one terminal of an electric supply for the lamp, the other terminal of the supply being constituted by the aluminium panel **15**. The sleeve **16** is clamped in position by means of a nut **18** under which is a suitable washer **19**, the nut being screwed on to the forwardly-projecting threaded end of the sleeve. The nut **18** is shown as provided with key slots **20**.

The lamp **21** is mounted in an inner metal sleeve or cup **22** closed at its rear end **23**, this sleeve making electric contact with the lamp cap. The sleeve **22** has moulded around its outside and extending nearly, but not quite, to the rear end of the inner metal sleeve an insulating sleeve **24** of translucent or transparent plastic, which may be of a suitable color, such as red. Thus the inner metal sleeve **22** projects slightly rearward beyond the insulating sleeve **24**.

The assembly comprising the inner metal sleeve **22** and the insulating sleeve **24** surrounding it is slidable within the outer metal sleeve **16**. The insulating sleeve has an outwardly-projecting circumferential rib **25** which engages in an annular groove **26** in the inside of the outer metal sleeve and allows limited movement of the said assembly within the outer metal sleeve in an axial direction.

A cup-shaped, internally threaded metal cap **27** is screwed on to the threaded end of the outer metal sleeve **16**. Within this cap is a spring **28** adapted to engage the center contact of the lamp and to press the lamp rearwards, thereby holding the projecting end 23 of the inner metal sleeve in electric contact with the alumininum panel 15. Electric contact between the center contact of the lamp and the perforated aluminium layer **13** is made through the spring **28**, the metal cap **27** and the outer metal sleeve 16.

The inner and outer metal sleeves **22** and **16** are provided with windows **29** to pass light from the lamp in suitable directions in to the panel.

What I claim is:

1. A lamp-holder for a trans-illuminated panel comprising an outer metal sleeve adapted to be fixed in an aperture of the panel projecting at least mainly forwards from the panel, an insulating sleeve mounted for limited sliding movement within the metal sleeve, an inner metal sleeve fixedly mounted within the insulating sleeve shaped and dimensioned to accommodate a lamp having a cap and a center contact, to make electrical contact with the lamp cap, and to project rearward beyond the lamp to make electric contact with an electric supply member, a cover member, and a spring within said cover member engaging said center contact and urging said lamp in a rearward direction, said cover member providing an electrical connection between said spring and said outer metal sleeve.

2. A lamp-holder according to claim 1, wherein the insulating sleeve is constructed as a colored light filter.

3. A lamp-holder according to claim 1, wherein the inner and outer metal sleeves are provided with windows

defining limited areas for the passage of light into the panel.

4. A lamp-holder according to claim 1, wherein the outer metal sleeve has at its rear end a flange for engaging and making electrical contact with a conducting layer on the rear face of the panel.

5. A lamp-holder according to claim 4, wherein the end of the outer metal sleeve opposite to the flanged end is threaded to receive a nut, whereby the lamp-holder may be fixed within the aperture in the panel by clamping the panel between the flange and the nut.

6. A trans-illuminated panel structure comprising an apertured panel, a conducting layer on the rear surface of said panel, a conducting member supported in fixed relation to said panel and spaced from the rear surface thereof, an outer metal sleeve fixed in said aperture in electrical contact with said conducting layer and projecting at least mainly forwards from the panel, an insulating sleeve mounted for limited sliding movement

within the metal sleeve, an inner metal sleeve fixedly mounted within the insulating sleeve shaped and dimensioned to support a lamp having a lamp cap and a center contact, said inner metal sleeve making electrical contact with said lamp cap and with said conducting member, a cover member at the front end of said metal sleeves and a spring within said cover member and engaging said center contact, said cover member making electrical connection between said spring and said outer metal sleeve.

References Cited in the file of this patent

UNITED STATES PATENTS

2,518,726	Shlenker	Aug. 15, 1950
2,637,802	Roper et al.	May 5, 1953
2,702,340	Thieblot	Feb. 15, 1955

FOREIGN PATENTS

485,602	Italy	Oct. 16, 1953