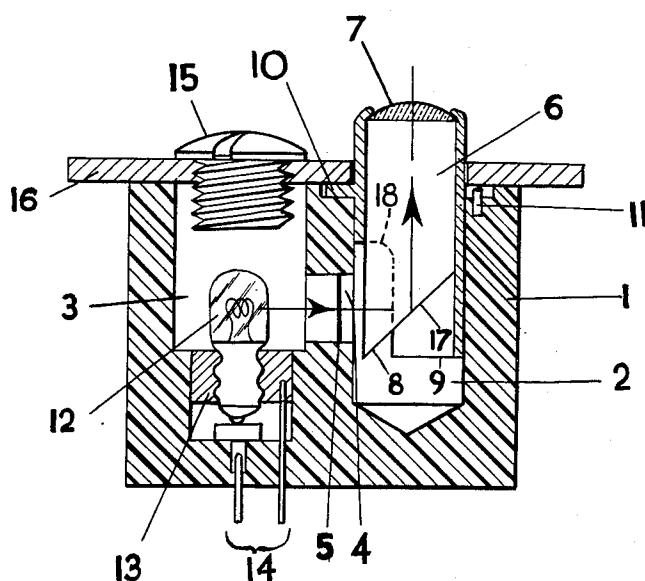


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VARIABLE INTENSITY LIGHT INDICATOR

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VARIABLE INTENSITY LIGHT INDICATOR

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3 Claims. (Cl. 240—8.16)

The present invention relates to the provision of light indicators (such as are commonly used on instrument panels and the like) in which the brightness of the indication can be adjusted to provide a degree of illumination appropriate to the general lighting conditions. Such light indicators frequently comprise an electric bulb and a coloured window; and in such indicators it has been proposed to provide for the control of brightness either a variable resistor in series with the bulb or an iris diaphragm interposed at a suitable point in the optical path. However, these arrangements are disadvantageous in that control by a variable resistor results in change of hue with brightness (which may in extreme cases give a misleading indication), control by an iris diaphragm is found to give undesirable directivity at small apertures, and the use of either a resistor or diaphragm is comparatively expensive.

It is accordingly the object of the present invention to provide a light indicator of robust and simple construction in which the brightness of the indication provided may be varied.

According to the present invention the light indicator comprises a housing, a cylindrical light-transmitting member revolvable about its axis within said housing, one end thereof protruding from the housing and the other end thereof being provided with an internal reflecting surface inclined to the axis of the member and a light source within said housing, said source and cylinder being such that, in one position of the cylinder, the axis of the member, a normal to the reflecting surface and the light source are coplanar, the reflecting surface then being so arranged that light from the source striking the reflecting surface is reflected along the axis of the member, passing through the end situated outside the housing, and by rotation of the member from such position the amount of light so transmitted may be diminished at will.

Preferably the outer end of the cylindrical light-transmitting member is convex in form and matted (for example by fine sand blasting).

Alternately also the reflecting surface is plane.

The wall of the cylindrical light-transmitting member is preferably surrounded by an opaque sheath, which sheath is provided with an opening to permit uninterrupted passage of light to the reflecting surface when the member is in position to transmit the maximum amount of light, the sheath being progressively interposed as the member is rotated to reduce further the amount of light transmitted along the member. It is found that this feature is particularly desirable if it may be required to reduce the intensity of light transmitted to a very low level.

Most conveniently the light source is a small electric bulb, situated in a substantially cylindrical compartment of the housing, the said compartment being in communication with the portion containing the cylindrical light-transmitting member and the bulb being accessible through a removable closure, conveniently adjacent the outer end of the cylindrical light-transmitting member.

If a coloured light indication is required suitably coloured transparent or translucent material may be interposed between the light source and the reflector.

A light indicator suitable for panel mounting and em-

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bodiment the invention will now be described with reference to the accompanying drawing, showing a section of the indicator.

The indicator comprises a light tight housing 1 moulded from suitable plastic material and adapted to be mounted in a panel by means of a flange 16. The housing is provided with two cylindrical bores 2 and 3 whose axes are parallel and normal to the plane of the flange 16. A passageway 4 is provided between the bores 2 and 3 which carries a film 5 of light transmitting material mounted therein. A cylindrical light-transmitting member 6 is carried in bore 2. The member is manufactured from any suitable transparent material such as that known under the trade name "Perspex". Member 6 has at one end a finely sand-blasted convex surface 7 and at the other a plane reflecting surface 8 set at an angle of 45° to the axis of the member, which is coated externally with white pigment (17). The member is provided with a thin metal sheath 9, of approximately the same overall length as the member, cut away, as at 18, opposite to the reflecting surface 8. The sheath 9 is rigidly attached to the member 6, and fits closely but rotatably in bore 2. Rotation is limited to an arc of about 180° about the axis of the bore by means of a projecting portion 10 on the sheath co-operating with a stop 11 carried by the housing. As shown, the sheath is in one extreme position.

The second bore 3 provides a housing for a small electric bulb 12, carrying at the end remote from flange 16 a socket 13 connected by means of leads 14 to a suitable electric source. The other end of bore 3 is closed by means of a screw cap 15, removal of which enables bulb 12 to be changed as necessary.

As shown, the line joining the light source and the intersection of the axis of the light-transmitting member 6 and the reflecting surface 8 is at right angles to the axis, the line passing of course through the passage-way 4 between bores 2 and 3. In one extreme position (that shown in the diagram) a normal to the reflecting surface is coplanar with the above mentioned line and axis, so that in this position, a maximum amount of light passes through the convex end of member 6. As the member 6 is rotated from this position the amount of light transmitted is progressively reduced until after a rotation to the other extreme position (through 180°) the amount is reduced substantially to zero.

It is found that the light emitted from the convex end is widely diffused and that the diffusion is not affected to a great extent by rotation of the light-transmitting member 6.

We claim:

1. A light indicator comprising a housing, said housing defining two cylindrical bores therein, the axes of said bores being substantially parallel to one another, a light transmitting passageway between said bores, a cylindrical light transmitting member revolvable about its axis in one of said bores, one end of said member protruding from the housing and the other end thereof being adjacent one end of said passageway, said other end being formed with a flat internal reflecting surface, an opaque sheath attached to and surrounding said light transmitting member, a light source mounted in the other of said bores adjacent the other end of the said light transmitting passageway, said source, member and sheath being so arranged that, in one position of the member the axis of the member, a normal to the reflecting surface, and the said light source are coplanar, the reflecting surface and sheath being then so arranged that light is permitted to pass from the source to the reflecting surface and, after striking the surface, is reflected along the axis of the member, passing through the end situated outside the housing, and by rotation of the member from such position the amount of light so transmitted may be diminished at will by interposition of the sheath and change in the angle of reflection.

2. The indicator of claim 1 in which said revolvable

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member comprises a cylindrical solid member of light-transmitting plastic composition, said reflecting surface being formed at substantially 45° to the axis of said revolvable member, said reflecting surface being coated externally with a material of relatively high reflectivity.

3. The indicator of claim 2 in which said housing includes stop means defining limit positions for revolution of said revolvable member.

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