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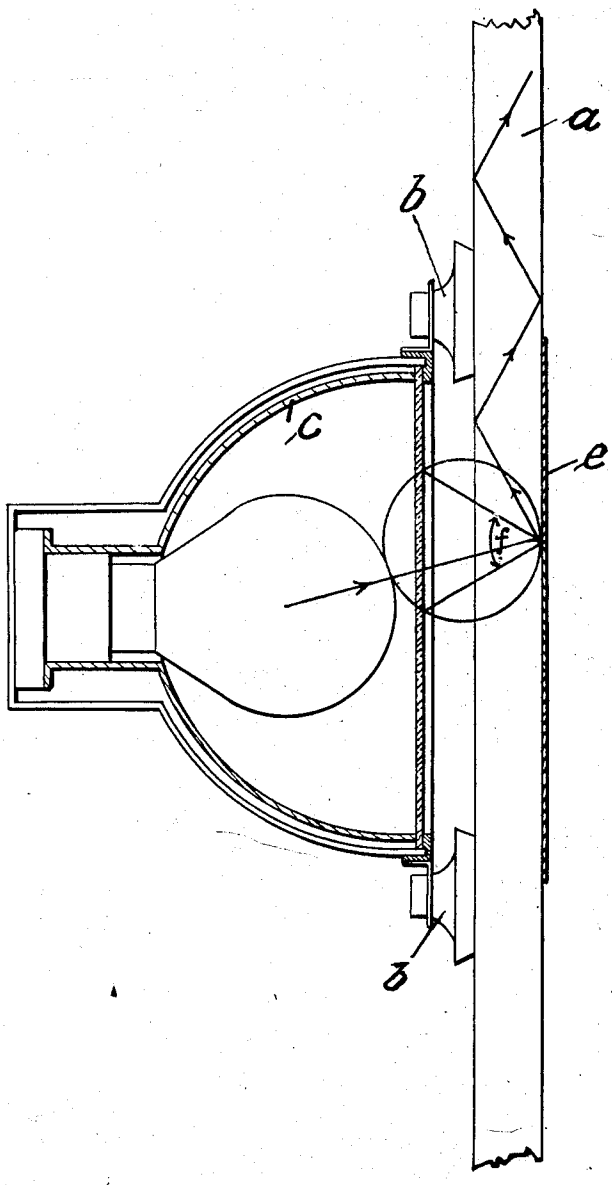
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ARRANGEMENT FOR PRODUCING MULTIPLE TOTAL REFLECTIONS

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ARRANGEMENT FOR PRODUCING MULTIPLE TOTAL REFLECTIONS

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1 Claim. (Cl. 240—1)

This invention relates to an arrangement for producing multiple total reflections of light rays in the interior of translucent bodies, such as glass panes, through which characters or the like provided on the body are rendered luminous. In the known arrangements of this kind it is either necessary to arrange the source of light along the edge or very close to the edge of the glass pane in order to project the light rays into the translucent body in the first instance directly and in the second instance by reflections of the correspondingly arranged pane edges, and to thus cause the characters or the like provided on the glass pane to become luminous; or if it is desired to arrange the source of light behind the pane in order to thus produce total reflection even in the case of panes the edge of which is inaccessible, a prism had to be cut in the side of the glass pane remote from the source of light in order to thus produce reflecting edges which reflect the impinging rays longitudinally of the pane within the same. This cut prism should be cut preferably right through or at least nearly right through the pane to enable the characters cut in wedge shape in the side of the pane adjacent the source of light to be sufficiently illuminated. This arrangement is open to the objection that, for example in the case of display windows, the glass has to be cut and the pane is weakened by the cutting of the prisms.

This invention is based on a different principle in that the side of the pane directed towards the public instead of having a prism cut therein which deflects the impinging rays into the pane, is provided with a flat reflector acting towards the interior of the glass pane, which reflector, without rendering necessary any changes on the pane, is stuck on to the glass pane so that it can be removed without difficulty and fitted as desired at any point of the glass pane, and radiated by a source of light, the rays of which impinge in known manner only on the reflector. The light rays are reflected in different direction by this reflector, so that those rays which are outside the critical angle of total reflection remain in the glass. It thus becomes possible, to illuminate characters or the like around the reflector in a radius of action corresponding to the source of light. Therefore it is only necessary to arrange a certain number of sources of light behind a display window and to fit a corresponding number of reflectors in front thereof, opposite the sources of light, in order to cause characters arranged over the entire surface of the display window to illuminate.

An embodiment of the invention is illustrated by way of example in cross section in the only figure of the accompanying drawing.

On the inner side of a display window *a*, a source of light surrounded by a reflector *c* is fixed for example by means of rubber suckers *b*. A reflecting plate *e* is stuck tightly on the outer side of the pane opposite the source of light, for example by means of a textile material coated with a light coloured rubber solution for effecting a tight adhesion to the pane. The beams of light impinging on this reflecting plate *e* are reflected and diffused, so that the rays which lie outside the critical angle *f* are compelled by the total reflection on the surfaces of the glass pane *a* to remain in the glass. They can then only leave the glass in known manner when they encounter characters or the like reacting to diffused light and fitted on the surface of the pane *a*, so that these characters are illuminated.

I claim:—

An arrangement for producing multiple total reflections of light rays in the interior of translucent bodies for illuminating characters mounted thereon, comprising in combination with the translucent body a source of light arranged on the inner side of said body, and a flat reflector stuck onto the outer side of said body adapted to receive all the rays of light from said source of light and to reflect the same in diffused state towards the interior of said body.

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