

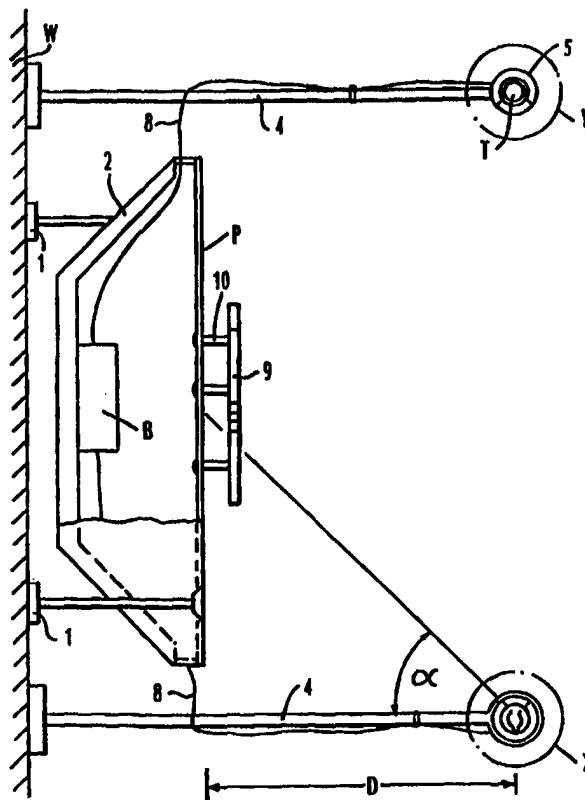


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(54) Title: ILLUMINATED SIGN**(57) Abstract**

An illuminated sign is mounted on a wall, the sign part being mounted on a framework and the lamp is arranged so that the sign is lit substantially uniformly across its face.



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ILLUMINATED SIGN

The invention relates to an illuminated sign, for interior or exterior use. Such signs usually comprise a body having a sign face, which is illuminated by a lamp spaced in front of the sign or behind the sign. It is one object of this invention to provide an illuminated sign which is particularly economical to assemble and operate and which is aesthetically pleasing.

According to the invention in one aspect there is provided an illuminated sign mounted on a wall and comprising a sign body and a lamp disposed to light the face of the sign **characterised in that** the lamp is a light tube located in a framework therefor on supports disposed in front of the sign face by a distance D and at an angle α , the distance and angle being selected so that the sign is lit up substantially uniformly across its face.

Preferably the framework comprises an elongate member of a channel section and the lamp is mounted therein, the lamp being disposed so as to face the panel at the angle α through the mouth of the channel section. Preferably the member includes a lid portion arranged to close the mouth of the channel section where illumination is not needed.

It is a much preferred feature of the invention that the lamp is a neon tube or a fluorescent tube and the control ballast therefor is located externally of the housing and is connected to the tube by wires. Most preferably the supports are hollow, and the control ballast is located behind the panel adjacent to the wall and the wires between the ballast and the tube extend through the hollow supports. In this way the

connections are concealed, and the whole is aesthetically pleasing. Typically, two such lamps will be present on opposite sides, e.g. top and bottom of the panel.

Preferably the fluorescent lamp is a 28 watt long life tube having a small diameter.

Preferably the elongate member is an extrusion.

Other features of the invention are set out in the dependant Claims.

The invention also includes the method of making the illuminated sign.

In order that the invention may be well understood it will now be described by way of example only with reference to the accompanying diagrammatic drawings in which:

Figure 1 is a front elevation of one assembly of the invention;

Figure 2 is a section taken on lines II - II on Figure 1;

Figure 3 is an enlarged view of area X on Figure 2;

Figure 4 is an enlarged view of area Y on Figure 2.

The assembly comprises a decorated panel P to be illuminated, for example as a sign board. The panel P has an acrylic face with vinyl display. The panel P is mounted on a vertical wall W, by brackets 1. The rear of the panel has a moulded styrene back shell

2 which contains a ballast or other control gear B for a fluorescent light tube T. The tube is the T5 type and was a small diameter e.g. 3mm.

A framework F comprises extruded lengths 3, of metal, e.g. aluminium, or plastics or a composite. The framework is held to the wall W in front of the panel P by support rods 4. The rods 4 are hollow aluminium extrusions and have tubular cross heads 5 at their free ends. As shown, there are two such lengths, one near the top and the other near the bottom of the panel P. Each length 3, is generally cylindrical as seen in cross section and, as shown in Figure 4, comprises a main channel shaped body 3A with an engagable, e.g. snap in lid 3B. The floor of the body 3A has a slot 6 to receive a spring clip 7. The framework lengths can receive a neon or fluorescent light tube T engaged in the spring clip 7. Where a tube T is inserted in the framework length, the lid 3B is removed so that the light from the tube can emerge via the mouth M of the channel body 3A. The lid is left over lengths where illumination is not required. The lengths are received in the heads 5 of the rods 4, and are free to rotate therein so that the centre of the tube T can be at an angle α to the horizontal centre of the panel P. The rods 4 can be of predetermined length or adjustable, e.g. telescopic, to control the horizontal distance D between the panel P and the tube T. Letters or logos 9 are mounted by brackets 10 in front of the panel P and, as shown, they spell out the word MILK. (Of course the word or words will vary according to the circumstances.) Preferably they have a finish to avoid or reduce undue reflection, e.g. a matt finish. It has been discovered in accordance with this invention that by adjustment of the length D and the angle α of the top and bottom lengths of the framework F, the panel P can be lit up in such a way that the light which is incident upon the surface area of the

panel is substantially uniformly distributed thereon and such that areas of shadow which might be cast by characters 9 which protrude from the surface of the panel P are reduced or eliminated. If the distance D is too short the panel P will appear dark in the middle; if it is too long there will be shadows and/or not enough illumination. Preferably the angle α is in the range of about 10° to about 90° and the distance D is about 180mm, in the case of a panel P having a height of about 360mm and spaced 100mm from the wall W.

The tube T is preferably of the T5 type available from Philips which has a small diameter, say 3mm. tube. Such a tube has a separate control ballast B. This item is located in the housing 2 and wires 8 lead from the ballast via the hollow rods 4 through holes, not shown, into the heads 5 for connection to the ends of the tube. In this way the ballast B is concealed, and its connections are also concealed.

The invention is not limited to the embodiment shown. The invention also includes the method of illuminating a sign using the components specified. The framework need not be of the design shown, but may be vertical depending on the shape and disposition of the panel. The tube T may have an integral ballast. The sign may be ornamental or functional as in a header to a supply, e.g. "MILK", "CONFECTIONERY" or warning, e.g. "EXIT", "TOILET" or a greeting, e.g. "WELCOME". The panel P can be mounted on the wall using any suitable mounting means.

CLAIMS

1. An illuminated sign mounted on a wall and comprising a sign body and a lamp disposed to light up the face of the sign substantially uniformly across its face, the lamp being a light tube located in a framework therefor on supports disposed in front of the sign face, wherein the framework comprises an elongate member of a channel section, the lamp being disposed within the member and arranged so as to face the panel at the angle α through the mouth of the channel section.
2. A sign according to Claim 1, wherein the member includes a lid portion arranged to close the mouth of the channel section where illumination is not required.
3. A sign according to Claim 1 or 2, wherein the lamp is a neon tube or a fluorescent tube and the control ballast therefor is located externally of the housing and is connected to the tube by wires.
4. A sign according to any preceding Claim, wherein the supports are hollow, and the control ballast is located behind the panel adjacent to the wall and the wires between the ballast and the tube extend through the hollow supports.
5. A sign according to any preceding Claim, wherein the fluorescent lamp is a T5 type.
6. A sign according to any preceding Claim, wherein the elongate member is an extrusion.

7. A sign according to any preceding Claim, including a lamp on two opposite sides, preferably top and bottom.
8. A sign according to any preceding Claim, including symbols in front of the sign face.
9. A sign according to any preceding Claim, wherein the interior surface of the channel section is reflective.
10. A sign according to any preceding Claim, adapted for interior use.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 97/03299

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G09F13/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 90 04132 A (GULTON INDUSTRIES) 19 April 1990 see page 9, line 3 - page 11, line 15; claims; figures 6,7 ---	1-3,6-10
Y	GB 2 143 067 A (D. MONTGOMERY) 30 January 1985 see abstract; figure 1 ---	1-3,6-10
A	US 5 243 506 A (L. WHITEHEAD) 7 September 1993 see the whole document -----	1-10

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Information on patent family members

International Application No

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