July 31, 1951

J. A. HOWENSTINE

INTERNALLY ILLUMINATED SIGN STRUCTURE AND UNIT THEREFOR

2,562,553

Filed April 6, 1950

2 Sheets-Sheet 1

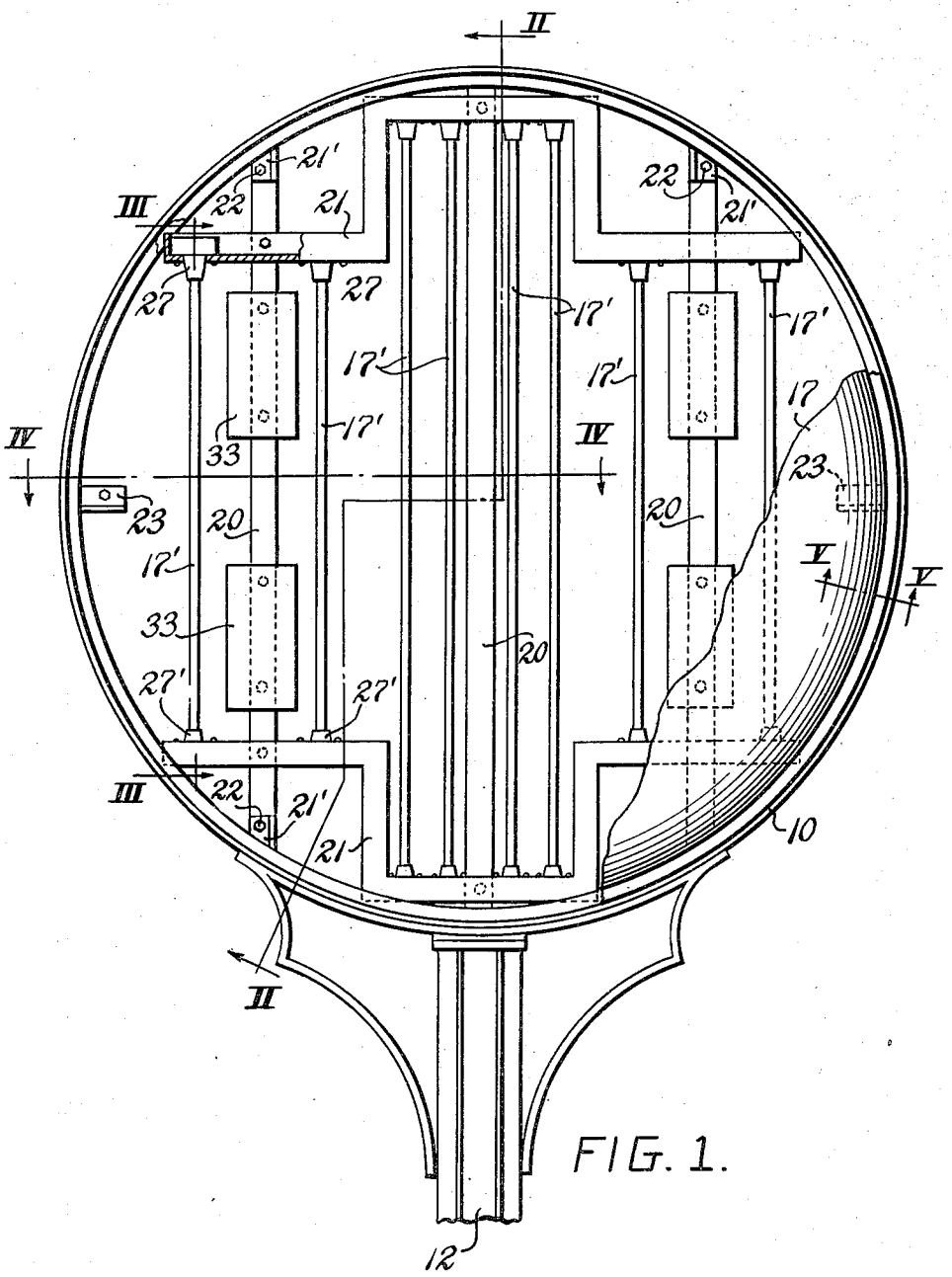


FIG. 1.

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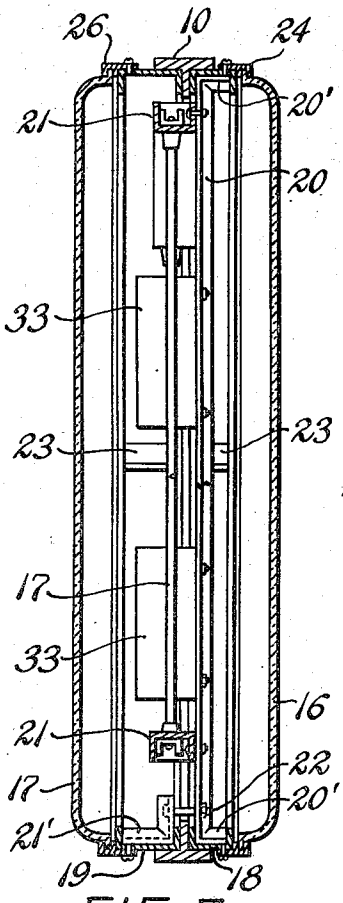


FIG. 2.

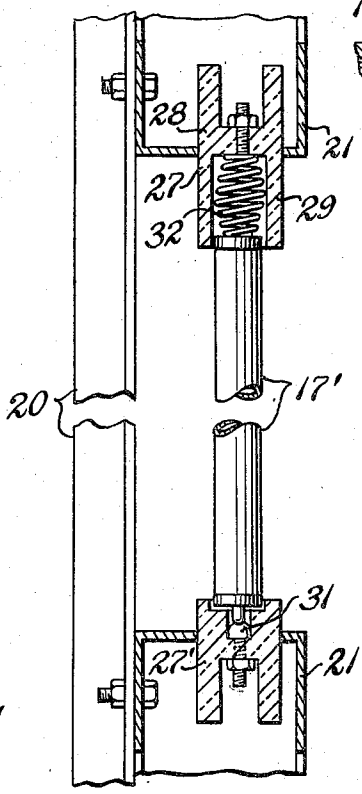


FIG. 3.

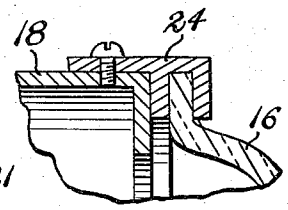


FIG. 5.

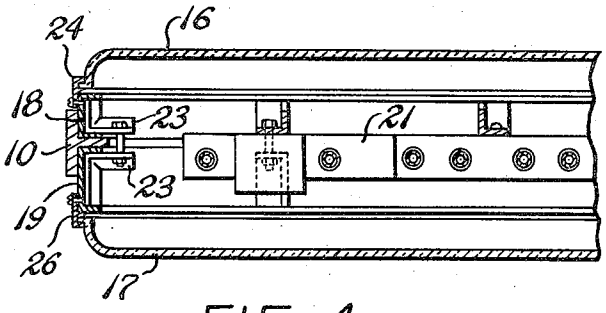


FIG. 4.

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Patented July 31, 1951 2,562,553

UNITED STATES PATENT OFFICE

2,562,553

INTERNALLY ILLUMINATED SIGN STRUCTURE AND UNIT THEREFOR

James A. Howenstine, Lima, Ohio, assignor to Neon Products, Inc., Lima, Ohio, a corporation of Ohio

Application April 6, 1950, Serial No. 154,317

6 Claims. (Cl. 40—132)

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This invention relates to illuminated signs and more particularly to an arrangement whereby signs consisting of a double face disc which is illuminated by an external light source may be converted to an internally illuminated sign having translucent faces.

At the present time there are many signs in use that comprise a base or standard having a circular frame supported thereon. Within the frame, a disc is mounted on the opposite faces of which the sign indicia is painted. These faces of the disc are illuminated by light bulbs and reflectors.

An object of this invention is to provide means for readily converting existing externally lighted signs to internally lighted signs provided with translucent faces.

It is a further object of this invention to provide an adapter structure which can be readily mounted in the frame of such a sign to replace the disc thereof, the adapter structure comprising a hollow sign assembly having spaced plastic faces illuminated by an internal light source, the assembly being supported within the circular frame of the aforementioned signs.

The above and other objects and features of this invention will in part be apparent and in part be obvious from the following detailed description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a view in front elevation of an illuminated sign structure constructed in accordance with an embodiment of this invention, part of one face and of the framework thereof being broken away for clarity of detail;

Fig. 2 is a view in section taken along line II—II in Fig. 1;

Fig. 3 is a fragmentary view in section of a sign embodying the invention, taken along line III—III of Fig. 1 illustrating details of construction of the light tube mounting and sockets;

Fig. 4 is a fragmentary view in section taken along line IV—IV in Fig. 1; and

Fig. 5 is a fragmentary view in section taken along line V—V in Fig. 1.

Throughout the drawings and specification like reference characters indicate like parts.

As shown in Figs. 1 and 2, the sign structure and ring 10 provide a supporting frame which carries and supports the sign structure. Many presently existing sign structures include this

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type of frame ring and upright. Such existing signs carry exteriorly lighted sign discs. Such exteriorly lighted sign discs may be replaced by the sign structure of the present invention to form a handsome internally illuminated sign having spaced plastic discs or panels 16 and 17 illuminated by fluorescent tubes 17' between the discs.

Discs 16 and 17 are spaced from the frame ring by filler rings or bands 18 and 19 which determine the width of the sign. The filler rings are mounted on opposite sides of the flange of frame ring 10, and are of channel shape in section with the flanges thereof projecting inwardly. Each filler ring is of substantially the same diameter as frame ring 10, and a portion of each filler ring is nested inside the web of frame ring 10 with one flange of each filler ring in engagement with the flange of the frame ring.

Filler ring 18 carries transverse ribs 20 which extend across filler ring 18. End portions of each rib 20 extend at right angles thereto and are seated between the flanges of filler ring 18 as indicated at 20'. The ribs not only serve to strengthen and reinforce the sign but also serve to support a pair of insulator holding members 21 which carry insulators for the ends of fluorescent tubes 17'. In addition, ribs 20 are attached to angle brackets 21 to hold the filler rings in place on the frame ring.

Angle brackets 21' are mounted in the channel of filler ring 19. Brackets 21' and ribs 20 are drawn together by bolts 22 to hold the filler rings against the flange of frame ring 10. In addition, pairs of angle brackets 23 may be provided at the sides of the sign as shown in Figs. 1 and 4 to hold the sides of the filler rings against the flange of frame ring 10.

The open side of filler ring 18 is covered by panel 16, while the open side of filler ring 19 is covered by panel 17. When the panels are in place, a closed hollow structure is formed which is illuminated from within by fluorescent tubes 17'. Panel 16 is framed by a molding 24 of F-shape in cross-section. As shown in Fig. 2, the stem of molding 24 embraces and is attached to the web of filler ring 18. Panel 17 is framed by a molding 26 of F-shape in cross-section having a stem which embraces and is attached to the web of filler ring 19.

As already pointed out, transverse ribs 20 support insulator holding members 21. Members 21 may be bolted or otherwise firmly attached thereto. Members 21 are of channel shape in section, as shown in Fig. 3, with the webs of the channels facing each other. The web of each member 21 is provided with apertures in which insulators 27 and 27' are mounted.

As shown in Fig. 3, each of the insulators has a base section 28 of channel shape. From the web of the base section, a neck section 29 containing a socket opening projects in a direction away from the channel flanges. The insulators are securely mounted in the members 21 with their neck sections projecting through the apertures in the web as shown in Figs. 1, 2, 3, and 4. Insulators 27' in the lower conduit are provided with fixed contacts 31 while insulators 27 in the upper conduit are provided with resilient contacts 32. Each of the fluorescent tubes extends between one of the upper insulators and one of the lower insulators.

When a tube is to be removed from the sign structure, the tube may be raised to compress the resilient contact sufficiently to permit release of the tube from the lower insulator. Then, the tube can be removed. A new tube may be mounted in the sign structure by inserting the upper end of the new tube on the upper insulator and raising the tube to compress spring contact 32 sufficiently to permit entry of the lower end of the tube into the lower insulator. The construction of the insulators is described in greater detail and claimed in the co-pending application of Kenneth F. Smith, Serial No. 148,970 filed March 10, 1950.

For clarity, electrical leads have been omitted, but it will be understood that appropriate electrical leads may be connected to the contacts to supply power to the tubes. In Figs. 1 and 2, boxes 33 are shown which can enclose transformers necessary for operating the tubes. Transformer boxes 33 may be bolted to ribs 20.

Having thus described the invention it will be apparent to those skilled in the art that various modifications and changes may be made in the illustrated embodiment of the invention without departing from either the spirit or the scope of the invention.

Therefore, what is claimed as new and is desired to be secured by Letters Patent is:

1. A sign unit adapted to be assembled in a hollow frame band open at one side and having an inwardly extending flange, said unit comprising a filler frame band adapted to be embraced on one side by said hollow band, the flange of the hollow band engaging a margin of the filler band at said one side thereof, means for attaching the filler band to the hollow band, a molding of substantially F-shape in section, the stem of said molding embracing the other margin of said filler band, the bars of said molding forming an inwardly facing closed loop channel, and a translucent panel having its marginal edge seated in said channel, the panel closing the open side of the hollow band.

2. A sign unit adapted to be assembled in a hollow frame band open at one side and having an inwardly extending flange, said unit comprising a filler frame band adapted to be embraced on one side by said hollow band, the flange of the hollow band engaging a margin of the filler band at one side thereof, the margin of the filler band embraced by said hollow band being provided with an inwardly extending flange disposed to engage the flange of the hollow band, means for securing the flange of the filler band to the flange of the hollow band, a molding of substantially F-shape in section, the stem of said molding embracing the other margin of said filler band, the bars of said molding forming an inwardly facing closed loop channel, and a translucent panel having its marginal edge seated inside said channel, the panel closing the open side of the hollow band.

3. A sign unit adapted to be assembled in a hollow frame band open at one side and having an inwardly extending flange, said unit comprising a filler frame band having inwardly flanged margins adapted to be embraced on one side by said hollow band, the flange of the hollow band engaging one of the flanges of the filler band, means for securing said one of the flanges of the filler band to the flange of the hollow band, a molding of substantially F-shape in section, the stem of said molding embracing the other margin of said filler band, the inner bar of the molding abutting the other flange of the filler band, the bars of said molding forming an inwardly facing closed loop channel, and a translucent panel having its marginal edge seated in said channel, the panel closing the open side of the hollow band.

4. In a sign structure, the combination of a frame band of T-shape in section, the leg of said T forming an inwardly extending flange, means for supporting said frame band in vertical position, a filler band disposed within the frame band on each side of the flange thereof, means for holding the inner margins of said filler bands in engagement with the flange of the frame band, the cross bar of the T of the frame band embracing the inner edges of both filler bands, a molding band of F-shape in section disposed at the outer edge of each filler band with the stem of each molding band embracing the outer margin thereof, the bars of each molding band forming an inwardly facing channel, and a translucent panel supported by each molding, the marginal edge of each panel being seated in the channel of its associated molding band and closing one of the sides of the frame band to form a hollow structure within which lighting fixtures may be housed.

5. In a sign structure, the combination of a frame band of T-shape in section the leg of said T forming an inwardly extending flange, means for supporting said frame band in vertical position, a channel shaped filler band disposed within the frame band on each side of the flange thereof, means for holding the inner margins of said filler bands in engagement with the flange of the frame band, the cross bar of the T of the frame band embracing the inner edges of both filler bands, a molding band of F-shape in section disposed at the outer edge of each filler band with the stem of each molding band embracing the outer margin of one of the filler bands, the bars of each molding band forming an inwardly facing channel, and a translucent panel supported by each molding, the marginal edge of each panel being seated in the channel of its associated molding band, and closing one of the sides of the frame band to form a hollow structure within which lighting fixtures may be housed.

6. In a sign structure, the combination of a frame band of T-shape in section, the leg of said T forming an inwardly extending flange, means for supporting said frame band in vertical posi-

tion, a channel-shaped filler band disposed within the frame band on each side of the flange thereof, means for holding the inner margins of said filler bands in engagement with the flange of the frame band, the cross bar of the T of the frame band embracing the inner edges of both filler bands, a molding band of F-shape in section disposed at the outer edge of each filler band with the stem of each molding band embracing the outer margin of one of the filler bands, the bars of each molding band forming an inwardly facing channel, a translucent panel supported by each molding, the marginal edge of each panel being seated in the

channel of its associated molding band and closing one of the sides of the frame band to form a hollow structure within which lighting fixtures may be housed, and a plurality of frame reinforcing ribs extending transversely of the sign structure between the translucent panels, each end of each rib being attached to the filler bands, the ribs supporting illuminating fixtures, said illuminating fixtures being adapted to illuminate both of said panels.

JAMES A. HOWENSTINE.

No references cited.

Certificate of Correction

Patent No. 2,562,553 July 31, 1951

JAMES A. HOWENSTINE

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows:

Column 1, lines 46 and 47, strike out "Throughout the drawings and specification like reference characters indicate like parts."; line 48, after "structure" insert *includes a circular frame ring or band 10 of* T*-shape in section which is mounted at the top of an upright post 12. Post 12*;

and that the said Letters Patent should be read as corrected above, so that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 30th day of October, A. D. 1951.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.