Feb. 6, 1951 L. G. LYTTON 2,540,271

ILLUMINATED SIGN STRUCTURE

Filed Jan. 23, 1947 2 Sheets-Sheet 1

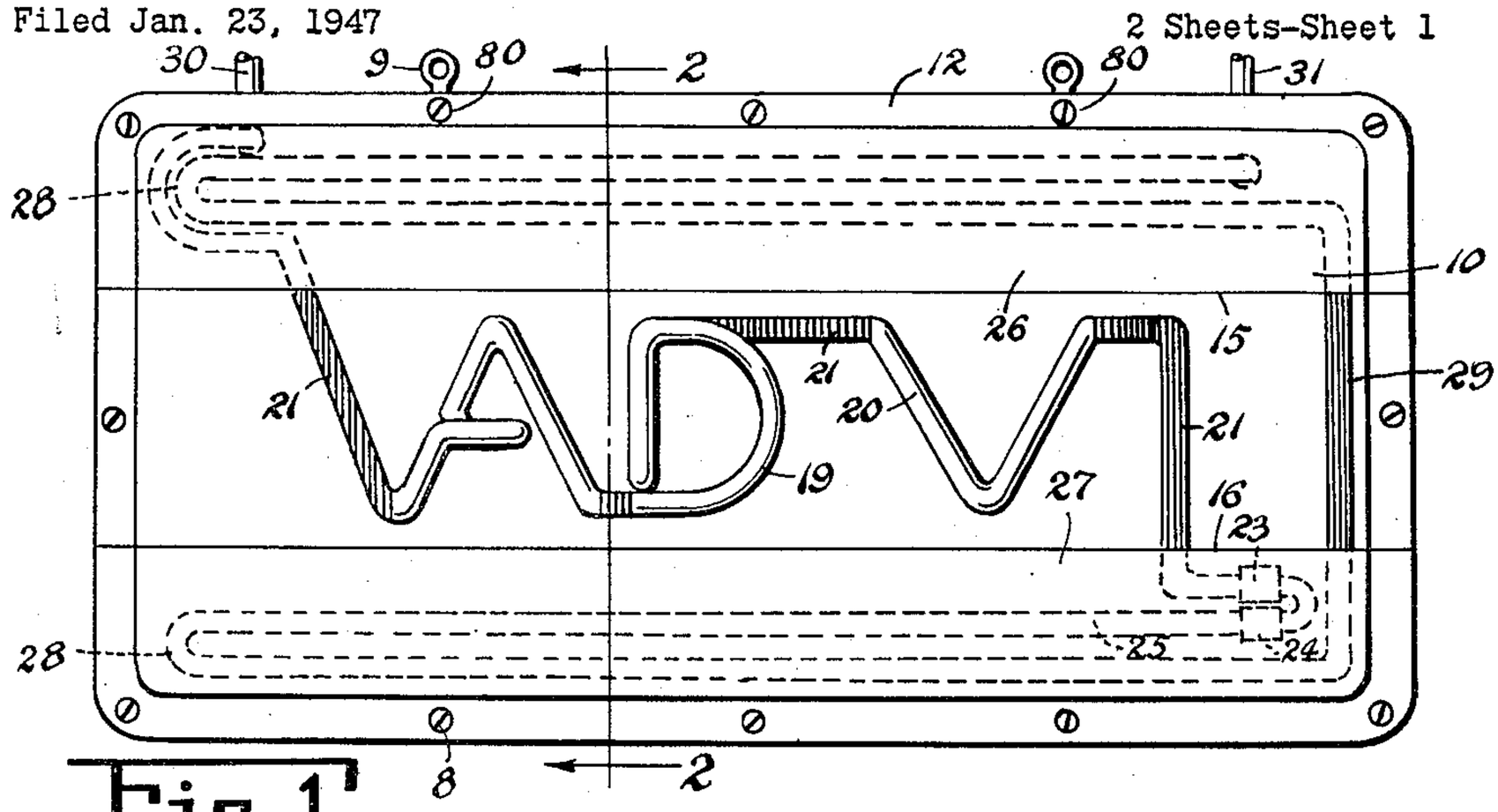

Fig. 1.

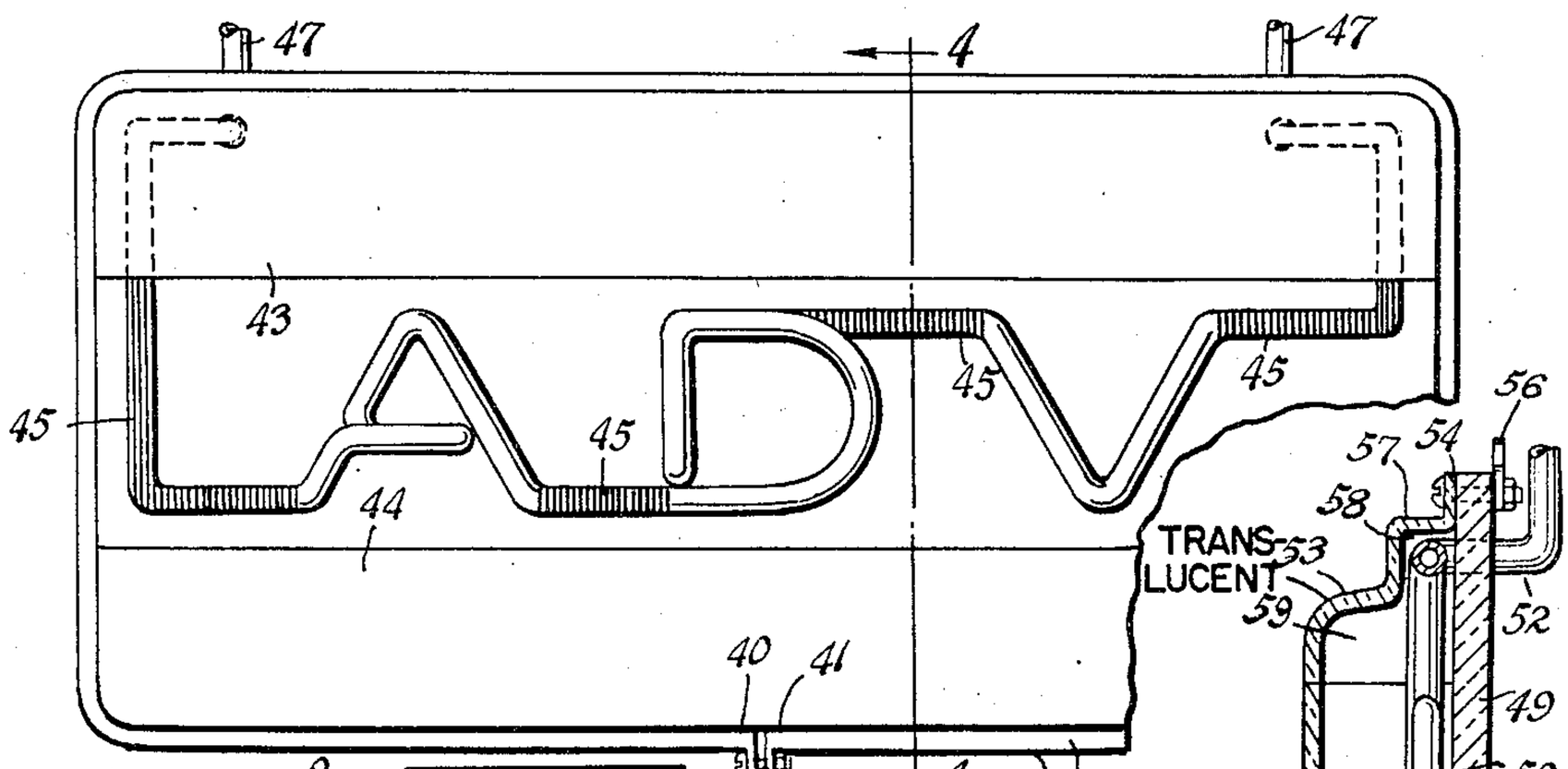

Fig. 3.

Fig. 4.

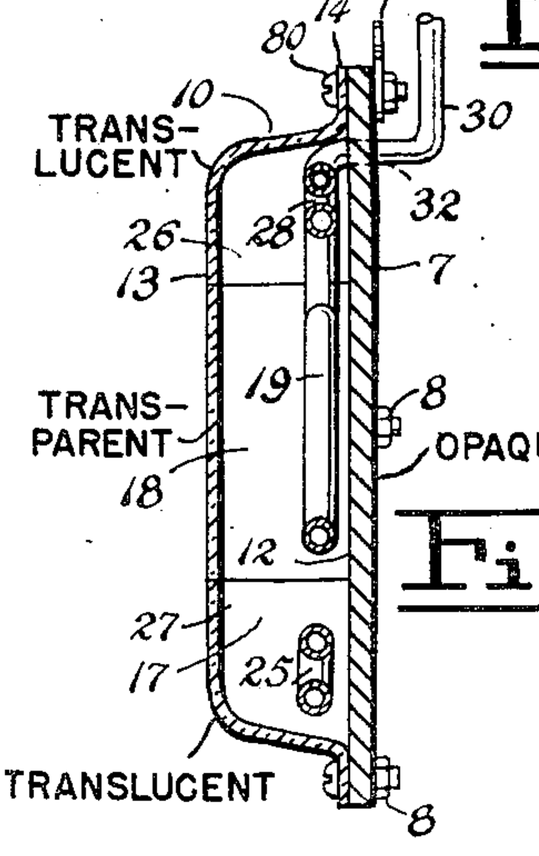

Fig. 2.

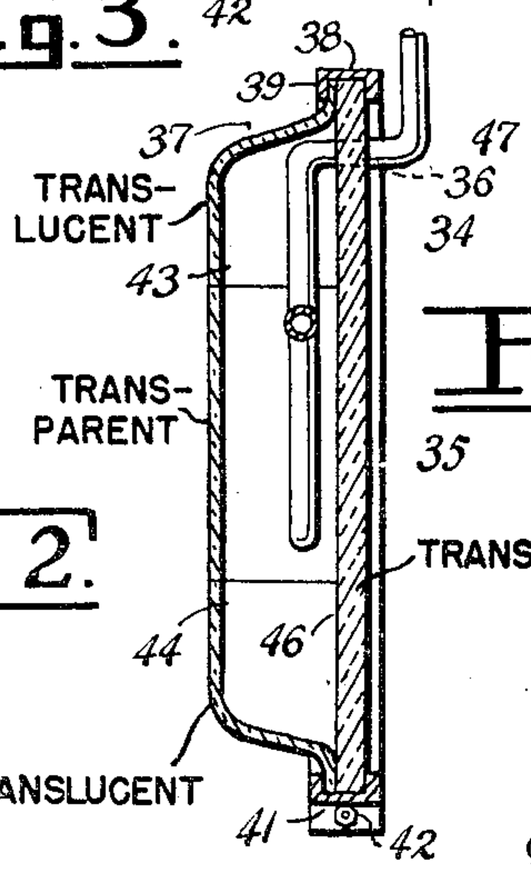

Fig. 5.

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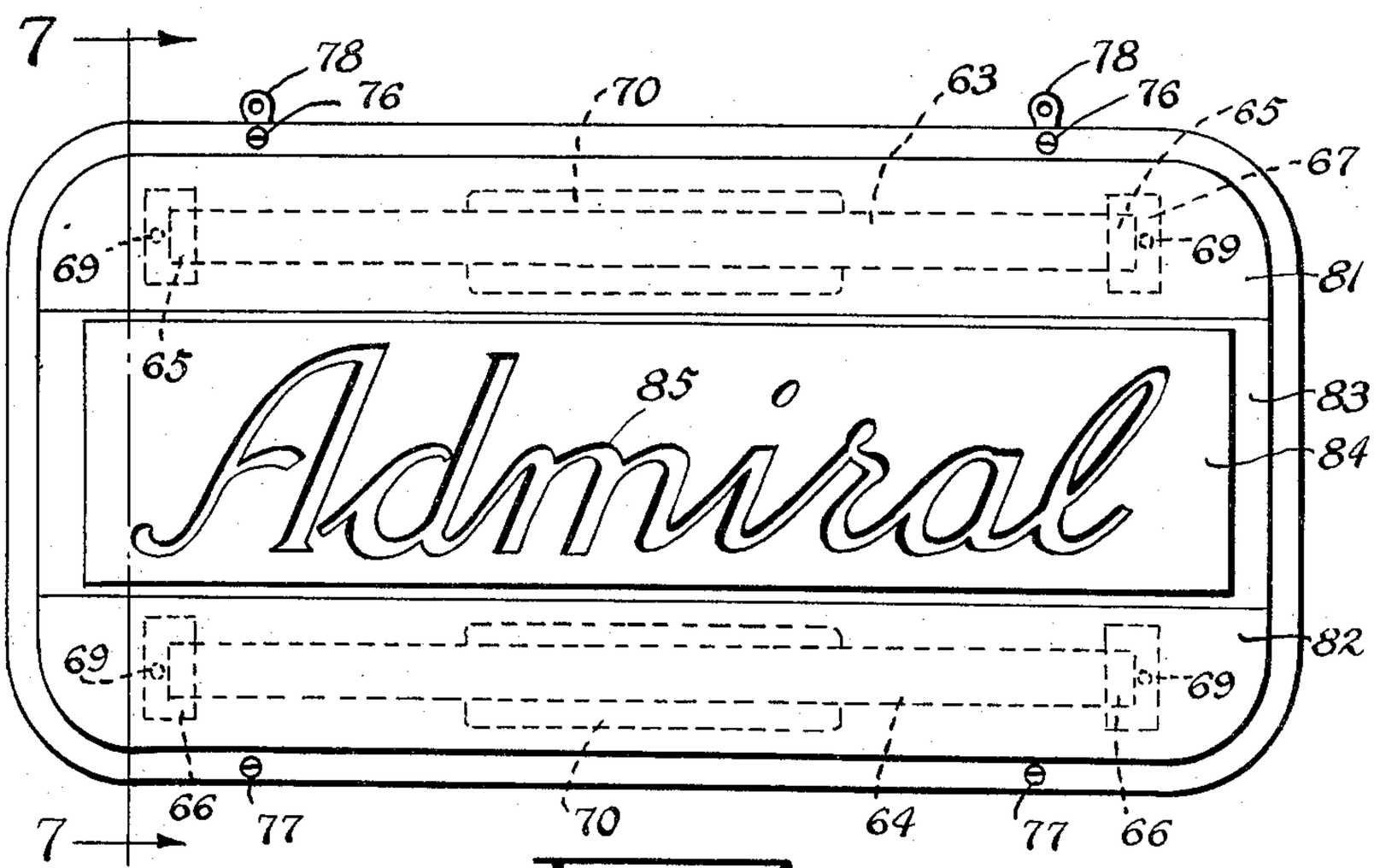

Fig.6.

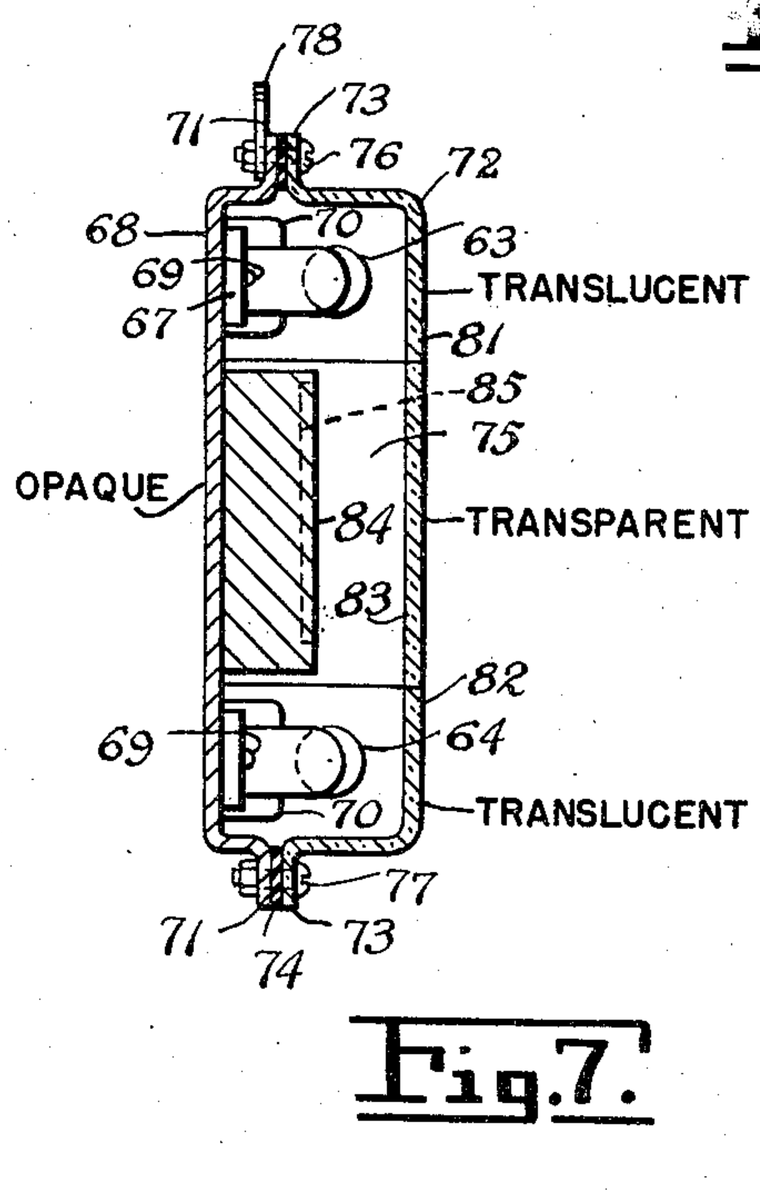

Fig.7.

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ILLUMINATED SIGN STRUCTURE

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Application January 23, 1947, Serial No. 723,821

3 Claims. (Cl. 40—130)

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This invention relates to improvements in illuminated sign structures.

An object of the invention is to provide a sign structure wherein the illuminating means is thoroughly protected against breakage, and against accumulations of dirt or other foreign substances which might adversely affect the brilliancy of the sign, the means employed for these purposes being highly durable and effective.

Another object is to provide an illuminated sign of the character referred to, wherein the light-emitting element is very prominently displayed where prominence is desired, while other portions thereof are effectively concealed, thereby to enhance the neatness and attractivness of the sign structure.

A further object of the invention is to provide an improved form of illuminated sign structure which may be manufactured at a reasonable cost, free of rejects in the factory, without in any manner detracting from the pleasing appearance and the effectiveness of the sign structure.

Another object of the invention is to provide an illuminated sign structure of the character stated, which will withstand a substantial amount of abuse in handling and under various circumstances of display, thereby avoiding the necessity for frequent servicing and repairs.

Another object is to provide an illuminated sign structure in which the light-emitting means is sealed in, thus achieving the various advantages above mentioned.

The foregoing and other objects are attained by the means described herein, and illustrated upon the accompanying drawing, in which:

Fig. 1 is a front elevational view of an illuminated sign structure embodying the invention.

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 1, showing a modification.

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a view similar to Fig. 2, illustrating a second modification.

Fig. 6 is a plan view of a third modification.

Fig. 7 is a cross-section taken on line 7—7 of Fig. 6.

As is well known, illuminated signs of the kind incorporating a gaseous discharge lighting tube have been very popular and have enjoyed generally a wide acceptance in the trade. Many signs of that character, however, are situated in surroundings highly unfavorable to proper maintenance of the effectiveness and brilliancy of the

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sign, due to the presence of dirt, grease, smoke and the like in the atmosphere surrounding the sign. When gaseous discharge lighting tubes accumulate dirt and other foreign substances which adversely affect the brillancy of light emission, they may be restored to the original condition only by means of a cleaning process which is very tedious and time-consuming in character, and which subjects the discharge tube to liability of breakage since the tubes are more or less fragile. Accordingly, the present sign structure was devised for the purpose of facilitating and expediting reconditioning of the sign structure to the original brilliancy and effectiveness, without subjecting the vital parts to breakage or injury. In addition, the improved construction enhances the attractiveness and the advertising power of the display.

With reference to Figs. 1 and 2 of the accompanying drawing, the character 7 indicates a base panel of any desired contour, and which provides proper support for the other constituents of the sign structure. This base panel may be opaque or translucent, as desired. In one form of the invention, base panel 7 may be simply a sheet of composition board such as Masonite or similar sheet material formed to the desired shape. In another desirable form of the sign structure, panel 7 may be a sheet of glass, plastic, or other translucent or transparent material, preferably of the kind which is unbreakable or at least highly resistant to fracture.

In that form of the invention illustrated by Figs. 1 and 2, the base panel may be drilled or otherwise furnished with apertures about the periphery thereof, for the reception of bolts or other fasteners indicated at 8. One or more of the fasteners, such as those indicated at 30, may be utilized as anchors for suitable hangers 9 to be used in suspending the sign structure from an overhead support. The fasteners referred to serve also as the means of mounting upon the panel a cover 10, which cover affords a chamber including the forward face 12 of the base panel 7. Cover 10 preferably is fabricated of transparent plastic material preformed to pan shape, and having its dimensions corresponding substantially to the dimensions of the base panel. The pan-shaped cover includes a circumferential flange 14 which rests flatwise upon the margin of the base panel all around the latter, with a sealing contact which is assured by the multiplicity of fasteners 8. From the region of the flange the cover bulges outwardly to produce the pan shape as indicated upon Fig. 2, so that the

forward face 13 of the cover is spaced from the forward face 12 of the base panel to form the chamber heretofore mentioned. Face 13 may be substantially flat as shown upon the drawing, or if desired it may be convex in form. The cover should be of a material penetrable by light, at least in selected areas thereof. In the device as disclosed by Figs. 1 and 2, the area between the horizontal lines 15 and 16 is transparent or clear, whereas the areas above line 15 and below line 16 may be translucent merely, these areas being either coated with a transparent paint, or etched or otherwise treated to diffuse light originating within the chamber 17. The clear portion 18 of the cover may extend throughout the length of the sign structure, as shown, or it may be restricted in area if desired.

The character 19 indicates a section of gaseous discharge lighting tube properly formed to produce a display, such as the letters A D V, or if desired, some form of design. The lighting tube is a well known light-emitting medium, and will usually comprise luminous sections 20 and opaque sections 21 properly arranged to produce a desired display of letters or designs. The gaseous discharge lighting tube customarily is formed from glass or glass-like substance, and within it is sealed an ionizable gas energized to emit various colors of light by reason of an electric charge applied at electrodes located at opposite ends of the tube. One of the electrodes of tube 19 is shown at 23, where electrical connection is made with an electrode 24 of a second tube 25. This second tube is a border tube adapted to concentrate light behind the translucent or colored sections 26 and 27 of the cover element 10. For this purpose, the border tube may be doubled upon itself at the location 28—28. The vertical section 29 thereof may be rendered opaque in a manner previously explained, to maintain a desired symmetry of the display. The ends 30 and 31 of the light tubes may leave the chamber 17 through openings 32 formed in the base panel at the rear of the sign, and as is customary, will have electrical connection with a suitable source of electric power. Tubes 19 and 25 may rest in a common plane, and any suitable means such as clips (not shown) may be employed to support them upon the base panel in substantial parallelism with the face of the panel.

In the modification illustrated by Figs. 3 and 4, the base panel 34 is shown constructed of transparent plastic or other glass-like material which forms a background for the advertising design or letters produced from the gaseous discharge lighting tube 35. The terminal ends 47 of the lighting tube extend through openings in the base panel at 36, and are intended for connection to a suitable source of electric power. The cover 37 is substantially like that illustrated by Fig. 2, with the difference that its marginal edge or flange need not be perforated to receive fasteners such as 8, since in the modified form the cover is held in place marginally of the base panel by means of a circumferential frame 38 having legs 39 embracing the margins of the cover and the base panel. Frame 38 may be constructed of a single length of U-shaped strip material, such as plastic, metal or the like, having its end portions 40 and 41 joined or clamped together in any suitable manner, as by means of a bolt 42. Tightening of the bolt holds the border frame firmly in place, and provides a convenient means for disassembly of the sign structure whenever necessary. Initial assembly, of course, likewise is expedited by the provision of a border frame as illustrated by Figs. 3 and 4.

While the border lighting tube has been omitted from the illustration of Figs. 3 and 4, it is to be understood that border lighting may be effected, if desired, as taught by the disclosure of Fig. 1. The cover 37 affords the desired protection for the lighting tube as hereinbefore mentioned, and facilitates cleaning and maintenance of the sign structure to impart lasting brilliance and effectiveness as an advertising piece. The characters 43 and 44 indicate translucent areas of the cover, as distinguished from the intermediate transparent area through which the advertising design or lettering is visible. All of these areas may extend the full length of the sign structure, or if desired, one or more of such areas may be more limited in extent. The vertically lined portions 45 of the gaseous discharge tube are rendered opaque in any well known manner, to preclude emission of light at those locations. The device of Figs. 3 and 4 may be suspended or otherwise placed in view, according to the wishes of the user.

In the modification of Fig. 5, the base panel 49 supports the lighting tube 50 which furnishes the advertising design or lettering, and also the border tube indicated at 51. The terminal ends 52 of the lighting tubes extend through the base panel as previously explained in connection with Figs. 2 and 4. In this instance, the cover 53 may be of preformed transparent plastic or similar material, pressed from a sheet, to render it substantially pan-like in character. The margins 54 of the cover are adapted to rest flatwise against the margins of the base panel, and may be held against the latter by means of bolts or other fasteners 55, or by means of a peripheral border strip as shown in Fig. 4. A hanger for suspending the sign structure is indicated at 56.

In the Fig. 5 form of sign structure, an effort is especially advanced to sharply and distinctively outline the circumferential border tube 51, and this is accomplished by forming a reverse curve 57 in the material of the cover intermediate the marginal flange 54 and the major area of the cover face. By so curving the cover material, a border channel 58 is provided, which is spaced from the base panel a distance approximating or slightly exceeding the diameter of the circumferential lighting tube 51. Thus, if the areas 59 and 60 above and below the central transparent portion 61 of the cover are coated or otherwise rendered translucent, rather than transparent, the border tube 51 will be sharply defined when the sign is lighted. It should be understood that the border channel 58 preferably is continuous marginally of the cover, and may easily be produced in the press as the cover is formed to the desired pan shape. The lighting tube indicated at 50 may be continuous with the border lighting tube 51, or if desired, these tubes may be individually formed but energized from a common source of electric power. Base panel 49 may be modified in various ways with respect to its characteristics of full or partial translucency or opacity, as suggested in the description of Figs. 1 to 4 inclusive. If the border tube 51 is to appear continuous marginally of the sign when lighted, the end portions of the translucent area 61 may be rendered light-diffusing in character, to correspond with the areas 59 and 60 which are less transparent than the intermediate area 61.

Figs. 6 and 7 illustrate a different form of sign structure, utilizing basically the same elements

as constitute the structures previously described with the exception of the type of gaseous discharge lighting tube employed. Whereas in the structures previously described the lighting tubes were of the so-called neon tube type, those of Figs. 6 and 7 are fluorescent tubes or lamps indicated by the characters 63 and 64. These tubes have their opposite ends lodged in socket members 65 and 66, wherein are located the necessary clips or contacts which hold the tube ends in place while supplying electric current thereto. The socket members each comprise a base 67 which is screwed or otherwise fastened to the base panel 68 as at 69, said socket members being arranged in pairs as indicated, to support their respective tubes in spaced parallelism horizontally upon the inner or forward face of the base panel. The necessary transformers or ballast elements for the tubes are represented at 70, the understanding being that such elements 70 may be located anywhere within or upon the sign structure, or remotely therefrom, as desired.

Base panel 68 may be pressed, cast or otherwise formed from metal, plastic, composition board material or the like, and will preferably be dished as illustrated upon Fig. 7 with the marginal flange 71 thereof disposed in a plane. The cover 72 likewise is formed to dish shape, and has also a marginal planar flange 73 corresponding and coinciding with flange 71, both flanges being continuous or peripheral. The cover is constructed of transparent plastic substance, preferably in one piece. By placing a suitable gasket 74 of felt or like material between the flanges 71 and 73 and then clamping the flanges together at various points on the periphery, an effectively sealed chamber 75 is provided for enclosing the tubes and other alements of the sign structure to be protected from dirt and injury. The clamping may be effected in any suitable manner, as by means of screws or other fasteners 76—77, or in accordance with Fig. 4. The characters 78 indicate hangers for the sign structure, which may be held in place by the screws 76—76.

As indicated upon Fig. 7, the tubes 63 and 64 are advanced forwardly toward cover 72 and away from the base panel. The cover where overlying the tubes may be rendered partially or wholly opaque by coating or painting the areas 81 and 82, preferably inside the chamber, leaving transparent the intermediate area 83. This transparent area may extend substantially the full length of the cover, and will be limited in width or vertical height to expose only the area of the base panel between tubes 63 and 64, without exposing the tubes. Directly behind the transparent area 83, the base panel may support any suitable form of advertising piece 84 to be illuminated by the tubes 63—64 and observed through the transparent area 83. This advertising piece is shown by way of example, as a block carrying suitable lettering 85 recessed therein or formed in relief thereon, as may be desired. The block preferably is made no wider than the height of the transparent area 83, and may be of any length within the limits of the sign structure. The translucent or opaque areas 81—82 may carry additional advertising matter, if desired,

and when the sign structure is illuminated by means of the lamps or tubes, a very pleasing and unusual effect is produced. The wires carrying electric current to the lamps or tubes may pass through the base panel of the sign structure at any convenient location.

The forms of the sign structure herein disclosed are to be considered typical or suggestive in character, and it will be at once evident that various modifications and changes in structural details may be made, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed is:

1. An illuminated sign comprising in combination a base plate having front and rear faces, display indicia attached to and extending across a portion of the front face of said plate, a gaseous discharge lighting tube having a luminous section adjacent to the front face of the plate, and an impervious protective cover overlying the forward face of the plate and the indicia and the lighting tube in spaced relationship thereto, said cover being attached to the margins of the base plate, said cover having a single transparent panel disposed in front of said indicia and translucent panels on opposite sides of said transparent panel, whereby the indicia behind said central panel are visible by direct illumination and the side panels are luminous.

2. An illuminated sign in accordance with claim 1 characterized by the fact that the indicia is formed by the gaseous discharge tube and that the tube extends behind the translucent panels of the cover to illuminate the translucent panels of the cover.

3. An illuminated sign which comprises in combination a base plate having front and rear faces, an elongated gaseous discharge tube attached to said base plate and formed to present display indicia across a central portion of the front face of said base plate, elongated gaseous discharge tubes disposed on either side of said display indicia, and an impervious protective cover overlying the front face of the plate and the indicia and the lighting tubes in spaced relationship, said cover being substantially sealed to the margins of the base plate, said cover having a single transparent portion opposite said indicia and translucent portions opposite said illuminated tubes, whereby the indicia behind said central panel are visible by direct illumination and the side panels are luminous.

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