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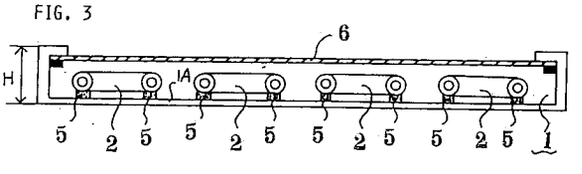
(54) Advertising signboard of decorative illumination type.

(57) Here is disclosed a thin advertising signboard of decorative illumination type comprising a plurality of neon tube lamps adapted to be operated by relatively low voltage and neon tube support members of extremely small height by means of which the neon tube lamps 2 are mounted on a base surface.

FIG. 3



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Field of the Invention

This invention generally relates to an advertising signboard of decorative illumination type used in- or outdoors and more particularly to such advertising signboard for store, railway station, building or the like.

Background of the Invention

As shown in Figs. 13 through 15 of the attached drawings exemplarily showing the prior art, mounting of the neon tube lamp 30 on the panel 31 usually requires insulative support members 32 since the secondary voltage output from the secondary side of the gas-tube sign transformer (referred to hereinafter as neon sign transformer) is relatively at a high level, for example, of 6 KV, 9 KV, 12KV or 15 KV.

According to such prior art, it has been disadvantageously required to employ relatively long (approximately 15 cm to 18 cm) support members 32 for mounting of the neon tube lamp 30 on the panel 31 in order to avoid an adverse effect of the high voltage and this requirement has necessarily resulted in a bulky signboard which is inconvenient for handling.

It is an object of the invention to provide an improved advertising signboard of this type allowing such problem of prior art to be effectively overcome.

Summary of the Invention

In view of the object set forth above, this invention resides in an advertising signboard of decorative illumination type comprising gas tube lamps each having a relatively short tube length (max. 1.5 m) and a relatively small tube diameter (9 to 14 mm) charged with neon gas, argon gas or the like under an appropriate gas pressure (5 to 7 mmHg), said gas tubes being conditioned so that selected colors evaporated therein be as bright as possible, said gas tubes being supplied with relatively low secondary voltage (e.g., AC 12V, 24V, 36V) output from a neon sign transformer. and, instead of the relatively high support members conventionally employed in the prior art, and both-sided or single-sided adhesive tape or the other relatively low support means (less than 25 mm, preferably in a range of 15 mm to 20 mm) attached on a base surface.

A plurality of the gas tube lamps (referred to hereinafter as neon tube lamps) are mounted on the base surface and discharge electrodes thereof are applied via the neon sign transformer with the low secondary voltage, causing the neon tube lamps to emit desired color or colors.

Brief Description of the Drawings

The invention will be described by way of example in reference with the attached drawings, in which:

Fig. 1 is a plan view showing a first embodiment of the invention;

Fig. 2 is a perspective view showing, in an enlarged scale, a relationship between the neon tube lamp and the both-sided adhesive tape;

Fig. 3 is a fragmentary sectional view taken along a line X - X in Fig. 1;

Fig. 4 is a plan view showing a second embodiment of the invention;

Fig. 5 is a front sectional view showing the neon tube lamp fastened by the both-sided adhesive tape to the base surface 1A of a panel-like thin box;

Fig. 6 is a plan view showing a third embodiment of the invention installed on the outer wall of building;

Fig. 7 is a side view showing, as partially broken away, the third embodiment;

Fig. 8 is a horizontal sectional view of the third embodiment;

Fig. 9 is a plan view showing, in an enlarged scale and as partially broken away, important parts of the third embodiment;

Fig. 10 is a perspective view illustrating the manner in which the neon tube is mounted on the base surface;

Fig. 11 is a front view illustrating a specific manner in which the neon tube is mounted on the base surface;

Fig. 12 is a view similar to Fig. 11 illustrating another specific manner in which the neon tube is mounted on the base surface;

Fig. 13 is a perspective view showing the prior art;

Fig. 14 is a perspective view showing the support members conventionally used in the prior art and;

Fig. 15 is a front view showing the support member used in the prior art.

Description of Preferred Embodiments

Embodiment 1 (illustrated by Figs. 1 through 3):

Reference numeral 1 designates a panel-like box which is substantially thinner than that of well known art and has a depth H of approximately 6 cm.

Reference numeral 2 designates neon tube lamps arranged within said panel-like box 1 so as to describe a desired message or figure and adapted for discharge upon application of AC 24V. Of course, it is also possible to employ the neon tube

lamps adapted for discharge under the other low levels of voltage.

Reference numerals 3 and 4 designate neon sign transformers each adapted to be supplied with primary voltage of AC 100V and to output secondary voltage of AC 24V (or AC 12V or AC 36V). These transformers 3, 4 energize the associated neon tube lamps 2 via respective electrodes P.

Reference numeral 5 designates pieces of both-sided adhesive tape interposed between the neon tube lamp 2 and a base surface 1A of the panel-like box 1 for adhesively fixation of the neon tube lamp 2 to the panel-like box 1. By emplying the neon tube lamp 2 of which the operating voltage is relatively low, for example, 24V as well as by utilizing the adhesive tape such as said both-sided adhesive tape 5 or single-sided adhesive tape if desired, the depth of the panel-like box 1 can be effectively reduced. Reference numeral 6 designates a acryl plate on which an advertising message or figure is displayed.

Embodiment 2 (illustrated by Figs. 4 and 5):

It should be understood that the same parts of this embodiment as those of the Embodiment 1 are designated by the similar reference numerals. As will be apparent from the drawings, this embodiment is similar to the Embodiment 1 except that the neon tube lamps 2 are arranged in a different pattern.

Embodiment 3 (illustrated by Figs. 6 through 12):

This is the embodiment of the invention used for an advertising tower installed on a wall surface of building or the like.

Reference numeral 10 designates an outer wall of building, to which a basic frame 11 of the sign board is mounted by fittings 12. While the basic frame 11 is illustrated as a square pillar in this specific embodiment, this basic frame 12 may be also in the form of a flat board or a polygonal pillar.

Reference numeral 13 designates a base surface of the signboard which defines the surface of the basic frame 11.

The basic frame 11 is provided at corners thereof with corner support members 14 secured by strut members 15 thereto so as to support a signboard surface sheet, as will be described later, under an appropriate tension.

Similarly to the previous embodiments illustrated by Figs. 1 through 5, a plurality of the neon tube lamps 2 are used and mounted in parallel to said base surface 13 in the instant embodiment illustrated by Figs. 6 through 12. These plural neon tube lamps 2 are selected to present different colors and arranged so as to display a desired advertising figure or message, just as in the conventional neon sign, in various fashions such as on-and-off light or multicolored travelling light fashion.

According to this specific embodiment, the neon tube lamp 2 is mounted on the base surface 13 by means of neon tube support members 16 made of insulative synthetic resin and having an extremely small height (less than 25 mm, preferably in a range from 15 mm to 20 mm).

Fastening means of the neon tube support member 16 may be a setscrew 17 as shown in Fig. 11, or adhesive tape or adhesive 18 as shown in Fig. 12.

Reference numeral 19 designates a signboard surface sheet on which various advertising message or figure is displayed by means such as print. While this surface sheet preferably comprises a sheet made from vinyl chloride mixed with polyester fibre, sheets of any other types may be employed. As will be apparent from Fig. 9, the surface sheet 19 has its opposite ends looped in the form of covered bindings 20 into which rods 24 are inserted, respectively, and there are provided hook-like tension fittings 21 including tension adjusting nuts 22, so that said hook-like tension fittings 21 may be mounted on respective flanges 23 secured to the basic frame 11, on one hand, and be engaged with the associated rods 24 to hold the surface sheet 19 about the corner support members 14, i. e., the basic frame 11 under appropriately adjusted tension.

While a distance between the base surface 13 and the display sheet 19 draped about said basic frame 11 is approximately 10 cm in this specific embodiment, this distance may be smaller, if desired. Reference numeral 25 designates fishing gut tensioned between said display sheet 19 and the neon tube lamps 2 in order to restrain a possible movement of the display sheet 19 due to a high wind and thereby to prevent the display sheet 19 from contacting the neon tubes 2. Use of the fishing gut is advantageous in that the shadow thereof is not easily visible externally.

By employing the neon tube lamps adapted to be operated by relatively low voltage and the adhesive tape such as both-sided adhesive tape or the other neon tube support member of extremely small height rather than the bulky support member as have conventionally been employed, this invention allows it to provide the advertising signboard of decorative illumination type, in which a thickness of the panel-like box or a distance between the base surface and the display sheet presenting the advertising message or figure can be effectively reduced.

IDENTIFICATION OF REFERENCE NUMERALS USED IN THE DRAWINGS

1	panel-like box
1A, 13	base surface
2	neon tube lamp
5	both-sided adhesive tape
16	neon tube support member
19	signboard surface sheet

Claims

1. Advertising signboard of decorative illumination type comprising a base surface, a plurality of neon tube lamps adapted to be operated by relatively low voltage, and neon tube support members each having an extremely small height by means of which said neon tube lamps are mounted on said base surface.

2. Advertising signboard of decorative illumination type as recited in Claim 1, wherein the neon tube support member comprises adhesive tape such as both-sided or single-sided adhesive tape.

3. Advertising signboard of decorative illumination type as recited in Claim 1, wherein the neon tube support member comprises a member of a height as small as less than 25 mm made from insulative synthetic resin.

4. Advertising signboard of decorative illumination type as recited in Claim 1, wherein an advertising message or figure is displayed on a signboard surface sheet held under appropriate tension.

FIG. 1

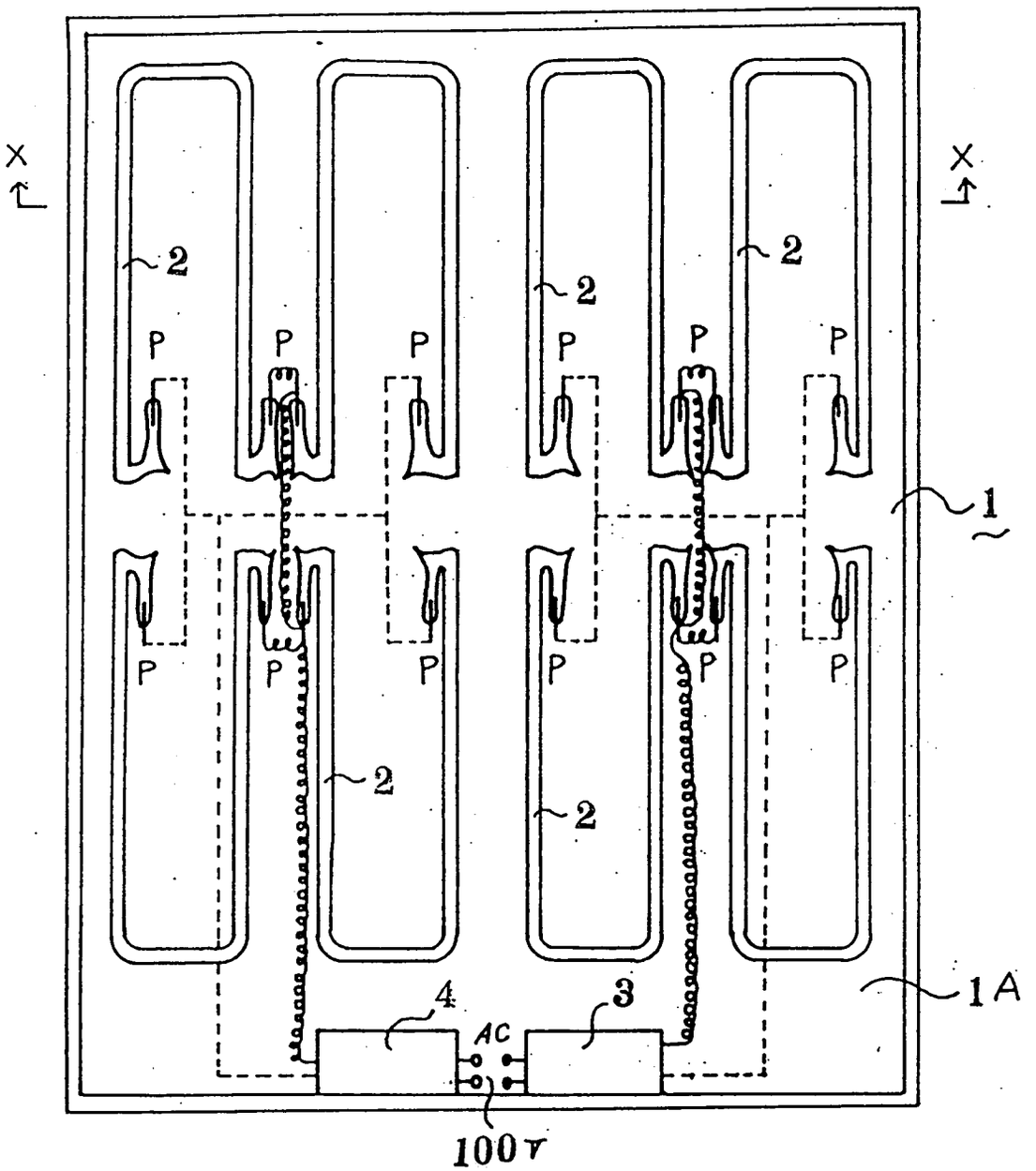

FIG. 2

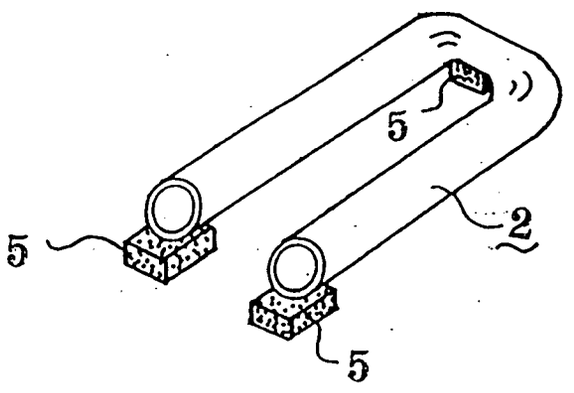

FIG. 3

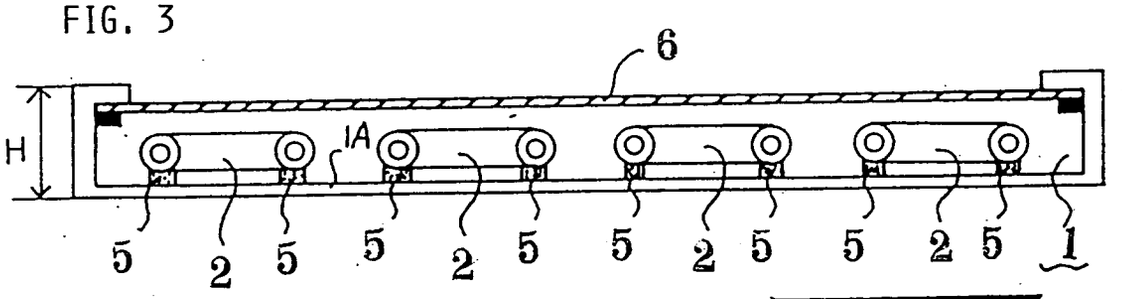

FIG. 4

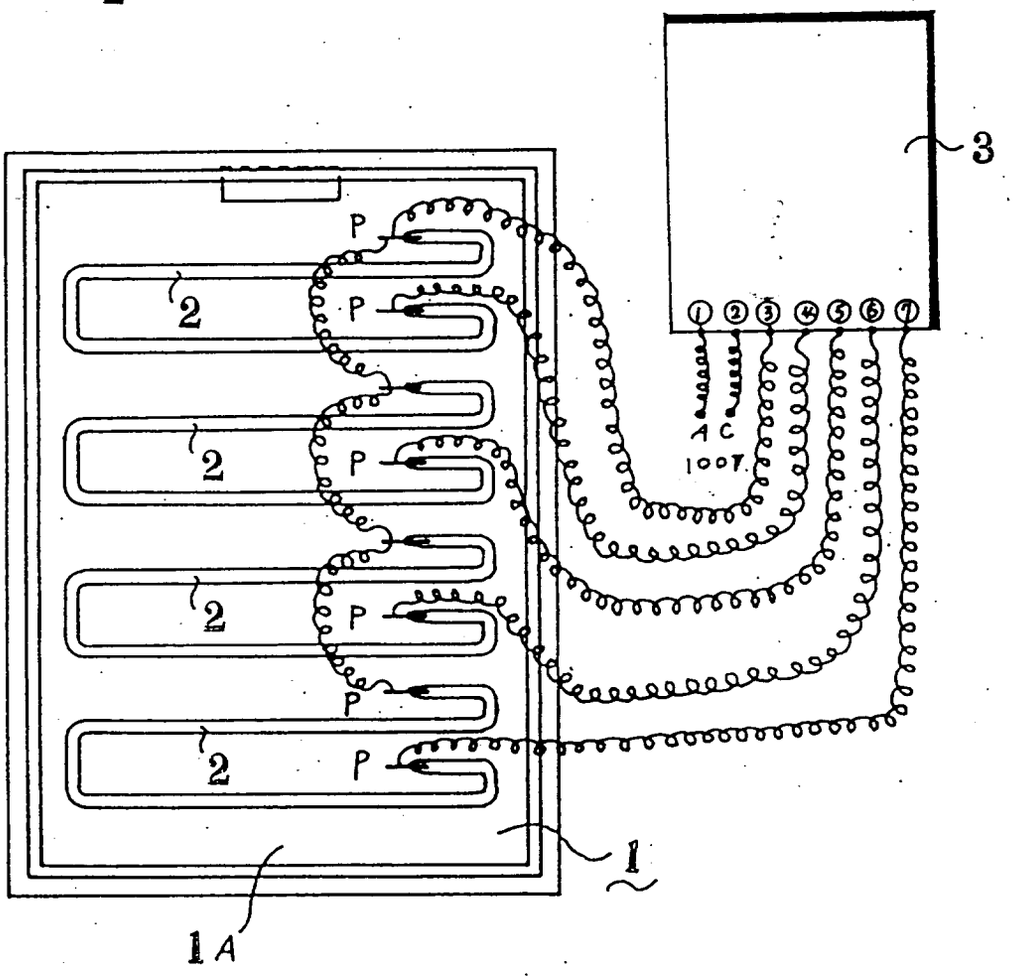

FIG. 5

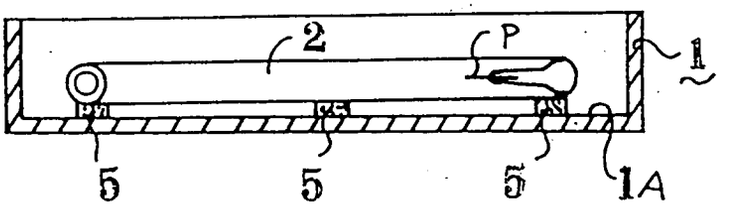

FIG. 6

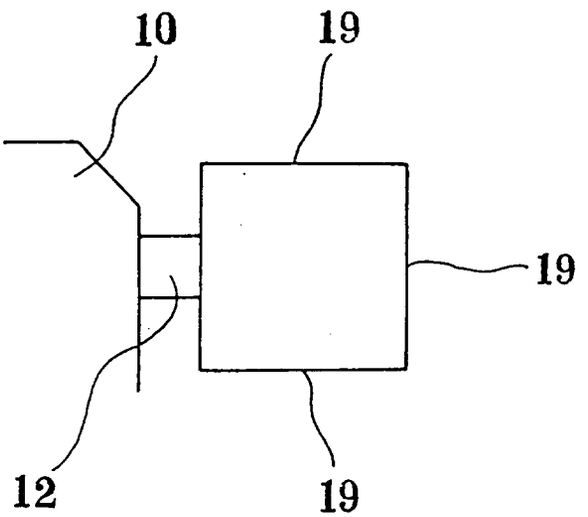

FIG. 7

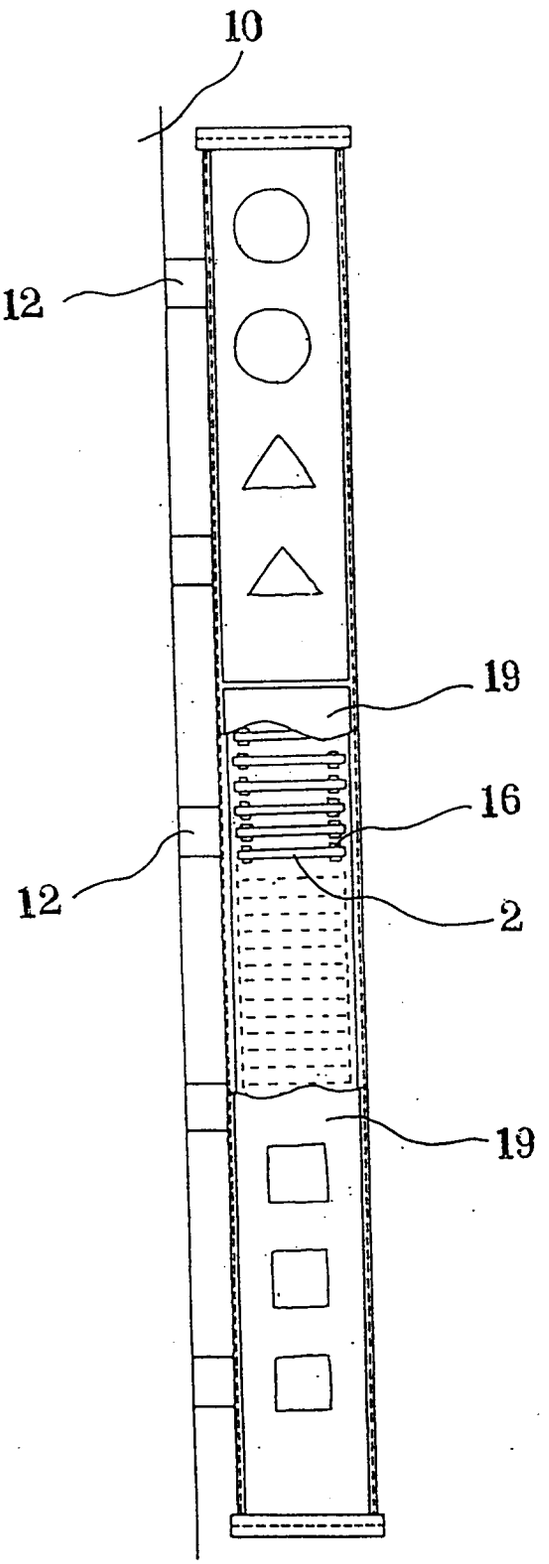

FIG. 8

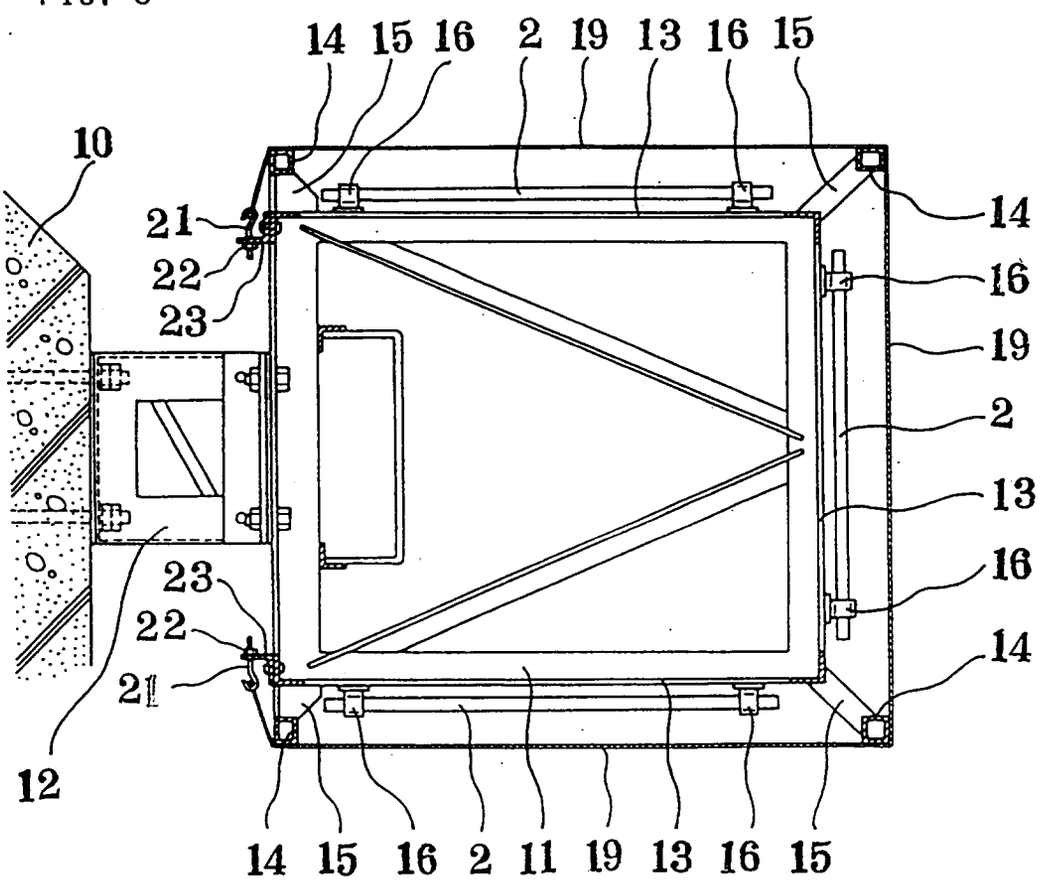
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FIG. 9

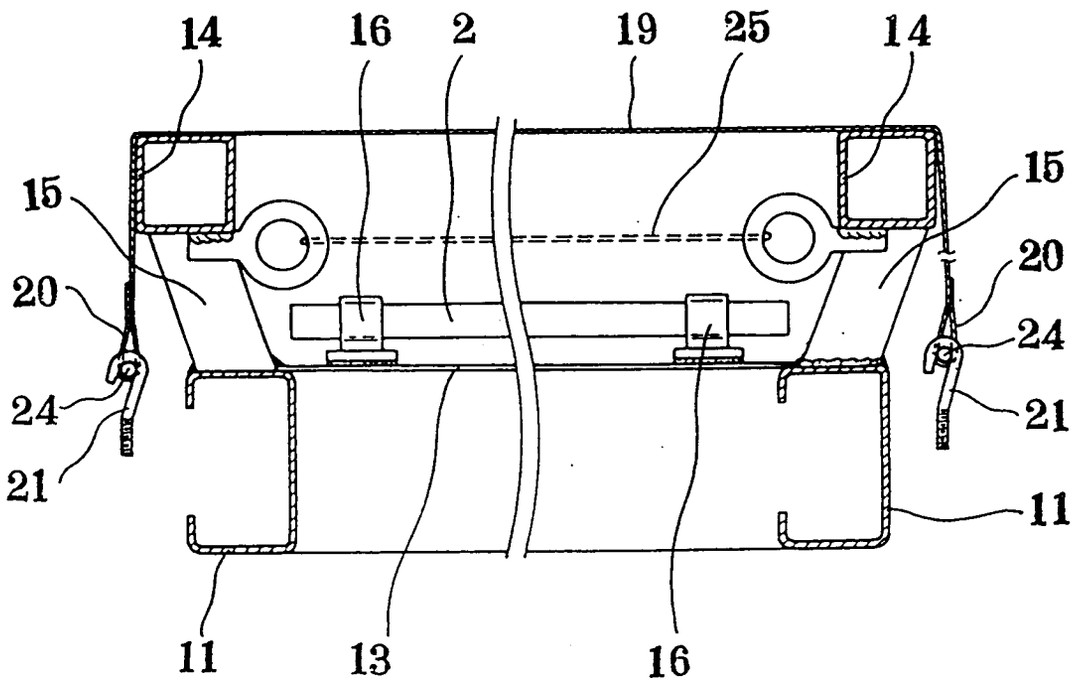


FIG.10

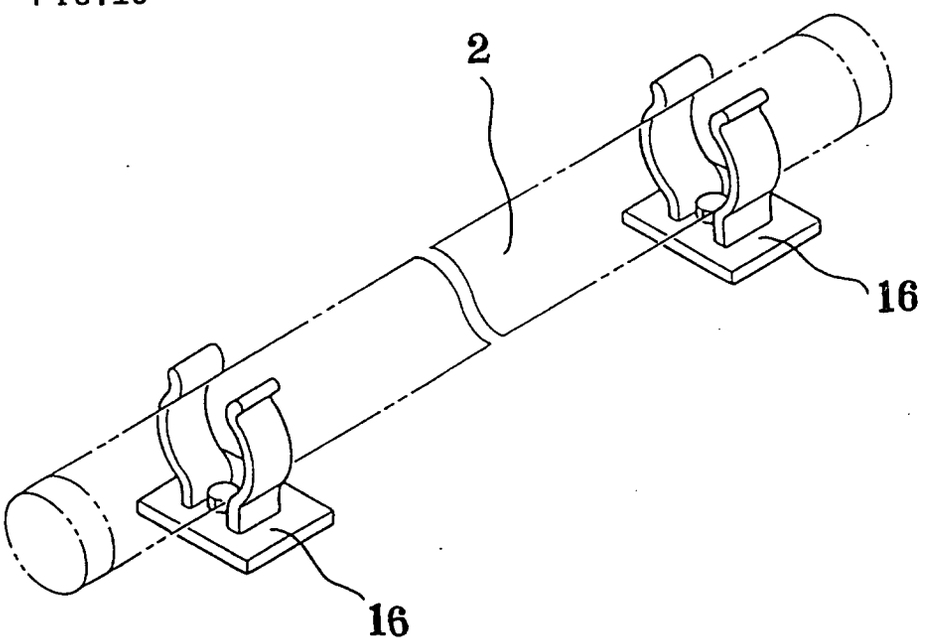


FIG. 11

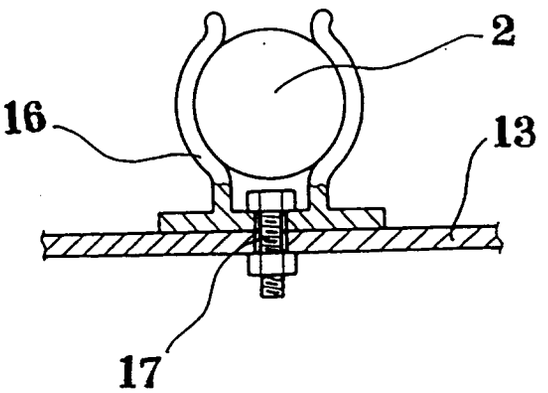


FIG 12

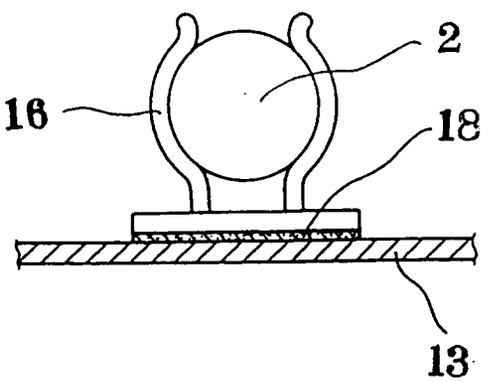


FIG. 13

PRIOR ART

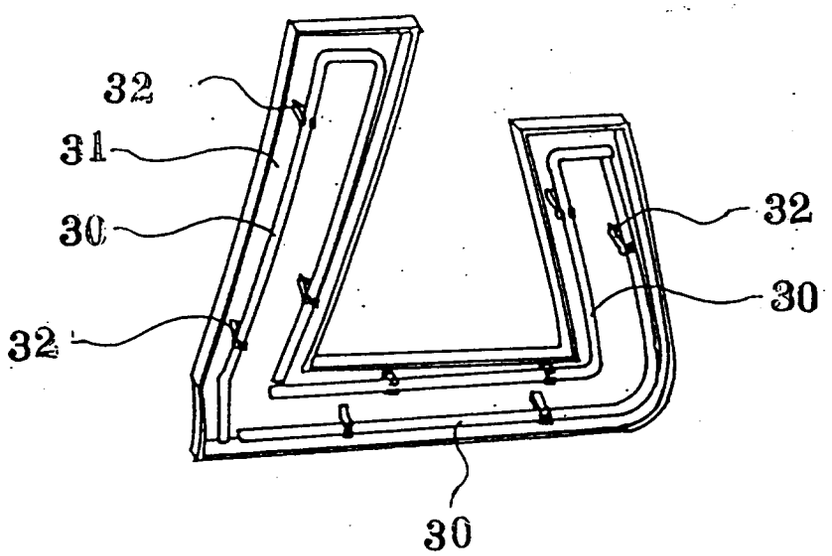


FIG. 14

PRIOR ART

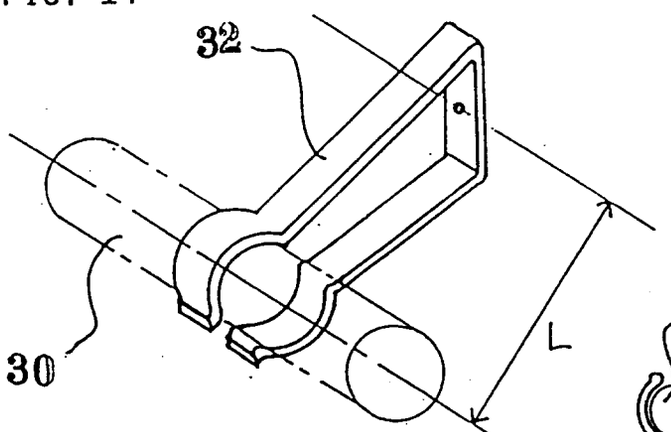
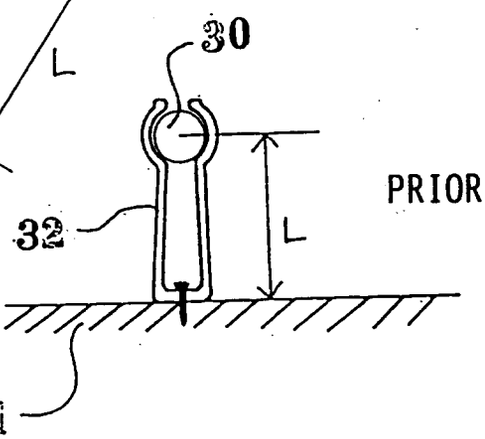


FIG. 15

PRIOR ART



European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 93 10 6727

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	FR-A-2 667 429 (ABAQUE ELEC) * abstract; figures * ---	1-4	G09F13/04
A	FR-A-2 556 445 (PETETIN ET AL.) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			G09F F21V

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	03 SEPTEMBER 1993	GALLO G.G.

CATEGORY OF CITED DOCUMENTS

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