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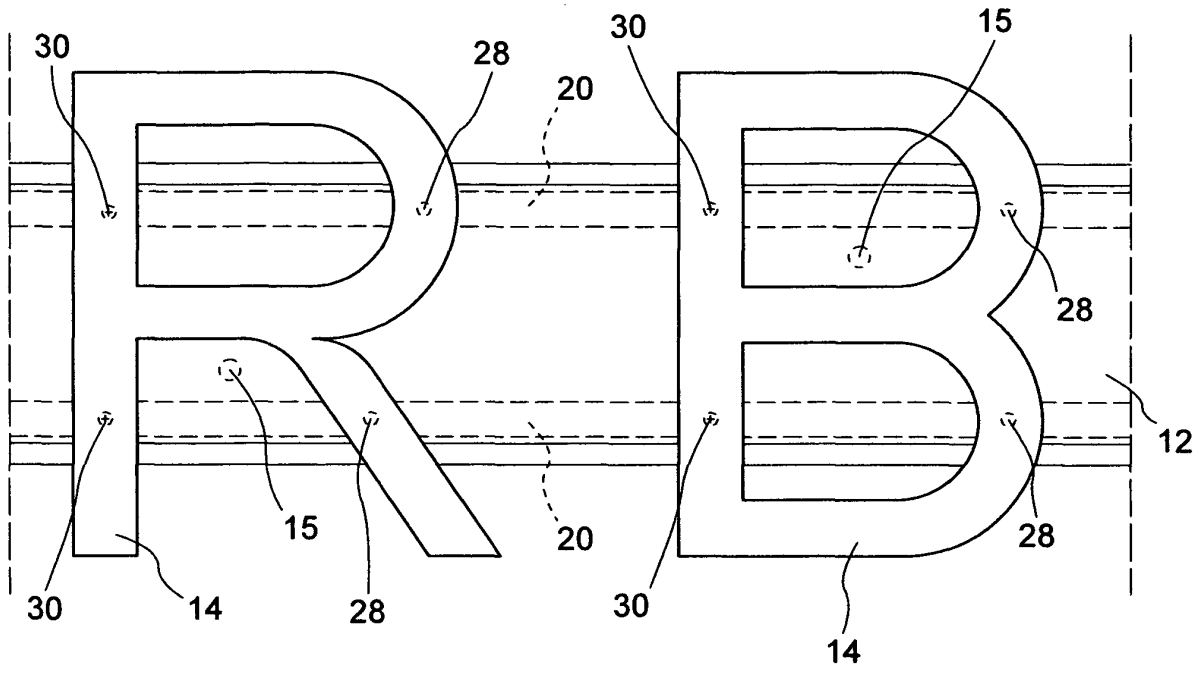
(54) A support for neon signs

(57) A support (10) for neon signs for interiors or exteriors, formed by the combination of box-shaped elements, or blocks in case at least partly recessed (14) which define alphabetical letters, numbers, logotypes or symbols and the like, comprises at least one plate-shaped body or lath (12) of any shape, size and/or section, making the anchoring base of said elements (14), provided with means (20) made of a conductive material intended for electrically powering the lighting bodies included into the same elements (14) and powered at a low voltage. Said elements (14) are attached to the lath (12) by screws (28) and/or (30), a part of which abuts on or passes through, said means (20) of a conductive material.

Fig.1



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Description

[0001] The present invention relates to a support for neon signs.

[0002] More in particular, the present invention relates to a support for neon signs consisting of the combination of box-shaped elements or blocks, in case at least partly recessed in the shape of letters, numbers, symbols or logotypes and the like wherein lighting bodies advantageously powered at a low voltage are arranged.

[0003] As known, neon signs are traditionally used for identifying above all the premises of commercial, production or service activities. Shops of various types, banks, public offices and factories are some of the exemplifying types of operating units that are typically signalled and highlighted by neon signs. The latter, made in various sizes according to the different needs, are usually installed outside the buildings, on the top of doors and glasses, but their use in indoor areas such as commercial centres, airports and fair display stands, is as much widespread. The known neon signs in question are mainly composed of alphabetical letters that, when combined with each other, form one or more words which are typical of the activity or of the trademark which is intended to be signalled or advertised; besides alphanumerical letters, the signs may comprise numerical elements and optional identification signs or logotypes of any shape and size.

[0004] These different components, alphabetical letters, numbers or symbols, are sometimes reproduced on translucent plastic material plates that are lighted by neon or incandescence lamps from the rear side or from the inside of a box of which they form the exposed front wall. Another known and currently more widespread type of neon signs envisages the independent realization of the multiple components in the form of box-shaped bodies of sheet or plastic material, with a part made of a transparent or translucent material, autonomously lighted. Such box-shaped bodies give rise to a sign with a higher aesthetic value since the wording stands out markedly thanks to the perspective dimension of the single components, even in daily hours when it is not lighted. Moreover, the single box-shaped bodies offer the further advantage of a possible alternative lighting; in fact, it is possible to provide for them to exhibit the front side of translucent material, through which the light is visible, or the back side consisting of a similar material or also of a transparent shaped plate.

[0005] In this latter case, the lighting is indirect and dampened, but in any case with considerable effects.

[0006] However the known signs consisting of the above box-shaped elements however exhibit considerable drawbacks, especially referred to the installation thereof.

[0007] In fact the single box-shaped bodies must be attached to the masonry, or in any case to a wall-support, and also require the electrical connection between them and to a supply line. These are at least two different operations that are burdensome, sometimes complicated, and that require long installation times and consequent high costs.

[0008] Moreover the cables that develop from one box-shaped element to the other, moreover, remain exposed with aesthetic drawbacks and require to be suitable insulated, with periodical check and maintenance operations in order to be protected from weather conditions. Even if such cables are integrated in a raceway, the resulting aesthetic effect is not totally remarkable and the periodical maintenance operations cannot be avoided.

[0009] The object of the present invention is to obviate the drawbacks mentioned hereinabove.

[0010] More in particular, the object of the present invention is to provide a support for neon signs suitable for being powered and for electrically powering, in an easy and quick manner, both the single box-shaped elements and the neon sign as a whole.

[0011] A further object of the invention is to provide a support for neon signs suitable for allowing, in as much easy and quick manner, the attachment of the single box-shaped elements to the support itself.

[0012] Last but not least object of the invention is to provide a support as defined above suitable for preventing resort to electrical cables between one box-shaped element and the other, thus eliminating the need of a proper insulation thereof and related periodical maintenance operations and checks.

[0013] A further object of the invention is to provide the users with a support for neon signs, especially for neon signs consisting of the combination of box-shaped elements or blocks in the shape of letters, numbers, logotypes and the like, suitable for ensuring a high level of resistance and reliability over time, also so as to be easily and inexpensively constructed.

[0014] These and other objects are achieved by the support for neon signs according to claim 1.

[0015] The construction and functional features of the support for neon signs of the present invention shall be better understood from the following detailed description, wherein reference is made to the annexed drawing tables showing a preferred and non-limiting embodiment thereof, wherein:

figure 1 schematically shows a front view of a part of the support for neon signs of the present invention, by way of an example combined with two alphabetical letters of the box-shaped direct light type;

figure 2 shows a schematic side view of the same support attached to the wall;

figure 3 shows a partial enlargement of the reproduction of the previous figure;

figure 4 shows a schematic cross section view of said support according to a preferred embodiment;

figure 5 shows a schematic front view of a part of the support similar to that of figure 1, for pointing out the lighting means and the respective electrical connections;

figure 6 shows a partially dissected side view of the

same support, for pointing out the attachment to a wall or the like of the sign with box-shaped reflected light letters;

figure 7 shows a partially dissected side view of the same support, for pointing out the attachment to a wall or the like of the sign with reflected light letters, according to an alternative embodiment.

[0016] With reference to the above figures, the support for neon signs of the present invention, globally indicated with 10 in figure 4, comprises a plate-shaped body or lath 12 by way of an example with rectangular plan, preferably made of insulating plastic material by extrusion or other techniques; the length and height of said plate-shaped body 12 are variable according to the number and size of the box-shaped elements or recessed blocks that make up the sign as a whole or a part thereof, such as a word. In fact the plate-shaped body or lath 12 is the anchoring base of said box-shaped elements or blocks and is in turn attached by screws 15 in a known manner to the wall, indicated, made of masonry or other material along which the sign is installed. In the preferred embodiment shown in the figures, the lath 12 exhibits trapezoidal section, limited depth and by way of an example comprised between 5 and 30 mm and a smaller height than that of the box-shaped elements or blocks forming the letters, numbers or symbols of the sign; this one may be installed outdoors or indoor or simply in roofed areas. By way of an example, two of such elements are depicted in a front view in figures 1 and 5, wherein they are respectively indicated with reference numeral 14, as well as in figures 2 and 6 in a partially dissected side view; said elements, as stated, may be box-shaped or obtained from solid elements or blocks, according to known embodiments. In the first case they are typically composed of a shaped structure that defines the side band, and of a front part of transparent or translucent material that defines the light diffuser; in this case, it is a sign formed of box-shaped letters and defined as "direct light". In any case, there can also be a solution with box-shaped letters, wherein the light diffuser is at the rear side and is opaque or transparent; this solution of sign with box-shaped letters is typically defined "reflected or indirect light".

[0017] In the second case, the solid elements are typically made of plastic material such as nylon, methacrylate, semi-foamed PVC or metal such as aluminium, steel, brass or even wood or marble, and on the side corresponding to the rear side they are sometimes recessed according to various configurations in order to receive the lighting bodies. If such elements are not recessed, the lighting bodies are simply attached with adhesives or the like to the rear side of the elements themselves and project or diffuse the light on the wall at the back rather than outwards. These various options are schematized in figures 2, 6 and 7. In particular, in figure 2 the box-shaped element 14 is of the direct light type and is provided, on the rear side, with an opaque wall, indicated with 14', whereas the opposite front side that defines the diffuser, indicated with 14", is made of translucent material.

[0018] The lath 12 is advantageously provided with two shaped cavities 16, 18, extended in longitudinal direction, intended for receiving respective bars, plates or the like 20 made of conductor material like aluminium, copper or another suitable one. The cavities 16 and 18 for example exhibit a rectangular profile for bars 20 shaped accordingly; said cavities are made, according to a non-limiting example, at the opposite top and bottom ends of the plate-shaped body 12 and are aligned with each other. The bars 20 made of a conductive material are inserted in said cavities starting from one or the other of the heads of the plate-shaped body 12 and their size is such that they preferably become settled by a slight mechanical interference into the same cavities. Moreover, the use of conventional retaining means, such as screws, for attaching the above bars into cavities 16 and 18, should not be excluded. If the plate-shaped body or lath 12 is made by moulding of a thermoplastic material, the above bars 20 may also be buried into the body itself during the moulding thereof, making the bars 20 being visible or partly exposed on at least one head of the lath itself. Further on the bars 20 may be attached by suitable means to one and/or the other of the front or rear sides of the plate-shaped body 12 rather than being integrated therein. At one of the ends thereof, each of the bars 20 is connected, typically by wires 22 to an electrical power source or, preferably, to a transformer 24 arranged between the electrical power supply network and the sign as a whole.

[0019] According to a preferred embodiment, the support of the present invention is in fact especially intended for receiving the box-shaped or elements or blocks provided with lighting bodies powered at low voltage and typically consisting of a plurality of L.E.D. (Light Emitting Diodes). The two bars 20 thus powered respectively define a positive pole + and a negative one - of the electrical circuit, as schematised in particular at figure 5. In said figure, the plurality of L.E.D. of each element 14 is schematically indicated with 26 and follows the shape of the elements themselves along an inner path that develops with known connections; the multiple L.E.D., already connected to each other and proposed in the form of crowns of known type, are stabilised inside elements 14 with any suitable means, for example bio-adhesives, silicone and/or screws.

[0020] The single box-shaped elements 14 or blocks optionally at least partly recessed for receiving the plurality of L.E.D. 26, are attached at one or more points to both bars or plates 20 of conductive material with self-threading screws 28, 30 or equivalent retaining means.

[0021] In particular, according to the preferred embodiment of the figures, each element 14 is attached on opposite sides along a vertical direction by two screws 28 on one side and two screws 30 on the opposite side. Two of such screws, for example the screws 28, penetrate

with their stem thereof into the plate-shaped body or lath 12 and can cross, piercing them, the bars 20, or stop before abutting thereon.

[0022] Each of the remaining two screws, that is, those indicated with 30, imperatively penetrates or at least abuts with the end tip, on one or the other bar 20, as schematised in detail in figure 3, thus determining a contact with the two poles, positive and negative, of the electrical circuit. This is because the bars 20 are electrically connected to the mains, subsequent to the interposition of transformer 24.

[0023] Through wire terminals or the like, not shown, each bar 20 (+ / -) is powered by the transformer 24 through wires 22. The bars 20 (+ / -) through the support screws 30 lead the voltage inside the elements 14, which through wires 34 (+) and 32 (-) power the L.E.D. 26, thus lighting the element 14.

[0024] The attachment of the elements 14 to the plate-shaped body 12 determines, in this way, the concurrent power supply of the lighting bodies, advantageously consisting of a plurality of L.E.D. 26; especially in the case of elements 14 of small size and thus limited weight, it is also possible to envisage that the two screws 30 alone are sufficient for the attachment thereof to the plate-shaped body 12 which create, in equal time, contact for the electrical power supply of the plurality of L.E.D. 26.

[0025] In the case of box-shaped elements with direct light, such as that in figure 2, the elements themselves may be directly attached to the lath 12; on the other hand, if the box-shaped elements in blocks are of the reflected light type, such as that in figure 6, their positioning relative to lath 20 is such as to leave an intermediate gap of few centimetres for allowing the proper diffusion of light on the back wall. In this case, screws 30 exhibit greater length and/or are combined with conventional spacers.

[0026] The bars or plates 20 may of course be replaced by conductive means with different configuration, for example consisting of pairs of metal rods next to each other so as to define a slit for the pressure-wise introduction of the stem of screws 30 or equivalent retaining members. In fact, the same screws may be replaced with pins or the like that are introduced pressure-wise into bars 20, optionally already pierced, or between pairs of conductive elements such as the metal rods mentioned above. Also the plate-shaped body 12 may be replaced by two similar bodies, suitably spaced from each other, each combined with a bar 20 or equivalent current conductive means. Moreover, said plate-shaped body 12 may be envisaged to have shaped or in any case, non rectilinear development and be divided into multiple elements corresponding to the single letters or symbols of neon sign.

[0027] As can be noticed from the above, the advantages achieved by the invention are clear.

[0028] Thanks to the support for neon signs of the present invention, the single box-shaped elements 14 or blocks and the sign as a whole are electrically powered in a quick and accurate manner, substantially facilitating the wiring/assembly and installation operations. Especially advantageous is the fact that the electrical supply of the lighting bodies is obtained at the same time with the constraint of the single elements 14, advantageously consisting of a plurality of L.E.D. 26. These ones may be replaced with incandescence micro-lamps and/or other light energy sources, powered at a voltage not exceeding 50 Volts.

[0029] A further and important advantage achieved by the support for neon signs of the present invention relates to the elimination of electrical wires between one element 14 and the other, with positive effects not only under the aesthetic viewpoint but also as regards the absence of maintenance of the same wires for their proper insulation.

[0030] Although the invention has been described hereinbefore with particular reference to an embodiment made by way of a non-limiting example only, several changes and variations will appear clear to a man skilled in the art in the light of the above description. The present invention therefore is intended to include any changes and variations thereof falling within the spirit and the scope of protection of the following claims.

Claims

1. A support (10) for neon signs for interiors or exteriors, formed by the combination of box-shaped elements, or blocks in case at least partly recessed (14) which define alphabetical letters, numbers, logotypes or symbols and the like, comprising at least one plate-shaped body or lath (12) of any shape, size and/or section, making the anchoring base of said elements (14), provided with means (20) made of a conductive material intended for electrically powering the lighting bodies powered at a low voltage included into the same elements (14) which are attached to the lath (12) by screws (28) and/or 30, a part of which abuts on or passes through said means (20) of conductive material.

2. The support for neon signs according to claim 1, wherein said means (20) of conductive material consists of one or more pairs of bars or plates or the like of aluminium, copper or other suitable material, integrated into the lath (12) or attached to one or both sides of the same, which is made of an insulating material.

3. The support for neon signs according to the previous claims, wherein in a single plate-shaped body or lath (12) two overlapped and parallel cavities (16-18) extended longitudinally suitable for receiving said means (20) of conductive material is obtained.

4. The support for neon signs according to one or more of the previous claims, wherein the lighting bodies included in the elements (14) consist of a plurality of L.E.D. (26) or incandescence micro-lamps and/or

other light energy sources, powered at a voltage not higher than 50 Volts, connected to the mains with the interposition of one or more transformers (24).

5. The support for neon signs according to one or more of the previous claims, wherein the plurality of L.E.D. (26) of every single element (14) is connected through respective wires (32-34) to two screws (30) whose stems abut or pass through the means (20) made of conductive material which respectively defines the positive pole and the negative one of the circuit.

6. The support for neon signs according to one or more of the previous claims, wherein the means (20) made of conductive material is connected to a transformer (24) by electrical wires (22) or the like.

7. The support for neon signs according to one or more of the previous claims, wherein the plate-shaped body or lath (12) exhibits a trapezoidal section, smaller height than that of the elements (14) and is made of plastic of any type, stiff or partly stiff, optionally recycled or of any other suitable material.

8. A support (10) for neon signs formed by the combination of elements (14) which define alphabetical letters, numbers, logotypes or symbols and the like, each associated to at least one lighting body, said support comprising at least one plate-shaped body or lath (12) making the anchoring base of said elements (14), provided with means (20) made of a conductive material intended for electrically connecting said lighting bodies to a low voltage power source, said elements (14) being attached to the lath (12) by fixing elements (28, 30) which make the electrical connection between said lighting bodies and said means (20) made of conductive material.

Fig.1

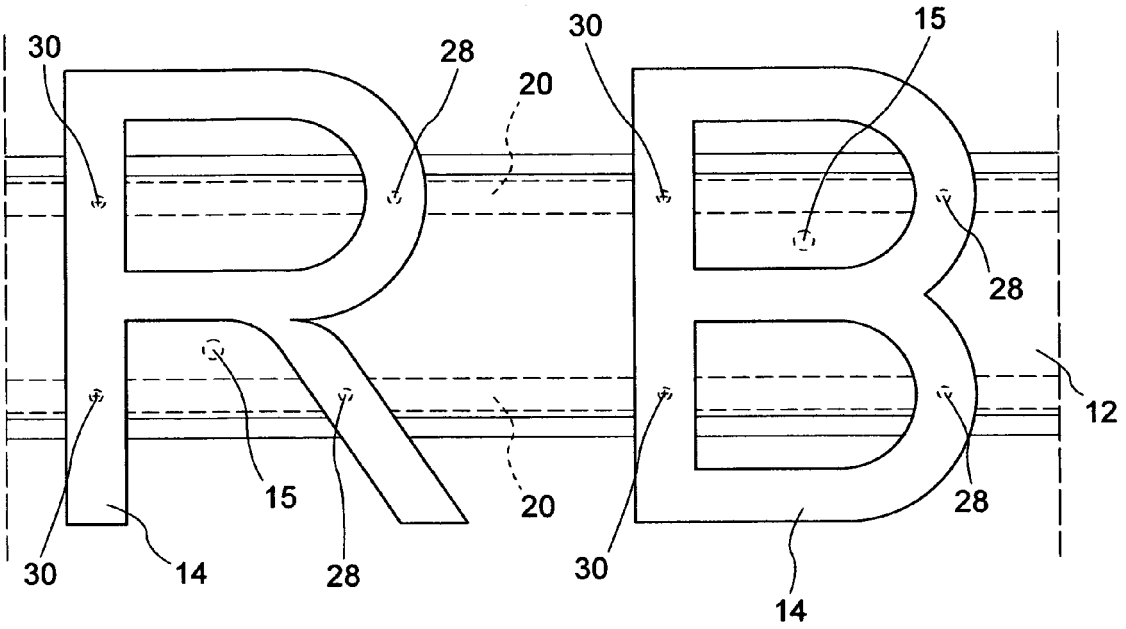
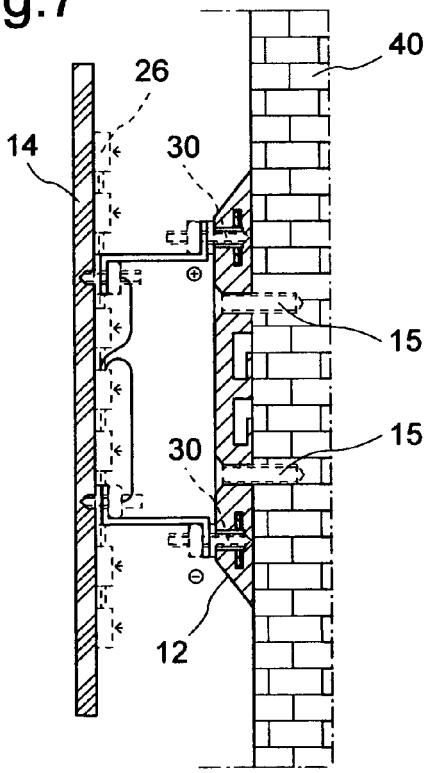


Fig.7



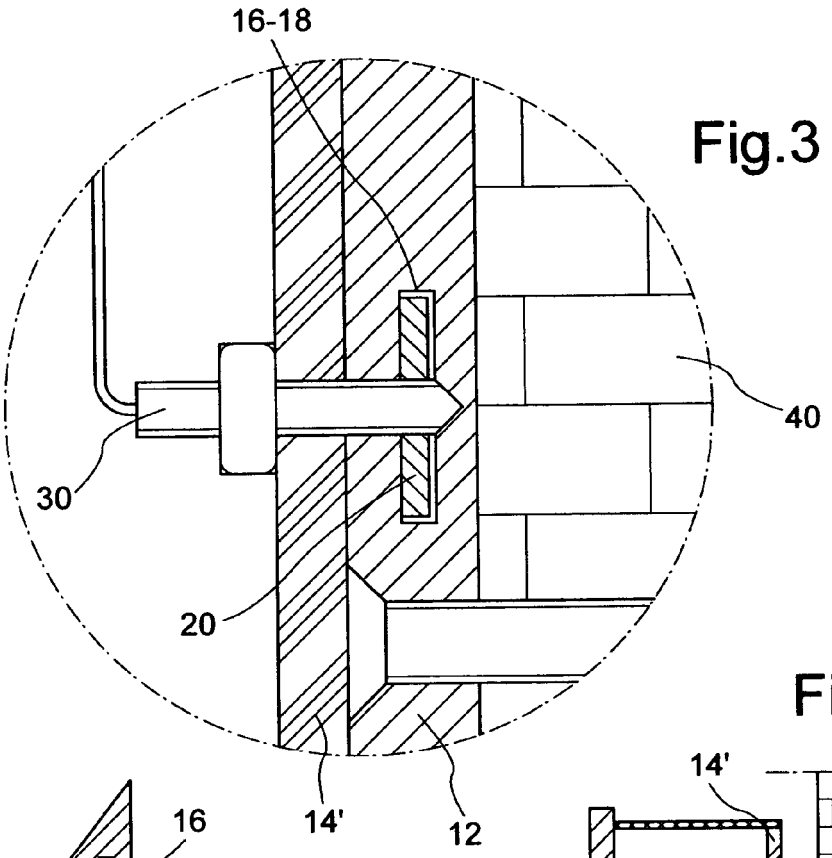


Fig.3

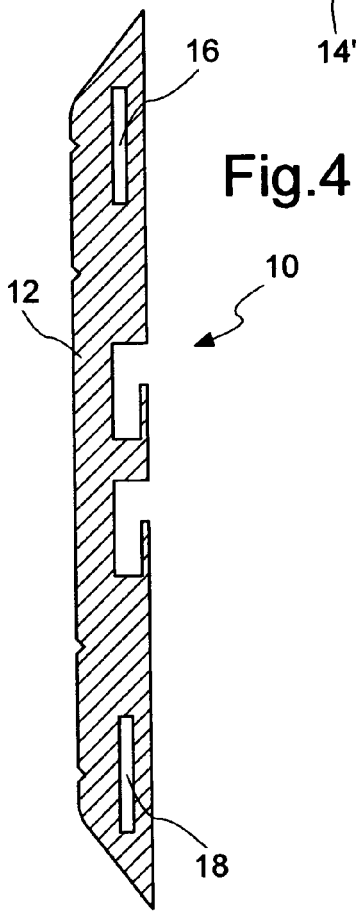


Fig.4

Fig.2

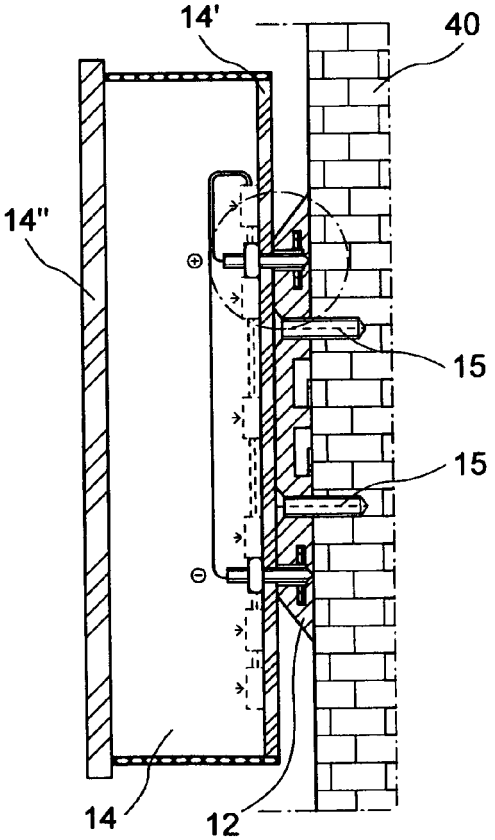


Fig.6

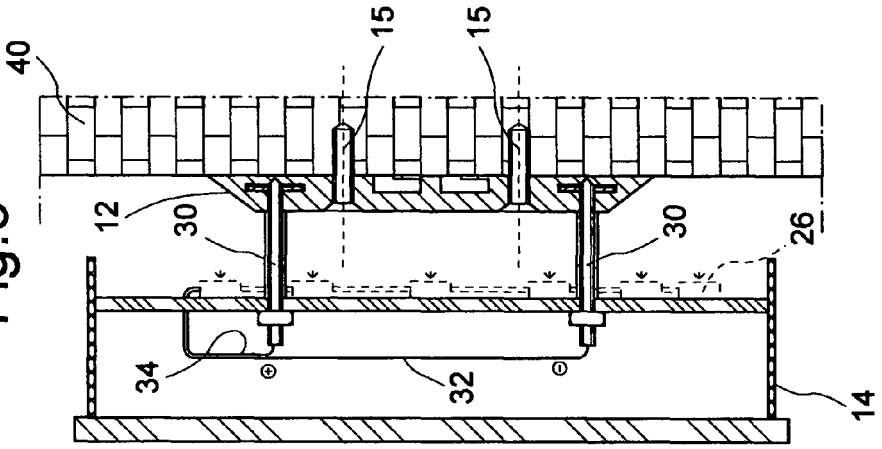

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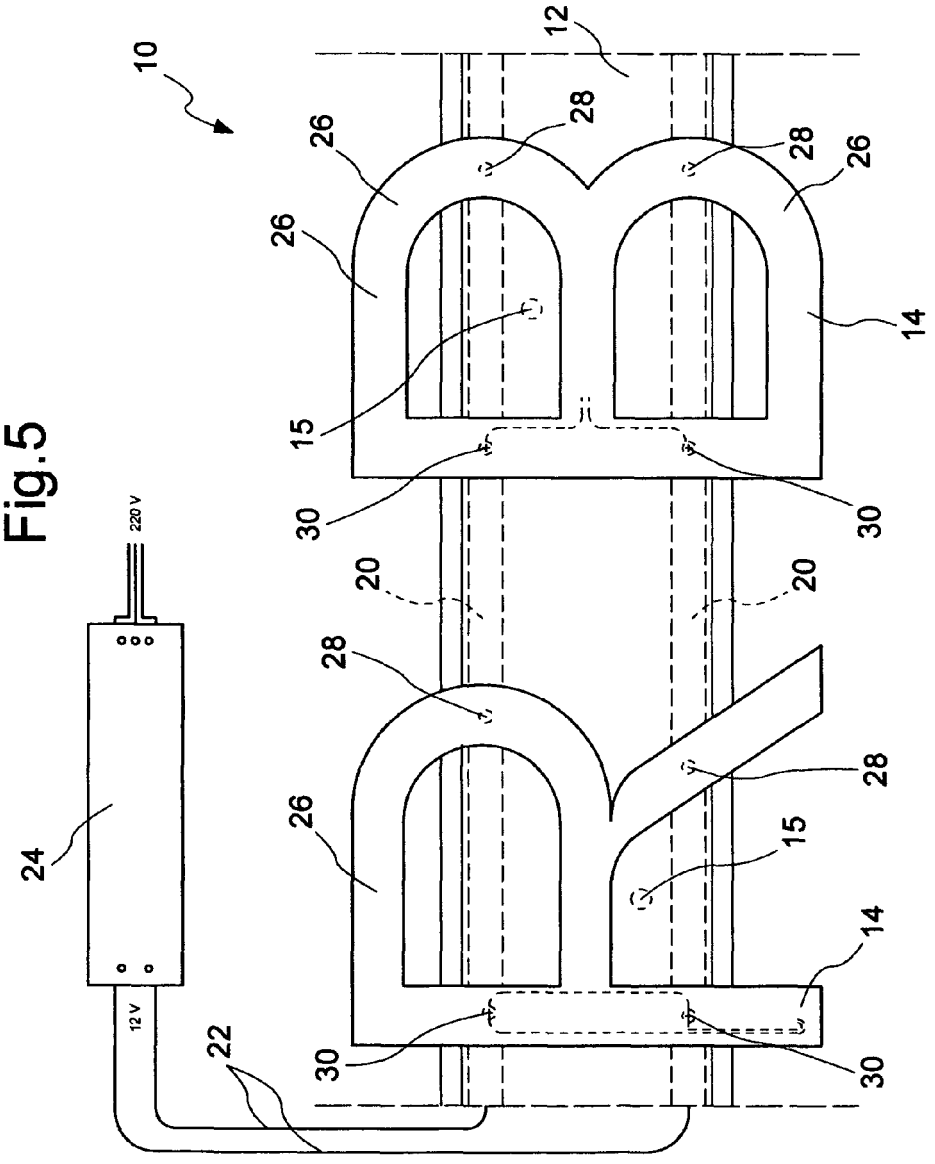
Fig.5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