



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) **EP 1 463 016 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**29.09.2004 Bulletin 2004/40**

(51) Int Cl.7: **G09F 13/04**

(21) Application number: **04006678.9**

(22) Date of filing: **19.03.2004**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**  
Designated Extension States:  
**AL LT LV MK**

(72) Inventor: **Plebani, Roberto**  
**23843 Dolzago (Lecco) (IT)**

(74) Representative: **Lecce, Giovanni**  
**UFFICIO BREVETTI CALCIATI S.r.l.**  
**Via Fratelli Ruffini, 9**  
**20123 Milano (IT)**

(30) Priority: **27.03.2003 IT mi20030607**

(71) Applicant: **Soleneon Service S.r.l.**  
**23843 Dolzago (Lecco) (IT)**

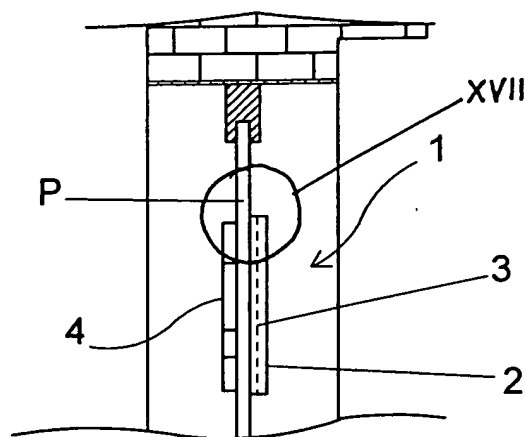
(54) **A light sign for transparent support**

(57) A light sign for a transparent support (1) to be applied to a transparent material wall P delimiting an indoor environment from an outdoor one wherein said sign comprises:

at least one light source container (2, 6, 8, 10, 13,

15) comprising at least one light source (3, 19, 20) applied into the indoor environment of said wall P and at least one lighted body (4, 26, 27, 30) placed on the outdoor environment of said wall P bearing the advertising message that can be read from the outdoor environment.

**Fig.1**



**EP 1 463 016 A2**

## Description

**[0001]** The present invention refers to a light sign for a transparent support.

**[0002]** More particularly, the present invention refers to a light sign for a transparent support, particularly but not exclusively suitable to be used for advertising, promotional, service, business, etc. light signs of the kind to be applied to a transparent material wall such as glass or crystal or similar materials of a shop, an exhibition booth or the like.

**[0003]** It is known that light signs are commonly applied to the glass walls of a room such as shops, bars, exhibition booths, etc, are generally placed inside the room.

**[0004]** The light signs that are generally used, are substantially of three types.

**[0005]** A first type comprising light signs defined as box signs that are generally constituted by a box frame made of sheet metal or plastic material or other suitable material and can have various shapes such as rectangular, oval, circular, squared shapes wherein a container is created. A suitable light source system of the known type is housed into said container. Said container is closed by a gable, said lighted body, generally made of a material that partially or totally diffuses light optionally by relief techniques, by different solutions and assembled with various techniques.

**[0006]** A second type comprises boxed letters/logos made of various fonts and/or logos and materials that are lighted with any kind of light source system. Each element of font and/or logo element becomes a complete light source container of the relevant lighted body assembled with various techniques.

**[0007]** A third type comprises letters/logos obtained by shaped neon tubes that outline the various logos and/or fonts. These shaped neon tubes are luminous and sight-read.

**[0008]** These known light signs are entirely installed inside the shop or booth, or entirely outside them, in such a way to be seen from outside.

**[0009]** Even though these light signs are commonly used and appreciated, they are not free from manufacturing and functional drawbacks. One of these drawbacks is the space said signs take so that they often interfere with other elements in the room such as curtains or the like and could damage the appearance. Other drawbacks are the need of drilling glass walls to install them; or in order to comply with the current provisions, these signs must be protected by transparent material containers. Another drawback is the loss of visibility of the advertising messages, when they are installed indoor, due to the reflection of the glass walls or of other transparent materials that separate the indoor environment of rooms, shops or the like, and the outdoor environment from where the same message is read.

**[0010]** The need of light signs for transparent supports that remove the above cited drawbacks is there-

fore required.

**[0011]** Object of the present invention is therefore the provision of a light sign for a transparent support that removes the above cited drawbacks with respect to the prior art.

**[0012]** According to the present invention these and other objects resulting from the following description are obtained by a light sign for a transparent support according to claim 1.

**[0013]** The manufacturing and functional features of the light sign for a transparent support of the present invention can be better understood from the following description wherein reference is made to the figures of the attached drawings representing some of its embodiments which are given only by way of illustrative and non-limitative example, wherein:

- Figure 1 is a schematic view of a section of the light sign for a transparent support of the present invention as installed;
- Figure 2 is a perspective schematic view of a portion of a first component of the light sign for a transparent support of Figure 1,
- Figure 3 is a schematic view of a first manufacturing embodiment of the component of Figure 2;
- Figure 4 is a schematic view of a second manufacturing embodiment of the component of Figure 2;
- Figure 5 is a schematic view of a third manufacturing embodiment of the component of Figure 2;
- Figure 6 is a schematic view of a fourth manufacturing embodiment of the component of Figure 2;
- Figure 7 is a schematic view of a fifth manufacturing embodiment of the component of Figure 2;
- Figure 8 is a schematic view of a portion of a second component of the light sign for a transparent support of Figure 1;
- Figure 9 is a schematic view of a first manufacturing embodiment of the component of Figure 8;
- Figure 10 is a schematic view of a second manufacturing embodiment of the component of Figure 8;
- Figure 11 is a schematic view of a section of a third component of the light sign for a transparent support of Figure 1 as installed;
- Figure 12 is a schematic view of a manufacturing embodiment of the component of Figure 11, as installed;
- Figure 13a is a schematic view of a portion of a fourth component of the light sign for a transparent support of Figure 1;
- Figure 13b is a schematic view according to the direction d1 of the component of Figure 13a;
- Figure 14a is a schematic view of a first manufacturing embodiment of the component of Figure 13;
- Figure 14b is a schematic view according to the direction d2 of the component of Figure 14a;
- Figure 15a is a schematic view of a second manufacturing embodiment of the component of Figure 13;

- Figure 15b is a schematic view according to the direction d3 of the component of Figure 15a;
- Figure 15c is an enlarged schematic view of the detail marked with XV in Figure 15b;
- Figure 16a is a schematic view of a third manufacturing embodiment of the component of Figure 13;
- Figure 16b is a schematic view according to the direction d4 of the component of Figure 16a, as installed; and
- Figures 17a, 17b, 17c, 17d are enlarged schematic views of manufacturing embodiments of the detail marked with XVII in Figure 1.

**[0014]** With reference to the attached Figures, the light sign for a transparent support made of transparent material such as glass or the like to be applied to a wall P of the present invention, marked with 1 in its whole comprises at least one light source container 2 provided with a suitable container bay installed into an indoor environment, at least one light source 3 housed into said container bay and at least one lighted body 4 installed into an outdoor environment. Said wall P delimits an indoor room such as a shop, an exhibition booth or the like from an outdoor one in the known way which is not further described.

**[0015]** The light source container 2 is made according to one of the embodiments described here below given only by way of illustrative and non-limitative example.

**[0016]** Figure 2 shows a portion of the light source container 2 obtained by the connection of the various fonts and/or logo elements of the advertising message, exemplified by two alphabetic characters connected between them. The light source container 2 can have any section such as a prismatic and/or a curved section with a depth P1 comprised between 15 mm and 80mm and preferably 40 mm. In Figure 2, a part of the front surface of the container bay 2 of the light source 3 that can be seen from the outdoor environment is marked with 5.

**[0017]** Figure 3 shows a portion of a light source container marked with 6. The light source container 6 is obtained by individually reproducing logos and/or fonts and/or separate parts. The light source container 6 can take any graphic form and any section having a depth P2 comprised between 15 mm and 80 mm and preferably 40 mm. In Figure 3 a part of the front surface of the container bay 6 of light source 3 that can be seen from the outdoor environment is marked with 7.

**[0018]** Figure 4 shows a portion of a light source container marked with 8. The light source container 8 has a polygonal shape and a depth P3 comprised between 15 mm and 80 mm, preferably 60 mm. In Figure 4 a part of the front surface of the container bay 8 the light source 3 that can be seen from the outdoor environment is marked with 9.

**[0019]** Figure 5 shows a portion of a light source container marked with 10. The light source container 10 has a polygonal shape and a depth P4 comprised between 30 mm and 120 mm, preferably 90 mm. This light source

container 10 represents a two face light source container. In Figure 5 a part of the front surface of the container bay 10 of light source 3 that can be seen from the outdoor environment is marked with 11, while the part of the front surface of the container bay 10 of the light source 3 that can be seen from the indoor environment is marked with 12.

**[0020]** Figure 6 shows a portion of a light source container marked with 13. The light source container 13 has a mixed polygonal and curved shape and a depth P5 comprised between 15 mm and 80 mm, preferably 60 mm. In Figure 6 a part of the front surface of the container bay 13 of the light source 3 that can be seen from the outdoor environment is marked with 14.

**[0021]** Figure 7 shows a portion of a light source container marked with 15. The light source container 15 has a mixed, polygonal and curved shape and a depth P6 comprised between 30 mm and 120 mm, preferably 90 mm. This light source container 15 represents a two face light source container. In Figure 6 a part of the front surface of the container bay 15 of the source 3 that can be seen from the outdoor environment is marked with 16, while a part of the front surface of the container bay 15 of light source 3 that can be seen from the indoor environment is marked with 17.

**[0022]** The light source 3 is obtained according to one of the embodiments described here below which are given only by way of illustrative and non-limitative example.

**[0023]** A light source 3 shown in Figure 8 represents a punctiform light source comprising a plurality of punctiform sources 18. This light source 3 is obtained by any technique.

**[0024]** Preferably, this light source 3 can be used in any of the container bay of light source 3; its area can be seen from the outdoor and/or the indoor environment and is marked with 5, 7, 9, 11, 12, 14, 16 and 17 as marked above. Due to the limited room required for its housing, this punctiform light source is particularly suitable for use into the light source container bays whose area that can be seen from the outdoor and/or indoor environment is marked with 5 and 7, the container bays have the shape of any font element and/or logo element as shown in Figures 2 and 3.

**[0025]** A light source marked with 19 in Figure 9 shows a linear light source. This light source 19 is obtained by any technique.

**[0026]** Advantageously, this light source 19 can be used into any of the container bays of light source whose area that can be seen from the outdoor and/or indoor environment is marked with 9, 11 and 12 having a polygonal shape as shown in Figures 4 and 5.

**[0027]** A light source marked with 20 in Figure 10 represents a mixed, linear and curved light source. This light source 20 is obtained by any technique.

**[0028]** Preferably, this light source 20 can be used in any of the container bays of light source 20 whose area that can be seen from the outdoor and/or indoor environment is marked with 5, 7, 9, 11, 12, 14, 16 and 17 as

mentioned above. This light source 20 which is particularly suitable for the use into the container bays of light source whose area that can be seen from the outdoor and/or indoor environment is marked with 14, 16 and 17, have a mixed polygonal and curved shape, as shown in Figures 6 and 7.

**[0029]** According to a manufacturing embodiment, the light sign for a transparent support, marked with 21 in Figure 11, comprises a cover 22 of the container bays of light source whose area that can be seen from the outdoor and/or indoor environment is marked with 5, 7, 9, 11, 12, 14, 16 and 17. This covering 22 is made of plastic material or with any other material, and also with physically different materials, a transparent or non-transparent material, a diffusing or a partially diffusing one. Advantageously, the covering 22 has a depth from 15 mm to 80 mm compared to the depth of the relevant container of light source.

**[0030]** According to a manufacturing embodiment, the light sign for a transparent support, marked with 23 in Figure 12, comprises a covering 24 of the container bays of the light source whose area, that can be seen from the outdoor and/or indoor environment, is marked with 5, 7, 9, 11, 12, 14, 16 and 17. This covering 24 is made with an adhesive film suitable to diffuse or not diffuse the light, or with rolled materials, also a metal material, of any kind suitable to diffuse or not diffuse the light with a thickness comprised between 0.05 mm and 2 mm.

**[0031]** The lighted body 4 is obtained according to one of the embodiments described hereby only as an illustrative and non-limitative example.

**[0032]** A lighted body 4, shown in Figures 13a and 13b can be shaped as a logo and/or font and/or a graphic form of the element of the light source. This lighted body 4 can be of any suitable plastic material; or of any other material, that can be a transparent, non-transparent, diffusing, non-diffusing material and can take any prismatic and/or curved section. The lighted body 4 can have a thickness S1 comprised between 2 mm and 60 mm, preferably 20 mm. In Figure 13b the lighted body 4 is represented as installed.

**[0033]** A lighted body, marked in its whole with 26 in Figures 14a and 14b, can take the shape of a logo and/or of the font and/or of the graphic form of the element of the light sign. This lighted body is obtained by an adhesive film suitable to diffuse or not diffuse the light or with any kind of rolled materials, even the metal ones suitable to diffuse or not diffuse the light. The lighted body 26 can take a thickness S2 comprised between 0.05 mm and 2 mm, preferably 0.06 mm. In Figure 14b, the lighted body 26 is shown as installed.

**[0034]** A lighted body, marked with 27 in Figures 15a, 15b and 15c can take the shape of the logo and/or of the font and/or of the graphic form of the element of the light sign. This lighted body 27 shows a first portion 28 applied to the wall which is substantially equal to the lighted body 4 mentioned above and a second portion

29 overlapped to said first portion 28. This second portion 29 is made of any material, preferably a different one compared to the one of the first portion 28, a diffusing or not diffusing material such as glass, plastic, metals, marbles or other materials and it is placed side by side to said first portion 28. Advantageously, the second portion 29 can have slightly reduced or increased sizes compared to the first portion 28. The second portion 29 is assembled by any prior art and therefore it is not described. The second portion 29 can have a thickness S3 comprised between 0.05 mm and 10 mm, preferably 3 mm.

**[0035]** A lighted body marked with 30 in Figures 16a and 16b has the shape of the logo and/or of the font and/or of the graphic shape of the element of the light sign. This lighted body 30 is made of more coloured surfaces and can have a first surface 31 and a second surface 32. These first surface 31 and second surface 32 are made of adhesive, cut, trimmed or in four-colour process film or the like, or with any rolled materials even metal ones, suitable to diffuse or not diffuse the light.

**[0036]** These first surface 31 and second surface 32 can have a thickness S4 comprised between 0.05 and 50 mm, preferably 0.06 mm.

**[0037]** Preferably, according to the different embodiments, the container of light source 2, 6, 8, 10, 13 and 15 and the lighted body 4 and 27 as shown in Figures 17a, 17b, 17c and 17d can have a section which is totally or partially curved with any ray and/or a prismatic shape with any angle. In particular, both the container of light source and the lighted body have a prismatic section as shown in Figure 17a; or the container of light source has a prismatic section and the lighted body takes a curved section as shown in Figure 17b; or the container of light source takes a curved section and the lighted body takes a prismatic section as shown in Figure 17c; or both the container of light source and the lighted body take a curved section as shown in Figure 17d.

**[0038]** In the installation of the light source for a transparent support 1 the covering of the container bay of light source, the container of light source and the lighted body are applied to the wall P made of transparent material by suitable fastening means. These fastening means are chosen among adhesives such as transparent or non-transparent biadhesives, or glues, or resins making the light go through. These fastening means can also contemplate the support of transparent or non-transparent threaded insertions glued to the wall P or any other suitable means.

**[0039]** Preferably, each of the containers of light source 2, 6, 8, 10, 13, and 15 is suitable to house the linear 19, mixed 20 and punctiform 3 light sources, even combined among them into the same container.

**[0040]** The container of light source 2, 6, 8, 10, 13 and 15 and the relevant container bay of light source are preferably obtained by a plastic material block wherein the chosen housing concerning the kind of light source 3, 19 and 20 is preset. These container of light source

and container bay of light source can be made of any suitable material or with materials that are different among them; they are obtained by cold forming, hot forming, casting, chip machining or other methods and therefore assembled with any available technique.

[0041] The lighted body 4, 26, 27 and 30 can be made of any suitable material to totally or partially diffuse the light, or with materials which are different among them. This lighted body can be made by cold forming, hot forming, casting, chip machining or other method and assembled with any available technique in order to obtain a lighted body diffusing light or partially diffusing light.

[0042] Preferably, the light sign for a transparent support 1 of the present invention is applied without modifying the glass of the wall P; in other words without drilling the glass.

[0043] Preferably, in the light sign for a transparent support, even though the same container of light source 2, 6, 8, 10, 13 and 15 can be kept, the lighted body 4, 26, 27 and 30 can be replaced.

[0044] Preferably, the light source container 2, 6, 8, 10, 13 and 15 and the correspondent lighted body 4, 26, 27 and 30 can comprise a single element or a plurality of elements.

[0045] Preferably, the light source container of the light sign for a transparent support 1 has a very reduced thickness in order to be easily housed into the projections of the wall compared to the wall P, thus avoiding the interference with other elements such as the curtains and can reduce the unaesthetic visual impact.

[0046] Preferably, the light sign for a transparent support 1 does not need to be maintained from the outdoor environment as the light source container is always indoor.

[0047] Preferably, the light sign for a transparent support 1 is safe as the light source container 2 with a thickness of 25 mm is preferably used and it is particularly suitable for containing a low power punctiform light source such as a LED.

[0048] Preferably, as the lighted body of the light sign for a transparent support 1 is completely outdoor, the visibility of the advertising message is not altered due to the reflection effect of the outdoor environment on the wall P made of glass or other transparent material.

[0049] As can be noticed by the previous description, the light sign for a transparent support 1 of the present invention proved to be functional and versatile, it is also easily manufactured and allows reaching the object of the present invention and remove the mentioned drawbacks as to the prior art.

[0050] Even though the present invention has been described above with reference to one of its embodiments which is given only by way of illustrative and non-limitative example, it is clear that many variants and changes can be made by the people skilled in the art with reference to the above-mentioned description. Therefore the present invention is meant to comprise all changes and variants falling within the spirit and the pro-

tective scope of the following claims.

## Claims

1. A light sign for a transparent support (1) to be applied to a transparent material wall P delimiting an indoor environment from an outdoor one, **characterized in that** said sign comprises: at least one light source container (2, 6, 8, 10, 13, 15) comprising at least one light source (3, 19, 20) applied into the indoor environment of said wall P and at least one lighted body (4, 26, 27, 30) placed on the outdoor environment of said wall P bearing the advertising message that can be read from the outdoor environment.
2. The light source for a transparent support (1) according to claim 1, wherein the light source container (2) is obtained by the connection of the fonts and/or logo elements of the advertising message among them.
3. The light sign for a transparent support (1) according to claims 1 or 2, wherein in the same light source container (2, 6, 8, 10, 13, 15) the lighted body (4, 26, 27, 30) is alternatively used.
4. The light sign for a transparent support (1) according to any of the previous claims, **characterized in that** it also comprises more light source containers (6) and a covering (22, 24).
5. The light sign for a transparent support (1) according to any of the previous claims, wherein the covering (22, 24) and the light source container (2, 6) have a total thickness comprised between 15 mm and 80 mm, preferably 40 mm.
6. The light sign for a transparent support (1) according to any of the previous claims from 1 to 4, wherein the covering (22, 24) and the light source container (8, 13) have a total thickness comprised between 15 mm and 80 mm, preferably 60 mm.
7. The light sign for a transparent support (1) according to any of the claims from 1 to 4, wherein the covering (22, 24) and the two face light source container (10, 15) have a total thickness comprised between 30 mm and 120 mm, preferably 90 mm.
8. The light sign for a transparent support (1) according to any of the previous claims, wherein the lighted body (4) has a total thickness comprised between 2 mm and 60 mm, preferably 20 mm.
9. The light sign for a transparent support (1) according to any of the previous claims from 1 to 7, wherein

the lighted body (26) has a total thickness comprised between 0.05 and 2 mm, preferably 0.06 mm.

10. The light sign for a transparent support (1) according to any of the previous claims from 1 to 7, wherein the lighted body has a total thickness comprised between 0.05 mm and 10 mm, preferably 3 mm. 5
11. The light sign for a transparent support (1) according to any of the previous claims from 1 to 7, wherein the lighted body (30) has a total thickness comprised between 0.05 mm and 50 mm, preferably 0.06 mm. 10
12. The light sign for a transparent support (1) according to any of the previous claims, wherein the light source container (2, 6, 8, 10, 13, 15) and the light source container bay are made of any suitable material or with materials that are different among them and are obtained by cold forming, hot forming, casting or chip machining. 15 20
13. The light sign for a transparent support (1) according to claim 12 wherein the light source container (2, 6, 8, 10, 13, 15) and the light source container bay are obtained by a plastic material block upon which the housing for the light source (3, 19, 20) is placed. 25
14. The light sign for a transparent support (1) according to any of the previous claims, wherein the lighted body (4, 26, 27, 30) is made of any material suitable for a total or a partial diffusion of the light, or it is also physically made of materials that are different among them obtained by cold forming, hot forming, casting, or chip machining. 30 35
15. The light sign for a transparent support (1) according to any of the previous claims, wherein the lighted body and the light source container have partially or totally curved sections of any ray and/or prismatic sections with any kind of angle. 40
16. The light sign for a transparent support (1) according to any of the previous claims, wherein each of the light source containers (2, 6, 8, 10, 13, 15) houses punctiform (3), linear (19) mixed (20) and even combined light sources. 45
17. The light sign for a transparent support (1) according to any of the previous claims, wherein the lighted body (30) comprises more coloured surfaces (31, 32) that are independently obtained. 50

55

Fig.1

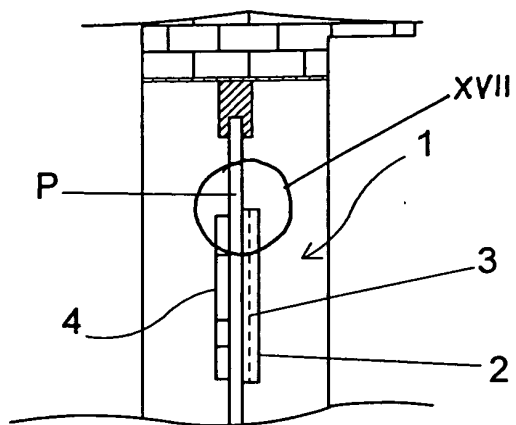


Fig.2

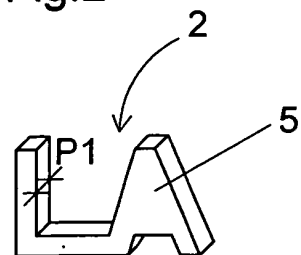


Fig.3

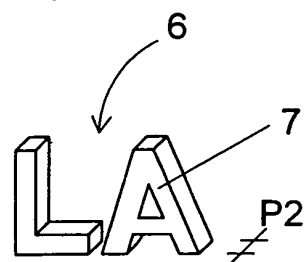


Fig.4

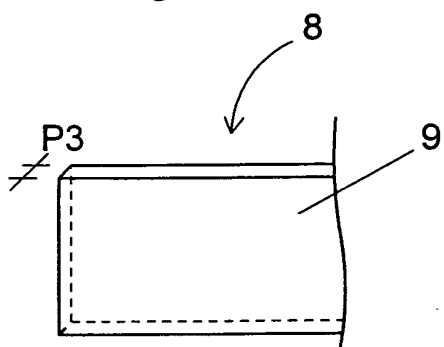


Fig.5

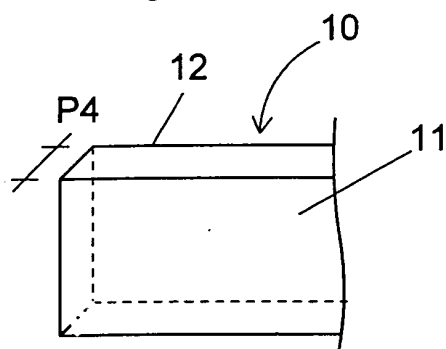


Fig.6

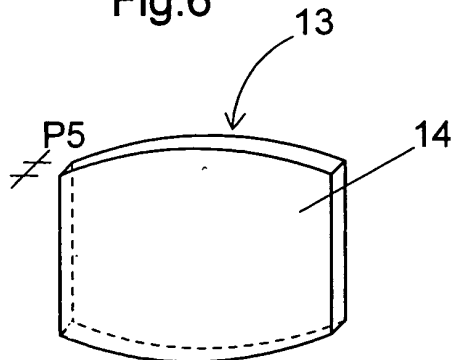
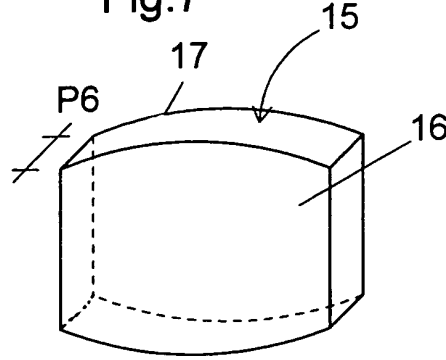
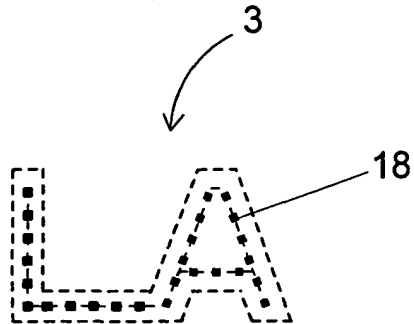


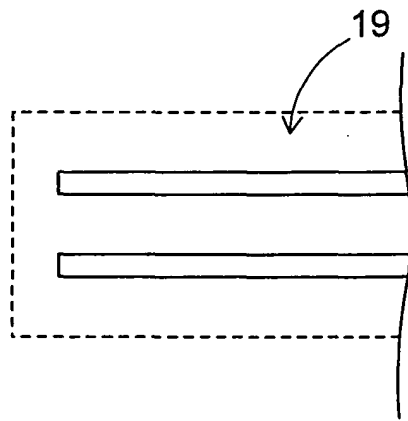
Fig.7



**Fig.8**



**Fig.9**



**Fig.10**

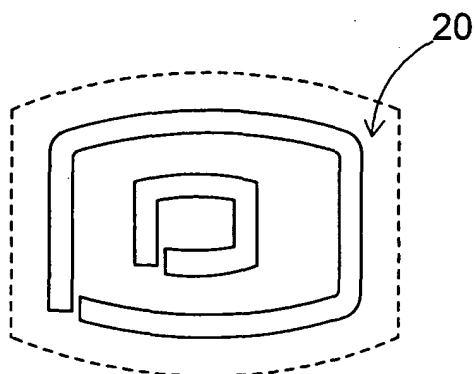




Fig.11

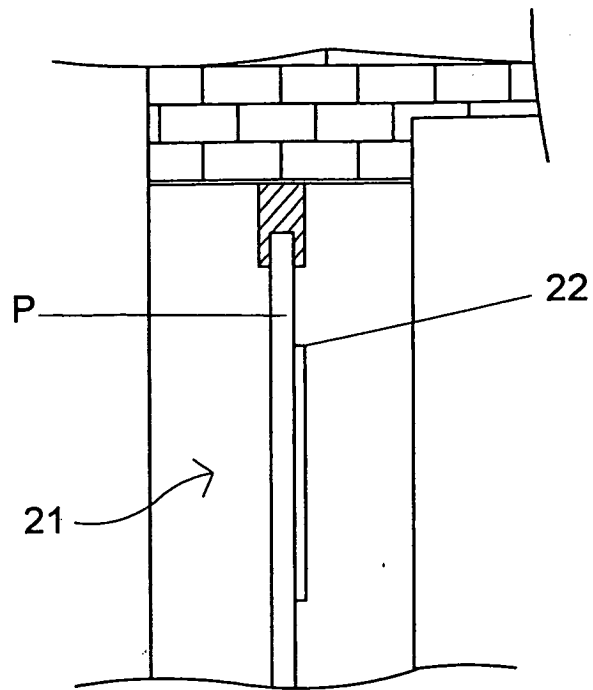


Fig.12

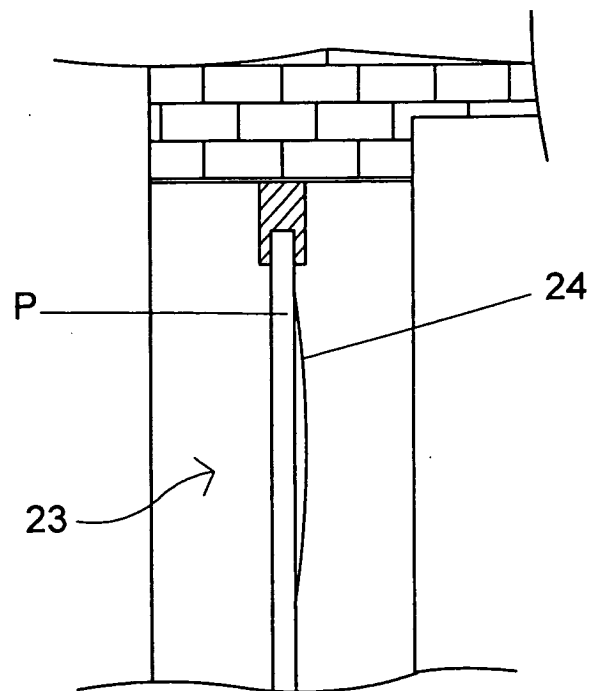


Fig.13a

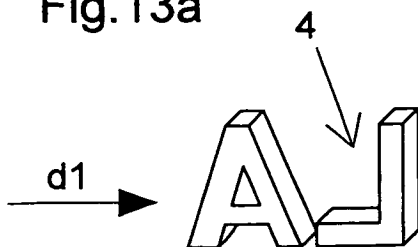


Fig.13b

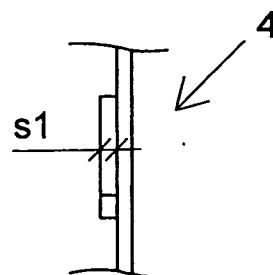


Fig.14a



Fig.14b

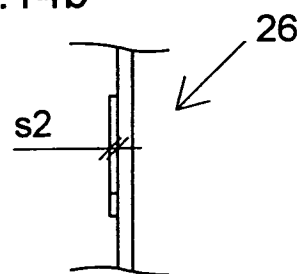


Fig.15a



Fig.15b

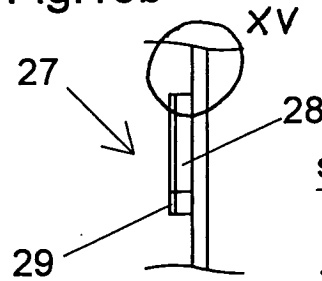


Fig.15c

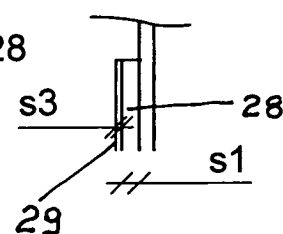


Fig.16a

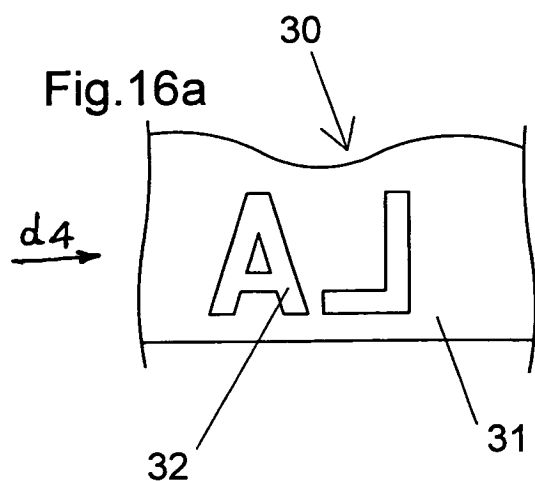


Fig.16b

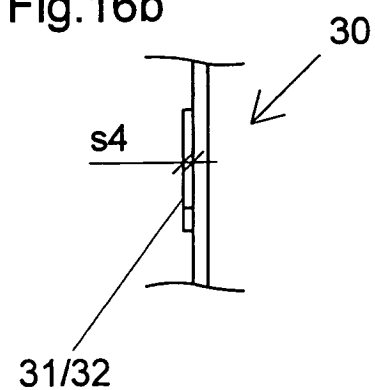


Fig.17a

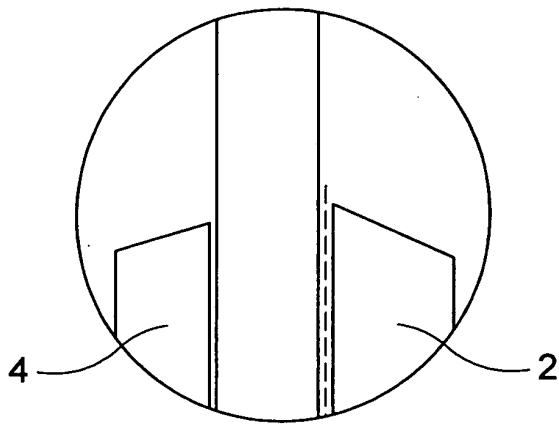


Fig.17b

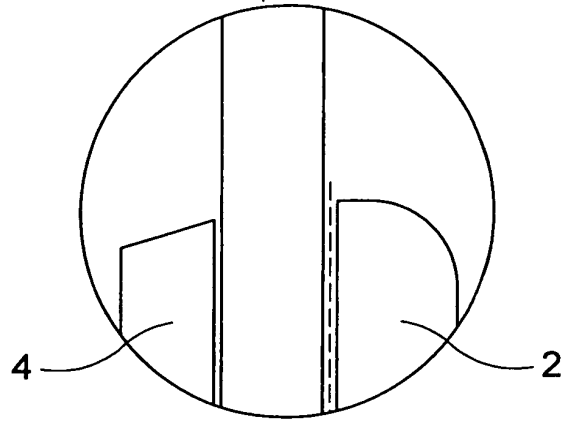


Fig.17c

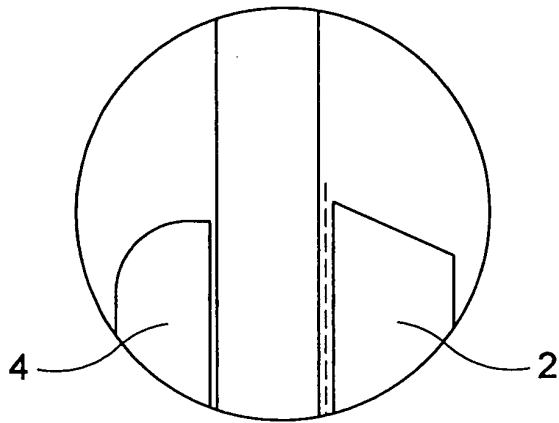


Fig.17d

