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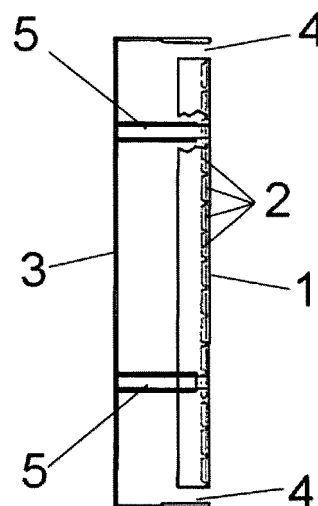
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(54) **SIGN**

(57) The sign of the invention emits a beam of light that provides a lighting effect similar to that produced by neon gas. To do this, it includes a front supporting member (1) and a rear reflecting surface (3) separated from and fixed to said supporting member by means of spacing elements (5), such that a perimeter opening (4) is defined between the two elements through which exits the beam of light emitted by an internal alignment of LEDs (2), arranged on the internal face of said front supporting member. The spacing elements (5) include means of adjusting the separation distance in order to obtain different lighting effects.



**FIG. 3**

## Description

### SUBJECT MATTER OF THE INVENTION

[0001] The present invention relates to a sign, the fundamental feature of which lies in the fact that, from its perimeter and once activated, it emits a beam of light that produces a lighting effect similar to that produced by neon gas.

[0002] The subject matter of the invention is to provide the market and the public in general with a sign that achieves a specific lighting effect, at low cost, with low electricity consumption and without the need to use the aforementioned neon gas.

### BACKGROUND OF THE INVENTION

[0003] In the field of use of the invention, neon gas has been used for many years as the element that provides a lighting effect in signs by lighting the outline of the corresponding letters, as well as internal outlines, forming a kind of "halo" of lighting that applies to an unlimited range of designs for signs and the like.

[0004] However, neon gas has the drawback that it is a gas that carries mercury with it internally, with the resulting pollution and problems deriving from the mercury itself, hence its use is being prohibited in many places.

### DESCRIPTION OF THE INVENTION

[0005] The sign advocated has been invented to solve the above mentioned problem in a simple, but highly effective manner.

[0006] More specifically, the sign of the invention presents a beam of light for the letter or sign design which is achieved by means of LEDs, aligned in such a way that the light emission projects towards what can be considered to be the rear part, in which there is a reflective surface where, logically, the beam emitted by said LEDs is reflected to exit to the outside through a perimeter opening in the sign, generating lighting similar to that which would be obtained with neon signs.

[0007] That is to say, the sign determines "corporeal" letters such that once switched on, a beam of light is obtained around its entire parameter, achieving a very striking lighting effect with this.

[0008] The advantages of the sign according to the subject matter of the invention can be summarised as follows:

- Low consumption due to the type of lighting it incorporates, as they are LEDs that are concealed as they are located in a supporting member aimed towards the back.
- Low maintenance due to the nature of said LEDs themselves.
- Environmentally friendly.
- Ease of assembly.

- A much more robust, impact resistant structure compared to conventional neon signs.

### DESCRIPTION OF THE DRAWINGS

[0009] To complement the description to be given below and in order to aid better understanding of the features of the invention, according to a preferred practical embodiment thereof, accompanying as an integral part of said description is a set of drawings, of an illustrative, non-limiting nature, representing the following:

Figure 1 shows a representation corresponding to a general view of a sign executed according to the subject matter of the invention.

Figure 2 shows a cross-sectional front view of the sign in the previous figure.

Figure 3 shows a cross-sectional view along the line A-B in figure 2.

Finally, figure 4 shows a view similar to figure 1, corresponding to a variant of the device embodiment or assembly.

### PREFERRED EMBODIMENT OF THE INVENTION

[0010] As can be seen in the aforementioned figures, the sign of the invention is composed of a part in the form of a supporting member (1) for a lighting element based on LEDs (2) which are concealed behind the supporting member (1) in which they are mounted, such that the light emitted by said LEDs (2) is projected towards the rear to a reflecting surface (3) in which, logically, the light beam is reflected towards the front to exit through a perimeter opening (4) established between the body of the front supporting member (1) of the LEDs (2) and the body that corresponds to the reflecting surface (3), with the supporting member (1) and reflecting surface (3) being joined by means of spacing elements (5), as can be seen clearly in figure 3.

[0011] The spacing elements (5) can be adjustable, such that the front supporting member (1) can project out with respect to the external casing that determines the reflecting surface (3), as shown in figure 1, be flush with it, as shown in figure 4 or be arranged in any of the possible intermediate positions.

[0012] In short, it is a sign which, in the embodiment shown in the figures, takes the form of a letter, with the particular feature that at the perimeter and corresponding with the front there is an opening (4) through which exits the beam of light emitted by the LEDs (2) located behind the front supporting member (1) and reflected from the rear reflecting surface (3), with said LEDs being concealed.

[0013] The sign is simple and economical, both in its manufacturing process and in assembly, is robust and

of great beauty, such that when switched on, the light emitted by same offers a lighting effect similar to that achieved with neon gas, without the risks and problems the use of said gas involves.

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### Claims

1. A sign which, able to adopt different design lines, is **characterised in that** it includes a front supporting member (1) and a rear reflecting surface (2) separated from and fixed to said supporting member by means of the corresponding spacing elements (5), with the particular feature that a perimeter opening (4) is defined between the two elements through which exits the beam of light emitted by an internal alignment of LEDs (2), arranged on the internal face of said front supporting member. 10 15
2. A sign according to claim 1, **characterised in that** the spacing elements (5) include means of adjusting the separation distance. 20

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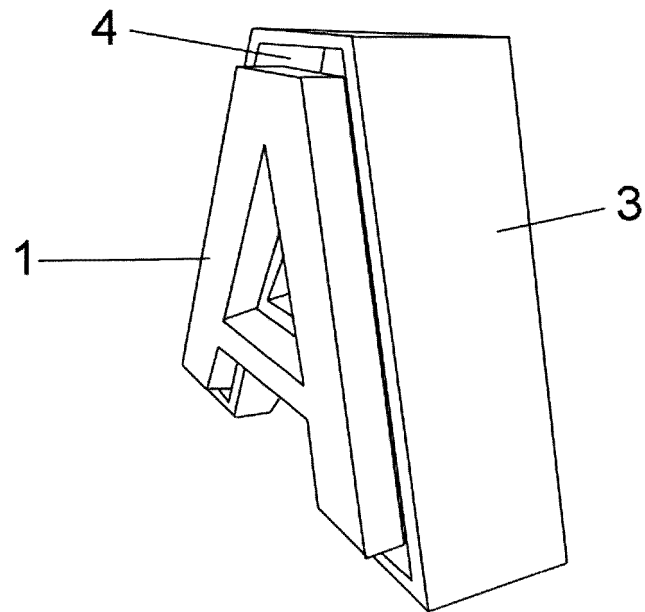


FIG. 1

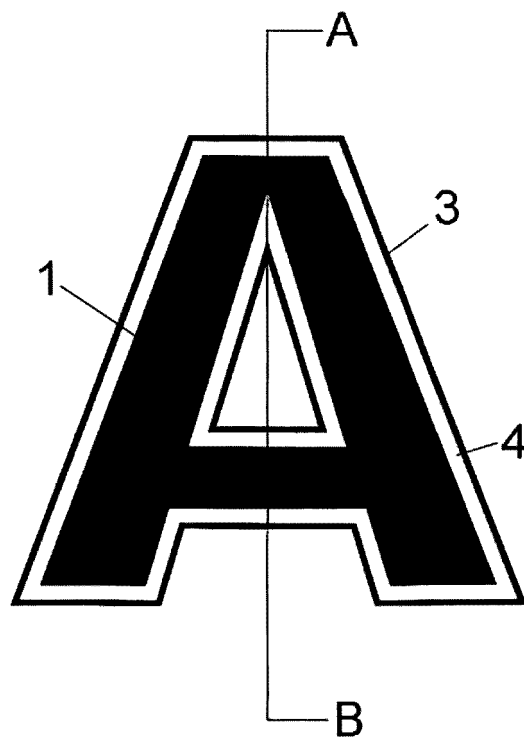


FIG. 2

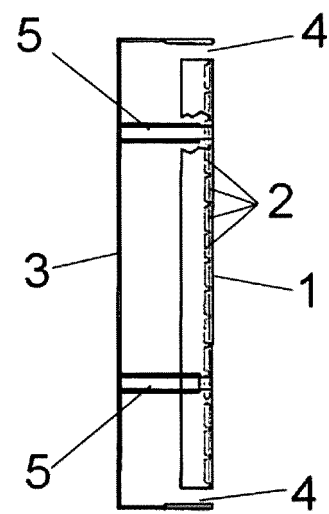


FIG. 3

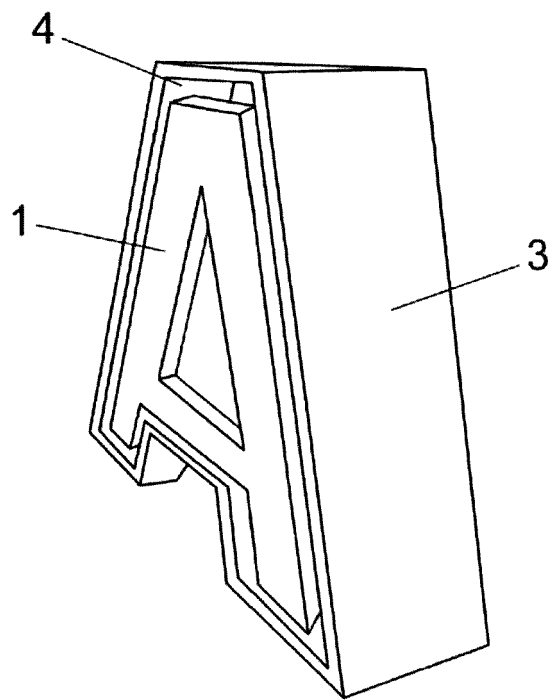


FIG. 4

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/ES2016/070071

## A. CLASSIFICATION OF SUBJECT MATTER

**G09F13/16** (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1146572 A2 (TOYODA GOSEI KK) 17/10/2001, paragraph [0052]; paragraph [0189]; paragraphs[0200 - 0201]; figure 2, figure 34, figure 39, figure 40.	1-2
A	WO 2007064069 A1 (HUNATECH CO LTD ET AL.) 07/06/2007, the whole document.	1-2
A	US 2004255497 A1 (VENKATARAMAN RAVI ET AL.) 23/12/2004, the whole document.	1-2

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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"&" document member of the same patent family

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International application No.

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