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(54) **PAVING ELEMENT**

(57) Especially designed for the location of electrical, electronic, radiofrequency, communication, sensor, telephony and/or energy-storage components for their application in both civil and military purposes, the element of the invention takes the form of a slab, a paving stone, a kerbstone or the like, made from a suitable material, wherein the underside is provided with a cavity having a depth smaller than the thickness of the element, the contour of the cavity being smaller than the contour of the element wherein it is made, such that said cavity can house any type of component not part of the paving, such as said electrical, electronic components, etc.

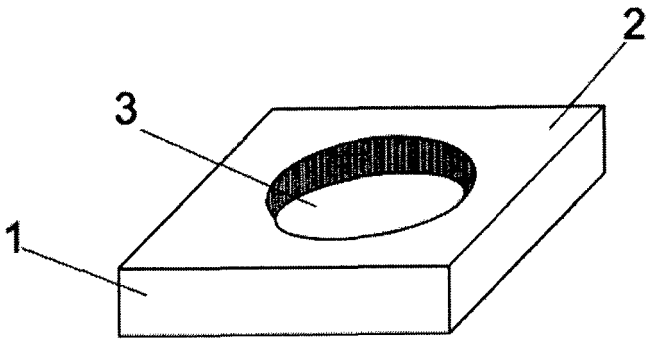

FIG. 1

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Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a paving element which, irrespective of the material of which it is made, of its form and characteristics, has the special characteristic that it has a cavity on its underside for the location of electrical, electronic, radiofrequency, communication, sensor, telephony and/or energy-storage components for their application both in civil and military purposes.

BACKGROUND OF THE INVENTION

[0002] It is a fact that as technological innovation advances, certain objects and components, both of communications and other sectors, have seen their dimensions vary with a drastic reduction therein, therefore there are currently minute electrical, electronic, radiofrequency, communication, sensor, telephony and/or energy-storage equipment, which are providing their service with civil or military purpose in areas located within casings, moulds or boxes of a different location, form and texture.

[0003] For this reason, bearing in mind that the paving elements, whether kerbstones, slabs, paving stones, or any other construction cladding component, are solely and exclusively provided as decorative elements and to make the thoroughfares or the open or closed spaces passable, are fundamentally characterized by their colour, form and resistance, without bearing in mind other possible utilities that they could offer maintaining those characteristics of colour, form and resistance.

DESCRIPTION OF THE INVENTION

[0004] The paving element claimed, having the form of a paving stone, kerbstone or slab, and having any form, resistance or colour and/or decoration, has the special characteristic that on its underside or reverse it has a cavity which can be obtained in the manufacturing process of the element or can be performed subsequent to the manufacturing of said element, since the only purpose that said cavity has is to allow housing therein components not part of the paving, and which give service to other different uses.

[0005] The cavity of the underside of the paving element, whether made in a slab, a paving stone or in a kerbstone, serves as housing for electrical, electronic, radiofrequency or communication components, as well as for telephony and housing of any type of energy, for which reason the element, in addition to fulfilling the conventional function, which is that of serving as a decorative element and to make the thoroughfares or the open or closed spaces passable, fulfils a second function, which is that of housing and concealing certain objects or components such as the aforementioned.

[0006] The cavity provided in the reverse of the paving element will have a depth smaller than the thickness of the element to avoid the breakage thereof, also being perimetrically separated from the side edges of the element and avoiding with this its breakage, i.e. to achieve that the element maintains its resistance and typical characteristics of what is a paving element.

DESCRIPTION OF THE DRAWINGS

[0007] To complement the description that will be made and in order to aid towards a better understanding of the characteristics of the invention, in accordance with a preferred example of practical embodiment thereof, a set of drawings is attached as an integral part of said description wherein, with illustrative and non-limiting character, the following has been represented:

Figure 1.- Shows a bottom perspective view of a conventional paving element, such as a slab, with the cavity as novel characteristic of the invention.

Figure 2.- Shows a side elevational view of the element represented in the previous figure, the broken line showing the depth and breadth of the cavity with respect to the element.

Figure 3.- Shows a top perspective view of the same element represented in the previous figures, the broken line showing the contour of the cavity provided in the underside or reverse of the element in question.

PREFERRED EMBODIMENT OF THE INVENTION

[0008] As can be seen in the figures indicated, the paving element (1) of the invention, which may be a slab, a kerbstone, a paving stone, etc., has the special characteristic that in its underside or reverse (2) a cavity (3) has been provided which may have any contour, although in the example of embodiment shown the contour of that cavity (3) is circular, but without rejecting the possibility that it is polygonal, regular, irregular, etc., so that in any case that cavity (3) has a depth smaller than the thickness of the element (1), while the contour of the cavity (3) is distanced from the edges or general perimeter general of the element (1), as is represented in the figures, so as not to decrease the resistance of the element and so that it can be used not only as a conventional element in the paving of floors, but also that it is provided with that cavity (3) to house the different components such as the abovementioned, whether electrical, electronic, radiofrequency, communication, etc.

[0009] Evidently, that cavity (3) can be made in the manufacturing process of the paving element (1), or it can be made subsequent to the manufacturing process of the element, and in any case the cavity (3) is provided to house components not part of the paving, which give service to other uses, and by virtue of the fact that depth

is smaller than the thickness of the element, that cavity (3) shall not perforate the element (1), maintaining the front or visible side perfectly intact.

Claims

1. Paving element, which, being in the form a slab, paving stone, kerbstone or the like, and having any configuration and being made in different types of materials, with one or another finish, is **characterized in that** the underside of the element is provided with a cavity having a depth smaller than the thickness of the element, the contour of the cavity being smaller than the contour of the element wherein it is made; with the special characteristic that said cavity established in the underside of the paving element can house any type of component not part of the paving, such as electrical, electronic, radiofrequency, communication, telephony or energy components.

2. Paving element, according to claim 1, wherein the cavity provided in the underside of the paving element, has any contour, regular or irregular, said contour being distanced from the external perimeter of the element wherein the cavity is made.

3. Paving element, according to the preceding claims, wherein the cavity is made in the manufacturing process of the paving element.

4. Paving element, according to claims 1 and 2, wherein the cavity is made in a process subsequent to that of the manufacturing of the paving element.

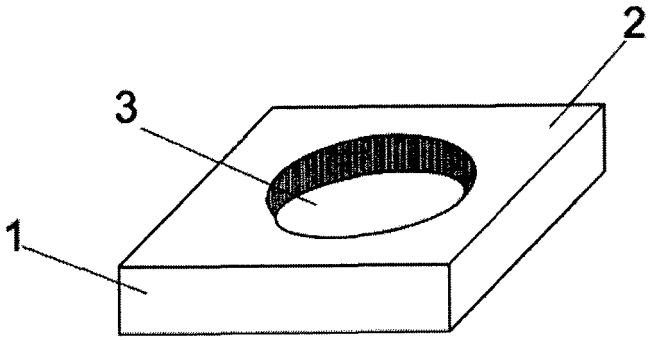

FIG. 1

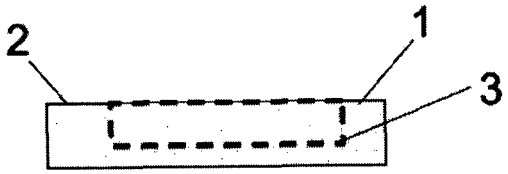

FIG. 2

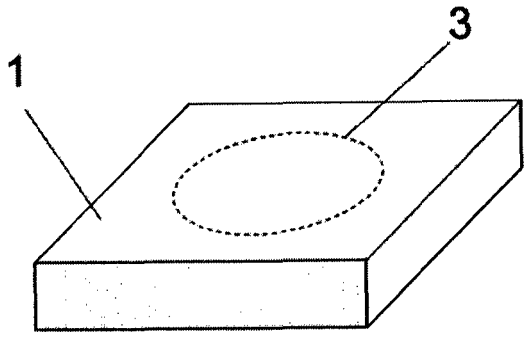

FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2011/070340

A. CLASSIFICATION OF SUBJECT MATTER

E01C5/00 (2006.01)
E01C11/22 (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)
E01C

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.
Y	JP 2004190288 A (MISAWA HOMES CO) 08/07/2004, Abstract from DataBase WPI. Retrieved of EPOQUE; AN 2004-493739; figures.	1-4
Y	GB 2298882 A (CONWAY SIMON) 18/09/1996, page 1, lines 14 - 21.	1-4
A	GB 478349 A (ARTHUR STEPHENSON) 18/01/1938, lines 8 - 27; figures.	1-4
A	GB 2111551 A (CHARCON PROD) 06/07/1983, page 1, line 93 - page 2, line 50; figures.	1-4
A	FR 2759502 A1 (COSTA ELIAS HELIDIO) 14/08/1998, page 3, line 29 - page 5, line 33; figures.	1-4

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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"E" earlier document but published on or after the international filing date
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"O" document referring to an oral disclosure use, exhibition, or other means.
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents , such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
06/10/2011	**(17/10/2011)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer M. Cuenca González Telephone No. 91 3493074

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2011/070340

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 1196680 A (PRIC PATENT RES INTERNATIONAL) 01/07/1970, the whole document.	1-4

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/ES2011/070340

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FR2759502 A	14.08.1998	NONE	
GB1196680 A	01.07.1970	FR1553954 A DE1534359 A	17.01.1969 26.03.1970

Form PCT/ISA/210 (patent family annex) (July 2009)