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(54) **CONSTRUCTION METHOD FOR STREET FURNITURE AND STREET FURNITURE ITEM CONSTRUCTED**

(57) The subject matter of the invention is a construction method for street furniture that comprises the following steps: placing at least two pieces of porcelain material (1) adjacent and in parallel; joining the at least two pieces of porcelain material (1) by means of an adhesive (2), thus forming a solid body (3); performing at least one machining operation of the solid body (3); inserting at least one securing profile (5) during machining (4) such that the pieces of porcelain material (1) that form the solid body (3) are joined to said securing profile (5); fixing the securing profile (5) to an external structure (7) in such a manner that the external structure (7) forms the support for the street furniture item. A further subject matter of the invention is the street furniture item obtained by means of this construction method.

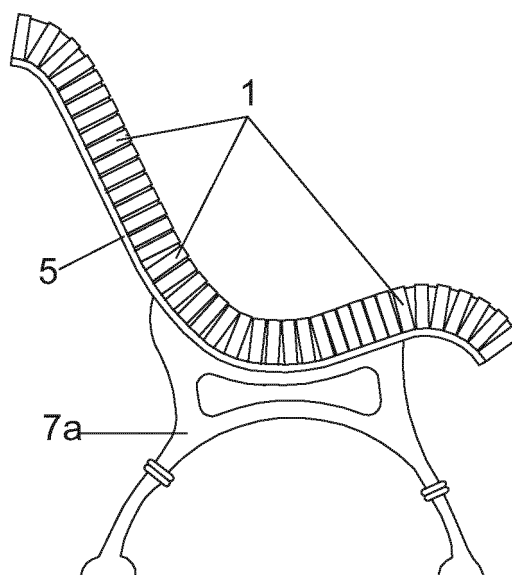


FIG. 7

Description

Subject matter of the invention

[0001] The present invention relates to a construction method for street furniture, said street furniture being of the type with flat surfaces. It is applicable in the field of construction for street furniture with porcelain elements and the construction elements are both functional and decorative elements.

Background of the invention

[0002] In the state of the art, a multitude of street furniture items that meet a series of needs of the inhabitants of the population nuclei (temporary waste storage, rest areas, plant sites, etc.), which are made up of highly resistant materials, both to weather and to the daily use thereof, are easy to maintain, accessible and long-lasting.

[0003] The most frequently used materials in the construction of the elements that make up street furniture are concrete, iron, steel, natural stone and wood with special outdoor treatments.

[0004] Known street furniture is manufactured in two ways, either in a single piece of solid material or manufactured in various pieces that are subsequently assembled to form the street furniture. Likewise, the street furniture may be manufactured from a single material or from pieces of different materials.

[0005] Street furniture is often subject to acts of vandalism where said street furniture is damaged or even rendered useless. These acts of vandalism make the maintenance of street furniture expensive and at times must even be replaced, further raising the cost of maintaining street furniture.

[0006] In relation to the subject matter of the invention, document ES 1 072 065 U is known, which discloses street furniture formed from a superposition of ceramic layers.

[0007] Document ES 1 075 419 U is also known, which discloses street furniture also made up of a superposition of ceramic layers.

[0008] Due to the large stock of pieces of porcelain material stored, currently without outlet due to lack of construction, alternative uses for said stock of pieces of porcelain material are being sought. The alternative uses of the pieces of porcelain material give rise to the subject matter of the invention, which discloses a construction method for porcelain street furniture.

[0009] No document that discloses a construction method for street furniture that produces porcelain street furniture is known.

Description of the invention

[0010] The invention described discloses a construction method for street furniture that comprises the follow-

ing steps:

- placing at least two pieces of porcelain material adjacent and in parallel;
- joining the at least two pieces of porcelain material by means of an adhesive, thus forming a solid body;
- performing at least one machining operation of the solid body;
- inserting at least one securing profile during machining such that the pieces of porcelain material that form the solid body are joined to said securing profile;
- fixing the at least one securing profile to an external structure, in such a manner that the external structure forms the support of the street furniture item.

[0011] In the construction method for street furniture, object of the invention, the adhesive forms a connecting body between the pieces of porcelain material that form the solid body, such that the pieces of porcelain material are separated therebetween by the volume occupied by said connecting body.

[0012] In the construction method for street furniture, object of the invention, the support structure comprises a securing profile with a prismatic cross-section and pieces of porcelain material disposed around said securing profile with a prismatic cross-section.

[0013] In the construction method for street furniture, object of the invention, the support structure is manufactured from a metal material.

[0014] Another object of the invention is a street furniture item constructed in accordance with the previously defined construction method for street furniture.

Description of the drawings

[0015] In order to easily understand the present description, the invention is complemented by a set of drawings wherein the following has been represented by way of illustration and not limitation:

Figure 1 shows a perspective view of a street furniture item that offers a flat surface manufactured according to the construction method, object of the invention;

Figure 2 shows a cross-sectional view of the street furniture item of figure 1;

Figure 3 shows a cross-sectional view of two ways of joining the pieces of porcelain material that form a module for the street furniture according to the construction method, object of the invention;

Figure 4 shows a perspective view of a table-type street furniture item constructed according to the construction method, object of the invention;

Figure 5 shows a side view of the street furniture item of figure 4;

Figure 6 shows a side view of the street furniture item similar to that of figure 4 wherein the support structure has been changed with respect to that of

figure 5; and

Figure 7 shows a side view of a bench-type street furniture item constructed according to the construction method, object of the invention.

[0016] A list of the different elements represented in the figures that are included in the invention is provided below:

- 1.- ceramic piece,
- 2.- adhesive,
- 3.- solid body,
- 4.- machining,
- 5a, 5b.- securing profile,
- 6.- connecting body,
- 7a, 7b.- support structure,
- S.- flat surface.

Preferred embodiment of the invention

[0017] The subject matter of the invention is a construction method for street furniture items constructed from porcelain material, said construction method resulting in a street furniture item having a very high finish quality with minimum maintenance and very high durability.

[0018] The construction method for street furniture items arises as an alternative use of pieces of porcelain material (1), due to the large stock of these pieces of porcelain material (1) accumulated in factories which cannot be used for traditional construction applications because new building projects are not being executed.

[0019] Said method comprises a first stage, wherein the pieces of porcelain material (1) are placed parallel therebetween and the pieces of porcelain material are joined together by one of the flat faces of the pieces of porcelain material (1), such that the portion of the piece of porcelain material (1) that remains visible once joined together is the edge of the piece of porcelain material (1). An adhesive (2) is used to join the pieces of porcelain material (1), which may be distributed between the pieces of porcelain material (1), such that the two pieces of porcelain material (1) are joined together, being in contact with each other, or creating a connecting body (6) between the pieces of porcelain material (1) such that the pieces of porcelain material (1) are not in contact with each other (the two options can be observed in figure 3).

[0020] Joining the pieces of porcelain material (1) forms a solid body (3) having at least one flat surface (S), which is that offered by the edges of the pieces of porcelain material (1) placed next to each other forming the solid body (3).

[0021] Next, in the construction method for street furniture items, object of the invention, the solid body (3) is subject to machining to obtain at least one slot (4) in the solid body (3) longitudinally to the solid body (3), i.e. each piece of porcelain material (1) of the solid body (3) receives said machining and, therefore, at least one slot

(4) is made in each piece.

[0022] Next in the construction method for street furniture items, object of the invention, at least one securing profile (5) is inserted in the at least one slot (4), such that all the pieces of porcelain material (1) are fixed, ensuring the formation of the solid body (3).

[0023] Lastly in the construction method for street furniture items, object of the invention, the at least one securing profile (5) is fixed to a support structure (7a, 7b), such that the street furniture item is completely configured.

[0024] According to the shape of the securing profile (5) and the support structure (7a, 7b), the construction method for street furniture items produces rounded street furniture items, for example a bench (as can be observed in figure 6). In order to adapt the pieces of porcelain material (1) to rounded shapes, the adhesive (4) that forms the adhesive union between said pieces of porcelain material (1) must create the aforementioned solid body (6) between pieces of porcelain material (1).

[0025] The support structure (7a, 7b) is embodied in two different ways, by means of a metal structure to which the at least one securing profile (5) is fixed, such as to obtain a metal support structure (7a). And, in an alternative embodiment, it is in turn formed by a prismatic securing profile (5b) with a polygonal cross-section, around which the pieces of porcelain material (1) are fixed, in such a way as to obtain a ceramic support structure (7b) which is disposed in an upright position and, in this position, can be equated with a vertical foot on which to place the solid body (3).

[0026] The construction method, object of the invention produces a street furniture item which is also the subject matter of the invention, which offers a multitude of chromatic possibilities since, according to the colour of the pieces of porcelain material (1) used to form the solid body (3), it will be the colour or colours of the solid body (3) formed.

[0027] As porcelain material is a hard material whose colour remains unchanged over time, the construction method, object of the invention, produces a street furniture item whose maintenance is inexpensive, that is practically indestructible and has an infinite number of chromatic options.

[0028] The invention should not be limited to the particular embodiment described herein. Persons skilled in the art may develop other embodiments in light of the description made herein. Consequently, the scope of the invention is defined by the following claims.

Claims

1. A construction method for street furniture **characterised in that** it comprises the following steps:

- A. placing at least two pieces of porcelain material (1) adjacent and in parallel;

B. joining the at least two pieces of porcelain material (1) by means of an adhesive (2), thus forming a solid body (3);

C. performing at least one machining operation of the solid body (3), obtaining at least one slot (4) in the solid body (3) with the machining; 5

D. inserting at least one securing profile (5) in the longitudinal slot (4) such that the pieces of porcelain material (1) that form the solid body (3) are joined to said securing profile (5); 10

E. fixing the at least one securing profile (5) to a support structure (7), such that the support structure (7) forms the support of the street furniture item. 15

2. The construction method for street furniture, according to claim 1, **characterised in that** the adhesive (2) forms a connecting body (6) between the pieces of porcelain material (1) that form the solid body (3), such that the pieces of porcelain material (1) are separated therebetween by the volume occupied by said connecting body (6). 20

3. The construction method for street furniture, according to any of the preceding claims, **characterised in that** the support structure (7) comprises a securing profile (5b) with a prismatic cross-section and pieces of porcelain material disposed around said securing profile (5b) with a prismatic cross-section. 25 30

4. The construction method for street furniture, according to any of claims 1 to 2, **characterised in that** the support structure (7) is manufactured from a metal material. 35

5. A street furniture item constructed according to the construction method for street furniture defined in any of the preceding claims. 40

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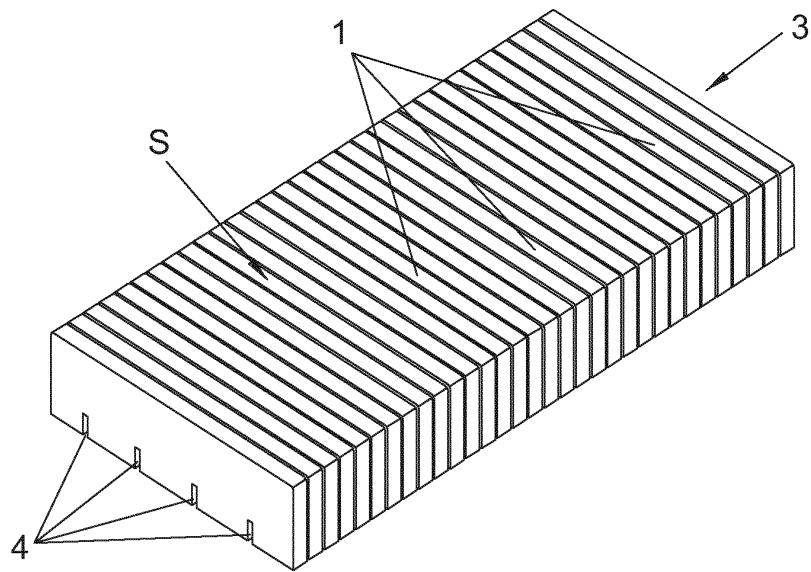


FIG. 1

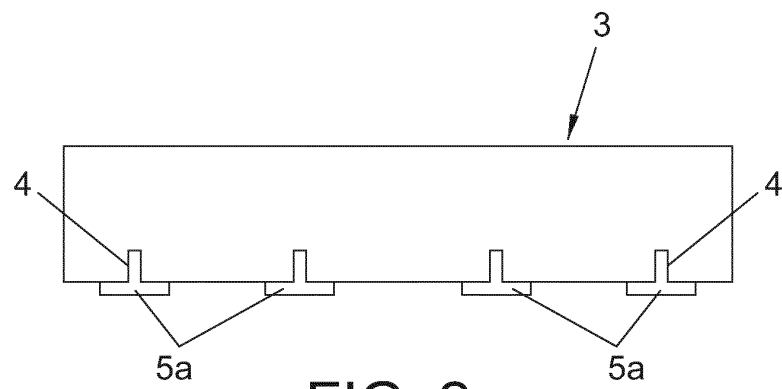


FIG. 2

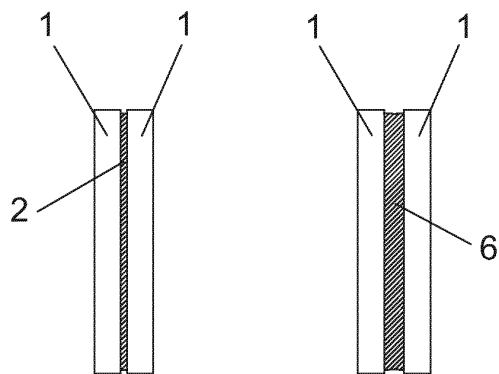


FIG. 3

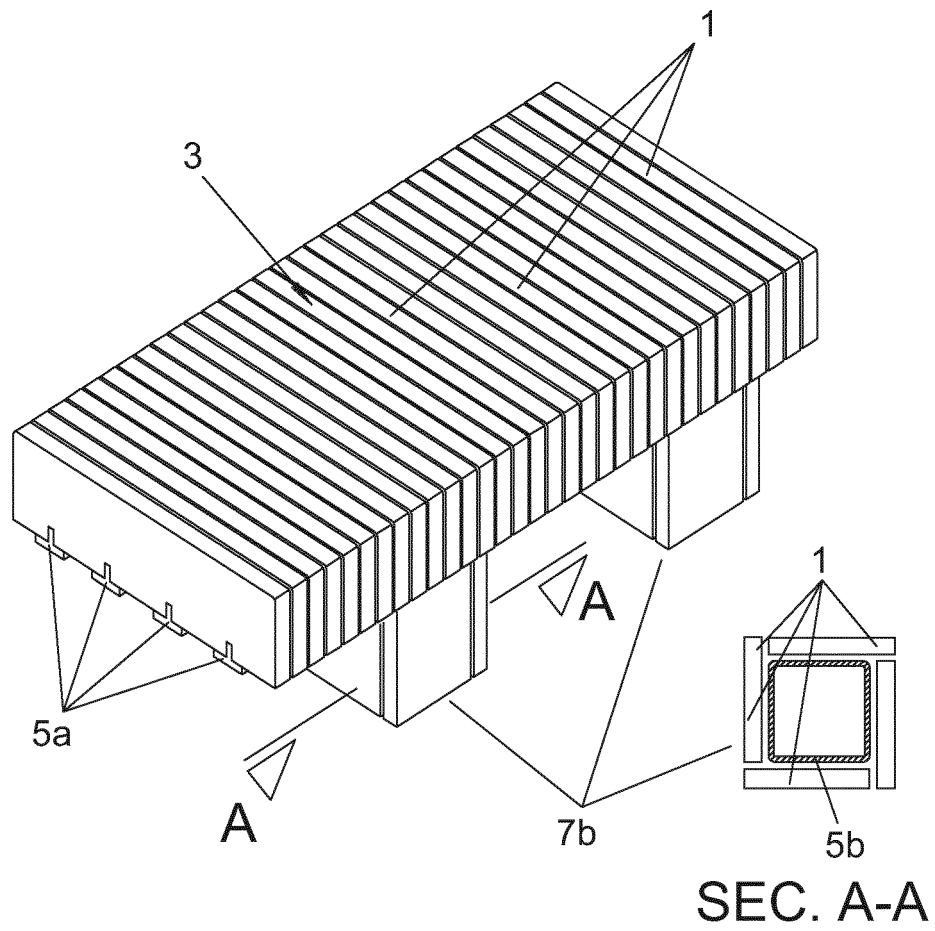


FIG. 4

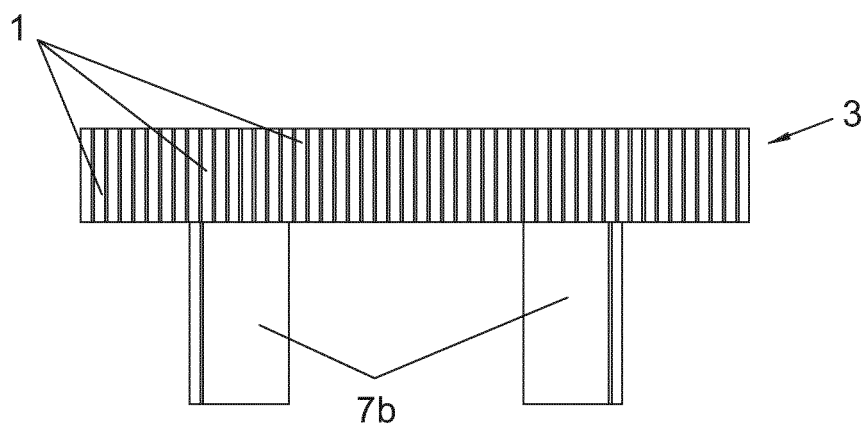


FIG. 5

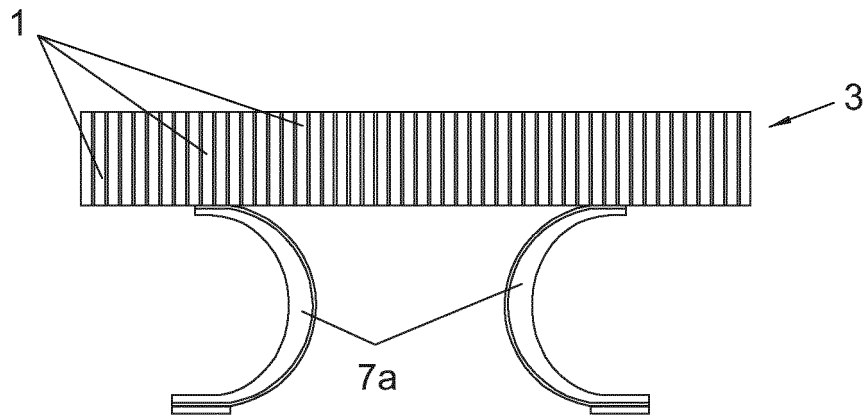


FIG. 6

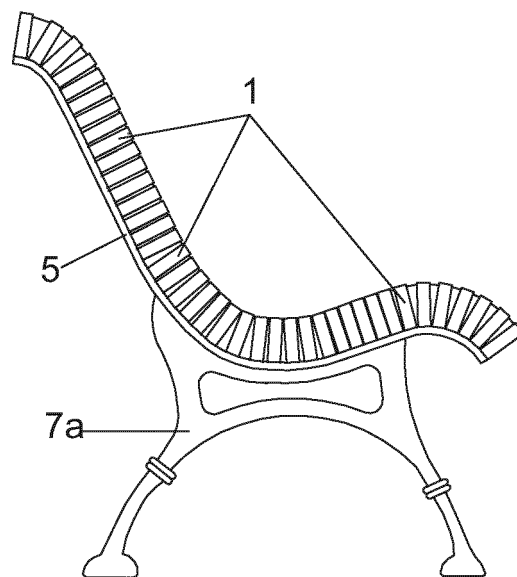


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2014/070442

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

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)
E04C

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	GB 2072731 A (CARRAN E) 07/10/1981, page 1, lines 26-41, 49-62, 67-72, 108-122; figures.	1-3
Y		4,5
Y	"> http://ajuntament.onda.es/web/guest/home/.../journal_content/56/10124/1500233?refererPid=10127 , 23/01/2013, figure.	4,5
X	GB 136257 A (MORTON BEN) 11/12/1919, page 4, lines 24-34; page 5, lines 38-44; figures 7, 9 and 12.	1,2,4
X	EP 1253258 A1 (HANIEL BAUSTOFF IND KALKSANDST) 30/10/2002, figures 1-4	1,2
A	US 4280308 A (SVENSSON LENNART) 28/07/1981, figures 6 and 7	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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"&"

document member of the same patent family

Date of the actual completion of the international search
27/06/2014

Date of mailing of the international search report
(02/07/2014)

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2014/070442

C (continuation).	DOCUMENTS CONSIDERED TO BE RELEVANT	
Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 1504816 A (CUMMINGS CLIFFORD L) 12/08/1924, page 2, lines 12-22,43-55,98-110; figures.	1,2
A	GB 2011521 A (IBSTOCK BUILDING PRODUCTS LTD) 11/07/1979, claims; figures.	1,2
A	US 2798538 A (DREIFKE RAYMOND F) 09/07/1957, figures.	1,5

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2014/070442

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CLASSIFICATION OF SUBJECT MATTER

E04C3/02 (2006.01)

E04C3/22 (2006.01)

A47C11/00 (2006.01)

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2014/070442

Information on patent family members

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
GB2072731 A	07.10.1981	NONE	
GB136257 A	11.12.1919	NONE	
EP1253258 A1	30.10.2002	DE20107101U U1	05.07.2001
US4280308 A	28.07.1981	DK373579 A	09.03.1980
		DK146948B B	20.02.1984
		CA1126529 A1	29.06.1982
		NO792890 A	11.03.1980
		NO151598B B	21.01.1985
		FI792750 A	09.03.1980
		FI64695B B	31.08.1983
		EP0008778 A2	19.03.1980
		EP0008778 A3	02.04.1980
		AT3318T T	15.05.1983
		FR2435573 A1	04.04.1980
		FR2435573 B1	14.01.1983
US1504816 A	12.08.1924	NONE	
GB2011521 A	11.07.1979	NONE	
US2798538 A	09.07.1957	NONE	

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- ES 1072065 U [0006]
- ES 1075419 U [0007]