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(54) STRUCTURAL JOINT

(57) A structural joint adapted to be engaged with slabs made of a moldable material comprising at least two profile elements, each adapted to be integral with one of the edges of two adjacent slabs, each profile having a substantial vertical stem adapted for extending at least partly along the edges up to a sharp edge of an upper surface of the slab, characterized in that the top edge of each vertical stem of the profile elements of two adjacent slabs as seen along the line between the two adjacent slabs is composed of non-linear elements.

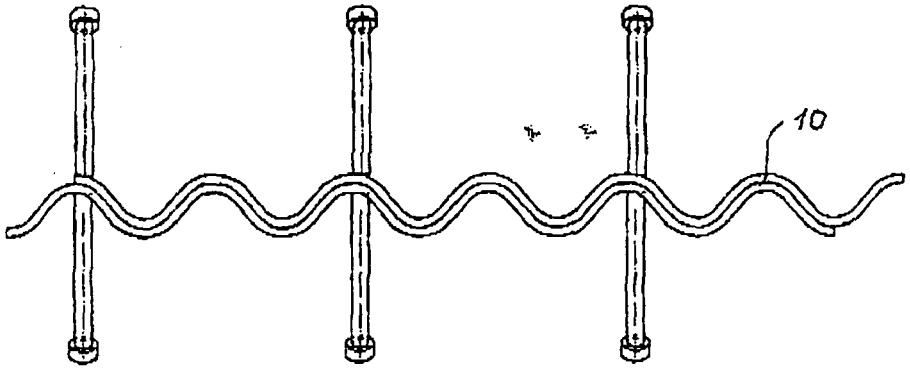

Fig. 1

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Description

[0001] The invention relates to a structural joint adapted to be engaged with slabs made of a moldable material comprising at least two profile elements, each adapted to be integral with one of the edges of two adjacent slabs, each profile having a substantial vertical stern adapted for extending at least partly along the edges up to a sharp edge of an upper surface of the slab.

[0002] Such a structural joint is known from the Belgian patent specification 1015453.

[0003] In this known structural joint the neighbouring side walls of two adjacent slabs are each provided with a structural joint provided with horizontal guiding means, which guarantee that the horizontal level of the two adjacent slabs is always maintained at the same height.
For that purpose the structural joint is provided with recesses and/or protrusions which allow a horizontal movement of two adjacent slabs, but which keep the slab in the same horizontal place.

[0004] In use a floor is composed of a number of slabs having a circumference which is provided with such known structural joints. In this way a perfect egalised floor is obtained in horizontal direction, whereas the structural joints as described above allow a horizontal movement between adjacent slabs, thereby providing compensation for movement of the individual slabs as a result of temperature variations or other stresses in horizontal directions.

[0005] In practice it has been found that the separation between two adjacent slabs always provides a grove-like gap. In case fork lift trucks or other transport means are used on such a floor each time a wheel is passing over the groove like separation this will cause undesirable shocks in the vehicle which can lead to some damage to the load carried by the vehicle and give additional usury or damage the upper circumferential-edges of the slabs or to the wheels. This is especially due to the fact that the joint is made of steel and therefore much harder than the commonly soft outer circumference surface of the wheels.

[0006] It is therefore an object of the invention to provide a structural joint as described in the preamble in which this problem is avoided.

[0007] This object is achieved in that the top edge of each vertical stem of the profile elements of two adjacent slabs as seen along the line between the two adjacent slabs is composed of non-linearelements.

[0008] Due to the fact that the groove-like separation between two adjacent slabs is not a straight line, the wheel of a fork lift truck or any other transport means having wheels has no tendency to lower into the groove upon passing over it, but will be always supported by the surface of any of the adjacent slabs.

[0009] In this way shocks are divided and usury reduced.

[0010] Other advantages and characteristics of the invention will become clear from the following description reference being made to the annexed drawings.
Herein is:

Fig. 1a schematic top view of two structural joints according to the invention in juxtaposed position in top view.

Fig. 2 a side view of a structural joint

[0011] The structural joint as shown in figures 1 and 2 may be of the type described in more detail in the Belgian patent specification 1015453 and the content of that specification is incorporated by reference into this description.

[0012] The structural described in this Belgian patent specification is of the type in which one of the joint part has a vertical flange provided with a horizontal groove for accommodating a horizontal flange connected to the vertical flange of the cooperating joint part. According to the invention known other types can be used as well.

[0013] In one such an embodiment both vertical flanges are provided with horizontal grooves and intermediate flange part is positioned between the opposing grooves.

[0014] In another embodiment one of the two opposing horizontal flanges is provided with a horizontal groove obtained by deformation of the vertical flange, whereas the opposed vertical flange is shaped in such a way so as to provide a horizontal protrusion cooperating with the horizontal grooves.

[0015] According to the invention the top of edge of each vertical stem of the profile has a non-linear shape as seen along the main direction of the joint between two neighbouring slabs. In the embodiment shown in the drawings the border line 10 between two adjacent slabs provided with structural joints according to the invention have an undulating shape. In this way it is obtained that the lower part of a wheel of a fork lift truck or any other vehicle or carriage is always in contact with some part of the upper surface of the floor formed by the slabs. In this way shocks and exaggerated usury can be avoided.

[0016] The undulating lines can be a sinus-shaped line, the frequency of which being defined in function of the dimensions of the wheels to be used on the floor.

[0017] However it is possible to use less regular shapes such as line composed of a number of linear and non-linear positions. Preferably the linear positions must have a length which is less than the width of the wheels to be used on the floor so as to avoid the problems cited before.

Claims

1. A structural joint adapted to be engaged with slabs made of a moldable material comprising at least two profile elements, each adapted to be integral with one of the edges of two adjacent slabs and provided with horizontal guiding means, which guarantee that

the horizontal level of the two adjacent slabs is always maintained at the same height, each profile having a substantial vertical stem adapted for extending at least partly along the edges up to a sharp edge of an upper surface of the slab, **characterized in that** the top edge of each vertical stem of the profile elements of two adjacent slabs as seen along the line between the two adjacent slabs is composed of continuous non-linear elements.

2. Joint according to claim 1, **characterized in that** the line between two adjacent slabs has a non-constant curative.

3. Joint according to claim 2, **characterized in that** the line between two adjacent slabs, has a sinus shape

4. Joint according to claim 1 modified in that the line between two adjacent slabs is composed of linear and non-linear elements and in that the length of each linear element is smaller than 70 mm.

5. The joint according to claim 1, wherein one of the joint profile elements has a vertical flange provided with a horizontal groove for accommodating a horizontal flange connected to the vertical flange of the cooperating joint profile element.

6. The joint according to claim 1, wherein both profile elements have vertical flanges provided with horizontal grooves and an intermediate flange part is positioned between the opposing grooves.

7. The joint according to claim 1, in which the profile elements have vertical opposing flanges wherein one of vertical flanges is provided with a horizontal groove obtained by deformation of the vertical flange, **characterized in that** the opposed vertical flange is shaped in such a way so as to provide a horizontal protrusion cooperating with the horizontal groove.

8. Use of a joint according to any one of claims 1 to 7, in a floor for fork lift trucks or other transport means.

Fig. 2

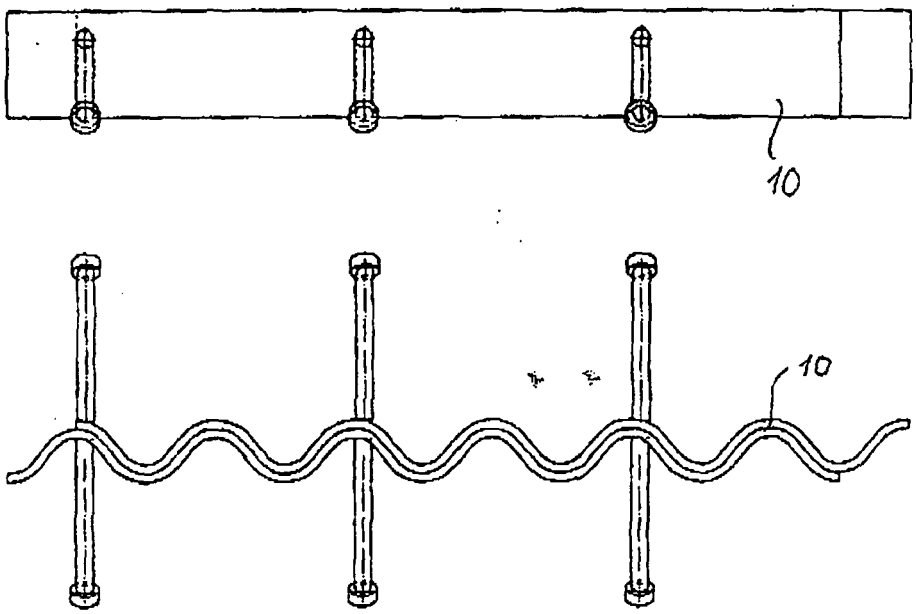

Fig. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 15 16 2038

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	AT 113 488 B (SCHUMANN MAX) 10 June 1929 (1929-06-10) * page 1, lines 11-27; figure 4 * -----	1-8	INV. E01C11/14 E01C11/08
Y	US 2 215 653 A (ROBERTSON ROBERT R) 24 September 1940 (1940-09-24) * claim 1; figures * -----	1-8	
A	DE 19 59 941 U (HEIERLI WALTER [CH]; HEIERLI RICHARD [CH]; HEIERLI WERNER [CH]) 11 May 1967 (1967-05-11) * page 3, paragraph 3; figure 1 * -----	1-3,8	

TECHNICAL FIELDS SEARCHED (IPC)
E01C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	8 July 2015	Gallego, Adoración

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 15 16 2038

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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08-07-2015

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
AT 113488 B	10-06-1929	NONE	
US 2215653 A	24-09-1940	NONE	
DE 1959941 U	11-05-1967	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- BE 1015453 **[0002] [0011]**