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(54) **SYSTEM FOR DISCONNECTABLE FASTENING OF PRODUCTS ON SURFACES CONTAINING VELCRO COMPONENTS ESPECIALLY IN THE CONSTRUCTION INDUSTRY**

SYSTEM ZUR LÖSBAREN BEFESTIGUNG VON PRODUKTEN AN OBERFLÄCHEN MIT
KLETTKOMPONENTEN, INSBESONDERE FÜR DIE BAUINDUSTRIE

SYSTEME DE FIXATION DETACHABLE DE PRODUITS SUR DES SURFACES CONTENANT DES
COMPOSANTS VELCRO, NOTAMMENT DANS LE SECTEUR DE LA CONSTRUCTION

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Description

Field of the Invention

[0001] The invention relates to a disconnectable system for fastening products on surfaces by means of elements fitted with Velcro components particularly in the field of construction.

Description of Prior Art

[0002] Patented in 1955, Velcro is generally a textile material consisting of two parts designed for their temporary or adjustable connection. One part is made of fabric with protruding fibres with loops, while the other is covered with a number of small nylon hooks that catch on the said fabric. The method of the Velcro production is apparent for example from the international patent WO 2012031339 (A1), nevertheless, its nature is not related to the present solution. Patent BE 1015181 (A3) discloses a composite panel of rigid material, which is at least on one side provided with loops or hooks, arranged for the connection on the Velcro principle. The connection of two parts of the wall using Velcro elements is described, for example, in the European patent EP0990746 (A1).

[0003] Nevertheless, the solution is not specific enough for practical use. There is also a solution according to FR 2816342 A1. The solution is focused on surface-treated panels for floor laying or wall mounting. It also implies the use of Velcro belts, but the fixation should be permanent, not adapted for frequent replacement.

[0004] Furthermore, a solution according to US patent 006000183 is known. However, this is a solution that allows a disconnectable attachment of the face from the panels to the base wall. The panels are in contact with each other and each is fixed to the wall by a central fastening to the base wall. The panel is designed to cover the entire base wall. If the panels were not connected to one another, the fastening would not be strong.

Nature of the Invention

[0005] The system for disconnectable fastening of products on surfaces (on to a supporting structure) contains Velcro components as the fastening elements. The nature of the invention lies in that the system consists of bearing elements provided on the surface with fastening elements. The bearing elements arranged on the bearing surface are shaped as flat strips and the bearing elements of products have the form of rectangular and/or square plates, which are in the middle and on the side edges provided with fastening projections.

[0006] In a preferred embodiment the bearing elements cover the entire supporting surface or a part thereof.

[0007] According to another preferred embodiment, the fastening elements on the flat plates are formed either

by Velcro loops or hooks.

[0008] According to another preferred embodiment, the fastening elements on the bearing element consist of Velcro hooks.

[0009] The bearing elements are preferably made of plastic.

[0010] It is also preferable, if the bearing elements are made of metal or wood.

[0011] According to other preferred embodiments, the bearing elements are attached to the bearing surface mechanically or glued or welded to it. They can be embedded in the material during manufacturing.

[0012] According to yet another preferred embodiment, the bearing elements are embedded in concrete or another product material.

[0013] However, it is also preferable, if the bearing elements are welded or fastened mechanically to the products.

[0014] The described system provides for dry attachment of a product to the bearing surface. This "dry process" thus enables installation also at below zero temperatures, thereby extending the application season especially in the construction industry. The installation is simple and can be done by average skilled persons.

[0015] Preferable is also installation on insulation systems, in places with difficult expansion, in places with high humidity, or after floods, e.g. remedy ventilation, etc.

Overview of Figures Included in the Drawing

[0016] The invention is further illustrated by a drawing, where Fig. 1 shows a sectional view of the fastening of a cubic product on a wall bearing surface by means of the elements of the system in question. Fig. 2 shows an axonometric view of the bearing element of products provided with the fastening elements in the form of Velcro hooks. Fig. 3 shows an axonometric view of the bearing element of products with separate fastening elements.

Examples of the Invention

[0017] The system comprises the bearing elements 1 and 2 fitted on the surface with the fastening elements 3.1 and 3.2, where the first bearing elements 1 arranged on the bearing surface 5 are shaped as flat strips and the second bearing elements 2 of products 4 have the form of rectangular and/or square plates, which are in the middle and on the side edges provided with fastening projections 6, 6.1. Their shape is sufficiently apparent from Fig. 3. First bearing elements 1 may cover the entire supporting surface 5 or a part thereof. The first fastening elements 3.1 on the flat strips consist of Velcro loops or hooks, while the second fastening elements 3.2 of products 4 are only formed by Velcro hooks, as shown in Fig. 2. The second bearing elements 2 are embedded in concrete or other construction material of the products 4 already in the production, or welded or mechanically fastened to the products 4.

[0018] Fig. 1 shows the first bearing element 1 in the form of a flat strip attached to the bearing surface 5, which is a wall in this case. In this case, the first bearing element 1 is glued to the bearing surface 5. However, it may also be attached mechanically, or welded if the material is suitable. The first bearing element 1 is provided with first fastening elements 3.1, which may have the shape of Velcro loops or hooks. The hooks of the second fastening element 3.2 of the product 4 are pressed in the loops or hooks of the first fastening element 3.1, the product being here, for example, a tile, thereby joining the fastening elements 3.1 and 3.2, respectively attaching the tile to the bearing surface 5 (the wall), as the second fastening elements 3.2 of the product 4 are fitted to the second bearing element 2 of the product 4 whose fastening projections 6, 6.1 extend into the product 4, where it was inserted at the time of the curing of the product 4. The above attachment provides disconnectable but strong connection, particularly in the vertical direction. This connection is repeatable while maintaining the strength characteristics and values of the connection. The bearing elements 1 and 2 as well as fastening elements 3.1 and 3.2 may be made of various materials, such as plastic, metal, wood, concrete, ceramics, etc., and can have various dimensions.

Claims

1. A system for disconnectable fastening of products on to a supporting structure comprising Velcro components to fix the products on said structure, the system comprising at least a first and a second bearing elements (1,2) where

- the first bearing element (1) comprising first fastening elements (3.1) of the Velcro components, is adapted to be fitted on the supporting structure and is shaped as flat strips,
- and the second bearing element (2) comprising second fastening elements (3.2) of the Velcro components, is adapted to be fitted on the surface of the product (4) to be fastened and has the form of rectangular and/or square plates,

characterised in that said plates are provided in the middle thereof and on their side-edges with fastening projections (6,6.1) for extending into the product (4) to be fastened.

2. A system according to claim 1, **characterized in that** the first bearing elements (1) cover a bearing surface (5) of the supporting structure.
3. A system according to claim 1, **characterized in that** the first fastening elements (3.1) on the first bearing element (1) in the form of a flat strip are made of Velcro loops or hooks.

4. A system according to claim 1, **characterized in that** the second fastening elements (3.2) on the second bearing element (2) of the product (4) are made of Velcro hooks.

5. A system according to a claim 1 to 3, **characterized in that** the bearing elements (1, 2) are made of plastic.

6. A system according to a claim 1 to 3, **characterized in that** the bearing elements (1, 2) are made of metal.

7. A system according to a claim 1 to 3, **characterized in that** the bearing elements (1, 2) are made of wood.

8. A system according to claims 1 and 2, **characterized in that** the first bearing elements (1) are attached mechanically to the bearing surface (5).

9. A system according to claims 1 and 2, **characterized in that** the first bearing elements (1) are glued or welded to the bearing surface (5).

10. A system according to claims 1 and 3, **characterized in that** the second bearing elements (2) are embedded in concrete or another construction material of the product (4).

11. A system according to claims 1 and 3, **characterized in that** the second bearing elements (2) are welded or attached mechanically to the products (4).

Patentansprüche

1. Ein System für die trennbare Befestigung von Produkten an einer Tragekonstruktion, welches Velcro-Komponenten zur Befestigung der Produkte an der besagten Konstruktion umfasst, wobei das System mindestens ein erstes und ein zweites Halterungselement umfasst (1,2), wobei:

- Das erste Halterungselement (1) einschließlich der ersten Befestigungselemente (3.1) der Velcro-Komponenten so adaptiert ist, dass es auf der Oberfläche der Tragestruktur angebracht werden kann und die Form eines flachen Streifens aufweist,

- Und das zweite Halterungselement (2) einschließlich der zweiten Befestigungselemente (3.2) der Velcro-Komponenten so adaptiert ist, dass es auf der Oberfläche des Produkts (4) angebracht werden kann, um dort befestigt zu werden, und die Form von rechteckigen und/oder quadratischen Platten hat,

dadurch charakterisiert, dass die besagten Platten in der Mitte dieser und an ihren Seitenkanten mit

Befestigungsvorsprüngen ausgestattet sind (6,6.1), die in das zu befestigende Produkt (4) ragen.

2. Ein System gemäß des Anspruchs 1, **dadurch charakterisiert, dass** die ersten Halterungselemente (1) eine Halterungsoberfläche (5) der Tragekonstruktion bedecken. 5
3. Ein System gemäß des Anspruchs 1, **dadurch charakterisiert, dass** die ersten Befestigungselemente (3.1) am ersten Halterungselement (1) in Form eines flachen Streifens aus Velcro-Schlingen oder -Haken hergestellt sind. 10
4. Ein System gemäß des Anspruchs 1, **dadurch charakterisiert, dass** die zweiten Befestigungselemente (3.2) am zweiten Halterungselement (2) des Produkts (4) aus Velcro-Haken hergestellt sind. 15
5. Ein System gemäß der Ansprüche 1 bis 3, **dadurch charakterisiert, dass** die Halterungselemente (1, 2) aus Kunststoff hergestellt sind. 20
6. Ein System gemäß der Ansprüche 1 bis 3, **dadurch charakterisiert, dass** die Halterungselemente (1, 2) aus Metall hergestellt sind. 25
7. Ein System gemäß der Ansprüche 1 bis 3, **dadurch charakterisiert, dass** die Halterungselemente (1, 2) aus Holz hergestellt sind. 30
8. Ein System gemäß der Ansprüche 1 und 2, **dadurch charakterisiert, dass** die ersten Lagerelemente (1) mechanisch an der Halterungsoberfläche (5) angebracht sind. 35
9. Ein System gemäß der Ansprüche 1 und 2, **dadurch charakterisiert, dass** die ersten Lagerelemente (1) an die Halterungsoberfläche (5) geklebt oder geschweißt sind. 40
10. Ein System gemäß der Ansprüche 1 und 3, **dadurch charakterisiert, dass** die zweiten Halterungselemente (2) in Beton oder ein anderes Baumaterial des Produkts (4) eingelassen sind. 45
11. Ein System gemäß der Ansprüche 1 und 3, **dadurch charakterisiert, dass** die zweiten Halterungselemente (2) an die Produkte (4) geschweißt oder mechanisch befestigt sind. 50

Revendications

1. Système pour fixation déconnectable de produits sur une structure de support comprenant des composants Velcro de façon à fixer les produits sur ladite structure, le système comprenant au moins un pre-

mier et un second élément de support (1, 2) où

- le premier élément de support (1), comprenant des premiers éléments de fixation (3.1) de composants Velcro, est adapté pour être monté sur la structure de support et est en forme de bandes plates,
- et le deuxième élément de support (2), comprenant des seconds éléments de fixation (3.2) de composants Velcro, est adapté pour être installé sur la surface du produit (4) à fixer et est en forme de plaques rectangulaires et/ou carrées,

caractérisé en ce que lesdites plaques sont munies au milieu de celles-ci et sur leurs bords latéraux de saillies de fixation (6, 6.1) destinées à s'intégrer dans le produit (4) à fixer.

2. Système selon la revendication 1, **caractérisé en ce que** les premiers éléments de support (1) recouvrent une surface d'appui (5) de la structure de support.
3. Système selon la revendication 1, **caractérisé en ce que** les premiers éléments de fixation (3.1) sur le premier élément de support (1) sous la forme d'une bande plate sont constitués de boucles ou de crochets Velcro.
4. Système selon la revendication 1, **caractérisé en ce que** les seconds éléments de fixation (3.2) sur le second élément de support (2) du produit (4) sont constitués de crochets Velcro.
5. Système selon une revendication de 1 à 3, **caractérisé en ce que** les éléments de support (1, 2) sont réalisés en matière plastique.
6. Système selon une revendication de 1 à 3, **caractérisé en ce que** les éléments de support (1, 2) sont réalisés en métal.
7. Système selon une revendication de 1 à 3, **caractérisé en ce que** les éléments de support (1, 2) sont réalisés en bois.
8. Système selon les revendications 1 et 2, **caractérisé en ce que** les premiers éléments de support (1) sont attachés mécaniquement à la surface d'appui (5).
9. Système selon les revendications 1 et 2, **caractérisé en ce que** les premiers éléments de support (1) sont collés ou soudés à la surface d'appui (5).
10. Système selon les revendications 1 et 3, **caractérisé en ce que** les seconds éléments de support (2) sont noyés dans du béton ou un autre matériau de cons-

truction du produit (4).

11. Système selon les revendications 1 et 3, **caractérisé en ce que** les seconds éléments de support (2) sont attachés mécaniquement à la surface d'appui (4). 5

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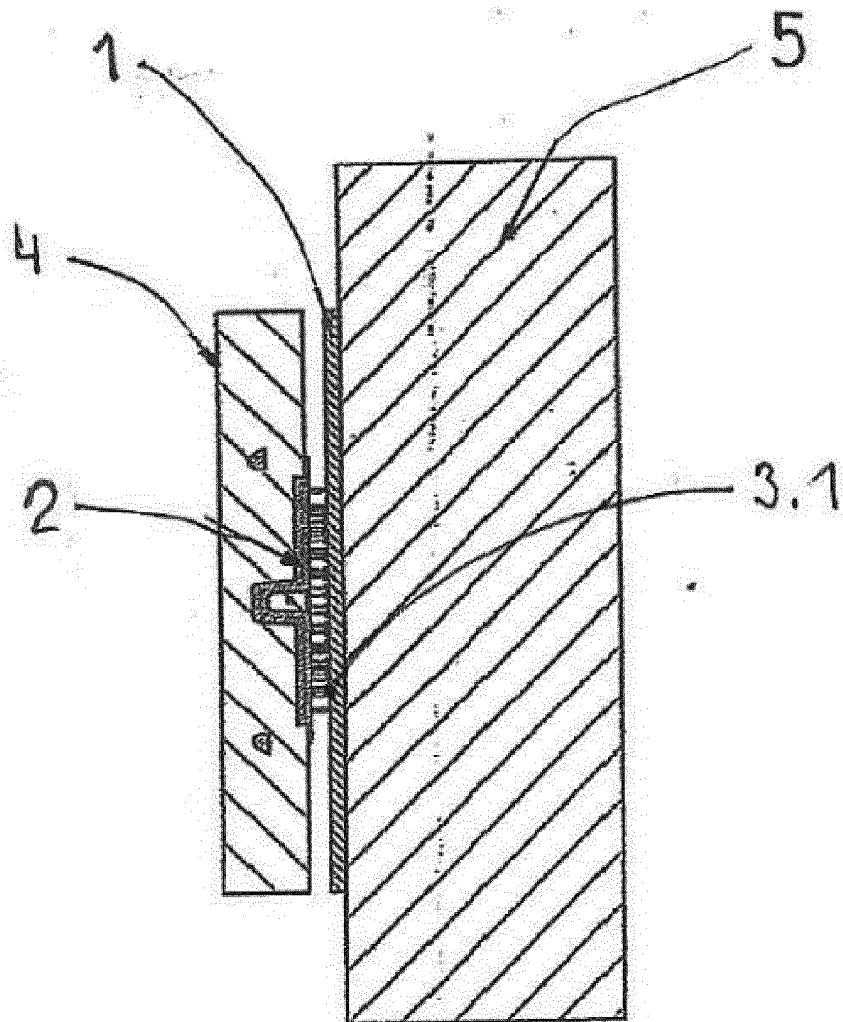


Fig. 1

REFERENCES CITED IN THE DESCRIPTION

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