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(54) **IMPROVED ROCK CLIMBING WALL**

(57) This is an improved rock climbing wall in which the climbing surface is covered with a number of parts (3) whose faces have "holds" (4) that constitute the sup-

port and grip elements for the climber, placed in the frontal plane of the climb, these parts (3) can also be housed in compartments (2) grouped in modular units (1).

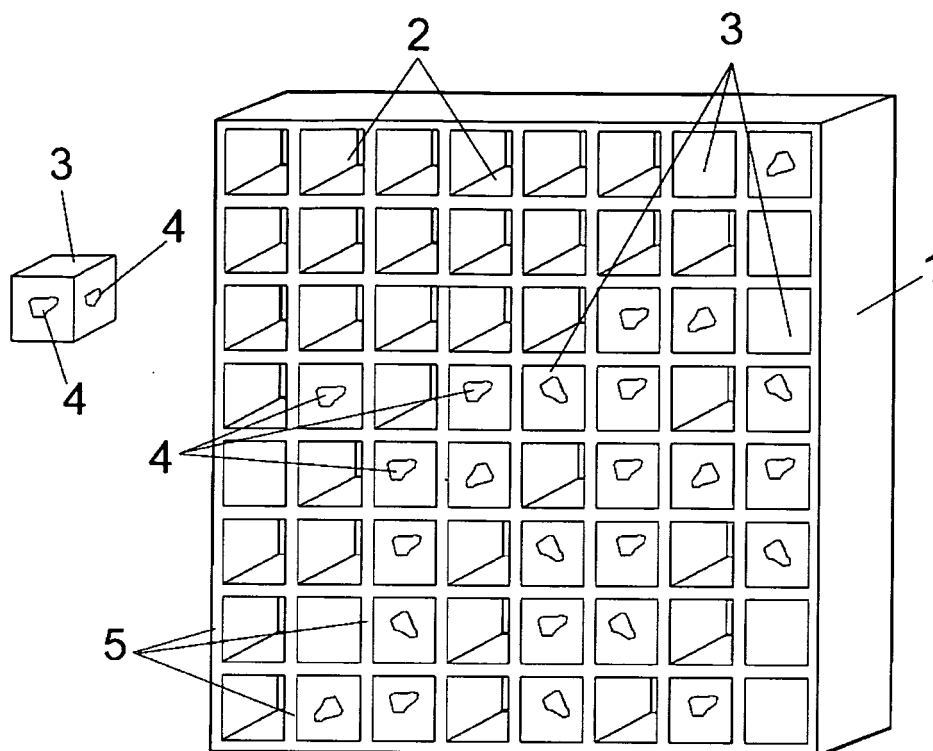


FIG. 1

Description

OBJECT OF THE INVENTION

[0001] This invention relates to an improved rock climbing wall, whose obvious aim is to allow the climbing activity to take place wherever the rock climbing wall is installed. The wall is made up of a number of geometric bodies or parts that are placed on the surface to be used for climbing (walls, roof, inclined planes, etc).

[0002] The object of the invention is to simplify the construction of a climbing wall with the ability to easily alter the position and shape of the "holds" that are placed on it. This will provide the climbers with grip and support in their ascent and also facilitate the replacement and re-location of the "holds".

PRIOR ART

[0003] There are many types of rock climbing walls used to make climbing activities possible in locations away from mountains by means of artificial walls on which the parts, basically the "holds" are arranged and secured, made usually of polyester mixed with sand to achieve a non-slip touch similar to that of natural rock; sometimes the rock climbing wall is covered with a sheet, generally made of wood, of suitable thickness and with perforations in staggered layout where the "holds" are attached using bolts, arranged at the climber's criteria in order to create climbing routes of varying degrees of difficulty, being measured and marked with coloured tape so that the climber can adjust the climb to the desired level.

[0004] Examples of such are Spanish Utility Models U9600831 and U9800146 as in both cases the "holds" mentioned are elements of varying sizes and shapes that protrude from the wall to which they have been suitably attached using a system of bolts or by other means.

[0005] However, in the above mentioned Utility Models, and in others, the "holds" are usually permanently attached, meaning the climbing routes cannot be changed thus making it less challenging for the climber, apart from the fact that the structure must be dismantled quite frequently in order to clean the "holds", something which is considerably time consuming.

DESCRIPTION OF THE INVENTION

[0006] The key feature of the proposed improved rock climbing wall is to cover the climbing surface, be it a wall, roof, inclined plane, etc. with a number of parts or geometric bodies that, once in place, present a smooth and homogeneous finish with no other cavities than the "holds" themselves.

[0007] The parts that will be placed on the surface of the rock climbing wall may be of any suitable geometric shape, the most appropriate being the cube, as it has six identical faces giving it perfect symmetry in all its axes, although other shapes can also be used, such as the

tetrahedron in which there are obviously four faces to each part.

[0008] These parts will be complemented with the traditional "holds" the climber can lean on and grip when ascending, the "hold" in this case will not protrude from the climbing surface plane, instead it will be defined by a cavity, which obviously more closely resembles a natural rock climb than the traditional climbing wall, since normally a rocky wall has more cracks and hollows and to a lesser extent grips protruding from the face of the rock.

[0009] It must also be emphasised that the view a climber has of the rock face he is about to ascend in reality does not provide many clues for the route that can be followed, a situation that is reproduced in the rock climbing wall that is the object of this invention, in addition to which the position of the parts can be altered with relative frequency as they may all be equal in terms of geometric shape and therefore interchangeable; their orientation can also be changed without having to move their position thus varying both the "holds" available for the climb and the spatial configuration of each one according to its orientation.

[0010] Clearly, some of the faces on the parts may lack the cavity corresponding to the "hold", with the aim to being able to design the whole wall with the desired number of "holds".

[0011] The climbing wall can be created by covering the climbing surface with a set of compartments where the said parts will be inserted. The set of compartments can be constructed using modular units to provide the spaces, manufactured with a light and resistant material, preferably wood, as this is cheap and easy to use without the need for the moulds that would be required if using plastic. Laminated water-proof materials can also be used.

[0012] These modular units are easy to handle and to secure to the surface where the climbing wall is to be attached or installed, thanks to the type of material used in their manufacture, being variable in size and in the number of number of spaces in each modular unit.

[0013] Once the compartments are placed on the climbing surface, the parts containing the "holds" can be inserted, arranging the climbing routes to the desired level of difficulty.

[0014] The parts can be formed in such a way that all the holds of the part have the same degree of difficulty; alternatively, different levels can be created as required.

[0015] Therefore, in the rock climbing wall that is the object of this invention, the climbing routes are easily modified by simply exchanging the parts or varying the relative position of some of them, offering the climber a surface with or without "holds", allowing the continuous creation of new routes, thus realistically reproducing the conditions of natural mountain climbing.

[0016] This system is simply and easily maintained, since exchanging the parts and altering their relative position lengthens the time before the cleaning of the

"holds" becomes necessary, thus delaying the moment when the parts have to be removed to be cleaned properly while maintaining at all times the type of hold chosen.

[0017] With regard to the anchoring of each part in its corresponding space, this can be done using screws, clips, or a bayonet system etc. or even by means of a bracket anchored by a screw at each intersection of the side partitions that make up the compartments.

DESCRIPTION OF THE DRAWINGS

[0018] To supplement the description given below, and with the aim of providing a clear understanding of the characteristics of this invention, in accordance with a pre-emptive example of its practical implementation, provided as an integral part of this description are a set of drawings of an illustrative but not limiting nature representing the following:

Figure 1.- Shows a frontal perspective of a modular unit that may be used in the construction of the climbing wall that is the object of this invention, in which the modular unit is square and sub-divided into square compartments.

Figure 2.- Shows a perspective view of one of the cube-shaped parts to be placed in one of the compartments of the modular unit represented in the previous figure, showing different "holds" in the same cube-shaped part.

Figure 3.- This final drawing shows a frontal view of an anchoring method, using brackets, to secure the cube-shaped parts into the compartments of the modular unit shown in figure 1

PREFERRED PRODUCTION OF THE INVENTION

[0019] The improved rock climbing wall in this invention is constructed by covering the climbing surface with either an assortment or parts (3) or geometrically similar bodies having on all or some of their faces different cavities or hollows that constitute the classic "holds" (4) or grasp and support elements for the climber; "holds" (4) that may in some cases have protruding elements.

[0020] Once the parts (3) have been attached to the wall using screws or any other suitable means, the result will be a smooth and homogeneous finish, as the parts will totally cover the climbing surface leaving no spaces between them, with cavities corresponding to the "holds" (4).

[0021] To place the parts (3) the climbing surface can be covered with a set of compartments (2) whose configuration complements that of the parts (3) which are designed to fit securely into the compartments; so in the drawings, the compartments (2) shown are square and logically the parts (3) will be cube-shaped.

[0022] The set of compartments can be fitted using

modular units (1) which will be made preferably of wood or laminated water-proof materials, with side partitions (5) constructed both vertically and horizontally to form the compartments (2). These side partitions (5) will enable the parts (3) to be secured by any suitable means, either using screws or even brackets (6) attached using a screw at each intersection between the side partitions (5) as shown in figure 3. In this way, when the bracket (6) is parallel to the side partitions (5), the four compartments (2) that meet at this intersection are free, blocking of the parts (3) being achieved by turning the bracket (6) and securing it in a cross-shaped position, as shown in figure 3.

[0023] Some of the compartments (2) containing the parts (3) can be seen in figure 1; these parts (3) are fitted with "holds" (4) on their faces to provide support or grip for the climber on his ascent.

[0024] Once the surface has been covered with the modular units (1), it becomes simple to fill the compartments (2) with the parts (3), creating climbing routes at any level and degree of difficulty desired depending on the "holds" (4) fitted in the parts (3) and which are placed facing outwards, grouped in one way or another.

[0025] These parts (3) can be placed in such a way that all the "holds" (4) in one part (3) offer the same difficulty, although varying difficulty can also be obtained by grouping them as required, for example, opposite faces having the same difficulty, thus facilitating replacement when they become dirty, while maintaining the level of difficulty already established.

[0026] One of the main advantages of this invention is its maintenance, as the "holds" (4) become dirty with use or the accumulation of dust, grease from the hands and magnesium used by the climbers, making them difficult to grip as they become slippery. To eliminate this effect, it is necessary to remove the "holds" (4) every so often to clean or replace them.

[0027] In the proposed system, this replacement is quick as the part (3) is simply taken out and turned around to show another face with a hold (4) having the same shape, without having to replace it for a different one; in this way the parts (3) can remain in place for longer before having to be removed for cleaning.

[0028] Likewise, the work required to change the climbing routes, which must be carried out by an operator fairly frequently as the users of this type of installation prefer not to know the routes in advance, becomes simpler. Interchanging the position of the parts (3) or changing their orientation so that they offer the climber a hold (4) or not, is very easy. It is possible for example to close a compartment (2) that previously provided the climber with a "hold" (4) and open a "hold" (4) within his reach in another compartment (2) that had previously been closed, thus maintaining the same degree of difficulty, if required.

Claims

1. Improved rock climbing wall, designed as an installation to facilitate the practise of climbing by using a wall, roof, inclined plane, etc., created by completely covering the climbing surface with a number of geometrically similar parts (3) or bodies that have, on all or some of their faces, a variety of cavities or hollow spaces that act as the classic "holds" (4) to provide support and grip to the climber, in such a way that the parts (3) form a smooth and homogeneous surface with the cavities corresponding to the "holds" (4) and no gaps being left on the surface. 5
10
2. Improved rock climbing wall, according to claim number 1, **characterised by** parts (3) that can be housed in compartments (2) using both elements for this purpose with complementary configurations. 15
3. Improved rock climbing wall, according to the above claims, **characterised by** parts (3) that are preferably cube shaped. 20
4. Improved rock climbing wall, according to the above claims, **characterised by** parts (3) that can either be attached to the wall to be covered or to the set of compartments built for that purpose, using screws or any other suitable means, or even brackets (6) attached at the intersections of the side partitions (5) that make up the compartments (2). 25
30
5. Improved rock climbing wall, according to the above claims, **characterised by** parts (3) that are interchangeable both in terms of position and the way they can be assembled and dismantled, to create variation in the position of the "holds" (4), thus varying the climbing route. 35
6. Improved rock climbing wall, according to the previous claims, **characterised by** compartments (2) that can be grouped into modular units (1). 40
7. Improved rock climbing wall, according to claim number 6, **characterised by** modular units (1) that are made preferably with wood, or using materials that are laminated and waterproof. 45

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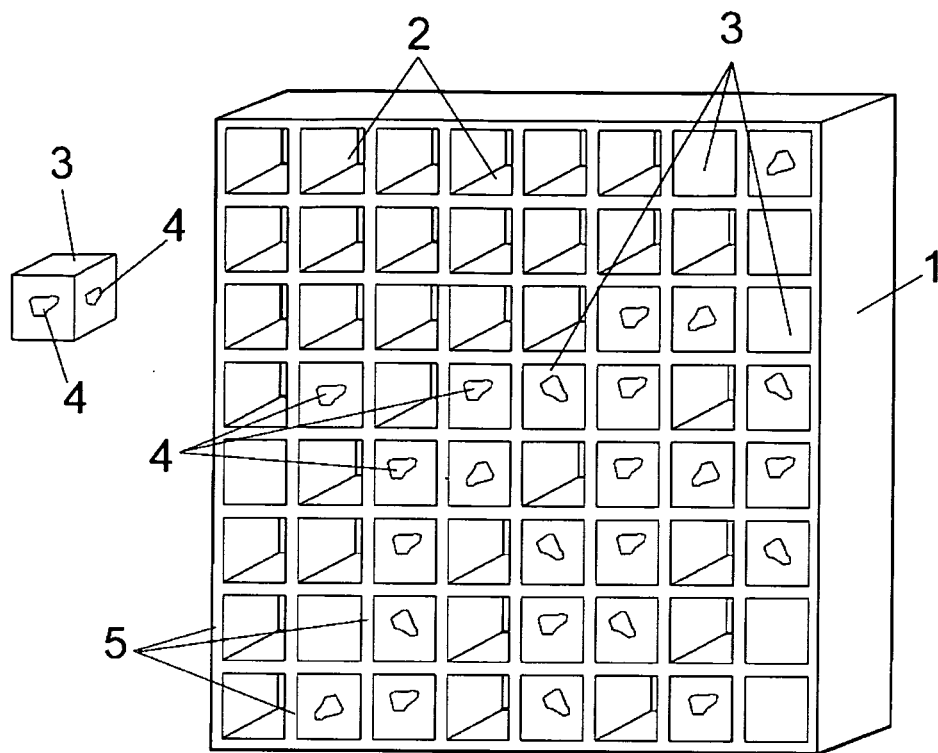


FIG. 1

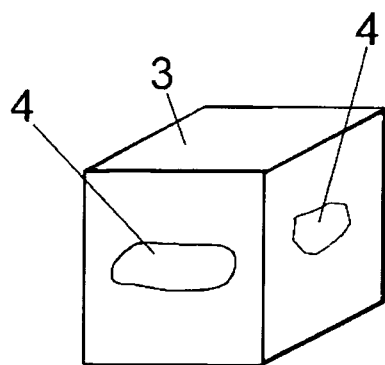


FIG. 2

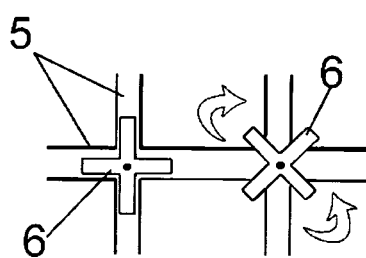


FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ ES 2010/070229

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)

A63B 69/00, A63B 9/00, A63b29/04

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)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AT 371002 B (BAUTECHNIK ANSTALT) 25.05.1983, figures.	1
Y		2-7
Y	FR 2917642 A1 (CONCEPT AVENTURE SARL) 26.12.2008, abstract; figures.	2-7
A	DE 202005009100 U1 (STEINBERG MARIO) 13.10.2005, description; paragraph [19]; figures.	1-7
A	DE 102005063225 A1 (SCHNEIDER ALBRECHT) 21.06.2007, figures.	1-7

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance.	
"E" earlier document but published on or after the international filing date	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O" document referring to an oral disclosure use, exhibition, or other means	"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
"P" document published prior to the international filing date but later than the priority date claimed	
	"&" document member of the same patent family

Date of the actual completion of the international search

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

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/ES 2010/070229

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
FR 2917642 A B	26.12.2008	NONE	-----
DE 102005063225 A	21.06.2007	NONE	-----
AT 371002 B	25.05.1983	FR 2467609 AB WO 8101107 A	30.04.1981 30.04.1981 30.04.1981
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Form PCT/ISA/210 (patent family annex) (July 2009)

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CLASSIFICATION OF SUBJECT MATTER

A63B 69/00 (2006.01)

A63B 9/00 (2006.01)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- ES 600831 [0004]
- ES 800146 [0004]