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(54) A stacking block.

(57) The invention relates to a stacking block (1) intended to be placed between stacked-together concrete elements and the like, whereby the stacking block (1) is made of an elastomeric material and is provided with projecting cams (3,4) at its bottom side and at its upper side, in such a manner that several blocks may be placed on top of each other, whereby the cams (4) located at the bottom side of a block (1) engage in the spaces between the cams (3) provided at the upper side of a lower block (1).

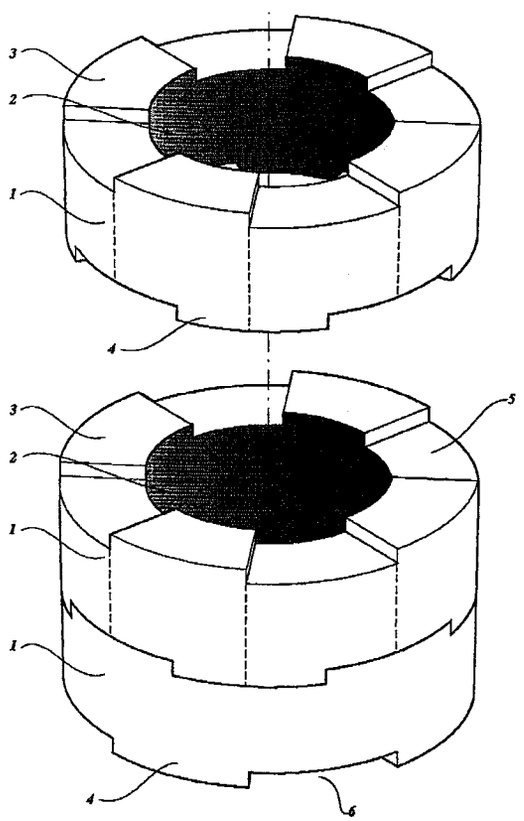

Fig. 1

EP 0 662 432 A1

The invention relates to a stacking block intended to be placed between stacked-together concrete elements and the like.

When transporting and/or storing concrete elements and the like heavy materials, which may be sensitive to breaking, it has been usual for several decades to place wooden stacking blocks between the elements, in order to prevent the elements from coming into contact with each other. There are several drawbacks connected to the use of wooden stacking blocks of this type, however.

In the first place the type of wood used must not be too hard, because wooden blocks which are too hard may cause cracks in thin concrete elements and the like. Wood blocks of a softer type of wood, however, will crack or break more easily under the influence of the loads exerted on the wooden blocks. Consequently a wooden stacking block can only be used ten times on average and thus has a comparatively short life.

A further drawback of wooden stacking blocks is the fact that when the wooden blocks are subjected to heavy loads, acid-containing moisture is squeezed out of the blocks. Such acid-containing moisture causes discolorations in the concrete, which in many cases necessitates an after-treatment of the concrete elements. In practice it has appeared that even after a period of more than twenty years these discolorations are still visible.

A further drawback of wooden stacking blocks is that they are frequently stolen, in order to be burned in open fires, for example.

Upon delivering concrete elements at building projects also quite a few of the wooden stacking blocks disappear among the other building materials present at the building site.

In frosty weather the wooden stacking blocks freeze on to both the concrete element lying under the wooden block and the concrete element lying on top of the wooden block, partially under the influence of the moisture squeezed out of the wooden stacking blocks. When subsequently the concrete elements are lifted by means of a crane or the like, the frozen blocks are pulled to pieces, so that in particular in winter the wooden blocks have a very short life.

The object of the invention is to obtain a stacking block, which obviates the drawbacks of the wooden stacking blocks that have been usual so far.

According to the invention this may be achieved in that said stacking block is made of an elastomeric material and is provided with projecting cams at its bottom side and at its upper side, in such a manner that several blocks may be placed on top of each other, whereby the cams located at the bottom side of a block engage in the spaces between the cams provided at the upper side of a lower block.

When using a stacking block made of an elastomeric material, such as plastic material or rubber, the aforesaid drawbacks are avoided, whilst the provision of cams, if desired, makes it possible to stack several blocks on top of each other in order to keep the elements to be supported a desired distance apart.

The stacking blocks may thereby be readily provided with a desired colour and/or suitable marks, so that they can be readily recognized by their owner.

The invention will be explained in more detail below with reference to the accompanying Figures.

Figure 1 is a perspective view of three stacking blocks, wherein the upper stacking block is depicted some distance apart from the two stacking blocks located therebelow, which are placed one on top of the other.

Figure 2 is a plan view of a stacking block.

Figure 3 is a side view of a stacking block.

Figure 4 is a side view of a further stacking block, which is thicker than the stacking block shown in Figure 3.

As is shown in the Figures the stacking block is formed by a round disc 1, in the centre of which an opening 2 is provided. Projecting cams 3 are provided at the bottom side of the disc and projecting cams 4 are provided at the upper side of the disc. The disc is made in one piece of for example a hard rubber, a rubber recycled from car tyres or a suitable plastic material.

In the illustrated embodiment a disc is provided with four cams 3 located at the upper side and with four cams 4 located at the bottom side.

Interspaces 5 and 6 located between the cams 3 and 4 respectively have the same dimensions as the cams themselves, so that the stacking blocks may be stacked on top of each other in the manner shown in Figure 1, whereby the cams 4 located at the bottom side of a stacking block fit into the interspaces 5 between cams 3 located at the upper side of a lower stacking block.

As is furthermore apparent from the Figures, the upper cams 3 are circumferentially staggered through a certain angle with respect to the cams 4, all this in such a manner that the cams 3 and 4 partly overlap when seen in plan view (Figure 2). The arrangement is thereby such that when two blocks are stacked one on top of each other, the uppermost projection of the assembly of blocks is located directly above the lowermost projection of the assembly of two blocks, so that the load exerted on the uppermost block is rectilinearly transmitted via the two blocks to the cams supporting the lower block.

Furthermore the cams prevent the two blocks placed one on top of the other from rotating relative

to each other, which also prevents any movement of the elements supported by the stacked blocks.

As is furthermore apparent from Figures 3 and 4, it is possible to produce blocks whose bodies 1 have different heights, whereas the height of the cams 3 and 4 or the depth of the recesses 5 and 6 and the dimensions of the cams or the recesses respectively are the same for the various blocks, so that it is also possible to stack blocks having different heights on top of each other in the manner described above. The blocks having different heights may be given different colours, so as to have a clear indication as to the height of a block.

Furthermore the blocks may be readily provided with suitable marks, which for example provide an indication as to the owner of the blocks.

The blocks do not absorb any moisture, so that the risk of the blocks freezing fast is largely prevented.

Furthermore the blocks do not secrete any harmful substances, not even when being loaded.

The choice of materials is preferably such that the blocks may slightly deform under a load, but automatically resume their original shape when said load is removed.

Furthermore the blocks are not combustible, which is important with a view to preventing them from being stolen.

Furthermore the blocks have a very long life in comparison with the wooden stacking blocks that have been usual so far.

Claims

1. A stacking block intended to be placed between stacked-together concrete elements and the like, characterized in that said stacking block is made of an elastomeric material and is provided with projecting cams at its bottom side and at its upper side, in such a manner that several blocks may be placed on top of each other, whereby the cams located at the bottom side of a block engage in the spaces between the cams provided at the upper side of a lower block.

2. A stacking block according to claim 1, characterized in that a stacking block is provided with through hole provided centrally in the block.

3. A stacking block according to claim 1 or 2, characterized in that the cams provided at the upper side of a block are staggered with respect to the cams provided at the bottom side when seen in plan view, all this in such a manner, that said cams partly overlap.

4. A stacking block according to any one of the preceding claims, characterized in that said stacking block has a round external shape.

5. A stacking block according to any one of the preceding claims, characterized in that the upper surface area of the cams located at the bottom side or the upper side amounts to at least substantially half the total surface area of a stacking block.

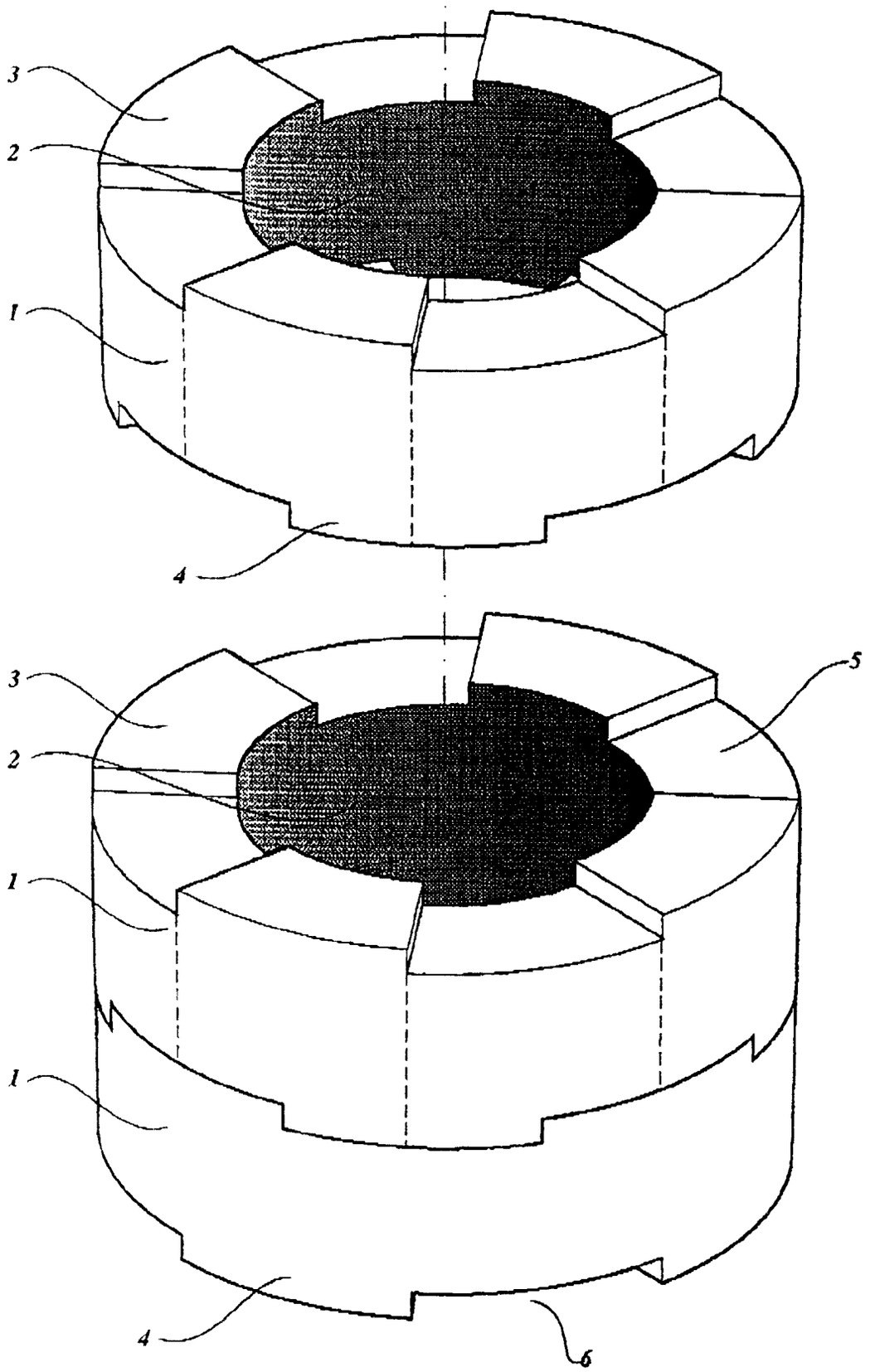

Fig. 1

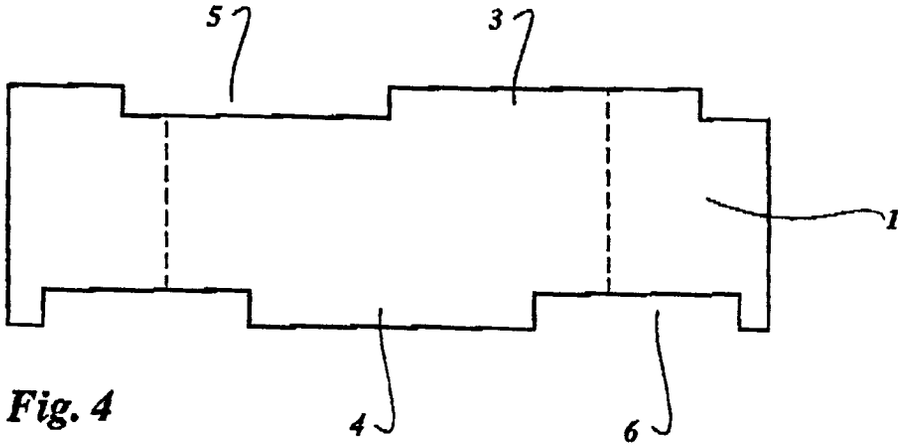

Fig. 4

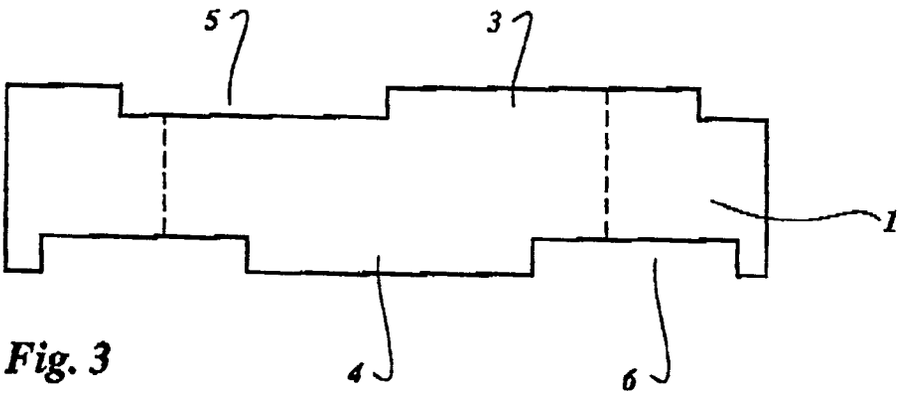

Fig. 3

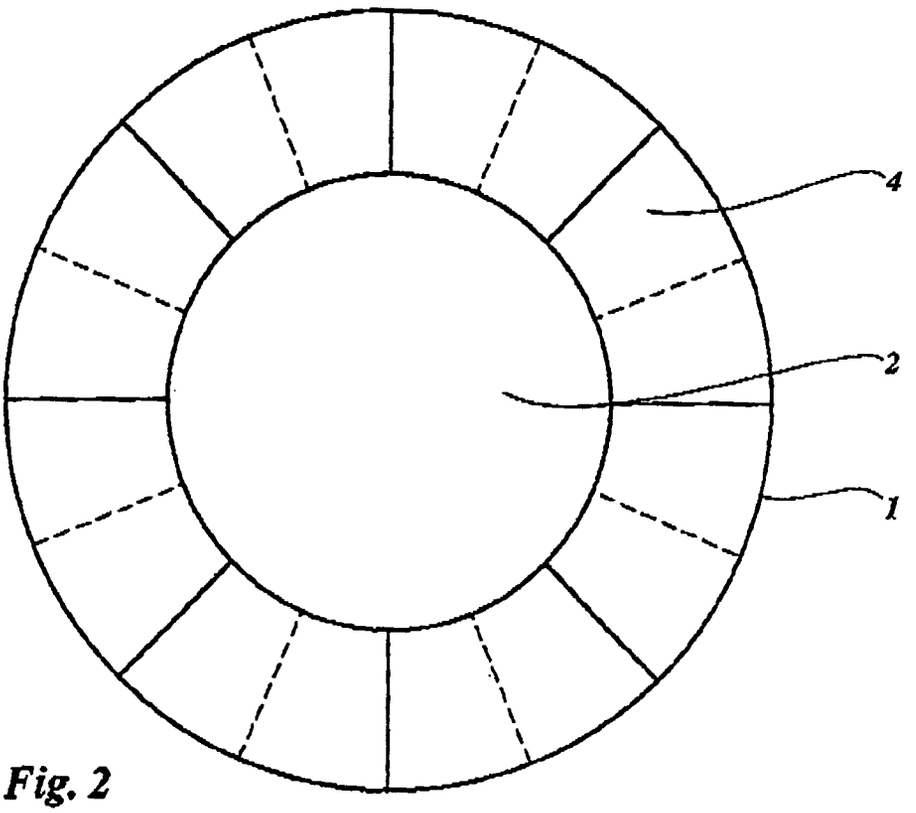

Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 94 20 3776

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	BE-A-759 107 (MAGASINS DE BOIS ET SCIERIES G. ORBAN ET FRERE) * page 1 - page 4; figures 1-2 *	1	B65D85/30 B65D85/62
A	FR-A-2 596 359 (LA BOULE OBUT) * page 2, line 12 - line 27; figures 1-2 *	1,2,4	
A	FR-A-2 204 181 (COPAFI) * page 3, line 3 - line 7; figures 1-4 *	1,4	
A	EP-A-0 557 252 (DE BENEDICTIS) * column 2, line 18 - line 31; figures 1-2 *	1,3	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18 April 1995	Vollering, J

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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