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(54) **Walling products**

(57) A walling product comprising reconstituted walling material formed as a block, in which at least one end of the block is adapted for mutual engagement with the corresponding end of another such block, said end

providing both horizontal and vertical mating surfaces. The ends of the blocks may be formed as tongues formed with through-holes for receipt of a dowel, bar or pin to retain the blocks in registration.

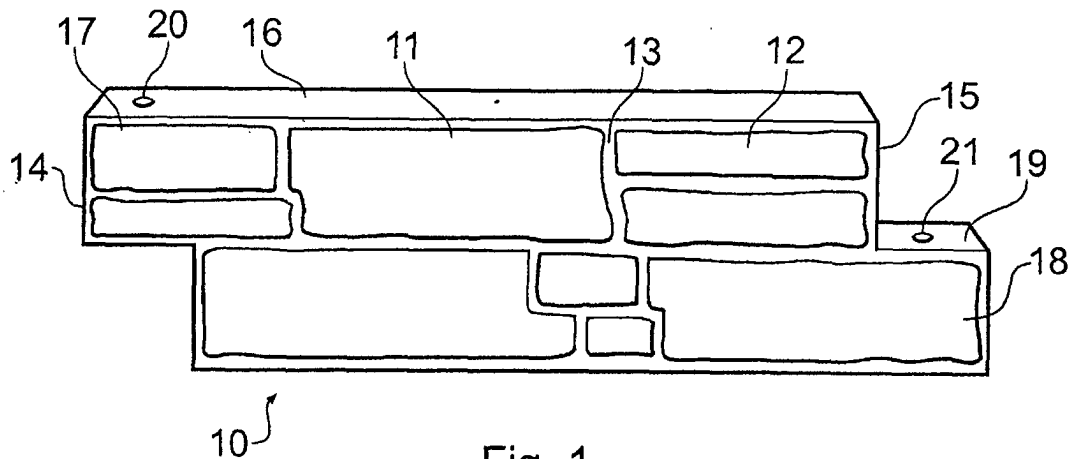


Fig. 1

Description

[0001] This invention relates to walling products and in particular provides blocks of reconstituted walling material which, when assembled and fixed together to form a wall, has the appearance of a wall formed from conventional materials such as brick or natural stone. The invention is particularly intended to relate to decorative garden-type walling.

[0002] It is already known to provide reconstituted walling blocks having an outer side surface simulating smaller-dimensioned walling elements joined by mortar so that, in the finished wall, the appearance is given as though the entire wall were made from the smaller-dimensioned blocks joined by mortar but, in practical terms, the appearance of the simulated mortar is almost invariably different from that of the real mortar, with the result that the finished wall fails to give the intended impression and, in fact, gives just the opposite impression, it being plain to the observer that the wall is, in fact, made from artificial materials. Furthermore, the conventional walling blocks are inherently unsuited for purposes other than straight walls and, additionally, a double-sided wall must be built with a double skin of outer-facing courses of blocks, since the reverse side faces of the blocks are invariably plain.

[0003] It is an object of the present invention to provide a reconstituted walling block which overcomes the disadvantages of blocks as currently available and which enables walls such as decorative garden walls to be built in a short time.

[0004] In one aspect, the present invention provides a walling product comprising reconstituted walling material formed as a block, in which at least one end of the block is adapted for mutual engagement with the corresponding end of another such block, said end providing both horizontal and vertical mating surfaces.

[0005] In use, blocks according to the invention may be assembled and fixed together to provide a wall in any desired shape and height, the mating surfaces as between adjacent blocks disguising the join and giving the impression, in the wall as a whole, of being made entirely from naturally occurring materials according to the side surface configuration and colouring of the individual blocks. Preferably, the height is restricted to that of a maximum of two blocks.

[0006] The ends of the blocks which are adapted for respective mutual engagement preferably present two vertical mating surfaces extending respectively from the upper and lower faces of the block to a medial position, the surfaces being longitudinally spaced apart and joined by a horizontal mating surface, whereby the end of the block presents a tongue and a recess and two blocks with such mating surfaces can be joined in end-to-end mating relationship, the horizontal mating surfaces being in mutual contact at half the height of the block and the tongue of one block engaging in the recess of the other block. The tongues may be provided with a

vertical through-hole positioned so that the holes in two (or more) mating blocks are in vertical alignment and registration, whereby a dowel, bar or pin, preferably formed from a plastics material, may be inserted there-through to secure them in mechanical engagement. In another aspect, therefore, the invention provides a kit of parts for assembly of a wall, the kit comprising blocks (as hereinbefore described) including at least one end tongue formed with a through-hole and dowels, bars or pins for engagement in two or more tongues arranged with through-holes in registration. The dowels, bars and pins should preferably be a reasonably close fit in the through-holes, typically of no more than 2 mm clearance, to prevent mis-registration of adjacent blocks.

[0007] Preferably, the mating surfaces are formed to be essentially flat, whereby the joint between two blocks is minimised; preferably also, the flat surface extends along the entire upper and lower edges of the blocks, whereby the entire periphery of each block presents a flat mating surface for engagement with other blocks above and below as well as at each end.

[0008] Walling blocks according to the invention may be straight or curved and preferably include horizontal and vertical mating surfaces at each end. Corner blocks may be provided, in which the horizontal and vertical mating surfaces are provided at respective ends disposed orthogonally to each other. The respective ends may be arranged with the tongues alternately disposed, that is, with the tongue at one end being formed in the lower half of the block and the tongue at the opposite end being formed in the upper half, but alternatively the tongues may be formed in the same half, whereby the block is "T"-shaped.

[0009] The blocks are preferably double-sided, whereby both side surfaces simulate an intended walling material, such as brick or natural stone. In use, suitable coping stones may be applied to the upper-facing edge surface of the upper course of blocks, to provide a finished appearance.

[0010] It will be appreciated that, using walling blocks according to the invention, walls may be constructed of any size or shape and may be straight, curved or reverse-curved, whereby the wall has a "snake" appearance. Walls may be used to define enclosed areas such as circles, "D"-shapes and the like, as desired and entirely at the discretion of the consumer.

[0011] Walling blocks according to the invention may be made from any suitable reconstituted material, whether natural or synthetic, held together with a suitable bonding agent. Preferably, they are made by a casting process, each block, despite having the same surface configuration or decoration, nevertheless giving the appearance, in the finished wall, of a wall made from naturally-occurring materials by a skilled craftsman. The blocks preferably comprise a lightweight aggregate and optionally a low-density filler or extender to reduce the weight of the finished product, to render the blocks easier to transport and use.

[0012] Embodiments of the invention will now be described by way of example with reference to the accompanying drawings, of which:

Figure 1 is a perspective view of a straight walling block;

Figure 2 is a side elevation of a "T"-shaped straight block;

Figure 3 is a side elevation of an alternative straight block with only one end formed with mating surfaces;

Figure 4 is a perspective view of a comer block;

Figure 5 is a fragmentary view of two straight blocks mated together; and

Figure 6 is a perspective view of a "D"-shaped enclosure formed from blocks according to the invention and coping stones.

[0013] Referring to the drawings, Figure 1 shows a straight walling block 10 formed in a mould from reconstituted stone, that is, ground or comminuted stone with a suitable binder, with side faces representing individual stone blocks 11, 12 joined together by mortar 13. The end faces 14, 15 and upper 16 and lower edge faces are formed substantially flat with the respective end faces and edge faces being parallel, whereby the overall configuration is rectangular. The block is formed with longitudinally-protruding tongues 17, 18 which each extend respectively from the upper and lower edges to half the height of the block and are therefore disposed alternately. The medial edge 19 of tongue 18, and also the corresponding edge of tongue 17, are formed with essentially flat surfaces which meet the end surfaces orthogonally. Holes or channels 20, 21 are formed through respective tongues 17, 18 to receive, in use, a bar or mandrel for connecting together adjacent blocks with their tongues engaged and the holes or channels in registration.

[0014] Figure 2 shows a block 22 which is generally similar to that shown in Figure 1 but the block is generally "T"-shaped, with the tongues 23, 24 formed in the same half of the block, considered in relation to its height.

[0015] Figure 3 shown a further embodiment 25 including only one tongue 27, the end 26 of the block being suitable for the exposed end of a wall.

[0016] Figure 4 shows a comer block 28 suitable for use with blocks as shown in any of Figures 1 to 3, or curved blocks, to form a wall extending in two mutually-orthogonal directions, at least as extending initially from the comer block itself.

[0017] Figure 5 shows the end portions of two blocks 10 as shown in Figure 1 joined in end-to-end relationship

with their tongues in engagement and the mating surfaces in contact; a rod or mandrel 31 is, as shown, in the process of being inserted through the holes or apertures formed in the tongues and which are in registration, whereby the blocks are mechanically connected together.

[0018] Figure 6 shows a completed wall in the form of a D and constructed from comer blocks 28 as shown in Figure 4, straight blocks 10 and/or 22 as shown in Figures 1 and 2, curved blocks otherwise similar to those shown in Figures 1 and 2 and coping stones. As illustrated, the wall is double-sided. Although stepped joints 30 between adjacent blocks are visible in the drawing, the joints are largely insignificant in relation to the simulated stone blocks and the wall has the appearance of having been build from individual natural stones joined together by mortar.

Claims

1. A walling product comprising reconstituted walling material formed as a block, in which at least one end of the block is adapted for mutual engagement with the corresponding end of another such block, said end providing both horizontal and vertical mating surfaces.
2. A walling product according to claim 1, in which the ends of the blocks which are adapted for respective mutual engagement present two vertical mating surfaces extending respectively from the upper and lower faces of the block to a medial position, the surfaces being longitudinally spaced apart and joined by a horizontal mating surface.
3. A walling product according to claim 1 or claim 2, in which said at least one end of the block is provided with a through-hole for receiving in use a dowel, bar or pin.
4. A walling product according to claim 3, in which the end of the block comprises a tongue, the tongue being formed with the through-hole positioned so that the holes in two (or more) mating blocks are in vertical alignment and registration.
5. A walling product according to any preceding claim, including horizontal and vertical mating surfaces at each end.
6. A walling product according to any preceding claim, in which the respective ends are arranged with the tongues formed in the same upper or lower half, whereby the block is "T" shaped.
7. A walling product according to any preceding claim, in which the block is double-sided, whereby both

side surfaces simulate an intended walling material.

8. A kit of parts for assembly of a wall, the kit comprising blocks according to any of claims 1 to 7 including at least one end tongue formed with a through-hole and dowels, bars or pins for engagement in two or more tongues arranged with through-holes in registration. 5
9. A kit according to claim 8, in which the dowels, bars and pins are formed from a plastics material. 10
10. A wall formed from blocks according to any of claims 1 to 7, arranged end to end with respective ends in mutual engagement. 15

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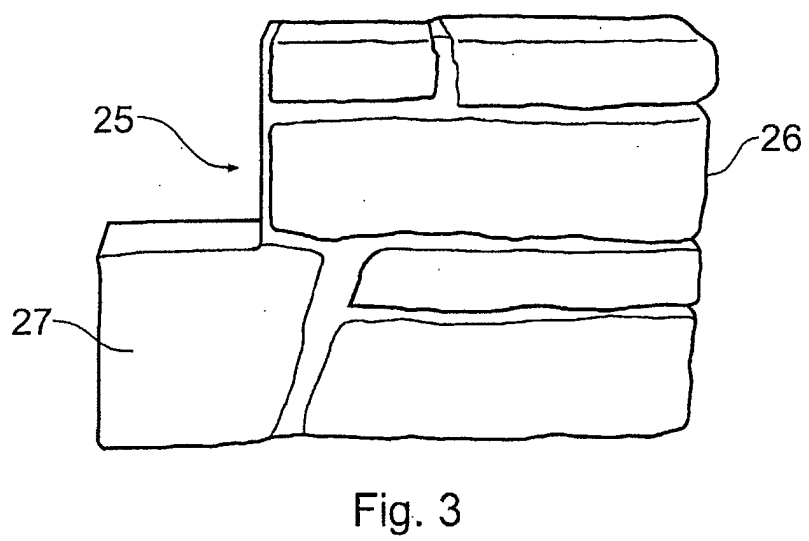
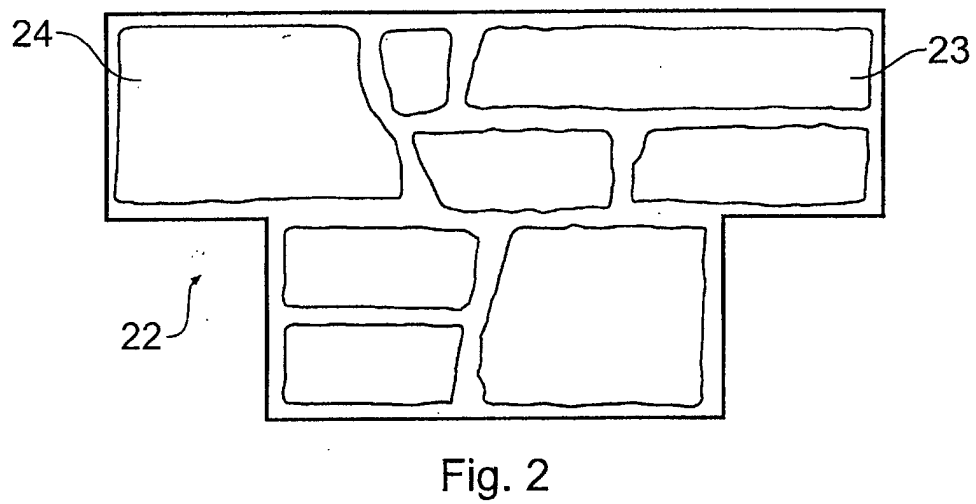
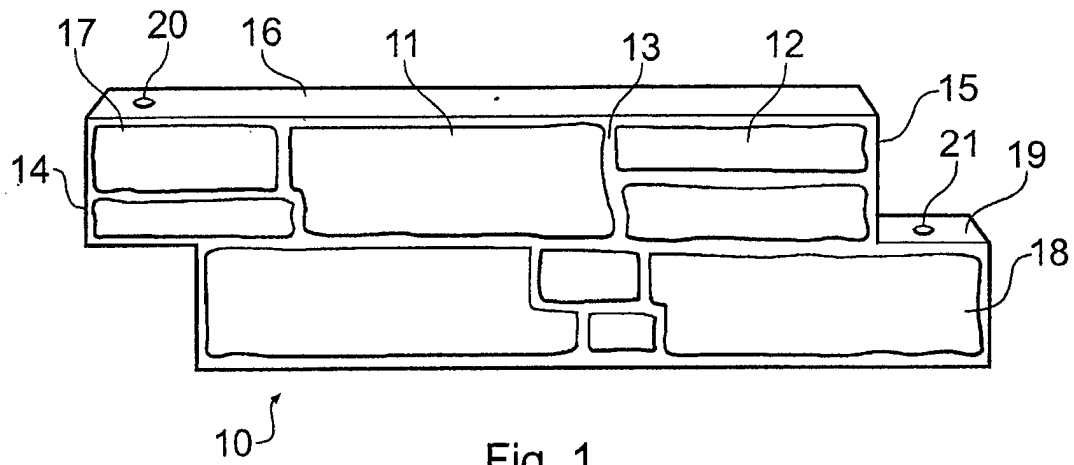
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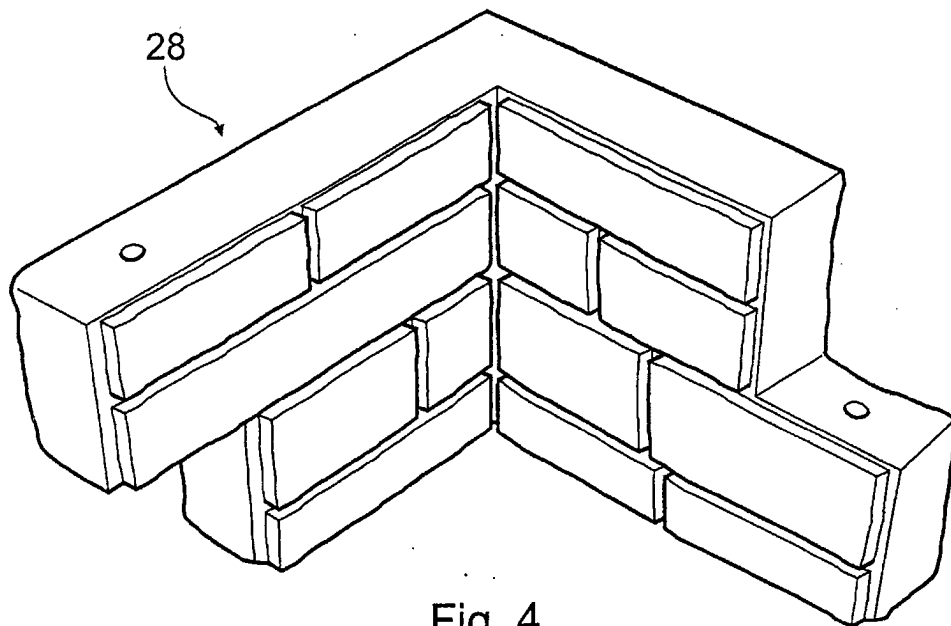


Fig. 4

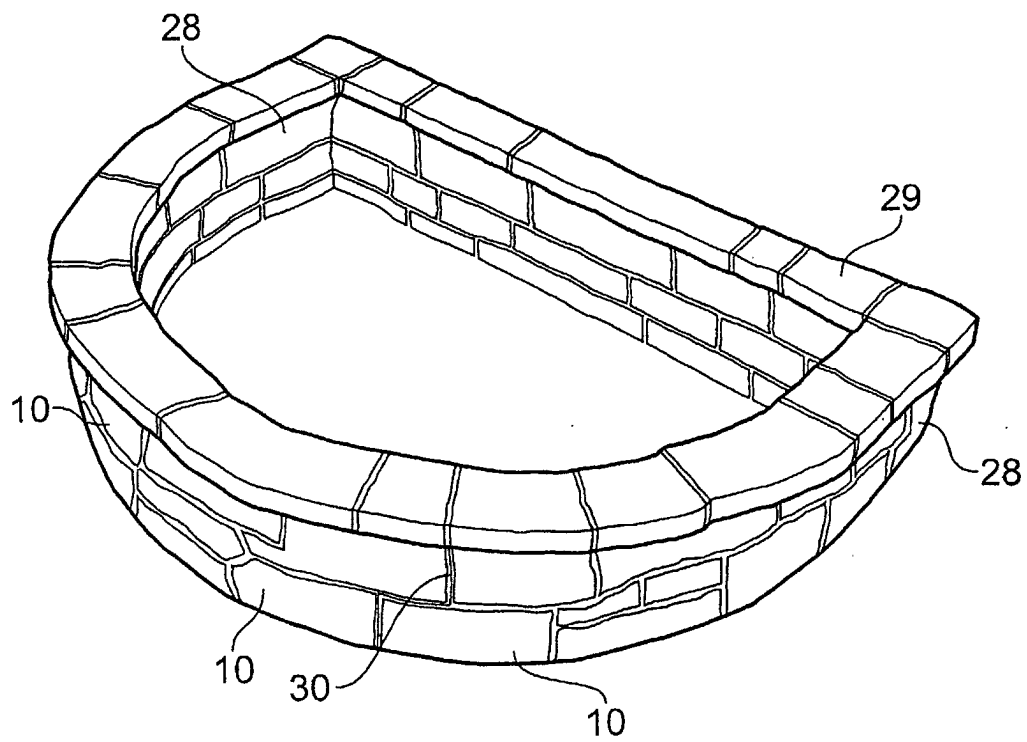


Fig. 6

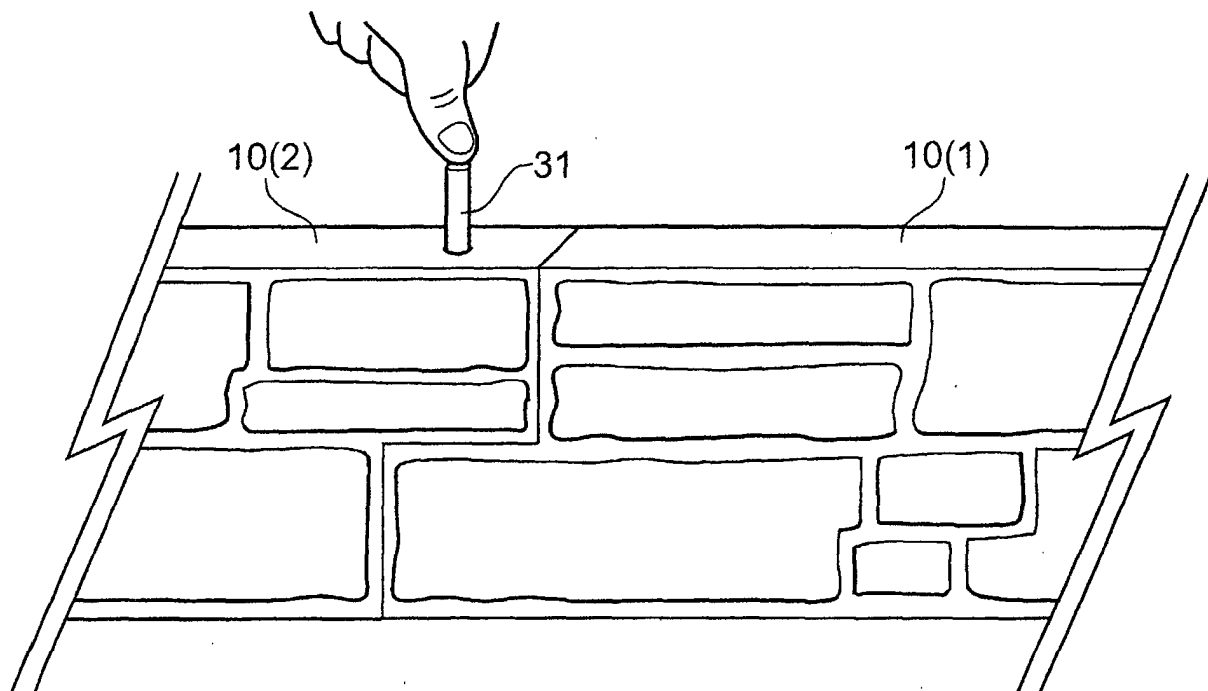


Fig. 5



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 03 25 6287

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.7)
X	FR 2 587 054 A (VIABEPUR) 13 March 1987 (1987-03-13)	1-5,8-10	E04C1/39
Y	* page 2, line 27 - page 5, line 38; figures 1-8 *	6	
Y	FR 2 636 087 A (MORELLO) 9 March 1990 (1990-03-09) * figure 1 *	6	
A	GB 2 265 167 A (REPOCAST LIMITED) 22 September 1993 (1993-09-22) * page 4, line 20 - page 6, line 17; figures 1,4 *	7,9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E04C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 5 January 2004	Examiner Mysliwetz, W
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 25 6287

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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05-01-2004

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