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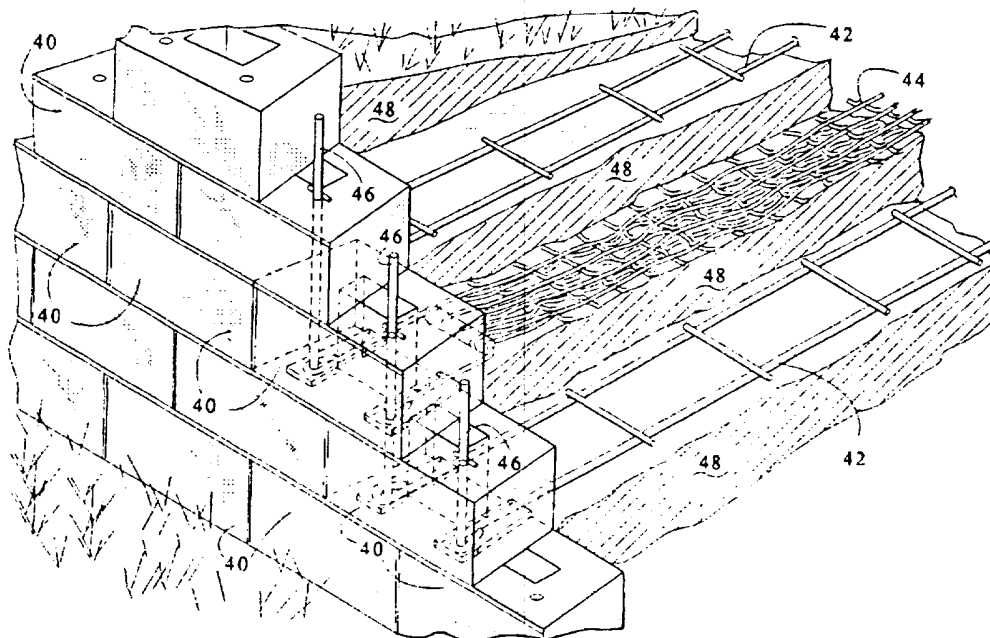
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(88) Date of publication of the international search report:
16 March 1995 (16.03.95)

(54) Title: MODULAR BLOCK RETAINING WALL CONSTRUCTION AND COMPONENTS



(57) Abstract

A modular block wall includes dry cast, unreinforced modular wall blocks (40) with anchor type, or frictional type or composite type soil stabilizing elements (42, 44) recessed therein and attached thereto by vertical rods (46) which also connect the blocks (40) together. The soil stabilizing elements (42, 44) are positioned in counterbores (70) or slots in the blocks (40) and project into the compacted soil (48) behind the courses of modular wall blocks (40).

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 94/03048

A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 E02D29/02 E04B2/22

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)

IPC 5 E02D E04B E04C E01F

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR,A,2 367 147 (BERNA) 5 May 1978	19, 22-24, 26,29-31
Y	see the whole document	1-3,5-7, 12,16, 35-38
A	---	20,21
Y	DE,A,41 03 330 (KOCH) 19 September 1991	1-3,5-7, 12,16, 35-38, 68,81,87
	see column 2, line 63 - column 3, line 27; figures 1,3	

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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- * "O" document referring to an oral disclosure, use, exhibition or other means
- * "P" document published prior to the international filing date but later than the priority date claimed

* "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

* "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

* "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 such documents, such combination being obvious to a person skilled in the art.

* "&" document member of the same patent family

Date of the actual completion of the international search

23 January 1995

Date of mailing of the international search report

10.02.95

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

Int: nal Application No
PCT/US 94/03048

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,4 324 508 (HILFIKER) 13 April 1982 cited in the application	64,65, 67, 75-77,79
Y	see the whole document	66,68, 80-82, 87,88
A		8-13,16, 83,89
Y	--- US,A,4 914 876 (FORSBERG) 10 April 1990 cited in the application	66
A	see column 3, line 26 - column 8, line 61; figures 1-28	14,25,27
Y	--- US,A,3 998 022 (MUSE) 21 December 1976	88
A	see column 5, line 29 - line 61; figures 2,4	32-34
Y	--- EP,A,0 472 993 (RDB PLASTOTECNICA) 4 March 1992	80
A	see column 3, line 15 - line 51; figures 1,5,6	14,81,82
Y	--- DE,A,29 44 550 (ZEMENTWAREN OTTO KALBERMATTEN AG) 9 April 1981	82
A	see page 6, line 8 - line 15; figures 1,4	
Y	--- US,A,2 313 363 (SCHMITT) 9 March 1943	82
A	see page 1, right column, line 40 - page 2, left column, line 37; figures 1-6	
Y	--- US,A,4 909 010 (GRAVIER) 20 March 1990	
A	-----	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 94/03048

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see annex

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US94/03048

FURTHER INFORMATION CONTINUED FROM PCT/ISA/210

1st invention: Claims 1-18 and 32-34, 39-63, 35-37, 38, 19-31,
71-74 and 89.

The claims are directed to an improved wall construction (claims 1-18, 32-34,, 35-37, 38, 39-63), an improved block member (claims 19-31) for the wall construction and a method of constructing an improved wall construction (claim 89)

2nd invention: Claims 64-68.

The claims are directed to an improved stabilising element.

3rd invention: Claims 69-70

The claims are directed to a wall construction

4th invention: Claims 75-82.

The claims are directed to a wall structure.

5th invention: Claims 87-88

The claims are directed to a counterfort wall.

6th invention: Claims 87-88.

The claims are directed to a wall structure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 94/03048

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR-A-2367147	05-05-78	NONE	
DE-A-4103330	19-09-91	NONE	
US-A-4324508	13-04-82	NONE	
US-A-4914876	10-04-90	US-A- 4825619	02-05-89
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		US-A- 5214898	01-06-93
DE-A-2944550	09-04-81	CH-A- 645148	14-09-84
US-A-2313363	09-03-43	NONE	
US-A-4909010	20-03-90	NONE	