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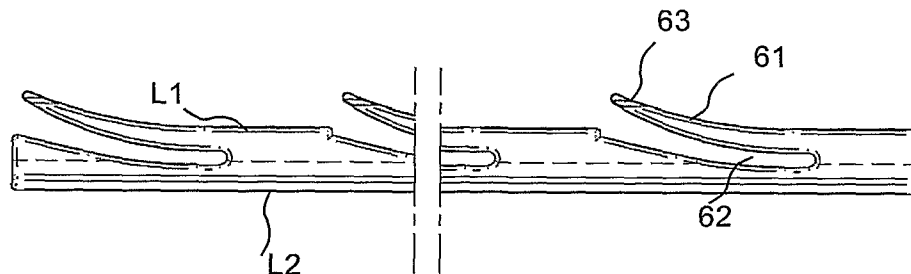
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- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- upon request of the applicant, before the expiration of the time limit referred to in Article 21(2)(a)

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MECHANICAL LOCKING OF FLOOR PANELS WITH A FLEXIBLE BRISTLE TONGUE



(57) Abstract: Floor panels (1, 1') are shown, which are provided with a mechanical locking system comprising a displaceable tongue (15) in a displacement groove (40). The tongue is moulded and provided with bendable protrusions (61).



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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2006/001218

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: 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)

IPC: E04F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, 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.
P,X	WO 2006104436 A1 (VÄLINGE INNOVATION AB), 5 October 2006 (05.10.2006), page 13, line 44 - line 45; page 14, line 4 - line 8, figure 7g, details 32,36	1,2,4-10,22, 23,25-30,34, 35,40,41,43, 44
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X	WO 2006043893 A1 (VÄLINGE INNOVATION AB), 27 April 2006 (27.04.2006), page 3, line 27 - line 30; page 5, line 25 - line 35; page 6, line 1 - line 16, figures 7a-f, details 30,32,36	40,41,43,44
Y		42,45
A		1-39
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 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent 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)

"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

24 April 2007

Date of mailing of the international search report

25 -04- 2007

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2006/001218

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 0020705 A1 (PERSTORP FLOORING AB), 13 April 2000 (13.04.2000), figures 7a-7d  --	1-45
A	WO 03083234 A1 (VÄLINGE ALUMINIUM AB), 9 October 2003 (09.10.2003), figures 35a-d, detail 22  --	1-45
Y	WO 03016654 A1 (AKZENTA PANEELE + PROFILE GMBH), 27 February 2003 (27.02.2003), abstract, details 13,38,50	42
A	--	1-40,43-45
Y	US 20030084636 A1 (D. PERVAN), 8 May 2003 (08.05.2003), paragraph (0213), abstract	45
A	-- -----	1-44

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE2006/001218

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

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

The following two separate inventions were identified:

- 1: Claims 1-39 directed to a
  - set of floor panels according to claims 1-10
  - set of floor panels according to claims 11-14

.../...

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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.  
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Box III

- floor panel according to claims 15-21
- tongue according to claims 22-39 according to claim 45.

2: Claims 40-45 directed to a

- locking system according to claims 40-44
- method to connect floor panels.

**International patent classification (IPC)****E04F 15/02** (2006.01)**E04F 15/04** (2006.01)**Download your patent documents at [www.prv.se](http://www.prv.se)**

The cited patent documents can be downloaded at [www.prv.se](http://www.prv.se) by following the links:

- In English/Searches and advisory services/Cited documents (service in English) or
- e-tjänster/anförda dokument (service in Swedish).

Use the application number as username.

The password is **CHPCDDEBVW**.

Paper copies can be ordered at a cost of 50 SEK per copy from PRV InterPat (telephone number 08-782 28 85).

Cited literature, if any, will be enclosed in paper form.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

31/03/2007

International application No.

PCT/SE2006/001218

WO	2006104436	A1	05/10/2006	US	20060236642	A	26/10/2006
WO	2006043893	A1	27/04/2006	EP	1650375	A	26/04/2006
WO	0020705	A1	13/04/2000	AT	301221	T	15/08/2005
				AT	305069	T	15/10/2005
				AU	1193600	A	26/04/2000
				AU	1302400	A	26/04/2000
				BR	9914349	A	26/06/2001
				BR	9915906	A	21/08/2001
				CA	2346661	A	13/04/2000
				CA	2346663	A	13/04/2000
				CN	1109173	B,C	21/05/2003
				CN	1109174	B,C	21/05/2003
				CN	1328612	A,T	26/12/2001
				CN	1331774	A,T	16/01/2002
				DE	69926520	D,T	08/06/2006
				DE	69927394	D,T	22/06/2006
				EP	1119670	A,B	01/08/2001
				EP	1119671	A,B	01/08/2001
				EP	1394335	A	03/03/2004
				ES	2247864	T	01/03/2006
				SE	513189	C	24/07/2000
				SE	514645	C	26/03/2001
				SE	9803379	A	07/04/2000
				SE	9902883	A	07/04/2000
				US	6763643	B	20/07/2004
				US	6920732	B	26/07/2005
				US	20040172904	A	09/09/2004
				US	20050252130	A	17/11/2005
				WO	0020706	A	13/04/2000

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

31/03/2007

PCT/SE2006/001218

WO	03083234	A1	09/10/2003	AU	2003217124	A	13/10/2003
				BR	0308966	A	01/02/2005
				CA	2481329	A	09/10/2003
				CN	1656291	A	17/08/2005
				DE	60217959	D	00/00/0000
				EE	200300590	A	16/02/2004
				EP	1395149	A,B	10/03/2004
				EP	1495197	A	12/01/2005
				IL	164344	D	00/00/0000
				JP	2005521813	T	21/07/2005
				NO	319661	B	05/09/2005
				NO	20035268	D	00/00/0000
				NO	20044072	A	02/12/2004
				NO	20064075	A	06/10/2003
				NZ	536142	A	28/07/2006
				PL	372277	A	11/07/2005
				RU	2004132195	A	10/06/2005
				SE	524869	C	19/10/2004
				SE	0201009	A	04/10/2003
				US	20050160694	A	28/07/2005
				US	20060070333	A	06/04/2006
				AT	299624	T	15/07/2005
				AU	2003206559	A	00/00/0000
				DE	60301015	D	00/00/0000
				EP	1486009	A,B	15/12/2004
				SE	526443	C	13/09/2005
				SE	0300271	A	01/08/2004
-----							
WO	03016654	A1	27/02/2003	AT	315698	T	15/02/2006
				DE	10138285	A	06/03/2003
				DE	20122553	U	23/03/2006
				DE	50205596	D	00/00/0000
				DK	1415056	T	29/05/2006
				EP	1415056	A,B	06/05/2004
				SE	1415056	T3	
				EP	1669512	A	14/06/2006
				ES	2254713	T	16/06/2006
				PL	367767	A	07/03/2005
				RU	2265703	C	10/12/2005
				RU	2004107124	A	10/09/2005
				US	20040211143	A	28/10/2004
-----							

INTERNATIONAL SEARCH REPORT  
Information on patent family members

31/03/2007

International application No.  
PCT/SE2006/001218

US	20030084636	A1	08/05/2003	US	6851241	B	08/02/2005
				US	7171791	B	06/02/2007
				US	20050034405	A	17/02/2005
				AU	2899801	A	07/08/2001
				BR	0206563	A	22/06/2004
				BR	0206564	A	25/02/2004
				CA	2433487	A	18/07/2002
				CA	2434168	A	18/07/2002
				CN	1212462	C	27/07/2005
				CN	1233914	C	28/12/2005
				CN	1484727	A,T	24/03/2004
				CN	1484728	A,T	24/03/2004
				CZ	20031846	A	14/01/2004
				CZ	20031850	A	17/03/2004
				EP	1349994	A	08/10/2003
				EP	1349995	A	08/10/2003
				HU	0303954	A	01/03/2004
				HU	0400740	A	28/07/2004
				IL	156528	D	00/00/0000
				IL	156530	D	00/00/0000
				JP	2004518042	T	17/06/2004
				JP	2004520502	T	08/07/2004
				NO	20032687	A	12/09/2003
				NO	20032688	A	12/09/2003
				NZ	527354	A	24/09/2004
				NZ	527355	A	30/09/2005
				PL	362995	A	15/11/2004
				PL	363051	A	15/11/2004
				RU	2277158	C	27/05/2006
				RU	2277159	C	27/05/2006
				RU	2003124758	A	27/01/2005
				RU	2003124759	A	27/01/2005
				SE	523823	C	18/05/2004
				SE	0100100	A	13/07/2002
				SK	9242003	A	04/08/2005
				SK	9252003	A	02/06/2005
				UA	75905	C	15/10/2003
				UA	76974	C	15/10/2003
				US	6769218	B	03/08/2004
				US	20020112433	A	22/08/2002
				WO	02055809	A	18/07/2002
				WO	02055810	A	18/07/2002
				ZA	200305370	A	12/07/2004
				ZA	200305371	A	12/07/2004
				AU	3065401	A	14/08/2001
				SE	519768	C	08/04/2003
				SE	0100101	A	13/07/2002

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