



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
01.05.2024 Bulletin 2024/18

(51) International Patent Classification (IPC):
D21F 3/02 ^(2006.01) **D21F 7/08** ^(2006.01)

(43) Date of publication A2:
27.03.2024 Bulletin 2024/13

(52) Cooperative Patent Classification (CPC):
D21F 7/086; D21F 3/0227

(21) Application number: **23192379.8**

(22) Date of filing: **21.08.2023**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(71) Applicant: **Ichikawa Co., Ltd.**
Tokyo 113-8442 (JP)

(72) Inventor: **SAKAI, Taichi**
Tokyo, 113-8442 (JP)

(74) Representative: **Dr. Gassner & Partner mbB**
Wetterkreuz 3
91058 Erlangen (DE)

(30) Priority: **31.08.2022 JP 2022138603**

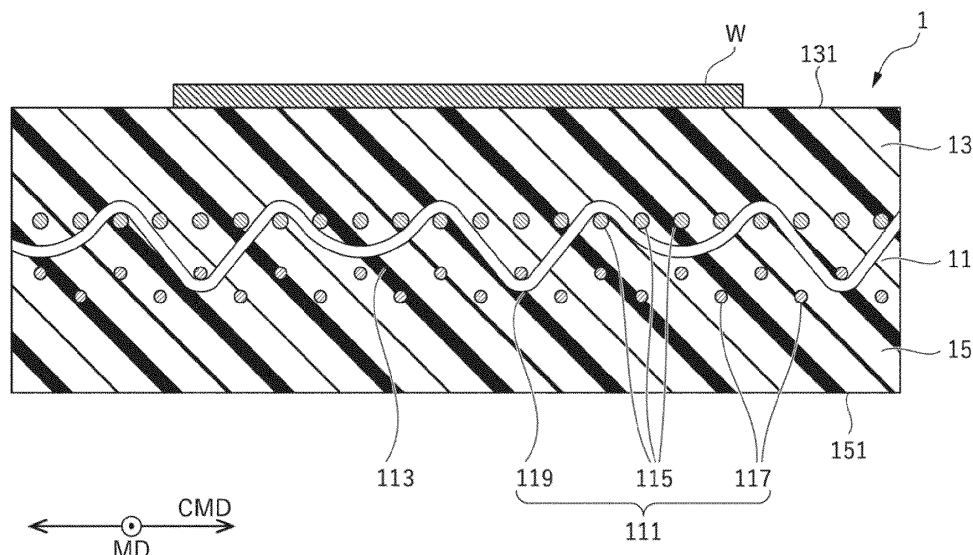
(54) **PAPERMAKING BELT**

(57) The object of the invention is to provide a papermaking belt whose warping at the end part during its use has been suppressed.

Provided is a papermaking belt that is used in a papermaking machine and that comprises a first plane on which a wet paper web is placed and a second plane on the opposite side to the first plane, wherein the papermaking belt comprises a reinforcing fibrous substrate layer comprising at least one layer of a woven fabric, at least

one layer of said woven fabric comprises a double or more combination weave pattern, said combination weave pattern comprises first yarns and second yarns that are placed in parallel; said first yarns are placed closer to the first plane-side than said second yarns and said second yarns are placed closer to the second plane-side than said first yarns; and said second yarns comprise a polyester yarn.

FIG. 1





EUROPEAN SEARCH REPORT

Application Number

EP 23 19 2379

5

10

15

20

25

30

35

40

45

50

55

1

EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	ES 2 392 093 T3 (ALBANY INT CORP [US]) 4 December 2012 (2012-12-04)	1, 2, 4-11	INV.
A	* figure 4 *	3	D21F3/02 D21F7/08

X	EP 0 960 975 A2 (ALBANY INT CORP [US]) 1 December 1999 (1999-12-01)	1-8, 10, 11	
A	* figure 5 *	9	

X	US 6 103 067 A (STELLJES JR MICHAEL GOMER [US] ET AL) 15 August 2000 (2000-08-15)	1-11	
	* the whole document *		

X	US 5 298 124 A (ALBANY INT CORP [US]) 29 March 1994 (1994-03-29)	1-7, 10, 11	
A	* figure 4 *	8	

X	US 6 319 365 B1 (INOUE KENJI [JP]) 20 November 2001 (2001-11-20)	1-3, 10, 11	
A	* figures 5A, 5B *	8, 9	

			TECHNICAL FIELDS SEARCHED (IPC)
			D21F D21J
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 March 2024	Examiner von Mittelstaedt, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 23 19 2379

5 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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-03-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
ES 2392093 T3	04-12-2012	AU 2006221017 A1	14-09-2006
		BR PI0608060 A2	03-11-2009
		CA 2599939 A1	14-09-2006
		CN 101133205 A	27-02-2008
		EP 1871950 A1	02-01-2008
		ES 2392093 T3	04-12-2012
		JP 4758446 B2	31-08-2011
		JP 2008531866 A	14-08-2008
		KR 20070114309 A	30-11-2007
		TW I417190 B	01-12-2013
		US 7059360 B1	13-06-2006
		WO 2006096318 A1	14-09-2006
EP 0960975 A2	01-12-1999	AU 1834199 A	02-12-1999
		BR 9901025 A	28-03-2000
		CA 2261504 A1	22-11-1999
		CN 1236842 A	01-12-1999
		EP 0960975 A2	01-12-1999
		ID 23463 A	27-04-2000
		JP 2000017594 A	18-01-2000
		KR 19990088374 A	27-12-1999
US 6103067 A	15-08-2000	ZA 992099 B	23-11-1999
		AR 018843 A1	12-12-2001
		AT E233844 T1	15-03-2003
		AU 749598 B2	27-06-2002
		BR 9909532 A	12-12-2000
		CA 2327802 A1	14-10-1999
		CN 1300331 A	20-06-2001
		CO 5070725 A1	28-08-2001
		CZ 20003393 A3	12-12-2001
		DE 69905702 T2	02-10-2003
		EP 1070172 A1	24-01-2001
		ES 2193691 T3	01-11-2003
		ID 29196 A	09-08-2001
		JP 2002510757 A	09-04-2002
		KR 20010042437 A	25-05-2001
		PE 20010782 A1	12-08-2001
		PL 343237 A1	30-07-2001
		TR 200002811 T2	22-01-2001
		TW 541384 B	11-07-2003
		US 6103067 A	15-08-2000
		US 6368465 B1	09-04-2002
		WO 9951814 A1	14-10-1999
		ZA 200005155 B	09-01-2002

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 23 19 2379

15-03-2024

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5298124 A	29-03-1994	AT E136607 T1	15-04-1996
		AU 2201492 A	23-12-1993
		CA 2087212 A1	12-12-1993
		DE 69302136 T2	02-10-1996
		EP 0576115 A1	29-12-1993
		ES 2088638 T3	16-08-1996
		FI 923803 A	12-12-1993
		JP 3264461 B2	11-03-2002
		JP H0657678 A	01-03-1994
		KR 940000347 A	03-01-1994
		NO 304799 B1	15-02-1999
		NZ 244196 A	27-04-1994
		US 5298124 A	29-03-1994
		ZA 926593 B	28-02-1994
US 6319365 B1	20-11-2001	CN 1288851 A	28-03-2001
		DE 60016341 T2	04-05-2005
		EP 1085124 A2	21-03-2001
		JP 3488403 B2	19-01-2004
		JP 2001089990 A	03-04-2001
		US 6319365 B1	20-11-2001

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82