

# Europäisches Patentamt European Patent Office Office européen des brevets

(11) **EP 1 533 403 A3** 

(12)

## **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3: 03.05.2006 Bulletin 2006/18

(51) Int Cl.: **D01G** 9/06 (2006.01)

(43) Date of publication A2: **25.05.2005 Bulletin 2005/21** 

(21) Application number: 04466031.4

(22) Date of filing: 18.11.2004

(84) Designated Contracting States:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR Designated Extension States: AL HR LT LV MK YU

(30) Priority: 18.11.2003 CZ 20033134

(71) Applicant: Rieter CZ a.s. 562 01 Usti nad Orlici (CZ)

(72) Inventors:

Appeltauer, Jiri
 564 01 Zamberk (CZ)

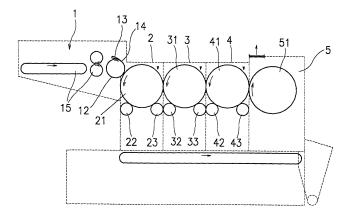
- Cizmarik, Ludovit
   562 01 Usti nad Orlici (CZ)
- Janosik, Stefan
   564 23 Zamberk (CZ)
- Maixner, Vaclav 561 02 Dolni (CZ)
- Hajek, Jaroslav
   561 81 Kunvald (CZ)
- Mlynar, Vaclav
   564 01 Zamberk (CZ)
- (74) Representative: Musil, Dobroslav Cejl 38 602 00 Brno (CZ)

#### (54) Method of producing spinnable vegetable fibres and products therefrom

(57) Method of production of spinnable vegetable fibers from raw multicellular vegetable fibers, during which are the multicellular vegetable fibers by mechanical action shortened, split, refined, opened and cleaned, while their surface area and diameter gets smaller. In the first step is acted on the raw multicellular vegetable fiber by a system of spikes and/or teeth and/or needles or in another way hacked rugged surfaces of a pair of cylinders (12, 21) rotating in opposite directions, while on the surface of the first of the cylinders (12) are the multicellular vegetable fibers held-down in an adjustable distance from the second cylinder (21), by means of which is reached adjustable controlled shortening of fibers while

their simultaneous opening and splitting, in the second step is on the multicellular fibers prepared in the first step acted by the rugged surfaces of at least one pair of the cylinders (21, 31) rotating in the same direction, by means of which is reached a high-performance cleaning, further splitting and refining of fibers, whereas are produced multicellular vegetable fibers capable of further processing by spinning technology.

Further the invention relates to the products from spinnable multicellular vegetable fibers, that is a linear fibrous formation reinforced by means of twisting or twining of parallel arranged fibers formation or bonding and a nonwoven fabric.





# **EUROPEAN SEARCH REPORT**

Application Number EP 04 46 6031

	DOCUMENTS CONSIDER	ED TO BE RELEVANT			
Category	Citation of document with indica of relevant passages	tion, where appropriate,	Releva to clain		
D,X	WO 98/35077 A (RIETER APPELTAUER, JIRI; MAIX JAROSLAV;) 13 August 1 * page 6 - page 9; fig	(NER, VACLAV; HAJEK, .998 (1998-08-13)	1,4	D01G9/06	
A	GB 258 929 A (PETER SE 27 September 1926 (192 * claim 1; figure 1 *	ember 1926 (1926-09-27)			
A	US 4 115 903 A (BARBER 26 September 1978 (197 * claim 1; figure 1 *	nber 1978 (1978-09-26)			
Х	US 5 167 264 A (KAELIN 1 December 1992 (1992- * claim 1 *		5,6		
Х	GB 181 410 A (WILLIAM 21 June 1922 (1922-06-		5,6	TECHNICAL FIELDS	
Х	US 5 253 397 A (NEVEU 19 October 1993 (1993-* claim 1; example 1 *	·10-19)	7,8	D01G D01B D03D D04H	
	The present search report has been	•			
	Place of search	Date of completion of the search		Examiner	
	The Hague	10 March 2006		D'Souza, J	
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		E : earlier patent o after the filling o D : document cite L : document cite	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  A: member of the same patent family, corresponding document		

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

EP 04 46 6031

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.

10-03-2006

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9835077 A	13-08-1998	AT 237704 T AU 5747398 A CZ 9700367 A3 DE 69813518 D1 DE 69813518 T2 EA 1245 B1 EP 0961845 A2 ES 2197456 T3 PL 335055 A1 US 6212738 B1	15-05-2003 26-08-1998 12-08-1998 22-05-2003 12-02-2004 25-12-2000 08-12-1999 01-01-2004 27-03-2000 10-04-2001
GB 258929 A	27-09-1926	NONE	
US 4115903 A	26-09-1978	NONE	
US 5167264 A	01-12-1992	NONE	
GB 181410 A	21-06-1922	NONE	
US 5253397 A	19-10-1993	AT 108226 T CA 2046651 A1 DE 69010490 D1 DE 69010490 T2 EP 0456795 A1 ES 2057849 T3 FI 110125 B1 W0 9108333 A1 FR 2662711 A2 IE 904311 A1 JP 2566084 B2 JP 4503231 T TR 24980 A	15-07-1994 02-06-1991 11-08-1994 27-10-1994 21-11-1991 16-10-1994 29-11-2002 13-06-1991 06-12-1991 05-06-1991 25-12-1996 11-06-1992 01-09-1992

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