(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 505 711 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
19.02.2014 Bulletin 2014/08

(43) Date of publication A2:
03.10.2012 Bulletin 2012/40

(21) Application number: **12160729.5**

(22) Date of filing: **22.03.2012**

(51) Int Cl.:
D21F 1/02 *(2006.01)*

(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 MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **31.03.2011 FI 20115312**

(71) Applicant: **Bellmer Vaahto Paper Machinery Oy**
15860 Hollola (FI)

(72) Inventors:
- **Nieminen, Erkka**
  33580 Tampere (FI)
- **Kronholm, Harri**
  33610 Tampere (FI)

(74) Representative: **Laine, Terho Tapio et al**
Heinänen Oy Patent Agency
Airport Plaza
Äyritie 8 D
01510 Vantaa (FI)

(54) Feeder channel for diluting fluid

(57) Feeder channel (1) for diluting fluid, such as for diluting water, which feeder channel is in connection with the headbox (10) of a paper machine and comprises one or more reservoir-type spaces (7), such as a chamber, for receiving diluting fluid, which space comprises one or more walls (4), and that an aperture (13) is formed in the reservoir-type space (7), via which aperture the diluting fluid can be conducted into the stock flow space (9) of the headbox, and that one or more shut-off/adjustment means (5), with which the flow of diluting fluid via the aforementioned aperture (13) can be adjusted, is fitted into the feeder channel (1), and that the shutoff/adjustment means (5) is a shut-off/adjustment means that can be moved in the longitudinal direction of an aperture that is in connection with the aperture (13) formed in the wall (4) of the reservoir-type space, and that in the shutoff/adjustment means (5) that is partly or wholly inside the aperture there are one or more cavities and/or recesses (6, 14), via which the flow of diluting fluid from the reservoir-type space (7) either directly or via an intermediate piece (11) into the stock flow space (9) can be adjusted by moving the shut-off/adjustment means (5) in the aperture (13), and that the shut-off/adjustment means (5) comprises a support surface or support surfaces (6"), which can rest on the inside surface (13') of the aperture (13) for preventing vibration of the adjustment means (5) caused by the flow of the diluting fluid at least during operation of the shut-off/adjustment means.

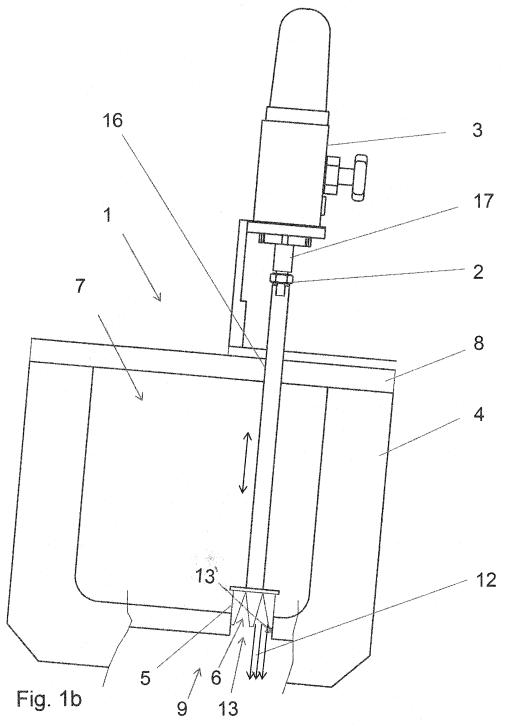

Fig. 1b

EP 2 505 711 A3

(Cont. next page)

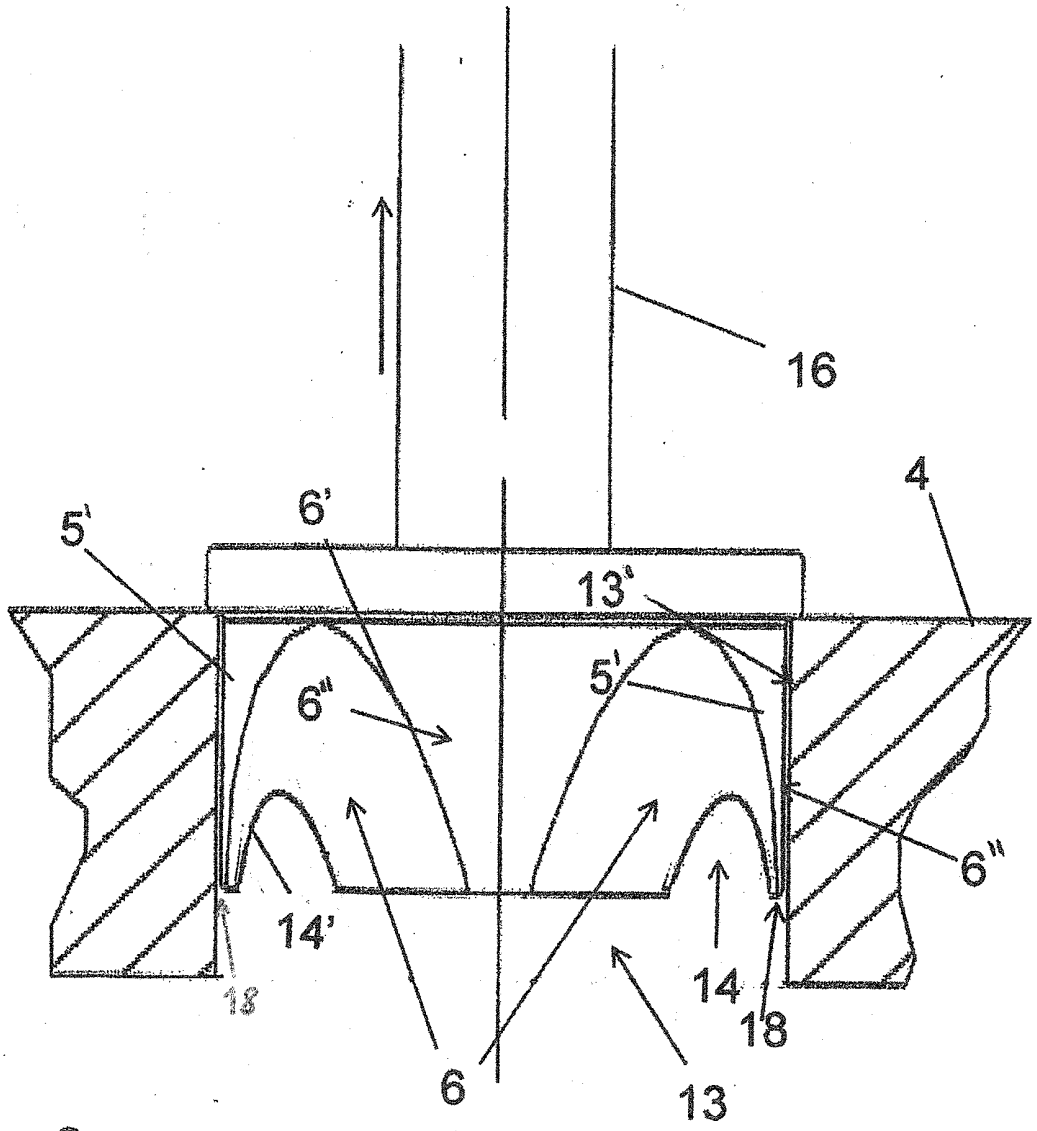

Fig. 2a

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 12 16 0729

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y,D	EP 0 674 042 A1 (VOITH SULZER PAPIERMASCH GMBH [DE]) 27 September 1995 (1995-09-27) * the whole document *	1-16,18	INV. D21F1/02
Y	US 2004/011412 A1 (WEARS WILLIAM EVERETT [US] ET AL) 22 January 2004 (2004-01-22) * the whole document *	1-16,18	
Y	US 2006/096643 A1 (MCCARTY MICHAEL W [US] ET AL) 11 May 2006 (2006-05-11) * the whole document *	1-10, 12-16,18	

TECHNICAL FIELDS SEARCHED (IPC)

D21F
F16K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	13 January 2014	Gast, Dietrich

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

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 12 16 0729

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.

13-01-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0674042 A1	27-09-1995	AT 172507 T	15-11-1998
		CA 2144922 A1	19-09-1995
		DE 4409415 A1	28-09-1995
		EP 0674042 A1	27-09-1995
		FI 951267 A	19-09-1995
		JP H0835189 A	06-02-1996
		US 5900121 A	04-05-1999
US 2004011412 A1	22-01-2004	AU 2003247895 A1	09-02-2004
		BR 0311525 A	22-02-2005
		CA 2487170 A1	29-01-2004
		CN 1668869 A	14-09-2005
		EP 1552202 A1	13-07-2005
		JP 4759725 B2	31-08-2011
		JP 2005533229 A	04-11-2005
		US 2004011412 A1	22-01-2004
		US 2006175564 A1	10-08-2006
		WO 2004010037 A1	29-01-2004
US 2006096643 A1	11-05-2006	AR 052528 A1	21-03-2007
		AU 2005305323 A1	18-05-2006
		BR PI0517708 A	21-10-2008
		CA 2586116 A1	18-05-2006
		CN 101203704 A	18-06-2008
		CN 102878309 A	16-01-2013
		EP 1809551 A2	25-07-2007
		JP 5060302 B2	31-10-2012
		JP 2008519943 A	12-06-2008
		MY 142678 A	15-12-2010
		RU 2007120608 A	20-12-2008
		US 2006096643 A1	11-05-2006
		US 2007062587 A1	22-03-2007
		US 2009309059 A1	17-12-2009
		WO 2006052365 A2	18-05-2006

EPO FORM P0459

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