



(51) International Patent Classification:

A43C 11/16 (2006.01) A43C 11/14 (2006.01)
A43B 3/00 (2006.01) A43C 7/08 (2006.01)
A43C 11/00 (2006.01)

(21) International Application Number:

PCT/US2017/022081

(22) International Filing Date:

13 March 2017 (13.03.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

15/070,995 15 March 2016 (15.03.2016) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:

US 15/070,995 (CON)
Filed on 15 March 2016 (15.03.2016)

(71) Applicant (for all designated States except US): NIKE INNOVATE C.V. [NL/US]; One Bowerman Drive, Beaverton, Oregon 97005-6453 (US).

(71) Applicant (for US only): NIKE, INC. [US/US]; One Bowerman Drive, Beaverton, Oregon 97005-6453 (US).

(72) Inventors; and

(71) Applicants: BEERS, Tiffany A. [US/US]; One Bowerman Drive, Beaverton, Oregon 97005-6453 (US). OWINGS, Andrew A [US/US]; One Bowerman Drive, Beaverton, Oregon 97005-6453 (US).

(74) Agent: GOULD, James R., Reg. No. 72,086 et al.; P.O. Box 2938, Minneapolis, Minnesota 55402 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,

(54) Title: POSITION SENSING ASSEMBLY FOR A TENSIONING SYSTEM

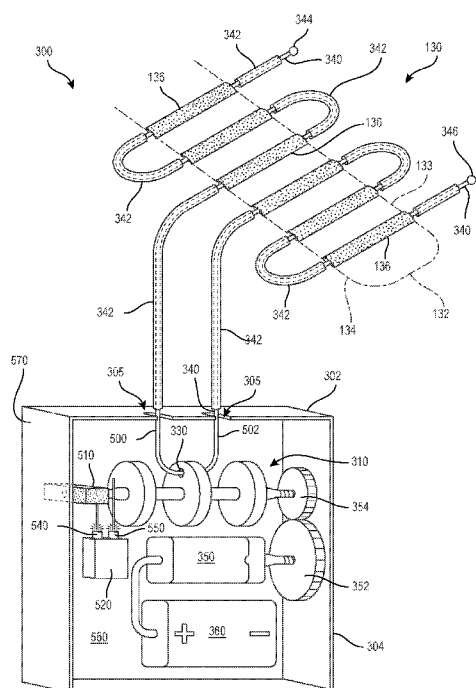


FIG. 5

(57) Abstract: A position sensing assembly for a tensioning system designed to provide tension to a lace, cord, or other type of strand is disclosed. The tensioning system includes a reel member configured to rotate about a central axis and the position sensing assembly. The position sensing assembly includes a shaft, an indicator tab, and an optical sensing unit. The position sensing assembly assists in controlling the degree to which the strand is tightened and loosened. The position sensing assembly prevents tightening of the strand when the strand is meant to be loosened.

MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

(88) Date of publication of the international search report:

26 July 2018 (26.07.2018)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2017/022081**A. CLASSIFICATION OF SUBJECT MATTER****A43C 11/16(2006.01)i, A43B 3/00(2006.01)i, A43C 11/00(2006.01)i, A43C 11/14(2006.01)i, A43C 7/08(2006.01)i**

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)

A43C 11/16; A43C 11/00; A44B 021/00; A43B 5/04; A43C 011/00; A43B 3/00; A43C 11/14; A43C 7/08

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: tensioning system, footwear, reel, lead screw, indicator tab, optical sensor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7752774 B2 (USSHER, T. J.) 13 July 2010 See claim 1; figures 1 and 3.	1-40
A	WO 2014-036371 A1 (NIKE INTERNATIONAL LTD.) 06 March 2014 See claim 1; figures 8-9; paragraph [0166].	1-40
A	US 2009-0272007 A1 (BEERS, T. A. et al.) 05 November 2009 See claims 1 and 22-25; figures 12 and 17-21.	1-40
A	US 2003-0150135 A1 (LIU, K.) 14 August 2003 See claim 1; figure 3.	1-40
A	US 2003-0204938 A1 (HAMMERSLAG, G. R.) 06 November 2003 See claim 1; figures 3 and 4C	1-40



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

09 June 2017 (09.06.2017)

Date of mailing of the international search report

16 June 2017 (16.06.2017)

Name and mailing address of the ISA/KR

International Application Division

Korean Intellectual Property Office

189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea

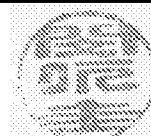


Facsimile No. +82-42-481-8578

Authorized officer

MIN, In Gyou

Telephone No. +82-42-481-3326



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2017/022081

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7752774 B2	13/07/2010	US 2008-0301919 A1	11/12/2008
WO 2014-036371 A1	06/03/2014	CN 104582519 A	29/04/2015
		CN 104582519 B	24/08/2016
		EP 2871991 A1	20/05/2015
		US 2014-0068838 A1	13/03/2014
		US 2014-0094728 A1	03/04/2014
		US 2017-0099913 A1	13/04/2017
		US 9248040 B2	02/02/2016
		US 9532893 B2	03/01/2017
		WO 2014-036471 A2	06/03/2014
		WO 2014-036471 A3	30/05/2014
US 2009-0272007 A1	05/11/2009	CN 102014682 A	13/04/2011
		CN 102014682 B	16/01/2013
		CN 102077022 A	25/05/2011
		CN 102077022 B	30/04/2014
		CN 102316758 A	11/01/2012
		CN 102316758 B	26/03/2014
		CN 102715706 A	10/10/2012
		CN 102715706 B	11/02/2015
		CN 102726888 A	17/10/2012
		CN 102726888 B	19/08/2015
		EP 2278896 A1	02/02/2011
		EP 2278896 A4	01/01/2014
		JP 2011-519611 A	14/07/2011
		JP 2011-519612 A	14/07/2011
		JP 2011-528240 A	17/11/2011
		JP 5323177 B2	23/10/2013
		JP 5421359 B2	19/02/2014
		JP 5460695 B2	02/04/2014
		US 2009-0272013 A1	05/11/2009
		US 2009-0273311 A1	05/11/2009
		US 2012-0005923 A1	12/01/2012
		US 2012-0007504 A1	12/01/2012
		US 2014-0026440 A1	30/01/2014
		US 2014-0360047 A1	11/12/2014
		US 2016-0219985 A1	04/08/2016
		US 8046937 B2	01/11/2011
		US 8056269 B2	15/11/2011
		US 8058837 B2	15/11/2011
		US 8522456 B2	03/09/2013
		US 8528235 B2	10/09/2013
		US 8769844 B2	08/07/2014
		US 9307804 B2	12/04/2016
		WO 2009-134858 A1	05/11/2009
		WO 2009-134860 A1	05/11/2009
US 2003-0150135 A1	14/08/2003	TW 521593 U	21/02/2003

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2017/022081

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003-0204938 A1	06/11/2003	US 6691433 B2	17/02/2004
		AU 6105600 A	26/03/2001
		CA 2299253 A1	04/03/1999
		CA 2382349 A1	08/03/2001
		CA 2382349 C	19/05/2009
		CN 101193568 A	04/06/2008
		CN 101193568 B	30/11/2011
		CN 102132983 A	27/07/2011
		CN 102132983 B	14/08/2013
		CN 103381003 A	06/11/2013
		CN 103381003 B	25/05/2016
		EP 1003392 A1	31/05/2000
		EP 1213981 A1	19/06/2002
		EP 1213981 B1	10/09/2008
		EP 1814417 A2	08/08/2007
		EP 1814417 B1	16/04/2014
		EP 2789251 A1	15/10/2014
		JP 2001-513379 A	04/09/2001
		JP 2003-508097 A	04/03/2003
		JP 2007-330808 A	27/12/2007
		JP 2008-525052 A	17/07/2008
		JP 2010-148927 A	08/07/2010
		JP 4171774 B2	29/10/2008
		JP 4514383 B2	28/07/2010
		JP 4874986 B2	15/02/2012
		JP 5048096 B2	17/10/2012
		US 2002-0095750 A1	25/07/2002
		US 2006-0156517 A1	20/07/2006
		US 2008-0060167 A1	13/03/2008
		US 2008-0060168 A1	13/03/2008
		US 2008-0066345 A1	20/03/2008
		US 2008-0066346 A1	20/03/2008
		US 2008-0083135 A1	10/04/2008
		US 2010-0299959 A1	02/12/2010
		US 5934599 A	10/08/1999
		US 6202953 B1	20/03/2001
		US 6289558 B1	18/09/2001
		US 7516521 B2	14/04/2009
		US 7591050 B2	22/09/2009
		US 7950112 B2	31/05/2011
		US 7954204 B2	07/06/2011
		US 7992261 B2	09/08/2011
		US 8091182 B2	10/01/2012
		US 8381362 B2	26/02/2013
		WO 01-15559 A1	08/03/2001
		WO 2004-110197 A2	23/12/2004
		WO 2004-110197 A3	31/03/2005
		WO 2004-110197 A8	09/09/2005
		WO 2006-050266 A2	11/05/2006

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2017/022081Patent document
cited in search reportPublication
datePatent family
member(s)Publication
date

WO 2006-050266 A3

24/01/2008

WO 99-09850 A1

04/03/1999