

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 June 2009 (25.06.2009)

PCT

(10) International Publication Number
WO 2009/078930 A3

(51) International Patent Classification:
F16G 1/28 (2006.01) *F16G 1/06* (2006.01)
F16G 1/14 (2006.01)

(21) International Application Number:
PCT/US2008/013524

(22) International Filing Date:
9 December 2008 (09.12.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/002,127 14 December 2007 (14.12.2007) US

(71) Applicant (for all designated States except US): **THE GATES CORPORATION** [US/US]; (a Delaware U.S.A. Corporation), 1551 Wewatta Street, Denver, CO 80202 (US).

(72) Inventor: **GAYNOR, John**; 8122 South Saint Paul Way, Centennial, CO 80122 (US).

(74) Agent: **THURNAU, Jeffrey**; The Gates Corporation, IP Law Dept. 10-A3, 1551 Wewatta Street, Denver, CO 80202 (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, BR, BW, BY, BZ,

CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:
17 September 2009

(54) Title: BELT

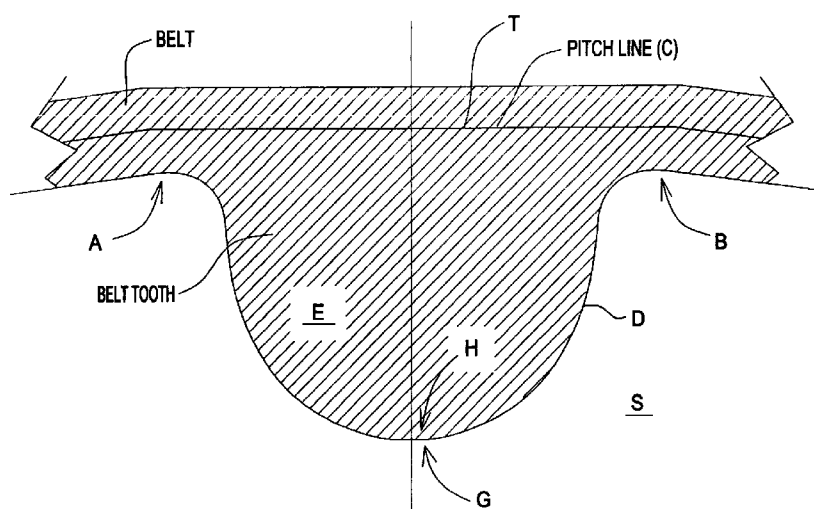


FIG.1

(57) Abstract: A belt and sprocket system comprising a tensile cord disposed within a belt body, a tooth projecting from the belt body, the tooth having a profile having at least two unequal radii connected in series and disposed between a tooth tip and a tooth root, a sprocket having a groove for receiving the tooth, the groove profile comprising at least one substantially linear portion disposed between the at least two unequal radii, a tooth tip engaging a predetermined portion of the sprocket groove such that the tensile cord is supported in a manner to cause the tensile cord to have a substantially arcuate form between the tooth roots.



WO 2009/078930 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/013524**A. CLASSIFICATION OF SUBJECT MATTER*****F16G 1/28(2006.01)i, F16G 1/14(2006.01)i, F16G 1/06(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)

IPC F16G 1/28; F16H 7/02

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 since 1975

Japanese utility models and applications for utility models since 1975

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

eKOMPASS (KIPO Internal) & Keywords: sprocket, belt, radi*, tensile, linear, arcuate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2002-364709 A (GATES UNITTA ASIA CO.) 18 December 2002 See the whole document.	1-4
A	JP 07-001051 B2(MITSUBOSHI BELT CO.) 11 January 1995 See the whole document.	1-4
A	JP 63-047536 A (UNIROYAL INC.) 29 February 1988 See the whole document.	1-4



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 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

29 JULY 2009 (29.07.2009)

Date of mailing of the international search report

29 JULY 2009 (29.07.2009)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu,
Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

PARK, HYUN SOO

Telephone No. 82-42-481-8439



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/013524Patent document
cited in search reportPublication
datePatent family
member(s)Publication
date

JP 2002-364709 A

18.12.2002

None

JP 07-001051 B2

11.01.1995

JP 1978144 C

17.10.1995

JP 7001051 B

11.01.1995

JP 1182652 A

20.07.1989

US 4993998 A

19.02.1991

JP 63-047536 A

29.02.1988

JP 05-070735 B

05.10.1993

JP 63-014215 B

30.03.1988

JP 59-089852 A

24.05.1984

JP 1545952 C

28.02.1990

JP 1863028 C

08.08.1994

KR 10-1990-0001355 B1

08.03.1990