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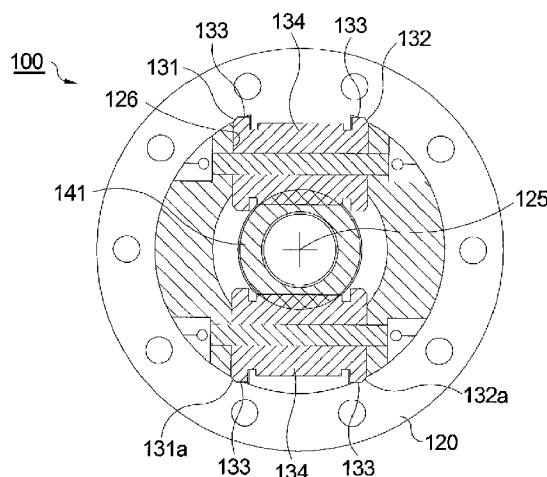
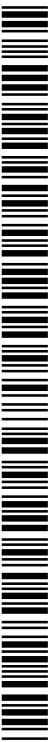


FIG. 1b.

(57) **Abstract:** An all-gear differential designed primarily for motor vehicle use, employing a "cross-axis" arrangement defined by a pair of helical "side" or "S" gears rotatable about a common first axis and mountable on respective opposite vehicle axles, and one or more pairs of "balance" or "B" gears rotatable about second axes orthogonal to the first axis. The B gears have helical central portions for meshing with the helical S gears, and have spur gear end portions for meshing with each other. The B/S helical gear tooth ratio between each balance gear and its respective side gear greater than 0.60 and preferably is about 0.75, and the B/S helical angle ratio between each balance gear and its respective side gear is less than 43°/47°, more preferably is less than 40°/50° and about 35°/55°, and most preferably is about 27°/63°.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/037882**A. CLASSIFICATION OF SUBJECT MATTER***F16H 48/12(2006.01)i, F16H 48/00(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)

F16H 48/12; F16H 48/06; F16H 55/17; F16H 55/22; F16H 48/20; F16H 1/38

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: crossed-axis

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008-0103008 A1 (GLEASMAN KEITH E. et al.) 01 May 2008 See paragraphs [0008]-[0049] and claim 1.	1-11
A	WO 2008-055062 A2 (TORVEC, INC. et al.) 08 May 2008 See the whole document.	1-11
A	JP 2004-346968 A (TOYODA MACH WORKS LTD.) 09 December 2004 See the whole document.	1-11
A	JP 02-050546 U (TOYODA MOTORS) 09 April 1990 See the whole document.	1-11

 Further documents are listed in the continuation of Box C. See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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