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(54) Title: CONCENTRIC CAMSHAFT PHASER TORSIONAL DRIVE MECHANISM

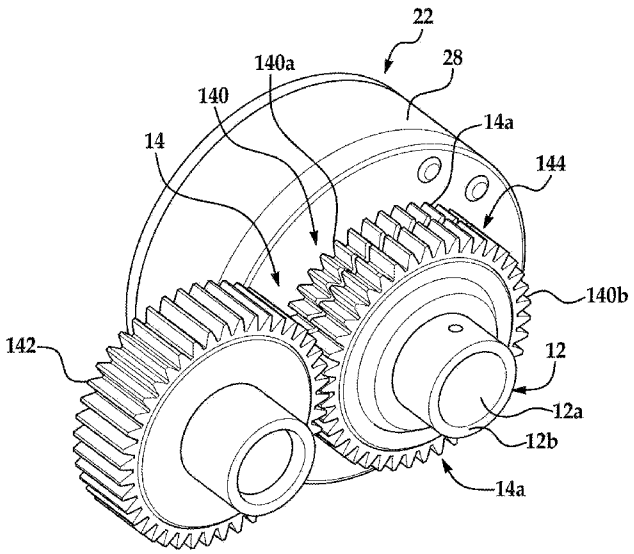


FIG. 1

(57) Abstract: A variable cam timing assembly (10) and method for an internal combustion engine of a motor vehicle includes a cam phaser (22) connected between an inner camshaft (12a) and an outer camshaft (12b) of a concentric camshaft (12). A torsional drive mechanism (14) connects between the cam phaser (22) and the inner camshaft (12a) for transmitting rotational torque. The torsional drive mechanism (14) permits adjustment for perpendicularity and axial misalignment of the inner and outer camshafts (12a, 12b), while maintaining a torsionally stiff coupling between the cam phaser (22) and one of the inner and outer camshafts (12a, 12b) of the concentric camshaft (12). The torsional drive mechanism (14) can be formed from one of a flexible shaft coupling (40), a transversely split driven gear (140), a transversely split sprocket ring gear (240), a transverse face spline gear (340), and a pin and slot combination drive (440).

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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

— *of inventorship (Rule 4.17(iv))*

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A. CLASSIFICATION OF SUBJECT MATTER

F01L 1/34(2006.01)i, F01L 1/047(2006.01)i, F01L 13/00(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)

F01L 1/34

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: camshaft, phaser, variable, adjust and spline

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2010-0089350 A1 (MYERS JESSE) 15 April 2010 See abstract, paragraph 0023, page 2 and figures 4-6	1,9,13,18 2-8,10-12,14-17,19,20
A	US 2010-0089352 A1 (MYERS JESSE et al.) 15 April 2010 See abstract, paragraph 0022, page 2 and figures 4	1-20
A	KR 10-0152373 B1 (HITACHI UNISIA AUTOMOTIVE., CO. LTD) 01 October 1998 See abstract, claim 1 and figures 1,7,8	1-20
A	US 2010-0186700 A1 (KANDOLF MICHAEL et al.) 29 July 2010 See abstract, paragraph 0003 and figures 3,4	1-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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Information on patent family members

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