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(21) International Application Number: PCT/GB96/02713 (22) International Filing Date: 6 November 1996 (06.11.96) (30) Priority Data: 9522975.3 9 November 1995 (09.11.95) GB (71) Applicant (for all designated States except US): DUNPHY, John, Fenlon [GB/GB]; Orchard Cottage, Cheddington, Leighton Buzzard, Beds LU7 0SG (GB). (71)(72) Applicant and Inventor: WOODHOUSE, Timothy, Charles [GB/GB]; 2 Carrington Hall Road, Drayton Parlow, Milton Keynes, Bucks MK17 0GP (GB). (74) Agent: COATES, Ian, Harold; Sommerville & Rushton, 45 Grosvenor Road, St. Albans, Hertfordshire AL1 3AW (GB).			(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report.

(54) Title: ENGINE LUBRICATION SYSTEM

(57) Abstract

The invention provides, in one aspect, a lubrication system for internal combustion engines of the kind comprising a crankshaft (1) and an associated oil sump (3), a camshaft in a cylinder head above the oil sump, and a timing belt (5) connecting the crankshaft and camshaft via respective pulleys (2, 4). In accordance with the invention, the timing belt is adapted to entrain a sufficient quantity of oil from the oil sump to lift it to the cylinder head for lubricating purposes, thereby eliminating the need for a separate oil pump. Preferably, an oil pulley (7) is provided below the crankshaft pulley (2) positioned to be immersed in oil within the oil sump for entraining oil therefrom. In one form, in which the crankshaft and camshaft pulleys (2, 4) have similarly formed tooth sets of different diameters to effect the timing required, the timing belt (5) is of an impermeable material over its width and is formed with a set of teeth (6) around its inner face meshing with said toothed pulleys, the oil pulley also has a tooth set (8), and the timing belt has an additional set of teeth (9) extending around its outer face for meshing with the teeth of the oil pulley, said outer teeth providing the means for entraining oil to the cylinder head. In another aspect of the invention, an engine lubrication system is provided wherein a toothed pulley (2 or 4), is provided, the teeth (32, 36) of which run over a part of their rotation in a restricted passage provided by a casing (10) and a belt (5) having mating teeth also runs for part of its movement in a restricted passage provided by said casing, these runs being guided to a meeting point (33, 35) at which oil under pressure is available as a result of meshing action of the two sets of teeth.

