

Title (en)

DOUBLE ECCENTRIC ASYMMETRICAL STROKE MOVEMENT SYSTEM FOR FOUR STROKE INTERNAL COMBUSTION ENGINES

Title (de)

ASYMMETRISCHES DOPPELEXZENTER-HUBBEWEGUNGSSYSTEM FÜR VIERTAKT-BRENNKRAFTMASCHINEN

Title (fr)

SYSTÈME DE DÉPLACEMENT ASYMÉTRIQUE À DOUBLE EXCENTRIQUE POUR MOTEURS À COMBUSTION INTERNE À QUATRE TEMPS

Publication

**EP 4339420 A1 20240320 (EN)**

Application

**EP 22000215 A 20220919**

Priority

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Abstract (en)

LKJ motor movement system for four-stroke internal combustion engine includes a second eccentric (2) on the crankshaft (1) instead the piston rod of conventional engines. This second eccentric (2) rotates with double revolutions relative to the crankshaft (1). The doubled revolutions of second eccentric (2) realised by special gear pair (5-6) design. An external toothed gear wheel (5) is fixed to the second eccentric (2) and it rotates together with it. Centrally to the crankshaft (1) there is an internal toothed gear wheel (6), which is fixed to motor block. The second eccentric (2) is actuated by the piston (4) through the piston rod (3), in parallel the crankshaft (2) is actuated by second eccentric (2) through the gear-pair (5-6), or vice-versa depend on type of stroke. With this mechanical design, a new movement system was created, where the piston makes four strokes with different lengths and dead centres during one revolution of the crankshaft. This enables the further development of four-stroke internal combustion engines in terms of reducing fuel consumption and increasing efficiency. Although this invention has been explained in relation to its preferred embodiment as mentioned above, it is to be understood that many other possible modifications and variations can be made without departing from the scope of the present invention. It is, therefore, contemplated that the appended claims will cover such modifications and variations that fall within the true scope of the invention.

IPC 8 full level

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CPC (source: EP)

**F01B 9/026** (2013.01); **F02B 75/32** (2013.01)

Citation (search report)

- [X] US 2018163623 A1 20180614 - SOKALSKI MARK [US]
- [X] DE 102013003682 A1 20140828 - GHEORGHIU VICTOR [DE]
- [X] DE 102015002385 A1 20160825 - SCHREIBER GEORG [DE]
- [X] DE 102017010330 A1 20190509 - SCHREIBER GEORG [DE]

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