

Title (en)  
TOOTHED FASTENER SYSTEM.

Title (de)  
VERZAHNTES BEFESTIGUNGSSYSTEM.

Title (fr)  
SYSTEME DE FIXATION DENTE.

Publication  
**EP 0663871 A4 19960508 (EN)**

Application  
**EP 93917454 A 19930813**

Priority  

- AU 9300417 W 19930813
- AU PL409892 A 19920813
- AU PL468992 A 19920911

Abstract (en)  
[origin: WO9404380A1] A system (10) of toothed fasteners (12) for fastening an object, such as a motor vehicle wheel, comprises a plurality of fasteners (12) each having a threaded portion and a head portion (16) provided integral to the threaded portion. The head portion (16) of each fastener (12) is provided with an associated toothed wheel (18) having a toothed outer periphery (20). The teeth of the toothed outer periphery (20) of each toothed wheel (18) are adapted to function like the teeth of a conventional gearwheel whereby, in use, the toothed outer periphery (20) can be engaged laterally for transmitting a torque to the associated fastener (12) of the toothed wheel (18). Each fastener (12) is provided with friction reducing means comprising a solid dry lubricant material contained within a region between the head portion (16) of the fastener (12) and the object to be fastened whereby, in use, the solid dry lubricant material can act as a low friction bearing for the fastener (12). The fasteners (12) are arranged so that the toothed outer peripheries (20) of the associated toothed wheels (18) of at least two of the fasteners (12) can be simultaneously mechanically coupled to a gear rotating mechanism (22) whereby, in use, the at least two fasteners (12) can be tightened or loosened simultaneously by operating the gear rotating mechanism (22). A motor vehicle wheel incorporating the toothed fastener system (10) is also described.

IPC 1-7  
**B60B 3/16**

IPC 8 full level  
**B60B 3/16** (2006.01); **F16B 39/36** (2006.01)

CPC (source: EP)  
**B60B 3/14** (2013.01); **B60B 3/16** (2013.01); **B60B 29/00** (2013.01); **F16B 39/36** (2013.01)

Citation (search report)  

- No further relevant documents disclosed
- See references of WO 9404380A1

Designated contracting state (EPC)  
AT DE FR GB IT SE

DOCDB simple family (publication)  
**WO 9404380 A1 19940303**; EP 0663871 A1 19950726; EP 0663871 A4 19960508

DOCDB simple family (application)  
**AU 9300417 W 19930813**; EP 93917454 A 19930813