

Title (en)
Shaft coupling mechanism

Title (de)
Wellenkupplungsvorrichtung

Title (fr)
Mécanisme d'accouplement d'arbres

Publication
EP 0728538 A1 19960828 (EN)

Application
EP 96102538 A 19960220

Priority
JP 3404095 A 19950222

Abstract (en)
A shaft coupling mechanism of the present invention includes a rotary shaft (21) and a rotary cylinder (3b) which are engaged with each other for transmission of a torque in a state where a predetermined phase shift therebetween is permitted. A first clearance which is to be reduced according to a phase shift between the shaft (21) and the cylinder (3b) and a second clearance which is always constant regardless of the phase shift are provided between the shaft (21) and the cylinder (3b). The mechanism further includes a hydraulic mechanism (36a, 40, 60, 36b, 50) for transforming a force applied as fluid pressure for reducing the first clearance into a force for retaining the shaft (21) in the second clearance. In the hydraulic mechanism, when first plungers (40) are respectively pushed by flat surfaces (22A) of the shaft (21), second plungers (50) respectively press curved surfaces (22B) of the shaft (21), thereby causing the shaft (21) to be coupled to the cylinder (3b). If the phases of the shaft (21) and the cylinder (3b) coincide with each other when the shaft (21) is not driven, the shaft (21) which has been held by the second plungers (50) is released, thereby allowing the attachment and detachment of the shaft (21). <IMAGE>

IPC 1-7
B21B 35/14

IPC 8 full level
F16D 1/04 (2006.01); **B21B 35/14** (2006.01)

CPC (source: EP)
B21B 35/141 (2013.01)

Citation (search report)
• [A] US 3626719 A 19711214 - CHURCH ROBERT M
• [A] PATENT ABSTRACTS OF JAPAN vol. 017, no. 198 (M - 1398) 19 April 1993 (1993-04-19)
• [DA] PATENT ABSTRACTS OF JAPAN vol. 018, no. 444 (M - 1658) 18 August 1994 (1994-08-18)

Cited by
US12042834B2; CN105555428A; US7337643B2; WO2005039791A1; WO2015040102A1

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
EP 0728538 A1 19960828; EP 0728538 B1 19990512; DE 69602387 D1 19990617; DE 69602387 T2 19991216; JP H08226452 A 19960903

DOCDB simple family (application)
EP 96102538 A 19960220; DE 69602387 T 19960220; JP 3404095 A 19950222