

Title (en)

Toggle-lever clamp, in particular for use in car bodywork construction

Title (de)

Kniehebelspannvorrichtung, insbesondere zur Verwendung im Karosseriebau der Kfz-Industrie

Title (fr)

Dispositif de serrage à genouillère, en particulier pour la construction en carrosserie dans l'industrie automobile

Publication

**EP 0917932 A1 19990526 (DE)**

Application

**EP 98119088 A 19981009**

Priority

DE 19751950 A 19971124

Abstract (en)

[origin: US6076816A] A toggle lever tightening device for use in the automobile industry in the assembly of automobile bodies. Toggle lever tightening devices secure one workpiece relative to a second work piece to locate the pieces for permanent connection. This toggle lever tightening device prevents deformation of the grip head and its seatings. The design of this toggle lever tightening device allows the grip head and cylinder to be constructed of light metal alloys without experiencing damaging deformation of the grip head. A very simple bearing arrangement for this toggle lever tightening device has made possible an embodiment in which a single tightening arm is provided on one side of the grip head. This single tightening arm design is highly desirable in the automobile industry. However, it results in an unfavorable introduction of forces. The pivot shaft that is driven by the toggle lever arrangement and functions to drive the tightening arm is axially and radially seated in the grip head. As a result of this construction, the axial and radial force are transferred to the walls of the grip head dependably and without causing deformation, twisting or sluggishness of the toggle lever arrangement. Bearings in the form of roller bodies are provided that simultaneously function as the axial and radial bearing. This simple bearing arrangement has permitted the use of light metals or light metal alloys for the construction of this mechanism. Major forces are dependably absorbed by an adjustable support plate that is fixed at the top dead center location of the toggle arrangement. The support plate and the fixed stop are made of hardened steel or of a ceramic material, and can be embodied with appropriately large surfaces so that the surface pressure in this area are kept low.

Abstract (de)

Die Erfindung betrifft eine Kniehebelspannvorrichtung, insbesondere zur Verwendung im Karosseriebau der Kfz-Industrie. Bei der Erfindung ist die gehäusefesteste Schwenkachse (11) der Kniehebelgelenkanordnung axial und radial im Spannkopf gelagert (21). Dadurch werden die axial und radial auftretenden Kraftkomponenten zuverlässig und auch bei aus Leichtmetall bestehenden Teilen ohne Deformationen in die Wandungen des Spannkopfes (12) geleitet. <IMAGE>

IPC 1-7

**B25B 5/12**

IPC 8 full level

**B25B 5/12** (2006.01); **B25B 5/16** (2006.01)

CPC (source: EP US)

**B25B 5/122** (2013.01 - EP US); **B25B 5/16** (2013.01 - EP US)

Citation (search report)

- [DA] US 4905973 A 19900306 - BLATT JOHN A [US]
- [A] GB 1523565 A 19780906 - POLYMATIC SA
- [DA] EP 0370914 A1 19900530 - POLYMATIC SA [FR]
- [DA] DE 19616441 C1 19970626 - TUENKERS MASCHINENBAU GMBH [DE]
- [DA] EP 0636449 A1 19950201 - TUENKERS MASCHINENBAU GMBH [DE]

Designated contracting state (EPC)

AT DE ES FR GB IT NL SE

DOCDB simple family (publication)

**US 6076816 A 20000620**; AT E232773 T1 20030315; DE 19751950 C1 19990304; DE 59807238 D1 20030327; EP 0917932 A1 19990526; EP 0917932 B1 20030219; ES 2193458 T3 20031101

DOCDB simple family (application)

**US 19900798 A 19981124**; AT 98119088 T 19981009; DE 19751950 A 19971124; DE 59807238 T 19981009; EP 98119088 A 19981009; ES 98119088 T 19981009