Title (en)

Over-center power clamp toggle mechanism

Title (de)

Selbsthemmende, angetriebene Spannvorrichtung mit Kniehebel-Mechanismus

Title (fr)

Dispositif motorisé de serrage autobloquant avec mécanisme à genouillère

Publication

EP 1179394 A2 20020213 (EN)

Application

EP 01306592 A 20010801

Priority

- US 22255600 P 20000803
- US 23760200 P 20001003
- US 89191601 A 20010626

Abstract (en)

A rotary clamp (10) having a linkage assembly (17) that provides an over-center condition for providing high actuation and clamping forces without excessively wearing the components of the linkage assembly. The linkage assembly (17) is connected to a linear actuator (12) for converting linear actuator motion into rotary clamp motion between a clamped position and an unclamped position. The linkage assembly provides a first link (64) having an aperture (68) for receiving a pin (72) and a roller (70) wherein the roller is coaxially connected o the pin. A second link (76) is pivotally connected to the first link, and a third link (82) is pivotally connected to the second link. The roller of the first link rollably engages a surface (104) on the third link when moving in and out of the clamped position. A beam-like structure (26) connected to the housing (18) provides a wear surface wherein the pin (72) engages the wear surface in response to the roller engaging the third link to prohibit the first link from reaching an over-center position. A spring detent (118, Fig. 4A; 106, Fig. 4B) is provided in the third link to engage the roller in the clamped position and resist movement of the roller from moving toward the end clamped position when power is lost to the rotary clamp. <IMAGE>

IPC 1-7

B25B 5/12

IPC 8 full level

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

CPC (source: EP)

B25B 5/122 (2013.01); **B25B 5/16** (2013.01)

Cited by

FR2839914A1; FR2871715A1; DE102004056229A1; EP1382860A3; CN102666023A; EP1371452A3; US7213804B2; EP3130809A1

Designated contracting state (EPC)

DE ES GB IT SE

DOCDB simple family (publication)

EP 1179394 A2 20020213; **EP 1179394 A3 20030827**

DOCDB simple family (application)

EP 01306592 A 20010801