

Title (en)

System for grooving and rolling linear member and flat heat exchanger tube resulting therefrom.

Title (de)

System zum Nuten und Walzen von länglichen Körpern und daraus entstehende flache Rohre für Wärmeaustauscher.

Title (fr)

Système pour le rainurage et le laminage de corps linéaires et tubes plats pour échangeur de chaleur en résultant.

Publication

EP 0591693 A1 19940413 (EN)

Application

EP 93114427 A 19930908

Priority

- JP 23875492 A 19920908
- JP 29276592 A 19921030

Abstract (en)

A system for grooving and rolling a linear member (11) comprises a first roll (1) having a groove forming part (1A) provided with a plurality of protrusions (2) and edge rolling parts (1B) disposed on both sides thereof, a second roll (8) disposed opposite to the first roll, and flanges (9) mounted to the first or second roll for restraining extension of the linear member in the cross direction thereof. The groove forming part is symmetrically constructed in the cross direction of the linear member, and has at least one buffer area (3) disposed continuously in the longitudinal direction thereof. <IMAGE>

IPC 1-7

B21D 53/04; **B21C 37/15**; **B21C 37/20**

IPC 8 full level

B23K 13/00 (2006.01); **B21C 37/15** (2006.01); **B21C 37/20** (2006.01); **F28F 1/40** (2006.01); **F28F 3/02** (2006.01)

CPC (source: EP)

B21C 37/151 (2013.01); **B21C 37/202** (2013.01); **F28F 1/40** (2013.01); **F28F 3/025** (2013.01)

Citation (search report)

- [AP] EP 0522985 A1 19930113 - MITSUBISHI SHINDO KK [JP]
- [A] GB 1468710 A 19770330 - ATOMIC ENERGY AUTHORITY UK
- [A] US 2047001 A 19360707 - LEON CAMMEN
- [A] US 2549466 A 19510417 - OTTO HOHEISEL
- [A] US 3662582 A 19720516 - FRENCH FRED W
- [A] PATENT ABSTRACTS OF JAPAN vol. 9, no. 264 (M-423)(1987) 22 October 1985 & JP-A-60 111718 (NITSUTETSU KENZAI KOGYO KK) 18 June 1985
- [AD] PATENT ABSTRACTS OF JAPAN vol. 16, no. 450 (M-1312)18 September 1992 & JP-A-04 157017 (MISUBISHI SHINDO CO LTD) 29 May 1992
- [A] PATENT ABSTRACTS OF JAPAN vol. 7, no. 149 (M-225)30 June 1983 & JP-A-58 058929 (DAIKIN KOGYO KK) 7 April 1983

Cited by

CN116871375A; US2023408204A1; US11988459B2; WO0045102A1

Designated contracting state (EPC)

DE ES FR GB IT

DOCDB simple family (publication)

EP 0591693 A1 19940413; **EP 0591693 B1 19961120**; CA 2105406 A1 19940309; CA 2105406 C 19990629; DE 69306080 D1 19970102; DE 69306080 T2 19970313; ES 2096822 T3 19970316; JP 3186261 B2 20010711; JP H06137778 A 19940520; MY 109575 A 19970228

DOCDB simple family (application)

EP 93114427 A 19930908; CA 2105406 A 19930902; DE 69306080 T 19930908; ES 93114427 T 19930908; JP 29276592 A 19921030; MY PI19931817 A 19930908