

Title (en)

MACHINE FOR REALIZING MECHANICAL RADIATORS, PARTICULARLY THOSE FOR MOTOR VEHICLES

Publication

**EP 0411672 A3 19910522 (EN)**

Application

**EP 90115045 A 19900806**

Priority

IT 8414889 A 19890804

Abstract (en)

[origin: EP0411672A2] A machine for realizing mechanical radiators, particularly those for motor vehicles, including positioning and support means for the radiators to be treated and a plurality of rods provided with an expansion element at one end and associated with means for their movement along the tubes of said radiators, characterized by comprising: - a loading table (1) removably housing a radiator (2) in a blocked condition during the expansion treatment and having the walls in contact with the ends of said tubes (4) provided with openings facing them, for the passage of said rods (10), - vertically mobile means (17), for holding the expansion elements (11) in the correct reciprocal operative position, - stationary means (16) placed between the loading table (1) and said holding means (17) for centering and guiding said rods (10) in the correct reciprocal operative position, and - a device (12) for the disengageable hooking of the ends of the rods (10) not provided with the expansion element (11) and making traction on it, said device (12) being placed on the part of the loading table (1) opposite to that in which said stationary centering means (16) and said mobile holding means (17) are.

IPC 1-7

**B21D 53/08**

IPC 8 full level

**B21D 53/08** (2006.01)

CPC (source: EP)

**B21D 53/085** (2013.01)

Citation (search report)

- [X] EP 0133687 A2 19850306 - NIPPON DENSO CO [JP]
- [Y] GB 2157985 A 19851106 - CARRIER CORP
- [Y] US 4698904 A 19871013 - NOZAWA YOSHIO [JP], et al
- [Y] US 4597171 A 19860701 - KITAYAMA YUKIO [JP], et al
- [Y] US 4780955 A 19881101 - STROUP STEVEN L [US]
- [X] GB 815096 A 19590617 - LICENCIA TALALMANYOKAT
- [X] GB 102231 A 19161123 - LORD FREDERICK WAIT [US]
- [A] GB 652510 A 19510425 - FRANK MEYER BENNETT, et al
- [A] US 4835828 A 19890606 - YORK JOHN D [US], et al

Cited by

JP2014117749A; EP1213067A3; CN104853863A; WO2014098257A3

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB GR IT LI LU NL SE

DOCDB simple family (publication)

**EP 0411672 A2 19910206; EP 0411672 A3 19910522**; IT 1234374 B 19920515; IT 8984148 A0 19890804

DOCDB simple family (application)

**EP 90115045 A 19900806**; IT 8414889 A 19890804