

Title (en)

MULTISTAGE METAL-FORMING MACHINE TOOL

Title (de)

MEHRSTUFIGE UMFORMMASCHINE

Title (fr)

MACHINE-OUTIL DE FORMAGE EN PLUSIEURS ETAPES

Publication

**EP 0988122 B1 20010509 (DE)**

Application

**EP 98922569 A 19980609**

Priority

- CH 9800249 W 19980609
- CH 144997 A 19970613

Abstract (en)

[origin: WO9857765A1] The invention relates to a multistage metal-forming machine tool having a last metal-forming station which divides combined pieces into two finished pieces (21, 22), and two delivery devices (3, 4) for the finished pieces. Each delivery device (3, 4) is assigned a transfer device (6), which transfers a finished piece (21, 22) from the last forming station to the delivery device (3, 4). One of the transfer devices comprises transfer tongs having an upper claw with two clamping jaws (521, 522) and a lower claw with one clamping jaw (531). The other transfer device (6) has a slide way (61) for receiving a finished piece (22) from the last forming station, as well as a pivoting kick handle (62) for pushing a finished piece (22) situated on the slide way (61) to the delivery device (4).

IPC 1-7

**B21K 1/04; B21K 27/04; B21J 13/14**

IPC 8 full level

**B21J 13/08** (2006.01); **B21J 13/14** (2006.01); **B21K 1/04** (2006.01); **B21K 27/00** (2006.01); **B21K 27/04** (2006.01)

CPC (source: EP KR US)

**B21J 13/14** (2013.01 - EP KR US); **B21K 1/04** (2013.01 - EP KR US); **B21K 27/04** (2013.01 - EP KR US); **Y10T 83/6518** (2015.04 - EP US)

Designated contracting state (EPC)

BE CH DE ES FR GB IT LI NL

DOCDB simple family (publication)

**WO 9857765 A1 19981223**; AU 7518298 A 19990104; CN 1084648 C 20020515; CN 1259065 A 20000705; CZ 9904174 A3 20011212; DE 59800691 D1 20010613; EA 001306 B1 20001225; EA 200000015 A1 20000626; EP 0988122 A1 20000329; EP 0988122 B1 20010509; ES 2156441 T3 20010616; JP 2001508704 A 20010703; KR 100349053 B1 20020821; KR 20010013213 A 20010226; TW 400257 B 20000801; UA 48307 C2 20020815; US 6471035 B1 20021029

DOCDB simple family (application)

**CH 9800249 W 19980609**; AU 7518298 A 19980609; CN 98805751 A 19980609; CZ 417499 A 19980609; DE 59800691 T 19980609; EA 200000015 A 19980609; EP 98922569 A 19980609; ES 98922569 T 19980609; JP 50348199 A 19980609; KR 19997011201 A 19991130; TW 87109422 A 19980612; UA 99126739 A 19980609; US 42489499 A 19991130