

Title (en)
AUTOMATIC APPARATUS FOR THE HYDROPLASTIC SHAPING OF SPUR PINIONS

Publication
EP 0163922 B1 19890712 (DE)

Application
EP 85105148 A 19850426

Priority
BG 6527784 A 19840427

Abstract (en)
[origin: EP0163922A2] 1. Self-acting machine for the hydroplastic shaping of spur gears consisting of a vertical hydraulic press (1), on whose worktable (7) is mounted a device (8) for hydroplastic shaping having a work tool (55) and a high pressure hydraulic cylinder (29) mounted on a base (28), a die (4) being anchored in a mobile carriage (7), characterized in that the die (4) is mounted in a plate (3) mounted immoveably in relation to the moveable carriage (2), in that there is rigidly attached with clips (11) to two of the supports of the vertical hydraulic press a cantilever (10) on which there is mounted a feed device with a roller bed (12) connected to a first guide device (15) and a packaging device (16) connected to a manipulator (17) by a gripper arm (23) immoveably attached to it, in that there are hydroplastic shaping a counterpressure hydraulic cylinder (29) and a removal device (60) which is connected to a discharge duct (62) to carry away the finished parts, the hydraulic cylinder (29) being arranged on a common axis in relation to the work tool (55) of the device for hydroplastic shaping, in that two extraction devices (58) are secured to a top plate (50) of the device for hydroplastic shaping, in that a second guide device (38) is mounted on its base (28), and in that set on the plate (3) which is attached to the mobile carriage (2) is a third guide device (69).

IPC 1-7
B21J 9/02; B21J 13/08; B21K 1/30

IPC 8 full level
B21J 13/10 (2006.01); **B21J 9/02** (2006.01); **B21J 13/08** (2006.01); **B21K 1/30** (2006.01); **B21K 27/00** (2006.01); **B30B 1/32** (2006.01)

CPC (source: EP)
B21J 9/025 (2013.01); **B21J 13/08** (2013.01); **B21K 1/30** (2013.01)

Cited by
CN105414443A; CN111940660A; CN102001190A; CN102632130A; CN109834213A; CN111975286A; CN100369694C; DE3718884A1; CN106216942A; CN113399575A; DE102016102429A1; DE102016102429B4; CN112517825A; CN108747306A; CN117324501A; WO2017137258A1; US11638981B2

Designated contracting state (EPC)
CH DE FR GB LI SE

DOCDB simple family (publication)
EP 0163922 A2 19851211; EP 0163922 A3 19871007; EP 0163922 B1 19890712; BG 38811 A1 19860314; DD 256610 A7 19880518; DE 3571404 D1 19890817; HU T37896 A 19860328; JP S60247435 A 19851207; SU 1593974 A1 19900923; UA 7011 A1 19950331

DOCDB simple family (application)
EP 85105148 A 19850426; BG 6527784 A 19840427; DD 27543385 A 19850422; DE 3571404 T 19850426; HU 152685 A 19850419; JP 8914285 A 19850426; SU 7773821 A 19850426; UA 7773821 A 19850426