Title (en)

METHOD AND APPARATUS FOR HANDLING TOOLING WITHIN A FOUNDRY MACHINE

Publication

EP 0284842 B1 19910724 (EN)

Application

EP 88103619 A 19880308

Priority

US 3423387 A 19870402

Abstract (en)

[origin: EP0284842A1] A foundry machine for forming molds or cores from a molding material such as sand provides a completely automated operating cycle commencing with loading the separable stacked tooling elements (24) onto an auxiliary table (18). These tooling elements may include, from the top down, a sand magazine (36), blow plate (34), combined gassing manifold and top ejector unit (32), upper mold box (30), lower mold box (28) and bottom stool (26) containing a lower ejector mechanism (390). The tooling is then conveyed along tracks (22, 40) into a mainframe (10), lifted from the tracks (40) by means of a work table (42) which is actuated by a compact telescoping hydraulic cylinder (46), and raised on this work table (42) until the sand magazine engages the blow sleeve (54). The sand magazine (36) is then clamped to the blow sleeve (54) and the blow plate (34) is clamped to the sand magazine (36). A transfer mechanism (68, 70) then engages the gassing manifold and top ejector unit (32), and the work table (42) is lowered to provide clearance for the transfer mechanism (68, 70) and gassing manifold and top ejector unit (32) to be laterally shifted to a stand-by position. Then the work table (42) is raised again to bring the mold boxes (30, 28) up into sealing engagement with the blow plate (34), whereupon sand is blown into the mold box cavities. The work table (42) is again lowered with the mold boxes (30, 28) to allow the transfer mechanism (68, 70) to return the gassing manifold and top ejector unit (32) into position between the upper mold box (30) and the blow plate (28). The work table (42) is raised again to press all the tooling units together against the blow plate (34) for the gassing step, following which upper mold box hangers (76) are swung into position. Upper and lower ejector pins (280, 390) are actuated and the work table (42) is lowered, causing upper mold box (30) to engage and be supported by the hangers (76), thereby separating the mold boxes (30, 28) as the work table (42) and lower mold box (28) continue downward. The completed part (388) is supported on the lower ejector pins (390), and a part-removal unit (78, 100) is transferred along the auxiliary table (18) so that pick-off fingers (100) can enter the gap beneath the ejected part (388), whereupon the lower ejector pins (390) are lowered to transfer the part (388) onto the fingers (100) for removal by the removal unit (78, 100). The cycle can then be repeated by transferring the gassing manifold and top ejector unit (32) to its stand-by position and raising the mold boxes (30, 28) into their part-forming position.

IPC 1-7

B22C 9/12; B22C 15/24

IPC 8 full level

B22C 9/12 (2006.01); **B22C 15/24** (2006.01)

CPC (source: EP)

B22C 9/12 (2013.01); **B22C 15/24** (2013.01)

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CN103537633A; CN114406206A; CN103506584A; CN113333683A; EP0539048A1; US5269363A; CN103537631A

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0284842 A1 19881005; **EP 0284842 B1 19910724**; DE 3863811 D1 19910829; JP S642762 A 19890106

DOCDB simple family (application)

EP 88103619 A 19880308; DE 3863811 T 19880308; JP 8116588 A 19880401