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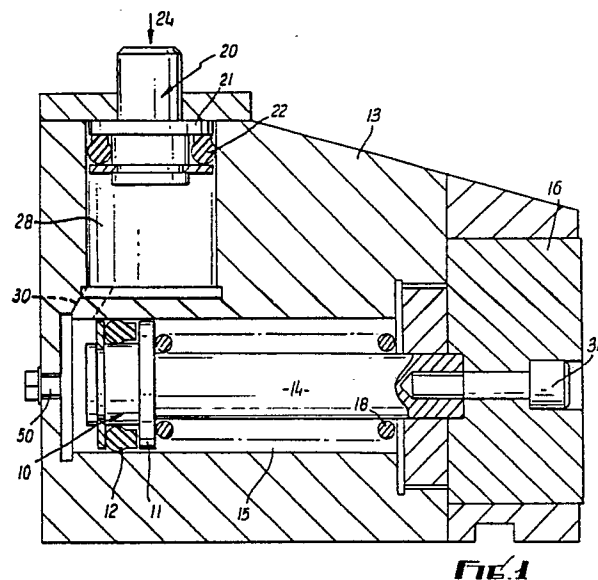
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54 **Improvements in or relating to punches and presses.**

57 A punch assembly for a press tool comprises a cylinder block (13) fixable to the fixed member of the press and defining first and second interconnected cylinders (15, 28) each provided with a piston arrangement (10, 20), the axes of the cylinders being arranged at an angle with the second piston arrangement (20) in the path of travel of the movable member of the press tool whereby when the tool closes the second piston arrangement is moved into its cylinder causing corresponding outwards movement of the first piston arrangement to operate, for example, a punch piercing the workpiece in the tool in a direction which is angularly disposed with respect to the direction of movement of the movable member.



EP 0 251 796 A3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	FR-A-2 348 051 (POLYMATIC) * Page 2, lines 23-37; pages 3-6; figures * ----	1,3-8	B 21 D 28/32
X	PATENT ABSTRACTS OF JAPAN, vol. 9, no. 168 (M-396)[1891], 13th July 1985; & JP-A-60 40 621 (NISSAN JIDOSHA K.K.) 04-03-1985 * Abstract * ----	1-8	
A	US-A-2 112 153 (GORHAM) -----	9	
A	DE-A-1 919 095 (GÜNTHER) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			B 21 D B 30 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19-09-1988	Examiner PEETERS L.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			