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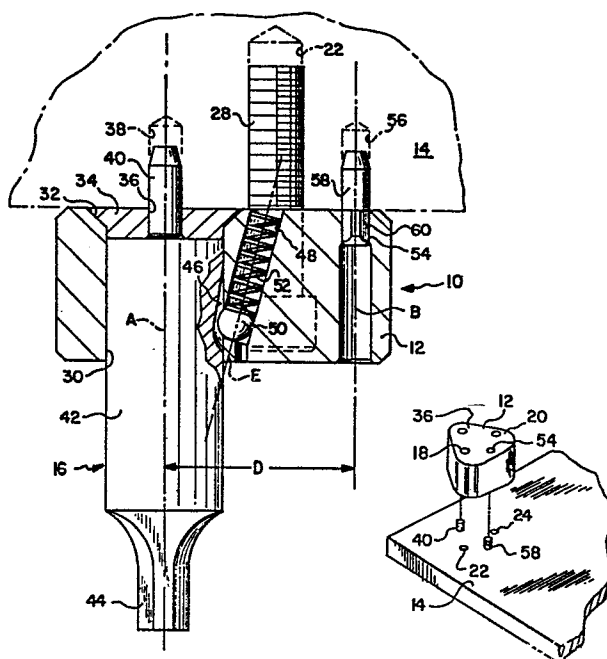
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54 Method of mounting an eccentric tool retainer to a die shoe.

57 The invention relates to a method of mounting a tool retainer plate (12) for a punch or die tool (16) to a die shoe (14), the retainer plate having bolt holes (18, 20) for receiving bolts therethrough for attaching it to the die shoe, a bore (30) in the plate including a ball lock (48, 50, 52) for receiving the tool, a first dowel pin hole (36) being concentric with the bore and a second dowel pin hole (54) being spaced therefrom along a reference line for locating the bore (30) relative to the die shoe. The method includes the steps of first preparing the die shoe by selecting a location on the die shoe including a point to coincide with the centerline of the bore (30) and selecting a line, corresponding in orientation to the reference line, extending through that point to determine the orientation of the retainer, drilling a first hole (38) in the die shoe coinciding with the said point for receiving the first dowel pin, drilling a second hole (56) in the shoe on the line for receiving the second dowel pin, drilling and tapping mounting holes (22, 24) in the shoe for receiving the attaching bolts, inserting the first and second dowel pins into their respective holes, placing the retainer plate on the shoe such that the first and second dowel pins engage the corresponding dowel pin holes in the plate, and threading the bolts through the mounting holes to secure the plate to the shoe.





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. ³)
D, A	US-A-3 563 124 (GARGRAVE)		B 21 D 37/00
Y	--- DE-A-2 902 164 (WALLIS) * Page 11, lines 1-4; figure 2, reference no. 32 *	1	
Y	--- US-A-3 263 549 (JORDAN) * Claim 1, column 3, lines 27-33 *	1	
A	--- DE-A-2 056 772 (DAYTON) * Pages 5, 6 *		
A	--- GB-A-2 093 391 (WALLIS) * Page 1, lines 108-113 *		TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
A	--- DE-B-1 195 261 (ALLIED PRODUCTS) -----		B 21 D 37/00 B 21 D 28/00
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 06-07-1984	Examiner SCHLAITZ J
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	