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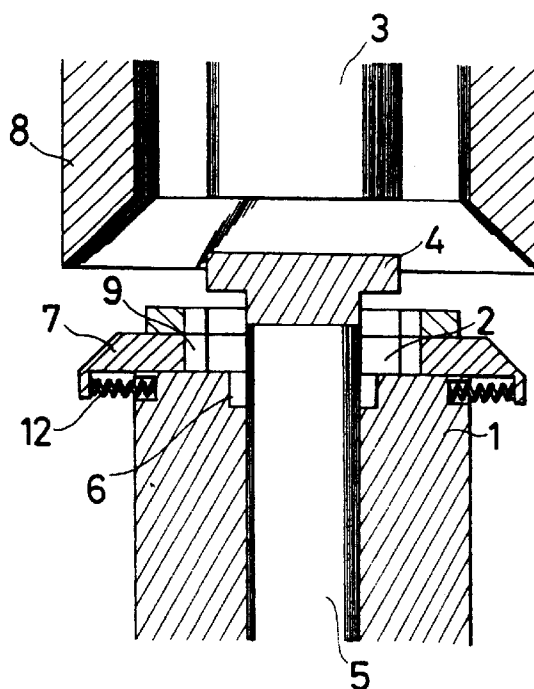
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Device for forging a helical gear.

A device for forging a helical gear by plastic working includes a die (1) having a cavity (2) formed on the center thereof for receiving a workpiece (4), a punch assembly (3) disposed above the cavity and movable in a vertical direction, a plurality of helical-tooth punches (7) mounted on a circumference of the cavity (2) and movable in a radial direction towards a center of the cavity, and an extrusion cam (8) disposed above the plurality of helical-tooth punches (7) to be movable in the vertical direction and having a bottom inner surface formed as a cam face constituting a side face of a first truncated cone having predetermined first dimensions and slope. The plurality of helical-tooth punches respectively have sliding faces which together lie in a side face of a second truncated cone for engaging with the cam face of the extrusion cam (8). The second truncated cone has dimensions and slope identical with or corresponding to those of the first truncated cone, and thereby perfectly fits in the first truncated cone. When the extrusion cam (8) is moved down, the plurality of helical-tooth punches (7) are pressed in the radial direction towards the center of the cavity (2) to form rough profiles of helical teeth around a side wall of workpiece (4) set in the cavity (2). The punch assembly (3) is then pressed down to finish the helical teeth roughly formed on the side wall of the workpiece.

FIG. 1





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EUROPEAN SEARCH REPORT

Application Number
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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.5)
X	GB-A-1 096 846 (ZAVOD GOMSELMASH) * claim 1; figures * ---	1,2,5,6, 10	B21K1/30
X	PATENT ABSTRACTS OF JAPAN vol. 14 no. 491 (M-1040), 25 October 1990 & JP-A-02 200341 (MITSUBISHI MOTORS CORP) 8 August 1990, * abstract; figures * ---	1,2,5-7, 10	
A	US-A-3 263 474 (PENTLAND) * column 2, line 30 - column 3, line 32; figures * ---	3	
A	US-A-3 803 896 (CERMAK) -----	1,5,10	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 June 1995	Examiner Barrow, 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			

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