Title (en)
Method for plastic forming of toothed shafts

Title (de)
Verfahren zum plastischen Formen von verzahnten Wellen

Title (fr)
Procédé pour la formation plastique d'arbres dentés

Publication
EP 2422898 B1 20131113 (EN)

Application
EP 11461501 A 20110103

Priority
PL 39227610 A 20100830

Abstract (en)

[origin: EP2422898A1] The method for plastic forming of toothed shafts consists in that the blank to be rolled (1) in the form of a rod or tube section is positioned between three identical stepped working rolls (2) with teeth which rotate in the same direction with the constant velocity (n 1) and move radially to the product axis with the velocity (V), as a result of which a toothed stepped shaft (3) is formed, and the three working forming toothed rolls (2) - the tools, are positioned on the perimeter at every 120° +/- 20°, the preferable position being that at every 120°, the three rolling tools (2) shift in a radial direction forming first steps of different diameters on the blank (1), and then teeth are formed on one of the steps, and when the working rolls (2) - the tools, reach their final position, the radial plane motion is stopped, while the working rolls (2) still rotate and correct shape inaccuracies of the part (3) - the toothed shaft. The process for forming of hollow toothed parts (3) is done with or without mandrel, which allows obtaining accurate cylindrical or shaped holes. The process is done either cold or hot. The process is used for forming toothed shafts with straight, helical, arc, herringbone teeth as well as other shafts with multi-toothed or spline steps.

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CPC (source: EP)
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Cited by
CN109759527A; CN102814434A; WO2022042997A1; EP3733322A1; US11484924B2

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