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PRECESSIONAL TRANSMISSIONS WITH TOOTHED GEARS

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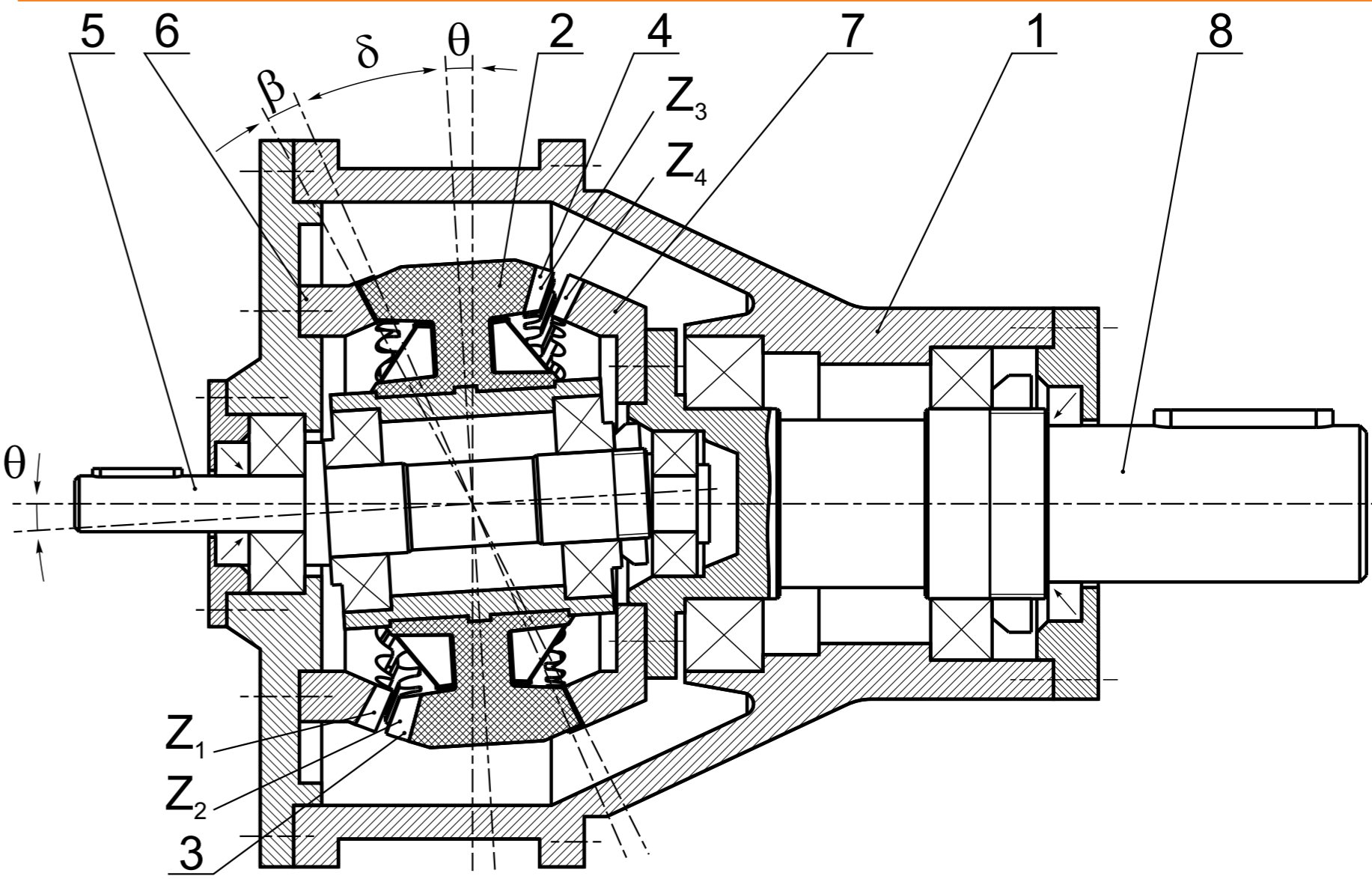
Goal: The problem solved by the invention is the creation of a precessional transmission that would ensure an increase in load-bearing capacity and mechanical efficiency.

Solution: The technical result of the invention consists in ensuring the damping of the dynamic loads from the toothed gears at high angular speeds of the coupled wheels by creating interdental cavities of the coupled teeth in the area with the angular coordinate, which, being filled with lubricant, represent hydraulic "pillows" for damping the dynamic load from the gears and, at the same time, it represents "pockets" for the accumulation of lubricant, a fact that leads to the improvement of the continuous lubrication of the contact surfaces of the flanks of the gears operated in extreme conditions.

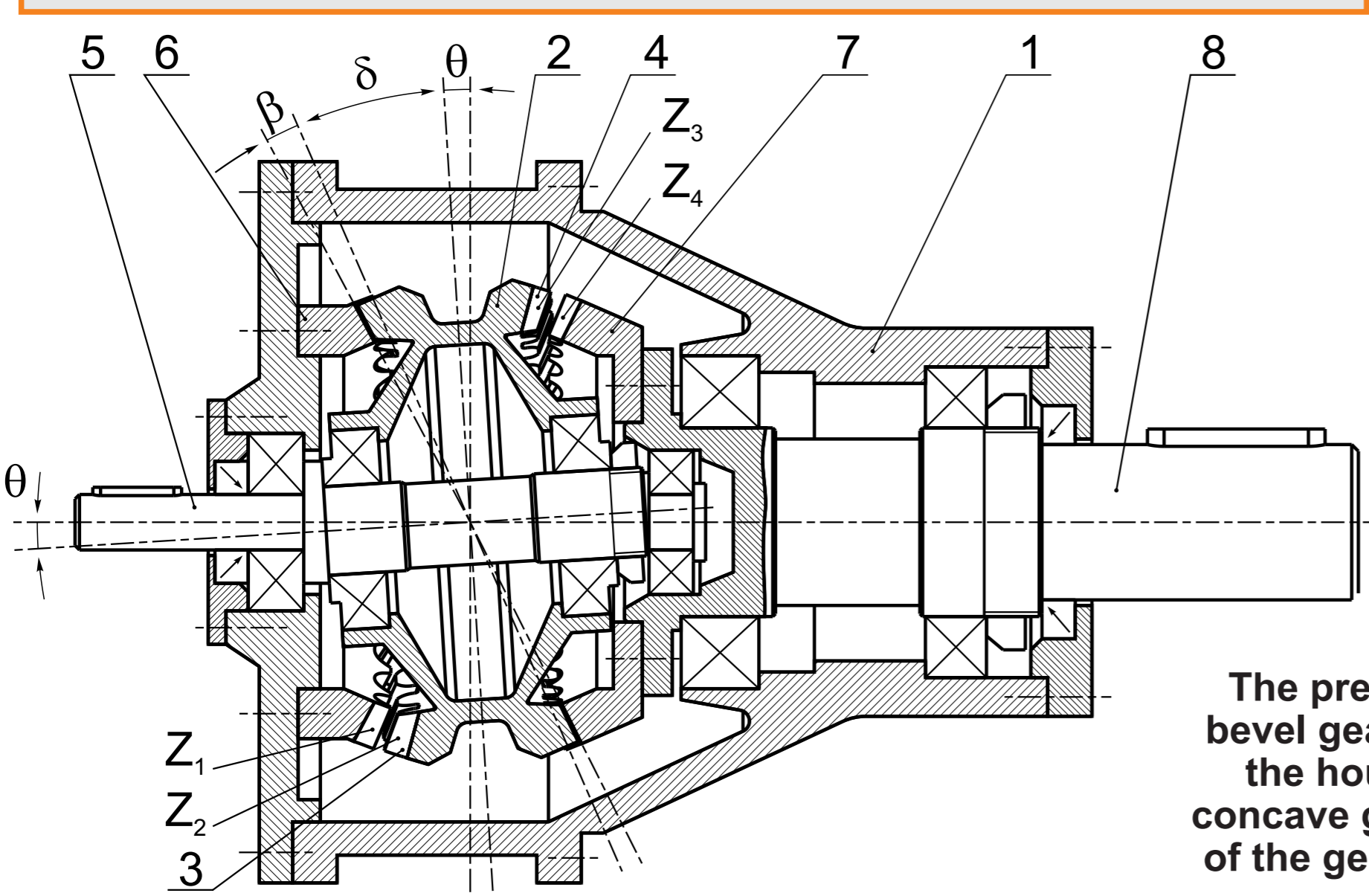
Advantages:
 ✓ damping of dynamic loads,
 ✓ improving the continuous lubrication of the contact surfaces of the flanks of the gears operated in extreme conditions.

Stage: Computerized 3D model.

Overview of precessional planetary transmission 2K-H with pressure-injected satellite wheel

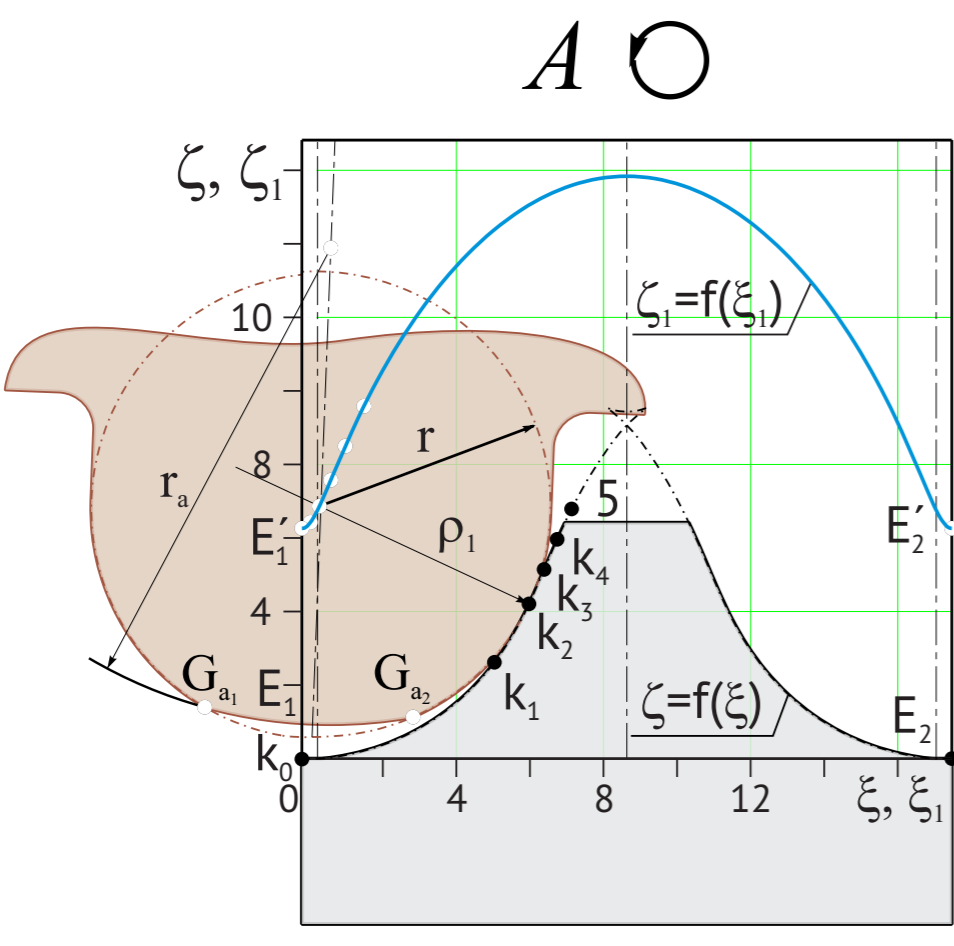


Overview of precessional planetary transmission 2K-H



The precessional transmission contains a housing 1, in which are located a satellite wheel 2 with two bevel gear crowns 3 and 4, a crank shaft 5 and two central bevel gears, one fixed 6 rigidly connected to the housing 1 and another 7 connected to a driven shaft 8, the wheels engage in multi-pair convex-concave gearing with the teeth of the satellite wheel 2 executed with a circular arc profile of radius r , and of the gear wheels 6 and 7 with curvilinear profiles with variable curvature increasing towards their top.

Conjugation of teeth with modified profiles in gearing with $Z_1=24, Z_2=25, R_m=75\text{mm}, r=6.272\text{mm}, q=3.5^\circ, d=22.5^\circ, b=4.78^\circ$



Conjugation of the teeth for the precession phase $\psi_{0k} = \psi_{1k} = 0^\circ$

