



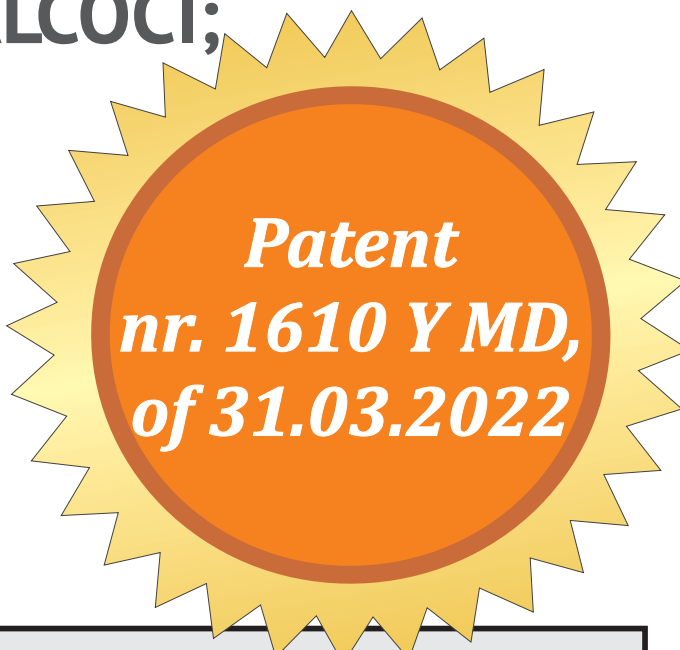
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PLANETARY PRECESSIONAL TRANSMISSION

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Goal: The problem solved by the invention is the reduction of the noise and vibration level, the reduction of the power losses at the sliding friction in the gear.

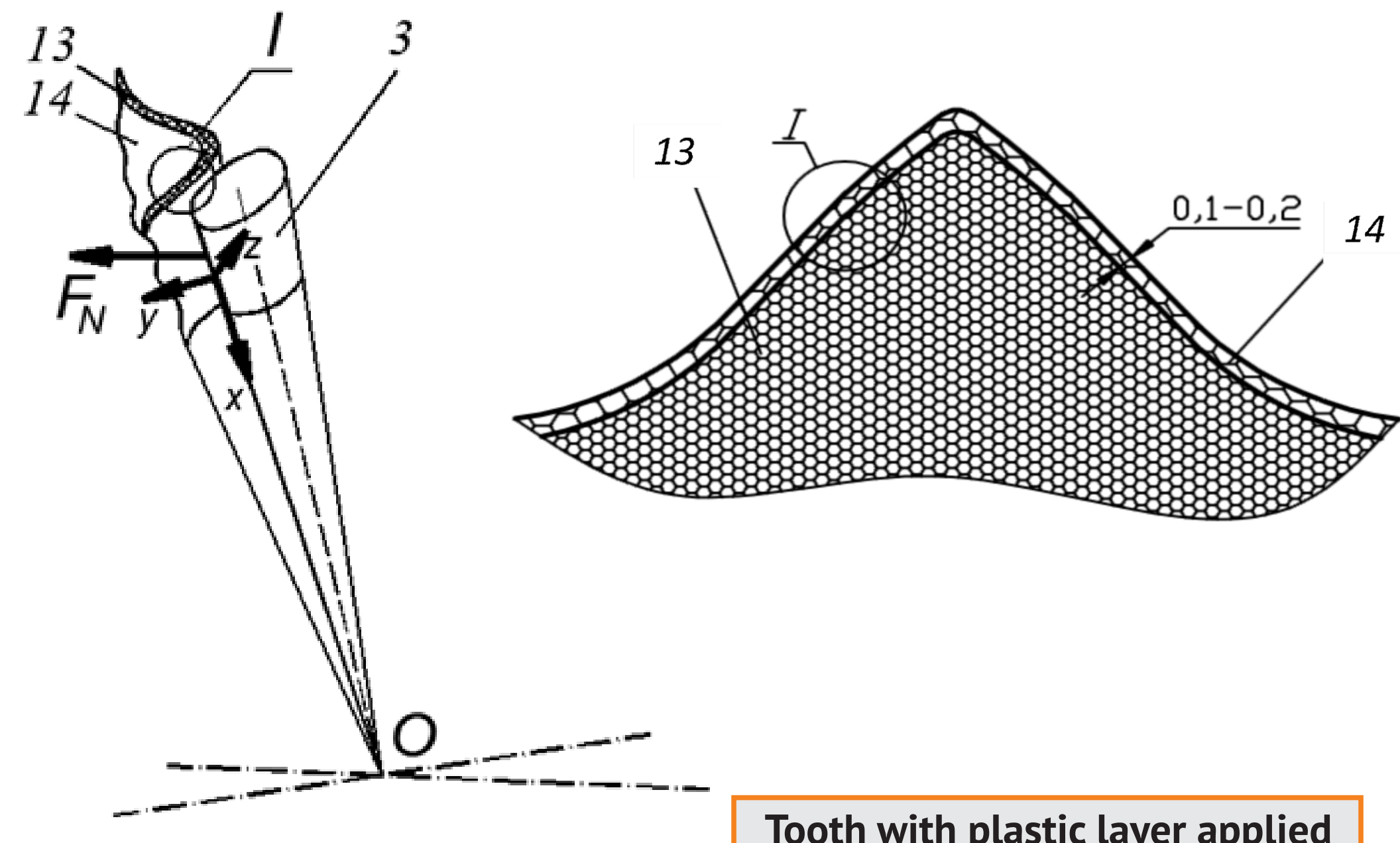
Solution: The solution of the invention consists in the following: - compensation for the execution errors of the transmission parts; - priming the shock loads on the gear by ensuring the micro-displacements in the direction of the action of the normal force in the gear; - reduction of slip friction losses by ensuring micro-displacements in the direction of the action of the friction force.

Advantages: ✓ noise and vibration reduction, ✓ reduction of power loss at sliding friction in the gear.

Stage: Computerized model.

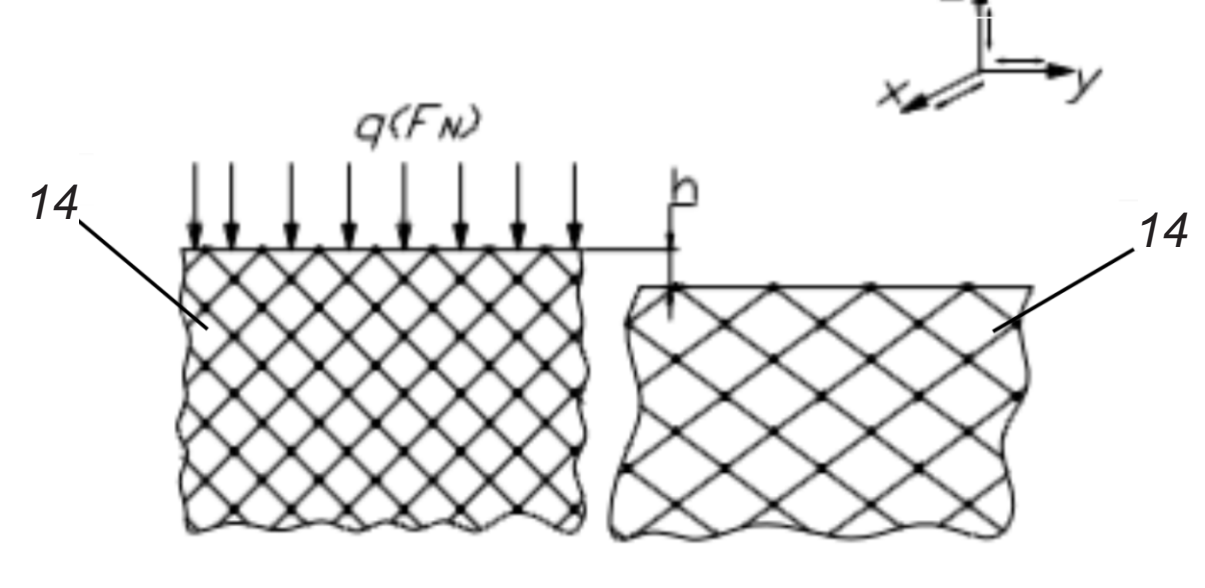
Overview of precessional planetary transmission

Elements covered with a thin layer of plastic

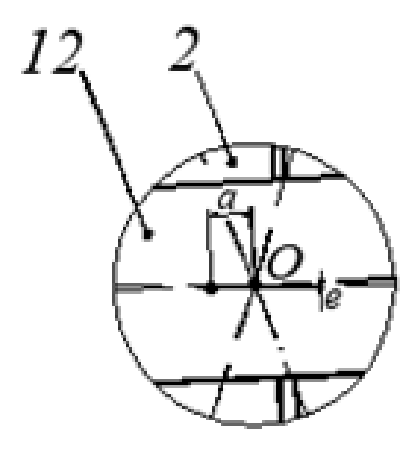
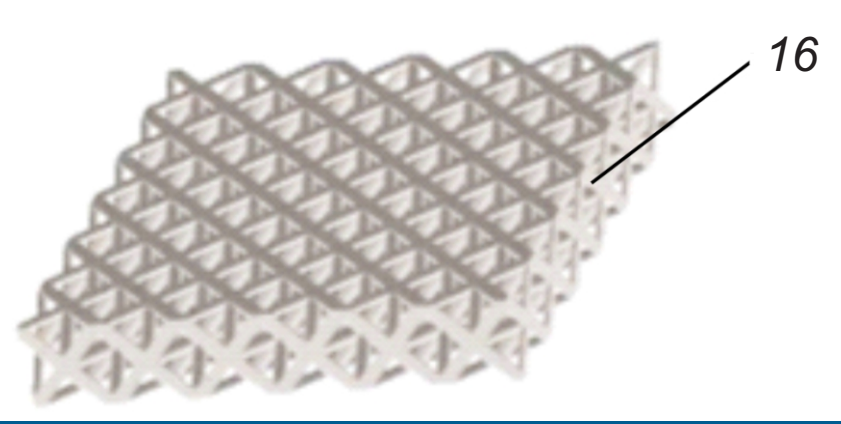


Tooth with plastic layer applied

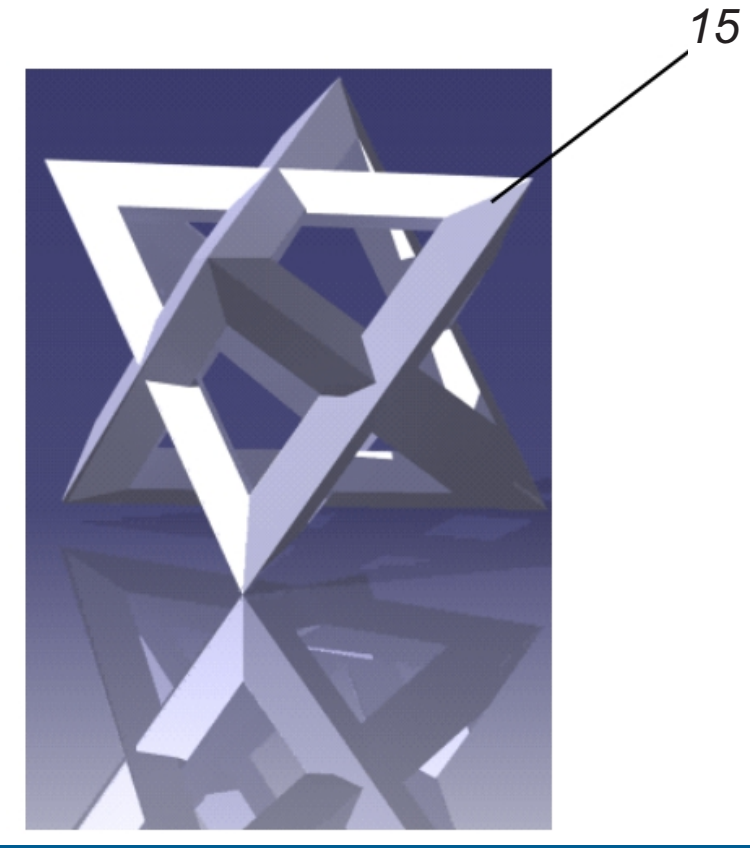
Elastic deformation of the material layer with the value h



Network of rhombohedral cell units



Rhombohedral cell unit



The precessional planetary transmission includes the housing (1), in which the satellite block (2) with the conical roller crowns (3) and (4), the fixed central gears (5), rigidly connected to the gearbox cover (6), and the furniture are located. (7) rigidly connected to the driven shaft (8). The satellite block (2) is installed on the bearings (9) on the inclined sector (10) of the crankshaft (11). The precession center O (10) is the point of intersection of the axes of the conical roller generators (3) and (4) with the axes of the crankshaft (11) and the inclined sector (12), on which the satellite block (2) is installed on the bearings (9). Due to execution and assembly errors, the precession center O can be moved with the value a , which generates the eccentricity e . A thin layer of plastic (14) is applied to the surface of the teeth (13) of the central gears 5 and 7 (14), with shock-initiating properties, consisting of rhombohedral cell units (15) in rhombohedral structures (16), located with the possibility of microdeplacement in the three XYZ directions.