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The invention relates to mechanical engineering, in particular to additive technologies for the manufacture of gearwheels of planetary precessional transmissions.

The processes for manufacturing a gearwheel by the additive method comprise the preliminary manufacturing of a gearwheel (1) of polymeric material or metal powders by means of one or more additive heads (12). Then, on the formed surfaces of the gearwheel (1) teeth is applied a surface layer of polymeric additive material or metal powders with the addition of a solid lubricant.

The device for manufacturing a gearwheel by additive method comprises a gearwheel (1), fixed on an upper disk (2), installed on a support (3) and connected to the shaft of an electric motor (4). The support (3) is installed by means of an intermediate disc (5) and a spherical body (6) on the inclined surface (7) of a lower disc (8), placed on a platform (9) and connected to the shaft of an electric motor (10). On the rack (11) of the platform (9) is installed with the possibility of linear movements in vertical and horizontal planes an additive head (12). The operation of the electric motors (4 and 10) and the performance of linear movements of the additive head (12) are carried out using a computerized control module (13).

The material for the surface layer of the teeth is deposited through the nozzle of the additive head (12), which executes a sphero-spatial (precessional) motion with geometrical-kinematic parameters, provided by the said device, and a translational motion to the center of the gearwheel (1) or vertically, the motions being controlled by the module (13), finally forming a surface layer.

Claims: 10
Fig.: 13