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(54) Title: TWO-STAGE SPEED INCREASER ARRANGEMENT, AND GEAR TRAIN FOR A CLOCKWORK

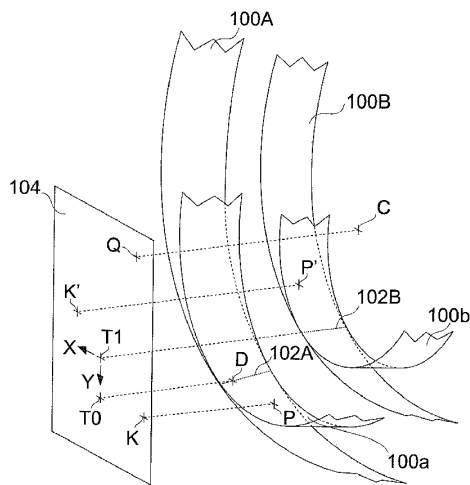


Fig. 1

(57) Abstract: The invention is a two-stage speed increaser arrangement comprising force transmission members having a first, second, third and fourth pitch surface (100A, 100B, 100a, 100b), wherein the first pitch surface (100A) and the third pitch surface (100a) having a common first line segment (102A) and the second pitch surface (100B) and wherein the fourth pitch surface (100b) having a common second line segment (102B). The two-stage speed increaser arrangement is characterised in that considering as an origin (T1), of an orthogonal coordinate system in a plane (104) perpendicular to the second line segment (102B), a projection of the second line segment (102B) to the plane (104), and considering that the Y axis of the coordinate system is pointing in the direction of a projection point (T0) of a point (D) of the first line segment (102A) to the plane (104), the following Formula 1 is satisfied at all times for the arrangement, in a coordinate system defined for each point (D) of the first line segment (102A): $x((y' + d)x - x'y)(x^2 + y^2 - dy) + d^2xy \geq 0$, Formula 1 wherein d is the distance of the projection point (T0) from the origin (T1), x and y are the coordinates of a projection point (K), as projected to the plane (104), of an arbitrary tooth contact point (P) within any tooth contact region of the first pitch surface (100A) and the third pitch surface (100a), and x' and y' are the coordinates of the projection point (K'), as projected to the plane (104), of an arbitrary tooth contact point (P') situated along any tooth contact region of the second pitch surface (100B) and the fourth pitch surface (100b). The invention is furthermore a gear train satisfying the above formula.

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WO 2020/201783 A1

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