

## SUMMARY

Fedchyshyn Ruslan Lyubomyrovych. Diploma thesis: „Study of computer model for a worm gear turred of 16K20T1 type lathe”.

Object of study in diploma work is a strained state of intermediate worm shaft of a worm gear and its mass-geometrical parameters.

Project's goals: study of a strained state of intermediate worm shaft of a worm gear and its mass-geometrical parameters.

To accomplish the task a technological analysis of shaft as a standard part has been carried out. Analysis of moulding pattern as well as designed lathe composition scheme has been performed to allow their subsequent realization on the designed machine tools. Theoretical basis has been analyzed and patent search of capstan head designs has been done. New design of a two-stage worm capstan head has been proposed. A complex of design calculations and engineering works concerning the two-stage worm turn drive of the capstan head has been performed. On a basis of SolidWorks programming platform the solid models of capstan head have been developed. The designed elements are composed into an assembly unit. A strained state of two-stage capstan head intermediate shaft has been investigated. An expediency of composite materials application for moulding of the proposed two-stage worm capstan head shafts has been proven.

Industrial safety, environmental defence and safety in emergency situations issues have been considered.

A performed complex of economic calculations has proven that the annual revenue of 228800 UAH can be obtained.

Keywords: analytical methods; methods of computer-aided solid body modelling; finite elements method, worm gear turret, lathe.