SUMMARY

The development of tilting gear mechanism was done in accordance reliability criteria like wear and lubrication. Both factors were influenced positively by a change in design and adding an extra block between key and groove, which reduce the wear and help in lubrication. The introduction of the key in a normal gear also decreases its factor of safety, but not up to a level of failure. The factor of safety can be positively changed by increasing the diameter of the key, which should not be more than the gear width.

Manufacturing of tilting gear mechanism is a complicated process as one of the parts, either gear or ball has to be split into two or more pieces. The concept is patentable in accordance with European Patent Convection substantial patent law. The tilting gear mechanism can be used to reduce the vibration transfer in gear systems and where changes in gear shaft changes in comparison to each other.

In future, work should be done to increase the strength of the mechanism and to simulate the mechanism in a computer-aided program for various factors like stress, forces, motion etc. One factor to increase strength is increasing number of keys in the system, and it can be done only after analyzing their motion path and every step of rotation. This could be done after a complex kinematic simulation of the gear and changing the groove design according to results.