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SUBJECT:- MEASUREMENTS LAB

3D – Printing **Geneva Drive**

Aim:- To design a 3D model in Autodesk fusion and print it using 3D printer.

Theory:- The Geneva drive or Maltese cross is a gear mechanism that translates a continuous rotation movement into intermittent rotary motion.

The rotating drive wheel is usually equipped with a pin that reaches into a slot located in the other wheel (driven wheel) that advances it by one step at a time.

The main wheel also has an elevated circular blocking disc that "locks" the rotating driven wheel in position between steps.

Motivation:- To understand the gear mechanism, specifically about how the continuous rotation movement is translated into intermittent rotary motion.

Fusion Model of Geneva Drive:-

Dimensions:-

1. Geneva wheel:- diameter = 6.094 cm, slit width = 0.77216 cm.
2. CAM:- diameter = 3.5052cm.
3. Shaft:- diameter = 0.762cm, height = 3.556cm.
4. Base:- Length = 5.0292cm, radius of semi circles = 0.7112cm.



Fig:1 – 3D view of the model.

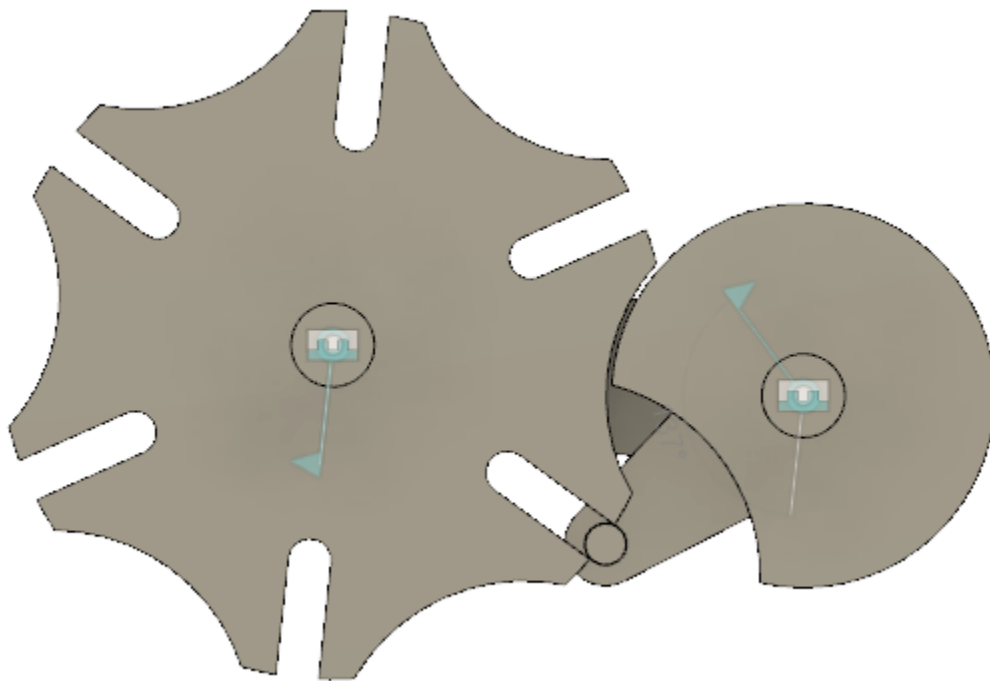


Fig:2 – Top view of the model.



Fig:3 – Front view of the model.



Fig:4 – Side view of the model.

Images of 3D Printed Model:-

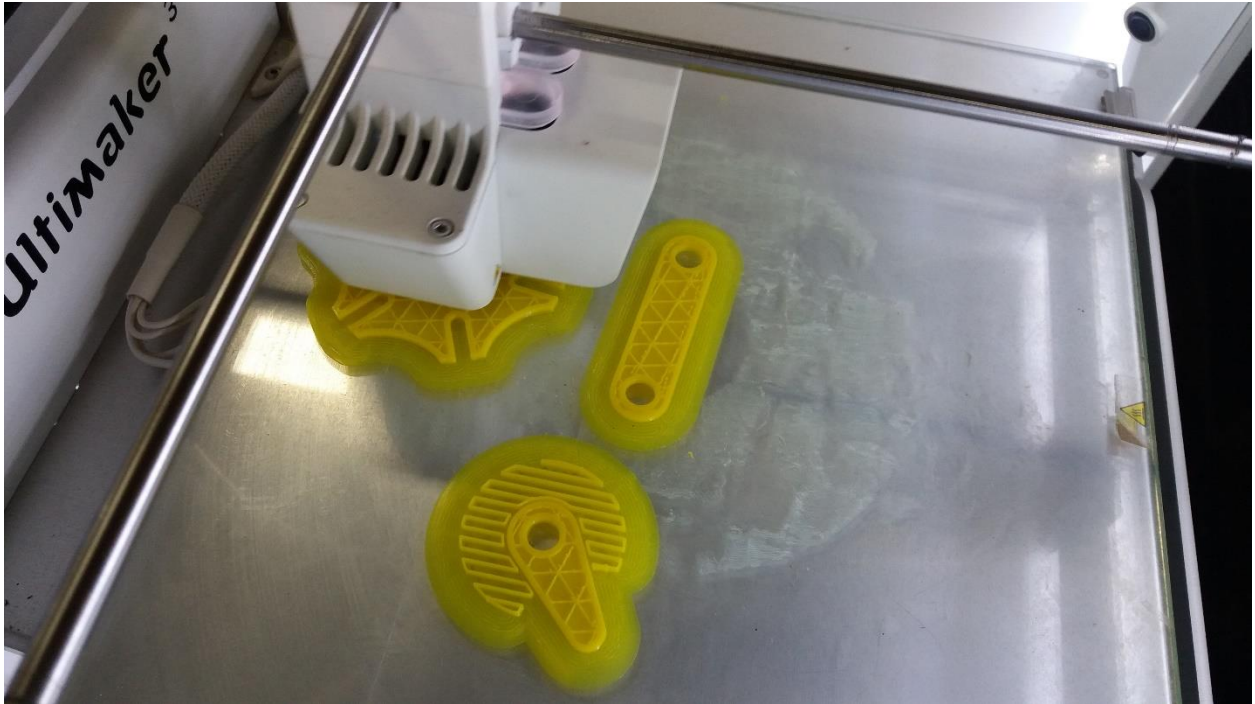


Fig:5 – 3D Printing by the printer (Ultimaker 3)



Fig:6 – 3D Printed Model



Fig:7 – Components of 3D Printed Model.



Fig:8 – Assembled model of 3D Printed Geneva Drive.

For the video of the working of the Geneva Drive [click here.](#)