**Geneva Mechanism Operated Conveyor Belt**

**ABSTRACT**

Geneva mechanism is a system to convert continuous circular motion into fixed step circular motion. Fixed step circular motion in other words means a circular motion produced in equal spaces of time and resulting in the same displacement which is a requirement in many automation industries. A conveyer belt is simply a linear belt mostly made up of rubber (of greater stability). It has a basic function of transporting raw material/ material in process of manufacturing. A simple Geneva mechanism consists of a drive wheel and a driven wheel. The drive wheel is a disk with a pin or a shaft near it’s circumference. The driven wheel consists of several slots. The drive wheel is kept next to the driven wheel in such a way that when the drive wheel is rotated, the pin or shaft fits inside the slot. As it reaches the bottom most point of the slot, the pin exerts a force on the driven wheel. As the driven wheel is pivoted from the centre, there will be a generation of a moment. This causes the generation of a torque which rotates the driven wheel. Hence there is a fixed step circular motion. There are several types of Geneva rotator such as external Geneva rotator, internal Geneva rotator and spherical Geneva rotator. Geneva mechanism is one of the most simple and inexpensive mechanisms. The mechanism used for conveyer belt is an external Geneva mechanism. This mechanism gives out production of jerks or instantaneous change in acceleration. The mechanism has various applications in many industries especially the automation/automobile industry. Modern day film projectors use a variation of this mechanism to power a motor which is used for fast forwarding. In short the Geneva mechanism converts continuous rotatory motion of the drive wheel to intermittent rotatory motion of the gear. A cheap, convenient and a simple mechanism with a variety of applications.

Keywords: Conservation of Energy, Speed Control.