**Quadra hack saw: circular motion to linear motion four side Quadra hack saw**

**Abstract**

In this project work and effort has been made to develop a modernized four way hacksaw machine and less stress full operation for cutting wood, metal and plastic materials. The aim of this work is to develop a hacksaw machine that will use a less effort to produce uniform cutting of PVC pipes ,metals ,wood. It is also done to show the performance difference between hand driven, pedal drive and four way hacksaw machine. This model implies a conversion of rotary motion of crank to reciprocating motion of hacksaw blades, which is done by using Scotch circular to linear Mechanism. This motion is used for hacksaw machine, in this model we can operate four hacksaws at same time. This model will overcome the traditional hacksaw machine which done material cutting of single piece at particular times interval and also fulfills the need of more material cutting accounts to mass production . This machine works significantly with minimum vibrations and jerks. This machine will also done cutting of different materials, hence the purposed model of hacksaw machines will be welcomed by many industries due to compactness and efficiency. In this project DC power Operation convert Energy Input given by Operator to Circular motion of the wheel. DC powering also useful as an exercise. DC power is converted into mechanical work. This Circular motion of the DC power crank is converted into reciprocating or sometime oscillatory motion to drive Hacksaw blade. Generally Hacksaw is operated by manually, hydraulically, electrically motor or pulley commonly used in industries and workshop.