DESIGN AND FABRICATION OF HEAVY JACK USING DOUBLE PARALLELOGRAM MECHANISM

ABSTRACT:

Double parallelogram mechanism is based on the fact that both two parallel linkages or bars or links which are in parallel to each other acts in same direction or movement with respect to one another.

In this project the operation involved is that, raise or lower the table by turning the screw that has right hand and left hand threads with the same pitch.

INTRODUCTION:

In existing model, we have several mechanisms like four bar linkages which is also four bar, is the simplest movable closed chain linkage. It consists of four bodies, called bars or links, connected in a loop by four joints. Generally, the joints are configured so the links move in parallel planes, and the assembly is called a planar four-bar linkage.

If the linkage has four hinged joints with axes angled to intersect in a single point, then the links move on concentric spheres and the assembly is called a spherical four-bar linkage. Bennett’s linkage is a spatial four-bar linkage with hinged joints that have their axes angled in a particular way that makes the system movable.

WORKING PRINCIPLE:

Double parallelogram mechanism is working on the principle of raising or lowering the table with the use of two sides thread screw which helps to elevate the table faster than other lifting mechanisms.

Due to the parallel motion of the two side linkages it can even lifts heavy objects in short time.
LAYOUT:
2d layout:

3d layout:
ADVANTAGE:

- This able to more weight lifting possible.
- Less time is take a weight lifting condition.
- Low cost amount in used for fabricate model.
- Less manual power.

APPLICATION:

- Light and heavy weight lifting it is possible,
- Four wheeler lifting.