DESIGN AND FABRICATION OF AUTOMATIC BAR BENDING MACHINE

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Introduction:
This project is to bend the rod at the specified dimensions which is used in the building construction which called as Stirrups. Stirrup is an important reinforced element which acts as a shear reinforcement. Presently, stirrups are made manually, which suffers from many drawbacks like lack of accuracy, low productivity and resulting into severe fatigue in the operator. In manual stirrup making process, operators not only subjecting their hands to hours of repetitive motion, but in many occasions it results into several musculoskeletal disorders (MSDs).

My project is to design and construct a bending machine. This machine is used to bend steel in to curve or other curvature shape. The size of the machine is very convenient for portable work. It is fully made by steel. More over it is easy to be carried and used at any time and any place.

In various fabrication works as well as in architectural work bars are used in artistic ways. To bend these bars in to these artistic forms is not easy thing to be done manually. Using a particular machine specially developed for bending of bars helps.

The project is designed based on the principle of Mechanical system. The Mechanical load has more power compare to the other type of loads like pneumatic and electric. By using heavy loads we can increase the productivity of the product. The manual stirrup making process suffers from the many drawbacks. The construction worker not only subject their hands to hours of repetitive motion but also sometimes suffers internal injury to his body organ i.e. disorder carpal tunnel syndrome CTS, slipped disc problem etc.

Objectives:
1) Will produce engineering designs that are based on sound principles and to make a complete mechanical device with fully automation.
2) To make a device which is suitable economical for small Scale industries: taking in to consideration the cost factor this device is suitable for small scale as well as big scale industries.
3) To build a device which can bend, cut, shape etc without applying greater force.
4) Optimal solution for real life problems with low cost and less human effort.
Methodology:

- Study on related research paper
- Analysis of research paper
- Industry survey
- Planning for future work
- Design and Drafting of model
- Manufacturing
- Assembly
- Testing
- Submit

BLOCK DIAGRAM:
Conclusion:

- It will be possible to produce large number of shearing ring of consistent size at faster rate with economic advantage.
- In this project it is possible to produce any desired shape of design required
- Publication of the technical paper.

Scope for Future work:

In order to define the scope of a project, it is necessary to first establish the project objectives. The objective of a project may be to produce a new product, create a new service to provide within the organization. Automatic bar bending machine is less costly comparing to hydraulic and pneumatic machines bar bending machines are more accurate than manual pipe bending machine so that Small industries as well as big manufacturer of various pipes. Bent bar used as a structural member in vehicles and also used as a passageways in condenser, evaporator, water & gas line, drainage lines etc In nowadays, this type of automatic bar bending machine is used in many different industries like automobile, aerospace, power plants and all mfg.