Case study on Magnetic material handling system at KEC international Ltd

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Abstract **- Mechanical fork lift is an improved and advance technology that helps brought about revolution in the mechanical industries today all heavy engineering company uses it. Widespread use of the forklift truck had revolutionized warehousing practices before the middle of the 20th century. A mixture of material handling systems is in the use, exact from that entirely physical to the ones that are semi-automatic but manually controlled. Forklifts have revolutionized warehouse work. They made it possible for one person to move thousands of pounds at once. Well-maintained and safely operated forklifts make lifting and transporting cargo infinitely easier. This is the general description of a normal forklift truck. To enhances the technology further, this prototype module is constructed with remote technology, there by the operator can walk along with the forklift for better visibility & the container can be placed accurately (precision position). This increases the safety of the operator. Keywords: Base (Chassis), Remote Controlled System, Rack and pinion, AC motor.**

INTRODUCTION

Let's of industrial area have automated full phase machine like CNC (computeised numerical control) and future is fully dependent on automation which means there is highest speed production or output system comes around us after some times.

If there is speed into a machine which means that's their causes of accident or injure to human being whose are working into that machining area specially at conveyor system.

So, to over comes this problem, we have studied into most of industries like production plant, batch area where material handling is so difficult to human being so to resolve this problem we have created magnetic material handling system which we will is used into the most industrial area

LITERATURE SURVEY

1.Modular Rollar Convayer

Author by: W.Scott Kalm, Date:03-july-2001

A modular power roller conveyor is described having a conveyor Section for transporting a product unit. The conveyor Section comprises a number of active Zones, containing means for sensing the entry of a product unit into the active Zone. A programmable controller generates activation Signals to a drive roller in response to the means for Sensing. A plurality of carrier rollers is Slaved to the drive roller within the active Zone Such that activation of the drive roller actuates all of the carrier rollers to drive the p product unit through the active Zone and into the next active Zone. The programmable controller also generates a deactuation Signal to deactivate the active Zone as a p product unit exits the Zone.

Fig 1.1 Modular Roller conveyor

2.Convayer Motar Dr ive Unit and Convayer System

Author by: William R.Hartness, Date:19 Sep 2000

A conveyor drive unit is provided for engaging and driving a belt type conveyor. The unit includes a motor drive unit and drive chain assembly having a drive

chain driven by the motor along a drive path. The drive chain has drive lugs configured thereon to engage with drive dogs on the conveyor as the drive chain is driven along the drive path. The drive path defines the drive angle with respect to a Straight path of the conveyor along the drive path. An adjustable positioning device is disposed relative to the drive chain assembly Such that upon variable positioning of the drive chain assembly, the drive angle defined between the drive path of the chain and the Straight path of the conveyor along the drive path varies. In this manner, the degree of engage ment of the drive lugs with the drive dogs of the conveyor along the drive path can be adjusted by varying the drive angle.

3. Tilter Unit System

Auther by:-Atchison san Diegan, Datev:-17 july 2004

Tilter are primarily design for tilting of raw material comes out fuel table. It may visualize other uses for these drives will not be held responsible for personal injury or properly damage due to misuse or neglect of this equipment.

Fig 1.2 Tilter Unit system

4.Crane

Auther by: Nevi.T.Crane, Date:15 dec 1998

A crane is a type of machine, generally equipped with a hoist rope, wire ropes or chains, and sheaves, that can be used both to lift and lower materials and to move them horizontally. It is mainly used for lifting heavy things and transporting.

5. Magnetic Rop Handelling

Auther by:Donzu yardize, Date :- 27 April 2014

The electromagnetic poles are gives moment with the help of rope drive system,where the motor used in attach to the system control the laod carrying of the system. As a motor rotat, is carry laod on it with the help of electromagnetic lifter and also gives the movement to shift from one place to another place.

Fig 1.4 Magnetic Rop Handelling

METHODOLOGY

1 Finding Problem: Road accident on railway gate is the problem which affects many hhuman lives around the world this is a major issue and it is a question of death or life for those persons who die on railway gate.

3.1.2 Collecting research paper: Collecting research paper from the internet on the fabrication of Pneumatic railway gate control system. Collecting research paper on sensor operated pneumatic railway gate open & close control system collecting research paper on pneumatic based railway gate control system.

3.1.3 Project proposal: Making a project proposal for the selection of project and experiencing our ideas with project in charge and getting suggestion and implementing that suggestion and submitting the project proposal to the project in charge.

3.1.4 Selecting area of work: After project finalization we have to decide and area of work for fabrication of pneumatic railway gate control with respect to the residence of group members as the suitable area of work is our group member house college workshop and other workshop for fabricating the electromagnetic poles are gives moment with the help of rope drive system, where the motor used in attach to the system control the laod carrying of the system. As a motor rotat, is carry laod on it with the help of

electromagnetic lifter and also gives the movement to shift from one place to another place.
some complex components.

3.1.5 Making CAD model and animation of machine: Making and CAD model of machine for clearing all the concepts related to the machine. Making the animation of machine for explaining the working of machine.

3.1.6 Finding resources: Resources should be fined for fabrication of machine it requires some pre-fabricated parts which are readily available in market also the complex parts such as telescopic rod and Archimedes screw should be fabricated from various workshops finding the materials and work piece for fabricating those parts.

3.1.7 Collecting different components: After fabrication and purchase of all the components all the components should be collected from various locations at the workplace.

3.1.8 Assembly: Assemble all the components of our model according to their proper position and check they are work proper or not.

3.1.9 Trial on project: Take a trial on project and find out some parameters such as

1. Time required for gate open & close.
2. Check the sensor sensing power.

WORKING

Magnetic holder pick-up the finished product on the outfeed conveyor with the help of magnetic force. Movement taken into the magnetic handling system and the deactivating the magnetic force, material is place into the outfeed table.

CONCLUSION

From all survey done on material handling system, magnetic material handling is the best system for it. Due to magnetic handling with some specific movement mechanism provided there it gets easy to handle material. We can lift material through this system upto one tonnes weight (specific weight limit) Electro-Magnetic system with control panel get easy to operates.

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