

DEVELOPMENT OF SOLAR POWER OPERATED RIDDLE MACHINE

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Abstract:

A demonstration of design and fabrication of solar based sand sieving system is done. As sand is used in construction, manufacturing and many industrial purposes, it needs to be filtered and separated from unneeded particles, stones and other large particles before put to use. This system puts forward a fully automated sand filtering and separator that automatically filters the sand poured on it. For this a motorized shaft is mounted horizontally on the mounts. The shaft is connected to a filter frame with a mesh below and enclosed frame on sides which operates the motor when switched on.

Keywords: Production , reduce , power , peeling & Shelling .

INTRODUCTION

Sieving machine serves is to remove large grams with a small grain through a sieve. Separation occurs when the sand is placed on top of a filter having holes size. The first sieving is done to get rid of the sand with a larger than standard withholding sand filter and the second sieving is done to get rid of the sand with a size too small means that the sand filter is ignored A steve is a device for separating wanted elements from unwanted material or for characterizing the particle size distribution of a sample, typically using a woven screen such as a mesh or net or metal. Sand substance is one of the most important thing in industrial world. Nowadays the industry need the sand sub stand that are already been process known as sand product. As we know the sand sub stand are mixture with variety other component such as dirt and metal. As we know the way sand is been collected still used the conversional way such as sieving using hand or machine. And human energy is needed to run the process. So to make the process more efficient new technology is needed to help increase the productivity so the human power can be reduce and also can cut the cost of the process. Sand is used in construction, manufacturing and many industries Sand needs to be filtered and separated from unneeded particles, stones and other large particles before it is put to use. Our system puts forward a fully automated sand filtering and separator system that automatically filters sand poured on it. Here we use a motorized shaft that is mounted horizontally using mounts. The shaft is connected to a filter frame with mesh below and enclosing frame on the sides. We now have a rod connected from the shaft to the filter frame in a way such as to achieve the best horizontal motion. Also we have a frame to hold the filter frame in place while ensuring proper horizontal motion at the same time. On switching on the motor using our motor controller circuit, the system allows to operate the motor. This allows us to operate the sand filter motion for appropriate sand filtering needs. The problem of size of sand in the market available need to spend more money if we want the sand in specific size or category it will

increase the budget and time to wait the supplier preparing the goods

- Now day's people always prefer the most suitable way to cut their cost and time. Example in a construction where they have to finish the work before the due date His might be problems. Since we have waiting long waiting for the good to arrive
- However, sometime in big company there are high tech machine that can do this work sieving any sub stand or mixture. But sometime in construction required a special sieve machine that is comfortable and easy o use
- Traditional method give low efficiency as it is operated manually but the automated sand sieving machines have higher efficiency.
- Traditional method requires more labour.
- Traditional method is more time consumed during the process of preparing the concrete.
- The cost of highly sophisticated machine is very high which is not affordable for small scale foundries and low level contractors.
- Modern machineries require high skill to operate

Objective of the project:

- 1.To understand the basic principal of the our project
- 2.Describe the construction and working of various parts of our project
- 3.Development of the working model of the our project
- 4.To reduce time spent on this activity.
5. To analyze the technology according to needs and capabilities

METHODOLOGY

The Horizontal sieving machine is very easy to construct and can be operated easily. It is very economic among this kind of machines. This project is fabricated with the help of parts like a motor, crank and slider link mechanism, bearing, caster wheels, sieving box. The horizontal sieving machine is worked on the basis of crank and slider mechanism. Here crank is attached to the sieve box the power is given by motor through pulley belt arrangement. The rail track is attached at the base in which the sieving box moves in it. The sieving box fixed with the crank shaft in order to move when the crank shaft is reciprocated. The sieving box is placed inside the rail track and the machine is started. When the sieving box moves in the reciprocating motion the sieving process is performed.

Design and design consideration of the project

Project design may be defined as the iterative decision-making activity to create a plan or plans by which the available resources are converted, preferably optimally, into systems, processes or devices to perform the desired functions and to meet human needs. In fact project design has been defined in many ways but the simplest ways to define project design as "An iterative decision-making process to conceive and implement optimum systems to solve society's problems and needs."

Project design is practical in nature and must be concerned with physical reliability, or economic and financial feasibility Design is essentially a decision- making process. If we have a problem, we need to design a solution. In other words, to design is to formulate a plan to satisfy a particular need and to

create something with a physical reality.

Manufacturing process of the project

Manufacturing is the backbone of any industrialized nation. Manufacturing and technical staff in industry must know the various manufacturing processes, materials being processed, tools and equipment's for manufacturing different components of products with optimal process plan using proper precautions and specified safety rules to avoid accidents. Besides above, all kinds of the future engineers must know the basic requirements of workshop activities in terms of man, machine, material, methods, money and other infrastructure facilities needed to be positioned properly for optimal shop layouts or plant layout and other support services effectively adjusted or located in the industry or plant within a well-planned manufacturing organization.

The complete understanding of basic manufacturing processes and workshop technology is highly difficult for anyone to claim expertise over it. The study deals with several aspects of workshop practices also for imparting the basic working knowledge of the different engineering materials, tools, equipment's, manufacturing processes, basic concepts of electro-mechanical controls of machine tools, production criteria's, characteristics and uses of various testing instruments and measuring or inspecting devices for checking components or products manufactured in various manufacturing shops in an industrial environment. It also describes and demonstrates the use of different hand tools (measuring, marking, holding and supporting tools, cutting etc.), equipment's, machinery and various methods of manufacturing that facilitate shaping or forming the different existing raw materials into suitable usable forms. It deals with the study of industrial environment which involves the practical knowledge in the area of ferrous and nonferrous materials, their properties and uses. It should provide the knowledge of basic workshop processes namely bench work and fitting, sheet metal, carpentry, pattern making, mould making, foundry, smithy, forging, metal working and heat treatment, welding, fastening, machine shop, surface finishing and coatings, assembling inspection and quality control. It emphasizes on basic knowledge regarding composition, properties and uses of different raw materials various production processes, replacement of or improvement over a large number of old processes, new and compact designs, better accuracy in dimensions, quicker methods of production, better surface finishes, more alternatives to the existing materials and tooling systems, automatic and numerical control systems, higher mechanization and greater output.

Manufacturing is derived from the Latin word manufactures, means made by hand. In modern context it involves making products from raw material by using various processes, by making use of hand tools, machinery or even computers. It is therefore a study of the processes required to make parts and to assemble them in machines. Process Engineering, in its application to engineering industries, shows how the different problems related to development of various machines may be solved by a study of physical, chemical and other laws governing the manufacturing process. The study of manufacturing reveals those parameters which can be most efficiently being influenced to increase production and raise its accuracy.

Advantages, Disadvantages and Application of the project

Advantages of the project

Advantages of the project per following like as:

- Simple to construct
- Automatic Filtering
- Easy maintenance
- Fast Filtering
- Human safe
- Easy to Dispose of Unneeded Objects

Disadvantages of the project

Disadvantages of the project as per following like as:

- Production rate is low

Application of the project

Our project should use for following various applications like as:

- Very simple to operate
- It is applicable on all construction sides
- Applicable in dal mill machines

Future Scope

The project has covered almost all the requirements. Further requirements and improvements can easily be done since the as per requirements is mainly structured or modular in nature. Improvements can be appended by changing the existing modules

Conclusion

The solar traveller is easily accessible, safe and practical with limited requirements because of few mechanical parts. It is ideal not only for the maintenance experienced cyclists but also for those non athletes, the elderly and individuals with health problems. This is the best source to replace the fuel which is exhausting day by day becoming more costly

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