

Gold Mining Vehicle With Motorized Gold Separator

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Abstract- In this project, we have developed a gold sorter with an electric seed separator. The operation of the gold separator is performed using the AC motor and cam mechanism, and the gold separator bowls with different diameters of the assembly. Each tray has several different hole diameters, depending on the diameter of the gold.

I. INTRODUCTION

The machine is very useful to separate the gold very accurately. The advantage of the machine is that it is Portable and low-cost machine.

Need for Automation:

Automation can be achieved through computers, hydraulics, pneumatics, robotics, etc., of these source pneumatics forms an attractive medium for low cost automation. The main advantages of all pneumatic systems are economy and simplicity. Automation plays an important role in mass production.

Currently, almost the entire manufacturing process is atomized in order to deliver the product faster. The manufacturing process is atomized for the following reasons:

- To realize mass production
- Reduction of personnel
- Improvement of plant efficiency
- Reduction of workload
- Reduce production costs
- To reduce production time
- Reduction of material handling
- Reduction of worker fatigue
- To achieve excellent product quality
- Less maintenance

II. LITRATURE SURVEY

Electric Motor History and Development

The precept of conversion of electrical strength into mechanical strength with the aid of using electromagnetic manner changed into validated with the aid of using the

British scientist Michael Faraday in 1821 and consisted of a free-striking twine dipping right in to a pool of mercury. A everlasting magnet changed into located with inside the center of the pool of mercury. When a modern changed into exceeded via the twine, the twine circled across the magnet, displaying that the modern gave upward thrust to a round magnetic subject across the twine. This motor is regularly validated in college physics classes, however brine (saltwater) is once in a while utilized in vicinity of the poisonous mercury. This is the handiest shape of a category of electrical vehicles referred to as homopolar vehicles. A later refinement is the Barlow's Wheel. These have been demonstration gadgets, unsuited to realistic packages because of restrained power.

In 1827, Hungarian Ányos Jedlik began out experimenting with electromagnetic rotating gadgets he referred to as "electromagnetic self-rotors". He used them for instructive functions in universities, and in 1828 validated the primary tool which contained the 3 foremost additives of realistic direct modern vehicles: the stator, rotor and commutator. Again, the tool had no realistic application.

III. DESCRIPTION AND EQUIPMENT

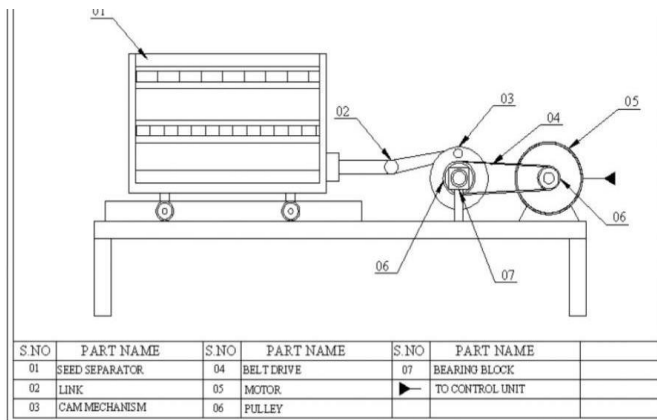
CAMSHAFT:

The use of cam son cam shafts was first introduced in 1206 by Iraqi inventor Al-Jazari. Al-Jazari used cams in automata, water clocks, and landers. Cams and cam shafts have appeared in European mechanics since the 14th century. The cam is the protruding part of a rotating wheel or shaft that contacts the lever at one or more points on the track. The cam can be the kind of simple tooth used to supply a power pulse. A shape such as an eccentric disk that creates a smooth reciprocating (front-back) movement in the follower, which is a lever that comes into contact with the cam. Since the hole is not in the middle, the bottom of the cam acts as a lever and the cam moves instead of rotating. The cam is the protruding part of the rotating wheel or shaft that contacts the lever at one or more points on its circular path. The cam is a simple tooth such as used to provide a power impulse to a steam hammer, or an eccentric disc or other shape that creates a smooth reciprocating motion (back and forth) for the driver and can create leverage. Contact with the camera. The reason the cam

acts as a lever is that the cam does not only rotate but also moves because the hole is not in the middle. Some cams, on the other hand, have a hole in the middle and the sides act as cams that move the touching lever up or down or back and forth.

WORKING PRINCIPLE

In this project, we designed a gold separator. Separate the gold in various bowls using the cam method. The operation of the gold separator is performed by the AC motor and cam mechanism and the gold separator tray assembly. Gold can be placed on top of the first bowl, so you can collect other gold in another bowl while the engine is running. Each tray has holes of different diameters. The tray is connected to a connecting rod that leads to the cam. A cam is a device that gives reciprocating motion to a connecting rod. The cam is connected to the pulley. The pulley is driven by the engine. Power from the motor to the pulley is transmitted by the belt configuration as shown in the figure. And the gold is separated by another arrangement. Therefore, as the wave moves back and forth, so does the shell. Due to the multiple holes in the bowl, the gold is separated and collected in the appropriate bowl. The maximum size is collected in the first bowl and the minimum size is collected in the last bowl.



Drawing for Motorized Gold Separator

IV. CONCLUSION

The project we embarked on set an impressive challenge in the field of gold conversion. It is very convenient for workers to perform a series of operations on one machine.

This project also reduced costs associated with the company. The project is designed to meet all of the required tasks provided.

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