Design & Details of Solar Power Lift

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Abstract- *We have visited many industries and we have seen that the use of electricity is more. So we have decided to decrease the electricity consumption. After discussion we think that to reduce the electricity consumption. We will apply electricity by use of solar power. So we can decrease the electricity consumption. By the use of solar power lift we can transfer heavy loads in industries. In this project we will also calculate maximum and minimum capacity of lift by using solar power. We can also use it in building instead of electric lift. By this project the consumption and electric bill can be reduced. In this project the Initial cost of solar power lift is more but it is very useful increase the profit of the product. In our project the working of lift is done by solar power instead of electricity. By this project we can also reduce the man power and labor power.*

Keywords- 1) verticle column, 2) base, 3) platform, 4)guide, 5) dc motor, 6) solar panel,7) driving motor 8) lead screw, 9) nut, 10) inverter,

I. INTRODUCTION

HISTORY OF SOLAR ENERGY

People have harnessed solar energy for centuries. As early as the 7th century B.C., people used simple magnifying glasses to concentrate the light of the sun into beams so hot they could cause wood to catch fire. In the 1860s in France, a scientist named Auguste Mouchout used heat from a solar collector to make steam to drive a steam engine. Around the same time in the United States, John Ericsson developed the first realistic application of solar energy using a solar reflector to drive an engine in a steam boiler. With coal becoming widely used, neither of these inventions became part of the mainstream.

Early in the 1900s, scientists and engineers began seriously researching ways to use solar energy. The solar water heater gained popularity during this time in Florida, California, and the Southwest. The industry was in full swing just before World War II. This growth lasted until the mid-1950s, when low-cost, natural gas became the primary fuel for heating homes **and** water, and solar heating lost popularity.

The public and world governments remained largely indifferent to the possibilities of solar energy until the energy crises of the 1970s. Research efforts in the U.S. and around the world since that time have resulted in tremendous improvements in solar technologies for heating water and buildings and making electricity.

II. WORKING OF SOLAR POWER LIFT

In the working of the solar power lift, first of all the base is made by the cast iron and which supports the solar panel, pulley, driving motor, guide ways support beam etc. With the help of the solar panel, the energy is stored in the battery cell and it converts the solar energy into the electrical energy. Than the with help of electrical power the driving motor starts working and due to that the lead screw also starts working and which gives up and down motion to the platform. By this way we can lift the load up to certain height. The electric current is used is mainly ac. power.

III. PROTOTYPE MODEL

IV. MAIN COMPONENTS PROJECT

(A).Vertical Column:

It is the main casting mounted vertically on one side of the base. It also support for other parts of the elevator such

as platform, driving motor, solar panel, pulley etc. The overhanging arm is clamped at the top of the column.

(B).Base:

The base is the foundation member of all elevator parts. It is generally made of gray cast iron to absorb shock and vibration.

(C).Platform:

The platform is generally made of cast iron. The cast iron can be withstood with the jerks and it can carry more and more load.

(D).Guide Ways:

The main function of the guide ways to guide the platform in up & down movement of the platform. It is also made up of cast iron.

(E).Solar panel:

The solar panel is mainly kept behind the guide ways as shown in the figure. The solar panel stores the solar power and gives it to driving motor to do work by different medium.

(F).Driving motor:

The driving motor is also kept behind the guide ways as shown on the fig. The main function of the driving motor is to give power to the platform for lifting the load

(G).Lead Screw:

It is use to up and down the Platform. Nut is fitted on Lead Screw. Lead Screw made on Lathe Machine Tool. The Lead Screw is mainly made from mild steel.

(H).Nut:

The nut is mainly made from mild steel. It is made on lathe machine tool. Lead Screw made on Lathe Machine Tools.

V. ADVANTAGES AND DISADVANTAGES

Advantages:

(A).It is very useful in material handling.
(B).The use of electricity is also decreases.
(C).It also affects in the cost of the product.

Disadvantages:

(A).It is not useful where the solar power is less produced.
(B).It is not in monsoon type season or rainy atmosphere
(C).It is not useful in carry very much load.
(D).It is suitable for small industry

VI. CONCLUSION

From study and working on solar panel energy. We had concluded that we can save energy and losses of electricity.After study of the nature of solar energy we had demonstrated a instrument which can lift 1.5 Kg weight and it will be operated with 12 volt battery. This will be recharge in 3 to 4 sunny hours.

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