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A Simple Design To Access Additional Energy From Real Resources

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ABSTRACT: *Appari's design is simple and applicable to get the extra energy from the existing recourses. The article focuses how to get the extra energy from wind and sun. Also it focuses the design and applicability of these energy sources.*

Keywords: *Appari, Solar Energy, Solar Dryer, Solar Water Heater, Wind Energy, Design of Fans*.

I. INTRODUCTION

Appari's design is simple and applicable to get the extra energy from the existing recourses. The article focuses how to get the extra energy from wind and sun. Also it focuses the design and applicability of these energy sources. It consists of how to make the solar panels and solar dryers effective to get the extra energy from the existing resources. Also it focuses how to get the extra energy just by changing the angle of blades of the wind mills.

II. APPARI'S SOLAR PANEL

APPARI's solar panel is a solar panel manufactured with well known techniques along with one additional detachable or inbuilt/embedded panel consisting of number of convex lenses which increases the light and heat. The Appari's solar panel is more effective than the present solar panels as it gives more heat and light from the sun.

2.1. Design:

The use of existing solar panels is made more effective by using the convex lenses. The layer of convex lenses may be fitted separately in one panel in detachable system and can be manufactured in the embedded system. This additional panel fitted with convex lenses can be used along with the existing solar panels to increase the heat and light and there by the total amount of electricity/energy produced will be more than the present system. The convex lens fitted in the panels can be placed above the glass covering of the exiting solar panels.

Depending on the capacities of the convex lenses which are used in detachable system, the gap distance between the top glass cover of the existing solar panel and the layer of convex lenses can be maintained properly so that it will generate the maximum heat and light on the glass covering of the solar panel.

The same principle of using the convex lenses to increase the more heat and light can also be used in the embedded system of the solar panels. In this system the layer of convex lenses fixed in the toughened glass may be directly used above the solar cells glass covering or directly above the solar cells by keeping the proper gap between the layers of convex lenses and the glass covering or the solar cells such that it will generate the maximum heat and the light on the solar cells and thereby generates the maximum solar energy.

The gap distance between the layers of convex lens fitted in the panels and the top glass covering of the solar panel will depend upon the capacities of the convex lens used. The number and the capacity of the convex lenses should be adjusted in such a way that each solar cell will get maximum heat and light from it.

The solar panels may be of any shape which will give more effect of heat and light to generate the more energy. e.g. inverted U shape with flanges on both the sides.Such solar panel plays very important role where energy required is more and at a faster rate e.g. solar vehicles.

2.2. Solar Dryers:

The principle of generating and increasing more heat and light by using convex lenses can also be used for solar dryers. Novel in the invention is simple & applicable that by using the layer of convex lenses or inbuilt system of convex lenses we can increase the efficiency of the solar dryers.

Solar dryers consisting of simple container to store the grains, fruits to dry (Fig 1). The system in such solar dryer is made up of any shape with glass covering/ acrylic roofing material. Above the roofing glass or acrylic material the detachable panel (Fig 2)consisting of convex lenses can be also used to generate the more heat and light thereby the heat generated in the solar dryer will be more than the heat outside the dryer and even more than the existing solar dryers.

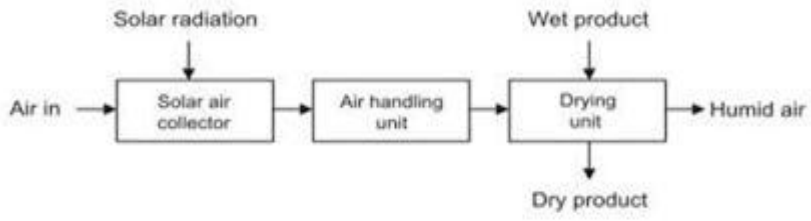

Fig 1. Block diagram of solar Dryer

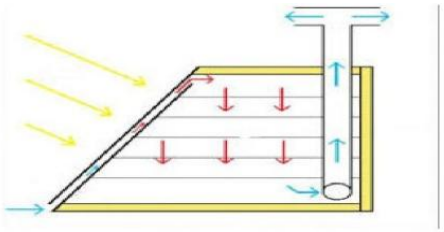

Fig 2. Simple Polar Dryer

The embedded system of roof of dryer can also be simply manufactured by attaching the various capacities of convex lenses in roofing glass which will produce the more heat for drying the grains and fruits inside the solar dryer.

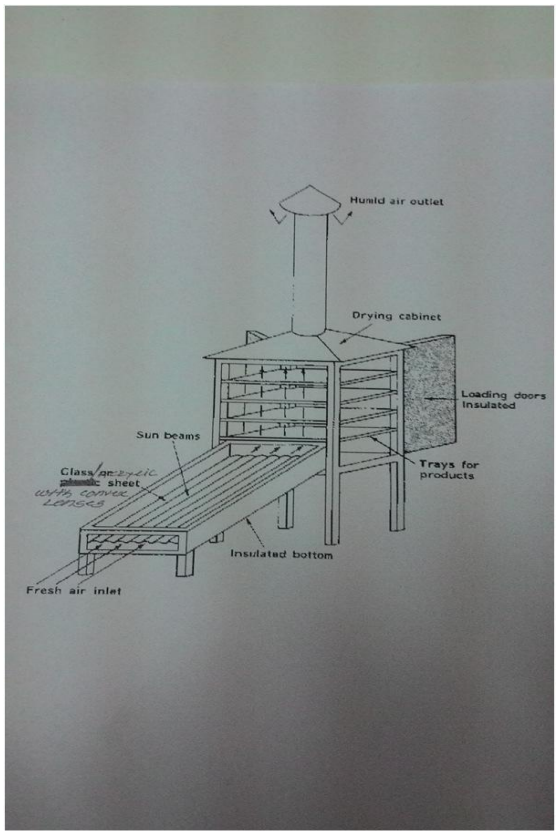

Fig 3. Embedded system of roof of dryer

The fresh air can also be heated in the embedded systems (Fig 3) of toughened glass pipes in which the convex lenses are fitted well in position/manufactured. And the connection of this hot air generated from the radiation of sun rays can be given to the drying unit, where the grains and fruits or any other wet product can be converted in to the dry product. The humid air developed during this process can be exhausted from the ventilator or chimney provided for that purpose.

III. SOLAR WATER HEATER

Appari's solar water heater is simple in construction and applicable for low cost housing. It consists of one over head small water tank and the two layers of corrugated G. I. Sheets which are completely water tight. And in which the cold water from the over head water tank can be automatically collected by gravity action. The G. I. Sheets can be covered by one layer of convex lenses to heat the G. I. Sheets. The convex lenses may be fitted in the welded wire mesh in detachable system or it can be inbuilt in the toughened glass. The capacities of the convex lenses may be different as par the need. Depending on the capacities of the convex lenses the gap distance between the top layer of G.I. sheet and the layer of convex lens may be adjusted so that it will produce the maximum heat in the G. I. Sheet and thereby heats the water stored inside the G.I.sheets. The heated water will be collected in the same overhead water tank. The overhead water tank can be covered with insulating material so that the heat from the tank cannot be dissipated. The outlet connection (above the inlet connection to feed the water in space provided in G. I. Sheets) from the overhead water tank can be given for the house.

The other method is the convex lenses should be fitted in the toughened glass pipe and this glass pipe can be used in place of G.I. sheets. The water stored in the glass pipe will get heated by radiation of the concentrated rays produced by the convex lenses from the sun rays. The other parameter is that the glass pipe should be closed at the other end whereas its one end is connected to small over head water tank. The principle of get heating the water is same as that of above.

One more simple arrangement can also be designed by using simple flat container with air tight cap. The air tight cap can be made up of toughened glass fitted with convex lenses. The connection of inlet water can be given to this flat container and the container can be fitted well with its cap in air tight and water tight position. The water stored in the container will get heated by the concentrated rays by the convex lenses fitted in the cap of the container and can automatically collected in the small over head water tank. This makes simple to manufacture the toughened glass caps with convex lenses.

The pressure relief valve may also be provided to relief the pressure from safety point of view. Also Mixing valve which is used to temper hot water from the solar storage tank with cold inlet water to maintain appropriate temperature hot water delivered from the system can be used (Fig 4).

3.1. Design

The two layers of G.I. Sheets can be perfectly welded by keeping the some gap in between them to collect and store the water from the overhead water tank. The connection of inlet water from the over head water tank can be given to the space provided in between the two layers of G. I. Sheets. The water in between the two layers of G. I sheets can be heated by the radiation/ heat generated from the sun.

The effectiveness to generate the more heat from the sun can be enhanced by providing one detachable or inbuilt layer of convex lenses which will be placed above the top surface of the G. I . sheet. The gap distance between the top surfaces of G. I sheet and the layer of convex lens can be adjusted by keeping in view the capacities of the convex lenses fitted in the layer. The heated water can be collected automatically in the same water tank.

The small capacities over head water tank can be separately used for this purpose and can be filled with the water as per the need and availability of hot water. Even one float can also be used to maintain the particular water level in this water tank. In case of this water tank feeds the water from the another over head water tank. In such case the level of the two water tanks can be properly maintained i. e. The water tank used for heating the water can be kept below the water tank which feeds the water for this water tank.

The same two layers of G. I . Sheets along with convex lenses can also be used for roof covering. The width and the length of this can be used as per the need of roof covering, quantity of water to be heated. The bottom surface of the G. I. sheets can be painted with black colour or thermal insulating material, so that the rooms from inside will not get heated and the heat from the G.I. sheets will not be dissipated.

This system provides economical for low cost housing along with facility of sound and thermal insulation property to the rooms. This roof designed in such way that it also provides the resistance to the earthquake forces as the water pressure force acts exactly opposite to the earthquake forces and thereby it auto balances the earthquake force.

The care should be take while fixing such G.I sheets for roofing, the G. I. sheets should be welded and not to be bolted by J bolts to facility of the water tightness and to make it stable against the wind forces. The toughened glass pipe (Fig 5) should be manufactured with convex lenses fitted inbuilt in the toughened glass pipe. The water inside the toughened glass will be get heated due to the concentration of sun rays by convex lenses. And the heated water will be stored in the small overhead tank automatically. The heated water in the small over head tank can be used for any purpose as per the requirement.

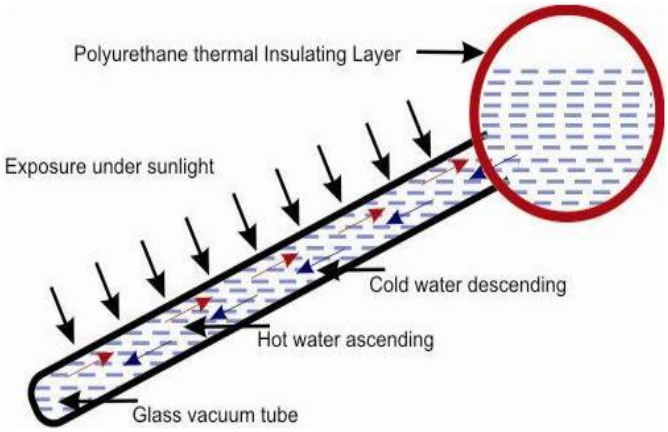

Fig 4. Solar Water heater

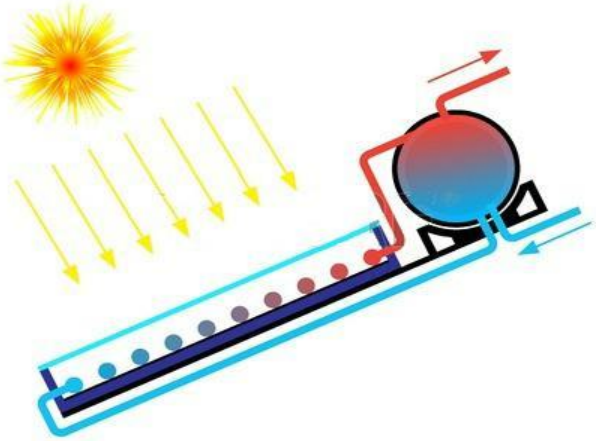

Fig 5. Solar Water heater mechanism with toughened glass pipes

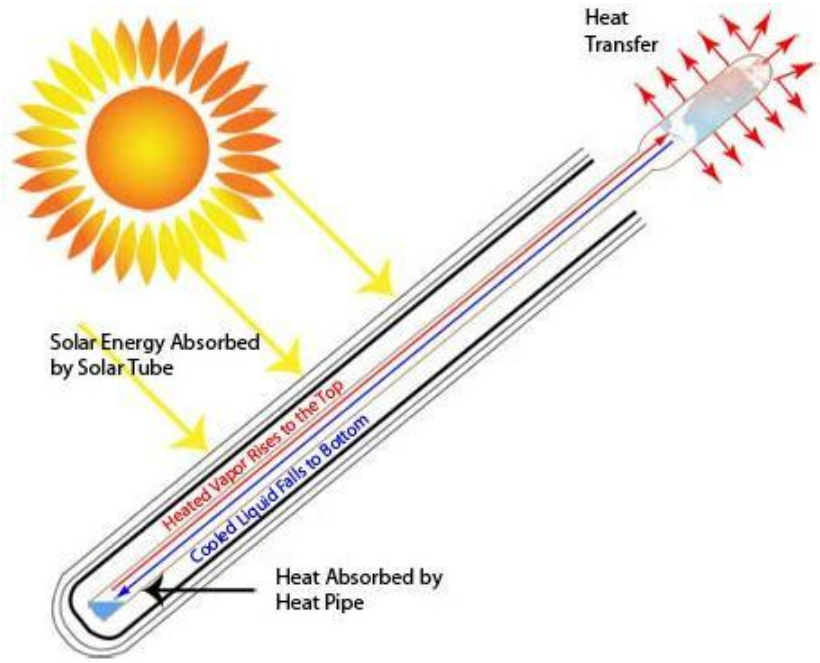

Fig 6. Solar Water heater mechanism with simple caps of the containers

Similar to the toughened glass pipes with convex lenses the simple caps of the containers (Fig 6) can also be very easily manufactured and can be used provided that there should not be any leakage of air and water from the flat container when such caps are fitted well in position.

IV. APPARI'S DESIGN OF FAN

In residential and public buildings and other purposes the various types of fans are in use to get the wind and to maintain the natural temperature to the lowest possible. If the blades of the fans are flat which do not have any bend then the blades of the fan will simply rotate and will not give any wind. So the blades are to be bent to get the wind. If this bent is made 90^0 towards the free end of the blade then we will get maximum wind even for small capacity of the motor also. Just by changing the shape of blades of the fan we will get maximum wind, so there is saving in the cost of capacity of motor and thereby saving in the electricity, which leads to improve the national economy. This type of fan is also suitable for wind mill to generate the maximum wind energy.

4.1.Design of ceiling fan/ table fan, blades of wind mill:
1. The inside total width of the blades may be kept equal to the one third perimeter of the drum/ inside Perimeter available for the blades for three blade, one fourth for four blades, one half for two blades and so on.
2. The inside width of each blade is equal.
3. The total width of blades at outside end is equal to one third perimeter available at outside of the blade for three blades , one forth for four blades, one half for two blades and so on.
4. The outside width of each blade is equal.
5. The angle of bent of each blade at the inside is equal to zero degrees.
6. The angle of bent shall be gradually increased from zero degrees to ninety degrees from inside to outside.
The material used for the blades may be any metal, plastic, etc. The thickness of the blades should be kept minimum for economy, but in any case the thickness should not be less than the thickness required for plane rotation which should avoid the vibration of the blades and thereby the vibration of the fan, noise etc. The thickness of the blades may vary according to the material used. The length of the blades may vary according to the requirement and the capacity of the motor Such blades if we use for the wind mill will prove to prodce the maximum energy from the wind.
The principle of machines i.e. free wheel technology can also be used so that the fan will rotate continuously without stopping tough there is short intervals of natural wind. And such blades designed for the wind mills plays very important role to generate the maximum wind energy.
Such fans may be used for vehicles to generate the wind energy and can be effectively used with the help of sensors so that the vehicles will run on its own generated wind energy after reaching a particular speed. Such hybrid vehicles will run on its own energy source i.e. wind energy after reaching the particular speed. To reach up to particular speed the conventional energy/fuel may be used. This type of hybrid vehicles can be designed with the help of sensors which automatically controls and saves the conventional fuel.

V. CONCLUSIONS

1. Use of existing solar panels for more energy simply by attaching one additional panel consisting of number of convex lenses will produce the more heat and light.
2. The embedded solar panels consisting of number of convex lenses fitted in a toughened glass along with the present system of solar panels can also be manufactured for generating more heat and light thereby generates more energy.
3. Use of existing solar dryers along with one additional detachable panel consisting of number of convex lenses can produce more heat and light for drying the grains and fruits.
4. The embedded solar dryers consisting of layer of convex lens fitted in a toughened glass can also be manufactured to produce more heat and light to dry the grains and fruits.
5. Solar water heater is applicable for low cost housing.
6. Solar water heater can be constructed on self help basis as the principle is very simple.
7. The provision of such solar heater as a roof of the structure makes the structure earthquake resistant.
8. The capacity of water heater can be adjusted/ designed as per the requirement.
9. The provision of such solar heater provides Sound and thermal insulation property to the building.
10. The blades designed having bent zero to ninety degrees from inside to outside of the fans will generate the maximum energy from the wind. Also for the same capacity of motor it produces the maximum wind and saves the electricity.
11. The fan designed with zero to ninety degrees bent along with machine technology i.e. free wheel technology generates the maximum wind energy if such fans are used for the wind mills.

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