



Foot operated roof tile making machine⁵⁰

CONSOLATION

Sukhranjan Mistry (32) is a native of Shakti Farm, Udham Singh Nagar, Uttaranchal. He completed his B.A. from Rudrapur College. Sukhranjan takes after his father, Meghnath Mistry, in his keen desire to simplify complex technologies. Sukhranjan is actively involved in farming and also serves as the village doctor and runs his own clinic. With a keen interest in social work, he spends his spare time in the Vivekanand educational institute, a social service organisation. He is married and has a son. He earns Rs. 20,000 per annum.

Address

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Genesis Sukhranjan's father wanted to reconstruct their old house. But the problem was lack of money to construct the roof of the building. Sukhranjan tried to construct the tiles from cement instead of clay. But due to a problem with the salting of the tiles, he was not able to maintain the quality of all the tiles. So he dropped the idea of making tiles from cement. Then one day on a visit to a town, he saw people working on a cold mixture in making roads and bridges. There he noticed that a device known as an agitator had a great role in making all kinds of cement based technologies. So he tried to establish a link between the road agitator and an agitator mechanism for tiles and came up with the idea of a table which has an agitating platform on its surface. He consulted his father and both of them worked hard in designing an agitating table. They used an old cycle tyre rim and two sticks in making this table. One very important thing is the frame used in making the tiles. It took 15 to 20 days to finalize the design of the frame. Sukhranjan has made one unit and is using it successfully. There is large scale nationwide need for such a cheap effective foot operated device.

The innovation

The device is a manual /pedal operated tile making machine. It is an ergonomic and efficient mechanical device for making tiles which is based on the principle of mechanical vibrations. The tiles so manufactured are useful to construct the roof of the building or like purposes.

The unit comprises of a bicycle wheel, crank, rope-link, pinion, oscillating striking link, polyethylene sheet and supporting frame. A vibrating platform is moved with the help of a cycle wheel, powered by pedaling. A polythene sheet is spread over the platform pressed by an iron frame. A mortar mixture is made using river sand and cement in the ratio of 7:1. This mixture is spread over the sheet. Then it is stirred over the vibrating platform till air bubbles ooze out. Once the cements set in properly, the frame is lifted and the sheet with mixture is put over the existing made tile. The new tile thus gets made. It is dried and then soaked in water for two days. The machine costs Rs.7500.

Advantages

This device is not like other tile making

machines available in the markets, which are costly and not affordable to the general public. This machine will be most useful in preparing roof tiles at a very fast pace as a number of tiles can be made at a time. It is possible to make 300 tiles per day. In addition tiles can also be made in multiple designs. The operation of the machine is not dependent on electricity and no heating is required to prepare the tile. The cost of preparing a tile is two rupees and it can be sold up to five rupees. The tile made using Sukhranjan's machine lasts for about sixty years compared to twenty years for the clay tile. This machine has a high self-employment potential in rural areas and an added benefit is that women can also operate it. The machine is simple in configuration and operation and can be made with locally

available materials by local artisans. There are no running costs or maintenance costs.

Current status

Current and future application areas of this device include in agitation of various liquids and semi-solid entities in chemical and food processing industries. NIF has sanctioned Sukhranjan, a sum of Rs.5625 from the Micro Venture Innovation Fund for product development and demand estimation of the tile-making machine. NIF has also filed a patent application for this innovation(995/Del/2004, 31/05/2004). Sukhranjan wishes to start a business with this innovation. Apart from this, he is also working on a kerosene incubator.

