



National Award – Third

Automated Arecanut Climbing and Harvesting Machine

Suresh PV
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Scout: Dr. Sunil, KVK

Suresh (41) works as a driver and a rubber tapping worker in rubber plantations in his locality. A school drop-out but an enthusiastic innovator, he developed a hydroelectric power plant of 2 kW capacity for his village in 2004 and a ropeway system for transportation of goods as well.

Arecanut tree has to be climbed three times every year for the purpose of harvesting. Only skilled labours can do this, as the task is very risky. Suresh came up with the idea of a machine that could be helpful for climbing the arecanut tree. First he came up with a machine that worked on electricity and could carry a man with it. However the power supply was an issue, so he designed a petrol engine based automated arecanut climbing and harvesting machine.

The machine is powered by a 42cc petrol engine operated using a remote/mobile app. It consists of dumbbell shaped rubber-grip rollers, which are clamped on tree and their rolling motion along the tree trunk provides upward motion. The machine is self-adjusting for varying diameter (100 to 203 mm) of the tree and can climb over dents or bumps in the surface of the tree. The device can remotely be put in forward, reverse, neutral and cutting mode. The rate of climb can be controlled with an accelerator and the device has been designed such that on full throttle, it can climb the tree (approx. 50-60 feet) in one min, perform cutting operation in 1 min and climb down the tree in another minute. It weighs approx. 28 kg and can work for about 3 hours in 1 litre of petrol. If at all the machine stops functioning while climbing up or down the tree, a rope connected to it will enables the user to bring it down without climbing the tree.

