



### **National Award – Third**

### **Automatic Weft Winding Machine**

Prafulla Kumar Meher  
Bargarh, Odisha

Prafulla Meher (56) is a weaver and textile machine manufacturer. He left his studies due to a financial crisis and joined his family business of weaving Sambalpuri Sarees. He visited numerous NGOs for gathering knowledge about weaving and started his own workshop named Artisan's workshop in the year 2008.

Weaving a 6 feet saree requires 8 kg of cotton and three processes viz. spinning, winding and threading are involved. Spinning is done for the purpose of dyeing and making designs in sarees, and winding is done to make a suitable package for both woven and knitted fabric production. He used to engage labourers for winding of the cotton thread. This process required two tree trunks for winding operation. However, gradually the number of labours decreased due to the involvement of tedious work in manual winding, lesser wages and better opportunities. Prafulla then started working at designing a solution for mechanization of this processes and nearly after 6 months he was able to develop his first prototype, which is a self-propelled machine

that facilitates winding of cotton thread for weaving of sarees.

The drum receives power directly from a 0.25hp electric motor and this can be operated manually as well. Weft winding work is carried out over the entire length of the drum. Prafulla has developed Purra bed (uniform thread distribution system), which automatically changes its direction of movement. This Purra bed has two cycle hubs for easy movement over the frame track. There is a small vertically placed thin rod attached with the chain loop and Purra bed is placed over this rod. So when it makes a U-turn after completing half cycle, the Purra bed automatically changes its direction of motion. The second Purra bed travels on other end of this drum as both Purra beds are connected by means of a square pipe. In this way, both the thread distribution systems work automatically and help in improving productivity. The machine has the capacity of winding 10 bundles of yarn over the drum within an hour. The machine costs Rs. 25000/- and over 110 units have been sold till date.

