



Suraksha Tong

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Background

Seeing the problems in lifting and holding hot vessels in the kitchen, Arvindbhai has come up with a new design of tongs, which are quite comfortable to use. These can be used to lift heavy vessels also apart from the normal use in the kitchen.

Youngest among six siblings, he could study only up to class tenth. As there was nobody educated in his family, Arvindbhai had only his own motivation to pursue his studies. After completing school, he tried to enroll for a course in commerce, but the medium of education being English, he couldn't cope with it and discontinued it. Later he joined an automobile garage and learned learnt practical skills of auto repairs for two years.

In 1980, he traveled to Saudi Arabia, where he worked on the latest models of automobiles. Finally retuning in 1984, he settled down in his native village and lived there till 1993 and thereafter moved to Ahmedabad.

Arvind's wife Jaishree is a schoolteacher who holds

a Masters in Arts and a Bachelor's in Education. They have a twenty year old son and an eighteen year old daughter. Both his children are bright in studies and have been instrumental in triggering ideas in him for new innovations.

Initially, his wife considered him to be over enthusiastic and asked him to concentrate on a steady job and leave alone, the work on innovations as it did not earn him regular money. But her views changed once the products were widely used and he started getting widespread recognition.

She mentions about him, *"When he gets an idea, nothing can distract him till the idea becomes a reality. He always wants to do something different, what no one has ever done. He is always found at home working on his products. Earlier, neighbours thought that he was up to nothing; now they often inquire what's up. Particularly, when they see something unusual in our courtyard."*

An accomplished technician and fabricator, he is a persistent innovator who has never learnt to give up. With his keen mind, he has developed many

innovative products such as Natural Water Cooler, Auto Air Kick Pump Auto Compression Sprayer and Innovative tongs.

Commercial water coolers are expensive, require maintenance and run on electricity whose supply is erratic. Arvindbhai has developed a *natural water cooler* that cools water without using any kind of non-renewable energy sources such as electricity and delivers clean potable water, with no recurring cost or maintenance. This product is being sold commercially in Gujarat.

Imagine your scooter has a puncture and the nearest repair shop being a few kilometers away. To overcome this crisis, Arvindbhai developed an *air-filling kit* for two and three wheelers. Just by replacing the spark plug with his innovative kit and kicking a few strokes, one can easily inflate the tyre.

It is easy to use, compact in size, and light weight which makes it handy and portable, acts as an alternative to a spare wheel and available for all kinds of two and three-wheelers along with a kit for

repairing the puncture. This product has been commercialized in Maharashtra, Assam, parts of Gujarat and Madhya Pradesh and some have even find their way to neighbouring Nepal.

He has also developed an *auto compression pesticide sprayer* mounted on the back of the user. A compression spring stores and transmits the energy of the jerks experienced while walking and the constant piston reciprocating action generates the requisite pressure in the tank to spray the liquid of the tank. This device eliminates the tiresome and repetitive manual hand pumping action needed in standard back mounted pump-sprayer unit. Farmers have shown tremendous willingness to buy this product and this product has been commercialized in Gujarat.

Genesis

Tongs are available in each household, but have their limitations in holding big vessels with their hot contents. Holding the large vessel with cloth at the edges is not a reliable solution. We often hear of accidents in the kitchen due to these problems, but they go unnoticed.

As an outcome of a brainstorming session organized by GIAN West, Arvindbhai took up the challenge to redesign the conventional tong and developed a new innovative version that addresses all requirements

Arvindbhai started working on this problem in 2001 and in one month came up with two different models of the tong- which can be used in a normal kitchen for lifting vessels of the capacity of 1.5 kg and other up to 20 kg.

After getting feedback from various organizations and Prof. Anil Gupta, he made various other models that can lift weight up to 25-50 kg and another up to 100 kg respectively.

During the development process, he sent the tongs of various capacities to organizations in Rajasthan and in SEWA, Ahmedabad to get user feedbacks.

In the whole process he spent around Rs. 7000 for making various models of the tong but he says he does not bother about the expense as the final product is useful to so many people.

Innovation

Arvindbhai developed the "Suraksha tong"- the term Suraksha being used to denote safety.

The innovative tongs developed by Arvindbhai handle various vessel types and diameters; have guide ways for proper alignment and knurled jaws for proper gripping. Therefore, it eliminates the possibility of instability, tilting or flipping of the vessel. It prevents accidents and increases user safety by allowing both hands to be engaged in lifting the vessel.

The product comprises of two stainless steel handles with plastic sleeve attached to a spring-loaded pair of solid and hollow stainless steel shaft combination. At each end, a semicircular steel plate is welded and this helps in clamping and holding



the rim of the utensils.

The solid shaft slides inside the hollow shaft and the motion of the solid shaft is restricted by the spring connected on both the shaft.

Due to spring loaded action of clamping the vessel, when utensil is lifted using both hands gripping the handle, there is very less chance of loosing of grip on the vessel

The innovation lies in the construction of the sliding mechanism, using solid shaft and hollow shaft and the secure spring loaded clamping of the vessel.

In all his endeavours, Arvindbhai has been constantly motivated by his family and for technical support by organizations like GIAN, SRISTI and NIF.