



National Innovation Foundation

National Award, Second
Utilities and General Machineries: Handy auto air kick
pump for two wheeler



Shri Arvindbhai R. Patel

Handy auto air kick pump for two wheeler

Imagine a burst tyre in a two-wheeler when the nearest repair shop is miles away. One has no choice but to drag the scooter or transport it in some other vehicle. Arvindbhai has faced this problem many a times. The idea of finding a solution to his problem came to him in 1985. He prepared the first prototype of an air kick pump within one and a half months, but that was without a pressure gauge. After that the innovation went through a series of improvements and the present prototype was developed.

The inexpensive device developed for inflating tyres of two-wheelers, uses the built-in kick-start mechanism of the vehicle. The compression of air obtained while cranking the cylinder of the engine is transferred to the tube with the help of this device. Applying gentle strokes to the kick of scooter/ motorbike, after unscrewing the spark plug and keeping the petrol cock closed expels residual petrol inside the carburetor. Then the adaptor of the device is screwed in the spark-plug hole while the other end is clamped onto the tyre valve. Applying a few kicks inflates the tyre. An



Arvindbhai (46 years), was born in Vanch, a village 10 km from Ahmedabad. He is the youngest among three brothers and three sisters. He has one hectare of land. None of his family members had any formal education. 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. He then joined a course in horology (watch and clock mechanism) at Industrial Training Institute. Even this he could not continue and finally he joined an automobile garage in Ahmedabad. He learnt practical skills of auto repairs for two years at this place.

In 1980, he got an opportunity to travel to Saudi Arabia. The experience in Saudi Arabia was quite valuable as he worked on the latest models of automobiles there.

When Arvindbhai finally returned back to India in 1984, they settled down in his native village and lived there till 1993. Arvindbhai's wife Jaishree is a BA B.Ed, MA and works as a schoolteacher. They have a son (14 years) and a daughter (12 years), who also seem to have been bitten by the

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on-line pressure gauge indicates the tyre pressure before, during and after every stroke. When desired tyre pressure is reached, the device is removed and the spark plug screwed back and connected. This would be particularly useful in motorcycles, in which carrying a spare wheel is cumbersome.

The innovation has already been listed among the top ten by NRDC and was also considered for an award in the year 1998. The innovation has undergone laboratory tests and recently this technology has been transferred through GIAN (West) on all India basis to M/s Janak Enterprises. During the journey of the innovation, the innovator had constantly been motivated by his family and also by the financial and technical support by organizations like GEDA, GIAN, SRISTI and NIF.

innovation bug of Arvindbhai. They too participate in the discussion on innovations.

At first, the innovator's spouse thought him to be over enthusiastic and would often ask him to start with a new job and leave the work on innovations as it did not earn him good money. But her views regarding her husband's zeal for innovation changed once he got recognition from National Research Development Corporation and GIAN, Ahmedabad. She says of her husband, "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."