

Toothbrush with paste dispensing mechanism and a safety valve

State Award
Delhi



Agastya Narain Shukla
New Delhi



An innovator and an entrepreneur, Agastya Narayan Shukla (39) has developed a toothbrush with an integrated toothpaste dispensing mechanism. The toothpaste is filled in the body of the brush and need not be put separately.

Agastya was born on 15th August, 1970 to Shri Prahlad Bhaktraj Shukla and Smt Kamla Devi. His father owned a power loom unit at Anand Parvat in Delhi. Unlike his five elder siblings, he used to assist his father at the factory when he was still a kid. Working with him and learning the nuances, his little eyes starting dreaming of running his own factory soon. The zeal to do something independently made him realize his dream when he was just 12. He set up his own small factory in partnership with one of his friend. While other children of his age were busy in learning books or playing games, he was engrossed in making spare parts in his factory.

He continued his schooling for two more years, though he preferred to spend time in his factory than sitting in the class. Hence, when he was 14 years old and studying in standard eighth, he dropped out of school and

completely devoted himself to the factory, learning from real life situations and dealing with practical problems. He continued to enhance his knowledge by exploring relevant technical books and attending informative programmes. His father's work was also not going on smoothly, for the past few years, and there were certain financial problems. He therefore did not mind young Agastya pursuing an alternate choice and trying to be independent.

Life changed its course when a tragedy struck in 1985. The untimely death of his father left behind huge debts to be repaid. His elder brothers washed their hands off the matter. With no other resource on hand, Agastya had to sell his factory to pay off the creditors. With the loss of his father and his brothers turning their faces away, his world had turned upside down. With Rs. 20,000 left in his hand, after clearing the dues, fifteen years old Agastya decided to go to Mumbai to earn a living.

The bustling city of Mumbai welcomed him with its cut throat competition and a sea of uncertainties. He got involved in various activities; from making documentaries to selling diamonds and doing some odd jobs even. After three years of hard life there, he decided to come back to Delhi and revive his father's unit.

He reopened the factory. His professional life started gaining momentum with slow and steady progress. He got married to Bharati, daughter of his father's friend, in the year 1994.

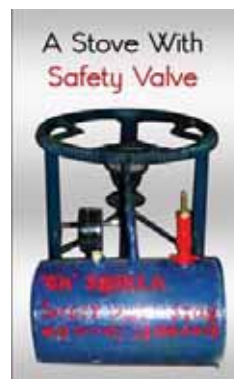
The next few years passed peacefully. Business grew and they made a tidy profit. However, things changed in 2000, when tighter environmental laws led to the closure of many small scale units.. His factory went into loss and had to be closed down. But, unlike the previous occasion, when he was alone to handle the atrocities of life, this time he had friends to help him financially and his wife to encourage him. With their support, he fought once again. One of his best friends, Ramandeep Gandhi helped him to set up a low-cost unit wherein he outsourced all his production thereby bringing down costs and risk. With his new business, he got ample time to think

about various ideas and applications, which could become potential businesses.

The string of ideas

In 2001, he saw an advertisement in the Navbharat Times soliciting entries for the national innovation awards. His curious mind started to tick and he started sending his ideas. His ideas included a device for spreading perfume during public performances, harnessing the energy generated while exercising, audio controlling device, using the energy of vehicle exhaust to keep food warm in food-delivery vehicles and an air vehicle dashboard to indicate air pressure.

Next, he made and tested a prototype of a safety valve for kerosene stoves. This safety valve was built to prevent the explosion of stoves that killed or maimed a large number of users across the country.



He came up with an idea to prevent people from getting run over by trains while crossing the tracks. His solution consisted of hanging ropes dripped in used black engine oil at the unmanned crossings. Anyone jumping the tracks would have to go through the mesh of old oiled ropes which would soil his clothes. This was expected to be the deterrent to those in a hurry to attempt crossing the tracks.

Having faced a lot of ups and downs in his life, today, he has become cautious in making long term plans. His focus is on living in the present moment and working hard on new ideas and business opportunities. He gives a lot of credit to his wife who has stood through thick and thin and supported his zeal for innovations.

The trigger of the idea



In the year 2002, the telecom revolution had begun in India. A merged conglomerate; Aditya Birla Group, Tata Group and AT&T executed a major branding exercise to launch "IDEA" in the prestigious Delhi telecom circle. It was a launch that attracted millions of eyeballs across the nation. While passing the road on his scooter, Agastya was struck by a message in the IDEA hoarding which read "An IDEA can change your life". He took the message as an inspiration to come out of the rut he was in.

He started thinking about that one golden idea that would enable him to move out of his labor intensive scale unit with wafer thin margins. His small scale unit with its irregular work orders kept tripping into losses every second quarter.

In June 2003, he was travelling in a train when he noticed people looking for toothbrush and toothpaste in their luggage. He thought why can't the brush be fitted to the toothpaste tube itself. On his return, he started thinking about one such product. He made a study of the design issues related to the bristles, contours and grip. Next, he examined various material choices and developed the first prototype in December 2003 wherein he fitted a brush's head to a syringe. Apprehensive of his innovation, he demonstrated it to his family and friends. But they encouraged him to go ahead with it.

He then showed it to a group of students and Honey Bee Network members, whose encouragement boosted his spirits further. Improving the design, he developed a toothbrush with the toothpaste tube integrated into the handle itself. He had to struggle hard to make the toothpaste retain its character and flow on demand though the holes near the tip of the bristles. Proper design of the front portion with hollow bristles became difficult as he lacked

the knowledge of proper injecting machines. Starting in 2003, it took him more than two years and around three lakh rupees to fine-tune the technology and develop commercial samples.

The toothpaste dispensing toothbrush

The toothbrush has an integrated arrangement for providing toothbrush and paste in a single assembly. The knob at the bottom of the tooth brush is twisted to push the paste up and out near the tip of the bristles.

The toothbrush is made from a suitable food grade material. All the individual parts are replaceable. The idea is to use the toothbrush for a long time and refill the paste when required.

Comparable toothbrushes are found in prior art, albeit with a modified configuration¹. But these differ in construction and design from the current innovation.

The innovator has been granted a patent for this toothbrush in 2007. He has also received a Micro Venture Innovation Fund (MVIF) investment from NIF. He has sold more than 250 such brushes at Rs. 125 per unit, through different outlets and got the user's feedback to improve it further. The toothbrush has a potential market among children who are curious and intrigued by its unique design and also the people travelling frequently. The convenience of carrying the toothpaste and the brush in a single unit might attract them. Apart from his business and innovations, he is also interested in parallel cinema and harbors a dream of trying his hand at filmmaking.



¹ US Patent discloses a toothbrush operated by spring and piston (US6948875) and foldable toothbrushes with periodontal attachment heads (US5735298). Other citable patents include US US5842487, US4717278, US5181531, US5425590, US5439014, US5746532, US5911532, DE3312392, DE1000391, US4521128, US5913632, US5100252, US5066155, US4291995, US6056469, and US 6062233.