

**Address**

Sameerul Hasan Liyaqati  
H No.2, Paliya Kalan  
Near Chaman Chowk  
Lakhimpur, Khiri  
Uttar Pradesh

**Scouted by**

SRISTI GYAN Kendra



## Improved stove with kerosene heating<sup>54</sup>

### CONSOLATION

**Sameerul Hasan Liyaqati** (36) is popularly known as 'lalla mistri' in his native place Paliya, Uttar Pradesh. With about 25 years experience in repairing tractor and truck engines, he earns his livelihood from his tractor workshop and earns about Rs.2500 per month. He spent most of his childhood learning his work. He did not go to school and is illiterate. But he sees to it that his two sons and daughter attend school regularly.

**Genesis** Once, when Sameerul was staying away from his family, he was forced to cook food on a stove that required pumping air. One night when the pump developed problems, he tried to repair it but he did not have any spare parts. Even after a number of attempts he couldn't succeed. To add to it there was no dry wood available. So he had to go to bed on an empty stomach. The whole night he could not sleep and he thought whether it was possible to develop a stove that did not require a pump. In the morning he went to the workshop and tried many designs. The main difficulty he faced was in collecting the components of the stove like the tank, burner, pipe and regulator. He had to make the pipe coil manually and this took the most effort and time. But finally he succeeded in developing his stove.

He regrets that his family members and neighbours constantly discouraged him from taking up this work as they felt that this was dangerous and would harm him. But after he had made the stove, he received considerable support from his family. At the same time he remembers with gratitude the help he received from some friends namely Kanwaljit, Shakti

Singh, Bhumil Kumar Gupta, Chandrabahuki and Daulat Rai who encouraged him and gave him some money also.

**The Innovation**

This is a modified stove which does not require pumping. A number of novel features help it to achieve efficacy with minimum carbonaceous deposits. Firstly the kerosene storage tank is placed above the burner-stove stand height to facilitate the flow of fuel without pumping. Secondly a bent copper pipe attachment is placed around the burner which is connected to the fuel cylinder. A pressure gauge along with a safety valve is fitted above the tank. On loosening the safety valve; first, the kerosene flows down to the burner due to the force of gravity. A delivery tube flowing from the kerosene tank revolves around the burner and leads back into the pump. Once the flame is lighted, kerosene inside this copper delivery tube heats up. The vapour so formed moves into the tank and creates pressure for the kerosene to move into the burner without any pumping. A valve helps in regulating the flow of kerosene. The safety valve facilitates release of excess pressure in the tank. The stove has been tested upto

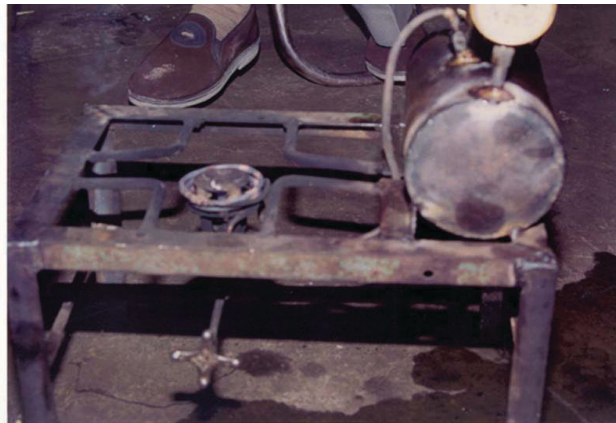
a pressure of 75 psi and found to be working without a problem.

### **Advantages**

Novelty lies in the placement of the cylinders and the use of the fuel heating coil as well as the provision of a pressure gauge and safety valve. This stove saves fuel and also the labour involved in pumping air. It does not blacken the vessels that are placed over it. There is also no need to clean the pores of the burner for carbonaceous deposits since the deposits are very low in this high pressure gas burner arrangement. This stove does not make much noise when in operation and therefore is less of a nuisance to people nearby. It does not require much maintenance. At Rs.300, its cost is comparable to the conventional stove. The reduced bio-mechanical tasks make it suitable for women or children as well as for the physically challenged as less effort and time is required.

### **Current status**

The device was successfully tried and tested in 2002. He also got an opportunity to attend the Indian Science Congress held in Chandigarh in January, 2004. Sameerul relates that he enjoyed the experience of innovation and feels that if the government gives him the opportunity he is prepared to work on other innovations. He has received several business enquiries on the innovation but so far he has not entered into



any agreement. Sameerul is interested in setting up a factory for the mass production of this innovation but he needs adequate support for the same. NIF in coordination with the GIANS has sanctioned an amount of Rs. 37, 250 from its Micro Venture Innovation Fund for prototype development for market research for the improved pumpless stove and three other innovations.

### **An affinity towards mechanics**

Sameerul's interest in mechanics started from a young age. From the age of seven, Sameerul accompanied the late Sardar Jagtar Singh to different places, as his disciple, and learnt the trade of working with machinery. After working as an apprentice for 12 years, he started his own workshop in Raja Mankapur in Gonda district. It was during that time that he made this stove. In 1990 he came back to Paliya and for nine years he worked on HMT tractor engines and also made many modifications to HMT tractors. Now he has a small workshop and has carved a name in the field of repairing tractors and engines.

On his future plans, he talks about how some day he would try to make a diesel engine like the ones made by the Koreans or by Kirloskar. He feels that both these are equivalent in terms of strength. Though the latter has higher fuel consumption, both are equally easy to fit and use.

