

Auto Stopper for LPG gas stove

**National First
Student**



Davalsab Ladammanavar
Dharwad, Karnataka

Imagine your mother is alone at home and is away in the garden watering the plants. She has kept a dish in the pressure cooker on the gas requiring one whistle. But the whistle sound does not reach the garden. The dish gets over cooked and the gas is being burnt unnecessarily. To solve these problems, Davalsab (20), a young student with multiple talents, has come up with an auto stopper, which senses the whistles and at preset numbers, gives an alarm and turns off the knob of the gas-stove.

Childhood achievements

Davalsab Ladammanavar, fondly called Daval, was born on 14th February 1989 to Mahammadgouse, who was a Government school Principal and Razia Begum, who is a primary school teacher. He is the youngest of three siblings. His elder sister has completed her medical course and his brother has done a health inspector course.



Although stubborn and naughty but he was good in studies and always stood first in the class. During his school days, he liked to visit automobile garages and scrap shops. He enjoyed collecting scrap or abandoned parts and repairing them. His father, a National level swimmer himself, wanted Daval to become a good sportsman. Drawing inspiration from his father, he participated and won two silver medals in State level swimming competition, and participated in the National level event as well. Apart from swimming, he is a good athlete too, and had won consecutively six times at the intra and inter school athletic meets. He was also a N.C.C candidate with a C.S.M rank in school. Not only this, pursuing his hobby of fine arts, he also procured two gold medals in State level Handwriting and Painting Competition, which was held at Dharwad Art Gallery in 2003. He also won the Dr. Dara Bendre award for painting given by the Karnataka Government in 2003.

Born with a scientific temperament and abundant creativity, he never missed any chance to take part in science exhibitions. When he was in class five, he made a boat model that was different from the commonly used boats in the state. This was published in local news papers and his interview was also aired on the All India Radio. Next he made a customized model of a truck for an exhibition in class nine. He wanted to put the truck model in the science exhibition but the teachers did not allow him as they did not find it worthy enough for presentation. He took this insult as a challenge and thought of coming up with a good exhibit for the next function.

He used to watch Discovery and National Geographic channels very keenly and happened to participate in one of the competitions, which invited entries regarding innovative designs of planes. The reward was a chance to visit the NASA, USA. He participated but did not win the competition. However, he received a letter from them, with a pamphlet about the educational

materials they offered to sell. As he did not have money, he discontinued the communication and got ahead with his life.

Unfortunately, he lost his father when he was in class ten and was preparing for another science exhibition. The loss of his father came as a shock to him and he withdrew himself from all the sports activities. Despite of the deep pain though, he designed the model for up coming science exhibition. This model was that of the Auto stopper for gas. The idea for which came after noticing the losses in LPG at his home and his friends' when mistakenly or carelessly, the gas regulator remained open even after the required time for cooking. Also, some times his mother used to put the cooker on the gas and then engage herself in some other task. She used to ask him to switch off the gas after preset whistles. This made his think of an automatic system to regulate this.

His school teachers, S. Gaonkar, Hullur, Prakash & Hadli supported him and motivated him all this while to do well. His friend, Manjunath, who was his partner in the first exhibition, was also a great pillar of support. Though in the exhibition, they did not win any award but many media person, both print and electronic, interviewed them and shot their innovation. This made the duo wonder if something was wrong in their innovation.

Undeterred, he continued with his experiments. He made an auto lever control system for his seniors who submitted it as a part of their annual project. He helps people with their projects without slightest hesitation. His parents have been supportive of his orientation towards mechanical gadgets and sponsored to an extent. At times his friends help him with the finances to get the materials. He has been interviewed twice by A.I.R. and he has been widely covered by the local media.

Auto Stopper for LPG Gas Stove

It is an electrical device with timer controller to stop the gas flow according to the preset time. The timer switches off the gas regulator after cooking. It has digital display system for cookers to count the number of whistles too. The preset cooking time for different varieties of rice or different dishes can be preset with the clock and this system will automatically switch off the gas once the cooking gets over. This system also gives an alarm when the gas stove is switched off.

It consists of two DC motor powered by a 12 volt battery with an analog clock. The timer is connected to the knob of the stove with thread. The timer will switch off the knob once the preset time is over. This device will also give alarm signal when the gas stove is switched off. This device prevents food from being over-cooked, saving fuel, time, energy and money.

There are different devices available in literature¹ that cut off the gas supply but they are stand alone devices. However, the present innovation is a retrofitting device that can be attached to existing gas stoves. In addition, it has the option to provide an alarm and also to count and display the number of whistle while using pressure cooker. A patent (73/CHE/2009) has been filed by NIF in his name.

Dreams!

Till now he has done about six experiments and plans to do a lot many in future. He feels strongly for Dr A P J Abdul Kalam's 2020 dream and wants



to work towards achieving it. He wants to develop modern rifles and certain other equipments for the defense utilizing the knowledge gained during the NCC days. On the other hand, he also wants to come up with other innovations, which address the problems of the teeming millions like proper drinking water and ways of filtering hard water, energy related issues, automatic brakes when the vehicle runs out of control and an ambulance, which can run fast even in bad and dumpy roads. He is hopeful that his mechanical engineering education, which he has embarked upon to get, would be able to provide him necessary technical knowledge to make his dreams for the country come true

¹ <http://www.fuzing.com/vli/001117a2e202/Gas-Cooker-and-Oven> describes the auto-choke safety device (switches off the gas automatically in case of unwanted flame) for thermostatic assisted gas stoves. http://www.alibaba.com/product-free/101366809/Timer_Controlled_Halogen_Cooker.html discloses an electric cooker using halogen lamp (far infra-red technology) with 6 temperature settings up to 480 minute timer and can use to switch off/on cooker at desired setting. The Indian patent application No 2256/CHE/2006 discloses a safety device for LPG gas shut off in the event of a leakage and indicating the gas nearing to get exhausted. Conventionally, many systems are available on safety valve arrangements especially on gas leaking e.g. US patent 5722448 and 5628242. US patent 6234189 B1 describes electric stoves which are provided with preset timer for desired cooking time Another, US patent 6733276 B1, describes an existing gas cut off device needs radical design changes in the gas stove suitable for the outdoor gas fueled barbecue grill.