SATISH CHANDRA DASGUPTA was an outstanding scientist and inventor who made the country proud. As a result of his efforts, the perennial fallow laterite region that had been a challenge to the farmers and scientists, changed into fertile green farmland, capable of growing three crops a year. Besides this he made many inventions which include a fire extinguisher called Fire King and Sulekha ink.

Satish Chandra Dasgupta was born on June 14, 1880, in Kurigram (now a part of Bangladesh) in Rangpur district of Bengal. He belonged to a poor family, yet due to his hard work and dedication, he was awarded a Master’s degree in chemistry from Presidency College, Calcutta.

The Bengal Chemical Works laboratory was used by chemistry students to carry out practicals. Satish Chandra’s work in the laboratory was closely watched by Acharya P.C. Roy, who got him a job in the Bengal Chemical Works factory as factory superintendent. Satish was determined to take the organisation to great heights. He developed medicinal products such as strychnine and caffeine from indigenous raw material. He knew that the tree nux vomica grew only in India. He worked out a process to produce the much-in-demand strychnine from nux vomica. The supply was large enough to meet the demand of the domestic market and was also exported. (Till then, the herb used to be taken to England and the product sold at a high profit in India).

Similarly, after much hard work done by Satish Chandra, Bengal Chemical Works began the production of caffeine, a medicinal product in great demand.

Satish was a versatile personality. He could work in the laboratory, in the factory, the smithy and even do the carpentry with immense ability. In 1910, the organisation had to install fire extinguishers for the safety of the factory and its workers. The sole supplier of the extinguishers was a British firm and the prices were extremely high. Satish felt that the expenditure involved would be unaffordable. He bought only one extinguisher, opened it up, studied it very carefully and designed a new and a much superior one. It cost one-fourth of the price charged by the British firm. The new design was called Fire King. The company sold it, making hundred per cent profit, yet it cost the buyers half of what the British firm charged. As an incentive, the founder P.C. Roy shared half the profit with Satish Chandra and the latter got Rs 2 lakh for Fire King.

Soon after this Satish Chandra was influenced by Mahatma Gandhi and responded to his call, asking young patriots to join him in national service. Despite the requests made by directors of the Bengal Chemicals, begging Satish not to leave them, he quietly left one night.

On joining the national movement, Satish Chandra donated his entire savings, which amounted to several lakh rupees, and got down to serving the nation. He was given the charge of the Wardha Institute for Research in Village Industries. He improved the charkha’s working, designed a cheaper and a simpler ghani (a simple oil crushing machine) with a higher efficiency. He also found more profitable ways of making paper from bamboo pulp. This brought higher profits to the farmers.

After India got Independence, Satish Chandra was offered posts of high offices, but he preferred to work at Khadi Pratishthan at Sodepur, on the outskirts of Calcutta. He improved the mustard seed crusher, found a more economical way of manufacturing palm gur and twisted jute yarn.

In 1965, at the age of 86 years, Satish began soil research. Various areas of West Bengal were affected by drought. Satish Chandra found ways of increasing the water retention capacity of laterite soil tapping ground water resources and raising good crops on fallow land. He revived the art of making hand-made paper. He carried out a project of making safety matches from bamboo sticks. He also wrote some books which include Cow in India and Home and Village Doctor. Fountain Pen Ink is a popular book which gives an account of how he invented Sulekha ink to help a boy start his own industry. Satish Chandra’s helpful attitude, scientific bent of mind and complete dedication made him a much honoured and loved citizen. Amidst preparations for new projects, he died on December 24, 1979.

Fire extinguisher

FIRE extinguisher is a portable device used to put out fires of limited size. Such fires are grouped into four classes, according to the type of material that is burning. Class A fires include those in which ordinary combustibles such as wood, cloth, and paper are burning. Class B fires are those in which flammable liquids, oils, and grease are burning. Class C fires are those involving live electrical
equipment. Class D fires involve combustible metals such as magnesium, potassium, and sodium. Each class of fire requires its own type of fire extinguisher.

**Extinguishers for Class A Fires**
Class A fire extinguishers are usually water based. Water provides a heat-absorbing (cooling) effect on the burning material to extinguish the fire. Stored-pressure extinguishers use air under pressure to expel water. Pump-tank extinguishers are operated by a hand pump.

**Extinguishers for Class B Fires**
Class B fires are put out by excluding air, by slowing down the release of flammable vapors, or by interrupting the chain reaction of the combustion. Three types of extinguishing agents—carbon dioxide gas, dry chemical, and foam—are used for fires involving flammable liquids, greases, and oils.

**Extinguishers for Class C Fires**
The extinguishing agent in a class C fire extinguisher must be electrically non-conductive. Both carbon dioxide and dry chemicals can be used in electrical fires. An advantage of carbon dioxide is that it leaves no residue after the fire is extinguished. When electrical equipment is not energised, extinguishers for class A or B fires may be used.

**Extinguishers for Class D Fires**
A heat-absorbing extinguishing medium is needed for fires in combustible metals. Also, the extinguishing medium must not react with the burning metal. The extinguishing agents, known as dry powders, cover the burning metal and provide a smothering blanket.