

d. Innovation from Bihar

Cooker for coffee:

Conventionally, the pressure cookers have been used for making food only. However, the innovator has modified the normal cooker and made it into an espresso coffee making machine.

The modified cooker is used to boil water and generate steam. It is then passed through a modified delivery system, attached to the lid, to a jar containing milk, coffee and sugar. In five minutes frothy, tasty coffee gets ready!

The modified cooker has been in great demand and even tea stall vendors from nearby districts have bought it for their shops.¹⁰



View of cooker for coffee

Reducing the pollution:

For operating a welding machine, the generator used by the innovator emitted a lot of flue gases and also produced unwanted noise. To solve this problem, the innovator retrofitted a cylindrical container to the exhaust pipe of the engine. The specific arrangement of different types of fins in the cylinder filters out the particulates and allows the clean air to pass, resulting in very low emissions and thus controlling pollution and reducing noise.

BIT Mesra, Ranchi has confirmed considerable reduction in the proportion of carbon monoxide and carbon dioxide in the flue gases after adding the device instead of conventional muffler. The temperature of the flue gas was also reported to be significantly reduced. The testing was facilitated by NIF.¹⁰



View of Generator which reduce the pollution

Hand pump with a change:

The plunger design of a hand pump has been modified by the innovator, which has resulted in substantial increase in the efficiency. The change of material has also helped in reducing the cost and weight as well.

BIT Mesra, Ranchi tested the same at NIF's instance and found that the hand pump with the modified plunger gave 69 percent more discharge than the hand pump with the conventional plunger for the same number of strokes and head.¹⁰

Novel gear mechanism & Cap for the wooden pencil:

The innovator has come up with this device to reduce the hard work involved while riding a bicycle/rickshaw uphill. The new gear mechanism enables a person to pedal backwards and yet move the cycle forward, thereby reducing effort and fatigue. It also prevents the reverse motion of the vehicle on slopes.¹⁰

The innovator has interestingly devised a cap for the normal wooden pencil, which prevents the tip from being broken easily. The cap also has an eraser and a sharpener to address the other needs of the user.¹⁰

Amphibious bicycle:

Saidullah's penchant for innovations has made him lead such a rich life that it can inspire generations to come. He made the amphibious bicycle in mid 1970s to cross over from one place to another during a flood in the region. Thereafter he has been churning one innovation after the other over the years with his latest being an amphibious rickshaw. Among his many innovations a few that can be mentioned are a mini tractor, key operated table fan, fodder cutter operated centrifugal pump, spring loaded bicycle, mini turbine etc.

The serial innovator, Shri Saidullah was given the Life Time Achievement Award at the hands of the then President of India, in NIF's Third National Competition for Grassroots Innovations and Traditional Knowledge Practices in 2005.¹⁰



View of Amphibious bicycle

Bicycle that can be carried in a bag:

A gritty and hard working graduate, Sandeep made this folding bicycle, which can be assembled and dismantled easily in a very little time. When dismantled and folded, the bicycle becomes portable such that it can be put in a bag and carried along!¹⁰



View of Bicycle that can be carrying in a bag

Solar cycle along with FM, radio and charging facility & Multifunctional emergency light:

Move over petrol and electricity operated two-wheelers for here comes the solar cycle, working on solar batteries. Using a 12 V motor, the cycle gives a speed up to 30 km per hour, good enough for a joyful city ride. It also has a tape recorder and FM radio for listening pleasure apart from a plug point, which enables the stored energy to be used for charging/operating various small devices.¹⁰

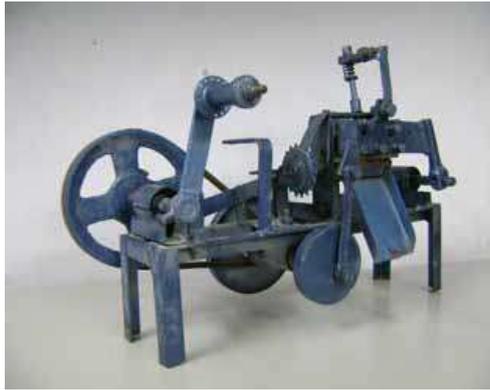
Who says an emergency light can only be used for lighting purposes? Definitely not the innovator, for he has come up with a solar powered light having tubes that can glow up to twelve hours, along with a FM radio, a mobile charger, a WLL Telephone battery charger and a 12 V DC fan that can be operated for four hours. Apart from solar energy, this emergency light can also be conventionally charged by electric power.¹⁰



View of Solar cycle along with FM, radio and charging facility & Multifunctional emergency light

Tobacco leaf cutting machine:

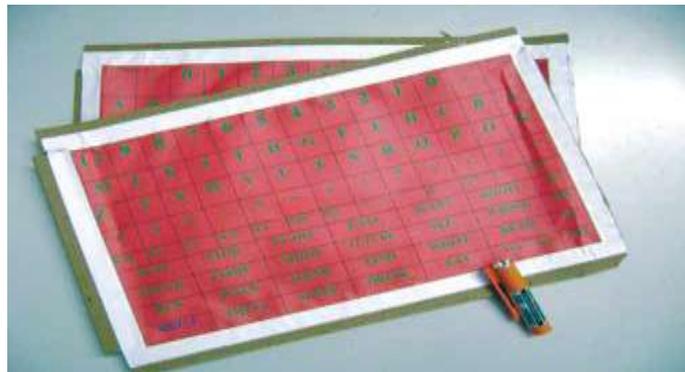
It is a manually operated machine for cutting tobacco leaves. The leaves are passed between the cylindrical rasps, flattened and then cut. Depending upon the cutting requirements, adjustments can be made in the assembly also.¹⁰



View of Tobacco leaf cutting machine

Communication board for the deaf and the dumb:

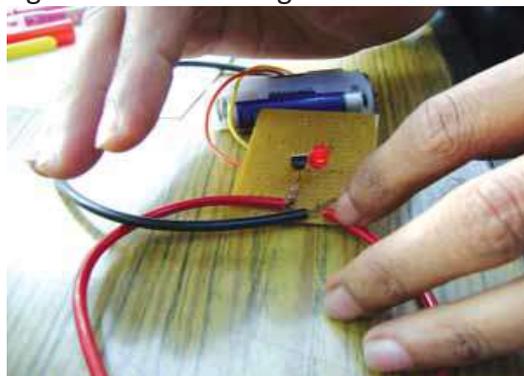
This thoughtful effort from a student enables deaf and dumb people to communicate with others as well as among themselves easily. This is a board that has alphabets, numbers and commonly used words written on it. The user has a torch, which is used to illuminate the specific word, alphabet or number such that the person viewing the board can understand the meaning.¹⁰



View of Communication board for the deaf and the dumb

Pen multimeter:

The innovator has modified a ball pen to act as an electric current tester and a sort of multimeter to check diode, resistance and capacitor's ratings. Moreover, it also has a small LED which can be used at night as a source of light.¹⁰

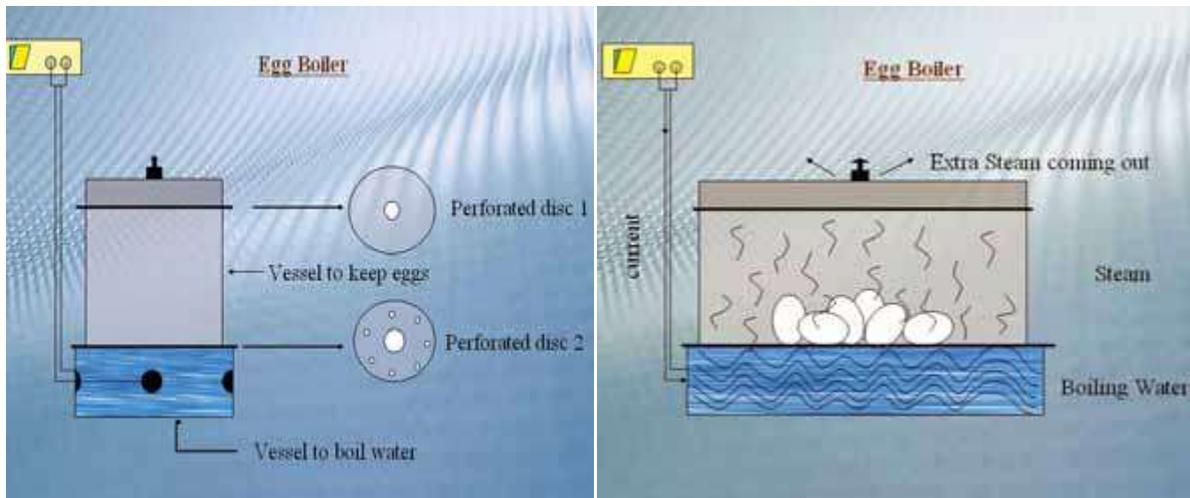


view of Pen multimeter

Efficient egg boiler:

Understanding that steam at an equal temperature is hotter than water, Pradeep has come up with an egg boiler that uses steam instead of water to boil the eggs. In the lower

compartment water boils and the steam rises through a perforated opening to the upper chamber where the eggs are kept. This way the eggs boil quickly saving fuel. The innovator was awarded in the student's category in NIF's First National Competition for Grassroots Innovations and Traditional Knowledge Practices in 2001.¹⁰



View of Efficient egg boiler

10. Source: Bihar Innovates by R. A. Mashelkar, FRS Chairperson, Governing Council National Innovation Foundation, Ahmadabad