

National Second - Engineering

Brick/Block making machine

Arjunbhai M. Paghdar
Keshod, Junagadh

Scout: SRISTI

Manually block/ brick making is a very laborious and time consuming process where mostly women and children are employed as workers. Arjunbhai has developed a block making machine, which has mechanized the process and improved efficiency.

Background

Arjunbhai (52) was born in an affluent family with his late father being the Nagarpalika Pramukh of Keshod. His father was an administrator and a social worker and earned a lot of social capital for his work. Arjunbhai has two brothers and four sisters; all of them are married and settled. His mother lives with his younger brother who is into construction business. Arjunbhai and his younger son live together while his wife lives with his elder son and his family. The younger son is also in the business of brick making like Arjunbhai while the elder one is in construction business.

As a naughty and mischievous child, Arjunbhai used to get reprimanded by his teachers and parents alike for his acts of mischief and disobedience. He was keen on tinkering with anything he could lay his hands on. Not able to pass class 12, he dropped out and started the manufacturing of box strapping machine in 1984 with the help of his father and a partner. With no local competitor, his business grew significantly however as local manufacturers started making the machine, business slowed down. He moved to Ahmedabad and continued his business however eventually returned back to Keshod after a few years and settled there.

Arjunbhai is not only an innovator; he is also good in sketching and poetry. He recalls that in school when the teacher turned to the blackboard, he used to start sketching anything that came to his mind in his notebook. He has also sketched the portraits of his father, mother and uncles in pencil. Among other things, he has written a Gujarati poem where a person is complaining to God about the late rains with God replying back that it is a result of the misdeeds that man has done to nature. Apart from the brick/block making machine, he has also made a wood splitting machine, cow dung log & pot making machine and a mobile *chabootra* (bird feeding platform).

Genesis

During 2005-06 he purchased a JCB machine and two tractors trying to make foray into another sector. However, late payments, diesel theft by his staff, and the ban of stone digging at the Arabian Sea coast by the government, forced him to sell his machines and wrap up this business. But this short business stint was very useful as he learnt about hydraulics using his JCB machine, which led him to start working on a brick making machine in 2007. Brick making requires a number of labourers and much time. Generally women and children are employed in the brick making plant. The process includes breaking of soil lump manually by legs, mixing of soil, fly ash, lime and water and tightly packing the mixture in moulds. Sometimes, scarcity of labour and high demand of bricks creates operational problems. After a number of trials over a period of two years, and developing

three versions of the machine, he could finally come up with the complete machine in 2009. He has been engaged in the business of making bricks and blocks using this machine ever since.

The Brick/Block Making Machine

The brick making machine can efficiently undertake all operations like soil lump breaking, raw material mixing and block/brick making.

The machine consists of three units, *viz.* material mixing unit, conveyor unit, and block moulding unit, which can make approximately 140-150 blocks (of size 15 x 9 x 7 inches) per hour. It can also be used for making conventional and interlocking bricks of different sizes by changing the mould. This machine eliminates the need to employ woman and child labour in the brick making process.

Among his other innovative works is a hydraulic wood splitting machine, which splits wood logs by dropping a vertically mounted hydraulic plunger having conical shaped tool at the bottom end. It is very useful in cutting big sized knots or joints in a log/ trunk, which otherwise are difficult to cut using an axe or a saw. The machine can split any width of trunk and height up to 3 feet. He donated one machine to the Keshod graveyard on the first death anniversary of his father. This machine has helped workers as splitting trunks can be done in minutes, which took hours earlier.

In Gujarat there is a traditional of making bird feeding platforms of various kinds, shapes and sizes. Using a waste plastic bottle and plastic tray, Arjunbhai has made a mobile bird feeding platform, which can be hung anywhere. The tray is set around the bottle, which is filled with seeds and has holes. The birds sit on the tray and punch the bottle by their beak releasing the seeds on the tray through the holes on the bottle, preventing wastage of seeds. Using his cow dung pot/log making machine is a manual machine that can be used to make pots or logs from cow dung. The logs are used as fuel while the pots are used in nursery replacing plastic bags.

Arjunbhai is a social innovator and has dedicated his life to come up with more innovations to solve the problem of common people.