

Pedal Powered Nut Sheller



Design & Realisation by Carlos Marroquin

Fact sheet by Henry Godfrey

Produced by Maya Pedal 2010

Version 1

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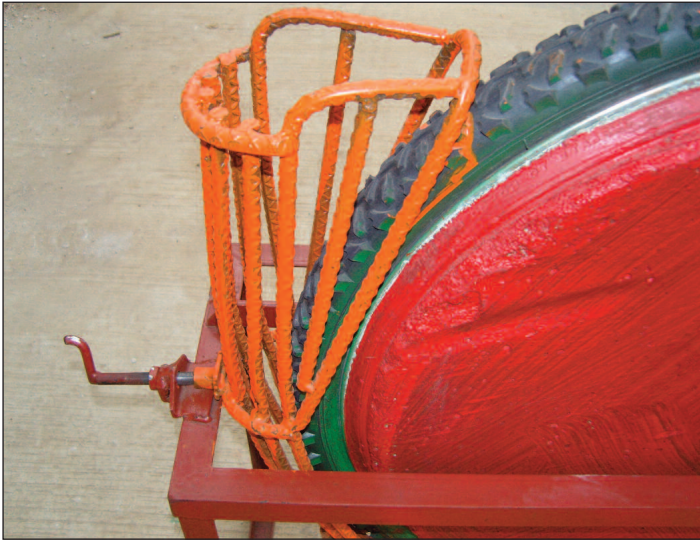


Introduction

This design of pedal powered nut sheller utilizes an unwanted bicycle to power a device for de-casing ripe Macadamia and acatropa nuts. It should work for a range similar nuts. As the machine is pedaled, nuts are fed into the front end. Once the nut enters the chute, the spinning mountain bike tire breaks the shell, and at the same time ejects the nut. The action is aided by converting the bike wheel into a concrete fly-wheel. 20-25 quintals can be processed in a day. 1Q = 46kg

You will probably need:

- A mountain bike with 26" wheels.
- Angle Iron
- Some Rebar (for reinforcing concrete).
- Concrete and fine sand
- Some extra bike chain



The entrance of the chute. The diameter of the chute is adjustable to allow for different sizes of nuts.



The chute is the most difficult part to make. It is made from rebar, bent into shape around a bike wheel.



The flywheel is made by pouring concrete into a handmade mold. Mix 1 part cement with 2 parts fine sand. Make sure the valve is left uncovered for access and removal (see inset).

The concrete puts more pressure on the axle and bearings. Make sure the bearings are well set, in good condition and well greased. The axle must be straight.



The outlet chute is made by spiraling rebar around a metal tube. The shelled nuts spill out from here.

About Maya Pedal

Maya Pedal is a Guatemalan NGO based in San Andreas Itzapa. We accept bikes donated from overseas which we either recondition to sell, or we use the components to build a range of "Bicimaquinas", (pedal powered machines).

Pedal power can be harnessed for countless applications which would otherwise require electricity (which may not be available) or hand power (which is far more effort). Bicimaquinas are easy and enjoyable to use. They can be built using locally available materials and can be easily adapted to suit the needs of local people. They free the user from rising energy costs, can be used anywhere, produce no pollution and provide healthy exercise.

We make water pumps, mills, tile makers, nut shellers, blenders (for making soaps and shampoos as well as food products), trikes, trailers and more.

In Guatemala

We have a busy workshop staffed by locals and by volunteers from around the World. As well as building Bicimaquinas, we offer a bike repair service and sell used bikes.

The project is managed by Maya Pedal founder Carlos Marroquin, a skilled engineer and the inventor of many Bicimaquinas.

We also work with a number of local partners, NGO's, agricultural cooperatives and organic producers.

Internationally

We are supported by a number of international organizations. We also accept volunteers with a range of skills and interests.

Contact us for more details.

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