

Design Resource

Charaka

The Making of Spinning Wheel

by

Prof. Bibhudutta Baral

NID, Bengaluru

Source:

<http://www.dsource.in/resource/charaka>

1. Introduction
2. Location Map
3. Tools and Raw Materials
4. Making Process
5. Panchakki Mechanism
6. Products
7. Contact Details



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Introduction

The word “Charaka” refers to “spinning wheel” which is used to spin yarn. In Uttarakhand, Charaka is used to spin wool yarn for weaving sweaters and other wool products. In Bageshwar, village of Uttarakhand; Charaka is creatively designed with very basic raw material and with less equipment which are easily available locally.

Charkha making is a traditional craft of India. The traditional Charaka started many years ago, and the artisans of Bageshwar have adopted this craft from their ancestors. These artisans are not only skilled in creating economic and compact Charaka but are also skilled enough to use natural resources (water flow in the mountains) to produce energy which will help to run or operate automated cutting machines.

Charkha helps to spin the fibers like cotton, silk and wool into fine threads. The twisted yarn later help to weave in loom using fly-shuttle with loaded wool spindle.



Production unit at artisans place in Bageshwar.



Different parts of the wheel are attached by hammering/fixing.

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Coloring is done to the wooden slab.



Wheel of Charaka is being fixed.

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Charkha spinning process done by pedaling. Closer view of wool spinning.

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Work environment at artisans place.

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Location Map



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Tools and Raw Materials

Charkha spinning is a wood craft used for spinning threads and yarns. Wood is purchased from forest department of Bageshwar which is abundantly available. In the earlier days “Toon wood” was used to make Charkha. But at the present “Pine tree” wood (cheer Ki lakdi called in local language) is used to make spinning wheel.

Wood is cut by the machine called Panchakki, practiced from their ancestors. The machine Panchakki (automated wood cutting machine) is operated by locally generated power which is done by water flow. The process of generating energy is very traditional and practiced from many generations.

List of Tools and Raw Material Used:

1. Wood-the basic raw material for charkha making.
2. Panchakki machine-the wood cutting machine.
3. L shaped tool-helps in measuring and marking wood.
4. Chisels (pateshi)- used in shaping the wood.
5. Hammer (Basula)- is done to give required shape.
6. Color- used for dyeing charkha.
7. Gaze- edges of wood are given even/smooth shape using gauge.
8. Saw machine- helps in cutting the thick wood to required shape.



Coloring is done to the wooden slab.



Wheel of Charaka is being fixed.

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Measuring is done using right angle shaped tool.



Edges of wood are marked using gauge.



Color is mixed with varnish and applied on wood.



The basic shape of wood is cut in rectangle.

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Panchakki machine is used to cut the wood. Different types of chisels for shaping.



Hammer and chisels for multipurpose carpentry work activities.

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Wood-cutting sawing machine.



Hammering is done to obtain required shape.

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Making Process

Charkha making is a traditional craft of India. Bageshwar charkha is a multiuse/purpose machine used for spinning the yarns to make spools. It is made using the wood of "Pine tree".

The process followed is:

Wood is cut according to the required size using Panchakki machine and smoothed to make surface flat. Different parts of the wood are carved using chisels and hammer. Before fixing the parts of charkha, wood is painted with hirogi (brick red color) which is mixed with varnish and applied on the carved parts of the wood and dried in sun shade. After drying different parts are fixed together along a fan to the top slam with which a belt is attached. The belt is fixed with wheel in the bottom and is operated by the pedal.



Wood slab is measured using right angle shaped scale. Marking is done to take exact measurements.

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Edges of wood are made even by using a gauge.



Holes are made using chisels and hammer to insert the other parts to be fixed together.



Extra part of the wood is being removed.



Wood is cut using a hacksaw blade.

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Artisan making wheel of charkha spinning machine.



The wooden pieces are fixed to make stand- main structure.



Hammering is done to fix the joined parts tightly.



Varnish is mixed with color and coated on the products.

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This varnish helps to avoid insect's attacks.



Different parts of the product are fixed.



Stand of the charkha is being attached.

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Wheel is a crucial part of charkha.



The parts are fixed and nails are tightened.

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Closer view of process of spinning strands of wool into thread.



Charkha functions similar to spinning wheel by pedaling.

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Panchakki Mechanism

Panchakki Mechanism is the traditional mechanism used as wood cutting machines. Water force is used to generate power by artificial (engineered with local knowledge) water channels. The generated kinetic energy is used to run the wood cutting machine to cut the wooden logs. Speed of the machine is controlled by managing the water flow.

Process Sketch of Panchakki Machine:

1. Water Flow diverted from canal.
2. Speed control valve.
3. Water Turbine.
4. Water Force converted to kinetic energy.
5. Wooden Pulley (5.1, 5.2, 5.3 - pulley).
6. Weight balancing wheel.
7. Belt which connects to the cutting machine.
8. Wood Slitting Machine.



Diverted river water for generating energy. Place where water enters into turbine.

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Flow of water is controlled here.



Water force controller junction.

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The belt is connected to pulley.



Belt from pulley is looped to wheel of Wood cutting machine.



Artisan started cutting wood using Panchakki (wood slitting) machine.

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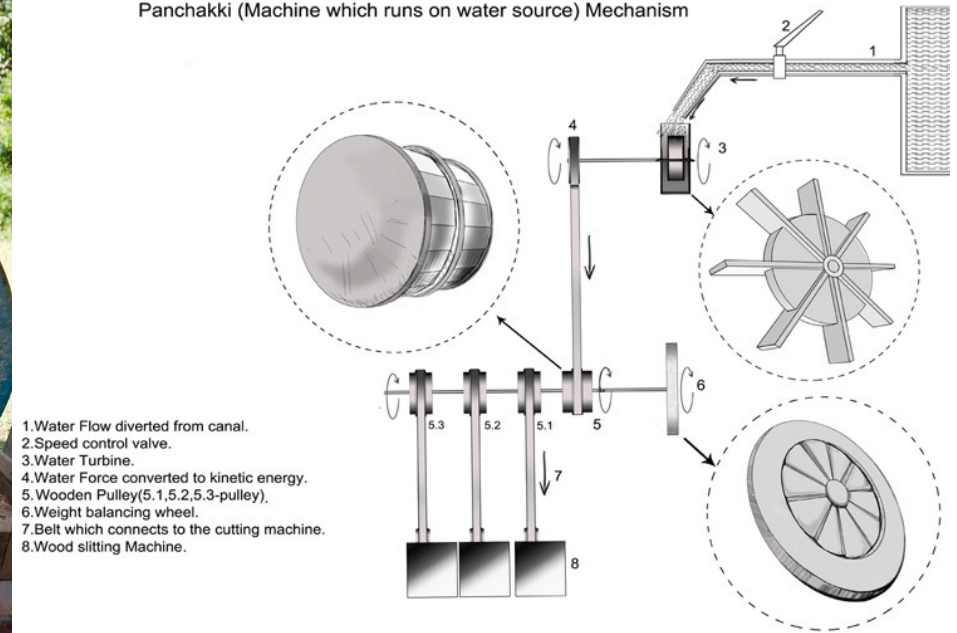
<http://www.dsource.in/resource/charaka/panchakki-mechanism>

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The over-view of artisan working with machine.

Panchakki (Machine which runs on water source) Mechanism



Schematic diagram that explains process flow of Panchakki machine.

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Products

The spinning wheel is very basic and economic for all the weaving units for purchase. It is completely done with wood and with minimal equipment, and yet helps in completing important task which helps in weaving processes.

Charka is used to spin wool yarn to make spools and spindles. The woolen yarn from bundle is spun on the spool. It is a unique innovation existing from many years in Uttarakhand region, done to speed up the spinning process and can be operated by pedaling, thus saving power, time and a very practical machine. Charaka functions similar to that of hand operated spinning wheel used for spinning spools but operated by pedaling.



Skilled artisan of Bageshwar expert in making charka.

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The finished product of charkha which helps in spinning wool threads.



Artisan makes Charaka based on individual orders.

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You can get in touch with Professor Bibhudutta Baral at **[bibhudutta\[at\]nid.edu](mailto:bibhudutta[at]nid.edu)**.

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