

Design Resource

Metal Bells - Kutch, Gujarat

Metal Artwork

by

Prof. Bibhudutta Baral and Ranjitha M. C.

NID, Bengaluru

Source:

<http://www.dsource.in/resource/metal-bells-kutch-gujarat>



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Introduction

Metal plays a vital role in human's life. There are three major periods of metal age - Copper Age, Bronze Age and Iron Age. The existence of human is divided into two great periods – 'Age of Stone' and 'Age of Metal'. The metal-working follows four major stages such as mining, smelting, alloying and forging or casting. The Copper age was the first metal age that continued to the discovery of iron. Iron has gained industrial importance in history. Iron is the most usual element in the Earth's crust and has been used since ancient times, although copper alloys, which can be melt with a low temperature was used earlier in human history. Iron is believed to be a blessed metal and iron is a wonderful material for making tools and weapons. Indian artisans have been using many different metals like iron, copper, silver and alloys like bronze, bell metal and white metal etc. The iron pillar at Mehrauli (Delhi) is one of the fine example of Indian craftsmen's excellence which belongs to the Mauryan and the metal art work reached great heights during the Chola period.

The metal artwork known to Indians for almost 5000 years from now. Whereas Archeological evidences proved that the metallic culture is very old as the Indus Valley Civilization. The beautiful figurine of 'dancing girl' from Mohanjodaro stands evidence of this fact. Metals like bronze, brass and bell metals are formed by alloying the copper with other metals mainly tin and zinc. The art of making articles from bell metal is one of the important craft form in Kutch, Gujarat. Kutch is located in the state of Gujarat, fortunate with one of the most environmentally and culturally rich landforms. It is an ancient land and the second largest district in India. The history of Kutch traced back to the Indus Valley Civilization whereas several sites are related to Indus valley civilization and also mentioned in Hindu mythology. Kutch is a cultural district of Gujarat and famous for its various handicrafts like Embroidery, Jewelry items, Wall paintings, Mud art, Rogan painting and Bell metal art. The Great Rann is a salt wetland in Kutch district, which is the most attractive place, and the beauty of nature, culture and tradition, superfluity of colours and wealth of joy and beauty all together reflect the brilliance of the Kutch.

Manufacturing bell metal products has a glorious past in India. Bell metal is an alloy of copper and zinc. Whereas these alloys are used to produce articles such as sculptures of deities, mythological figures and animals, pots, pans, utensils and bells etc. The sound of bells signifies the seven musical notes. Bells are one of the oldest percussion instruments. The unique ability of producing sounds that reaches vast distance and was used by several cultures and ancient civilizations as a mode of communication and also as a musical instrument. It is believed that each part of the hand crafted bell represent a particular deity, goddess Saraswathi (Goddess of wisdom) resides on its clapper or tongue, Lord Brahma on its face, Lord Rudra on its middle and vasuki on its stem. The handle of the bell denotes the life-giving energy or vital force (Prana Shakti). Pleasantly sounding bells is an accurate mixture of copper and tin (4:1 i.e., 78% copper and 22% tin).

Mr. Luhar Ismail from Zura village of kutch district, a well-known artisan who started his career in making bells at his early age of twelve. Later on he stopped making bells for some personal reasons and then again he started

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making bells from past fifteen to twenty years. The income will be depending on the orders which he gets.

Artisan Mr. Jan Mohammed S. Luhar from Zura village of Kutch, a famous artisan and national award winner who is blessed with this unique skill from his father. Before artisans were very particular about their work by making a typical bells later on they come up with the innovative ideas of making various designs of bells like wind chimes, doorway hangings, key chains and finely tuned musical instruments etc.



Fine-looking bell metal musical instrument.



Small cowbells made of bell metal.

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Craftsman involved in making bells.



Final product of hand made and hand tuned bell.

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Tools and Raw Materials

- **Iron Sheet:** A basic material to make bell.
- **Wood:** Used to make clapper for bell.
- **Metal Powder** (copper and zinc): Powder is applied to the bell before heating.
- **Metal Compass:** To measure and mark the sheet according to the required size.
- **Cutter:** To cut the metal sheet.
- **Holder:** To hold the bell and to place in a kiln.
- **Hammer:** To shape the metal sheet.
- **Kiln:** Used to heat the bell with high temperature.
- **Raw Cotton and Clay:** Mixture of raw cotton and clay is wrapped around the bell before heating.



Iron sheet is used to make the bell.



Different size cutters are used to cut the metal sheet.

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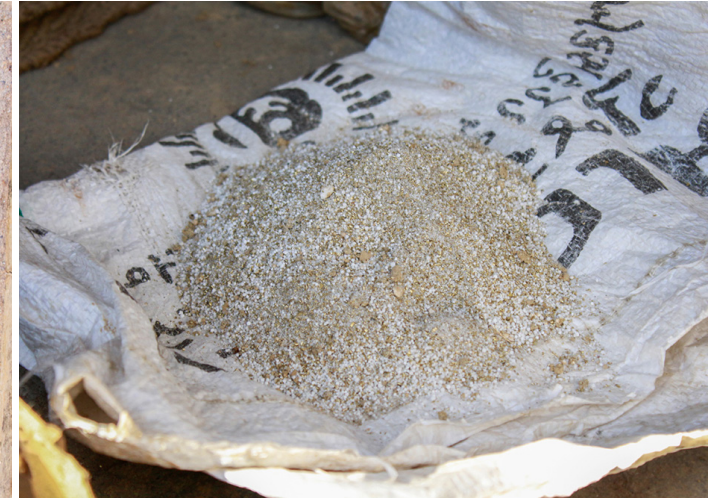
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Hammers are used to shape the metal sheet and for tuning the bell.



Metal powder made of Brass, Iron, Copper and Zinc for polishing.

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Customized tool to shape the metal sheet according to the requirement.



Mud water and mud mixed with raw cotton are used to wrap the bell before placing in kiln.

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Coal is used to set the fire in kiln.



Kiln is used to heat the metal bells.



Dense wood (khirad tree) is used for bell clapper.

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Making Process

The metal bells are manufactured in the traditional process of heating and beating. In India it is believed that the bell sound will drive away all the negative thoughts. In Hinduism and Buddhism, bells are used in religious ceremonies and bells are also called as 'Ghanta' in Sanskrit. Before these bells were made in Zura but as time passes this craft spread to some other places like Nirona and Bhuj etc. Iron sheets, metal powder and mixture of raw cotton and mud are the basic materials for bell making that include five important steps those are shaping the metal sheet, applying metal powder, mud wrapping, heating and tuning.

Initially iron sheet is marked according to the required size and cut with the help of metal sheet cutter. The edge is cut slightly to lock both the edges to make cylindrical hollow. Then the metal sheet is shaped by placing on the rock, which has an impressions of varying sizes and shaped carefully. Metal sheet is beaten further and smoothen the edges, which has to be overlapped. Once again the sheet is marked in to circle using metal compass to make a cap for the bell. The marked sheet is cut and bent by hammering the sheet to obtain a dome shape. The sharp edges are smoothened by hammering. The handle for the bell is made by cutting and shaping the metal sheet according to the bell size. Handle for the bell is attached by making a hole on the semi-circular hollow crown. Then the cylindrical body and the semi-circular hollow crown are skillfully interlocked together without any welding but are beaten and driven in to the required shape.

Woman in the house will do the next process. The article is dipped in to mud water and then the metal powder made of copper and zinc waste pieces applied on the wet bell so that it will hold the powder smartly. Then the mixture of raw-cotton and clay is kneaded thoroughly and wrapped around the article. Once done with the wrapping, the article is placed in kiln using metal holder to bake with a high temperature. After heating the article is taken out from the kiln and cooled by dipping and pouring water. Then the outer layer of mud is removed by hammering carefully. The wood is cut and shaped in to required size to make a clapper for the bell. Then the clapper for the bell is attached with the help of metal wire. The very next step is tuning the bell, which is one of the most important processes. Artisan starts tuning the bell by beating cleverly to get a fine tune.

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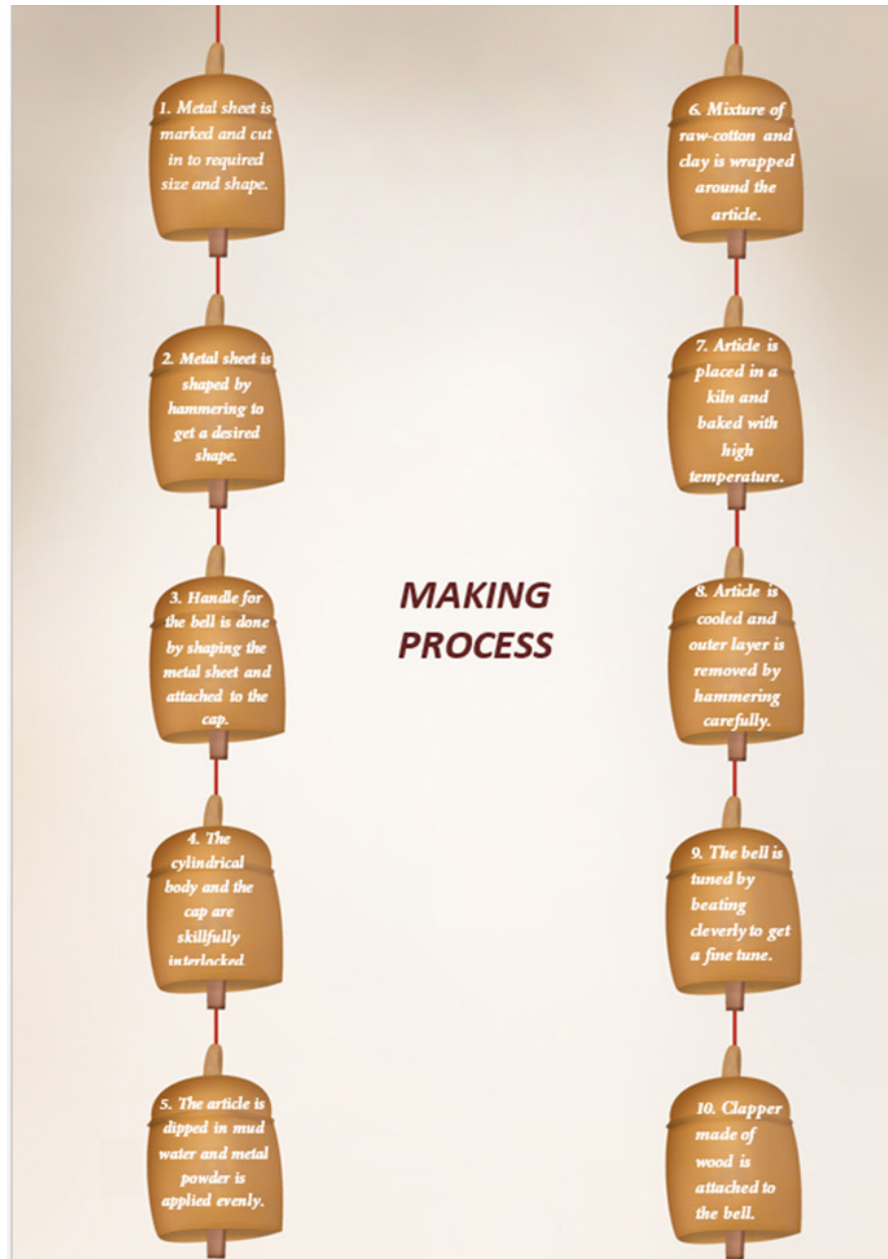
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Flow Chart:



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Initially metal sheet is measured using customized measurement tools.



Metal sheet is cut with the help of metal sheet cutter.



Metal sheet is bent by hammering.



Shaping the metal sheet by beating to obtain a required shape.

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Metal sheet is measured and marked using compass.



Marked sheet is cut and beaten to get a dome shape.

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Smoothing the sharp edges by hammering.



The hole is formed on the cap and handle for the bell is attached.

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The bell parts are joined together.



Bell is dipped in mud water before coating the metal powder.

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Metal powder (brass, zinc, copper and iron) is coated to the wet bell.



Mixture of raw-cotton and mud is kneaded thoroughly.

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The kneaded dough is wrapped around the bell.



The wrapped bell is baked in the kiln with high temperature.



The object is taken out from the kiln and dipped in cold water.



The cooled object is hammered to break the mud cover.

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The bell clapper is attached at the center.



Khirad tree wood is used to make bell clapper.



Artisan tuning the metal bell.

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Products

Artisans Mr. Jan Mohammed S. Luhar and Mr. Luhar Ismail from Zura, a renowned artisans who changed the perspective of the usual bells by making a varieties of products by following a traditional method of making bells. Some of the attractive products using bells are wind chimes for home décor, traditional metal bell doorway hangings, bell key chains and finely tuned musical instrument etc. The size of the bells starts from 0 to 13, 0 size will be the smallest and the size number 13 will be the largest one. Whereas the price for the article depends on the size and starts from INR 25/- to INR 2500/-



Bell key chains with traditional kutch embroidery.

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Metal bell wind chimes for home decor.



Traditional metal bell doorway hangings.



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Finely tuned musical instrument.



Array of metal bell articles.

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

You could write to the following address regarding suggestions and clarifications:

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