

THE HAMMER

By Bob Garay

The hammer stone has been identified by archeologists as the first tool. Made by Homo Habalis, a forerunner to Homo Sapiens, and dates about two million years ago. This first hammer was held in the hand and has basically three functions for which it is suited: pounding, grinding and cutting. A relatively high specific weight and hardness give it much more impact power than a similarly sized piece of timber would have. This hardness is also what restricts its use as a hammer, because it splinters easily.



The author uses a hammer stone to chip rock.

The stone was either chipped or ground into the desired shape depending on the kind of stone: Fine sandstone, limestone and the like were ground serving as grinding stones and the like, while flint was generally chipped and used for cutting. Some materials like granite could only be worked with spherical hammer stones made of diorite, a stone of even greater hardness. Thanks to their roundness and composition these hammer stones rarely splintered. Applied with measured force they were used to slowly pulverize and shape the work piece.



Above is a grooved hammer stone. A typical example of a handle lashed to the stone.

It was over a million years before a handle was adapted to this hand held stone to make a compound tool. Very rarely was a hole made in the stone hammer head for assembling as this was a rigorous chore. Imagine using a reed drill with sand abrasive to grind away at the stone to produce a hole. It was much easier to make a hole in the wood handle and wedge the stone into it. (Fig. 4) Of course early man discovered other materials suitable for hammers as antler and bone was adapted for simple hammers

where making a hole could be produced with arrow like drills spun between the hands.

There were various techniques to attaching the hammer head to a handle, but with the advent of metal casting around 4000 BC a hole was supplied in the hammer head allowing for a wood handle. Iron could not be completely melted in antiquity as the necessary temperature of more than 1500°C could not be achieved. The porous mass of brittle iron, which was the result of the smelting in the charcoal furnaces, had to be worked by hammering in order to remove the impurities. Carburizing and quenching turned the soft wrought iron hammer head into harder steel. Iron implements are generally less well preserved than those made of copper or bronze. But the range of these early hammers covers most of today's craftsman's activities.



Fig. 4

When early colonists came to this country from their homelands they brought their



A commander.

tools with them, the hammer included. But hand wrought iron nails were difficult to make in quantity, and expensive when bought. Thus, there just wasn't much of a demand for the typical claw hammer. Wood was plentiful and as a result woodworkers used wood joints and easily made wooden pegs called trunnels for assembly. Wooden hammers ranging in size from the small hand held mallet to the large commander which was used to nudge together barn beams were dominant. A metal hammer would increase the chance of splitting the piece into which the wooden peg was driven and have a tendency to mushroom the pegs soft heads. Of course metal hammers were still used by the blacksmiths and other metalworking craftsmen.

It is well recognized that the claw hammer as we know it today was first used during

the Roman times. This is well documented by artifacts found in museums. I am sure it had the same problem then as hammers



18th century claw hammers were similar to Roman claw hammers.

of the early nineteenth century had, the head flying off the handle or the handle breaking. This problem was the source of inventive craftsmen developing solutions.



Fig. 7

One of the earliest solutions was using metal straps or flanges that attach to the wood handle for reinforcement. These could be part of the hammer head



Fig. 8

(Fig. 7) or separate flanges (Fig. 8) that go thru the hammer head with the handle. They often were riveted to the wood handle just a bit down from the hammer head. But the holes going thru the handle at this location weakened the handle and often caused it to break at the rivet hole. Attaching a new handle was difficult using this metal reinforcement.



Fig. 9

Another technique of stopping the handle from coming apart from the hammer head is to make it all one piece. Different manufactures were very successful with this design such as the Perfect Handle hammer and the Estwing hammer. (Fig. 9) A hammer I recently found seems to borrow a technique used by early axes. It is a socketed hammer head with the handle firmly driven and riveted into the socket. (Fig. 10)



Fig. 10

The first patented hammer in the United States to approach this problem was by Solomon Anderson from South New Berlin, New York, with his wrap around claw. (Fig. 11) He states that this curved claw attached to a ring around the handle will prevent the handle from breaking or loosening. Not many examples of this hammer are found today and when they are seen in tool auctions they usually sell for around \$1000.



A Cooper's bung startle mallet has the head secured in a wedged mortise.

The most successful hammer modification of modern times is the adze eye hammer head invented



Fig. 12

by David Maydole. He was a blacksmith in Norwich N.Y. who made and fixed many different types of tools. He adapted the eye from the adze which has a wider opening at the top of the head and narrows as it extends thru the head. By also extending the head further down the handle he produced a hammer head that was stronger and would not become loose. (Fig. 13) He never patented this invention but used it in his very successful hammer manufacturing business which he started in 1845. The business was continued by his family after his death in 1892. At that time it was the largest hammer manufacturer in the country with 115 employees. In 1942 the company received its largest order when the Navy purchased 100,000 hammers for use by their shipyards. A fire destroyed the Maydole factories in 1957 and the business never recovered. Many Maydole adze eye hammers can be found today, but finding a non-adze eye Maydole claw hammer is rare.



Fig. 13

As one of the two main functions of the claw hammer is to extract nails,

there have been many patents designed to complete this endeavor.

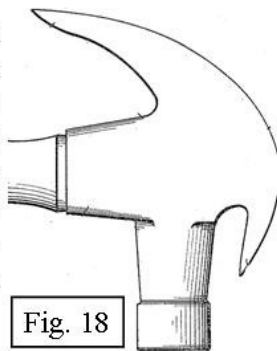
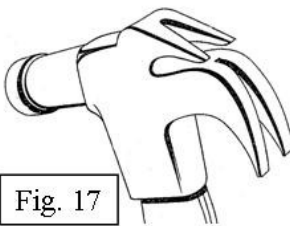
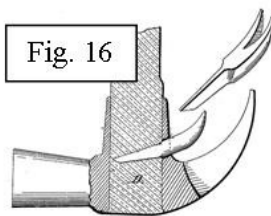
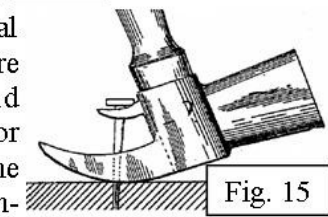
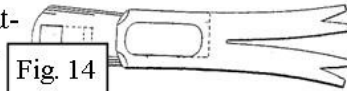
Some make practical sense while others were over designed and doomed to the rare or never seen category. Some patents add small second-

ary claws on the ends of the main claws. Patent No. 83,897 filed Nov. 10, 1868 by William Zimmerman was one of the first to do so. (Fig. 14) Edwin Duryea in his 1893 patent has a small auxiliary claw under the primary large claw. (Fig. 15) Charles Blydenburgh in 1896 patented a separate supplemental claw that slides into a recess in the head behind the main claw. (Fig. 16) Of course not all secondary claws are under the main claw. J.T. Hall in 1916 patented a small starting claw on top of the hammer head and facing the same way as the main claw (Fig. 17) He said this was to minimize strain on the hammer handle when starting extraction. Two months later W.F. Charley patented a similar starting claw design but turned the claw around to face the opposite direction of the main claw. (Fig. 18)

A hammer that attracts many collectors is the two-claw hammer. There is much discussion about where the first two claw hammer originated. It is often said that the Shaker craftsman forged the first double claw. The one that most collectors often see is one patented by George F. Voight In 1902. (Fig. 19) This hammer was made by the Double Claw Hammer Co. of Brooklyn, N.Y and has the patent date stamped on the side of its head. Before this in

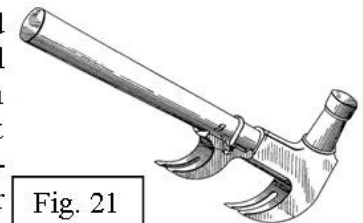
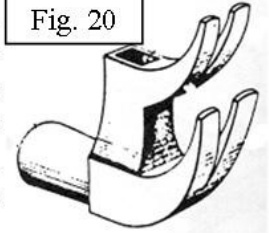
May 1899 W.W. Brownell of Lake Placid N.Y. patented a similar double claw for the same purpose of gaining more leverage. (Fig. 20) An interesting double claw is another one patented to W.W. Brownell in 1903. It is an auxiliary claw that attaches to the handle of any regular claw hammer for pulling out long nails without bending them. (Fig. 21)

Of course if you have a double claw hammer, inventors have to go one better and invent a triple claw hammer. A triple claw hammer was patented in 1901 by C.I. Yonge. (Fig. 22) Another triple claw hammer is patented to Hachig A. Ayvad of Hoboken N.J. in 1930. His hammer is similar to the Cheney adze hammer but has two small claws on the side of the adze claw with a nail pulling in the middle. (Fig. 23) Hachig said this hammer was unique because it could get at nails in a corner that regular claw hammers could not. Not to be outdone J.N. Jarrell in 1941 patented a four claw hammer. It has three step-up claws leading up to the main claw. Thus large nails can be pulled out in stages. Of course not all hammers used claws to extract nails. W.A. Day in 1911 patented a toothed eccentric cam on the side of the hammer head to trap and pull the nail out. Others used the classic pinchers used on the old large slide pullers. The Hammer George Capewell designed in 1896 is one of the more collectible of these hammers. There are many other designs inventors came up with for extracting nails and finding anything other than a simple



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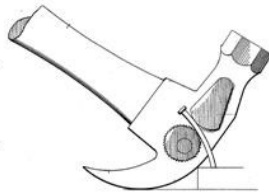
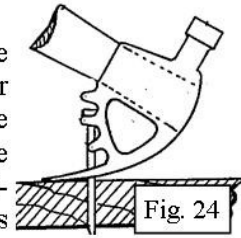
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single claw is always a treat.

Another area of creative inventions for the claw hammer is starting the nail. Some have become classics such as the 1871 patented Cheney ball-bearing system fit into the claws of his hammers. Holding nails with different attaching mechanisms under or with the claws are numerous. While others have a slot on the side of the hammer to hold the nail head.

Josiah Clark was the first to patent this idea with a metallic plate attached to the side of his hammer head with a slot and spring holding the nail head. Robertson's Bill-posters hammer uses something similar to



Day's cam lock hammer.



Capewell's combo hammer.

this type of attachment to hold his nails for reaching up out of reach. In 1862 George Mills and Jackson Hanscom



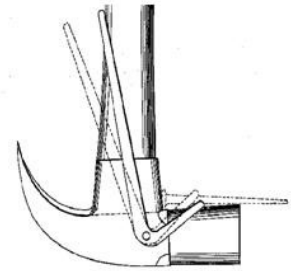
Cheney nail holding hammer.

from Boston perfected this design by making a tapered socket integral as part of the hammer head. In 1860 Charles Carlisle patented a nail holding device by using an angular lever to hold the nail in place just under the hammer head. Many inventors patented various mechanisms to hold the nail either under the hammer head or just above it. In 1866 W.G. Ward patented an attachment to fit under the hammer head. It was a small metallic block or (spring socket) that could be bolted on and acted as a seat to hold the nail. In his patent drawing he included a one-armed man using his patented hammer attachment. Of course necessity being the

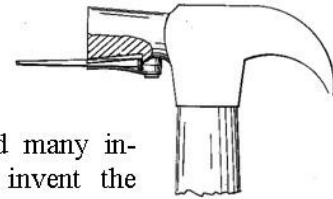


Robertson's Bill posters hammer.

mother of invention this one armed person probably came up with many clever inventions. Lastly, in 1871 Gottlieb Young modified the hammer head to allow for a nail to sit on top of the hammer head. It is secured in place by a sheet metal spring holder.



Carlisle lever hammer.

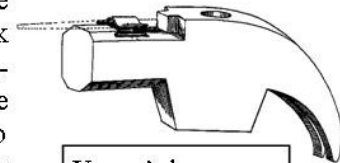


Ward's hammer.

As the Age of Invention found many inventors trying to invent the better mousetrap, combining different tools into one was the way to riches. One of the highly sought after combination hammers is the Thayer patent combo hammer. Patented in 1862, John Thayer of Boston claimed that his compound tool in its compactness offers a graduated scale on the handle bar, a screwdriver, two different claws and of course a moveable hammer head to adjust leverage.



Many inventors thought to combine the hammer with the wrench. A.W. Park of Norwich, Connecticut was the first in 1860 to combine the claw hammer with the mon-



Young's hammer.

key wrench and screwdriver. Byron Boardman's patent of 1866 improved on this design by installing a cam jaw insert to grip curved objects better. Many inventors combined pliers with



Thayer's combo hammer.

hammers but the standard is the cobblers pliers with the dominant hammer head. Other combination hammers had insertable tools such as screwdrivers, chisels corkscrews, and drills, stored in the handle. A clever invention was patented by Allen Lake an employee of the L.S.



Hammer wrench having both patent dates for

Starrett Tool Co. He put a magnifying glass in the center of the hammer head to help machinists punch center marks in fine layouts. Finding one of these hammers stuffed in a drawer of an old machinists tool chest is a rewarding find.

Of course how can one talk of collectible hammers without mentioning the rare beauties of the sport. Two of the earliest hammers I collected were cigar box hammers with their fancy relief work and ebony



Combo hammer with tools.

wood handle. Their graceful design and diminutive size intrigued me. I also hunted for the 1901 patented Charles Hennig decorated hammer. With its finely ornamental relief work and nickel-plating it was sure to stand out in my collection. Next on my hit list of ornamental hammers was the 1928 patented bronze goats head hammer, designed by toolmaker Mitteldorfer Straus of New York City. Of course if one is talking about beauty, lets not leave out the ornately lathe turned gavels and carvers mallets of exotic wood. These finely turned hammers show not only the skills of the crafts-



Early cigar box hammers.



To left is Hennig's decorative hammer. Below is Strauss bronze goat head hammer.



man but also the beauty inherent in the woods used.

Even with all the advancements in hammers over the years they are still being redesigned. Manufacturers are redesigning for ergonomics making a more comfortable and user friendly hammer. Carpenters who swing a hammer all day develop elbow problems due to the vibrations emitting from hammering. The new "Anti-Vibe hammer by Stanley has a tuning fork in the handle to deaden the vibrations. Estwing manufacturers has designed a revolutionary new hammer design with their "Weight Forward" creation. Estwing states that this design "puts the power and weight up front for easier, more efficient nailing. It has a smooth, continuous face to claw radius for easier nail pulling, a



Beautifully turned rosewood mallet.

shock-reduction gasket and comfort grip reducing shock, and the world's strongest fiberglass handle." It takes a bit getting used to but is very comfortable.

Collecting hammers is a very rewarding aspect of tool collecting. It is often one overlooked by the flea market seller. It is not uncommon to come upon rare finds like a French cobbler's hammer or a coopers hoop driver hammer. It is a very simple task to fix a broken handle with a correct replacement or wire wheel a rusty head. There is a very good market for blacksmith hammers





Estwing "weight forward" hammer.

and farrier's hammers for the modern day user who knows a good old tool. A Heller or Atha blacksmith hammer will be a cherished addition to any hammer rack. Often a stone workers hammer is the prize of an early



Cobbler's hammers.



Cooper's hoop driver hammer.



Various blacksmith hammers.

morning of flea marketing. These older hammers are still used today by sculptors and demand a good price.

Sometimes you will find something that is really odd and lacks any known purpose.

This will keep you on edge until you can learn its function.

There are so many more hammers to talk about

as the designs are as rich as their history. I hope you will send in a picture of any rare finds you have discovered

and let the Tool Shed publish it so all our readers can learn more

about this fascinating area of tool collecting.



Various stone workers hammers.



Bronze double headed hammer with slender neck of handle. Use is unknown.