

## **ENGINEERING - HAMMERS**

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# ENGINEERING - HAMMERS

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# THE BALL PEIN HAMMER

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The Ball Pein hammer is used mainly by engineers. It is a general hammer, but has certain specific uses. One such use is cold riveting.



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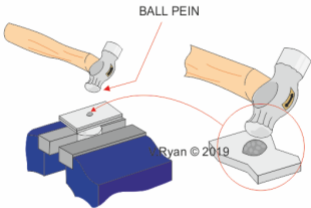


# THE BALL PEIN HAMMER

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The images below show cold riveting using a ball pein hammer. Notice how both faces of the hammer head are being used. The 'ball' face is used to form the head of the rivet and the flat face applies the force to the rivet set, closing the gap between the two steel plates.

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# THE CROSS PEIN HAMMER

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Cross Pein hammers are used where space is a little restricted, such as working in a corner. Another possible use, is when a nail is held in the hand, between fingers



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# THE CROSS PEIN HAMMER

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If hammering a nail in a restricted space, the cross pein can be used, to transfer the force from the hammer to the nail. Greater care is needed if using the hammer in this way, as it is more likely to slip off the head of the nail and damage the surface of the material or hit hands and fingers.

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## THE STRAIGHT PEIN HAMMER

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Straight pein hammers are also used where space is a little restricted, such as working in a corner. Another possible use, is when a nail is held in the hand, between fingers



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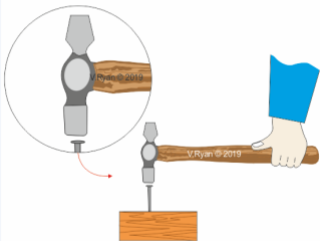
# THE STRAIGHT PEIN HAMMER

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The straight pein hammer has exactly the same uses as the cross pein. However, there are times when a straight pein is suitable, because of the nature of its design.

*It is worth noting that straight pein hammers are less common than the 'cross' type.*

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## THE PIN HAMMER

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A Pin Hammer is a light-wieght hammer, with a 'thin head', ideal for hammering panel pins in place. Panel pins tend to be very thin and when held in the hand, a slender hammer is needed.



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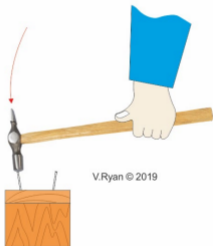


# THE PIN HAMMER

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The pin hammer is being used to 'tap' panel pins in place, holding two pieces of pine together. Starting a panel pin is very difficult with other hammers. The 'thinner' pin hammer, makes it possible to hold the panel pin and to hit its small head.

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## THE CLAW HAMMER

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This is a general hammer, preferred by those working in wood. Ideal for hammering nails, with the claw being designed to remove nails from wood.



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# THE CLAW HAMMER

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One use of this hammer is the removal of nails, using the 'claw' as a lever (see below).

Hickory or ash is used for the handle, as it absorbs shocks and vibration, caused by the hammering process.

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## THE REPOUSSE HAMMER

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A Repousse hammer is used for decorative metalwork, often in jewellery projects. The head has a flat and rounded face, allowing a variety of detailed and decorative work, especially with non-ferrous sheet metal.

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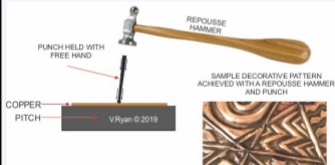


# EXAMPLE OF REPOUSSE WORK

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The flat face of the repousse hammer, is being used to drive a 'punch' into the surface of annealed (softened) copper, producing a decorative pattern. The hammer can be reversed, so that the rounded face can be used directly onto the surface of the copper, producing a hammered pattern.

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# THE BLOCKING HAMMER

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A Blocking hammer is the ideal choice, when 'raising' soft nonferrous sheet metal, to form a dish / bowl, as an aspect of beaten metalwork.

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# THE BLOCKING HAMMER

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The blocking hammer is used here, to form the initial shape of a dish / bowl, along with a hollowed out, wooden block. Jewellers have several of these blocks, with different sizes of hollows. They select the hollow most like the initial shape they want to form.

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# THE PLANISHING HAMMER

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After using a blocking hammer to form the initial shape of the dish, a planishing hammer is used to form a more accurate 'dish'. A planishing stake of the appropriate shape/form, is held securely in an engineers vice.

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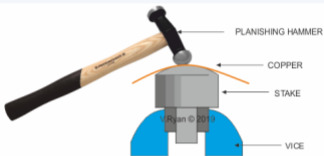


# THE PLANISHING HAMMER

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For good results, both the face of the planishing hammer and the face of the stake, must be polished and without damage or even scratches.

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# THE RAISING HAMMER

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A Raising hammer is used in conjunction with a polished metal 'raising stake', often after a blocking hammer. It is used to raise the sides of a nonferrous sheet metal bowl/ dish, making them 'deep'.

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# THE RAISING HAMMER

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When deeper work, such as a decorative drinking cup is to be made, a raising hammer is used to deepen the sides. The metal is slowly rotated on the stake and the raising hammer is used to accurately 'hammer' the copper surface, producing the 'deep' container.

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# THE COLLET HAMMER

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A Collet hammer has slightly cylindrical faces and it is used to planish nonferrous cylindrical shapes and ring shapes.

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# THE COLLET HAMMER

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The collet hammer is used in this example, to 'stretch / expand' a ring of copper. This has the effect of thinning the metal. The ring will form a piece of a decorative sculpture.

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# THE CREASING HAMMER

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Sheet metal edges can be sharp, especially if the sheet metal used is thin. A wired edge is a safe option. This is produced by the use of a creasing hammer

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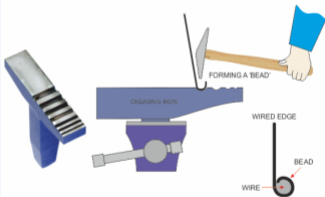


# THE CREASING HAMMER

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One use of a creasing hammer, is to produce a 'wired edge' on sheet metalwork. When used along with a creasing stake, the curved edge (known as a bead) can be slowly formed. A 'wire' of a suitable diameter, is placed inside the bead.

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# NYLON/RUBBER/COPPER HAMMERS

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These hammers are used, when force is needed, but the surface being 'hit', must not be damaged.

Jewellers use a nylon hammer to harden decorative wire, without deforming the wire.

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COPPER



NYLON

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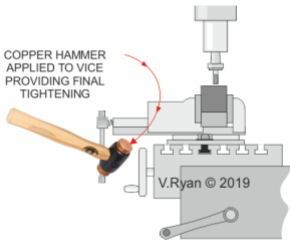


# NYLON/RUBBER/COPPER HAMMERS

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These hammers can be used to apply the final tightening force to a heavy duty machine vice, set up on a machine such as a shaping machine.

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# THE SMITH'S HAMMER

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A Smith's hammer is used during the forging of metal. It is a general blacksmithing hammer, because it is heavy and well balanced.

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# THE SMITH'S HAMMER

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In trained hands, it is capable for forming red hot steel and wrought iron, into numerous shapes and forms. It is often used in conjunction with an anvil.

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## THE CLUB HAMMER

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A Club hammer is not normally used in craft work. It has two flat faces and is used in demolition work and in the construction industry. It is ideal for providing the force required to 'drive' a cold chisel, through resistant construction materials.

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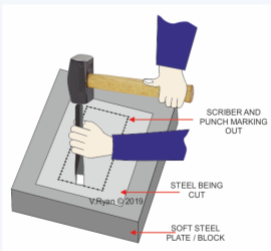


# THE CLUB HAMMER

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The example below, shows a cold chisel being used in conjunction with a club hammer. The club hammer provides more force than the common ball pein hammer. This combination is ideal, for cutting thicker more resistant steel sheets.

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