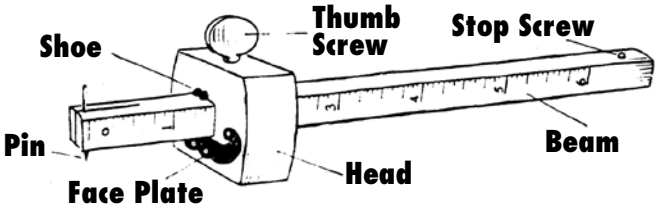
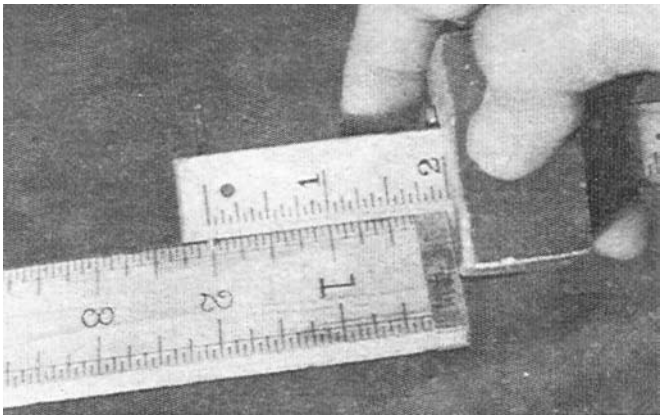
Woodworking Tools and Machinery



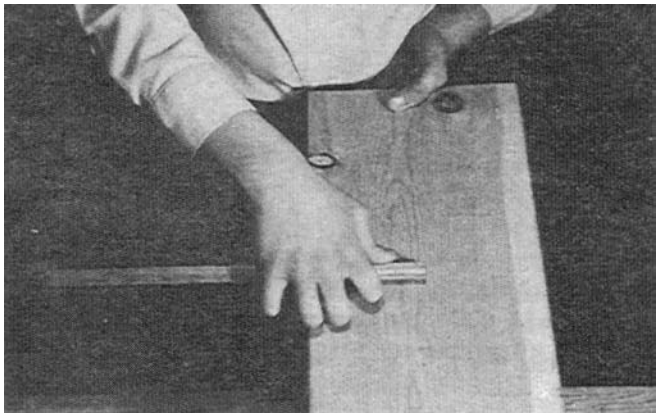
Marking Gauge

A marking gauge is used to mark a uniform width on a board. The steel combination square discussed in Unit II can be used for the same purpose.



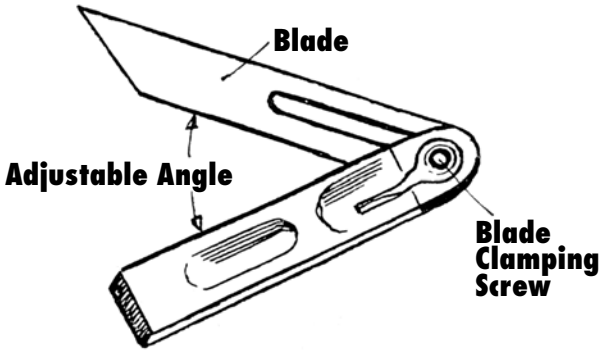
To use the marking gauge, set the pin the desired distance from the face of the head and check with a rule. It is better not to rely upon the measurements on the gauge, because the pin may become bent, which will alter the measurement. When the correct dimension is found, tighten the thumb screw and measure again. The pin must be kept sharp.

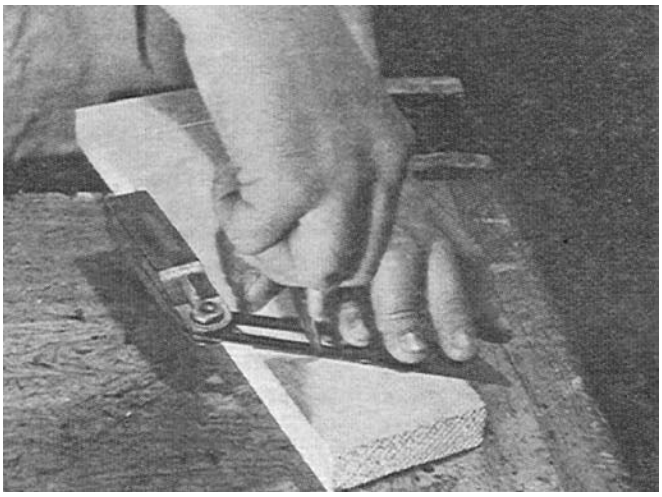
When marking, push the gauge forward. Roll the gauge slightly clockwise so both the beam and pin point touch the wood. Held in this manner, you can observe the point at all times. The head must be held tightly against the work edge of the wood. Hold the gauge as you would a ball, then move the thumb toward the pin to distribute the pressure between the pin and head. Some people use the gauge by drawing it toward the body. In either case, be careful to keep the face firmly against the edge of the wood.



T Bevel

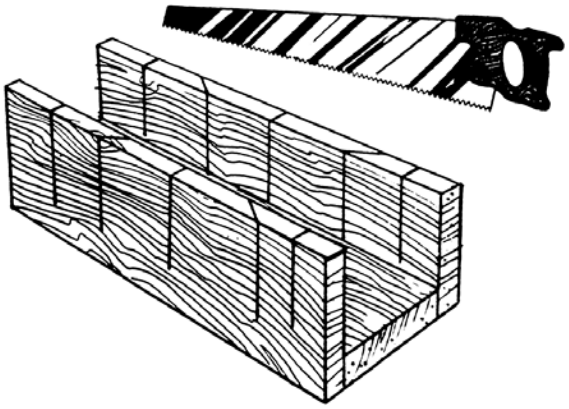
The T bevel is used for laying out miters; testing mitered ends, beveled or chamfered edges; or duplicating lines drawn at some angle. Mitered corners of picture frames and bevel siding are examples of ways the T bevel can be used for measuring and cutting angles.





Miter Box

This simple miter box is used to cut wood stock accurately at 45- and 90-degree angles. Other miter boxes can be adjusted to any angle. The wood is placed in the bottom of the box, then the saw is placed in the saw cuts. This gives a rapid and accurate method of cutting.



Clamps

Clamps are essential tools to many woodworking operations. They are used to hold wood pieces together while you work on them and they are used in gluing, to hold your wood pieces under pressure while the glue dries.

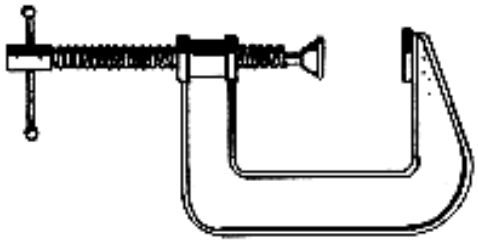
There are several different kinds of clamps:

C-Clamps were discussed in Unit I. They are rather small, c-shape devices with an adjustable bolt at one end. They are commonly used to clamp boards together when boring holes, gluing wood pieces together, or making a saw guide. To hold two pieces of wood together or to apply pressure to wood for gluing, tighten the bolt. It is possible for wood to become dented when using the c-clamp, so remember to use a piece of scrap material between your good board and the clamp to prevent dents.

Handscrew Clamps are designed to do jobs too large for the c-clamp to do. They have two long, parallel bolts which are adjusted separately. To hold two pieces of wood together or to apply pressure for gluing, screw the bolts in opposite directions.

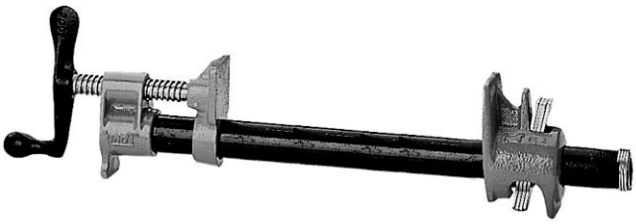
Pipe Bar and **Adjustable Clamps** vary in length according to intended use. These clamps adjust to fit the size of your wood by moving the adjustable stop back and forth along the bar. Pressure is applied by the crank screw.

The **Adjustable Bar Clamp** is commonly called a cabinet clamp. It may be used for the same purposes as the pipe bar clamp.



C-Clamp

Handscrew Clamp

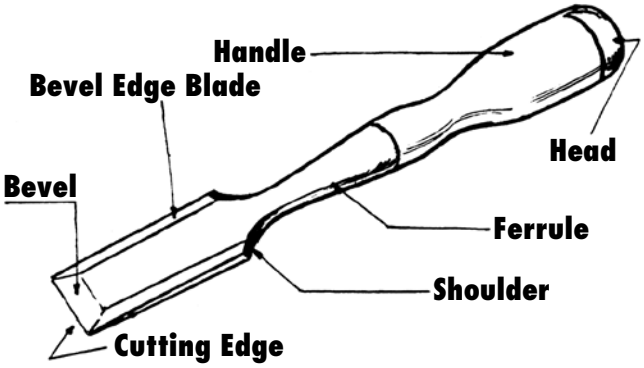


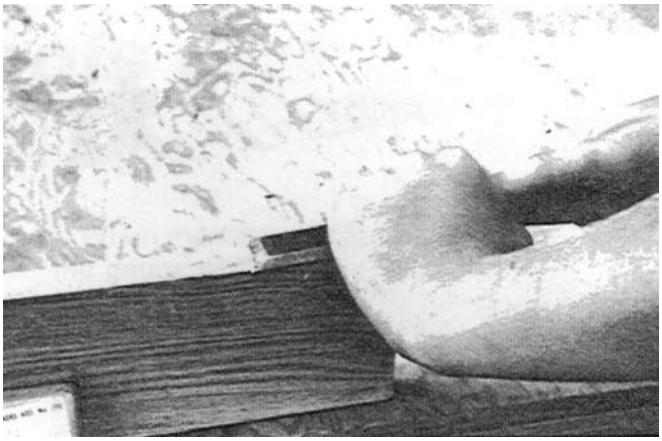
Pipe Bar Clamp

Quick Clamp

Wood Chisel

Chisels are used for removing unwanted strips of wood. They are made in various blade widths, ranging from ⅛ to 2 inches, and there are different types of chisels available at various prices.





Always push the chisel away from you. Keep both hands behind the cutting edge.

Depending on the density of the wood and the cut being made, chisels are operated either entirely by hand pressure or by pounding the end with a mallet or hammer. Hand pressure may be adequate when there is little material to remove and a good, smooth cut is needed. Pounding pressure is applied when making marking cuts and when removing large chunks of wood material. When pounding a chisel head, it is advisable to use a wooden, rubber, rawhide, or plastic mallet. When possible, chisel cuts should be made with the grain of wood. Cutting across the grain tears the wood away, leaving uneven areas and splinters.

Buy a chisel made of good steel. A chisel made of poor metal cannot hold an edge and becomes a dangerous tool. Chisels purchased in sets of varying sizes are economical, but if you can buy only one chisel, buy a ⅜ " because it is suitable for most woodworking jobs you will be doing.

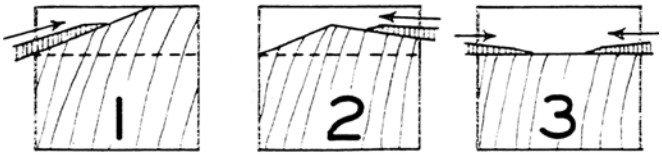
Using the Wood Chisel

Guide the chisel with one hand, and apply the moving power with the other. Always push the chisel away from you, keeping both hands behind the cutting edge.

To cut with the grain of the wood, hold the chisel with the beveled edge up for a fine cut and with the beveled edge down for a rough, heavy cut.

To cut across the grain of the wood, grasp the blade of the chisel between the thumb and the first two fingers of one hand to guide the chisel and act as a brake while pushing with the other hand.

To avoid splintering the corners, cut from each edge toward the center. Remove the center portion last.



Safety Notes for Using Chisels

Keep chisel edges sharp. Dull chisels are hard to use and can slip and cause dangerous accidents.

Always push the chisel away from your body, never toward you.

Place all work on a table or workbench. Never hold it in your hand.