

Saws for Woodworking

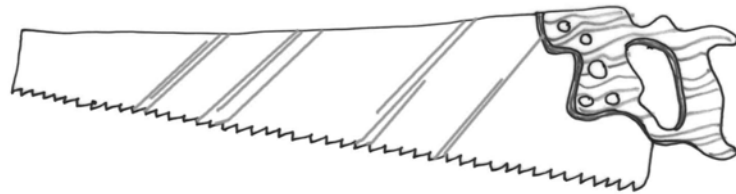
Issued December 2002

SAWS FOR WOODWORKING

SAW TYPES

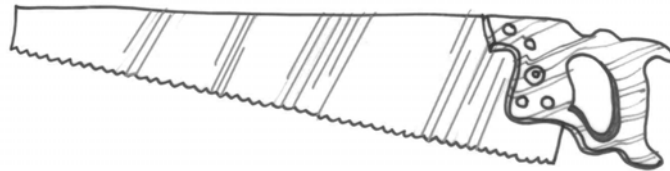
Rip saw

For cutting along the grain



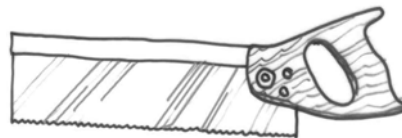
Crosscut saw

[A smaller version is known as a Panel saw]
For cutting across the grain



Tenon saw

[Also called a Back saw, Dovetail saws are similar but smaller and may have an open handle]
For cutting smaller sec-



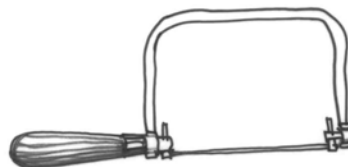
Gents saw

For cutting very fine joints



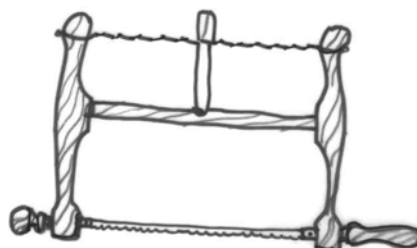
Coping saw

For cutting curves in thin materials



Joiners Bow saw

[Also called a Frame saw]
For cutting curves in timber sections



SAWS FOR WOODWORKING

SAW TYPES

Key Hole saw

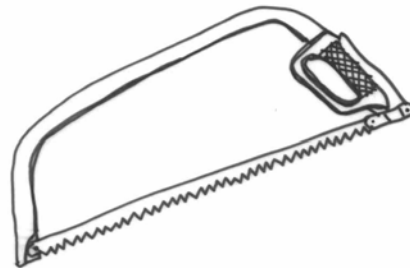
[Compass saws are similar but with a fuller handle]

For cutting holes in panels



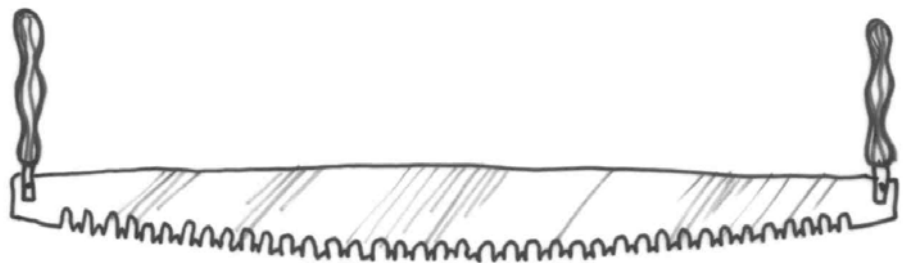
Timber Bow saw

For cutting logs



Two Man Crosscut saw

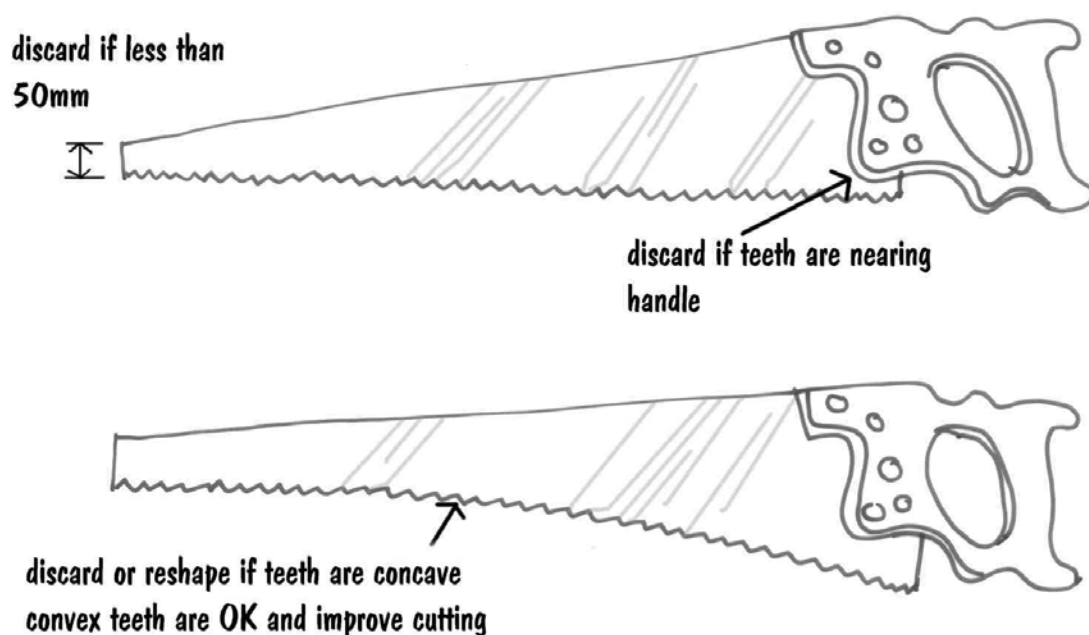
For felling trees and cutting logs



SAWS FOR WOODWORKING**SORTING SAWS TO BE REFURBISHED**

As we all get plenty of saws we should only refurbish the very best. The saws to be discarded are:

1. **Hard point saws** These are not sent because they cannot be resharpened. Almost all plastic handle saws are hardpoint or poor quality so dispose of them.
2. **Poor quality saws** These will be made from inferior grade steel, will not stay sharp and will bend. They can be recognised because they are often shorter and have plastic or wooden handles which are fixed with rivets rather than screws. Good quality saws have their handles fixed with 4 or 5 screws so discard any with rivets or only 3 screws.
3. **Badly worn saws** These will only have a short life left



4. **Badly dented or bent.** Some dents can be straightened with careful tapping on a flat surface.
5. **Badly pitted by rusting**
6. **Any missing teeth in the middle of the saw. One or two missing teeth at the ends are acceptable**
7. **Split or woodwormed handles**

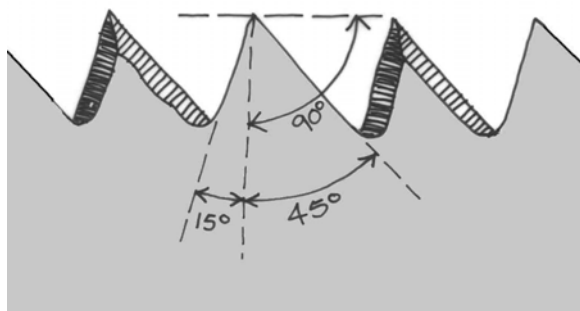
These rules are a guide only.

If the saw is a very good quality or a less common rip saw then it is worth spending time on correcting problems.

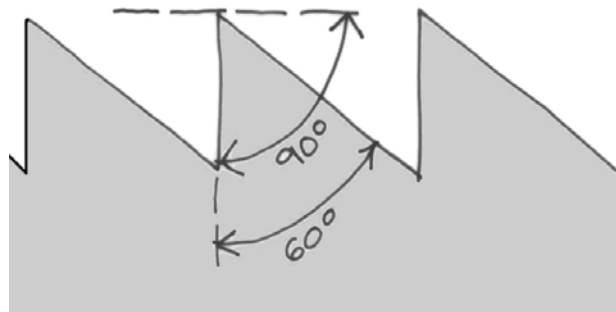
SAWS FOR WOODWORKING

Recognising Rip and Crosscut saws

CROSS CUT teeth angle



RIP teeth angle

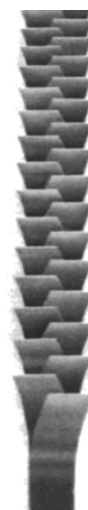


6 to 7 points in an inch

These saws are meant for cutting across the grain. The angles are not absolutely critical

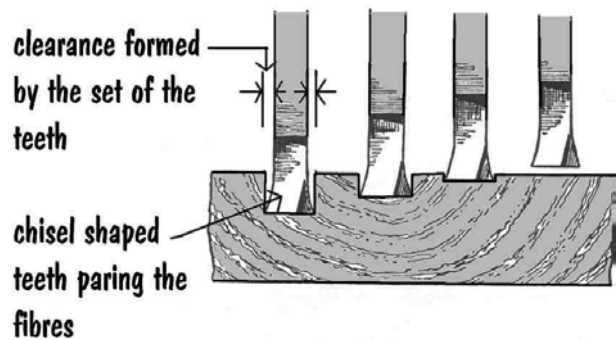
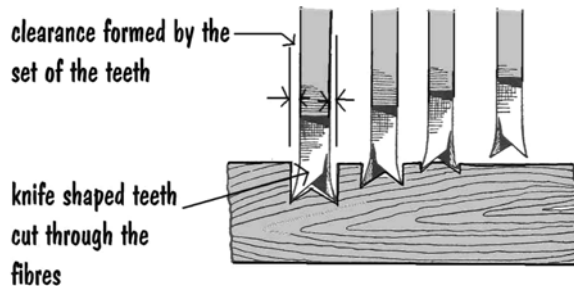
4 to 5 points in an inch

These saws are for cutting with or along the grain. The angles are not absolutely critical



Looking down the teeth

Looking down the teeth



Cross section through a saw

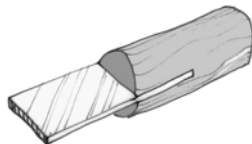
Cross section through a saw cut

SAWS FOR WOODWORKING

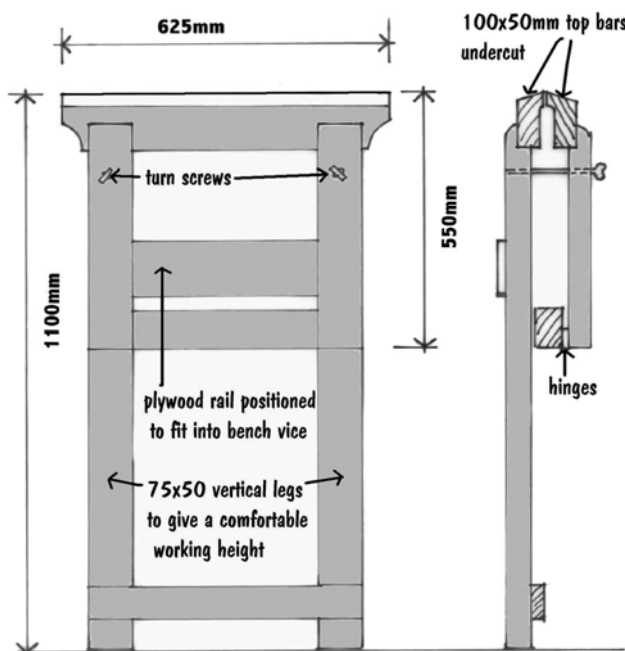
REFURBISHING AND SHARPENING

Tools needed:

- A scraper made from an old wide hacksaw blade and ground to a square edge is a good tool for removing heavy rust.



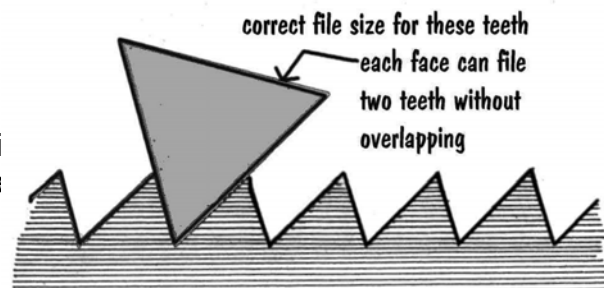
- Emery or sandpaper
- A saw vice. This can be a traditional wooden vice as this diagram or a steel proprietary saw vice



- **Saw files.** These should be slim taper files from a good manufacturer [eg Sandvik] fitted with a sturdy handle. The width of the file face should be twice the depth of the saw teeth

A guide to the length of files

8 inch long for 4 points per inch
 7 inch long for 6 to 7 points per i
 4— 5 inch long for 14—16 points p



- 10inch flat file for topping
- Saw setting tool

SAWS FOR WOODWORKING**REFURBISHING AND SHARPENING STAGES****1. CLEANING**

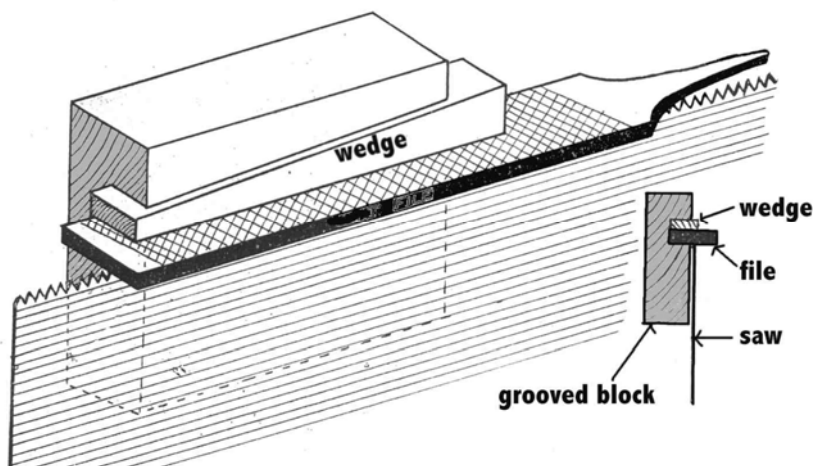
This must be done before anything else. Handles can be removed to derust more easily or support the saw blade on a piece of board. If sanding heavy rust avoid sanding over the upstanding teeth as this will start to remove steel from the cutting edges of the teeth.

2. ASSESSING THE WORK REQUIRED

Look along the saw and at the teeth shapes. If there is an inward curve or if the teeth shape varies [little and large] or if the teeth height varies, then the teeth will need to be reshaped

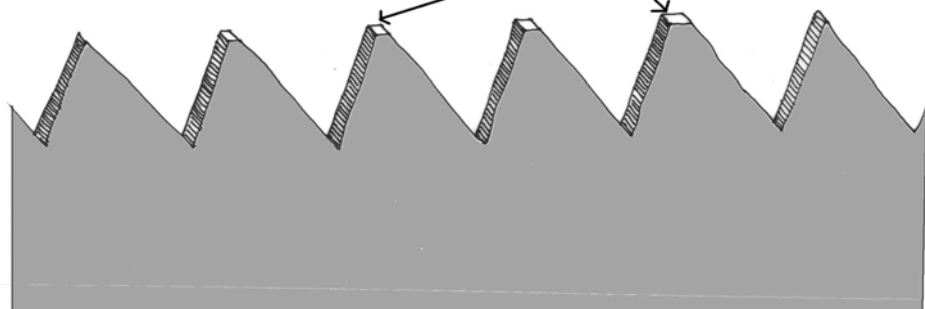
3. TOPPING

This is the first step of reshaping. It is the process of levelling the teeth by running a flat fine file along the teeth with the saw held in a saw vice. The file can be held in a large block of wood as shown



Only file lightly until all the teeth have been touched by the file. This produces flats or 'shiners' of different sizes on the top of the teeth

varying size flats or shiners on the top of each tooth

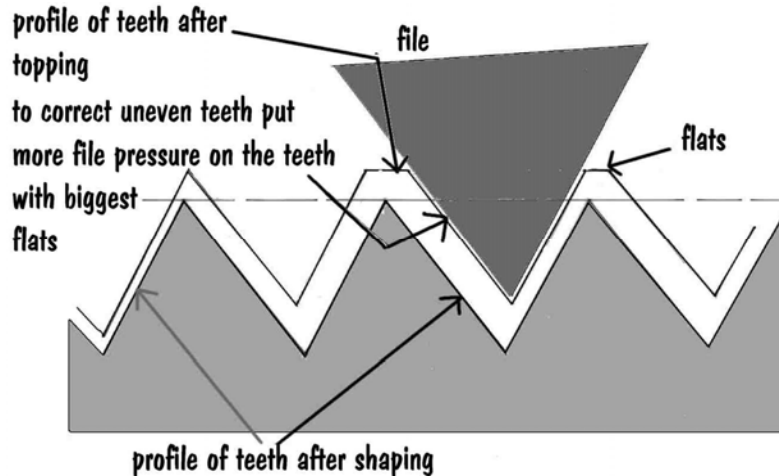


SAWS FOR WOODWORKING

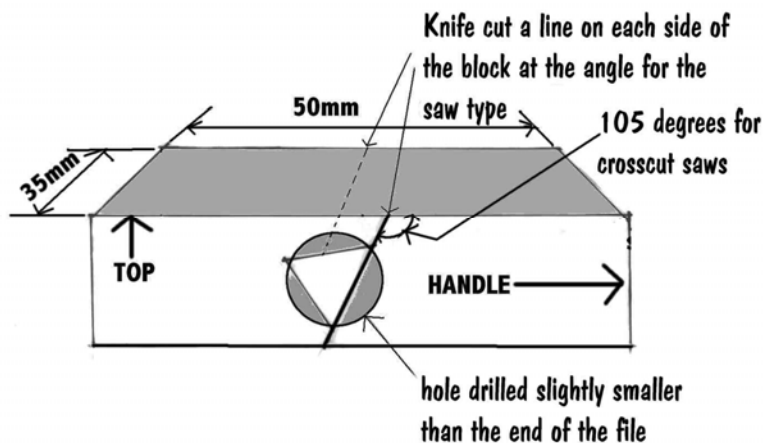
REFURBISHING AND SHARPENING STAGES

4. SHAPING

The teeth may now be looking like this



The shaping process is to bring them back to an uniform shape and size. It is done by filing with the file at 90 degrees to the saw. A useful device to help you maintain the file at the correct angle can be made from a piece of hardwood as the diagram



The file is pushed into the hole and this makes a firm handle to hold the other end of file at a constant angle. When filing the teeth on the other side the block must be turned around and the file inserted from that side

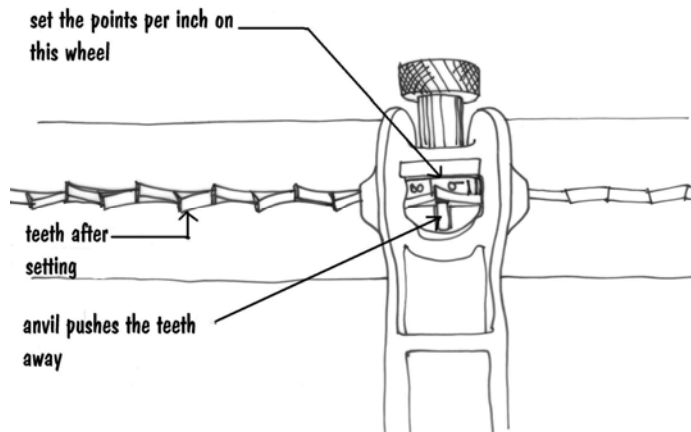
5. SETTING

This is the process of bending the tips of the teeth so that the saw produces a cut is just wider than the thickness of the saw blade. If the set is too little then the saw blade will bind in the wood. If the set is too great then effort is wasted removing more wood than necessary and the saw will vibrate in the cut.

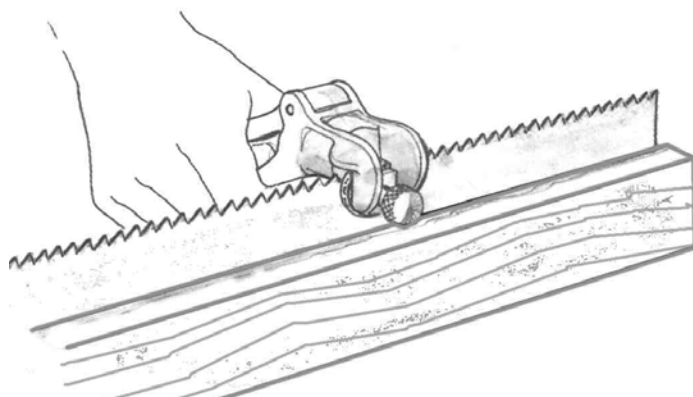
The easiest way to set the teeth is by using a pliers--type setting tool. The saw setting tool is adjusted to the points per inch of the saw. The saw is best held in the saw clamp and the teeth are set alternately along one side of the saw which is then reversed so that the other side can be set.

SAWS FOR WOODWORKING

REFURBISHING AND SHARPENING STAGES



Set the teeth the same way as they were set before otherwise they will break off



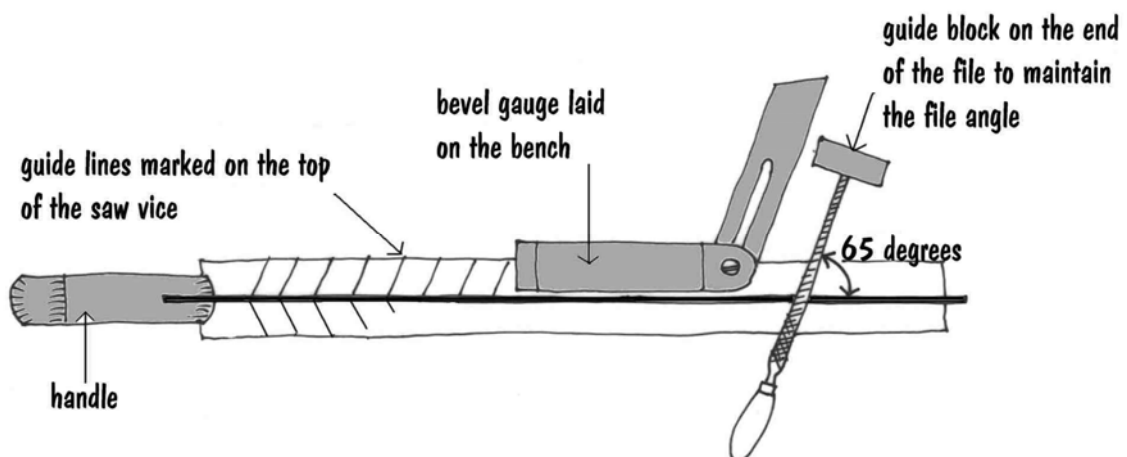
Set alternate teeth and then turn the saw around

6. SHARPENING

This is the most complicated part of the process.

Crosscut and rip saws are filed differently to produce their own tooth shape.

Crosscut teeth have bevel edges to form the knife shape teeth. These are produced by filing the teeth at an angle of 65 to 75 degrees. This angle is not critical but should be consistent and there are several ways of helping to maintaining it.

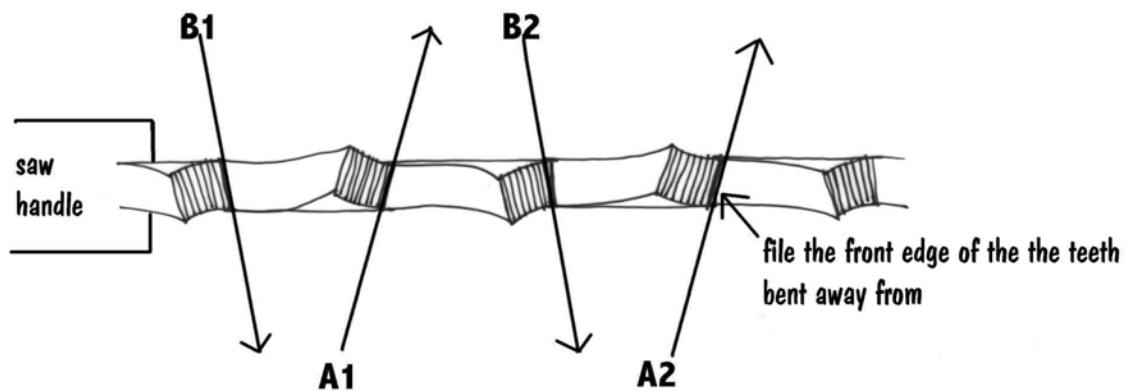


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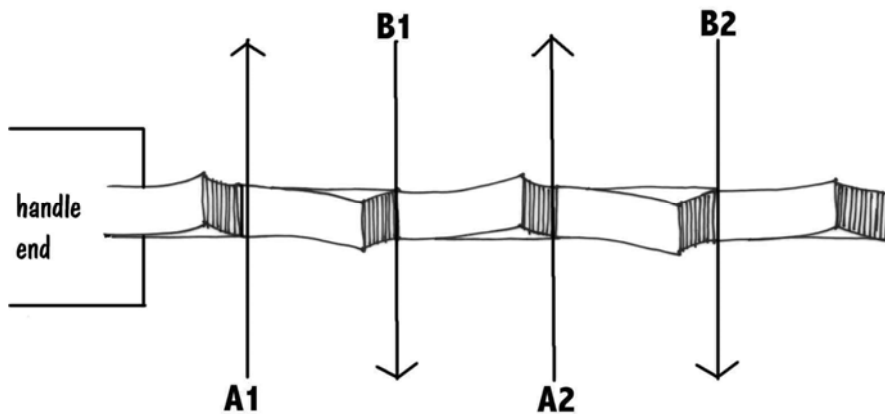
REFURBISHING AND SHARPENING STAGES

The saw must be held as tightly as possible to reduce vibration. Fix it in the saw vice with about 2mm of the blade clear below the bottom of the teeth.

Place the file so that it is working on the front edge of the first tooth bent away from you with the end of the file facing away from the saw handle. It will also be working on the back edge of the tooth set towards you. Keep the file horizontal and give it two to three slow steady strokes. File alternate teeth until the end is reached then turn the saw around and file the other teeth maintaining the same angle.



Crosscut teeth are sharpened at an angle to produce knife shaped teeth



Rip saws are sharpened in the same way but at an angle of 90 degrees to produce the chisel shaped teeth