

# Care of Bonsai Tools

by JOHN F. PATRICK

## Introduction

Routine care and maintenance are essential if you want the best performance from your tools. During normal tool use, tree sap, pitch and dirt accumulate on the blades; the cutting edges get nicked; and rust forms when moisture accumulates in the sap and dirt. As the cutting edges become dull, greater pressure is required to make a cut. The cuts are not clean, and tearing and crushing occurs, damaging your trees. Severe damage to your cutters can also occur. The combined increase in cutting pressure, dulled edges and accumulated dirt causes the blades to separate. This wedging pressure is high enough to break the tips of your branch and root cutters. Therefore, good tool care should be practiced.

## Tool Care Recommendations

A few simple rules, if followed, will increase the life of your tools, expand the time between sharpenings and make your hobby more enjoyable.

They are:

1. Examine your tools before and after using and look for bent tips on scissors, nicked cutting edges, dirt accumulations and rust. If any of these conditions exist, correct them before using the tool again.
2. Don't use your branch or root cutters when cutting roots in a dirt ball. Sand and small stones will nick or break the cutting edge. Clean the dirt off the roots or use pruning shears. Pruning shears will take the punishment and are easier to restore.
3. Don't drop your tools. You will either bend or break the cutting tip. This is the most common cause of tool tip failure.
4. Don't overload your tool. Use a larger cutter or make your cut in small, easy steps.
5. Protect the tips and cutting edges of your tools when not in use by storing them separately in a pocketed cloth roll or compartmented tool kit.

## Materials Required for Tool Restoration

Pruning and cutting tools can be restored to good working condition by cleaning, sharpening and oiling. The required materials, listed below, are easy to obtain.

Scotch-Brite scour pad

WD-40

Emery paper --- grit #320 or #400

Emery cloth --- grit #240

Lubricating oil --- light machine oil (Sears #955941)

Oil stone --- natural Arkansas stone (Washita grade preferred)

Paper towels

## Cleaning Tools

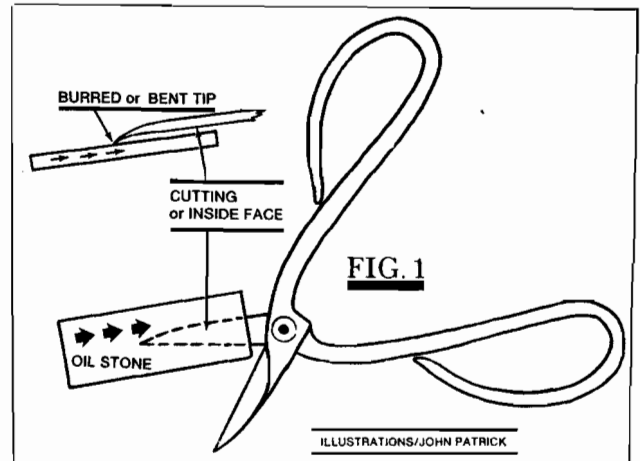
Cleaning of tools after use is relatively simple if you have carried out a routine care program. The first step is to wipe the tools clean of all dirt and grit. Next the tree sap that remains can be removed by wiping the cutting blades with a damp paper towel. Pitch from conifers may be removed with Scotch-Brite and WD-40. When stubborn stains or light rusting exists, rub the blades with a damp Scotch-Brite pad. To remove severe rusting, use #320 or #400 grit emery paper. Rub all rust, dirt and sap off with the cutting tool in a closed position first. Do this to protect your fingers from the cutting edges and tips. You will probably find it easier to work if you support the tool on a solid surface. When all the exterior rust and sap is removed, open the blades and clean the inside faces. To remove rust from the inside face of scissor type tools, lay the emery paper on a flat surface and rub the inside of the blade while holding it flat on the emery paper. When all of the tool surfaces are bright, wipe off all the cleaning dust and grit. Make sure to clean the pivot joint, using WD-40. Exercise the joint to loosen dirt and old lubricant and respray with WD-40 to drive it out. This is important on riveted joints. It will prevent rusting and reduce wear. Oil the tool all over with machine oil. Wipe off the excess oil with a paper towel. Now your tools are ready for sharpening or storage.

## Sharpening Tools

There are two types of bonsai tools, each requiring a different approach to sharpening: those with a scissors cutting action, e.g. trimming scissors and pruning shears, and those with a mandible (biting) action, e.g. branch, knuckle and root cutters.

## Deburring Scissor Types

To sharpen scissors, first check the blade tips and edges for burrs on the inside face. They should be

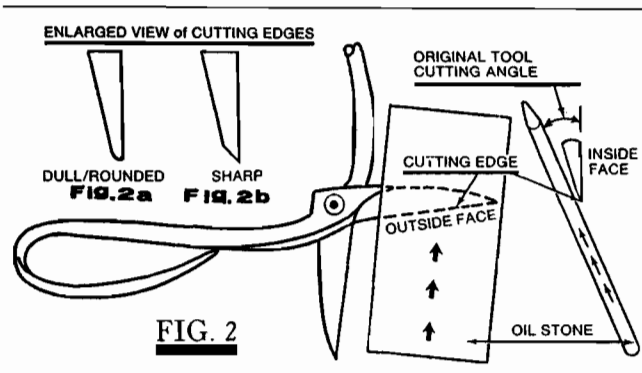


removed before sharpening. To remove the burrs, put a small amount of honing oil on the stone. I use a light machine oil mixed with an equal amount of kerosene for honing. The lubricant is used to carry away the metal particles removed during the stoning process. Now open the scissors and lay the stone flat on the inside of the blade (Fig. 1). Push the stone over the blade, making sure the stone remains flat, until the burr or bent tip is removed. Turn the scissors over and stone the opposite inside face, if necessary. Excessive or unnecessary stoning will eventually deform the cutting faces.

Depending upon the size and shape of the oil stone and your adeptness in handling the stone and tool to be deburred or sharpened, you may prefer to reverse the process from moving the stone over the fixed tool to fixing the stone and moving the tool over the stone. With a little practice on your part, you can determine which is best for you.

### Sharpening Scissor Types

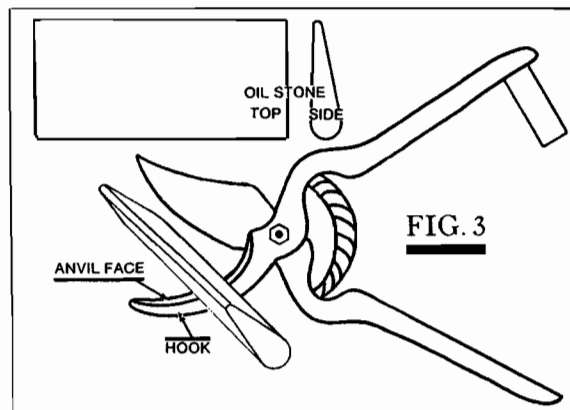
To sharpen scissor type tools, open the blades with the outside face up and the cutting edge toward you.



Support the scissors firmly on a bench. Place the oil stone over the outside face of the blade (Fig. 2) at an angle equal to the original tool cutting angle. Cutting angles may differ, depending on the type of cutter and its manufacturer. It is important to maintain the original cutting angle of each different tool as closely as possible. Push the oil stone, in the direction of the arrows shown in Figure 2, over the cutting edge until all nicks are removed. Check the cutting edge by examining under a bright light. If the cutting edge is dull, (Fig. 2a) you will see a highlight reflection of light off the cutting edge. If you gently pull your finger over the edge, it will slip over with no drag. The sharp cutter (Fig. 2b) will not reflect a highlight, and if you lightly pull your finger over the edge, you will feel some drag.

**Caution:** Don't pull or slide your finger along the cutting edge. If the edge condition is as described for Figure 2b, your blade should be sharp. Turn the scissors over and proceed to sharpen the other blade. If the blade is dull, continue the stoning process as described. Only three or four strokes of the stone should be necessary. Make sure you hold the stone at the same angle for each stroke. Changing of the cutting angle while stroking the stone will continue rounding the edge. When you complete the sharpening of both blades, wipe off all the stoning grit,

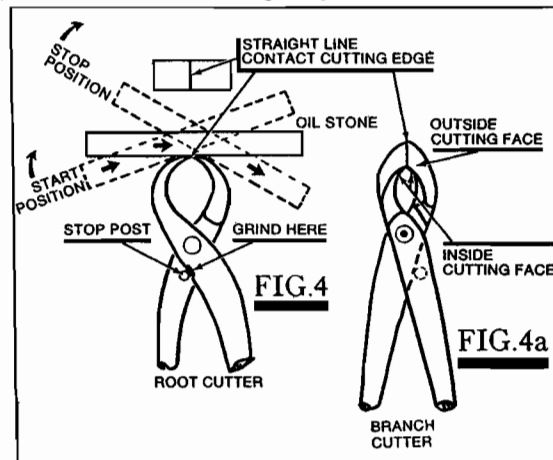
oil the tool and wipe off all excess oil with a clean paper towel. Rub the excess oil over all of the tool in the process of wiping it. The fine coating of oil remaining will help protect the tool from rusting.



If your pruning shear (Fig. 3), has only one cutting blade, sharpen it as described above. The hook or anvil blade should be cleaned and examined for burrs. Remove the burrs from the inside face as described above in Figure 1. If the hook face is not nicked, leave it alone. If it is nicked, stone the anvil face (Fig. 3) until the nick is removed. Wipe the shears clean and oil.

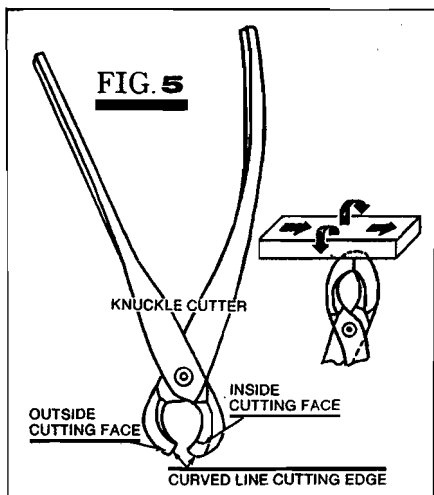
### Sharpening Mandible Types

Mandible type cutters have a biting action similar to your teeth. The cutting edges when closed should

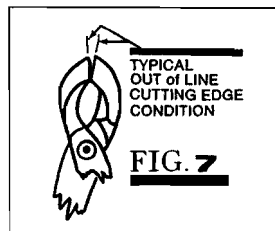
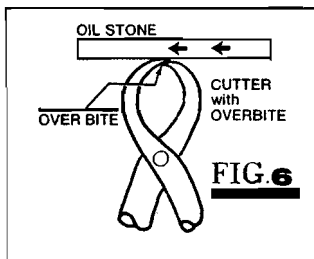


be in a straight line contact (Fig. 4, 4a) or curved line contact (Fig. 5). The condition of contact can be determined by placing the cutter up to the light in a closed position. If a wedge of light shows through, the cutting edges are out of line. If the edges are in line but have very small nicks, proceed to sharpen the tool.

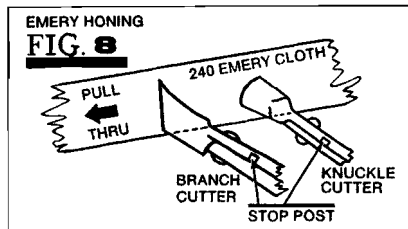
To sharpen the tool, place the cutter in a closed position on a bench with the outside face up. Place the oil stone on the outside face of the cutter and slide the stone over the face (Fig. 4) at the cutting edge. When sharpening the knuckle cutter, the oil stone should move over the cutting face and all along the curved cutting edge (Fig. 5). Repeat the stoning motion until both edges are sharp. Don't worry about the cutting angle of the tool. The angle is established by the inside cutting face. The inside face should be stoned only to remove burrs.



Generally, root, knuckle and branch cutters have an overbite (Fig. 6). The overbite is normal for mandible type cutters. Proper sharpening will maintain the overbite. With the cutters in the closed position, sharpen the exposed edge in the direction against the overbite. The under cutting edge will not sharpen. Open the cutter and stone the under cutting edge, taking care to maintain the line cutting edge.




When you first inspect your mandible cutting tools and find an out of line cutting edge condition (Fig. 7) or large nicks, the defects must be corrected prior to sharpening. To line up the cutting edges and remove the nicks, place a six inch strip of 240 grit emery cloth about one and one half times the width of the cutting



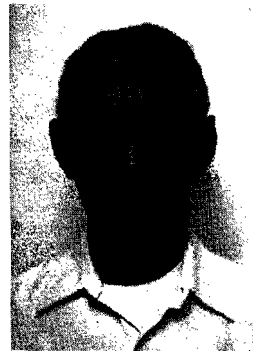
edge (Fig. 8) between the cutting edges. With a very light pressure on the cutter jaws, pull the emery cloth through to hone the cutting edges. Do this several times then turn the emery cloth over so it is facing the opposite cutting edge and pull it through several times. Repeat this process until the nicks are removed and the cutting edges are in line. If only one cutting edge is nicked and the line contact is good, only the nicked edge has to be emery cloth honed. Any time this process is performed, the tool will have to be sharpened. In addition, after this process has been performed, the cutting edges may not close completely because of the stop post on the handle of the cutter (Fig. 4 and 8). If this condition occurs, grind or file a small spot (Fig. 4) off the cutter handle until you get

cutting edge contact. Do not exceed a paper-thickness clearance (three thousandths of an inch) between the stop post and the handle. Too much clearance will allow excessive pressure on the cutting blade which may cause cutting edge failure. With the cutting edges in line, proceed to sharpen as described above.


## General Comments

A word of caution: don't try to sharpen your bonsai tools with an electric bench grinder. The tools are too light in weight to dissipate the heat generated during grinding. The excessive heat will take the hardness out of the blade rendering it useless. If your tool is so bad that it requires bench grinding, take it to an experienced tool sharpener who has special grinders and the expertise to do it properly. 

## ABOUT THE AUTHOR



*John Patrick*  
A mechanical engineer by profession, John Patrick learned the techniques of sharpening wood working tools from an old Scotch pattern maker. John's interest in bonsai began when his wife was assigned "Bonsai, the Culture and Choosing of Materials" as a subject for a presentation to her garden club in 1965. Their first miniature tree was created the next year. Six years later, they were among the group which founded the Greater New Orleans Bonsai Society (GNOBS).

John says he has found that bonsai is not only a good way to relax and an interesting retirement hobby, it's an excellent way to meet with people of all ages, in all walks of life while participating in an enjoyable activity. 

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