

# Marking Up for Success: Prepare the Stock

By Ian Kirby

Put the Arts and Crafts legacy to work in your shop.

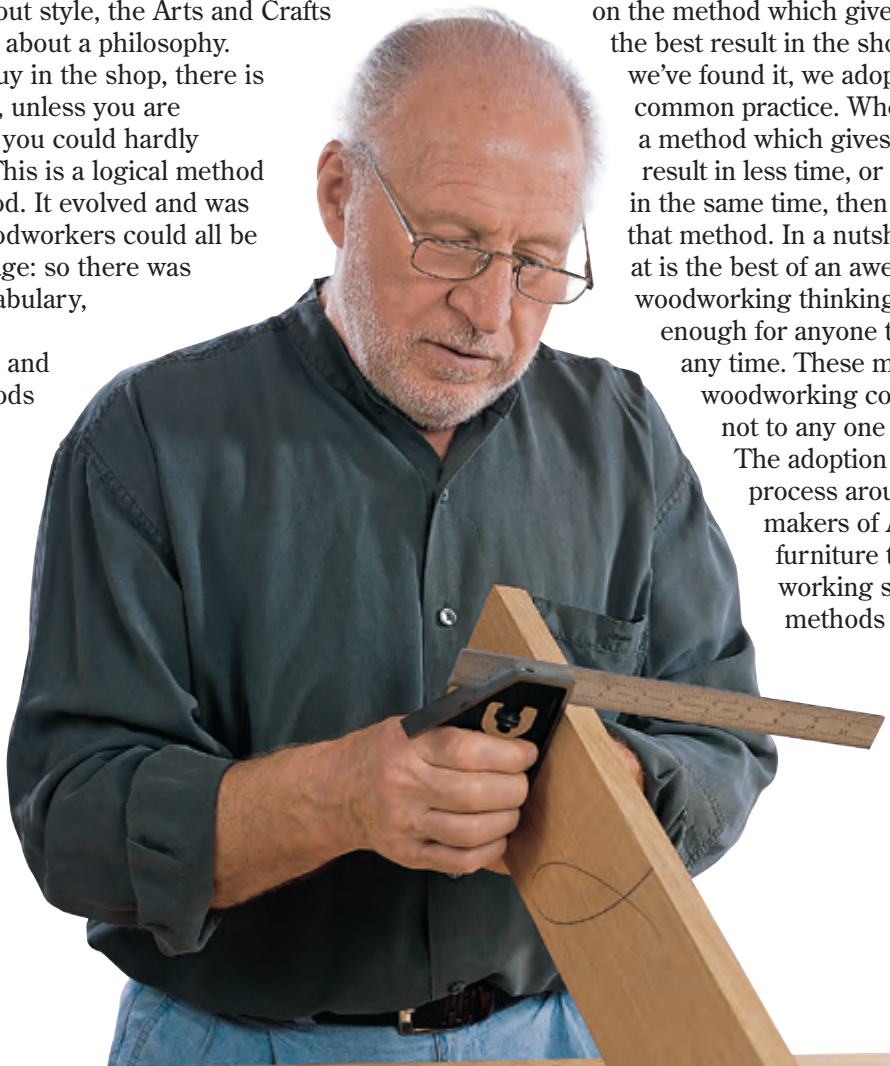
**W**hen writers, lecturers and academics talk about the legacy of the Arts and Crafts movement, they refer to the simplicity of the design, the rightness of the materials and the rightness of the construction. These three aspects were the canons at the heart of the movement. Unlike other furniture periods (Queen Anne, William and Mary, Chippendale, et. al), which were about style, the Arts and Crafts movement was about a philosophy.

But for the guy in the shop, there is a legacy which, unless you are a woodworker, you could hardly comprehend. This is a logical method of working wood. It evolved and was adopted so woodworkers could all be on the same page: so there was a common vocabulary, a common understanding, and common methods of work. It was

adopted to take advantage of the best of communal thinking. It evolved around 100 years ago, and it goes beyond simple design and right materials.

Among woodworkers, we know all the ways, good bad and indifferent, to get any woodworking task done. In order to achieve a logical approach to each specific task or skill, we look at all the different ways it could be done. What we do then is decide on the method which gives the best quality or the best result in the shortest time. When we've found it, we adopt that method as our common practice. When someone devises a method which gives the same quality result in less time, or a better quality result in the same time, then we will all adopt that method. In a nutshell, what you arrive at is the best of an awesome array of woodworking thinking which is flexible enough for anyone to improve upon at any time. These methods belong to the woodworking community at large and not to any one person in particular. The adoption of this thoughtful process around 1900 gave the makers of Arts and Crafts furniture their tool skills, their working systems and their methods of work.

**Marking up lumber before you start, author Ian Kirby maintains, is critical to your success. Here he's using a try square, winding strips and a straightedge, key tools in the process.**



## What's in a Mark?

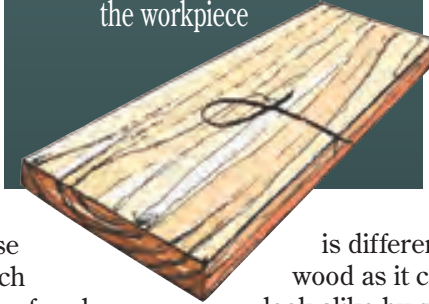
A piece of prepared stock (below) that has been marked with the looping face side mark tells a woodworker many things.

### The Face Side is ...

1. Flat in length.
2. Flat in width
3. Out of winding
4. Destined to be the inside face

### The Face Edge is ...

5. Perfectly square to the face side
6. Designated to be the bottom or back of the workpiece



### Harvesting the Parts

The aim of cutting the parts from the necessary boards of wood is to get the best looking parts with the greatest economy of the material.

Right away we come into contact with the woodworking legacy of the Arts & Crafts movement. I'll explain by going right to the other end of the making process: the finish. The common finish was shellac and beeswax — the effect of this finish was that the looks of the wood had to stand on its merits. Wood stain in any form was not an option. This means that the initial selection of the parts is in evidence as long as the piece of furniture lasts. It is one of the ways that the small woodworker

is different from industry. Industry takes the wood as it comes — and then makes the parts look alike by squirting on dark brown stain.

The first thing to emphasize is how radically a piece of solid wood can vary in grain pattern and color from one side to the other. You have to keep looking at both sides to make the best selection.

Bear in mind that solid wood was their material, and they worked it using hand tools. Understanding this is key to understanding how and why the system worked. Everyone and every workshop had exactly the same tools, and all were using the same materials. They were indeed, “all on the same page,” in ways that are no longer the case and never will be again.

So what does that leave us as a legacy? It means that if you want to work solid wood using hand tools, then the legacy is complete, “they had it down pat.” The world, however, has changed. We have new materials: plywood, particle board and medium density fiberboard. New hardware systems, new hand-held power tools, new stationary machinery. These things have changed the content of each woodworker's toolbox and the makeup of each workshop. The net result, as I see it, is simply more reason to observe the legacy of a thoughtful methodology which highlights and exemplifies our beginnings.

### First Steps

Once you have the design of the piece, either as a working drawing or as a full size mock-up, you can draw up the cutting list. This is the transition point from designing to making. To many woodworkers, “real” woodworking begins when you start to make joints, but before this can happen there are two essential steps to go through. They are called, respectively, harvesting the parts and the preparation of stock.

The first step, harvesting the parts, results in a pile of “rough cut” pieces as per the cutting list. Rough cut means the parts are sawn oversize up to one inch in length and width.

The second step, preparation of stock, results in the same pile of pieces being made dimensionally and geometrically accurate, as per the cutting list.

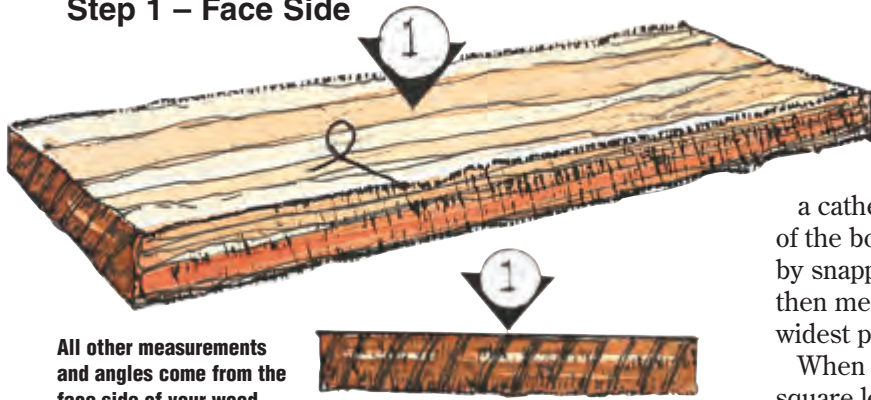
### Selection Process

It's best to begin by marking out the pieces which will be the largest and/or the most visible on the piece of furniture. In this way you have the most board from which to harvest the choice pieces. It can be a most frustrating hunt, and you may want to change your decisions as you go along. For this reason, use chalk as the marker.

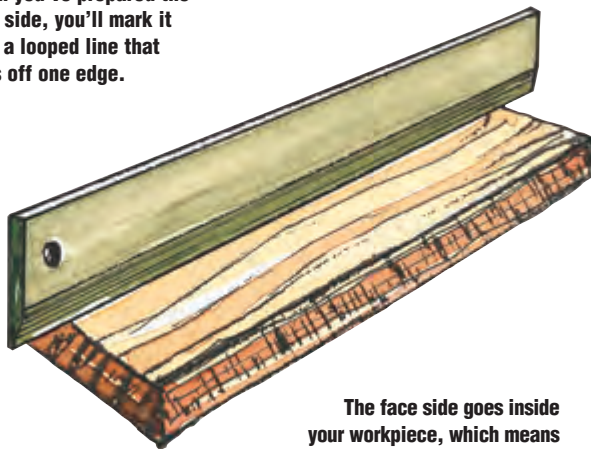
An important expression of the selection process is to get the grain of a part aligned with its edge. This shows the proportion of the part to the best advantage and retains the pattern value of the assembly. All too frequently, especially on quartersawn boards, the grain and the edge of the board are not parallel. Use a snap line to mark the intended cut line.

Boards from the outer edge of the tree have a typical arch-shaped grain pattern which we call

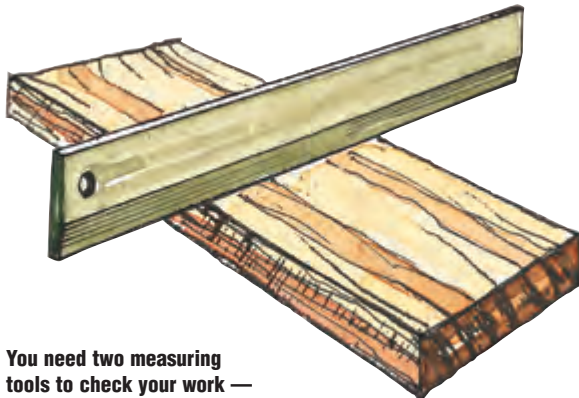
## Step 1 – Face Side



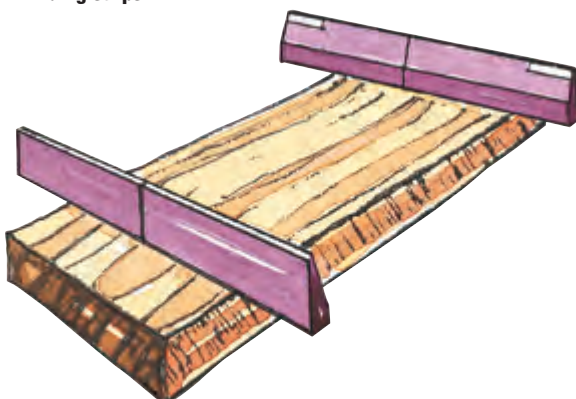
All other measurements and angles come from the face side of your wood. When you've prepared the face side, you'll mark it with a looped line that goes off one edge.



The face side goes inside your workpiece, which means it's the less good-looking side. Its characteristics: flat in length, flat in width and out of twist.



You need two measuring tools to check your work — a straightedge and a pair of winding strips.



a cathedral figure. Rarely is the arch in the center of the board. To harvest a symmetrical panel, begin by snapping a line down the middle of the arches, then measure each side of the center line to get the widest panel from the boards.

When you are choosing stock for legs — especially square legs — you want the end grain to run across the diagonal. In this way you get a very balanced grain pattern on each of the two visible faces.

### Preparation of Stock

You may undertake the preparation of stock using a variety of tools, machines and methods. How it is prepared is not critical; what is critical are the properties of the finished pieces. If the cutting list calls for stock 1" x 6" x 24", the piece of wood must exhibit more than the specified dimensional accuracy. It must be geometrically accurate as well — flat where it should be flat, parallel where it should be parallel and square where it should be square. Don't be tempted to add to the cutting list dimensions as a precaution against possible error further down the line. You cannot create insurance for yourself with a little extra width, thickness, or length; all you do is create confusion. So work with confidence exactly to the cutting list dimensions.

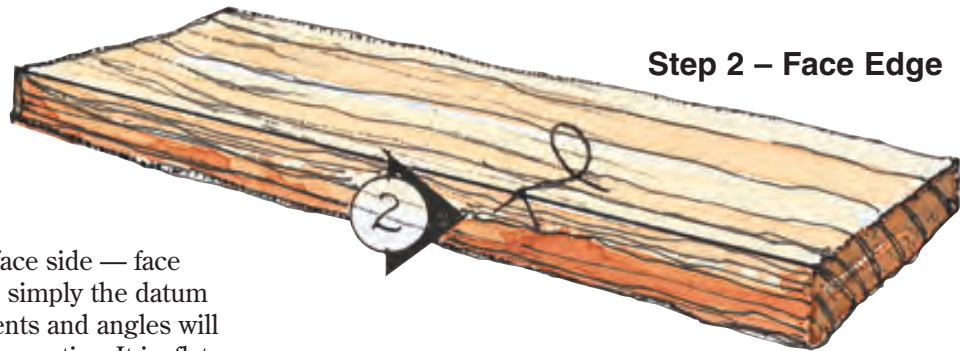
This "preparation" step is a long-winded, exacting and often tedious part of the work. It has all the ingredients which invite us to lower our standards, but to be less than rigorous would be a bad mistake. Badly prepared stock will haunt you throughout the making of a piece of furniture, and its effects become more pronounced with each stage of manufacture. Joints will not be correctly aligned, faces will not be square to the other and so on. I emphasize the need for accuracy here because its importance is badly understood. When woodworkers are confronted by an error whose origin eludes them, they should first look to stock preparation for the answer. The one saving grace about preparation of stock is that once this stage is completed, the entire job is about half done.

To explain the process, I'm going to use the 1" x 6" x 24" piece. It has six faces: two sides, two edges and two ends. All have to be prepared.

### Face Side: Step 1

We begin with a side. Look at the piece and choose which is the best looking and the one you want to show on the outside of the piece of furniture. The

## Step 2 – Face Edge



other side is destined to be the face side — face sides go inside. The face side is simply the datum from which all other measurements and angles will be taken. It has three physical properties. It is: flat in length, flat in width and out of twist.

To prepare a face side using hand tools, you need a very accurate bench, a jointer plane, a straightedge and a pair of winding strips. The straightedge checks the planed stock for flatness in length and width; the winding strips check for twist. To prepare a face side by machine, you need only a jointer with accurate tables. Once the surface satisfactorily meets the condition of a face side, it is marked with a looped line which goes off one edge of the wood. The edge where the face side mark leaves the planed surface is destined to become the face edge.

The face side and the face edge are the only two faces which get marked. They are used to orient the part in the structure. Face sides go inside and face edges go down or to the back, depending on whether the face side is oriented vertically or horizontally.

Any subsequent marking with gauge, try square, sliding bevel or miter gauge is done from one of these two faces. Any machine setup should have one of these faces against the bed or the fence to ensure consistency.

### Face Edge: Step 2

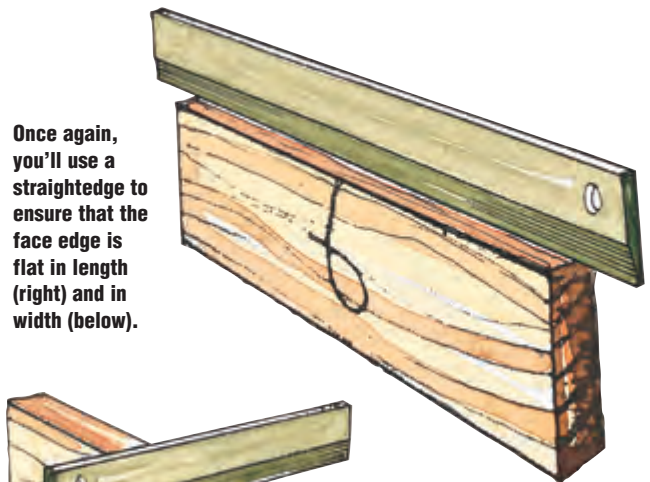
Next, prepare the face edge. The face edge has four physical properties. It is: flat in length, flat in width, out of twist and at right angles to the face side.

The hand tools necessary to prepare a face edge are a jointer plane, a straightedge to ensure the edge is flat in length and width, a pair of winding strips to ensure that it is out of twist and a try square to ensure that the face edge is at a right angle to the face side. To prepare a face edge by machine, all you need is a jointer with a fence positioned perpendicular to the tables.

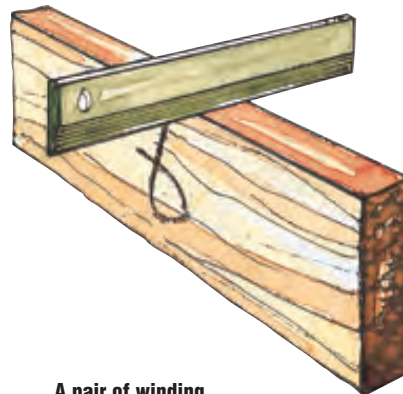
Once the edge satisfies the conditions of a face edge, mark it with a V connected to the face side mark. You should put the marks which indicate the face side and the face edge onto the workpiece when you know it to be correct. Make them bold and use a soft pencil 4B or 6B, so they will remove easily at the cleanup stage prior to polishing.



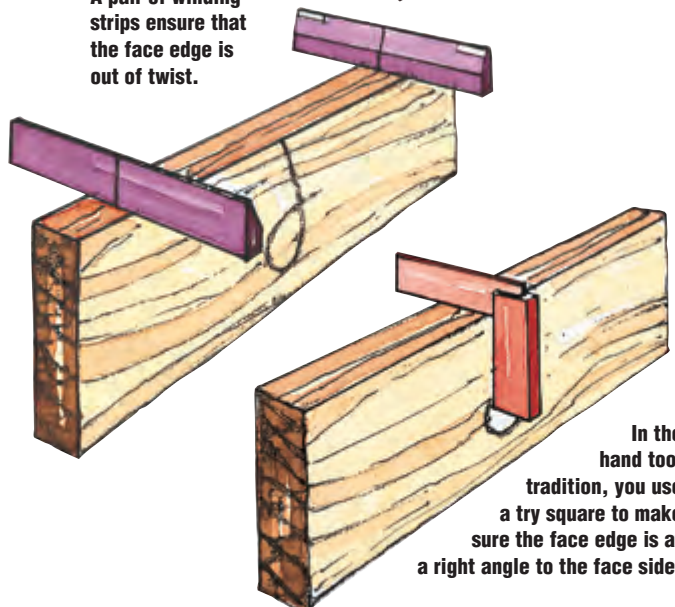
The marking for a face edge is a V connected to the looped face side mark.



Once again, you'll use a straightedge to ensure that the face edge is flat in length (right) and in width (below).

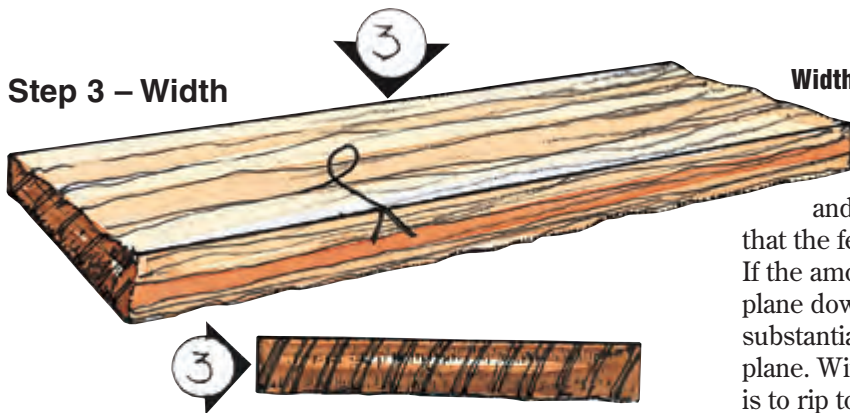


A pair of winding strips ensure that the face edge is out of twist.



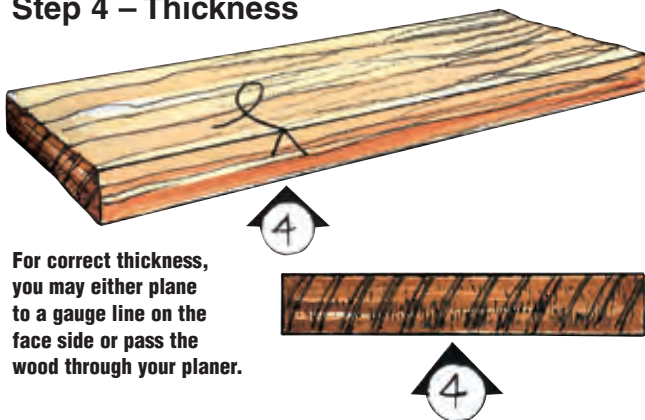
In the hand tool tradition, you use a try square to make sure the face edge is at a right angle to the face side.

### Step 3 – Width



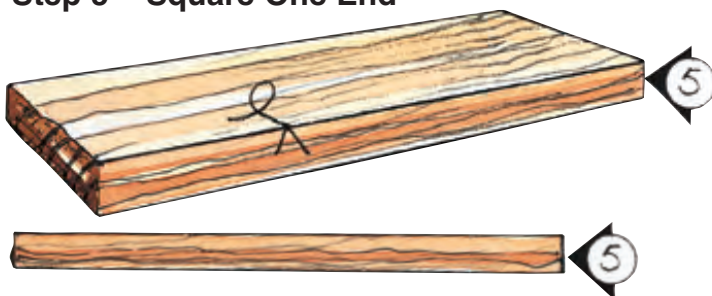
To get your stock the correct width, either hand plane it to a gauge line along the face edge or rip it to width on the table saw.

### Step 4 – Thickness



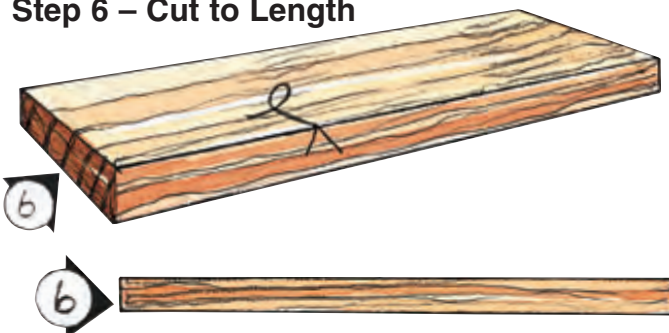
For correct thickness, you may either plane to a gauge line on the face side or pass the wood through your planer.

### Step 5 – Square One End



Square one end of the board. By hand, you'll saw to a line you've created with a marking knife. You can accomplish this step in several different ways if you're using machinery.

### Step 6 – Cut to Length



The final step is to square the other end and cut to length. Use a simple stop on your miter gauge or crosscut table.

### Width: Step 3

It is common to prepare the wood to width next. By hand, the procedure is to set a marking gauge to the width required and gauge down the two sides, making sure that the fence of the gauge rides the face edge only. If the amount of material to be removed is small, plane down to the gauge line. If the amount is substantial, remove the waste with a rip saw and then plane. With machinery, the most probable procedure is to rip to width on the table saw, cutting all pieces of like dimension in succession before changing the fence setting. Then clean up the sawn edge by passing through the planer. The normal technique is to assemble all the parts that are the same width, bank them together and pass them through the machine as one piece. An alternative is to pass the sawn edge once over a jointer. This is not the best method, but it is acceptable if you don't own a planer.

### Thickness: Step 4

The next stage is to prepare the wood to thickness. The hand method involves gauging round the piece with the fence riding the face side and then planing down to the gauge line. By machine, the piece is simply passed through the planer at the correct setting. You can check and assess these two new faces in the same way as the face side and the face edge; indeed, you will have to if you are working the wood by hand. If they are incorrect coming from the planer, then the planer has to be rectified. These faces do not get identification marks as the face side and face edge do.

### Square One End: Step 5

The next part of the procedure is to square one end. The required hand tools are a marking knife, a try square, a sawing board and a back saw. Knife around the end, placing the stock of the try square only on the face side and the face edge. Place the piece on the sawing board and saw to the knife line. Depending upon what the piece is for, you may have to plane the end grain down to the knife line and get the end absolutely square with the face side and the face edge. This certainly would be the case in making a set of dovetails. If the piece is to become a rail with a tenon at each

Sighting across winding strips: as effective today as when they were invented in woodworking's long distant past. Essential to properly preparing stock, checking for twist is one basic step often overlooked ... Learn why you should not.

end, leaving the end as cut from the saw is correct practice. To accomplish this on a table saw, place the face edge against a crosscut fence. Provided the fence travels at right angles to the blade, you have a square end. The usual device for crosscutting is a miter gauge. Another system is a crosscut table of your own manufacture which slides in the tabletop grooves. You can also cut the ends using a chop saw or a radial arm saw.

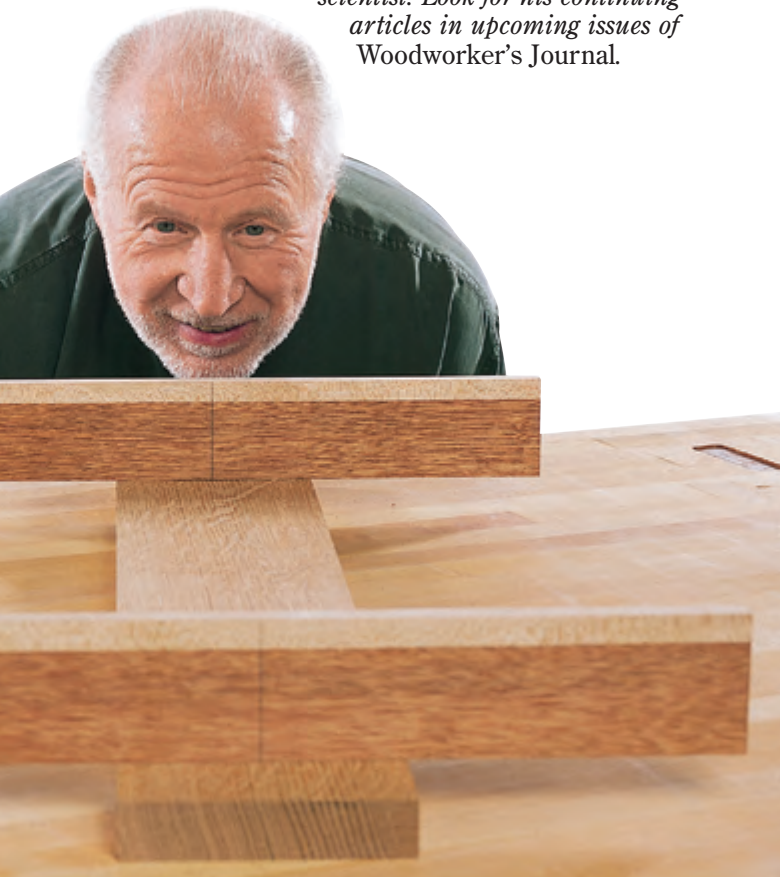
### Cut to Length: Step 6

The second end has to be squared and cut to length. Having marked the distance from the first end, the procedure is much the same as for the first end, with one major exception. You must cut accurately; you can't reposition the length line. To machine the ends, attach a simple length stop to the miter gauge or the crosscut table.

It's important that each stage in the construction of a piece of furniture be completed, as far as possible, in its entirety. When selecting stock, choose all the materials for the job at that time. When you undertake stock preparation, all the parts and pieces should be processed at the same time. This keeps mistakes to a minimum. Going back and forth between various stages becomes a serious waste of time and very confusing. And you don't have time to waste: now that you've prepared your stock correctly, you're ready to start building some beautiful projects.



*Ian Kirby, a master of the British Arts & Crafts tradition, is a woodworker, designer and wood scientist. Look for his continuing articles in upcoming issues of Woodworker's Journal.*



## Winding strips: An old tool for a new generation



Winding is the woodworker's term for twist. A slightly twisted piece of wood will have twisted joints on its ends and will give you all sorts of trouble at the sub-assembly stage and thereafter; so twist really is an important factor to be dealt with early on. To tell if a board is flat, you place your winding strips at right angles to the edge of the workpiece and near the ends, line up the center marks and sight the top edges. Trying to assess twist by sighting directly on the stock is as futile as assessing straightness or squareness by the same method. Winding strips have always been an essential measuring tool for the woodworker. We have no other method to survey flatness. In the past, woodworkers made their own. The wood of choice was quartersawn Cuban Mahogany with the edges inlaid with prized materials such as ivory and ebony for better sighting. Most woodworkers would have two or three pairs of different lengths.

You can make your own very easily. The drawing above will give you some "starter" dimensions, but they can be made to any size you want. Use good quality, straight grained quartersawn wood that you know to be dry. The major requirement is that the opposite edges of each strip be straight and parallel. They can be made using hand or machine tools. If you care to emulate your woodworking predecessors, you can fuss with the details. You might inlay the top edge of one strip with a white material so that it will be in sharp contrast to the black material inlaid on the edge of the other strip. Detail the center mark with inlay or incised carving and polish to suit your pleasure.

The tools required to prepare wood have remained the same for generations. Winding strips can be as simple or as fancy as you choose ... as you will need to make your own.

