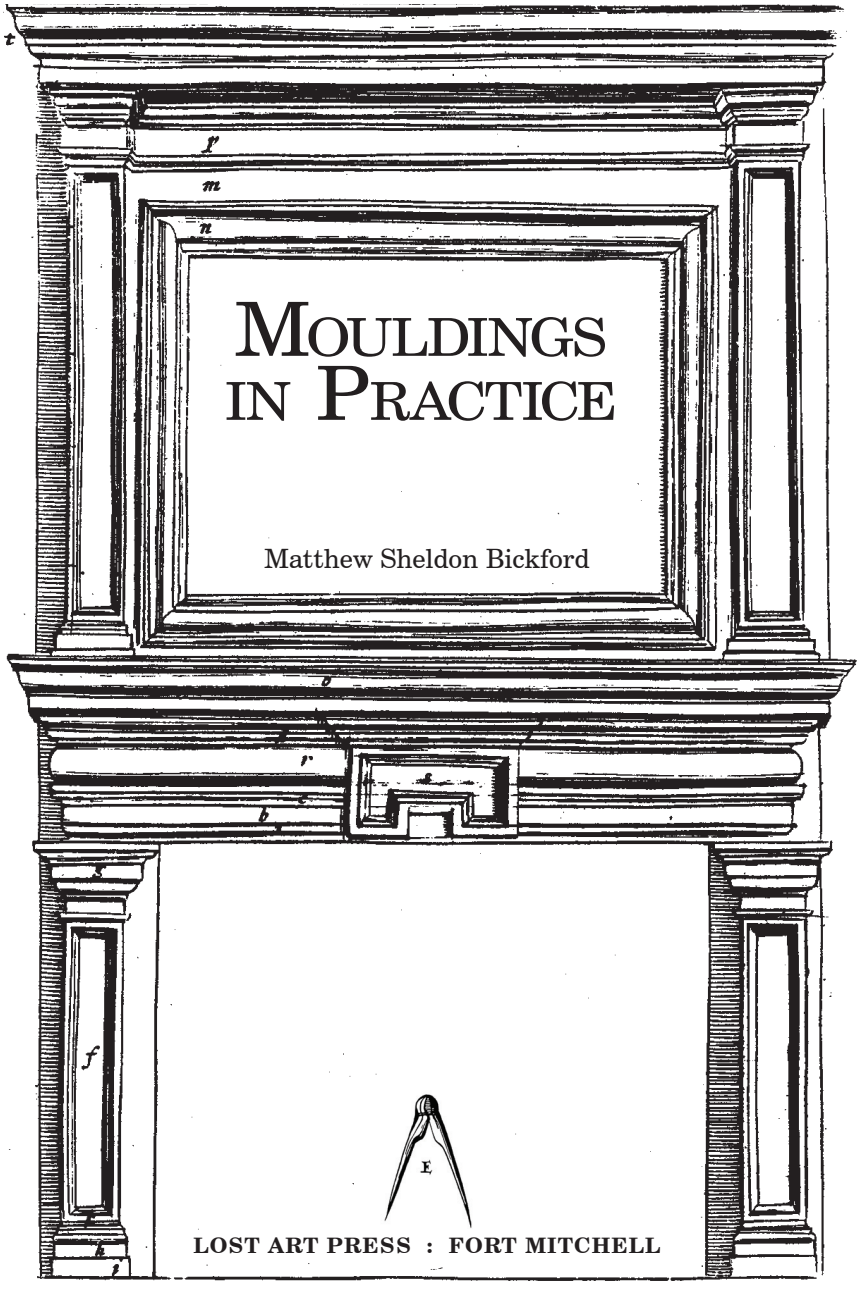
Mouldings in Practice



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Matthew Sheldon Bickford

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PREFACE.

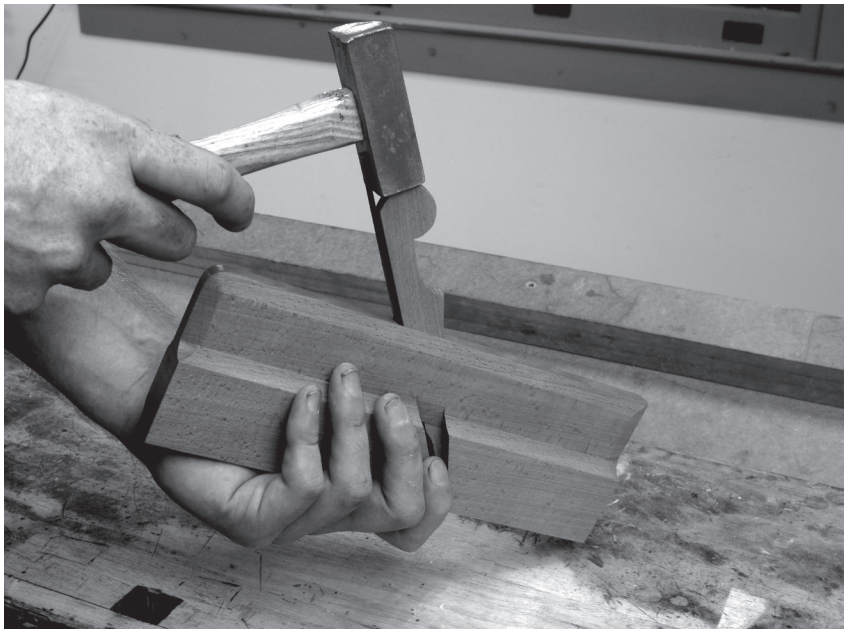
Our craftsmanship defines our work. Our work defines our fulfillment. Unfortunately, there are times that our tools define both.

The attraction to woodworking is a personal story to most of us. Some people become involved as young children watching a barn being raised from large piles of timbers. Others start working wood to customize a bird house, fraternity house or first house. For many of us that path ultimately leads to building furniture or cabinets, while others make spoons, decorations or fishing poles. The focus of each of our attentions is relevant to our life, desires or needs.

The relevance of tool selection, like project choice, is not an arbitrary endeavor. Chop saws are purchased for hanging our first crown mouldings. Table saws are purchased for our first hanging cabinets. Jointers and planers come when we no longer want to be hung up by lumber that was dimensioned by someone else. Routers are ordered when we want to mould an edge on our first solid-wood tabletop.

As our craft progresses, the shop fills with tooling that is relevant to our interests and pursuits. Unknowingly, this mechanical tooling starts dictating our work. We never use wide boards because our jointers are only 6" wide. We plane 4/4 material down to 1/8" because our resaw capacity is much too small. We make moulded edges based upon our router bit selection or those of the manufacturers.

It is at this stage of mechanical dictation that we start the slow progression toward the regression to hand work. We find fore planes and try planes to flatten a board that is the width of our 12" planers, then start dimensioning lumber that's even wider. We buy chisels to fine-tune joints and end up combining these keen edges with our tenon saws to cut dovetails. We eventually make bowsaws to pierce a back splat because there's no good reason to have a scroll saw for this single, one-time task. Plus, a turning saw can do so much, and making it will allow us to once again use that rasp we acquired to shape wood in a way that shop machinery simply cannot.



Still, the scope of our work is dictated by the capacity of our tooling. Some pieces are certainly beyond the scope of our skills, basements and garages, but some of it is just beyond what tools we own.

Years ago I knew that I would never make my own kitchen cabinets because my basement was not big enough to stage the build. Despite growing up with the sound of a grandfather clock in my house, I knew that I would never make one because the number of moulded edges along its height were staggering to a 25-year-old with 15 router bits and no desire to purchase stock bits that were of similar dimensions but of staggeringly different shape. Several sets of custom knives would have been an option if I had a shaper, but not to run just 4' of moulding once.

Is there an answer?

Matthew Sheldon Bickford

Haddam Neck, Conn.

May 2012

To the one person whose steadfast patience and support not only encouraged this book and business, but has guided it through her personal standard. For my wife, Molly, "... the only one of us who's achieved immortality."

– Steven Mallory (in Ayn Rand's, "The Fountainhead")

CHAPTER 4.

RABBETS & RABBET PLANES.

Hollows and rounds have no depth stops and no fences, and they have cutting edges that are difficult to maintain. So how do we guide these planes? Is it not a trial to keep them sharp? The solution to both questions is a rabbeting plane.

Rabbets, which are grooves along the edge of a board, along with chamfers (or bevels), are the basis for all mouldings when using hollows and rounds. These rabbets serve three purposes: creating chutes in which the planes travel, creating guides that serve to gauge your progress, and removing as much material as possible with an edge that's easy to maintain and easy to guide.

Fig. 4-1. *Moving fillister.* This moving fillister has a brass depth stop that is adjusted with the knob on top, along with an adjustable fence upon which this plane is standing. The iron is skewed across the sole and has a nicker ahead of the cutting edge for shearing wood fibers while working across the grain.

CUT RABBETS WITH A RABBET PLANE.

All the moulding profiles discussed in this book begin with a series of rabbets and/or chamfers. These two shapes define the final moulding profile. Therefore, accuracy is crucial. Much of your time making moulding is spent laying out the profiles and transferring those layouts onto the wood via rabbets. Only an efficient method of executing these steps will lead to success. There are many methods.

Ventures through the Internet, books or magazines will introduce you to many tools for cutting rabbets, including fenced rabbet planes, moving fillisters and plow planes. A rabbet plane with a fixed fence and fixed depth stop needs only to be pressed against the side of a board, held vertically and swiped until the plane's depth stop bottoms

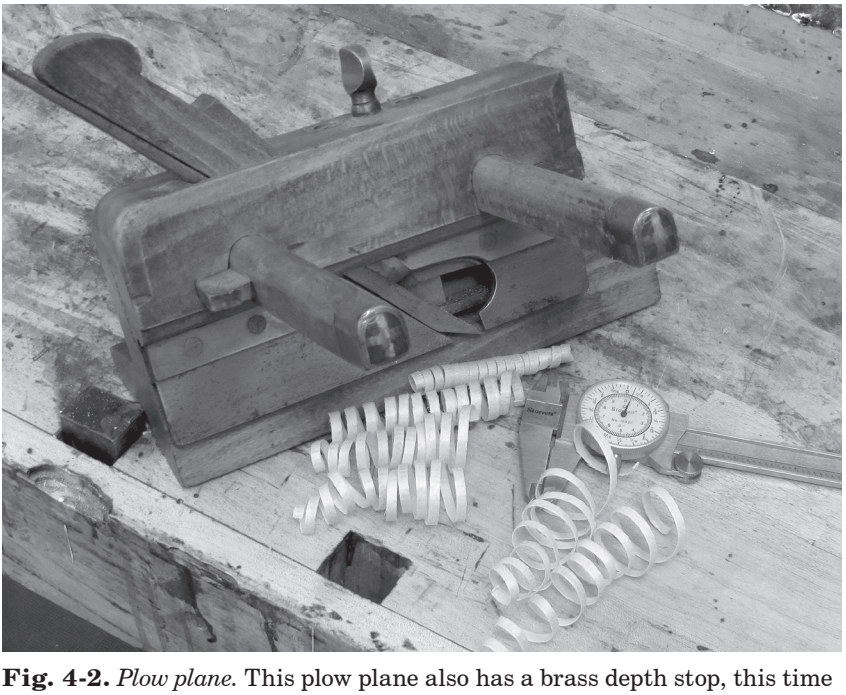


Fig. 4-2. *Plow plane.* This plow plane also has a brass depth stop, this time on the opposite side of the iron, that is adjusted with the brass knob on top. The plane is leaning upon its fence, which is adjusted by the wedged arms protruding through the plane's body. When using my plow to make rabbets, I use only the thinnest iron. That iron allows for the most aggressive cut.

out and the plane stops cutting. It produces one rabbet of a fixed width and depth along the edge of a board.

A moving fillister plane might seem more versatile than a fixed rabbet plane. You can, of course, create rabbets of any width by adjusting the tool's fence. Its depth stop can also be adjusted so that the plane cuts rabbets of various depths. Limitations still exist.

Though the plow plane is slightly different than a moving fillister, it also has an adjustable fence with (usually) an adjustable depth stop. A plow plane, in conjunction with a chisel, can be used to aggressively remove material along the edge of a board. In addition, a plow can cut grooves in the center of a board, which is necessary for some mouldings.

A moving fillister and plow plane are very useful when creating single rabbets of equal depth and width in different boards. But they have shortcomings. Most profiles start with multiple rabbets of varying dimensions. Each time one rabbet is completed and the next is started, the fence and depth stop need to be changed. In addition, many of the mouldings involve chamfering a corner of a rabbet. When using fenced planes, it will be necessary to set up a second plane to execute this brief step.

A fence and depth stop predetermine the order in which rabbets must be cut. This predefined order is not always efficient. Finally, there are circumstances in larger profiles when the surfaces upon which the fence and depth stop register are lost as subsequent rabbets are added.

THE SIMPLE RABBET PLANE.

For mouldings, an unfenced rabbet plane is ideal for the craftsman looking to use fewer planes.

The simple rabbet plane has no depth stop and no fence. Therefore, each time a new rabbet with new dimensions in a new place along the board is needed, nothing needs to be adjusted. Despite this lack of guides, it is possible to be as accurate with this plane as you are with any gauge line made by a marking gauge.

Rabbet planes with no fence or depth stop excel at making mouldings because almost all profiles require multiple rabbets of varying dimensions.

A rabbet plane that is 7/8" wide will cut rabbets as wide as the plane's sole and as narrow as you want or need. There are few limitations to this plane. Contrary to common belief, at times you will wish for a plane that is slightly more narrow, 5/8", but rarely for one that is wider. Among other things, a smaller plane will let you see inside the escapement when adding a small chamfer in a tight area. This narrow plane also allows these facets to be added in tighter spaces while keeping the sharp corners of the tool away from the surrounding facets. Additionally, the individual rabbets you need to cut are rarely wider than 7/8", even for the large, complex mouldings.

I prefer a rabbet plane of this width, 7/8", because I like to use approximately half of the plane's sole in normal circumstances. I am able to comfortably reach under the plane and use my fingers as a fence against the edge of a board which, as you will see, is vital. If you have large hands, a narrow rabbet of 5/8" will likely suit you better because you will use less of your fingertips. Many people simply prefer a narrower plane for this type of work because it is easier to recognize the vertical axis when holding a thin, tall plane body.

RABBET: SETUP & USE.

When setting the iron of a rabbet plane it is important that the iron's cutting edge be parallel to the sole. Additionally, it is vital that the iron's side projects very slightly from the side of the rabbet plane's body where the cut occurs. If the iron's side is instead flush to the side of the plane it will be impossible for the plane to cut down into the wood vertically. The side of the iron must not be sharpened; if the side of the iron is sharp, it will scrape the vertical portion of the rabbet, or fillet. This will increase the rabbet's width with each subsequent pass and can potentially clog the plane.

Holding an unfenced rabbet plane with no depth stop might seem intimidating. It is not necessarily obvious how it works. Some woodworkers think it is an inaccurate tool and has the singular use of cleaning up surfaces that were created by other planes. Perhaps you have read how some woodworkers attach a batten, or auxiliary fence, to the work for the rabbet to follow. This works, but it is another unnecessary step that consumes time and effort in some situations, and is useless in others.

When working with a simple rabbet plane, here are the basic steps to follow.

Step 1: Mark the size of the rabbet with a marking gauge along the board's face, edge and two ends.

Step 2: Pinch the plane with your thumb leading on top and your forefingers along the bottom. Hold the plane at an angle with its corner pressed into your gauge line. The plane will want to stay in that line. Use your fingers as a fence and take two passes. The plane's corner will want to stay in the gauge line; your fingers will help it.

Fig. 4-3. *Tilting a rabbet plane.* My fore and middle finger, located in front of the cutting edge, help lead the plane down the length of the stock. Pressure is applied from the top of the plane toward your body, the sole and cutting edge. Do not apply this force away from your body against the side of the plane. This second method may result in the iron's side scraping the far side of the gauge line and slightly widening the rabbet prior to starting.

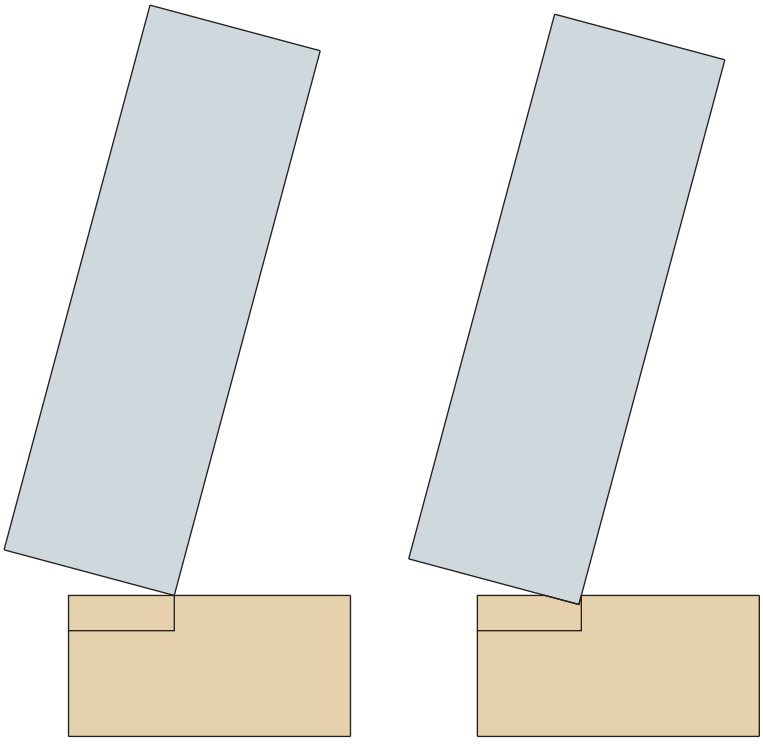
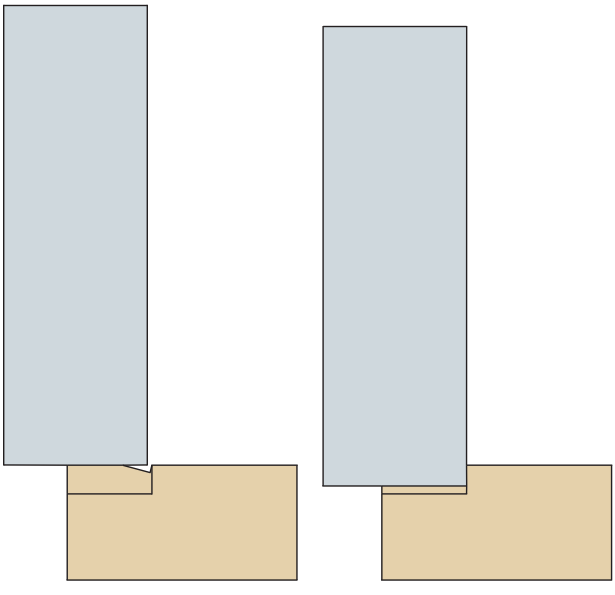


Fig. 4-4. *Tip the plane substantially.* The closer it is to 45°, the easier it will be for it to stay in the gauge line.

You have created a "V." That "V" will give some slight room for error in the following step. The more rabbets you cut, the less you will use this second step.

Step 3: Hold the plane vertically (see Figs. 4-5 and 4-6). Keep the plane pinched in the same manner with your leading hand. This is the more difficult step because your fingers are now the only guide. Start taking passes and keep the corner of the plane and iron that are on the escapement side of the plane inside of your "V." If you miss, try to miss toward the edge closest to you. (I do not watch the corner of the iron during this phase. I sight down the side of the plane's body and watch the edge of the body in front of the iron. A pencil line drawn in the "V" will help the novice.)

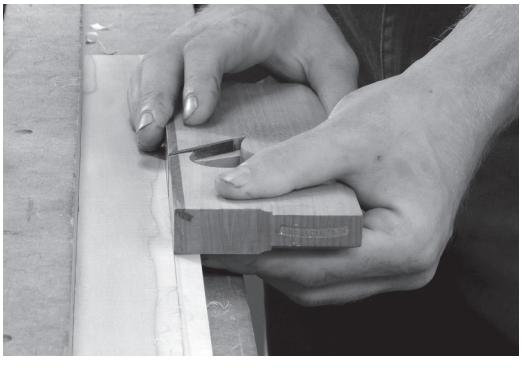


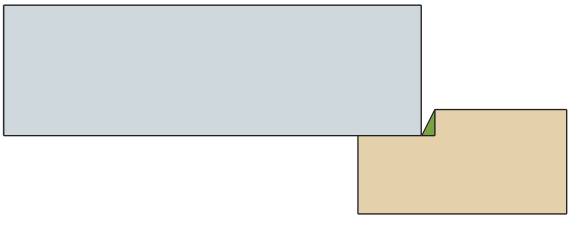
Figs. 4-5 & 4-6. *Holding square.* The fore and middle fingers of my leading hand are guiding the plane while my trailing hand applies most of the forward force. Be certain to hold the plane square, which is gauged by the existence of a full-width shaving.

Be certain that the plane you're holding is vertical. A full-width shaving should be ejected at all times. After only a few passes, the fillet of the rabbet will be developed to the extent that your fenced fingers will be less necessary. At this stage you can become less careful and more aggressive by increasing your speed. Wispy shavings that flutter in the air are fun, but not here.

Your progress then should be closely monitored in two ways. First, make certain that the plane is being held vertically by comparing the floor of the rabbet with the previously marked gauge lines on the two ends of the work. Second, measure the depth of the rabbet against the gauge line running along the board's edge. Take abbreviated passes along areas with high spots. The goal is to make one full-width, perpendicular shaving that removes the gauge line in its entirety on your final pass.

Step 4: If at any stage the plane was held out of vertical for several passes, or if the plane strayed from the gauge line, the vertical fillet along the back of the rabbet will not be perpendicular to the rabbet's floor. To fix this, tip the plane on its face to clean the fillet.





Figs. 4-7 & 4-8. *Horizontal work.* Hold the rabbet plane horizontal to clean up the vertical fillet. Clean-up will be necessary if you wandered from the gauge line at any stage or if the vertical fillet is a finished surface to appear in the final profile. Be aware that, depending on the season the rabbet plane was made and the season that it currently is (or the age of the plane) the iron may protrude too heavily on this opposite side or not at all. This can affect the results if several passes are necessary.

As discussed, there are several ways to make a rabbet. This is a simple method when dealing with square stock because it involves one plane from start to finish. Other methods involve multiple planes and/or other tools such as chisels.

A metal shoulder plane, along with many other planes that have an iron that projects to the edge, can perform this task. This is not ideal, however, because they are heavy and do not easily eject their shavings.

In this way, a wooden rabbet plane is a luxury. Its tall body helps you find vertical easily. Its light weight allows you to be aggressive. Its escapement grants you speed. Its lack of a depth stop and fence allow you to cut the next rabbet with no adjustments. A simple rabbet plane can cut rabbets of any width less than their own – a 1/16"-wide rabbet is easily executed with a 7/8"-wide rabbet plane. When a corner needs to be chamfered, and roughly a third of your corners will, you don't need to find a new plane and set it up.

Adding a chamfer with a rabbet plane is also a straightforward process. Your fingers will again serve as a fence. Progress will be gauged by sight. Look at the surrounding facets. Not only should the chamfer

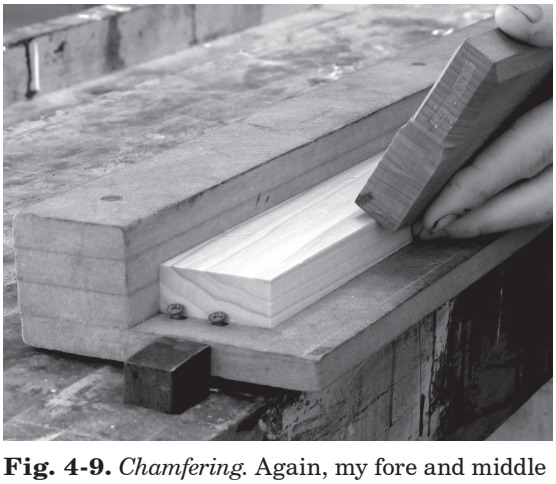


Fig. 4-9. *Chamfering.* Again, my fore and middle fingers are guiding the plane. When possible, I allow my trailing fingers to fall upon the workpiece. This will help gauge uniformity.

be of a uniform width, but the adjoining horizontal and vertical surfaces need to be uniform. Hold the plane at the desired angle and stop at the desired depth.

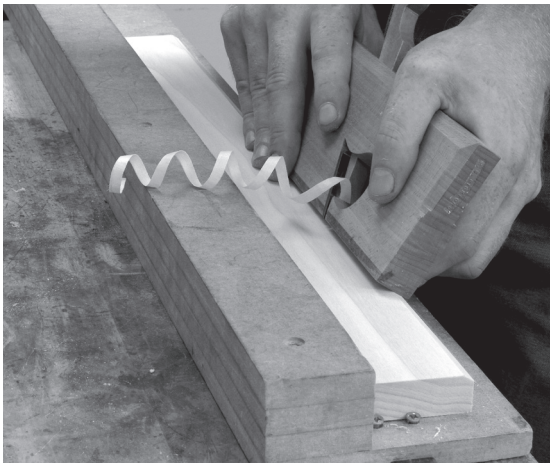


Fig. 4-10. *Even shavings and results.* Your goal when creating a chamfer is uniformity. All care, however, should not be paid toward this goal because efficiency is also warranted. Work for consistency, but do not demand it. The length of the hollow plane to follow will overcome moderate variations. The width of the plane's sole in relation to the chamfer will overcome slight facets. Watch the surrounding horizontal and vertical facets. If these features look uniform from afar they are perfect for this step. Do not reach for your double square.

Note: Using a plane on its corner for the first few passes will eventually cause problems. A significant amount of wear will occur on the single point that runs in the gauge line. In time this edge will become slightly rounded and will not sit in a gauge line. Many antique planes show evidence of re-establishing that corner lost to wear. Some soles have been planed back so much that they approach the tool's escapement; sometimes the face has been planed off to re-establish the sharp corner.

The solution? "Boxing" a corner of a rabbet plane is recommended if you use a rabbet on its edge. Boxing is where you inlay a wear-resistant species, such as boxwood, into the corner of the tool. This reduces that wear and the inevitable loss of that corner.

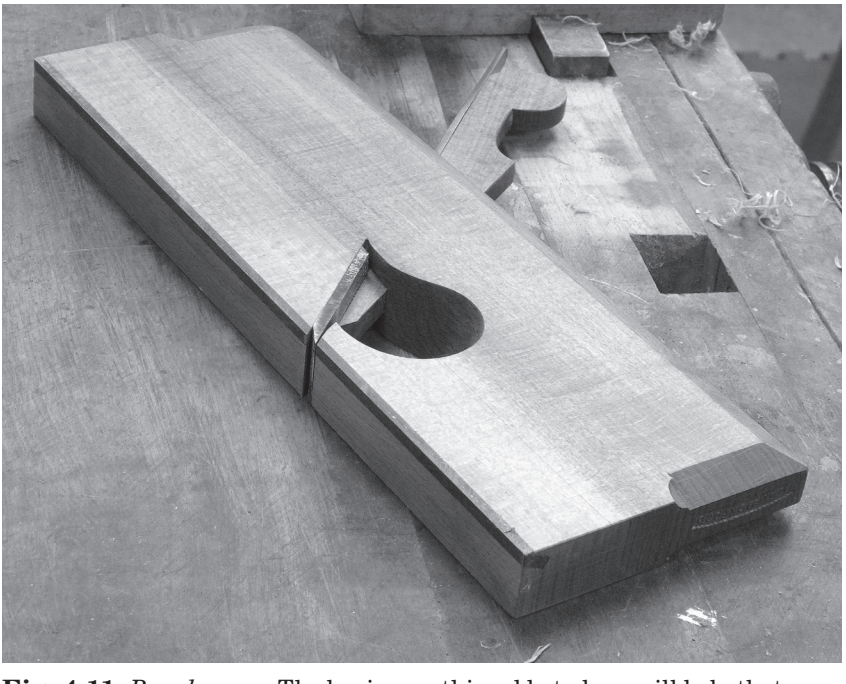


Fig. 4-11. *Boxed corner.* The boxing on this rabbet plane will help that corner of the plane remain sharp longer. It will not, of course, help the opposite, unboxed edge. The unboxed edge is used less often, but it is still used.

A table saw or other power tool is also an economical method for creating rabbets. When creating a large profile I often opt for this method. Getting rabbets close on a table saw then fine-tuning them with a rabbet plane is an efficient way to work. The main problem I have when using a table saw is that, after multiple passes, it will often turn a long, straight piece of thin wood into a long, bowed piece of wood that will become difficult to hold and then work. It is also dangerous to run many profiles to completion on power tools because the final product often has a triangular cross section.

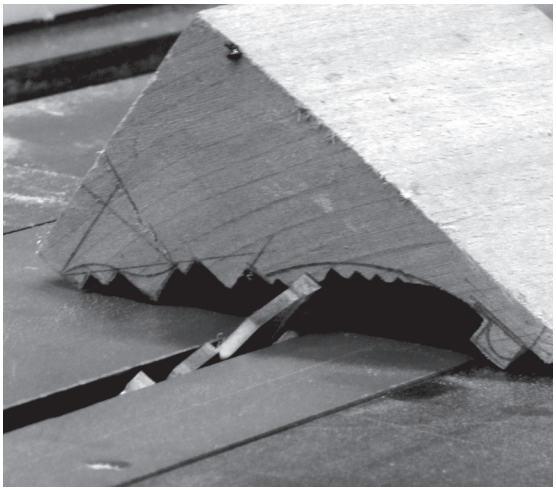


Fig. 4-12. *With the table saw.* An errant pass across the table saw, with the blade raised too high, can quickly change the final profile drastically. Do not bother with 1/100ths on the saw. Do not feel like every rabbet on a single piece needs to be executed in this fashion because you're already there. The risk of an extra rabbet can easily outweigh the reward of saving the three minutes it will take to do it by hand.

Rabbet plane use begets rabbet plane use. The more you use a rabbet plane and the more comfortable you become with one, the less you will opt for the table saw. You will gravitate toward efficiency and effectiveness, which a rabbet plane allows.

This last point will bring up the argument, "If efficiency and effectiveness are the goal, why not stay with a router in the first place?" I can create most profiles three days faster than a router user, unless he pays for overnight delivery of his specialized tooling (in which case I will only beat him by 24 hours). But I digress.