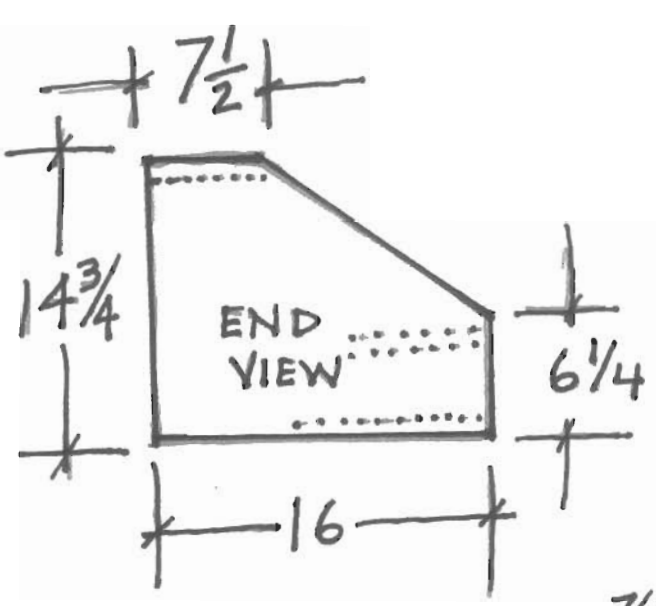
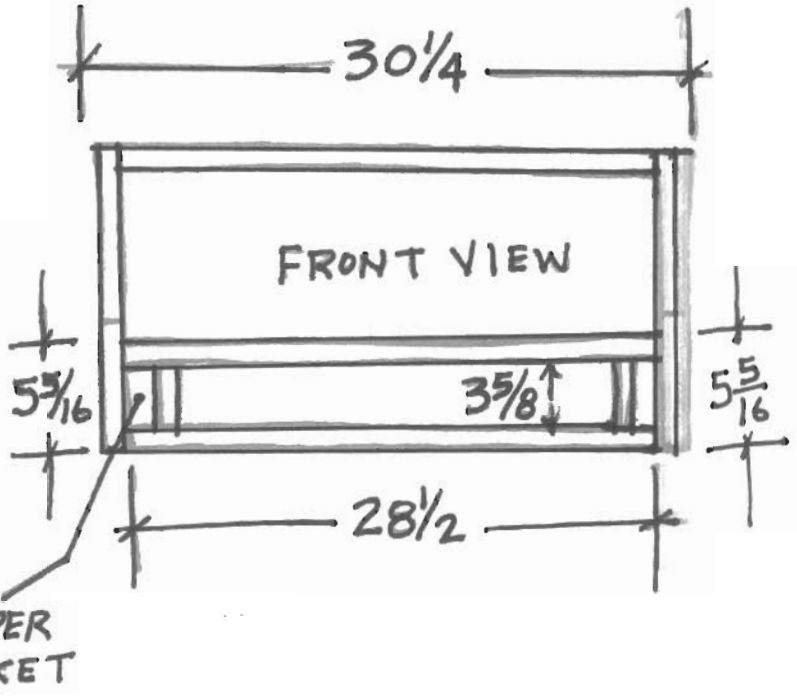
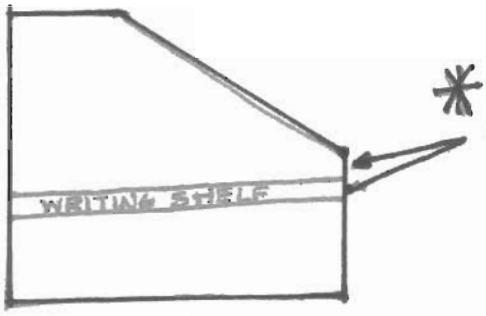
JHLIII 1/10

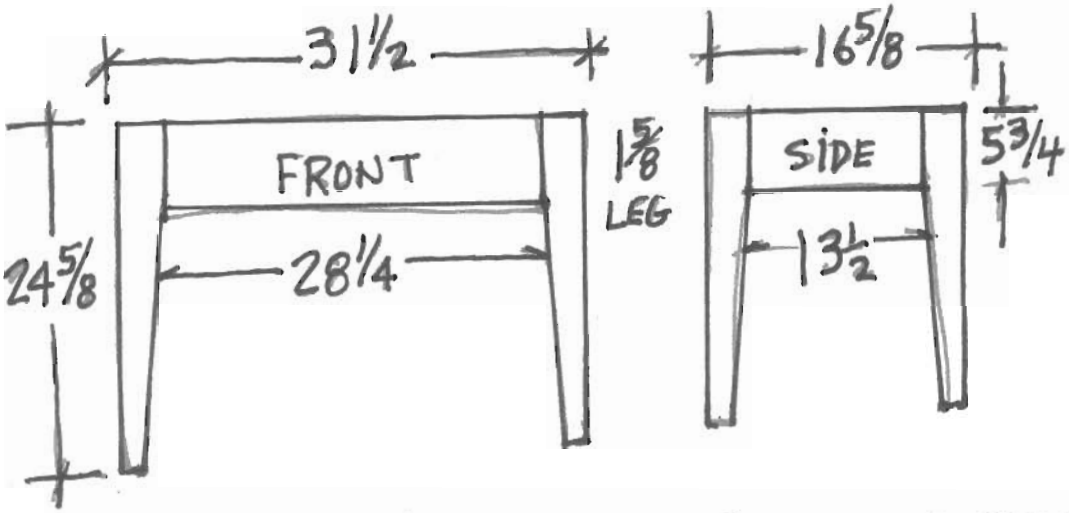
SLANT FRONT LADIES DESK







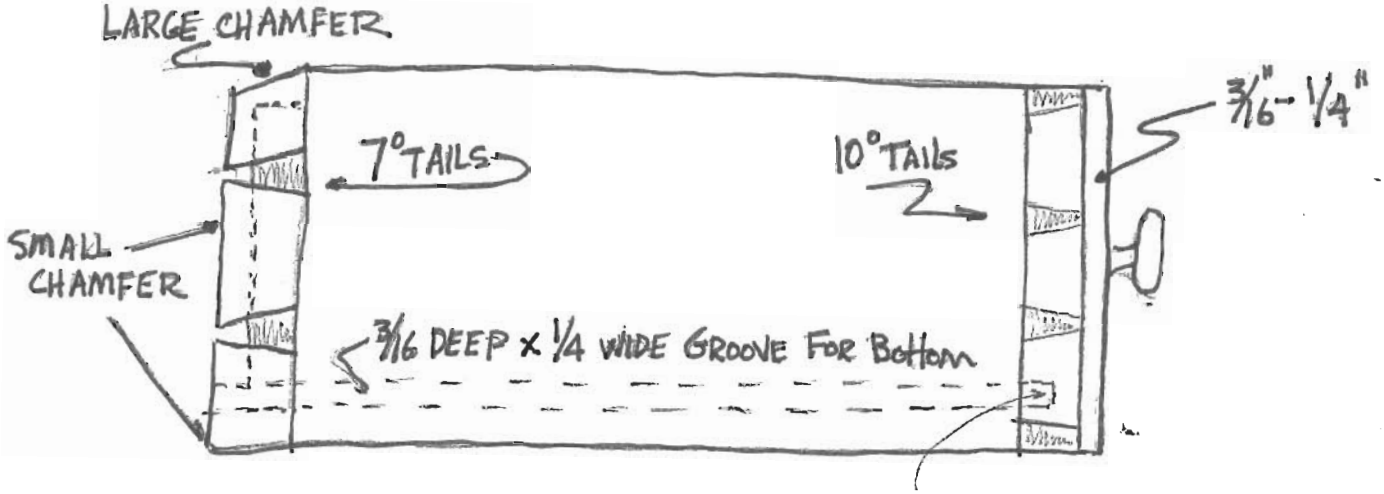
* MAKE SHELF THICKNESS & THE DISTANCE ABOVE IT *Before* THE SLOPE STARTS THE SAME.



THESE DIEMENSIONS ARE ALL BASED ON STOCK THICKNESS OF 7/8". 3/4 OR 13/16 WILL WORK JUST FINE

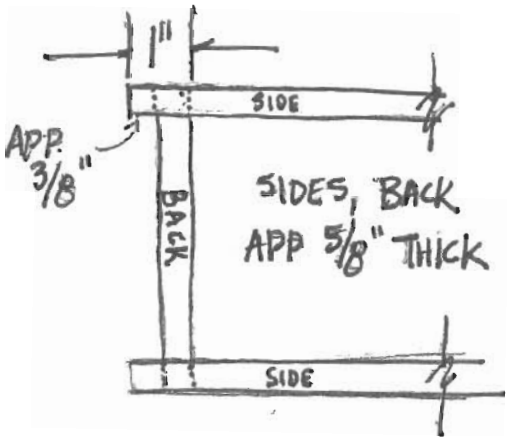
DRAWERS

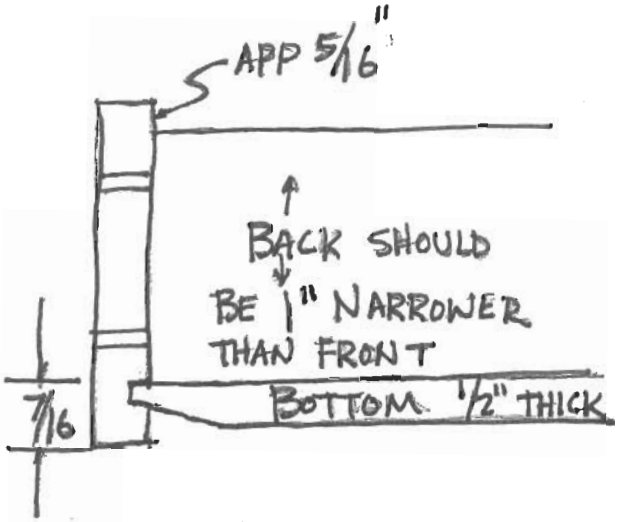
DRAWERS MUST FIT PROPERLY TO RUN PROPERLY. TOO LOOSE OR TOO TIGHT WILL CAUSE PROBLEMS. USE SILICONE SPRAY OR WAX ON WEARING SURFACES. CUT & FIT THE FRONT FIRST. TRY FOR A LIGHT PRESS FIT LEFT+RIGHT. THE BACK SHOULD BE CUT NEXT, TO THIS SAME LENGTH BUT 1" NARROWER..



DRAWER BACK SET IN 1" FROM END. THIS "CAPTURES" THE EXTRA DRAWER BOTTOM STICKING OUT THE REAR

GROOVE MUST BE ENCLOSED IN THE TAIL SO IT DOESN'T SHOW IN THE DRAWER FRONT.

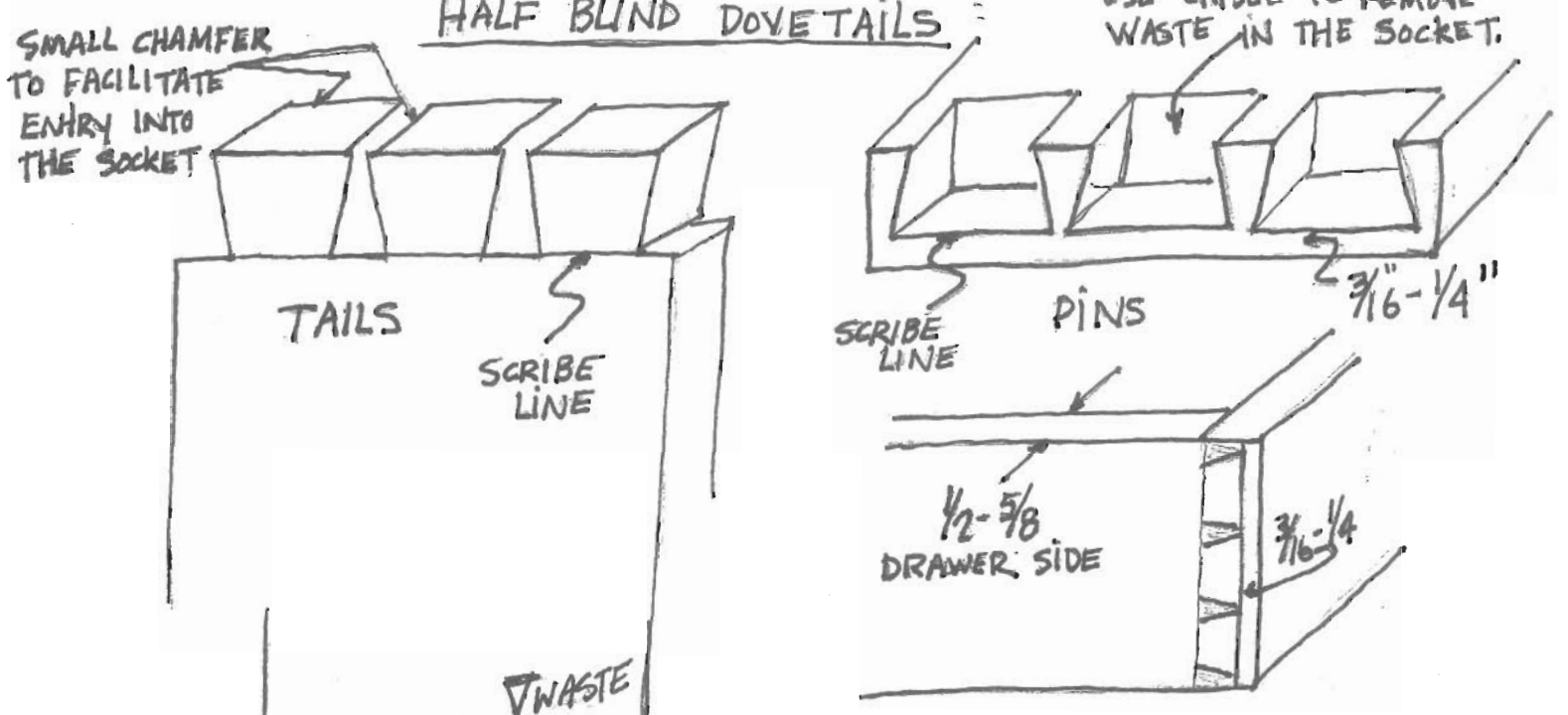




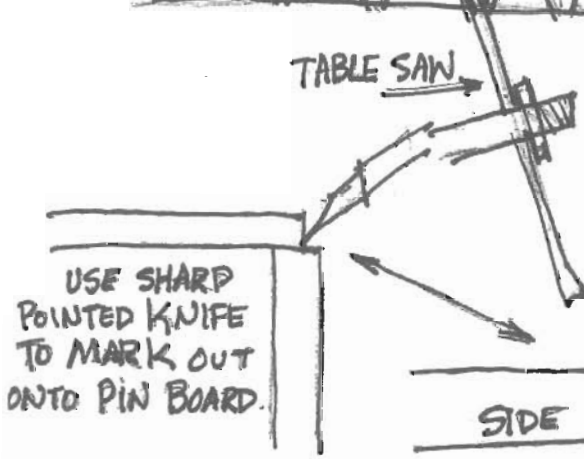
- SIDES SHOULD BE SAME WIDTH AS FRONT.
- BOTTOM IS 1/2" THICK, BEVELED TO 1/4" ON 3 SIDES TO SLIDE INTO GROOVE. IT SHOULD EXTEND ALL THE WAY TO REAR OF THE DRAWER SIDE (APP 3/8" PAST THE BACK)

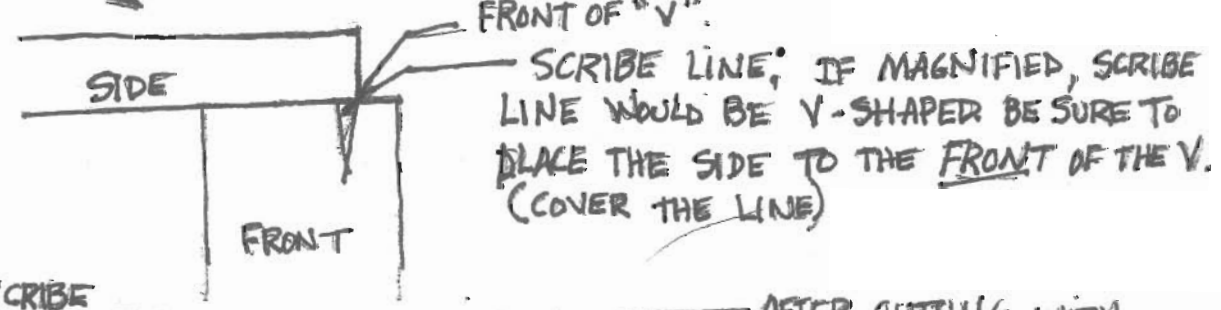
JHL 1/03

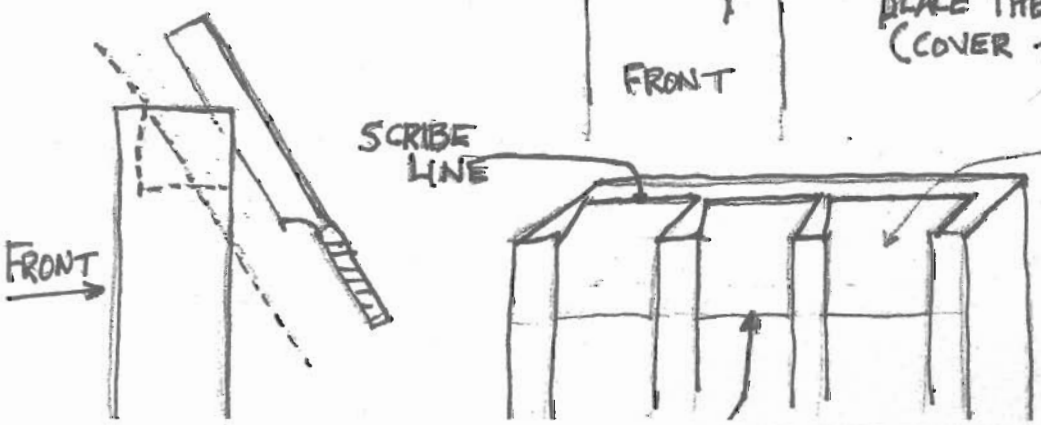
HALF BLIND DOVETAILS



* REMEMBER: THE QUALITY OF THE FIT IS DETERMINED WITH THE DOVETAIL SAW, NOT THE CHISEL. AVOID TOO MUCH TRIMMING OF THE PINS W/ THE CHISEL. DO NOT TEST FIT THE JOINT. VISUALLY CHECK IT, GLUE IT, DRIVE IT HOME!!







after the piece has been finished to a nice luster, at which point it is too late to reshape the leg. These irregularities are not so much the result of variations in dimensions, but rather of awkward transitions from one part of a curve to another, or minor bumps or dips in an otherwise smooth curve. After a leg has been handcrafted, it makes very little difference if one leg is, for example, 1/16 in. thinner at the knee than another, but it is glaringly apparent if the curves of the leg do not flow smoothly. A smooth shape is more important than an actual dimension. When it is well executed, the curve of the leg should carry the eye from the top of the knee to the tip of the foot in a seamless transition without interruption or distraction.

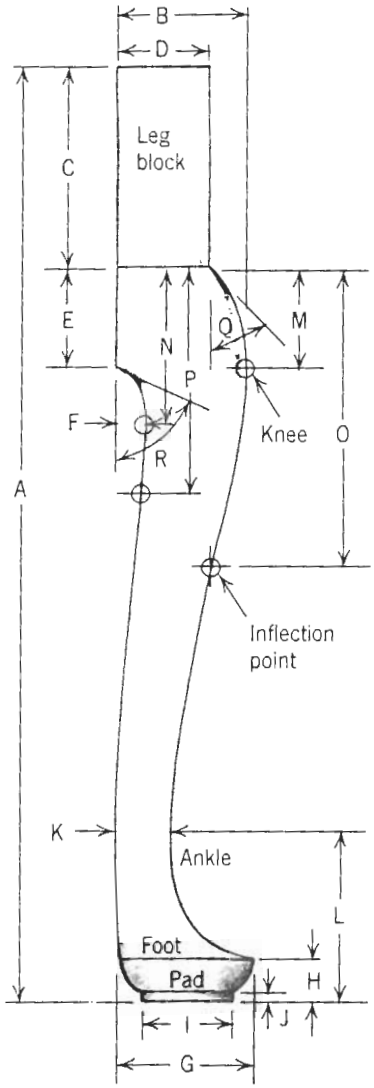
MAKING CABRIOLE LEGS

There are four steps in making a cabriole leg. First, a pattern is made to define the profile. Second, the profile is traced onto the prepared blank, which is then sawn to rough shape. Third, the bottom of the Dutch or pad foot is turned on the lathe. Finally, the contours are smoothed, and the leg is shaped to its final form. At each step of the process, careful attention to the profile will help ensure well-shaped and consistent results.

Making the pattern

Successful cabriole legs begin with a carefully made pattern. One pattern of the profile is all that is needed to define and create the leg. It is in this pattern that the dimensions of the leg are set and the curves are worked out before any wood is cut. If one is working from an original piece, the pattern making is reduced to the relatively simple task of copying the leg profile, either by tracing or measuring. If working from a photograph, it is helpful to have one that shows the leg profile from straight ahead. Because the legs are curved on all four sides, looking at the leg from an angle shows a shape that is an exaggeration of the pattern profile. Similarly, any part of the leg that is not round in cross section, and that can include all but the foot and ankle, will appear to be thicker than the pattern profile when viewed at an angle.

Defining Dimensions of Cabriole Legs



A. overall length
B. maximum width at knee
C. length of leg block
D. width of leg block
E. height of adjoining knee block
F. depth of back curve
G. foot diameter
H. foot height
I. pad diameter
J. pad height
K. ankle diameter
L. ankle height
M. distance to peak of knee
N. distance to peak of back curve
O. distance to front inflection point
P. distance to rear inflection point
Q. knee angle
R. transition angle to knee block

In making the pattern, there are many key features that can be measured to aid in faithfully replicating the originals. The drawing at left shows the dimensions that define a cabriole leg. Besides the obvious measurements, there are several points that are important in defining the curve. These points denote the width and location of the peak of the knee, the back of the knee, the thinnest part of the ankle and the inflection points. Inflection points are those points where the profile changes from concave to convex. It is rare to find period originals that have any discernible straight sections along the length of the leg. There are usually very slight curves throughout the length, and locating the inflection points aids tremendously in capturing their most subtle nuances.

There are a few general rules of thumb that apply to cabriole legs. Then, as now, the makers used rough stock in dimensions of inch multiples. Most large cabriole legs were cut from 3-in. stock, which after drying and planing could be more like 2¾ in. or 2⅞ in. This dimension is a common thickness at the knee and foot for tall-chest, dressing-table and dining-table legs. Smaller legs, such as those on chairs and tea tables, usually measure 2½ in. to 2⅝ in. at the knee. Very slender legs, such as those on tuckaway tables, may have been squeezed from 2-in. stock. Because the leg is cut from a straight and square piece of stock, just wide enough to accommodate the pattern, the width at the knee is nearly always that at the foot. Proportionally, this works out very well: The foot usually looks to be of proper size when its diameter is close to the width of the knee.

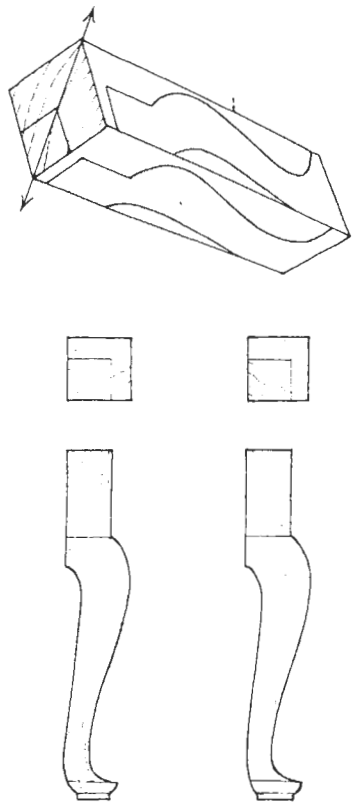
Experience in measuring many cabriole legs has yielded a few more empirical maxims: Even on very robust legs, the knee rarely protrudes more than ¾ in. beyond the leg block. The block tends to be no less than two-thirds the width of the knee on well-proportioned legs, and the ankles are frequently about 40% of the knee width.

The location of the peak of the knee is critical to the appearance of the leg. A good first approximation is to locate it down from the block a distance about ¼ in. greater than the width of the leg block. The

angle at which the top of the knee meets the block is about 45°. The height of the adjoining knee block is roughly equal to the width of the leg block. The height of the foot is about one-quarter to one-third its diameter, and the pad, which is usually worn down on originals, probably started at ¼ in. tall. Once again, the actual measurements of original legs are the best source for their replication, but these relationships in their geometry appear repeatedly. They may be of use where only a few actual measurements may be determined and the rest must be estimated.

Once the important dimensions of the leg have been determined, the pattern may be drawn and cut from posterboard or thin wood. It may take a few attempts before the profile pattern truly captures the feel of the original. Measurements can go only so far in quantifying the curves of a well-shaped cabriole, and a discerning eye is always essential. Even a direct tracing from an original will require some smoothing, as small variations in the shape can alter the look of the finished leg. It is very important to have smoothly flowing curves in the pattern, and sighting along the length of the pattern can help show any irregularities more clearly. The pattern will look like the drawing of the leg on p. 149, but it is not necessary to include the shape of the foot, because this will be turned later. The extra effort required to perfect the pattern more than pays for itself by making the rest of the work easier and yielding a well-shaped leg.

Growth-Ring Orientation



By orienting the growth rings on the end grain to point toward the knee, the grain patterns follow the contours of the leg. Orienting them in the opposite direction yields a less attractive pattern.

The pattern is used to draw the leg profile onto the wood. The extra ¼ in. at each end will be cut off when the leg is complete.

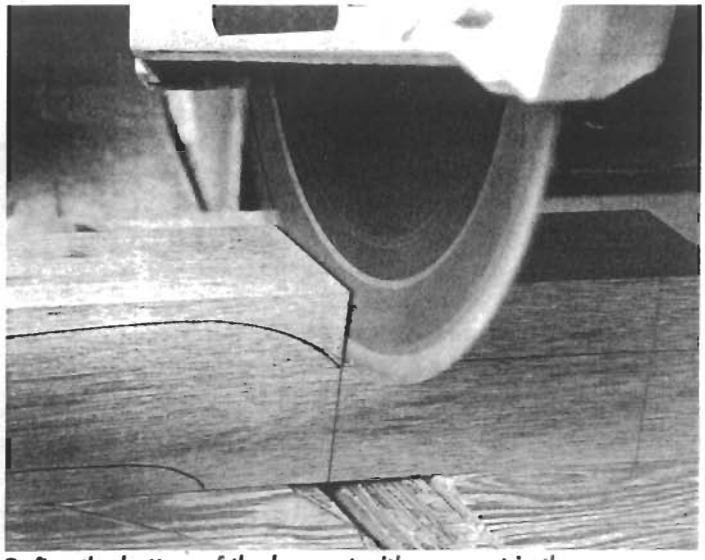
Preparing and cutting the stock

The stock from which the legs are to be cut should be dressed straight and square. It should be about ½ in. longer then the pattern or finished legs, and at least as wide. The extra length allows ¼ in. on each end of the leg that will be marred by clamping and lathe centers; it will be trimmed off when the leg is complete. A little extra width allows for a continuous cut over the knee without the blade running off the stock.

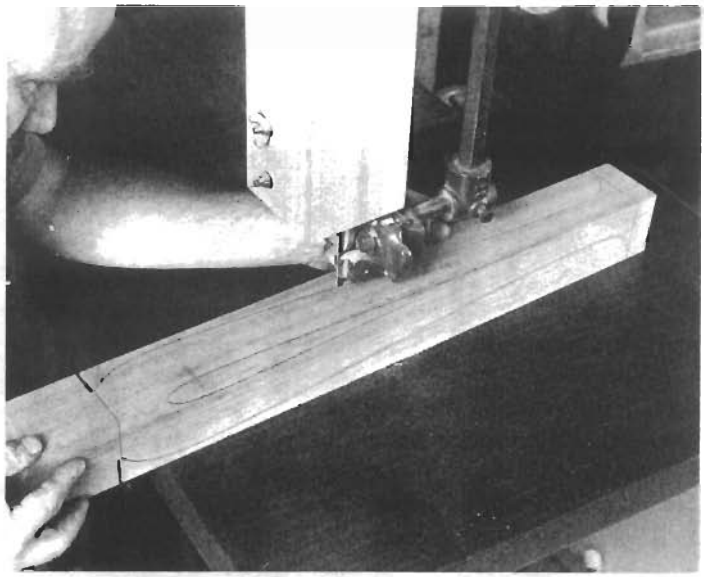
Before the pattern is traced on the stock, the orientation of the growth rings on the end grain should be noted. The leg should be cut so that those rings are oriented to point in the direction of the knee. As shown in the drawing at left, aligning the rings this way ensures that the visible features of the wood (the grain pattern) follow the shape of the leg. Aligning the end-grain growth rings across the leg, from side to side, orients the grain pattern in a way that is in opposition to the contours of the leg. While the grain orientation is not noticeable on darkly finished pieces, it is quite apparent on light pieces made of grainy wood like mahogany. On some pieces, like those in which the legs are the major element of the form, this orientation of the grain adds to the qualities of the finished piece. It is one of the small features that separates truly inspired furniture from the ordinary.

The best way to mark the stock for the optimal grain orientation is to draw a diagonal line on the end grain in the direction of the growth rings. One end of that line will be the corner of the knee, and the other will be the inside corner of the leg. In choosing which will be which, it's important to remember that the leg block and the ankle will be at the inside corner, and that corner should be free of any imperfections in the stock. It is helpful to mark the inside corner to aid in locating the pattern.

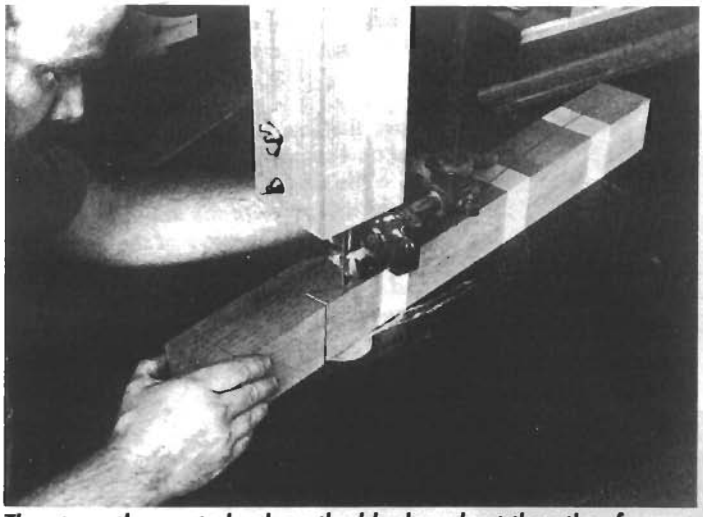
Once the best orientation of the grain is determined, the pattern can at last be traced onto the wood. With ¼ in. left at either end of the pattern, the profile is



Define the bottom of the leg post with a sawcut in the adjacent outside faces of the leg blank.



After tracing the template, cut the leg shape out of the square blank on the bandsaw.



Then tape the waste back on the blank and cut the other face.

bottom of the leg post), the length of the shoulder where the knee bracket will attach, and the exact finished length of the leg (plus one extra inch at the top of the leg post). Clamping the four legs together will speed the process and ensure that they will be identical. Use a marking gauge to lay out the width of the leg posts. The incised lines produced by the gauge are more accurate and easier to follow than pencil lines, which can be easily smudged and are usually too thick.

Trace the template Hold the back of the leg post and the back of the foot flush with one edge of the blank, and trace the complete template on two adjoining faces (shown in the top photo on p. 21). The intersecting corner will become the inside of the leg, so orient the pattern to accomodate any grain features that you wish to expose on the outside of the leg.

Outline the foot For the turned-pad foot, draw diagonals from corner to corner on both ends of the blank and mark the center with an awl or punch. Most turned-pad feet are centered on the square end of the leg blank, but on some examples the foot is located off-center, toward the outside corner of the leg. This gives the foot a bit more projection but requires a larger blank, particularly for a large-diameter foot.

Use a pencil compass to draw the major diameter of the foot and the smaller pad on the bottom of the blank (bottom left photo, p. 21). Make sure the lines dark, so you can see them while the stock is rotating on the lathe. This will enable you to turn the feet to the correct diameters without using calipers.

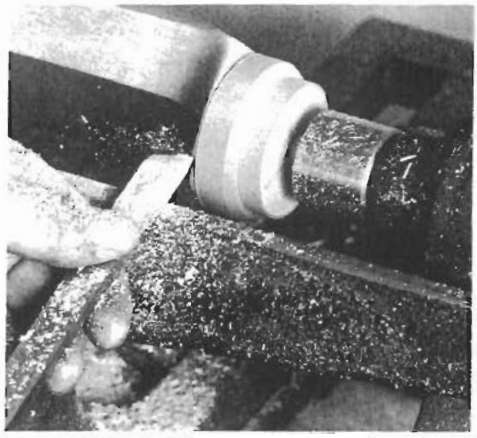
To lay out carved slipper or trifid feet, draw the diagonal lines and transfer the appropriate templates to the bottom end of the blank. Two templates—representing the top and bottom profiles—are included with the drawings on p. 20 for each type of carved foot (except for the Spanish foot, which does not have a sawn profile). Then the diagonals are used to orient the templates on the feet, which are sawn and then carved.

Define the leg post Make a single cut into the two adjacent outside faces of the blank to define the top of the knee and the bottom of the leg post. Use a radial-arm saw or table saw to produce a crisp, straight cut.

Do not cut out the rest of the leg post until after the leg is carved. The full top of the leg will be easier to hold in the vise and to turn on the lathe, as the drive center is often dangerously close to the edges of a fully sawn post. Also, the full-dimension blank will be better balanced on the lathe, and the leg post is less likely to become marred by some carving operation.

Cut the leg shaft profile Follow the template pattern you traced earlier to bandsaw the leg shape out of the square blank (see the middle photo at left). Cut the inside and outside contours on one face first. Save the waste and tape it back on the blank, then cut out the other face (bottom photo at left). Some people use brads to reattach the waste, but a misplaced brad could blemish the leg or even touch the bandsaw blade. (Again, the Spanish foot is an exception; you have to define the ankle molding on the saw before cutting the leg-shaft profile.)

1. Center the bandsawn leg on the lathe, with the foot at the tailstock end, and turn the major diameter of the foot.

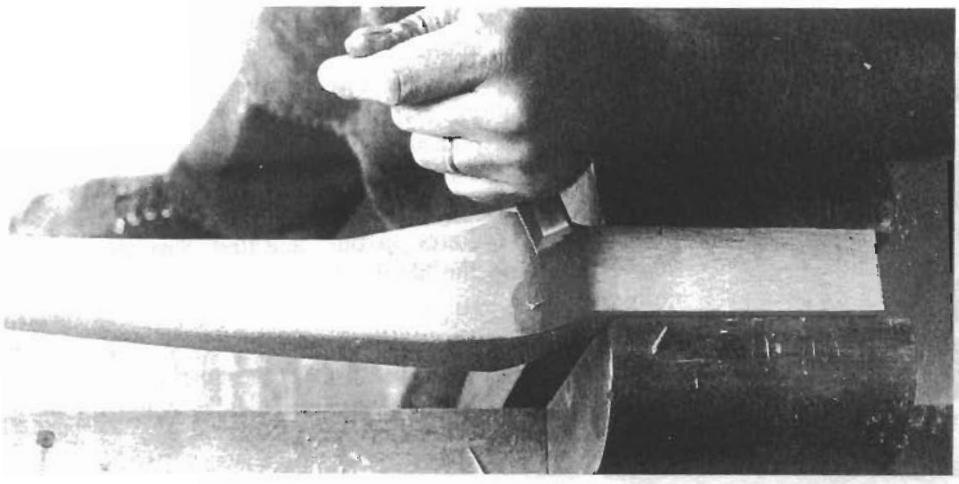


2. Mark the height of the foot pad on the cylinder, turn the pad to size and shape the sides of the foot to the correct profile. Scrape the pad with a parting tool—it's difficult to cut with a gouge or skew in such a small area. Make a shallow groove at the top of the foot with a skew to define the top edge when you carve the foot and the ankle. (You can also turn a small shoulder above the incised line, which rounds off the arris at the back of the ankle and causes the three other thin corners to flake off.) Shape the curved profile of the foot, and use the point of the skew to turn a crisp corner between the upper part of the foot and the pad. Finally, sand the foot on the lathe.

3. Shape the lower leg, from the knee to the top of the foot, with a drawknife, followed by a spokeshave, a pattern-maker's rasp and cabinet scrapers. This may be done right on the lathe, as shown here, or by clamping the leg in a vise with V-blocks. On the lathe, an indexing pin could be used to keep the leg from turning. Sand the leg.

4. With a chisel, carve the ankle beyond the bandsawn line to give the foot more definition.

5. Saw out the leg post, and keep the sawn face as smooth as possible. You can use a table saw, but you'll have to finish the cuts with a handsaw or bandsaw. You can also remove the waste by making successive cuts on the radial-arm saw.



6. Pare the sawmarks off the knee with a chisel and smooth it with a pattern-maker's rasp, a file and sandpaper. Leave the shoulder crisp where the knee bracket will be applied. The inside curve of the leg, underneath and behind the bracket, is simply pared with a chisel and carving gouges and need not be sanded. Photos 5 and 6 in this sequence apply to all four feet types found on sculpted cabriole legs