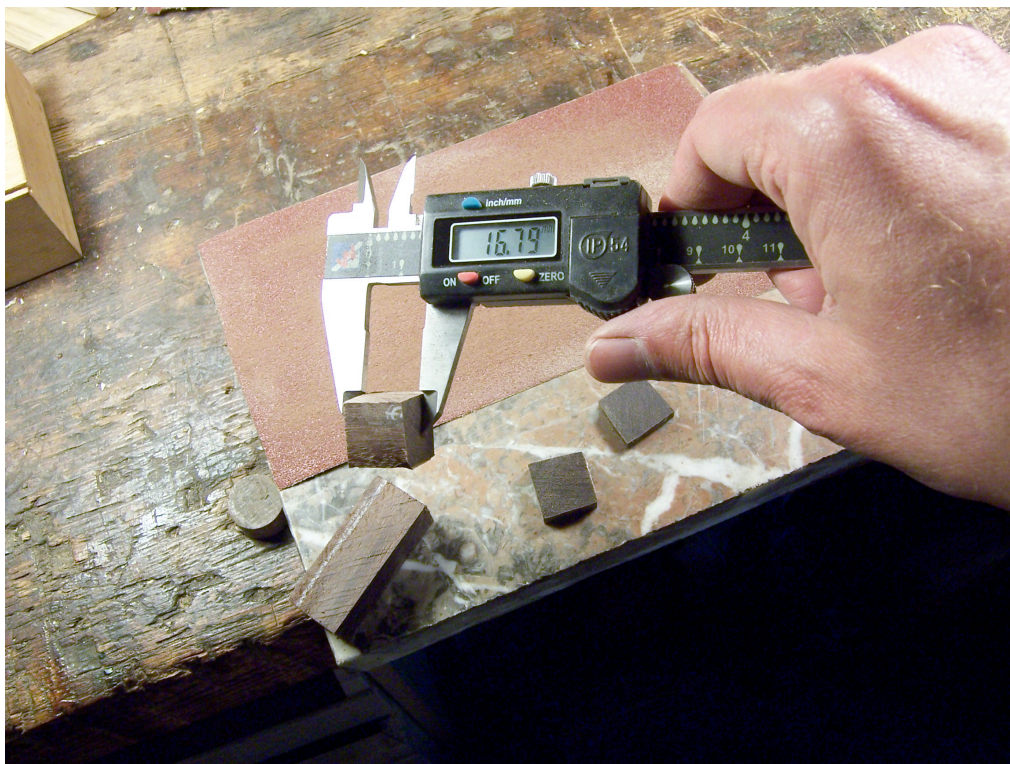


**Figure 20:** Sanding the slices to get the square cross sections parallel.



**Figure21:**  
I can reach  
a good  
precision  
(0.05mm)  
within a  
minute.

In order  
to glue  
the  
parts with  
a white  
veneer in  
between,

I must admit I use a machine: I found that my circular saw table was very convenient.





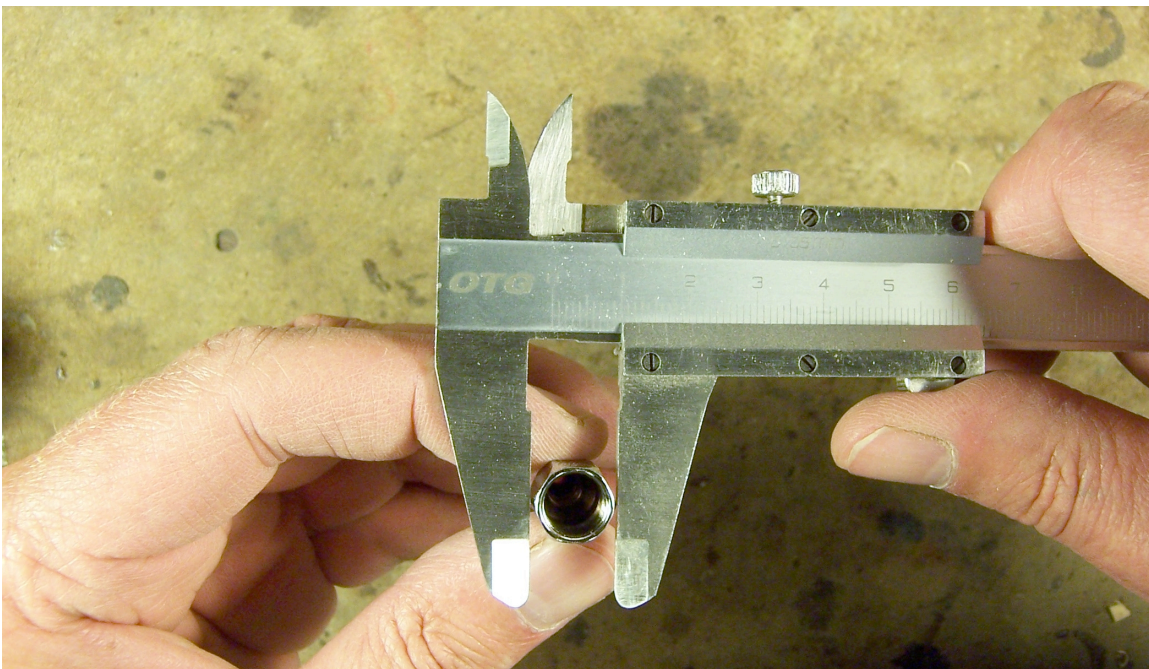
**Figure 22:** Gluing the white veneer strip in place.

Then, I drilled the two blanks the usual way.

### ***Turning the blanks***

I now need to turn a perfect cylinder. The diameter has to be the same as the larger diameter of the kit

hexagonal nib, in fact a very little bit bigger to allow for sanding. I modified a caliper, rounding the end of the jaws. I locked the jaws at the correct diameter to allow reading the measurements easier.



**Figure 23:** Taking the measurement needed. Notice calipers are not digital.

I put the lathe on with the blank on a pen mandrel, and I gently rub the jaws ends on the wood while cutting a mortise with a narrow parting tool.





**Figure 24:**

Step one in getting a perfect cylinder with the required diameter.

When the jaws go across the wood, the correct diameter is reached. It takes only seconds. I make different mortises along the blank, and then I only have to turn away the wood in between. I stop the lathe and check the whole length with the caliper; it has to run tightly but freely along the blank.

The catalox blank has been turned the usual way with the glued tube and the bushings. But since I want to drill holes for the mother-of-pearl dots in the boxwood blank, I did not glue the boxwood to the tube yet. When the blank is on the mandrel, the unglued tube is inside, and only the bushings are holding it tight when I turn it.

### ***Making the facets***

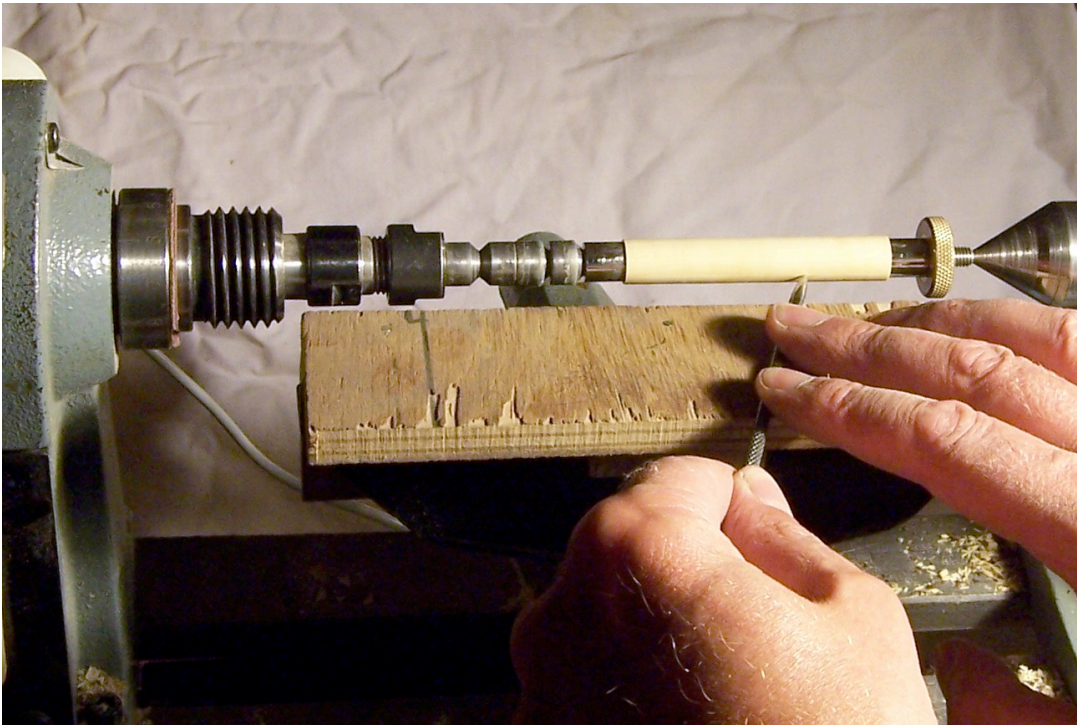
I made a wooden device to transform my tool rest into a shelf rest. Two scraps, three nails and a clamp is all I needed, it does not have to be precisely horizontal, only steady.



**Figure 25:** My steady shelf.

I place the steady shelf roughly level with the lathe axis. Using the index, I draw six lines with a scratch awl.





**Figure 26:** Scratching the 6 intersection lines of the 6 faces of the future hexagonal barrel.

Note: We were not told how the blank was indexed. Possibly the lathe has a built in index.



**Figure 27:** I take the blank to the bench vice to hold it for planning.

I like to use two planes. With the first one, a good old Norris, I go quickly near the lines, sometimes at the price of some very light tear-

out. With the second, a very precise French plane with a metallic sole, I can take shavings 0.02 mm thick.

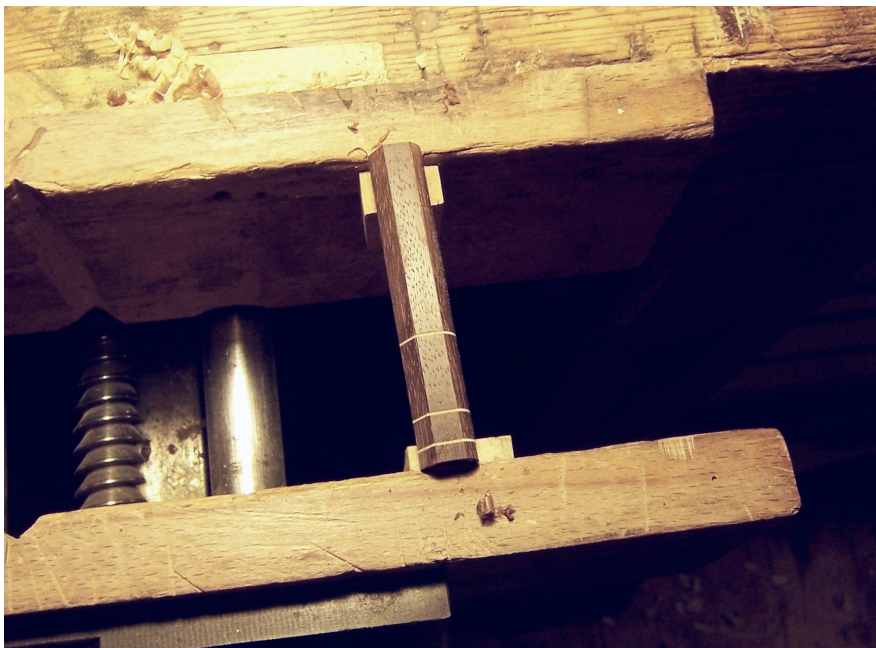




**Figure 28:**  
Planning started  
but not complete.

The smaller French plane is the perfect tool for reaching the line. I begin to “feel” the surface I made first, holding the plane on top of the blank, rocking the tool from side to side before starting to plane. I

frequently check how far the lines are from the side of the newly planed surface. If I do not plane really in the center of the two lines, I have to lightly press the plane more on one side. I may glue two temporary pieces of wood on the vice jaws to better support the blank.



**Figure 29:** The small blocks glued in place to help support the blank while using the planes.

Some would suppose this technique is difficult; it is much easier than it seems. You need a well-tuned plane (I use

two because I have them, but only one is sufficient) with a freshly sharpened blade. You have to take very light cuts especially at the end, always trying to feel the surface you bring out. If you practice on a piece of scrap wood, then you will be amazed to see how easy it is to reach precisely the lines. The process is even easy for those who are not well-experienced using planes. In fact, I use this technique because it is accurate, inexpensive and very quick! My first try gave me a decent hexagon, and now I make



them nearly perfectly in less than ten minutes. The untubed blank is thin but no damage if the vice is not too heavily tightened.



**Figure 30:** A completed hexagonal pen barrel.

### ***Finishing the blanks***

I now have to drill holes in the boxwood blank to insert the mother-of-pearl dots, which is rather straightforward. I draw a line in the middle of three faces, mark the place where I want the dots to be with an awl, drill with brad point bits, and of course using a hand drill.



**Figure 31:** Using a hand drill to make hole for the mother of pearl dots.

I pour some thick CA into the holes and insert the dots, trying not to have too much material inside the blank. When the glue is set, I use a chainsaw file to clean the inside until the tube moves freely. I usually have some mother-of-pearl on top of the blank surface. I clean it on the marble fitted with sanding paper. This is time to get rid of any size imperfection: I carefully measure



every diameter and sand more where I did not plane enough, until the hexagon is regular with parallel sides. If you feel unconfident with a plane, you may stay quite far from the lines and finish the shape on the sanding paper. You may even shape the facets only with sandpaper; it only takes a bit more time but it is very precise.



**Figure 32:** Any needed final sanding is not done.



**Figure 33:** You now have to file the little triangles at the corner of each surface to match the kit's shape.

Buffing will give a nice shine to the wood and break the edges. I like to oil the wood with linseed oil to protect it from splashes, to prevent the wood fibers to raise and to prepare a nice patina that use and age will give.

I assemble the kit taking care of the orientation of the hexagon: the surfaces have to flow from top to bottom.  
That's it!