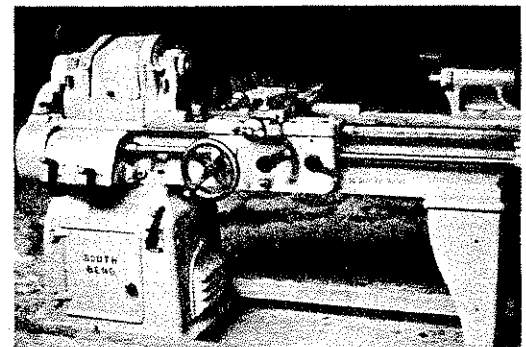
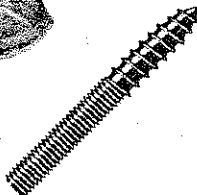
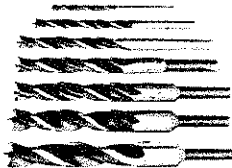
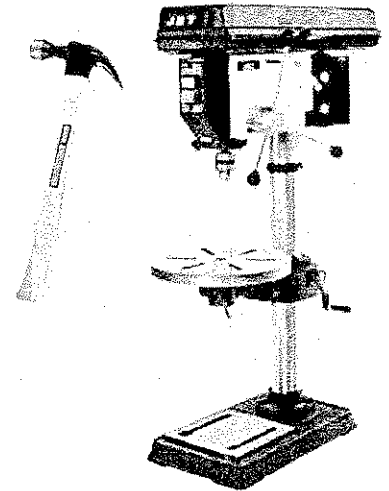
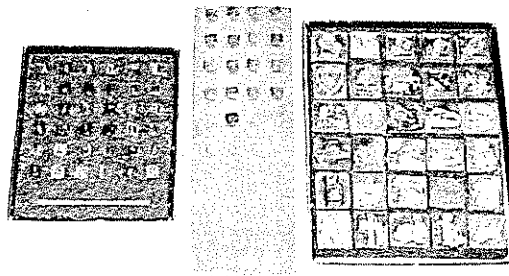
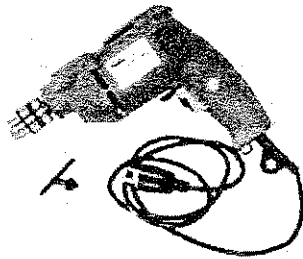
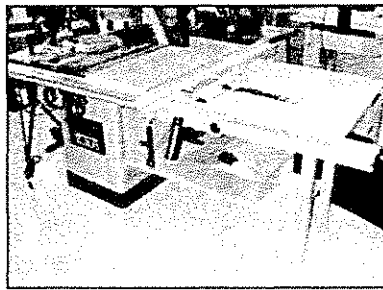
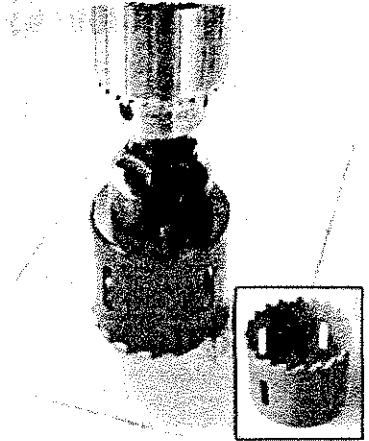
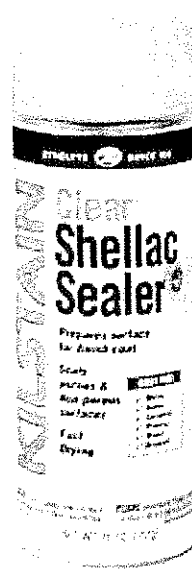
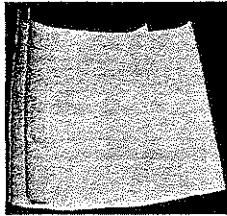




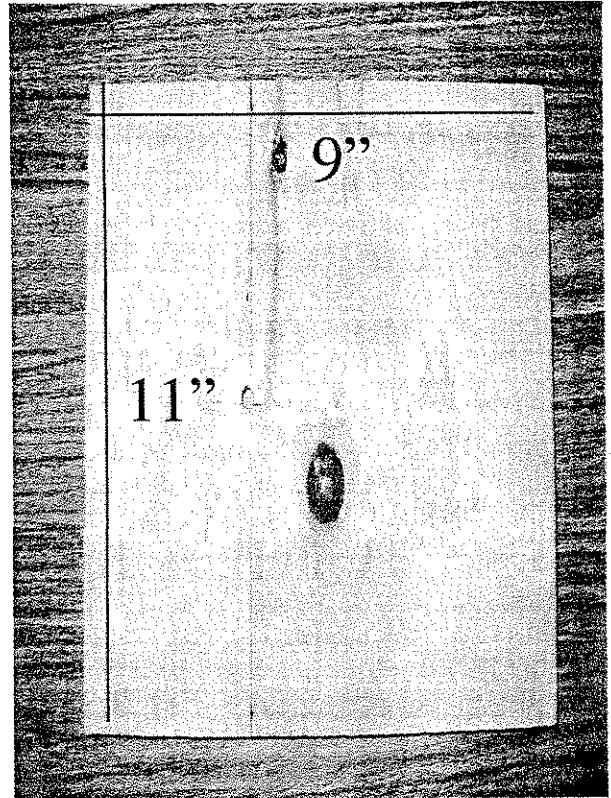
Paper Towel Holder

What Supplies and Equipment are Used

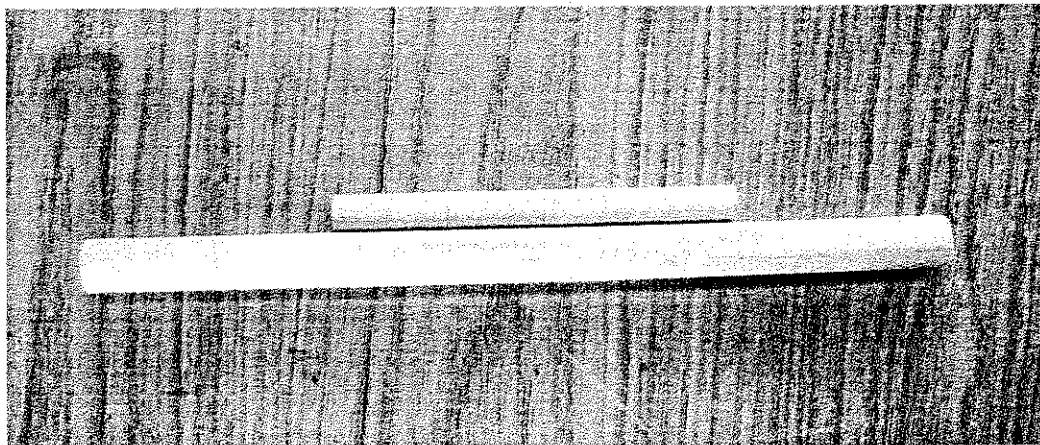


Selection of Materials

- Choose a piece of lumber approx. 3/4x9x11. The left over will be used for the top.
- I have used Pine, Burch and Oak. It is your choice.
- Grain pattern is not that important. Remember, it is round.

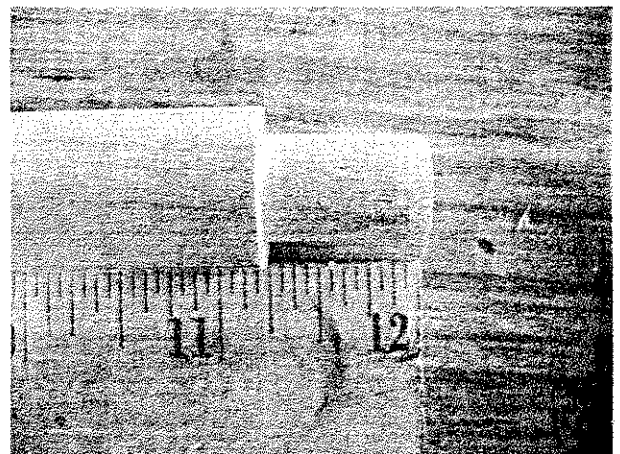
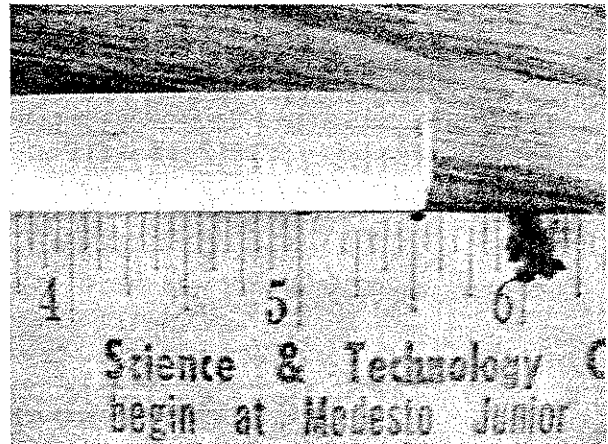
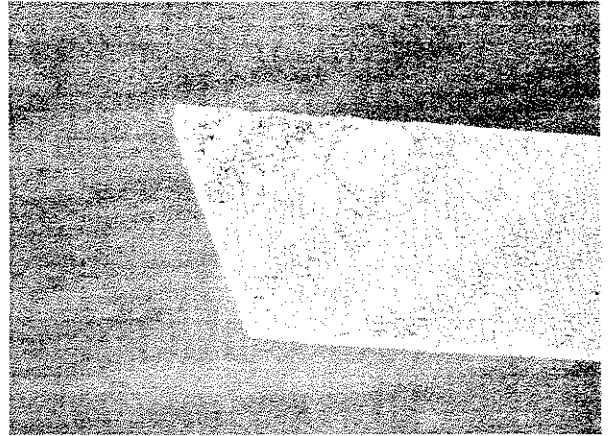


Select two dowels that are the same materials used for the base. If not, use materials that are close in color/grain.



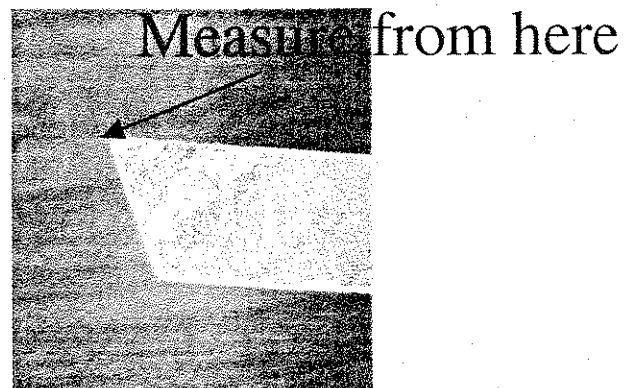
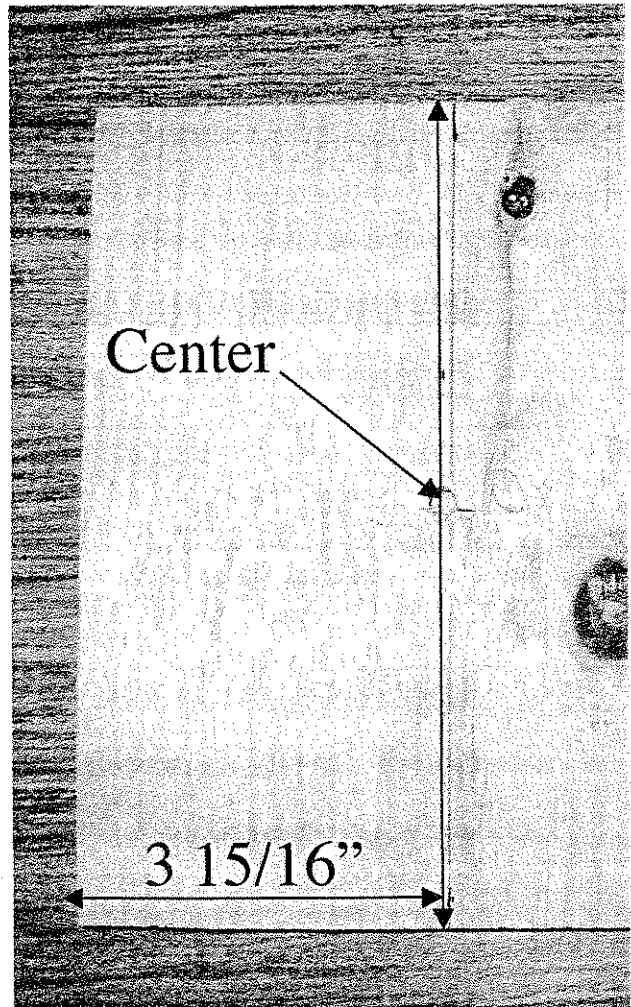
Preparing Materials

- Bevel one of the narrow edges - the 9" end - 40 degrees on the table saw.
- The smaller dowel is 1/2"x 5 1/2"
- The larger dowel is 3/4"x12". At one end turn down -(remove the material using a lathe)- the large dowel to 1/2" in dia. X 3/4" long.



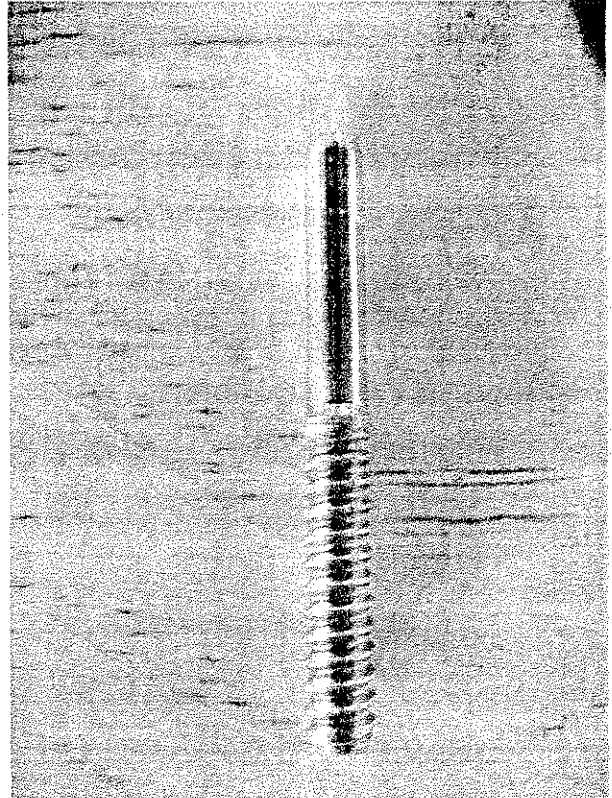
Layout of the Base

- Some knots are acceptable. Use common sense when you are cutting out the materials to be used. In many cases you can waste 2-3" of materials and avoid a problem. I tend to use some of these for demo material such as the one to the right.
- Measure from the point $3 \frac{15}{16}"$. Find the center of the board on a line that you draw $3 \frac{15}{16}"$ from the edge.
- Drill a $\frac{5}{32}"$ pilot hole at the center point. This is for the band saw circle guide.



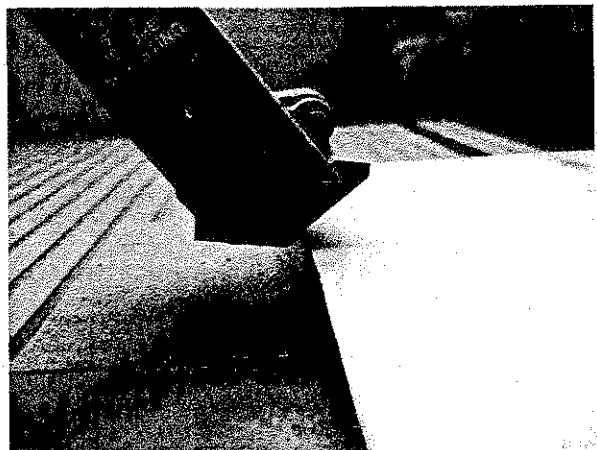
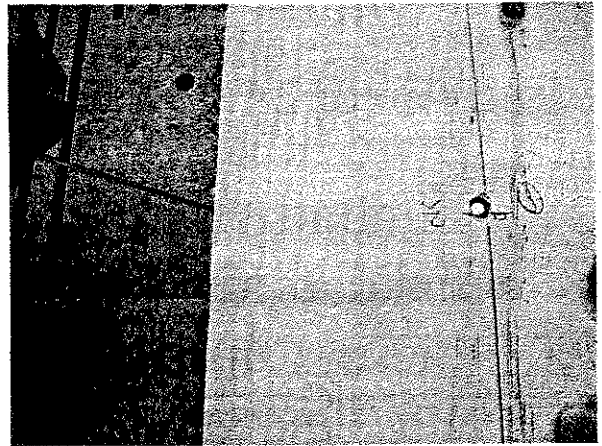
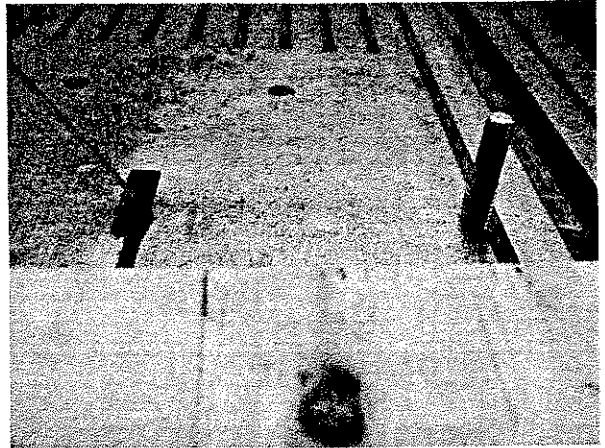
How to Make a Circle Guide

- This is a 5/16" SS bolt that was turned down on a lathe to 1/4" to be used as a pilot for the band saw. Do not make it too tight of a fit or it will bind the saw if the hole is drilled crooked in the board.



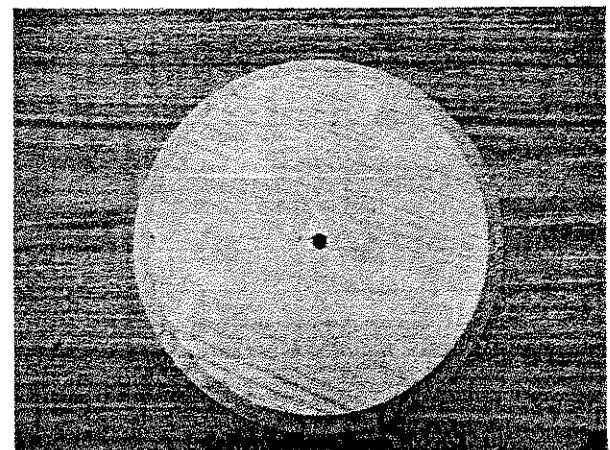
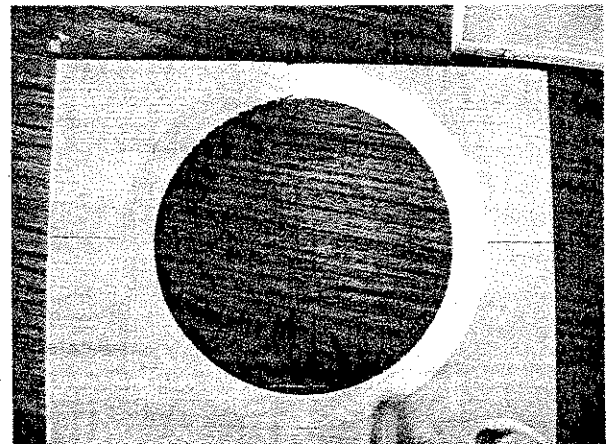
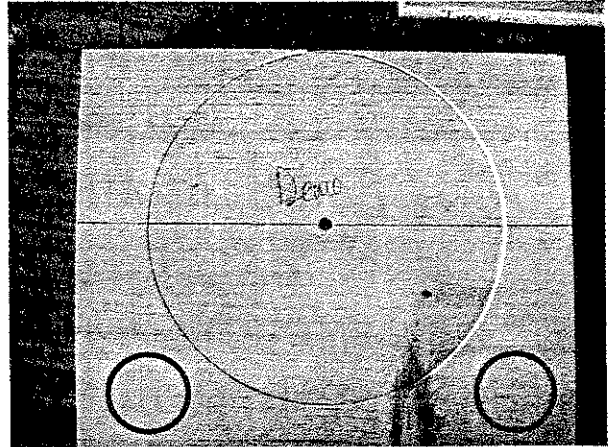
How to Cut a Circle

- Measure for the pilot hole in the band saw table. Drill and tap the table. It is best that you make a board first and move the hole placement in the table accordingly.
- The leading edge of the blade should be at the center line of the pilot.
- Use a 3/16" fine tooth blade and go slow.
- The blade guard will have to be raised and lowered for this project.



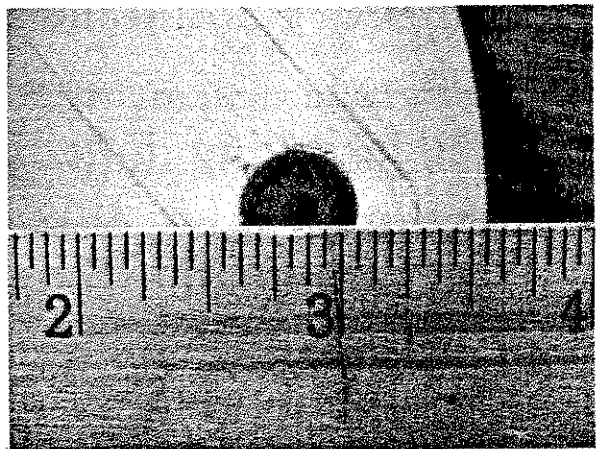
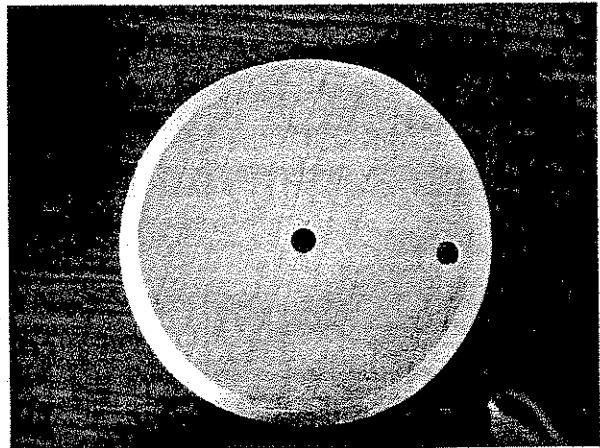
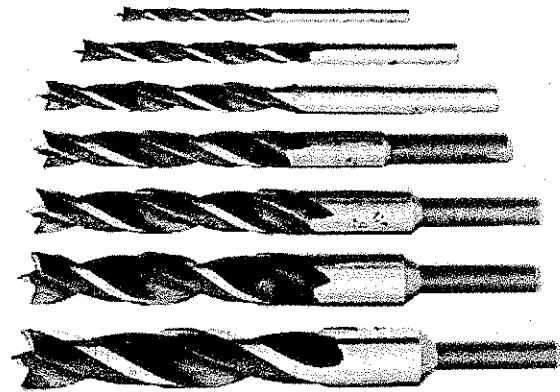
What it Will Look Like

- When you are done it should look like this.
- Do not throw away the remaining board. It will be used for the top of the towel holder. Students tend to make a mistake on the first hole saw cut. This gives them another chance with the same board/grain.



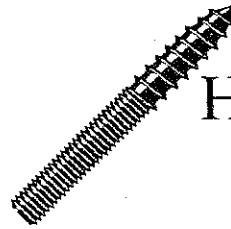
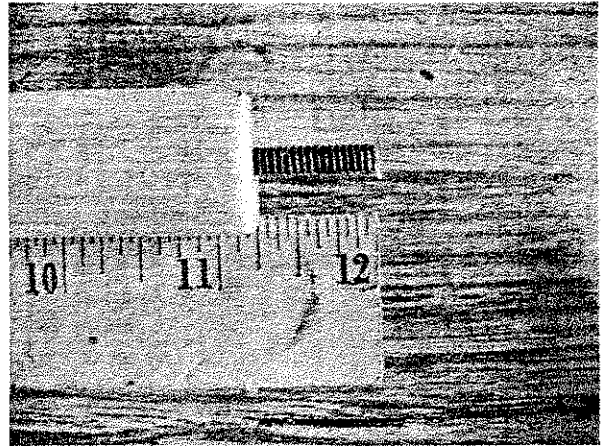
Drilling Holes

- A drill press should be used for this part of the project.
- Use a very sharp brad point bit that is $1/2''$ in dia. To enlarge the hole in the center from $1/4''$ to $1/2''$. This hole should be drilled all the way through.
- The hole on the edge of the base should be approx. $2\ 7/8''$ from the center of the base. Set the stop at $1/2''$ deep.



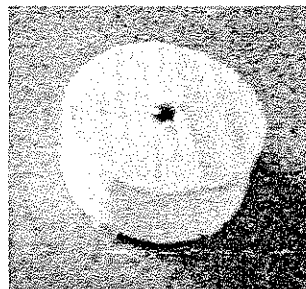
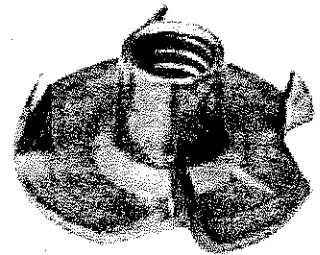
Top of the Towel Rack

- Drill a hole in the center of the top end of the 12" dowel large enough to accept a 10-32 x 1 1/2" hanger bolt.
- Do not make the hole too small. It will split the dowel.
- Using a 2" hole saw with a pilot bit, make a top.
- After everything has been sanded, stained, and sealed; you press the Tee Nut into the top.
- The last thing done is the leather cap. It is used to hide the Tee Nut and give some decoration to the project. Use contact cement for the leather.



Hanger Bolt

Tee Nut

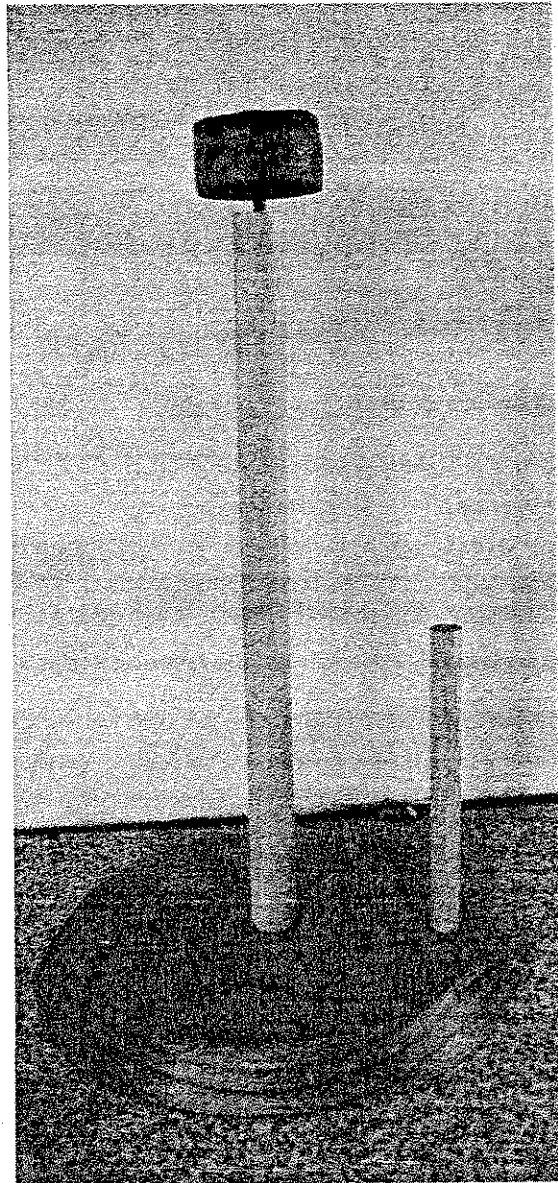


Top for
Towel
Rack



Finishing/Assembly

- Lots of sanding with 120 grit sand paper.
- Stain and seal with what ever you like. I use Minwax Natural or Golden Oak.
- I seal with Shellac and rub down with Bronze Wool between coats. Bronze wool will not leave rust stains like steel wool will.
- Use wood glue to join the parts.



You are done!!

