

INLAY FOR BEGINNERS

A collaboration project between
Jim Collins aka JimSawyer – Technical input
and
Jim Moss aka jim_mex – Tutorial design
for
www.scrollsawer.com/forum

INTRODUCTION FROM JIM COLLINS

Folks who have no experience of inlay work may well feel intimidated to give the inlay technique a try so Jim and myself have created this tutorial for what we'll call an 'experiment' to help break the ice. I've been producing inlays for over 15 years but still have my first 'experiment' to remind me how I got hooked and how much fun inlay is. I hope you feel the same after giving this a try.



For this experiment I'm going to produce the inlay shown which when finished will measure approximately 3 1/4" wide by 1 7/8" high. One good thing about this piece is that the one pilot hole which I'll drill will be cut away with a second inlay which originates on the outside of the piece. This will give newcomers a chance to practice getting the drilling angle correct. There are also a few sharps turns in each direction which give an opportunity to really cut one's teeth – but more of this later. So, let's begin.....

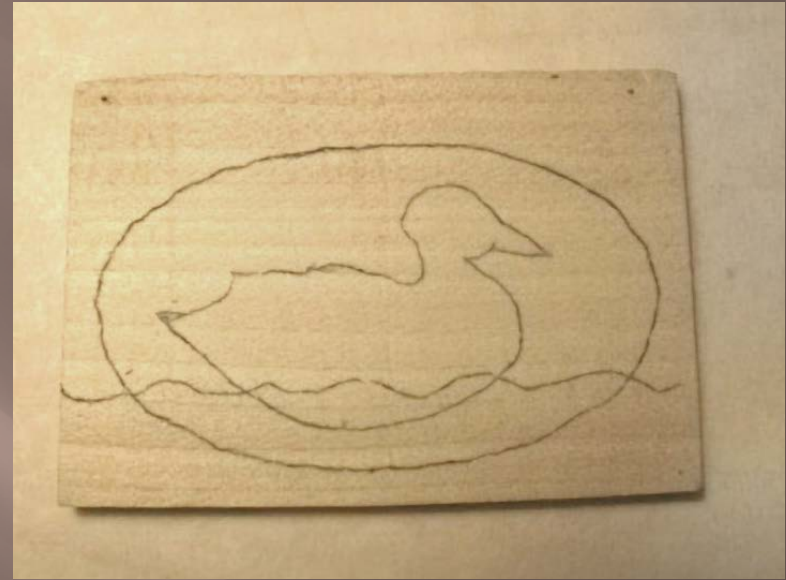
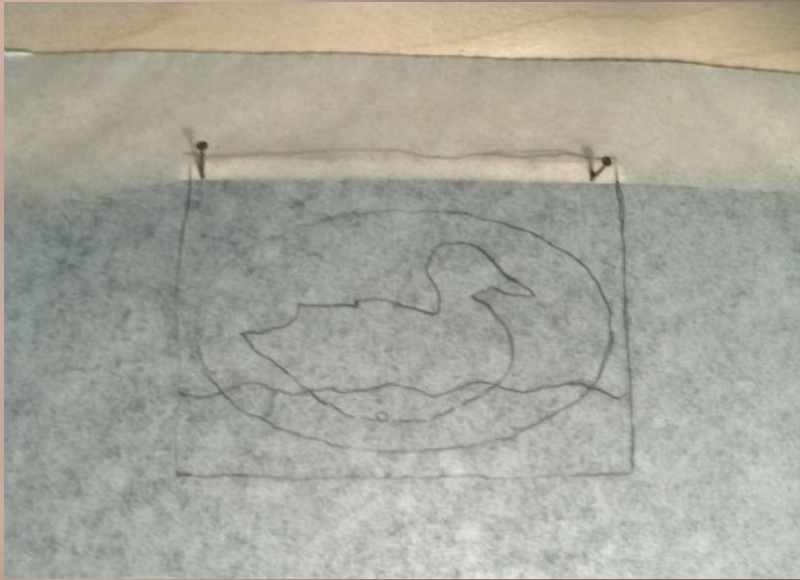
MATERIALS & TOOLS

- The pattern.
- 3 pieces of contrasting woods of 3 $\frac{3}{4}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{4}$ " size . I used basswood, poplar and mahogany but any woods which have good contrast between them will work
- A #5 scroll saw blade – I prefer a Flying Dutchman Penguin Silver
- A #60 drill bit and power drill
- Needle file or equivalent
- Double sided adhesive tape
- Tracing paper and pencil
- Carbon or transfer paper
- Bench Knife
- Brads, tacks or map pins



- A locking C-clamp or similar small clamp
- A random orbital or similar – sanding can also be carried out manually with a sanding block
- Finish of choice – mineral oil, blonde shellac or varnish

TRANSFERRING THE PATTERN TO THE WOOD



Begin by tracing the pattern onto a sheet of tracing paper.

Fix the pattern, with a piece of carbon or transfer paper positioned face side down underneath it , to the basswood using brads, tacks or map pins as shown.

Using a sharp pointed pencil, transfer the pattern onto the basswood surface.

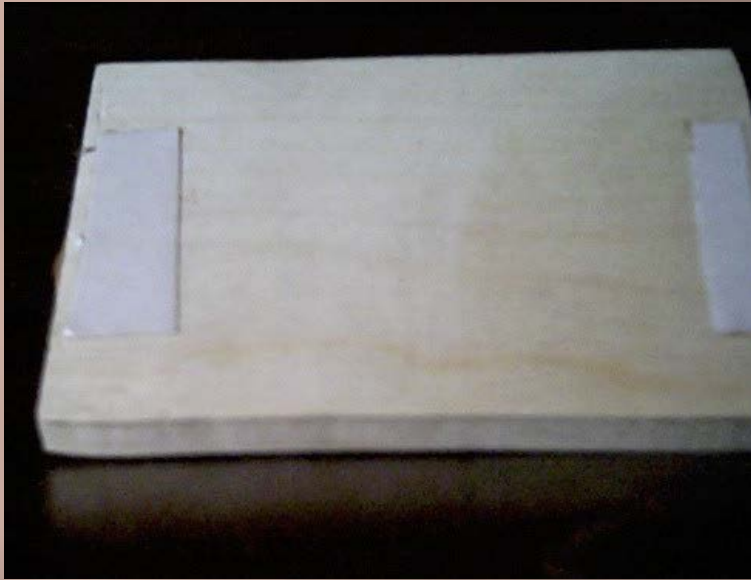
PREPARING THE BLADE



Load a #5 blade and apply a reasonable amount of tension to it.

Using a mill file or similar very fine file round over the sharp edges of the backside of the blade, especially the back right hand corner. When cutting, this will help in making sharp turns much easier and more accurate.

TAPING AND CLAMPING



Stick a couple of small strips of double sided adhesive tape to the back of the basswood piece -I usually pencil marks on the pattern side of the basswood to show where the tapes are. Place the basswood tape side down on top of the mahogany piece, aligning the sides of both pieces together.

Using a 'C' clamp or similar, in turn, firmly clamp together for a few seconds each of the two taped areas to ensure that the two pieces of wood become securely attached to one another then remove the clamp.

MAKING A TEST CUT

Set your saw table down to the left at 2.5 to 3 degrees. The exact angle will depend on the actual thickness of the top piece of your stack.

Make a rectangular shaped test cut at the side of the stack outside of the pattern area.



Push the mahogany piece up into the cutout of the basswood. It should protrude about $1/32$ ". If necessary, change the angle of the table slightly and repeat the test cut operation to obtain the correct height.

Note: Having this height of the inset piece above the piece with the cutout is a good idea since when making tight turns it is easy to lean on the blade a little causing the piece to be cut slightly off. Also, when gluing up, some woods may swell a little causing the inset to drop slightly.

THE CORRECT DRILLING ANGLE

This project is great for practising how to obtain the correct drilling angle since making a slight mistake won't matter because the area of the drill entry hole will be removed.

For drilling I use a #60 drill bit fitted in a Dremel rotary tool, however, any type of hand or power drill can be used.

The drill is placed just to the right of the pattern line at the bottom of the duck's belly and at a slightly exaggerated angle in what will be the waste part of the wood. Note that I usually drill my holes directly on the scroll saw table, supporting the piece to be drilled with a piece of flat scrap wood.



CUTTING THE FIRST INLAY



Thread the blade into the blade holders and apply tension. The inlay to be cut should be to the right side of the blade . When cut it will push up from the bottom of the stack. Cut in a counter-clockwise direction. As you reach the end of the cut don't worry too much about staying on the pattern line, instead try to make sure that you finish the cut such that it smoothly joins up to it's starting point .

REMOVING THE FIRST INLAY



Having finished the cut , release the tension on the blade and remove the blade from the top blade holder. Lift the stack and push the duck shape downwards to free it. Remove it from the saw. There is usually a burr left on the piece from the drilling operation. Remove this easily with a needle file or sanding stick.

Note that the left hand image does not show the pieces stacked as they were cut. I placed the mahogany one on top of the basswood one as I was inspecting it – sorry for any confusion!

THE FIRST INLAY IN PLACE



After cleaning the burr from the mahogany inlay carefully push it up from the bottom of the stack into the basswood piece

SEPARATING THE STACK



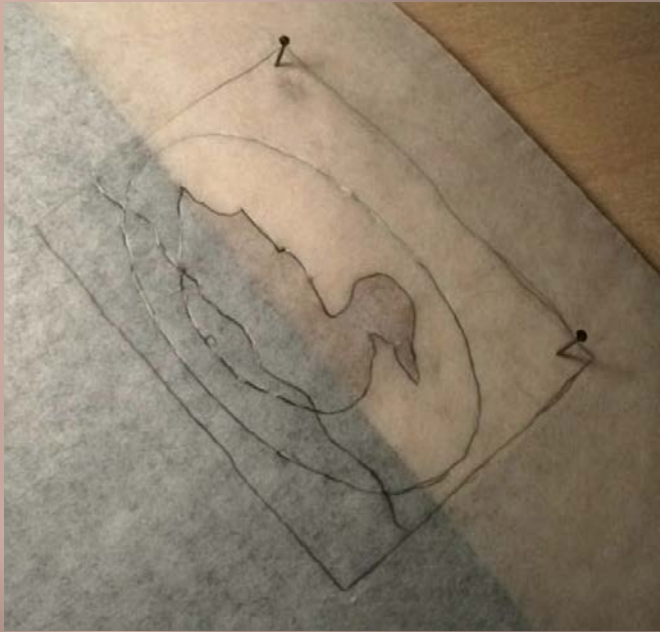
Using a bench knife, or similar, carefully separate the stack by gently levering with the blade at the tape points

GLUING THE FIRST INLAY



Place some wood glue into a dish and using an old artists brush – I keep a couple handy in a jar of water – apply glue to the entire edge of the inlay and then push it into place into the basswood. Your fingers are going to get messy here! It's also a good idea to wear an apron during this operation. Set the assembly aside for a couple of hours to allow the glue to dry.

PREPARING FOR THE SECOND INLAY CUT



After the glue has set sand the back of the piece perfectly flat.

Superimpose the pattern tracing on top of the tracing on the basswood and place transfer or carbon paper under the lower part of the pattern and draw the wavy lines of the waves below the duck shape

THE SECOND INLAY CUT



Place double sided tape onto the back of the basswood piece. Place the tape above and below at the base of the duck shape. This will provide stability for the next cut. Attach the piece of poplar to the bottom of the basswood and clamp as before to ensure that the pieces are firmly attached to one another. Cut the wavy line starting from the outside the right hand side of the pattern and exit the left hand side – no pilot hole is needed. Remember that the inlay will be to the right side of the blade

GLUING THE SECOND INLAY



Having made the inlay cut separate the stack and set up to glue the cut piece of poplar. Apply glue to the cut edge and hold it firmly against the main piece with your fingers for a few minutes to allow the glue to bond. Once it has taken use small clamps to gently maintain pressure until the glue has dried. Alternatively the assembly can be wrapped with masking tape to achieve the same effect. Allow the glue to dry completely before removing the clamps or tape.

THE FINAL CUT



Sand the backside of the assembly completely flat to remove any traces of glue. Place the pattern tracing over the face of the assembly and using transfer or carbon paper draw the oval of the pattern onto the face of the assembly. Note that in this image it is difficult to see that the oval is also drawn on the face of the poplar (water) section but it is there!

THE FINAL CUT AND PRE FINISHING SANDING



Set the tilt of your scroll saw table to zero degrees and check that the blade is square to it . Carefully cut out the perimeter of the oval. Using progressively finer grades of sand paper fine sand the face , edge and back of the completed assembly.

The inlay is now ready for finishing.

FINISHING THE COMPLETED PIECE



For small projects like this one a coat of mineral oil provides a satisfactory finish. You can usually source mineral oil at your local pharmacy . It's in the laxatives section! You can also use any type of wipe on finish or traditional oil based varnish, acrylic or polyurethane of your choice.

THE COMPLETED PIECE



Here is your completed inlay experiment. Once the finish is perfectly dry or cured you can add a magnet or maybe a pin or clip to the back of the piece.

Congratulations! - and welcome to the wonderful world of inlay!

END NOTE FROM THE JIM MOSS

After such a fine tutorial from Jim I had to try my hand at inlay and here is my finished piece.

I used beech, walnut and olive wood which give a nice colour combination, however, the beech and olive were a little too hard and softer woods would have been a better choice to cut.



I also used a finer blade than Jim recommended as I had no other option available and this flexed a little during cutting causing a slight gap on the duck's back, but other than that I found the project fairly easy to make.

Jim has definitely come up with a nice starter for folks wishing to try inlay and I for one will be looking at more of this type of scrolling in the future.

Thanks pal !