EDGES, BORDERS AND INLAY BANDING

by Jim MacKeracher

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In this article I will describe the method I was taught at work and presently use to add veneer edges, borders, and inlay banding to panels. This method can be used on all shapes of panels from rectangles to ovals but I will focus on the process for a rectangular panel (**Figure 1**). The first part of the article outlines how to glue veneer edges on the panel. The second part shows how to selectively glue an oversize picture without a border, trim it to size, and add a border. The third part deals with how to insert inlay banding between the picture and border. For specific steps I will suggest alternatives.

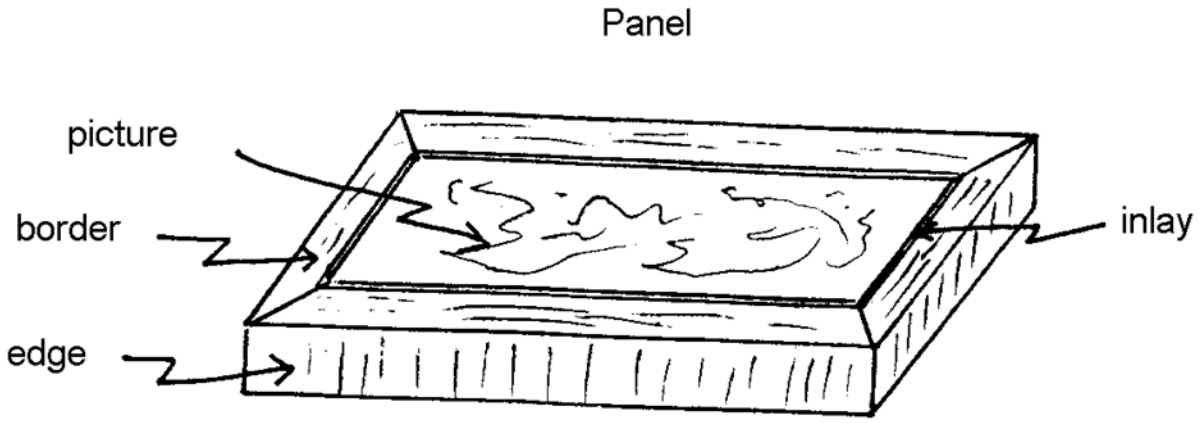

Figure 1

Note that the method requires some special equipment including a press, pipe or 'F' clamps, veneer saw, and laminate trim router or regular router.

The substrate for the panel is cut and worked in its finished size. The best substrate is PC (particle board) or MDF (medium density fibre board) because they are flat, smooth, and stable.

Part 1 - Edges

There are several options to attach veneer edges to the panel. For all options cut a strip of veneer for each edge at least a ½" longer than its corresponding substrate edge. For small panels make the strips at least a ¼" wider than the thickness of the substrate and even wider for large panels.

The extra width and length allows for slippage and bends during clamping. The grain direction has no effect on the method only that it is harder to produce and keep together a cross grain strip.

Option A - Vertical Clamping (**Figure 2**)

This is my preference because it takes up less space, allows for easy clamp adjustment, and edges two opposite sides at the same time. It is limited to small rectangular panels, 3' to 4' maximum, and requires a flat, sturdy table edge at least 1" thick to properly distribute the clamping pressure along the panel's edge.

Place a strip of veneer, good side down, along the edge of the table. Spread white glue on the corresponding edge of the substrate. Place the glued edge of the substrate on top of the veneer strip. Spread glue on the opposite edge of the substrate. Position the corresponding strip of veneer, bad side down, on the second glued edge.

Cover this second edge with a caul (a straight board at least 1" thick and as wide as the strip). The caul prevents the clamps from denting the veneer and evenly distributes the clamping pressure.

Clamp this unit to the table with pipe or 'F' clamps. Adjust the clamps in or out to keep the panel vertical to the table surface and eliminate gaps between the veneer strip and the edge of the substrate. Sight along the surface of the panel and adjust the clamps accordingly. A consistent bead of glue squeeze out should be present along all joints. Do not overtighten the clamps or the pressure may warp the panel and produce a bad glue joint.

Leave the panel in the clamps for a hour. Trim off the excess veneer using a veneer trimmer (**Figure 3**), veneer saw (**Figure 4**) or file (**Figure 5**). Sand off any excess veneer and glue from the surfaces of the panel making sure not to round over the edges. A sanding block made up of sand paper glued to 12"x3"x3/4" piece of plywood works well.

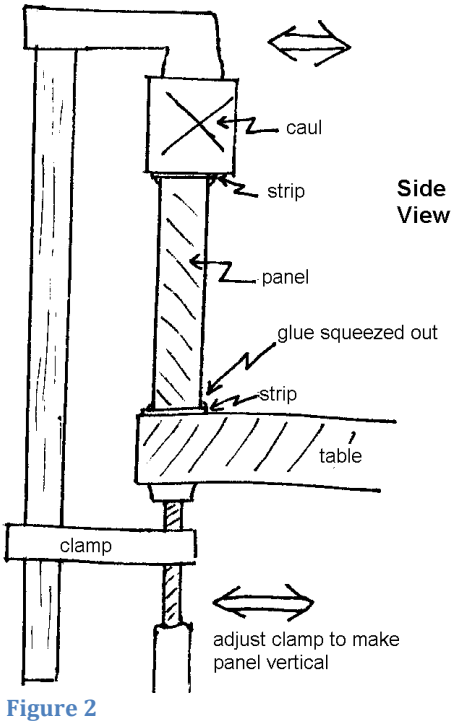

Figure 2

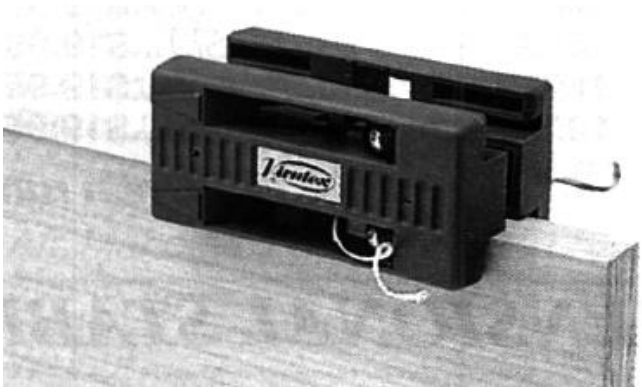

Figure 3

Repeat the procedure for the other two edges.

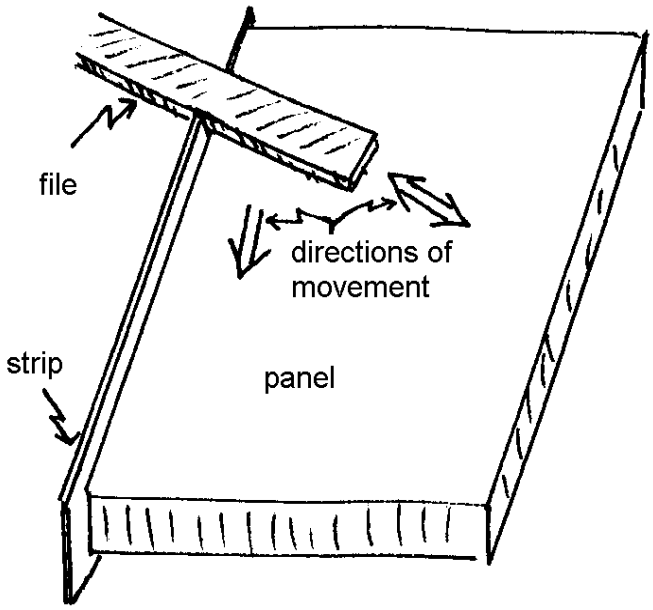

Figure 4

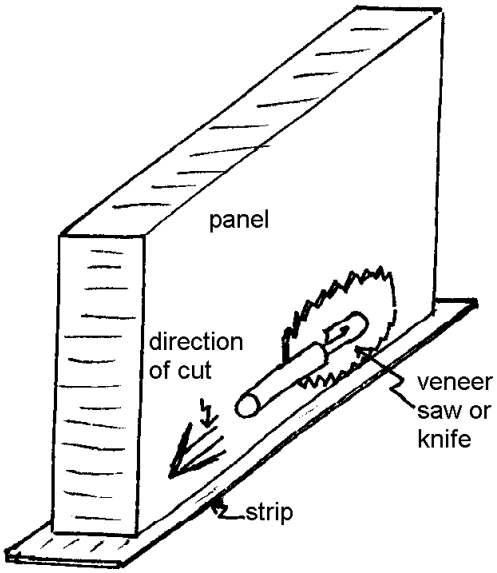

Figure 5

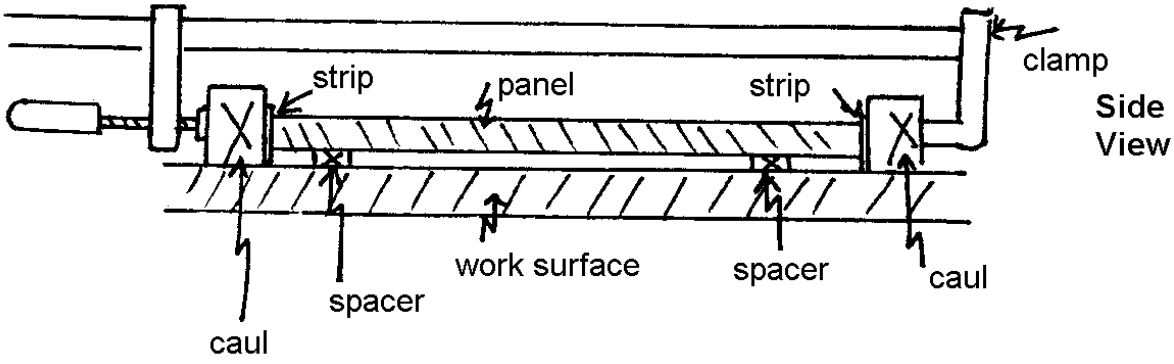

Figure 6

Option B - Horizontal Clamping (**Figure 6**)

This method will edge any size of rectangular panel but requires lots of space.

Place ¼" thick spacers on the work surface and the panel flat on top of them. The spacers allow the veneer edge strips to overlap the panel edges and prevent gluing the panel to the work surface.

Spread white glue on one panel edge. Tape the veneer strip on the glue edge with masking tape. If you feel you are able to glue the opposite edge do so. Place (a) caul(s) against the strip(s) and clamp. Try to place clamps alternating on top and below to avoid panel warping. Follow the trimming and sanding procedures described in Option A. Veneer the other edges.

Option C - Contact Cement

This method will edge all sizes and shapes of panels. Use it as a last resort because it is messy, smelly, and unforgiving.

Paint one edge and veneer strip with contact cement and let dry. Paint the strip and edge a second coat and let dry until they are tacky to the touch. Place the strip on the edge very carefully because once it touches it cannot be moved. Rub the strip down with a roller, veneer hammer, or wood block to bond the two surfaces together. Trim off the excess as described above. After an hour, rub the edge down again to push down any areas that might have separated. Veneer the other edges.

Part 2 - Picture and Border

This part will describe three steps. The first step shows how to selectively glue the untrimmed picture to the substrate. The second step involves trimming the picture to a selected distance from the edges of the substrate. The third step describes how to attach, mitre, glue, and trim the border strips.

*Step 1 - Picture (***Figure 7***)*

The first step is to use a pencil and straight edge to draw guidelines for gluing on the face surface of the substrate. The pencil lines should be drawn where the centre of the inlay will be situated. Place masking tape along the outside of the pencil lines. This will prevent the oversize portion of the picture from sticking to the substrate. Spread white glue over the area masked off.

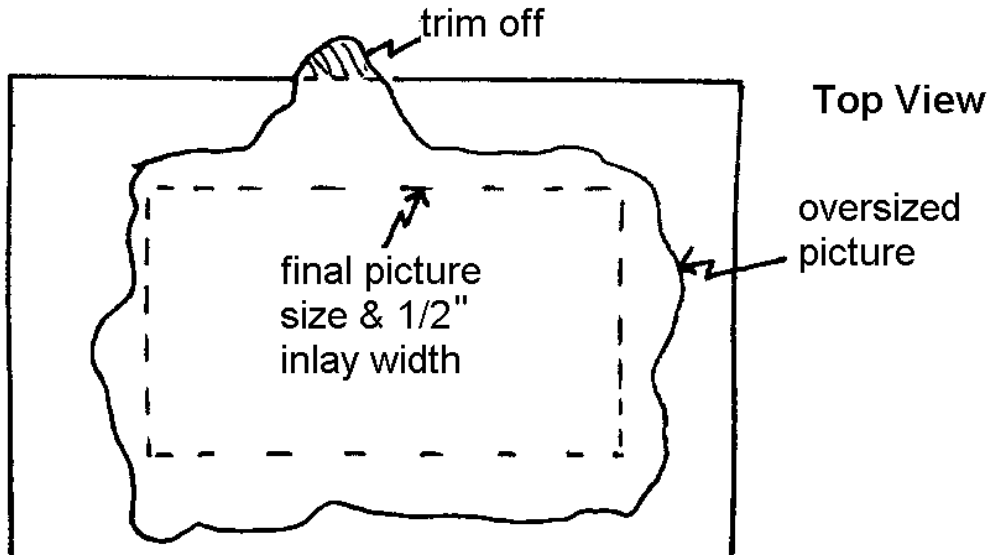

Figure 7

Remove the masking tape and press the oversize picture to the substrate. It is advisable to use reference marks to aid in the exact positioning of the picture and use pieces of masking tape to keep the picture from shifting. If the picture shifts during pressing, simply recut the panel edges parallel to the desired final picture edges and adjust the border width in Step 3.

Step 2 - Trim

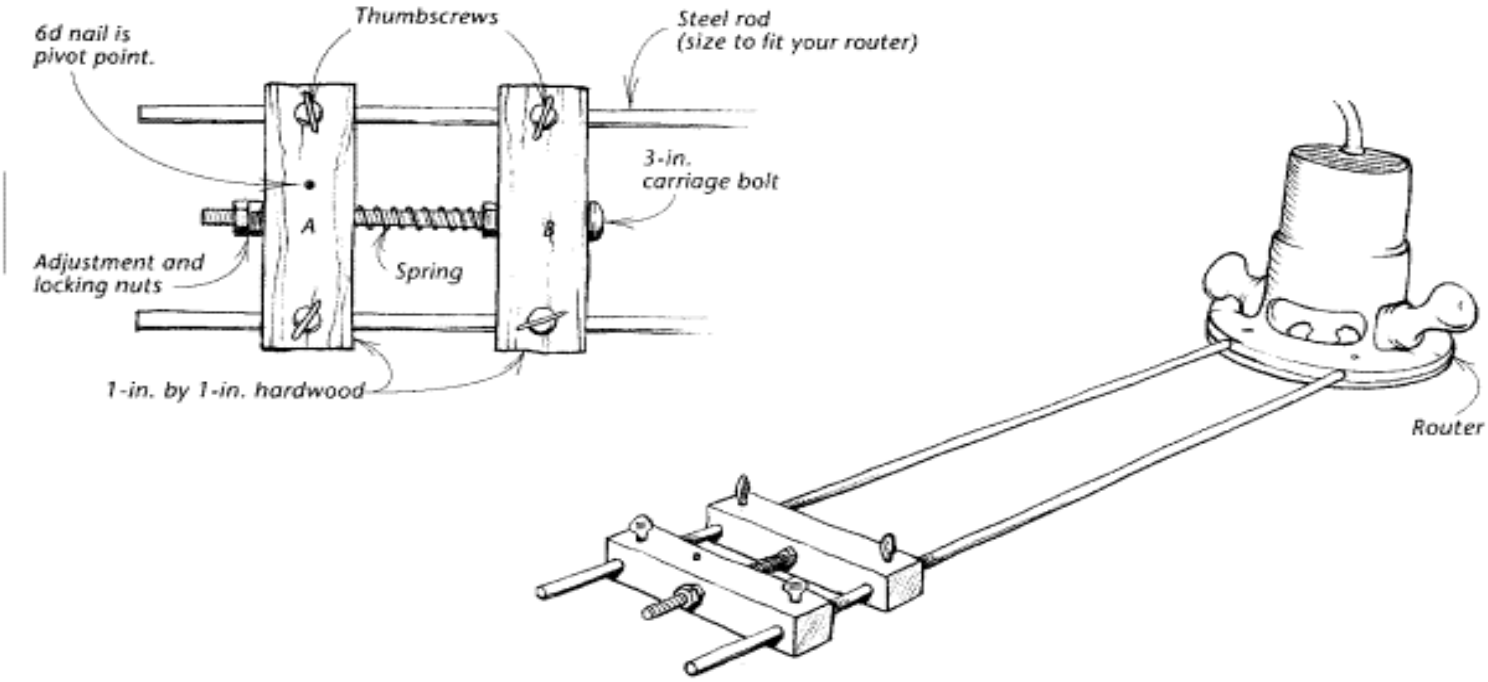

Figure 8

The second step involves trimming the picture veneer to final size. There are two options.

Option A - Rou**t**er (**Figures 8**)

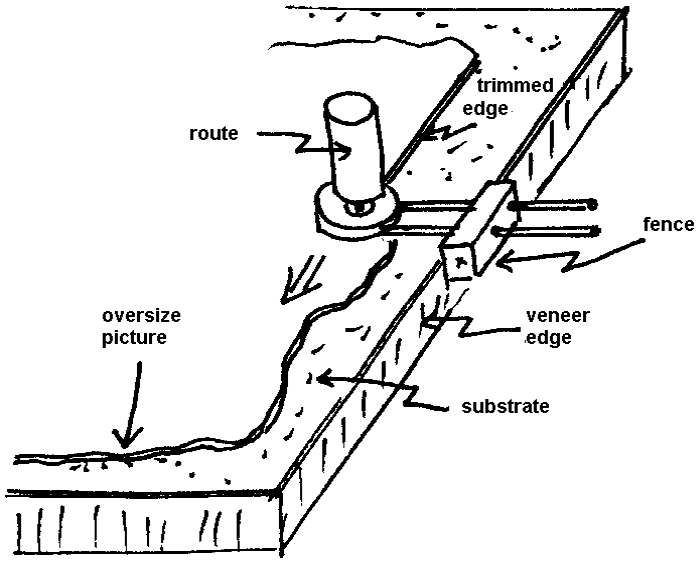

Figure 9

The router is fast and accurate but requires precise setup and a special fence.

Set the distance from the router's fence to the outside of the router bit to be the distance from the edge of the substrate to the centre of the inlay. The depth of the bit must be set a hair shallower than the thickness of the picture veneer. Rout around the panel keeping the fence tight against its edge. Make sure the router base lies flat so the bit does not tilt and gouge the substrate. Most of the excess picture veneer should break away. Use a sharp paint scraper, chisel, and/or cabinet scraper to clean off the remainder.

Option B - Veneer Saw or Knife

Using a veneer saw or knife is slower and less accurate than a router, but for most, safer and less intimidating.

Redraw the pencil outline from Step 1. Clamp a straight edge on the inside of the pencil line. Cut along the pencil line down to the substrate. Repeat for the other sides. Remove the excess as in Option A.

*Step 3 - Border (***Figure 10***)*

Prepare the border veneer strips by making them at least 1/8" wider than the distance from the trimmed picture edge to the edge of the panel. Butt the strips up against the trimmed picture's edge and tape them in place with veneer tape making sure the strips' ends overlap.

The next step is to cut the borders 45° corner mitres (**Figure 11**). Use a ruler to measure length 'A1' in Figure 11, which is the shortest side. Beginning at corner 'B', mark 'C' with a pencil on the joint between the picture and border so that length 'A2' equals length 'A1'. Lay a straight edge

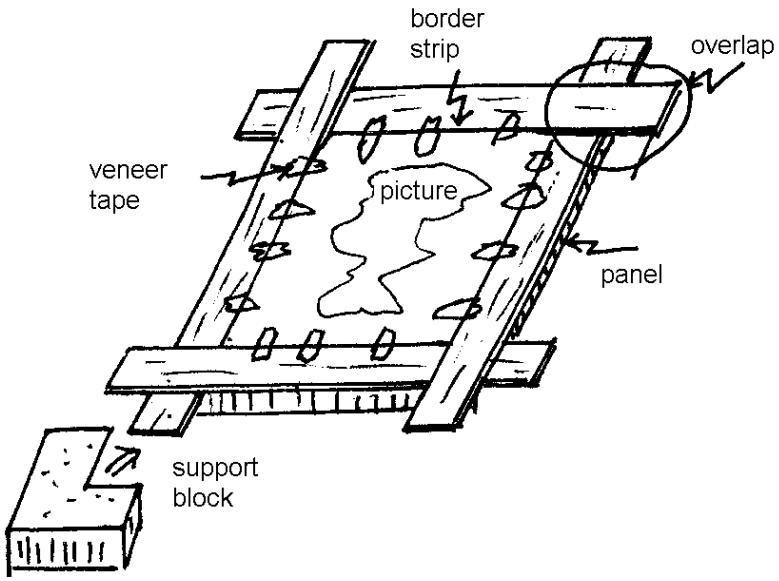

Figure 10

through the junction of mark 'C' and the joint between the picture and border past and through corner 'D'. This will produce a perfect 45° mitre to the outside corner of the panel.

Place a notched support block of the same thickness as the panel atthe corner to be mitred (**Figure 10**). Cut through the overlapping border strips with a knife. Many people draw the knife towards the centre of the panel because it prevents spreading of the mitre, but be careful not to cut into the picture. Tilt your knife blade ever so slightly to undercut the mitre to make up for the wedge-shaped cut the knife blade makes. Mark and cut the remaining mitres.

The border is now ready to be glued. Gluing must be done quickly to prevent the water in the glue from swelling the veneer and opening the corners. Flip up two opposite strips and spread glue onto the substrate. Flip them back down. Do the same to the other two strips. Tape the corners tightly together with masking tape. Press the panel.

Once the glue is dry, remove the masking tape. Trim off the overhanging border veneer with a knife, veneer saw, or router. To remove irregularities and glue, sand the edge smooth with a rigid sanding block.

Part 3 - Inlay

Inserting a strip of inlay banding involves removing an exact width of veneer at the joint between the border and picture veneer.

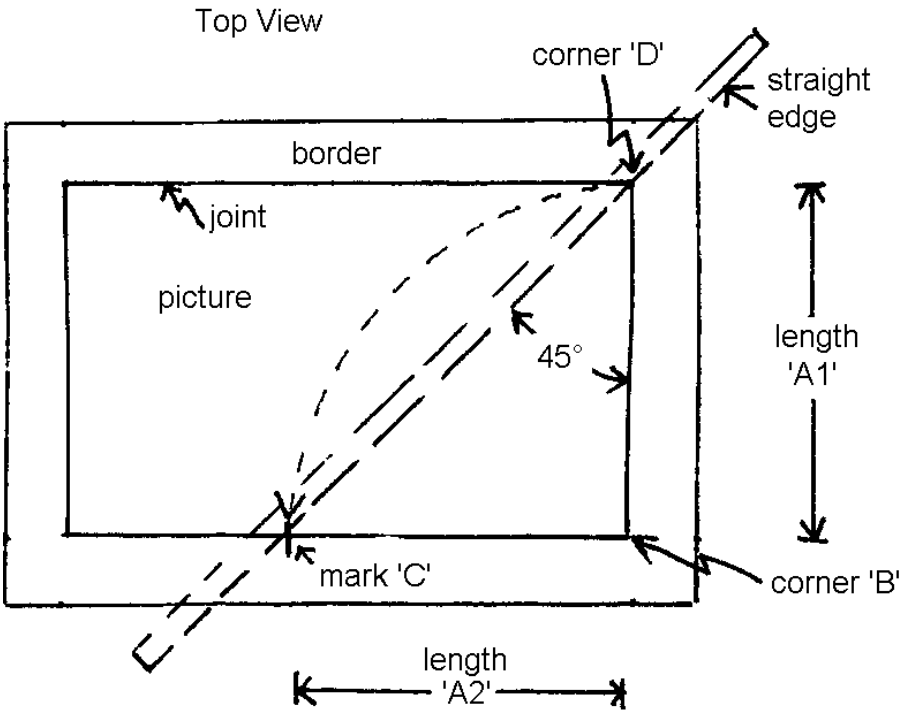

Figure 11

Option A - Router

The router is fast, exact, and unforgiving.

Mark with a pencil on the panel the location of the edges of the inlay.

Select a rabbet bit of the same diameter or smaller than the inlay's width. Set the router fence so that the outside edge of the bit runs along the inside pencil line. Set the depth of the bit to be slightly less than the thickness of the inlay. Test the depth on a piece of scrap.

The router bit must be plunged down into the panel with the fence tight against the panel's edge. Rout the groove making sure not to go past the pencil lines. Turn off and remove the router. Rout the remaining grooves in the same way. If the inlay does not fit the groove, a second router pass will be required to widen the groove. This can be done by adjusting the fence or better yet, by adding pieces of masking tape to the riding surface of the fence. Clear out the corners with a chisel.

Take a piece of inlay and cut an end at a 45^{o} angle (**Figure 12**). To do this, place the inlay on a hardwood block. Set a sharp polished chisel vertically on the inlay. Twist the chisel at a 45^{o} angle. Look at the reflection of the inlay in the back of the chisel and adjust the reflection to form a 90^{o} angle with the real inlay by rotating the chisel. Cut the inlay by giving the chisel a sharp blow.

Insert the mitre end of the inlay in one corner of a groove. Mark the length with a pencil. Cut the other end at a 45^{o} angle. Proceed around the picture in the same manner. To join shorter lengths use the same chisel and reflection method except cut the inlay when the reflection makes the inlay appear to go through the chisel.

Remove the inlays from their grooves making sure not to mix them up. Spread a tiny amount of white glue in the grooves. Insert the inlays. Tap them in with a hammer if necessary. Several

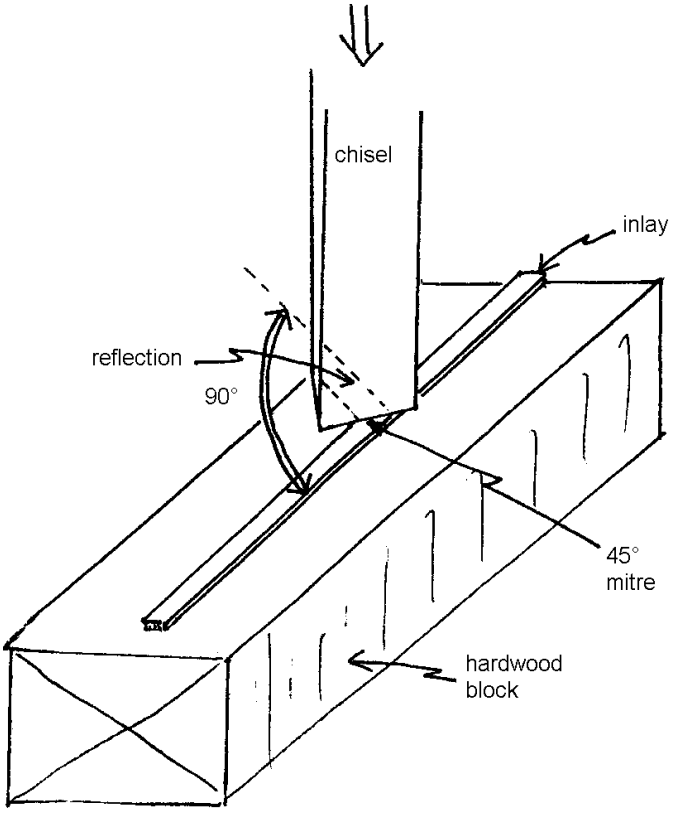

Figure 12

pieces of masking tape will keep them in place. Press the panel.

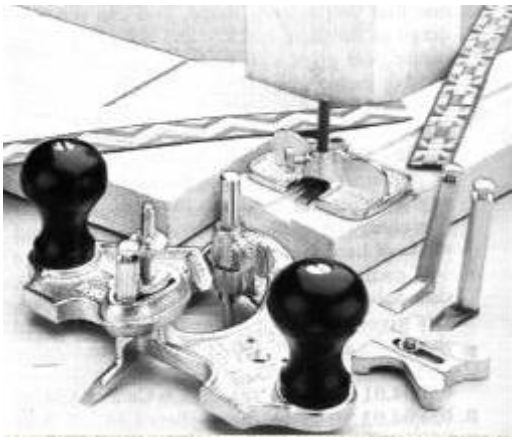

Figure 13

Option B - Inlay Cutter (**Figure 13**)

This method is slow but accurate.

A inlay cutter is a hand tool with two adjustable parallel cutting blades. The cutter has an adjustable fence that runs along the outside edge of the panel. A chisel or router plane (**Figure 14**) is used to remove the waste between the cuts. The inlay is cut and inserted in the same way as Option A.

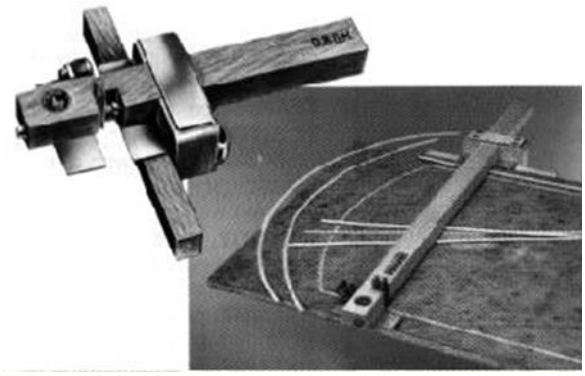

Figure 14

Option C - Knife and Straight Edge

This method is very slow and inaccurate.

A straight edge is clamped to the panel at one edge of the inlay marked by the pencil line. A knife or veneer saw is used to cut through the veneer to the substrate. The straight edge is then repositioned to cut the other edge of the inlay. The waste is removed as in Option B. The inlay is cut and inserted in the same way as Option A.

Final Comments

The picture is ready to be scraped, sanded, and finished.

The advantage of the method outlined in this article is its accuracy and reliability. The border strips and inlays are positioned precisely with consistent widths and extremely accurate mitres.