



American Period Furniture

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Tony Kubalak
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American Period Furniture depends on readers and SAPFM members to produce the content in our annual journal. We are grateful for the efforts of the authors who created the issue you are now reading. There is a tradition in SAPFM to share knowledge and experience so that the skills for creating furniture from our past continue to grow and develop in the future. If you would like to contribute an article, see the "Journal Guidelines" on page 105.



Jeff Thompson, a former jeweler, has turned his talents to the woodworking venue by fabricating reproduction period furniture. He has turned in his files and fret saw for a table saw and chisels. He has been reaching for old world techniques and inlay challenges in wood for over twenty years. He joined the SAPFM Board this year in an effort to give back by sharing skills that have been presenting themselves from dedicated masters. Visit his website at: www.jfilmorethompson.com.



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Pinwheel Cabinet



A great project packed with interesting challenges.

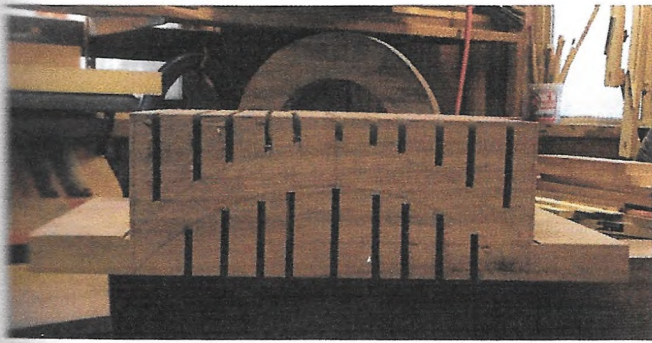


When the Covid-19 pandemic had closed all non-essential businesses (including my favorite lumber yard), I decided it was time to start a new project. I explored my dwindling stash of wood and found a great piece of walnut. Inspired by the book *"Furniture in the Southern Style"*¹, I selected the pinwheel cabinet project.

If you are interested in "everything inlaid," pick up this book. There are 27 shop drawings of furniture from the Museum of Early Southern Decorative Arts in Winston Salem, North Carolina (MESDA)². This jewel of a book provides patterns for turning, inlay, molding profiles, and scalloped projects. It is an intriguing book.



By Jeff Thompson



A series of table saw cuts made above and below the scribed radius of the top arch of the cabinet makes it easier to cut the curves at the bandsaw.



The initial cuts for the tails on the top were made using the bandsaw.



The pins are cut on the bandsaw using an angled jig. After making the cuts in one direction the jig is reversed to cut the other way.



The top joints are completed and dry fit to the sides before working on the dovetail joints for the bottom.

The book contains good drawings but I had to determine the process to build this beautiful cabinet: carcass, shelf partitions, back, cabinet hinges, cabinet locks, drawers, corbels and molding, assembly, inlays, and finishing. The project took approximately two and a half weeks to complete.

The Carcase

Where to begin is often one of the hardest parts of a project. My initial plan was to start with the bottom and work up, fitting the top to assembled sides and bottom. I soon changed my mind. The arched top of the case is a challenge, and it makes sense to start with that and make the other parts fit the completed top.

I began by selecting a piece of 12/4 walnut. I cut a section of the billet large enough to yield a solid top that would include the arch. After I squared up the thick billet, I laid out the radius for the top arch, including the roof's wings that reach the sides.

I moved to the table saw and produced a series of cuts above and below the radius. Then, I moved to the band saw and removed the waste. I began cutting to reveal the wings and then roughed out the top, exposing the arch. Upon finishing this task, I laid out the tails of the dovetails on the roughed out top. I have a jig that I sometimes use

on the bandsaw to saw out dovetails - I set it up and made quick work of the task.

To produce a crisp line between the arch and the flats, I used a block plane with an open side and nickers. I turned to my bench top spindle sander and loaded a #120-grit cylinder to clean up the saw marks back to the arch's reference lines. Then, I used #150 grit on a block

sander. Next, I progressed by hand with #220 grit. The knot on the arch became increasingly apparent as I sawed out the waste. To a craftsman, knots are defects. To a client, knots are marks of character.

I worked on a dry assembly to examine the overall fit after cutting the pins into the top of the side panels. I began sanding, to level off the pins to the tails - this required cross-grain sanding. The miters at the top of each side for the top rail were then laid out and machined with a 45° chamfering bit. Next, I cleaned up the corners with a chisel.

Before I could begin fitting the top rail to the sides, I had to complete the bottom. I focused



A dry fit of the carcass including the front top rail as it is fitted into its mitered seats in the case sides.



The final step to complete the top rail is to cut the inner radius. With these parts fit, the case is taken apart to add dados for the partitions.

Shelf Partitions

Next, I focused on the dados in the sides that house the shelf partitions and the rabbets for the back and the door. I took everything apart and began working on the layouts. I laid out the vertical spacing of the partitions an equal distance apart to ensure the drawers were the same height.

After disassembling everything, I headed to the router station and set it up with a $\frac{1}{4}$ " end mill, $\frac{1}{4}$ " deep to create a stopped dado 1" in from the front edge of the case sides. The router station made cutting the dados and rabbet a routine operation. There will be plenty of detail work to do on these pieces later. It is a time-consuming process that requires detailed craftsmanship.

With the shelf partitions cut to size, I relieved the front ends with a $\frac{1}{8}$ " notch to let the shelf go forward to cover the end of the stopped dado. This process produces an ideal fit when the shelves have their front edges rounded over.

Before starting on the round over, I cut $\frac{3}{8}$ " from the front of each shelf, $1\frac{7}{8}$ " in from each end for the drawer knobs. The drawer fronts have a matching profile but sit slightly back from the edge of the shelves. I laid the partitions out and made the cuts with the bandsaw, sanded out the saw marks, and made the round over with a $\frac{1}{8}$ " radius router bit. While the sides were apart, I also cut a $\frac{1}{8}$ " deep rabbet, $\frac{3}{4}$ " wide, down the front of the lock side. That allows the door to sit flush inside the case.

on making the pins on the bottom end of the side bottom panels, and the tails on the bottom itself. I returned to the bandsaw jig and cleaned out and removed the waste from these areas.

When I completed the dovetails I cut a rabbet to shorten the height of the tails by $\frac{1}{8}$ ". That moves the bottom up $\frac{1}{8}$ " and repositions the $\frac{3}{4}$ " molding to cover the joint's exterior. I used a dado blade to remove the excess material and followed up with more dry assembly and minor tweaking.

With most of the carcass complete it was time to decide on the grain orientation of the top rail. Typically, the grain runs horizontally for rails, but because the design incorporates a wide rail, with much of it visible above the door, I ran the grain vertically, parallel with the door.

With the ends of the rail blank mitered, I taped it to the cabinet and scribed the top's arch on its backside. Next, I used the bandsaw to complete the cutout and laid out the door's radius. Finally, I taped the finished top rail to the cabinet to double check the fit and appearance of the rail.

Finally, I began assembling; inserting the shelf partitions to see how they came out. They looked pretty good (if I say so myself). I taped the top rail to the front again to scribe a piece for the door. Then, I pulled the shelves out from the back, inserted cardboard, and made a trace. I added the $\frac{1}{8}$ " back on the hinge side of the door to account for the rabbet.

I disassembled the shelving for the rabbets and ran a $\frac{1}{4}$ " by $\frac{1}{4}$ " rabbet down the back edge of the sides and bottom. Although the book's schematics showed a solid piece, I decided on a small (more complicated) design modification and used ship lapped backboards that run horizontally, held in place with screws.

The bright shine of the brass screws appeared stark against the wood. Wanting a more cohesive look, I gave them an antique look with Sur Fin, EZ-Brown #703 applied with a Q-tip.

Get the Hang of It

I wasn't happy with the fit of the door below the arch, so I edge-glued a thin strip of walnut to the door top to improve the appearance by reducing the gap. The hinges were a great learning experience. Initially, I laid out the hinges (Horton Brasses #PB405) on the left edge of the door. I pointed them towards the back – this resulted in an annoying hinge barrel interference – the drawer pullouts were not smooth. The next time I produce this box, I will point the hinges to the opposite side of the cabinet (not aiming to the back).

There is another possible variation: cut the side panel back from the front. Reduce the side by the thickness of the door and place the barrel of the hinge on



Dry fit seen from the front. The front edges of the partitions will be notched in the corners to cover the ends of the dados in the case sides.



At the back the partitions and the arched case top end at the rabbet cut to accommodate the ship-lapped back boards.

the outside. The drawers will have a much more fluid motion. This is similar to Steve Latta's spice box design.

Cabinet Locks

When ordering the cabinet lock (I got mine from Horton Brasses), be careful to ask for the "correct" item. If your hinges are on the left side, make sure that you order the "left-hand lock" (vice versa with the right side). If you

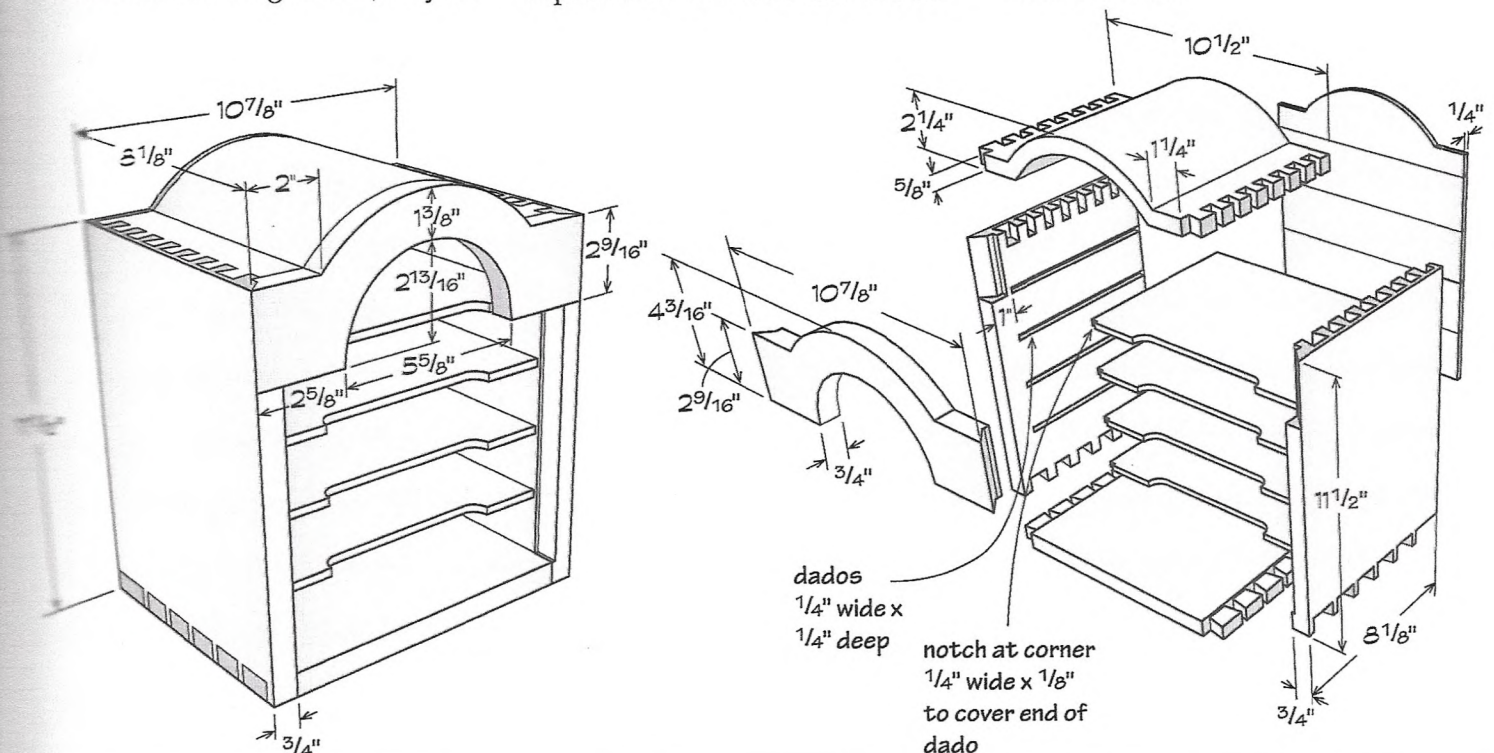
fail to specify, you are liable to make the same mistake I made; you will install the lock upside down. Please imagine the key hanging upside down and an upside-down escutcheon – certainly in the wrong location for the lock pin. (NOT good!)

I prefer H-39 key escutcheons. They are inexpensive and are available in antique colors. If a brass color is needed, leave it proud on the door and file off

the top; with a little sanding and polishing, you'll be good to go.

Drawers

Because the shelves have a cut out on the front, the dimensions of the drawer fronts must match to ensure the same form. I used $\frac{7}{8}$ " stock and produced the layout for the cutouts to match the front of the shelf partitions. This allows room for the knobs behind the door.





The initial fitting of the door panel. The gap at the top of the door was narrowed by the addition of a thin strip of walnut to the door.



Behind the door the horizontal partitions carry the drawers. The fronts are cut back to provide room for the drawer knobs.

The drawer front has a half dovetail on the bottom to hold up the front of the drawer bottom supporting the other half of the dovetail on the front edge of the bottom. See the illustration below on this page. The drawer bottom is glued and pinned to the lower edges of the drawer sides and back. I dovetailed the rest of the sides and back joints of the drawers as a matter of routine. I completed the gluing process before I turned to the corbels and molding.

Corbels And Molding

I modified the top molding design - I used a bit to cut the concave profile and left off the bead at the bottom. (I did not have the correct bit to produce the bottom bead.) Next, I used full length profile pieces to complete the bottom molding, then I cut the center sections of the front and two sides of the base

molding, thereby exposing the feet and went on to glue and pin all the cabinet's moldings.

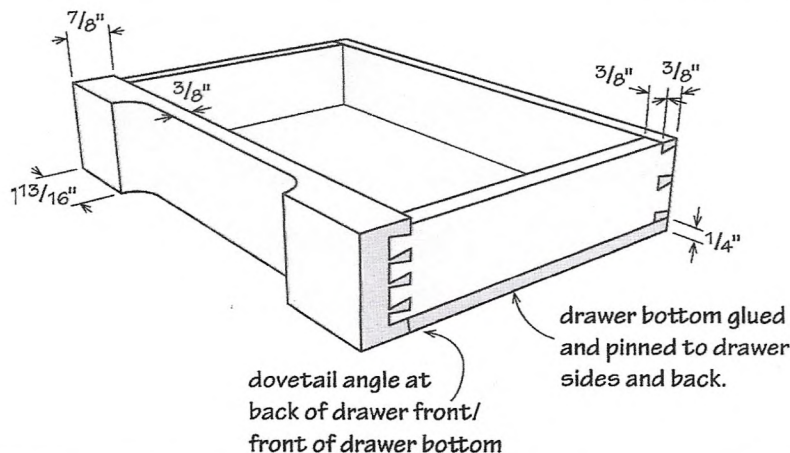
Then, I produced the corbels by cutting a piece of walnut $\frac{5}{8}$ " thick that was wide enough for me to create two corbels. I ran the bottom edge over a beading bit. Then I attached the piece to a larger block with double-sided tape and clamped it in my vise. I began to chisel away the profile of the scrolls. It took me about an hour to do the clean-up. I cut the piece in two and glued and pinned them to the front. After I cleaned up my workspace, I began to assemble the cabinet and double-checked for a secure glue up and removed excess glue.

Inlays (My Favorite Part)

With the drawers completed and the box fully dry after glue-up, I turned to the fun part! I turned back to the book illustration to begin working on the scribe lines. First, I started on the arch and corner arcs of the door front and I connected the arcs with border lines. The holly was unusually broad for inlay work which I found to be an intriguing challenge).

Measuring the arch's legs, I was happy to discover that I had a chunk of holly that was wide enough. I set up the band saw for a $\frac{3}{32}$ " wide cut - the piece was large enough for the big arch and I cut a second one for the smaller arcs in the corners and borders. I used circles for the smaller arc cutouts. I cut two circles and took two corners out of each circle. To obtain the straight lines, I cut 45° angles on the ends. I routed the inlay area with a $\frac{1}{8}$ " end mill set up in a Dremel 3000 fitted with a Veritas plunge base.

Except for a few joints, I successfully obtained tight fits with



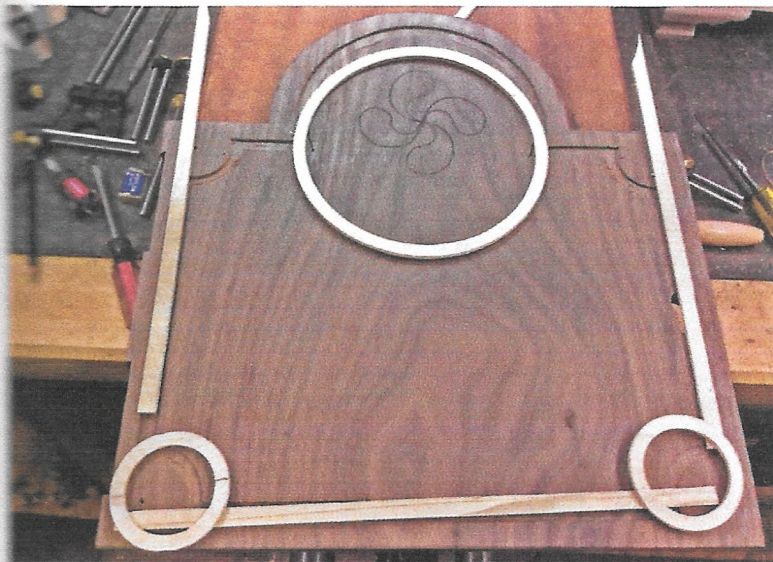


After hanging the door and mortising for the lock I laid out and scribed the areas to be excavated with the end mill for the holly inlay work.

the help of the tacky glue. I erred in undercutting too far on some joints forcing me to repair the joints with a V tool. Then, I cut a corresponding sliver of holly and glued it into the damaged joints. Next, I leveled out the holly by sanding and scraping.

Finishing

Then I started the final sanding - I began with #180 grit and finished off with #220 grit. I used



I used the scribe marks to determine what to cut from my holly billet. The two small circles make up the four arcs for the corners.



The finished cabinet all glued up and hinged, the lock installed and the holly inlay in place, ready to finish with linseed oil followed by shellac.

boiled linseed oil and turpentine at a 50/50 ratio for two coats followed by two coats of shellac.

I loved building this cabinet; this project was full of challenges. I made my share of mistakes, but then I was repaid by some valuable learning. Isn't it what this is all about? The challenges and the rewards, what else could you ask for? ♦

RESOURCES

1. "Furniture in the Southern Style" by Robert W. Lang & Glen Huey, 2011, Popular Woodworking Books. Out-of-print, but used copies are available online.

2. The original cabinet is part of the MESDA collection. More information and images are available online at:

<https://mesda.org/item/collections/cabinet/230/>

3. Sur Fin Chemical Company

<https://surfinchemical.com/>

Hardware from Horton Brasses

<https://www.horton-brasses.com/>

PB-405 Hinges

H-39 Escutcheon

LK-8 Left Hand Lock

#LD-K-11 Knobs