

HANDCRAFTED LIDDED CHEST IN CHERRY

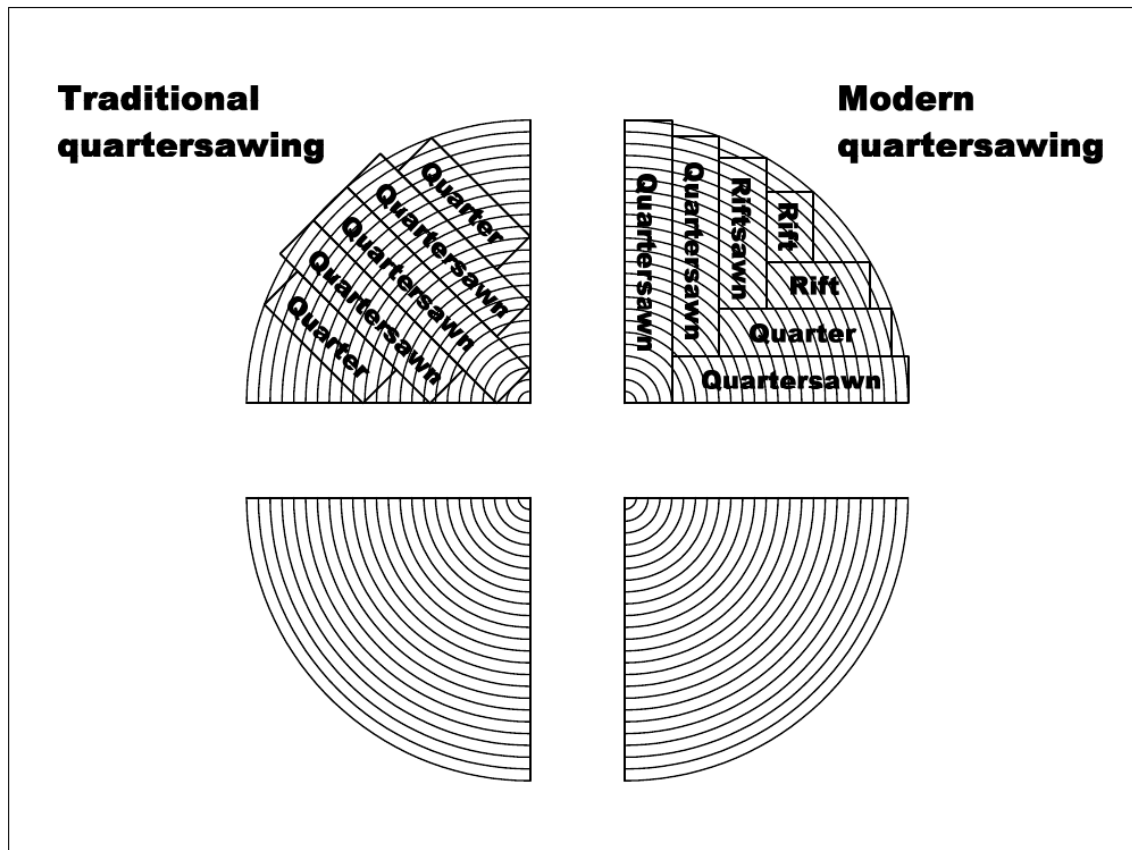
With Red Cedar Lining



Design

A chest was desired as a gift to family. The Shaker style of furniture was identified as a pleasing style. After viewing a number of pictures of Shaker blanket chests, the proportions and size of one built in New Lebanon, New York, was selected.

Except for a cedar lining, the chest is built entirely of quarter- and rift-sawn cherry. Quarter and rift lumber has very pleasing straight grain and is much more stable than flatsawn boards.



The basic dimensions of the chest are 40 ½” by 16 ½” by 18 1/8” high. The sides and ends are joined with through dovetails. To avoid possible problems due to seasonal expansion and contraction of wood, the bottom is a frame and panel design, and is screwed to the sides and ends.

The chest is supported by a base 4” tall. The base is also dovetailed, and has decorative cutouts copied from the New Lebanon chest.

The top is a glued up assembly of boards with breadboard ends for a more formal look.

Inside is a red cedar lining of ¼” ship lapped boards. There is also a dovetailed “till” or small open top box supported by a pair of cleats.

Very nice brass lifting handles are attached to the ends of the chest. The top is attached with a pair of brass “cranked” hinges. For safety, the top is supported by a brass friction stay.

Construction



After glueup, each panel is finish flattened with hand planes. Quarter/rift cherry has grain reversals, so power planing produces too much tearing and chipping for final surfacing. Random orbit sanding will not produce a sufficiently flat panel – there will be high and low areas.

Minor offsets between boards and surface imperfections are being removed with a low angle jack plane. The blade has tiny teeth, which minimize tearing and chipping.

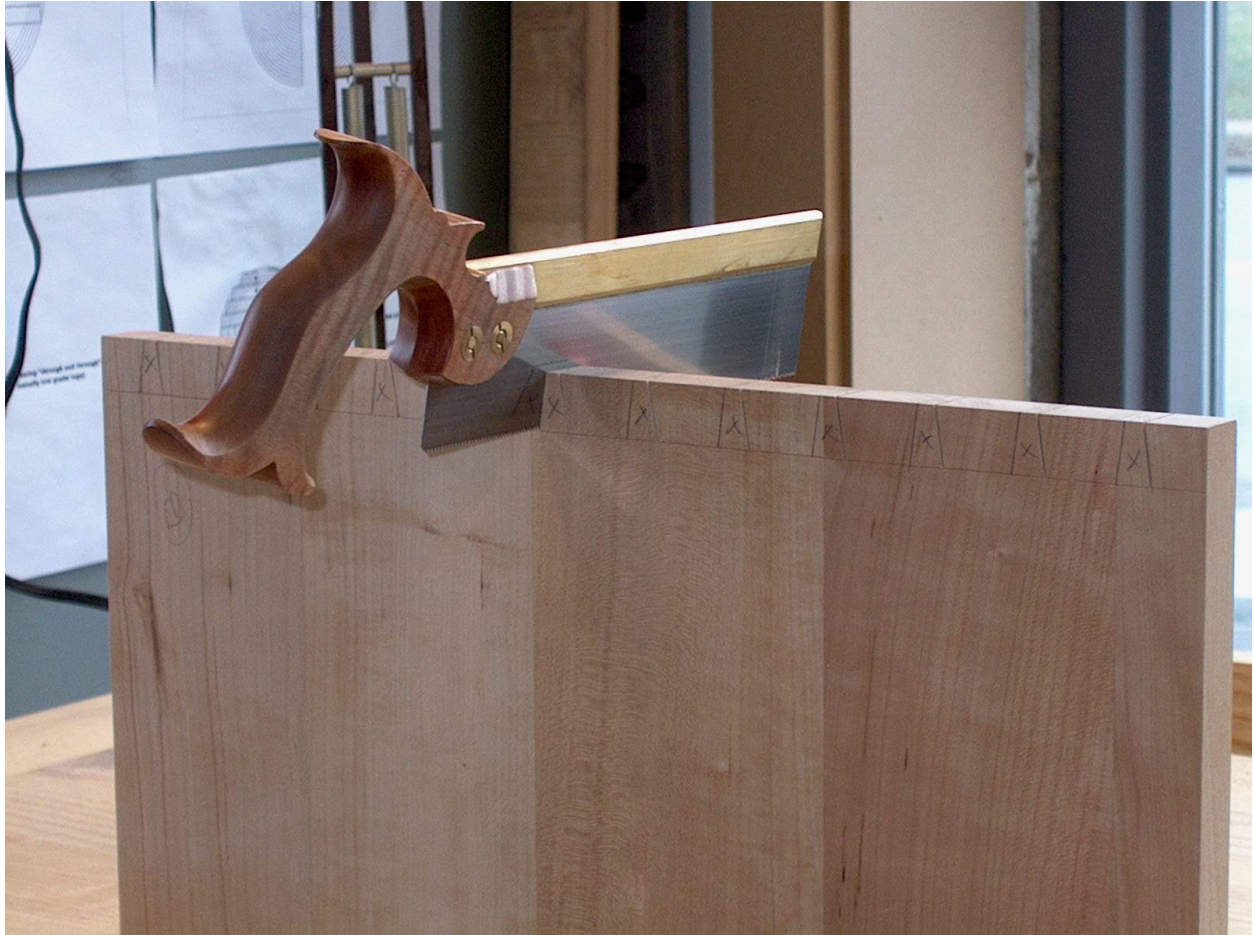
This panel is one of the sides of the chest.



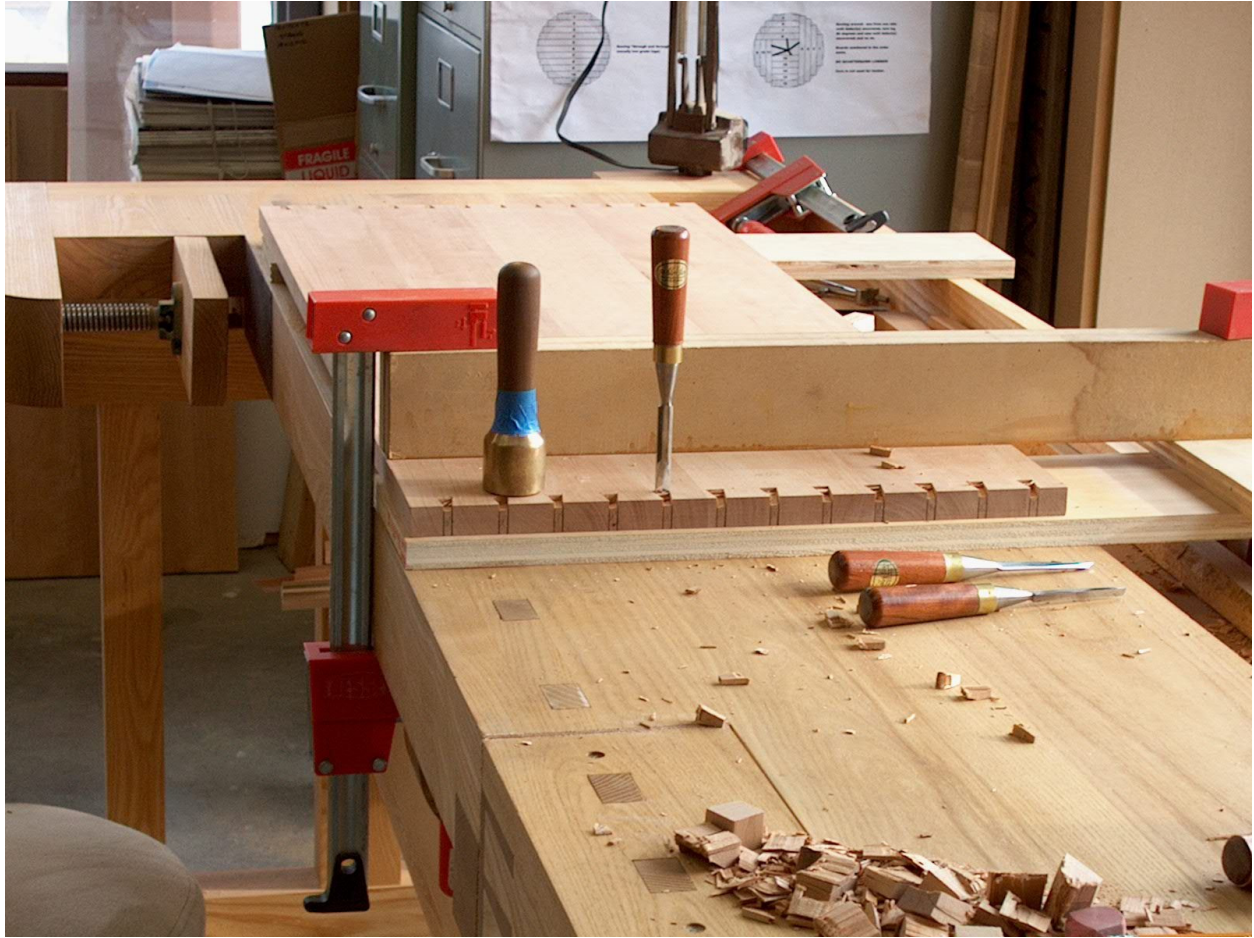
A smoothing plane follows the low angle jack. The smoother is several inches shorter, but the panel has been flattened by the jack. The smoother is a more traditional looking plane, although in this case the blade is bedded at a York pitch (50 instead of 45 degrees) to better handle difficult grain.



Here, the panel has been cut to length. The end grain is being dressed by the low angle jack plane with a regular (non tooth) blade.



Dovetail joints consist of tails (named for the shape of the tail feathers of doves) and pins. The tails were placed on the sides of the chest, and pins on the ends. Here the tails have been laid out and are being sawed with a fine tooth back saw.



The spaces between the tails are removed with chisels. The clamps and cleat hold the panel tight against the workbench during chopping.



With the tails finished, the pin board is held in the vice and the layout of the tails transferred to the end of the pin board.



For appearance, the sides of the chest start and stop with half tails. Here, the pins have been sawn and the end removed.



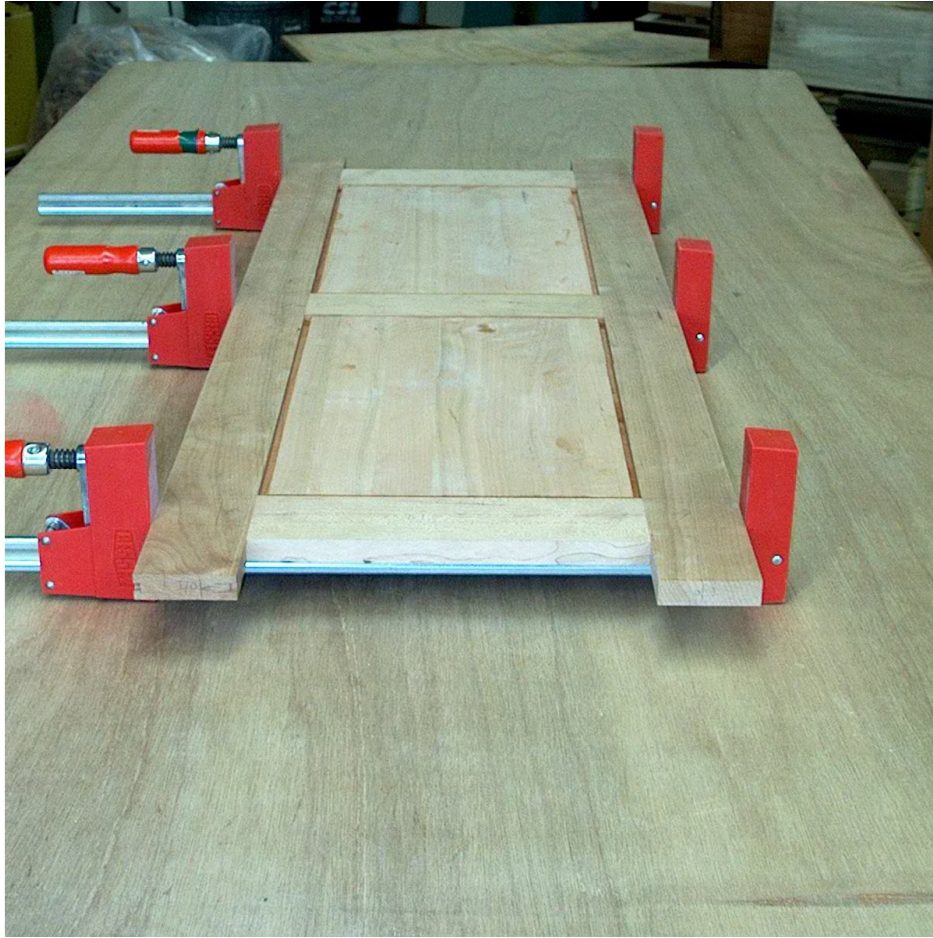
The chest bottom has a frame and panel design. The groove in the styles and rails is made using a router.



After routing the groove, mortises are formed in the styles. These mortises will accept tenons on the ends of the rails.



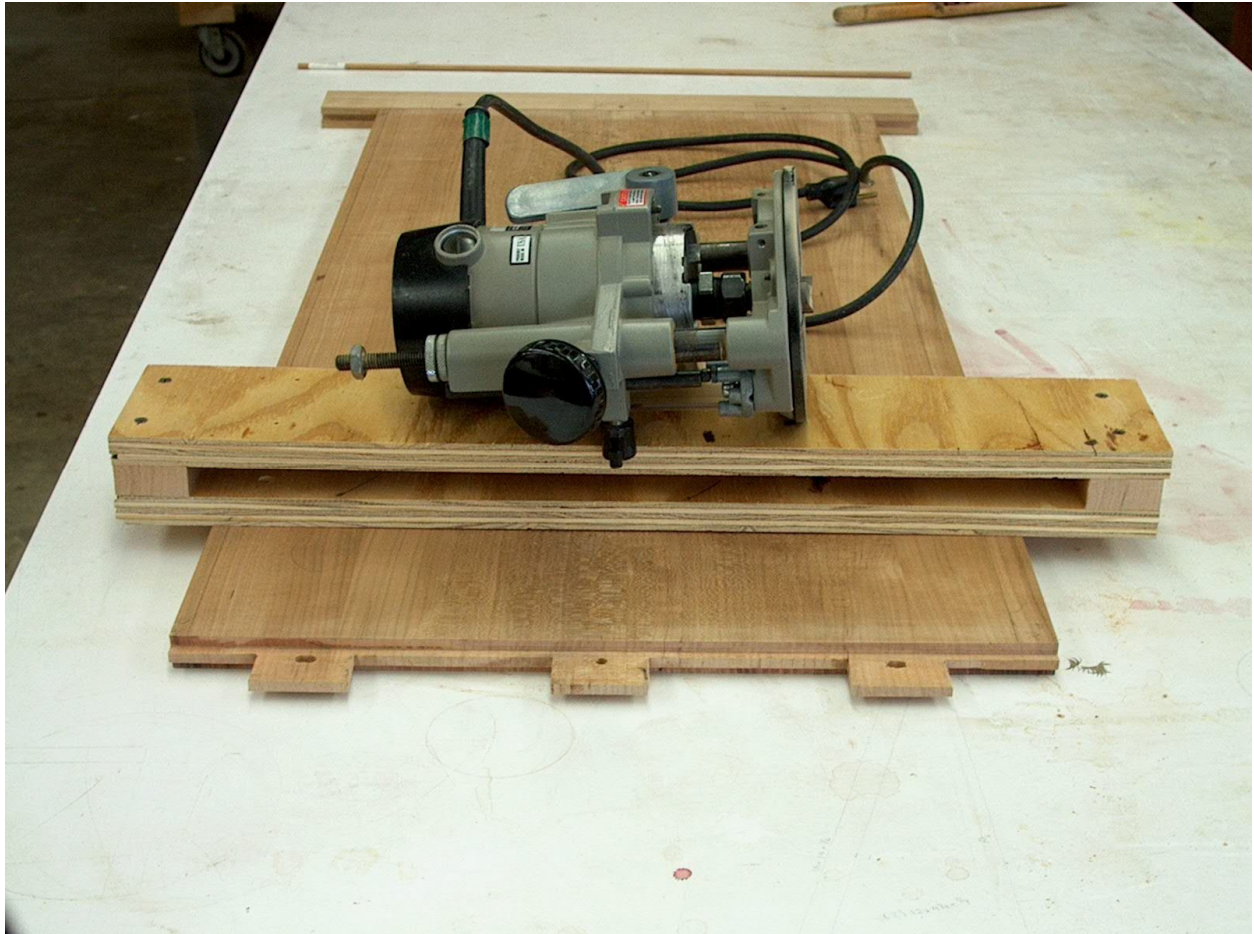
This exploded view of the bottom shows the two styles, the three rails, and the two panels. To minimize seasonal expansion and contraction of the floating panels, their ends were given a coat of Danish oil, the first step in the finishing process. After the bottom is glued, the panel ends won't be accessible.



Here, the panel is clamped while the glue dries. Typically the styles are left long during construction. After the glue is cured, the panel will be cut to final size. After attaching to the chest sides and ends, the bottom is dressed to final size with hand planes.

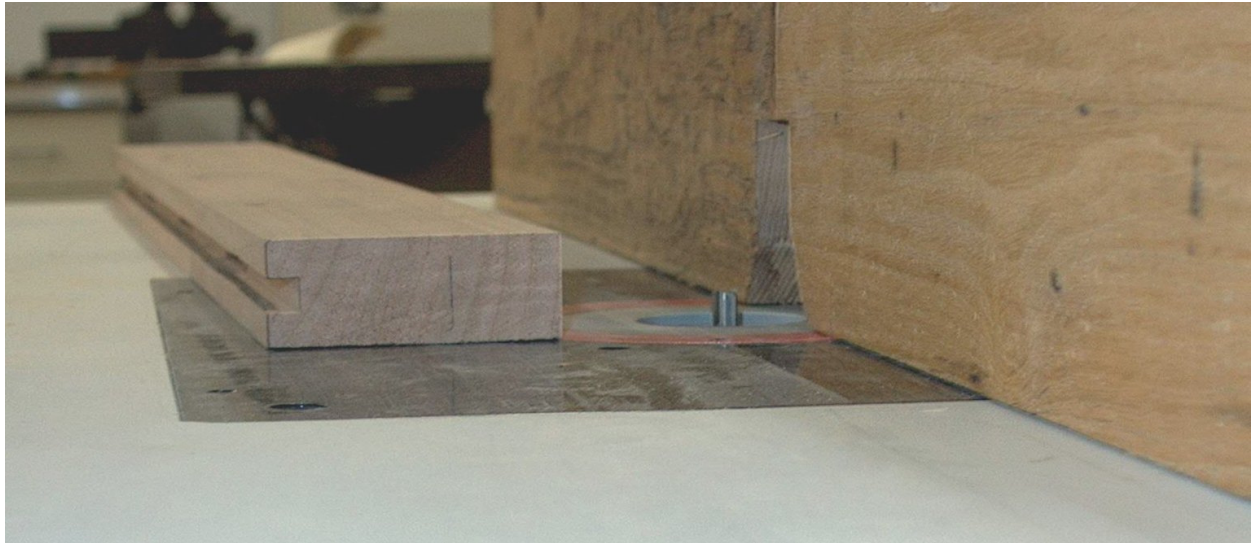


After cutting the sides and ends of the base to length, the dovetail joints were formed. A pattern was developed for the cutouts and traced onto each piece. The shapes were cut slightly oversize on the bandsaw. The quarter circles were finished on the edge sander. The notches were pared with a sharp chisel. The straight sections were finished with a block plane and card scraper.



After cutting the top to final length, large tenons were formed at each end using a router. The router was guided by a collar slipped over the top. The collar was clamped to the top, and the two edges of the collar insured that the tenon shoulders on top and bottom were identical.

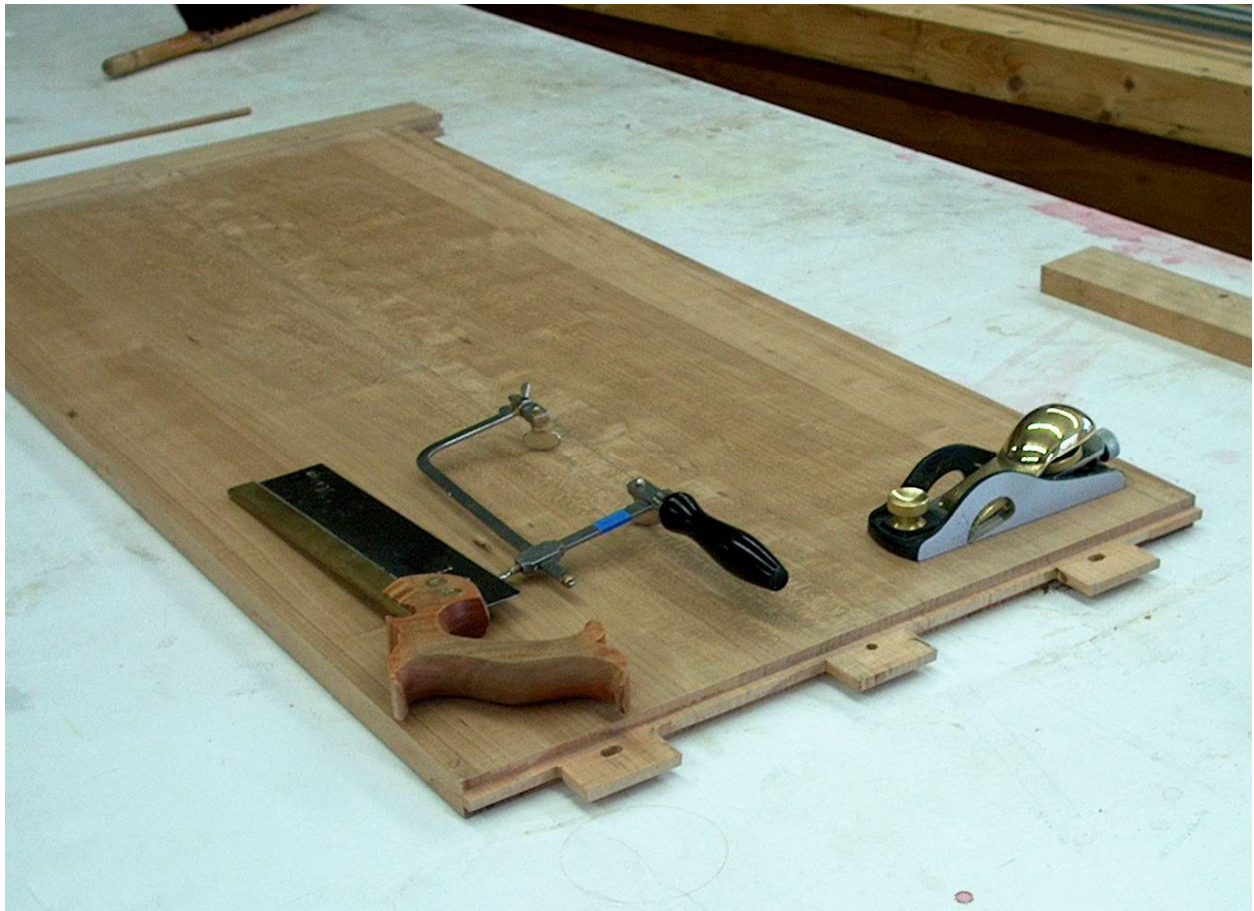
The router formed a tenon 1 1/4" long and the full width of the top. The above picture shows the final shaped tenon after additional steps.



The grooves in the breadboard ends was formed on the router table.



The mortises in the breadboard ends were formed using the mortising machine.



The full width tenon was cut to final shape with a fine tooth backsaw and coping saw. Final trimming to length was done with a fine rasp. The tenon was formed slightly too thick so that it could be dressed with a rabbeting block plane. This approach insures that the top and ends will have an ideal “friction fit.”

The short tenon keeps the top and ends in alignment for the life of the chest. The three long tenons form a strong joint between the top and ends.



This picture shows the top and one end ready for gluing.

Cherry pins are used to secure all three mortises and tenons. The holes in the tenons are drilled slightly closer to the top so that the ends are pulled tight to the top.

The top will seasonally expand and contract across its width, but the ends will not expand and contract along its length. The holes in the outer tenons are elongated. The outer mortises are wider than the tenons. Glue is applied only to the middle mortise and tenon. These steps together allow the top to expand and contract unimpeded by the ends.



The chest was given a three coat hand rubbed finish. The first was a Danish oil, to bring out the warmth and character of the cherry. The following two coats were a blend of Tried and True Varnish and McCloskey Spar Varnish.



A front view of the finished chest on its base . . .



a perspective view of the front and one side . . .



the breadboard top . . .



a view of the interior showing the glove and scarf “till” and the red cedar lining .
..



and the bottom frame and panel assembly.