



# RECREATING A 17th CENTURY CARVED BOX

TEXT AND PHOTOS: PETER FOLLANSBEE

**M**ost 17th-century households in England and New England contained one or more small boxes for storing a variety of everyday objects. These boxes were made in a joiner's shop and were usually decorated with carving on the front, and sometimes the sides. Making a box is a good introduction to the basic elements of the joiner's craft.

## MATERIALS

The box requires several oak boards whose width becomes the box's height—generally 6" to 9". The box's body is composed of two long boards (the front and back) and two short boards (the ends). Typically the ends are slightly thicker. Ends that are 3/4" thick and front and back boards that are 1/2" thick work well.

The front and back boards are rabbeted to receive the end boards. The joint is secured with three wrought nails or slightly tapered, square wooden pegs, and glued.

The box's bottom and lid can be white pine, which allows you to work with a single board, or oak, which is usually glued up to form the necessary width. Make these pieces from 1/2" to 5/8" thick. The lid can be attached with wooden pintle hinges or iron hinges made by a blacksmith (see Gimmel Hinges, page xx).

## RIVE THE LOG

Oak boards are split or "riven" from the log. Select a straight-grained, knot-free section of freshly cut red or white oak. Split the log into halves, then quarters and eighths, using wedges and a sledge hammer

or maul (1). Always wear safety glasses when driving metal wedges with a sledgehammer or maul.

Split the resulting pie-shaped bolts with a froe and club (2). You'll get the best results when you split a bolt in halves, which equalizes the stress on the timber. Drive the froe until it is fully buried, then twist the handle to further the split. Slide the froe's blade down the open split, and twist the handle again. Continue until the piece breaks open. If it's difficult to lever the piece open with the froe, go back to using wedges. Split your stock slightly oversize, to allow for dressing the boards. Split two pieces for the front and back, and a third for both ends.

Riving produces high-quality radial boards, essentially the same as truly quar-

tersawn stock. They're dimensionally very stable and easier to work than tangential, or flatsawn boards.

## DRESS THE BOARDS

Green wood is easier to plane and carve than dried wood, so begin working on the rough-split sections as soon as you can. Their stability ensures that the finished piece won't distort much as it loses moisture.

Some boards might need hewing first in order to rectify twisted or unevenly split surfaces (3). A hewing hatchet is essentially a small version of the broad axe—flat on the back, one bevel on the front.

Now, on to planing. I prefer to use wood-bodied planes, because they won't stain green oak. Metal-bodied planes may leave a stain, but it's usually superficial and can be removed with one light shaving.

Begin planing the first face of the stock with a scrub or fore plane (4). Both planes have convex-shaped irons that remove stock quickly. I often plane across the width of the board, because it requires less effort. The resulting surface must be dressed with a smooth plane to clean up the hollows left by the fore plane. If a riven surface is reasonably flat, I go directly to the smooth plane. As you plane, sight across the top edges of a pair of winding sticks to check for twist (5). Green oak planes very easily, so don't overdo it.

After you've planed one face flat, plane an edge along the board's bark edge, removing all of the sapwood first. Make sure it's square to the board's face. Then use a chalkline to mark a straight line parallel to this edge at the heart side of the board. Hew and plane this edge, then mark the board's thickness by using a marking gauge to scribe a line around the board's perimeter. Plane to the line.

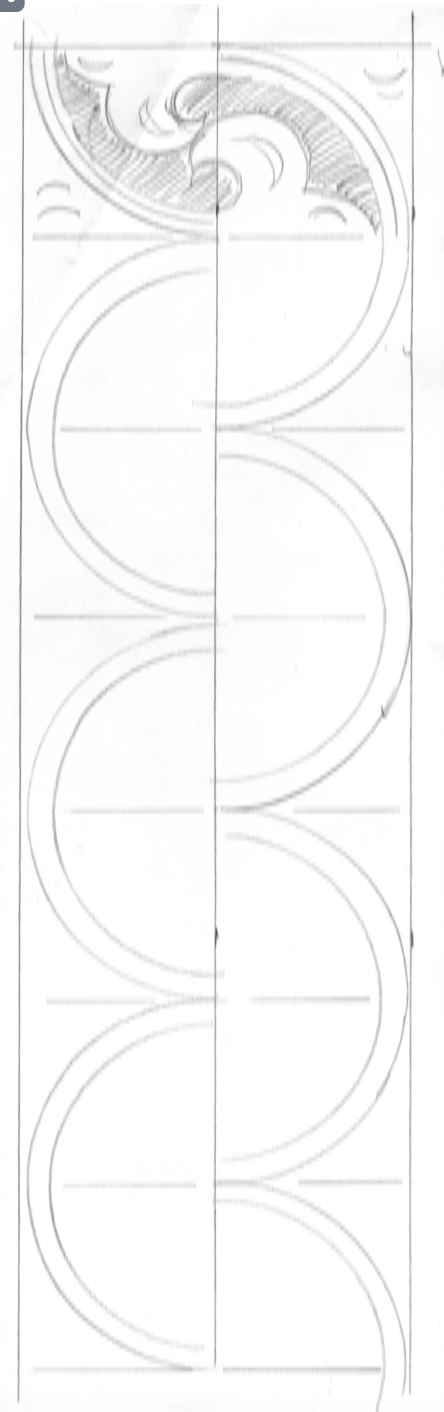
The inner surface of the front board should be fairly flat, but it needn't be perfect. It mainly needs to be flat so it sits steady while carving. For the back board, the face inside the box should be the better surface. Its outer surface is not very critical, and can retain some coarse tool marks.

When you're done with each planing session, disassemble your irons and clean them well. Wipe a metal-bodied plane. Wet, acidic green-oak shavings can rust and discolor blades and plane bodies.

After all the boards are dressed, set them



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12



aside for a short time for initial drying. A week or two is usually sufficient, but the time required depends on the humidity where you store the boards. Carving is easier on timber that is only slightly seasoned.

### LAY OUT THE CARVING

Carving on 17th-century boxes was laid out with a compass, straightedge, ruler and awl—not a template. These tools are much more versatile—it's easy to adjust a compass for variously sized boards. I prefer an awl and a marking gauge for layout over a pencil because pencil marks are troublesome to remove. I allow some of the scribed lines to remain in the finished carving, in keeping with 17th-century practice.

Begin by using a try square and awl to define the width of the box on the front and inside faces of the front board. Leave about 3/4" of waste wood beyond these lines for nailing or clamping the board to the bench. Using the marking gauge, scribe a 1/2" margin along both edges, to define the field to be carved. Mark vertical and horizontal centerlines.

While I do all the layout directly on my board, you may want to make a pencil sketch of the general layout before scribing the wood (6). Set the compass to the distance from the horizontal centerline to one of the horizontal margins. Starting at one end, scribe a half-circle above the horizontal centerline. When the leg of the compass swings over and hits the centerline, pivot the compass and scribe the next half-circle below the centerline. Continue leapfrogging these half-circles until you reach the other end of the board. Close the legs of the compass a bit, and using the center points you created before, scribe the inner half-circles. This time you must lift the compass and move it to each center point. With a square and awl, scribe vertical centerlines that run between the circles and through their centers.

### OUTLINE THE PATTERN

For removal of the background, I use several different gouges and chisels, including a V-tool, at least two fairly large gouges, a smaller slightly curved gouge, and some almost flat narrow gouges (7). Sometimes I also use a shop-made punch for texturing the background, or accenting the carvings.

The angle between the tool's handle and

the board dictate the carving's depth. Beginners tend to carve too shallow. Remember, as you're carving you're closer to the piece than you will be when it's finished, so don't be afraid to cut a little deeper. Experiment with different angles: the steeper the handle, the deeper the carving.

Using the V-tool, begin carving the half circles on the upper section of the pattern. Go from the top center towards the bottom left (think 12 o'clock to 9 o'clock). While in the same position, cut the bottom circles from the right-hand centerline towards the bottom center of the circles (3 o'clock to 6 o'clock). Using the same posture to make similar cuts helps with uniformity and efficiency. Switch your posture and cut the remaining half-circles, working your way along the board (8).

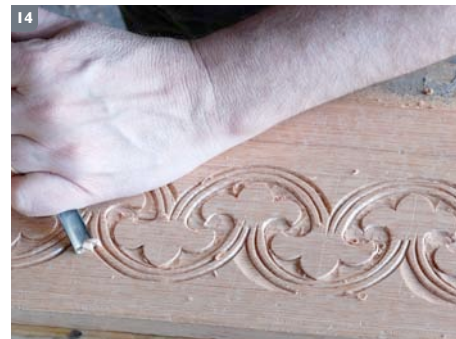
Strike a small, tightly curved gouge with the mallet to incise the beginnings of the pattern within the half-circles (9). This usually requires two overlapping strikes, side by side. The first is connected to the ends of the inner half-circles. Next, use a fairly wide curved gouge to begin defining the three-lobed leaves (10). Strike the gouge twice, to the right and left of the semicircles top center. Do all the cuts to the right, then switch around and do all the ones on the left. Make the next cuts with a more steeply curved large gouge, to connect the two elements cut previously (11). This takes two side-by-side chops with the gouge.

## CARVE THE BACKGROUND

Begin removing the background with a very shallow curved gouge (12). Instead of the mallet providing pressure, these cuts are mostly done with hand pressure. Support the cutting edge of the tool by resting your lower hand on the wood. Brace the hand gripping the handle against your torso. Some of the force comes from your body, not from moving your arms.

Move the tool side-to-side by hand as you work it up to the incised cuts of the outline. The chip will pop up. If the vertical cut is not deep enough, sometimes the chip does not pop out. In this case, the tendency is to try to flick it with the gouge. Don't do it. Redo the vertical cut to release the chips.

Half of the background is now removed. All that's left are the hard-to-reach spots where the upper and lower patterns meet





(13). I often use the mallet to get in here; hand pressure in these tight spots can sometimes go astray and remove something that's meant to stay.

Once all the background is removed, use the V-tool to cut a centered line between the half circles. These cuts are not as deep as the original outlines. Cutting them too deep can break off the outlines' "positive" wood.

Use the shallow gouge to bevel the area between the arcs of the half-circles (14). My left hand is braced against the board, and the tool pivots from the heel of my hand. Do all the arcs to the right, turn around and do all the arcs to the left.

Next, use the large curved gouge to decorate the leaves (15). Make the first cut straight down into the wood; make the second cut with the tool held at an angle, creating a sort of crescent-moon motif.

Small punches were often used to add details to carvings. For this pattern, I used a punch made from an old cut nail with a small cross filed into its end. I strike it with a hammer, once for each spot (16). Here's the finished carving (17).



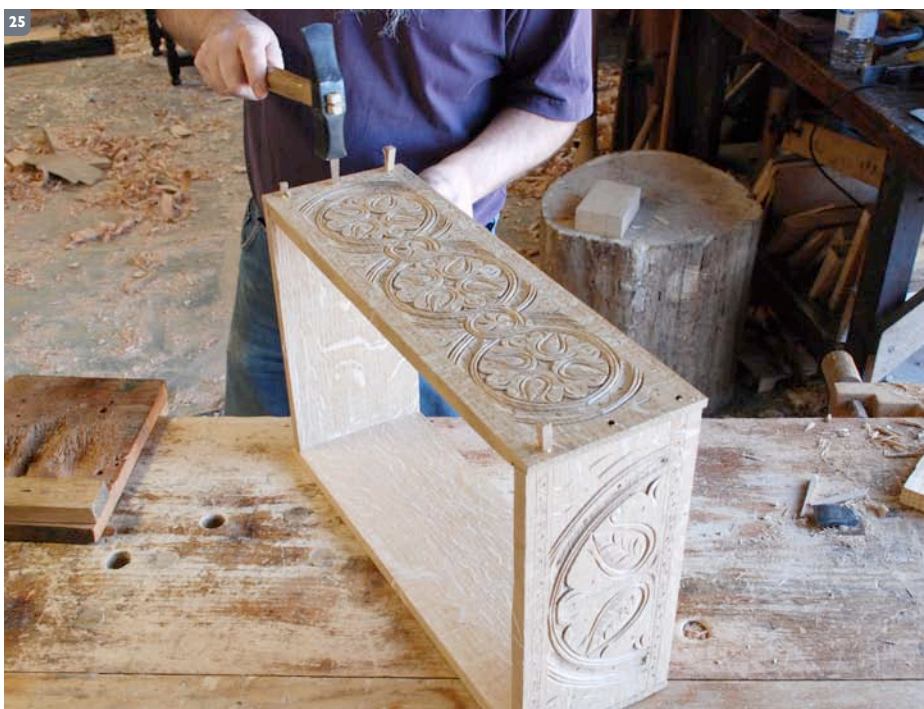
## MAKE THE RABBET JOINTS

Cut the rabbets after the carving is done. It's best to keep the front and rear boards a little extra long, to help prevent splitting. Dress and cut the end boards to final length.

Use a marking gauge to scribe the rabbets' depth, referencing from the board's flat face. Saw the rabbets' shoulders with the stock braced in a wooden bench hook (18). Use a backsaw or tenon saw. Cut down to the gauge line.

Holding the piece upright, either in a vice or clamped to the bench's edge, split out the waste with a broad chisel and mallet (19). Straight-grained quartered timber usually splits cleanly and accurately. At first, position the chisel just inside the waste side of the scribed line, and lightly tap the chisel with a mallet. The wood should split down to the sawn shoulder. Repeat as necessary.

Lay the board face down in the bench hook and cut across the grain with a long-bladed paring chisel to make the rabbet flat and even (20). (A rabbet or shoulder plane is a good alternative to using a chisel.) Take the rabbet down to the scribed line cut with the marking gauge. Both rabbets need to be in the same plane—this is one of the most critical factors in making the box. Check



## GIMMAL HINGES

LIDS ON 17TH-CENTURY BOXES and chests were often hinged with iron “gimmals,” made by a blacksmith. (They’re also called snipebill or snipe hinges.) Gimmals are essentially two linked rings with split tails, like a pair of cotter pins. I’ll show you how to install them on a box.

First, chop two small V-notches in the back board, one for each pair of hinges (1). I just eyeball their locations. Bore small-diameter holes at a downward angle from the back (2).

I use a square-sectioned reamer to enlarge and taper the holes (3). You might be able to do this with a tapered file. You’re aiming for a tight enough fit that you need to drive the hinges in with a hammer, but not so tight that you bend the hinge, or split the oak.

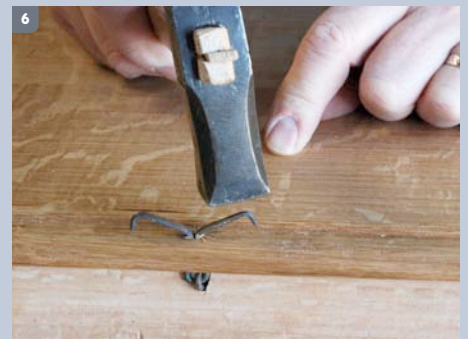
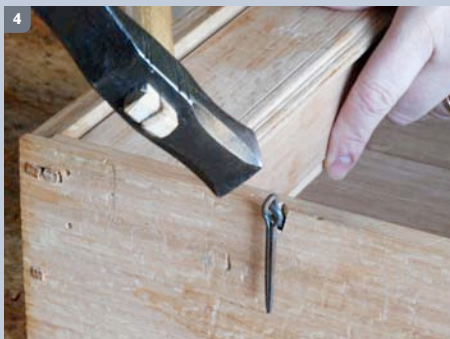
Hammer each hinge into the box so that the ring in the box is vertical (4). If the ring sticks up above the box after you’ve driven it home, hammer it downwards, then give it another rap inwards.

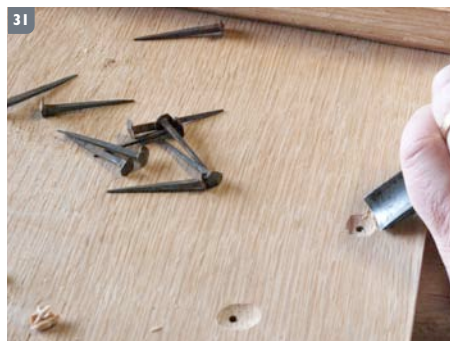
Spread the hinge’s legs inside the box, and clinch them back into the wood (5). To prevent the hinge from withdrawing, back it with a scrap of steel. Bend the tips of the hinge’s tails with pliers, or just knock them about with the hammer before setting them. Consistent light blows yield better results than brute force.



Place the lid upside down on the bench, position the box on it, and eyeball the proper placement of the box. Scribe the location of the hinges near the rear edge of the underside of the lid, then bore holes straight through the lid, not at an angle. Ream the holes and knock the lid down onto the hinges, alternating blows to bring the lid down evenly.

Test the way the hinges work, making sure the cleats clear the sides of the box and that the lid sits all the way down at the front. If all is right, spread and clinch the hinge’s tails (6).





them with the winding sticks and make any necessary corrections. The flatness of the wood between them isn't so critical.

After finishing the rabbets, set the end board in place, with the front board face down on the bench. Mark just outside the end board, then cut the front board to length using a handsaw. Do the final trimming with a plane, after assembly, but before the bottom gets nailed on.

To locate the rabbets on the inner face of the rear boards, first mark out a shoulder at one end of the rear board. Leave about 1-1/2" beyond the shoulder, to accommodate the rabbet and the pintle hinge extension. (If you are using iron hinges, make this rabbet just a bit longer than the thickness of the end board.)

Next, lay the front and rear boards face down, with their bottom edges butted against each other. Line up the scribed shoulder with its counterpart on the front board. Then mark the shoulder-to-shoulder distance from the front board to the rear board (21). Position the end boards in place, then scribe against their outside surface to determine the overall length of the box's carcass (22).

If you're making pintle hinges, cut the rabbets extra-long to allow for the hinge's round tenon (see 36). Cut the rabbets as before, saw the back board to length and whittle the tenons.

## ASSEMBLE WITH PEGS

Bore three 1/4" dia. holes in each rabbet. I bore from the inside of the rabbet because it's easier to center the holes by eye. Mark the end boards with an awl (23). (Here, I'm working on a box with different carving.) Remove the front or rear board and bore holes into the side pieces' end grain.

Make pins that are about 5" long from dry, straight-grained riven oak. I split them out with a carving knife and pare them with a broad chisel (24). They should be just the slightest bit tight in the hole and very slightly tapered along their length.

Assemble the box by gluing each joint and driving in the pegs (25). A tight fit takes a shaving off the corners of the pegs (26). Trim the pegs flush with the surface using a sharp chisel with the bevel down. Don't pare straight across the peg's head, but come in from both sides. This eliminates tear-out as you come off the peg.

Decorate the front corners with a row of gouge cuts (27). Work by eye and strike the gouge with the mallet.

### ADD THE BOTTOM

Dress the bottom board, but leave it a bit oversize. Set the box on the bottom board, flush with the rear edge. Scribe lines on the bottom board, inside and outside the box (28). Measure about 1/2" to 3/4" from the outside lines, then cut and plane the board to size.

Bore pilot holes for nails to secure the bottom (29). Don't position a hole too close to the corner joints. I use two nails in each short end and three in each long end.

Using a fairly long plane, form a bevel around the bottom board (30). Plane the ends first, then the sides. Squat down and sight the bevel as you work. You're aiming for a neat appearance, but it doesn't have to be perfect.

Countersink holes for the nails by making two swiveling passes with a carving gouge (31). Set the box upside down and position the bottom. Transfer the nail holes by poking an awl through each one. Remove the bottom board and bore these holes. Nail on the bottom (32).

### ADD THE LID

The lid has a thumbnail profile, but you don't need a molding plane to make it. Mark a line around the lid to define the thumbnail's fillet. Clamp a board on the line to guide a rabbet plane, then shave rabbets around the lid (33).

Use a smooth plane to gradually form the thumbnail shape (34). This is all done by eye. Plane the end grain first, and keep the plane skewed for a smoother cut.

The lid has two oak cleats nailed to its underside. Here's the procedure if you're using wooden pintle hinges. Make the cleats wider towards the rear and bore holes into the ends of each cleat to receive the pintle. Bore pilot holes through the cleats for nails. Lay the lid on the bench and position the box and cleats. Mark nail holes in the lid and drill them. Nail one cleat in place, clinching the tips of the nails on the upper surface of the lid (35). Slip a piece of steel under the nail head so it doesn't back out. Slide the lid into position on the pintle, slip the next cleat in place, flip the box over, and then nail the second cleat (36).

