The craft of coopering

STAVES AND A HOOP MAKE A WATERTIGHT VESSEL

BY JONATHAN BINZEN

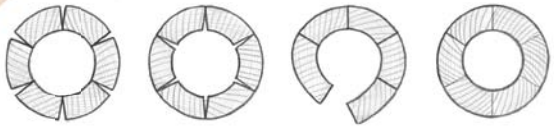
Carl Swensson's staved vessels (Back Cover) are inspired by the traditional milking buckets of Swiss cooper Ruedi Kohler (*FWW* #40). To make this faceted version, Swensson first makes a tapered, smooth-sided bucket, then disassembles it to continue shaping the staves. Getting the staves just right is a challenge, but Swensson says that making the interlocking hoop (p. 90) is the real hurdle. The secret to successful bending, he found, is pre-limbering: Before cutting the arrow lock joinery, he soaks and steams the hoop blanks, then bends them to a spiral much tighter than the bucket itself. This breaks the lignin bonds in the wood, rendering it almost floppy. After cutting the joinery, Swensson resoaks the hoop and it bends to shape easily.

Staves

1 MITER AND SHAPE THE STAVES

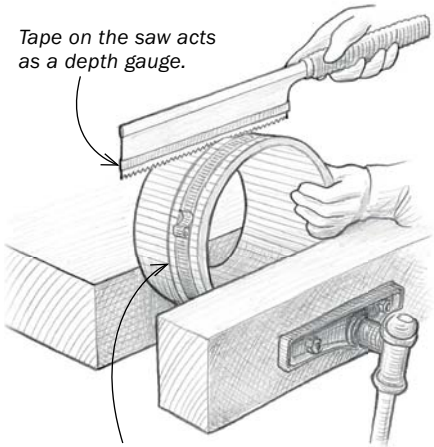
Try the miters. *After cutting the stave to length and planing the outside face convex, Swensson shoots the miters on an inverted try plane. Next, he scoops the inside face with a cooper's drawknife. Then he drills for a pair of locating pegs in each joint.*

SIZE STAVES FOR A PERFECT CIRCLE



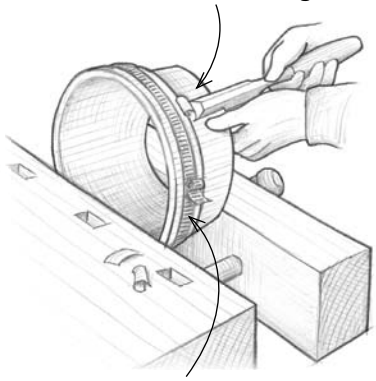
2 CUT A RELIEF FOR THE HOOP

Tape on the saw acts as a depth gauge.



After dry-assembling the staves with a temporary strap, Swensson cuts a kerf around the bucket using a handsaw.

Working from the bottom of the bucket to the sawkerf, Swensson chisels a flat to receive the hoop. He smooths it with a sanding belt.



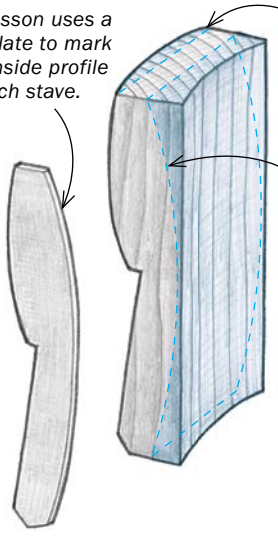
After moving the strap, he will plane this area cross-grain to a convex shape.

3 SEPARATE THE STAVES FOR FINAL SHAPING

Swensson uses a template to mark the inside profile of each stave.

To give the vessel its faceted look, he planes the area above the hoop relief until the circumference curve is flattened out.

He planes to this line, working cross-grain.



Reassemble. *After shaping, Swensson dry-fits the staves, again using the locating pegs and temporary strap.*

Action photos, this page: Drew Langsner; p. 90 (bottom left): Tim Van Riper

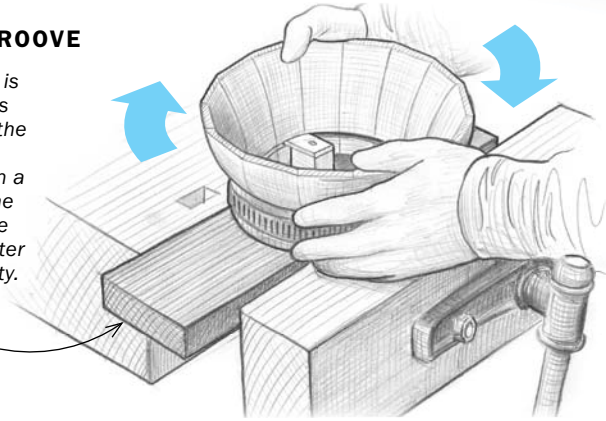
how they did it continued

Bottom

Custom groover. *To cut the groove, Swensson uses his version of a cooper's croze. First he cuts two kerfs, then switches to a cutter that cleans the waste between them.*

1 CUT THE GROOVE

A traditional croze is handheld and rides the bottom rim of the bucket. Swensson clamps his croze in a vise and rotates the bucket to make the cut, giving him better control and visibility.

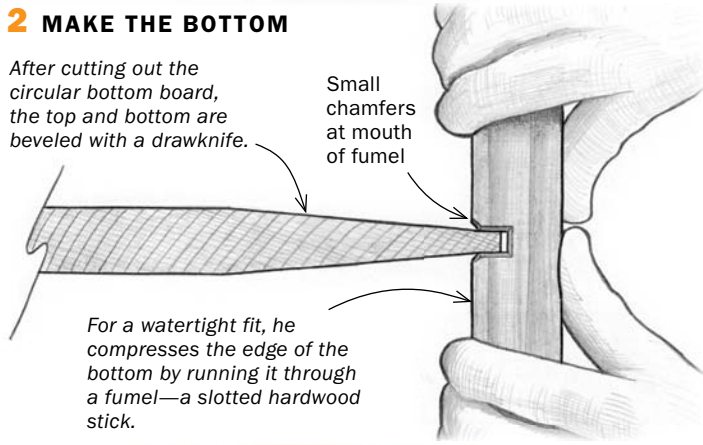


2 MAKE THE BOTTOM

After cutting out the circular bottom board, the top and bottom are beveled with a drawknife.

Small chamfers at mouth of fumel

For a watertight fit, he compresses the edge of the bottom by running it through a fumel—a slotted hardwood stick.



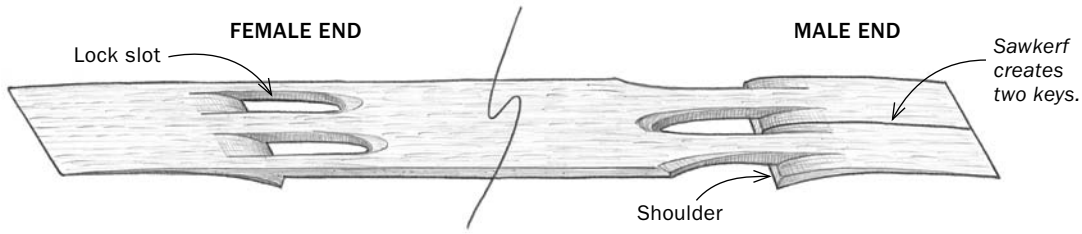
Hoop

1 SUPER LIMBERING

Spiral bending turns the hoop into a wet noodle. *After soaking and then steaming the hoop, Swensson bends it to a tight spiral, then flips it and bends it the other way.*

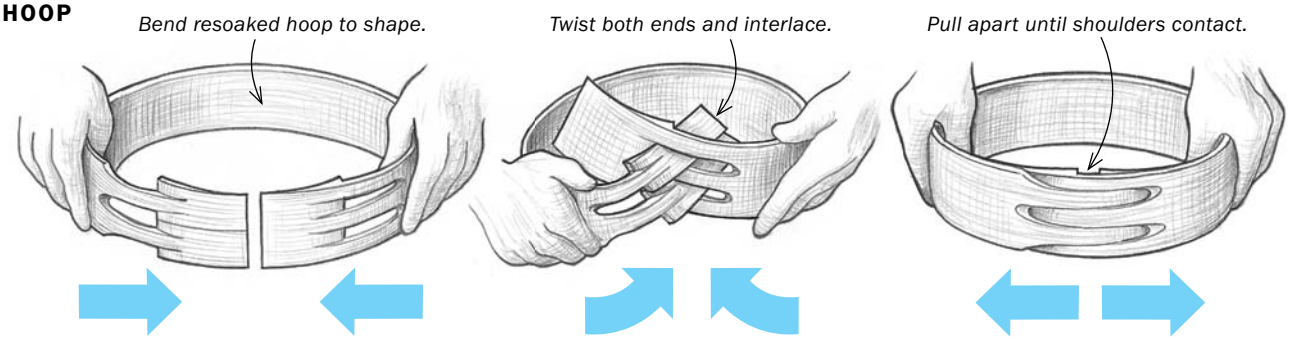
2 DOUBLE ARROWLOCK

The interlocking joints are cut after the hoop has been limbered. Swensson tapers the inside face of the hoop across its width to match the 3° flare of the hoop relief.



3 WEAVE THE HOOP

With the joints cut, Swensson resoaks the hoop to fiber saturation and laces the double lock together. Once on the bucket, the hoop is pegged in place.



Photos, except where noted, and drawings: John Tetreault