

Build an Andon Lamp

Re-create the warmth and style of a traditional Japanese light

BY CRAIG VANDALL STEVENS

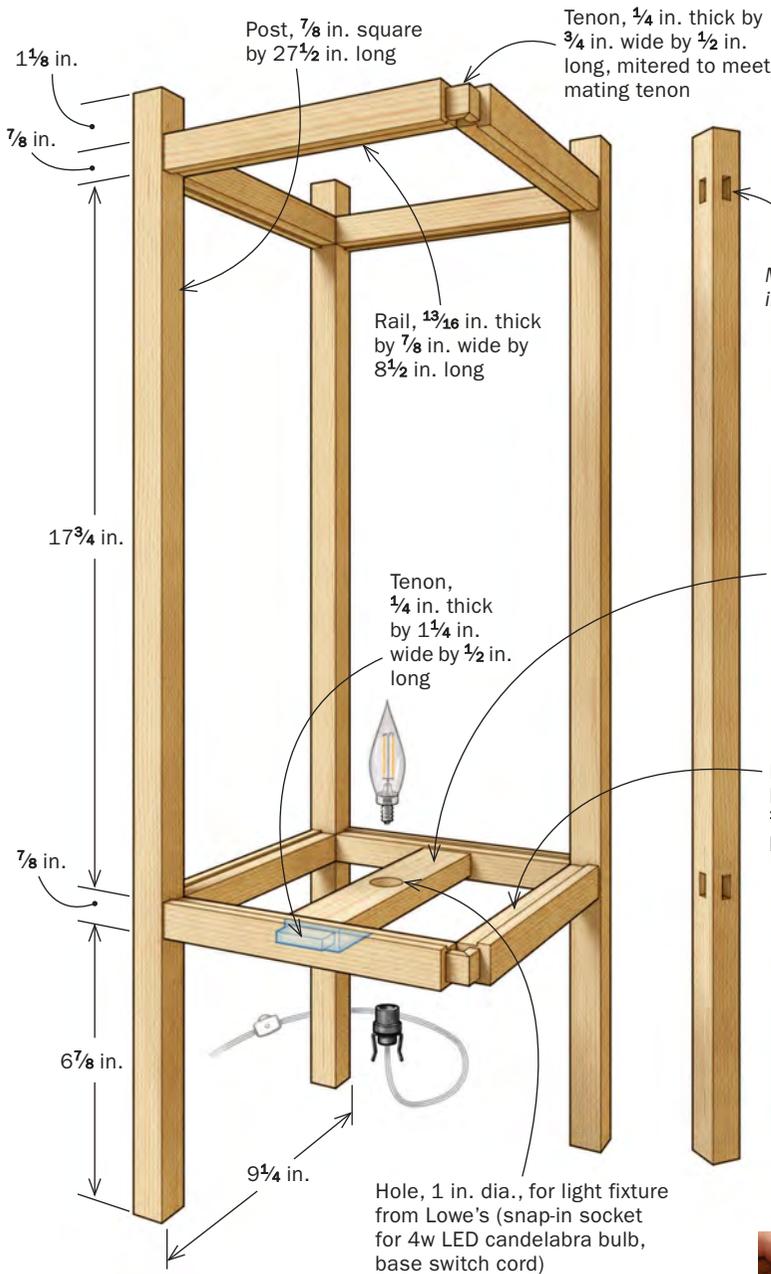
Andon lamps capture the clean lines and simple beauty of traditional Japanese woodworking. The original, oil-lit style is no longer commonly used, but modern Andon designs with electric fixtures are plentiful. Although some traditional Andon lamps had hinged panels and could be opened to shed more direct light, Andons primarily provided accent light and a warm aesthetic statement rather than bright light to read by. I build mine in the same spirit. The size I'll demonstrate is suitable for a tabletop or floor lamp.

The Andon (pronounced ahn dohn) can be made in various ways, offering a range of design possibilities and levels of woodworking complexity. In this version, the rails of the lamp frame are joined to the legs with mitered tenons. As to the thin strips, or kumiko, that form the lamp's gridded panels, in many original Andons they were tenoned into the lamp frame's legs and rails. For this lamp I used a different method, making four separate lap-jointed kumiko panels that are press-fit into the lamp's frame. You can give your kumiko panels a plain grid pattern—relatively simple or more complex—or add one of the many traditional infill patterns. To see how I make the decorative



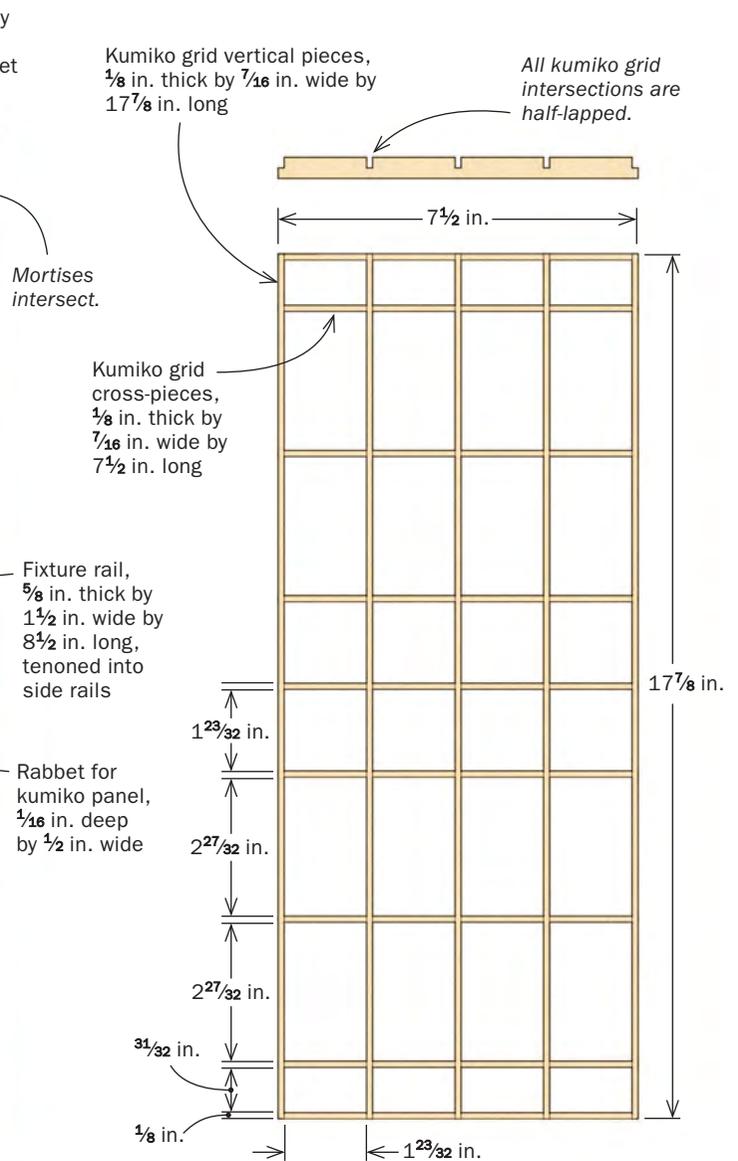
ANDON LAMP STRUCTURE

Softwoods (or softer hardwoods) without distinct grain markings are best for Andon lamps. This one is made with Alaskan yellow cedar; basswood is another good choice.



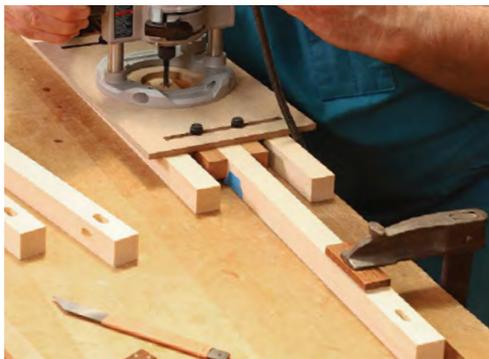
KUMIKO PANEL

Kumiko grid pieces can be tenoned directly into the posts and rails, but to simplify the construction, Stevens made individual kumiko panels, which are press-fit into the lamp.



Mortises

Machine the mortises. After laying out the leg mortises using a story stick, Stevens cuts them with a plunge router screwed to a saddle jig: an MDF base with two adjustable fences. Extra leg stock on the bench helps support the jig.



Chisel them square. A chopping jig straddles the leg and keeps the chisel plumb and square as Stevens cleans up the ends of the mortise. Next, he uses a wider chisel to trim any waste from the walls.

Tenon the rails



Tablesawn shoulders. Use a crosscut sled to saw the deep shoulders. For the shallow ones, add a piece of blue tape to the stop block; it moves the workpiece just enough so the blade won't nick the first shoulders.



Bandsawn cheeks. With a stop block clamped to the bandsaw fence, cutting the rail cheeks goes quickly. After all the face cheeks are cut, move the fence and cut the edge cheeks.



Freehand miters. Mark the miters on the tenon ends and cut them freehand on the bandsaw. The miters aren't a glue surface, and needn't be precise. Stevens holds a pair of rails as he saws for added stability.



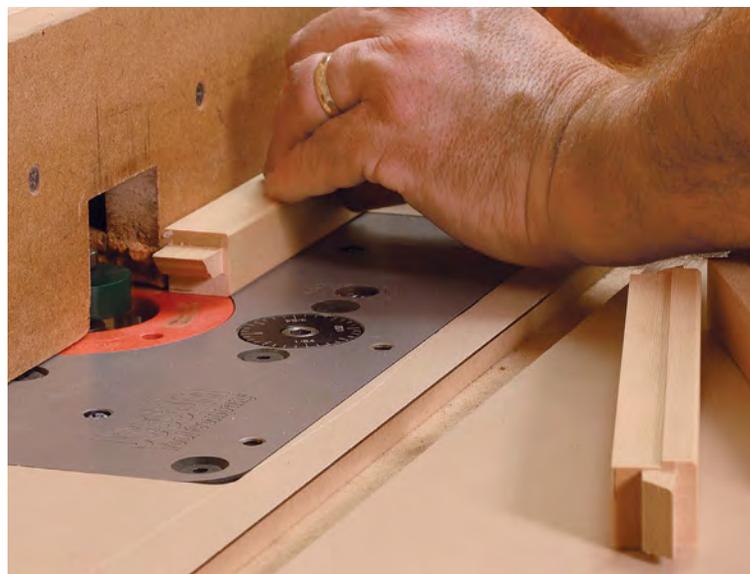
Rails get ripped. To simplify the joinery, the rails, like the legs, are milled $\frac{7}{8}$ in. square. But after the tenons are cut, Stevens trims $\frac{3}{16}$ in. off the outside face of the rails, so they'll be inset from the legs.

kumiko pattern for this lamp, see Handwork (pp. 22–24).

Millwork

The techniques for the lamp frame and kumiko panels are straightforward, but throughout the process precision is paramount. I start by building a mockup of the lamp frame in poplar, screwing it together. When I have the shape and size right, I make story sticks from the mockup: one the length of a leg, which I mark with the location of the two rails; another the length of a rail (not including tenons). I use the story sticks throughout the milling and joinery process.

In the completed lamp frame, the rails will be inset from the outside faces of the



Quick rabbets. At the router table, Stevens cuts a rabbet in each rail to receive the kumiko panel.

Assemble the lamp frame



Front and back first. Stevens assembles the Andon in stages, starting with the front and back frames, which he glues up flat on his bench. Here he checks the diagonals of one frame with squaring sticks.

legs. But because it's easier to cut centered joints than offset ones, I mill the rails and legs to the same dimension, $\frac{7}{8}$ in. square. Only after cutting centered tenons do I rip the rails to their final width, removing $\frac{1}{16}$ in. from their outside face.

Frame joinery

I mortise the legs with a plunge router mounted on a saddle jig, which has a $\frac{1}{4}$ -in. MDF base and two adjustable fences snugged up to the leg stock. Layout for these mortises, which I do using the story stick, requires just knifed end lines for each mortise. I stay a bit shy of the end lines as I plunge rout, and then I square up the ends of the mortises by hand with a chisel and a squaring jig that straddles the leg.

Making the tenons on the rails begins on machines and ends with handwork. After cutting the rails to overall length, I cut their tenon shoulders on the tablesaw with a crosscut sled and a stop block. Then I cut the tenon cheeks at the bandsaw, using a fence and a stop block. I mark miters on the tenons and cut them by eye at the bandsaw, not worrying too much about perfection here, since they will not be glue surfaces. With all that done, I reset the bandsaw fence and rip the rails to final width. Then, at the router table, I cut the



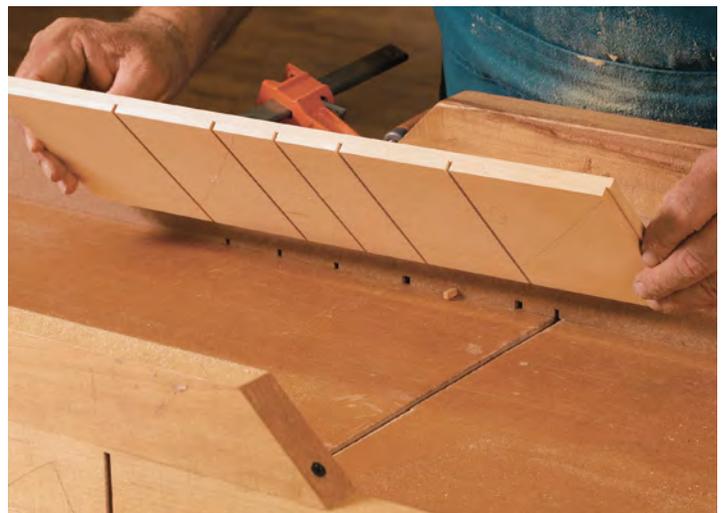
Completing the structure. With the side rails and fixture rail in place, Stevens finishes assembly. He uses liquid hide glue from Old Brown Glue, which provides reversibility, a long open time, and a slippery texture for easy insertion of the multiple tenons.



Make strips for the kumiko grid



Strips start as a wide blank. It's simplest and most accurate to cut the half laps by cutting dadoes in a wide board and then ripping it into strips. Mill the board's thickness to the width of a strip. For the vertical strips, trim the board's length so it fits snugly between the rabbets in the lamp rails.



Cut dadoes for the half-laps. Stevens cuts the half-lap dadoes on a crosscut sled, using a flat-topped blade and an auxiliary fence with a moveable indexing pin to control the spacing. To cut the open half laps on either end of the blank, he removes the pin and uses a stop block.

shallow rabbet in the rails where the kumiko panels will be seated.

Now there are a few steps at the bench before the lamp frame is ready for assembly. On the rails, I chisel away any waste at the intersection of the tenon cheeks and shoulders. Then all faces of the legs and rails get finish planed, and all the corners get a small chamfer. I use a dedicated chamfer plane, but any bench plane or router would do the trick. Next, I assemble the lamp frame and move on to the kumiko work.

Creating the kumiko grid

The wood that comprises the kumiko grid, or *jigumi*, could be cut into strips first and



Similar spacing. For the horizontal strips, make a blank that fits snugly between the lamp's legs, then cut the dadoes with the auxiliary fence. Getting the dado spacing perfectly even is a challenge. Using metric measurement can help.

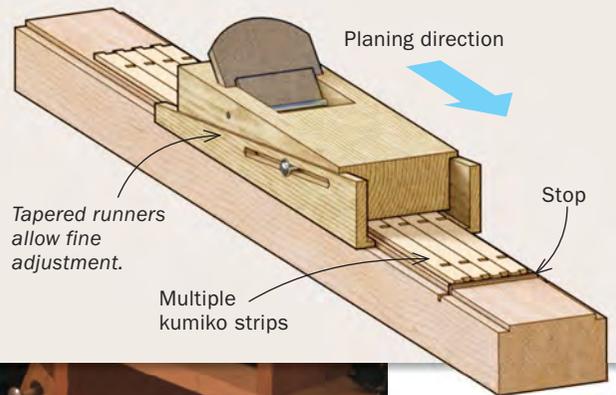
then notched for all the half laps. But I find it simpler and more accurate to cut the half laps as dadoes in a wide blank, which I then rip into strips. I mill all the blanks to $\frac{7}{16}$ in. thick, the eventual width of the strips. For the vertical kumiko strips, I cut a blank to length so it fits snugly into the rabbets in the lamp frame's rails. For the horizontal strips, I cut a blank so its length fits snugly between the lamp's legs.



Slice up the sticks.
At the bandsaw, Stevens rips the dadoed panel into kumiko strips. He saws the strips about $\frac{1}{32}$ in. over finished dimension.



KUMIKO THICKENING PLANE



A rig made for milling.
Using a Japanese kumiko plane, or hikouki kanna, that has adjustable runners and a mating fixture to ride on, you can plane four strips to final thickness and glassy smoothness.

TIP BENCH PLANE BECOMES A PLANER

I cut the dadoes for the half laps at the tablesaw using a flat-topped blade with a $\frac{1}{8}$ -in. kerf. To dial in both the exact blade height for the half laps and the correct thickness for the kumiko strips, I use a test blank and test strips that I rip from it on the bandsaw.

To control the spacing of the half-laps, I use an auxiliary fence on the tablesaw's crosscut sled. It works like a box-joint jig, but its indexing pin can be moved to different slots to create different spacing. When cutting dadoes in the blank for the long vertical strips, I start with one at the midpoint of the blank; this is cut with the indexing pin removed. Then, to



You can tape a pair of runners to the sole of your bench plane to create a hand-milling system much like the dedicated Japanese version. To get just the right thickness, use extra kumiko strips as runners. Once they're taped on, you can rub them on sandpaper, reducing their thickness slightly to compensate for the thickness of the double-sided tape.

Assemble the kumiko grid

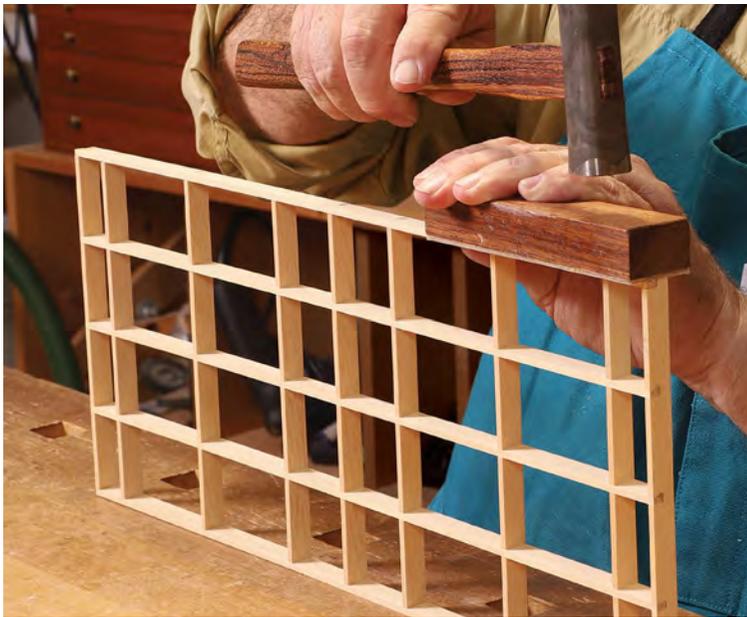


Gang up the strips for gluing. To prepare for assembly, Stevens aligns a batch of horizontal strips and applies glue to their half laps.



Gentle assembly. A hardwood block faced with mat board helps engage multiple half laps at once.

Tighten the grid. Once all the central strips are fitted together, Stevens presses the perimeter strips into place and taps them tight.



Add clamps at the corners. To keep the open half laps at the corners of the grid tight while the glue dries, Stevens stretches blue tape around the corners.



cut the two adjacent dados, I insert the indexing pin and rotate the blank between passes. I move the indexing pin to a more distant slot for the next two dados, and I move it farther away once again for the last two.

With the dadoing complete, I rip the blanks into strips, slightly thicker than final size, at the bandsaw, edge-jointing the blank after every five or six strips. I mill the strips to final thickness with a traditional kumiko plane, but you can add runners to a normal bench plane and do the same work a bit more slowly.

I assemble the kumiko grids flat on my bench. I use white glue and a palette knife and I gang parts to glue them, which makes it easier to get good coverage without excessive squeeze-out. After tapping the grid together, I clamp its corners with tape to keep the open half laps there tight.

I let the grid assembly cure, and if I'll be adding a decorative kumiko infill pattern, I do that next. If I'm leaving the grid plain, I move on and apply washi paper with starch glue. I get the paper, glue, and applicator from eShoji.com. When the glue dries, I trim the paper and spritz it with a little water to tighten it. Then the panel is ready to be pressed into the lamp. I skip a finish on Andon lamps; it would be very fussy to apply, and it seems unnecessary, since Alaskan yellow cedar and other light, unfigured woods look so good raw. □

Craig Vandall Stevens builds furniture and teaches at Philadelphia Furniture Workshop.

Add washi paper



Roll out the washi. The Japanese paper typically used in Andon lamps comes in a roll and can be cut with scissors or a knife. Cut the paper slightly larger than the kumiko panel.

Glue sparingly. Using starch glue and a special applicator that makes it easier to deliver a thin stream of glue accurately, Stevens coats all the exposed edges on the inside face of the grid.



Weight the panel. After flipping the kumiko grid glue-side down onto the washi, add weights on top and let it cure for an hour or two.



Trim to the grid. When the glue dries, remove the weights, put a cutting mat beneath the grid, and trim the washi to the perimeter of the panel with a knife.



Tightened up and pressed in place. Once the starch glue has turned clear, spritz the inside face of the washi with a mist of water. As it dries, the paper becomes taut. Then the panel can be press-fitted into the lamp frame.



To purchase expanded plans and a complete parts list for this lamp and other projects, go to FineWoodworking.com/PlanStore.