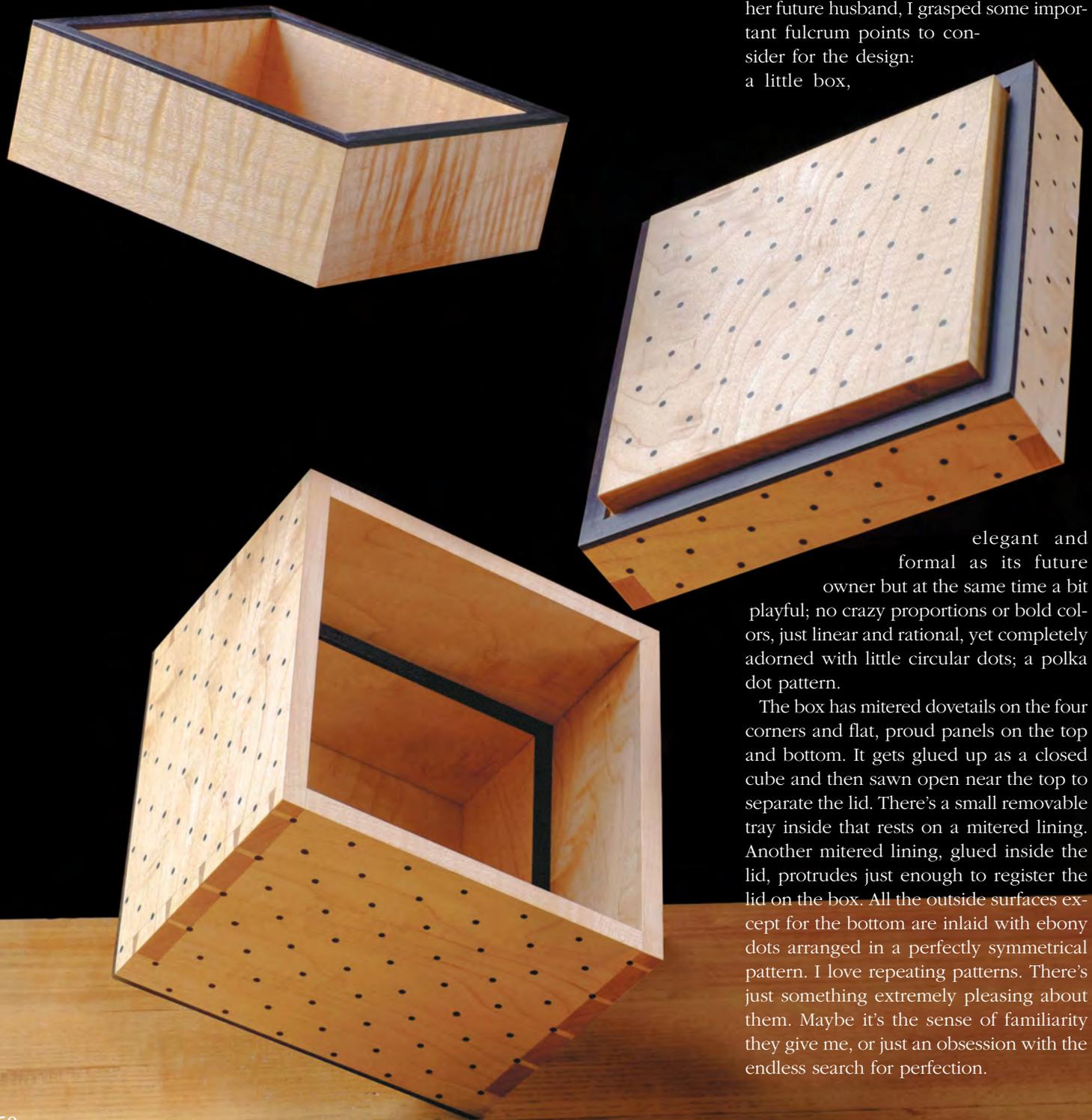


Polka Dot Box

Elegant, small, and playful, this dovetailed box makes a perfect present

BY VASKO SOTIROV

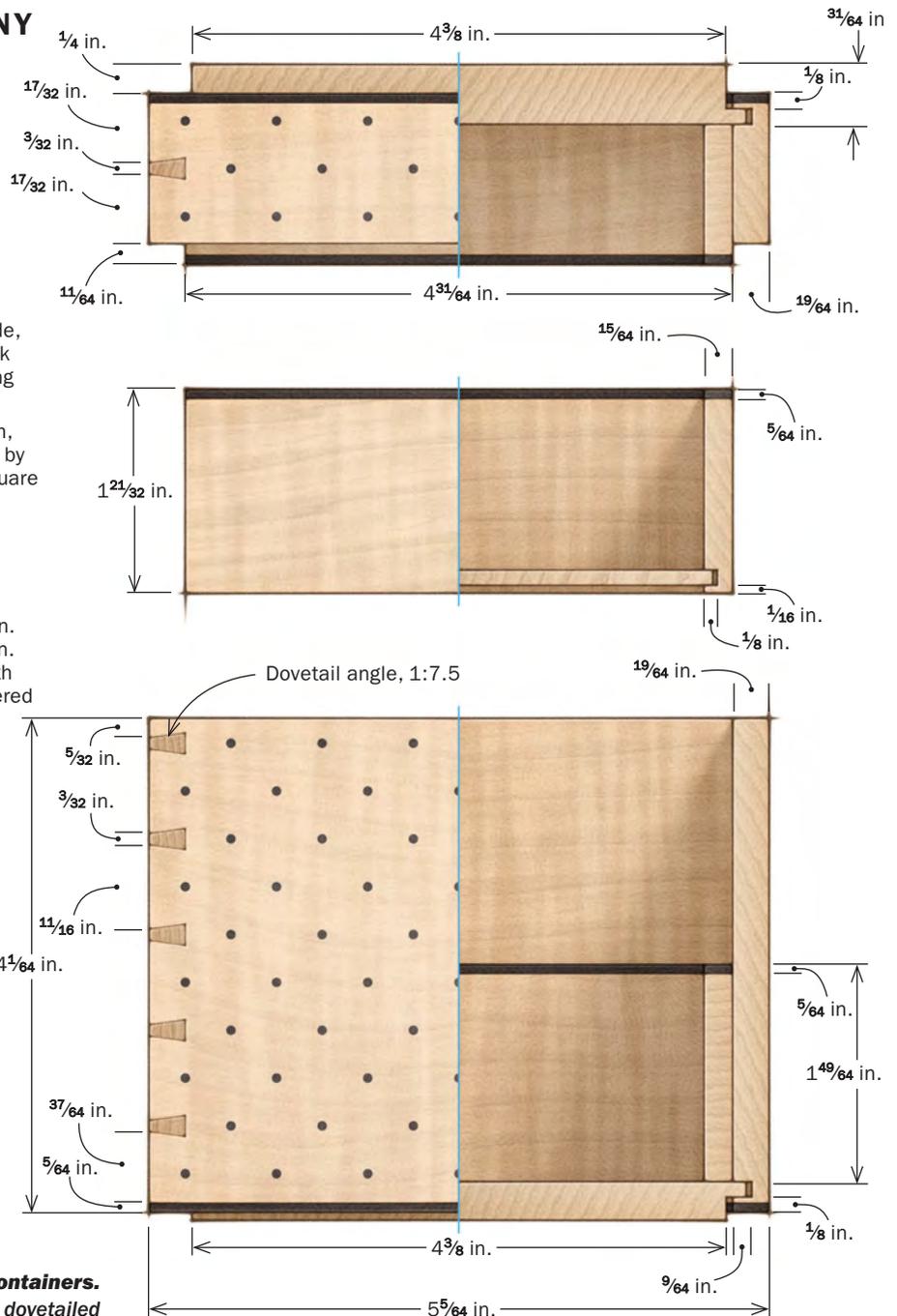
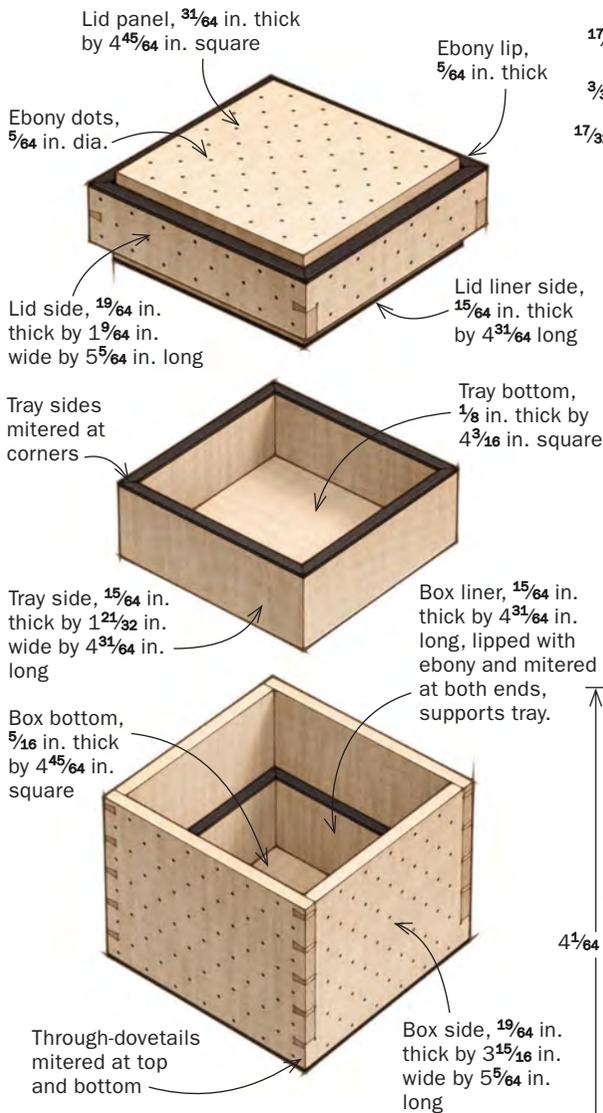
Recently I received a commission from a German gentleman for a little box he wanted to give as a surprise to his wife-to-be. No other details were added to his request. He liked my work and decided to give me carte blanche for everything. Exciting, but also very hard. It's always a challenge to design and build something that will be really meaningful to someone else; especially in this case, when I couldn't actually talk to the man's fiancée. But after a few video calls with her future husband, I grasped some important fulcrum points to consider for the design: a little box,



elegant and formal as its future owner but at the same time a bit playful; no crazy proportions or bold colors, just linear and rational, yet completely adorned with little circular dots; a polka dot pattern.

The box has mitered dovetails on the four corners and flat, proud panels on the top and bottom. It gets glued up as a closed cube and then sawn open near the top to separate the lid. There's a small removable tray inside that rests on a mitered lining. Another mitered lining, glued inside the lid, protrudes just enough to register the lid on the box. All the outside surfaces except for the bottom are inlaid with ebony dots arranged in a perfectly symmetrical pattern. I love repeating patterns. There's just something extremely pleasing about them. Maybe it's the sense of familiarity they give me, or just an obsession with the endless search for perfection.

LIDDED BOX IN MAPLE AND EBONY



FRONT VIEW

The dimensions here were converted from the author's metric ones; you can find his original CAD drawings and metric dimensions at Finewoodworking.com/296.

Cubic containers. Sotirov's dovetailed maple box with ebony dots and detailing has a tray that slips inside.



Just the right wood, just the right way

Let me tell you more about how the box was made. First step, as always, was the lumber selection. I wanted something classy that would produce a delightful contrast when dotted. In my wood storage I immediately spotted a piece of hard maple with a particular subtle figure that some people call angel step, the perfect match for my client and very well suited as a

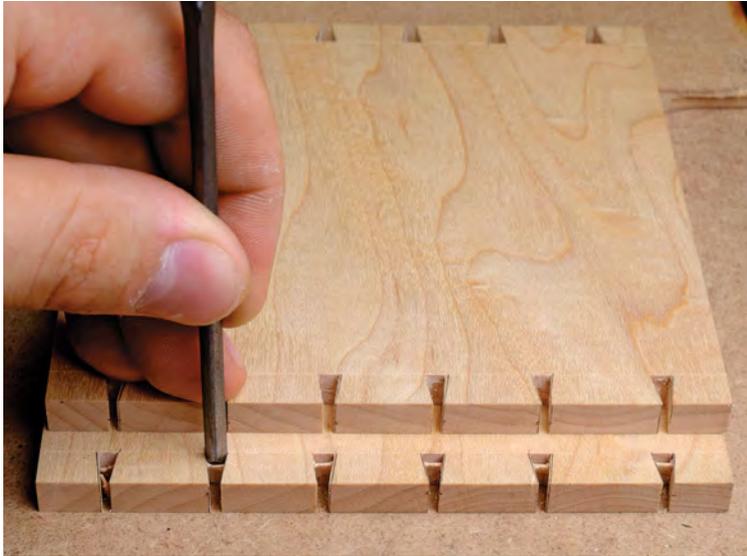
canvas for the black dots of Gabon ebony. By resawing a single maple plank, cross-cutting the resulting boards in half, then turning their inner faces out, I got four sides with a seamless grain flow around the perimeter of the cube.

Never enough dovetails

I might be obsessed with dovetails. I love cutting them, I love looking at them, and

● DOING MITERED DOVETAILS

Tails first. After laying out the tails with a pencil, Sotirov sawed to the lines, then cleaned up to the baseline with a chisel.



I love how versatile they are. In laying out these dovetails, I decided on five whole tails and mitered half tails at the ends. I added about $\frac{1}{8}$ in. to the width of the tails that were destined to be cut through during the lid separation to compensate for the wood lost to sawing and smoothing.

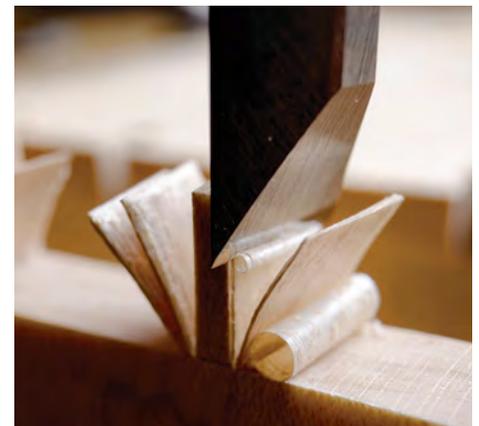
Mitering the ends of a dovetail joint adds a couple of steps but gives a more refined look to the whole piece. The steps for making this joint are the same as for cutting normal through-dovetails until just after the tails are cut and the pins are traced. When making the first and last pins, you have to make a cut with the sawblade tilted up at an angle of 45° —similar to the cuts you make with half-blind dovetails. After cutting this angled kerf, I remove the bulk of the waste with a cross-grain saw-



Miter the half tails. With all the tails cut, Sotirov makes a miter cut on the half tails. He slides a thin scrap into the socket to keep from cutting into the neighboring tail.



Miter cleanup. Sotirov smooths the sawn face of the miter with a chisel. A piece of MDF with one edge beveled at 45° supports his chisel and serves as a paring jig.



Paring the pins. Rather than sawing right to the knife lines that define his pins, Sotirov leaves some waste and pares to the lines in multiple slices. If the grain allows it, he pares vertically. If it doesn't, he pares horizontally. When he has pared to the scribe line, he slices along the base of the pin to sever the waste.

● ASSEMBLE THE BOX AND SAW IT APART



Ebony edging. After cutting and fitting the dovetails, Sotirov adds ebony lipping to the top and bottom edges of the box sides. He glues the ebony on slightly oversize, then trims it flush.



Glue up a closed container. The top and bottom panels, tongued around their edges, are slipped into grooves at glue-up, creating a closed cube.



Off with its lid. Holding a fine-toothed dozuki saw against a scrapwood fence, Sotirov begins the cut that will separate the lid from the body. He turns the box and resets the fence to cut each side in turn.



Install the liners. Once the box is sawn apart, Sotirov makes two mitered liners, one for the body of the box, to support the tray, another inside the lid, to register the lid to the body.

cut. Then I refine the miter with a chisel. When it comes to the tail board, there's no need to make the inclined kerf before mitring the first and last tails.

Assemble and separate

Well-fitted dovetail joints don't need to be clamped while drying, which means you can split the glue-up into less stressful subassemblies. I glued two of the box

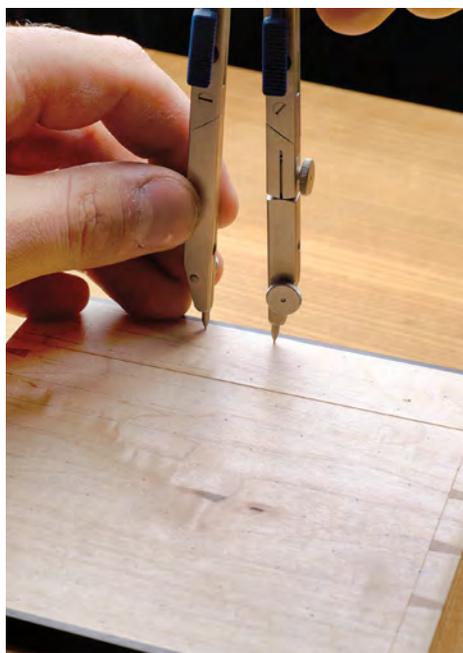
sides together, checked for square, and set them aside. Then I did the same with the other two. I did these glue-ups by clamping a pin board upright in a bench vise and tapping the tails with a hammer until they were seated. I used a pine caul to prevent marring the surface and getting glue on the hammer. Finally, I glued the two L-shaped assemblies together, capturing the top and bottom panels between them.

When it came to separating the lid from the body of the box, I could have used a bandsaw, tablesaw, or even a router, but I chose a handsaw. It doesn't take much longer on a small piece like this, and it gives me much more control. I used a very fine dozuki saw; not every handsaw is well-suited for this operation—if the tooth set is pronounced, the cut will not be straight.

● INLAY THE DOTS



Parallel pencil lines. To start laying out the inlaid dots, Sotirov uses a marking gauge to draw a series of parallel lines on all four sides as well as the top of the box.

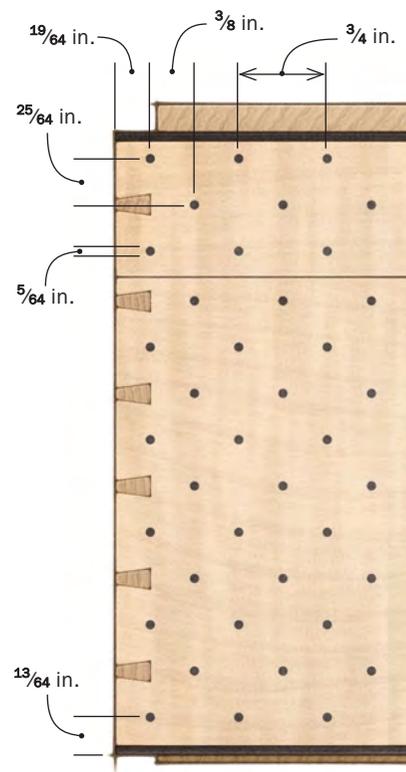


Step by step. With a pair of dividers, Sotirov makes a pinpoint along the pencil line for every dot.



Drilling all those dot mortises. With 400 holes to drill, Sotirov avoids mistakes by ignoring the number he has to do, focusing instead on drilling each hole perfectly.

DOT LAYOUT



Outfit the interior

After cleaning up the sawn edges with a block plane, it was time to add the inner linings, one in the body of the box and one in the lid. I milled the maple liner parts to size, lipped them with ebony, and finished them with shellac, masking off areas where glue would go. Then I fitted them, snugly adjusting their length on a miter shooting board. The ones in the lid are held in place with a small bead of glue, while the ones in the body are just dry-fitted. After the glue cures, the protruding part of the lid's liner can be planed or sanded slightly to adjust the fit of the lid.

Next, I made the small mitered tray that fits inside the box. Wanting to achieve a piston fit, I sized the tray sides so that they barely fit into the opening. To assemble the tray, I applied tape across the joints to act as hinges, added glue to the miters, and closed the sides around the bottom. I tightened a band clamp around the tray while the glue dried. Then I used a handplane to take a few shavings from each side, until the tray would glide slowly into place.

Dot matrix

With the box glued up and the lid separated and adjusted, I laid out the polka dot

Turn a dowel with a block plane. After milling up a square strip of ebony, Sotirov puts it in a planing jig—a piece of MDF with a V-groove and an end stop—and chamfers the four corners with a handplane. Then he chamfers the resulting eight corners.



Finishing the diminutive dowels. Repeated chamfering will get the ebony stick nearly round. Then Sotirov will finish the job by chucking it in his hand drill and spinning it against a sheet of sandpaper.



Microdots go in with tweezers. Sotirov crosscuts the dowel into short lengths with a fine-toothed handsaw, then inlays the dots with a drop of glue, a pinch of the tweezers, and a tap of the hammer.

pattern. A pencil marking gauge took care of horizontal lines and a pair of dividers marked centerpoints for the equally distanced dots. I used a brad-point bit in the drill press to bore the 400 holes for the little ebony dots.

I made the ebony dowels in a pretty odd way, but it worked out beautifully and was surprisingly quick. I first milled up some square ebony sticks. Then, in a scrap of MDF, I cut a shallow V-groove and put a little stop at the end. With an ebony stick in the V-groove, I used a block plane to chamfer one corner, then the other three. Then I chamfered the resulting eight corners, and the stick was nearly round. I used a caliper to check the diameter. When it was near to final size, I chucked the rod in my drill and spun it against a piece of 240-grit sandpaper. Now it really was round, and I cut the stick into small pins with a very fine crosscut saw.

I inlaid the ebony pins using a pair of tweezers and a little brass hammer. A dot of wood glue secured them. Finally, with a very sharp handplane, I planed the slightly proud ebony dots flush, producing some extremely interesting shavings. □

Vasko Sotirov works wood in Bergamo, Italy. See more of his work on Instagram @vaskosotirov.



Speckled shavings. Not wanting to risk rubbing ebony dust into the pores of the maple, Sotirov used a razor-sharp handplane to flush off the dots.

