

BOX CLEVER



JOHN BULLAR

John Bullar keeps the family silver under lock and key with a jewellery case made in knotty oak

I started to make this chest when asked to test a new type of dovetail jig. It is fine to play around with cheap scraps of softwood while getting the hang of a tool, but once things seemed to be going right, I couldn't resist reaching for some fancier timber out of the drying loft. The chest really just happened on the hoof as a result of the test, rather than being planned or designed, but the result is a simple but elegant jewellery case that houses my secret treasures.



PHOTOGRAPHS BY THE AUTHOR

dovetails rather than through-dovetails if you have access to a jig better suited to that method. The variable-pitch is handy to make the extra wide gap to allow for where the lid is cut off and planed, but it would look quite normal if this gap was smaller than the others.

A fair proportion of the work is done on a routing table. It is especially handy for cutting the slots to hold the base and top and for shaping around the feet. The hinge recesses also came about on the router table but fitting the lock was a chisel and gouge job. I must admit I forgot about it until the box was glued up!

FRAMED IN FOUR WALLS

The walls are dovetailed to make a frame and then slotted inside to house the loose top and base panels. The box is jointed and glued before parting the lid from the base. This has the advantage of guaranteed alignment between lid and base, which is otherwise a tricky task.

Start by planning the type, size and layout of the dovetail joints between the walls. Try a few dummy runs first on

WHICH WOODS?

For this project I used three durable but very different woods. Visual interest comes from the exposed geometric side joints cut into the wild organic grain pattern of English oak (*Quercus robur*).

The oak panel in the lid is bordered by contrasting fine black ebony (*Diospyros crassiflora*).

A separate lining tray can be dropped inside. Made from soft, coarse cedar of Lebanon (*Cedrus libani*), its natural oils release a fresh scent as you open the lid, but repel most insects.

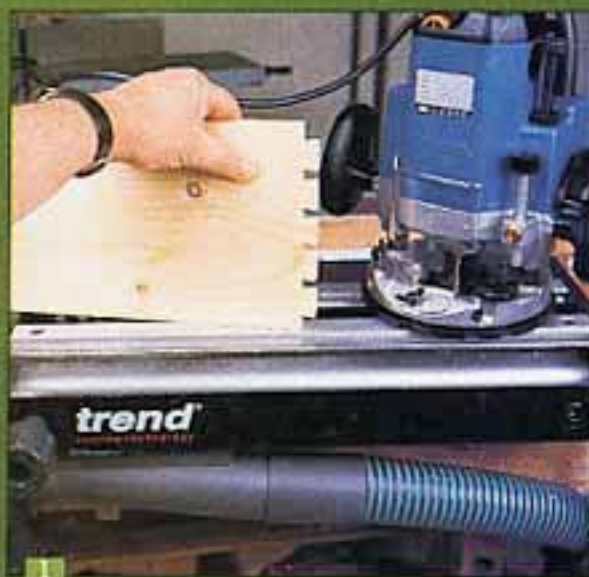
All the wood is kiln-dried so it will not self-destruct in a central-heated house.

With dovetailed sides framing top and bottom panels in loose housings, this is a traditional construction. A cut with a straight bit along the lower edge of each side, stopped at the corners, forms bracket feet while the gaps between feet provide grips for the weighty chest.

Although not a strongbox in the sense of a safe (the lock might discourage a 'nosy-parker' but nothing more serious than that), the finished chest is certainly a robust chunk of oak (*Quercus spp.*). It should be able to look after itself for generations.

THE TOOLS FOR THE JOB

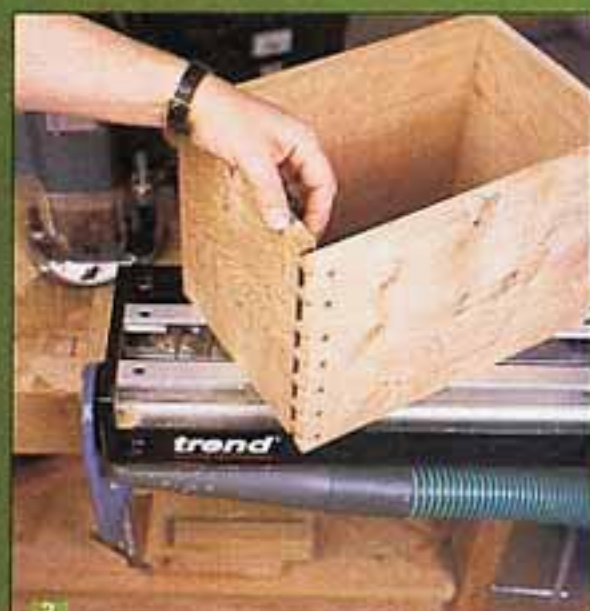
Although the dovetails were cut with a new type of variable-pitch jig (the Trend DC400), you can make this project with other types and makes of jig, adjusting the methods and dimensions to suit the equipment. For example, there is no reason why you should not use lapped-



1 Test out the dovetails on scrap wood first



2 Cutting oak dovetails on the jig



3 Dry-fit to check the joints

pieces of scrap or cheap wood. Make sure the joints hold well and the position of the tails fit the timber width.

Once you are confident, move on to dovetailing the real timber. The joints should be a snug fit – almost tight, but not so tight they cannot be knocked together and apart again without damage.

FEET FIRST

Use a straight cutter about 12mm (approximately $\frac{1}{2}$ in) to recess the underside of each wall and form the 'feet'.

Here is how I went about it on the router table. Set up end-stops to limit the travel and define the width of the feet. Dry-fit the carcass together so you have something to hold. Starting with the right-hand end of the timber pressed against its stop and the left end raised up, lower the left-hand end onto the cutter. Move the timber towards the left-hand stop then back again with moderate pressure against the fence to ensure it does not snatch on the return stroke. Finish by raising the left-hand timber end off the cutter before removing it from the table.

The resulting feet will have pointed lower corners, which looked likely to splinter, so pare them round with a razor-sharp chisel.

FROM TOP TO BOTTOM

The top is housed in a fine slot in the walls and given room to move a little with seasonal humidity changes. The central part of the lid is made flush with the wall tops. This requires the lower edge of the slot to be just the thickness of the top below the upper edge of the walls. The top is made from a 15mm- ($\frac{1}{2}$ in) thick piece of timber so the slot will not be too close to the edge of the walls.

The base is handled in exactly the same way, but the housing slot for it is positioned with the upper edge, 15mm

($\frac{1}{2}$ in) above the cutout between feet.

Mark out the inner edge of the lid rebate by using the four walls as a template. You must do this before gluing, with the dovetails pushed tightly together and checked for squareness. Now the lid and base pieces can be cut 3mm ($\frac{1}{8}$ in) larger than the inside of the carcass.

Dismantle the sides and rout 5mm- ($\frac{1}{4}$ in) wide x 5mm- ($\frac{1}{4}$ in) deep slots in the sides to house the top and base. Stop the slots short of the ends so they will not appear in the finished dovetails.

Make a lip on the top and base 5mm ($\frac{1}{4}$ in) wide by 5mm ($\frac{1}{4}$ in) deep. This is done on the table by routing a 10mm- ($\frac{3}{8}$ in) deep, 5mm- ($\frac{1}{4}$ in) wide rebate down each edge. Check the lip fits in the housing with some light friction and if necessary adjust with a fine block plane.

THE GLUE-UP

Make sure the internal surfaces are sanded smooth before finally putting the box together, it would be practically impossible afterwards! Leave the internals

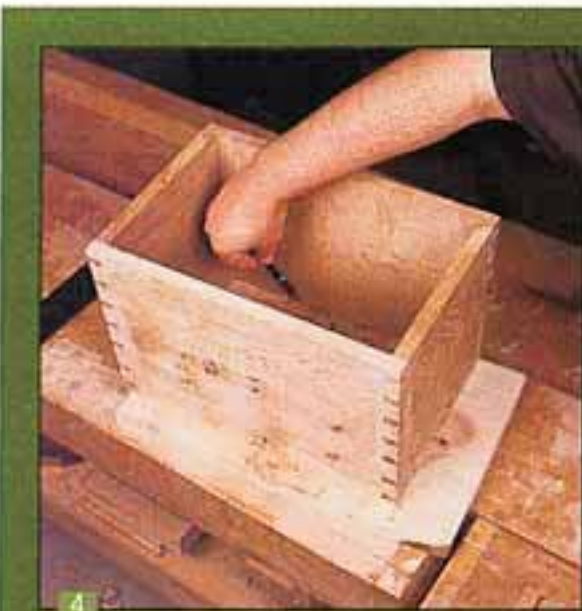
as bare wood, don't be tempted to oil or wax them otherwise they will smell stale with age.

At this stage, you have already put all the joints together dry and dismantled them so you know they fit without gaps. Use a small brush to glue the dovetails. Put a dab in the middle of the top and bottom panel housings – this will stop them rattling if they loosen as the timber ages.

In an ideal world, dovetails should be glued, knocked together with a soft mallet and that is that! In the real world, it is better to have a few cramps handy to apply light pressure and ensure the joints stay closed up tight. All the corners must be exactly 90° and if not you can adjust cramp positions to pull them in line.

STRINGING ALONG

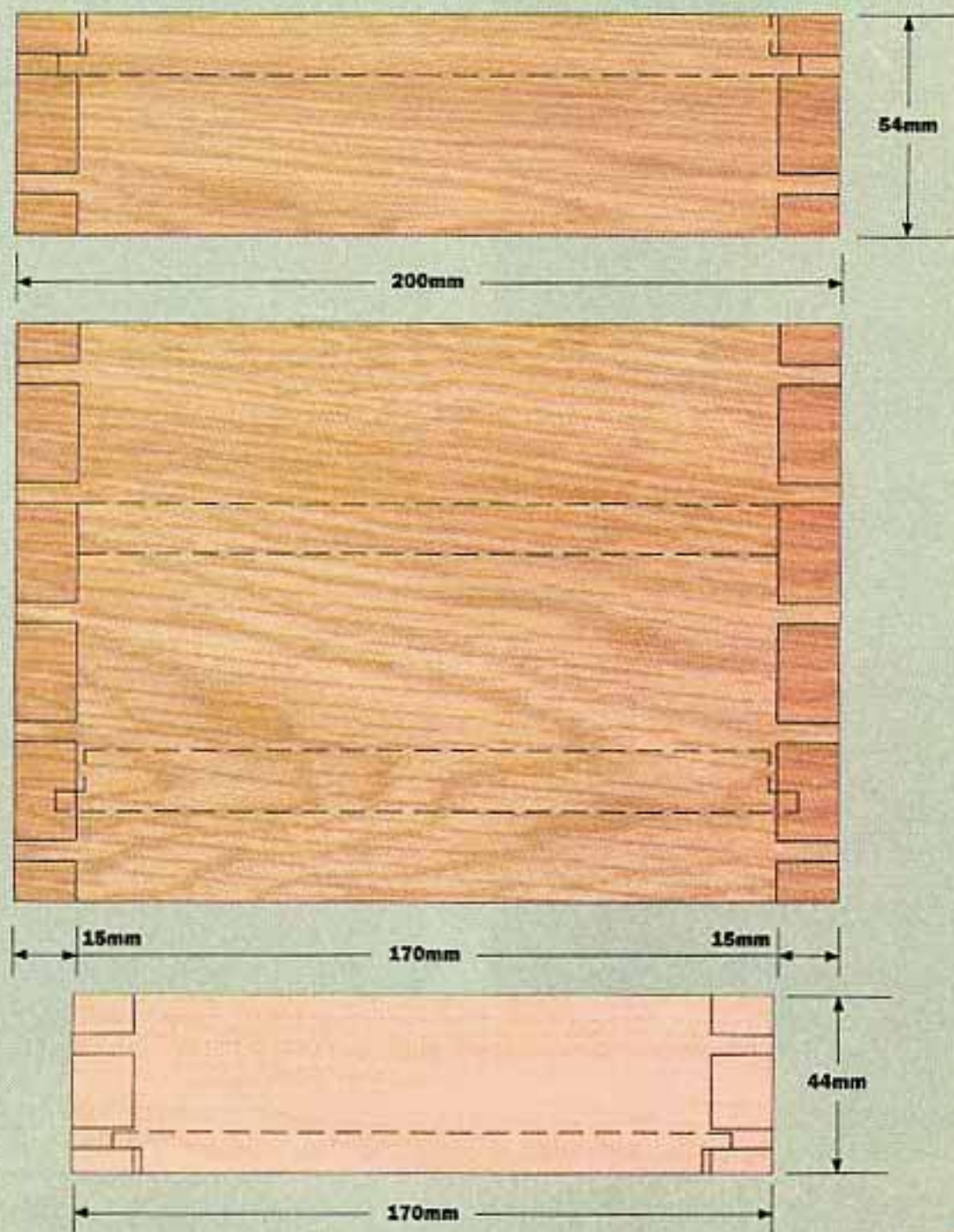
The expansion gap around the lid, which should be 2mm ($\frac{1}{16}$ in) wide, is disguised with a line of African ebony stringing. For a more glamorous treatment, you can use a patterned stringing made from two



4 Mark the internal size on the top and base, then cut 3mm ($\frac{1}{8}$ in) extra on each side



5 Cut a rebate around the top and base panels



“Please excuse me being a bit unconventional here... but it is worth oiling the box as soon as it’s glued up”

Danish oil is a mixture of natural oils and solvent that soaks into the pores of wood. It builds up a succession of thin layers leaving an impressive silky finish. The surface grain is still exposed to the touch (unlike varnish, which forms a clear skin outside the wood). The resulting finish is much more ‘woody’ than with varnish.

You can apply the oil by diluting it with white spirit then painting it liberally over the surface with a good-quality clean brush. It will spread like water, so make

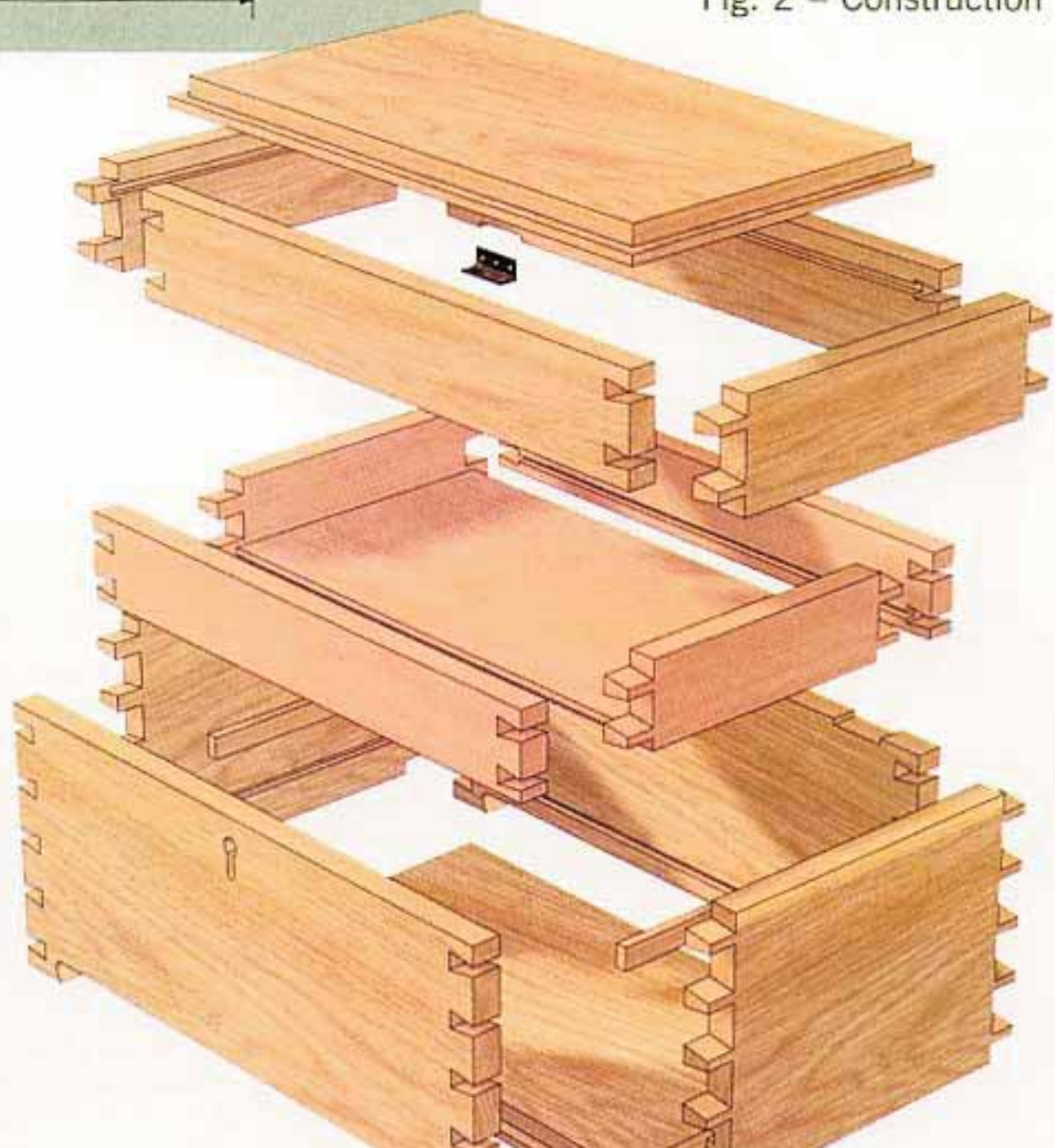
Fig. 2 – Construction

FROM START TO FINISH

Please excuse me being a bit unconventional here, talking about the finish well before the end of the project, but it is worth starting to oil the surface as soon as the joints are glued up, planed and sanded. That way even if, like me, you are a bit slow getting the internals made up and the brassware fitted, the time is not lost.



9
Ebony stringing being inlaid

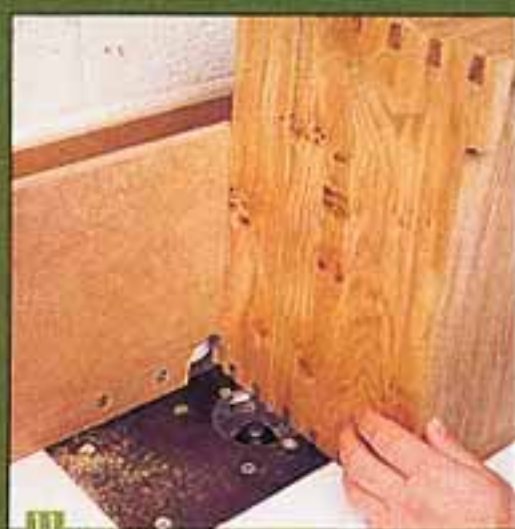


ROUTER THE INNER TRAY

The cedar of Lebanon inner tray is a simple shallow open box, through-dovetailed at the corners to frame a base panel, similar to the chest. Prepare the timber to length 1mm (1/16in) more than the internal dimensions of the main box and make sure it is square. Once the inner tray is glued up that extra millimetre can be planed off to make the tray a piston-fit in the chest. An oak beading glued inside the chest holds the tray at its chosen height.



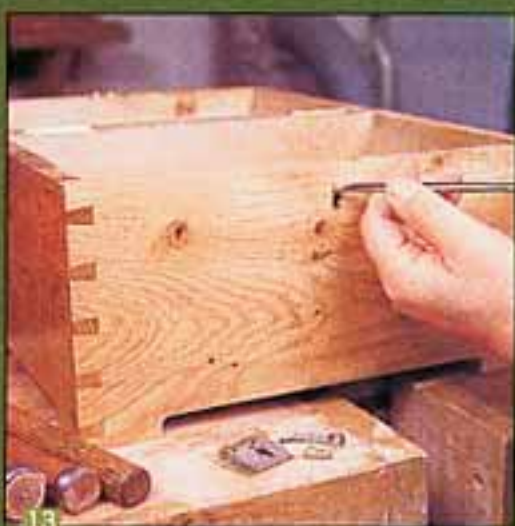
10 A fine straight cutter to separate lid from base



11 The lid and base are still joined, the final cut is by tenon saw



12 Hinges being positioned



13 Fitting the lock

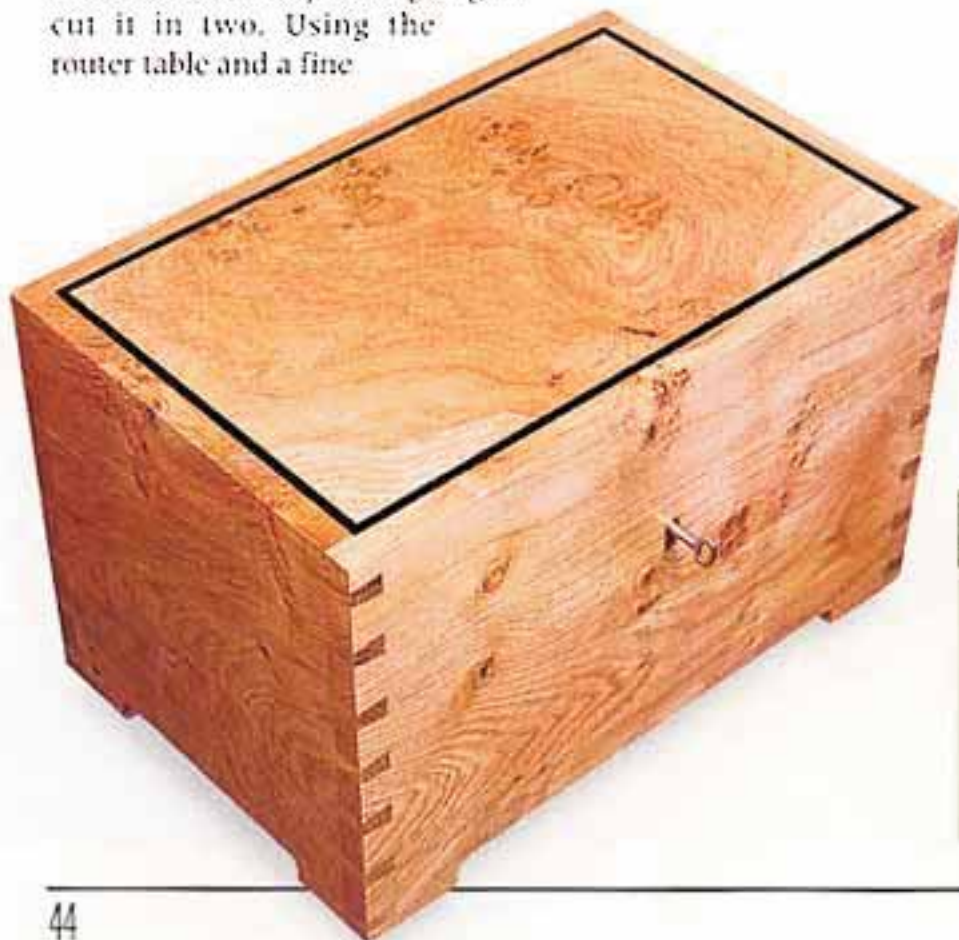
sure it doesn't dribble out of control. The important bit now is to leave it long enough to soak in, but not to let the oil dry up on the surface. Probably half an hour is enough, depending on the temperature but test it with a clean cotton rag and before it starts to drag, wipe all the oil off the surface.

An old cabinetmaker's rule of thumb is to apply oil once a day for a week, once a week for a month, once a month for a year, then once every year. I would not worry about following this to the rule, but the general idea is correct – the external surfaces of the chest needs to be oiled many times to build depth in the finish. Start with frequent additions that will soak in deep and finishing with an occasional replenishment of the surface layer that may otherwise rub away.

SEPARATING THE LID

This stage is a brave move – by now you have invested a good bit of effort in this hollow cuboid and you are going to cut it in two. Using the router table and a fine

straight cutter of, say 2mm (1/16in), it is easy to cut the lid off – but don't rush into it. There is danger of the cut going wrong as the two parts separate, either because they split apart and splinter or because they close in on the cutter leaving a groove. To avoid this cut with the router until four fine webs are left, one on each side, joining the lid to the base. The final separation is done with a tenon saw and the box placed lightly on a flat bench.



14 The knotty lid framed in ebony stringing

HINGES AND LOCKS

Polish the brassware with steel wool away from the chest before the final fit so you do not risk getting metal particles into the wood pores.

For maximum strength I chose the largest hinges that would fit. The hinge barrels are aligned with the pin centre just outside the back surface. The hinge plates cover the full depth of the rim so the recess for them was easy to cut on the router table.

You will need to get hold of a proper box lock – one that hooks into the striker plate rather than bolting into it as a normal door lock. Fit the lock first starting with the keyhole. Then, with the striker plate trapped in the lock, mark its position on the rim of the lid.

The little escutcheon around the keyhole is a snug fit. Nonetheless, it is a good idea to smear inside its cutout with epoxy resin before finally pressing the brass in place.

ROUTER AND FINALLY

The finishing process goes on with more coats of oil being applied and rubbed off to build a deep lustre. If you want a glossier surface, cut short the oiling after a few days, rub on beeswax polish with '0000' grade steel wool, then buff to sheen.