



Starting from scratch

Like any relationship, your ability with a scratch-stock will take time to flourish. But stick with it, says **John Lloyd**, and you'll never want to be parted from your hardwood lump again.

Why would anyone in the 21st-century be interested in using a dull, old fashioned piece of woodworking kit, like a scratch-stock?

As some of my students say, if it hasn't got a plug on it, complex electronics controlling a mighty motor, or something tungsten-tipped hanging out of it, it's not going to be anywhere near exciting enough to use. Well, if students

knew everything they wouldn't be students would they?

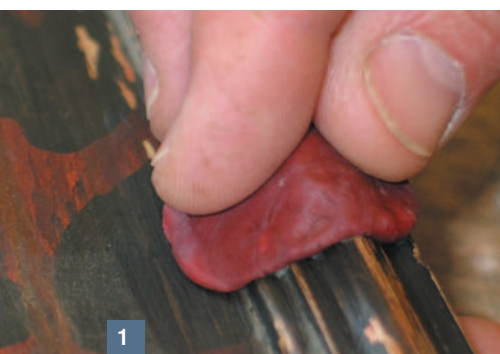
On the face of it however, I'm afraid I have to agree. A scratch-stock is not likely to induce anything approaching an adrenaline rush, but take a moment to consider the properties of this odd shaped lump of hardwood, and you might come to realise that it's actually a very cunning, versatile, little tool.

Above
Using an old jigsaw blade to make an inlay cutter

1 Applying dental moulding compound to make a cutter profile

2 Cutting the moulding square

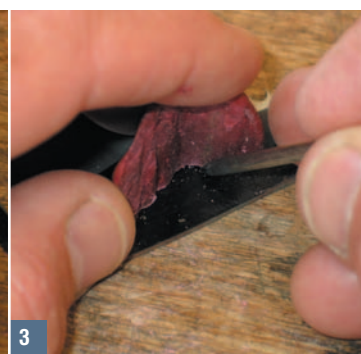
3 Scribing the profile on to the cutter blank



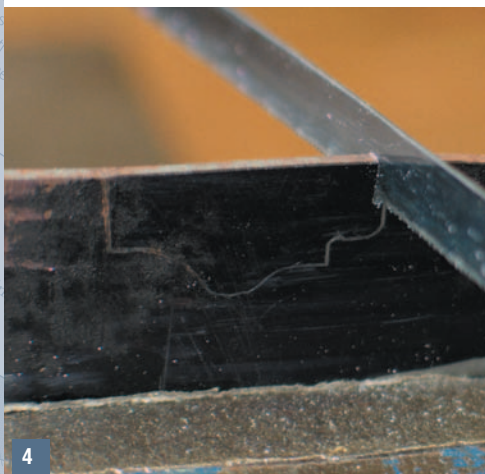
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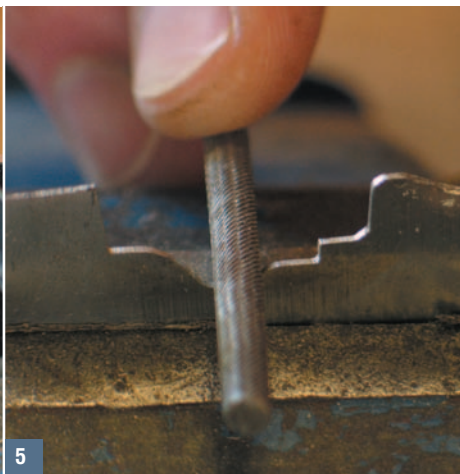


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4 Hacksawing the cutter profile out



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5 Final shaping with files



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6 Using a pencil line as a guide for the depth

7 Making a start



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8 Moulding nearly finished, note disappearing pencil line



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9 The finished moulding

10 Hacksawing a groove to create inlay cutting 'wings'

11 Rounding off with a file

12 Cutting an inlay groove

Low-tech router

If you haven't come across a scratch-stock before it's sort of low-tech router which, I suspect, is used mainly by furniture restorers. I'm not saying that a scratch-stock is a viable alternative to the router, as I have to admit to being the proud owner of three routers of various sizes. However, I suggest that it's a piece of kit that would also be useful for a furniture-maker. It does require a degree of skill to use and a bit of practice to master.

A scratch-stock is, in essence, just a piece of hardwood which is shaped to form a fence and then split in two, allowing a shaped metal cutter to be sandwiched between the two halves. The two sides are held together with a couple of screws. I have always

stuck with my basic model – why overcomplicate things unnecessarily?

Home-made

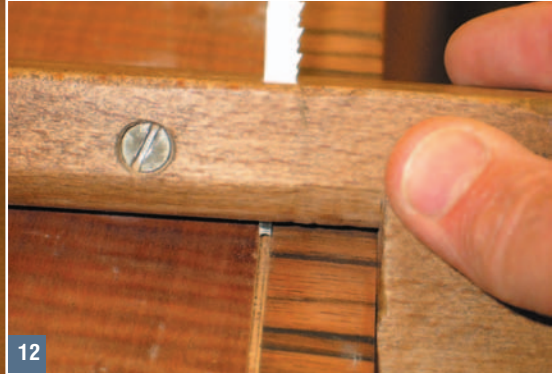
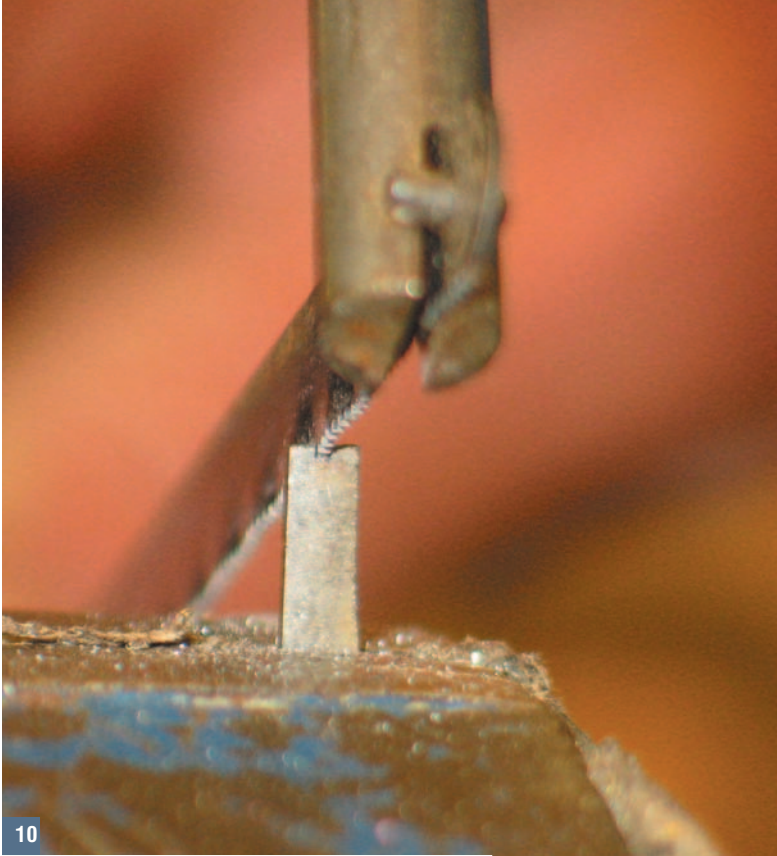
Historically, cabinetmakers would make some of their own tools as a matter of course, and the scratch-stock or 'scratch router' would have been one of the simplest home-made tools for them to create.

The shape would have been largely a matter of personal preference, depending, I suspect, on a combination of how much time they had on their hands and how much they wanted to impress visitors. They were used to run beads and mouldings around straight or curved edges, and also to run grooves for stringing and bandings.

Benefits

The stock itself is made from an offcut of hardwood, and the blade can be made from a bit of old saw blade or cabinet scraper which has the desired profile cut into it using a hacksaw and files.

There are several major benefits in having a scratch-stock for furniture restorers. For instance, if there's a bit of moulding missing on an antique, what are the chances of there being a router cutter that would be exactly the same shape? Realistically, nil. The shapes of modern router cutters are usually a bit bland and lifeless as well, compared to, for example, a Georgian moulding. And even if an exact match could be found, the end result would probably be too straight and perfect to match



the hand-cut original. It probably wouldn't make commercial sense to buy a new router cutter to make 6ins (150mm) of missing moulding. For cutting a groove for a stringing repair, a scratch-stock is a much less terrifying prospect than using a router. One slip on an original 250 year-old surface with a screaming router is guaranteed to ruin your day!

When I'm making furniture I will often use a scratch-stock instead of a router, partly because I already own one, but also because they are much less anti-social.

Cutter

Having made your scratch-stock (see *panel*) constructing a cutter is the next hurdle. Old saw blades,

cabinet scrapers, or even old style spindle moulder cutters work well for mouldings, and old jigsaw blades are good for grooves. When copying an existing moulding, an accurate copy of the original profile is required. One of the few benefits of having children is that there is likely to be some plasticine in the house. It can be used to transfer the profile, but the downside is that plasticine stays pliable and is, therefore, liable to change shape during the transferring process.

A better bet is dental moulding compound. However, that too has a snag – a visit to the dentist is required! Dental moulding compound is thermoplastic, so soften it in hot water and then press it against your original moulding and leave to harden. Care should be taken when using this stuff on original surfaces though. If it's applied too hot, it will damage the polish. I generally put a little paste wax on the surface of the moulding to dissuade the compound from trying to attach itself permanently.

The shape of the moulding is then transferred to the piece of steel being used as the cutter. Colour the cutter with a marker pen to make the shape more visible before scribing the shape onto the steel. To shape the cutter,

Making a scratch-stock

Making a scratch stock is not very taxing. It takes just a couple of minutes using a band saw. For a general purpose scratch-stock with a single fence, a piece of beech about 200 x 55 x 35mm (8in x 2 $\frac{1}{4}$ in x 1 $\frac{1}{2}$ in) will do the job. Create the fence by making two cuts on the band saw. One should be across the grain, about 80mm (3 $\frac{1}{4}$ in) in from one end, and extend halfway across the width. The second cut should again be to half the width but this time should run along the length of the piece to meet up with the first cut, thus creating a sort of lumpy 'L' shape. Whilst still in one piece, drill and countersink the pilot holes for the screws. It's a good idea to fit the screws into the drilled holes, although moving straight on to the next stage without removing them again is likely to have a nasty effect on the band-saw blade.

Next stage

The next stage involves splitting the scratch-stock in two, right down the middle. The two halves can then be screwed together again with a couple of fairly meaty screws. Having created the basic shape, it needs to be slightly enhanced to make it work properly. The underside, adjacent to the fence, needs to be rounded-over along its length. All the sharp edges on the top and ends need to be softened to prevent drawing blood or creating blisters, which will make you think that scratch-stocks aren't such a brilliant idea after all!



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13 The stock blank cut out



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14 Splitting the stock



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15 Shaping the long face to give clearance

16 Finished scratch stock along some old favourites

use a combination of hacksaw and various shapes of files – warding or needle files work well for this. The cutting edge should be cut square so that it cuts from either direction when mounted in the scratch-stock. Having completed the profiling, flatten both faces of the cutter on a bench stone to give a really sharp cutting edge.

Using a scratch-stock

As mentioned earlier, using a scratch-stock requires a sensitive touch, particularly when it's being used for letting in fine lines. Cradle the thick end of the stock in one hand, and support the thin end with the other. With the piece securely restrained, hold the fence against the edge of your work.

Then, in an action similar to that used with a spoke shave, hold the blade away from the surface and rotate the stock so that the blade makes contact with the piece as it gains momentum.

It's almost impossible to get the cutter cutting from a standing start. At the end of the cut rotate the blade back out of the groove, and bring the stock back to the start point. Repeat the process until the cut is complete.

The skill lies in keeping everything aligned whilst twisting and moving the scratch-stock back and forth.

Inner glow

With a bit of practice you'll form a strong bond with your odd shaped bit of hardwood. You'll also get that nice warm inner glow of the true craftsman every time you use it – possibly after thinking it might be more use in the wood burner! **F&C**



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Parallel-sided cutters

Narrower, parallel-sided cutters for cutting grooves and for letting in lines and bandings can be made from old jigsaw blades. Remove the teeth and get close to the required width with a bench grinder, and undertake a bit of fine tuning with files. A cutter with a square end is going to be fine for getting into surfaces along the grain, but if it was used across the grain, or perhaps on a cross banding, the edges will tear out giving a less than crisp result.

Use the same sort of theory as with drill bits – to get a nice clean edge to the groove requires some spurs on the cutter.

Spurs can be successfully added to very narrow cutters. To get the spurs started, make a shallow cut in the middle of the cutter with a junior hacksaw

and use this cut to locate a fine, round, needle file used to create a concave shape which, if extended right to the edges, will result in two spurs.

The spurs can be filed off while the cutter is still in the stock, and then running the cutter in the groove again gives a square-bottomed groove.

Controlling the depth of cut is sometimes just a case of hanging the right amount of cutter out of the stock. Whilst this can be effective for cutting grooves, I find that moulding cutters don't work effectively unless they are hanging out a bit. So to control depth of cut for mouldings I run a pencil line along the top edge of the work piece. When the pencil just disappears, the moulding is done.