

# Creating Bridle joints

Michael T Collins takes us through creating the corner bridle joint for a door and the 'T' bridle set mid-way in a rail

**T**he number of ways that you can join two pieces of wood together is nothing short of staggering, and the plethora of names for each method can be mind numbing. In the last issue, we looked at creating half-lap joints but here we'll look at making bridle joints.

This joint is most likely named after a horse's bridle because its appearance replicates the way a bridle fits into the horse's mouth.

Just like a traditional mortise and tenon, in a bridle joint a tenon is cut on the end of the rail and a mortise is cut into the stile to accept the tenon. The fundamental difference is that the mortise fully extends through and out the top of the stile – it is sometimes called a slip tenon. The photo here shows a well-worn bridle joint in a bathroom cabinet.

Bridle joints can be used anywhere you might use half-lap or mortise and tenon joints. They are very strong and a good choice for jointing thin stock, especially where a lap joint would not offer strength and a mortise and tenon would be too small. I have even seen double bridle joints used in the construction of chairs, joining arm and leg in one flowing piece. As a general rule, a bridle joint can be used in place of a lap joint, but a lap joint should not be used in place of a bridle joint.

As with the half-lap joint, there are many variations in the bridle joint. In this article, I will take you through the steps of creating the corner bridle joint for a door and the 'T' bridle set mid-way in a rail.

PHOTOGRAPHS BY MICHAEL T COLLINS

Bridle joint on an old medicine cabinet

## Michael T Collins

British-born Michael has been working with wood off and on for 40 years. He moved to New York in 1996 and over the years, has made bespoke furniture, including clocks, inlay work, Adams fireplaces, book cases and reproduction furniture.

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## MAKING A BRIDLE JOINT

Throughout this series, we have been slowly adding to your woodworking skills and at the same time, adding the necessary tools to your collection. You may be pleased to hear that your toolbox already has all the tools necessary to make this joint.

The skills and techniques learned in the previous issues are readily transferable to making a bridle joint; in fact you will see that they are the same skills with some new techniques added to the mix.



The tools needed for making a bridle joint

### Preparation

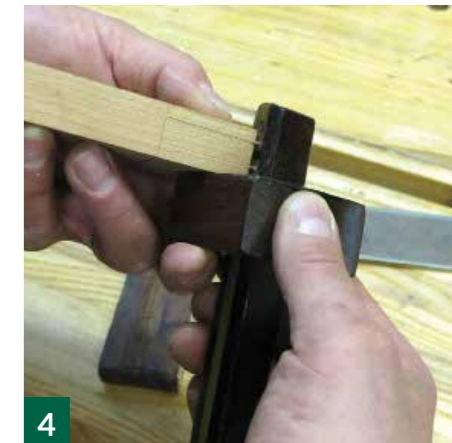
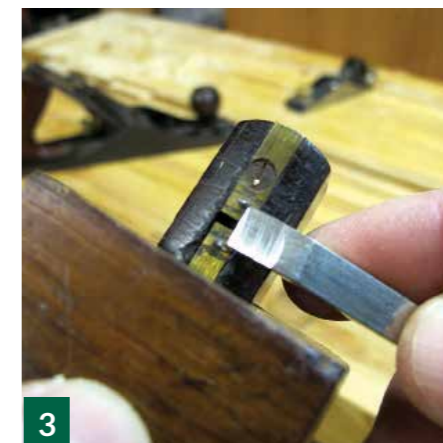
**1** Start with your wood cut, squared and planed to size, leaving each piece 1-2mm longer than required for waste. My stock is 22 x 63mm cherry (*Prunus serotina*). Mark the face side and face edge on all pieces – you can also use an elongated cabinetmaker's triangle; this will help keep the parts orientated.

**2** The mortise location is simply the width of the rail plus 1mm for waste. You do not need to measure – just use the rail, pencil and try square to mark the location of the mortise. I always use a pencil to mark mortises. Again, leave an extra 1mm or so at the end for waste.

**3** Set the mortise gauge using the width of your chisel – in my case 10mm. The size is also dependent on the width of the stock – a good rule is that the tenons should be greater than a third, but less than half the width of the stock.

**4** The tenon location is marked using the width of the stile. Gang the rails together and using the stile, try square and a marking knife, scribe the location on all sides, but don't forget to add 1mm for waste. Adjust the mortise gauge so that the tenon is in the centre of the rail. Scribe the tenon, from the face side.

**5** With the same mortise gauge setting you used to mark the tenon, mark the mortise on both edge and end grain from the face side. If you look closely at the bathroom cabinet joint on page 22, you will see that it is slightly offset towards the door's outside, illustrating that you should always mark from the face side. By doing this, you are almost guaranteed to produce a joint that is flush. This is another 'secret' of woodworking. ▶



### Which came first – the mortise or the tenon?

If all your joinery is perfect, then it will make no difference whether you cut the mortise or the tenon first. However, woodworking is not an exact science and perfection is a rare animal. So chopping the mortise first has several advantages:

- a) They are easier to layout
- b) It is easier to make a tenon fit a mortise, than vice versa.



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### Drill the mortise

Unlike a housed mortise that needs to be chopped out, a bridle joint is opened and a different method can be employed. While you can place the stile on the bench hook and drill the hole from above, I have never found this to be very accurate since you have to be able to keep the drill vertical, while seeing all directions – not an easy feat. Instead, I like to place the stile vertically in the vice so that the mortise location faces towards you and the location of the hole is about waist height. With your brace and 10mm spiral bit, drill a hole at the base of the mortise – make sure that you position the bit so that the drill bores a hole that touches the three marked lines and is perpendicular to the edge.

6 When starting out, a simple way to keep the brace and bit horizontal is to place a washer over the bit – if the drill is horizontal, while turning the brace, the washer will remain in one



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place. You only need to make sure the drill is perpendicular to the face – you can use a try square – as the washer makes sure it is horizontal.

7 Drill through the bottom of the mortise until you can just see the point of the bit poking through the other side. Turn the wood round and drill from the other side; this will prevent any tear-out. Before withdrawing the bit, back it off a few turns. You can also use this method to hog out the waste in regular mortises – use tape to mark the bit to gauge the depth. Once the hole is drilled, saw the rest of the mortise in the same way as with the tenon – on the waste side.

8 Lastly, using your mortise chisel, clean up the mortise base from both sides to avoid tear-out.

### Cutting the tenons

9 Cut a 'V' groove on the waste side of the shoulder line using a chisel;



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this will give you a place for the saw to cut and produce a very clean shoulder. Using a bench hook and a tenon saw, you now begin to cut down to the tenon marks. Place the rail in the vice at 45° and rip down on the waste side to the ends of the scribe marks using a dovetail saw. Turn the wood around and again saw at 45°, using the kerf as your guide. Lastly, saw vertically down to the shoulder and the waste should fall away.

10 You need to repeat this for the other cheeks. This should be sounding familiar – repetition is good for you, so they say – but more importantly, with each repeated action, your skills will develop, be reinforced and become natural over time, thus making you a better woodworker. This joint is going to be visible on two faces so you will need to clean the mating faces with a chisel. If you look carefully at the tenon in photo 10, you can see that the scribe lines are still visible.



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11 The secret of a good fit is crisp lines. To clean, pare from the scribe line to the tenon. The cheeks can be pared a little at a time and the fit checked often.

12 If you have trouble seating the tenon in the mortise, then you can chisel a very shallow concavity in the bottom of the mortise. Once the joint is finished,

you can square, glue and clamp it. Finally, plane off the waste – note the direction and angle I am planing here; as before, using this technique will avoid tear-out.

13 Take your time and you will be able to produce crisp clean joints. You can experiment with double and angled bridle joints – you can even peg the joints.

## 'T' BRIDLE JOINT



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1 Not only is the 'T' bridle joint strong, but it allows the grain of the rail to flow through the joint, giving a much nicer appearance. It is also easier to cut when the rails are curved. Photo 1 shows an inlaid side table with two 'T' bridle joints connecting the legs to the rails.

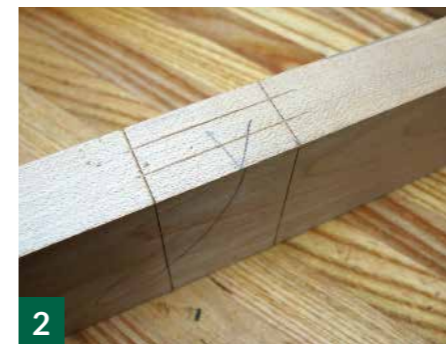
2 A 'T' bridle joint is made in much the same way that we cut the corner bridle, only this time the tenon part of the joint is moved along the rail. Mark out and cut the mortise as before. The 'tenon' should also be laid out as before, using the mortise gauge to mark the location. Use the

try square and marking knife to scribe the joint.

3 Pare away from both sides, checking the fit from time to time.

4 If the stile is thicker than the rail, marking from the face side will still produce a flush joint. If you are adding a reveal, you just need to add the amount of the reveal to the distance between the movable spur and the gauge's fence.

So get the bit between your teeth and have a go at making some bridle joints!



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### NEXT MONTH

Michael shows how to build a simple panel door using many techniques and joints learned so far. ■