The pivotal moment

Don't let badly fitted hinges ruin your work, says designer-maker **Chris Tribe**, who reveals his fine furniture maker's technique

Badly fitted hardware can spoil the look of an otherwise well-made piece of furniture. How often have you opened a beautifully made cabinet door and been disappointed to see sloppily fitted hinges or locks? The positioning of hinges can also have an impact on the overall appearance of the piece – if they are set equally into stile and frame they break the elegant line of the door.

Being able to achieve neatly fitting hinges is more important, then, than you might think.

Joiner's methods

Traditionally joiners fit hinges so that the leaves are set equally into both the stile and frame. The recessing helps to support the door on the hinge, rather than relying on the screws alone. However the hinges span the join between door and frame, breaking the line of the join (**Pic.2**), which probably isn't all that important in joinery.

Another traditional joiner approach is to recess the hinge entirely into the door stile. This moves the hinge over to give a clean line between door and frame; also, moving the pivot point means the door is less likely to catch with the frame edge on the opening side.

However the deep hinge recess has to be chamfered to avoid binding, which looks rather untidy and, as it is not recessed in the frame, it is relying entirely on the screws for support (**Pic.1**), which isn't ideal

The following method of fitting hinges gives the best of both worlds and is often seen on fine furniture.

A finer approach

The door should first be planed to fit – a gap of 1 to 1.5mm all round is reasonable. Start by fitting the hinges into the doors and deciding on the position of the hinge; in line with the inside edges of the rails is usually appropriate for the top and bottom hinges. Offer the hinges up in the chosen positions and mark lightly with a pencil (**Pic.3**). Lightly square the pencil lines across the door edge and face (**Pic.4**). Set a marking gauge to the width of the hinge to the centre of the hinge pin, less 0.5mm (**Pic.5**), and gauge between the two pencil lines.

Set the marking gauge to the thickness of the hinge, again less 0.5 mm, and mark the thickness between the pencil lines. It is worth using two marking gauges for this operation to avoid having to reset and is insurance against the inaccuracy this can involve. Reposition the hinge and mark by pricking with a scalpel or marking knife (**Pic.6**) then square round using a marking knife – accuracy is paramount here.

The position of the hinge should first be marked in pencil to indicate where the gauge line should extend, otherwise you may be left with overshot gauge lines. Some people prefer to use a cutting gauge for this operation as it leaves a cleaner line than an ordinary marking gauge, but you'll need to ensure that the flat edge of the gauge blade is facing out.

▲ Pic.1 **A traditional method is to recess the hinge entirely into the door stile, but the recess has to be chamfered to avoid binding and it has to rely entirely on the screws for support**

Cutting the recess

Next you need to cut the hinge recess; it will slope from the full depth of the gauge line at the front to the thickness of the hinge plate at the back. Using a tenon, dovetail or Japanese saw make a series of cuts into the waste, being careful not to overshoot (**Pic.7**); saw slightly shy of the knife lines. Chop down with a sharp chisel to further break up the waste (**Pic.8**) and then pare away. A very sharp chisel gives more control here; it is important not the over shoot and cut away the back of the recess. Breaking

▲ Pic.2 **Another traditional method is to set the hinge's leaves equally into both stile and frame. Surely there's a 'third way'? Read on...**

▲ Pic.3 **Place the hinges in position and lightly mark out using a pencil...**

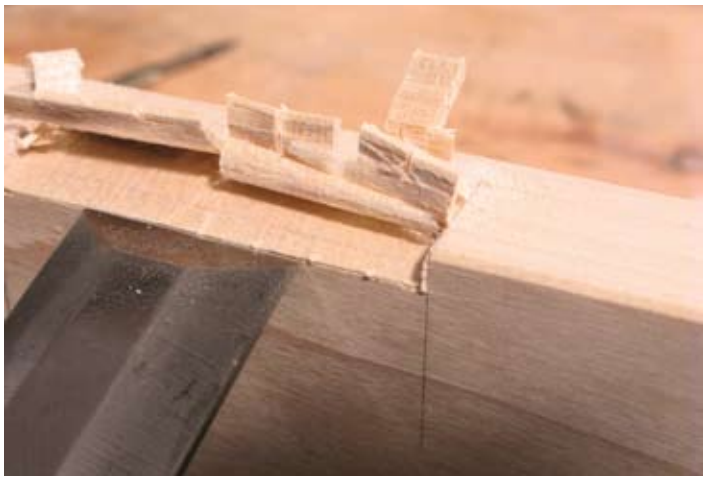
▲ Pic.4 **...then, again lightly, square the pencil lines across the door edge and face**

▲ Pic.5 **Setting a marking gauge to the width of the hinge to the centre of the hinge pin, gauge between the pencil lines**

▲ Pic.6 **Repositioning the hinge, prick with a scalpel or marking knife then mark around**

▲ Pic.7 **Make a series of cuts into the waste using a saw, sawing slightly shy of the knife lines**

▲ Pic.8 **Break up the waste with a sharp chisel and then pare away**



▲ Pic.9 **With paring out the recess, creeping up on the bottom gauge line is the best approach**

▲ Pic.10 **Take the same approach with the line at the back of the recess, chopping down only when a smidgeon remains**

up the waste with saw and chisel assists with this and holding the chisel between forefinger and thumb with the forefinger against the wood, as illustrated, gives fine control. Do not try to chisel directly to the bottom gauge line, creep up on it and only engage the chisel with the line when there is the merest smidgeon to remove (**Pic.9**). Similarly, with the line at the back of the recess, pare up to it then turn the chisel and locate it in the gauge line and chop down only when there is a small amount of waste left (**Pic.10**). Finally locate the chisel in the knife lines at either end and remove the sliver left by the saw (**Pic.11**).

This creeping up and only cutting to the line when there is just a sliver left is a basic rule of all paring operations; if you try to pare away large pieces there is a danger that the slope of the top of the chisel will push it beyond the gauge line.

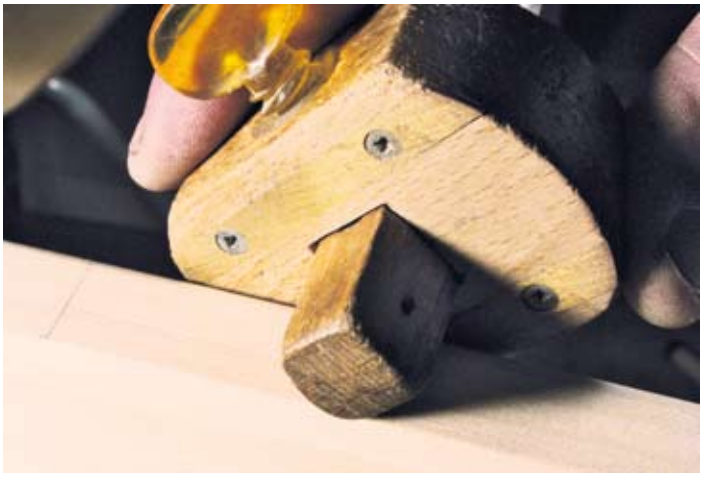
Perfect fit

You should now have a clean accurate recess for the hinge flap in the door edge. Offer up the hinge and carefully trim the edges if it does not fit. Check particularly the seating of the edge of the hinge flap against the back of the recess. If all is well secure the hinge with one screw. Positioning the screw is critical as if it is not central the hinge can be pushed away from the back edge of the recess. Use an awl

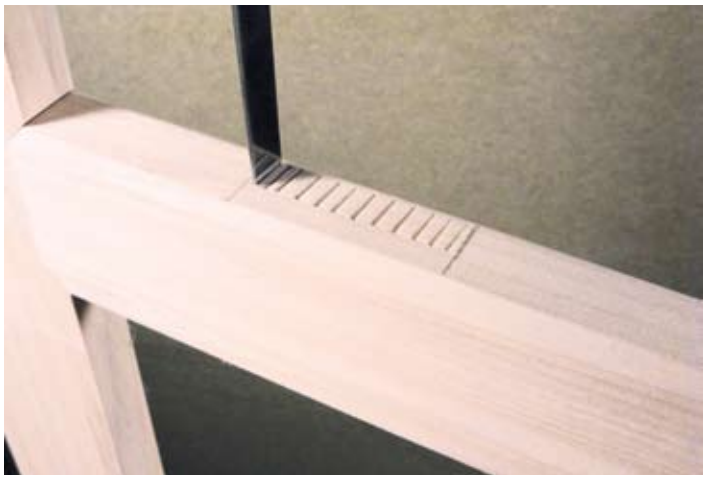
▲ Pic.11 **The last task is to locate the chisel in the knife lines and remove the sliver left by the saw**

▲ Pic.12 **Use a scalpel or marking knife to mark the hinge positions on the edge of frame**

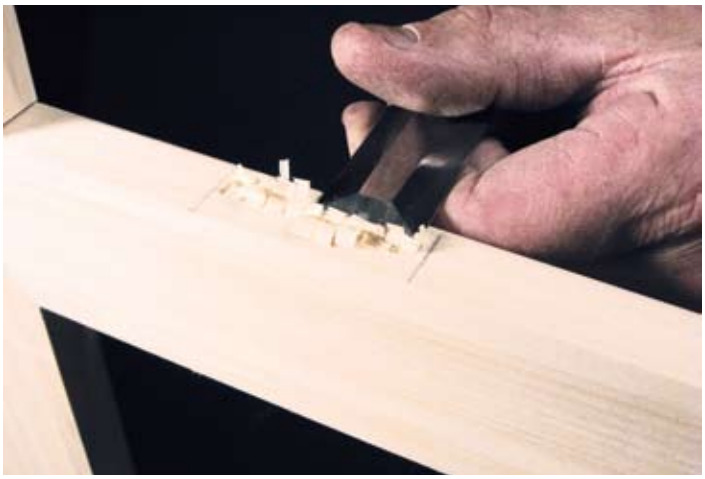
▲ Pic.13 **Lightly square the marks across the frame using a pencil...**



▲ Pic.14 **...and then mark the width of the recess between the pencil lines with the marking gauge**



▲ Pic.15 **Chop the waste out vertically with the edge of the chisel just touching the gauge line**

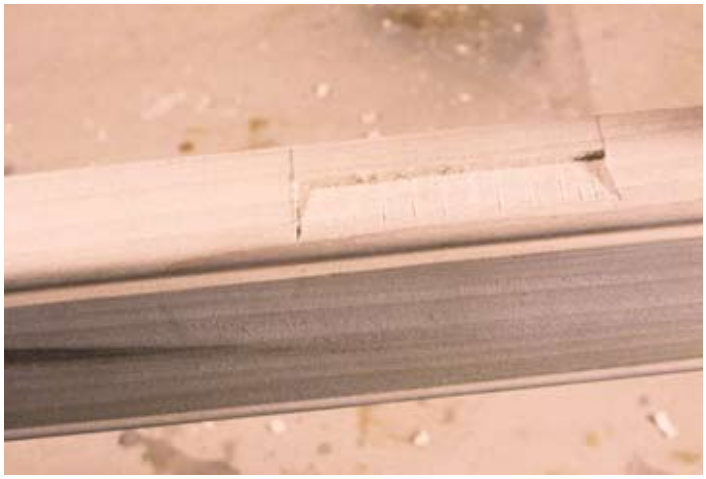


▲ Pic.16 **Pare at an angle, stopping just short of the gauge line to create the sloping from front to back**

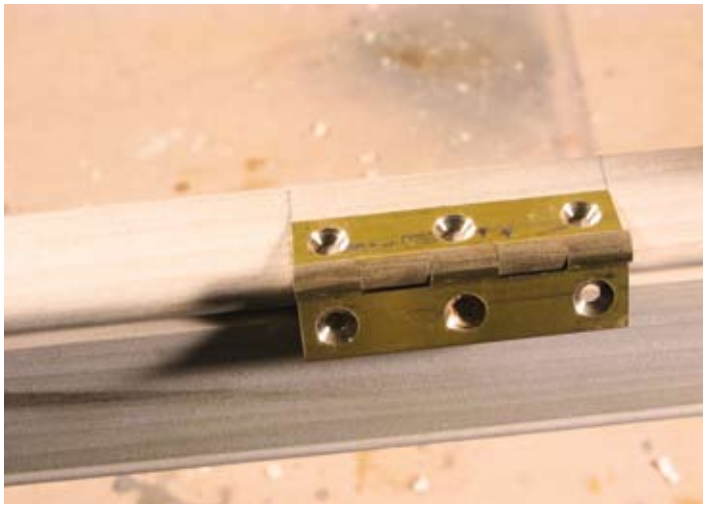
or point to make the centre of the hole then pilot drill. Alternatively use a self-centring drill.

The door can now be offered up to the frame with the flaps open and the hinge positions marked. It has to be lifted so that there is an equal gap at the top and bottom of the door. A steel rule works about right if the gap is 1mm. Mark the hinge positions on the edge of the frame using a scalpel or marking knife (**Pic.12**). Lightly square the marks across the frame edge with a pencil (**Pic.13**) then mark the width of the recess between the pencil lines with the marking gauge as it was set for the door recess (**Pic.14**). Square across the previously marked hinge positions with a scalpel or marking knife.

The recess in the frame will taper from nothing at the front to the thickness of the flap at the back. Obviously you can't use a saw for this job, the waste should first be chopped vertically with the edge of the chisel just touching the gauge line, stop just short of the knife lines (**Pic.15**). Then pare at an angle stopping just short of the gauge line to create the sloping from front to back (**Pic.16**). When you have pared to the flap thickness turn the chisel vertically and carefully chop down the back line. Chopping the slivers from the end knife lines completes the recess (**Pic.17**) and the hinge can be checked for fit (**Pic.18**).



▲ Pic.17 **Complete the recess by chopping the slivers from the end knife lines**



▲ Pic.18 **Check the hinge for fit**

▲ Pic.19 **The hinge could have been recessed into the frame bead, but here the vertical lines are uninterrupted**

Screwing together

The door can now be offered up to check for fit. If there is any problem, think carefully before you ease either of the recesses, try to ensure that the position of the door is not changed vertically so the gap top and bottom is kept equal.

Secure the hinges with again one screw per flap and check the position and opening of the door. Particularly ensure the gap is equal all round and that it closes into position equally top and bottom on the opening side, if the door or frame are slightly twisted this may be an issue. You can try a bit of limited correction by recessing further back the hinge diagonally opposite the corner that is inset.

When you are happy with the door position, fit the rest of the screws. Lining up the position of the screw slots is a nice touch. The reason why the hinges are secured with only one screw initially is to allow the later screws to be used for final positioning.

The hinge should be sitting in the stile of the door and not breaking up the line of the door. In the example the hinge could have been recessed into the frame bead, but I think it looks better if all the vertical lines are uninterrupted (**Pic.19**).

Router shortcut

One shortcut for those who like using machines is to use a router for cutting the back line of the recess. Initially set a gauge to the width of the flap as described earlier and on a piece of waste mark the recess width. Set the fence on a trimming router with, say, a 3mm cutter so that the cutter just kisses the gauge line. Set the depth to the thickness of the flap; this can be done by inserting the flap into the depth stop and dropping the stop onto it (**Pic.20**). Now use the router to cut a groove at the back of the recess – this should give a good clean line (**Pic.21**), especially if a packing piece is clamped to the back of the door to stablise the router.

▲ Pic.20 **Set the depth to the thickness of the flap by inserting the flap into the depth stop**

▲ Pic.21 **Rout out a groove at the back of the recess, leaving a good clean line**