

# HOW TO INLAY PURFLING

**KAI-THOMAS ROTH** explains the delicate process of adding inlaid decoration

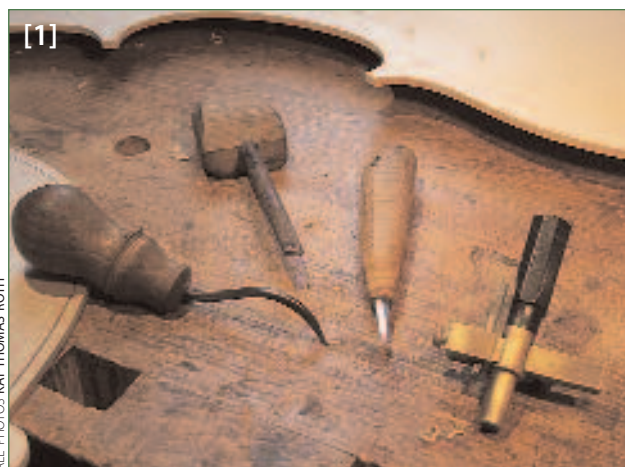
Following my description of making purfling (Trade Secrets, September 2007), I will move on to describe my method of inlaying it around the edges of the table and back of stringed instruments.

From the early days of its use, this inlay has had both a decorative and a structural purpose. Here, I will concentrate on what has become the aesthetic and technical standard: one strand of purfling around the edge of each plate.

Some of the more cost-conscious makers in previous centuries avoided purfling the back of the instrument altogether and instead

scratched or inked on a fake inlay to save work and time, but with later wear this decoration often disappeared in places.

Purfling plays an important structural role for spruce tables in particular. This inlaid strengthening across the grain prevents cracks from developing inwards from the bottom or top edges. Cracks that develop from the f-holes or elsewhere on the inside area of the plate are stopped at the point where they meet the purfling. This makes repair easier at a later date and ensures that the separated parts remain in register.



ALL PHOTOS: KAI-THOMAS ROTH

[1] Handmade tools: (from left) pick, dabber, knife blade and marker

[1] I have made all my own tools for my method of inlaying, since no satisfactory ones were commercially available at the time I started doing this work. I have a 6mm knife blade sharpened to a long, straight-edged, double-side-ground point, and fitted with a wooden handle. My purfling pick is made out of 5mm silver-steel, shaped in such a way that the index finger of my left hand can lift the tool easily when picking out the channel. The chisel edge of the pick is 1mm wide and the tool has a substantial turned handle, giving good control. The steel was hardened and tempered after shaping.

My purfling marker is in effect a miniature marking gauge that takes two 3mm blades. The stop, which moves along the edge of the plate, is cylindrical in shape with a diameter of 10.5mm but has a palpable flute aligned with the direction of the beam. I made this from brass and ebony in my college days and have used it ever since. My fourth essential tool is a dabber made from an off-cut of pernambuco (from the end of a bow-stick) flattened on two parallel sides to form a 3mm edge, with a large handle fitted to it.



[2] Marking the purfling channel, using the purfling marker to follow the edge

[2] My method of inlaying, which I learnt at college and still prefer, is to establish the exact outline for the plates from the rib structure of an instrument constructed on an inside mould. This differs from the method the Cremonese makers employed. They only finalised the edges and corners of their plates once these had been glued on and then inlaid them after that. Instead, I prefer finalising the outline and inlaying my plates completely before properly arching or hollowing them.

I set the purfling marker according to the desired distance between the outside of the inlay and the edge. The blades can be adjusted in distance relative to each other by adding or taking away shims, but I rarely have to change the measurement because I use the same width of purfling for violin, viola and cello. My purfling channel is not so wide that the dry purfling can move about in it, but it is not very tight either. I do not like having to use filler afterwards so I try to work accurately at this stage.

I do this marking with a relaxed hand, several times over, until I have easily recognisable cuts. When carrying out this step, I always



[3] Marking the purfling channel in the button area on the back

make sure that the beam of the marker remains at right angles to the tangent through the point at which the stop touches the edge, thus keeping the marked line equidistant to that edge. The notch in the stop makes it easier to feel when this is correctly aligned.

[3] It is not possible to use the gauge to mark the button area on the back, so I use a template made from thin plywood. It is important to ensure that the curves remain continuous, without wobble, as every bit of unevenness shows up markedly when the purfling is inlaid.

[4] Not all corner designs require a purfling 'bee-sting' but where this is needed the line of the purfling cannot follow that of the marker all the way into the corner. I use a wide, shallow gouge matching the required curve to correct the marked line. The marked line in the C-bout does not need to be corrected in this way.



[4] Marking the purfling 'bee-sting' using a wide, shallow gouge

[5] Next, I use a sharp-pointed knife to incise both marked lines evenly and at the same time. I like to let the inlay go as deep as two-thirds of the full depth of the plate, except in the button area, where I try to avoid going further than half-depth. With sycamore in particular, there are several stages to picking out the channel: I cut with the knife, lift out a certain depth of channel with the purfling pick, and then repeat the process until I achieve the desired depth.

[6] I next scrape each individual strip of purfling on both sides, then bend them on a hot bending-iron. I then cut them to fit using my bridge knife, on a boxwood end-grain block.



[5] Lifting out the channel to the correct depth with the purfling pick



[6] Cutting the purfling strip in preparation for inlaying



[7] Adjusting the purfling to ensure it fits properly in the corners

[7] The next task is to adjust the joints in the corners until they fit properly. It is crucial that the strips in the C-channel in particular are not too long: when gluing, things swell slightly and bulking-up can occur. If this happens, the strip cannot then be forced into the channel. The strips of purfling in the top and bottom bout on the table do not need joining (for instruments with a modern set-up) but on the back I join them with chisel edges that overlap with each other in the channel. I prefer joins to be at the extremities of a bout, where the edge is least vulnerable to cracking.

[8] When all fits well 'in the dry', I remove the strips again and apply thin hide glue to the channel with a modified breakfast knife, taking care not to spill too much. I dip both parts of the corner joint into that glue and then push both evenly home into the corner and then down into the channel.



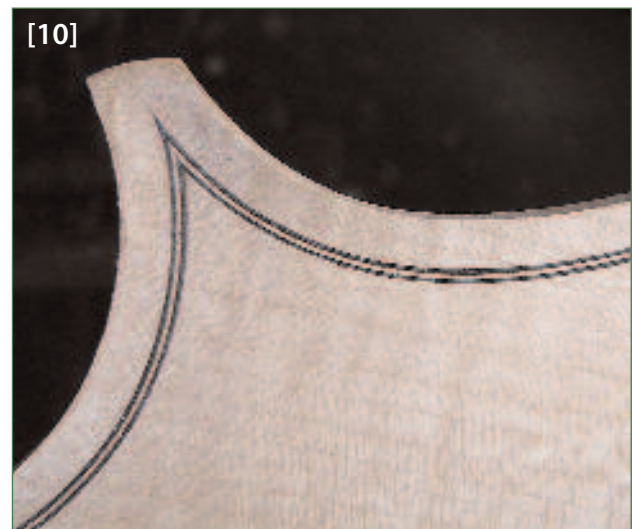
[8] Applying adhesive in the purfling channel with a gluing knife

[9] With the pernambuco dabber I press down the strips until they are flush with the plate or even a little sunken into it. I do not like using a hammer here as I feel it gives me a lot less control and could potentially cause damage. Once everything is glued down, I wash off all excess, even from the outside of the edge. This glue-sizes the edge to a degree, making fluting easier at a later stage.

[10] I like to flute the plates between just six and nine hours after gluing in the purfling, when there is still a little residual moisture in the wood. This makes cutting easier. ■



[9] Pressing down the purfling strips with the pernambuco dabber



[10] The plates are fluted between just six and nine hours after gluing the purfling

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