

INLAY CLEATS AND CRACK REPAIR (Patches und Risse reparieren)

Face clamps hold the loose piece of top in place while I hide glue it. I install as many of the patches (also called cleats) for the cracks as I can each gluing, limited by room and number of clamps. The location of each cleat is carefully planned. Freezer or wax paper is put between the patches and the clamp pressure pads to keep from gluing the pads to the top.



There is a crack going directly under the old bass bar. Our new bar is going in the same place so I will have to inlay some cleats under the bar. There is a similar crack on the top end requiring the same repair.



Using diamond shaped spruce cleats put the most added mass under the crack. More cleats can be put closer together with this shape (when necessary). I make the cleats with the grain at 45 degrees instead of the more typical 90 degrees. All this serves to keep the top flexible yet strong.



More cleats are glued on. Before the top is put back on the patches will be "feathered", their edges carved down to nothing. This makes them more flexible and less likely to come loose, causing a rattle or buzz.





To inlay the cleats under the bar I measure the top thickness there and remove a little less than half with a router. I then use sharp chisels to square the edges and fit the cleat. For inlaid cleats I prefer to use rectangular shaped spruce with the grain at 45 degrees. The cleat is glued in and carved down.



With the top cracks patched and the inlay cleats carved down, I can now fit the new bass bar.

NEW BASS BAR FITTING (Neuer Bassbalken)



I use a compass to transfer the top curve to the aged spruce blank. I saw to that line and fit it to the top with hand tools. I rub the bar blank in chalk on the inside of the top, which shows where the wood touches.

Wherever there is chalk I shave the bass bar until the entire bottom surface fits the inside of the top. I typically spring in the bar, fitting it such that the ends of the bar don't touch until clamped in. I center the spring to where the bridge foot will sit.



The bass bar is then glued in with hot hide glue. I use 10-12 clamps to hold the bar until the glue dries. The new bar has to be carefully shaped, tap tuned to a half step higher than the top. I take a few days to finish it.



Next I have three sections of the top edges to re-build.

NEW EDGING (Kanten ansetzen)



The edges of the top on this bass are worn or broken off in four spots. I plane some of the wood off the inside of the top and add new spruce to the under side, with the grain tilted slightly to strengthen the edge. Spruce matching the grain is inlaid on the top edge after the top is re-glued to the ribs



Here is the inside of the top. The right photo shows some new edging being glued on. The left shows all of the new edging, the bottom half carved to fit the ribs. I add the top overlay and shape all the outside after the top is back on.





Before the overlay.



After the overlay is glued & carved.



After varnishing.

The new top edges are carved down and varnished to match the top.

While I repair the top, I also do all the back and rib repairs.

SHORTENING RIBS (Zargen kürzen)



This bass's back has shrunk over the years and now the ribs are too long, bulging over the back edge on the lower bout. To correct this I shorten the ribs. First I rout out wood at the endpin block seam. I then re-set the ribs one bout at a time. I remove the rib from the block and open the back to rib seam from the endpin block to the lower corner block. I re-glue the rib back to the endpin block at the center point. At the same time the back to rib seam is glued, re-distributed so it fits.



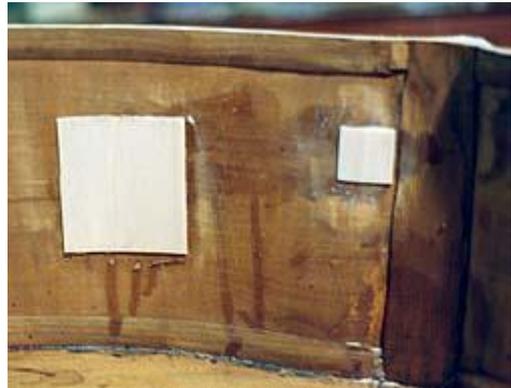
The other half is glued next, the same as the first.

Until the back shrinks so much it doesn't fit at all I can open the lower bout's back seams & re-distribute the ribs- without removing the top- but eventually the ribs should be shortened. Since the top was off, this was the perfect opportunity.

Now I repair the punch in the lower bout rib, where it is cracked across the grain as well as with.

RIB PUNCH REPAIR (Zargenriss reparieren)

The rib has a punch, where it is split across the grain. I have to use a patch large enough to support the whole area. I make the patch from thin tulipwood (poplar) with the grain 90 degrees to the rib's.



I use 1 inch square patches of the same wood at both ends of rib cracks with some spaced between where necessary. The linen is from an earlier repair but was sound so I took it out only where I was putting patches.



I put a patch at the block ends of rib cracks to help prevent the rib from lifting off the block there. This can happen as the rib maple dries & shrinks.

When all the internal repairs are finished, the top is glued to the ribs with a thin hide glue.



With the top on, I can fit and glue the overlay for the top of the new edging.