Special Repairs and Modifications

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Tools

- **C-Clamp** with a slot cut in the end, and a hold in the push button. This is handy for pushing out pedal pins.
- **Hammer Filing Jig** for gang-filing the bass.
    - Remove the hammers. (Usually they start angling at 60 or so.)
    - Tuck the flanges under the hard rubber clamp. There is a cut for the drop screw and the knuckle.
    - Clamp the shanks down with the second bar.
    - Gang file.
        - Start with a wide paddle.
        - Polish with an even wider strip, held between two paddles in order to keep the strip even.
    - This jig allows for
        - greater accuracy and prevents tipping and irregularities
        - saving time

Unusual Repairs

- **Crooked grand leg key lock**
    - With piano on side, remove leg, then remove the leg plate.
    - Drill and plug the old holes with dowels.
    - Reposition the plate. For markers, drill two small holes the size of a pencil lead throught the plate. Drill counter-sink holes.
    - Put the leg place back on the leg, with two screws sticking out. Hold the leg in place and tap the plate to leave the marks from the screws. Now we know the position where the plate must go. These pilot screws assure that the plate won't wander.
    - Mark the position of the new plate holes on the piano bottom.
    - Use two different bits to pre-drill the screw holes. One is slightly smaller than the size of the threaded part of the screw. The other is the diameter of the fat part of the screw.
        - Drill 1/8th inch through the cast iron plate a hole exactly the diameter of the plate hole. This centers the hole exactly
        - Now use the second widest bit for the fat part of the screw. Mark the drill bit with some tape so as not to drill too far.
        - Drill the smallest hole for the threaded part of the screw.
- **Re-wedging lyre posts**
    - Use a dowel and pound out the top of the lyre post.
    - Dig out the wedge. Use a Japanese saw. A Dremmel tool can helpful.
    - Once the vertical post is removed from the lyre, clean out the hole where it came from with a sanding disc. Clean the male part as well.
    - Apply glue to both surfaces. If you apply glue to only one surface, there will be a void.

    - Clamp the parts together. Use a small hydraulic jack as a go-bar. Make sure that the jack is not pulling apart other parts. If it does, then those parts need to be re-glued again.
    - Make maple wedges in advance and dry-fit them. Tap them in and you should see the wood spreading apart.
    - Take a chisel and carefully chip away the polyester in a nice rectangle so that there is increased glue surface to bare wood around the top as well as inside.
- **Steinway Damper Tray Pitman**
    - Over the years the tray will start warping and the spring will not work.
    - Enlarge the pitman hole. Remove the leather and enlarge the hole. Sometimes this hole is big enough with the felt removed.
    - Drill a hole into the end of the dowel for a new pin.
        - Roger carries pre-drilled several dowels of varying lengths already with a pin in them.
        - Supply houses carry pins with one end knurled.
    - Drill a hole into the leather and wood of the lifter lever.
    - Drill a hole in the damper tray.
- **Repositioning the pitman lift**
    - The old Steinway design located the pitman so that it raised as much as the pedal, giving a heavy feel and making the dampers jump. Instead, the pitman should be moved back.
    - We're going to drill through all three levers, with cardboard punchings between them as spacers. Check the distances with a caliper. Determine where to drill without interfering with anything else.
    - Turn all three levers on their side and drill though all three of them with a drill press. Block them against a 2x4 to keep them flat.
    - In the original lever, the pivot point is at the end. Now when the pedal is pushed, the tail of the lever will tilt away from the piano, so there will be no interference.
- **Using T-nuts on lyre rods** to hold the lyre on.
    - To put a T-nut in a key bed, drill a well for the T-nut.
    - Drill a narrower hole through the key bed itself.
    - Use a ¼" rod to attach the hole saw to a reversible drill. With the rod in the drill, put the drill in reverse to make the hole.
    - A back spot facer comes on rod with a hook. It makes a clean hole like a Forsner bit.
    - Fasten the nut onto the new rod.
- **Fixing a cracked bridge** on a spinet.
    - Pull out the pins.
    - Fill the holes with Titebond II in order to get the bridge back together.
    - Clamp the bridge together and leave it for a day.
    - Drill out the pin holes and fill them with two-part epoxy and immediately insert the pins.

- **Spinet dollies**
    - Spinet dollies cost $325, plus shipping, and are very heavy.
    - Instead, build a light-weight dolly. This is helpful for pianos that are being moved around a lot.
    - Remove the original casters, and replace them with single rubber casters. These casters and sockets cost about $24 for the back ones and about $8 for the front ones.
    - Tip the piano on a tilter and remove the bottom board.
    - Drill out the hole for the new socket so that decent casters can go on the back.
    - Drill out the bad screws.
    - Drill a hole for receiving the plate stem with a hole saw, using a guide screw.
    - Sand out the hole to smooth it out.
    - On the bottom stretcher, mark where it goes, and rout it out. Use a board clamped to the wood as a router guide. A router makes a much cleaner cut than a chisel.
    - Prepare the bottom board and mark where the plate will attach.
    - Use a metal press to custom bend the metal plate for the difference between the back casters and the front casters.
    - To maintain the original height of the piano. Cut the leg off.
    - Attach the plate around the leg, and insert a guide pin to prevent it from slipping down.
    - Use light Darnell double rubber casters on the front.
    - Use heavier-duty double rubber casters on the back.
    - Make a guide plate and screw it in place.
    - Drill the new holes through this guide so that the position is correct.
    - Mix up some steel putty, apply it to the stem of the plate and install the stem. Make sure this plate is in the piano straight or the piano will move crooked. Don't assume that the wood is straight. Use a square and check the directions.
- **Changing the down-bearing**
    - In this instance, the back of the bridge is higher than the front.
    - Wedge the soundboard to support it from pounding.
    - Take a piece of flat brass and pound down the bridge, actually crushing the wood.
- **Front panel and bottom board cut-outs**
    - Cut out the majority of these boards and install fabric.
    - The sound from the front panel is most noticeable to the player.
    - The sound from the bottom panel is more noticeable to the listeners.
    - Frame it like a picture frame. Fabric can be obtained from Speaker Lab. Wooden swivel latches make this panel removeable.
    - Build a wooden pattern jig to hold the panel.
    - Start with a large template guide on the router. This goes slowly.
    - Then use a smaller template guide and go around the edge.