Repinning

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REPINNING

- When considering a flange pin, elasticity is the issue. The felt is free and spongy. It goes all over the place and does not hold the action firmly. The rigidity and firmness of a grand hammer flange is crucial. Side-play and oscillations cause side vectors and tone variations. When doing pinning work, we need a method of assessing the springiness of the felt. Ed does it by feel, learned by thousands of hours of practice. When Ed rebuilt flanges, he would set up the knuckles by small, medium and large.
- The best way to ream is to make your own broach out of a center pin. Ed showed a long, uncut center-pin from the factory, about a foot long. He also showed a stainless steel wire about the diameter of a #19 pin, also a foot long. To install flange bushing cloth, it has to be soft enough to go through the hole.
- Shrinking flanges is done with alcohol to size the felt around the pin. Looking at an action, it becomes very important to have even flanges; sizing is important.
- When the humidity changes, the wood shrinks. Shrinking works because the amount of felt shrinkage is greater than that of the wood. It takes time over days, not hours.
- To make action parts, they string the flanges on a wire, dip them and then hang them up for a day to dry. If you have a perfectly firm fit, you could run the humidity up or down about 20 points and the friction will not change. However, beyond that point, the felt will respond more than the wood and the problems occur.
- Other centers are fairly tolerant of variations in tightness, but grand hammer flanges are vital.
- On an upright, the jack flange is important. The small amount of action motion in a grand is magnified in an upright. A crooked jack will make the hammer oscillate. It is more difficult to make a high-performance upright because of the jack.
- Shanks oscillate upon impact, and that movement is connected to the center pin. Different impacts affect the pitch and the tone.

TOOLS.

- Ed showed a double-end **pinning tool**. One end is a center pin that has been cut with a file to make a broach on the back part and a smooth reamer on the first part. The other end is a small drill bit.
- Do the swing test: look for 5-7 swings.
- **Pin pusher**. To make a new pin on a pin punch, use piano wire, and carefully grind the end of the wire to be as flat as possible. If you accidentally start to poke the bushing cloth out of the hole, stop, and use a tool to push it back in. If the seam of the felt has a gap, you can insert a thread to fill in the gap and hold the bushing more firmly.
- **Flush Cutters.** Fine flush cutters will cut up right up at the edge. Eremge from electrical supply houses, supply good cutters and heat guns.
- **Lubricants.** If you are depending on Protek for function, it will last a little while. Ed prefers Teflon. The Wurlitzer oil works well. Aeolian used a good cloth and sized their pins and these lasted a long time. Pratt Read lubricants were good. Renner put graphite and they would bead up, as did Yamaha in the mid 70's; graphite does not work well.
- **Tubing**. For pivot points on pedals and other swivel points, Ed puts a heat-shrink tubing on the pin. Instead of wearing out the plating or the bushing, the abrasive felt will wear out the tubing instead of the pin.

- **Center Pins.** Yamaha, Apsco, Schaff
- **Make a reamer.** The toothing will be close to the pin bite. Find the right spot by inserting the pin into a bushing to note the spot. Remove the pin, and roll the pin on a piece of wood with the edge of a file. The ream size should be a half size smaller than what the pin will be.

PINNING TIPS

- Usually one side of the flange has a larger hole than the other. Ed places a pin in the smaller side and rotates the pin to slightly enlarge the hole.
- Holes can be sized with superglue.
- If there is too much side-play between the birds-eye and the flange, insert travel paper.
- When a larger pin is too tight, pull on the flange and push on the flange to work the hole larger.
- Have the cut pin stick out on the tight side; then, with a heat gun, heat that side.
- Ream, then burnish, to loosen a tight hole.
- Generally the flange should not drop when held out horizontally.
- A fast way to test for loose flanges is to put a stick under a whole section of grand hammer shanks and move the stick sideways back and forth (left and right). Hammers and flanges that move are too loose.
- Pin, let them sit overnight. If they are tight the next day, heat them. Tough the pin on the tip of the heat gun for a few seconds, then exercise it again. Let it cool down and test it. Once it is even, cut the pin.
- For shrinking, us a little syringe and dribble it in.
- Acetone dries faster than water. It is the water that shrinks it. Let it dry before testing.
- Bush with yellow glue. Don't use super glue or it will get into the felt.
- The gap in the bushing on a grand hammer flange should be at about 2:00.
- Steinway is still using the uncut pins with a small divit in the middle to keep it from walking out. These are pre-cut and rounded.
- Pin flanges firmly. Friction should be even. As the piano is played, the pinning will settle in.
- Ammonia cause brass to corrode, so don't use it to clean.
- Pre-bend a pin to align a crooked part. You could even do a double bend.
- Ed rarely uses a gram gauge. It is good for learning the feel. Once you know the feel you don't really need a gauge.
- Damper flanges must be fairly free.
- Sostenuto tab springs are difficult to pin. Make sure the spring stays put.
- Wessell Nickel Gross stainless steel pins are pre-cut to size. They are perfectly round, so they are a better fit. Heat them to loosen. If the flanges ae too loose, push them together.