Re-Pinning

Isaac Sadigursky

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Miscellaneous Comments

- The less we touch the center pins with our hands the better, because our sweat oxidizes the pins and creates friction.
- In this class, Isaac's goal is not to teach us how to do things, but how to think to do things in a different way.
- Don't this type of work is relaxing. Play rap music while working, like Rapsody in Blue
- Employ younger technicians who cannot afford to buy a house or a shop.
- Doing something and being productive is satisfying and means more than money.
- Lubrication belongs on the stage and for emergencies, but is not the proper solution.
- The foundation of all regulation is good, solid pinning.
- Painting is not an art. Selling paintings is an art.

Tools

- Evolution of tools
- They used to use a little punch, tap it with the hammer to push one out and the other in.
- Now we have the double-duty pin punch.
- Another pin pusher is operated by the thumb.
- Another design was made with an altered pair of pliers.
- If you know an orthopedic surgeon, there is a special pushing tool

Storage

- Film canisters do not work and are pretty much no longer available.
- Now people use the multi-hole slide container.
- Plastic divider drawers are good visibly, but it is difficult to remove the pins.
- Soap holders are very easy for picking up a pin.
- Pill dividers work.
- Isaac has industrial drawers in his shop with curved bottoms.
- He keeps the tool of the same size as the pin in each container.
- The clip on a Yamaha trap system has a hole that would hold pins

Measuring Center Pins

- Micrometers are great for precision work
- How do you test tight centers?
    - Put a screw in the flange, tap the shank and see if the shank rises
    - Measure the resistance with the needle of a gram gauge
- Zapping
    - In less than an hour, Isaac can use Francis MaHaffey's zapper to heat the pins to heat up the center pin. This will last a couple months to a couple years.
- Vertigree
    - In 1920 Steinway started moving pianos to the west coast, and tried to solve the moisture problem by pre-lubricating the center pins.

    - The body of a goose produces fatty lubricant, so swans can swim faster.
    - The reaction later was the resulting green color.
    - For reassembling and rebuilding old pianos, these pianos from 1900 to 1925 that had been treated in grease fat were soaked in refinishing chemicals and the vertigree was gone.
    - There always should be two approaches to doing any kind of work. In this case,
- Re-Pinning Tool kit
    - Isaac always keeps his repining roll of tools with him.
    - Pin-pusher
    - Collection of pins
    - Reamers, burnishers
    - Along with pinning tools, he carries a tool for checking damper guide rail holes
    - Small block and mallet for straightening crooked jacks in the window
    - Lubricants
    - Zapper
- Balancier Pins
    - The tighter the repetition spring, the more responsive the movement of the jack
- Re-Pinning Process
    - Measure the original pin and then the identical replacement pin
    - Feel the tightness of the pin in the birds-eye
    - The center pin must be tight in the wood and should rotate in the bushing cloth
    - Reversed pinning (tight in felt, loose in wood) can cause a number of other pinning problems in other flanges. Lube no more: re-pin!
        - Go to a larger size pin so it's tight in the birds eye
        - Burnish the felt so the hole is larger but snug
- Re-pin an entire set in less than an hour
    - Think of yourself as an over-qualified person to do this job
    - Isaac has a helper at $20/hour. Here is his job:
        - He removes every other hammer with an electric screw driver.
        - Each section has a magnetic dish for storing the screws.
        - Using a modified pin pusher (the push-pin is cut in half) he pushes the center pin only half-way so the flange still stays together, using his fingernail to guide the pusher to the pin
            - The tool stays in his hand
        - If center-pins are originally corroded, before extraction happens, file both sides so they are shiny to make extraction faster and easier.
            - The original cut created a burr. Filing just smooths it without pushing the burr to the side.
            - American needle pointed center pins can be pushed 2.5 times the size of the hole without splitting the wood.
    - Meanwhile, Isaac re-pins
        - Burnish both pins
        - Test the tightness of the center pin in the bushing
            - Hold the pin with the thumb and fourth finger as you feel each side of the flange. This feel provides a much more sensitive detection.
        - Install pin

        - Cut off the excess
        - Do the next
        - This process takes 15-20seconds per unit
        - It's much more efficient to do one set of units at a time
    - Re-pinning the jack is a little slower because it is cut on both sides
        - Remove and measure the pin
        - The next motion is to remove the jack and move the repetition spring side-ways
        - Test the original pin in the bushing and in the wood.
        - To push the pin back in, use a smaller center pin to push it in using the tool, keeping the chaser in.
        - Push the chaser through and cut it.
    - Balancier
        - Almost always, one side of the balancier flange will me looser than the other
        - If the pin is too loose in the wood, use a size 18 pin to push it out, and replace it with a larger pin without burnishing the tighter bushing
        - Even though one flange hole is a bit loose and the other is a bit tight, because the pin is not rattling in the wood there will be no clacking sound and therefore no issue in the function of the balancier
- Large pins
    - Older pianos have had the pins replaced larger and larger, which leaves increasingly less bushing felt.
    - Carry new parts to be able to demonstrate to the customer the difference between their old parts and a new part. Install the new part so they can play and compare for themselves.
        - You don't have to brush all your teeth: only the ones you want to keep.
        - Give them two different choices: yes or yes.
            - Rebuild the piano and do it right
            - Opt for the temporary solution that will need to be done again.
            - Demonstrate how tedious the job is and point out that it needs experience.
- Solvents
    - Paraoxitetrachloraethylene has been said to work
        - This is extremely toxic, so wear gloves and a gas mask
        - Isaac has heard that even with this the problem can return
- Destruction of center pins: What destroys center pins in real life?
    - When a hammer tail falls onto a crooked back check
    - Broken bass string bi-chord
    - Aggressive voicing can destroy pinning
    - Broken agraffes
    - Plastic elbows
- Damper System
    - Richard Davenport re-pins all new parts because most are reversed pins
    - Don't tamper with the damper