



Small Shop - Big Results
Grand Action Reconstruction – Part 7
(Realignment of Let-Off Buttons)
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At the end of last month's segment in the coverage of the Weber action rebuild, I was bemoaning the misalignment of the jacks with the let-off buttons. Basically, I spent the evening down in the dumps, not even trying to put myself in a positive frame of mind.

The next morning however, I awoke with renewed optimism. It wasn't, after all, a fatal error. I hadn't dropped the plate onto the concrete floor of the shop and shattered it into a million pieces. Basically, when you thought about it, it was a simple problem to solve. A part was located at point A, and it needed to be relocated to point B. Well, 85 identical parts needed to be relocated, but still, what was the big deal?

Sometimes when I'm out in the field and I have a sticky situation to deal with (A0 breaks at the coil, and I need to make a splice in the cramped quarters next to the edge of the plate, for example) I just have to remind myself that however long it takes, I will persevere and that before I pack my tool kit up, the problem will be fixed. As I work, I visualize the repair as it will look once it is made. The power of positive thinking.

I therefore tried applying that mind-set to this particular problem and imagined the repair done, with all the jacks lining up ever-so-nicely with the let-off buttons. What I needed to make this happen was a plan. I removed the rail with the let-off buttons and hammer shanks attached from the brackets to mull things over.

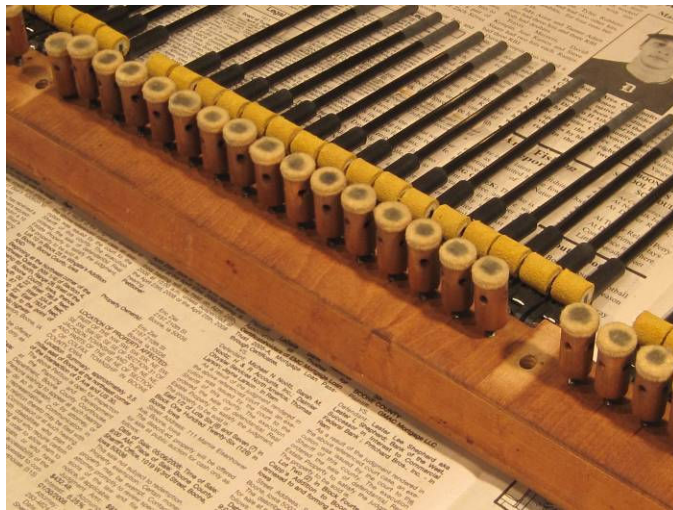
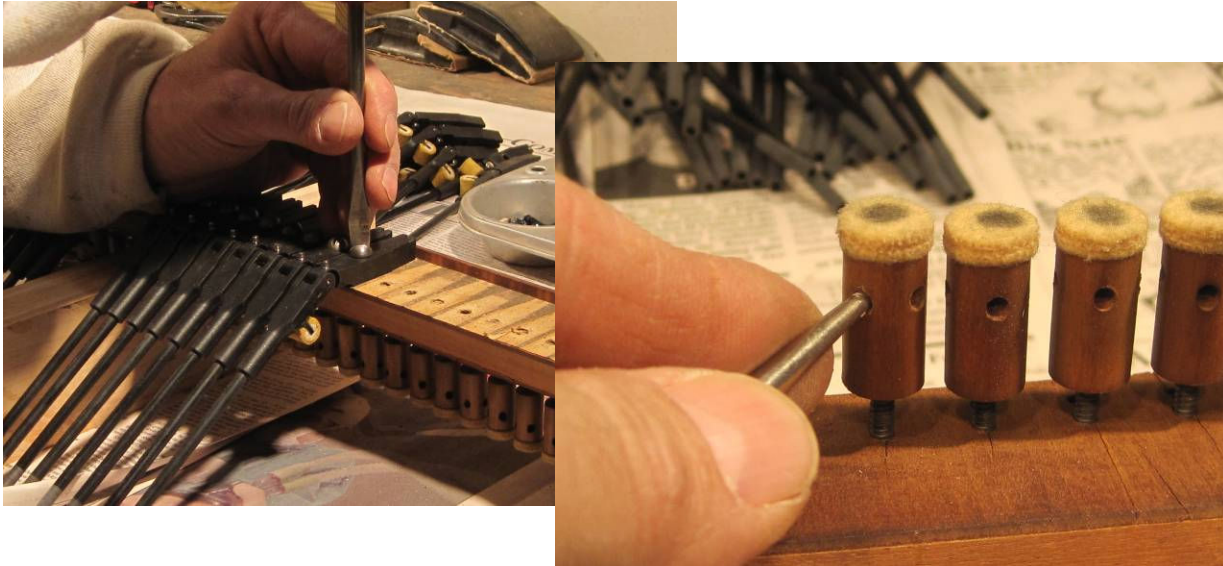


Photo 1: Decisions, decisions.

As I saw it, there were two options. I could, I suppose, start from square one and make an entirely new hammer flange rail. I kicked this idea around for awhile, thinking that pinblock stock would be the most stable material to use. It would be just a matter of cutting and drilling precisely enough to match the old rail exactly (with the exception of moving the holes for the let-off button posts forwards.)

Before jumping in to the deep end on this, however, I decided it would be prudent to at least try saving the old rail. My original intention with this piano action, after all, was to utilize what I could of the old framework while replacing the brittle parts.



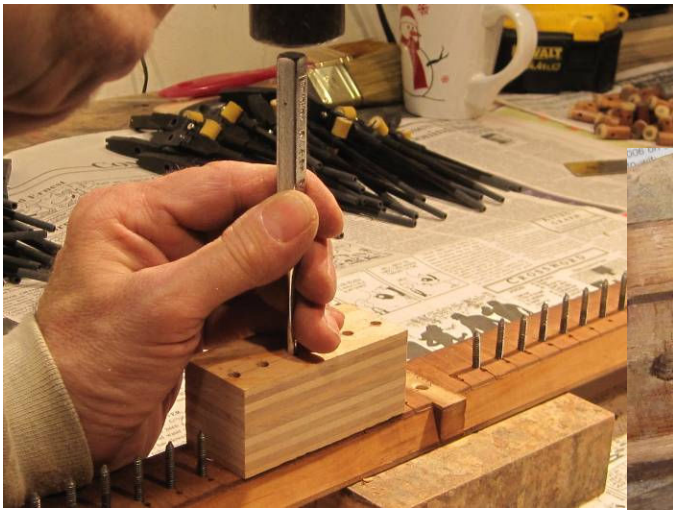
Photos 2, 3: Two steps backwards

With a sigh, I began removing the hammer flanges from the rail. The good news with this was that now I could peel off the sandpaper that I had felt guilty about leaving on. Once the hammers / flanges were all removed, I flipped the rail over and used a regulating tool to begin backing off the let-off buttons. These were, I learned quickly, both tight on the threaded shaft, and brittle, with a number of them breaking upon removal.



Photo 4: Down to the bare bones.

In less time than it took to watch a movie on my VHS player, I had all the parts removed from the rail with the exceptions of the posts that the let-off buttons had been screwed on to. An easy job for after lunch, I remember thinking.



Photos 5, 6: A headache in the making.

To be honest, I'm fairly certain I've never removed the post for a let-off button before – never had a reason to. I couldn't imagine that they would be much problem to pull out, however, so I enjoyed my lunch, thinking I would have time to have the posts repositioned by early afternoon.

The first thing I tried when I got back to the shop was to fish a pair of tiny nuts from my collection to lock together on the end of the threaded post to give me a spot to lock onto with Vise-Grips and pull. This plan went nowhere. The threaded posts were beyond me to simply yank out.

Plans B and C met with failure as well. Finally I decided to try pushing instead of pulling. I made a jig that would fit over 6 posts at once (Photo 5), drilled for a punch to fit into on the top end, and pounded the posts through the top side of the rail. I then was able to use a pair of pliers to pull the posts all the way though from the other side, spade end first (Photo 6). Pretty? No. Effective? Yes.



Photo 7: Repairing the damage.

With the entire set of post removed, I set about repairing the damage. As I filled the old post holes with filler, the old “Where do you draw the line?” dialogue began through my head. Should I be plugging these holes with dowels? I suppose, but also I realize that I would at some point in the foreseeable future I would like to have this piano finished. I used filler and took the dog for a walk while it dried. Upon returning to the shop, I sanded the rail smooth.

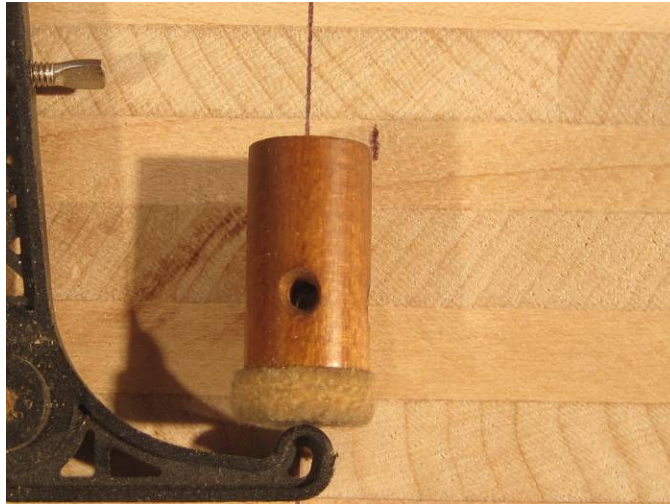


Photo 8: A careful measurement, to say the least.

One step remained before drilling the new post holes, and that was to take a careful measurement of exactly how far to move the posts. I lined up a let-off button in reference to a jack in the position that the average capstan had been lined up before and drew a line along the edge of the button. I then repositioned the button centered on the toe of the jack, and drew a second line (Photo 8). I measured that distance, to determine how far from the center of the old holes I would be drilling. I marked that distance as a line along the rail and then marked in cross lines using the position of the old hole as the reference (Photo 9).

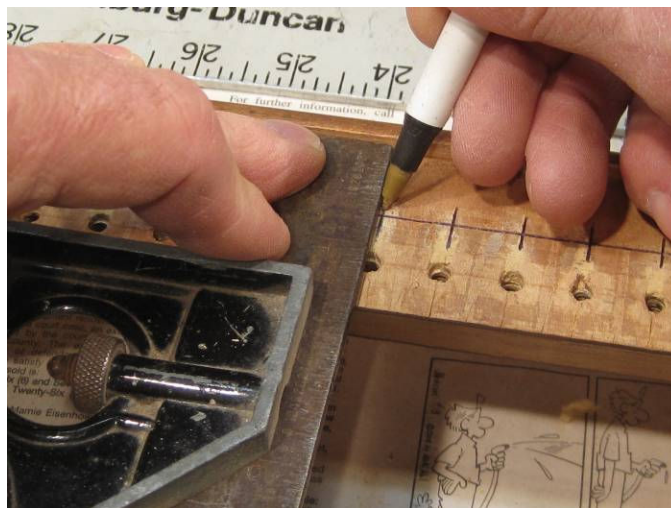


Photo 9: X marks the spot.

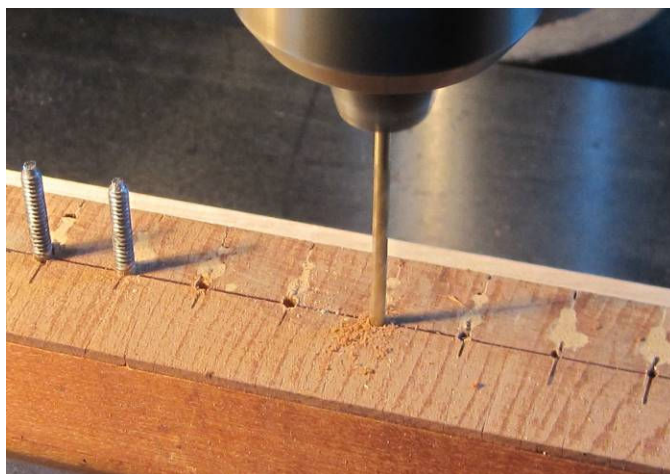


Photo 10: Pilot holes.

New pilot holes were then drilled. Before this picture was taken, I did double check the placement of the holes by drilling all the way through with a small bit, then screwing the rail back in place and making sure that the bit, when pushed through from the top, lined up with the toe of the jack. It hit the toe square on. One would hate to go to all this trouble, only to find that the buttons were now too far the other way!



Photo 11: Reinstallation of the posts.

The jig for reinstalling the posts was slightly different than the one used to remove them in the first place. A small diameter hole that a post could just drop through was drilled through a piece of scrap pinblock material. Then, from the top, a larger hole was reamed out following the smaller hole so that a tuning pin would be able to drop down to the height required for driving in the posts. The post was then held in place over the pilot hole, and given a starter tap so the spade end was driven in just a bit. I then lowered the jig over the post, drop in the tuning pin, and pounded the post down to the correct depth by hammering on the end of the tuning pin.



Photo 12: Back to normal.

Finally, with everything back together (to a degree, at least) I was able to knock off for the evening.

An extensive rebuilding job such as this is to me like a trip in an automobile. Sometimes you're going down interstate, not a care in the world, with nothing but the open road in front of you. Other times, however, you realize that you've strayed from the beaten path and you that you are now on some winding back roads. Now and then you come to a crossroads where you could go this way, or you could go that. You have to make decisions, and then make the best of the choices you've made. I had been on those back roads for a time now, and hopefully and now headed back towards I-35, so to speak.

Speaking of which, if you yourself happen to find yourself on the interstate that cuts north to south through Iowa, swing off the beaten path yourself for a bit, and drop on by the shop. I'll put the coffee pot on.

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