Small Shop - Big Results

Grand Action Reconstruction – Part 10 (Rebuilding the Back Action)

By Chuck Behm
Central Iowa Chapter

The list of projects needing to be done on the Weber grand which had occupied so much of my time was growing ever shorter. With the hammers installed, the shanks trimmed and everything else on the action done that I could think to do, the action components were reassembled. I was nearly ready to put back into the piano for regulating. Before being able to finally slide the completed action into the waiting piano, however, a new back action needed to be built from the ground up. Not having done a total back action rebuild before, I had been doing what I tend to do when confronted with an entirely new procedure–I stalled! With absolutely no other projects left to be done, however, it was now or never. Let the work begin!

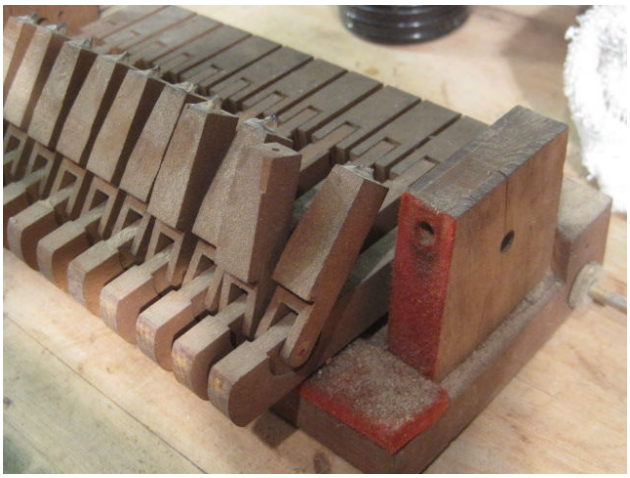

Photo 1: Epoxy collars on the tops of the damper blocks.

Photo 2: Added- on set screws.

The old back action had been fiddled with in the past, apparently causing other technicians headaches down through the years. The damper wires to the Weber were threaded and meant to be turned into the under lever top flanges. Over time, however, some of the damper wires had evidently become loose in the flanges and required bolstering by with collar of an epoxy-like substance around the juncture between wire and flange(Photo 1). Other efforts to correct the problem were made as well, as evidenced by the addition of set screws (Photo 2). These were installed hit or miss, however, and when the piano first arrived in the shop and was disassembled I noticed that despite these previous efforts, some of the damper wires simply slid out of the top flanges without resistance.

The box of new back action parts from WNG was opened, the parts laid out and I got down to the business of figuring out how it was meant to go together. I quickly realized that my hesitation in starting the project was unnecessary. Working with the well-designed WNG parts, the assembly process was very straight-forward.

The first step was to drill the holes in the new damper lever rail supplied by WNG for the under lever flange screws. To locate the position for the screws, I placed the old

back action on top of the damper lever rail, and used a scratch awl to mark the position of the center of each under lever on the face where the flange screws were to be located (Photo 3).

Photo 3: One way (not necessarily the right way) to mark the side-to-side position for screw holes.

(Author's note: Looking at the photo at the time of this writing and rethinking this process, I believe a more accurate method would have been to remove the old under levers from the original rail, and then made a paper pattern using the original screw holes themselves as the template for the positioning of the new holes. By using the ends of the under levers, any shifting or warping would cause an inaccurate placement for the screw holes.)

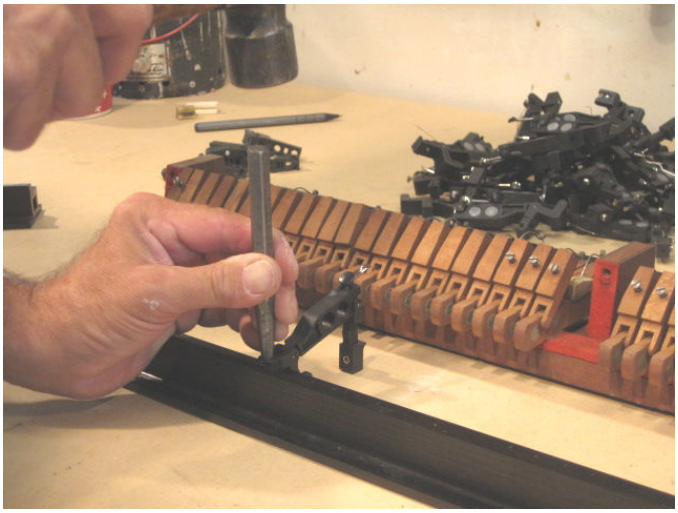

Photo 4: Using a punch to mark the exact spot to drill.

Whatever the method used for marking the position of the screw holes, the vertical scratch line indicates the side-to-side position only, not the up and down position. That must be determined by using a under lever mounting flange and a punch to mark the exact point to drill. Line up the hole in the flange so that the scratch line is exactly centered, and then use a properly-sized punch and mallet to mark the spot (Photo 4).

Photo 5: Drilling the flange screw holes

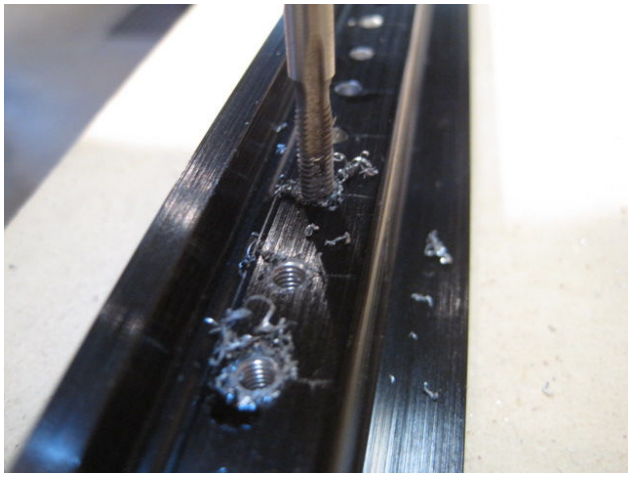

Photo 6: Tapping the holes

With the center points marked, the next step is to drill the holes for the flange screws (Photo 5), then tap them with the proper thread size (Photo 6). Since the WNG damper lever rails are made of heavy gauge aluminum they are easy to drill and tap.

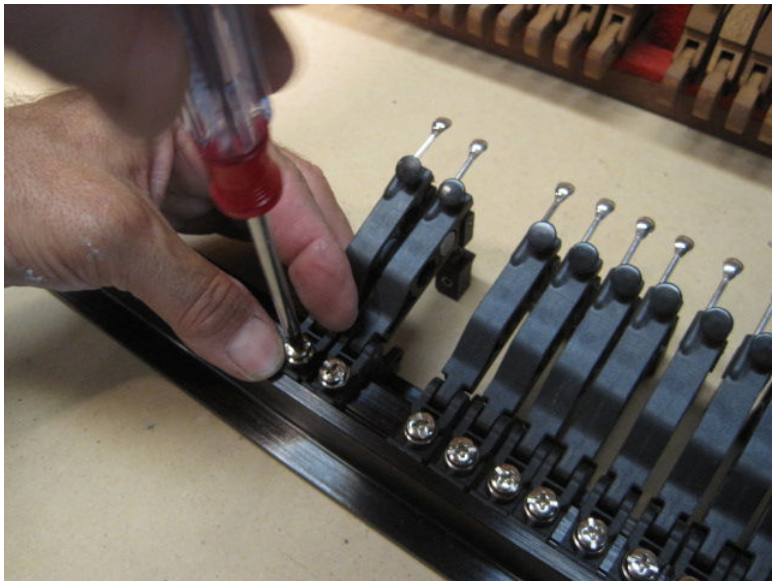

Photo 7: Screwing the damper levers down.

By the time I started screwing the under levers in place (Photo 7), starting with the more heavily weighted levers on the bass end, I had to say that everything was going much more smoothly than I had anticipated. The 1885 Weber didn't have a sostenuto assembly to worry about, which I was glad of. I would rather deal with a simpler system for my first time trying a job out than having to deal with a more complex assembly.

When the under levers had all been screwed down, it was time to attach the sustain pickup tray. Again, this was a straight-forward operation in which the bracket spacing of the old back action was duplicated.

Photo 8: New back action compared to old.

Having installed the pickup tray, I compared the new back action assembly with the old (Photo 8), and found no discrepancies. It was time to make a decision about the installation of the new back action into the damper cavity of the Weber. According to the literature that came with the parts from WNG, the heavier damper flange rail which I used, "Only requires mounting at each end as the rail is stiff enough to anchor the under levers without additional support." The old back action, however, had been secured to the keybed by three large flat-head screws, which I decided to duplicate. To do so, I cut a length of pinblock stock to run underneath the back action (Photo 9). The damper lever rail was then screwed to the pinblock material, which in turn could be screwed down to the keybed, as the original back action had been.

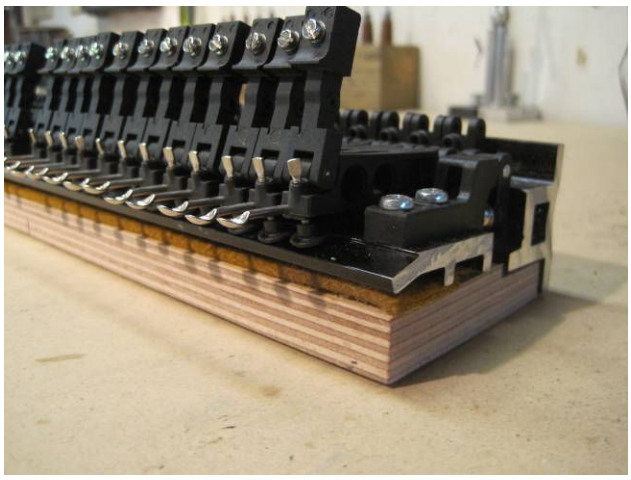

Photo 9: Pinblock stock used as base.

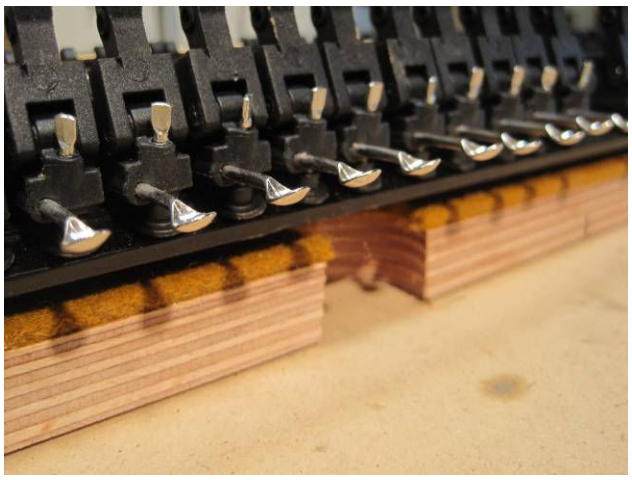

Photo 10: Sustain pedal access hole.

I used a Forstner bit to drill a hole through the pinblock stock for the sustain pedal dowel (Photo 10). With that done, the action was ready to slide into place. The WNG parts are designed to be easily adjusted, with a "bendable spoon for easy key pickup

regulation" and an "accessible screw adjustment for tray pickup," both which may be seen in the photos 9 and 10.

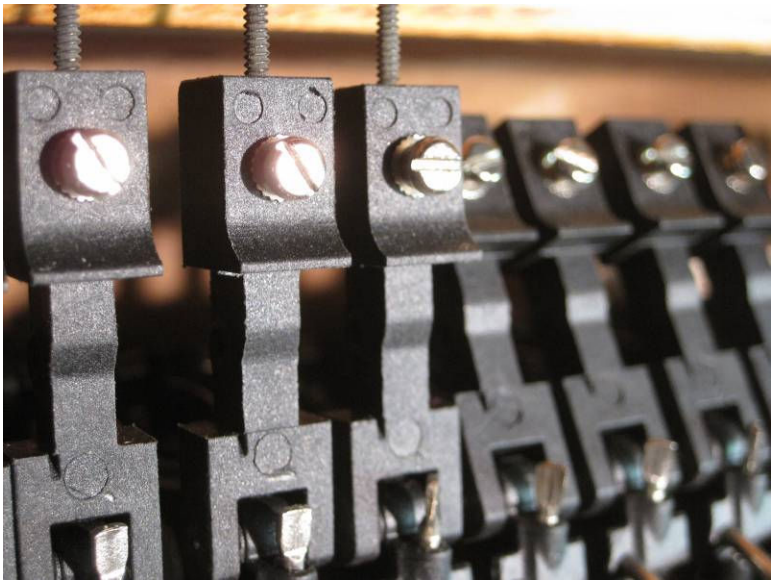

Photo 11: Damper wires installed in the top flanges.

As in past procedures with this piano, I needed to make decisions as to how far to go in replacing parts. I decided that the threaded damper wires would stay (Photo 11), but the damper felts would be replaced (Photo 12).

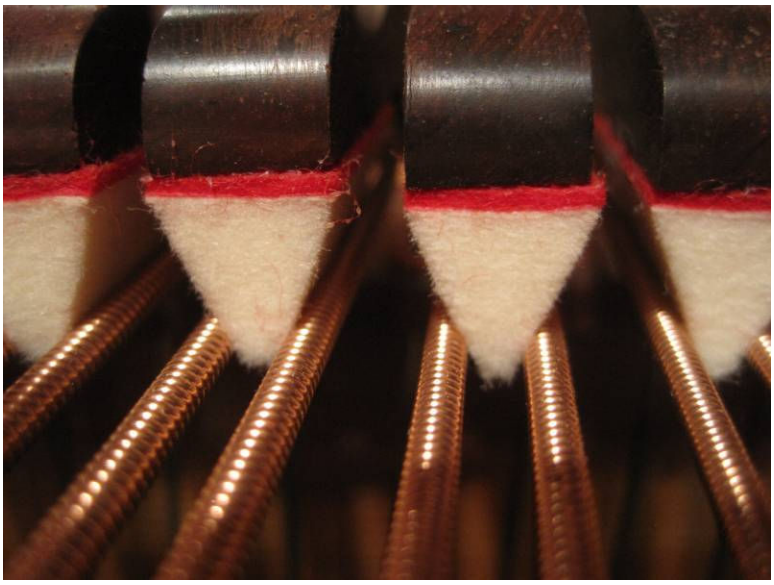

Photo 12: New felts round out the procedure.

Final thoughts: In my opinion, the WNG parts are very well designed and manufactured. With everything assembled and the action finally slid into place, regulating the piano was a breeze. I was truly amazed how little adjustment was needed to make the parts work right. The only hiccup was the alignment problems between the toe of the jack and the let-off buttons, but that was simply a problem with my not choosing the correctly sized

part. Everything else went together extremely well. WNG, it needs to be noted, provides a large assortment of available action parts, with many variations available, and though I chose to put the parts together myself, the company is quite willing to do the assembly for you, if you provide the needed measurements. I'm sure in the case of the Weber grand featured in this series that I would have saved a huge amount of my time by letting the experienced technicians at WNG do the assembly work for me.

Photo 13: The finished piano, ready to go home.

At the end of a big job such as this Weber, I like to spend a little time just appreciating what's been done. Sitting on the bench to take a final photo of the piano, I realize just how much I love this work.

As always, if you find yourself in the neighborhood, drop by for a cup of coffee and a chat.

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