

Small Shop – Big Results

Piano Parts Trolley

By Chuck Behm

One reason **not** to restore pianos which I've heard given by tuners who have no shop other than their kitchen table to work at is that rebuilding takes up too much space. They simply don't have room to undertake a major refinishing job or action restoration. If one were overhauling piccolos or banjos, it wouldn't matter so much. Pianos are large instruments, however, and when broken down into the component pieces of case parts, action and keytops, a lot of floor and bench area is consumed. To rebuild pianos, however, you need not have a large shop capable of servicing multiple instruments simultaneously. One piano at a time is all that needs to be worked on. A single stall of a two or three car garage is enough to work on one or even two pianos.

Even with just one piano, however, storage of parts is an issue that needs to be dealt with. If the piano is to be refinished, in particular, a lot of space will be filled by parts that are laid out for stripping, sanding, staining and finishing. One device that has come in very handy in our shop during this process is the **piano parts trolley** – a moveable storage rack capable of holding all the pieces of either a grand or upright piano.



Before I built the first trolley for our shop, to lay out all the pieces of the piano for drying took a bench 16' long by 3' deep (Photo 1). In a small shop this obviously would take up a big percent of the available floor space. The bench we had could only hold the parts to one piano at a time.

With benches as storage space, there's no room left to work one piano at a time. At times we had up to 4 pianos torn apart at the same time, with 2 or 3 more waiting their turn. There were parts stacked everywhere, on top of every horizontal surface! At times, it was hard to remember what parts went to what piano. The issue came to a head one day when I discovered (after the 3rd coat of varnish) that we had finished a lid with a walnut stain, which was supposed to go with a piano that was being done in golden oak. Crap.

They say that necessity is the mother of invention. At this point I decided that we truly needed a better way to lay parts out. I wanted a device that would;

1. hold all the pieces of an individual piano in a way that air would circulate around each piece without any pieces touching.
2. take up a minimum of floor space while freeing up valuable bench space.
3. be portable, so that pianos and equipment could be moved around at will without the storage unit being a roadblock.
4. be solid enough to provide reliable and safe drying room and/ or storage space for the parts of valuable instruments.

With these ideas in mind, I set out to work on a prototype. One important key, I decided early on, was solidity. For this device to work and be reliable, it had to be built on a sturdier framework that 2 x 4's. I sketched out a design using a base constructed of 6 x 6's and 2 x 6's and uprights of 4 x 4's. The individual piano parts would be supported on 1 x 1 rails dadoed into the 4 x 4 uprights. The whole unit would be put on heavy duty wheels to be mobile. Photo 2 shows the prototype of the base I built.



Construction of the base

At the lumber yard, I spent a lot of time looking for the right materials. This was not going to be a cheap to build, I discovered. I wanted it to be built right the first time, therefore focused on the materials that would work the best, not the least expensive. The 6 x 6's had to be made from treated landscaping timbers, the only available choice. For the 4 x 4 inch uprights, I chose Douglas fir for strength, and for the 2 x 6's and for the lumber for the 1 x 1" rails; I chose select pine without knots. From the available casters, I chose ones with industrial strength wheels to stand up to years of use.



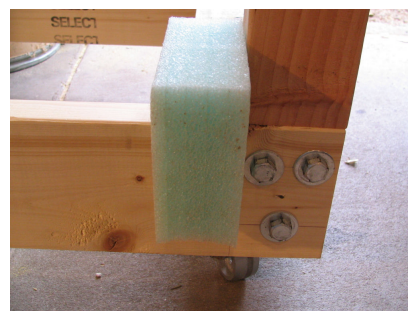
Fully load trolley in shop

only 8 square feet! All 3 of these trolleys combined occupy only 24 square feet of floor space. Compare that to the 54 square feet of space consumed by the drying bench we once used for the pieces for 1 piano!

Bumpers added to the back of the trolley as in Photo 4 protect the finishes of other instruments if the shop becomes crowded with pianos. This I learned from experience, when the bolts used to tie together the framework scratched the finished side of another piano. Oops!

The resulting invention has been a godsend for our shop. Although we have 1800 square feet in our shop, space is still at a premium (Have you ever heard of a shop owner complain of **too** much space?). We currently have 3 trolleys which are continually in use. Our 6 shop benches are freed up from serving time storing drying pieces. This really helps the flow of work from getting bogged down.

My 4 benchmark requirements are more than adequately met with this device. With the hefty base, the trolleys are absolutely stable and reliable. The fact that all the pieces to one piano (Photo 3) can be stored on a cart eliminates the headache of keeping track of what parts go to what piano. Each trolley has a footprint in the shop 2 feet deep and 4 feet wide –



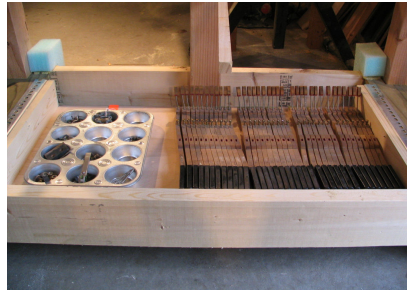
Bumpers

Another caution is not to lean anything up against the back of the trolley that you would hate to see fall over, such as a grand piano lid, cast iron plate, etc.

Additional space for such things as muffin tins for holding screws, bass strings, sharps, etc., is found at the base of the trolley, where a removable shelf (Photo 5) may be hung using angle irons (Photo 6) between the 6 x 6's of the base. This shelf, once placed in between the 6 x 6's, is out of the way, so that the keyed or the action of a grand may be slid over it (Photo 7), while the piano is torn apart.



Removable shelf

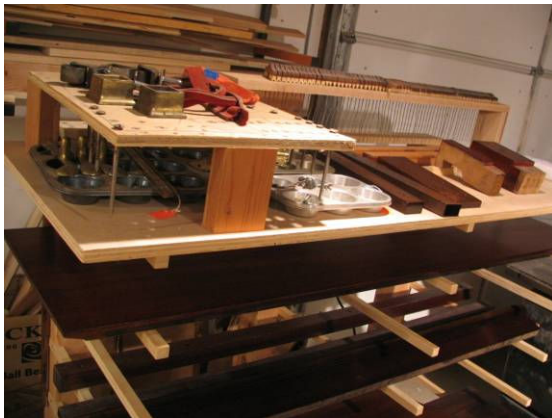


Shelf hung between 6 x 6's



Grand action storage

An additional shelf, placed on the top set of rails, provides a spot (Photo 8) for small parts being finished, such as the end blocks, legs, etc. Also, this is a good spot for a wooden jig constructed for holding screws for the cast iron plate, or for a holder for grand dampers (Photo 9).



(TOP LEFT) Shelf on top provides storage for small parts. (TOP RIGHT) Removable grand damper holder. (BOTTOM LEFT) Bolts on back provide hanging spot for upright action.

Two bolts on the back of the outer 4 x 4" uprights provide an ideal spot to use the hammer rail to hang an upright action (Photo 10). The only parts not provided for on the parts trolley are the large half of the lid of a grand piano, or the cast iron plate of either a grand or an upright.

However, if the wheels of the trolley are locked, either of these may be safely leaned up against the back of the device.

The parts trolleys that I have built for our shop have cost from \$175 to \$200 in materials for wood and hardware, depending on current prices. For the 1 x 1 rails to hold up the parts, I ripped 1 x 12's of choice lumber. I found that if you tried to economize by

buying less expensive lumber, you have a lot of unusable wood due to knots. With the choice grade of lumber, it's all good wood.

The minimum tool requirements for building a trolley would be a table saw with a dado head attachment, a band saw, and a thickness planer. I suppose one could build one without these tools, but I certainly made use of each of them.

If anyone wishes for a materials list and plan, I would be glad to e-mail those out free of charge. In addition, easy to assemble kits will soon be available through Schaff Piano for anyone who desires a trolley, but doesn't want to go through all the trouble of purchasing the materials and cutting and putting together the unit piece by piece. Call Schaff for details at 1-800-747-4266.

Finally, I would just like to encourage anyone who has dreamed about operating a rebuilding shop to start by at least taking small steps in that direction. The reasons to do this could easily fill another column. Simply put, however, it does something for your soul to develop the skills and facilities to take an instrument that is truly a basket-case, and to turn it into a show piece. For 35 years, I've tuned an average of 500 pianos a year, and that's time well spent, but the time I really treasure is the shop time, when I'm bringing back the beauty of pianos built by the artisans of an earlier generation.



Wegman upright before restoration



Wegman upright after restoration

If interested in plans for a piano trolley, or if you would just like to visit about ideas for setting up a shop, please contact me at:

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