

Schaff Piano Supply Company Presents:

The Piano Parts Trolley (Plans Included!)



By Chuck Behm

The Piano Parts Trolley



-Rationale-

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.

Note: A version of this article (without plans) first appeared in the January, 2008 issue of the Piano Technician Journal.

-Design Features-

The piano parts trolley was designed with four criteria in mind. For it to be useful, it was necessary that it:

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.



Photo 1: Fully loaded trolley

With these ideas in mind, work began 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 than 2 x 4's. I sketched a design for a base to the trolley constructed of 6 x 6's and 2 x 6's and uprights of 4 x 4's (see cover). 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. When built, it would provide room for all the parts of the typical upright piano, as seen in Photo 1. On the next page, Photo 2 shows the prototype of the base. As in the construction of any home or commercial building, a solid foundation is the key to a reliable structure.

Shop Ideas/ Piano Parts Trolley



Photo 2: 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.

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.

The 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 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 – only 8 square feet! All 3 of these trolleys combined occupy only 24 square feet of floor space!

Shop Ideas/ Piano Parts Trolley

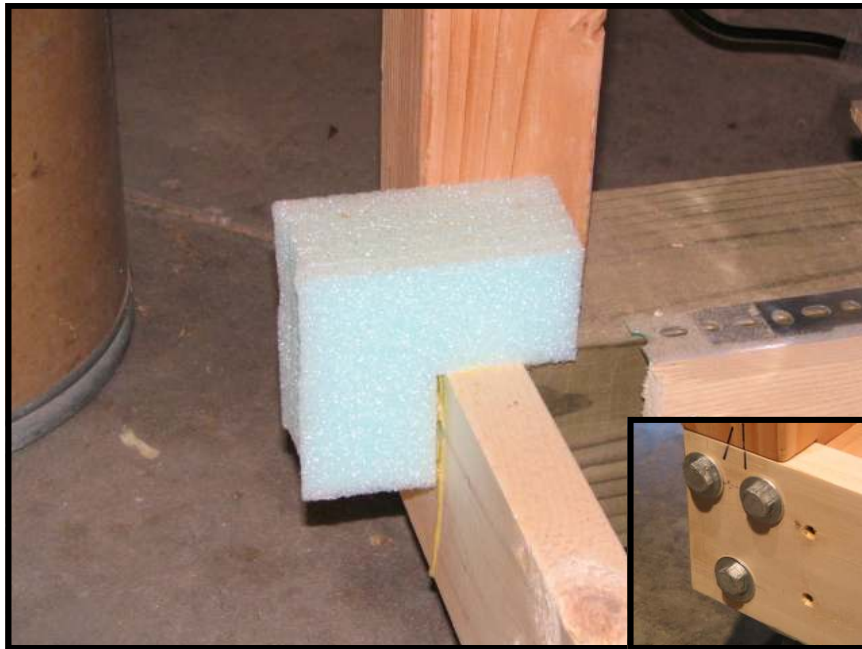


Photo 3: Bumpers required

Bumpers were added to the back of the trolley as in Photo 3 protect the finishes of other instruments if the shop becomes crowded with pianos. This I learned from hard experience, when the bolts used to tie together the framework (photo 3 insert) scratched the finished side of another piano. Oops! (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.)



Photo 4

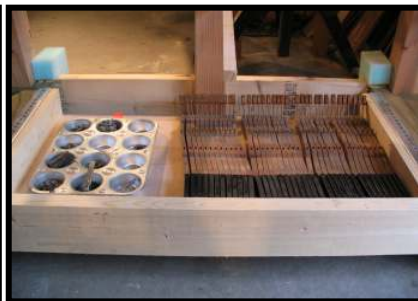


Photo 5



Photo 6

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 4) may be hung using angle irons (Photo 5) 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 keyframe or the action of a grand may be slid over it (Photo 6), while the piano is torn apart.

Shop Ideas/ Piano Parts Trolley

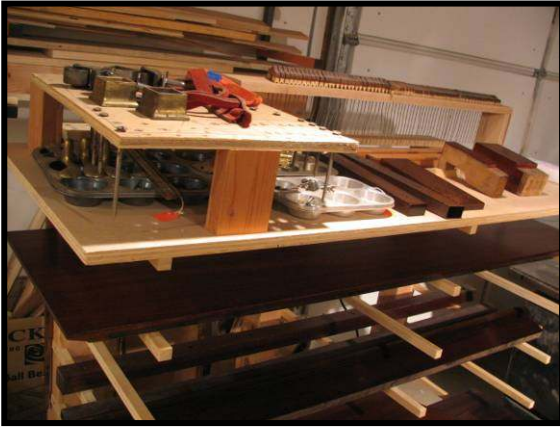


Photo 7



Photo 8

An additional shelf, placed on the top set of rails, provides a spot (Photo 7) 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 8).



Photo 9: Hanging storage 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 9). 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.

Shop Ideas/ Piano Parts Trolley

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.

The following materials list and plan should help you in building your own piano parts trolley.

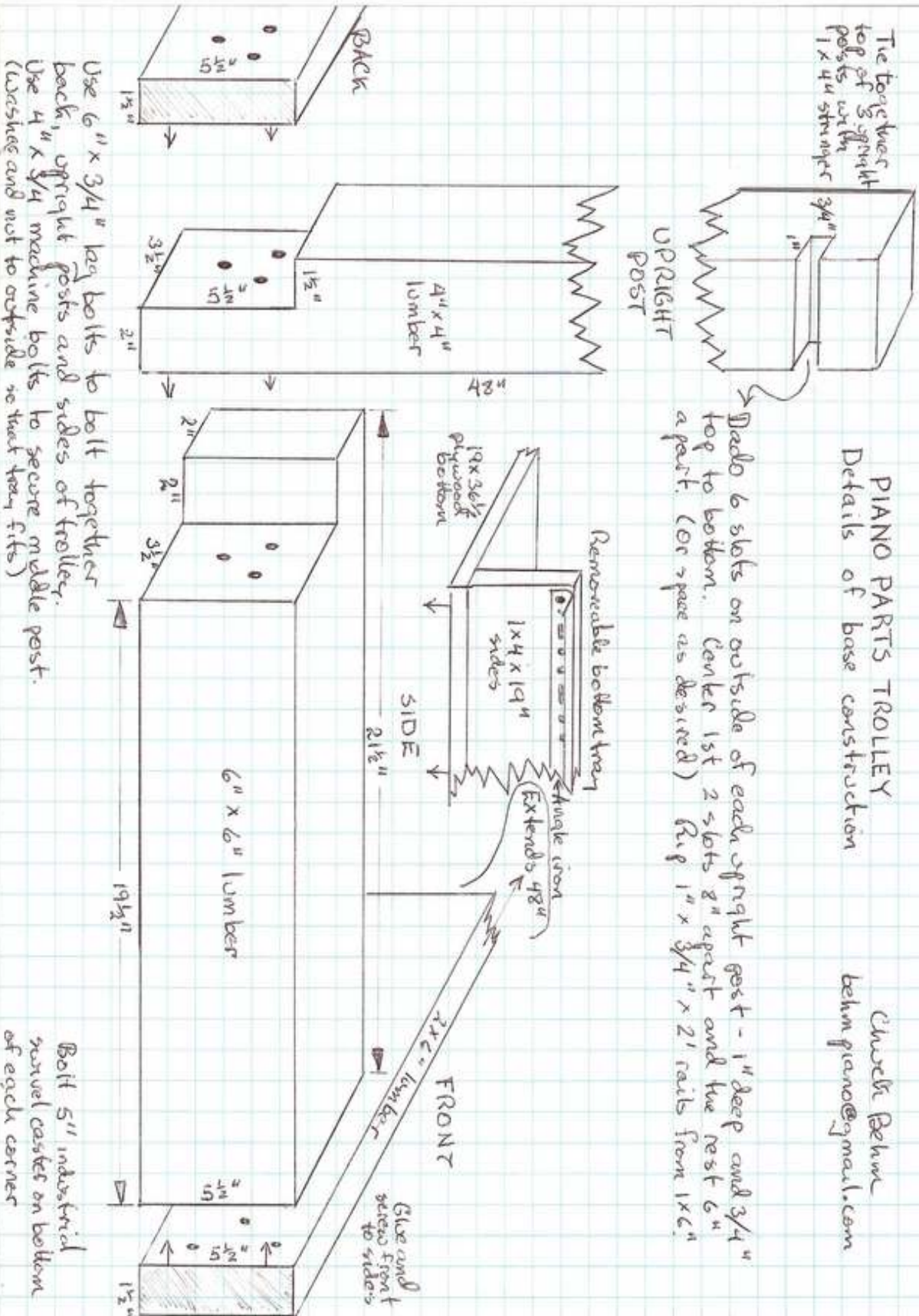
Materials List:

Lumber:

- 4' 6 x 6 treated pine (sides of the base)
- 8' 2 x 6 select pine (front and back of the base)
- 12' 4 x 4 treated pine or Douglas fir (upright posts)
- 12' 1 x 4 select pine (top stringer, sides of the bottom shelf and grand damper holder)
- 6' 1 x 8 select pine (for cutting into rails)
- 1' 2 x 4 (end blocks for the grand damper holder)
- 1 4' x 8' sheet of 3/4" plywood (top and bottom shelves - you'll have some left over)

Hardware:

- 14 3" Phillips screws (I used the type you buy for decking)
- 15 2" Phillips screws
- 46 1 5/8" Phillip screws
- 6 1/2" round head screws (large heads needed for attaching angle irons to 1 x 4's)
- 6 6" x 3/4" lag bolts w/washers
- 3 4" x 3/4" machine head bolts w/washers & nuts
- 16 1 1/2" lag bolts w/washers
- 1 4' length of angle iron
- 4 5" industrial grade swivel casters (2 w/brakes)



PIANO PARTS TROLLEY
Details of base construction

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Drado 6 slots on outside of each upright post - 1" deep and 3/4" top to bottom. Center 1st 2 slots 8" apart and the rest 6" apart. (or space as desired) Rig 1" x 3/4" x 2' rails from 1" x 6"

Notes on Trolley Construction