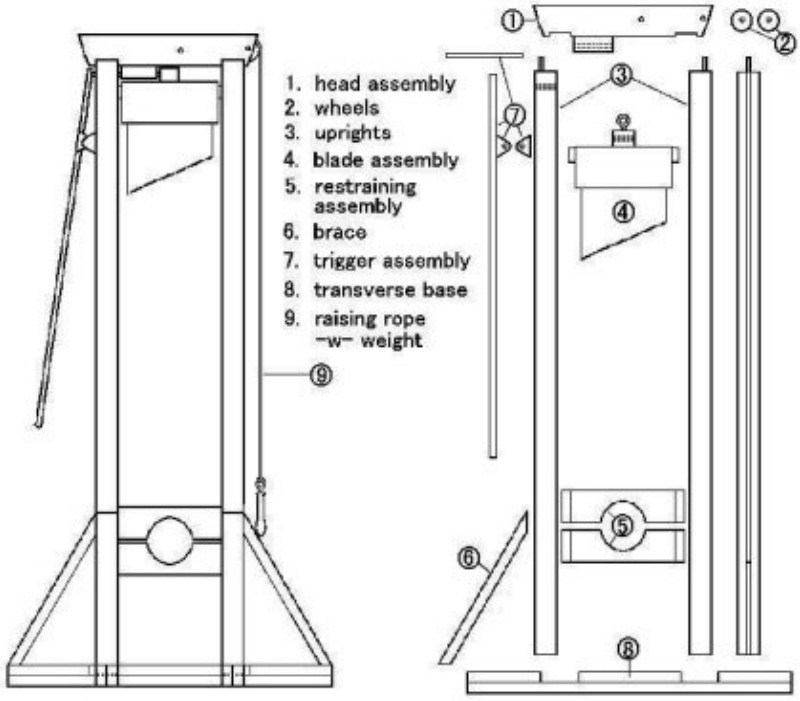
http://dreadwilliam.com/homemadeguillotine.html

The guillotine was prompted by Dr. Guilotin, but was actually built by Tobias Schmidt, a German harpsichord builder.

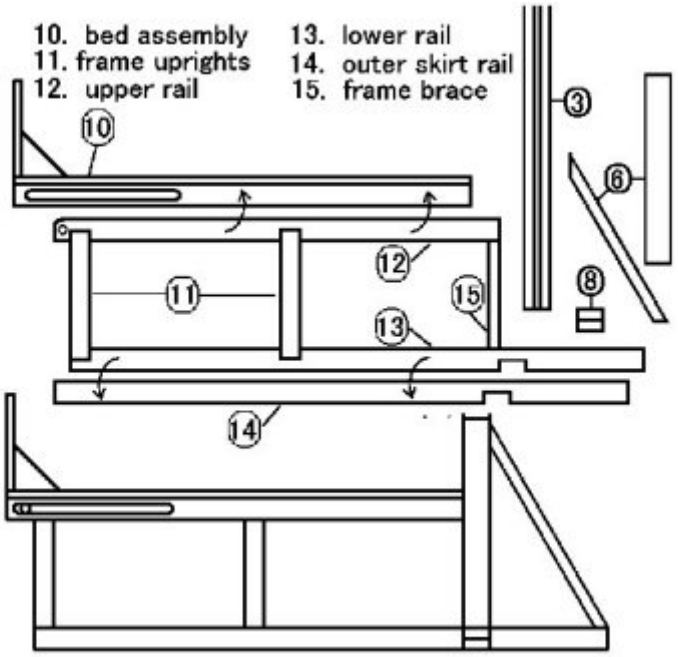
.

It actually only took a weekend to produce. I design as I build, and so you can figure that it couldn't be all that hard right? It isn't. Step #1, find an image of a guillotine. Step #2, convince yourself that if some Frenchman from hundreds of years ago could make one of these, then so can you! Step #3, build it.

Kiln dried Douglas fir 2x4s were used throughout this one, either as stand alone structural members or bonded into 4x5s which constitute the two uprights. I finished it off with a plywood tabletop.



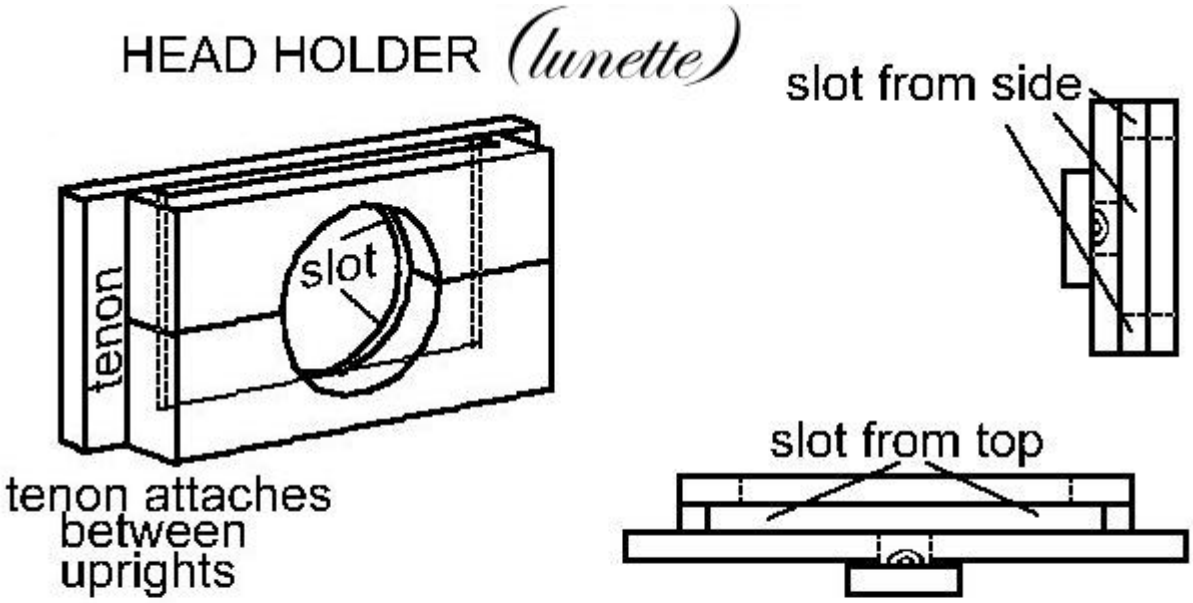
FRONT VIEW This diagram shows the sliding frame and hardware **SIDE VIEW** Diagram showing side framing and sliding table.



This one had a trick table utilizing an oval shaped hole to allow access for the actor's head which is located as close to the business end as possible to help with the illusion. A wooden shield segregates the actors head from the blade area and guides the blade safely past.

Since our head was obviously a rubber copy of Saddam Hussein, (or Pop Racer, take your pick) all audience members assumed the impossibly thin, rumpled, cheap looking body with feet akimbo was fake as well.(make sure your actor wears loose cotton gloves to make the hands seem less real.)

The blade falls, and slams with a horrible chunk! The head tumbles into the basket. Needless to say the audience came unglued when our beheaded body begins to jump around, tied as he still was to the table.

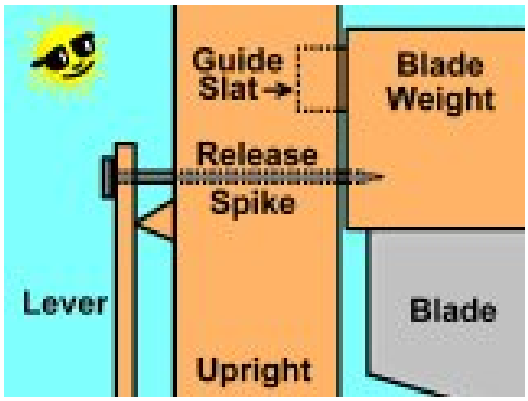


a slot must be provided for the blade to pass through and protect the actor from. a solid back is attached to the imaginary 2-piece front and must include a hole for the latch which attaches the head to the machine.

I played the executioner who, at first confused by the crowd reaction, becomes equally alarmed upon seeing the calamity taking place and determines that something must be done to calm the spectators. I retrieve the head from the basket and smack it hard with a club, immediately calming the recently deceased. I admonish the body, apologize for any unpleasantness and send the crowd on their way, so we may prepare for the next show which usually happened within seconds of each other.

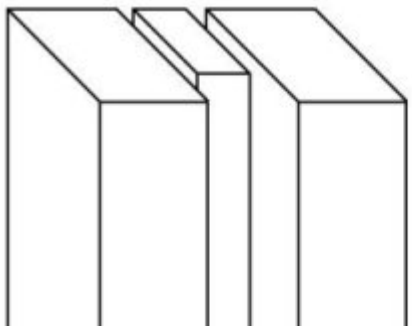
Due to space constraints, mine was roughly 10 feet long by six feet wide and nine feet and two 1/2 inches tall. It had a plywood table top and bottom, steel hardware, and a soft masonite blade. I chose masonite for the odd chance that if the blade might act up in any way it would shatter instead of splinter and all that implies. Construction was executed with #6 2 1/2 inch drywall screws.

The blade assembly is held in firing position by means of a large spike or dowel slid through a hole in the top of the upright into the blade weight. Friction holds it in place until such time as a lever which is attached to the spike is activated and down she comes.



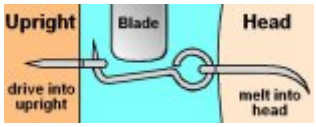
Slats on either side of the blade act as guides to retain the blade during it's trip. To avoid catching on the way down, I found that the slats should be installed only at the top of the blade weight assembly. If your parts don't fit too tightly and are sanded decently you should have no difficulty getting a big slamming chop.

The reason 2x4s were bonded with 1x3s for the uprights was so that grooves would not have to be carved to guide the blade. Big labor saver, that.



sandwiching a 1x3 between two 2x4s will make the uprights both stronger and straighter, and eliminate the need to carve out the blade raceway grooves. Use 3" #6 screws to secure members throughout.

One trick was attaching the dummy head to the machine in a way which would allow the blade to seperate it reliably. An adaptation of a screen door hook latch was made from thin nails, and was used upside down so the passing blade would simply knock the latch from the hook



.

Another trick is to attach the actor's coat to the very edge of the neck holder, so that no matter how much squirming is done the shoulders appear still attached to the neck. The victim is still very much held to the machine until released. Add newspaper to the shoulder area as needed for fullness.

Step by step illustrated plan for realistic stage guillotine. Updated 11/09/08. This machine was so impressive with it's size, force energy and noise that I could not get anyone to get into the dummy suit. Alas, even though the event was a screaming success, it was not worth videoing without the jumping dummy effect.

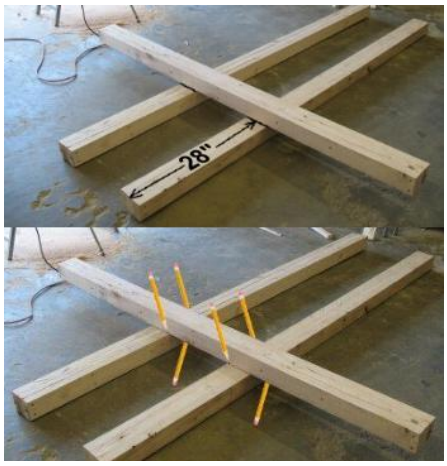
Step 1 **The Base**

Lay out six straight 2x4s which have been rip-sawed to remove the rounded edges, and put them in sets that enhance each other's grain strengths and structures. After you have "witness marked" the sets, glue and clamp them. After the glue has cured, put as many deck screws as you see necessary to the new timbers you have built.

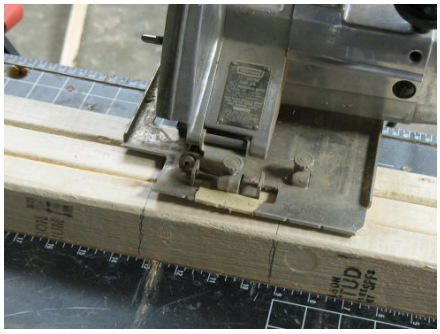
Be sure your new timbers are straight and evenly matched.

Lay out three straight 2x4s which have been rip-sawed to remove the rounded edges, and put them in a set that enhances each other's grain strengths and structures. After you have "witness marked" the boards, glue and clamp them. After the glue has cured, put as many deck screws as you see necessary to the new timber you have built.

Be sure your new timber is straight and true.

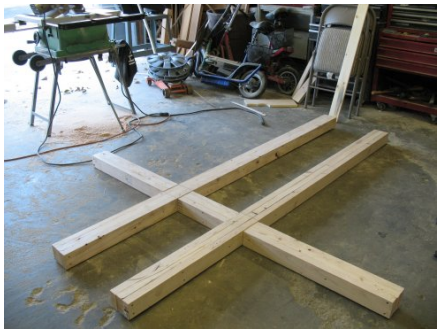


This next part requires a bit of skill, so here we go. Carefully measure 28 inches from the front of each rail, and draw a mark. Carefully place the crossbar you just finished across and over the marks on the rails. Outline the crossbar on each rail and then draw lines along the rails onto the crossbar. The timbers are heavy, so bear that in mind for the next step.



Making the notches in the timbers; using caution, carry the timbers one at a time to your bench and clamp it down firmly, with the lines facing upward. Using a circular saw, cut inside of the lines you drew earlier. You saw the insides so the joint will be snug.

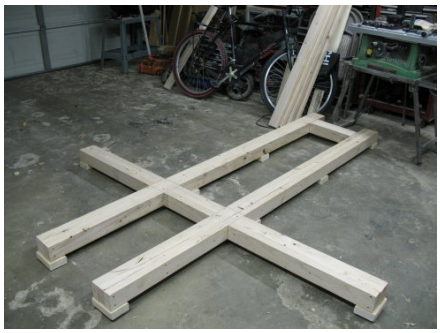
Carefully adjust clamps so the timber may be rotated so the notch diagram is sideways. Using a band saw or jigsaw, as shown, yes there is no blade in this image, clean out the rest of the notch. After doing this to each timber you may have to fine tune the joints with a rasp, also shown.



Being satisfied with the joinery, send as many deck screws into the joints as you see fit. Be reminded at this time that this assembly is heavy enough to harm or kill if handled with enough ignorance.

Measure the space between the rails at the crossbar, and using this measurement, manufacture another timber to the specs you came up with. Ours was 24". Place it between the rails near the rear end of the frame assembly and install with dowels and deck screws.

Very carefully lift and lean one side up against something solid and fasten 10 lifting extensions evenly around the base. These will allow for a more uneven floor to be acceptable and they also add a level of massiveness to the look.



See? There is your base. Next step, table.

Step #2. The Table. In my haste, this was the only shot I took of the completed and mounted table. I have animated the previous steps in it's creation. Download the GIF file and review it at your leisure.

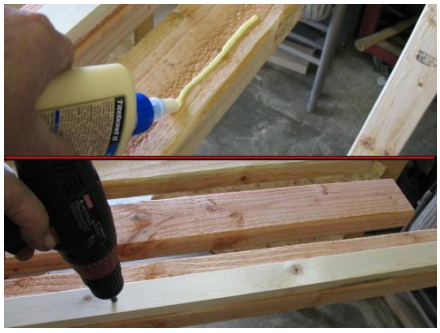
Drill pilot holes through the legs and into the base two times on each leg. Fasten with #10 gauge 3" deck screws.

Next step. The upright frame!

Step #3 The Upright Frame.

First select 4 2x4s in the 10' length. These must be as straight as you can possibly get. If it rained on your lumber as happened to mine, get a fan and dry the lumber ASAP!

Next we pick out 2 1x2s in a 10' length to be used as spacers which will create the slot that the blade will slide down.



Run a bead of glue down one side of the 2x4x10', being careful not to cross over the line.

Spread the glue and screw down the 1x2 making sure that it is as straight as you can get it.

Here you can see the slot that was created in this procedure. You will make two of these.

Drill pilot holes for the fasteners, but leave the clamps in place until after the assembly is deck-screwed together.

Measure the widths of the assembly, the slot thickness and slot depth. These will be important when laying out the three sliding parts.

Transfer these measurements onto a 2x8 and cut to size. You will cut two rabbets at the ends with a router.

Using the router, carefully remove waste until you reach the line you drew earlier. This process can also be done using a radial arm saw with a rabbet blade.

Here you can see how the main spreaders slide into the slotted frame members.

Manufacture the top spreader to fit as tightly as you can but still allowing it to be removed. Sink as many deck-screws into the lower spreader parts as you may see as necessary as these will bear the weight of the fast moving blade assembly.

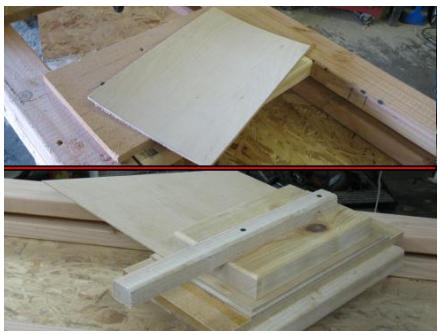
Your upright frame is now complete.

Cut 4 2x4s in a 42" length and trim off the ends to 45 degrees each. These will be the diagonal braces that give the guillotine that final massive touch, that adds strength and scariness.

Next step. Blade assembly!

Step #4 The Blade Assembly. Form a rectangle from plywood or particleboard so that it slides easily throughout the length of the upright frame.

On the back side, glue on counterweights made from 2x4s that have been ripped to result in sharp edges. This makes for prettier joinery.

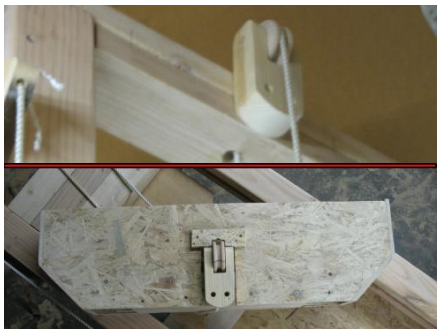


On the front side, fashion a shim to a thickness that assures the blade will pass way clear of the lunette. This keeps the actor safe and assists in knocking the head off. Glue it in place.

I made the fake blade from two pieces of 1/8" luan ply for flexibility, but enough brittleness to assure the blade shatters upon impact with anything. Make a back plate and catch lever, and screw the assembly in place without glue. This way a replacement can be quickly installed with little slowage in Showtime.

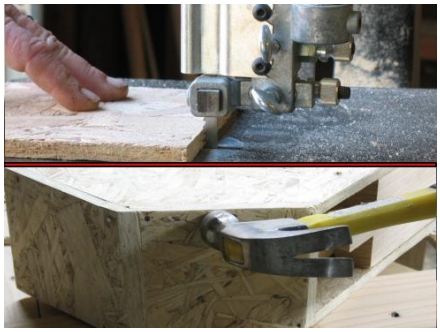
Step #5 Lunette and other mechanisms. Remove the upper and lower lunette and saw a neck sized circular opening equally into the two parts. Sand them so they look nice.

While you have the frame on it's back, jam appropriately sized lumber into the remaining slot under the lower spreader. The blade will need all the support it can get to keep from busting it's way to the ground.



Remove the top spreader and glue a top to it so that the top spans the entire width of the upright frame when the spreader is returned to original position. Purchase or create a wheel to ease the friction on your draw rope. Install it in a convenient location on the top assembly. Bore a 1" hole in the center of the assembly so the rope may easily pass through.

Cut a front and a back from plywood or chip board in a decorative fashion, and glue/nail them to the top assembly. The back will have to be tailored to fit around the wheel assembly



Cut side pieces from 1/2" stock.

Sheet the sides of the top box with the pieces you just cut and glue/nail them in place. Here you can see the top spreader inside.

Had this been a real guillotine, the top would be a solid timber.

Fashion a release lever and catch lever, and install them into the upright frame in a suitable left or right handed way. Be sure the blade can rise as far as possible.

Bore holes so a rope can be spread between the two levers. Add weights to counter that of your release rope.

Note how the top ends of the upright frame have been tailored to fit the top box. Plan ahead I usually say.

Measure out a suitable opening for your actor to hide his head. Drill a pilot hole large enough for a jigsaw blade to pass through.

Using the aforementioned jigsaw, carefully saw around the drawing.

Use a router to clean up the opening

Get hold of some dense foam padding and make your table tolerable to your actor. Bruises will be slow to forgive during all Saint's.

Leave plenty to staple around the head supports and chin rest.

Trace the hole in the lunette onto a piece of lumber and cut carefully to fit snug. Give it a back plate and a 90# magnet on the front and set it to fit as seen in the following photos.

Choose your victim. We decided on an old head of the cartoon character Pop Racer from Speed Racer.

Using very coarse and very long screws, fasten a steel plate to the back of Pop's head which has been sawed at the proper angle to set properly in the scene.

Allow the magnet to grab only an edge of the plate as seen in the photo. This wedge of space allows the blade to pass easily between the machine and head for quick separation.

Here you can see the scene as the audience will see it. Notice that the "wedge" of space cannot be detected in the darkness.

Sand everything smooth, stain or paint with environmentally sane pigmentation. We used a redwood semi transparent latex stain.

Now, put the whole thing back together and have some fun with it. It will be useful to know how to operate it, break it down and reassemble it quickly.

Please be reminded that this thing is dangerous. Fingers can be cut off or crushed.

We will close with these thoughts.

"...they're designed to harm."-Marge Simpson

"...they've been known to kill people."-Mom from Christmas Story

Last minute suggestions. Drape a large towel or a small scrap of blanket over the pad to conceal it's comfort. We don't want the audience to think there is a real person inside of the dummy. Choose an appropriate vessel to catch your head. We will use a galvanized oval water tank.