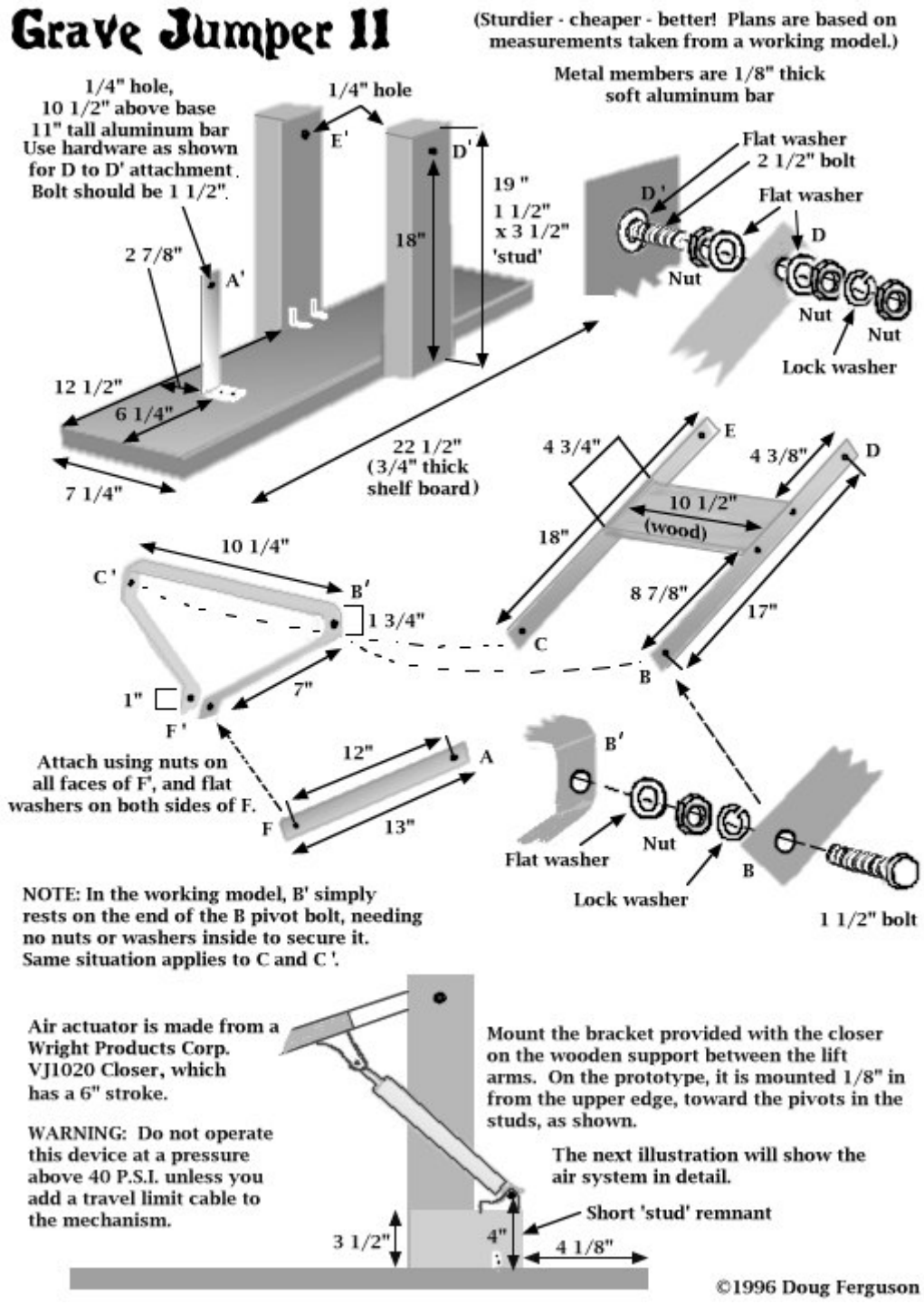
http://www.phantasmechanics.com/jumper.html

The Grave Jumper
or
What To Do With a Lonely Tombstone

This pneumatic mechanical was originally developed in response to a post from a Halloween-L list-member who wanted to have something which could jump from behind a gravestone. It should cost you no more than $50.00 to build, and even less if you have wood scraps lying about from other projects. If you've built any of the many projects to be found in the Halloween-L archives, you will find this one to be no more difficult. If you've never worked with compressed air before, be sure to read our summary of pneumatic basics (Haunting With Compressed Air) before you begin.

If you've visited the Disney Haunted Mansion's graveyard, you've probably seen the horrible heads that jump up from behind the gravestones. These, which I last saw at the Orlando attraction, apparently used to be housed at Disneyland. (Back in the 70's and early 80's, the Orlando Mansion had the 'hi-tech' version of what ended up in the Halloween-L archives as the 'pop-up ghost.' This easy-to-do pneumatic effect is worthy of your attention, if you haven't already seen it.) The Disney mechanism that inspired me consists of a very simple metal frame-guide, with a pneumatic cylinder in the center

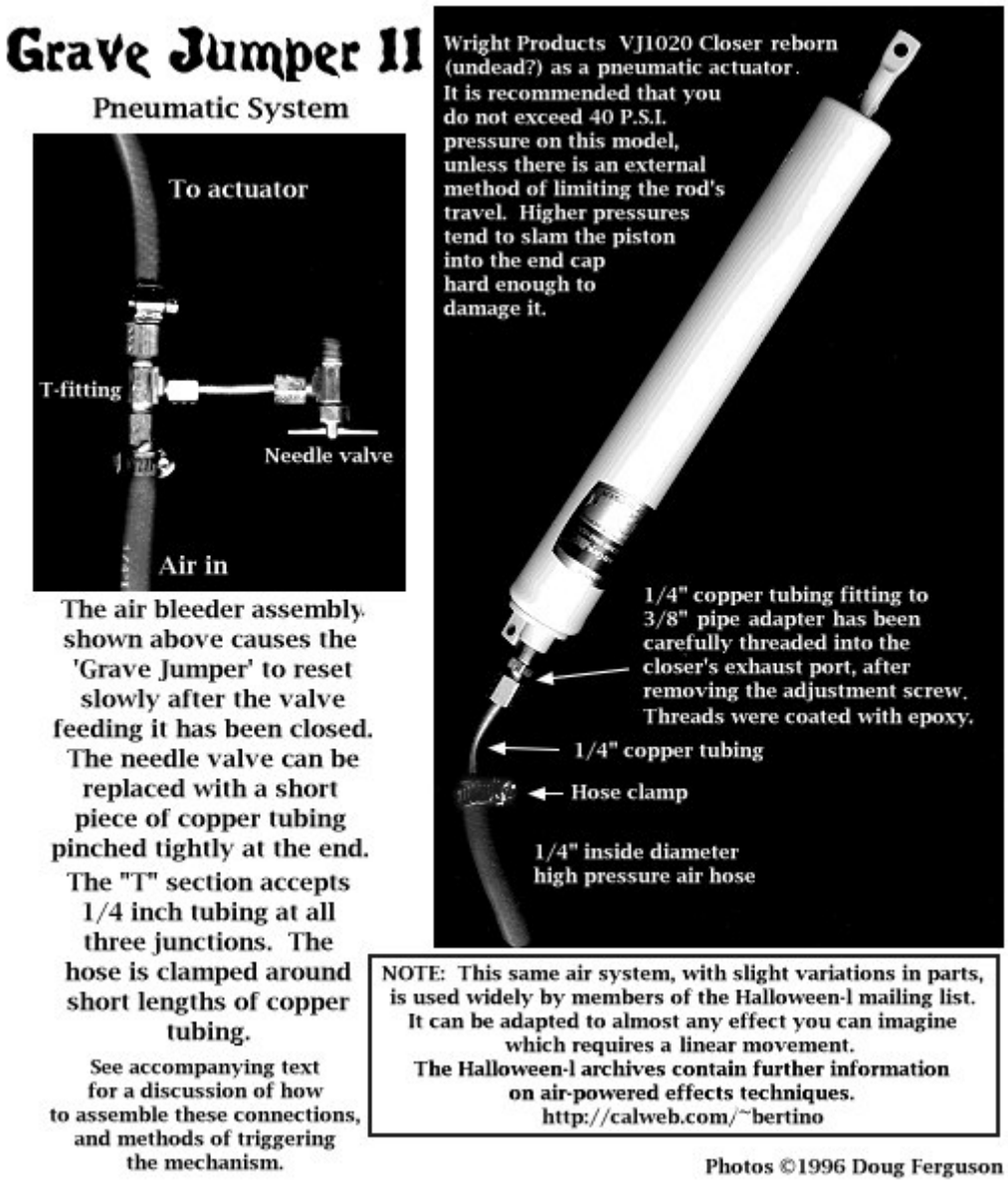
beneath a platform, upon which is mounted a hideous head. Each of these mechanisms probably cost hundreds - if not thousands - of Disney Dollars to construct.



The present device, besides being much less expensive to build, adds a slight twist: The head, instead of simply hopping straight up, leans forward slightly as it jumps. As the normal practice of halloween-I imagineers is to use door closers for pneumatic

cylinders, we can't normally get the 'long throw' that a more expensive pneumatic jack can provide. To get around this, I have applied the lowly lever to good effect, turning a 6" throw pneumatic into a 20" throw device. This should be enough rise to allow you a sizable tombstone (or shallow grave) with which to hide the mechanism.

The *Grave Jumper* mechanism can be set inside a shallow grave, or at ground level behind an appropriately-sized tombstone. The choice is up to you.



Using Brass Fittings

The T-joint shown in the plans uses 1/4" brass tubing (intended for use with water, as when connecting an ice maker in a refrigerator to a water line) which is typically available in coils of varying lengths. When you unscrew the hexagonal fastener(s) on

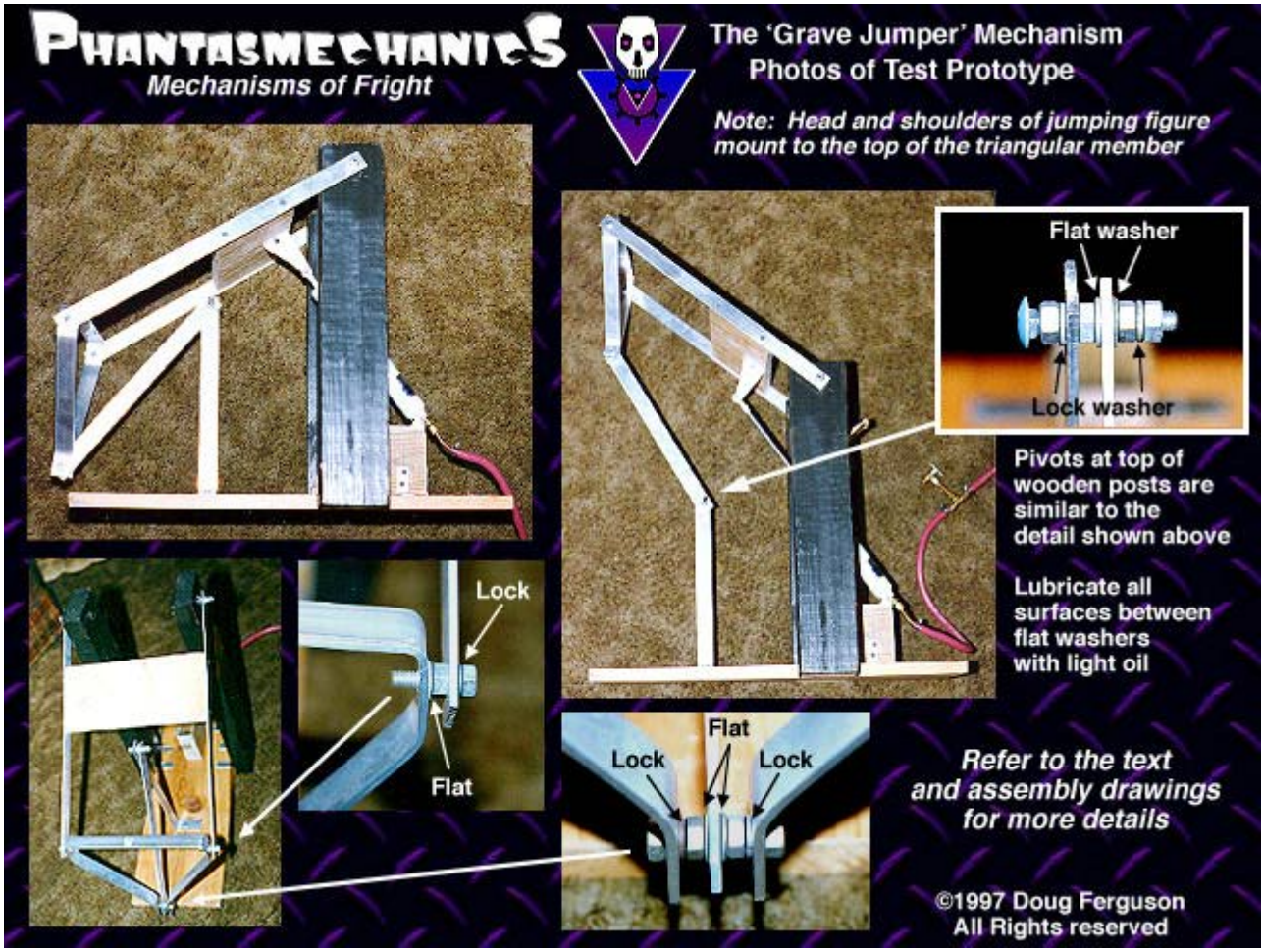
the T-fitting, a small brass bead with a hole through it will fall out. One of these beads is usually provided with each connection on a fitting.

What you need to do to connect the tubing to the fitting is to slide the hexagonal nut, followed by the brass bead, down the tube, and then use a Philips screwdriver, slightly larger than the diameter of the tubing (or preferably, a special tool sold by hardware stores especially for this purpose) to flange the tubing so that the bead cannot fall off the end. Then, you insert the tube into the T-joint fitting, and tighten the nut on the threads behind it. *In theory,* when the fitting is tight, there will be no leaks. If you are in doubt about this process, ask your hardware or plumbing supply dealer to show you how to make these 'joins.'

Of course, this system is designed to work for water, not air. In reality, you may have slight air leaks when you use this type of connection for pneumatics, especially if you have to flex the copper tubing after making the connection(s). Slight leaks, beyond the little hissing they create, are not a major worry in this application.

Important Note: It has been pointed out to us that the door-closer part specified may not always be available. If you cannot tap into the exhaust port with the specified threaded part, it is possible to insert a section of the copper tubing into a smaller port by using a ring of epoxy surrounding it. Be sure to scrape any painted finish off of the inside lining of the port beforehand. *Obviously, any closer lacking a recess surrounding the adjustment screw is not appropriate for this project.*

The illustrations cover the measurements, parts, and construction details fairly well, or so it is hoped. What they do not show is the final 'window-dressing' required to bring the effect to life (death?) The 'inverted-coat hanger-shaped' bracket that is shown in the plans is the platform on which the head is mounted. You can drill a couple of holes in the aluminum cross-member, and screw down a wooden platform, to which the head can be mounted. Or, you can attach a coat hanger-wire frame via bolts and washers, and slip the prop head (stuffed mask or whatever) onto that.



For an added touch, put a pair of prop hands on top of your tombstone or graveside, and using an old stuffed shirt (I won't touch that one!) create the appearance of arms/shoulders connecting to the neck and head atop the jumper device. Just make sure that the gadget can operate freely without snagging on the fabric, which shouldn't be too complicated to do.

A further enhancement includes using an air-horn as a 'bleeder valve.' This is an old standard in amusement park dark ride effects, and works well, as it inevitably draws the patron's eyes to the effect - gets 'em every time! (Carl Chetta's original 'Trash Can Trauma' incorporates a horn in this manner.) The illustrations show where the bleeder valve is located.

It occurs to me as I write this that the use of pneumatics may put off a number of talented beginners. Don't let it scare you - save that for your patrons! Admit it - you've always wanted to get serious about scaring your neighbors! Now, go ahead - just BOO it!