

Portable Blacksmithing - Another Oxymoron

Steve Bloom

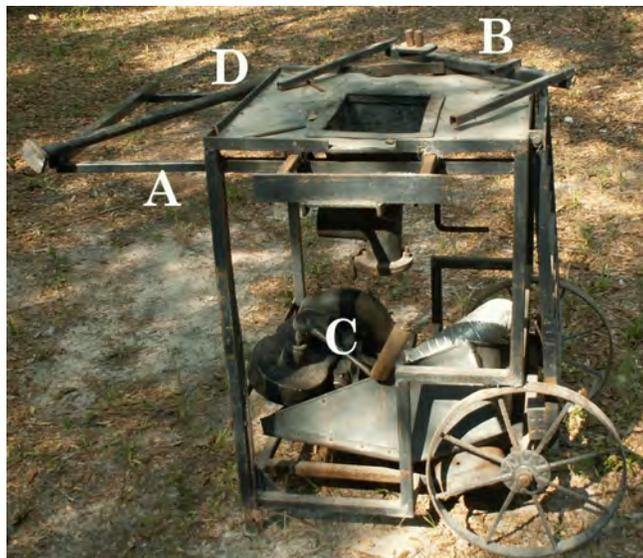
Once upon a time, I did (before retirement and reason occurred) a lot of demonstrating and got *really* tired of loading, unloading, forgetting critical items. At the time, I had a full-size van (and a decent back), so I decided to build a portable forge and bench system under the premise that it's a whole lot harder to forget a couple of big items than a couple of hundred little items.

First the forge. I wanted a light, wheeled unit that somehow wrapped together a blower, a blower stand, a tool rack, a coal bin (or at least a location for one), a forge pot, a small work deck, a third-man, a smoke hood, and, of course, a rust-resistant finish. While I'm at it, why not make it levelable, small to store, and big when set up?. What I came up with is shown here.



Forge - closed for storage

The basic material is light, hollow square tubing (apprx 3/4"), welded into a 'Tea-table' 36" high by 24" long & 24" deep. The wheels were home-made units (bits of pipe, bits of round stock, long thin strap of steel) but if I could have found some old light metal ones, I would have snapped those puppies up. The deck is a framework of 3/4" x 1/8" angle iron

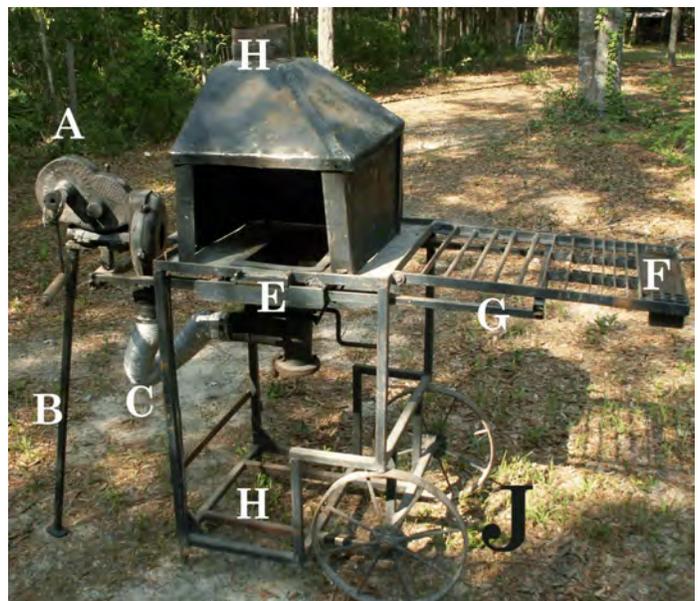


Forge - starting to open

supporting a really thin stainless steel sheet. The forge pot is a stainless steel unit made from 1/8" material (way too thin, I later discovered) with a couple of pieces of 3" pipe to form the ash-dump/tuyere area. Note the grill hanging from the deck (near the wheels), the pipe at the rear, and all the stuff under the pot. Wait, Grasshopper, all will be clear soon.

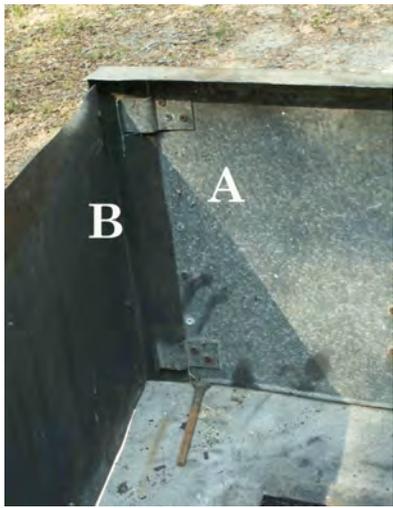
To move the beast, there is a handle (A) telescoped into the edge of the deck opposite the grill. The handle is a square "U" of tubing welded together. Slightly larger tubing forms sleeves for the handle and run left to right in front of and behind the pot, i.e., they double as deck support. When the handle is pulled out, a pair of holes in the handle align with holes in the deck and the sleeves, so that a couple of pins (actually old wood spade bits turned into screwdrivers) can lock the handle into the unit. You then just lift up on the handle to get the legs opposite the wheels off the ground and roll it away. If you look closely, those legs are actually telescopic and can be moved up and down to make rolling easier and also to allow leveling on uneven ground. Stuffed into the rear of the deck is another handle-like unit (B) that has a couple of stubs welded to the upper surface. The Champion 400 blower (C) travels on the lower deck and has a replacement mount that features a couple of sockets that match those stubs and a piece of pipe that sleeves over the blower leg (D) (which is slipped into a pair of rings on the rear when in travel mode).

When it's time to set up (letters now apply to the picture below), the handle is pulled out of the sleeves, the grill is swung up, and the handle slides into the sleeves from the other side of the forge (G) to act as the support for the grill (F). The grill is lowered and it's ready for tools. The blower support slides into the original location of the handle and is pinned in place. The blower support leg (B) is slipped into the pipe on the bottom of the blower mount, and the whole unit is dropped (A) into place over the stubs. There are set screws on the blower support pipe and sockets to allow the system to be locked down so that there isn't any wiggle when turning the blower. A flex pipe (3" aluminum dryer hose) (C) connects



Forge - ready to use

the blower to the pot. One end of the pipe is a simple sleeve for the tuyere end and the other is a wrap-around piece of light leather. The leather slips over the mouth of the blower and is held in place with a radiator clamp. A "third man" (E) lives in the front edge. In travel mode, it has a flange that protrudes up



and keeps loose coal from falling off the forge deck. In use mode, the "third man" is flipped over and now is level with the deck. It has 18" legs, so it can be slipped out to support long stock. Also living on the lower deck is a four-part smoke hood (made of light stainless). The rear wall (A) has four clips riveted to it and these hold the side walls (B) which slide into those clips. When assembled,

the three walls then support the hood (H). The area where the hood used to live (also marked 'H') is now available for a wood box full of coal and the slack tub (made from an old nail keg and a 5-gallon white bucket) can live under the grill as (J). This also allows the user to occasionally drop tools into the water. It's a good idea to paint the hood pieces - stainless steel walls plus a forge fire makes a pretty effective reflector oven.

The hood had a wood stove pipe socket riveted to the upper surface and a couple of 6" x 36" stove pipes and adjustable elbows completed the assembly. If support was available, I would rig the pipes and the smoke exited 8' over my head and outside of the canopy I used. In travel mode, everything fit on the lower shelf and was held in place with a couple of bungee cords.

The only complaint I had was the pot itself - too thin (it would glow when in use), too deep and not broad enough. If I was to redo it, I would just use the dimensions of a normal pot. Even given the thin walls, it has stood up to years of use.



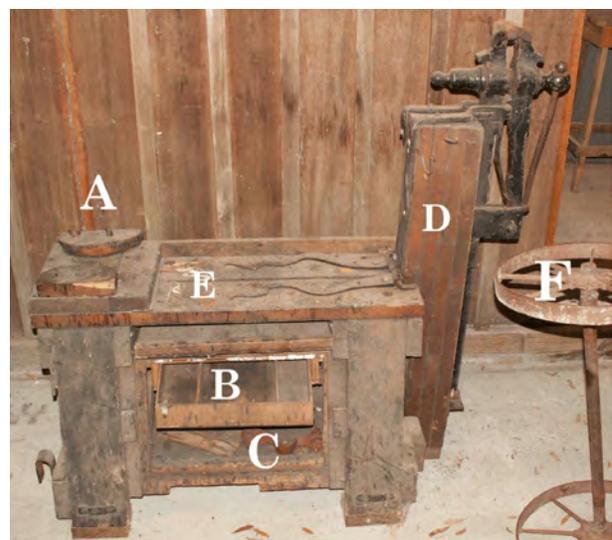
Bench in travel mode

The next problem was what to do with the anvil, the post vise, and all the stuff we just have to have when forging. That required a traveling bench. The bench is 36" long, 21" wide (at the base) and 22" tall. It was made from 2x6" planks. The leg assemblies are supported at the top by a pair of cross-ties (2x4's) and are tied together at the base by additional cross-ties. The work deck is screwed to the upper cross-ties. Hinged to the rear of the bench is a post (~ 6" square) that supports the post-vise (D). In travel mode, the post swings down onto the deck and is secured with a strap. Note the anvil position at the front of the deck (A). I used additional planks to raise the anvil to where I wanted it and then carved a couple of blocks of wood to match the upper surface of the anvil's feet. Those blocks are held in place by a couple of bolts and wing nuts. The wheels are welded to an axle which is held onto the front of the bench by a couple of hooks (opening downward). In travel mode, you pick up the end of the post and wheel the unit around like a wheelbarrow.

In use mode, the post is pushed down to the ground, the wheels drop out of the hooks, the bench is lowered onto all four feet, and the post is swung up. There is a "U" strap that locks the post in the upright position but typically, the mass of the system does that nicely. The wheel assembly (F) can double as a tong rack. The deck (E) has holes to hold a chisel, a hold-down, a brush, etc. The space between the legs and under the deck was covered with thin plywood and turned into a tool chest. I also added a pull out drawer at the top of the chest to hold all of that little stuff (like matches, chalk, rivets, etc.).

I rigged a couple of 2x8 planks and some scrap steel to form a quicky ramp and would wheel both the bench and forge into my van. If I then remembered to toss in the slack tub, the anvil and a bag of coal, I was good to go.

The take-home message is that you can build an inexpensive, reasonably mobile setup. Look for big, light wheels, collect hollow tubing and scrap stainless, and who knows, you might like to demonstrate!



Bench in use mode