



Sofa Sounds

Southern Ohio Forge & Anvil

VOL 94-4

JULY/AUGUST 1994

MARK YOUR CALENDAR: Note the location change. Unless otherwise noted, all meetings will be held at the SOFA Blacksmith building on the Miami County Fairgrounds in Troy, OH starting in *October*. Donations of items to support the newsletter are always welcome. Finger food and cold drinks provided on a break even, honor donation basis. The forges are available before and after the meeting for individual projects. Bring and wear safety glasses.

Demonstrations are open to the public and are at no charge. Meetings start at 1:00 PM.

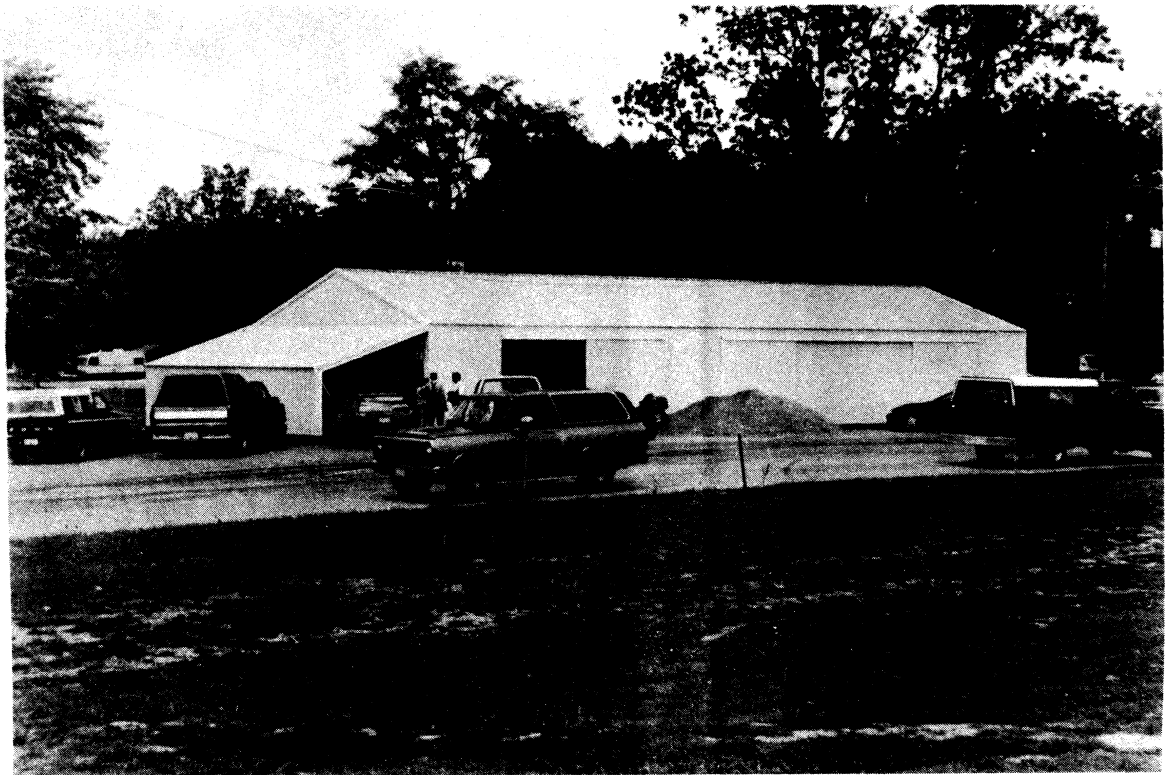
Upcoming Events

Sep 10, 1994 Note change in date due to Labor Day II	SOFA MEETING at the Studebaker Homestead ** This is a work party for the new location	Work party, setting up the new shop
QUAD-STATE 94, 23 & 24 Sept. 1994	Miami County Fairgrounds at The SOFA Blacksmiths' Shop	Four Demonstrators: Scott Lankton, Michael Sarri, Walt Scadden, Hank Steinmetz
Oct 1, 1994	Miami County Fairgrounds at The Blacksmiths' Shop	TBD
Nov 5, 1994	Miami County Fairgrounds at The Blacksmiths' Shop	TBD

Southern Ohio Forge & Anvil

Credits due: The following corrections to the previous issue of SOFA sounds need to be made. Ron Turpin is the person who submitted Longfellow's poem on the chair that went along with his contest. The antique hinges actually came from Ron Thompson. Now I think the record is straight.

Construction news: The building is up and progressing well. The large photo was taken after the 9th of July meeting. At this point the rough plumbing was in with the backfill and cement due next. All permits are now in hand (that took eight months). Thanks to all who have donated time and labor to see this project through to completion. By the August meeting the concrete floor was poured. The county fair starts the second week making the building unavailable until after the fair to



do more work. The interior walls are being done this week. The 19th of Aug is a work day for the club. Stringers for drywall will be setup and maybe a start on the electric will be made. All work must be completed before an occupancy permit is issued and we can't use the building until the permit is issued. A lot of tooling is needed for the shops.

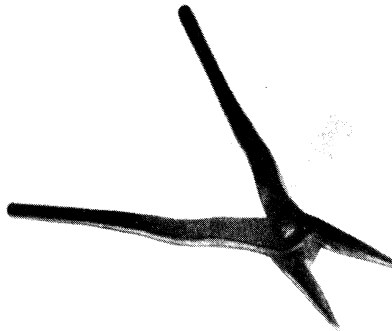
Look at the accompanying list and see if there is something you can contribute to outfit the shop.

Southern Ohio Forge & Anvil

Put this one in your coon skin cap and consider it for next year: Blacksmith Demonstrators are needed for the commemoration of the Greenville Treaty signing, this is the 200th anniversary of the signing and is sponsored by the Miami Council, Boy Scouts of America. The expected crowd will be from 6,000 to 24,000 (projected). The date is May 6, 1995 from 9 to 4 pm. Contact Larry Helton at 513-236-2434.



*Paul Woods, 10th Anniversary Anvil's
Ring Commemorative piece*

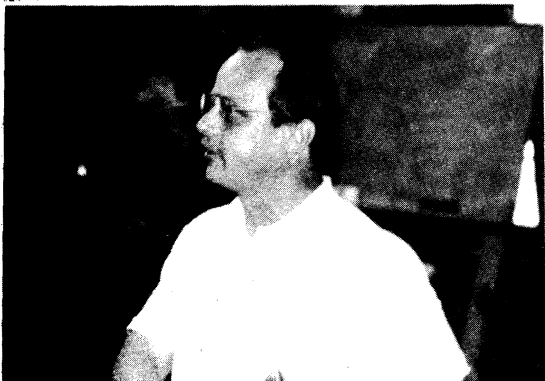


*Plier Tongs by Francis
Whittaker*

July Featured Demonstrator

July Demonstrator - Steve Roth - Reworking Old Tongs

Invocation given by Keith Sommers.



Steve Roth in person

Our July Demonstrator Steve Roth is a commercial artist and vice president of SOFA. His desire is to emphasize the basics of blacksmithing in SOFA. He took his beginning classes here and over the years has developed a good shop. For this demonstration he brought tongs picked up at flea markets and fairs. Steve figures that the top price to pay for a good set of tongs is \$3. If nothing else, a tong provides a source for the odd length of steel and is good stock for 'S' hooks.

Steve did a Tom Sawyer on us, we should have known something was up when he appeared in that white shirt. As it was, Jim and Pat (I did

Southern Ohio Forge & Anvil

not get their last names) were willing workers and added much to the demonstration.

When evaluating tongs, Steve looks for several basic items such as jaw shape and location of the

rivet. Remember, the tong part most used is forward of the rivet and you want a lot of metal in the jaws. Used tongs need to be judged against a good set to see what you have to work with. Look at the distance between the jaws, jaw length, amount of metal, location of the rivet, any visible cracks, size of reins, type of rivet.

The iron must be held flush in the jaws (gripped parallel). A slanted front grip will let the hot iron swing sideways and if gripped in the back the hot steel will slide forward.



Tongs based on plier pattern, good for scroll work

Case #1. This example has a low pivot point but there is still plenty of metal left in the jaws. This will allow us to move the metal forward and reshape the hinge area.

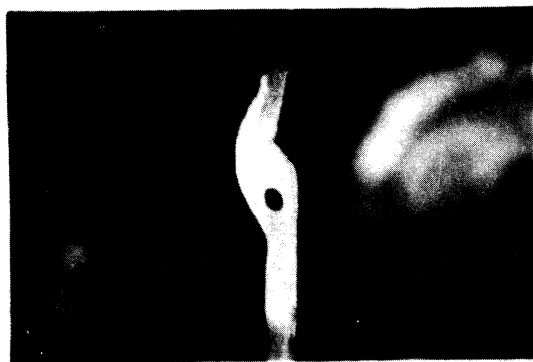
After studying the tongs to see what you have and what needs to be done, disassemble them. Note that this pair had a rivet that was smashed flat instead of heading it properly. Options for removing the rivet include drilling out, chiseling the head off or heating and driving out with a drift. This one was heated and driven out, very clean and simple operation.

Notice how far down the jaw the hole is.

This allows the jaw to be shortened and move metal into the jaw lips. The new curve can be formed with a flatter or over the edge of the



Tongs for rework



Low pivot point



Forming over edge of anvil

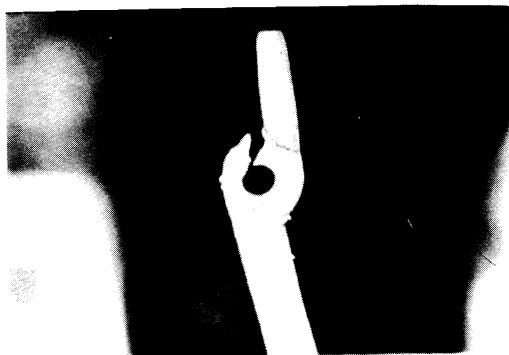
Southern Ohio Forge & Anvil

anvil. Be sure not to distort the eye and keep the offset in line with the handle. The goal is to keep jaws and reins parallel with just enough offset to accept the stock. With the jaws fully formed, it is time to line them up with the hole and check that everything is in order.

Now heat the rivet red hot and set it in hole. Mushroom the rivet head and round the head over with the hammer pein

Case #2: This pair of tongs is cracked in front of the rivet. For the repair, the tongs were heated, the rivet driven out and then the crack was welded.

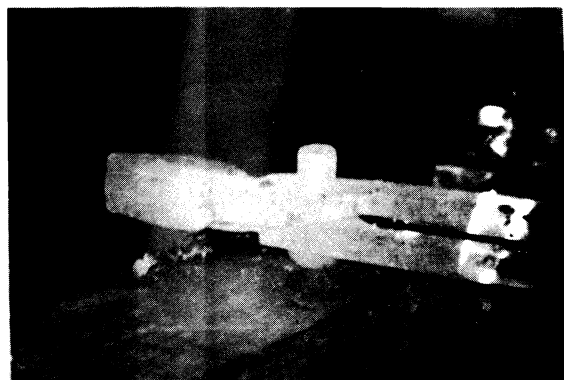
In these tongs the hole is slightly out of round. Re-drilling with a twist drill will catch the drill lips and cause more problems that it solves. The best solution here is to reshape the hole with a punch while it is hot. The punching should be from the inside face, this puts any bevel on the inside giving more bearing area and as it wears it won't be as sloppy. Dress the inside surfaces so they are flat. Hot rasp or use a flatter, it's easier now than later. Now shape the jaws remembering that narrower



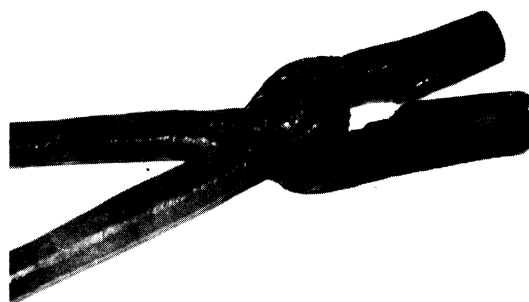
The Grand Canyon of Cracks

jaws work better for the majority of current work. Moving metal to the centerline and forward accomplishes this. Assemble with hot rivet as with the first tongs.

Setting the rivet. Line up jaws while hot, . Put a groove in jaws with square or round stock. Grind edges square and even. Keep the rivet flat and pein it to round the head over. Rivets don't have to be white hot to work them, this is soft steel. Steve heated the tongs several time to help set them as he worked them open and closed in the slack tub.



Setting the rivet



As good as new

Southern Ohio Forge & Anvil

Featured Demonstrator

August Demonstrator - Hans Peot with help from Larry Gindlesperger and Larry Wood - Making FIVE different STYLES of TONGS

Invocation - Bob Zeller

Conducting - Hans Peot

If you weren't there for this meeting, you missed a treat! Five different ways to make tongs were demonstrated from simple to heavy duty. Hopefully we can present the gist of that material here.

Tong Style #1: FULLERED STOCK To do this one you need a 3/8" round rod to use as a fuller. Starting with a length of 3/8" x 3/4" stock mark 1.5" from the end and 3" from the same end on the other side. You will need to drive the fuller rod half way through the bar on the 3/8 inch



Hans Peot in person



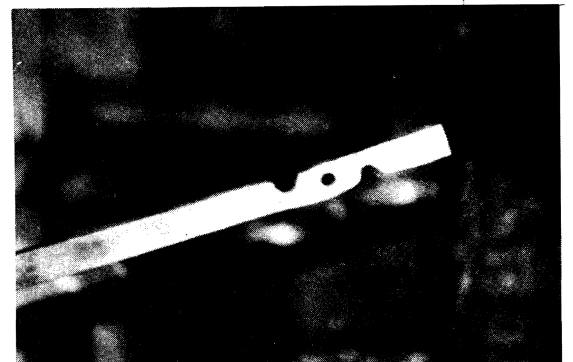
First fullering step

side. After fullering both sides punch the rivet hole next, note the coal dust on the anvil step for the punch.

For the next move you need a crescent wrench to do the twist. Put the bar in the vise and twist to form the jaw. Do another section just like this and give it the same twist. You need two identical



Punching the Hole



Ready for the twist

Southern Ohio Forge & Anvil

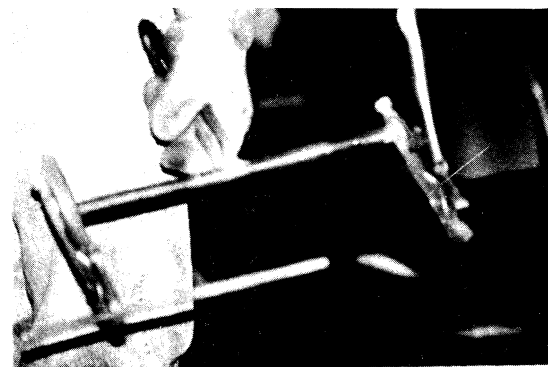


Doing the jaw twist

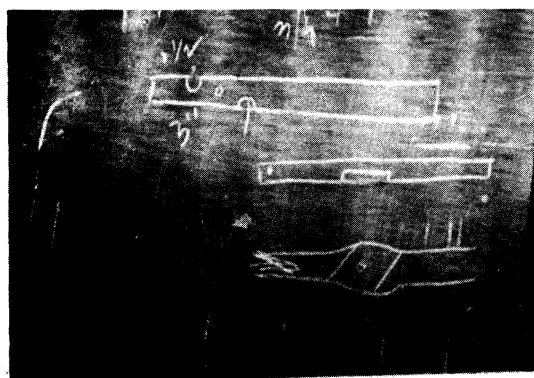


Drawing the reins

pieces to form the tongs. The reins can be drawn out or the jaws welded to other stock. At home, Hans will drill the hinge hole and use a bolt rather than a rivet. The bolt should have a nut run on finger tight, cut the excess bolt off and peen the end of the bolt to secure the nut and allow the nut to hold as tight as you feel you want it. As a last step heat the jaws and fuller the inside with a rod or square bar to provide a better grip on the work.



Hans' third hand



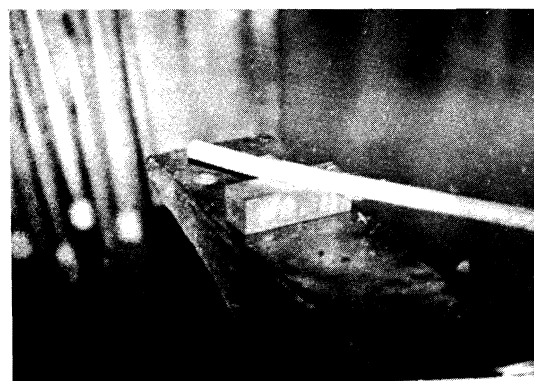
1st and 2nd style drawings

Note

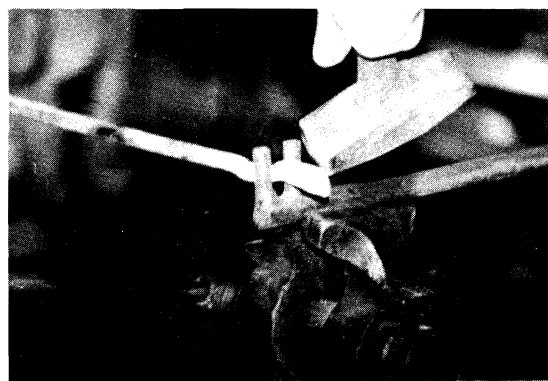
Hans' third hand for forge welding. They are used to position the two pieces and hold them while heating and removed after making the weld. They also allow welding of thin sections when heavier pieces are used as backup blocks and heat sinks.

Tong Style #2: ROUND ROD

Using 1/2" or 5/8" rod (your choice, size to your hands) you will shape this for jaws. The black-

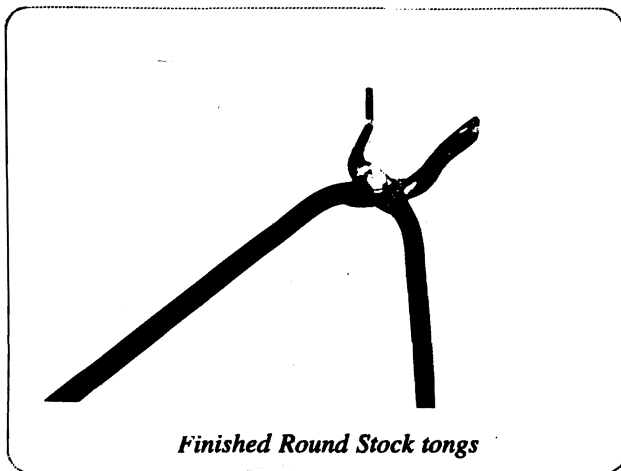


First placement of the hinge

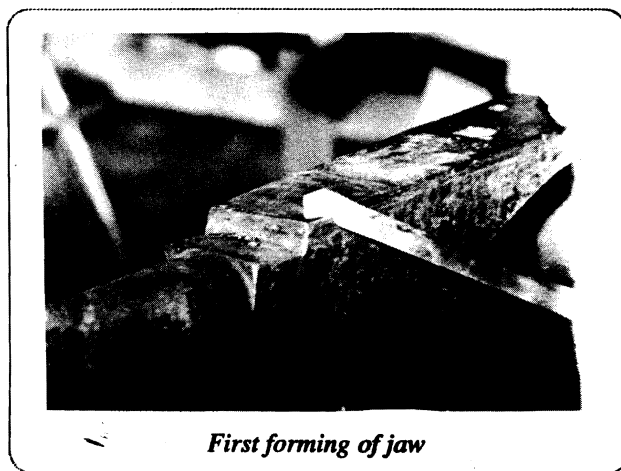


Forming the jaw

Southern Ohio Forge & Anvil



Finished Round Stock tongs



First forming of jaw

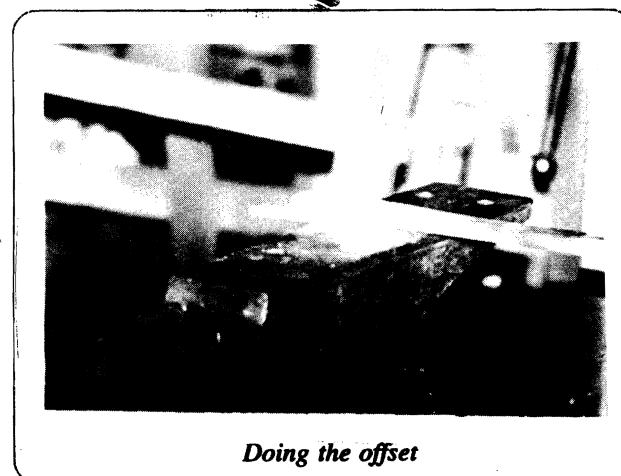
board shows the idea for the hinge in the bottom two sketches. The first step is to place the location of the hinge joint. This can be done using a 1" wide section of steel fitted to set in the hardy hole. This is used to fuller a notch in the rod at a 45 degree angle. Step two is to flatten the stock in front of the hinge to form the jaws. Step three is to use a bending fork. Use this to bend the reins parallel to the hinge joint and then do the same for the jaws. Repeat for the other side of the tongs. Draw or weld reins and finish the jaws to taste. Sounds like a recipe, huh?

Tong Style #3: 5/8" square bar

Using a section of 5/8" square form the jaw on the edge of the anvil as shown. Flip the material left



First flip of the jaw



Doing the offset



Drawing the reins

or right depending on whether you want left or right handed tongs. Push the newly formed jaw section down over the anvil and flip it 90 degrees again in the same direction. Hammer straight down to form the offset. Add a hole for the hinge and draw or weld reins to the jaws.

Tong Style #4: LIGHTWEIGHT RUSH JOB

Larry Wood showed these for a quick job. Take a bendable section of steel. Fold in half and clamp in vise with about 2" extending beyond the vise. Use

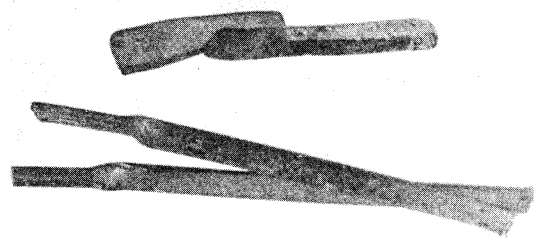
Southern Ohio Forge & Anvil



Setting up for first twist



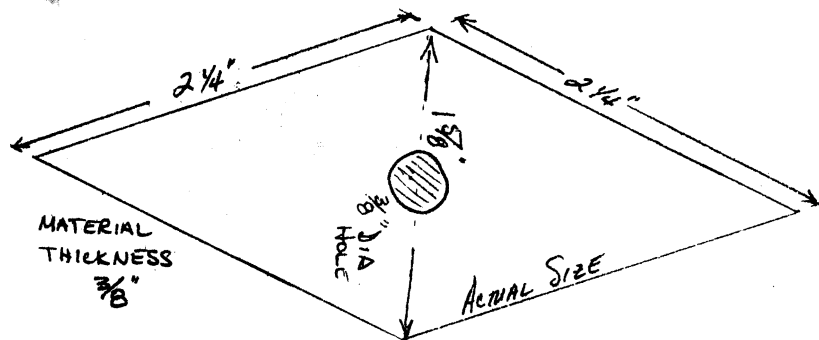
Twist finished



Ready for the rivet

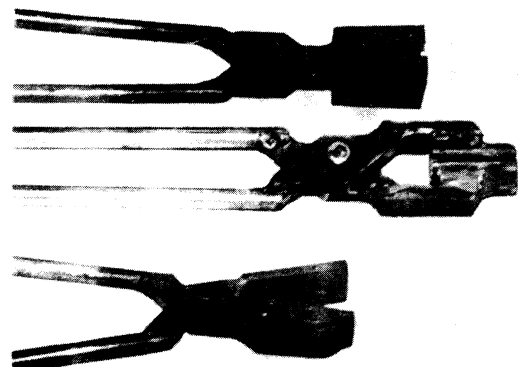
pliers or a wrench to give a 90 degree twist on the section sticking out past the vise. Drill a hole for a rivet or bolt and nut, separate at the bend and you have a quick pair of lightweight tongs.

Tong Style #5: Welded Tongs -- ANY SHAPE



Parallelogram size

The parallelogram with the hole forms the foundation for any type of tong you want. Just by adding the appropriate jaw shape you can have many different styles. Cut the parallelogram from bar stock and gang drill the holes. Cut up various pieces and put



Selection of fabricated tongs

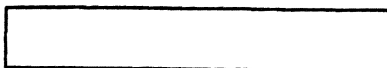


Cut pieces ready for assembly

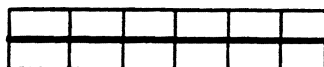
Don Asbee's Hand Grenade Twist

Don showed off this unique twist at the May BAM meeting. It would make a neat handle or a balluster or maybe even a salt shaker if the center was drilled out.

1. Start with a piece of 1" tubing long enough to hold

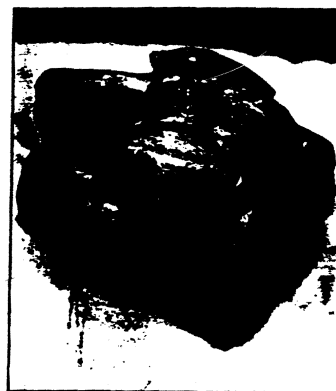
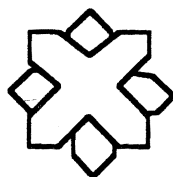


2. Fuller all sides until it looks sort of like this

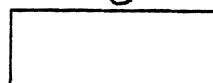
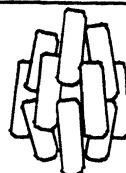
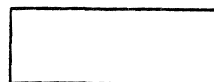


3. Let it cool and then cut at 3/4 to 1 inch intervals to an even depth with a hacksaw or chopsaw on all four sides to isolate rectangles. Don't cut too far!

4. Clamp in a vise and twist every other segment until points are 45 degrees off center. Cut off the longest length that will fit under the power hammer. (2-3")



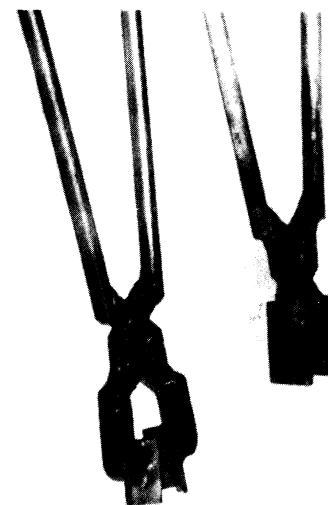
5. Now heat and squash under the power hammer until the segments slide past each other



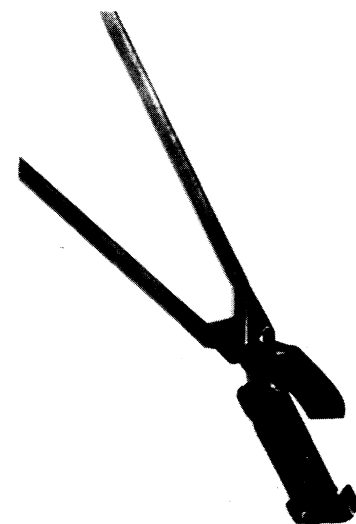
Note: All work is done hot except for step #3.

them in bins so they are ready when you need a special set of tongs. Note the knife tongs with the pivoting jaw insert at the bottom of the picture. This allows even pressure on a beveled blade. The knife tong also includes an adjustable steady that fits the blade width.

Fabricated tongs



Fabricated tongs



Southern Ohio Forge & Anvil

Southern Ohio Forge & Anvil

This is a list of items needed to outfit the S.O.F.A. blacksmith shop and its six forges. Note that there are two forges in the main building and four remote sites. All donations are tax deductible and receipts will be provided for your use. Contact points are Hans Peot and Ron Thompson.

Items that are already available or procured are marked with an X

ITEM	FORGE #1	FORGE #2
Bench		
Forge	X	X
Hood	X	X
Pipe (4 - 10" elbows + 12-14 3', 10" sections)		
Power Hammer	X	X
Base		
Vise + stand	X	
Anvil + stand	X	X
(need wood stumps)		
Swage + stand	X	
(need stand)		
Drill Press	X	
Metal saw	X	
Cut-off saw	X	
3/4hp Grinder	X	
Arc Welder	X	
Electric drill		
Hand held grinder	X	
Sketch board	X	X
Drill bits, 1/16-1/2"	X	
Hammers		
crosspein 2 lb		
crosspein 3 lb	X	X
Ball pein	X	X
Sledge 8 lb	X	
Brass		
Set	X	X
Flatter	X	X
Punch & Chisels	X	X
Hardies	X	X
Hot Cut		
Pullers		
Spring Swages 1/2", 3/8", 1/4"		
Hacksaw + Blades		
Files		

12" Mill		
Square	X	X
Round		
ITEM	FORGE #1	FORGE #2
Old rasp	X	X
Tongs		
Flat		
Square	X	X
Round	X	X
Rivet sets and bottoms		
Rivets		
Cutting Plate		
Vise grips	X	X
Adjustable wrenches	X	X
Pliers	X	X
Clamps 4", 6", 8"	X	X
Extension cords	X	X
Drill press vise		
Hardie V-block		
Scroll bender		
Tape measure		
Metal ruler		
Large square		
Wire Brush		
Metal table		
Cut-off plate		
Fire extinguisher (3)		
Arc weld rods 1/8", 5/32"		
metal ash bucket		
coal bucket		
slack tub, metal		

These are the four remote sites

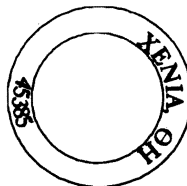
ITEM	Site 1	Site 2	Site 3	Site 4
<i>Required</i>				
Forge + Hood	X	X	X	X
need hoods				
Anvil + stand				
Coal bucket				
Ash bucket				
water bucket				
swage block + stand				
hammers				
hardie				
hot cut				
tongs				
vise + stand				
chisels and punches				
cut-off plate				
sketch board + stand				
Files				
wire brush				
<i>OPTIONAL</i>				
Hand held grinder				
3/8" drill + bits				
Flatter				
Set hammer				
Hacksaw				
Vise grips				
Pliers				
Extension cords				
Power hammer				
Large square				

Offset printed on an excellent paper, Super Max Polished, text and cover weights. Paper stock donated by Howard Paper Mills, we appreciate their support.

SOFA SOUNDS
C/O Richard Kern, editor
P.O. Box 284
Xenia, OH 45385

Your SOFA membership expires on 6 95

Franklin, Richard A.
7158 Kiyemore Dr.
Dayton, OH 45424



	BULK RATE
	U.S.
	POSTAGE
	PAID
	PERMIT NO.
	823

FROM MR. RICHARD SHIELDS

2 ADDITIONAL SETS TO THE BENDING FORK

IN A COUPLE OF PAST ISSUES OF OUR NEWSLETTER WE FEATURED HOW TO ARTICLES ON A CENTER FINDING JIG AND A MULTI-PURPOSE BENDING FORK. MR. SHIELDS INFORMS US THAT YEARS AGO BLACKSMITHS COMBINED THE TWO TOOLS AS SHOWN BELOW, IN ADDITION, THEY USED THE SAME SET UP TO GUIDE A GROOVING CHISEL. *The Editors*

THIS NEW, NEW CONTRIVANCE IS USED FOR MULTIPLE PURPOSES. IT CAN BE MODIFIED FOR YOUR SPECIAL NEEDS. JOE USES IT FOR FORMING COUNTERSINKS AND FOR FORMING PROTECTIONS CALLED "DOG EARS" ON HIS CURTAIN RINGS INTO WHICH HE THEN DRILLS A SMALL HOLE FOR THE HOOKS. HE SUGGESTS THAT IT COULD ALSO SERVE AS A FULLER, HOLE PUNCH, DESIGN STAMP, TOUCH MARK, LEAF VISE, ECT.!!!

① GRIND DESIRED SHAPE ONTO ENDS OF PIECES OF HIGH CARBON RAILROAD SPIKES. AFTER HARDENING, WELD THESE TO A 6-8" LONG BEAM OF 3/4" SQ. STOCK. DRILL BEAM AT ITS CENTER POINT WITH A 7/16 BIT. (SEE FIG. 1)

② WELD A PEDestal OF 3/4" SQ. (OR WHAT HAVE YOU) TO A PIECE OF HEAVY ANGLE IRON (WHICH WILL BE USED TO CLAMP THE TOOL INTO YOUR VISE). THEN WELD TWO HIGH CARBON ANVILS (A) OF DESIRED SHAPE TO THE ANGLE.

③ ASSEMBLE BY PLACING A SAMPLE OF THE MATERIAL TO BE USED ON THE ANVILS TO LOCATE THE HEIGHT OF THE FIRST HOLE IN THE PEDestal. DRILL FIRST HOLE WITH A 7/16" BIT AND INSTALL HIGH GRADE BOLT WITH A FLAT WASHER ON EITHER SIDE OF BEAM AND WITH NUT ON THE BACK OF THE PEDestal.

Fig. #1
SIDE VIEW
Rivet Set
Fig. #1

Fig. #2
TOP VIEW
CENTER PUNCH MARKS
CHISEL GROOVE
WORKPIECE (IRON STOCK)

Fig. 1
BEAM

Fig. 2
HEAVY ANGLE IRON

Editor's note:
AFTER SPENDING UNHAPPY HOURS WITH WELDERS AND GRINDERS AND DRILL PRESSES MAKING SPECIAL VISES TO DO THIS JOB, Mr. Lich, WITH A PIECE OF WIRE, SHOWS US WHY WE NEED TO RESPECT OUR ELDERS! Humbling, Ain't it?

Fig. 1
SAMPLE

Fig. 2
SAMPLE

Joe Fawcett