



Sofa Sounds

Southern Ohio Forge & Anvil

VOL 94 -1

JANUARY/FEBRUARY 1994

MARK YOUR CALENDAR: Unless otherwise noted, all meetings will be held at the Studebaker Frontier Homestead on St. Rt. 202 about four miles north of I-70 and two miles south of the intersection of St. Rte 571 and 202. Please do not park in the grass or block access to a production area. 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 at the homestead 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: PM.

Upcoming Events

March 5, 1994

SOFA MEETING at the Studebaker Homestead. Demonstrator will be Doug Fink forging something to be announced.

April 2, 1994

SOFA MEETING at the Studebaker Homestead. Demonstrator will be Keith Sommer forging wrought iron.

May 7, 1994

SOFA MEETING at the Studebaker Homestead. Demonstrator to be announced

June 4, 1994

SOFA MEETING at the Studebaker Homestead. Demonstrator to be announced.

President's Note from Ron Thompson

Well, here we are in the middle of winter and this one's been a dandy. Almost too cold to blacksmith. Our attendance at SOFA is always encouraging when it's too cold to do anything else, we always have an excellent turnout. **Steve Morrison**, the fourteen year old son of member Jeff, was our demonstrator at the January meeting and picked a difficult project for his first demonstration. Did a great job, more on that later. Thanks to **Bob Cruikshank** for assisting him and being his righthand man.

Last month I announced the several members who had volunteered to help us out and one of the was **Ed Rhoades** who was announced as Ed Roush. That is known as brain lock. My brain has a habit of locking up like that. Sorry, Ed. Anyway Ed is going to help by selling hats, T-shirts, gloves and pins. If it's any consolation, Ed, I was demonstrating

casting at one of the roundups and as I began, I looked up and the sign said "Ron Thomas". They apologized and put up another sign that said "Ron Thomason". Then one that said "Tom Ronson", and finally the right one. I think Steve Roth should be ashamed.

The board has been meeting to try to reach resolution on a new home. The situation with the Miami County fairground is still unresolved. A new building requires a handicap restroom which we are in favor of but there is no sewer line in the entire area. A septic system must meet EPA standards and the ground in the area is gravel so we would be required to truck in enough dirt to build a mound system. Our applications for variances have not resulted in a satisfactory solution. We are still working on it. We will report our progress as we proceed.

Hans Peot has prepared a financial statement for this newsletter which took a lot of time. We will try to report our financial situation periodically. The board approved a motion to send Hans to an accountant to make sure we were doing everything properly. Our building fund which we have built-up over the many years currently stands at \$70,000 and we should have enough money to build and furnish a new home for SOFA. Last years Quadstate results are included elsewhere in the newsletter. We are planning to have a place to keep coal. **Larry Gindlesperger** checked out the requirements and we plan to have a covered coal storage.

Several more members have volunteered to help out it looks as if we might have enough to put on a Quad-state this fall. The Board has selected the last weekend in September (24-25, 1994) for the roundup if we are able to pull it off. Note: this is one week later than it was for the last several years. **Brian Thompson** and **Doug Fink** are going to be the co-chairmen for the event. We are going to plan a slightly smaller event for our first one at the new location, wherever that is going to be.

Ron Turpin reported at the January meeting that during the holidays his children kept coming up and asking him to make a sound like a frog. When the third child asked for the same thing, Ron became suspicious and demanded to know what was going on; why everyone wanted him to make a dumb sound like a frog. One of the kids piped up and said "Mom said as soon as you croak we are going to Disneyland!" Sounds like a loving family. Ron said it was an almost true story.

I heard of this sad story..... Seems one of our blacksmith friends was pounding iron much too long and too hard and began to act a little strange. (my wife wonders how we would know). Anyway, his mother sent him to the psychiatrist to see if he could be helped. The doctor asked what was wrong and the blacksmith told him that he was in love with an elephant. The doctor berated the poor blacksmith, told him that people did not fall in love with elephants, that such a thing was impossible and stupid and asked if he had any question. The blacksmith said "O.K. Doc, I understand. By the way, do you know of anyone who would want to buy a very large engagement ring?" O.K., I quit already. On to the rest of the newsletter.

Club News

January Invocation: Larry Gindlesperger
February Invocation: Larry Gindlesperger

Emmert Studebaker slipped on the ice and broke his ankle. While he was not at the January meeting, by February he was at the meeting and due to get his cast off the next week. We wish him a continued quick and speedy recovery.

SOFA 1993 Financial Statement

INCOME	
Dues	\$2441.00
IRON IN HAT/SALES	\$2812.53
INTEREST	\$1281.30
QUAD-STATE	\$19,818.33
TOTAL	\$26,353.16
EXPENSES	
NEWSLETTER	\$2,479.71
INSURANCE	\$201.00
SERVICES	\$4,487.72
MATERIALS	\$2,641.72
AWARDS	\$690.00
DEMONSTRATORS	\$4,000.46
MISCELLANEOUS	\$588.97
TOTAL	\$15,089.06
1993 INCOME	\$11,264.10
Surplus moved to building fund with approximately a \$70K balance	
Hans G. Peot	
Secretary/Treasurer	

JAN: The biggest hurdle to overcome now is the state EPA. The main problem is putting in restrooms and meeting the handicapped requirements which are extensive and expensive. The idea of a pit and pump is not acceptable and an alternative of porta-johns will be proposed. Depending on the soil conditions we may have to do a mound type system which is the most expensive solution.

FEB: Larry Wood reported that a test hole dug in the area shows 6 feet of top soil. This is sufficient for a septic system so that will no longer be a problem. Steve Roth is arranging for a survey due within 2 weeks. A quick review of the proposed building was given noting that the club has always wanted its own property and building. This will get us the building, 30' x 80' in size. This is the culmination of over ten years of savings and work. Final approval from the EPA is still needed. The coal storage is not an issue because of the small amount 2-4 tons as long as it is kept covered.

!!!!!! GOOD NEWS!!!!!!

Enough people have volunteered that QUAD STATE 1994 is on and will be held the LAST (4th) weekend in September. Doug Fink and Brian Thompson will co-chair the event. Four demonstrators will be on hand and it is planned for the new facility.

Item sales--- call these people to arrange for delivery and payment at the next meeting

coal sales: Bob Cruikshank 323-1300
 kevlar gloves: Ed Rhoades
 video tapes: Hank Steinmetz

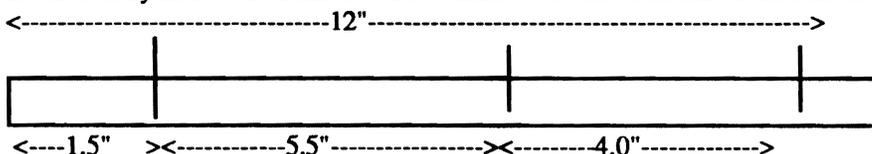
January Featured Demonstrator

January Demonstrator Steven Morrison with Bob Cruikshank as striker and all-round helper

BIO: age: 14, being taught by Dad (Jeff Morrison and Bob Cruikshank). This is his first demonstration and after a year or two of work has recently decided to put more effort into blacksmithing.

FORGED COLONIAL MEAT FORK

The stock used is a 1/2" x 3/16" flat, 12" long. It should be noted that in colonial times flat stock was the norm and round was rare unless you made it. The bar is marked out with soapstone and center punched at 1 1/2", 5 1/2" and 4". This gives 1 1/2" for the tines, 5 1/2" for fork body and 4" for a handle. The balance becomes a rattail on the handle.

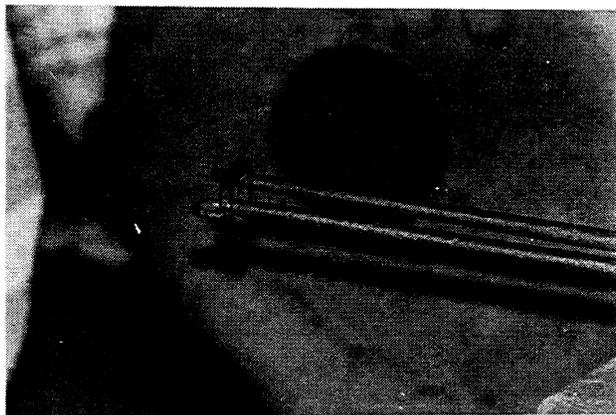


Steven's first action is to heat the end marked with the 1 1/2" section and split it down the middle for the tines with a hot cutter. Several methods of hot cutting can be used Steven chose the chisel and cut from the end to the center punched mark.



Hot cut on the anvil

rasp step is not necessary as the thin edge will not be there. Note the lock ring on the tong reins here, definitely a help in keeping a handle on things.



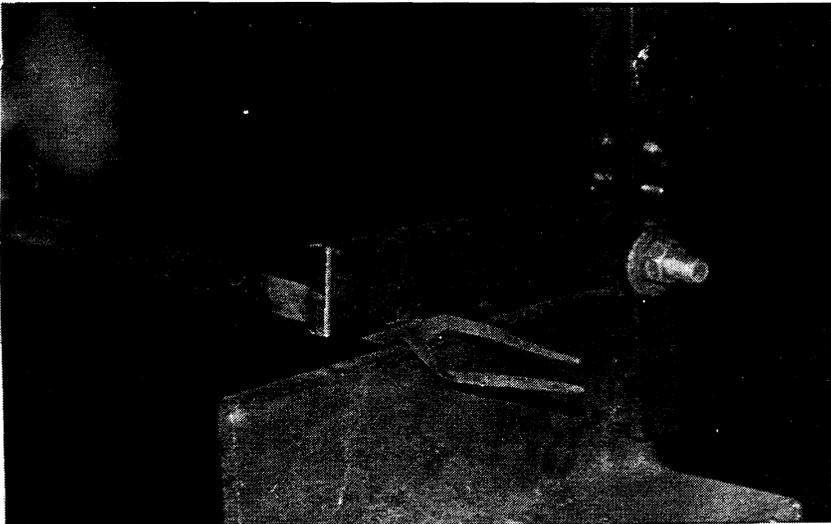
Lock ring on tongs

Do another heat and spread the split and clean up the inside of the split. The thin edge that is left is hot rasped to smooth it out and prevent cold shuts later in the process. Do the whole inside length of each tine. If the split is cut cold with a bandsaw then the hot

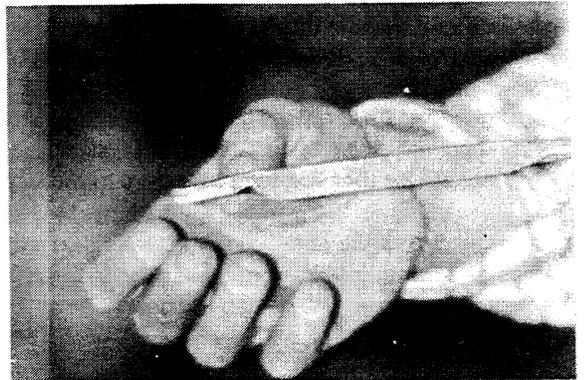


Hot rasping the inside edge

Reheat as necessary and draw the tines out to a taper point while maintaining a square cross section. This is the hardest part as you can overheat and melt the tines very easily. Using chalk mark on the anvil step the length of the first tine and forge the second to the same length.



Fullering behind the completed tines



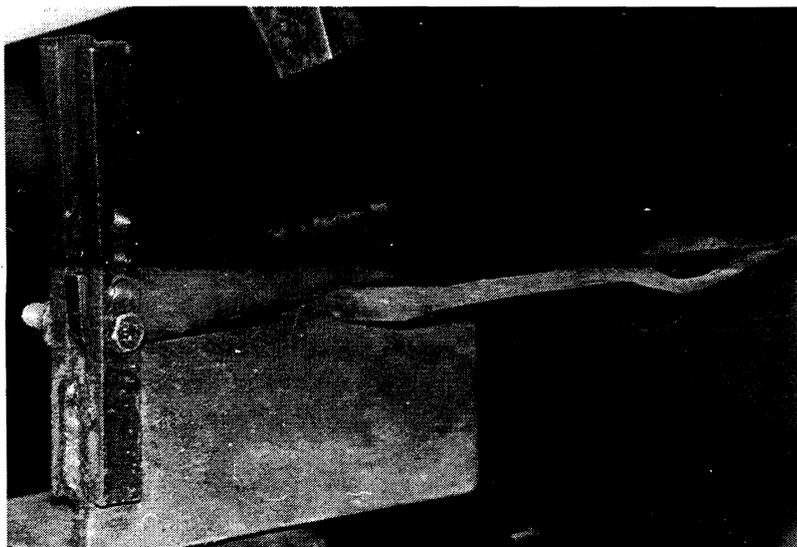
Offset the rattail



Drawing the rattail

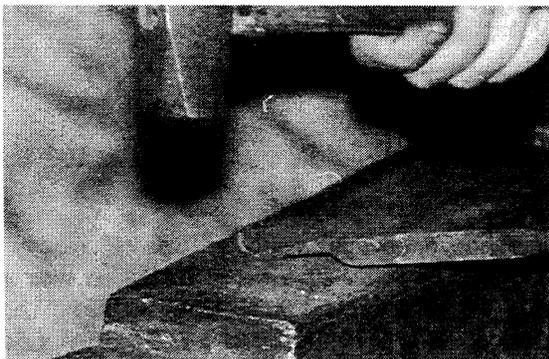
Heat and bend the tines forward out of the way and cool the ends of the tines, then heat the body just behind the tines. Now

fuller about 3/4" behind the tines leaving enough material to support them. This is to give a depth guide for the final thickness of the shank. Reheat and start drawing the shank keeping it straight as you go up the shank. Fuller at the top to mark the end of the drawing process.



Fullering behind the flat handle

The top remains flat and the rattail is started. Note how the offset is started over the edge of the anvil and that you are



Starting the curve

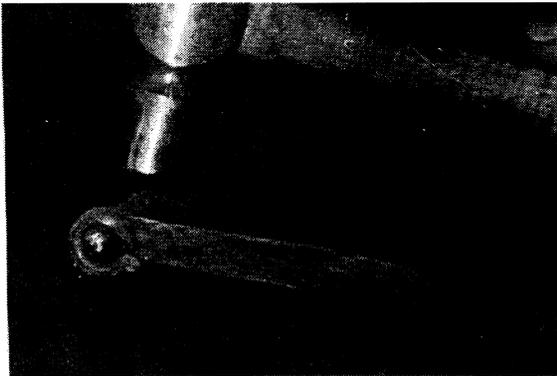


Curving over the horn

hammering straight down to get the offset. This is important technique to master. Draw the rattail maintaining the cross section and straightness. Bend the very tip over the edge and close it up.

The handle is flat at the moment and gets his attention as the sides are beveled and given a hammer finish. Tapering and flattening the side stretches the metal and will cause it curve. This is counteracted by drawing out the other side so they are balanced. Use the peen to give texture to the surface.

Now he curves the rattail over the anvil horn and closes it up. Center the curl in the handle using the horn and offset blows from the hammer. Now put a slight bow in the handle so it doesn't stick straight out from the hand.

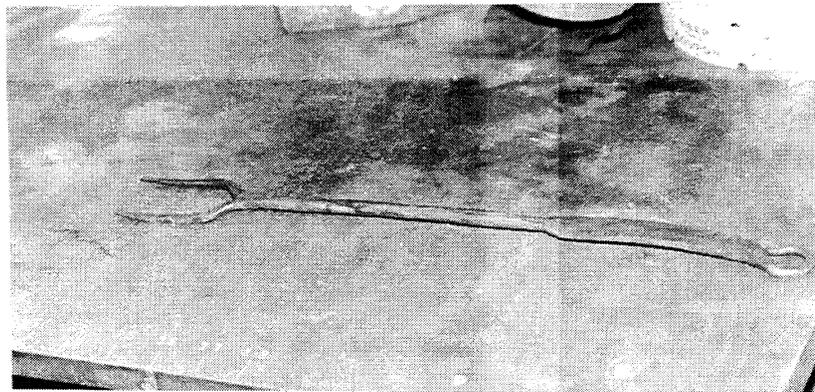


Finishing the offset



Finished rattail hook

Heat the area at the base of the tines and bend them forward and put a slight curve on them also as shown.



Finished Colonial Fork with handle and tine curve

February Featured Demonstrator

Dick Franklin was the featured smith this month

Basic Blacksmithing plus Die Striking

Basic Preparation includes the following:

CLOTHING: you need good shoes which does not mean tennis shoes or anything synthetic. Sparks have a tendency to melt the material and the melted nylon puts a hot crater in your skin. So the advice is to use leather shoe and consider the need for a steel toe shoe. Bib overalls protect but also have synthetic fibers and pretty soon you are holding a bunch of holes together with some thread. The best solution here is a leather apron or a thick set of cotton bibs. A jacket is

helpful in cool weather and when grinding. Dick showed us his arm sleeves which had seen several battles with the grinder wheel and spark streams. The conclusion is that grinders are tough on sleeves. Cotton with a liner seems to work well.

AIR: Shop air can get dirty fast with a smoke layer from the forge, wire brush dust, rust dust from grinders, etc. Some feel headaches and stuffiness from this. The solution is a disposable dust mask and even a respirator with an organic vapor cartridge if needed when working with solvents.

HEARING: Hearing protectors can be of the ear muff type which block the high frequencies or the soft foam type which are inexpensive and do an excellent job.

CARBON MONOXIDE: This is a silent killer and alarms are now available on the market for about \$40 and the battery will last approximately two years.

EYES: A good face shield protects the whole face and at a minimum use eye goggles. These are particularly needed when wire brushing. As the wire brush gets older the wire fatigue, break and blow off in a straight line.

WELDING: Use proper filter number for the type of welding you are doing and use old glasses. The point here is that welding flux sticks to glass as do grinder sparks. Old glasses are a cheaper investment than having to buy a brand new set of specs.

GLOVES: Leather gloves are a safety hazard as they hold heat and if they get wet in the slack tub you'll have hot water or steam to contend with at the same time. Use cotton or Kevlar, none with meltable synthetic fibers.

TOOLS

HAMMERS: These don't have to be big and heavy but as determined by the work you are doing. Hold the handle where you can control the hammer blow, this may be at the middle or end (even though some don't like to choke the handle).

Put a rounded edge on the hammer so the edges will not leave marks on the work a rounded face will concentrate the force of the blow and move the metal outward. Dick also covered type of hammers, flatters and set hammers.

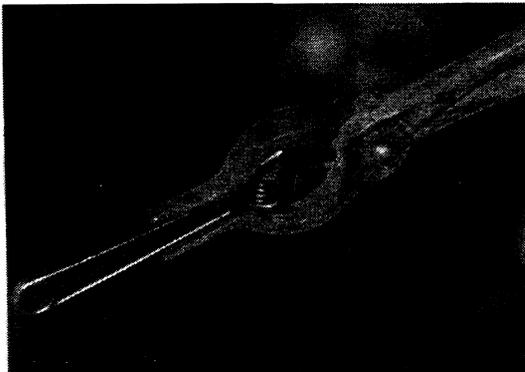
CUTTING: Hardy tools for cold and hot cutting were demonstrated and it was noted that hardies should be removed when the cut is done. Your hand between a cutoff tool edge and hammer handle can take your knuckles and do a number on them. Truck axle steel works well for cutoffs. It was also promulgated as chaos theory that no two hardy holes are the same size.

To work around this problem shims for hardy tool holes can be made from angle iron and flattened copper pipe. After this Dick showed how to use a cutting plate on the anvil

⊗ **Hot cuts with one straight edge give more latitude in layout work**

⊗ **Small hot cut chisels are very useful and the one shown needs a longer handle. It seems to magically disappear. Install handles with Silicone RTV.. This hold the head and cushions the blow.**

TONGS: Different types of tongs are available and were shown. The important thing is that they grip and hold the workpiece. Fit the jaws if necessary.



Tongs fitted to hold a wrench

COAL FIRE: Start the exhaust fan in the flue or use a wad of lighted paper stuck in the flue to start the draft. Crumple a section of newspaper the size of a grapefruit, light

HAMMERING: Place the material flat on the anvil, otherwise it will fly out of the tongs or bend if you don't want it to. The metal should go through the tongs and not be forced out of them.



Crumpled paper and fire

it and place it over the tuyere. Place coke around it, not the fines but the larger stuff because you want air passages between the coke pieces. Start the blower and give some air to the paper and coke. You are trying to ignite the coke which requires a higher temperature than coal. The coke edges will heat quickly and begin to bridge so they will be knocked down as the paper burns. The heat spreads and soon the coke is burning well. Add old and new coal to the fire. New coal is put around the outside to be roasted into coke. This burns off the oils, and volatile gases giving a yellow flame while the pure coke burns clean with a blue flame..

⊗ If you want to move metal, hammer at a yellow heat but you can get a smooth finish by hammering at a temperature just above black. But beware that hammering black but hot at 700° - 800 °F will tend to crack the steel as this is a brittle point for it.

Don't quench immediately as any carbon in the steel will harden it and a hammer blow will crack it. This is a reasonable precaution if you are using mongrel steel (i.e. no pedigree or specs).

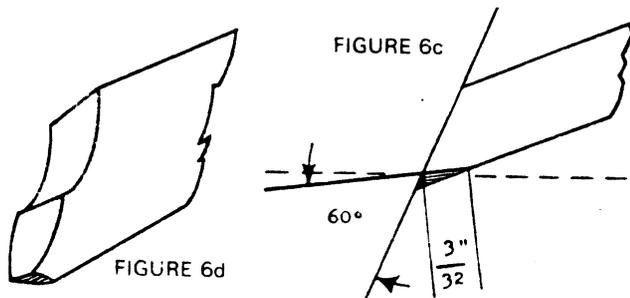
When hot cutting, don't cut all the way through. If you do the hot metal will fly off and probably land somewhere you didn't want it to. Use tongs or pliers to remove the almost cut through piece.

PUNCHING: Punch on the front and flip the piece over. You will see a black dot where the point of the punch was. Place this on a punch plate or pritchel hole and punch through the back side and shear off the hole blank.

DIE STRIKING

Dick showed several designs he has done and a piece from the Wendell August Forge in Pennsylvania. The die is of a harder metal than the material to be struck and he is currently using a mild steel. Material to be struck is aluminum or brass. The die is carved with the desired design and the softer metal is then hammered into the design thereby transferring

it. So the first step is to make or find a suitable drawing and trace it on graph paper. You need a reverse image so flip this over and trace it from the other side with a soft pencil to get a mirror image. Now take the die material and paint it with a flat white paint and rub the mirror image onto the white paint with a fingernail or burnisher to transfer the image. Use engraving tools to carve the design. Dick showed several gravers made from concrete nails that were doing a good job for him. These were ground to shape, hardened and drawn to a yellow color. Note how the points are ground. You need the heel to rock on. In use the graver is rocked as you hammer it. This



From "The Art of Engraving", J.B. Meek

breaks the chip from the metal and helps control the cut.

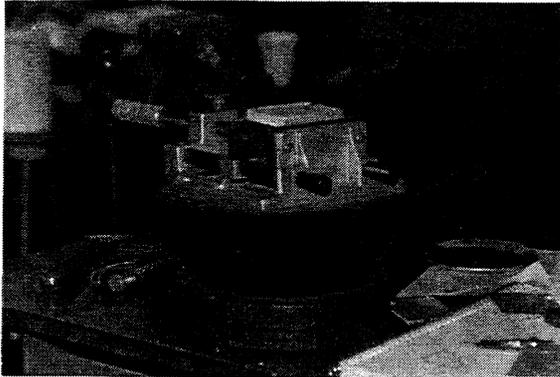
To maintain register with the die as he hammers the soft metal, Dick uses two bolts through the top edge of the die and soft metal. .

Next a large steel bar is placed in the post vise with the end resting on the screw. This is the die holder and the die is struck with a ballpeen hammer using the pein. You start near the top and work out and down the length.



Die block on support post

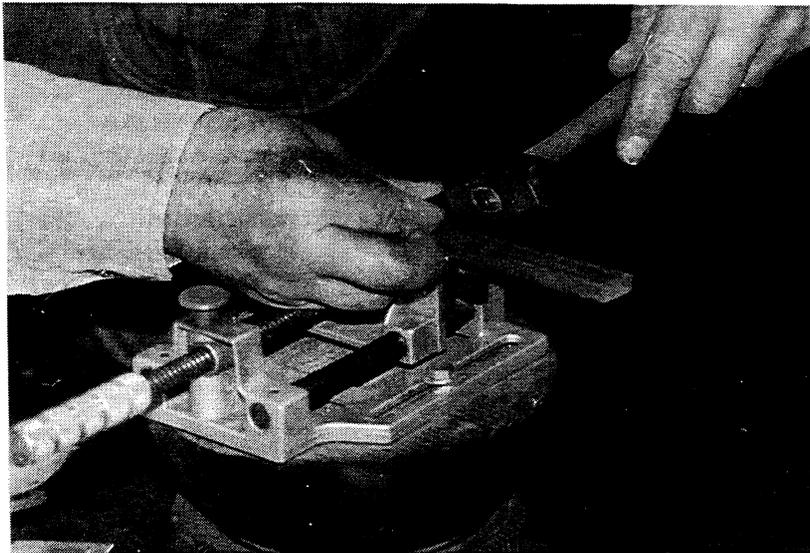
☒ In response to a comment about putting black on soft metal and knowing where the temperature is, Ron Turpin mentioned that you can put a layer of carbon down with an acetylene flame (no oxygen) and that this will burn off at 800°F.



Engravers vise and block



Engraved die blocks



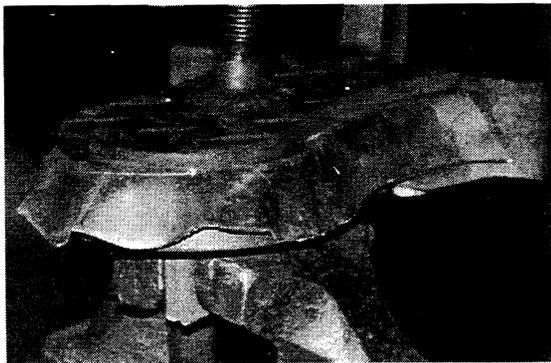
Engravers vise and block

The pictures of the engravers vise built by Dick and shown here are worth several hundred dollars to you if you're interested in doing this work. Using a common aluminum vise mounted on half a bowling ball and set in a lawnmower rubber tire to duplicate the basic setup of a commercial engraving vise. I think this ingenious idea hits the scale at 2400F°, don't you?.

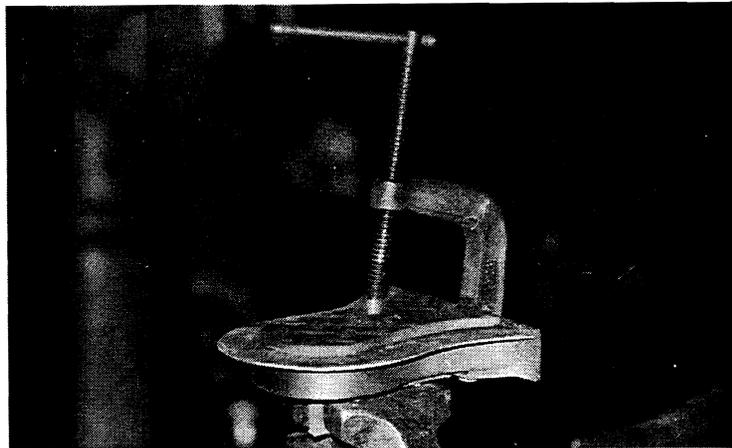
Member's Work

Bob Cruikshank Shovel Mold

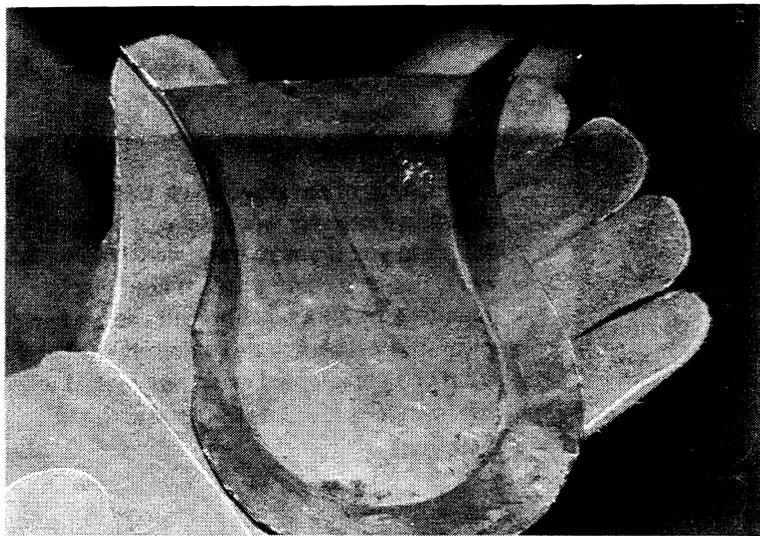
Bob showed this shove mold patterned after one from Doug Hendrickson. If used with a female die and hot sheet steel it can be used as a die. This time soft cold steel was clamped in place and hammered down around the mold. Folds in the metal



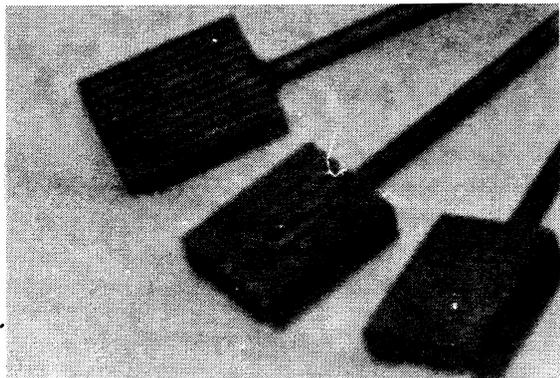
Steel folded over



Sheet steel clamped on mold can be left in place or taken out on the anvil and swage block. The top piece is cut from a scrap piece of diamond plate and is necessary to keep the bottom flat.

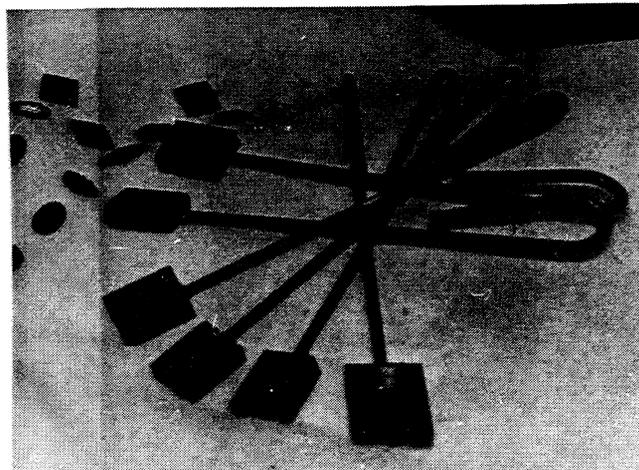


Finished shovel end ready for handle



Faces of tooling

Hans Peot brought several items to the February meeting: A surface texture tools for use with the treadle hammer and sample discs showing the final surface texture. He also brought a very nice knife made from a Timken bearing race. The pictures did not turn out well for it so we'll try for some other time. He reports the steel is 52100, hard to work but finishes nice.



Layout of set tooling

Ken Scharebok: an auto wheel bearing placed on the floor vise screw in front of the vise allows better clamping and speedy release. Use the inner race which is cone shaped to give the proper pressure.

Ron Turpin - As part of the same conversation on vises during Dick's presentation Ron suggested an 'O' ring over the end of the handle as a cushion when the handle drops down. You could also use a piece of rubber inner tube. The goal is to keep your fingers pinch free.

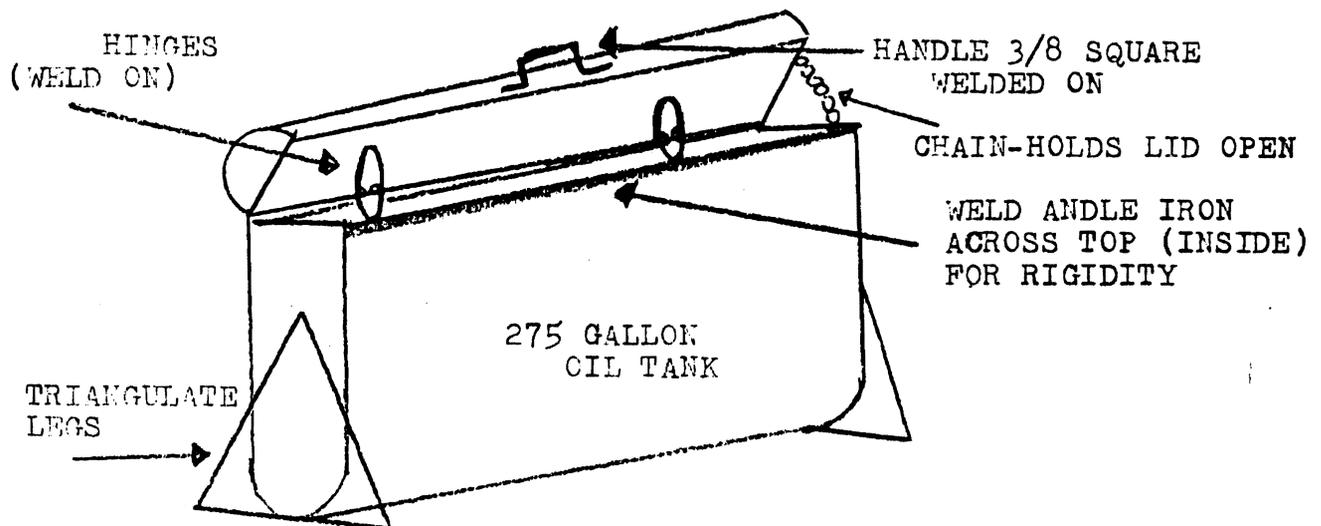
Ron also submitted the following drawing and procedure for **A Dandy Coal Bin**

Recent changes in my coal supply caused me to decide to keep larger quantities on hand. Where could I put it in my small shop? What about outside? In the dirt? Big black spot in my grass? Digging coal from under the snow? NO! I decided some sort of container would be required. Something with a protective lid. Something not too costly!

The procedure: Find a 275 gal. oil tank (oval type). Cut across the top about a foot from the top. CAUTION ** a tank that contained flammables could explode. Use a metal blade in a saber saw or have the tank steamed out before you begin.

After cutting one side, weld on two large strap hinges. This is easier than trying to align the lid later. After welding on the hinges make the remaining cuts. Weld on a handle bent from 3/8" square stock. Weld on legs. Triangulate for strength (I used angle iron). Weld a chain on to hold the lid after you open it.

Perfect! Doesn't leak, holds about 1 ton of coal, coal stays clean and dry, yard stays clean, no wasted coal. P.S. my tank cost \$5.00 and no extra charge for the leak it had.



ABANA

Artist-Blacksmiths' Association of North America



P.O. Box 1181, Nashville, Indiana 47448
Executive Secretary, Janelle Gilbert Franklin

Office Hours: 9:00am - 5:00pm
Phone: (812) 988-6919

ABANA PRESIDENT'S MESSAGE February 1994

Dear ABANA Chapters,

The latest issue of the *Anvil's Ring* features a list of folks who have helped ABANA be the strong organization it is. Several of the ABANA Board's committees would be less effective without their help, it is very much appreciated. These people have gone out of their way to provide us with special help in their areas of expertise; however, they are not the only people helping ABANA and blacksmithing today. All of you who are working to make your Chapter strong, and spreading the word about our craft in general are helping in ABANA's efforts as well! Together, we are bringing blacksmithing into the mainstream.

Those of you who had the good fortune to go to the *National Ornamental Metal Museum* in Memphis, Tennessee last month saw the first ABANA Member exhibition - *The Blacksmithing Craft Continuum*. The show, which went from December 14 through January 30, featured the work of selected smiths, and also the work of those smiths that inspired them! The show was quite a success, and it was due in part to all the generous donations by chapters, smiths, and businesses determined to help make it happen. You will see an excellent spread on the exhibition in the next issue of the *Anvil's Ring*. True to our word, we are trying to support another exhibition for 1994!

The time remaining before the June, 1994 ABANA Conference is growing shorter! In Chapters all over the country, plans are under way to provide a ring for the conference Ring Project. The deadline to have the rings submitted for a promotion in the *Anvil's Ring* is March 1. I can hardly wait to see the finished product! Others among you are busy making items for the Conference Auction or Iron In The Hat. I have heard that this conference may shatter all ABANA Conference attendance records! In many ways, this 1994 ABANA Conference may just be the best one ever. The registration packets will be sent out in the spring, make sure you get your registration in early in order to get the best deal!

At your next club meeting, why don't you make it a point to point out to the crowd where your fire extinguishers are, and how to use them? Through no fault of their own, there are many people who have no idea how to use a fire extinguisher. That is no crime. But it would be a shame if something happened and you had a shop full of people who had no idea what your fire protection plans were. Fires have a way of going "out of control" rather quickly! These kinds of situations leave little time for crash courses in proper fire extinguisher use. Make sure that everyone knows how to use your fire extinguishers before your meeting really starts; and just as important, that they should aim the stream at the BASE of the fire, not into the flames! Outside, make sure people park away from the building, or at least leave plenty of room for firetrucks or other emergency vehicles. Just a little bit of planning can turn potential disaster into a mere pause in the program!

Warm Regards,

Clayton Carr
ABANA President

***** ATTENTION *****

This is to announce that three scholarships of up to \$500.00 will be available to BAM members each year beginning in 1994. Scholarships are open to all BAM members in good standing with two reserved for Missouri residents. Scholarships are to be used for the study of blacksmithing or a related subject - metallurgy, design, etc. Funds will be paid directly to the recipient, and may be applied toward tuition, transportation, housing, or materials. Upon successful completion of their studies all recipients will be required to submit a paper outlining their work, as well as to conduct a demonstration at a regular meeting or the Ozark Blacksmith Conference. These conditions are to be met or all monies must be refunded.

Applications received by March 28 will be considered by the Scholarship Committee, whose nominations are subject to confirmation by the Executive Board. It will require a unanimous vote by the Executive Board to deny a scholarship. Please complete the application on the reverse of this announcement and send to:

BAM Scholarship Committee
c/o Todd Kinnikin
8356 John McKeever Rd.
House Springs, MO 63051

Describe the course you would like to take and the projected expense. Winners will be announced at the April conference. Good Luck!

ABANA message



You may post items for sale on the board, either things you make or have and want to change out. The only qualification is that the items must be related to blacksmithing somehow. This is an unabashed attempt to help you turn your stock and work. I would like to see a long listing of just about everything!!

FOR SALE: Anvil about 115 lbs mounted on wood stand. Call Jack at 252-9052, Dayton OH.

FOR SALE: Mini Log Cabins, Size 8" x 5 1/2" x 12"
all hand crafted and made from 100 year old wood. These are limited to 50 ea.. From \$25 to \$35. I also make them from soft pine and treat with wood conditioner and stain.
Dale Woodruff, 15000 Merand Rd., Anna OH 45302, 513-394-7274

FOR SALE -- 25 lb. Little Giant power hammer. The hammer is currently located in Iowa. Pictures are available, price is \$1500 in Ohio or \$1250 if you pick it up in Iowa. Janet Lagouranis, P.O. Box 156, Williston, OH 43468. (419) 836-7172.

FOR SALE -- 100 lb. swage blocks for \$110. 65 lb. portable cones with tong groove for \$75. Shovel molds for \$30 Ron Thompson at (513) 492-2259

FOR SALE -- books: Little Giant Powerhammer, Building the Gas Forge & Foundry, More. Catalog free. H&K Publishing, P.O. Box 284, Xenia, OH 45385



This section is for items you want or need. Call me at 513-372-9100 or pass me a note at the next meeting.

Brad Weber, club member in Medina OH, writes that he is going to Europe in May and would like to know of any blacksmith shops he could visit while there. He is looking for information and addresses in the Netherlands, Belgium, France Luxemburg and West Germany. Any other addresses would be nice also. Brad was also contacted about the bear trap that he had at Quad State but did not hear from him again. If he is still interested Brad would be happy to provide the information. Please contact him. BRAD WEBER, (Village Forge), 521 Bronson St. Medina, OH 44256. (216)-723-7133

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and is copied on a Xerox Docutech.

The Cedar Lakes Crafts Center features two of WV's talented smiths for 1994....

MARCH 18-20

Jeff Fetty -- Metal Forging Techniques

Advanced beginner to experienced smiths will expand their smithing skills with a variety of practical techniques for use in the small shop. Metals manipulation, joinery, making jigs and tools, and forming sheetmetal will be included in the hands-on workshop. The professional and business sides of smithing will also be discussed.

Spencer, WV, artist/blacksmith, Jeff Fetty, specializes in residential and commercial architectural work marketed by several galleries throughout the US. An installation of five eight foot daffodils can be seen at Women's and Children's Hospital in Charleston and a recent sculpture was completed for the Thomasville (GA) Public Library.

OCTOBER 14-16

Mel Townsend -- Basic Blacksmithing

Students will develop their basic skills and techniques for forging bar and sheetmetal in this hands-on workshop. Emphasis will be on setting up a shop, toolmaking, and the production of small objects.

Blacksmith, Mel Townsend, maintains an active forging business in Newville, WV, specializing in residential commission iron work. Townsend markets his production work through regional fairs including the Mountain State Art and Crafts Fair.

Fees for each of the workshops are \$65 for commuters, \$107 for those wishing dormitory room, and \$119 for a double room. For more information on these and other workshops contact the CRAFTS CENTER, Cedar Lakes, Ripley, WV 25271 (304) 372-7873.

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