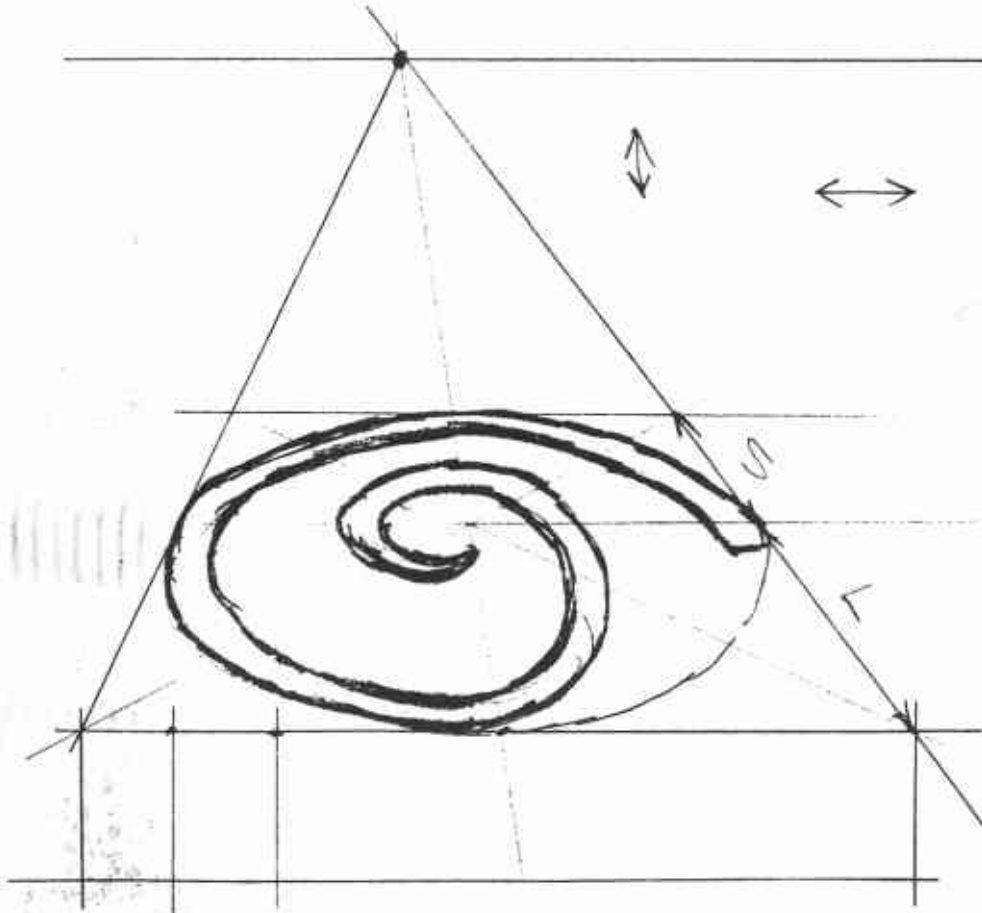


Newsletter ^{of} the Blacksmiths Association of Missouri



VOL. 8 NO. 4

The Blacksmith's Association of Missouri is a chapter of the Artist-Blacksmiths' Association of North America, and is devoted to the preservation and advancement of blacksmithing and to communication among blacksmiths in Missouri and surrounding areas. BAM's newsletter's goal is to support these aims. Letters to the editor, Tech Tips, tools for sale, or anything else which furthers these ends will be considered for publication.

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BAM Membership Application

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Telephone: _____

New Member: _____ Renewal: _____

Memberships are for one year from receipt of dues. Dues are \$20, which includes a subscription to the bimonthly BAM newsletter. Please make checks payable to Blacksmith Association of Missouri. SEND CHECKS TO: Steve Austin
44 N.E. Munger Rd.
Claycomo, MO 64119

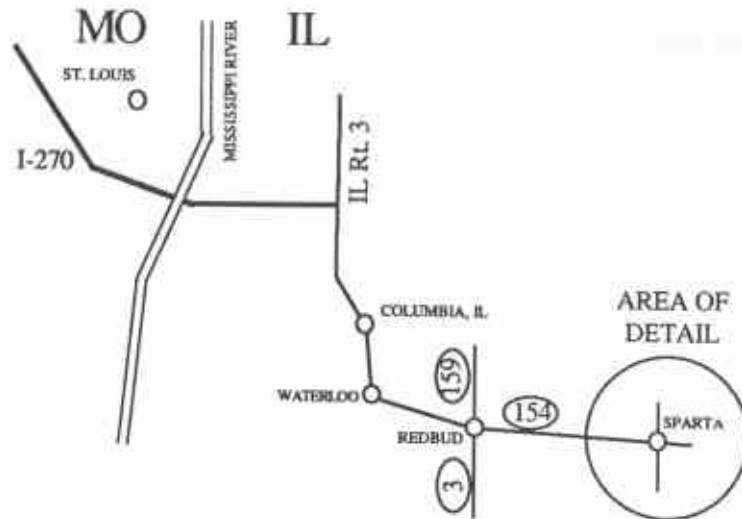
Membership Renewals

Be sure to check the date on the label of your newsletter. This is your membership renewal date. We will include a renewal reminder in your copy of the newsletter when your membership is due to expire. If the date on your newsletter label is not correct, please notify Bernie Tappel as soon as possible.

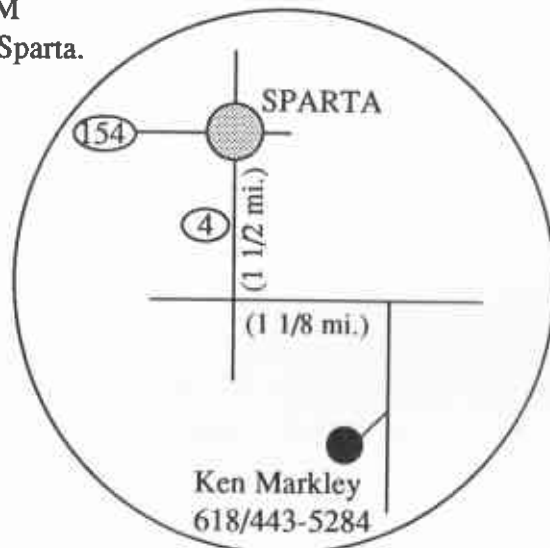
Next Meeting

The September 28 meeting at Ken Markley's shop has been moved back to October 5. The trade item is to be a piece of jewelry. Sparta, IL may sound like a long drive, but its just over the line for a lot of you. Talk to Ken at 618/443-5284.

Here come de Map:



Watch for BAM signs south of Sparta.



Tips on Buying a Power Hammer

by Fred Caylor

1. If you don't know what to look for take some one with you who does.
2. Don't worry about the condition of the babbit in the shaft journals or clutch pulley, unless they are so bad there might be some wear on the shaft. (Follow directions in the Anvil's Ring and pour them.)
3. Check the wear in the toggle pins and look for elongated wear in the arms and toggles. If elongated they will have to be bored out and over-size pins made.
4. It is very common for the upper arms to have been repaired. If done properly they will function good as new. But if they have been put back together in a slight twist this will cause the toggle holes to not line up properly and will wear the pins out as fast as you can make them. Remedy-ream the holes through arm and toggle while in correct position. Make oversize pins.
5. Check for wear inside of the ram where toggle cross pieces ride. We recently found one that was worn so badly they had to be filled with weld and remilled to size. This calls for hours of work and special machinery.
6. Check for wear in the vee guides on front and rear ram guides. These control the path of the ram and it would take a lot of work to correct. The afore-mentioned hammer had the front guides worn almost through and had to be rebuilt and re-shaped due to warpage from welding heat. This hammer was worn out from lack of lubrication.
7. Last but not least, don't let your desire to own a hammer at a bargain price induce you to buy one that needs work that you can't do yourself or afford to have done. A poor hammer is worse than no hammer at all. Save your money and buy one that you will enjoy using and can make money with. Price should be secondary if you have work for it.
8. One thing I would like to suggest is that when you acquire your hammer take the time to strip it down completely. This way you can inspect it through-out. As you are cleaning it make repairs right then and there. This is a good time to repaint the parts before you reassemble. When you are finished you will have a piece of equipment you will be proud of and it will give you years of service. After all, it did take years for the hammer to get in such a sorry condition.

ABANA Membership Application

Name: _____

Address: _____

City: _____ State: _____

Phone: () _____ Zip: _____

New Member Renewing Member

How did you learn about ABANA? _____

- Regular Member \$35.00 yr.
- Family Membership (one Vote) \$40.00 yr.
- Senior Citizen (age 65) \$25.00 yr.
- Overseas Membership \$45.00 yr.
- Contributory \$100.00 yr.
- Library \$25.00 yr.

I _____ hereby apply for membership in the Artist-Blacksmiths' Association of North America and enclose \$ _____ as my annual membership dues for one year.

MasterCard VISA Check/Money Order

Card Number

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Exp. Date (Required)

	/	
--	---	--

Checks must be in U.S. currency
SEND RENEWAL TO:

ABANA (812) 988-6919
P.O. Box 1181 Nashville, IN 47448

Dues Distribution:
1 Year Subscription Anvil's Ring: 68.5% \$24.00
Adm. Offices & Other ABANA projects (Conferences, etc.): 31.5% \$11.00

Dear Walt,

Greetings from St. Louis! We have struggled through the winter and spring and I believe we are going to make it through the "Recession." Like all small business people, when hard times hit, we look for ways to save on costs. One area that just beats my brains out is the cost of insurance. Do we all agree that insurance is a legal license to steal your money? I don't know about you guys and gals, but I spend more money on insurance premiums than any other item including my house!

Commercial truck insurance, health and accident insurance, tool and equipment insurance, general liability insurance, workman's comp., etc., etc. Even though I have never filed a claim, the rates continue to go up.

I would like to know if other members involved in the metal working trades are in the same boat. Perhaps we could all get together and somehow get group rates or something. Maybe that is a far-fetched idea. But maybe not. Is there anyone out there who knows someone that is giving them a debt coverage for a fair price? Or are all of you being held up without a gun also?!

Walt, thanks for the chance to spout off, I needed it! I hope to see you real soon, perhaps in Lesterville! Until then, take care!

Sincerely,
Jud H.

p.s. Ben wanted me to say "Hey"!

—Hey, Ben! You guys gonna come to a meeting sometime, or what? Be great to see you again.

Ed.

July Meeting

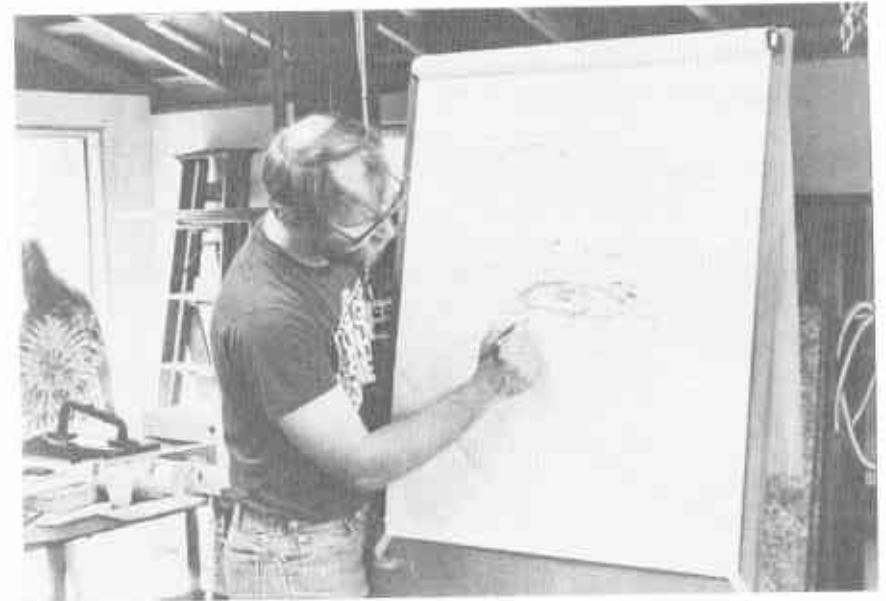
FUN AT DR. IRON'S

That was how it was billed, and that was what happened. There is no more congenial host than Doug Hendrickson, unless it be the folks at Lester's Cafe, where many of us ate breakfast, supper and (yes, Virginia) real peach cobbler.

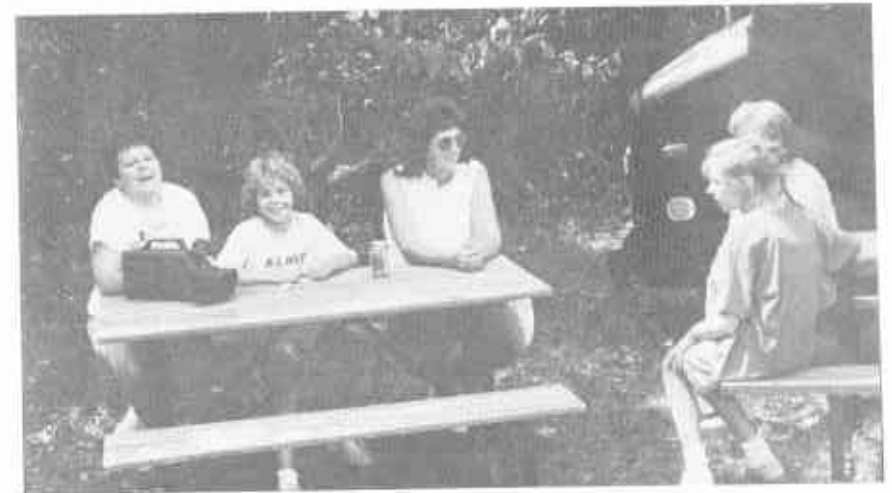
At the anvil, it was beginners' day, with the old beginners showing off for the new beginners, and everyone getting coal under their nails and sparks in their hair. Your reporter only got to see one corner of the show, but rumblings suggested that the other corners were doing at least as well. Someone made a first forge weld, and declared at some length and volume that Stan Winkler was the best forge weld teacher in the whole damn world. Jerry Hoffman showed that if you want to know what you're making before you make it, instead of just waiting to see how it turns out you could draw a picture. There's more to this than meets the eye,



The Exchange: Door Pulls



Jerry puts it all in perspective.



Some kept their cool.

folks. One stroke with a pencil can equal hundreds with a hammer.

At the easy-stuff forge, Walt Hull embarrassed himself in ways too numerous to mention, and outside a plethora of BAM'ers braved the afternoon sun to do it their way at the open anvil.

continued

Afterwards we all got wet (inside and out) in the Black River. I bet there was a float trip Sunday, but I had to put on my red slippers and go back to black and white, all too soon.

Thanks, Doug and Bonnie.



Robert Hazel gets upset.



Walt talks too much.

July 19th Business Meeting

Lou Mueller reports that half of the last coal buy has been sold. If you need coal, call Lou at 314/225-3252.

Steve Baker has a video of the March Knifemakers' Workshop for \$20.00. Call Steve at 314/735-4268.

A video tape of Fred Caylor's power hammer talks at Tom Clark's will be available for \$20.00 after the release of Fred's forthcoming book.

July is officer's month. Up for election were the offices of Treasurer and President. Our new President is Tom Clark. Steve Austin was reelected Treasurer.

Doug reports that we are still trying to engineer a March charter (bus) cruise to the National Ornamental Metals Museum in Memphis. It would need to fall between 3/8/92 and 4/15/92. This could be NEAT, guys!

Call or write: Doug Hendrickson, RR1 Box 16D, Lesterville, MO 63654 • 314/637-2576 *NOW* if you even think you might go.

Tom Clark was not wearing his name tag.

Future Meetings

Stan Winkler will be our host for a meeting at his shop in St. Genevieve on December 14, and the first meeting of 1992 will be held at Jerry Hoffman's shop on February 1. Stan's number is 314/883-7670, and Jerry is at 314/629-4061.

Workshops

Tom Clark says that a number of BAM members have been invited to a Clifton Ralph workshop at Tom's on November 2 and 3.

On November 15-17, Fred Caylor will be at Tom Clark's, featuring an inspection and tear-down of a 25# Little Giant, its rebuilding including pouring new babbitt, and testing. The big days will be Saturday and Sunday. A \$50.00 fee will be charged. Make checks payable to Fred Caylor and send to Tom Clark. The first 15 will be accepted, and later checks will be returned.

Coming Soon

More from the Knifemakers' Workshop: Bob Miller on blade testing and design.

Sorry we didn't get this in this time.

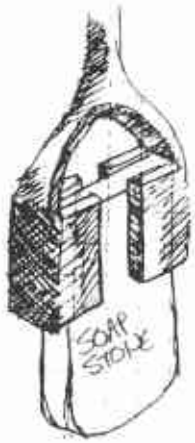
Ed

Notes from a Clifton Ralph Workshop

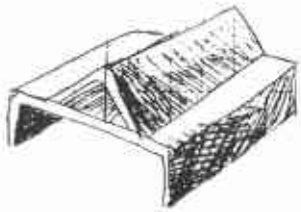
Here are my notes from a 5 day workshop with Clifton Ralph on April 1 - 5, 1991. Bill Manley, graciously, gave Clifton his shop and bunk house in Kingston, TN to do the workshop.

Bill made it big in metalurgy and casting and now shares his good fortune with the blacksmiths of America. I'm not sure what you can use - give it a shot.

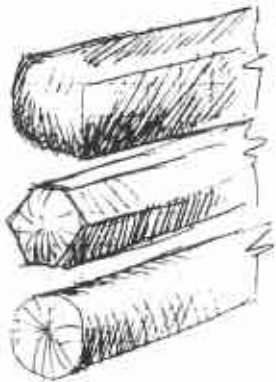
I got a beat it
Doug Hendrickson



Soapstone holder forged and welded on one leg of dividers gives you a compass.

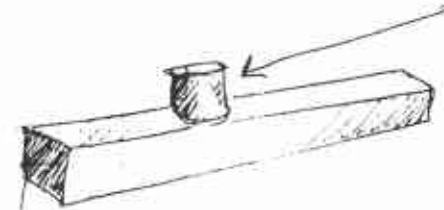


To turn a vee jaw tongs into a clip tong just weld an angle iron on a channel section. Slide it into the vee jaws and presto — a clip.

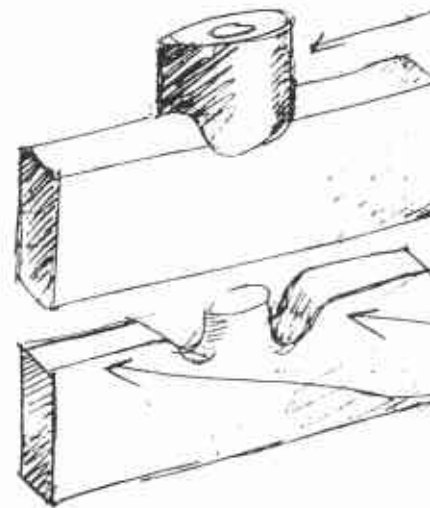


When drawing out a square bar it will dome on the end, a hex bar will dimple slightly and a round will pipe.

Tool for developing an extension from the edge of bar stock.



Drive tool down on edge of bar.

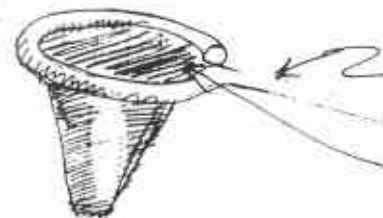


RESULTANT FORM

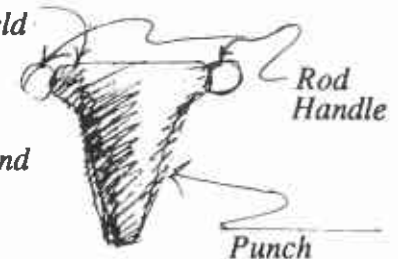
Forge these humps down.

PUNCH

< Weld



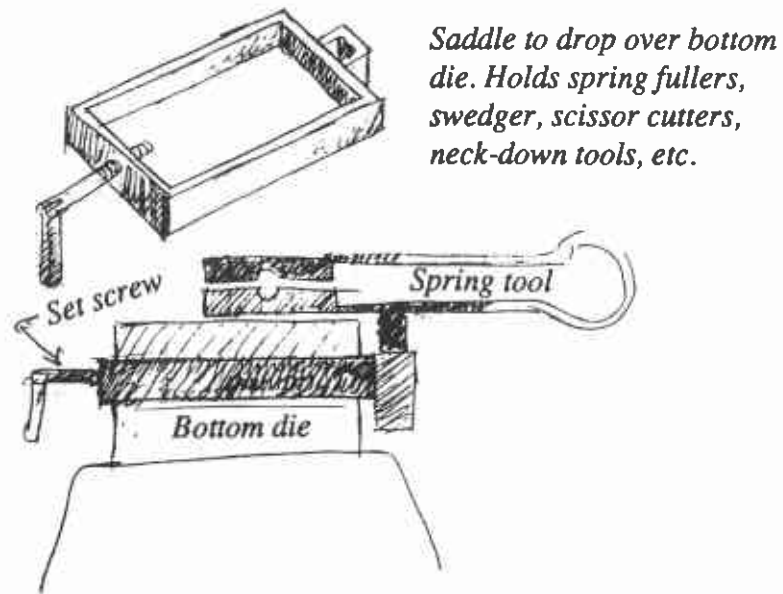
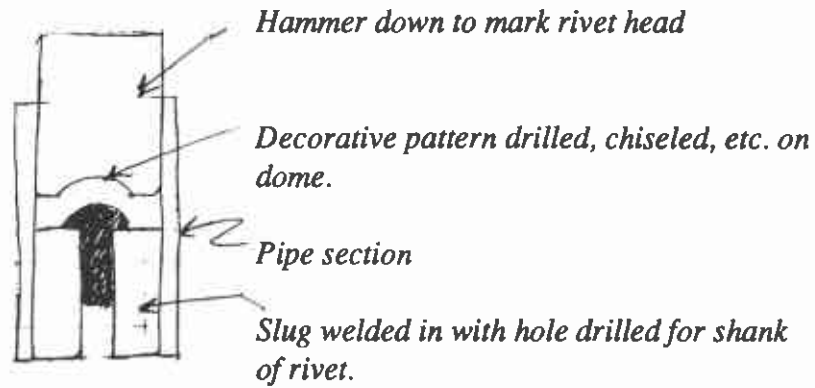
Bend light rod around punch and weld it up.



Punch

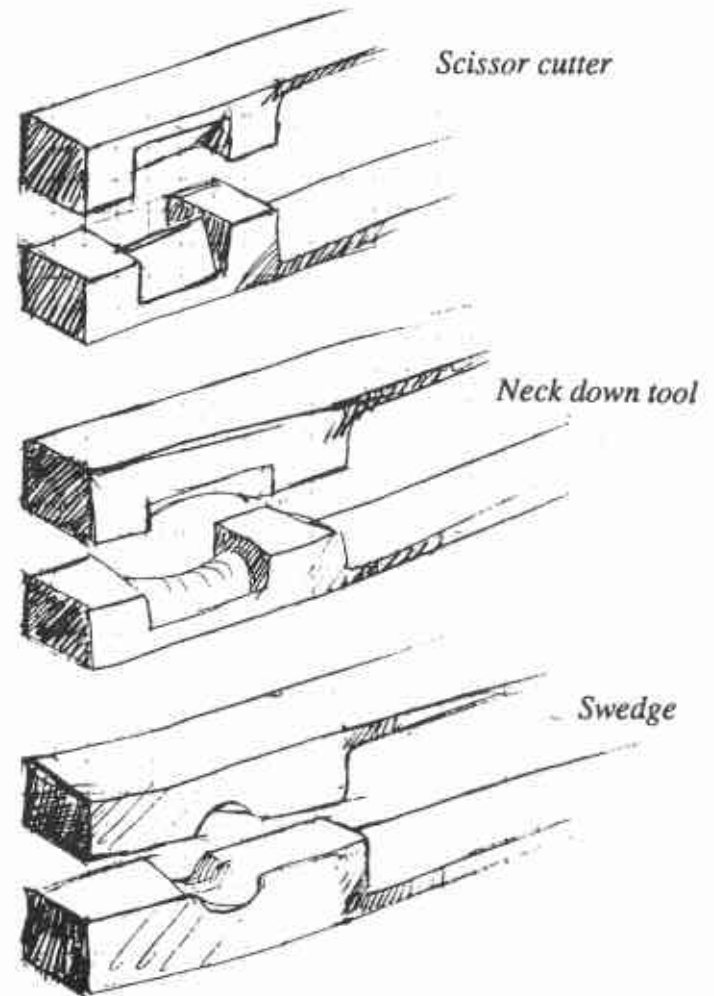
Rod Handle

DECORATIVE RIVET HEADER

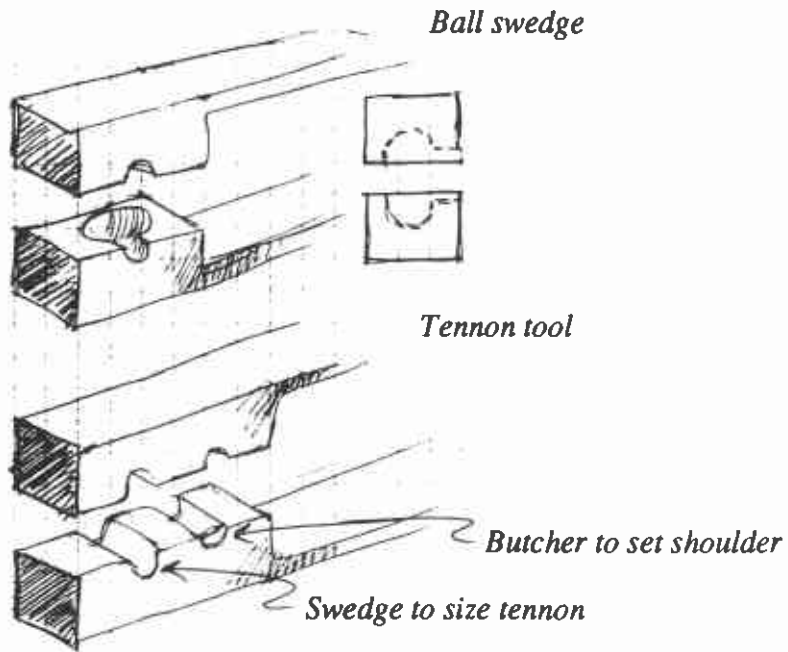


SPRING TOOLS

May be used in saddle or hand held.

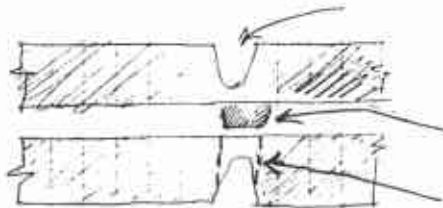


SPRING TOOLS FOR SADDLE AND/OR HAND



Spring tools can serve several purposes in one as in the butcher/swedge tool. One of Clifton's tools contained a scissor cutter, ball swedge and a straight through swedge.

HOT PUNCHING

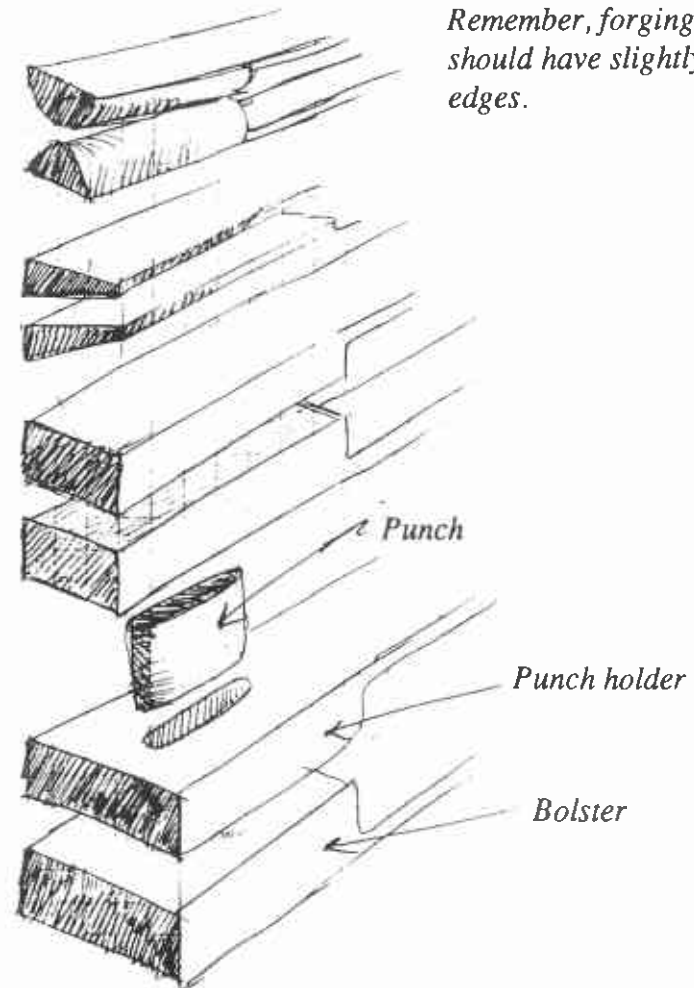


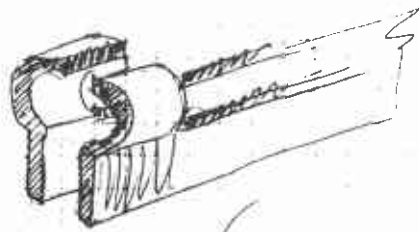
First punch with a slightly rounded punch.

Back punch with a larger punch so that it shears on the dotted line.

SPRING TOOLS

May be used in saddle or hand held.





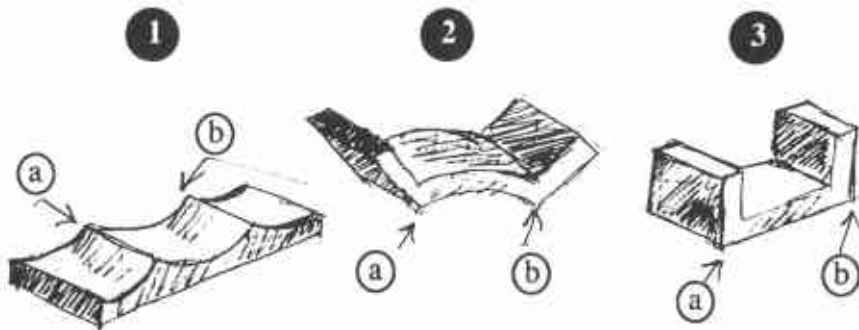
Tongs for holding 2 rounds. For welding up branches.



These two tongs are Clifton's bread and butter tools.



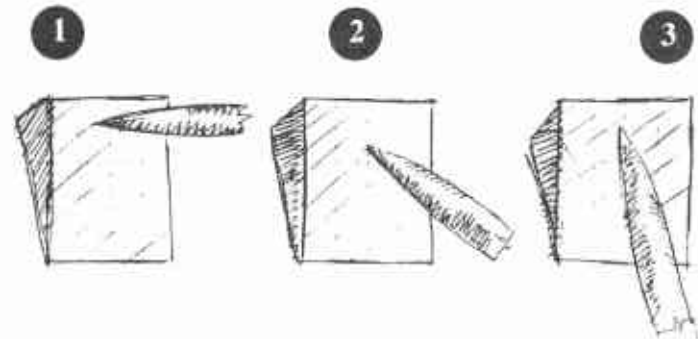
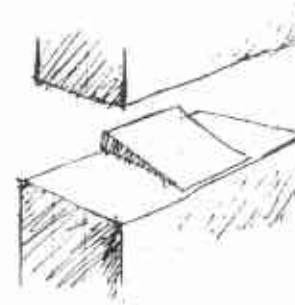
FORGING SQUARE CORNERS



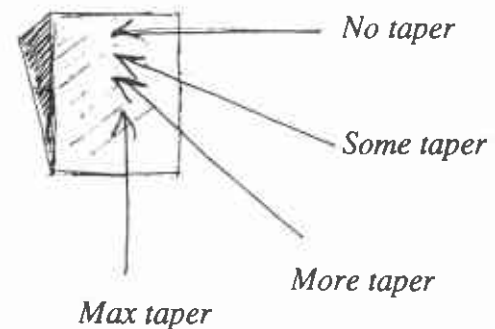
Setup - bumps become outside corners

FORGING A BULLET SHAPED TAPER

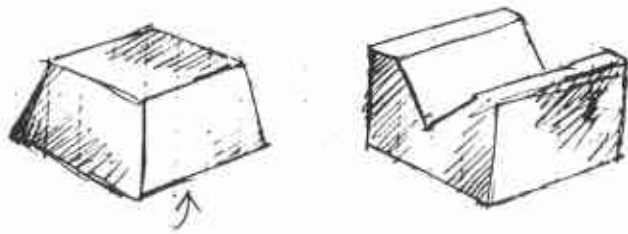
using a wedge mounted on the bottom die of the power hammer.



Start parallel with back edge and rotate it toward the front edge.



VEE BLOCK



First taper block then drive vee shaped fuller into block to form the vee. The sides stand up straight and add strength.

The whole workshop can be summed up in these words by Mr. Ralph with a translation by Doug Hendrickson

1. "Hell, you can't do nothing without a tool"
(To do a good job you need good tools)
2. "Keep your stuff together"
(Contain and control your metal)
3. "Learn a whole lot about how and why metal moves a little, maybe"
(?)

INGREDIENTS IN TERIYAKI MARINADE

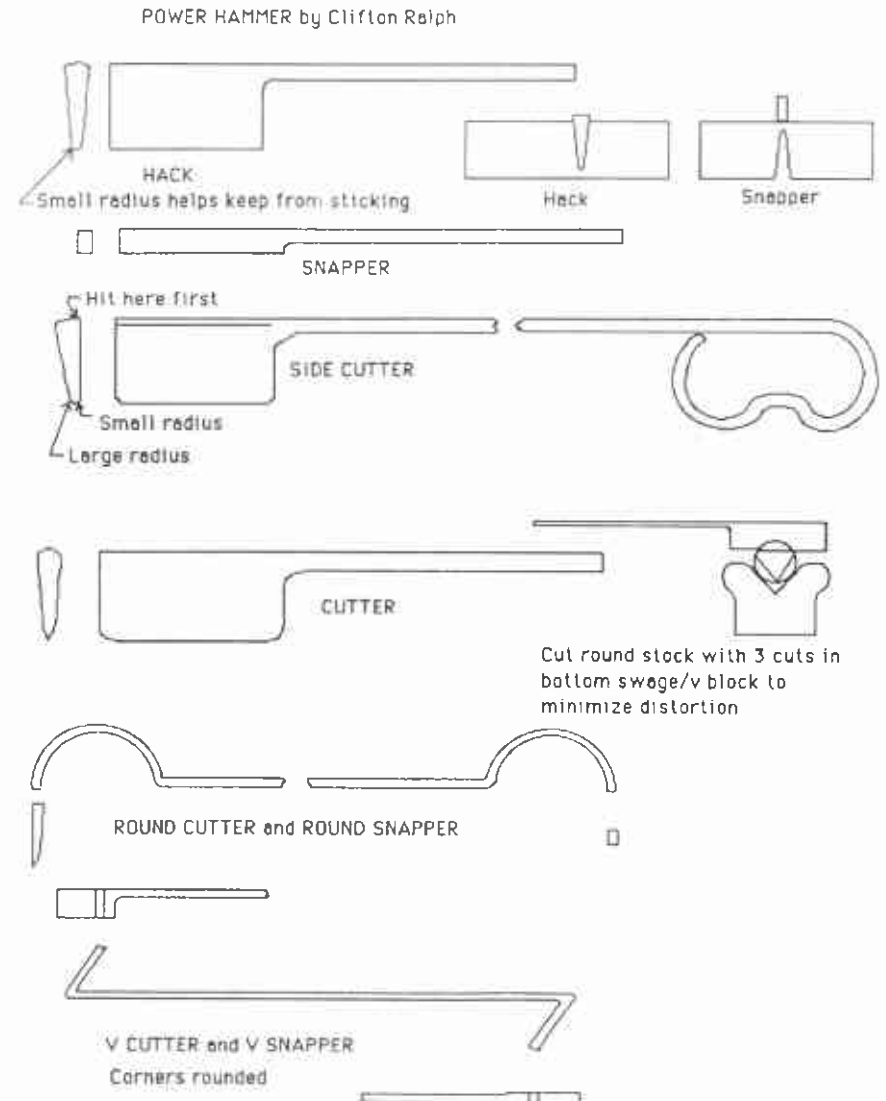
Soy sauce - Teriyaki sauce - Sherry - Rice vinegar -
Honey - Ginger - Cumin - Turmeric - Red pepper -
Ground onion - Curry - Garlic

I don't know why this is here — but it sounds good!

More Notes on Clifton Ralph

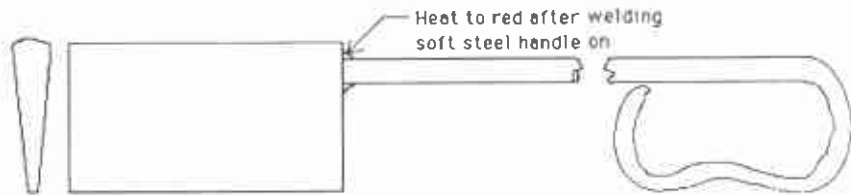
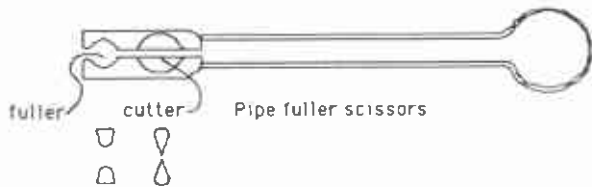
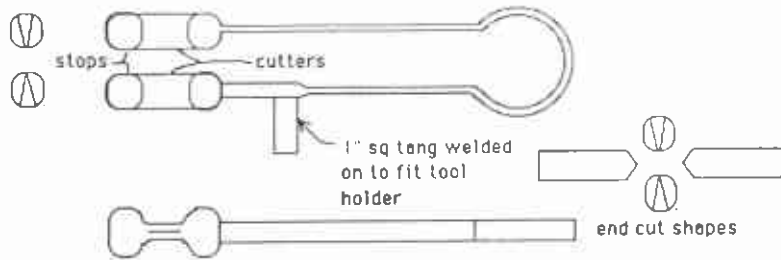
from Bituminus Bits

HOT CUTS AND SNAPPERS



SCISSOR CUTTERS

SCISSORS CUTTER Clifton Ralph

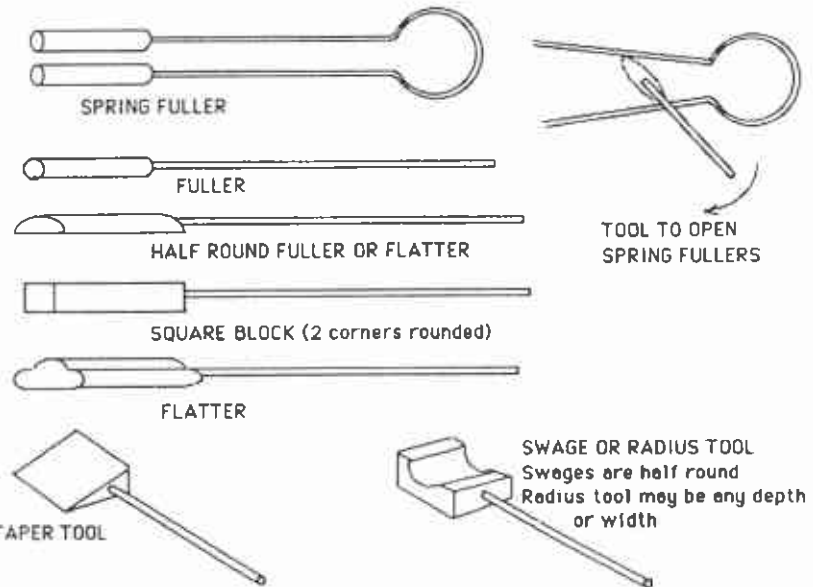


STRAIGHT CUTTER



SNAPPER - wider than bottom of cutter, no higher than needed sharp edges

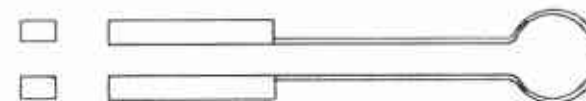
BIG HAMMER HAND TOOLS



TALL FULLER

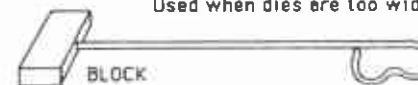


V FULLER



SQUARE AND RECTANGULAR FORGING OR SIZING BLOCKS

Used when dies are too wide



BLOCK

Most of Clifton's tools have a loop on the handle for better control DO NOT PUT FINGERS IN LOOP

BIG HAMMER HAND TOOLS



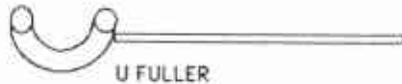
TAPERED FULLERS Most are forged handles



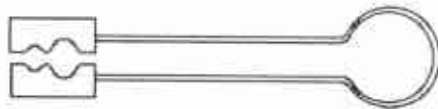
BALL FULLER



BALL FULLER

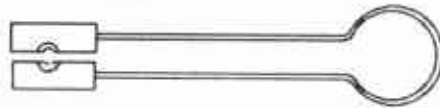


U FULLER



SPRING SWAGE

Forge swages using 3 dummies
1 - smaller to start, 2 - exact size,
3 - larger to break corners
finish forging below scaling heat
for better finish



Hole for excess bleed



The shorter the better BALL SWAGE

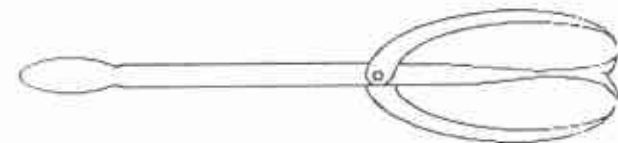
BIG HAMMER TOOLS



INSIDE/OUTSIDE BRASS RULER



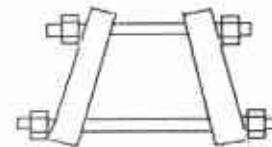
U TOOL



DOUBLE CALIPERS



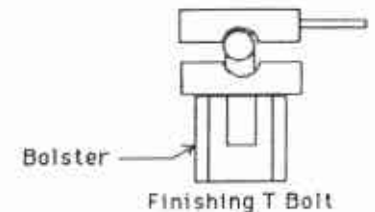
TAPER DIE (attaches to bottom die with tool holder)



ADJUSTABLE BLOCKS for conical sections, clamps, brackets, etc



T BOLT TOOL Roughing out



Bolster Finishing T Bolt

EQUIPMENT FOR SALE

Gas Overhead Ind. Heater.....	\$200
Ton Hoist w/Roller & I Beam.....	\$300
2 Burner Gas Forge.....	\$300
4 Burner Gas Forge w/Hood.....	\$600
50 lb. Trip Hammer.....	\$1,200
25 lb. Trip Hammer.....	\$1,400
Heat Treating Oven.....	\$1,400

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*Rebuilt & Used Little Giant-Mayer Bros.
Power Hammers and Replacement Parts.*

Harlan "Sid" Suedemeier
420 4th Corso
Nebraska City, NE 68410

Days 402-873-6603 • Eves. 402-873-4372

All parts, patterns and tooling have been acquired from the Little Giant factory in Minnesota.

Production records have been copied. Sent me size and serial number of your hammer and I will send you the date it was shipped and to whom.

25 lbs.	Hammer
50 lbs.	Knowledge
100 lbs.	Parts
250 lbs.	Service
500 lbs.	Technology

Beginning Blacksmithing

from Bituminous Bits

This is to provide the beginning student with some information on the basics of blacksmithing. There are several ways of doing any operation. Not all are right and all the others not covered here are not wrong. Some ways work better for one smith, allowing him to do his best, most efficient work and other methods work better for someone else. Try different approaches and pick the best for you and your shop.

ORGANIZATIONS

Search out a local blacksmithing organization. This will be one of the greatest aids to your blacksmithing career. They can help you to learn skills, identify sources of tools and supplies and provide support. Their newsletters provide a lot of information. If there is not a local group, go to the nearest one and then come back home and organize a local group.

BOOKS

Reading several of the available blacksmithing books is highly recommended. It is one of the quickest ways to get knowledge. You don't have time to make all the mistakes by your unguided trials. Some of the best books for beginners are:

The Art of Blacksmithing by Alex Bealer. This is a very inspirational book with lots of how to information.

The Blacksmith and His Art by J. E. Hawley. This book has historical, biblical, poetical and mythological references, a great description of the 8 basic operations and sketches of several useful tools.

The Edge of the Anvil by Jack Andrews. This wonderful book is now back in print and available again. It covers the full spectrum from beginning to advanced work—lots of excellent sketches of how to make many items.

CLASSES

Just as soon as you have read some of these books, you should take a beginning class. Get your forgemaster to start a class or go to one of the schools listed in the Bituminous Bits. Or you can arrange for private tutoring by a blacksmith friend. Here again this will save you much time, many errors and false starts in your blacksmithing progress.

EQUIPMENT YOU WILL NEED

Forge and blower, shovel, poker, coal, anvil and stump, vise, slack tub, water sprinkler, hammers, tongs, hardy and wire brush are a minimum set of tools required for beginning blacksmithing.

Other tools listed below help you to work more efficiently or tackle more difficult jobs. Get them as you are able to, or make them. Anvil tools fit in the hardy hole or pritchell hole. They include fullers, swages, bicks, hold-downs, stakes, cones and cold hardies.

Struck or handled tools are held by hand and struck with a sledge or heavy hammer. Hot and cold cuts, chisels, punches for round or square holes or slots, top swages and fullers, set hammers, and flatters are the most common of these tools.

Center punches, rulers, tapes measures, squares, calipers, scribes, soapstone or silver pencil are needed for measuring, marking and layout. Other useful tools include twisting wrenches, bending wrenches and forks, C clamps, spring swages and spring fullers.

continued

A fully equipped shop would include most of the following more expensive pieces of equipment: swage block, cone mandrel, shear, band saw, Beverly shear, chop saw, drill press, post drill, grinder and wire wheel, belt sander, acetylene torch, arc welder power hammer, treadle hammer, hand grinders and drills, steel storage racks, gas forge is optional and can be a great benefit to the production smith.

SAFETY

Be safety conscious, use safe work methods, wear ear, eye and respiratory protection appropriate for the job being done. Safety glasses or face shield must be worn when forging or using power equipment, grinders, wire wheels, etc. Ear protection should worn when you are subject to loud noises. Think Safety, work safely. Have a First Aid Kit readily available.

Do not use power hammer, welders, or other equipment unless you have training or experience using the equipment.

Cooling burns in the slack tub helps (if the water is not hot), then immediately put ice on the burn area for a while. Then apply the liquid from a broken aloe vera leaf to save you from a severe burn. Everything is assumed to be hot until proven otherwise.

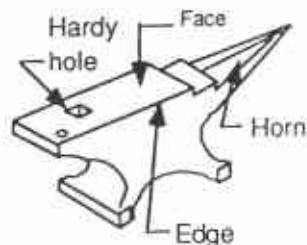
Hot mill gloves, made of cotton, are preferable to leather gloves. The leather shrinks when very hot and sticks to your fingers. The leather transfers heat very quickly and will burn you. The hot mill gloves are insulated and can be slung off if they get too hot. Watch out for finger fires. Cotton or woolen clothes do not burn through like polyester or other plastic cloth. Leather high top shoes or boots give more protection than low cut or cloth shoes. Hot scale in your shoe will get you dancing. Toe and metacarpal protection is desirable. A leather or heavy cloth apron is another layer of protection for your body and keeps off some of the dirt.

Hazards— anything hot, heavy, sharp, or rough, ragged edges or any thing connected to power that you or someone else is using, anything moving is a potential hazard. This includes hand tools, hot iron, sharp edges, power tools, fire, propane gas, acetylene, oxygen, welders, stock or other loose objects lying on the floor.

USE OF TOOLS

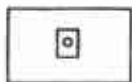
Anvils should treated with care. Do not strike anvil with hammer— hit hot iron. Do not cut through material on hard surface— use a separate cutting plate on top of anvil when cutting through. On very cold days, warm the anvil before starting work. Do not strike edge of the anvil.

The traditional anvil height is just under your knuckles when you are standing in a



hammering posture. This is a good height for a striker or for heavy hammering. With my bifocals, this height is too low for lighter work. My back tells me so.

The anvil should be positioned so you can go from forge to anvil by making a quarter turn and no more than one step. The anvil should be fastened securely to the stump. It's safer and doesn't ring as much



when tight. Traditionally, smiths have the horn to the smith's left. Many are trying a right hand orientation now. The vise should be 3' - 4' from the anvil and forge and securely mounted on a pipe or strong post.

The most useful hammer is a cross peen with a peen at least 3/8" thick and the shape of the face end should be square with slightly rounded edges. The face should be slightly domed and not perfectly flat. Other hammers you will need are ball peens and sledge.

Face and peen are hard but should be softer than anvil. Do not hit hard steel with your forging hammer— use a separate hammer for chisels, punches and other cold steel pieces.

Hammer control must be developed. The important considerations are grip, swing, weight, strike angle and hand-eye coordination. Look at the point you are going to hit (the exact spot and nowhere else). There are many variations of grip. Some propose forefinger straight, others say thumb pointing to the head. Use a grip with which you can control the hammer and work comfortably for long periods. You should not have a death grip on the hammer through all the hammering. You must relax the grip during raising of the hammer.

Use a heavy enough hammer to do the work. Light work, light hammer, heavy work, heavy hammer. For heavy work, use the heaviest hammer you can control. If you lose control, you cannot do effective forging. Start with a 2 - 3 lb. hammer and go up or down as required.

The angle that the hammer face contacts the work is one of the crucial control factors. It can hit flat, either side of the face can hit first, the front or back edge can be made to hit first.



A sledge with short handle is used with your control hand near the head and other hand 12" - 16" back. No overhead hitting is done. Look at the point you are going to hit.

Tongs are your extension hand. Tongs are a nuisance to work with so if able leave the stock about 2' long so you can hold it in your hand. To work efficiently, the tongs must fit the work. Being a blacksmith, you can make the tongs fit well. You can make tongs or buy at sales. Most that you buy will require modification to fit correctly.

The most commonly found tongs will be flat jaw tongs. They are almost useless for holding stock, but luckily the jaws are easily reshaped. Vise grips are useful for some shapes, not traditional even though they were invented by a blacksmith.

Hammer and anvil are most used tools. Most forging is done on the face of the anvil, on the horn or edge of the anvil. Drawing out is done with cross or straight peen, on a fuller, on the horn or on the edge of the anvil. Stem and scarfs may be formed on the edge of the anvil with hammer blows half on, half off the anvil. Bending may be done by hammering on hanging stock over the anvil or the horn.

Most forging should be done over the heavy, center section of the anvil.