

Hot Iron News

VOICE OF THE NORTHWEST BLACKSMITHS ASSOCIATION

Winter 1994

\$7.50 U.S.



Hot Iron News is the official quarterly publication of the Northwest Blacksmith's Association. Submission of materials for the magazine is eagerly encouraged and may be sent to the editor, Gene Chapman. Dead-line for submissions are February 15, May 15, August 15 and November 1. Other ABANA Chapters, blacksmith associations, and non-profit educational metals oriented groups have permission to reprint non-copyrighted materials found within the covers of **Hot Iron News** as long as credit is given to the authors, the magazine and NWBA. The Northwest Blacksmith's Association, and the Hot Iron News disclaim any responsibility or liability for damages or injuries as a result of any construction, design, use, manufacture or other activity undertaken as a result of the use or application of information contained in any article in the **Hot Iron News**. The **Hot Iron News** makes every effort to insure the accuracy of the information contained the articles published herein, but the use of any material or information is solely at the user's own risk. The **Hot Iron News** assumes no responsibility or liability for the accuracy, fitness, proper design, safety or safe use of any information, technique, materials, tool design, use, etc., contained herein.

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FRONT COVER

The N.W.B.A. quilt was inspired by a letter from Nahum Hersom written to the ladies of the N.W.B.A. in 1991. It represents 15 years of Northwest Blacksmiths Association activities and its members. It was designed by Ina Culberson and hand quilted by Vernell Henderson, Betty Hedglin, Phyllis Tice and Ina Culberson. It will remain with the N.W.B.A. archives and will be displayed at each N.W.B.A. event.



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Thanks Tom Graham	No. 2 3 4 5 38
Armchair Blacksmithing	Weight without handles 2 2 1/2 3 3 1/2 3 3/4 lbs. 39
No. 1 Hot Tips	hammers for driving tuning pins for 4 in. 57.00 6.00 6.40 6.80 1.00 40-70
Classified	Each .71 .80 .84 .88 7178

N.W.B.A. FALL CONFERENCE 1994

Coski Forge, Tacoma, WA

Our N.W.B.A. conferences have always been great fun, packed full of useful information, old friends and new acquaintances. Coski's unique(!) shop was indeed the ideal setting for this year's fall conference which was also N.W.B.A.'s fifteenth anniversary. I was struck by the incredible range of interests, talents, background and experience of those attending.

It seemed like half of the folks there were either giving demonstrations or should be. There were blacksmithing purists, artists, architectural smith, knifemakers, industrial tool smiths, production smiths and many combinations of skills. Experience level ranged from interested hobbyists to struggling students to experienced masters. I was in awe of the talent and professionalism represented.

It was particularly neat that new comers were so totally welcomed and accepted and could become as involved as they wanted. I learned something from every single demonstration. For certain, repose, animal head carving, forged joinery and non-ferrous work will be used more in my own work. After getting back into my shop I have found that there are many tooling ideas, improvements and techniques that I will be incorporating.

One very unique piece of equipment was Barney Coski's new power hammer that he designed

and built from scratch. It was simple, powerful, had excellent control and took up very little floor space. Having recently rebuilt my own Little Giant, and making many mistakes, I was just totally impressed.

Another nice feature of Barney's shop was that it was big enough, having a number of separate work areas, that several demonstrations could be carried out at once. Things could get a little crazy as there were usually two, and at one time three, demonstrations that I wanted to see that were going on at the same time. I often found myself frantically "swooping" between demos. In addition to the formal demonstrations there were unofficial parking lot lectures on doing business with galleries, how to wire three phase motors, design tools, using spare time effectively, deciding what type of work to focus on and who has what priceless junk. Is this too much of a good thing? A split personality is sometimes useful.

The round table discussion was a new experience for me. It was good to hear that I am not the only one who hears "You do what for a living??" Phil Baldwin did a great job of drawing out ideas on the state of our profes-

sion and where it is going. This discussion dealt with the fact that more and more smiths, and certainly the public, are coming to see hand-forged work as an art form. Whether you call it art or not, virtually every aspect of our work, from learning a new technique, to inventing and making your tooling, to presenting your work to clients requires a high degree of cre-

ativity and talent. After many years, and the efforts of

many smiths such as those who started N.W.B.A. fifteen years ago, our clients were recognizing the quality of our work and affording smiths the respect they have earned.

I am totally in the debt of those folks who made this conference happen. The food was great! The organization and planning was very evident. I know that a lot of people had to contribute time that they could have used, and probably badly needed, to earn a living so that I and many others could benefit.

Thank you all so much!

Paul Thorne, Anacortes

It seemed like half of the folks there were either giving demonstrations or should be.



N.W.B.A. Board Meeting September 30, 1994

Meeting called to order at 5:50 p.m. by Vice President Elliott.

Present were: Grant, Joe, Dennis, D.J., Ben, Gene and Jeff Holtby.

Minutes of April 4, 1994 were approved.

JOB DESCRIPTIONS:

Job descriptions of Board Members are supposed to be done and turned into Kent by Sunday. We are working on three different handbooks: 1) For new members so they have an idea of what goes on, 2) For putting on a workshop, 3) For putting on a conference.

CONFERENCE:

There were a few last minute changes to the line-up of demonstrators. Al Bart was not able to make it because of health problems with his wife (we hope she recovers very soon) and Dave Thompson was also not able to make it. It was decided that the Association would pay the prize money for the desert contest and the soap stone holder contest.

RECOGNITION:

For his years of service, Tom Graham will be given a lifetime membership and a plaque made out of something big and rusty and presented at the general meeting. Our host Barney Coski said that he didn't want to be paid the conference fee, so it was decided to purchase one of Gene Chapman's knives and present it to Barney along with a check for \$300.00 for supplies at the general meeting on Saturday night.

WORKSHOPS:

The only workshops planned thus far are Novice, Novice II, and a Power Hammer Rebuilding Workshop at Berkley Tack's. The suggestion was made that all of the money for workshops should go directly to the host and that the host send written confirmation of money received to participants. (This is the kind of information that will be in the workshop handbook).

UPCOMING CONFERENCES:

Spring Conference will be at Kent's shop in Corvallis, Or. on April 21, 22 and 23. Joe is going to contact prospective demonstrators. Fall Conference will be at Winthrop, WA. October 6, 7, 8 and D.J. Stull will be our host.

MEMBERS:

We have 551 members on roster and 420 paid up members.

HOT IRON NEWS:

The HOT IRON NEWS is receiving rave reviews. It was decided the next issue will have a color cover to celebrate the 15th anniversary conference. When Gene and Peg signed on as editors it was to be for 2 years. They have just finished the first year and are doing such a great job that we are trying to find a way to get them to stay on for a lot longer.

MISCELLANEOUS:

We need to get the mail to the treasurer much faster so Grant is going to look into a service and check with the Post Office to see if we can get the mail forwarded for a while.

Dennis is going to get a copy of the insurance policy and review it and see if the ABANA insurance is worth looking into.

Meeting will be continued Saturday, October 1 at 5:15 p.m.

Meeting adjourned at 7:12 p.m.

Meeting called back to order October 1, 1994 at 5:15 p.m.

Present were: Grant, Joe, Kent, Dennis, D.J., Gene and new members Don Kemper and Barney Coski.

ELECTIONS:

Elections were tallied at 11:00 a.m. today. The winners were Barney and Don. Dennis was re-elected. Congratulations and Welcome.

Officers were elected and all present officers were reinstated.

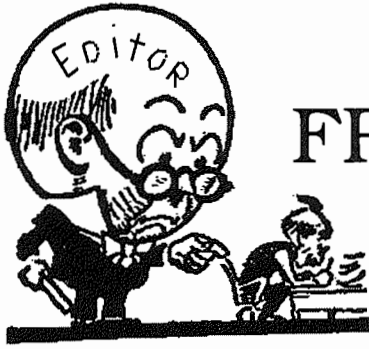
MISCELLANEOUS:

Kent stated that he needed more computer disks and was authorized to get some.

Our 501C status has been completed. Dennis is going to have it reviewed by someone in the know to make sure that everything is in order.

Meeting adjourned at 5:47 p.m.

Dennis Prince
Secretary



FROM YOUR EDITORS

WOW

some doings, the N.W.B.A. 15th Anniversary Conference. Hot iron, blacksmith talk, old and new friends and not enough sleep. Many thanks to Barney Coski, our host, demonstrators, workers, cooks, clean-up crew, tool bringers, buyers and bangers, and last, but not least, the N.W.B.A. Board members for planning and coordinating the event. Once a conference begins the energy level picks up and everything gets done. Hats off to all conference participants, you're a bunch of go-getters!

To the many folks who contribute articles, photos and drawings to the "Hot Iron News", Peg and I are grateful. Without your support the "news" wouldn't be much. We plan to publish as many "How Tos" as possible, time and budget permitting. Special ideas and techniques can be real problem solvers to both beginning and advanced blacksmiths. Many "Hot Tips" are from old N.W.B.A. and ABANA Chapter Newsletters.

Please advise us of any address or phone changes or corrections ASAP.

To 15th Anniversary Demonstrators: We wish we had photos of everyone who demo'd but that was not to be. We had many folks taking pictures but no planned effort to get everyone in action. If anyone has snapshots of demonstrators not in this issue, the Hot Iron News would like to publish them. Please contact the editors. Thanks.

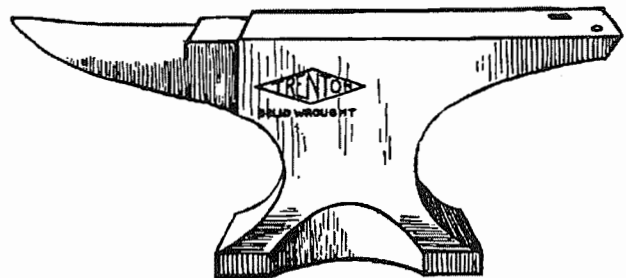
Blacksmiths, how many times have you been asked. . .

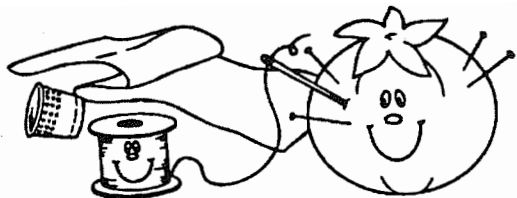
"WHERE CAN I FIND A GOOD ANVIL?"

Well advertise . . . newspapers, bulletin boards, any time you talk to someone bring up anvils. It's surprising how many people know their whereabouts.

What brand? Talk to some of the professional blacksmiths at N.W.B.A. gatherings. Some of the most preferred brand names are Trenton, Hay Budden,

Peter Wright, Columbia, Ajax, Kolshaw and some Fishers. The least preferred is a Vulcan, although some folks do very nice hot iron work on pretty shabby anvils. Ok blacksmiths, send me your opinions, choices and any tidbits you care to share.





Blacksmiths' Ladies

The Ladies Press On . . . In a gathering 'round the table for one of our discussion/evaluation sessions, the ladies decided on two projects for the next two years. Our goal for both projects is to have as many people, male and female, participate as possible.

The first project is a N.W.B.A. Cookbook. Whenever you bring a food item for the potluck, please bring a copy of the recipe (be sure it is legibly written and complete with instructions and measurements). For starters, we already have Jerry Culberson's famous "Old Cedar Forged Beans" recipe. The next recipes we're looking for are those from all who participated in the dessert contest at the Fall Conference, especially from those top three winners. This project will be on-going until we collect enough recipes to publish. You may bring recipes to any N.W.B.A. function or send them to either Ina Culberson, East 220 Cronquist Road, Allyn, WA 98524; Vernell Henderson, 36050 Pittsburg Road #2, St. Helens, OR 97051; or Phyllis Tice, Box 633, St. Helens, OR 97051.

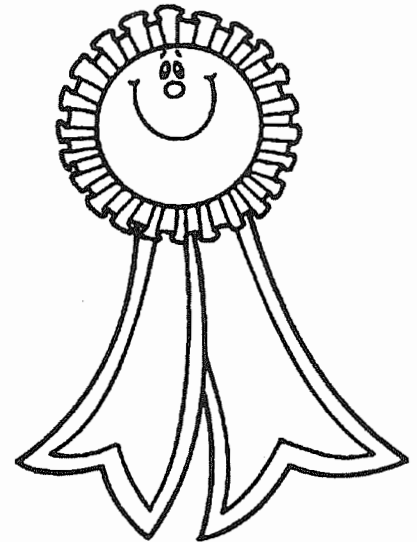
Our second project will be another quilt. . . but this time you don't have to know anything about quilting to participate. To provide an opportunity for anyone who wants to try their hand at a stitch or two, we are going to make a yo-yo quilt. At the Spring Conference the ladies will have a table set up with fabric, needles and thread. Anyone can drop by and make a yo-yo in just a few minutes. We'll show you how and you can make one in less than 10 minutes! We want this to be an "everyone participated" quilt. We're expecting to have a lot of fun and conversation, and look forward to having you visit our table and take part in the next N.W.B.A. quilt.



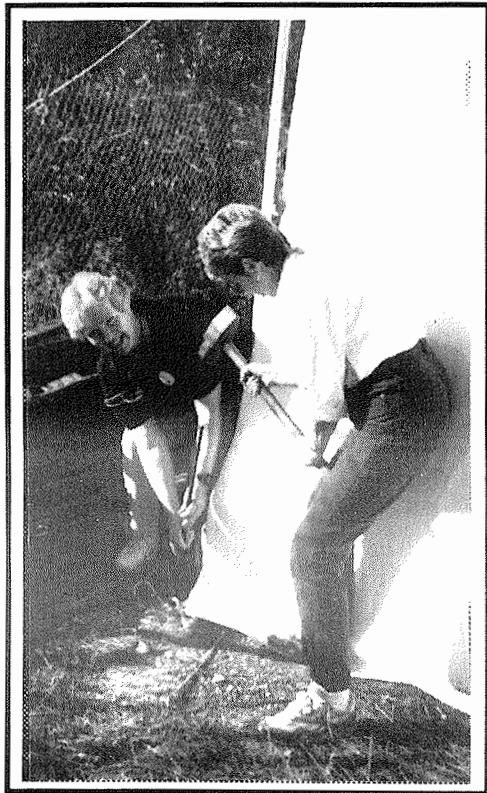
Roses for the Ladies

- - - A Tribute

For the past 15 years the N.W.B.A. women have played a significant role in the success of all N.W.B.A. events. With their cunning ways, senses of humor and expertise, they have served as organizers at meal time, set up and clean up; prepared and served delicious meals; given advice and consultation to the officers and board; stitched quilts to help raise funds; contributed photographs and articles for the newsletter; made anyone new to the organization feel welcome; and stepped up to the plate in assisting with registration, the auction, gallery, selling items, and collecting money . . . staunch supporters in every way.



"Behind every successful man stands an even more successful woman."



The women prefer not to be singled out as individuals but rather to be thought of as a group who is there with a smile to lend a helping hand (or opinion) without even being asked!

Thank you, N.W.B.A. ladies for 15 years of faithful support. We hope you're around for another 15 years!!

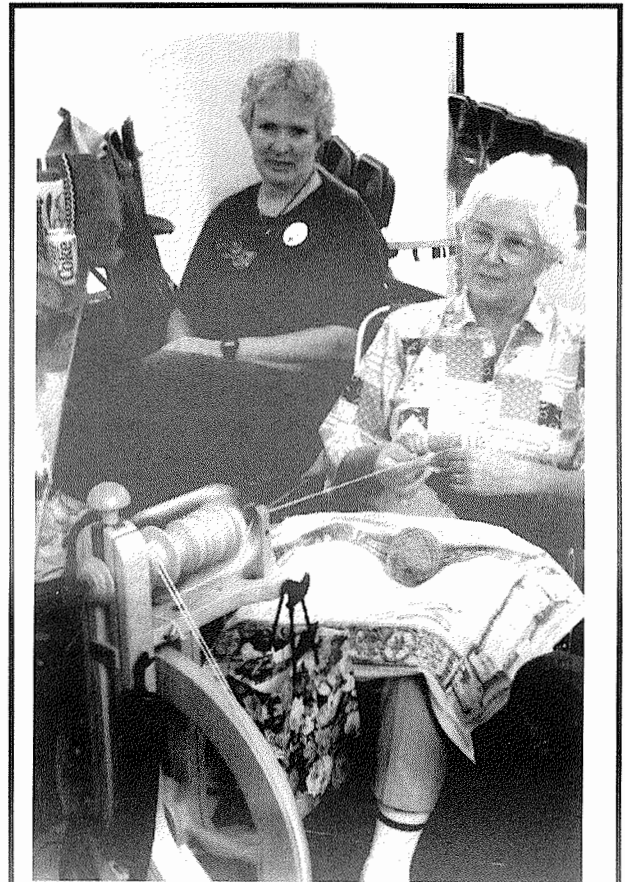


Blacksmith's Ladies at Work

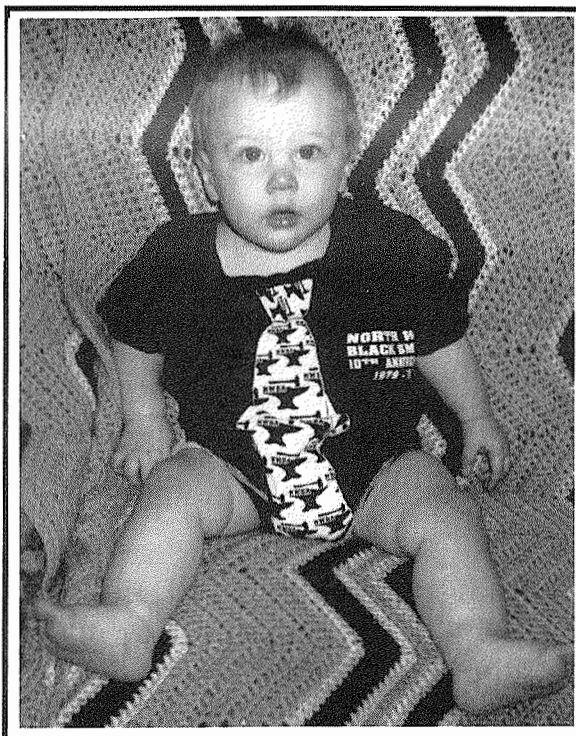


Phyllis Tice and others tried
their hand at the wheel.

Anne Slykerman from Rosedale, British Columbia, was our non-hot iron demonstrator with her spinning wheel. Anne spun a skein of yarn from Dennis Prince's dog. (Humm. . . wonder why Dennis was saving dog hair?)



Thanks, Anne for
sharing your craft
with us. It was
fascinating!



Youngest N.W.B.A. member, Luke Henderson,
Grandson of Jerry and Vernell Henderson
of St. Helens, Oregon, proudly wears his
N.W.B.A. 10th Anniversary T-Shirt.

Letters to the Editors:

An open letter to all the Ladies of N.W.B.A. who helped with "Grandpa's" quilt. It sure is a beauty. Such artists!!

Dear Quilters:

I personally want to thank you ladies for turning a suggestion into a work of art. Not only were the squares, tastefully and skillfully done, but the center squares with our

N.W.B.A. logo and the flame colored materials set the whole quilt off.

I also thank you all for the pillow. I have an idea of a shadow box type of frame so I can put it up on a wall with other treasures.

Bless you all for all the work and energy you put into the quilt and know in your hands the 20th anniversary quilt will be equally beautiful. Thanks and love to all.

Nahum and Melba

Dear Gene,

Here is a little article you may consider for publication in the "Hot Iron News". Though a little tongue-in-cheek, I find a grain of truth to it.

Thank you for the wonderful job with the newsletter.

Most Sincerely,

Paul Casey

Over the last dozen years of taking on commissioned projects, I have come to note certain key phrases of a client's requests. These translations may be of great use to the young and aspiring smith, interested in pursuing architectural commission.

Key Phrase

I WANT IT SIMPLE
I WANT IT UNIQUE
NO RUSH
FEEL FREE TO BE AN ARTIST

I DON'T KNOW WHAT I WANT

I WANT IT TO MATCH THE HOUSE

Translation

I want it cheap.
I want it cheap, but to look expensive
Tomorrow would be fine.
Just make it look like something I've seen
before in Mexico.

I may never get anything, but I like the
attention and my hobby is looking at
craftsmen's proposals.

Not my house, but a house in
"Architectural Digest"

How you handle these requests depends entirely on your own temperament. Chances are, before too long you too will look like a real blacksmith (bald, grey and quick-tempered).



N.W.B.A. Tibbits

Treasurer's Report

FALL CONFERENCE 1994

INCOME:

AUCTION	\$3677.50
DUES & CONFERENCE	5652.50
HOT IRON NEWS	130.00
HATS & T-SHIRTS	<u>520.00</u>
TOTAL	\$9980.00

EXPENSES:

BUTTONS	\$ 70.00
DONUTS/PLATES/ETC.	306.39
TOILET	268.50
BOLTS	17.60
TENT	1284.01
MEAT	256.61
HATS & T-SHIRTS	1306.02
LUMBER	189.11
OTHER EXPENSES	<u>829.50</u>
TOTAL	\$4529.35

TOTAL PROFIT \$5452.65

HOT IRON NEWS EXPENSES

Fall 1994 -- printed 700 issues	\$1759.19
Summer 1994 -- printed 700 issues	1535.93
Spring 1994 - - printed 700 issues	1854.60
Winter 1993 -- printed 900 issues	1882.18

MEMBERSHIP INFO

Past and present members in data base: 650

1994 Active members: 450

Members By State:

Washington:	348	British Columbia	27	Arizona	7
Oregon:	140	Montana	12	Alaska	5
California:	27	Idaho	11	Poulsbo	1
				Other	74



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THE AMERICAN BLACKSMITH



AUGUST, 1914



YOUR HANDS

are the only tools needed for adjusting and working this die stock on any diameter for which it is made.



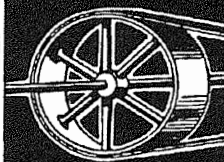
THE "DUPLEX"

It has a wide adjustment, too, and a range adapting it to a large amount of work. Put up in a case with taps

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HAVE YOU POWER IN YOUR SHOP?

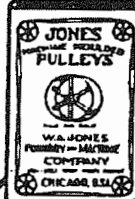
If so, you want the best Power Transmission Machinery. The Jones line will give satisfaction. It includes machine moulded pulleys shafting, hangers, boxes, gears, friction clutches, sprocket wheels, chain belt, fastenings, mill and factory supplies.

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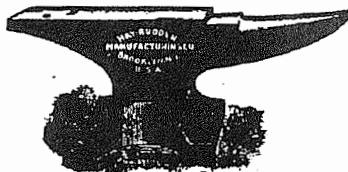
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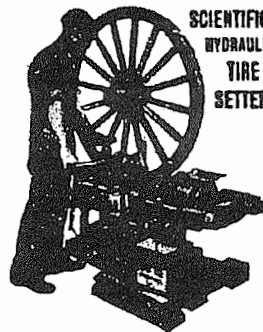


"The Capewell"

OVER 1,500 BLACKSMITHS
will tell you that we send out
**THE BEST TIRE
SETTERS MADE**

and, if you don't believe them, we will send you one on trial in competition with any other make and let YOU be the judge.

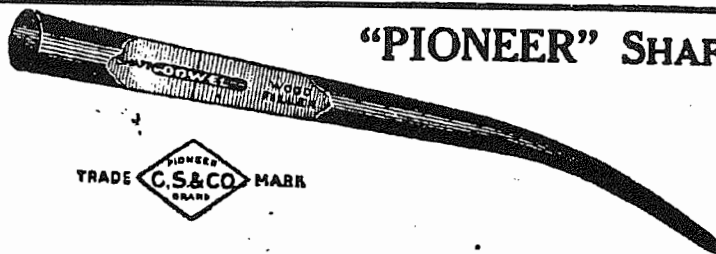
Our machines set tires to the true circle of the wheel without kinking and do it easier and quicker than any others.



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HYDRAULIC
TIRE
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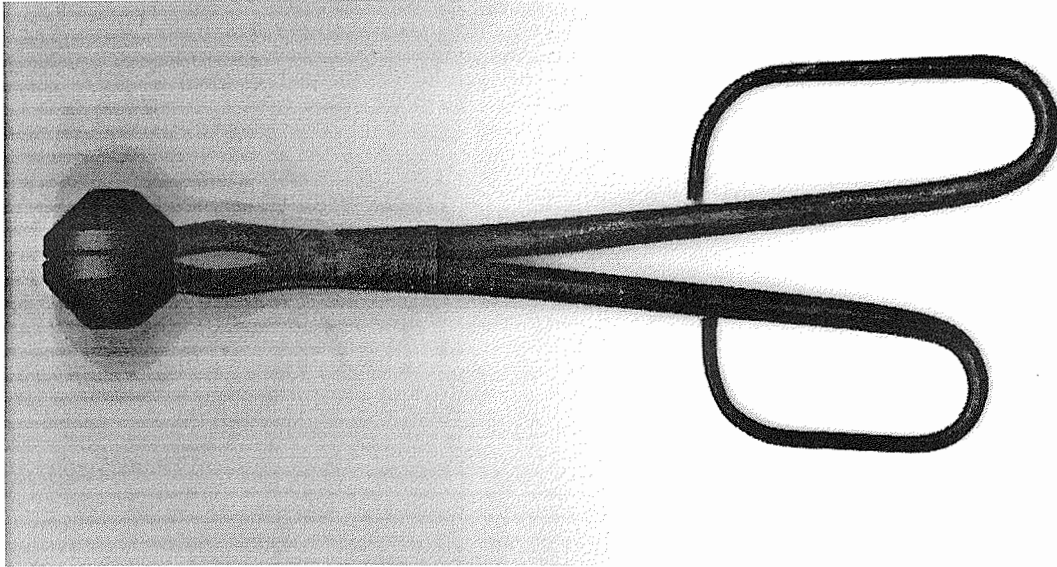
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BINGHAMTON, N. Y.

WHATSIT??

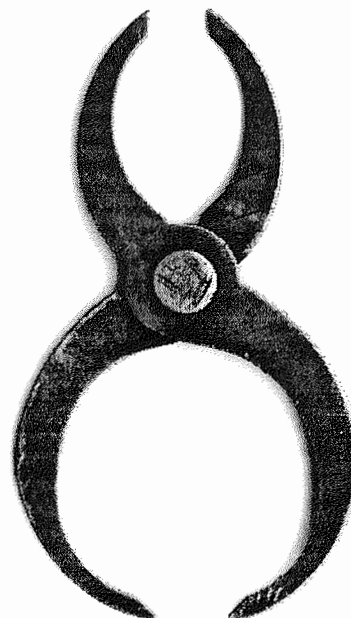
This forged iron pair of something was bought in a Blacksburg, Virginia junque shop. It has a box joint, 10" long, marked with the number 14. The jaws are about 1/16" apart when handles are closed. Whatsit??? *nut cracker? bug squasher?*

GEE I dunno!



"WHATSIT" SOLUTION

Summer issue "Whatsit", says Jack Slack, is a stopper gauge used by potters and glass blowers to guage stoppers and lids to fit bottles and jars, etc. The big end is set to the outside rim of the container and then the small end is used to size the stopper to fit inside. The difference in dimensions is to account for the wall thickness of the rim. From the dimensions given, I'd guess this one was used by a potter.



Don't let this happen to your rig!



Once Jim Keith's horseshoeing rig, this tangled heap of metal is all that remains after a 1988 propane explosion.

Fortunately, Jim has resumed his farriery practice in Indiana.

This story and Jim Halverson's "Propane Safety" reprinted from ANVIL Magazine, May, 1994

Propane Safety

by Jim Halverson

Check List

Do you have the correct propane tank for your job? Frame-mounted D.O.T.-approved tanks are best for farriers' trucks.

Is your tank certified?

Tanks must be certified 12 years after manufacture and every 5 years thereafter.

Are your hoses, regulator and shutoff valves in good working order?

Keep a bottle of Formula 409 spray cleaner on hand to check for leaks.

If it bubbles up, there is a leak.

Is your truck set up so that in the event of an accident, your propane tank will not be struck or punctured?

Does your truck display L.P.G. stickers on left, right and top of your truck?

In the event of an accident, these stickers will alert emergency personnel of the pending danger. It might possibly save your life and theirs.

Do you carry a fire extinguisher?

Do you carry your tanks in an enclosed compartment?

If so, they should be vented to the outside environment.

Did You Know?

Never lay a cylinder on its side. If it vents, it will release liquid instead of vapor.

Did you know that one gallon of liquid LPG = 264 gallons of vapor LPG?

Do you know how many pounds of pressure are in an LPG tank?

At 50oF = 86 PSI

At 70oF = 120 PSI

At 90oF = 165 PSI

At 110oF = 220 PSI

The safety release valve on your propane tank is set to release pressure at 375 PSI.

Some states do not allow vehicles that are carrying propane for use to drive in tunnels. (If caught, there is a big fine - \$\$\$!)

If your tank does explode, it will throw horseshoes approximately one mile in all directions. (FACT!) Just ask Jim Keith.

Propane gas is heavier than air and settles to the lowest point.

So, if you are cutting vent holes, put them in the floor, not the top.

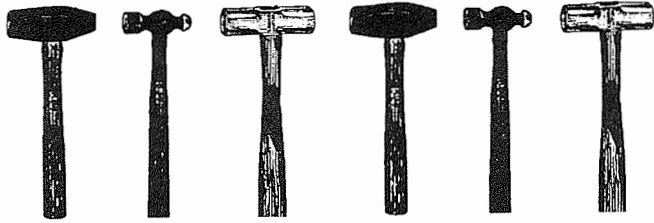
A Final Note

In 1984, Jim Halverson spent \$1000 for a few hours in the hospital and 30 days' loss of work in a minor propane accident. Jim Keith (whose truck is pictured on the previous page) spent \$120,000 and a year suffering from his major accident.

Some costs you may want to consider: A D.O.T.-approved frame-mounted LPG tank, 10-15 gallons, will cost approximately \$250.

The average price of a funeral, including cemetery plot, is approximately \$3000 to \$5000. Straight cremation is approximately \$500 to \$1200.

Think about it.



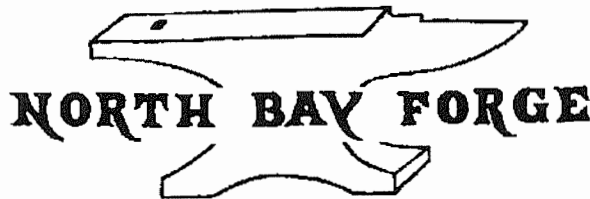
BLACKSMITH

PROFILES

Jim Wester

Talk about isolation! Jim lives on Waldron Island, in the San Juan Islands. Imagine this, there is no ferry service to Jim's island paradise. The only way in is by private boat!

Jim has been blacksmithing at North Bay Forge for the past 10 years. His speciality is toolsmithing, specifically wood carving tools. In 1984 Jim took an N.W.B.A. Novice Blacksmithing class. He was a real "go-getter". After finishing his class projects, Jim began building tooling, hardies, swages, fullers, punches, it was tough getting him to take a lunch break. Jim had his goals -- today he owns and operates North Bay Forge.



Waldron Island, WA 98297

Jim primarily wholesales his carving tools. One well known client is Woodcraft Supply Co., a national woodworking tool outlet with stores nationwide. Just to have your work in the Woodcraft catalog speaks

of "primo" craftsmanship. For a copy of his brochure write to North Bay Forge, Waldron Island, WA 98297.

Well done Jim!

Other hobbies include wooden boat building, boating, camping and gardening. His wife, Joanne is a teacher and they have a five year old son, Tate.

ADVICE OF A MASTER

From the Introduction to Elementary Metal Work, as reprinted in Forge Facts, Fall, 1991

"In the Middle Ages in Europe, as in the East, the vast extension of decorated work was entirely due to the fact that the rudiments were so perfectly mastered, and the very utmost made of their resources. Thus an immense proportion of the carving, and, in deed, of most kinds of ornamental work, was actually such as would be included in the first two or three lessons in an industrial or minor art school. Nowadays all pupils hasten on as rapidly as possible to the 'higher stages,' despising the lower, the result being vast quantities of petty elaborate foliage and fine work, valued for great skill and labour, while on every house-front, and door, and elsewhere, we see dead blank space. The art education of the present day is all wrong in this, that it constantly holds up before pupils the idea that they are to become great artists, when what the country needs is good artisans. Practical result guided by good taste is what the latter require, and I believe that I have had this before me in every phase of my work."

-- Charles Leland, 1894





CHAPTER LIAISON NEWSLETTER

Nov 1994

NEW CHAPTERS:

Welcome new ABANA Chapter:

Furnace Town Blacksmith's Guild (note this new entry on the list enclosed). Although a new chapter of ABANA, Furnace Town is not a new group. They have been an active blacksmith association for years. They bring thirty-six members into the fold.

NON-ABANA BLACKSMITH CLUBS:

We are aware of at least eighteen blacksmith interest groups around the country that are not presently ABANA chapters. Many of them, like Furnace Town, have a history of regular demonstrations and hammer-ins as well as a substantial membership. One surmises that there could be a number of misperceptions that have dissuaded them from applying for Chapter status:

1. They think joining would be expensive.
2. They see no benefit from joining.
3. They believe they have to be incorporated.
4. They believe they are too small.
5. They share an emphasis on a special branch of blacksmithing e.g. archeological, tool making, bladesmithing, etc., that they don't think ABANA is interested in.
6. They are under the impression that they will be exposed to greater liability if they incorporate or join ABANA as a Chapter.

NOT SO!

1. It doesn't cost anything.
2. There are plenty of benefits: newsletter exchange, dissemination of raffles, conference classes and demonstrations to the whole membership and availability of insurance; to name a few.
3. We recommend incorporation for liability protection and charitable status, but you don't have to be incorporated. Many of our chapters are not incorporated.
4. It only takes five ABANA members who also belong to a blacksmith club to qualify as a Chapter.
5. Special interest groups like damascus, tool making, etc. should consider chapter status. Other ABANA members with the same interest can be solicited to join and to

contribute and to receive your newsletter even though they are geographically distant.

6. Public Liability - If your group is not a corporation and somebody gets hurt at a club event, not only will the member who volunteered his forge be liable, but your whole membership could be individually liable because the law will treat you as joint venturers. There's a lot of membership overlap. Seriously, consider evaluating ABANA chapter status with your clubs next year. Call me or Andy Quittner if you need help.

ATTA BOY:

To the *ALABAMA FORGE COUNCIL* who has opened their 11th forge: Landmarks Forge in Dothan, serving Southeast Alabama.

To *SOFA* for purchasing building and equipping their own building with multiple public demonstration forges at the Miami County Fair Grounds and for finishing it in time for Quad State Round-Up.

To *VANCOUVER ISLAND* for finishing their own building and forge at Luxton Fair Grounds, Vancouver.

To *NED EDLEN* of the Central Maryland Chapter, who made a noble effort to organize the Southern Maryland Smiths to fill the need there and in Northern Virginia. Super effort, Ned. Don't be discouraged. There are a lot of good smiths in Virginia and Southern Maryland who need a place to get together. It will happen.

SUBDIVISIONS:

Chapters with a wide geographic membership might want to seriously consider creating divisions or regional forges with their own regular hammer-ins and demonstrations to increase membership and member activity. Some of our most active chapters like the Alabama Forge Council have used this technique and their size proves its effectiveness. People will regularly drive 10 to 20 miles to share blacksmithing, not 100 miles.

Any opinions expressed in this newsletter are the opinions of Chairman, John Pollins. If you have any comments, please direct them to:

John Pollins III
Chapter Liaison Committee Chairman
RD #5 Box 154, Greensburg, PA 15601



Artist-Blacksmiths' Association of North America



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

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

ABANA PRESIDENT'S MESSAGE

November, 1994

Dear ABANA Chapters,

The ballots are in for the 1994 ABANA Board of Directors election. With 692 ballots in, the results are as follows: Joe Harris, 555; Toby Hickman, 545; Lou Mueller, 545; John Pollins, 533; Tal Harris, 449; Charley Schultz, 398; Will Hightower, 307. In addition to the three incumbent Board members, we welcome two new Board members, Lou Mueller and Tal Harris to the ABANA Board. I would like to thank all of the candidates for taking the time, and making the commitment, to run for the ABANA Board. Please join me in thanking Charley and Will for their willingness to serve the membership, and encouraging them to run again.

This month, the ABANA Board is holding its annual Budget Meeting; and once again, Emmert and Jane Studebaker have offered the use of the Studebaker Homestead in Tipp City, Ohio, for the meeting. We very deeply appreciate the use of this remarkable facility, and the wonderful hospitality that Emmert and Jane have shown us over the years. ABANA would be something less than it is without the support of people like Emmert and Jane.

Going into the Budget Meeting, we are nearing the 4,000 mark in ABANA's membership. We have seen growth in the National Endowment Trust for Artistic Blacksmithing. We have introduced a new insurance program. We have new items in our ABANA Video Library. We have seen the first, and will soon see the second ABANA-member-only exhibition at the National Ornamental Metal Museum. We are coming off the most successful ABANA Conference ever. We have an improved Scholarship Program. We have more sales items than ever before. We have more Chapters than ever before. The Anvil's Ring has more pages than ever before. Kind of sounds like something is happening here, doesn't it?

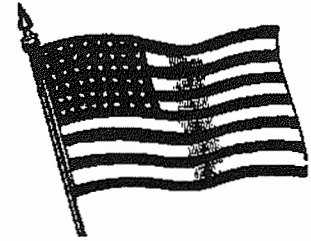
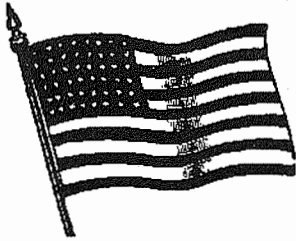
This Budget Meeting, as in every other one, will present a whole new set of challenges as the ABANA Board prepares to enter its 22nd year. It is the responsibility of the Board to ensure that our precious resources are used in the most effective way, to provide the education, opportunity, and service mentioned in our by-laws. Fiscal responsibility and a good bit of human effort has brought us to this point. It is time to set our sights on the horizon, and take ABANA where its founding fathers only dreamed of being.

But remember, we don't want you (day) dreaming about anything as you engage in your favorite activity! Plan to take an extra moment to think about each task before you do it. Now there's a sure-fire way to make certain you are around to enjoy the beautiful fall weather!

Warm Regards,

Clayton Carr
ABANA President

GOVERNMENT SURPLUS SALE



OFFERING:

OFFICE EQUIPMENT* *FURNITURE AND SUPPLIES

***COMPUTER EQUIPMENT* *ASSORTED HOUSEHOLD**

FURNITURE* *ASSORTED HARDWARE*

ASSORTED SCRAP LOTS* *METAL AMMUNITION BOXES

***ELECTRICAL AND ELECTRONIC COMPONENTS**

AND EQUIPMENT* *ASSORTED VALVES* *VEHICULAR

COMPONENTS, RESIDUE AND VEHICLES*

RETAIL STORE NOW OPEN!

10:00 A.M. - 2:00 P.M. MONDAY, TUESDAY & WEDNESDAY
(excluding holidays)

DIRECTIONS TO DRMO SALES OFFICE:

Take exit 123 off I-5, turn south and go approximately 1/2 mile to the Ft. Lewis Logistics Center gate. Stop at the gate for a visitor's pass. You must show a valid driver's license, proof of insurance and the vehicle's registration. Proceed 1/10 mile to the stop sign, turn left and go 9/10 mile to North "O" Street. Turn right and go across the railroad track, then go to the far end of building 9671.

If you wish to have catalogs faxed to you, you can call our fax line after 3:45 p.m. weekdays. New catalogs will be available on Thursdays with the fax line open throughout the weekends. The fax telephone number is (206) 967-2049.

Department of Defense
Defense Reutilization & Marketing Office
Building 9670
Fort Lewis, Washington 98433-5000

NOTE - - MOST OF THE SURPLUS IS SOLD AT AUCTION BY LOTS.
SORRY I DON'T HAVE A PHONE NUMBER . . . editor

WORKSHOPS - - - DEMOS - - - WORKSHOPS

**Winter
1995**

NOVICE BLACKSMITHING

Learn the basics, safety, drawing, punching, slitting, upsetting, drifting, welding, etc. Hands-on, make a punch and chisel, tongs, poker and individual projects. Repeat students welcome.

**Winter
1995**

NOVICE II BLACKSMITHING

Special help and techniques in individual hot iron projects. Prerequisite: Novice Blacksmithing Workshop or talk to instructor.

**Spring
1995**

BLADESMITHING

Hands-on OR demos: Design, materials, forging, heat treating, techniques, etc. with Gene Chapman and hopefully Wayne Goddard at Joe Elliot's shop in Redmond, Oregon. Yes, Don K., there is gonna be a blade workshop!

Dates, specific locations and costs of these workshops is still to be determined.

If you signed up at the conference you are on the list . . . but it doesn't hurt to double check.

REGISTRATION CONNECTION

BLACKSMITHING WORKSHOP

Joe Elliot, (503) 548-2564

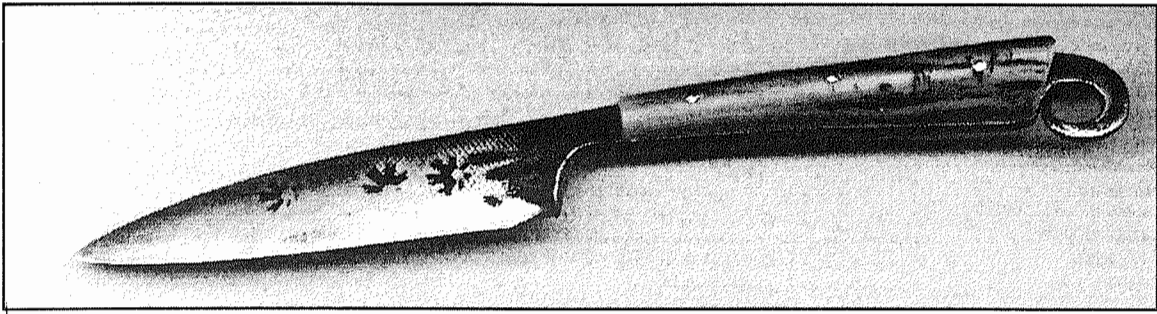
BLADESMITHING WORKSHOP

Gene Chapman, (206) 297-2495 (evenings)

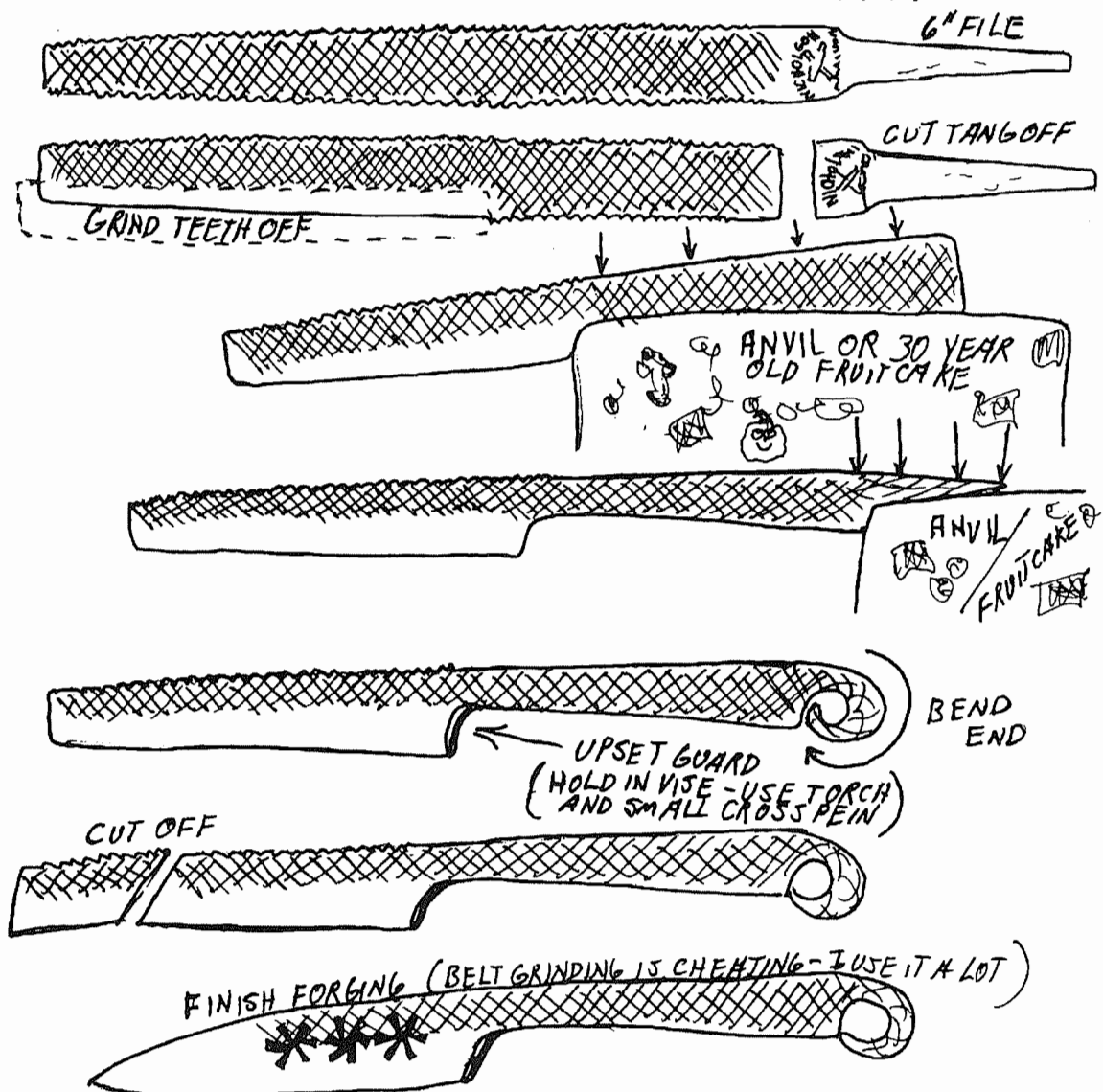
Winter 1994



Bladesmith's Corner



MY WORKING KNIFE
MADE FROM A NICHOLSON FLAT BASTARD FILE



STAMP MARK - FILE & SAND - HEATREAT -
RIVET SLABS ON HANDLE OR WRAP WITH
LEATHER, SHARPEN, GO CUT SOME CHEESE,
Don Chapman

My Iron Nightmare

by Paul Quyle
Murphys, California

Unfortunately, opportunity knocks at my door a few times too many. Opportunity knows I am a sucker for anything that is cast iron, heavy, awkward, and has to be moved. Therefore, it should not have been a surprise when my good friend Bob Thomson called to tell me that a fellow CBA member, John Bartelme, had a large power hammer that he would consider selling.

My wife Joyce and I combined a Moxon Chappel junket with a visit to John's house to look at this available hammer. He lives in a nice section of Menlo Park, California, where you would not expect to find anyone with heavy blacksmithing equipment. Nevertheless, there in a back shed was a 250-pound (rated) Little Giant Power Hammer. This rating is the weight of the hammer only; the total machine weighs a little over five thousand, five hundred pounds. John is as bad as I am and keeps collecting tools, but this one was just a little too big to operate in this quiet, residential neighborhood. Because of friendship, John reduced the price and made it irresistible to me. The deal was made; all I had to do was get it home.

It took over two months before everything worked out to put me, my truck and trailer, and a young helper in John's driveway. We had everything that I thought I might need: chains, come-alongs, ropes, planking, blocking, pry bars, shovels, and assorted hand tools. Now the fun started. The hammer was on pipe rollers in a very crowded, low-roofed shed. We moved years of accumulated iron and tools from around the base to enable me to get a long bar under it to start the journey to the outside. Three inches of movement revealed that the rafters of the building were too low and the machine was caught. John and my helper Mike were able to bend the rafters up enough to just slip under. At last it was out of the shed and ready to be rolled around to the front of the house. Planks were laid on the ground for the rollers to ride on, and it started to move. We came to the place where the next roller should go under — it didn't. The planks were laid over irregular stepping stones and bent just enough that we had to find a tractor jack to raise the front enough to get the roller under. Obviously, this rough surface was going to be a problem. John manfully made the decision and started removing stones the full length of the house. Now we should be okay. As it turned out, the space between the house and the fence was just a few inches wider than the

hammer. The ground under where the stones had been was soft. The planks bent, we swore, and we jacked up to put rollers under every three feet. Six hours later, the hammer rested on the driveway in front of John's house. Three exhausted men thought the worst was over. John told me that when he moved the hammer in, he had rented a big forklift from a rental company about a mile north on El Camino. I promised to be there early in the morning, and I was confident that it would only take a few minutes to load the hammer on my trailer, using a big forklift — a piece of cake.

At 7:45 am the next morning, I walked into the office of the rental company to find a man slouched in a chair with his feet on the desk. "I would like to rent your big forklift," I said. He reply was, "We don't do any business before 8 am." I walked around and admired the greasy pavement until 8:00. Back inside I repeated, "I need your big forklift." "It's rented," he replied, "and it won't be back for a month." That was his only statement. My thought was: If I kill him, it will take even more time before I can get loaded. The only other rental company that had one large enough was four miles farther north on El Camino. They had a high-lift forklift that was certified for six thousand pounds of load. However, it could not be towed, and we had to drive it slowly five miles up El Camino during the morning rush. It had a fan that kept hitting against a pipe, and steering that caused a wobble over half a lane on the road, and brakes that almost worked.

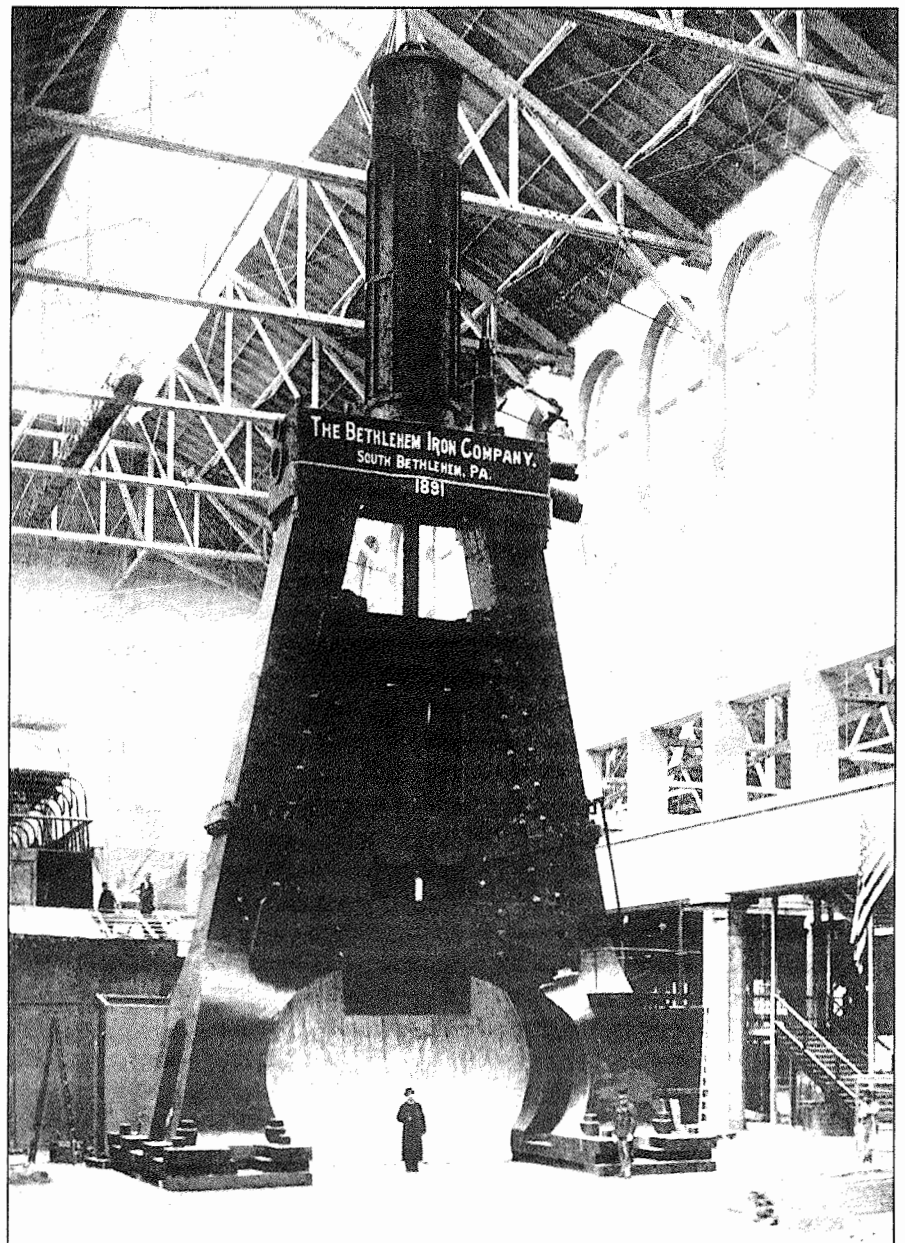
At last, the trailer was in position, the forklift was ready, up it goes. Did I say *up*? Oh no, not up. All the forklift did was grunt. I called the company; their reply was that it should lift it, but maybe the system was worn. Bring it back; they have a bigger one. Five miles back to find the bigger one — taller, but with a very much smaller load capacity.

Phone call after phone call to forklift agencies only proved that no one in this part of the world used forklifts that lifted more than one ton. Next I tried lumber yards — they always seem to have big ten thousand-pound lifts. Yes, they had one, and yes, they could help. But they were not licensed and so could not move on the streets. Next came a call to a heavy equipment mover. They could do it in a week, but the price was \$500 to come out, plus \$200 an hour while they were there. Thank you very much.

At last a light glimmered: *try a heavy-duty truck tow service.* There was one just a few miles away. Yes, they could come; their boom would easily clear the fifteen feet of height we needed, and they could handle thirty thousand pounds. The price was \$100 an hour. Come, just do it!

Back at John's, we waited. Hours went by. We called the company — no answer. Finally a phone call came through. They were sorry, but there had been a truck wreck on the freeway and their contract with the California Highway Patrol requires them to take those calls first. But they would still come. At 4:00 that afternoon, the truck arrived. Believe it or not, the driver was excellent; he knew what he was doing. He used his own chains for safety, rigged it and lifted it. Unfortunately, the width of this truck left only inches for us to back in our trailer. This residential street was so narrow that we could not maneuver, so we blocked the street for about a half hour until we fought our equipment into place. John's neighbors on the street all came out — either to watch or to be unhappy because we were blocking their street. After he was paid, the driver was in no hurry to leave and helped us chain down and secure our load for the long trip home. As some of you may know, Menlo Park has no through streets going to the freeway. We had to take this load through downtown traffic to the freeway. Rush hour was again in full swing until we were past Hayward, going home. A little after 10:00 pm that night, we pulled up my driveway, happy in my belief that everything was now under complete control.

The next morning my son-in-law, Stuart, asked how I was going to get it off the trailer. Our forklift is high enough and is rated at 8,000 pounds; unfortunately, while I was gone, its clutch went out. I was sure that I could find another solution so I called our local lumber yard that has a boom truck. They would be happy to help, but it only had a four thousand-pound capacity. My neighbor is a logger and has a boom on his logging truck. Unfortunately, it was rated at 3,000 pounds. My jib crane is only good for two tons. My options seemed to be running out. Stuart suggested using our bulldozer to dig a hole to put the trailer down level with the yard, then using a winch to pull it off. At this point Jim, another employee, mentioned that there was a crane service in San Andreas. I called them and was told that



This is NOT a picture of Paul under his new hammer.

if I could wait for a few days, they were coming up past our place on another job. It would be possible to swing up our driveway and unload it for me. The cost would be at their minimum of \$100. By now, this seemed almost cheap. Everything went according to plan. The hammer came off and was placed on my slab outside the blacksmith shop.

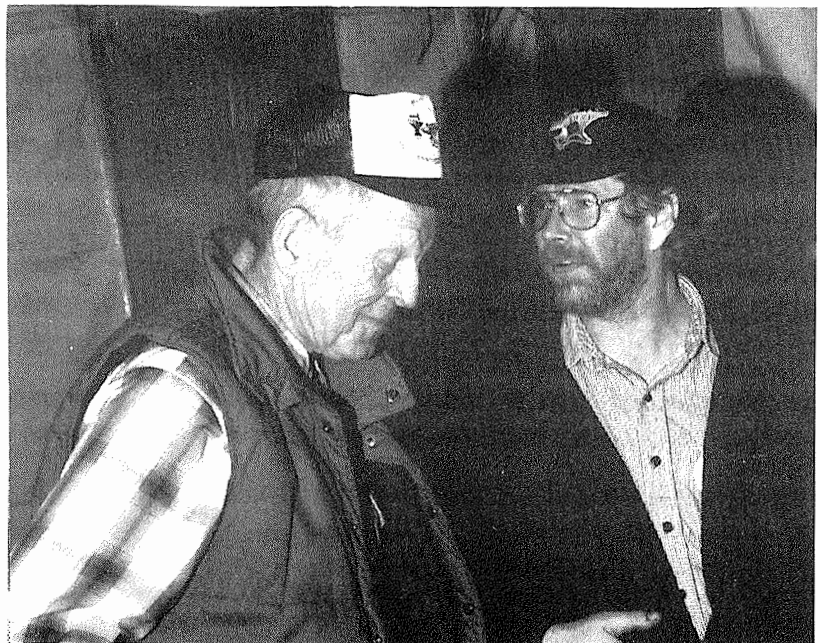
So is this hammer now pounding iron? Don't I wish! I made the mistake of checking the factory recommendation for a foundation to go under the hammer. Their minimum calls for a reinforced concrete block six feet long, four feet wide, five feet deep with over two hundred lineal feet of $\frac{3}{4}$ " steel and six full-length $1\frac{1}{4}$ " bolts. I am now using my jackhammer to dig this hole through the concrete shop floor and the rock below. □

An appreciative crowd soaks up all those good blacksmith techniques that Jerry Culberson does so well. He also has a jillion nifty little philosophical tidbits for us "unlearned" folks!



Pa Brandon helps an aspiring blacksmith with some basic hot iron tips. Those forges were sure busy at the 15th Anniversary conference.

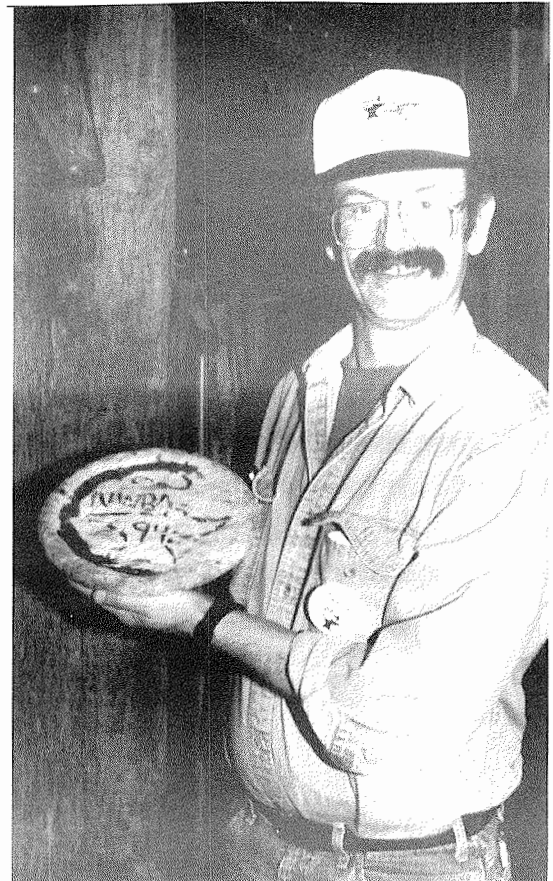
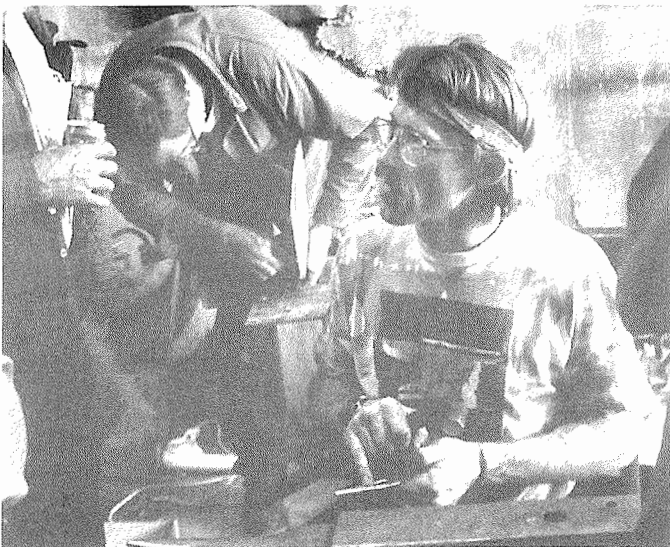
The Prez, Grant Sarver, thanks Barney Coski for hosting a super 15th anniversary event. If you saw any "toys," big or small, around his acres of iron you like, Barney says "It's all for sale."





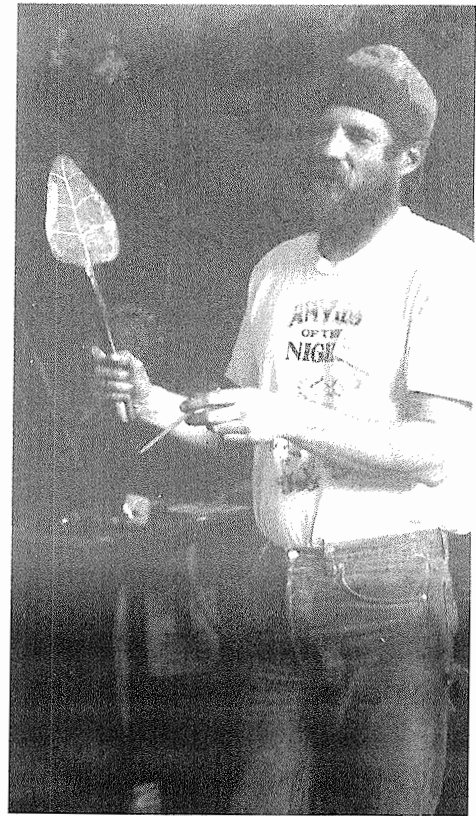
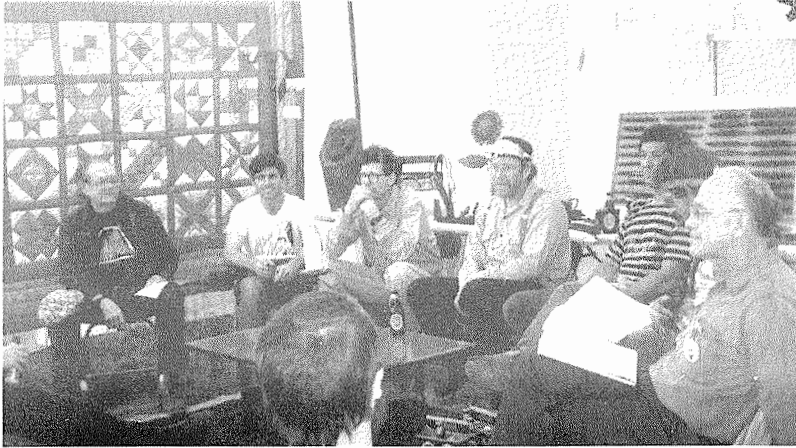
"Joe Lewis", a 90 # mechanical power hammer built by Barney Coski, complete with engraving. This is a real work of art. When Barney was asked about the name, he said "I named it 'Joe Lewis' because he was one hell of a man." Conference demonstrators put "Joe Lewis" to the test and it performed as expected.

Terry Carson, Blacksmith and winner of the dessert contest proudly shows his wares. If you don't remember his face, draw a big black beard on him. You're looking good Terry, nice to see you again.



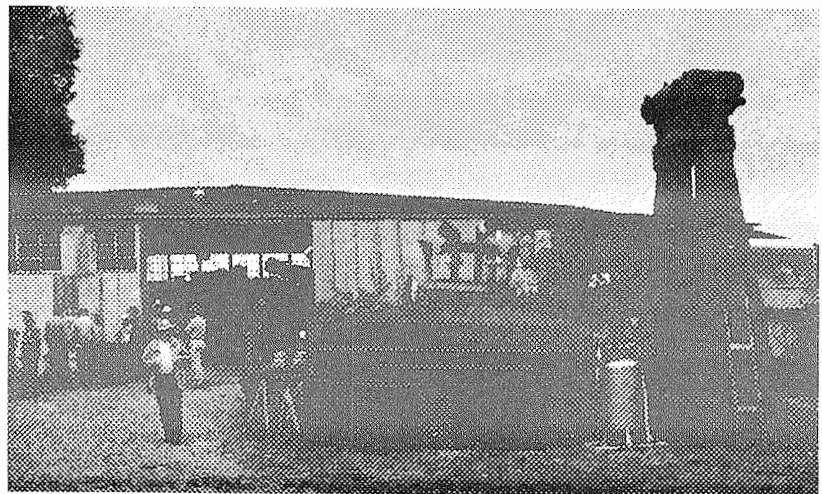
Phil Baldwin discusses some of the finer points of non ferrous forging. He had a nifty gas forge with the quietest burner around. Phil is a true master with his Damascus and Mokume forgings. Just seems like yesterday (1982) Phil gave the first N.W.B.A. Damascus steel workshop.

Dan'l Moores' repousse demo. If you attended the conference, hammering repousse has a distinctive sound . . . plink, dink, plink, dink, a slow process but produces pleasing results.



Distinguished panel discussing, Blacksmithing, Art, Prices, Clients, and learning the craft. Discussions are an eye opener. Bringing up subjects seldom discussed around the forge. We can all benefit from other opinions on common problems.

This conference had about 200+ people in attendance over 3 days. The "beast" just barely lasted through lunch Sunday. Master chefs taming the beast, 100# of slow Elk.

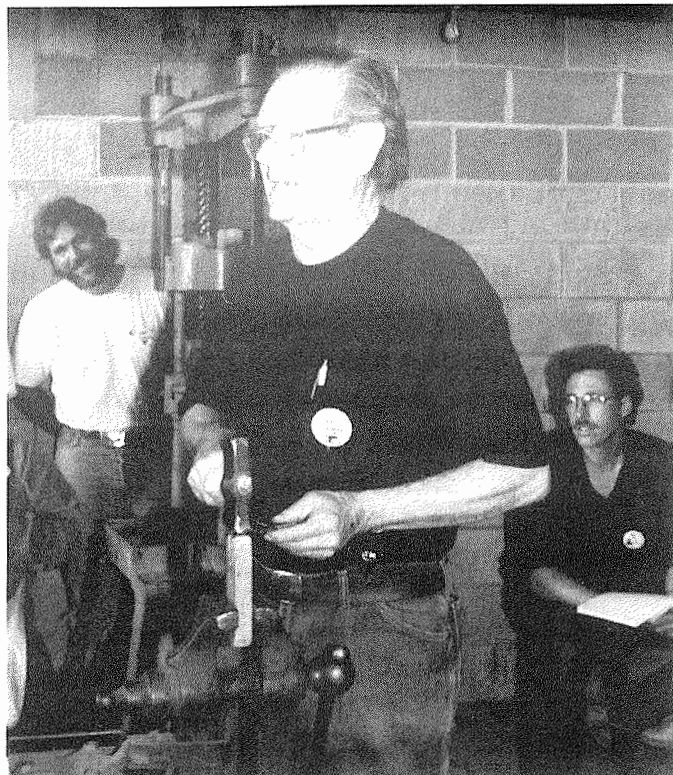


Coski's toys, the little guy on the right is about a 2500# hammer. Just the ticket for those little odd jobs. The Harley rider on the left is about 200 # -- small potatoes. If you took a self guided tour through Barney's acres of iron, hammers, motors, earth movers, it was a site to behold and it's all for sale. See want ads.

Grant S: How old are you Terry?

Terry W: Fifty two, but that's forty U.S.

Mathew Tilton and Dave Brandon doing what they do best, HOT IRON. Dave has been in the N.W.B.A. since iron was invented. Mathew has his own shop in Seattle and was showing off his photo album of his work. Impressive Mathew. Both young and old inspire us all!

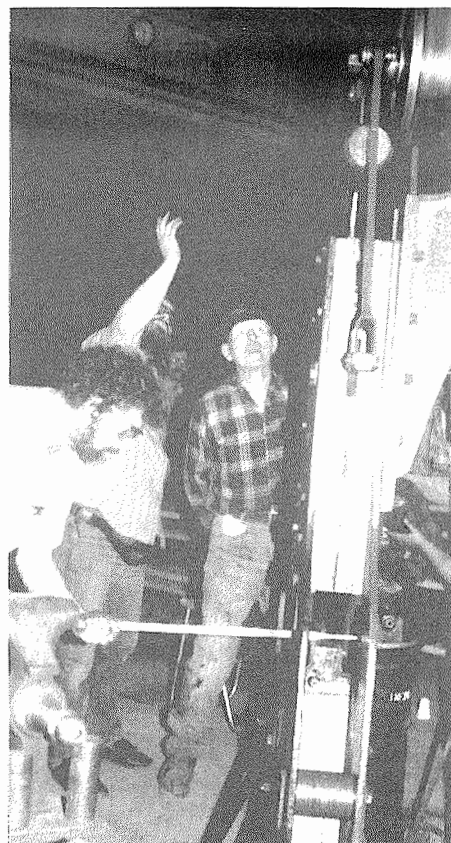


Nahum (Grandpa) Hersom's Repousse demo. Grandpa is one of the best repousse smiths around and an expert in its unique tooling and all those hammers, punches, stakes, and fixtures that go with the trade.

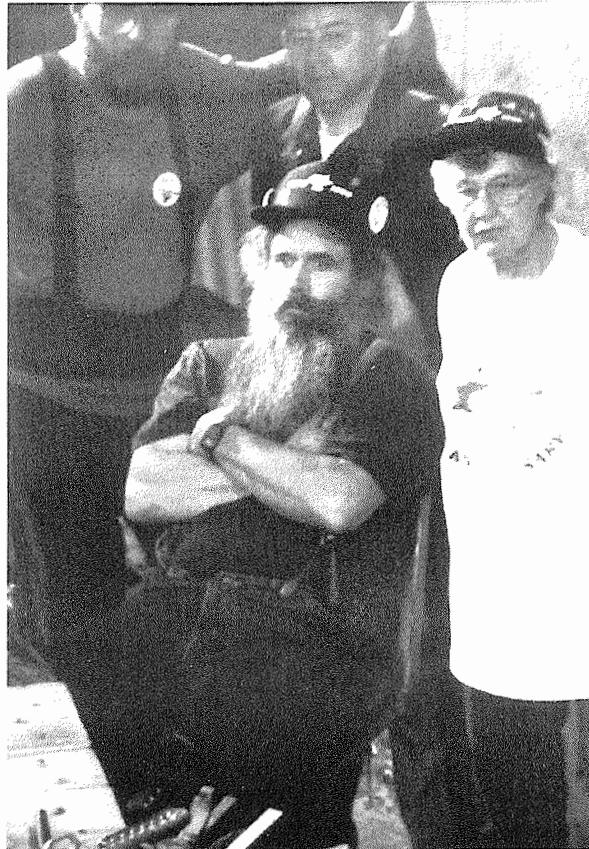
Joe forging on "Joe Lewis" under Barney's watchful eye with only a couple minor problems at first. "Joe Lewis" was used by many during the conference.



Nahum is presented a special thank you pillow made from the NWBA 15th anniversary quilt. It was Nahum's suggestion that sparked the ladies to make an anniversary quilt. The ladies are already planning the N.W.B.A. 20th anniversary quilt. It would have to be a work of art to out do the 15th quilt!



Kent n' Ma Brandon-- "What the heck are is he making?" Kent has a fully equipped shop in Corvallis, OR., the site of the Spring Conference. I especially remember the fresh cow pies in the parking lot. Made me feel right at home. Reminds me of changing tractor tires in a feed lot - true story. Ed.



Joe Elliot doing his thing with special techniques, tooling and ideas for hot iron projects. Joe is fun to watch, a true artist. He takes traditional forging methods and produces some outrageous ironwork . . . "Roll of Hammers," "Gumby," "Bow Tie."

Assorted culinary experts got the short straw and had to taste desserts from the N.W.B.A. membership. Gadzooks -- what a deal! We wanted to quit hot iron and go to work for Betty Crocker . . . Mmmmm . Thanks all you fine cooks.

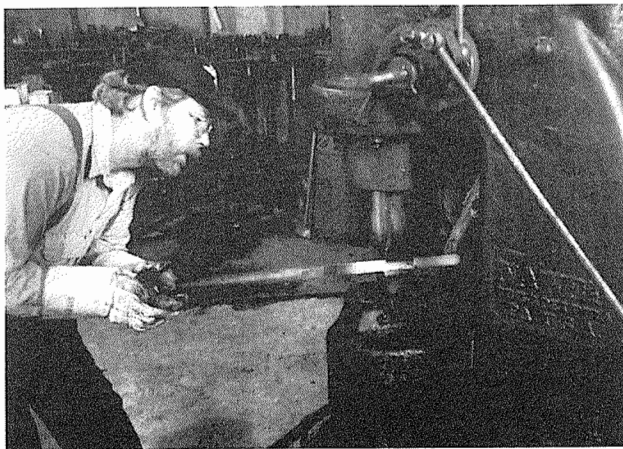
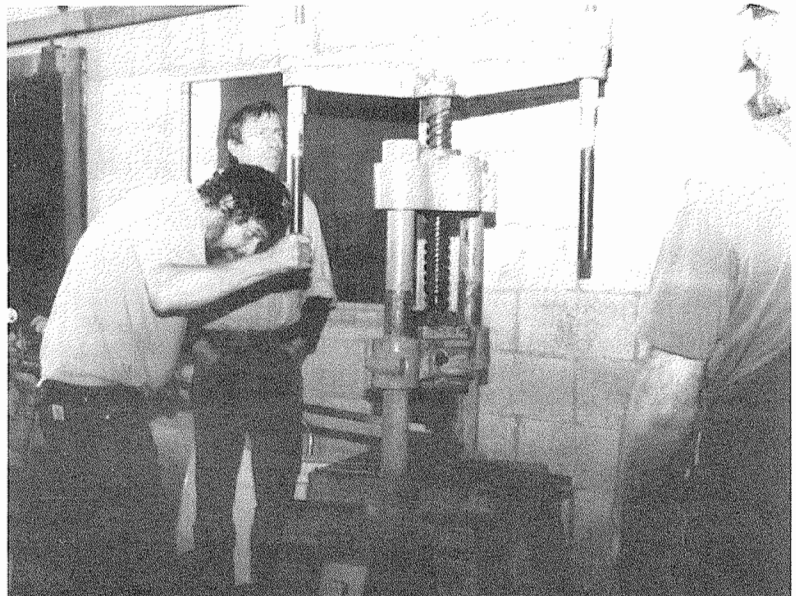
Next conference -- more of the same - different judges to give everyone a chance. (except Smedley Soapstone from Poulsbo - he only judges lutefisk!)





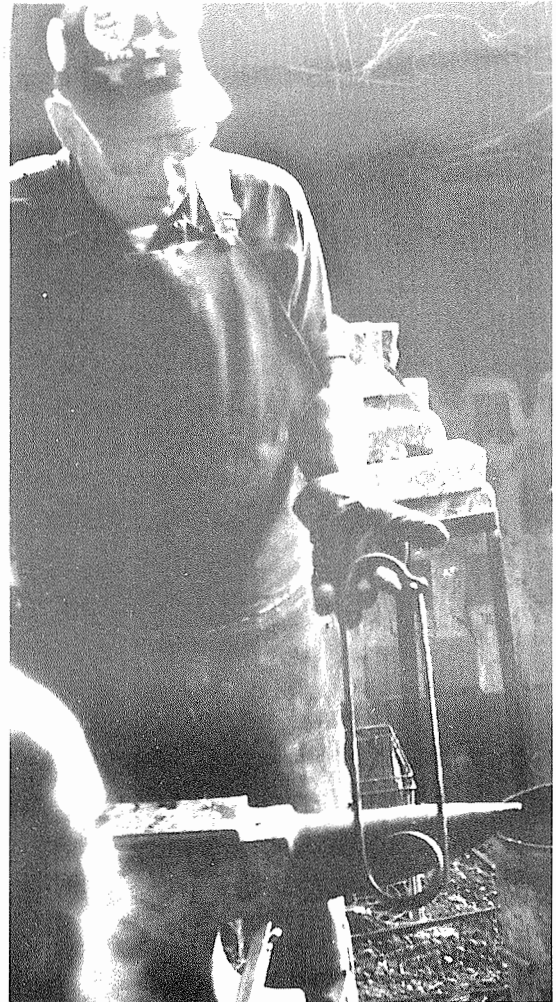
Steve had a crowd at his demo. . . Layout - How Tos and Shop Hints. Oh. . . so many demos and so little time!

Ben Atherly's fly press with Joe squishing flies. Ben rescued this tool at an auction for about \$45. It was covered with clay. The stuff potters use. Was used as some kind of a plate press. Now it has a proper spot in iron work.



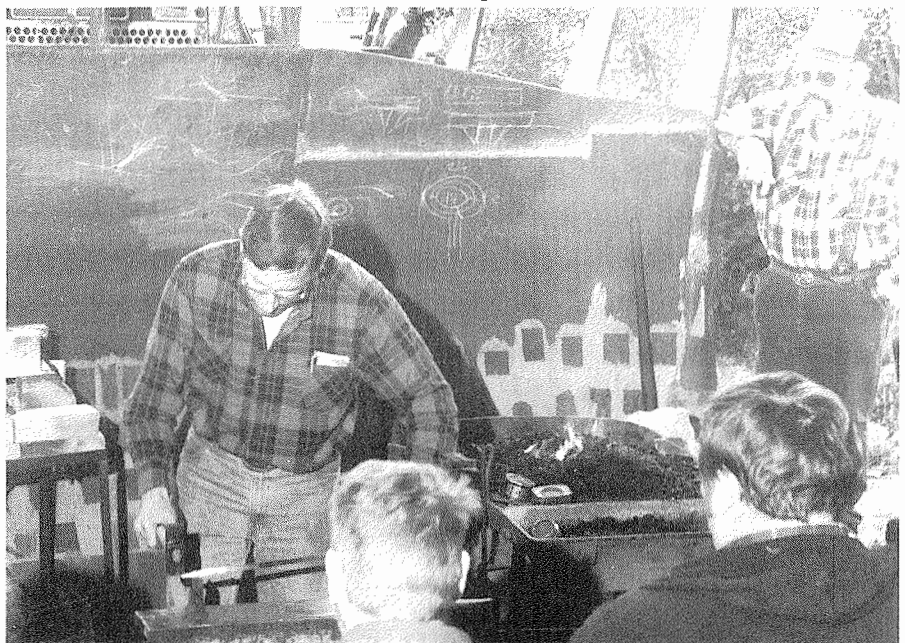
Grant, our Prez, Sarver doing his thing. Grant usually does his thing with really big toys, 1000# hammers, 500# Nazel's - but he treated us to hot iron with the baby Nazel. Thanks, Pres!

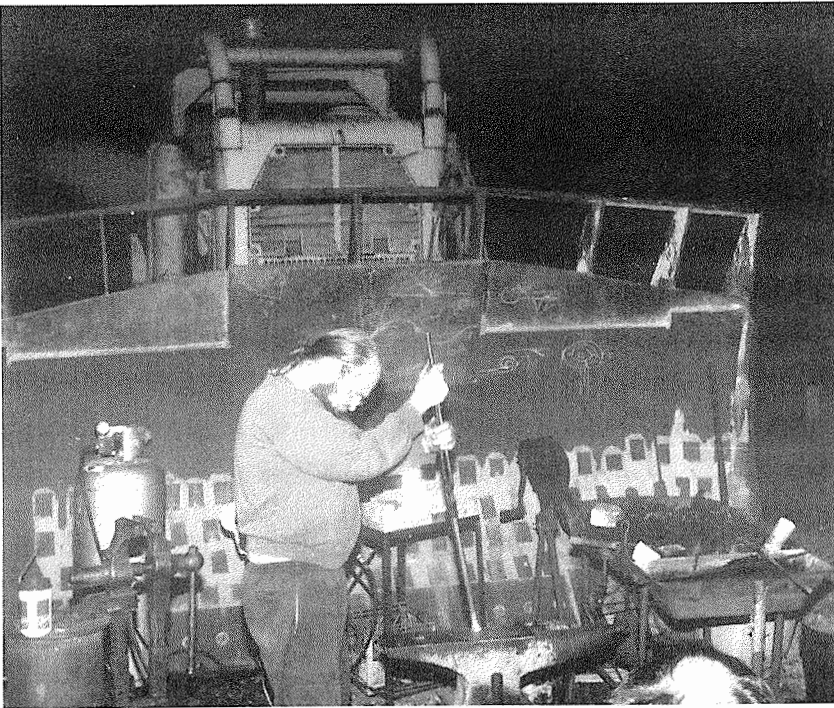
Dave (PA) Brandon demos the Brandon Pin. Pa kept us guessing with the giant safety pin he made. Nice going Dave, keepum guessin!



Dan'l Moore's Sunflower. Dan hasn't been sleeping over Montana way. He does beautiful ironwork, and now repousse. Must be the cold Montana winters. Gotta work, work, work to keep warm. Thanks Dan'l.

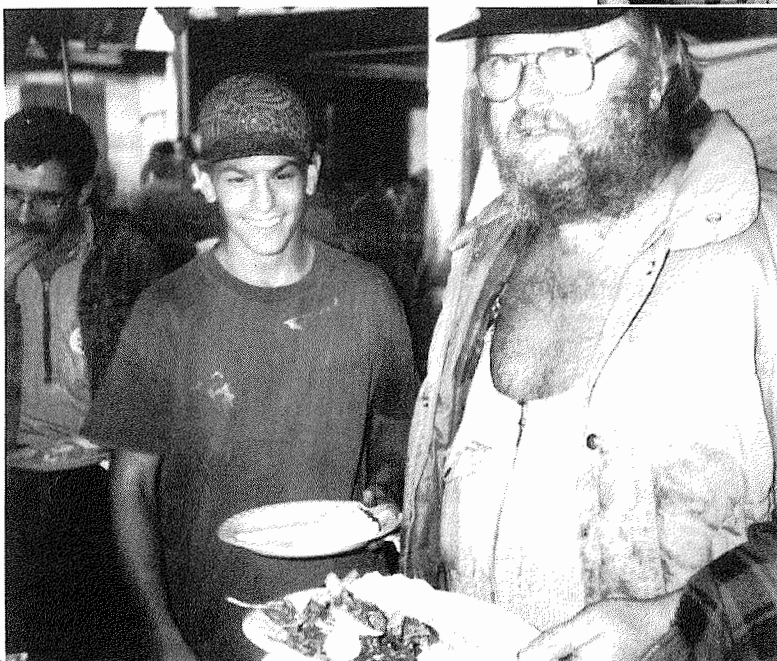
Berkly Tack demos in front of the dozer. Berkly is a gentleman blacksmith, soft spoken and makes his living at the trade. Berkly is one of the instructors at the novice workshops coming up.



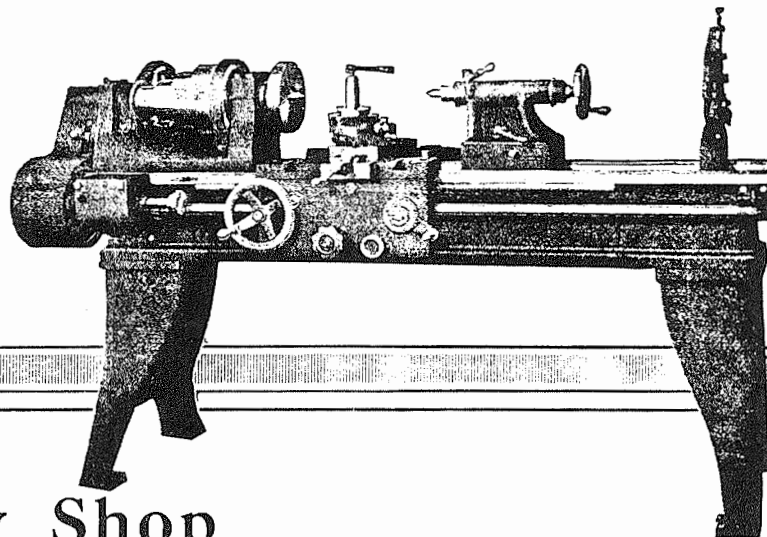


Part of the "Canadian Connection," Glen Webb from Surrey, B.C., partakes in a bit of mid-night madness framed by one of Coski's "BIG TOYS". Three open forges insured an above average madness participation.

Jerry (actually sitting down this time) auctioneer with hooks Don Kemper and Dave Brandon. They coaxed a fair amount of change out of our wallets, \$3677, a good nights work. For many, this is the highlight of a NWBA conference.



First in line for seconds or thirds perhaps? Another "Canadian Connection" blacksmith, Wade Wade appreciates the slow elk barbecue. Behind him eyeing his plate is Jacob Greeling from Rickreall, Oregon.



Every Shop Needs This CANEDY-OTTO LATHE

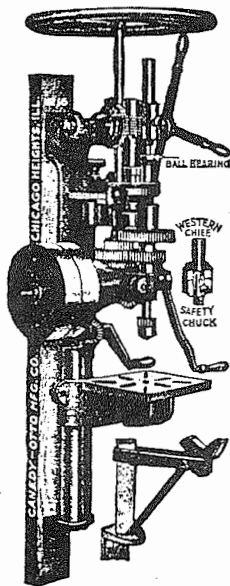
Made by the same firm who for over 25 years have manufactured shop tools—noted for high quality and unexcelled workmanship.

Canedy-Otto 14", 16" and 18" screw cutting engine lathes are built for service. *Spindle* is made of 50 point Carbon Steel accurately ground runs in the best quality bronze bearings. *The Apron* is made for heavy duty. *Gear Box*—quick change type. *Complete Equipment* is furnished.

We make over 200 different styles and types of tools—to fill every requirement of blacksmiths, auto repair shops, machine shops, foundries and garages.

Most jobbers handle the **Canedy-Otto** line. If yours does not—write us and we will see that you are supplied.

Catalogue No. 2 gladly sent on Request.

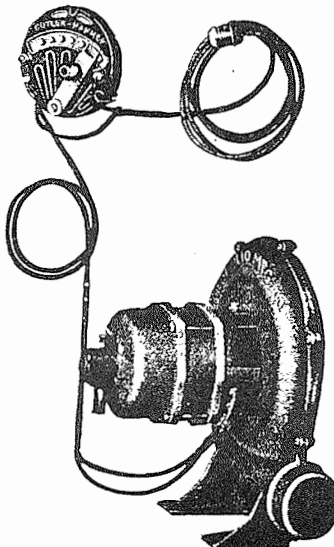


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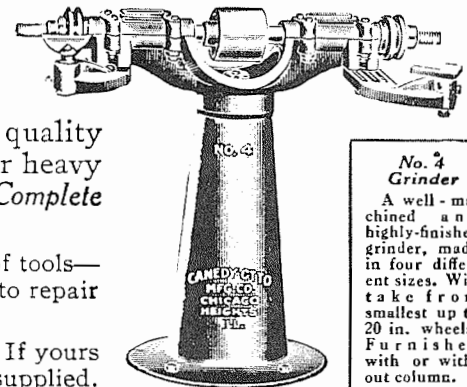
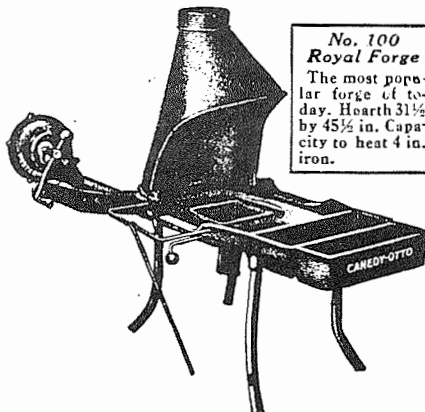
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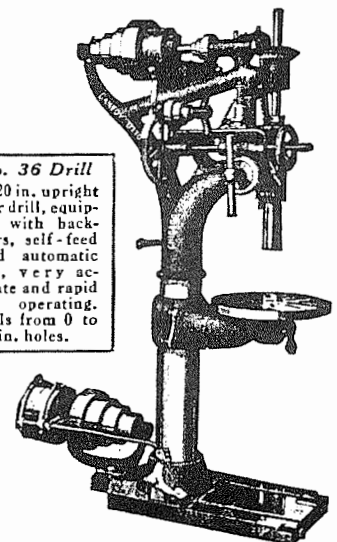


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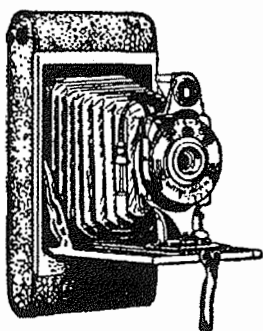
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Shutterbugs

Many thanks to the following shutterbugs for contributing photos for this edition of the Hot Iron News.

Lloyd Hedglin

Lloyd and his wife Betty are long-time N.W.B.A. members. Lloyd got started with the N.W.B.A. in 1982 after reading Weyger's book, The Making of Tools. One of his goals for the coming year is to take more pictures! Way to go Lloyd. . . keep those snaps coming! Betty has been very active with the Blacksmith Ladies.

Ina Culberson

As an Administrative Assistant at Xerox, Ina has a ton of experience organizing. She is one of the key coordinators of the Blacksmith Ladies in addition to many of the events at each conference. Her latest project is the N.W.B.A. Archives; including 15 years of photos and ironwork. She has had a hand in the N.W.B.A. for the last 9 years.

Al Kaarg

Al is a Mechanical Engineer for Boeing. In 1970 he watched a blacksmith demo at the Bellvue Arts and Crafts Fair and decided to try it himself. He is especially proud of the 16' x 24' blacksmith shop he built and named the "Rare Owl." Next project - - get the 25# Little Giant operating. He has been a member of the N.W.B.A. since 1984.

Vernel Henderson

Vernel's special project she is proud of is getting her kids through school! Sometimes not an easy task! She and Jerry have been members of the N.W.B.A. since 1984. They are both very active participants in the Novice Workshops. In addition to taking care of blacksmiths, Vernel is the manager of a retirement center. In her spare time she enjoys cooking, sewing, quilting and painting.

WORKSHOP SCHOLARSHIPS

The N.W.B.A. is going to sponsor a workshop scholarship program. Each N.W.B.A. sponsored workshop will have one student scholarship for the tuition cost of the workshop. Applicants should write a letter to the N.W.B.A. Board stating why they feel they should be awarded the scholarship. A panel of three will determine the recipient.

If you receive a scholarship you are expected to write an article for the "Hot Iron News" and possibly demonstrate what you have learned at a conference. We hope to expand this program to hot iron events outside the N.W.B.A.

SOAPSTONE HOLDERS

The soapstone holder was won by Tom Richards for his cleaver patined copper dish and yours truly for Fluffy the Blacksmith Cat. I especially admired the craftsmanship in the holder that had a traveler on it.

. . . The Editor

VOLUNTEERS

The N.W.B.A. Board is seeking volunteers to represent and sit in on board meetings in the following blacksmithing categories:

Artists	Hobbyist
Blades	Industrial
Farriers	Professional

We would like a representative from each category who would act as liaison and voice.

15TH ANNIVERSARY SOUVENIRS

N.W.B.A. 15th Anniversary T-shirts
and hats are still available

N.W.B.A. Hats \$7.00

N.W.B.A. T-Shirts \$12.00

Please add \$1.50 for shipping.

Contact: Kent Rudisill

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Membership Application

Mail to:

Northwest Blacksmiths' Association

P.O. Box 81041

Seattle, WA 98108

Membership Application: ☐ New ☐ Renewal ☐ New Address?

Annual dues are \$20 (\$24 out of the country) and includes a quarterly subscription to **Hot Iron News**. Please make your check to N.W.B.A. and mail to the above address.

Date _____ Are you an A.B.A.N.A. member? [☐] YES [☐] NO

Name _____ Phone Number _____

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ABANA

MEMBERSHIP APPLICATION

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Indicate type of membership applying for:

☐ NEW MEMBER? ☐ RENEWAL MEMBER?

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

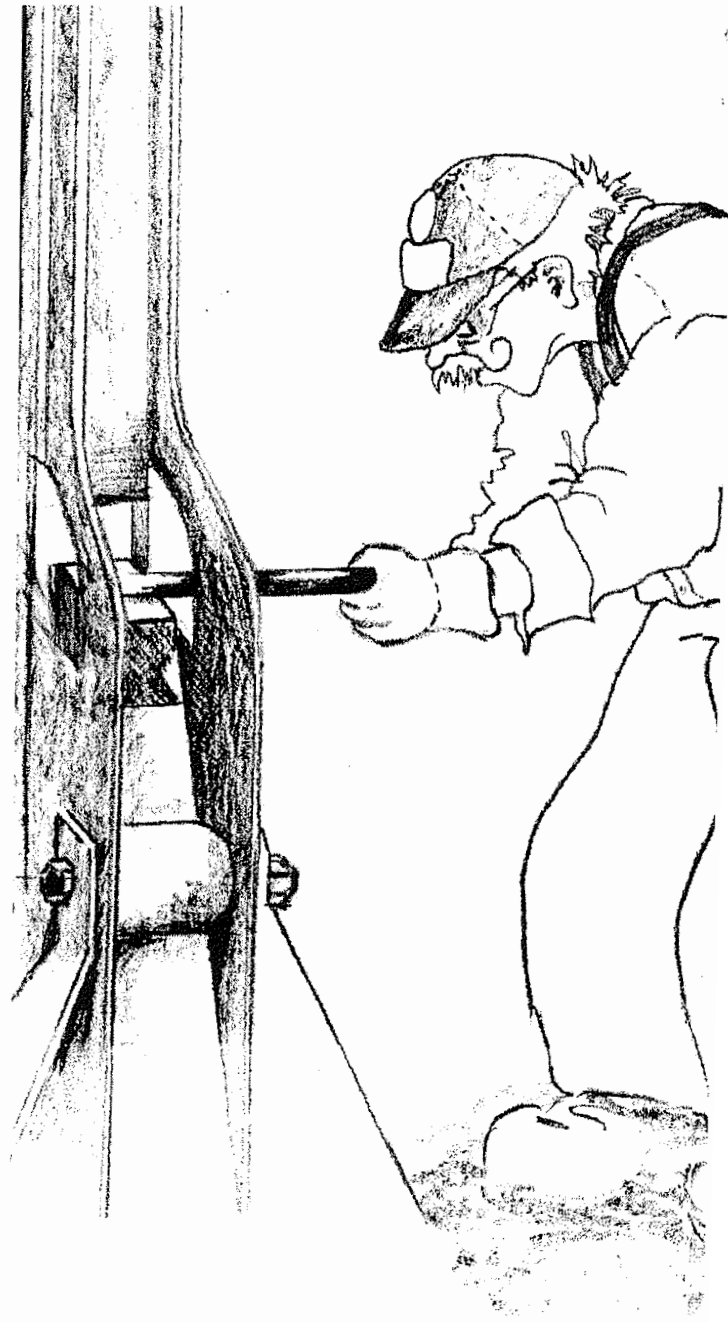
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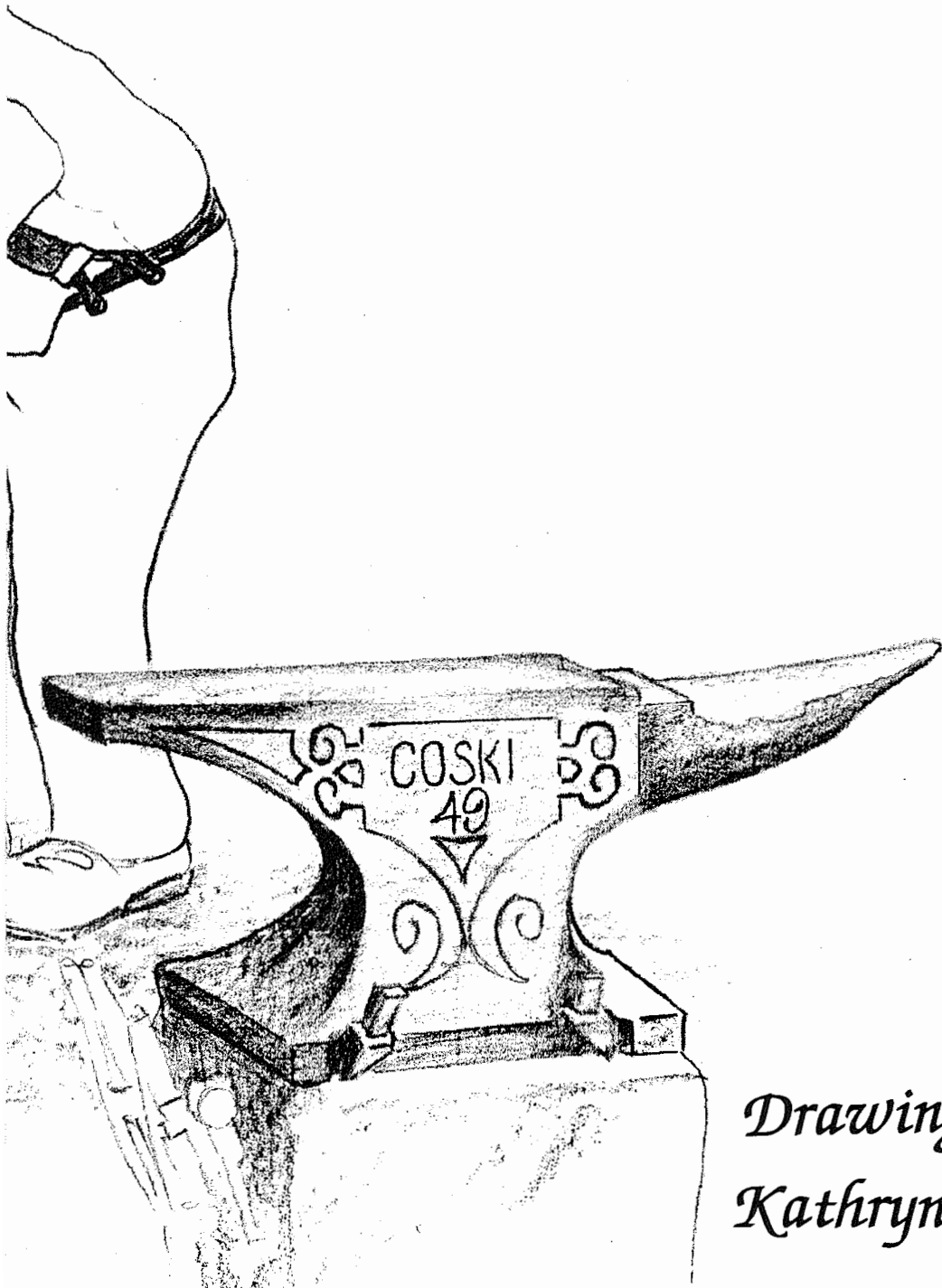
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*Jerry Culberson on the power hammer.
Coski's anvil in the foreground.*

*N.W.B.A. 15th Anniversary
Fall Conference, 1994*



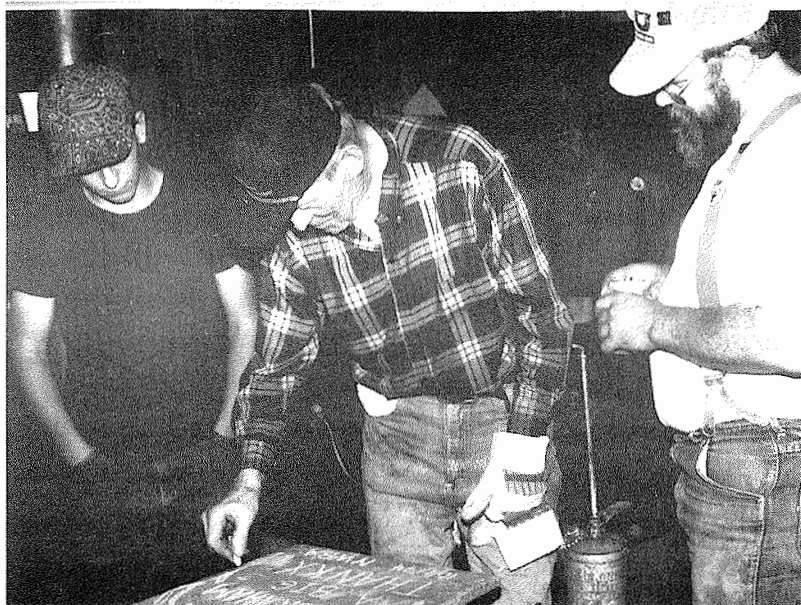
*Drawing by
Kathryn Dawson*

Thankx Tom



Tom Graham goes way back in N.W.B.A. history. He attended the N.W.B.A. conference at Rus Jaqua's NIMBA Forge with Francis Whitaker demonstrating. That was about 1980 or so. Tom was the N.W.B.A. treasurer for many years and in gratitude some of the boys, in the tradition of midnight madness mode, found something big and heavy, about 30#s worth, engraved it with "Thankx Tom" and presented it during the auction. Rain or shine Tom was there for the N.W.B.A. He was awarded a lifetime membership for his dedication and contributions. Thankx from all the N.W.B.A. Tom!

Barney and Dennis planning Tom Graham's plaque with Jacob Greeling taking notes. Midnight madness has a magic about it . . . last minute projects, auction items and the camaraderie of all with common interest -- Hot Iron-- talking about it, planning it, then going home and doing it.





Armchair Blacksmithing

Available from The Astragal Press, Books on Early Tools, Trades and Technology, P.O. Box 239, Mendham, N.J. 07945-0239

ART OF COPPERSMITHING

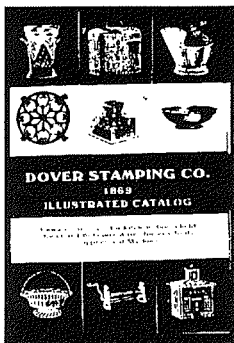
John Fuller, Sr.

Written in 1893 by one of the leading authorities, this book has come to be recognized as the classic work in its field. All aspects of this important craft are covered, from the making of household copper goods and ornaments, to copper piping, three- and four-way expansion joints and double bends, brewery, locomotive, and ship installations—from the simplest, to the most complicated and demanding work. Over 474 illustrations and completely indexed. 352 pages. 6" x 9 1/4". Soft cover. \$25.00.

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Founded in 1833, the Dover Stamping Co. was, by 1869, one of the leading American manufacturers and distributors of houseware goods and tinner's tools and machines. Included in this extensive catalog are a wide variety of products, ranging from plates, cake pans, molds, tea and coffee pots to graters, match safes, stove ornaments, and toys. These goods include much tinware plus Britannia and japanned, tinned, and enameled ironware. Also shown are many tinner's tools and machines. All are fully illustrated and described. A most valuable resource for

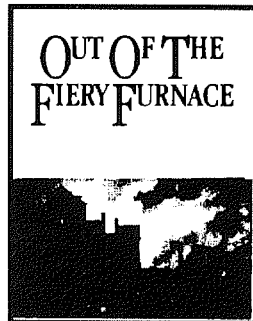
tinsmiths and other metal workers, as well as collectors, dealers, in fact anyone interested in Americana of this period. 214 pages. 6" x 9". Soft cover. \$16.95.

OUT OF THE FIERY FURNACE

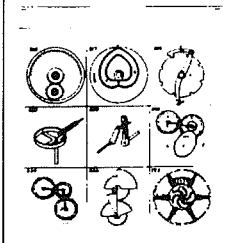
The Impact of Metals on the History of Mankind, Robert Raymond

A fascinating historical journey beginning with the earliest known metal smelting site in the Sinai Desert, where the Iron Age may have begun; on through Roman times and the Middle Ages to the New World and the conquistadors' savage treasure hunt for gold; then to England where Abraham Darby helped start the Industrial Revolution when he discovered how to make inexpensive iron in Coalbrookdale. There are the stories of Thomas Newcomen who developed the first power-driven, self-regulating engine, and James Watt, who followed him; Richard Trevithick and his locomotive; Isambard Kingdom Brunel and his iron-hulled ships. Included also are the development of coinage, the invention of printing, the harnessing of steam, the discovery of electricity—the entire sweeping history of how man discovered and developed the metals used today—from copper to steel.

Over 145 beautiful photographs—most in color—plus many early line drawings and diagrams. 274 pages. 8 1/2" x 11". Soft cover. \$29.95.



FIVE HUNDRED AND SEVEN MECHANICAL MOVEMENTS



FIVE HUNDRED AND SEVEN

MECHANICAL MOVEMENTS, Henry T. Brown

First printed in 1896 when America had nearly completed its first century of industrialization, this delightful book sets forth in simple, descriptive language with clear concise drawings, 507 different types of mechanical movements, in areas as diverse as C.R. Otis's safety stop for the elevator, Pickering's governor for a steam engine, Arnold's escapement for watches, compound parallel rules, piston rod guides, the grasshopper beam engine and a self recording level for surveyors. The list goes on and on in fascinating variety. 122 pages. Hard cover. \$13.50.

BACK TO BASICS

Material for BACK TO BASICS is taken from the 1925 Selvidge & Allton manual BLACKSMITHING

WELDING

Directions:

BUTT WELD.

13. If a butt weld is to be made, heat and upset the stock on the ends thruout the length that will become red during the process of welding and until they are about one and one-half times their original diameter. Hammer the surfaces until they are round or convex (Fig. 41), with the center considerably higher than the edges. While at a red heat sprinkle a small amount of flux on the ends and place the stock in the fire; on a thick bed of live coals. Cover the ends with live coals and raise the temperature slowly, meanwhile turning the pieces of stock. Remove the stock occasionally to see if the ends are of uniform temperature. When the stock becomes molten on the surfaces have the helper remove one piece of the stock from the fire, strike it on the anvil to knock off the slag, and place it flat on the anvil so that the end is about even with the center of the anvil. While the helper is doing this, remove the other piece from the fire, strike in on the anvil and place it end to end with the piece held by the helper. Caution should be given to the helper to hold the stock firmly.

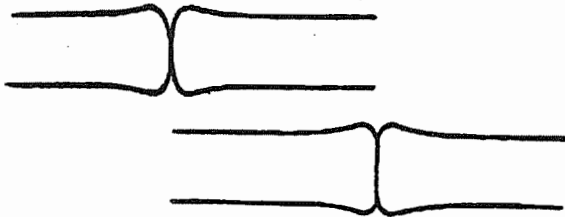


Fig. 41

Deliver blows on the end of the piece you are holding until the pieces are firmly united, and the crack between the ends is about closed. Then deliver blows on the top of the weld until it is perfectly smooth. Draw or swage it down to original dimensions.

SPLIT or CLEFT WELD.

14. If a split or cleft weld is to be made, heat and upset the stock as far as it will become red, during the process of welding and until each piece is about one and one-half times its original diameter. Clamp one piece of stock firmly in the vise and split the end for a distance equal to the original diameter of the stock. Spread the ends until they form a Y and draw the sides of the Y until they are blunt edged and form an oval shaped point. Make a blunt taper on the ends of the other piece, forming a 60° angle between the surfaces of the taper. (Figs. 42 & 43)



Fig. 42

Roughen the surfaces of the taper with a chisel or the edge of the hammer. Heat to a red heat and sprinkle flux on the ends and drive the taper into a Y and bend the ends of the Y down over the bulge on the taper piece to prevent the pieces from coming apart. Build up the fire so that the stock will lie on a live bed of coals with no strain on the parts to be welded. Place the stock in the fire and take the heat slowly, meanwhile turning it over and over, so that the larger portions will become heated as fast as the tips of the Y.



Fig. 43

Turn off the blast occasionally to allow the pieces to assume a uniform temperature thruout. When all is at uniform welding heat, remove the work from the fire, having the helper support one end to keep it in line, and place it flat on the anvil. While the helper is holding one end of the stock, deliver one blow on the other end of the piece to drive the wedge firmly into the Y; then with light blows weld down the ends of the Y over the bulge. Next, deliver blows around the weld until the pieces are firmly united. In case of welding tool steel or mild steel, as in pointing tools, it is sometimes advisable to heat the pieces separately because of the different welding temperatures of the two materials. Ω



"I DON'T EVEN FISH! WHY ARE YOU NAGGING ABOUT HAVING MY HERRING TESTED?"

REPRINTED FROM VANCOUVER ISLAND BLACKSMITH ASSOCIATION

Scrolls & Scrollwork

by Mike Chisham, Petaluma, California

The following is a collection of ideas that have been around ever since man first bent a piece of iron into a shape that fancied his imagination. The following ideas are not of my own origin or all of my own creation. I would like at this point to call attention to a couple of blacksmiths from whom I have learned a great deal about scrollwork. First is Beau Hickory, the Scrollman par excellence, and the second is Francis Whitaker, The Master. I have acquired an innumerable amount of information from many other people, too many to mention here.

STYLES

The first question that pops into our inquisitive little brains is "What is a scroll?" A scroll is a mathematical figure that conforms to strict geometrical guidelines (Figure 1). If this does not happen, then you have only a piece of twisted-up and bent metal, in which case, the scroll is wrong and the customer is right. Yup — they're



Figure 1A

Figure 1B

Figure 2

right. For how many times have we heard them say that they want those curlicues on their ironwork? And that is just what they are: curlicues. Then again, when I think of a curly Q, I think of a pig's tail, and I have seen very few works of art on the hind end of a pig (Figure 2). The most commonly used figure for scrolls is the *volute*, and also used is the spiral. The French ironwork makes a lot of use of the volute (Figure 3). This style of scroll makes one and one-half revolutions from its start to its termination. The space between the ironwork itself is referred to as the negative space and this space must be continually getting larger. If the space were to stay constant, then you would not have a volute, but rather a spiral. The spiral is used extensively in Spanish-style ironwork (Figure 4). You will commonly see both styles of ironwork readily visible in this country. The third style is what I refer to as the Victorian scroll. This scroll still has a continually increasing negative space, but it only makes one revolution in 360°, making it a very hard scroll to form on a scrolling iron (Figure 5).

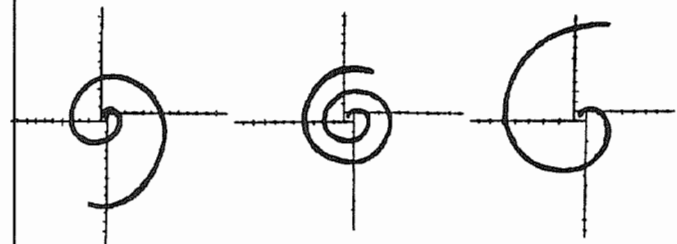


Figure 3

Figure 4

Figure 5

TYPES

Types of scrolls are what styles of scrollwork are made up of. There are three basic types of scrolls: the "C" scroll, the "Double C" scroll, and the "S" scroll. The simplest is the C scroll. It usually makes only one curve in a single direction and is contained on one plane, when viewed from the side (Figure 6). The C scroll is the basis for most scrollwork and the other scrolls, too. The second is the Double C scroll (Figure 7). The double C is basically two C scrolls that are mirror images of one side to the other. Many times, two C scrolls are put end to end and are confused with a double C scroll. For it to be a true double C, one half has to be an exact mirror image of the other side. Another of the misnamed scrolls is the S scroll. As before, often two C scrolls are put end to end with one facing 180° to the other and are called S scrolls. For it to be a true S scroll, it too has to conform to a particular mathematical formula.

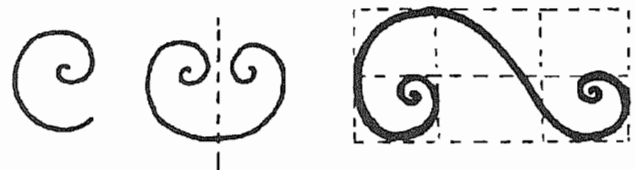


Figure 6

Figure 7

Figure 8

To properly draw an S scroll see (Figure 8). As previously mentioned, a lot of times two C scrolls are called an S scroll (Figure 9). One other important fact to note is that for the negative space to be continuously getting larger, then the metal itself must be tapered. A lot of so-called scrolls have flat ends that are placed

Reprinted from California Blacksmith, January/February 1994

between two pieces of metal to aid in starting the scroll. These are not scrolls, rather a warped piece of semi-ruined metal, metal from a like maker (Figure 10).



Figure 9



Figure 10

DESIGNS

Proper style is important but not as important as the designing of the entire piece. Though designing is most often neglected, it's the most important aspect of all, for if the piece is very obvious in its installed place, then the design was wrong. The piece should fit in and blend



Figure 11

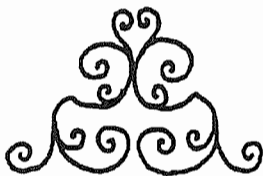


Figure 12

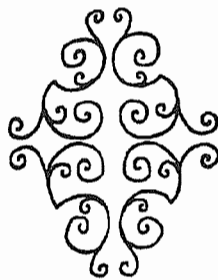


Figure 13



Figure 14

with its surroundings. If the piece has a single flowing design to it, this is commonly referred to as a floral design (Figure 11). A floral design has a beginning and an ending place that are obvious within the design itself. If the same design is repeated as a mirror image on the other side, then a design in this case is no longer floral but becomes semi- or half-symmetrical (Figure 12). Gates are usually done in this style of designing. Half symmetrical can be symmetrical from the top to

the bottom or from the left to the right. If the design were to be mirror images from the top to the bottom and at the same time from left to right, then the design would be full symmetrical (Figure 13). Many traditional panels and window guards are good examples of this. When one scroll comes off another, then they must conform to the rules of Mother Nature and therefore never come off at an unorthodox angle (Figure 14).



Figure 15

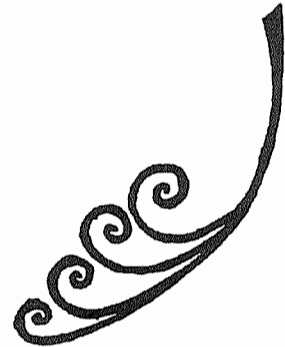


Figure 16

All things in nature seem to conform to what artists refer to as the Golden Mean or the Curve of Beauty (Figure 15). The only scroll that does not conform, for

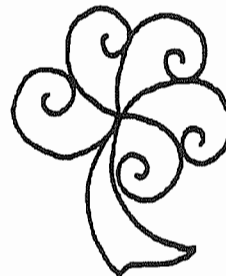


Figure 17

there has to be an exception to every rule, is the Peacock scroll. This is a scroll that has three or more C scrolls going in the same direction off the same parent scroll (Figure 16). Usually when this scroll is used, the C scrolls are either diminishing or enlarging in size off the parent scroll. Then again in some instances,

the small C scrolls all stay the same size (Figure 17).

Too many smiths are more worried about how they made the project than how it looks after it's installed. So, now is a good time to start thinking about the design before you start making it. For if every time the owner of the piece walks in and sees that particular piece sticking out like a sore thumb, he will always know who made that sore thumb and will most likely remember you for the bad, rather than the good. And, I have never seen a good sore thumb! □

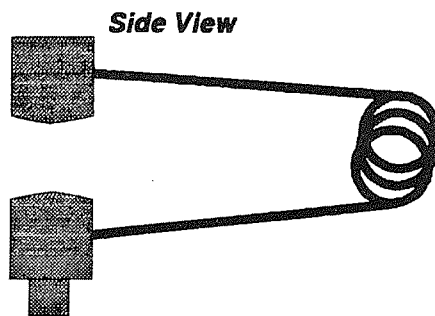
IMPROVED SPRING FULLER

by Art Swyhart

One of the first tools many of us make is a spring fuller, simply a bent piece of round stock. We soon learn that this design has some faults: the two "fullers" are closer together at the end than the center and it's just about impossible to draw out a piece of work with this type of fuller. Here's a design that is more useful and still easy to make:

The fullers themselves are 2-1/2" pieces of 2" square steel, ground to the desired radius on one long face, then drilled and tapped for 3/8-16 threads on an adjacent long face. The bottom fuller is also drilled and tapped on the center of the face opposite the radius; this allows you to change the piece that fits in the hardy hole and use the fuller with different anvils. For this hardy attachment, 1-1/2" of the proper size square stock is drilled and tapped on one end and attached with 3/8-16 threaded rod available at hardware stores. The spring is 3/8" round mild steel, 36" long, heated in the center and bent twice around a 2" pipe. Heat the center again, grip the coils in a vise, tweak the two ends so they're aligned, air cool, then even off the ends and thread about 1" of each. Screw the fullers on to the spring and you're done.

That's all there is to it - not even any welding!



Front View

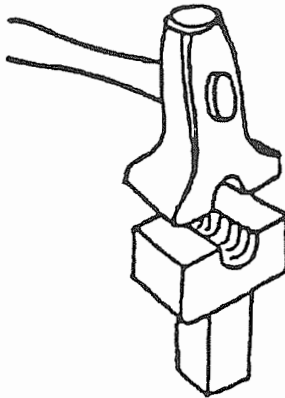


Reprinted from "The Tuyere",
Illinois Valley Blacksmith
Association, Feb/Mar 1994

Flea Market Wish List

These drawings and explanations were given to my wife, who is an avid antique store cruiser. They help her identify as "useful" items she may see in her travels that might otherwise be considered junk. Feel free to give this to your cruiser!

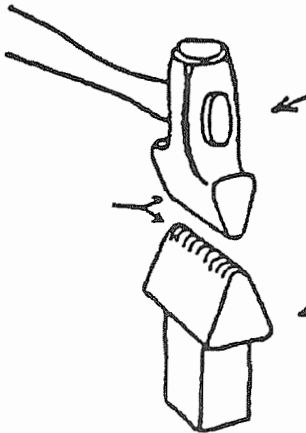
Reprinted from the Inland Northwest Blacksmiths Association by way of the Hammer's Arc.



Top Swage Comes in many different sizes. I am looking for 1/4, 5/16, 3/8, 1/2, 5/8, 3/4 inch. It is meant to be held by hand, will have a handle or hole for a handle.

Bottom Swage Looking for above sizes, it is meant to drop into the "hardy" hole of the anvil.

The Swages draw those little round tenons on the ends of bars.

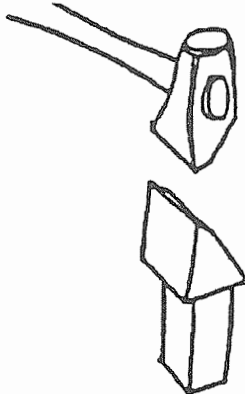


Top Fuller Comes in many different sizes. I am looking for 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 1 inch. It is meant to be held by hand, will have a handle or hole for handle.

Bottom Fuller Looking for above sizes, it is meant to drop into the "hardy" hole of the anvil.

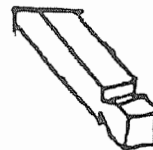


The fullers bring bar sizes down at different radiuses.

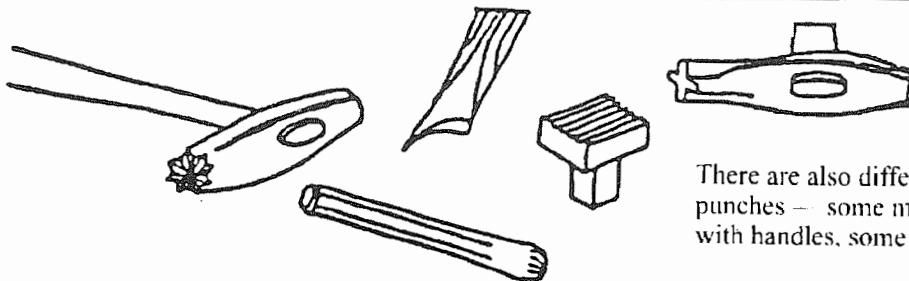


Side set or "Butcher" is a handled tool or will have a hole for a handle.

Bottom set or "Butcher" meant to drop in the "hardy" hole of the anvil.

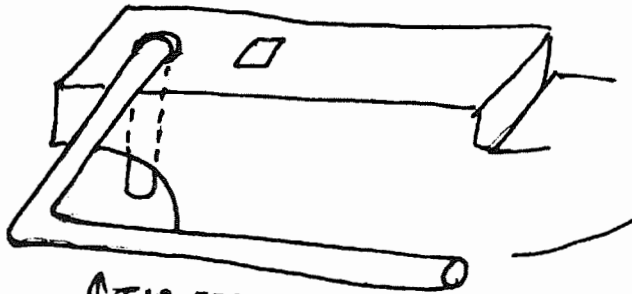


The Butchers prepare the ends of bars for tenons, putting a square edge on.



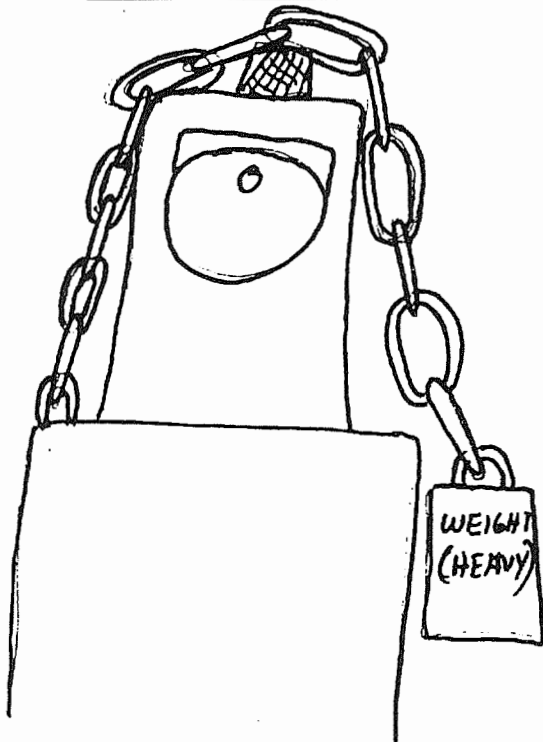
There are also different types & sizes of decorative punches — some meant to be held by hand, some with handles, some fit in the hardy hole.

3RD HAND



↑ TIP FROM FRANCIS WHITAKER
FROM ANVILS HORN (1988)

HOLD DOWNS

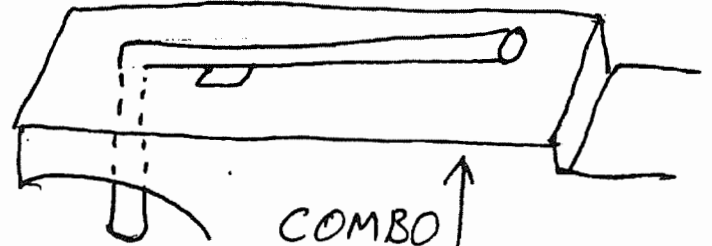


THESE BOTTOM THREE FROM
MIKE _____?

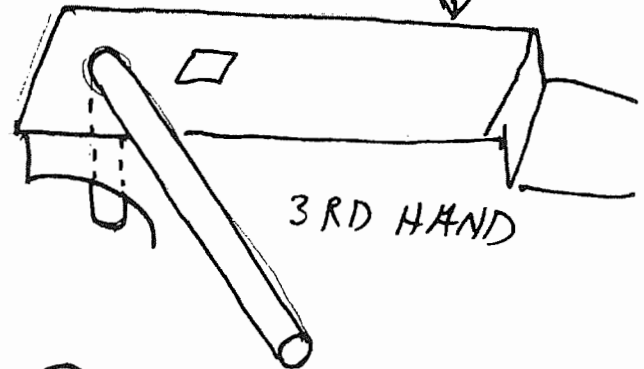
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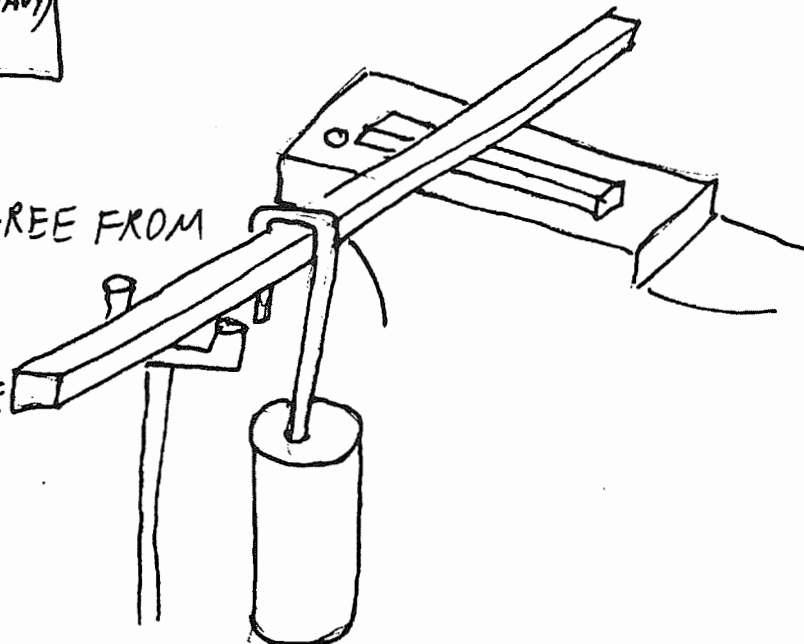
(SOURCE UNKNOWN)
BOTTOM FULLER



COMBO

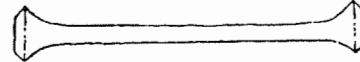
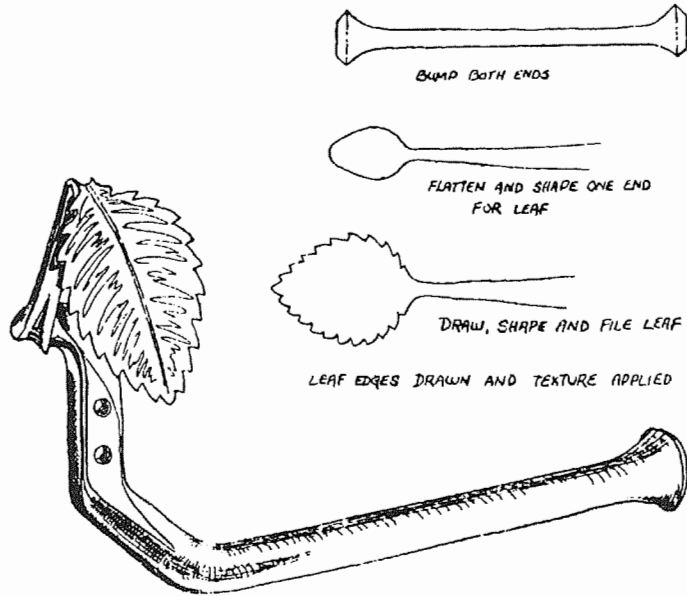


3RD HAND

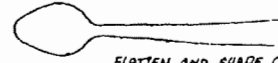


TOWEL RACK

BY R. BLOOM



BUMP BOTH ENDS



FLATTEN AND SHAPE ONE END FOR LEAF



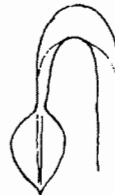
DRAW, SHAPE AND FILE LEAF

LEAF EDGES DRAWN AND TEXTURE APPLIED



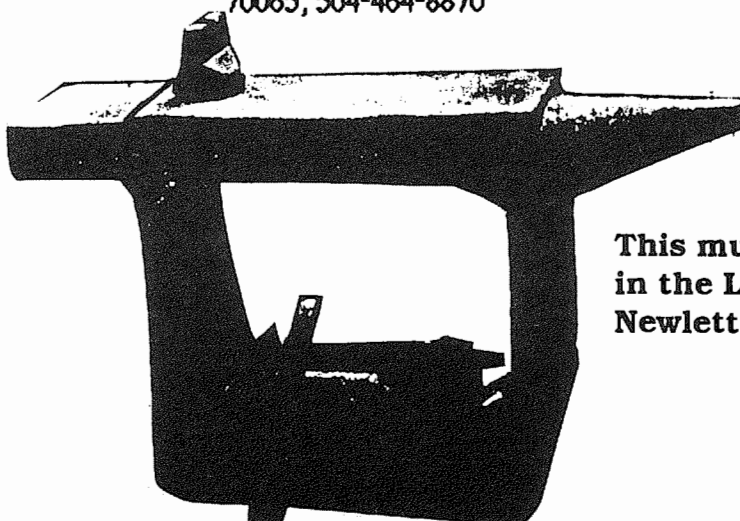
LEAF IS FOLDED AND HAMMERED ON FOLD
LEAF IS THEN REOPENED AND HAMMERED ON FOLD TO PRODUCE CREASE IN CENTER

Reprinted from Upper Midwest
Blacksmiths Association



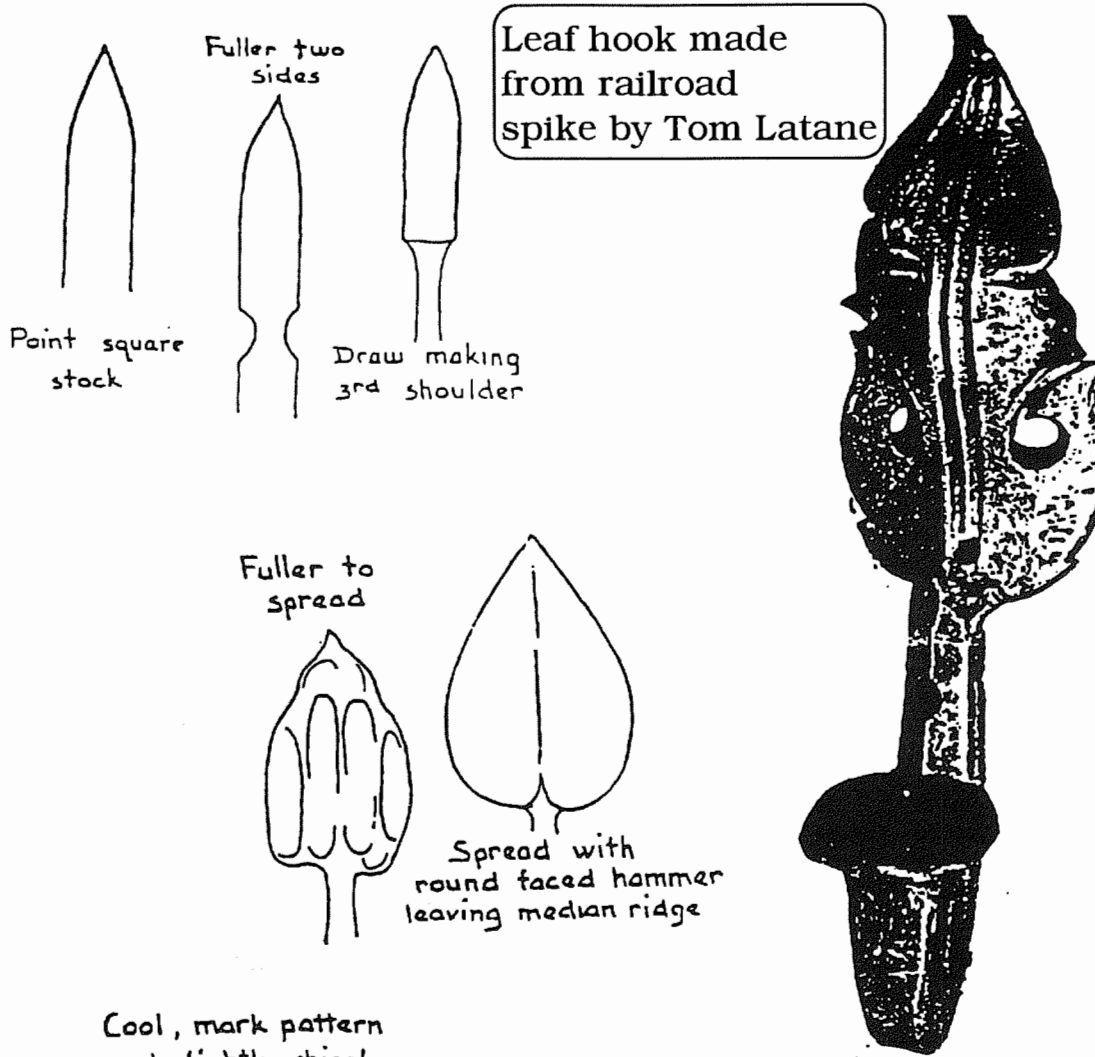
BEND STEM, HAMMER BEND
THEN TWIST STEM UP
NOW BEND AND SHAPE REST
OF ROD
FINALLY, BEND LEAF DOWN
AND APPLY BRASS TO LEAF

FOR SALE
700 POUND ANVIL
Face is 10" x 36", includes 6 hardy tools
\$600.00
Contact: Bob Tapia, 430 31st St., Kenner, LA
70065, 504-464-8870



This multi-purpose anvil was advertised
in the Louisiana Metalsmith Association
Newsletter some time back.

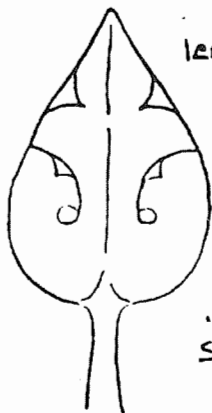
Unusual eh, Wade!



Leaf hook made from railroad spike by Tom Latane

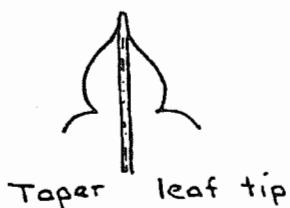
Cool, mark pattern and lightly chisel

Punch holes then hot chisel pattern. Heat and bend leaf where necessary to clean and refine with files.



Stamp median with grooved chisel

Stamp sides of ridge with flat tool to leave median raised



Taper leaf tip



Leaf can be left flat or domed with a ball peen hammer over a wooden block

Tips & Techniques

Forging Hollow Material

DAVID THOMPSON

Eugene, OR

Illustrations by Eric Ziner.

I have found experimenting with tubing and other industrial steel stock is exciting and rewarding, and would like to encourage other metal workers to explore the possibilities of this material because of its light weight, strength and economy.

Using a light hammer and quick blows is the most successful method of working standard mild steel seamed tubing of .083 wall or heavier. If there is a problem with a seam splitting, it is usually an inferior piece of stock. Caution should be taken when cooling in the slack tub because hot water and steam can discharge out the end of the tube causing burns.

Forging a Taper Point

I have forged taper points from 3/8" to 2" square using the following method. Work the taper point by hammering only the edges, so that the sides slightly bulge out. (Fig. 1). If the sides of the tube collapse inward, you must correct immediately or you will have a crease. Continue working until the taper is closed.

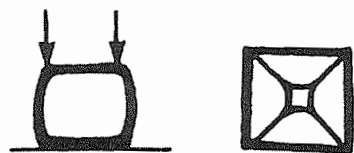


Fig. 1

Forge weld the tip and draw it out to a point. Welding the tip is a simple process. Flux only the tip and return it to the fire. Since you are only welding the end together, the end comes to a welding heat first.

There is a quicker way of making a taper point on square tubing which results in a handsome point with interesting grooved sides (Fig. 2).



Fig. 2

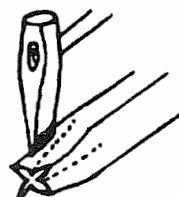


Fig. 3

Use a dull hot cut or chisel, and collapse all the sides on the end of the tube into the center (Fig. 3). Taper down, weld the tip and draw the point.

Square tubing can be twisted by using this method of collapsing the sides of the tube into its center and twisting.

Forming a Flared End

Forming a flared end on square tubing and round pipe is a process of stretching the material. In forming a flare, I first make a beaded edge. The bead helps to minimize seam splitting and improves appearance. Using a ball peen or radiused cross peen hammer turn 1/4" of the end of



Fig. 4

the pipe 90° over the edge of the swage block (Fig. 4). Using the horn of the anvil as an inside mandrel, roll the bead over but do not flatten (Fig. 5). Continue to form the flare in the same manner as the bead is formed, by working quarter inch sections from the inside over the swage block.

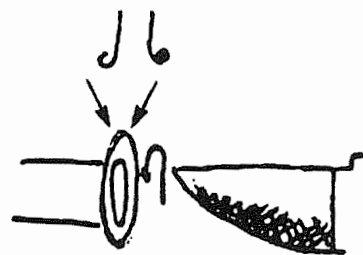


Fig. 5

To reach unworked material, the already stretched material must be knocked back to 90° out of the way, increasing the size of the flare (Fig. 6).

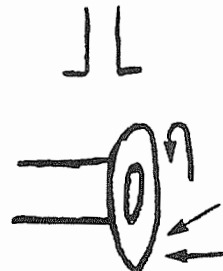


Fig. 6

A flared end on pipe or tubing is useful for candle cups or a base for standing vessels.

Forming an "S" Scroll

To form a scroll from tubing, it is necessary to make a jig. A jig can be quickly and easily made from light materials. Material should include: 13" length of 1 1/2" x 1/8" strip; angle iron welded on for securing in vice; 32" of 3/4" sq. tube. Here are some workable dimensions for an "S" scroll (Fig. 7).

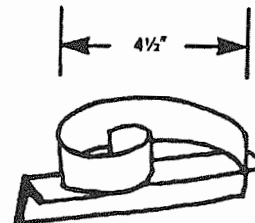


Fig. 7

Taper each end back 13" by striking on the corners (Fig. 8). Fire weld the ends and form a hook (Fig. 9). Using as long of an even heat as possible, secure the hook on the inside end of the jig. With an even pulling motion, pull and wrap the hot tube around

Forging Hollow Material . . . continued

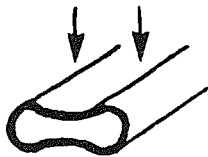


Fig. 8

the jig being aware that the angle of pull is where the tube contacts the jig (Fig. 10). You will have a scroll with

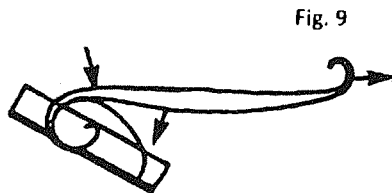


Fig. 9

Fig. 10

a beautifully fullered inside and rounded edges outside.

Forming by Fullering

Pipe and tubing can be fullered in the same manner as solid stock. I

prefer to use a guillotine fuller (Fig. 11). A guillotine fuller can be easily

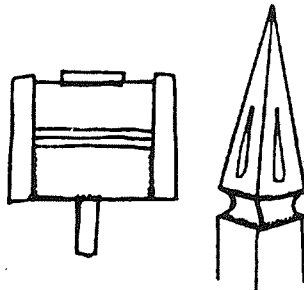


Fig. 11

fabricated and assures a positive blow. A ball is formed by two fullerings (Fig. 12). It can also be



Fig. 12

formed by power hammer with a set of top and bottom clamp on dies (Fig. 13). The power hammer must have

good control because the first few blows must be light.

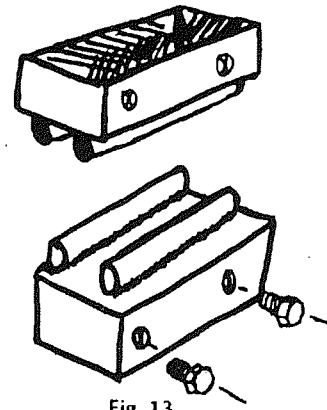


Fig. 13

Tubing with its hot working possibilities has advantages, but will never replace solid iron. The problem of water entrapment and swelling due to freezing, make some outdoor applications undesirable. Don't try to pass it off as solid material, work tubing as its own medium.

How to make the Penny on the Penny Scroll

Form taper and square on the edge of the anvil



Hit here first

Tip up



Hit here second

Make from strap 1/4" or less thick and 3/4" or so wide. Don't make taper too thin at the penny.

By Everett Browning

Finished, looks like this.



At ABANA conference in St. Louis, Francis Whittaker

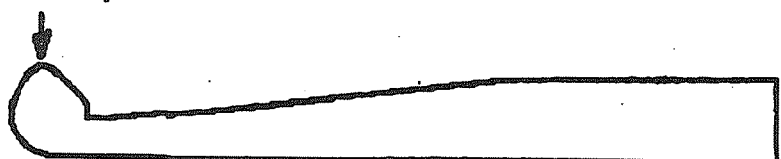
showed how to do this. I believe that

someone who has little smithing experience can make this from the instructions. It's so simple and works so well with a little practice, I wonder why I didn't figure it out on my own. But then that's smithing.



It should look pear-shaped like this

Turn piece over and strike here until round



Reprinted from *The Prairie Blacksmith*, July 1994

Draw a square taper on the blade.
Flatten on diamond to get width

Steel that Hugh uses:

turning blades - D2
truck springs - 5160
ball bearings - 52100
potato conveyor - 1085
saw blade - L6

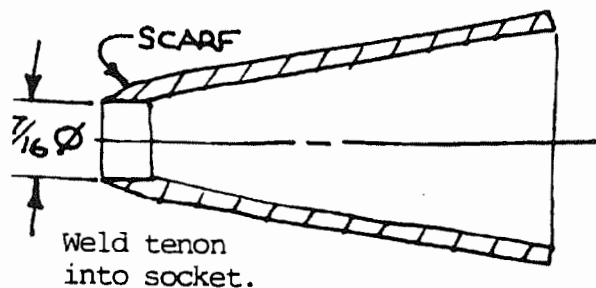
Harden the cable blades in oil, draw temper to 375-400 F--leave in the tempering oven at temperature for one hour.

CHISELS

Hugh makes some really neat chisels using a lovely set of tools he has made specifically for chisel making. My notes on this portion of the seminar are very sparse. For a good description of the tooling and process, I suggest that you borrow a copy of the video tape from INBA.

Tanged: shoulder with tooling shown on tape of seminar.

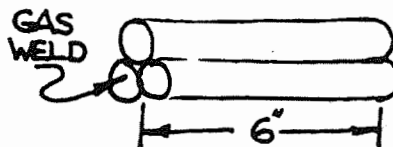
Socketed: uses pipe for socket, draw taper in die (one heat). Hugh uses potato conveyor for chisel--draw 7/16 tenon to go into socket, square the rest of the tool to 1/2". Drill the small end of the socket to 7/16" (should be a tight fit on tool). Scarf the end of the socket.



Harden in oil;
temper to about 550 F.

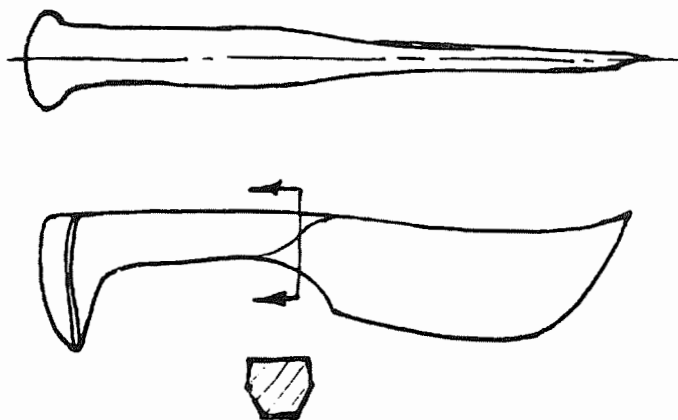
CABLE BLADES REVISITED

For greater mass, three chunks of cable may be welded together. Gas weld the ends together and weld onto a handle. (See figure below.) Flux and forge weld cables together. Draw out to blank size under power hammer (each heat to welding temperature).



RAILROAD SPIKE KNIFE

A rope twist looks very nice on the handle.



OSHA Safe Hardening Compound for Mild Steel:

5 gallons water
5 lbs. table salt
32 oz. Dawn liquid soap
8 oz. surfactant (Basic H)



Reprinted from INBA News, June 1992

Hot Tips

-50-



MAKING TONGS

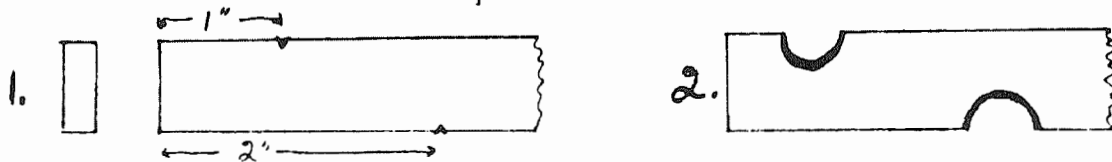
Alabama Forge Council Blacksmith Conference
Tannehill, Alabama - September 11, 1987

Demonstrator: Paul Armbruster, President, Tullie Smith Guild, Atlanta, Georgia
Notes by Clay Spencer -- Published in the newsletter of the Alabama Forge Council

Material: 3/8" by x 1" x 12" (longer for larger jaws)

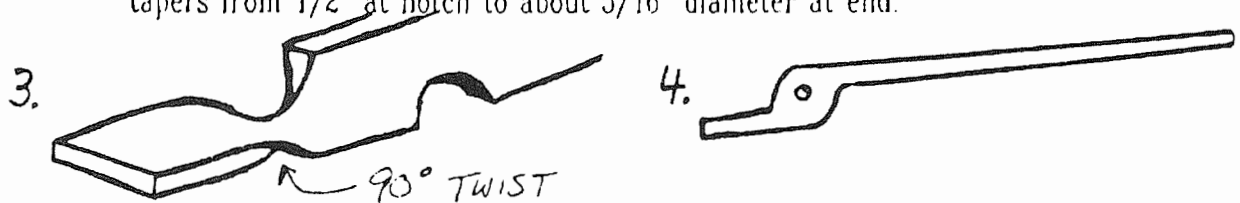
1. Mark edge with punch at 1" from end and at 2" from same end on opposite edge.

2. Use 1/2" bar, clamped to anvil as fuller. Make a 1/2" "U" shaped notched at each of the punch marks.



3. At first notch (1") , make a 90 degree twist.

4. Cut bar at middle. Draw out reins from second notch so that it tapers from 1/2" at notch to about 5/16" diameter at end.



5. Form second handle in same manner as first. Be sure to twist jaw in the same direction as the first.

6. Fit the two halves together, mark and punch holes for rivet. Center the hole between the two notches.

7. Form jaws to fit material to be handled. For larger jaws, use longer material and make the marks farther back from the end (1 1/2" rather than 1") but keep the 1" spacing between the first and second notches.

8. Rivet the jaws together, and adjust jaws and reins to fit the material and your hand.

from: 'UMBA' Upper Midwest Blacksmiths Assoc. Nov. 1988

THE BEGINNING BLACKSMITH

by Ryan Johnson

(From the newsletter of the Appalachian Area Chapter of ABANA)

"MAKING HEARTS"

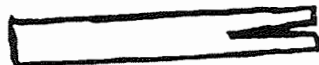
OR

"AM I EVER GOING TO GET THIS THING EVEN?"

If you sell items at a craft fair, or keep up with the country decorating trends, then you probably know that hearts are in. There are heart: pokers, hooks, trivets, door knockers, etc.. All sell well, and with a little practice, you can make even, good looking hearts. To get the idea across, we'll do a simple pattern.

Stock: 3/4" wide by 1/8" thick, mild steel

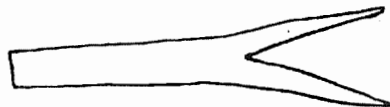
1. First take stock and split the end back about 1 inch.



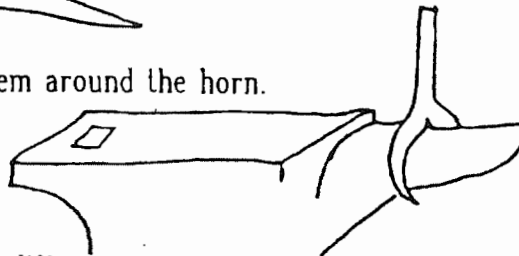
- 2) Spread the two ends by striking the end of the piece with your hammer while the halves are on the edge of the anvil.



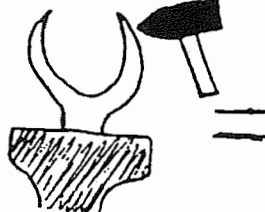
3. Draw both ends to a fine point and about one and 3/4 to 2 inches long.



4. Now heat the ends and bend them around the horn.



5. This step can be done several different ways. I will mention the method that is easiest for me. You can use a jig, but I tend to stay with freehand. Heat the tines, put in vise and with the **ROUNDED** pien of your cross pien hammer, bend the ends inward.



or



Copied from the Nov/Dec, 1990, newsletter of the Upper Midwest Blacksmith Association, which copied it from the Western Canadian Blacksmiths Association.



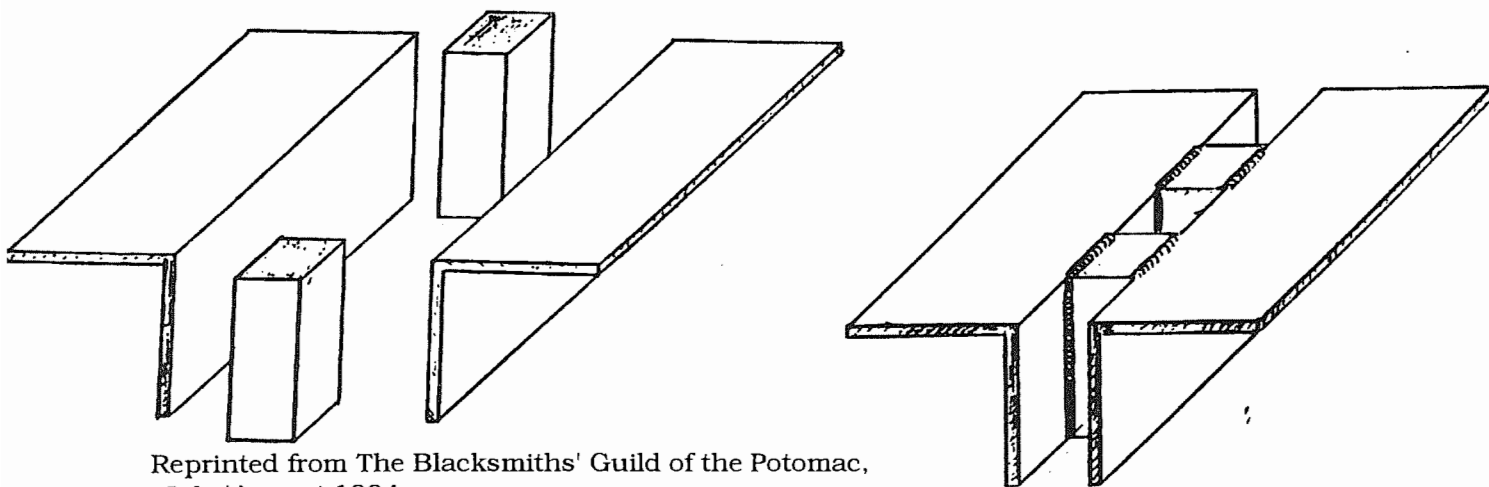
PUT A HARDY HOLE IN YOUR VISE

Albin Drzewianowski

Here is a handy jig which will allow you to use certain of your anvil tools in your vise. I saw this used at the EARLY AMERICAN WROUGHT IRON CONFERENCE in Dover DE, in Sept 1992.

Take 2 pieces of 2 inch angle iron, each as long as your vise is wide. Fabricate 2 spacers, such that when they are placed between the 2 pieces of angle iron as shown below, you now have a hole, which is the same size as your anvil's hardy hole. Weld the 4 pieces together.

You might want to make a couple of these. If you already have or come across anvil tools which have a shaft that does not fit your anvil's hardy hole, you could now make use of them. Obviously, this will not work with anvil tools which need the support of the anvil table, such as spring fullers.

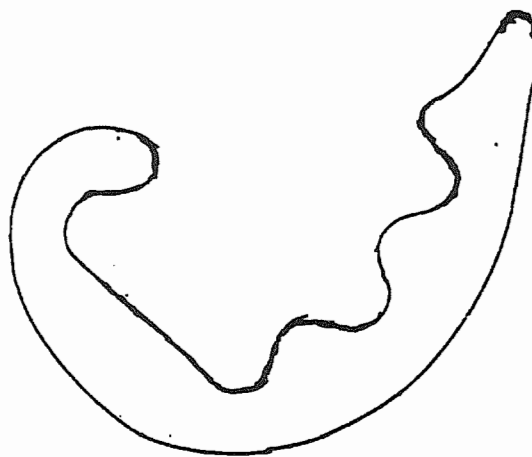


Reprinted from The Blacksmiths' Guild of the Potomac,
July/August 1994

Retaining Ring for Tongs

Francis Whitaker was using one of these tong retaining rings while he working on assembling the Rings project. I took a tracing of it and thought I would pass it on. It's made of 1/4" stock and cut out with a torch. The rein size it can handle seems to be up to about 3/8".

Frank Turly says your tongs should be slightly flat on the sides for comfort and that working them cold will work harden them a little and make them springy.



Rick Dixon

Reprinted from The Rivet, South Alberta

Power hammer die keys

Do it right the first time and your dies will stay where they're supposed to for a long time

by Sid Suedmeier

Before I get started into this subject, I want to make one thing very clear. What I am going to share with you is not, or never will be, the final word on die keys, but we have to start someplace. This information has been accumulated from working with Fred Caylor, practical experience and from talking with many of you who work with these machines. All of my experience has been with Mayer Bros/Little Giant but will still pertain to many other brands of power hammers.

To begin with, the old key and die need to be removed. This in itself can present some real problems, depending on what previous methods have been used to keep the die in place. We will discuss only the standard single key as the alternatives that have been tried are a whole story in themselves.

To remove a standard key that is not all battered up, we use a long chisel that has been ground thin to reach behind the die. The end needs to be squared off to present a good contact for the driving area. After you have the chisel ground to suit you, give the small end of the key a good hit with a medium size hammer, 4 to 6 pound.

Do not tap with a small hammer as this tends to swell the end.

The use of penetrating oil and heat can also be very helpful. I have seen some dies that defy all methods and have to be literally blown out with a cutting torch. Once the key and die have been removed we are ready to check the dovetail and die for any repairs or modifications that may have to be made to insure proper fit.

At this point we need to check the condition of the dovetail and floor the die sets on. The floor needs to be flat. Many times the die will be hammered into the bottom. This needs to be corrected. For minor erosion, flat filing will take care of it, but for major damage, other methods will be needed which can include welding and machining.

The sides of the dovetail can generally stand some shaping up, again a good flat file can be utilized. Care should be taken to not modify the angle of the dovetail. You want to achieve a good straight, smooth surface so as much contact as possible can be obtained between die, dovetail and key.

At this point we need to measure the dovetail to check for taper from end to end. The factory machined 1/8th inch per foot of taper into the dovetails. It is generally set up with the small end to the left and the large to the right. It needs to be checked and verified. The saw block could have been turned on

models so equipped causing it to be the opposite.

The dovetail in the rams is generally not tapered from side to side.

The die also needs to be checked for the same taper. On the new dies that we make the ends are marked W for wide and N for narrow. Set the die into the dovetail with narrow end into the wide end. This creates a natural taper into which the die key will fit.

The die is usually positioned to the front of the dovetail with the key going into the rear. Variations of this are found on some machines. It can also be changed in order to position some dies for proper relationship to each other.

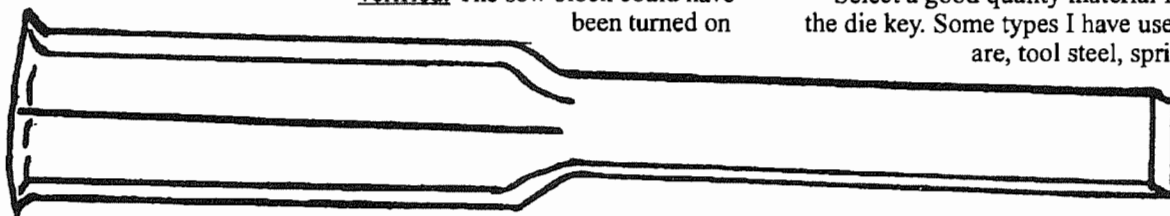
Check the corner of the die for proper radius so it does not keep the die from seating squarely. The angle at the point where the die contacts the front of the dovetail should be compared with the angle of the die, they should be the same. This creates two parallel surfaces that should contact each other squarely. Minor corrections can be made with the file or small grinder. Proceed slowly with corrections — this fit is very important.

Move the die to the key side and check for the same fit. The angles should be the same or it can be a little wider at the bottom. It can not be wider at the top as this will cause the key to "squirt" up out of the dovetail as it is driven in.

If the floor of the dovetail has been lowered in the truing up process, the ledge of the die dovetail needs to be checked to make sure it does not hit the top of the dovetail before it is setting squarely on the bottom. Grinding for additional clearance will correct this problem.

Once you are satisfied that you checked all the above, we are now ready to start on the key itself.

Select a good quality material for the die key. Some types I have used are, tool steel, spring



Long Chisel

Grind long blade to reach behind die. Keep end square to prevent swelling of end of key.

NEWSLETTER of the BLACKSMITHS ASSOCIATION OF MISSOURI

steel, or other comparable types. It should not be too hard as it needs to conform to the minor irregularities. Measure the opening the key will fit into. Let's say the small end is 3/8 and the large end is 5/8. Start with material that is at least 5/8 inch thick and the width to cover the dovetail/die face. I always make it at least twice as long as needed for ease of handling and trimming later. I shape the taper to the key with a belt grinder with a 50 grit belt.

They can also be forged to a rough shape before grinding. Once you get enough taper to start fitting, coat the two surfaces the key will be contacting with Prussian Blue. This is used in many close tolerance fitting applications in machine shops and garages.

The Permatex brand is part number 35V. Most auto parts stores should be able to order for you if they do not have on hand.

Insert the key into the opening and tap in lightly, drive key back out with chisel and notice the contact area as indicated by the blue left on the key. These are the high areas that need to be removed by grinding. Make corrections in both the long taper and the top to bottom dimension. The goal is to achieve at least a 70 percent to 80 percent overall contact area. Take it slow, stop to check often. I always mark my key so it is certain that the same side is always up, also good for later reference when changing dies.

Continue to check and grind until the key will extend to at least the far end of the die. Watch the contact area closely. I have seen dovetails broken because of small contact area exerting all the force into a very concentrated spot. Extra time here can save you time later.

Trim the key to length, leaving some on the large end to allow the key to be driven in as the key conforms. Chamfer the end generously, especially the small end, so it does not swell up when driven.

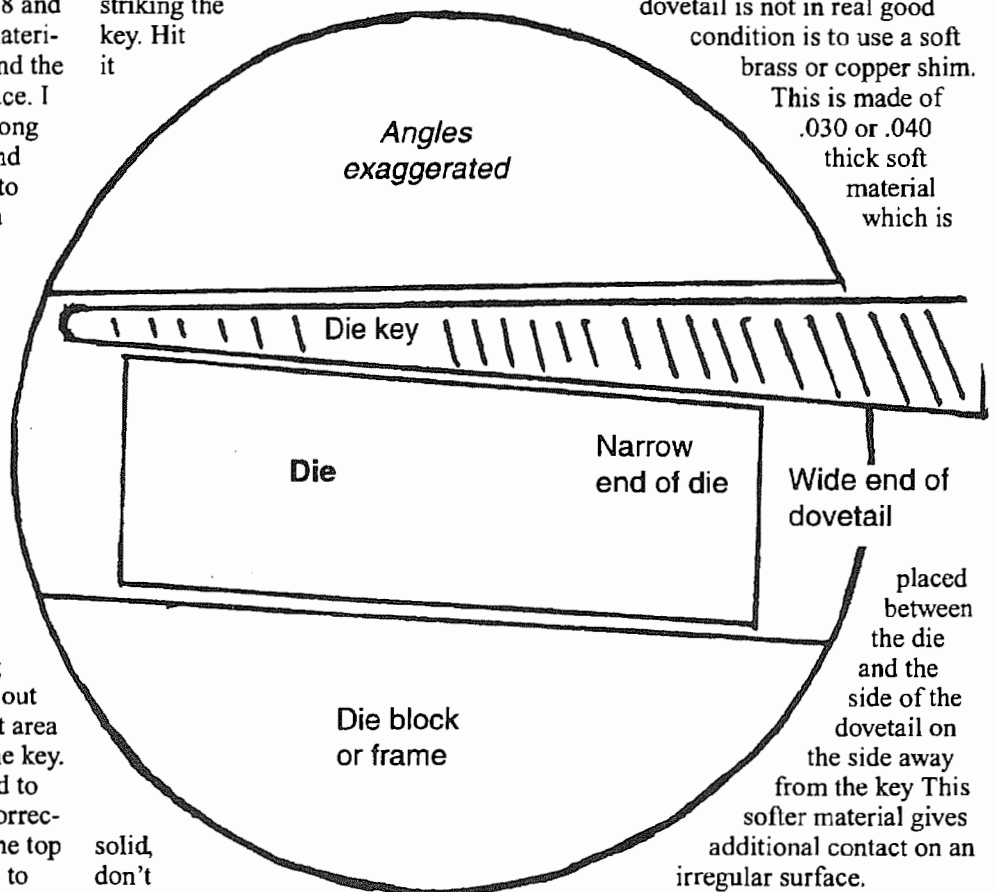
Drive the key in,

again using a 4 to 6 pound hammer. If properly fit it should drive to a certain spot and you should get a definite solid sound when striking the key. Hit it

minutes of operation the key should be seated and need very little attention for quite some time.

Another little trick if the side of the dovetail is not in real good condition is to use a soft brass or copper shim.

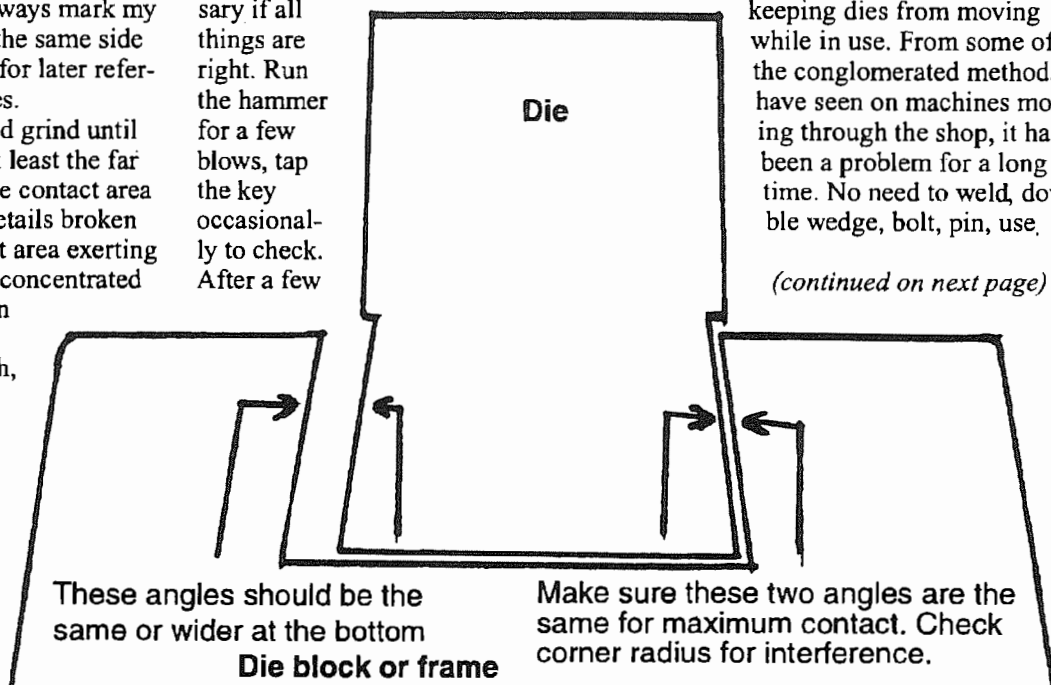
This is made of .030 or .040 thick soft material which is



solid, don't overdue it, it is not necessary if all things are right. Run the hammer for a few blows, tap the key occasionally to check. After a few

I hope this will help ease any problems you may have had keeping dies from moving while in use. From some of the conglomerated methods I have seen on machines moving through the shop, it has been a problem for a long time. No need to weld, double wedge, bolt, pin, use,

(continued on next page)



Last of the 100 pound Little Giants

So you thought all the Little Giants were gone, leastwise the bright shiny new ones fresh from the factory.

Well guess again — Sid Suedmeier, the man who bought all the Little Giant spare parts, has done it again.

Sid bought four 100 pound Little Giants at a U.S. Army surplus sale held in Rock Island, Ill. He says there were nine hammers total at the sale.

His four have never been used. Three were still in the crate. One had the end panel off so you could see what was inside. The other two are complete mysteries.

The one that was unpacked never had the dies installed and has never been used. But true to army form, it already has its second coat of paint.

You can be in on the grand opening of one of the 100 pounders if you attend the 1994 ABANA Conference to be held in St. Louis June 14-19. Sid has offered to bring one of the rare finds to the conference, unpack it and set it up for use at the conference.

If you want to buy one of these hammers, there are two still for sale at \$6,800. (Sid is keeping one and one has already been sold.) Until he opens them he is not sure what year they were made in.

For more information contact Sid at Little Giant Automotive, 424 Corso, Nebraska City, NE 68410 or phone (402) 873-6603.

Incidentally, I asked Sid what he liked to forge and he said he's not a blacksmith! Guess he just likes his heavy collection.

(continued from previous page)

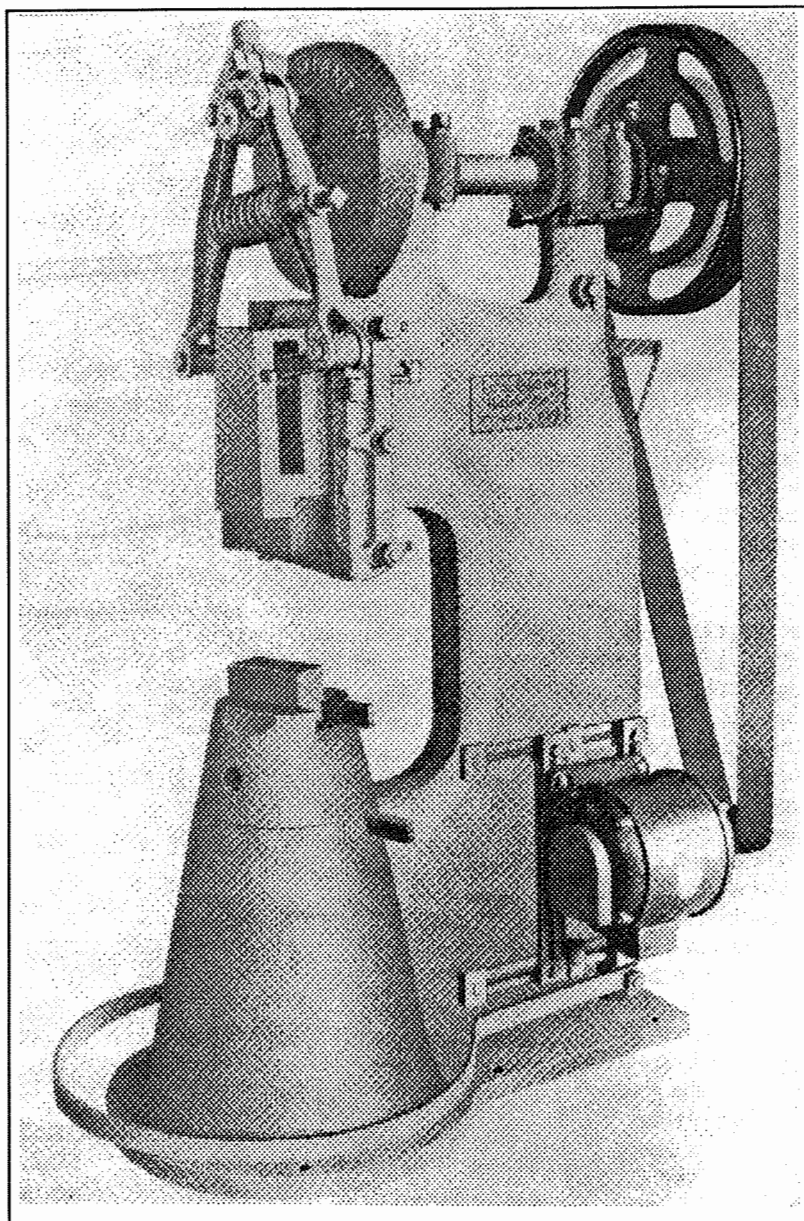
witchcraft or any of the many methods if the time is taken to do it right the first time.

One little after thought is the key on the upper 251b. Little Giant. It is a double taper key, meaning it not only tapers from left to right but also across the width. This presents no special problems, it still has to be fit carefully for good contact. All above procedures apply.

You will notice the words generally and usually have been used. The rea-

son for this is, about the time you think you have seen it all and have found a fix for them all, a variation pops up that you had never thought about. Keep an open mind, think it through and try to do it right the first time.

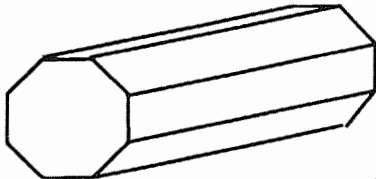
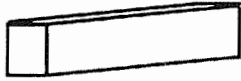
Editor's note: This article and the drawings were printed with the permission of Sid Suedmeier. For reprint rights contact Sid at Automotive Inc./Little Giant, 420 4th Corso, Nebraska City, Neb. 68410 or call (402) 873-6603.



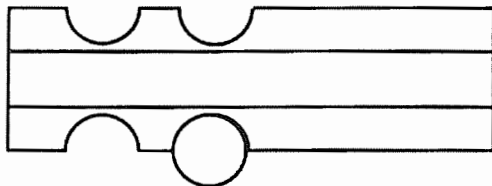
Tang Chisel

This Tang Chisel was demonstrated by Peter Ross at Hillsboro, OR in March, 1988. Notes and sketches were by Hugh Eddy.

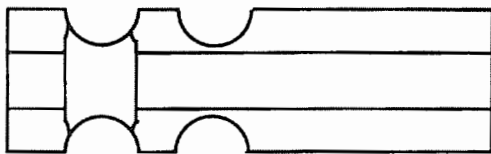
Stock -- $\frac{3}{4}$ " mild steel



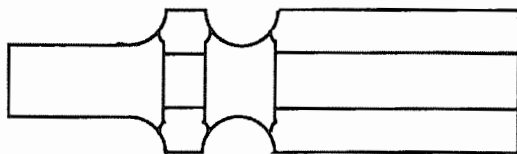
1. Forge corners to make octagon.



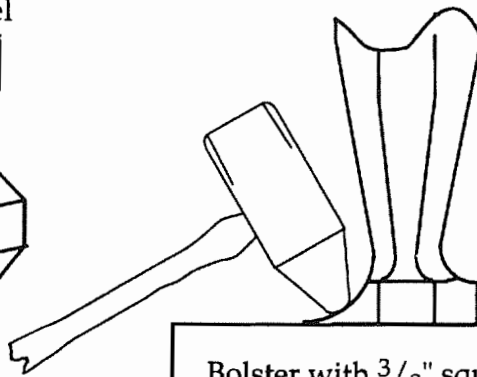
2. Fuller to make shoulder. Hammer over $\frac{3}{8}$ " round to make fullers.



3. Fuller on four sides.



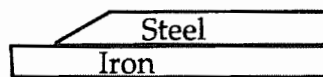
4. Draw out tang to $\frac{3}{8}$ " square.



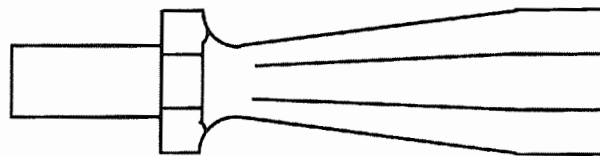
Bolster with $\frac{3}{8}$ " square hole

6. Fuller shoulder on bolster.

9. Draw blade to desired shape/length.



8. Scarf a piece of steel by tapering one end. Forge weld steel to end of chisel.



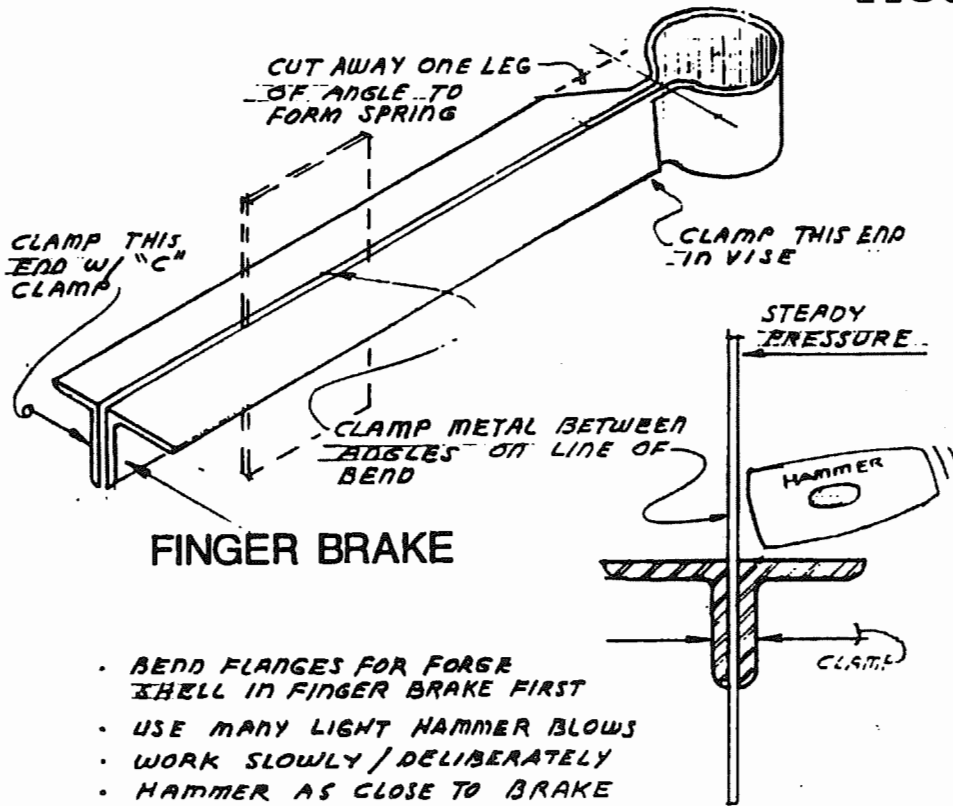
5. Taper chisel shank on near edge of anvil.

7. Draw tang to point.



REPRINTED FROM BITUMINOUS BITS. ALABAMA FORGE COUNCIL

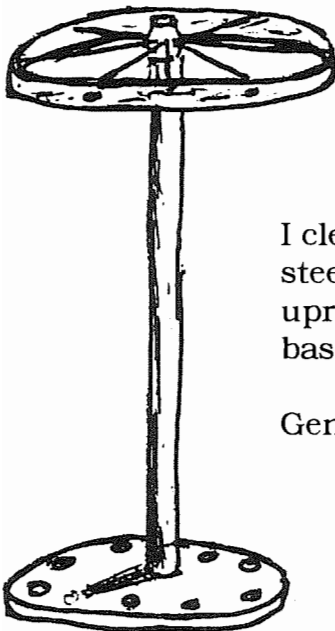
Hot Tips



- BEND FLANGES FOR FORGE BELL IN FINGER BRAKE FIRST
- USE MANY LIGHT HAMMER BLOWS
- WORK SLOWLY / DELIBERATELY
- HAMMER AS CLOSE TO BRAKE POINT AS POSSIBLE
- ON LONGER PIECES APPLY PRESSURE AT TOP, UP TO BENDING, THEN LET THE HAMMER PROVIDE THE LAST BIT OF STRESS TO MAKE THE BEND.
- ONCE THE FLANGES ARE BENT THE FINGER BRAKE CANNOT BE USED
- FINISH THE LAST INTERNAL BENDS BY BOLTING SHORT STEEL ANGLES THROUGH THE CASE AT THE BRAKE LINE AND BENDING AS INDICATED ABOVE

Reprinted from The
Blacksmiths Guild of
the Potomac

.....



I cleaned up my shop recently and put to use an old, steel wheelbarrow wheel. The wheel turns on the upright made from 36 inches of 2 inch pipe. The base is 1/2 inch plate. Holds about 50 pairs.

Gene Chapman

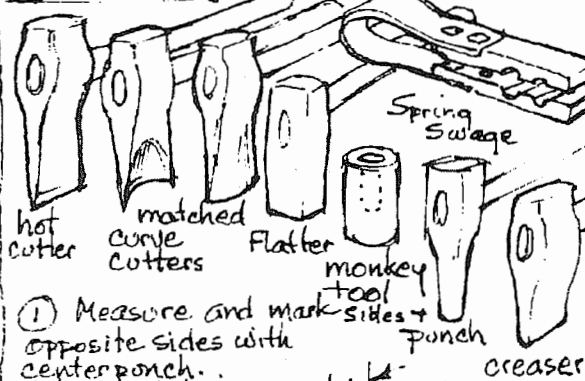
the making of Christoph Friedrich's CROSS by Francis Whitaker

Drawings and notes by Tom Reinertsen.

Francis demonstrated this cleverly unfolding cross at the ABANA International Blacksmiths Conference, on June 30/1990 in Alfred College, Alfred, New York. The credit was given to a Swiss demonstrator Christoph Friedrich who showed it in 1988.

Materials:
mild steel

Special Tools:



① Measure and mark opposite sides with center punch. Note: maintain ratio if stock differs in size.

② Get a deep soaking heat and with the hot cutter, cut 1/2 way through and remember to keep cut down the middle and cool cutter after each 4 or 5 hits.

Flip piece over and complete the cut over a cutting plate. Hammer the split closed and even up.

③ Heat deeply again and cut 90° from last cut. Work straight cutter along and cut 1/2 way through.

split to the edge with curved cutter.

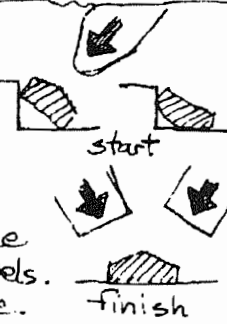
④ Reheat, flip and then complete the cuts with straight and curved cutters.

⑤ Maintain heat in center and bend back 180° gently.

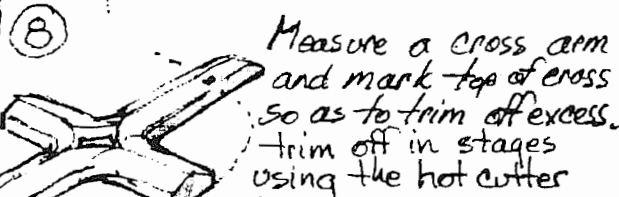
⑥ Unfold using the hardie, and horn, and flatten gently on the anvil. Now you can see if you cut the intersection cleanly or not.

REPRINTED FROM THE ANVIL'S RING, WINTER 1991

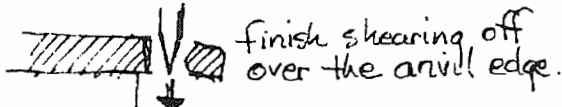
⑦ Create bevels on cross arms on the opposite side by using the anvil step and cross peen first. Proceed then to anvil face - flip piece over and complete bevels using the hammer face.



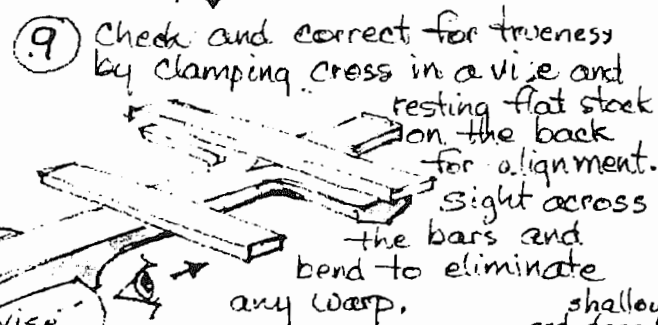
⑧ Measure a cross arm and mark top of cross so as to trim off excess. trim off in stages using the hot cutter.



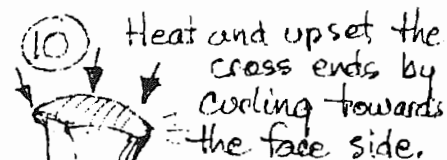
finish shearing off over the anvil edge.



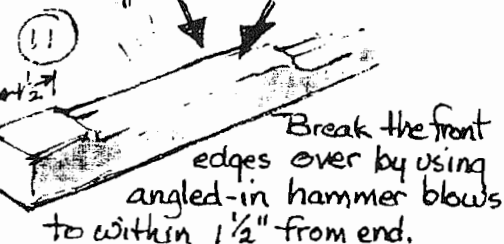
⑨ Check and correct for trueness by clamping cross in a vise and resting flat stock on the back for alignment. Sight across the bars and bend to eliminate any warp.



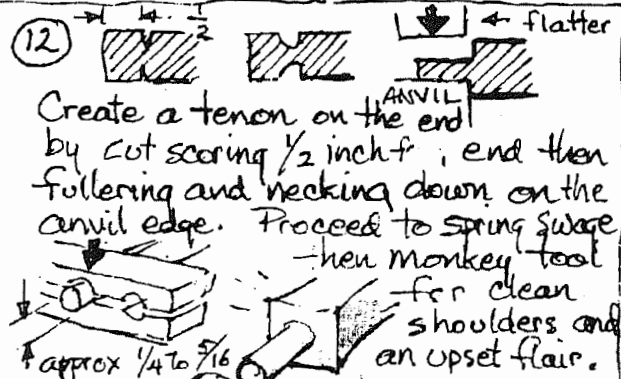
⑩ Heat and upset the cross ends by cooling towards the face side.



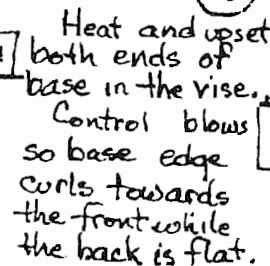
⑪ Break the front edges over by using angled-in hammer blows to within 1/2" from end.



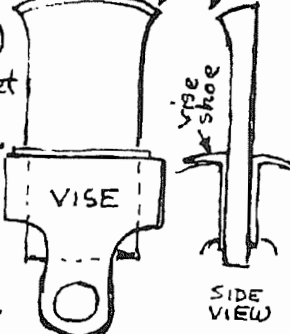
⑫ Create a tenon on the end by cut scoring 1/2 inch - 1 inch, end then fullering and necking down on the anvil edge. Proceed to spring swage - then monkey tool for clean shoulders and an upset flair.



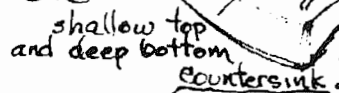
⑬ Heat and upset both ends of base in the vise. Control blows so base edge curls towards the front while the back is flat.



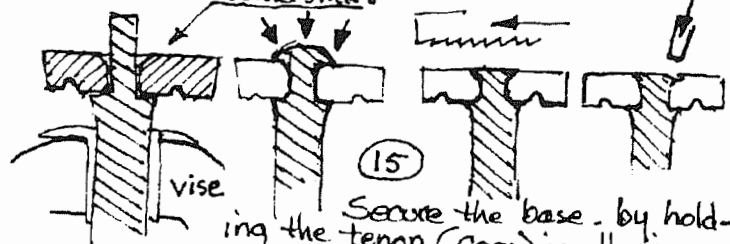
⑭ Crease both sides of base front side approx. 3/8" from edge and 1" from ends. Cool slowly and drill a hole to fit tenon.



shallow top and deep bottom countersink.



⑮ Secure the base by holding the tenon (cool) in the vise, and with the base properly aligned and oriented peen the tenon snug. File off any excess and assure the set with a punch. Wire brush and wax.



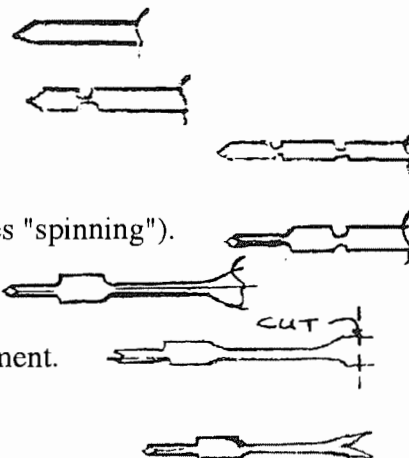
Francis Whitaker teaches blacksmithing at the Colorado Rocky Mountain School.

DOROTHY STIEGLER'S "ROSE THAT DOESN'T WILT!"

By Don Kemper

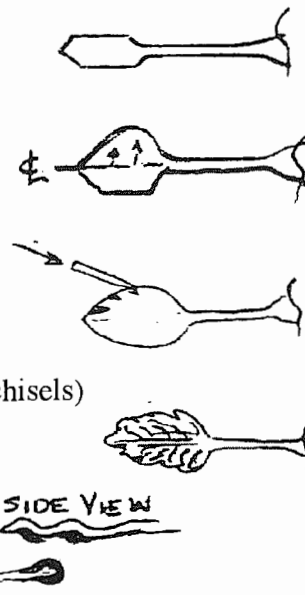
STEM

1. Use 3/8" round for stem.
2. Point end of stem
3. Fuller tenon shoulder (uses Guillotine Fuller)
4. Fuller stem 1" behind tenon
5. Square tenon (square tenon-round hole in leaves negates "spinning").
6. Reduce stem diameter (square first)
7. Reduce edges, round and finish stem above leaf attachment.
8. Split bottom of stem -- dress spit in vise with file.



LEAF

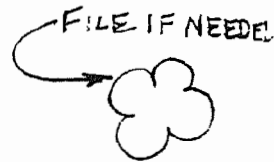
1. Same 3/8" round stock and set up (without tenon)
2. Flatten leaf (Draw from center to side with round face hammer - repeat) DO NOT over draw leaf edges!
3. Heat. Put leaf in vise and hot chisel barbs in leaf edges.
4. Finish flattening leaf - chisel leaf veins (curved and straight chisels)
5. Cool and stamp with name.
6. Heat. Add lifelike bends with hardy bick or wood block.
7. Cut off leaf - flatten end and fold "cup shape".
8. Gas weld stem and leaf (s) - use natures examples to guide you.



(Wait until after assembling flower on stem makes vise work easier).

PETALS

1. Use "heat drawn" 18 ga. sheet stock (Fender Mfg, etc.
cut out with "airplane" snips, bandsaw or ???).



2. Punch "Round" hole in center and texture veins
3. Ball punch base of petals on wood block on back,
then reflatten (starts bends).
4. Ball punch sepal same way - do no reflatten.



5. Stem in vise - put sepal on tenon.



Set with monkey tool (petals also).



6. Put petals on tenon (largest first). Stager and set.

Tenon extends above smallest petal to heat, peen and
tighten with ball punch. Retighten after forming petals.

7. Heat top petals, bend one straight up, then "C" shape

(top view, overlap, heat and bend tips out (use small, round nose pliers).

8. Start second row (rotate one petal to start). Process is
and in while heating base, overlap, then bend edges up and out.

Roll edges of petals, bend up

9. Each lower row is same (bend up and under).

10. Retighten peen on tenon.

11. Close top (bud) petals over tenon.

12. Heat Brass brush hilts. Add hilt colors from ceramics store, if desired.

13. Review shape and apply wax.

14. 150° Oven will even out wax (newspaper underneath will preserve happy home)

GENERAL ROSE TIPS

Buy three silk flowers (same type)

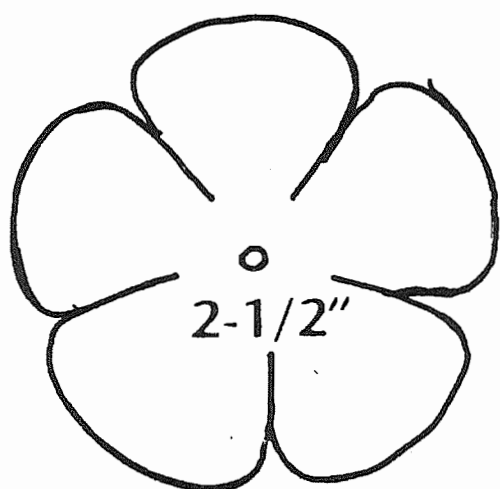
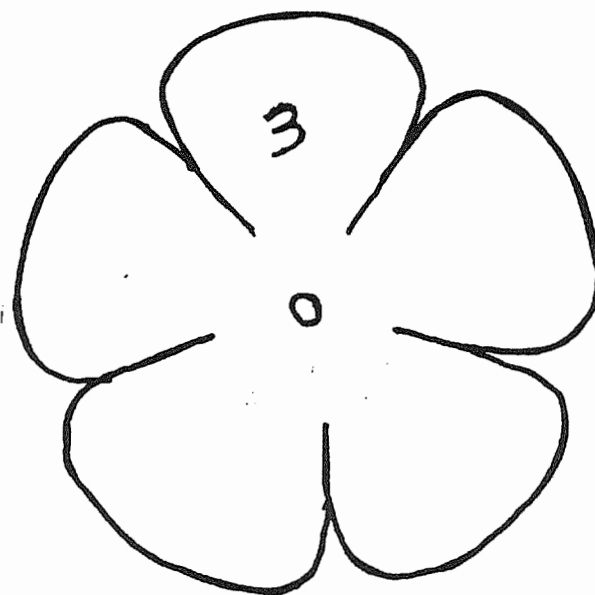
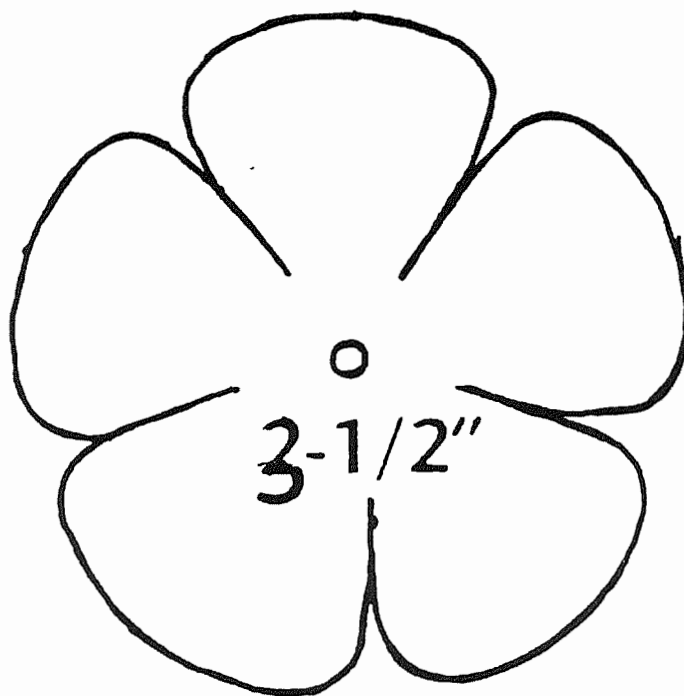
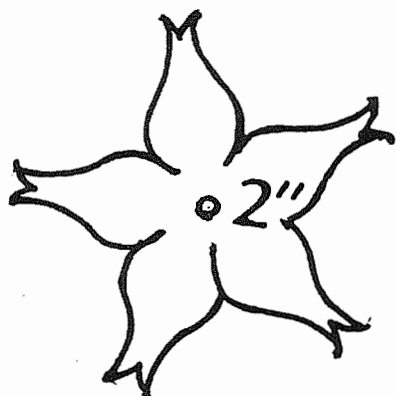
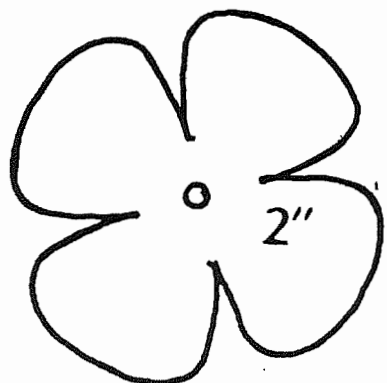
- a. Keep one for model
- b. Disassemble one for shape of parts.
- c. Disassemble and iron one flat for pattern. Xerox (c) and use for cutting metal
 - * 18 ga. "Heat Drawn" non-galvanized stock may be cut with snips.
 - * Using three pair of round nose pliers (square or serrated edges mark metal)
Allows cooling when working.

LOOK AT LIVE FLOWERS!
MAKE WHAT YOUR EYES LIKE!
NOT AN EXACT COPY!

GENERAL LEAF TIPS

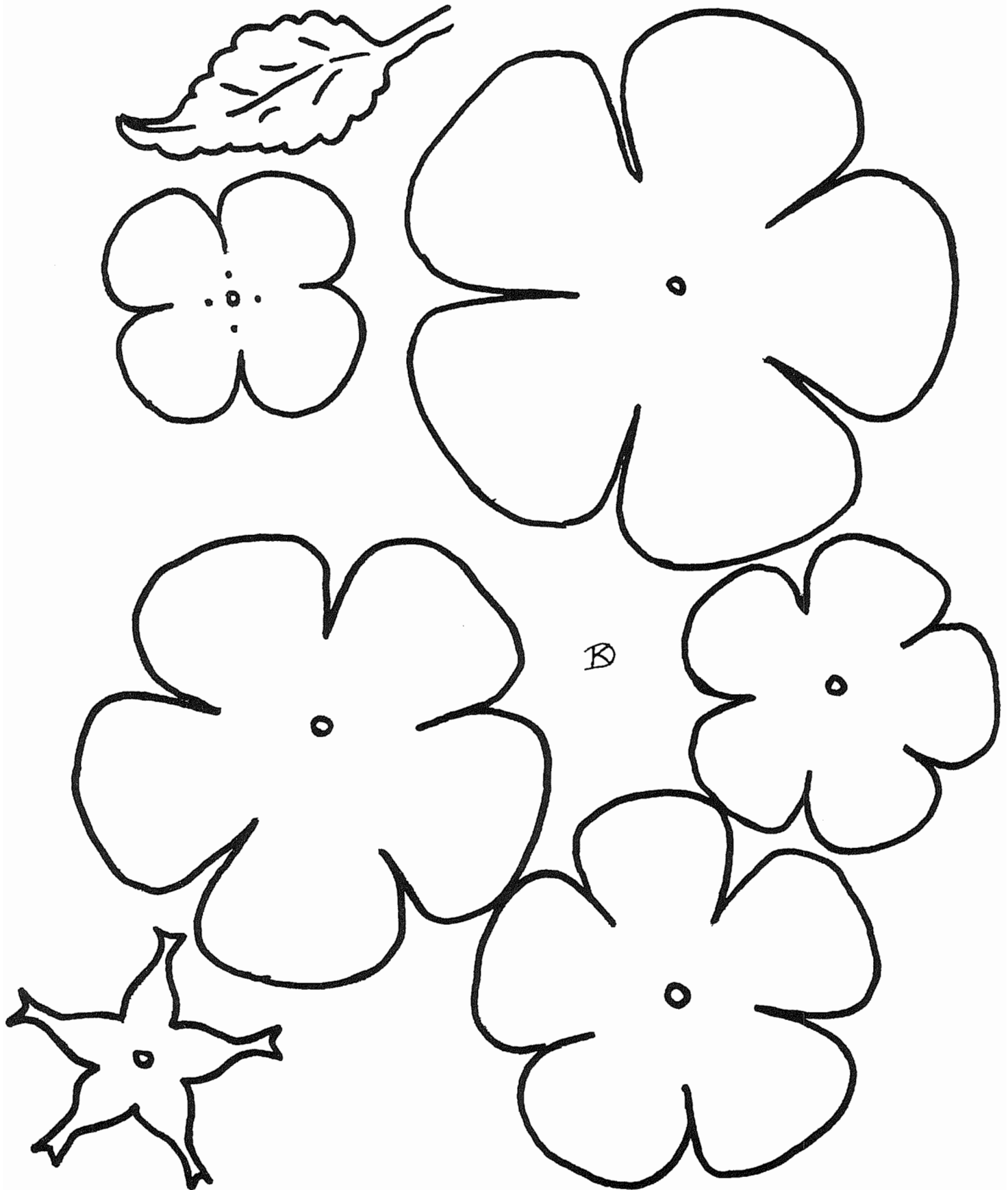
- * A Xerox copy of "Nature's own" makes best pattern.
- * Set up round stock and flatten from center line to each side (DO NOT over thin edges)
- * Serrate edges and add veins with rounded chisel as appropriate.
- * Large leaves or leaf plates can be made of 16 ga stock.
- * Large center/ancillary veins may be added by folding leaf towards back, flattening, then unfolding, reflattening, leaving small upturned ridge for vein(s)
- * Add chiseled veins, round stem and form/bend on wood stump to complete.
- * Two Ginkgo leaves joined by one stem can be finished, folded together and the center of the stem attached to necklace, etc.
- * Add engraving for a lasting reminder of a special occasion.

ROSE LEAF, PETAL & SEPAL PATTERNS



Hot Tips

ROSE LEAF, PETAL & SEPAL PATTERNS



THE BRANDON PIN

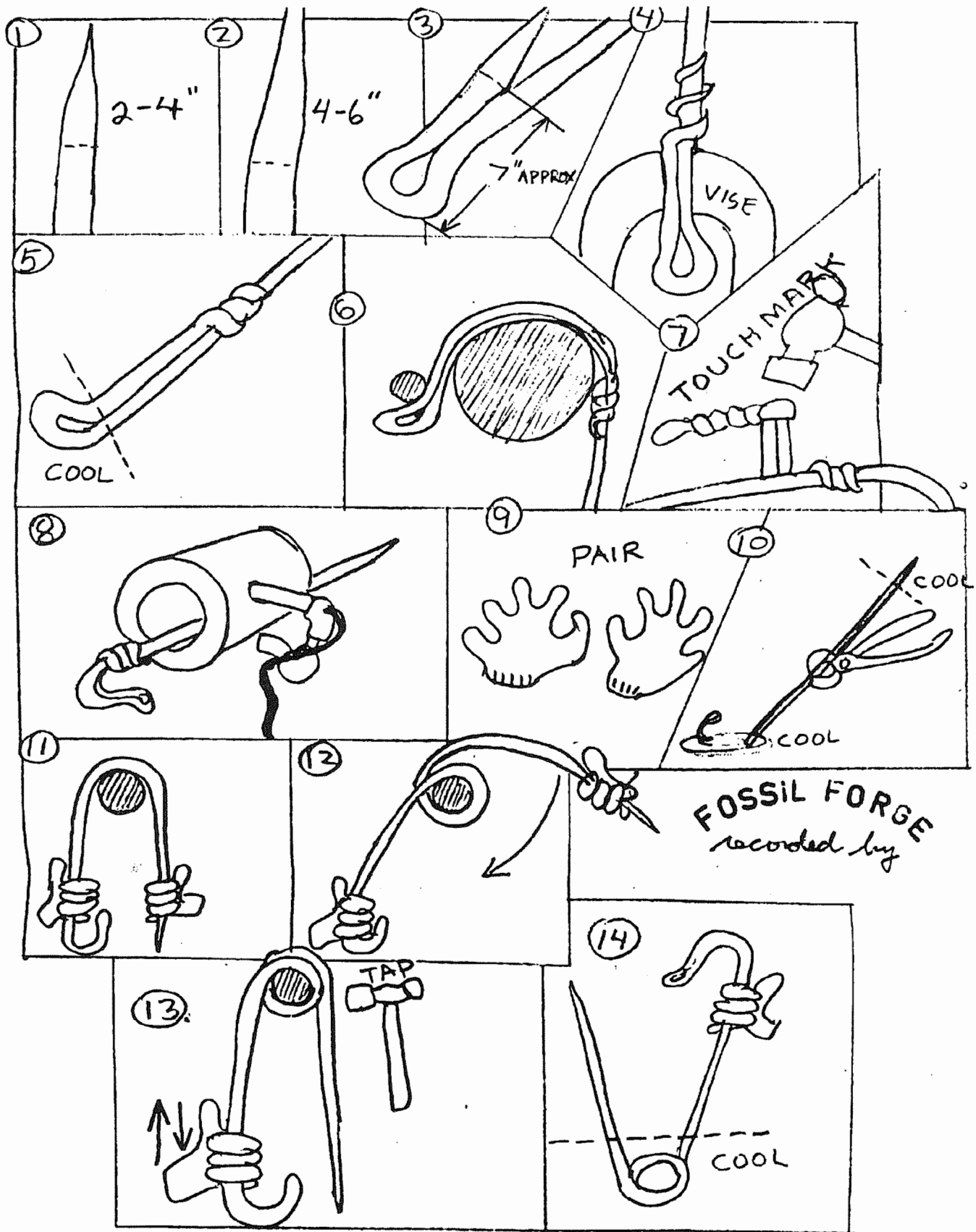
UNAUTHORIZED BUILDING INSTRUCTIONS

As demonstrated by Dave Brandon at N.W.B.A. Fall 1994 Conference



1. Taper round point 2" to 4" on one end of approximately 60", 3/8 round stock.
2. Flat taper point other end 4" to 6". Do carefully.
3. Take longer heat and fold over 6" to 7" back of taper. Use pritchel hole.
4. In vise, carefully wind taper around the round bar, tune up on anvil.
5. Bend loop back about 45° and cool.
6. In a 2 1/2" pipe jig or over anvil horn, bend hook.
7. Recommend you place your touchmark near the base of hook.
8. Take long heat on center of stock.
9. Recommend you use a pair of gloves for this.
10. Cool a little of both ends.
11. Pull job around 2" to 3" pipe in vise.
12. Wrap loose end around pipe again.
13. By pulling or pushing on the hook end (there should still be heat left) and tapping the coil, you can make the two ends meet properly.
14. Cool off coil with pin open, gives maximum spring.

Article submitted by Wade Wade



BRANDON PIN '94

Hot Tips



CIRCLE CUTTER

Circle Cutter is approximately 18 inches long. Adjust the dimensions for your torch.

To Make: Use 3/8" stock for body.

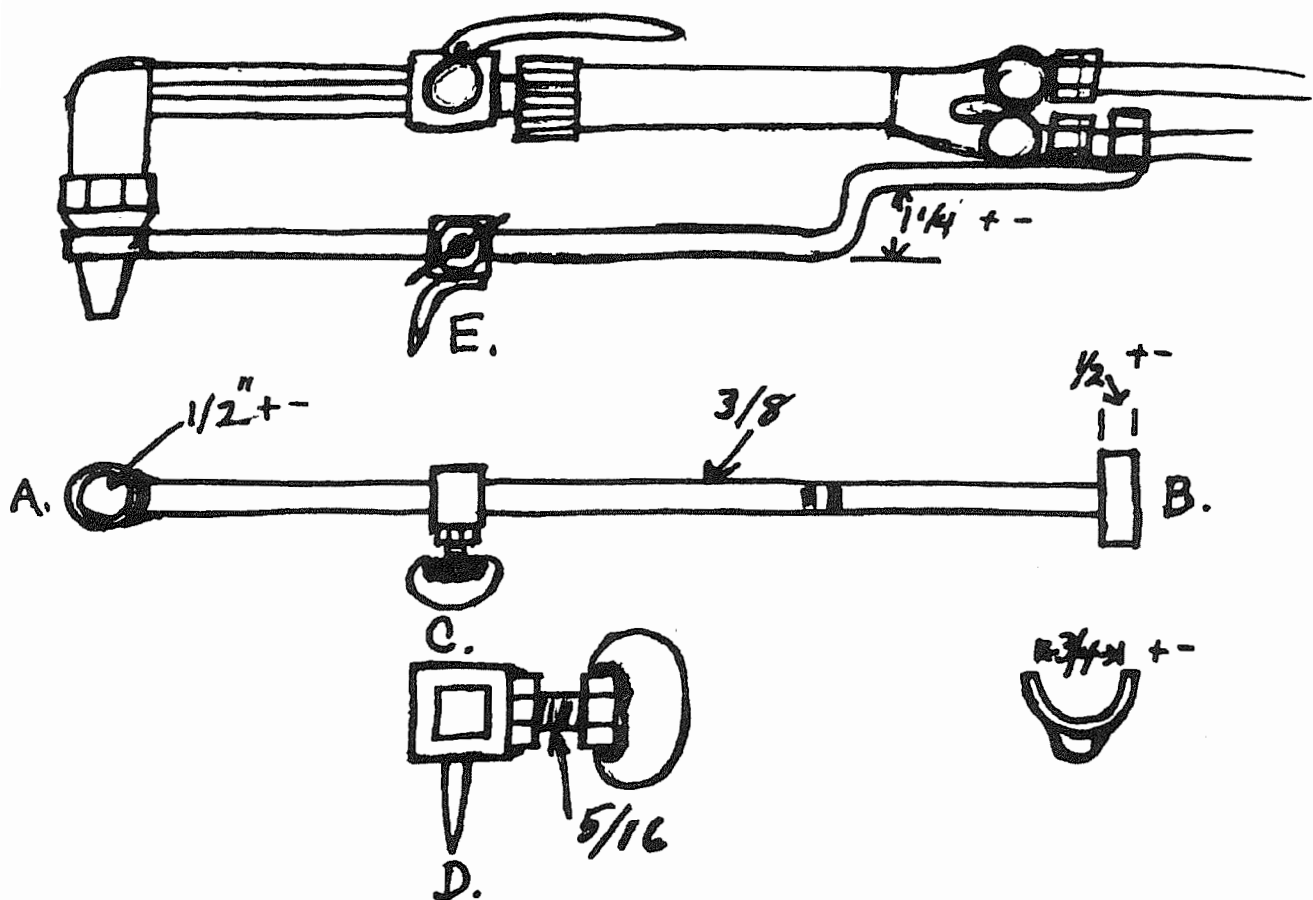
A = Cutting tip holder made form pipe

B = Saddle to hold back of torch

C = Piece of heavy walled square tubing with lock nut on side. Allows adjustment of circle sizes.

D = 16 penny nail welded to bottom fits center punch hole. Bending it allows you to adjust height of torch as in E.

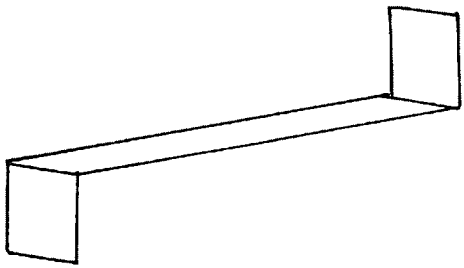
- D.J. Stull



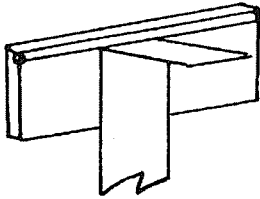
REPRINTED FROM HOT IRON NEWS, MARCH, 1990

Peter Ross BUTTERFLY HINGE

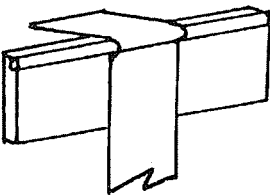
by Hugh Eddy



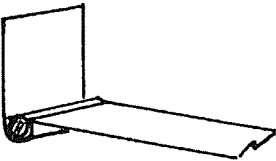
1. Stock: 1/16 x 2 x 16 inches. Bend a right angle 3 inches in from each end.



2. Make a eye forming tool by welding a round rod, the diameter of the hinge pin, to a flat bar.



3. Place eye forming tool and stock in vice and bend around cold. Repeat with other end.

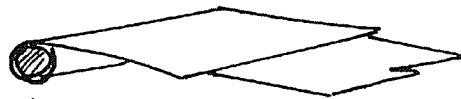


4. Place hinge pin in U-bend, clamp in vice and close eye cold. Repeat with other end.



5. Weld the hinge, being careful not to weld hinge pin. Repeat with other end. (A charcoal fire works well for welding thin stock.)

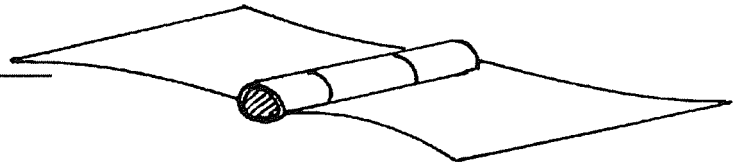
6. With the cross peen widen hinge to butterfly shape. Repeat with other end. Drive hinge pins out.



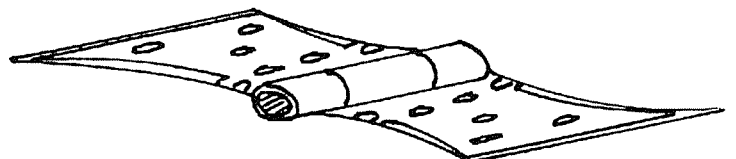
7. Cut off hinges so each half is about 2 inches long. Cut hinge eye with hack saw and cut away unwanted portion with cold chisel.



8. File fit the two halves together. Place hinge pin and peen ends, close hinge, place in vice, and file two halves the same shape.

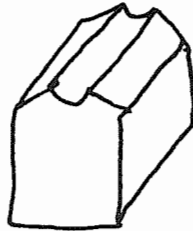


9. Punch or drill holes and file edge decoration



Art Jones' Dies

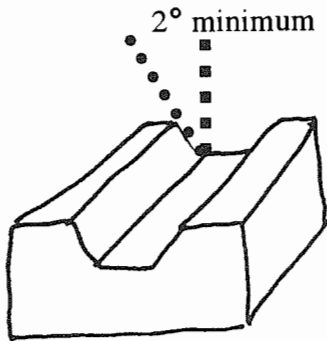
At Russ Jaqua's NIMBA FORGE (By Ben Atherly)



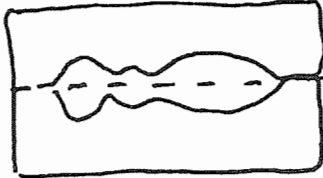
Trough Die

3/4" or 5/8"

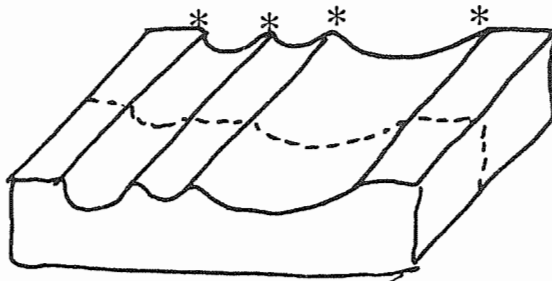
Bottom and top dies look the same



Draft - any tool or die that is not round needs draft (relief)

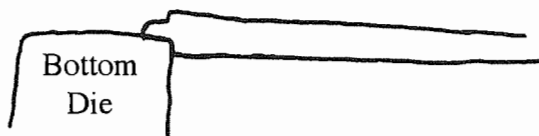


So you want this shape



Grind, mill, drill to shape in die steel -- cut in half for top and bottom dies.

*Chamfer all edges.



Forging

Take small bites -- you will get more elongation and less spread

Bronze -- 954 -- good forgable alloy

Hot Iron News

CLASSIFIED ADS

CLASSES: Rob Gunters Blacksmithing Classes:

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FOR SALE: Collapsible U.S. Cavalry coal forge and good coal. Russ Maugans (206) 321-5611.

LASER CUT PARTS: For a detailed brochure, and a sample from the shop floor, send a dollar (refunded with your first order) to: Bob Bigelo, Rt. 1, Box 380-H, Espanola, NM 87532. One part, or one thousand, we can handle it.

TOOLS: Timbercove Trading Company, blacksmithing tools. For free price list: 121 H Street, Petaluma, CA 94920, (707) 778-8261. These tools were on display at the Spring Conference and were fine quality. Editor

HAVE YOU PAID YOUR MEMBERSHIP DUES? LOOK ON YOUR MAILING LABEL, IF IT HAS EXPIRED OR IS CLOSE TO EXPIRING, PLEASE SEND YOUR DUES (\$20 -- \$24 out of country) TO OUR TREASURER, P.O. BOX 81041, SEATTLE, WA 98108. DUES ARE WHAT MAKE THIS NEWSLETTER AND OTHER MAILINGS, EVENTS, ETC. POSSIBLE. THANKS.

WANTED: Name and address of the man who brought bean salad to Fall Conference in orange tupperware bowl. Call Old Cedar Forge (Ina) at (206) 275-6769 and we'll mail it to you.

Brooms


Handcrafted

By

Warren Olney

P.O. Box 1182
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"This Broom Stands Alone"



These quality brooms are often made directly on custom made handles forged by individual blacksmiths.

FOR SALE: Compact Bender with leverage multiplier attachment #2516-H. Bends up to 5/16" x 2" flat, and up to 5/8" solid round or solid square hot rolled mild steel. Includes (7) 1"-3" heat treated steel dies, heat treated pins, die rack, stand, right angle bend attachment and instruction manual. \$538.00 plus shipping. Lockdown Securities, Inc., 605 South Adams St., Laramie, WY 82070, (307) 745-5999.

FOR SALE: Bladesmith Information Booklet by Wayne Goddard, steel spec. charts, metallurgy, color chart, bladesmithing, heat treatment, forging a simple knife, Damascus steel, wire Damascus, forge welding, homemade gas furnace. Cost \$15.00 postpaid, Wayne Goddard, 473 Durham Ave., Eugene, OR 97404.

FOR SALE: John Deere Mechanical Banks - 9.5" x 4.75". A diecast blacksmith pounds your coin, it drops through the anvil into the bank. A limited number available, \$50.00. Contact Dave Brandon, 674 Porterhill Rd. Stevensville, MT 59870, (406) 777-3507.

*We do not make
mistake's but in kase we
do we will replase the
work by redewing it!*

HUNKS OF THE MONTH

Jim Bomba of the Red Pepper Forge is starting a monthly production of "The Blacksmith of the Month". It will include a professional 8x10 color photo of a noted blacksmith plus an information sheet which consists of 18 questions the blacksmith has answered. This is meant to give all of us a great collection of photos and some interesting data on people that we admire in our blacksmithing circles. If interested contact The Red Peper Forge, P.O. Drawer C, Northeast, Maryland 21901, (410) 287-7851.

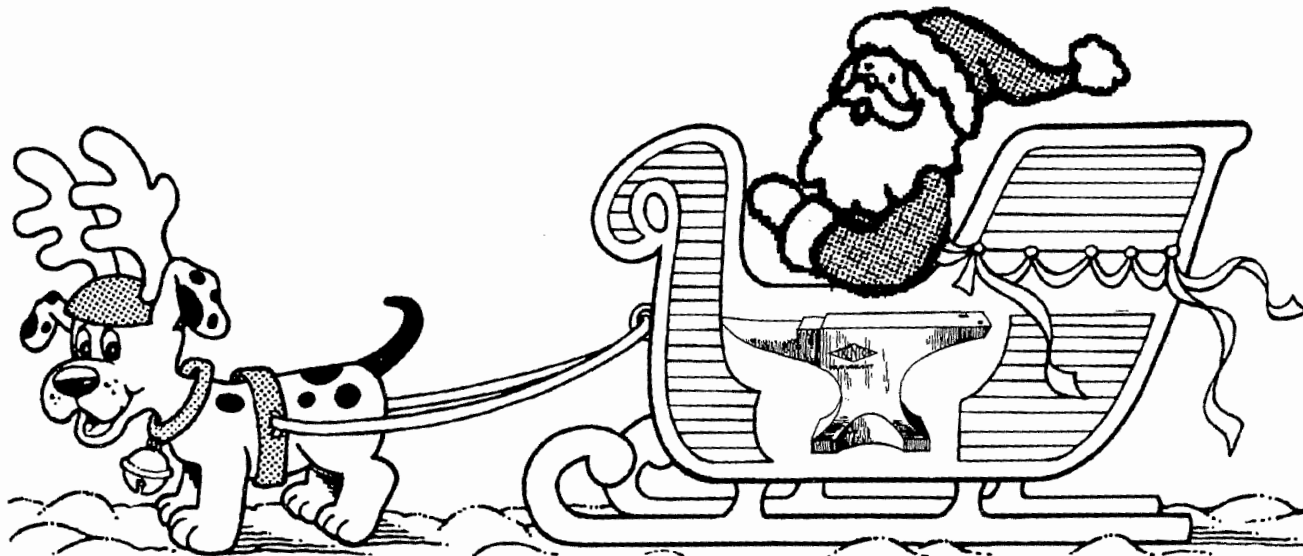
"MIGHTY MITE" Small Hand Benders

Compact 6 lbs vise or bench mounted heavy duty industrial bender, \$154.00 Model JJA-1

Edge Bender Model JJA-2, \$33.00 Purchase both for \$168.30.

Travers Tool Co., Inc., P.O. Box 541550, Flushing, NY 11354-0108.





Season's Greetings from the N.W.B.A.

Gene and Peg Chapman, Editors

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GENE CHAPMAN, EDITOR
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