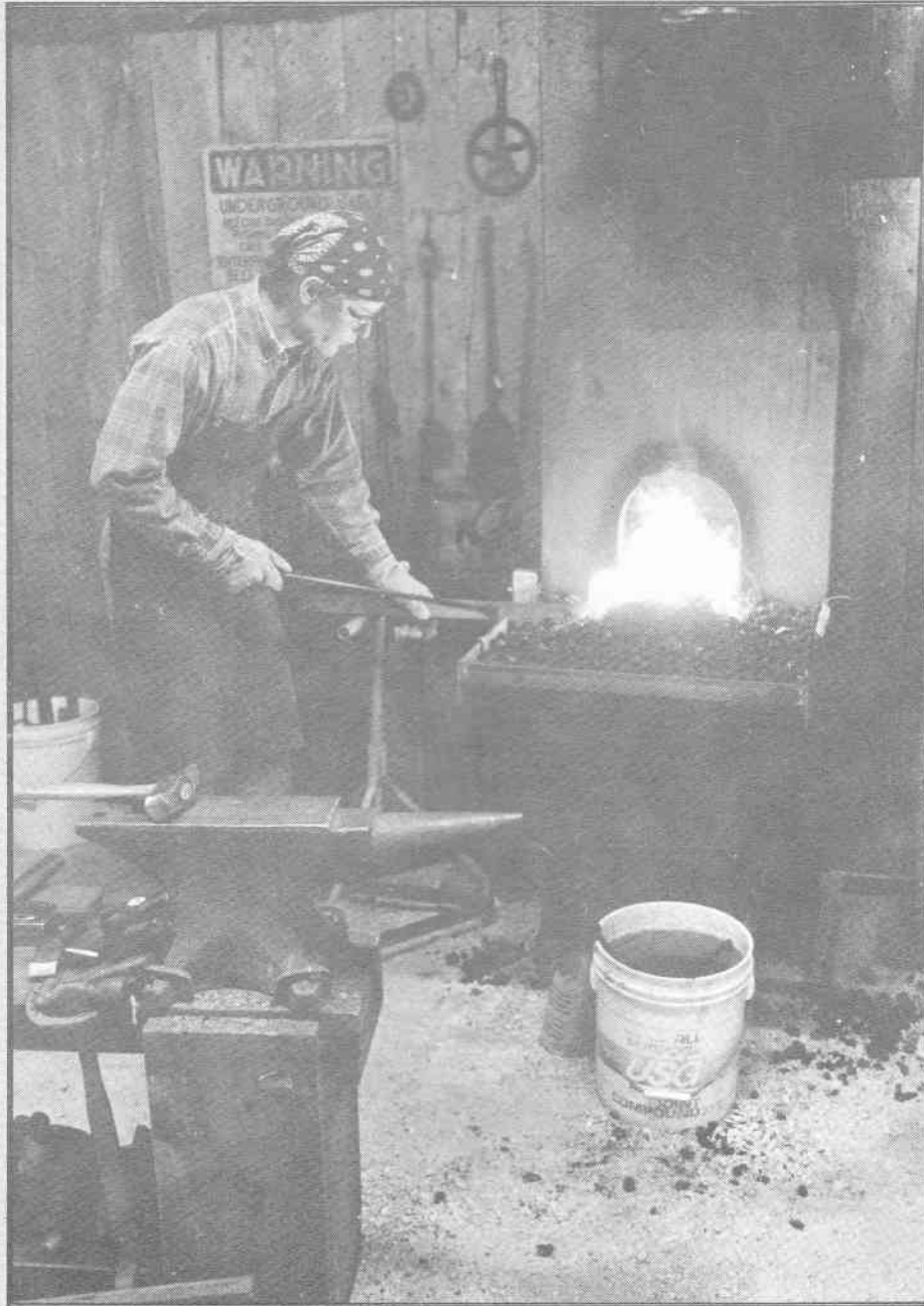


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NEWSLETTER of the BLACKSMITHS ASSOCIATION OF MISSOURI

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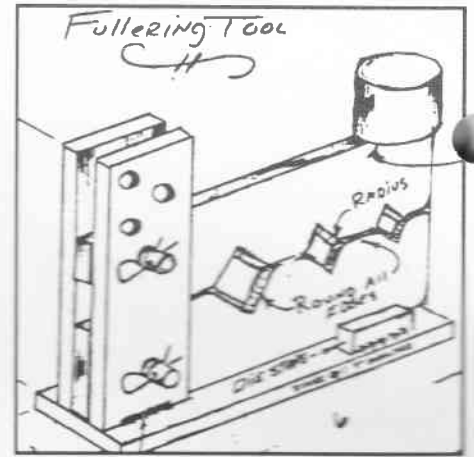
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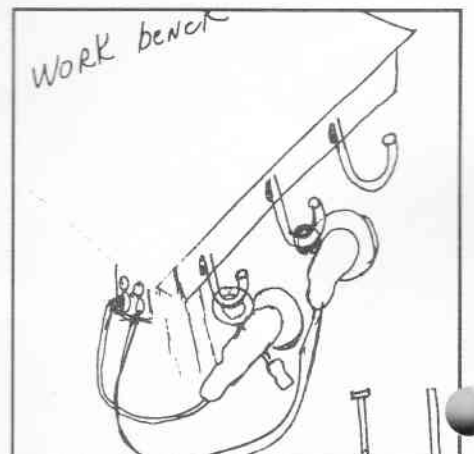
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Newsletter of the Blacksmiths Association of Missouri

March — April 1996

Volume 13 No. 2

Our cover: Don Asbee, one of BAM's founders, showed us how to forge the pretty end on a strap hinge at BAM's March meeting. Photo by Jim McCarty.

Editor

Jim McCarty

Contributing Editors

Roy Warden
Bob Alexander
Pat McCarty

Mailing Labels

Maurice Ellis

The Newsletter of the Blacksmiths Association of Missouri is published six times a year and is mailed to members of BAM. The annual fee for regular membership is \$20/year; a portion of this amount is for a subscription to this newsletter for one year. Editorial inquiries should be addressed to: Jim McCarty, 5821 Helias Dr., Jefferson City, MO 65101; (573) 395-3304. BAM membership inquiries should be addressed to: Gary Kobermann, 2337 Whitshire, St. Louis, MO 63129; (314) 892-2527. Occasionally some material will be copyrighted and may not be reproduced without written consent by the author. BAM welcomes the use of any other material printed in this newsletter provided the author and this organization be given credit.

ABANA Membership Application

Primary ABANA Chapter Affiliation: _____

Name: _____

Address: _____

City: _____ State: _____

Phone: () _____ Zip: _____

New Member Renewing Member

How did you learn about ABANA? _____

- _____
- Regular Member\$35 yr.
 - Senior Citizen (Age 65)\$30 yr.
 - Fulltime student\$25 yr.
 - Overseas airmail\$70 yr.
 - Overseas surface mai\$50 yr.
 - Contributory\$100 yr.
 - Public library.....\$25 yr.

See reverse

BAM

Officers:

President
Pat McCarty

1st Vice President
Bob Alexander

2nd Vice President
Vernon Fisher

Secretary
John Murray

Treasurer
Gary Kobermann

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

MasterCard VISA Check/Money Order

Card Number

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Exp. Date (Required)

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Checks must be in U.S. currency

SEND RENEWAL TO:

ABANA

P.O. BOX 206, Washington, MO 63090 (314) 390-2133

Dues Distribution:

1 year subscription Anvil's Ring: 68.5 % \$24

Adm. offices & other ABANA projects (Conferences, etc.): 31.5% \$11

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

The Newsletter of the Blacksmiths' Association of Missouri and its members do not manufacture, distribute, sell, test, warrant, guarantee, or endorse any of the tools, materials, instructions or products contained in articles or features in the Newsletter of the Blacksmiths' Association of Missouri. The Newsletter of the Blacksmiths' Association of Missouri disclaims 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 articles or features in the Newsletter of the Blacksmiths' Association of Missouri. The Newsletter of the Blacksmiths' Association of Missouri assumes no responsibility or liability for the accuracy, fitness, proper design, safety or safe use of any information contained in the Newsletter of the Blacksmiths' Association of Missouri.

Editor's anvil

If you want to get something done I set a deadline. That's what I did when I started my shop way back in August 1995. I scheduled myself for the March 1996 meeting thinking I would have plenty of time to build a shop and have it all wired and outfitted.

Of course I hadn't counted on Janice getting herself pregnant (OK, I helped out on that too) and all the problems that came along. As a result, when brother Pat, my dad and Joe Wilkinson showed up in late February to lend a hand I think they were a little overwhelmed by the amount of work left to be done.

At that point there were no doors, no interior walls, no wood stove, no forge, no floor where the forge was going, no wiring and no outside trim.

The four of us worked hard on a cold Saturday and made a big dent in it. Then Pat came back on two more weekends, doing more in one day than I could accomplish by myself working to midnight through the week.

Somehow things fell into place and the result was what you saw on March 30. It's a pretty nice shop when there aren't 100 people inside. I have 20x30 feet with concrete underneath and another 12x20 floored with fine gravel that's a little easier on the feet.

I have plenty of electrical outlets, because I spent 2 years in a shop with 2 plug-ins. I still have some hinges to forge, trim to hang and more wires to run but at least my stuff is under roof. How's your shop coming, Clay? Wish we had bet something on who would get done first.

Wish I could get out in the shop and forge something. Unfortunately, my right arm is aching from when I dug the trench for the wire — 135 feet with a pick and shovel. Everytime I try to forge something it hurts like hell, so I am trying to take it easy and get to know the kids again.

A big thanks goes out to Peggy Williamson for the basket of baby stuff she brought with her. That was a nice touch. Also many thanks to the demonstrators who made the March

meeting happen. We ran out of time so Bernie Tappel didn't get to do anything. Put him on first at your May meeting, Steve!

You may have noticed Patty Tappel wasn't at the meeting. I heard she has been hanging around a certain parking lot in Columbia, Mo. lately. If you see her ask her why.

I have been wondering whether there are any more old blacksmiths left anymore and in March I was fortunate enough to find one, Steve Ciocella of Marceline. It was interesting hearing about what he used to do — which was practically everything. Marceline is in the big coal belt in north central Missouri and part of his job was sharpening tools and making picks for the miners. He also sharpened a lot of plowshares, usually late at night because when you have ground to break you can't wait on the blacksmith.

Steve showed me a jig he made to cut down wooden wagon wheels and refit them to rubber tires. This happened a lot back in the '30s and '40s.

If you are trying to contact me via e-mail, you will find I don't answer. That's because I cancelled my America On-line account and am in the process of getting connected with Socket Internet Services. They move pretty slow so I don't know what the new address is yet. Will let you know so that we can stay in touch.

If you are on the Internet then you probably already know the blacksmithing community has a large presence there. Besides Artmetal and the ABANA Web Site, there are numerous chapters and even individuals like UMBA's Franklyn Garland who have their own web pages established.

Recently a friend of mine was browsing on the web and I asked him to type in the word blacksmithing in his search engine. He came up with more than 50 hits, including many historical sites that have shops.

Hope this one reaches you before the Ozark Conference. We need your help for our auction to be a success. If everyone will donate an item and then bring your wallets Saturday night we will bring in some needed income. Also, help spread the word

around and bring a friend with you.

It's also time to nominate someone to be a BAM officer for the coming years. Nominations need to be in for the May meeting and our election will be held at the July meeting. If anyone has any suggestions on the election process let Pat know.

This issue was kind of rushed to get it out in time for the conference. I hope everyone will read the article on holding the hammer. I had seen this article in the Guild of Metalsmiths Newsletter but didn't take the time to read it. Now with my arm bummed up it really caught my eye in Clay Spencer's Bits. It has some of the most sage advice I have seen on hammering and can save you a lot of trouble.

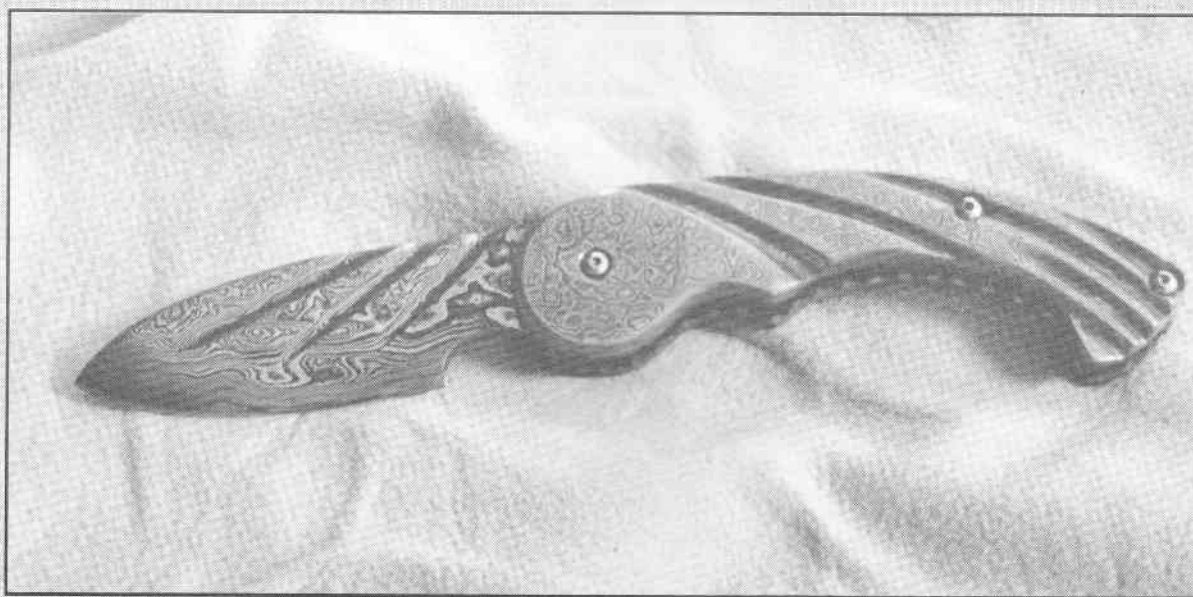
Thanks to Roy Warden, Pat and Bob Alexander for providing material to fill these pages. Looking forward to articles from the rest of you, especially those scholarship winners who haven't paid their dues yet.

Hope to see you in Potosi.

—Jim McCarty

New Knives by Roy Warden

This pair of knives was forged by Roy Warden of Union, Mo. The Hunter's Drop Point at right is a mosaic of 1095 and 203-E. Note the silver wire trim. The folder, below, is made from 384 layers of 203-E and 1095. Nice job Roy, send more photos!



Pat's Place

Even though the weather was nasty we may have set an attendance record at our March meeting. We figured about 95-100 members were present at Jim's shop.

Since Jim's shop is new it wasn't full of all the essential junk and stock we acquire over the years. This meant there was plenty of room for everyone to mingle and watch the demo's. Don Asbee started us off with a hinge demo at Jim's request, it seems Jim's big doors are held up with "C" clamps. I was next at the forge and I demo'd some rosettes from the "Blacksmiths Journal".

I really like Jerry's designs, I think I'll be using them on the trunk I'm making for the ABANA Conference auction. Lou Mueller took us up to lunch with his demo of techniques for stamping and drawing out large bolts into thin strands. Tom Clark and I teamed up to strike for Lou and Tom proved that he can still hit hard with only half a thumb.

Lunch at J.R.'s was great, 76 lunches were served. We held the business meeting after lunch and Lou finished up his demo. Walt Hull took over and made a clinker fork for Jim's forge. There was a lot of rusty iron for sale and the new B.A.M. T-shirts and hats were a big hit. We've collected about \$400 for the J.K. Reynolds Scholarship Fund. We only need a little more to award another scholarship at the conference. Send your donations to Gary Kobermann as soon as possible as the conference is just around the corner.

I would like to compliment everyone who participated in the Trade Item, we had a vast array of chisels. Excellent job by all involved. The Trade Item for Steve Austin's meeting will be a railing baluster. This will be a good place to try out those fancy twists we've seen

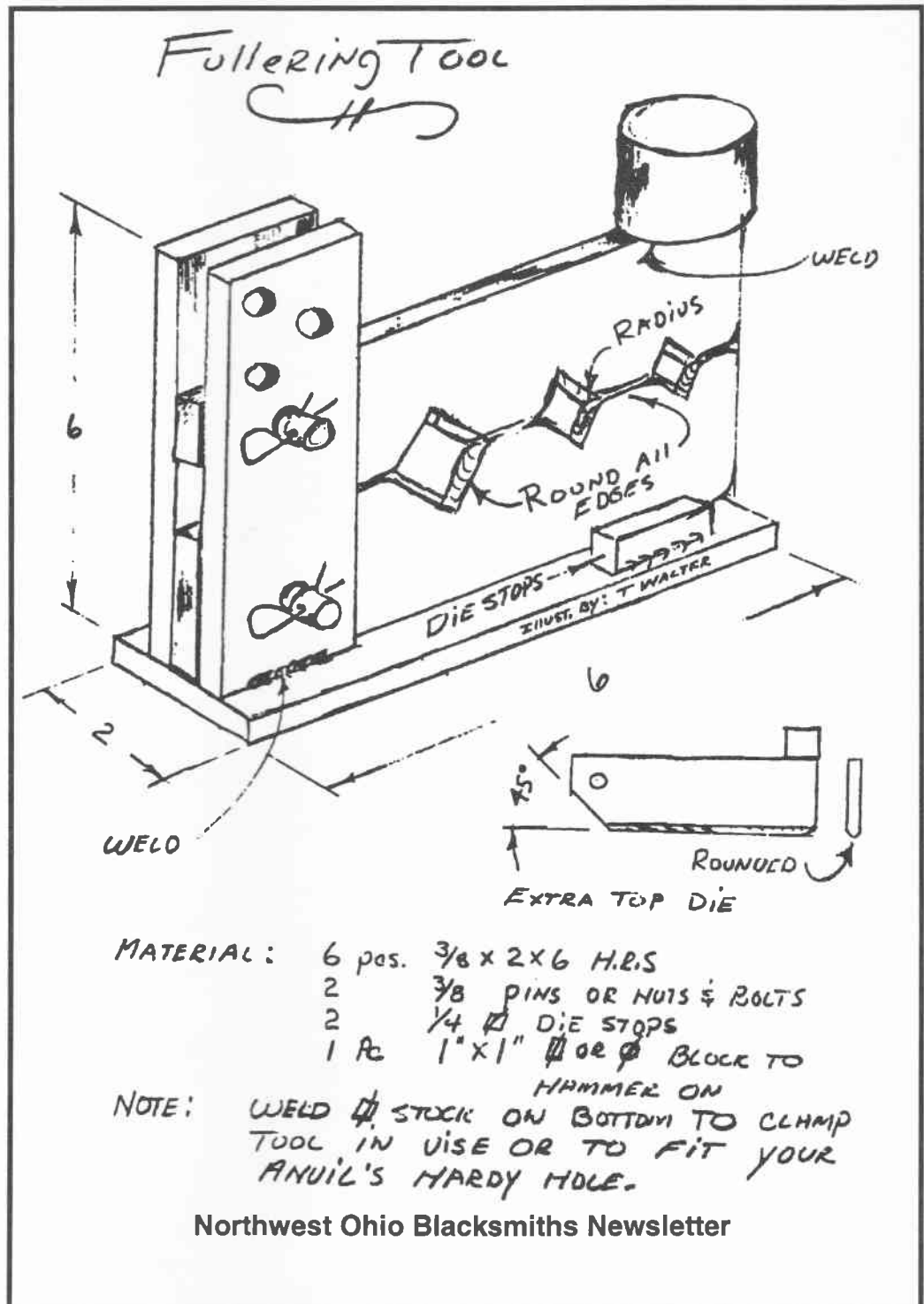
demo'd. Also at Steve's meeting we will accepting nominations for election of officers.

As I've been president for the last two terms I'll be stepping down and let someone else take over. It's been a lot of fun being president for such a fine group. If you want to run for office send your nomination to any of the officers or come to the next meeting. We'll publish the candidates and

vote at the July meeting.

Maurice Ellis assures us that splendid weather is ordered for the weekend of the conference. Should be an excellent conference this year. We've added a few new wrinkles, guaranteed to interest everyone. That's all for now, see you all in Potosi!

— Pat McCarty



BAM

MARCH

MEETING

Over 100 BAM members found Taos, Mo. and somehow BAM editor Jim McCarty got his shop together in time for a successful March BAM meeting. It's been a long time since we had so many folks gathered in one place and so many super demonstrators — sort of a warm up to the Ozark Conference.

Don Asbee, one of BAM's original founders, showed up early with a trailer full of tools and was quickly persuaded to get things started. While Don doesn't do much without his trusty Ellis brand air hammer these days, he still knows how to swing a hand hammer.

Don showed us how to put the pretty end on strap hinges. Using a piece of 1/4 by 1-1/2, he made two deep fullers to isolate a square piece of stock. Then he forged this to round shape and drew out a point for a traditional end. The rest he tapered back to the hinge area. The host has to forge 5 more to match for the swinging doors on the forge end!

When Don was wore out Pat McCarty took over. Pat came to the meeting armed with several decorative rosettes he learned from Jerry Hoffmann's latest Blacksmiths Journal. These are used behind rivets and bolts.

Next came Maurice Ellis, who put on a demo most of us had never tried, nail making. Maurice used the time spent heating the metal to give us some of the history of nail making and

to show how he made the nail head he was using.

About this time Lou Mueller showed up. Lou had spent a few days with Doug Hendrickson and got a good taste of travel in rural Missouri coming to Taos from Lesterville.

Lou had a trunk full of tooling he has been perfecting. Lou has been playing a lot in his spare time, so much so that we accused him of doing nothing but playing.

Part of his demo was that forgotten part of the anvil, the horn. Lou slit a piece of stock and worked it round on the horn. (Later Drew Johnson put the technique to use on a beer can holder.)

Lou really gave the anvil a workout especially when Tom Clark and Pat started striking for him.

We had one of the best turnouts ever for the trade item, which was a "wood or metal" chisel. Several small alecks took some liberty with the host's description, bringing chisels "forged" from wood. Most unique was Walt Hull's effort with a wood blade and iron handle.

We also had a tremendous effort on the iron in the hat with some real nice items to win and plenty of people willing to dip into their wallets for tickets.

There was also a good selection of tools for sale on trucks and vans scattered around the parking area.

Somehow the rain held out until afternoon, when most people had left or we would have had a lot of trucks stuck. As it was the only one who got stuck was the host, whose truck stalled where all the water ran down the hill. That area has been plowed and I am going to call it a garden now.

Walt Hull and his friend George spent the night, and we kept the fire going until late Saturday night. Phil Cox, the Williamsons, Scott Stager, Drew, myself and my two little boys went at it until Daniel got a little fussy and wanted his dad back.

The next day the rain had washed out most of the tire tracks and I found a new clinker picker (thanks Walt), a fire rake (thanks Pat), one hinge (thanks Don), a bacon turner (thanks Phil), a nail header (thanks Maurice) and a big hunk of Bethlehem non-tempering tool steel (thanks Tom Clark) took that big hunk of steel Tom le

Below: Don Asbee strikes an unfamiliar pose, swinging a hand hammer instead of his trusty "Ellis" brand air hammer. That's Scott Stager helping out with the sledge.



behind and made some real big nails.

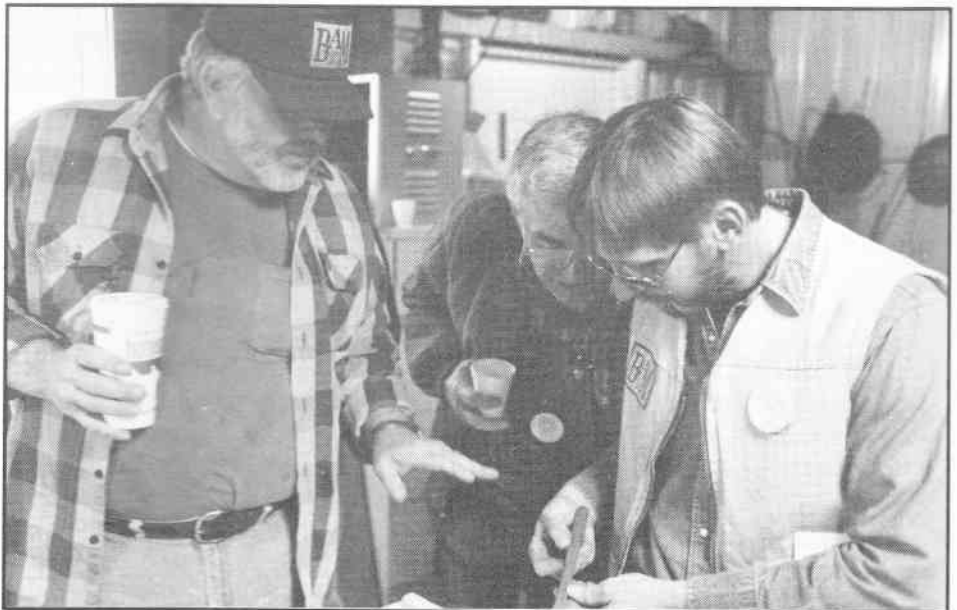
Hope everybody had as good a time as I did. Hope to have you all back sometime — but not all at once!

Minutes

- Thanks to Jim and Janice for hosting us.
- Minutes approved as published.
- Faust Park demo schedule is in order. Contact Bob Alexander for info.
- JK Reynolds memorial cross is finished, looks great. JK Scholarship fund has \$382 today. Pat called for members to chip in so we can fund a scholarship at the conference.
- Coal is in at Lou Mueller's, \$7.50 per bag.
- ABANA 1996 Conference coming up soon. Tom Clark is in charge of iron in the hat. Pat McCarty is making a fine wooden tool chest. BAM members are encouraged to donate or make tools to fill it.
- Tom Clark has Francis Whitaker coins for sale, proceeds to Francis Whitaker Scholarship fund.
- Pat brought the button machine. If you need a name button see him.
- Jordon Metal Works, Jackson, Wyoming, is looking for a journeyman. Details in newsletter.
- New T-shirts and caps are in.
- Maurice Elis spoke on 1996 Ozark Conference. Splendid weather is ordered and a good time will be had by all.
- Bruce Herzog is new librarian. Donations encouraged.
- Ken Valdejo spoke on "Blacksmith" auction at Ozark Conference. New idea, six BAM members will spend a day with winners at auction, showing and demonstrating their particular skills one-on-one.
- BAM chess pieces are done. We need someone to make the BAM pennants to go on top of the castles. See Pat McCarty.
- Iron in the hat brought in \$210.
- Scholarship applications are in the newsletter.
- Auction donations for Ozark Conference encouraged.
- Elections in July 1996.
- Next meeting at Steve Austin's. Trade item will be a stair balluster, must be 36 inches long by 5/8 inch square.
- Meeting adjourned.



Above: Lou Mueller, dressed in his costume from the *Pirates of Penzance*, wowed us with some gadgets and interesting sculpture he has been playing with. Below: Ken Markely, left, tells Maurice Ellis and Pat McCarty how to make a trade item.





President's message March 1995

February was a very cold month in my part of the country and many other parts according to the weather channel. A forge fire will always warm your heart but it doesn't do much for your feet when the weather makes the shop really cold. I have visited several shops that are properly heated for winter comfort. They are for the most part shops that provide all or the bulk of the owner's income. The part time smiths and those that smith as a hobby shut down the forge during cold weather or find a way to provide temporary heat.

Providing makeshift heat for a shop can present several hazards. These may include leakage or spillage of fuel, improper ventilation, inadequate oxygen and creating heat too close to combustible materials. If you have to provide temporary heat for your shop be aware of the possible hazards and deal with them before they present you with an unwanted problem.

By now you should have received your registration packet for the 1996 ABANA Conference. I have said before and I say again I have never attended a bad conference. I first attended an ABANA Conference in 1982 here in West Virginia, about a 45 minute drive from my shop. I have not missed one since. They have all been good conferences and I am convinced that the 1996 Conference will be another outstanding one.

If you are going to the Conference I encourage you to register early and I encourage you to consider donating something to one of the auctions or to the Iron in the Hat. These fund raisers help us support programs that provide benefits to our chapters and to our members. ABANA is financially sound but it certainly is not over funded. Your donations will be appreciated.

It is not too early to start thinking about who will be running for the ABANA Board in our next election. If you are not interested in being a candidate yourself but know someone that you think would be a good director, you should encourage them to run. Just to refresh your memory ABANA has 15 directors, each serving a three year term. The terms are staggered so that five directors are elected each year. The directors elect ABANA officers at the annual board meeting that follows the election of directors. We want all of you to be a part of the election process.

Safety awareness is becoming more and more apparent. I have noticed at recent meetings I have attended that safety glasses are available for those that forgot to bring their own. Help in providing safety awareness is coming from Newsletter Editors, Chapter Officers and Conference planners. Keep up the good work. We will all benefit from your effort.

Joe Harris
ABANA President



Maurice L. Ellis, Chairman
314-766-5346

Ozark Blacksmith Conference

May 3, 4, & 5, 1996 - Potosi, MO, Lions Club Park

Demonstrators: Dorothy Stiegler
Bob Haverstock
Jay Burnham-Kidwell

Friday, 6 pm-?

Fish fry 6-7 pm
Forging contest 7-8:30 pm
Bonfire 7 pm

Saturday, 8:30 am

Opening 8:30 am
Demonstrations 9-12 n
Lunch 12-1 pm
Demonstrations 1-4 pm
Forging contest 4-5:30/Dinner 5-6:30 pm
Auction (w/Tim Ryan) 7 pm

Sunday, 7-12 noon

Breakfast 6-8:30
Demonstrations 9-12 n

**\$25 for Fri.-Sun. (in advance) \$15 for One day.
\$11 for 3 meals (Sat. lunch & dinner. Sun. breakfast)
Tailgate sales and camping free to registered participants.
Motel accommodations furnished on back of flyer.**

Registration Form

Name _____ Phone #(_____) _____ - _____

Address _____

City _____ State _____ Zip _____

# of people		Amount of money
___	Registration for one day only - \$15/person. <u>Circle Day:</u> Saturday Sunday	\$ _____
___	Registration for entire conf. - \$25/person before 4/15/96---\$30 after 4/15/96	\$ _____
___	Meal ticket - \$11/person ___ Friday fish fry - \$6/person*	\$ _____

Send registration form and payment or request for additional information to: Maurice L. Ellis
Route 1, Box 1442
Belgrade, MO 63622-9801
Total enclosed: \$ _____

*Friday Fish fry is free to each participant who has preregistered by April 15, 1996. Spouse and children must pay for the Fish fry unless they have registered and paid for the conference.

SEE MORE INFORMATION ABOUT THE CONFERENCE ON THE BACK OF THIS FORM

Spouses' Workshop

YO YO's Quilting Concepts
to be taught Saturday 9 am-noon
by Evelyn McCarty

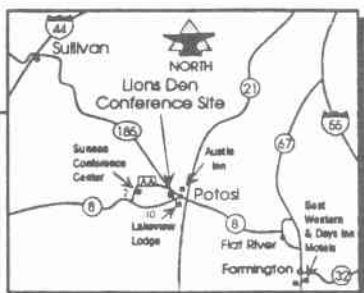
Cost of the class will be \$15 which includes a \$10 supply kit. The class will cost \$5 if a participant supplies her own materials. A supply list will be furnished with registration for the Spouses' Workshop. The Registration Form for the Spouses' Workshop can be found elsewhere in this Newsletter.

Forging Contest

Forging contest (Demonstration Bldg) to be held Friday evening from 7-8:30 pm and Saturday afternoon from 4-5:30 pm. The contest will be to draw a piece of 1/2 inch square rod down to a square taper in one heat in the forge. The winner will be the forged piece with the longest and smoothest taper.

- 1st place - \$20
- 2nd place - \$15
- 3rd place - \$10
- 4th place - \$5

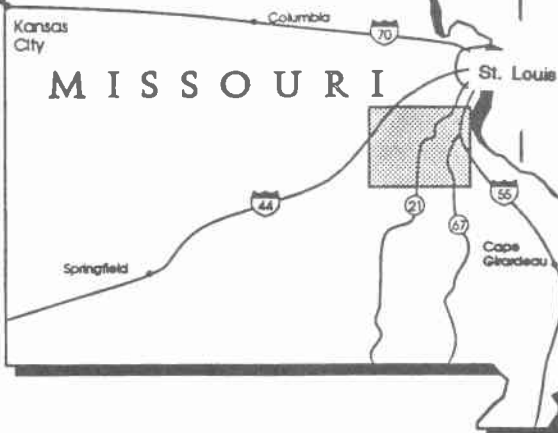
Complete rules will be supplied at the Conference. Decisions of the judges are final.



Lodging Information

- Suncoast Conference Center, Potosi (314) 438-2154
- Best Western Farmington, (314) 756-8031
1-800-528-1234
- Days Inn Farmington, (314) 756-8951
1-800-325-2525
- Austin Inn Potosi (??), (314) 438-9002
- Super 8 Farmington, (314) 756-0344
- Budget Inn, Desloge (314) 431-4001
- Rosener's Inn, Park Hills (314) 431-4241

There is free camping on the conference site, but no hookups are available.



BAM

 Ozark Blacksmith Conference

An auction item will be appreciated from any participant who would like to donate one. Proceeds from the auction go to support BAM activities and scholarships. The auction will be held Saturday evening at 7 pm at the Lions Club main building. Colonel Tim Ryan is the scheduled auctioneer.

Family members may attend the conference at no charge, except for meals and spouse workshop. Meal tickets may be purchased with advanced registration (see Registration Form on the reverse side). Meals at the conference site may be purchased separately at meal time. Friday fish fry-\$6. Saturday lunch-\$3.50. Saturday dinner-\$5. Sunday Breakfast-\$2.50.

Please check appropriate spaces:

Yes, I desire tailgate space (free to registered participants).

Yes, I wish to participate in the forging contest (free to registered participants). I prefer to participate in the contest on: (Circle one) Friday (7-8:30 pm) Saturday (4-5:30 pm)

Yes, my spouse is registering for the "Spouses' Workshop" on the registration form elsewhere in this Newsletter.

SEE MORE INFORMATION ABOUT THE CONFERENCE ON THE REVERSE SIDE OF THIS FLYER.

A KNOT TYING JIG

by Al Cannella

Doug Verble, a member of the Appalachian Chapter of ABANA, used to be very active as a scout leader but now spends much of his spare time developing techniques for his blacksmithing work.

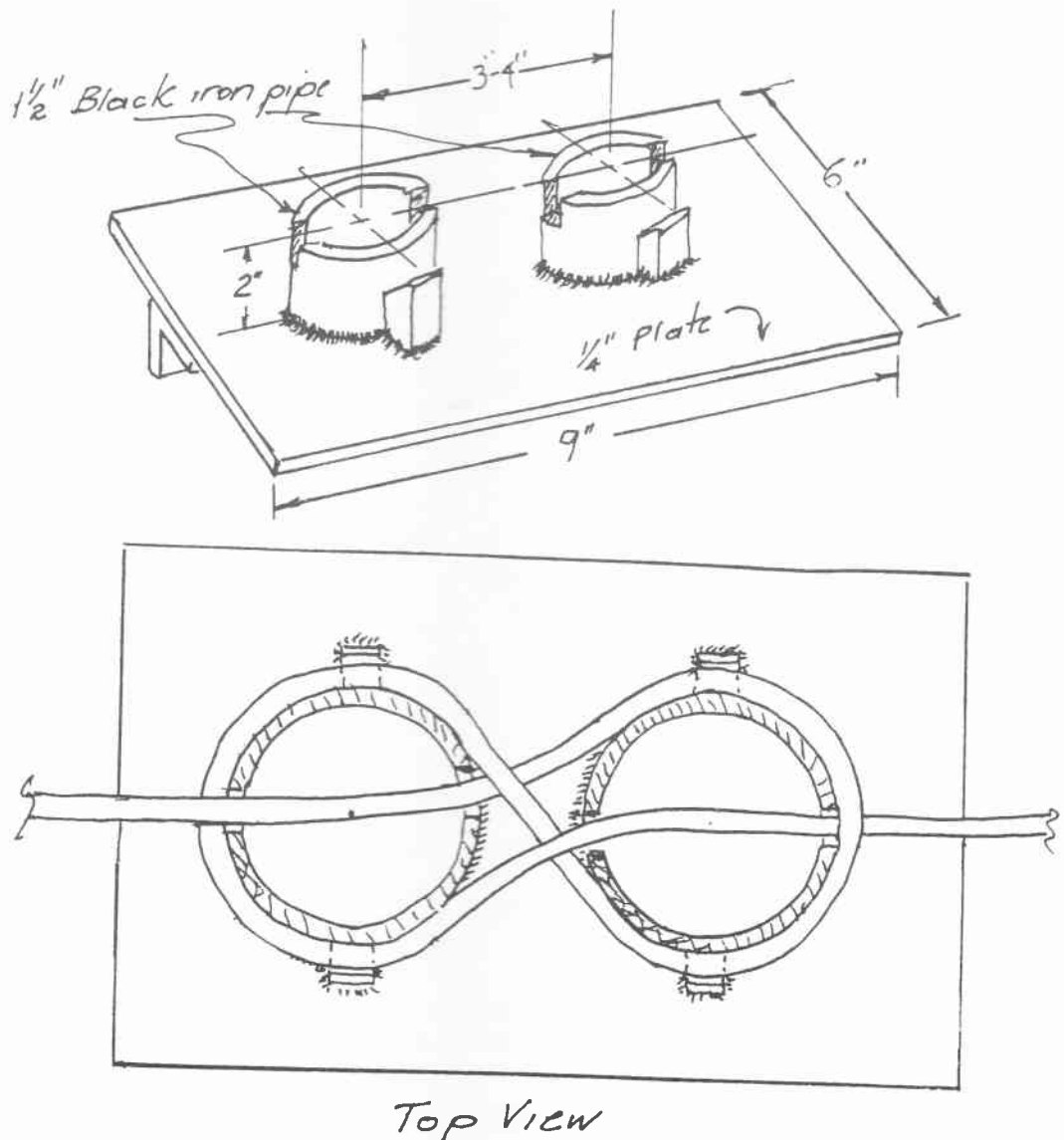
In particular, as an expert tyer of knots, he has made jigs for forming many of the standard rope knots using $1/4$ " round or square rods. Shown below is his jig for forging a figure 8 knot.

Using two pieces of $1\ 1/2$ " diameter black pipe with slots $3/8$ " wide by $1/2$ " deep 180 degrees apart, welded to a $1/4$ " plate on 3"-4" centers, he can make perfect knots every time.

To keep the loops in place 1-inch square guides are placed 90 degrees from the slots. The interior slots are offset by $1/2$ their widths.

Also, a piece of angle iron is welded to the bottom of the plate to mount in vise.

Doug uses these completed knots for handles, wall hooks, sconces and numerous other unique items.



AAC '96, Feb

Welding Tips from Al Bart

by Bob Thomson, Loomis, California

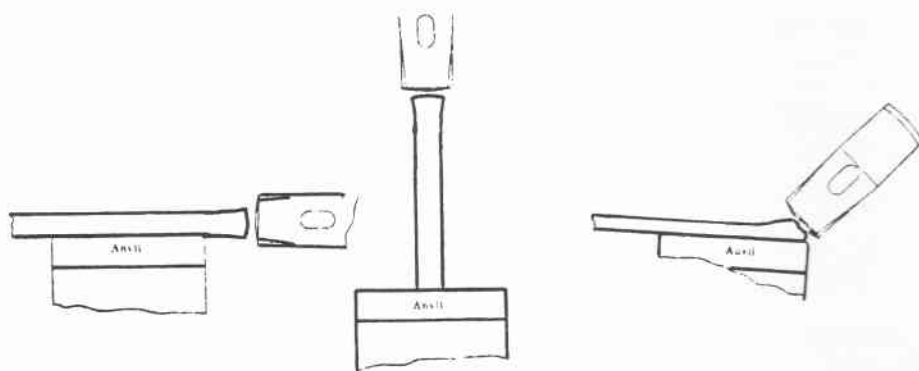
Some of the drawings are from *Plain and Ornamental Forging* – Schwarzkopf.

"As an apprentice we were taught many of the right ways to work. But as the years went by, we began to 'fudge' and take shortcuts. This is fine when you are experienced. Here are some things the old-timers taught me when I started. We'll talk about a lap weld with 1/2" square hot rolled.

First we shape the ends of the pieces to be welded. This is called *scarfing*. We generally *flux* steel to allow the scale to melt below the welding temperature. The *way we scarf* allows the flux, dirt and scale to be forced out as the weld is made. The scarfs must be heated almost to the melting temperature of the steel. The scarfs must be properly positioned – fast, light hammer blows – and a successful weld!"

Forming the Scarf

1. Upset the ends to be welded. This will allow enough material for some scaling and hammering which draws out the steel. (We usually do not upset 3/8" or smaller.)

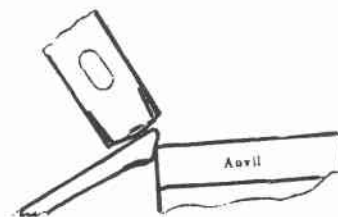
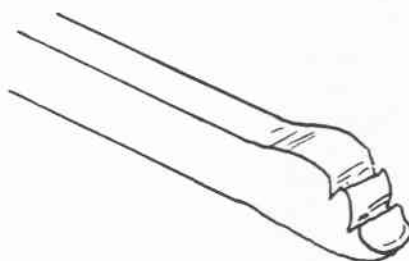
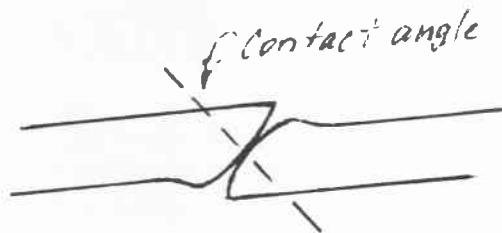
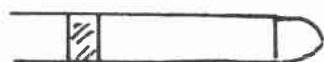


2. When shaping the scarf, make the weld area *convex*. Then, when welding, the scarf centers will touch first – forcing out the dirt, etc.

Our goal is to have the scarfs fit together well.

"I find making cuts or notches in the scarf helps hold them together as I start the weld."

With small metal, the end of the scarf is frequently bent up. This keeps the end off the anvil and it doesn't lose heat.



California Blacksmith

Prior to Welding

1. Get the right hammer. A big hammer may be fine for forming the scarf, but for welding material under 1", use a light hammer (Our goal is to weld – not to *kill*). For ½" stock, a 12-oz. or 1-lb. hammer is good. A 2½-lb. hammer is wrong. Once the weld is made, change hammers. **The correct hammer is part of hammer control.**
2. **PRACTICE** how you will make the weld. How to take it out of the fire (don't drag it through the green coal. Raise it straight up.) How you will touch the pieces on the anvil (*and make sure the thin tip doesn't touch the anvil*). How you will make light, fast hammer blows.
3. The coal fire. Even though the fire looks good, Al finds it best to look for and remove clinkers. Get a good fire going, 3" to 4" of burning coke below where you'll place the steel and 2" or more of burning coke above the steel. All this burning coke will keep the oxygen from the steel and will keep scaling to a minimum.
4. Capable smiths can weld without flux, but they generally do use flux. There are many commercial fluxes available, but borax works well and it is cheap. Look in your market's soap section. You want **20 Mule Team Borax** – about \$4 for 5 pounds. You DON'T want **Boraxo**, which is powdered hand soap.

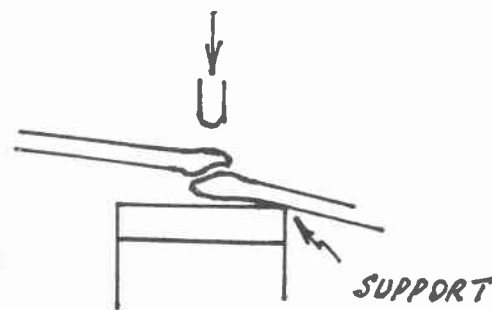
Welding

1. Heat the scarfed ends to a red. Put borax on the scarf (some smiths put the borax all over, on the back side and up 2" above the scarf.) Watch the borax melt and flow over the scarf. Place the steel in the fire, scarf up.
2. Heat until the scarfed ends are almost the same color as the fire. Rotate the steel placing the scarfs down. Heat for a few seconds until the back of the scarf is a clear, milky coat. Both pieces must be the same color as the fire. **THIS IS A WELDING HEAT.** If you heat until sparks appear above the steel, you are burning some carbon. A little burning and the weld may not be the best. A lot of burning and you've failed!
3. With a welding heat, remove the steel, quickly tap the scarfed ends to remove the dirt and scale. Position the scarfs on the anvil. Quickly, hit fast, light blows on both sides. At a welding heat, the steel is soft. Hit it fast and easy until the steel hardens.

If you are concerned about the weld, put it back in the fire, bring it to a welding heat again – rehammer the weld and dress it up. Once welded, test it. Tap the weld on the anvil. It should bend uniformly. If a tip of one scarf pulls away, flux, reheat and weld it. Once welded, use the correct weight hammer to draw the weld area out to match the stock.

Refining the Steel Next to the Weld

This is required for tool steel. The steel near the weld was very hot for a long time. While it was hot, the crystals grew in size. Large crystals reduce the strength of the steel. There are two ways to reduce the size of the crystals – annealing or refining. The quicker way is to refine. Reheat these areas to a red and lightly hammer until cooled to almost black.



"Use extra heats. Take time to do a good job. Be proud of your work."

It took longer to read these details than to weld. Start in. Each weld will be easier. □

How to Hold and Use a Hammer

by Monty Bygd, Eau Claire, Wisconsin

With all the new people starting to blacksmith, it must be time for someone to write an article on how to hold and use a hammer. While I know nothing about bone and muscle structure, I have made some observations while watching many demonstrators hammer during the past 15 years. I have seen 200 lb., 6 ft tall men use a ½ lb. hammer and tell about the trouble they have with tennis elbow and tendonitis. I have also seen 160 lb., 5 ft. 6 in. tall men use a 6 lb. hammer with no physical problems with their arm or elbow.

How could that be? It is my opinion that when at least 70 percent of the hammer blow is from the shoulder, no problems arise. But when the shoulder is used very little and the elbow does about 80 percent of the work, physical problems will develop.

Three joints are used when swinging a hammer: shoulder, elbow, and wrist. The shoulder has the biggest joint, the elbow has the next biggest, and the wrist has the smallest. If the shoulder has the biggest joint, it should be doing most of the work and the wrist should do the least. The wrist should be saved and used for riveting and planishing.

With all the camcorders around, it would be easy to have someone tape a side view of us to see how we swing our hammer. If you observe that the elbow is doing most of the work, you probably better change your style or physical problems could require you to change your profession.

I have been told by beginners who attended hands on workshops that they sure had a good time but that their arm was sore for days afterwards. So I usually ask, "Did anyone show you how to hold a hammer and how to swing it?" The answer is always "No". So now when

I work with new smiths, they have to put up with my spiel about holding and using a hammer.

I know of only two ways to grip or hold a hammer: The first one I will call a full grip—that is when your fingers and thumb are wrapped around the handle. The second (the one I use) is when you place your thumb on top of the handle. I have been told by some smiths that when they tried the thumb on top hold that it really made the top of their arm hurt. That is when I say "Don't hammer with your thumb! Use the hammer".

The hammer should be held as loose as possible. Most beginners have a tendency to squeeze the handle so hard that I swear if you were to measure the handle before and after four hours of use it would be two inches longer.

Full Grip. (Figure 1) The only time to have a full grip is when the hammer is in contact with the iron. On the way back up, the handle should be held only by the index finger and thumb; the other three fingers should be somewhat open until you start down, then only tighten up only enough to keep the hammer in contact.

Thumb on Top. (Figure 2) As the hammer is coming up, it should be held by the little finger and the heel of your hand. The three fingers and thumb should be loose.

If you have a good anvil, the hammer will come up by itself. The hand and arm should only be used as a guide and the hammer will do the work.

The hammer should start above the head with the elbow about head high, unfolding as it comes down until the arm is straight or nearly straight, depending on the height of the anvil. (See figures 3 - 6). While I am not an artist, I

How to Hold and Use a Hammer

did attempt a simple drawing to illustrate the movement. You want to avoid using the hammer motion in Figure 7 where most of the arm movement is done with the elbow.

One other thing to keep in mind is that a runner would never go out running without at least a few good stretches first. But many of us think nothing of getting up and going right to work, many times having exercised the elbow

only by having a cup of coffee. So stretch those tendons and muscles a little by at least stretching the arm out and making a few fists, tightening up and relaxing the tendons and muscles.

If anyone has any additions or corrections to my suggestions, I would welcome them.
Monty Bygd, Rt. 2 Box 210, Eau Claire, Wisconsin 54703



FIGURE 1.

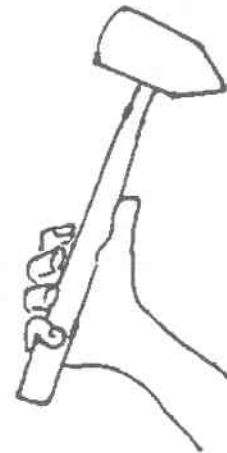


FIGURE 2.

Reprinted from the newsletter of
The Guild of Metalsmiths,
Volume 20, No.1, February, 1996



FIG. 3
Shoulder



FIG. 4
Shoulder



FIG. 5
Shoulder
&
Elbow



FIG. 6
ELBOW



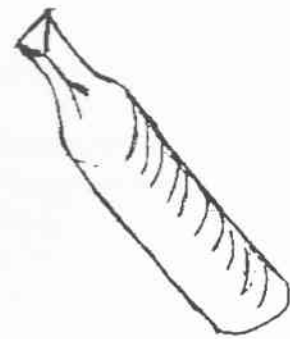
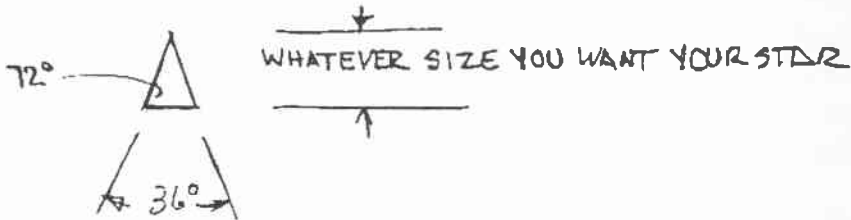
FIG. 7
NOT THIS

Five Pointed Star Punch

WIZARDS NEED CRESANT MOONS AND STARS ON THEIR HATS!
 BUT BOY, A FIVE POINTED STAR IS HARD ENOUGH TO DRAW, MUCH LESS
 FILE INTO A PUNCH TIP.

TRY THIS:

ANNEAL YOUR FAVORITE PUNCH/CHISEL STEEL (I USED A ROUND
 PUNCH MY GRAND FATHER HAD MADE FROM A RAT TAIL WOOD RASP).
 BELT SAND OR FILE A TRIANGLE AT THE TIP,
 KEEP WORKING DOWN 'TIL YOU HAVE AN ISOSCELES
 TRIANGLE WITH THE SMALL ANGLE BEING ABOUT 36°



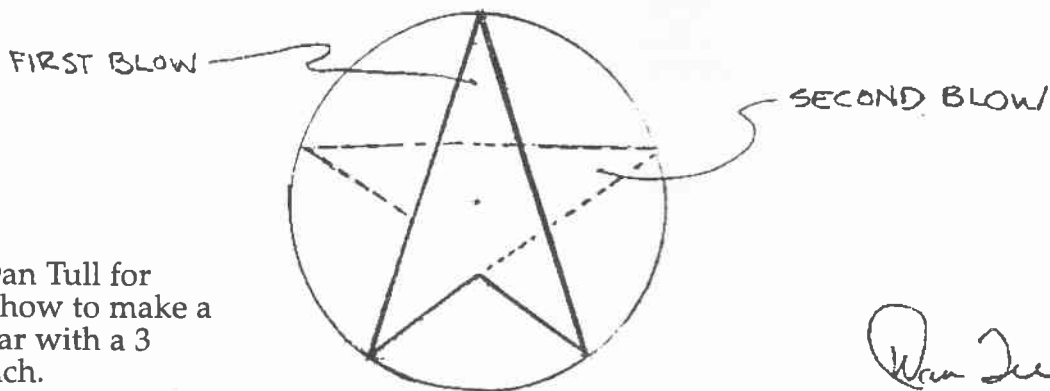
FILE A NOTCH IN THE CENTER OF THE SHORT LEG.

KEEP WORKING THIS DOWN W/TRIANGULAR FILE
 TILL THOSE TIPS ARE 36° ALSO.



OK, I DIDN'T HAVE A 36° PROTRACTOR EITHER, BUT YOU CAN EYEBALL THIS
 TEST BEFORE YOU HARDEN & HEAT TREAT.

YOU SHOULD BE ABLE TO GET PERFECT STARS WITH TWO LICKS.



Thanks to Dan Tull for
 showing us how to make a
 five point star with a 3
 pointed punch.

Dan Tull

For sale: Bantam Ironworker, lots of dies, \$1,000. Mayer Brothers/Little Giant 50-pound hammer, good bearings, center clutch model. No motor, \$1,000. Treadle hammer kit, fixed design, no spring or treadle. \$350. Call Don Asbee (573) 657-4185.

Heavy duty frying pan blanks, steel, approx. 9 inches diameter with 2 inch sides — 12 gauge (.095) thickness. Has two 3/16 inch holes for your decorative handle, \$7.75 each, \$7 for 5-9, \$6 for 10 or more pans. Shipping \$2.50 plus 50 cents for each pan. Bob Tuftee, 3855 Aspen Hills Dr., Bettendorf, IA 52722.

For sale: Aprox. 3,000 pounds of nuts, bolts, carriage bolts square & hex, machine screws. Mostly 1/2 inch and up, not galvanized. New but lightly rusted from flood. Cheaper than dirt at 25 cents per pound, bring your own container. Joe Wilkinson, (573) 943-6779.

Announcing: New how-to Manual for beginning blacksmiths titled: 101 Metal Projects for the Novice Blacksmith, by Al Cannella. This is a how-to shop manual for beginning blacksmiths with step-by-step explanations and clear drawings to insure successful completion of each project. Available postpaid for \$29. Write to: Al Cannella, 1310 Walter Reed Rd., Cookeville, TN 38501.

For sale: 70 pound ram air hammer. Total weight 1,000 pounds, 180 blows per minute. Requires 5 hp 2 stage air compressor. \$2,500. Also 25 pound ram air hammer. Total weight 400 pounds, 180+ blows per minute. Can be operated with small air compressor (3 hp, 20 gallon tank). \$2,000. Contact Maurice Ellis, (314) 766-5346.

David Oliver always has swage blocks — custom cut to your design or his — for sale. He usually has a power hammer or two and all sorts of other stuff for sale. David Oliver, PO Box 3452, Bristol, TN 37625, or phone (615) 878-5712.

For power hammer parts machined to your specs give Russell Cashion a call

at (615) 731-3215. He also has a 1,000-pound and a 700-pound anvil for sale.

BAM now has new T-shirts and caps with the old triple-striker logo (who are these mystery blacksmiths?) Sizes are small, medium, large, and Doug Hendrickson. Any color as long as it is black or red. Shirts are \$10 and hats are \$5. Pick one up at the next meeting or contact president Pat McCarty, (314) 239-3814 and he will ship you one.

—NEWSLETTER EDITORS NOTE—

Want to trade t-shirts? BAM will trade even up your shirt for ours to use in Iron in the hat. Contact Pat at the above number if you are interested. We have several styles including the fabled Ozark Conference shirts in demand by polite company. For an extra charge we will get a real BAM member to sweat in them.

For sale: 50 pound Little Giant, one of first 500 made, with hole in center, real rusty but complete. Has piece missing where lower die is. This is a very old hammer, probably made around 1900. \$500. Hawkeye No. 2 Helve hammer, swings a heavy hammer with top and bottom dies. Oil it up and it's ready to go. \$500. Hossfeld No.1 bender with lots of dies, new price for all would be more than \$1,500. Includes original manual from '50s. \$300. I have several Champion 400 blowers, real rusty but restoreable. \$25 each. Champion 20 inch drill press, heavy duty machine, self feed, needs to be freed up but otherwise in fine shape. \$200. Two swage blocks, perfect shape, 15 and 13 inches square, one is 3" thick other is 5" thick, lots of hex, square and round shapes, weigh 160 pounds, \$250 each. Champion electric blower set up for gas forge, has burner pipe with inlet for gas, motor shot, \$30. Champion blower, runs on flat belt, about 14 inch blades, \$30. 14 inch grinder on pedestal, needs motor, \$40. Very old 3 horsepower electric motor, single phase, \$40. Cannedy-Otto post drill, huge, with auto-stop depth gauge, perfect shape, \$35. Sick-

BAM

Bulletin Board

le mower grinder, electric powered with hold down for blades, could be used for knife grinding, whatever, \$25. May have more stuff — call me if you're looking for something. Jim McCarty, (573) 395-3304 or (573) 659-3421.

Jordan Metal Works is looking for a journeyman smith who can fabricate as well as forge. Tig experience helpful. Wages will reflect experience and merit. Send resume and two pictures of work to Jordan Metal Works, PO Box 3285, Jackson, WY 83001 or call (307) 739-2210.

Wanted: Your stuff for sale. Send your classified ad to the BAM editor. Adds are free to BAM members and anyone who has something to sell to a BAM member. Send the details to Jim McCarty, 5821 Helias Dr., Jefferson City, MO 65101.

BAM

Shop Notes

Got a tip to share? Jot it down and send it to the editor, Jim McCarty, 5821 Helias Dr., Jefferson City, MO 65101

This month's shop tips is devoted to getting just the right finish. Most of these came from the two on-line mail lists, the Forge and Artmetal. Thanks to those who responded to my inquiry. If you have a different recipe than one listed here please share it with us — cause it ain't done till it's finished!

Presto — it's finished

Gunblue (from the sporting goods store) makes a similar black as burnt in linseed oil, except the piece does not have to be heated. After treatment and washing with water a sealing process is required which for inside applications can be as simple as sprayon WD 40. Larger quantities of gunblue are sold by BIRCHWOOD & CASEY as "Presto-Black" for \$70 a gallon. The stuff can be thinned down a lot and also works on other metals (bronze, galvanized).

— *Helmut Hillencamp*

Beeswax quench

My trick for getting a stable black surface has been to quench from medium black heat directly into a pan of beeswax. You've got to be careful not to let it burn, but otherwise it works really well. Once it cools most of the way down, wipe the excess off with a rag.

— *Brian Meek*

Stinky sock applicator

I have not had any difficulty in blackening wire-brushed iron using a linseed oil/beeswax/turpentine mixture. I heat the item to a black heat and then rub the mixture onto the item using an old towel. The mixture should smoke upon application. Following the advice of Doug Hendrickson, I've also used non-natural material rags, usually old socks. The idea being to melt some of the polyester material onto the item. Either way seems to work okay. I'm using towels because I ran out of old socks.

— *Mark Williams*

Getting the black look

Jim asked about getting the black look on wire-brushed steel. One way is to use Jax Blackener for Iron and Steel. It needs to be followed by application of your favorite linseed oil/beeswax-type finish coating. Soaking the piece in a solution of tannic acid will also darken it, but tends to give a purplish hue in my experience. Used 30W motor oil applied to a piece hot enough to burn the oil yields a nice, slightly gloss, black finish. Just some ideas. I likewise would be interested in what others have used to get the traditional black iron look.

— *David Hufford*

Outdoor finish

Here's a great, easy formula for a metal-looking paint-job, when it's GOTTA be outdoors, it isn't allowed to rust, and it's GOTTA

"look" like raw, black steel:

Using Rustoleum brand oil-based enamel paint (others would work, I'm sure, but this is what I use):

1 part Aluminum color
1 part Flat Black color
1 part Gloss Black color

This looks pretty good, not too paint-like, and easy to do (no rubbing graphite at just the right time, etc.) This is a little lighter than black mill scale, and for that look, just increase the amount of black. More gloss for a more shiny look, more flat for a more, well, you know. This mix of 1:1:1 leaves a satin-like finish.

— *Heath "Manly" Satow*

Mountain man finish

I have met some smiths who follow the Rendezvous (historic re-enactment) circuit who carry small blocks of beeswax and hard tallow which they melt and mix as needed for finishing. From a practical standpoint, the solids are easier to carry than cans of liquid, but their tradition says that it is an ancient formula. Could be true!

An interesting parallel: About 20 years ago I got a formula from a Cistercian monk in the monastery near Seattle. His specialty was book preservation. To restore leather bindings he used a heated mixture of beeswax and mineral oil (the clear, thick kind used for medicinal purposes.) A mess to work with but it works. I wonder which came first, for leather preservation or for iron finishing?

— *Rod Larson*

It's the beeswax

The component of beeswax/turpentine which creates the finish is the beeswax. I use the turpentine to dilute the beeswax a bit, i.e. to make it softer and easier to apply. I don't know the proportions I used — mix some up and add more beeswax/turpentine if it is too soft/hard. Not a huge amount of turpentine, though. To make it, heat beeswax IN A DOUBLE BOILER until it melts. Then

add turpentine. **DO NOT DO THIS OVER ANY KIND OF FLAME.**

We have an electric stove that I melt the wax on. The turpentine smells pretty strongly, so I take the melted wax off the stove onto the back porch to mix in the turpentine. Dump it in some kind of a container with a lid and let it cool. To apply the finish, I warm up the piece of metal (pleasantly warm), and rub wax all over it. Then I continue heating it until the wax starts smoking. What is going on is the wax is carmelizing on the surface, which hardens it a lot. You need to get it warm enough to carmelize all the loose wax (or you could buff it off later), and not so warm that the carmelized wax burns off entirely. Somewhere in between those temperatures the wax goes from light brown through dark brown to a nice shiny black. It takes a bit of practice to apply this finish to an irregularly shaped piece and get a uniform look. I suppose that the folks saying "apply the finish at black heat" are talking about the same temperature range, but I like this approach as I think it gives me more control.

— Steve Smith

Money saving finish

In our blacksmith shop we use a mixture of equal parts of liquid wax and boiled linseed oil. The wax is any liquid wax that we can find in the grocery, hardware, or auto store. We used to use liquid floor wax, but that has become unavailable in recent years (no plastic finishes please), so we have gone to the water soluble car wax that you "mix with water to wash and shine in one easy application." To apply, we heat the piece just short of color and brush on. Continue applying until the liquid ceases to boil on the surface of the metal. Then quench in water and rub with a cloth. (Do not try this at home because the smell is horrendous and takes months

to leave!) The finish is very durable under weather and mechanical action. Hinges, latches, dinner bells, etc. that are outside last years before rust appears at the mechanically abused points.

We can trace the idea of the liquid/liquid mixture back to the 1940s. The blacksmith who owned the shop where our forge came from started using liquid floor wax when it came onto the market. It was much faster to prepare than the melted paraffin and linseed oil formula — and in the shop time is money. We make our brushes from twine or hemp rope, tied into a shape like a shaving brush, ends trimmed and unwound. The brush design came from the same smith (money is also money!)

—Not sure who supplied this

Peanut oil treatment

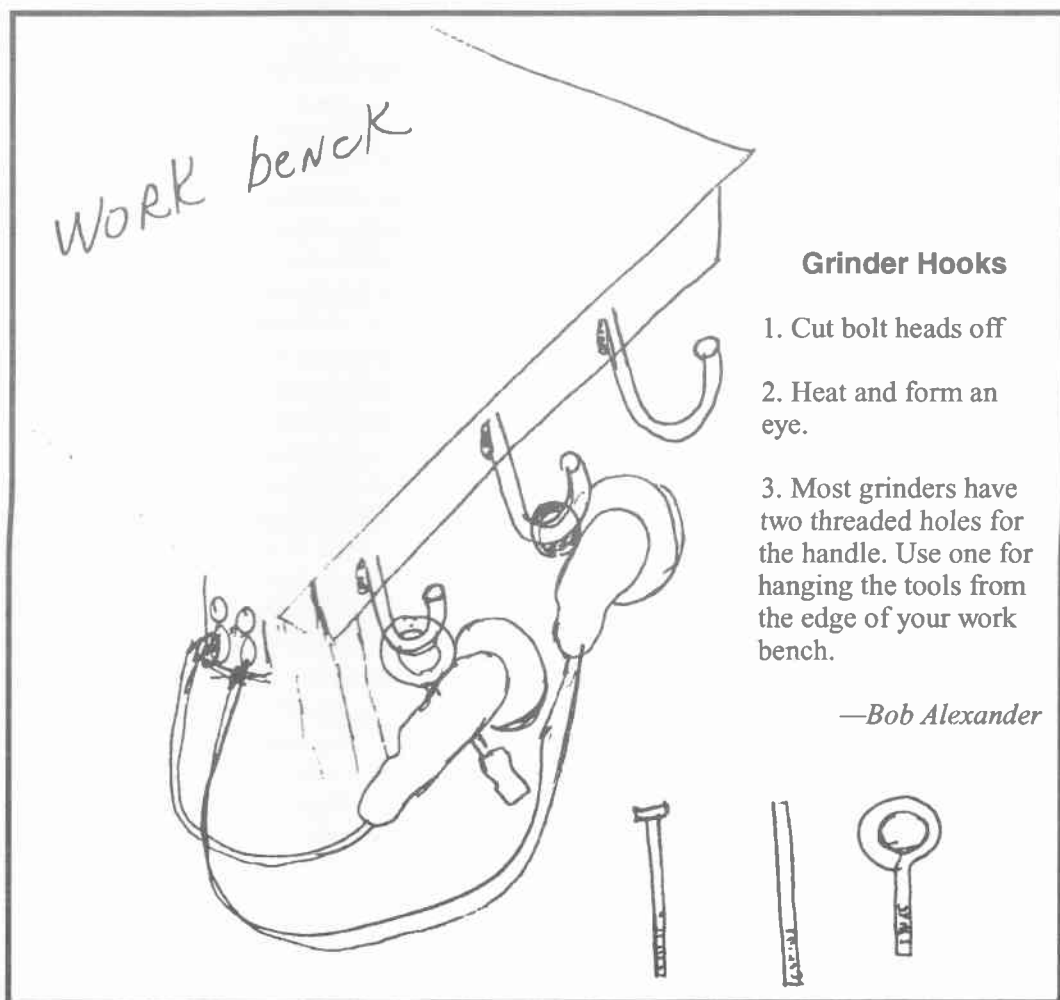
While I work mainly with brass and bronze, here are a couple

comments re metal treatment prior to coloration . . . If I'm going to patina a piece of brass/bronze, I'll take it all the way to a polished stage, then lightly sandblast with -200 mesh silica dust. This will remove oils and waxes, and give a uniform surface for chemical treatment. The colors will usually be darker for a given chemical reactant after this blast treatment.

For the iron work I do, to get a grey to black surface, I apply peanut oil to the heated piece and continue with the flame until I get the desired color.

A book containing many good patina formula, for both red-metals and iron, is: *Methods For Modern Sculptors*, ISBN 0-9603744-0-X. It is available from Lindsay Publications, Centaur Forge and American Foundrymen's Society for about \$20.

—Winston Harness



BAM NEWS

Demo opportunity

I will be doing a demo at the Russellville Steam Engine Show on Saturday, June 20. Russellville is just south of Jefferson City if you don't know your Missouri geography. These guys are bending over backwards to help out and promise a tent for shade and shelter. If anyone wants to come along and forge stuff, sell stuff or just lend a hand give Jim McCarty a holler at (573) 659-3421.

Coming Conferences

Besides the ABANA Conference coming up in Alfred, NY on June 26-30, there are enough regional events to keep you happy this summer. Here's a few dates to mark on your calendar:

North Carolina Chapter of ABANA
Denton Farm Park, NC, May 10-12.
Preregistration \$25. Demonstrators include Doug Hendrickson, Daniel Miller, Jerry Darnell, Tal Harris, Doug Merkel. Send to NC Conference, 4300 Daniel Dr., Waxhaw, NC 28173 or call (704) 843-5586.

New England Blacksmiths
May 10-12, Whitefield, NH. Ivan Bailey demonstrating.

Mississippi forge Council
May 25-26, Pelahatchie Shore Park, Jackson, Miss. Bob Patrick and Chris Marks demonstrating.

Indiana Blacksmithing Association
June 1-2, Tipton, Ind., Steve Austin and Clay Spencer demonstrating.

Illinois Valley Blacksmith. Assoc.

June 8-9, Pontiac, Il. Peter Ross demonstrating

ABANA Conference
June 26-29, Alfred NY. Registration booklets were mailed to all members on February 21, 1996. If you are not an ABANA member call the conference line at (716) 268-5152 for a copy.

Banging on the Bayou III
Louisians Metalsmiths Assoc., Oct. 4-5. David Fink demonstrating.

The Mountain Smiths
Aug. 15-18, Carbondale, Co. Cathy Borthwick, Chris Axelson, Hoss Haley, Nahum Hersom, David Norrie, Francis Whitaker. Contact Dan Nibbelink (970) 532-4386.

Alabama Forge Council
Tannehill State Park, Sept. 6-7-8. Al Fouche', Allan Kress, Bob Bergman and Larry Cooper.

Florida Artist Blacksmith Assoc.
October 1996, Barberville, FL

Spots open at Metals Museum

The National Ornamental Metal Museum in Memphis, Tenn. is seeking an experienced blacksmith interested in a two-year museum internship. In addition to a \$500 per month stipend, the Museum provides health insurance, workman's compensation, a one bedroom apartment, utilities and studio space. There are ample opportunities throughout the year for additional income through repair work and commissions.

Applicants must have completed undergraduate work in metals or have comparable training through an academic or apprenticeship situation. Also required are excellent "people" and communication skills, a good sense of humor and the ability to work effectively under pressure and meet deadlines. Applicants must be U.S. citizens and provide a photo copy of a valid driver's license.

This is a highly competitive position, and only applicants able to meet all of the criteria above should submit a letter of interest, slides of recent

work, and a resume detailing education, current and previous employment. At least three references, including addresses and daytime telephone numbers, should be provided.

Members of the Museum staff will conduct interviews at the 1996 ABANA Conference in Alfred, New York (June 26 -29) and at the Museum in Memphis. All applicants will be contacted by phone or letter following the Conference.

Because of space considerations (the intern apartment is located on the second floor of the gallery building), only single applicants without pets are realistic candidates.

The Museum also is offering a full-time, permanent position requiring an undergraduate degree from a ferrous or nonferrous metals program. The beginning salary is \$16,500 with raises considered annually by the Board of Trustees. Benefits include medical insurance, workman's compensation, paid sick and annual leave, and an employer-supported pension plan. Other benefits are access to the Museum library and studio space. Personal commissions and work for exhibitions are strongly encouraged.

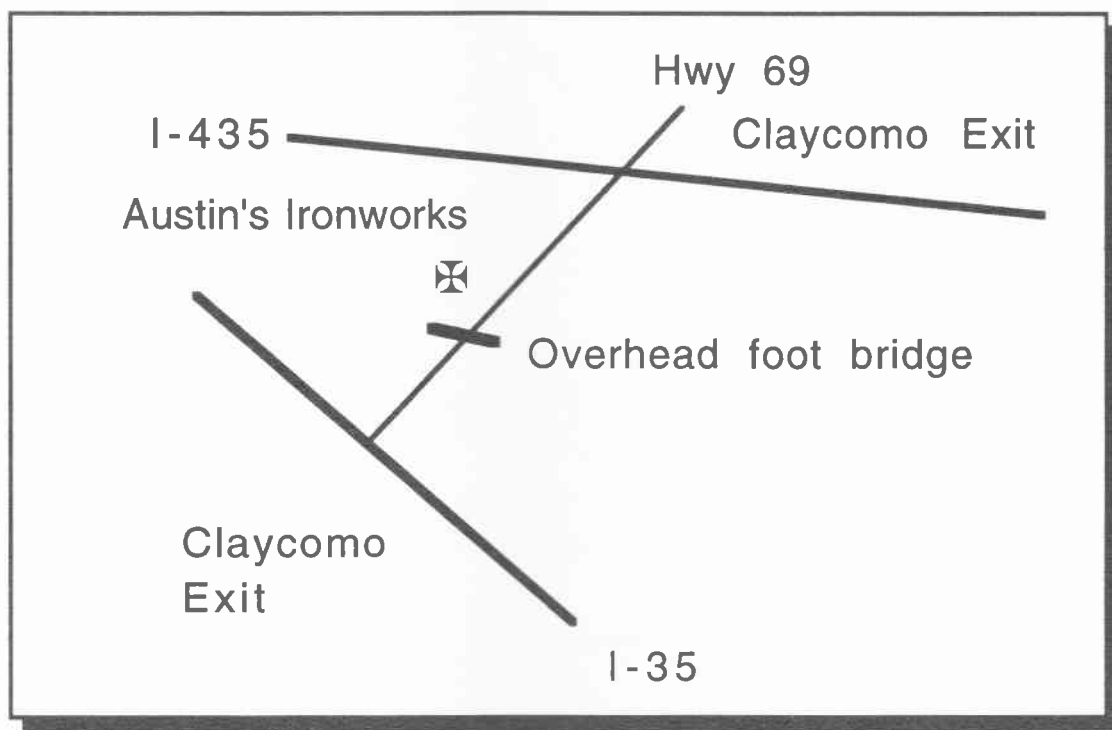
This is not a training position, but one which requires experience with a wide variety of metalworking processes and techniques. Applicants must be U.S. citizens and provide a photocopy of a valid driver's license. To apply, send a letter of interest, slides of recent work, and a resume detailing education, current and previous work experience and three references with addresses and daytime telephone numbers.

Interviews will be conducted at the 1996 ABANA Conference in Alfred, New York June 26 - 29 and at the Museum in Memphis. All applicants will be notified by phone or letter in early July.

The need for additional time to relocate can be accommodated but we would prefer a start date no later than September 1.

Please send the requested information and slides to: Jim Wallace, Director, National Ornamental Metal Museum, 374 Metal Museum Drive Memphis, TN 38106.

Next Meeting May 25, 1996, Claycomo, Mo.



For the May meeting we travel to the west side of Missouri for a look at what Steve Austin has been up to.

For those of you who are new to BAM, Steve is one of the nation's premier builder of gates, fencing and stairs.

His latest endeavor involved 8 miles of fencing. Can't wait to see the jigs that went into that project.

Steve tells me he has been knocking out walls and adding on to his shop and we probably won't recognize the place when we get there.

Steve isn't hard to find.

If you are coming from the St. Louis side of the state just take 435

north off I-70. Stay on 435 until you get to the Claycomo exit (Hwy 69.)

Stay on 69 until just before the overhead foot bridge on the right hand side. If you reach the footbridge you went too far.

From Kansas you would take I-35 north to Hwy 69 and turn left just past the foot bridge.

If you get lost just look for the coal smoke.

One item of business that we will be taking care of is nominations for officers. Once the slate of candidates is decided at the May meeting we will publish the names and have elections at the July meeting. If you are inter-

ed in running please step forward.

The trade item for the May meeting will be a staircase balluster forged from 36 inches of 5/8 inch square. Here's a good chance to try out some of those neat twists you have been learning.

The trade item exchange was excellent at the March meeting so be sure to get one done for this meeting.

As usual, remember to bring something along for the Iron in the Hat raffle. It can be something you made or just something you picked up of interest to blacksmiths.

Hope to see everyone at Steve Austin's on May 25.

1996 Schedule

Ozark Conference
Lion's Club Fair
Grounds, Potosi, Mo.,
May 4-5

May Meeting
Steve Austin,
Claycomo, Mo., May
25. Trade item: ballus-
ter from 5/8 Sq.

July Meeting
Jim Kendzora, Sunrise
Beach, Mo, July 13
Trade item: Coffee
mug holder

September Meeting
John Murray, New
Melle, Mo. Date to be
announced



Pat McCarty swings the sledge for Lou Mueller during Lou's demo at the March BAM meeting.

BAM
5821 Helias Dr.
Jefferson City, MO 65101

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