N.J.B.A. Newsletter

NJBA Volume 6, Issue 1

Spring is here!

If you're a hot weather person who hid all winter, it's time to dust off the tools and get to work! Come out to an open forge or take a course, even just come to a meet or two. I hope the beginners and others too are following the Foundations Series I'm reprinting, it's an excellent how-to! Get activated! Soon it may be too hot!

Upcoming events for 2001

Remember most of our meets have a "Iron in the Hat" drawing, be sure to bring something.
May 19th: Membership meeting and Hammer-in at Longstreet Farm in Holmdel, NJ.
Details this page.
June 16; Meet at Cold Spring Village in Cape May, NJ. Details on page 2.
July 27th; Monmouth County Fair.
Details on page 2.
August; Joint meet with NJBA/ PABA. Details to be announced. Also we possibly will be involved with the NJ State Fair (Sussex County Fair)
October 13; Tentative meet at Mike Walker's in Elton, Md
November; Tenative meet at Peters Valley

May Meeting:

Hammer-in and Elections

The May meeting will be on Saturday May 19th. 10 AM at Longstreet Farm. Holmdel Park, Holmdel (Monmouth Co.), NJ.
This meeting will be a general hammer-in. Our goal is to have several smiths demonstrate blacksmithing to our members and the public. The setting will be the blacksmith shop and surrounding area. We have use of the blacksmith shop at Longstreet which has one forge. We encourage you to bring portable forging equipment so if permitted we can have more forging stations, we may be able to set up other forge stations around the area of the shop. NJBA will supply the coal and some stock for the demonstrations. If you have any specific stock requirements please bring your own stock. Some suggestions for demonstrations include: Tong making, hot cuts, hardy tools. barn hardware including strap hinges, hasps and latches. Lunch will be provided. There will be a brief business meeting over lunch to elect directors and discuss up coming events. There will be an Iron in the Hat so please bring your donations. There will be no tailgate sales.

Directions to Longstreet Farm:
From the North: Take Garden State Parkway to exit 114. After paying toll make a right onto Red Hill Road at the 1st light. At the 2nd light make another right onto Crawfords Corner Rd. Pass the very large Lucent facility and make a left onto Roberts Rd. Take Roberts Rd. for about 1 mile. Make a right unto Longstreet Rd. The park entrance is about 100 ft. on your left. Longstreet Farm is adjacent to the main parking lot on the left as you enter the park. The blacksmith shop is the 1st building on the left of the main farm house.
From the South: Take Garden State Parkway to exit 114. Proceed up the exit ramp to the light, make a left onto Red Hill Road and follow the +instructions above.

The NJBA Web Site!

The NJBA Web Site is up and running at:
`http://njba.abana-chapter.com/`

June Meet in Cold Spring Village In Cape May

The New Jersey Blacksmith Association will hold a general meeting and demonstration at Historic Cold Spring Village in Cape May New Jersey. The meeting will take place on Saturday June 16th .There will be demonstrations on both Saturday the 16th and Sunday the 17th so if you can't make Saturday come out Sunday. The meeting will coincide with HCSV's Farmfest event. HCSV is a 19th century village so period costumes are encouraged. NJBA members not wearing costumes are encouraged to wear NJBA t-shirts. Demonstrators should be in costume or be wearing a NJBA T-shirt. All members in costume will receive free admission and may bring one guest. Lunch on both days will be provided to NJBA members in costume.

We need members to bring portable forges and anvils for the demonstrations. Members bringing forges and other equipment should be there an hour earlier at 9 am. If you are interested in being a period demonstrator or have any other questions contact Steve Rhoades at (856) 697-4144 or dwarrows@att.net .

Directions: Take exit 4A south from the Garden State Parkway and follow the signs to Historic Cold Spring Village 720 Rt. 9 Cape May NJ 08204 (609) 898-2300.

July Meet at Monmouth County Fair East Freehold Park NJ

General Meeting Friday 7 PM July 28th

NJBA members will be providing a blacksmithing demonstration in conjunction with the Longstreet Farm Exhibit during the County Fair running

NJBA Board of Directors

Marshall Bienstock, June, 2001
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mbienstock@worldnet.att.net

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Jon Folk, June, 2001
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516- 625-5667.

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415 Hutchinson St., Hamilton, NJ 08610
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26 Saddle Shop rd., Ringoes N.J. 08551-1510
609-446-0349 antonholdstrom@msn.com

Josh Kavett, June, 2001
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732-431-21 52, jakavett@aol.com

Doug Learn, June, 2001
121 Pebble Woods Drive, Doylestown, PA, 18901
215-489-1742 cjfdlearn@mindspring.com

David Macauley, Director June, 2002
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856-697-4144, hotiron1@juno.com

Bruce Ringier, June, 2001
201-652-4526 346 Rt.565 Wantage,NJ 07641

Tim Suter, June, 2002
1112 Ladner Ave., Gibbstown, NJ 08027
856-423-4417

Greg Phillips, June 2002
(845) 457-5671, Acorn Forge, 937 Route 17k, Montgomery, NY 12549 suresign@frontiernet.net

July 25th – 29th. The general meeting will be held Friday Night starting 7 PM at the NJBA demonstration booth. Look for the Longstreet Farm Exhibit. Blacksmiths are encouraged to submit some of their work for a display at this venue on Friday night. All work will be displayed at the exhibit. This is a great opportunity for us to advertise NJBA and individual members. We can distribute business cards, brochures and talk to the public regarding our work
A forge, several anvils, some tools, stock and coal will be kept at the fair site for demonstrators.

Directions to East Freehold Park ,NJ

- From Garden State Parkway:
  Garden State Parkway to Exit 100, Hwy. 33 west. Follow Hwy. 33 to Kozloski Rd., turn right. Follow signs to Park.
- • State Hwy. 9 to Hwy. 33 east, south of Freehold. Follow Hwy. 33 to Halls Mill Rd. North exit. Follow Halls Mill Rd. north to intersection. Road name will change to Kozloski Rd. Follow Kozloski Rd. to Park on left.
- From Rt. 18
  Rt. 18 to Exit 22, Rt. 537 west. Take Rt. 537 west to Kozloski Rd., turn left. Follow to Park on right
- It has also been recommended that to avoid traffic approach from Rt. 537

For more information contact David Macauley 732-206-1568 or drmacauley@att.com.
Free passes will be available for demonstrators, but we need to know who wishes to demonstrate by June 30th, 2000. For general information on the fair call: (732) 842-4000.

PABA R & T Meet

Blacksmith Day at Rough and Tumble in Kinzers, Lancaster County (Pa.) Hosted by PABA
On Saturday, June 9, 2001, the Pennsylvania Artist Blacksmiths' Association (PABA) and Rough and Tumble (Engineers Historical Assoc.) will host Blacksmith Day. Many activities are planned for this day, and all are invited to come and participate. The main demonstration area will be at the Titus Brubaker building from 10 am to 4 pm. Feature demonstrations are:

•Bill Purcel of Harrisburg, PA - sand-casting of a small anvil;
•Win Harrison of Intercourse, PA - tinsmithing;
Gary Reichard of Lancaster, PA - basic farrier techniques

A forge area will be manned by PABA members, who will demonstrate a variety of projects. There will also be an area set up for tailgate sales, which is an ongoing function of most PABA meetings. All are welcome to bring items to sell at the tailgate area.

PABA will conduct an Iron-in-the-Hat raffle of donated items, both handmade and mass-produced work. Proceeds will be used to help PABA defray its operating expenses.

Items made for trade between members will be on display. Other displays of interest include a portion of James C. Sorber's colonial wrought iron collection (as featured in the recent book: Colonial Wrought Iron), Bucks and Lancaster counties historical blacksmithing information, and a small collection of blacksmithing prints.

Admission is free to all, so bring your family, friends, and neighbors. Food will be available from R&T Food Services.
For information contact Louie Frantz, 717-755-4797

February meet at Marshalls Farm

On February 18th we held a meet at Marshall's farm in Howell, NJ. Marshall treated us to a demo based on the classes he took at Cambell Folk School in N.C. this January. Marshall took one course with Tom Latane on re-creating a small bench vise and a course with Bill Fiorini on forging damascus steel knives. Marshall's first demo piece was forging a sample of the "Table" holding piece of the vise with its 3 sided tenon and punching a hole through a piece of 1" stock to show the technique for joining the piece

Continued on page 4

to the vise and the table piece.He then discussed how each part of the vise was forged and the jaws welded on. Jeff Morelli also brought an antique table vise he had bought that looked like Tom Latane had used it as a model for his plans. (Tom has given permission for the plans to be reprinted in this newsletter starting on page)

We then broke for lunch and a very good "Iron in the Hat"(Good because I actually won some of the stuff I wanted, Remember everyone bring something and buy tickets).After lunch Marshall demonstrated punching a hammer head handle hole using methods he had learned from Bill Fiorini. One of the interesting thing about Bill's method is that he forges the hammer head then punches the hole. Marshall also discussed the techniques used to forge the damascus blanks he made in the class.
Many thanks to Marshall for sharing his shop and experiences with us.

Report on the Furnace Town Joint Meeting and Workshop,

March 24-25, 2001.
by Bruce Freeman

Five NJBA members (at least) attended. On Saturday Lou Mueller presented information on the construction and use of punching and shearing dies and bending jigs, mostly as described in (the late) Donald Streeter's book, "Professional Blacksmithing" (now available in paperback). Among the dies he showed were two used for cutting a fleur-de-lis in the top of a Suffolk latch plate, a punch for cutting the cheater plates (more or less half-round with a tab on one side), an H-shaped punch for the thumb latch and cheater plates of this latch, and round and square shearing dies used for general purposes. He also showed some bending jigs including one used for H and butterfly hinges, as well as tooling for a simple eye. Lou was having a little trouble because he was attempting to demonstrate the use of these tools on 16-guage steel, when 18-guage would have been more appropriate. He mentioned that for demos (and presumably for practice) it is useful to use aluminum instead of steel.

Tim Suter and Hector Giumetti ("Armstrong Forge"), between them, filled about three picnic tables with their contributions to the IITH. The rest of the NJ contingent made more modest contributions, but bought enough IITH tickets that we went away heavily loaded with our booty. Marshall bought two items at the auction, including a miniature tongs made by Anton from cut nails.

On Sunday, Marshall Bienstock, Anton Holstrom and I attended the workshop. This was an incredably ambitious project, consisting of the construction of three bending jigs for each of twenty-two members. The tools were a hinge-eye roller, a candlestand leg-bender (which produces a double bend), and a general purpose miniature bender. We arrived a few minutes late and may have missed some announcements. About half the folks were hard at work, and we looked around for things to do. Marshall soon got into the drilling operation. I mostly just helped here and there. Anton did a little grinding, but mostly spent the day taking pictures. Eventually I started helping out a welder, but with only one jig to work with, there was little I could actually do for him.

The down side was that we didn't finish the construction of all these jigs, though I believe that all the drilling and most of the critical welding was completed. Some of the attendees made a push to complete their three jigs. Anton and I will be getting together with Marshall some Monday evening to finish our tools.

Lou noted that this was the first he'd run such a workshop and that he'd learned a lot from it. He noted that in the future he'd have more jigs, more instructions as to what work could be done when, etc. All of this pointed up just how WELL Marshall has always prepared for the workshops we've sponsored, such as the Smithing Magician, the Forge Hood and the Gas Forge Workshops. However, Lou and the

Continued on page 5

Furnace Town Blacksmith Guild are to be complemented on this ambitious effort. FTBG managed to keep the materials fee to a mere $15, which was very impressive.

Campbell Foundry Tour

On Tuesday, March 27th at 1 pm, 7 members of NJBA met outside the Campbell Foundry in Harrison, NJ. Campbell Foundry has been making mainly manhole and drain gratings and covers since the company opened in 1921. The tour started outside the main office with the distribution of safety gear, hard hats glasses and ear plugs and with a short talk by John R. Campbell III, The Operations Manager. He

is now the third family member to run the business since it's start in 1921. He said they produce 35 - 50 tons of finished castings a day. Most of what is poured is also finished that same day.

The first shop we visited was the floor where they were doing the pouring. We watched as they finished setting up the forms for pouring the base rings (the part you can't see in the street) for manhole covers and then watched as they poured two of them. From there we went to the section where they have patterns stored for most of the items they have made over the years. Mr. Campbell said this enables them to do small production runs of items for former customers and to adapt existing patterns to save costs for new customers.

The next section we went to was the steel and iron piles where they feed the hopper bucket for the cupola with an electromagnetic crane. They use a mixture of scrap cast iron, steel, added alloys, coke and limestone. These are added to the hopper by weight and then fed into the cupola. The cupola is fired up at about 5 in the morning and emptied about 3:30 in the afternoon. Repair maintenance is then done at night to prepare for the next days firing. Twice a year the plant shuts the cupola down for rebuilding. Mr. Campbell also pointed out the afterburner, where the fumes from the cupola are processed. The furnace produced no signs of smoke

The next section was where they were using machines to ram up the copes and drags for the patterns. From there the frames are moved away on rollers and brought to the pouring floor by gantry crane. After cooling (the length of cooling time is based on the size of the casting) the pieces are sent to a shaker to remove the parts from the sand. After further cooling the parts are hung on frames and blasted (bead or sand?) to remove excess sand from the castings. In this area, a lot of fine sand material is kicked up, but an exhaust system, supplemented by respirators the workers wear, keeps the hazard down. The exhaust system collects the fines, which are disposed of as waste.

The next section is the finishing room where the parts are scraped, ground and/or machined depending on the finish needed. the last section is where the parts are sent out for delivery or to their storage yard.

Mr. Campbell said they are always trying to update the operation to make it more efficient and described some or the shop re organizing that was planned for the future. This ended our tour and then Josh followed Mr. Campbell inside to discuss pouring anvils. Many thanks to John Chobrda for taking the time to set up this tour and Many thanks to Mr.Campbell for taking the time out from his schedule to give us the tour.

LB

Peters Valley Scholarships

Peters Valley Craft Center has offered NJBA two half scholarships for its members. If more than two people apply, the decision will be made by drawing out of a hat. An article describing the class and maybe a demo on what was learned would be a nice return for this.

Contact either Bruce Freeman or Larry Brown. The course schedule can be viewed on line or ordered over the phone or by mail. This is a splendid opportunity to expand your skills and knowledge.

Peters Valley Craft Education Center
19 Kuhn Rd., Layton, NJ 07851 (973)948-5200
pv@warwick.net www.pvcrafts.org
Peters Valley is looking for donations to help them through a tough financial time, letter on next page.

Dear Friend of Peters Valley:

While our Annual Appeal is always one of the most important fundraisers that Peters Valley has during the year, this year's fundraising drive -- to support general operating expenses and reduce our deficit – is especially important.

- ✓ We must raise more than ever before in order to keep offering the innovative educational programming that is the hallmark of Peters Valley. We cannot move forward without your help.
- ✓ A supporter of Peters Valley has committed to match every dollar raised in this Appeal up to $20,000. So for every dollar you donate, Peters Valley receives two! An incredible chance for your donation to matter even more to the Valley.

Workshop fees cover just a small portion of the operating costs of a nonprofit educational facility such as Peters Valley. Our programming cannot happen without the costs of staff, phones, electricity, boiler repairs, printing services, studio and office supplies, and the repair of winter damage to the roads and buildings. Weather-related expenses have been greater than anticipated this year.

As a friend of the Valley, you know about the quality workshops and educational outreach we have offered for the past 30 years and about our dedication to the mission of preserving and contributing to the evolving tradition of fine American crafts. You know, too, about the honors we have received, including a Citation of Excellence by the New Jersey State Council on the Arts. You know we are recognized as a valuable regional cultural resource, and among the leading craft centers in the country, attracting highly skilled craftspeople as resident and visiting artists.

As in years past, this year's catalog (available on our webpage, www.pvcrafts.org) outlines an exciting lineup of programs, including new collaborations with other organizations, and innovative opportunities for artists, aspiring artists and the general public to experience the value and pleasure of the process of creating.

With your support, we will be able to continue offering meaningful and diverse learning experiences. Please contribute to the Valley's future by sending your tax-deductible gift today. We thank you in advance for your time, consideration and support.

Sincerely,
Peters Valley

2001 Annual Appeal Donation

Enclosed is my donation of
( ) $20 ( ) $30 ( ) $50 ( ) $75 ( ) $100 ( ) $250 ( ) $500 ( ) $1000 Other _____
Name _____
Address _____
City _____ State _____ Zip _____ Telephone _____
Paying by ( ) Check *(Please make checks payable to Peters Valley Craftsmen, Inc.)*
( ) Visa Card # _____ Exp. Date _____
( ) Mastercard Card # _____ Exp. Date _____

Thank you for your financial support and continued generosity

ABANA Correspondence

President's Letter to the Chapters
April 2001.
Dear Chapter Officers and Members,

ABANA correspondence comes out monthly. I will print the most recent and post the others on the web site L.B.
http://njba.abana-chapter.com/

One recurring themes I have heard since becoming an ABANA member is references to factions of ABANA based on geographical location, traditional versus artists-smiths, etc. This theme is usually based on past history and events, rooted in the personalities of the persons involved with ABANA during some time period in ABANA's history. Some of these incidents were based on substantive issues of policy and direction. Other incidents were rooted in personal conflicts or reasons lost in the fog of history, but have grown to mythic proportion and now have taken on a life of their own. I ran for the Board in part to make this an organization that embraces all legitimate aspects of blacksmithing and uses those aspects as a source of strength to move ABANA and blacksmithing into the future. I intend to continue that effort, but to do so we must remove the obsession with these ghosts of the past from our organization. This Board cannot undo any of the real or imagined past slights or omissions, mistakes or miscommunication between the Board, ABANA members or ABANA chapters, in all directions, since it's inception. But if this obsession is not removed, ABANA will continue to meet unnecessary resistance from within in it's efforts to move blacksmithing into the 21st century stronger than ever before. These instances are in the past; this Board is working in the present for the future of blacksmithing and ABANA. This does not mean that past issues are to be dismissed out of hand, but rather put in the proper perspective as we move into the future. And we must move into the future.

This Board under my leadership is an activist board, engaged in moving ABANA forward in part by upholding the existing policies and procedures of ABANA. This has caused concerns and resistance from some chapters and individuals. But as I have said in past messages, the Board has a legal obligation to uphold those policies and procedures and will do so. The other side of this relationship is our effort to improve the relationship with the membership and the chapters. Information is sent to chapter presidents and editors, posted on the ABANA website, included in both *The Anvil's Ring* and *Hammer's Blow*. We as a Board use these tools to communicate with the chapters and the membership; these are our voices to you. Some of the conversations I have had with chapter members reveal that this information is not reaching the proper audience. Why some are aware and others are not is a mystery to me. But what is disturbing to me is the lack of calls to any of the Board members for clarification on topics or responses to requests for feedback. Frankly, much incorrect information is floating around that could be clarified with a call or an e-mail to a Board member. Communication is a two-way street. We need feedback on what we are doing, but little has been offered. The request for comments on the draft *Statement of Mutual Responsibilities* has gotten three responses. This document defines the relationship between the chapters and ABANA and we need your input. Bob Fredell and his Member Services Committee have some new ideas that hopefully will be introduced by the end of the year. Again, these will need cooperation and input from the chapters. We cannot help you if you do not participate in this dialogue.

There has been discussions regarding a re-examination of the relationship between the chapters and ABANA. We cannot take this step without input from all ABANA Chapters and the understanding by all of ABANA and the chapters as to what such a change may bring to ABANA and the chapters. Any such step must be productive and a benefit for the whole organization. I feel that to do anything at this time without input from all the chapters regarding their issues with the present arrangement, a clear understanding of what all the chapters want from any different relationship, the introduction to the chapters and the membership of possible changes that the Board is working on and will be introducing over the rest of the year, and a firm agenda and a clear understanding by all involved of the ramifications of each possible new arrangement would be premature and non-productive.

`These changes will take time, patience and open-minded cooperation from all involved. We must work together to build this relationship. This Board will continue to communicate with you, and we welcome and need your input.
Safe and productive forging.

Doug Learn, President
Artist-Blacksmith's Association of North America, Inc.
121 Pebble Woods Drive
Doylestown, PA 18901-2907 (215) 489-1742 cjfdlearn@mindspring.com

ABANA Chapter Liaison Letter
April 2001

The often asked question, "What does ABANA do for me for my 45 bucks -- or more- a year?" This letter will focus on two things that ABANA will do for you in the future.

ABANA's Member Services committee is currently working on two (actually, more than two, but for now I will talk about only two) new programs that have the potential of giving a whole lot of assistance to the chapters. Here they are.

It seems to me that it was Mark Twain who said, "The ABANA chapters will correctly do all of the things some of the time, some of the things all of the time, but not all of the things all of the time." Being inspired by the wisdom of Mr. Twain, we decided to develop a new program that will let all of the chapters know about some of the things that some of the chapters are doing right.

We have thought this program through only in general terms—no particulars yet. It would work something like this. We will identify 10, or so, crucial aspects of a chapter organization, such as the structure of the board of directors, educational program, etc. Then, seek out those chapters that are successfully administering one or more of these crucial aspects of their chapter organization. The final step would be to send this information to all of the chapters for their use. We need to share our blacksmithing skills and our administration skills.

The second new program is a combination of communication between ABANA and the chapters and recruitment of ABANA members. We are just starting to think this program through, so I can give you only a thumb nail sketch.

Participating chapters appoint an ABANA-chapter representative, to be known as *The Rep*. The task of *The Rep* is to give the chapter members the latest information about ABANA and to hear the questions and comments and to relay this feedback to the Member Services Committee. The big deal about this program is that it is one more way for ABANA to communicate with the chapters. But mostly, it is an opportunity for persons to speak their piece and to be heard by ABANA. Communication is a two way street. If this is going to work, we must give *The Rep* the tools and the support to do the job—this is the part that will take some good planning on our part.

The Rep, speaking at every chapter meeting, and keeping ABANA in the awareness of persons will hopefully result in an increase in ABANA membership.
Let me know what you think about these new programs.
Bob Fredell, Chairman
Member Services Committee
3500-45 Ave. So.
Minneapolis, MN 55406-2927 (612) 721-2298 fredell@frostbit.com

Blacksmithing Workshops and Classes:

Peters Valley Craft Education Center
19 Kuhn Rd., Layton, NJ 07851 (973)948-5200
pv@warwick.net www.pvcrafts.org
Academy of Traditional Arts
Carrol County Farm Museum
500 South Center St. Westminster, MD 21157
(410)848-7775 (410)876-2667
Touchstone Center for Crafts
R.D.#1, Box 60, Farmington, PA 15437
(724)329-1370 Fax: (724)329-1371
John C Campbell Folk School
One Folk School Rd.
Brasstown, NC 28902
1-800-365-5724 www.folkschool.com

Coal

Coal is now available through Alex Parubchenko at his shop in Trenton. Please contact Alex or John Chobrda at the shop, Phone # (609) 396-9583.

Open Forges

We want to encourage all to join us at:

Monday Night Open Forge in N.J.

Marshall Bienstock is hosting an open forge in his shop at 7 pm almost every Monday night (Please call ahead on holidays to make sure , (732)780-0871)

Monday Night Open Forge In Orange County

Greg Phillips will be hosting an open forge in his shop in Orange Co. NY. For more information Contact: Greg Phillips, Acorn Forge, 937 Route 17k, Montgomery, NY 12549, (914) 457-5672, Suresign@frontiernet.net

Wanted

Old two cylinder cast iron block Onan engine needed to make repairs on welding machine, need not be running, but preferably not blown. If I can't locate an engine I will have parts to an old Lincoln engine driven welder for sale.
Larry Brown— (718)967-4776

Business Members
We would like to thank those who joined with our new Business Membership category
Please show them our support

Ginty's Welding Service, Inc
2 Lee Mack Ave.,Danbury, Conn, 06810

Timothy Miller, Artist Blacksmith,
Bayport, Long Island, NY (631)419-1185

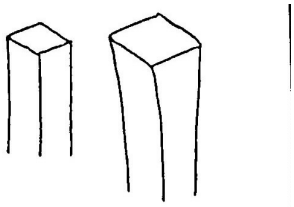
Marshall Bienstock
663 Casino Dr., Howell, NJ 07731
(732) 938– 6577, (732) 780-0871

www.artist-blacksmith.org
It may be the only address you need

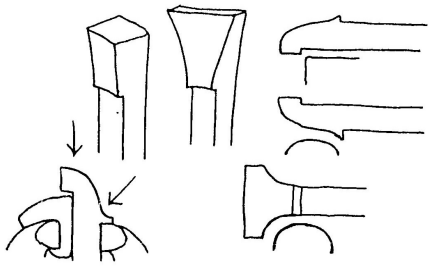
Bench Vise by Tom Latané

Complex Hand Forging Bench Vise By Tom Latané

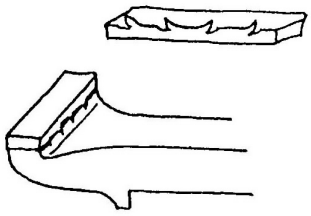
Identical forging procedure for front and rear jaws.



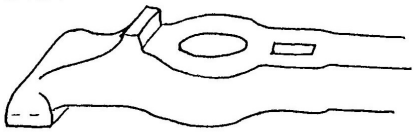
I. A. Upper Vise Jaw
Upset end of a 10" and a 12" piece of 1" square until the ends are 1 1/2" square.
2" below the end should measure 1 " x 1 3/16" —1 1/4".
With 1 ¾" -2" over edge of anvil shoulder down to 1".
Spread end over horn and anvil face hammering first on back, then inside.
Reduce end to ¾" thick.
Dress curves with round faced hammer over horn.
Bend ¾" of end down over anvil edge.
Upset and dress over anvil edge and in vise with back-up jig*
Reduce the thickness of the back of the jaw above the shoulder
with cross pein. Place in vise with jig and draw out lip with fuller.
Dress shape of jaw in jig and over horn.
Forge bar below lip to 1" square.



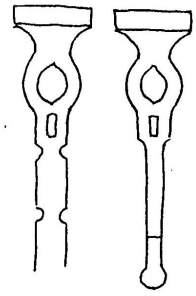
B. Steel face on jaw
Forge some 1045 or water hardening steel to length and width of vise jaw face and 3/16-1/4" thick.
Chisel barbs into one edge of steel.
Heat vise jaw and pound cold barbs into it. (Barbs on lower side.)
Bring to welding heat with steel up in fire.
Weld into place.
Dress edges and top of jaw.



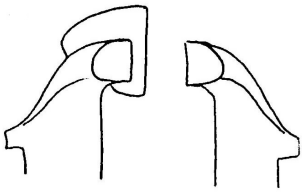
C. Eye for screw
Begin a slit 1 1/2" long 3/8" below the lip through jaw back to front.
Open and drift to a little over 1" round.



II. Rear Vise Jaw Components.
A. Mortise
Punch a mortise 3/8" below eye with a 3/16" x 1/2" punch. - -
Dress with mild steel drift to 1/4" x 3/4" maximum.
B. Lower bracket
Forge leg below lip to 7/8" deep or to smallest dimension resulting from punching.
Make a punch mark on side of leg ½" below mortise and another 2" below that.
Fuller on both these marks.
Draw material between fullers to a taper from over 1/2" to under.
Cut off over hardie leaving mass below fuller shoulder for screw clamp.
Shoulder bar on side of jaw face 2/3 of distance down from shoulder below mortise to lower shoulder.
Reduce from 7/8" to 5/8".
Forge end into cylindrical shape.
Bend end of leg away from face of jaw to right angle at shoulder.



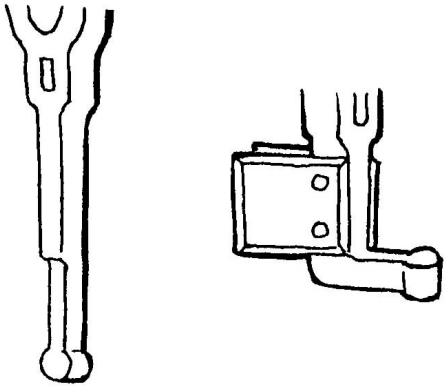
*Back up jig
Shoulder 1 ¼" x 1" and draw down to 3/8".
Forge a right angle.
Cut off bar and taper back of 1" end.
Forge to fit your leg vise jaw.



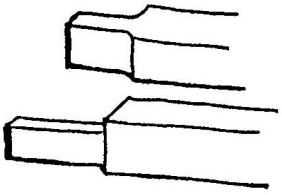
Bench Vise by Tom Latané

Part 2

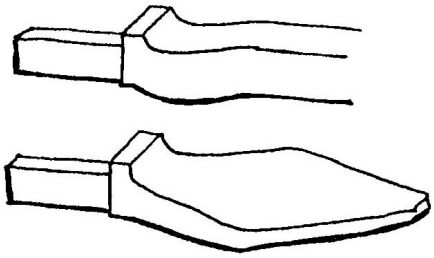
C. Cheeks
Cut 2 pieces of 1/4" x 2" x 2 1/2".
Bevel top and bottom edges.
Drill and rivet to vise leg ¾" above
or even with bottom bend depending
on space available.
Pickle in vinegar.

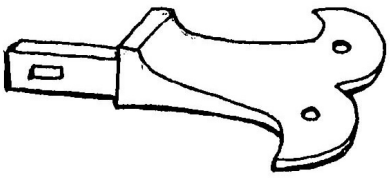


D. Bottom bracket screw
Weld ¼" x ¾" collar on 7/16" round shaft.
Forge ball end.
OR
Forge 3"- 4" of 7/16" round on end of ¾" round bar.
Cut off and forge ball end. Pickle in vinegar.
File or turn ball end.
Bore for 3/8" round toggle.
Make toggle like main screw toggle.
Hold in upsetting jig or wood vise chaps to thread with die.



E. Upper bracket
Fuller end of ¾" square, or use set hammer on anvil edge.
Shoulder third side over anvil edge.
Draw tenon to ¼ x ¾ x 1 ½" long.
Shoulder behind single shoulder. Cut off bar.
Spread and forge or cut desired shape.
Punch mortise with 1/8 x 3/8" punch.
Bore 1/8" holes for teeth.
Counter bore or drift.
Forge tenons on 3/16" square rod.
File to fit holes.Cut 1/4" long and brad tenons in holes.
Sharpen teeth with file
.



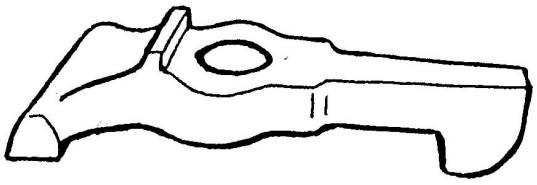


III. Front Jaw Hinge
A. Front Leg
Dress depth to match rear leg
Fuller below eye to match rear jaw.
Draw leg width to taper same as rear, allowing it to spread in depth.
Cut off even with bottom of rear jaw cheeks.
Shoulder and upset pivot area. (Shoulder will need to be
higher than finished position.)
Forge leg to even depth from eye to shoulder.
Match length to rear jaw.
Heat cheeks and dress together with front leg.
Bore for 7/16" bolt.

Bench Vise by Tom Latané

Part 3

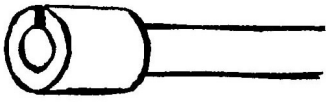
B. Pivot Bolt

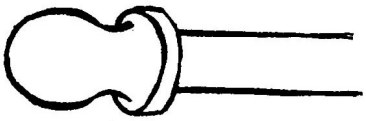


Neck down end of 5/8" square bar to 7/16".
Forge to 7/16" round.
Nick and head partially in 7/16" round hole.
Finish head in 7/16" square hole,
File hole in one cheek to accept square portion of bolt.
OR
File notch in plate with 7/16" round hole..
Form bolt head in this.
File corresponding notch in one cheek.
Make nut and thread bolt or punch mortise in bolt over swage and fit with wedge.

C. Spring
From scrap spring forge a leaf spring no wider than the width of the vise leg where the upper bracket is mortised, tapering from about 1/8", long enough to reach from below the box to just above the shoulder above the pivot hole in front jaw.
Punch a mortise for the upper bracket tenon.
Make a wedge to secure both bracket and spring.
Harden and temper spring.

IV. Vise screw and Box
A. Screw





Upset 2" of end of 5/8" round.
Make collar of 1/4" x 1 ¼" bar.
Weld to end of rod using swage.
OR
Draw 4" of 11/16" round on end of 1" round bar.
Cut off with 1 ½" of 1" round on end.
Upset shoulder with shaft through 11/16" hole in plate.
(For beveled shoulder and washer, forge dished washer first, then upset in washer)
Fuller neck.
Forge ball on end.
Pickle in vinegar- Ball end will be filed or lathe turned. Screw wilt be turned down to 5/8" round and threaded on lathe.

B. Flat washer

Scarf ends of 3 ½" of 3/8" square.
Roll in swage.
Weld.
Drift open.

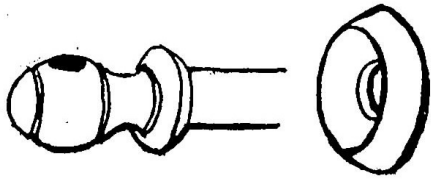
C. Dished Washer
Cut 1/2" of 1" round.
Punch and drift 5/8" hole.
Upset outer edges.
Dish center with large ball pein.

Bench Vise by Tom Latané

Part 4

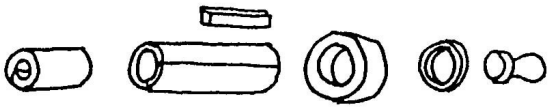
V. Box

A. Outer tube



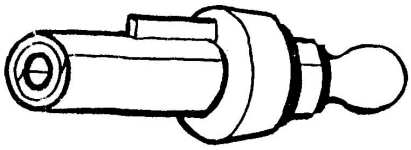
2-7/8" of 1/8" x 3"
Scarf the two 3" sides
Roll a 3" long tube in a swage.
Dress to close ends around ¾" round bar.

B. Inner Tube



1 ¾" of 1 ½" x ¼" bar.
Chisel cut both ends same side.
Roll in swage with chisel beveled side inwards.
Close ends using ¼" mandrel or drift if necessary.
Size to fit snugly inside outer tube.
Braze together in fire.
Pickle in vinegar- threads will be cut in inner tube on lathe.

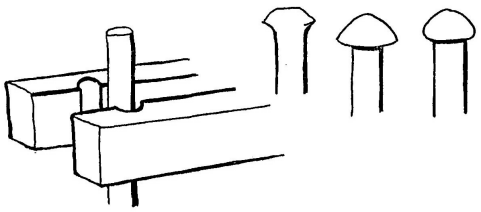
C. Restraining ring



Weld 4" of 3/8" square or upset and punch 1" of 1" round.
Drift to fit tightly around tube.

D. End plug
Fuller end of ¾" round.
Forge ball finial.
Cut off and fit to end of tube.
These will be brazed around and into the end of the tube along with a spline to prevent rotation after the threads have been cut.

E. Toggle
Upset end of 7/16" in vise jig.
Forge button end.
Pass through hole bored in ball end of screw.
Upset and forge second button end.



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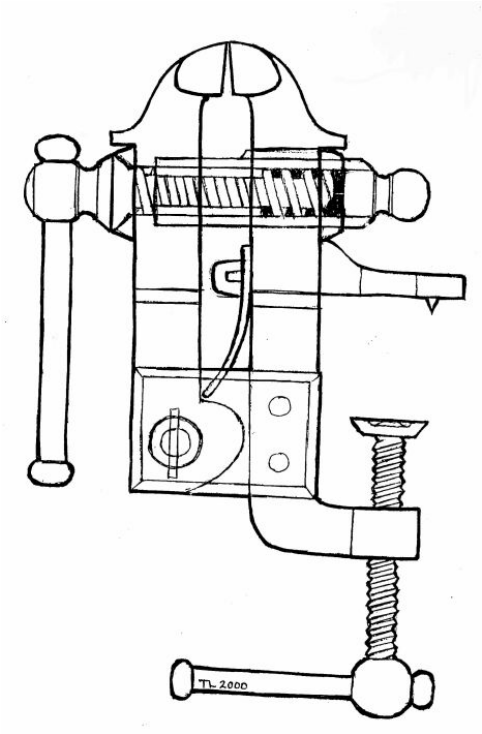
January 2001



The Scrap Corner

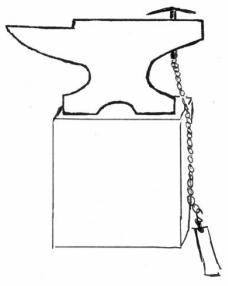
Of long tradition, blacksmith shops have always had a scrap pile or corner. There reposed unused bits and pieces, broken and discarded tools and implements, This pile was not regarded as waste, but rather, as a valuable resource, for a small piece of material, useful odd shape or a piece of desired special material. In olden times and remote areas, when iron stock was at a premium, scrap would be forge welded together into a billet then fashioned in to a desired product.

Our membership is encouraged to toss something into OUR scrap corner. A technique hint, shopping hint, product or tool testimony (pos. or neg.) ,a novel tool idea, finishes and coatings, quenching and tempering solutions and techniques, patina formulas, etc. Your tidbit could be of welcome use or help to another. By Tim Suter

Tim's Hold-down

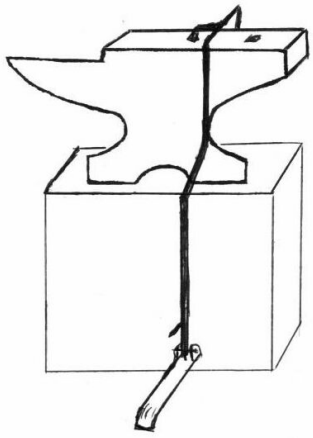
Problem; to hold a piece on the anvil with a tool in one hand and a hammer in the other. I have tried spring dogs, spring loaded mechanical devises, modified vise grips, and chasing loose pieces around the anvil.

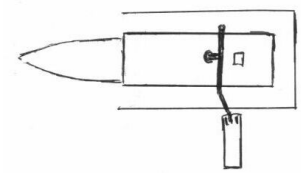
This is the best solution I have come across so far. Use a piece of pipe about eight inches long that fits loosly in the hardie hole. To that weld a piece about 3/8 X 1/2 and slightly longer than the width of your anvil to one end to form a “T". Bend the arms down slightly. If your work piece wants to move it can only move to the center and no further than the pipe. Now weld a length of 1/4” log chain to the bottom of the “T”, long enough to just clear the floor. Make a pedal of wood about 3/4” X 4” X 14” with an eye bolt on one end with three links of chain and a chain hook. With the chain and “T” through the hardie hole adjust the hook so the pedal just clears the floor with the work piece under an arm of the “T”. By shifting your weight to the pedal the holding force will be 2/3 of your body weight or more and won’t shake loose. The pedal can be kicked to the most advantagious place under the anvil. Try this, it’ll make you happy and you will quickly learn to pick it up from under the anvil. Tim Suter



Larry’s Hold-down

My hold-down uses the same foot pedal idea as Tim's except I use a 5/8 rod that hooks over the top of the anvil and comes down almost to the floor. The part that hooks over the anvil, the rod should be longer than the size stock you usually work, mine is about 2” with no stock under it. The rod has a piece that sticks out and down from the side of the rod over the anvil. There is also a small bar sticking out from the rod near the pedal to help lift it onto the work or off the work with your toe. I have been using this for about 15 years and although I can think of ways to spice it up or improve it, It's the same as when I spent a half an hour or less to make it. It fits both anvils I have set up and when I set up another anvil that is a different size I will try out some modifications on the next one, But it works good now!





One-Man Swage

Jr. Strasil

1. Cut 2 pieces of cold rolled 1 1/4" to 1 1/2" square stock with good square edges, 3" long.
2. Cut 1 piece of 1 1/4" heavy walled square tubing, 1 1/4" long. Cut 2 sides off so a 1/4" flat will easily slide inside. See Fig. A. Weld to bottom swage block.
3. Cut 2 pieces of 1/4" x 1" flat, 1/4" shorter than both blanks together. Make sure they slide in tubing. Fig. B. Weld to top swage block on top and sides.
4. Clamp blocks together in drill press and drill holes on the center line. Slightly camfer holes. Break corners with file. Fig. C.
5. Weld on stub to fit hardy hole, it can be round or square.
6. To use - Lift top swage and insert part to be swaged. Use light to medium blows directly over the part to be swaged and rotate the part slightly with each blow. If you do not break the corners on the holes, the swaged part will have many little nicks.
7. Happy swaging!

Upsetting

By Jr. Strasil

Upsetting can be a time consuming and frustrating task to perform. With a simple bolster or upsetting bar it can be quick and easy.

Start with a piece of 2" square hot rolled bar about 5" long and drill 6 holes in it as per drawing. Hole sizes are 7/8" - 3/4" - 5/8" - 1/2" - 3/8". All holes should be 1/64 to 1/32" oversize and very lightly camphered on both sides. Remove burrs from the cut ends and weld on a square shank to fit your hardy hole at the end with the 1" hole.

To use, take a yellow heat on 1 1/2 to 2" of the end of the piece to be upset and taper slightly as in figure 3. Stick the end in the upsetting bar, using a hole about 1/8" larger the material, Hammer the end of the material. Remove from the block and realign the upset end of the rod with light blows, so you don't undo the upsetting. If a longer or larger upset is needed, taper the end before heating and repeat the procedure.

Upset only 1/8" at a time to control cold shuts and bending of the end. If it sticks in the hole, wait a little while and it will cool and shrink and then slip out easily.

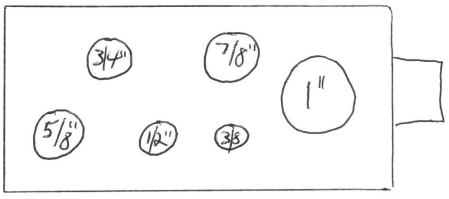
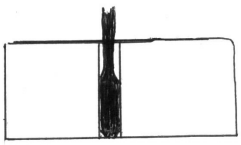


FIG.1



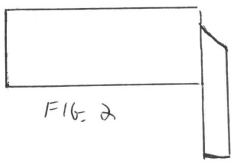


FIG. 2


FIG. 3

Foundations;

A Resource for Beginners. . .
by Bud Oggier
the Anvil's Ring/Fall 1986
Part 3

"Hello, Jean. Back for more? I hear you bought an anvil at the farm auction last week."

"Yes, I got one that's not beaten up too much."

"Did you get started putting your forge together yet?"

"Yes, Bud. Things really have been going along well. Dad offered to let me use the old shed and helped me put up the masonry. I used the dimensions from the Anvil's Ring (Volume 7, #1, March 1979) and when the dimensions didn't suit the block sizes, I went larger, like you suggested, to make them come out even. We used 8" blocks for the base with a brick top and laid up the chimney with 4" blocks around a 12" x 12" liner. Came out fine. I could hardly wait for a week until the mortar was set before starting a fire. When it was finally time, I built a fire and it draws as well as yours. I'm really pleased."

"Good, Jean. Sounds as if you're well on your way. We'll start making some tools pretty soon so you can start to make all the tools you need for your shop. But, first we need to have a discussion of the different types of hammers. Other than your anvil, the tool you are going to use more than any other is the hand hammer. When you look in my tool rack you can see I have about 25-30 different ones. That's not because I'm a collector, but because each one has a specific use. The one I use most is this one; it weighs about 3 lbs. and has a cross pien. I used to use a 4 lb. hammer for all general forging, but at my age it gets a little heavy by the end of the day.

"The pien, or end opposite the face, has a purpose and comes in many shapes. When you hit a piece of stock with the square face of the hammer, the stock moves equally in all directions. It gets as much longer as wider. If you need to make the stock move much more in one direction than another, you use the pien. When you hit a piece with the pien, it acts as a wedge and drives the metal at right angles to the pien and consequently, it moves more in one direction than the other.

"Cross pien means the pien is at a right angle to the handle; straight pien means the pien is parallel to the handle. The same effect can be achieved by forging on the horn instead of the face of the anvil, but in that case, the effect is much less pronounced.

"Notice the pien on my hammer is about ½" wide and has a rather large radius. In my opinion, factory made hammers have a pien that's much too sharp. You can correct this easily with a grinder. I also like to relieve the side edges with a radius. It helps to prevent chipping.

"Let's heat up a bar of iron and see if it really works this way. Now that this bar is hot, I'm going to forge it just the way we did on the very first piece we ever worked except I'll hit it with the cross pien. If what I told you is right, the steel should get much longer than wider. Here goes! See how much it stretches in length compared to width? Now a few hits to flatten out the ridges the pien put in. Just turn the hammer around and hit with the face. There, that should do it. If I wanted to make it wider instead of longer, I could use a straight pien or turn the piece 90 degrees, but that's a little awkward.

"Now, let's see what happens if we hit the piece with a round or ball pien. I'm going to hit this piece I just forged out close to the end so we can see if the metal really moves in all directions. I'm getting the piece real yellow hot so it will move freely. There, it's ready. See, I only hit in exactly the same place twice. If I really had to I could use a round ended punch. Let's cool it off and take a good look. Notice the end and the sides show about the same swelling and the swelling is radiused. So, the stock really does move in all directions at the same time. The same happens when you hit with a flat hammer but it's not as pronounced because you can't displace enough metal. "Let's try it again using a straight pien. I'll get the piece hot and then spread the end to make it wider. Notice that the piece gets a little longer, but mostly wider. We're ready to go. See how the piece spreads? Notice my blows are coming down first in the middle, then on either side in order to move the stock throughout its entire width.

"Let's try another piece using the cross pien, but over the horn. The closer to the small end of the horn you work, the more pronounced the stretching is because the small diameter of the horn can sink in more than the large end. My piece is ready; let's go. While I hit this piece, I have to move it on the horn closer to me. Now to flatten out the pien marks. See, it stretched more than when I worked on the anvil face. This same principal can be used when you get far enough along to work with a striker using a top and bottom fuller. We'll do that when you're a little more experienced.

"Jean, look at these two hammers. They are almost the same size and weight, but have a major difference. The face of one is quite flat with only the edges radiused, The other has the edges radiused but also has considerable crown. The center is almost 1/8 inch higher than the edges. This is not a flat taper, but a large radius. I use this hammer for final finishing where I don't want any hammer marks. In using it, I don't hit very hard, since all the forging is done, but only hard enough to take out the old hammer marks. This leaves the piece not dead flat, but with a series of large radius dents that blend together so it looks flat. Even though it looks smooth, if you were to file it, you would see high places where the hammer strokes met.

"Jean, why don't you heat up a piece and try the cross pien and draw a piece out? Remember, your hammer blows need to progress over the length you are trying to draw out. Don't hit in the same place twice. It will take a little practice before you can judge when to stop using the pien and go to the face so your piece is not too thin by the time you get the pien marks out. You're doing well, Jean; keep your hammer blows progressing toward the end. Fine; now flatten it, now a few blows on the edges to true them up. Great! See how much easier and faster it was to draw that piece out than the ones we did earlier?

"Jean I make quite a few floral pieces so I use this tool called a leaf hammer. It's not very heavy, maybe a pound and a quarter, and has a cross pien on one end and a straight pien on the other. While folding or shaping a forged leaf, I only have to change ends to get a different pien. You may notice I also have a similar hammer, about the same weight as my forging hammer. I use it when I'm shaping a piece on which I will have to move part of the piece in different directions. It's faster and easier than changing hammers. In looking around my hammer rack, you can see many of my hammers look the same, but are different sizes.

"On one of your first visits, I told you to hit the piece hard enough to move the steel throughout its entire section. This holds true for almost all forging. It is much easier to use a hammer of the proper weight for the piece being worked than to use one too light and try to hit that much harder. I think hammer control is almost impossible when you are trying to hit as hard as you can. Let the hammer do the work. Conversely, you wouldn't try to drive a tack with a sledge, so use the right size tool.

"Now I'd like to show you how to punch holes in steel. Punches can be divided generally into two classes: backing out punches and punches for making holes. They can be hand-held or hand-led. Here are two 1/2" punches. This one is ½" at the end and is slightly tapered so it gets larger going away from the end. Its for putting in holes. This one is slightly smaller than ½" (by about l/64") and has a straight diameter for about 3 inches. It's used for driving pins or parts out of a 1/2" hole. Punches come in all kinds of shapes round, square, for making slots, or decorative shapes. Let's just deal with this ½" round punch for now and see if we can make it work.

"This may seem a little strange, but when you drive a punch into a piece of hot steel you are forging it. Almost all the stock that was was in the hole is forged into the surrounding material. Sometimes this is a big advantage over drilling, where all the stock is lost in chips.

"Well, let's take a piece of 1½" X ½" bar and punch a ½" hole in it. I'm going to put a heavy center punch mark where I want the hole and chalk it well so I can see it when it's hot.

"Here we go in the lire. While that's heating I'll put this bucket of water close to the anvil. While the punch is being driven into the bar I'll have to take out the punch after every few hits, dip it in the bucket to cool it, and then go back in the hole again. If I don't keep the punch cooled off, it will get hot enough to soften. This causes trouble, If it gets hot enough, the end of the punch upsets in the hole and you can't get it out.

"My piece is ready now, so let's go. Notice it's

quite yellow. In mild steel you can work at this temperature and not harm the steel, and it will punch easier. See the black dot where the punch mark is? I put the punch over the mark and strike quite hard, hitting five or six times. Now I cool the punch tip in the bucket, put it back in the hole, hit five or six more licks and cool again. Hear the difference in the sound the punch makes now? That means we're just about through; just a few more licks there, cool the punch and turn the piece over. See the black spot where the hole is coming through? I'll put the punch right over the black spot and hit hard. There, its broken through. Now I slide over the hardie hole and drive the punch all the way through the hole, then put the punch in the bucket so it gets cool again. I'm looking for the little slug I punched out. Here it is. Let me cool it. There, see, it's only about 1/16" thick; all the rest of the stock from the hole is in the piece.

"Try your piece, Jean. Don't forget to get it good and hot, and cool the punch every few hits. Sometimes when punching a deeper hole, the punch wants to stick. If you put a pinch of coal dust or a small piece of coal in the hole before you put the punch back in, it helps eliminate this. If your punch does stick, turn the piece on its side and strike at the hole. The taper on the punch should loosen it up so you can get it out. Also, while punching a deeper hole, the piece will want to curl up, so you will have to turn it over and flatten it. If you don't, when you flatten the finished piece you'll find the hole quite a bit too large at the entry side. If you don't drive the punch far enough in from the first side, when you turn it over to punch out the slug it won't cool fast enough at the hole so you can see it. You can set your hammer where you think the hole is for a few seconds and that should cool it enough so you can see the dark spot.

"I think your piece should be ready now. Go for it. Don't be afraid to hit the punch hard, Jean. Drive it down in the steel. Cool your punch; it's getting hot. Now go again. Hold it, Jean. Your piece has cooled too much, so take another heat and go again. Once you have started your punch in about an eighth of an inch, hit the punch hard, real hard. If it doesn't go in fast enough, you need a heavier hammer. You want to get the punch through the hole before the piece cools off. Don't forget to cool.

"Okay, go again. Hit it hard. Good. Don't forget to cool. Hear that solid sound? It sounds almost as if it's hitting the anvil. That means you've gone far enough. Turn it over. See the dark spot? Hit it. Good. Now drive the punch in far enough to knock out the slug. Great. I don't think you'll have any trouble the next time. Just remember that while the steel is rather soft at this heat, it's still not like butter. You've got to hit hard.

"Now I'd like you to try a thicker piece. Let's use this 1" x 1" bar. I'm going to let you do this one without me showing you first. No sense working the old man too hard!

"This time the piece has more mass, so it won't lose its heat so quickly. You may have to cool the punch more often, but otherwise everything should be the same. You're ready now. Act like a hole puncher. That's it. Hit hard. Don't forget to cool. Go! Hold it, Jean. Look at your piece. See the ends curled up? If you don't flatten, the hole will be too large. Great. You're ready to turn over. Good. Knock out the slug. Now a few hits to flatten the piece. Good. I was pleased to see you remembered to put a little coal in the hole the last time you went in from the front side. You feel any sign of sticking? Some smiths put a little beeswax or hoof salve on their punch to help prevent sticking, but a little coal dust seems to work okay for me.

"Just remember to keep cooling your punch because it not only will lose its hardness, but if it gets hot enough, it will upset in the hole and will be very hard to get out.

"In punching holes at the forge it is important to do your punching at a high heat. Start at yellow, cool the punch frequently, flatten the piece if it starts to curl up, punch until the punch sounds and feels as if its punching right on the anvil face. In punching a hole rather than drilling, all the stock except the thin slug remains in the piece and most times, this is an advantage.

"Next time, Jean, we'll make a hole a different way and use a different tool to size the hole with."

This article was reprinted courtesy of the author Brad Oggier, The Anvil's Ring and ABANA. It was originally published in the Spring issue of the Anvil's Ring 1986, Volume 14 Issue 2. Reprinting of this article must be cleared through the ABANA publishing committee