New Jersey Blacksmiths Association
"EAGLE"

N.J.B.A. Newsletter

NJBA Volume 15, Issue 3 10/22/10
http://njba.abana-chapter.com

Editors Soapbox

Hi, As editor I would appreciate some help in writing up events for the newsletter. You don't have to be a gifted writer just send me something about the event as I can't make all of them or remember everything. We have some events coming up that are good opportunities for fellowship and to swing a hammer, so come out and enjoy.
Larry Brown, editor

We need some more activity from our members!

Recent events in the lives of some of our directors have made it hard for NJBA to be all it can be. We need more people to help out other than the same few doing everything. Please talk to one of the directors to find out what you can do to help!

We are also looking for members who have a pickup and would be interested in helping bring the NJBA trailer to meets. If you are interested in helping please contact one of the board members listed on page 2. Larry Brown, Editor

Upcoming events for 2008/2009

Get you calendars out and mark these events down. Please bookmark our web site and check for updated meet information. Remember most of our meets have an "Iron in the Hat" drawing, so be sure to bring something. Meet information starts on this page and continues on page 3.
November 13th- Anvil Repair Workshop More information this page.
December 5th– NJBA Holiday Party, hosted by Marshal and Jan, more info on page 3.
December 11th—Damascus workshop, at Marshals farm for more info see page 3.
February 5th– Meet at Eric Cuper's shop in Easton, PA. More information on page 3

Saturday November 13th, Anvil Repair Workshop

For $100 and some sweat labor you get your beat-up old anvil repaired with freshly welded, ground and polished edges. This is a workshop meaning that the anvil owners are participants, usually meaning you will be assigned a task such as grinding, etc.

Anvils missing chunks of the face badly swayed or otherwise abused can also be repaired, but will require more preparation, labor, and money on your part. The workshop will take place at Marshall Bienstock's shop in Howell NJ. Prior registration is required so we can have the proper amount of supplies on hand - please provide the approximate size of your anvil. Pictures would help determine the amount of work required. NJBA has run a similar workshop on several occasion with tremendous results. Non-NJBA members will be required to join to participate in the event.
The Contact Persons for this event are: Bruce Hay; (732) 747-4758 and Larry Brown (917) 620-9774

Directions:
Marshalls farm is at 663 Casino Drive, HowelI (Monmouth Co.). NJ. which is about 1/4 mile east of Route 9. Casino Dr. is a few miles north of 1-195. and a few miles south of Rte. 33. Either of these routes can be easily reached from the major north-south highways. including the Garden State Parkway. the NJ Turnpike. 1-195. Rt. 18 or Rt. 34. Marshall can be reached at his shop at (732) 780-0871.

The NJBA Web Site!

The NJBA Web Site is up

and running at:

http://njba.abana-chapter.com/

The Newsletter is at:
http://
members.bellatlantic.net/
~vze25jcc/index.htm

or use the link on the NJBA web site for the newsletter.

Official NJBA Address

NJBA
P.O. Box 224
Farmingdale, NJ
07727-9998

Rather than use room in the newsletter, All correspondence between ABANA and NJBA is now being posted on the NJBA web site. If you cannot access it there, contact me and I will send you copies. ABANA is communicating again so check it out

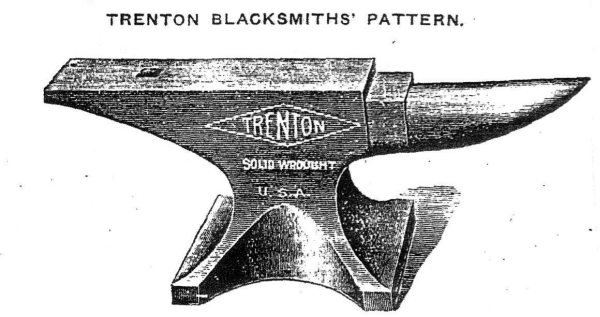
NJBA Board of Directors

Directors names are not listed on line

NJBA Holiday Party December 5th at 3PM

The holiday party is to be held on December 5th, 3PM at Jan and Marshall's house. Many thanks again, to Marshal and Jan for opening their home to us in the holiday season. Members are asked to also bring various trivets, candle holders, or other holiday items they are making to the party. Despite the emphasis on blacksmithing, members are encouraged to bring their families. Bring a dish, beverage or dessert. Contact Jan or Marshal for advise on what to bring. (ph# 732-938-6577) jlfmib@optonline.net

Directions to Marshalls' Home:
Marshall and Jan's "cabin" is not on Marshall's farm, but about 3 miles east of it on the same road. Casino Drive is just off Rt. 9, about 3.5 miles north of interstate I. 195 (exit 28). and about 4 miles south of Rt. 33. Either of these routes can be easily reached from the major north-south highways including the Garden Sate Parkway, the NJ Turnpike. 1-295, Rt. 18 or Rt. 34. From Rt. 9 northbound. make a right onto Casino Dr.; southbound. take the jug handle to make a left onto Casino Dr. Continue past Marshalls' Farm to #301 Casino Dr., Howell, N.J. (ph# 732-938-6577) jlfmib@optonline.net



Saturday December 11th, Damascus Workshop

This will be a basic damascus steel class for knives or specilty tools led by Mark Morrow (http://www.swordsmith.net/). This will be a beginner level class.
We will be making a simple pattern bar of folded steel in both gas and coal , coke forges, tools and forges will be provided. Attendees will need to bring leather gloves and safety glasses.

The patterns will be twist , ladder and random , also covering types of steel to use , grinding methods and heat treat of finished blades and how to bring out the pattern in the steel.

Charge to be $50 per person plus $20 or less (payable to Mark) for materials. (Open to members only, but anyone may join NJBA on the day of the event.) To be held at Marshall's shop. Mark's email address is;
swordsmith201@verizon.net
and also the shop phone 7324585823 , we need a at least a $20 deposit and balance at the door. There is a minimum of 4 participants and a maximum of 8.

Directions:
Marshalls farm is at 663 Casino Drive, HowelI (Monmouth Co.). NJ. which is about 1/4 mile east of Route 9. Casino Dr. is a few miles north of 1-195. and a few miles south of Rte. 33. Either of these routes can be easily reached from the major north-south highways. including the Garden State Parkway. the NJ Turnpike. 1-195. Rt. 18 or Rt. 34. Marshall can be reached at his shop at (732) 780-0871.

Blacksmithing Demonstration Eric Cuper and Daniel O'Sullivan or Mystery Demonstrator at Cuper Studios Saturday, February 5, 9am.

Eric and Dan or possibly another swell demonstrator will present a scintillating demonstration for NJBA, PABA, NOMMA, and others. All are welcome! As always, there will be an Iron In The Hat, tailgating is welcome (try to leave parking spaces in front of the garage doors for tailgaters), and we'll crank up the heat. Coffee and Donuts will arrive at 8:45ish, demos starts at 9ish, lunch and IITH at 12ish, more demos from1 until 4. We usually order out for lunch and request contributions. We will have bleachers but if you have a chair you prefer please feel free to bring it.

The Demonstrators

Eric Cuper, an NJBA Board member, began blacksmithing at Peters Valley Craft Center in 1996 (which is where he first heard of NJBA). From there he attended Southern Illinois University at Carbondale to receive his BFA and MFA degrees specializing in blacksmithing. While at SIUC, Eric's forged sculptures were shown nationally and won several prestigious awards. His work can also be found in several books on forge work.

Since 2004, Eric has been operating Cuper Studios LLC in Easton, PA. Cuper Studios is an architectural metalsmithing company currently producing railings, lighting, gates, furniture, fireplace accessories, sheet metal work, sculpture, and other house jewelry. Check out www.cuperstudiosllc.com for some of Eric's work.

Daniel O'Sullivan received a BFA from Parsons School of Design, completed a traditional Ornamental Ironworker Apprenticeship followed by Stage Forge at the International School of French Wrought Ironwork in Muizon, France. He taught blacksmithing in County Mayo, Ireland, and worked for an exclusive European metalworking company. Daniel is now proud to be a Local 483 Union Ironworker and is on the Board of the NJBA. Demonstration and demonstrator yet to be determined.

Directions to Cuper Studios

Shop address is 1301 Lynn Street, Easton, PA 18042. Phone 610-438-8694.

Email: www.ericuper@hotmail.com

From NJ: Take 22 West into PA. After you leave the toll booth, stay in the right lane. Take the first right exit immediately off the bridge. Keep right around the exit and turn left at the stop. Follow this road (Larry Holmes Drive) through 2 lights and take the next left onto Lehigh Drive. Continue on Lehigh Drive and Lynn Street will be your first right with my building being the first big off white building with red trim on the right.

From PA: Take Route 22 East towards Easton. Take the 248/ 25th Street Exit. At the end of the exit turn right onto and follow 25th Street heading South. Turn right onto Lehigh Drive. After the intersection with a stop sign, Lynn Street will be the 4th left.

Coal Order with Eric Cuper

Hello Everyone. I need to buy coal and I am looking into getting a full load to hopefully save everyone some money. The order would be for 22-23 tons and it would be bagged in 50# bags with 40 bags to a pallet, so one pallet equals one ton. I am happy to keep several tons in my shop and sell by the bag but I am unable to keep the bulk of this in my shop so I am looking to see if anyone is interested in giving me a confirmation of an amount they would like to purchase to see if we can make this happen. I need to know by early December because once freezing temperatures set in they can no longer bag it because it clumps together. This blacksmithing coal is from the Fisher Coal Mine in Bradford, PA. I do not have the technical data. We would get the 'nut' size which is ¾" x 1-1/2" and smaller. I have been using it for several years and it forges and welds well and produces very little clinker. Prices may change, but at the moment it would cost $250 a ton. I have forklifts so I can unload the truck at my shop but everyone would need to get their share quickly so it doesn't choke up my shop for too long. I am also able to deliver 4-5 tons for a nominal delivery fee if you have the means to unload. Please call or e-mail with interest as soon as you can so I can confirm an order. Eric Cuper 908-642-6420 or eric@cuperstudios.com

Outside NJBA Meet

The upcoming NOMMA meeting invite has been extended to our group. It will be a swell meeting and I encourage all to go if you can. Eric Cuper

NOMMA Northeast Chapter Meeting
When: Saturday, November 6, 2010; Starting at 10 am
Where: M. Cohen & Sons, t/a The Iron Shop, 400 Reed Road, Broomall, PA 19008

In addition to a tour of the M. Cohen & Son facilities, Chris Tierney formerly of Samuel Yellin Metalworks and currently with M. Cohen and Sons, will be forging steel utilizing the coal forge, hand and power hammer forging, anvil tooling and hot chisel work. The focus of this demonstration will be on moving mass and layering detail in order to achieve a more complex design.

The design will be a copy of an ornament from the Yellin Collection.

Additionally they will be showcasing their laser and water jet techniques to incorporate intricate design work along with hand forged items to produce a unique modern twist on old methods.
RSVP is required in order to make proper arrangements.

Phone: 973-247-7604
Fax: 973-247-7605
Email: majkarailing@optonline.net
This e-mail address is being protected from spambots. You need JavaScript enabled to view it
Directions: call 610-547-8487 or go to http://www.ironshopcustom.com

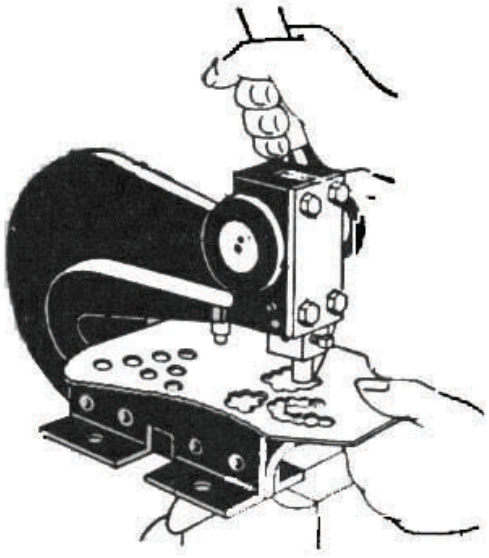
Eric Cuper
Cuper Studios LLC
eric@cuperstudios.com
Phone/Fax 610.438.8694
Cell 908.642.6420

Peters Valley Pig Roast

The Peters Valley Pig Roast to benefit the Blacksmith shop/school was held on September 4th this year. The demonstrator for the event this year was Jonathan Nedbor of High Falls, NY, with a popular and unscheduled demo by Sam Salvati, who I believe is currently working with Tim Miller in Bayport, Long Island. The event had tailgating, an auction (With a lot of great items) and well of course food. There was a selection of roast pork (Pig in BBQ was the star of the show), burgers, dogs, sides and a vegetarian alternative for the non carnivorous. It is now a BYOB event, I had a great time and recommend it to all as a must make event for next year. L Brown

Red Mill Picnic– Report

By Bruce Freeman (with contributions by Dave Ennis)
This year we held our annual picnic and tailgate sale at the Red Mill on Sunday, Sept. 12. The weather was drizzly in the morning, but soon brightened up. It was later reported to me that attendance was about 44, including



NJBA members and others. I'm sure there were at least two dozen NJBA members and relations present.

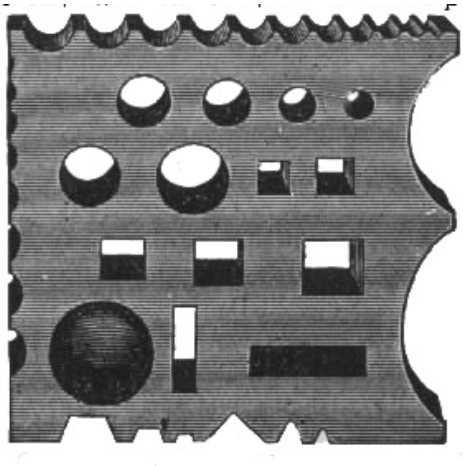
Dave Ennis took on the task of shopping for the picnic food and supplies, including providing two charcoal grills for cooking hamburgers and hot dogs. Bob Bozzay and the staff of the Red Mill also contributed to the effort. By the time I arrived, two canopies had been erected, and tables and chairs set up. One charcoal grill was set up and Dave soon assembled a second one. (We opted to use charcoal this year because the city of Clinton has imposed greater regulations on the use of propane grills.)

Mark Balzarette and his wife handled the grills again this year. They started them up in time to have lunch ready by noon, and then kept things running till all were well fed. They also did most of the clean-up, with the help of Dave Ennis.

A local Boy Scout, Brian Fokker from Clinton Troop 121, recently completed installing a brick floor in the front portion of the Red Mill's blacksmith shop as part of his Eagle Scout project - and it looks GREAT! The Mill honored him before the Hammer In. There was a brief 'ribbon cutting' and some recognition of his work. The Mill staff, Board President, Scoutmaster, a local Cub Scout pack, and the local press was there. Since I was running a few minutes late due to the rain slowing traffic, Larry Brown represented NJBA in this ceremony and said a few words.

My contributions were to bring up the NJBA sign and EZ-up canopy, and to get the iron-in-the-hat organized. I also brought up the T-shirts and sweatshirts, and handled their sales. In addition, I joined several others in tailgating blacksmithing and related merchandise. I saw a number of items change hands before the afternoon was over.

As is my wont, I drafted a few folks to help out with the iron-in-the-hat. Maggie sold tickets for the IITH, and Larry and Mike Braddee conducted the drawing, later in the afternoon. What with the IITH and T-shirt sales, NJBA did better than break even for the day. I believe all went away satisfied that the day was well spent.



Old Time Engine Show at Washington's Crossing Park

The Show was very nice this year with a broad selection of one lung / hit or miss engines (Most running) antique trucks, tractors, cars and farm equipment. The show is held at Washington's crossing park in NJ in Titusville, NJ. It was a beautiful day on Saturday when I got to the event. Mike Erdie, Jose Torres and Mitch Swirsky were at John Chobrda's trailer with a fire going and Mike was working at the forge. A few other members were working in the fire at various times or checking out the show. I spent a while walking around looking at all the tractor, trucks and hit or miss engines in the fair grounds. I can't begin to describe all the equipment that is on display there, much of it restored beautifully. I forged a scroll and something else (I need to do write up sooner after an event) as an impromptu demo on Saturday. The Show is was held on Friday, Saturday and Sunday I would recommend this event as a great day out, bring your family and see some history and some forging.

Report L Brown

2010 Boy Scout Jamboree Metalwork Merit Badge Report

By Doug Learn

On 22 July my son Calum and I, accompanied by Life Scouts John Kopperman and Zack Johnson and Scoutmaster Kim Johnson all of Troop 71 traveled to Fort A.P. Hill, Virginia to participate in the 2010 National Jamboree as Metalwork Merit Badge counselors. This was the 100th anniversary of scouting and proved to be one of the largest and best Jamborees.

We carried three forges, four anvils, three vises, one drill press, a chop saw, two grinders and all the other ancillary tooling to help outfit the merit badge booth for blacksmithing, one of the three metal skills that were taught, tinsmithing and foundry being the other two. The Metalwork Merit Badge booth was approximately 120 by 40 feet, with the blacksmiths set up along the entire side of the booth, 9 forging stations in all. Kim and Zack helped in the foundry area, while Calum, John and I were blacksmithing instructors, along with 12 others from all over the US, half of whom were ABANA members. A total of 45 volunteers worked in the booth, including administrators who kept the advancement paperwork organized, handled safety gear and kept the booth managed, and tinsmiths and foundry crew who taught these skills. In addition, others taught the basic safety, metallurgy introduction and did the hardening and tempering requirements. And this was only one of the booths set up on Merit Badge Midway, and nearly all of the 126 merit badges were offered during the Jamboree

After two days of set up and three days of prep work teaching some of the other instructors the skills they needed to teach the scouts, we started teaching some of the over 45,000 scouts who attended Jamboree on Monday, and carried on for 9 days, until lunch the following Tuesday. The booth was very popular, perhaps the most popular on the Merit Badge Midway, with scouts starting to arrive an hour before we opened and often with 30 waiting in line throughout the day. Operating hours were from 0930 to 1700h with about an hour off for lunch. The scouts, Military Brass and Military Police also gravitated to the booth, primarily because of the visibility of the blacksmiths and also because several of us made bottle openers, steak turners and other such pieces for them. Calum, under the tutelage of ABANA member Jim Robarr, made a knife from 1095 steel for the grandfather of one MP.

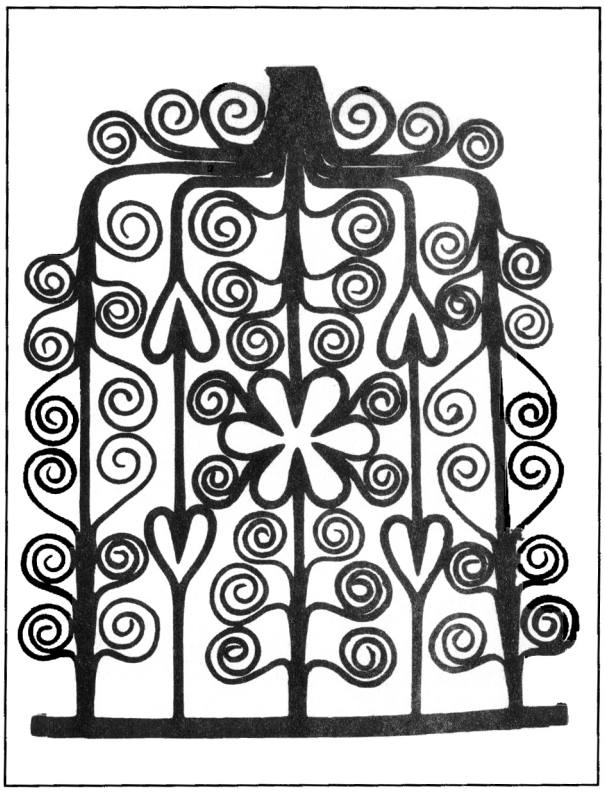
Over these days, approximately 1100 scouts passed through the booth, and 486 worked on the blacksmithing requirements, having first completed the initial safety and metallurgy requirements and making a center punch. The blacksmithing requirements include making two pieces that require forging a taper, making a decorative twist in a piece, performing riveting and preserving their work

with wax. The choices of projects were a dutch oven trivet, a spatula with a stainless steel blade, a dutch oven lid lifter and a steak turner. Working in pairs with a counselor, the scouts worked on one of these projects, completing the piece in about 90 minutes with assistance from the counselors to match the Scout's skill level. The counselor's goal was to expose the scouts to the processes and the field and ensure that they carried away a piece that they could be proud of and a souvenir of their experience.

The staff stayed in Wilcox Barracks and either bussed or drove to the Midway each day. We ate breakfast and dinner at the mess hall and had lunch on site. I 'incentivized' the outdoor cooking booth and Lodge Cookware staffs with dutch oven tools and bottle openers early and several of us enjoyed their cooking in lieu of the bag lunches. The fellowship of the counselors, not only in Metalwork but with all the counselors and staff, was wonderful, with people from all walks of life, tool and die makers to physicians to retired Marine generals, volunteering their time to give the Scouts that will be, for many, a once in a life time experience.

A search of YouTube for BSA Jamboree Blacksmith will yield two videos made by scouts completing the cinematography merit badge. One is of Rich Herman of Minnesota and the other is me. There are many sites on the internet where photographs of the Jamboree are posted, and many of them show the Metalwork Merit Badge booth.

My thanks to my fellow counselors, along with PABA members Ed Land, Stan Newcomer and Don Plummer for their generous donation of equipment that made this possible. And my thanks to my wife Fawn, who provided, as she has for over 15 years, her support for my volunteer work with Scouts. We will



be doing this next Jamboree in 2013 at the Bechtel Center in West Virginia. I hope to share the experience with some of you.

Flame Polishing to Rejuvenate Old Safety Glasses

By Bruce Freeman

Recently, I came across information on the flame polishing of plastics. I'd know for many years that glass could be flame polished, but that entails heating the glass to incandescent – a process not amenable to plastics.

It turns out that many plastics can be flame polished merely by waving a MAPP gas flame over them. (Apparently, the hotter flame of MAPP gas is preferable to propane, but I can't attest to this as I've only tried MAPP gas.) Start with a foggy sheet of plastic, like Plexiglas, waive the torch over it, and it magically

turns clear as the surface imperfections melt together and become smooth. But take care because if you heat the plastic too much it will bubble, and the bubbles may be impossible to buff out.

Anyone working in a shop uses safety glasses, but small scratches and fogging impair your vision and can actually make the use of a battered pair of safety glasses – unsafe! If you can't see through them, you might tend not to wear them at all.

As it happens, I use non-prescription safety glasses that fit over my prescription glasses. I get these on the cheap from Harbor Freight, so it was no great risk to try flame polishing one of these pairs. The first step was to clean off the oil and grit by washing gently with detergent and warm water. Let the glasses dry, then waive the flame over them. The result is great – you can watch the lenses get clear.

A warning, however: Don't try this with prescription lenses unless you would otherwise throw them out anyway. The flame polishing may very well change the prescription, either by direct change of the lens, or by warpage. But for the cheap safety glasses that you can wear OVER your prescription glasses, you have little to lose if the trick fails.

Tim's Tips

By Tim Suter

I would like to pass along a few observations I have made; Recently I completed a gate that includes eight double ended scrolls which enclose eight smaller double ended scrolls. I find that scrolls are like snowflakes, no two are the same, regardless of the care taken. Same technique, same length of material, same scroll form,, etc... They all need some tweaking to perform as intended.

To simplify this and final assembly I made an angle iron frame of the desired dimensions with a bolt hole at the location of the final fastening, located and drilled the hole in the scroll and bolted it in. then with a torch for localizing the heat I tweaked the scroll to fit the frame closely. The mounting hole in the smaller scroll was located, drilled, bolted in and tweaked to suit. Where scroll met scroll I located a 1/4" pin hole. The pin was plug welded both sides and rotary filed smooth to hide it. This greatly simplified the final assembly.

Winter is fast approaching; Last winter I used a small electric space heater to take the initial chill out of my 12 by 18 shop, then used a window fan at low speed to circulate the air around my forge, hood and stack. The shop was soon at a cozy working temperature.

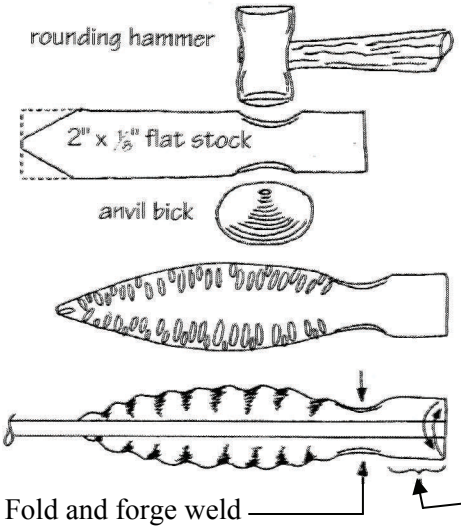
What to do about a freezing slack tub; Mine is a beer keg mounted on casters, the better to move it to the most convenient location. I put a 25 watt light bulb under it, wrapped it with insulation batt and a cover of the same batt. I would guess the water never got less than about 60 in the coldest of nights. it is nice not to have to empty the tub lest it freeze and break or have to fill it when the hose is frozen. The cost is inconsequential compared with the convenience of going to the shop whenever the mood strikes.

Water Leaves

By Eden Sanders, San Andreas, California,
based on photographs taken by John Graham
During Mark Aspery's
Weaverville demonstration
CBA Skill Level II

Reprint from California Blacksmith, No. 08-03, May/June 2008

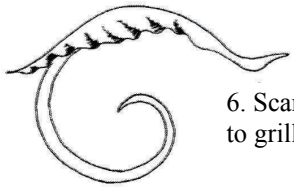
Water Leaf 1



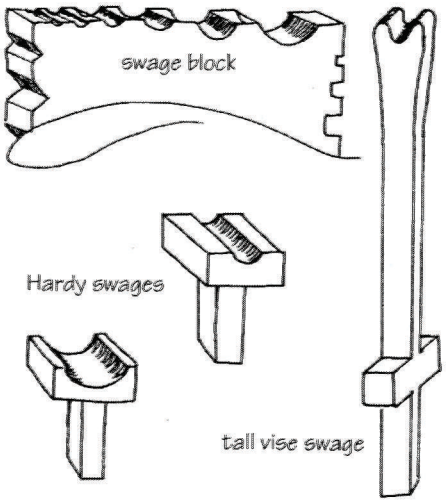
1. Use rounding hammer to narrow the base of the leaf
2. Cut corners to make a point
3. Use cross peen to thin edges and elongate the leaf

4.Use a swadge and round edge of anvil for rippled edges
5. Fold and forge weld on four sides

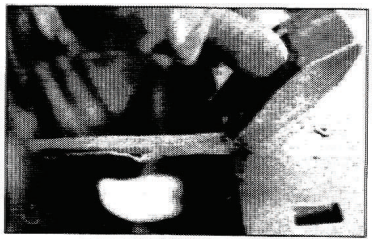
Fold and forge weld on three sides

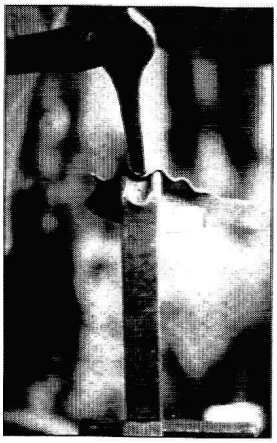


6. Scarf the end to attach to grill, curtain rod or ...



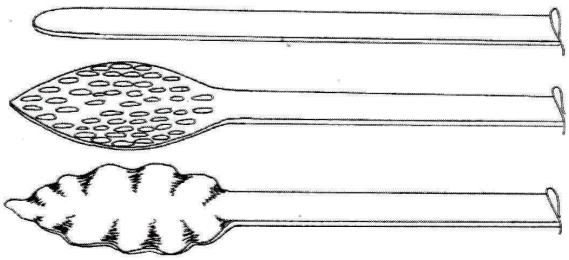
Leafing hammer and swadge at work



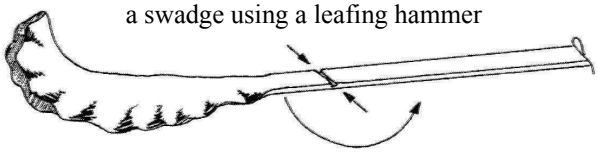


Scooping the leaf in a 45 ° swadge designed to be used in a vise

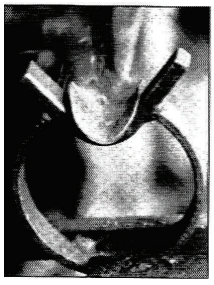
Water Leaf 2



4. Ripple edges over rounded edge of anvil and a swadge using a leafing hammer



1. Round the tip.
2. Use cross peen to thin the edges and shape the leaf
3. Flatten out the peen marks with rounding hammer, and scoop the leaf in a 45° swage with a wide cross peen
5. Cut bar halfway to fold leaf back over the bar, and forge weld
6. Scarf the end of the weld to suit application



Leaf Making

As Taught by Mark Aspery, October 13-15, 2007 and notes by Steve Smith, ME Rep. Attending.

Reprinted from New England Blacksmiths, VOL. 28 NO. 1, Winter 2008 Edition.

Mark is originally from Wales. He has a lot of experience and skill in many areas of blacksmithing. He is very good as an instructor, clear in his explanations and entertaining (watch out for his understated British wit). He has written a book, Mastering the Fundamentals of Blacksmithing, with a second volume in process. The photographs in the book are excellent b&w, clear, detailed and well composed. I strongly recommend both his book and his classes.

This class was on making leaves; both period leaves (water leaf, acanthus) and more modern leaves. The class starts you from scratch, making the tooling to make the leaves. The work is all done by hand, a few items made with the help of a striker. Our class was only three days (the full class is five), so we didn't have time to finish all the pieces.

General Info gleaned from Mark:

Case Hardening
Mark makes many tools out of case hardened mild steel, including his leafing hammer. The steel is easier to forge, available in many more shapes and sizes, less expensive. Case hardening is usually sufficient, especially for leaf work. He likes Kasenite #1 Fine (but he says that in England, they use rose petals...):
Heat to orange
Cover with Kasenite
Reheat to orange
Quench
A quick and easy process. Mark says that Kasenite has wetting agents that make it work something like Superquench, plus it adds carbon. Mark's quenches screamed a lot like Superquench; mine did not (practice...). Case hardening compound is made of "ground up dead things" and smells like it.

Heat treating - bits and pieces
Mark's book has a very clear chapter on this, one of the clearest explanations I've read. Heat treating starts with the premise that the steel is stress free-thus the need to normalize before hardening.

Tenoning
Use a butcher to isolate the mass of material to form the tenon. Forge all four sides or the tenon will walk off center. If you hit the anvil with your hammer, almost all of the energy conies right back at you. Now hit hot metal. Force from the top moves the hot metal. What comes out the bottom of the work into the anvil is less force, so less force is applied to the bottom of the work than the top. This causes a centered tenon to move off center if you only forge two sides. Forge all appropriate sides.

Pickles
Oxalic Acid-only attacks oxide, not the metal
Phosphoric Acid-only attacks oxide, not the metal
Vinegar-dissolves borax

I use phosphoric acid to pickle stuff. It works really well and leaves behind a layer of iron phosphate which provides some rust protection if your project languishes for a few months as mine have a habit of doing. Some concrete cleaners are dilute phosphoric acid (read the label).

Design
Mark has interesting things to say about design, which would be difficult to reproduce here. Some bits: Vertical lines look stoic/solid, horizontal ones look at rest. Lines at an angle add a dynamic element. Even numbers tend to annoy, odd numbers give the eye a place to go, a focus.

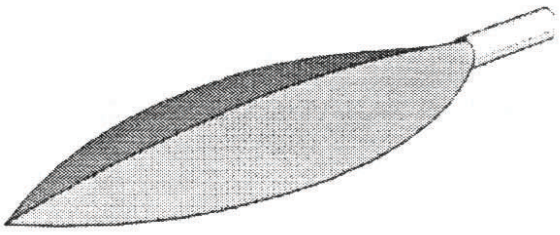
000000 boring	
000-000-000	more interesting (note odd)
0o0o00 etc.	

Restoration work in England
With an old. piece, you cannot simply start welding on new leaves. This greatly damages the value of an authentic item. Instead, new leaves are attached with epoxy, which is reversible.

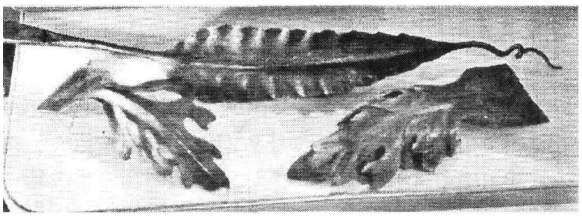
Klein Tools bull pin (#3251)
Costing $10 or $15, this is a good buy for making a tapered drift, especially if you lack a power hammer. It is 1. 1/16" diameter at the top and 15" long, tapering to 3/8" Mark says it sparks like it is an S series tool steel. He calls it "the transmorgifier drift:,

Teflon/UHMW can be used to back up cold sheet work.

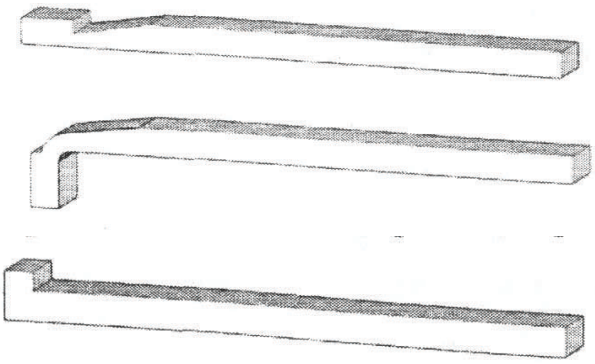
Leaves
Water leaf
"Ibis leaf is a representation of a hearts tongue fern. Start with 1/4 x 3/4 stock. Taper the tip of the bar and spread. to perhaps twice the width. Spread. the far side (hard side) first, then the near side. "Leaves are like dinosaurs - thin at both ends and thick in the middle". Make a small shoulder at the stem. While heating the leaf (in a coal fire), heat it upside down. If you lift the stock (at the cold end), you can see into the fire under the leaf Don't heat quickly or you'll burn it up. Form a valley (hot) using a leaf hammer and the crimping stake, with the shoulder up. The leaf will curl - over curl it as crimping the edges will straighten it a little.
It is very easy to lose the valley during edge crimping. Work from the edge in, keeping the leaf on edge, not horizontal. This is easy to say but also easy to do wrong. Practice ...
The tip of the leaf should be blown over to make it lifelike.



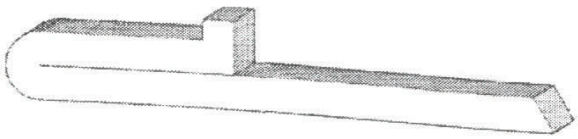
A simple abstract leaf
A very credible looking abstract leaf can be made without veins, broadly triangular in cross section:
Other leaves
We also did one of Mark's contemporary leaves and an acanthus leaf. My notes on these don't allow me to do them justice here. Take his classes or read the next book when it comes out.

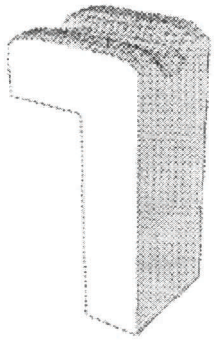


Tools made for the leaf making class
Crimping stake
1/2" x 1." bar (for anvils with a 7/8" - 1" hardy hole) Make a shoulder, leaving about 1" full thickness.



With the step up, fold the end down over the edge of the anvil at about 90 degrees.
Invert and upset the tab back down into the body. Flip and work over a sharp anvil edge, pulling back on it to clamp on the edge, squaring up the tab. Now bend back about 3" from the end and close the fold. The folded part should now be about 1" square and goes in the hardy hole, with the projecting tab acting as a stop. Knock off sharp edges everywhere appropriate. Cut stock so 4-6" will project above anvil. Cut with a hot cut so that the scrap has a square face and this tool has a bevel on the end.



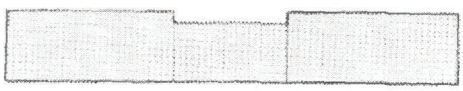


Now take the beveled end of the stake and bend it 90 degrees (ours went opposite the tab). Heat the top and put it in a vise so that the bent end is resting on the jaws. Hammer a piece of 1/2" round into the top to form a groove. File to smooth the edges all around and case harden.

The top should look something like this when done.
This approach to hardy hole tools will obviously make more than just a crimping stake.

Vise stakes
Start with 5" of 3/4" round stock. Forge a flat in the center the same size as your vise jaws (vertical dimension) by using a piece of square stock and a striker.

Rotate the stock 90 degrees and thin one side a bit - maybe the left half is now 5/8" and the right half 3/4" The idea is to make each end into a stake tool, but with different widths.

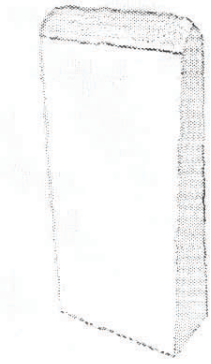


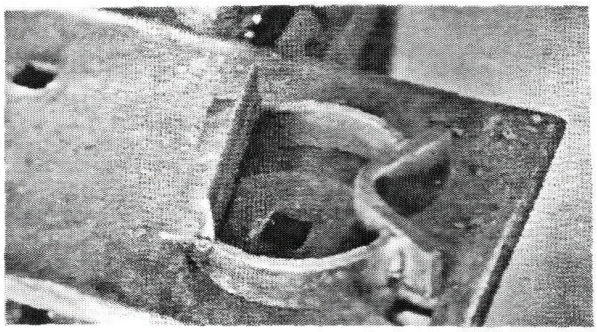
Rotate back 90 degrees and make a clean, one sided taper the full length of each side.

File the tips to have gently rounded curves. Looking at the Hat face, the top should be mostly flat but have rounded edges. In cross section, the tip should have a radius, no sharp spots. Take all the sharp corners off the rest of the tool and case harden.

A second tool is made the same way, but instead of leaving it flat, bend the flat parts back -45 degrees.
This is also a good approach for small ball tools, such as 1/2 to 5/8" diameter.

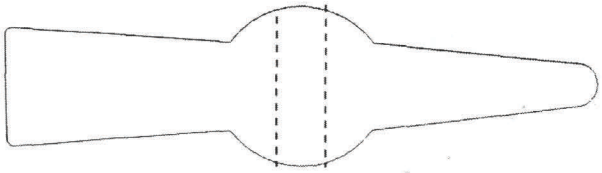
Mark at the vise with the vise tool.

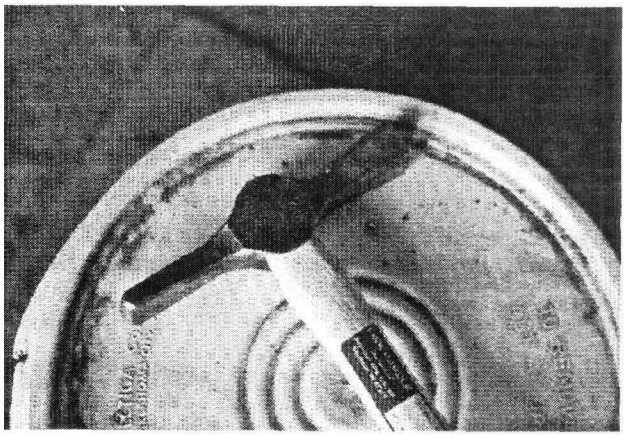




Another version of a crimping tool.

Leaf Hammer
This is sort of what it looks like from the side (if it looks funny, blame me not Mark):



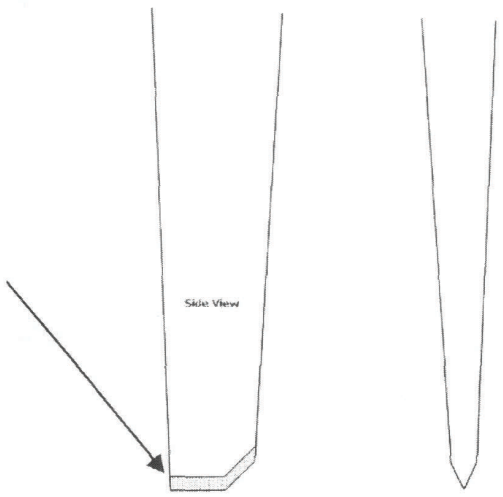


The peen end has a 3/16" radius (3/8" dia.). When used with 1/16" sheet material, the outer radius of the sheet will be 1/4 (1/2" dia.), which matches the crimping stake.

Punch a hole in 1" square stock with a slot punch (~ 1/8" x 3/4" rectangle with rounded corners). Hit it once and take a look, correct tool if you are off. Remember to quench the tool occasionally. If the tool gets stuck, turn the stock upside down and flatten the back side to make the punch drop out. Do not try to drive the punch all the way through, you will upset the end of the punch and it will never cone out. Finish punching from the back side once you are most of the way through the head. The eye will likely be a little off center. Heat with the thick side of the eye down (coal forge) so the thick side gets hotter. Lay the drift on the anvil, hanging over the horn. Slip the hot head onto the drift and pick up. Drift from the back side where the slug was knocked out. First, drift parallel. A parallel drift might have a (parallel) body section 3/8" x 3/4" or 5/8" (rounded edges), depending on your hammer handles. The parallel drift would be a little smaller than your handle. It has a short, slight taper on the struck end and a longer taper on the other end, sized to fit in slot.
If your initial slot is off at an angle, initially drift it round. This can offset the hammer ends-fix by hammering with the drift in place to correct. Mark uses a fly press to punch eyes. I've done a great job of welding tools in hammer eyes using a hydraulic press. With the drift in, peen the eye edges to stretch material along the handle. The longer an eye reaches down the handle, the better it holds.
Taper the hole with a tapered drift hanging the hammer head over the horn.
If you are hand hammering, shape the head after the slot punch, then drift. If using machinery to shape the head, finish the eye first, then shape the ends.

<u>Cold Chisel for cutting curves in sheet material.</u>

'Ibis chisel doesn't look like much, but it's the cat's meow once
you try it out. Forge a bluntly pointed chisel blank. Taper and flatten , ending up with perhaps a 3/16" x 1/16" tip. File the tip to the shapes below. Do NOT round the corner between the 45 degree and flat portions of the edge (side view). To use it, tip the chisel to the left (side view) and cut towards the right. Sounds strange, but it works very nicely. This tool should be made of high carbon steel, hardened and tempered.



How to Sharpen Drills by Steve Hildred

In order to discuss the sharpening of drills, it is necessary to define terms and description of drills: Cutting Lips: The parts of the drill that cut.

Point Angle: The inclined angle between the cutting lips. The point angle is varied to correspond with material hardness.

Chisel Angle: The line between the cutting lips, which is the length of web thickness.

Clearance Angle: The amount the cutting lips are relieved. Controls the rate of feed or how fast the drill travels through the material.

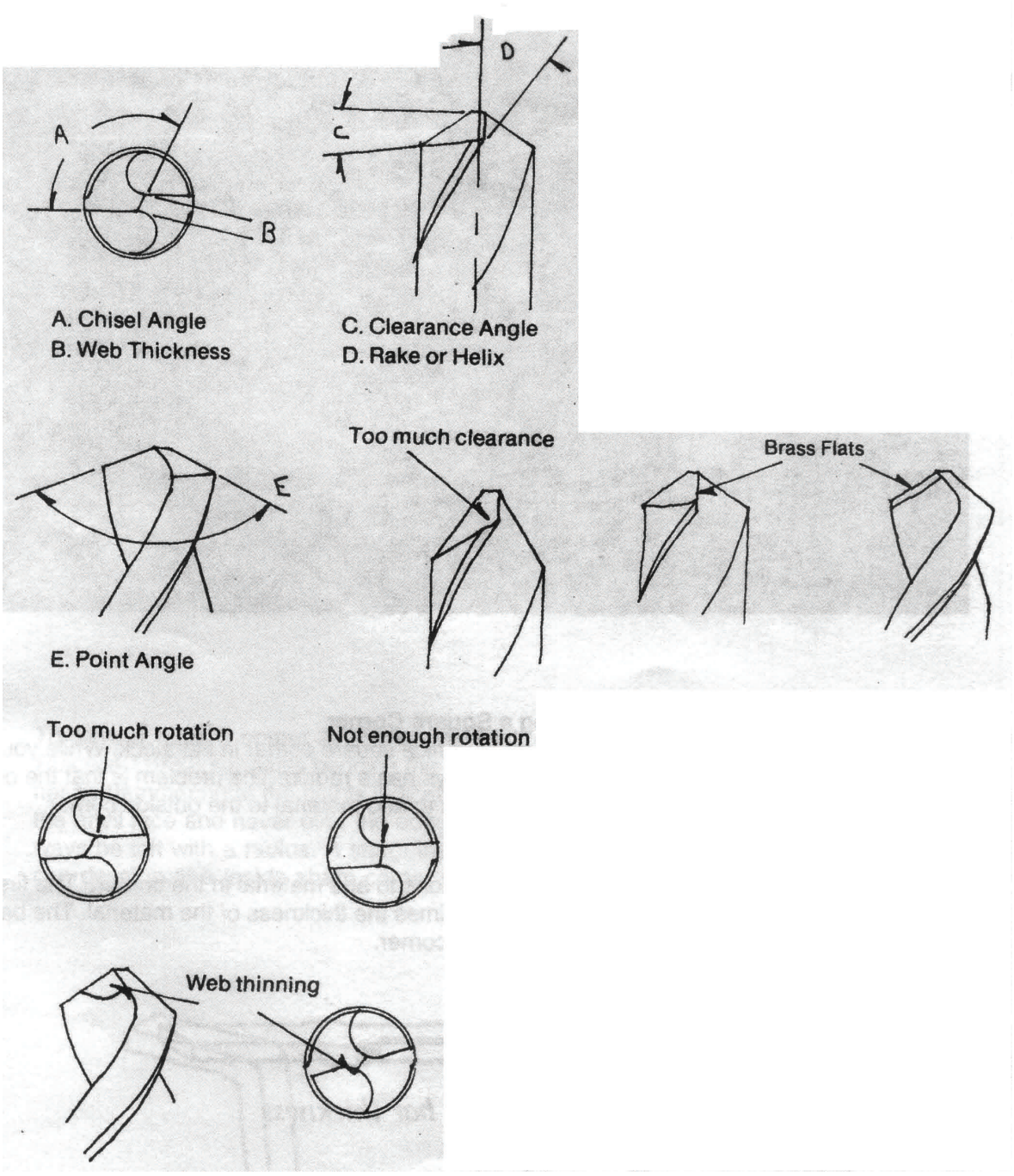
Rake Angle or Helix: The angle of the twist of the grooves to the axis of the drill.

To sharpen drills correctly, a drill gauge is highly recommended. It allows the drill point angle to be correctly measured and to center the cutting lips. The point must be in the center of the drill and the point angle must be symmetrical to the axis of the drill.

Use a general purpose, 60 grit grinding wheel, 3/4" wide. True the wheel so that the wheel runs smoothly. To test if it is true, very gently brush the wheel with your finger. Be sure that your finger points in the direction of the rotation of the wheel. If you don't, your finger WILL be grabbed by the wheel and get CHEWED UP! If you feel any bumps, it is not smooth enough for a fine edge. Hold the drill shank in your left hand, the point in your right. Steady your right hand against the wheel guard. Using a light pressure to hold the drill to the wheel, begin the grind at the very edge of the lip with the cutting lip facing up. Move the left hand downward to form an arc of 8 to 12 degrees depending on the clearance desired. At the same time, rotate the drill along its axis clockwise 5 to 10 degrees. Both the downward arc and the rotation must be timed together. Rotate the drill 180 degrees and grind the other lip. Continue grinding, rotating the drill from one lip to the other. Keep the web thickness about 1/8 to 1/10 the drill diameter. Try to grind equal amounts from each lip. When grinding don't burn the drill (turn it blue). The drill should never get too hot to touch on the end. If you quench it when hot, it will develop little cracks and chip away.

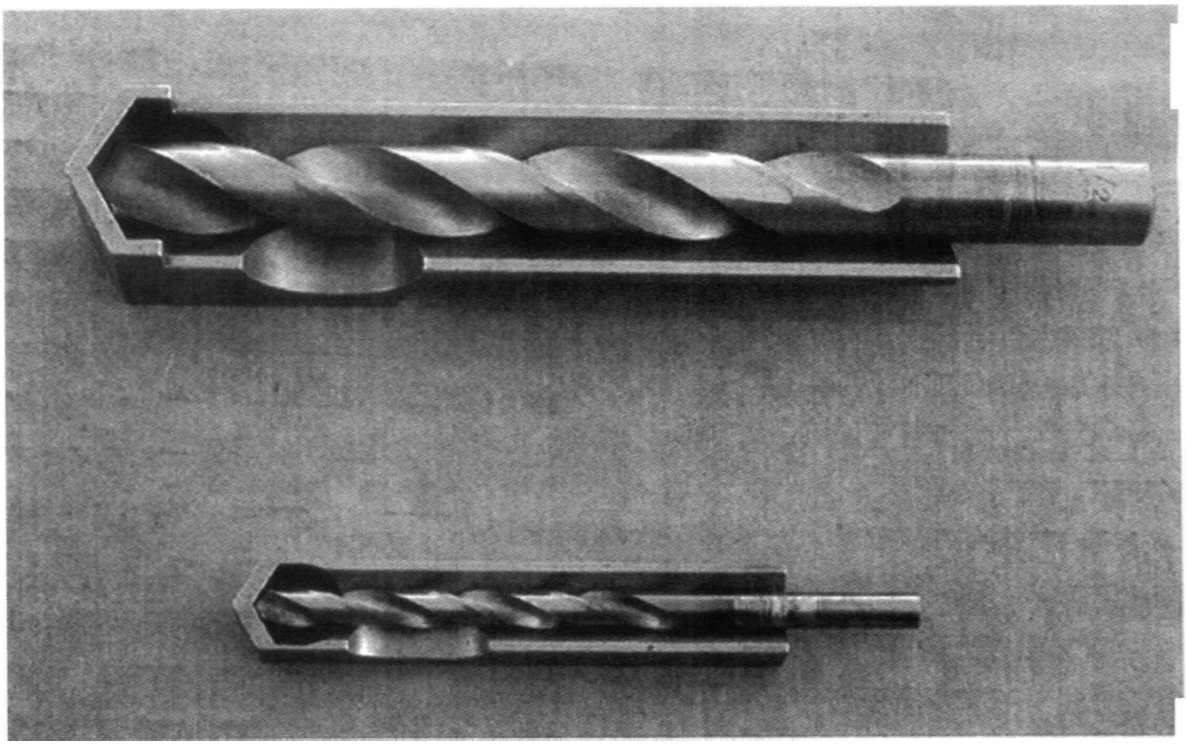
That is really all there is to it except lots of practice. The real challenge is to know how you goofed and how to fix it. Refer to the drawings for trouble shooting. When drilling tough material or when you want the least possible burr, grind the point angle wide, 128 to 135 degrees. For a soft material like plastic, change the point to 90 degrees. For general drilling use 118 degrees. When you are drilling brass or opening up a hole, put Brass Flats on the cutting lips. This makes the drill cut slower so it doesn't pull through the material. When cutting really tough material or one that has the tendency to work-harden, use a carbon steel drill and apply pressure to the work before the drill is started, and use slow speed.

Good luck. All you need is ten thousand drills to practice on and a bunch of ornery machinists to gripe at your lousy drills. Before you know it you'll be able to sharpen anything!
l Reprinted from Forge Facts - by the Rocky Moutain Smiths - Winter 2009



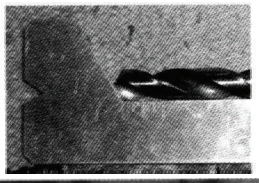
Ed. Note: My father was a tool & die maker and taught me how to sharpen drill bits as described by Steve above. Steve mentioned a `drill gauge.' I inherited my father's tools. On the next page are examples of drill sharpening gauges in two sizes. The point angle and centering is checked in the `roof end' of the gauge.
Wayne Frame - Forge Facts

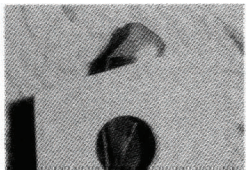
Drill Bit Sharpening Gauges

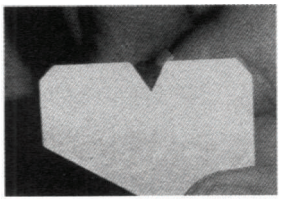


Above, Wayne's gauge.

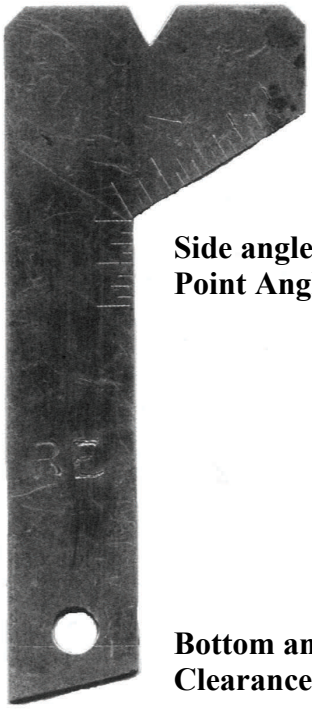
Notch on top used to check the Chisel Angle (A)







My gauge in use checking point, clearance, and chisel angles.



Side angle used to check the Point Angle (E)

Bottom angle used to check the Clearance Angle (C)

Ed. Note:
I made this gauge (right) in shop class, more years ago than I'd like to remember. It's cut out of a piece of 16ga aluminum. With some practice and frequent checks to the gauge I can do a fair job of sharpening a drill. I have found that if I don't use a gauge, I tend to make the drills too pointy. If you let them get too far out of shape it can be hard to get them back to the proper configuration. Bob Ehrenberger - BAM

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If any members have a forge at home and work in the evenings or weekends and want to open it up to help a few local guys, let me know, Larry Brown, editor, as we get requests from members who have a hard time traveling to some of the open forge locations.
Please contact, Larry Brown, Editor.
We want to encourage all to join us at:

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The Ashokan campus is located in Olivebridge, N.Y., several miles west of Kingston, N.Y. The meets are held the first weekend in May and in the first weekend in October every year. The main demonstration is in the blacksmith shop and there is a "Hands On" workshop for beginners. A main demonstrator is brought in for each meet, food and bunk-house style lodging are provided as part of the cost of the weekend long meet.

Contact : Tim Neu
to register for hammer-ins
or subscribe to the newsletter;
Tim Neu, The Ashokan Center,
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For more info check out the web site;
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