

The Anvil's Horn

A Publication of: The Arizona Artist Blacksmith Association

Issue No. 157

July, 2012



Life Sized Horse Head by Dean Wenker. Sahuarita, Az.

President's Message:

Another couple months have passed, a couple more open forges behind us, and one more demo have passed through the forge! Summer is sliding by as we hammer away.

We have had a couple outstanding open forges recently if you have not been able to attend. In April we had a whole bunch of you forge a split cross from 1 ½" square bar, we need to finish the base, then find it a good home. Then in May we did a bit of pattern welded steel with a twist.

As far as the upcoming open forges, July we will not have one since we will all be at Jaime's forge for a demo up in Payson. This will be the first demo at his place, I'm looking forward to it. And as for August and September, we are looking at letting the forge cool down then too! Keep up to date with us on facebook.

Don't forget Jay Griffith needs help out at Sahuaro Ranch with demo's. He's been doing such a great job cleaning up and organizing the shop. You should at least make a trip out there to see all the hard work he's been doing.

Also, I did not get much feedback on doing some "TEAM" projects for the Auction, remember the auction is only as good as our members want it to be!! I'm sure Jason will come up with some cool trophies, contact him to help out!

By the time this is published we will be hot and heavy with the show at The Flag Arboretum, thank you Cathi Borthwick for all the hard work to make this show possible.

One more rant, anyone who is still above the grass is invited to be on the AABA board of directors, it's only an hour every few months, working with some of the greatest people on the planet!! Seriously I would like to have you join us, before I volunteer you.

Keep those hammer blows true!

Rodger "GRIZZ" LaBrash

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Demo: July 7 Jaime Escobedo's in Payson

1034 W. Bridle Path Lane

Payson, AZ 85541

Registration begins at 8:00 am. Demo 9:00 am \$10 Registration fee

Jaime will demonstrate:

“Everybody uses them so everyone is a potential customer or gift recipient for Cabinet Pulls.”

- Lunch: We will have deep pit BBQ beef, rolls, beans, salad, pasta salad, chips and salsa for \$7.00 or \$8.00.
- Tent camping spots and a limited number of RV spots are available Friday and Saturday.
- Tailgating bring your stuff
- Remember to bring Iron in the Hat items

Directions:

From the Mesa/Phoenix area:

Take SR 87 (Beeline Highway) north to Payson. When you get to the SR 87 and SR 260 junction in the center of town, travel another 1.2 miles north to the first roundabout. Turn west (left) at the roundabout onto Airport Road. Travel 1/4 mile west to McLane Road and turn north (right). Travel 1/2 mile to Bridle Path Lane and turn west (left). Follow Bridle Path Lane west for .6 miles and it will curve to the right and then to the left for another .2 miles. Drive through the gate and take an immediate right through the archway and you are there!

From Camp Verde or Flagstaff:

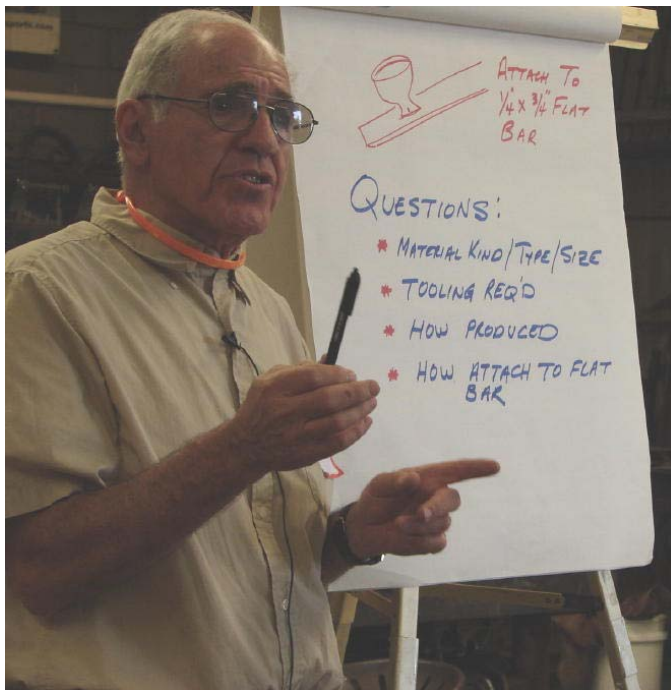
From the north side of Payson go to the 2nd roundabout and follow the above directions.

Call 928-472-7397 or 928-978-3111 if anybody gets lost.

May demo: Grizzly Iron



Michael Sobrado used the tool in the top photo with the power hammer to make bells as shown above.



Professor Ledet with the theme: "5 Blacksmiths 6 Opinions"

Right: Ray Brown





Deif (left) showed some affordable joinery. Does it look like he's getting ready to taste that sample?

Peter Sevin (below) suited up to illustrate some patina perils.



Ivan Hills was there hawking AABA wares.

The dragon fly and candle holder were a couple of the many items in Show and Tell.



A Guide To Anvils

Submitted by Hollis Wooldrige

This is some interesting info I pulled off the ABANA forums. It was posted in the public section by Ken Scharabok. Might be of some use to folks shopping for anvils. This is just intended as a rough guide for identifying anvils which are not clearly marked. For more detailed information see Anvil's in America by Richard Postman Hollis

If there is an oval depression in the bottom it may be either a Trenton, Arm & Hammer or Swedish. If there is a clear line/seam showing a top plate it would likely be a Trenton or Arm & Hammer. If the area under the heel is rough worked, it would likely be a Arm & Hammer. No seam, then I would suspect a one-piece cast Swedish.

If there is an hourglass shaped depression on the bottom it is likely a Hay-Budden (with the exception of some manufacturer who put out 50 pounders with a hourglass depression also).

If you see a series of numbers (serial number) on the front foot, it is almost certainly to be a Trenton, Hay-Budden or Arm & Hammer. If it starts with an A, it would be an H-B. Arm & Hammers do not go over about 52,000.

If it meets the other criteria for one of the above, and it has no serial number, it may be one of their rejects sold on the secondary market. Usually, but not always, it was due to an incomplete weld between the anvil and top plate. When they tested it, they didn't get the 'ring' all over the plate they wanted.

If you see numbers at the waist such as 1 1 20, it is a British made anvil. This is their stone weight system to where the first number represents multiples of 112 (1/20th a long ton), second represents multiples of 28 and third is remaining pounds. Thus this would be 160 pounds (112 plus 28 plus 20). Usually off from scale weight a tad.

If you see punch marks between the numbers, such as 1 . 1 . 20, it is likely a Mousehole. Sometimes all that remains are the two punch marks.

If there are small, flat steps on top of the front and back feet it is almost certain to be an English Peter Wright.

If it has five handling holes, with two on the front and back feet, it is almost certain to be an English Peter Wright.

If it is the London pattern (what you would typically consider an anvil to look like) and there is no seam between the body and top plate, it may be Swedish one-piece cast steel. (However, anvil makers were sometimes very, very good at working in the seam.)

American British and Continental Europe manufacturers made double-horned anvils, and specialty anvils, such as saw maker, carriage or plowshare anvils, so these are of little help by themselves.

If you see what looks to be an Eagle on the side, it is almost certain to be a Fisher Morris. Eagle is usually holding an anchor, perhaps because Fisher made many of the big ship and shipyard anvils for the U.S. Navy. The largest anvil ever known to have been made (1,400 pounds) is a Fisher.

If you see what looks to be an arm holding a hammer on the side, it could be either Vulcan or Arm & Hammer. Vulcans were raised while Arm & Hammer's were stamped in. Vulcans tended to be short and blocky while A&Hs were more sleek looking.

If the anvil has no 'ring' when struck, it is likely a cast iron body with steel plate on top. (These were sometimes called 'city anvils'.) Likely either Vulcan or Fisher. Vulcans tended to be more blocky while Fishers were more typically of the sleeker, London pattern. Older Fishers had a handling hole under the horn and heel also, while Vulcan's didn't. Newer Fishers (after the late 1800s) usually had the mold pattern date under the heel.

If you see what looks to be II&B on the front foot it would be a Vulcan (Illinois Iron and Bolt Co). Some people incorrectly think this is H&B.

If you see what looks to be a relief of a Badger within an oval, it would be a Badger (American Skein and Foundry Co. of Racine, WI). If for sale, snatch it up at almost any reasonable price as this would be a very, very rare anvil. The other American anvil considered to be rare is the Samson. After the manufacturing of Trentons moved to Cleveland, OH, one of the former owners continued to make anvils in Trenton, NJ calling them Samsons,

If the anvil has a very narrow waist and an 'oversized' horn, likely it is one of the newer farrier anvils. These are all one piece cast steel, to my knowledge.

Continued from previous page

Steps came into common use on American and British anvils about 1780. Pritchel (punching holes) about 1830. (However, some older anvils had pritchels later drilled into them.)

Any anvil with letters, numbers or logos raised, would have been at least partially cast. In the latter years of manufacturing the American wrought iron anvil makers used cast bases rather than forging them. Sometimes the base doesn't match the top, such as a 140 pound base used for a 160 pound top.

Raised weight markings were pretty well only on cast anvils (or cast bases) and usually had the last digit left off, such as 8 representing 80 pounds or 16 representing 160 pounds.

Anvils were usually marked on the side with the horn to the right, under the horn and on the front foot. Wire brush using soap and water to base metal. Let thoroughly dry. Lay on side and dust with flour. Brush off, leaving flour in depressions. Do same on the front foot with anvil resting on heel. Sometimes the lettering and number just jump out at you.

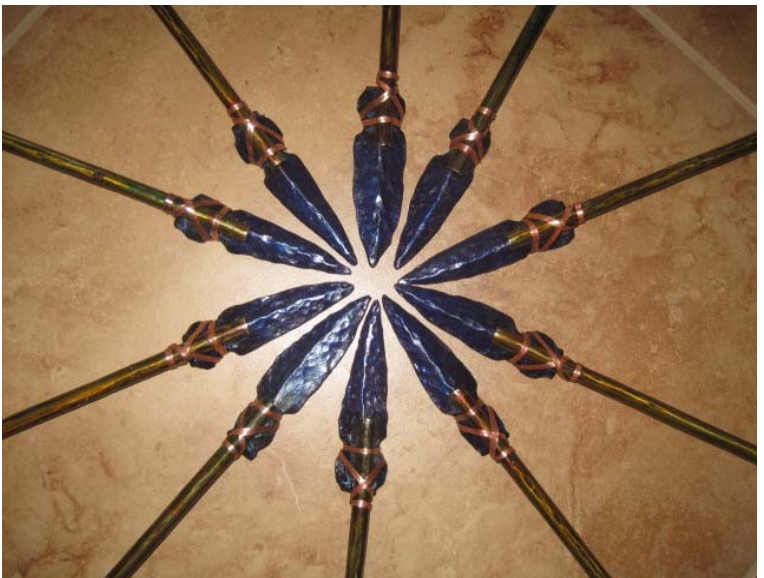
If you see a "painted lady" (a painted anvil) and it meets some of the above criteria, you might take a chance on it. However, be aware that a coat of paint can hide a multitude of sins and it can still turn out to be a 'prostitute', rather than a 'good woman'. Many of the new imported anvils are painted. Personally, I would not be interested in an anvil with a painted top plate as there may well be body putty under it.

Trenton, Hay-Budden and Arm & Hammer (as well as the British makers) made anvils using the buyer's logo. For example, Acme (Sears) and Lakeside (Montgomery Ward) anvils were made by both Trenton and Hay-Budden. If it has serial number on the front foot the anvil was almost certainly made by one of these three. You would then have to look at the secondary characteristics.

*Reprinted from The Balcones Forge Newsletter
2007*

Gallery: Arrows by Steve Miller

The arrowheads are forged from ½" square bar, the feathers or fletching are forged from 1.5 x 3/16" flat bar, and the shafts are lightly hammered 3/8" round bar. The wrapping is 14AWG solid Cu wire. The colors are dye-oxide patina in blue & yellow from Sculpt Nouveau.



ONCE A SMITHY, ALWAYS A SMITHY by Larry Dorrell

In October I visited my daughter in a small town in Wyoming. In my prior visits I had noticed an old building which was showing its age and displayed a faded sign above the door "BLACKSMITH". There was something about the old building and sign that kept my interest every time I saw it. I asked my daughter if she knew who owned the building and if not, could she find out. So during my visit in October she informed me that she had found the owner and we could go see him.

On a cold windy day we went to his home which was next to the blacksmith shop. The old gentleman was 95 years young and had been planning our visit for a couple days. I liked him the minute we met as he was sharp witted and very friendly. For me, who has just been into blacksmith for a little over one year, the next three hours was an experience I won't forget. After introductions he said "lets go see the shop". He picked up a large ring of keys and out the door we went.

After unlocking the old door we stepped into an old blacksmith shop and also back in time. I had no idea what we would find and after opening a window for more light I stood in awe. The old shop was as if they had turned out the lights 25 years ago and walked out. Everything was there; just like they had left it. The forge with all the hammers and tongs still hanging on it and next to the forge were three bags of coke. The burlap bags looked as if they would break if you moved them. Raw steel covered one side of the room waiting to be used.

The old gentleman knew where everything was and he directed me around things and also under shelves to show me some of the tools he used during the time he worked there. Antique tools used to make and repair wagon wheels. One cabinet had a traveler for measuring the steel need for a wheel. The more we explored the shop the more I could see how the old gentleman was reliving the past. He just beamed if he showed me an old item and I knew what it was and for what purpose it was used. Swage blocks and fuller blocks were waiting to be pounded on. I ask him what he was going to do with all this stuff in the end. (At 95 years old the thought must have crossed his mind). He informed me that when he is gone a good friend will come over and take everything.

After returning to his home he gave me three books on blacksmithing as he can't see good enough to read anymore. He also gave me one of his personal hammers from the shop and a handmade cone mandrel. As we were about to leave he said he had one more thing for me, a slip of paper with four horse shoe nails in it. He said after his father was killed in World War II they never shod another horse, as he didn't like horses. The nails were new even though they were 75 years old. I am not sure who had the best time if it was me or him. I think it was him, because once a smithy always a smithy.

Bennett's Trivet

by Pete Bennett, a MABA member



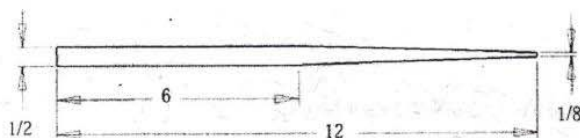
I started this project back in June of 2004 at a class at Tillers taught by Tim Carr. During the class I forged the three penny scrolls. The trivet was supposed to have a straight triangular shape. The more I thought about it, triangular was not going to get the look I wanted. A year later I finished the first trivet in the shape it is above.

Pete Bennett's trivet from
Iron-In-The-Hat -May 2005



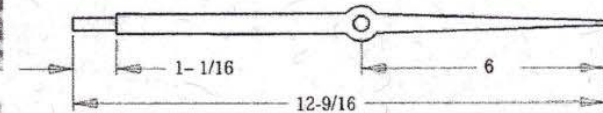
The variations of this trivet, like many other projects, are endless. By changing the way the pieces are joined, the type of scroll, or the detail of the three pieces you can have a very different look from the basic design.

- 1.) Start with a piece of $\frac{1}{2}$ " square stock $9\frac{1}{2}$ " long.
- 2.) Taper one end 6" long down to $\frac{1}{8}$ ".
- 3.) Bevel the four corners the length of the part to add some detail.
- 4.) Measure 6" from the tapered end for the hole.

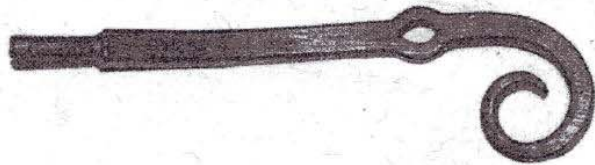


- 5.) Slit and drift a $\frac{3}{8}$ " hole through the part.

- 6.) The part should be 12" long at this time.
- 7.) Measure $\frac{1}{2}$ " in from the end and make a $\frac{3}{8}$ " tenon $1\frac{1}{16}$ " long.



- 8.) Make a scroll on the tapered end. Try to keep the scroll tight. The bigger the scroll the higher the top surface is from the table.



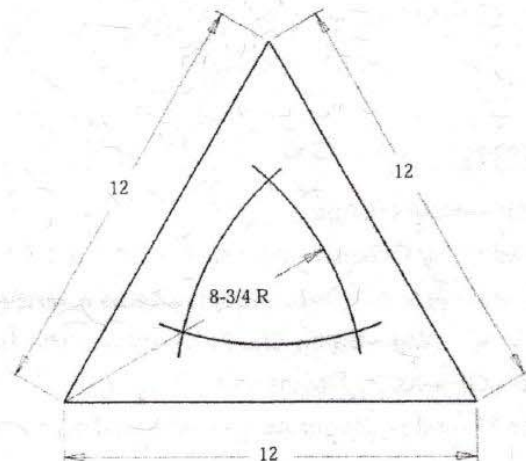
- 9.) Bend the three pieces to form the curves. Don't put the curve in the tenons.
- 10.) Assemble the three pieces and wire together to hold parts while peining the tenons.



To lay out the shape of the curve:

1. Draw a 12" triangle.
2. Draw an $8\frac{3}{4}$ " radius from the points of the triangle.
3. The $8\frac{3}{4}$ " radius is the inside edge of the trivet.

You can change the size of the trivet by changing the size of the triangle. The $8\frac{3}{4}$ " radius is important to get the three pieces to mate up squarely.



Reprinted from the Newsletter of the Michigan Artist Blacksmith's Association Mar-Apr 2007

CALENDAR 2012

July 7	Demo: Jaime Escobedo	Jaime Escobedo's	Payson
July 18-21	ABANA Conference	Fairgrounds	Rapid City, SD
Sept. 15 & 16	Demo	Bill & Karen Morris	Camp Verde
October 27	AABA Auction & lunch	Sahuarro Ranch	Glendale
Nov. 17	Demo	Grizzly Iron	Phoenix
February 16 & 17	Southwest Regional Conference	Mickey's	Las Cruces, NM

Kinyon Vise Workshops

Ron did a test workshop with a couple blacksmiths who work at Michael Sabrado's Dragonforge. The following Friday 5 of us and Ron built 6 vises with 5 bases. By all reports everyone is happy with their vises.

David Bridenbaugh sent some photos of a vise he built, as have several blacksmiths from around the country. Quite a few newsletters reprinted the November Anvil's Horn article. Just like the Kinyon Simple Air Hammer, everyone seems to have a slightly different take on the execution while using the basic design elements.

Ron reports he has 14 AABA members on the workshop list and he's in the process of scheduling them.

The vise without a base built during the workshop is around \$150. Ron is requiring a deposit to reserve a slot in a workshop.

If you'd like to build a vise in a workshop, Ron's email is ronkinyon@aol.com

Deadline: August 4 for the September issue of the Anvil's Horn. Articles, photos, notices, and ads can be emailed to: Danshammer@cox.net or mailed to AABA 2522 W. Loughlin Dr. Chandler, AZ 85224

Welcome New Members

Walter S. Ligoeki Jr.	Scott Borchardt
Stephen Rubin	Clayton Cowart
Dave Bendall	Bryan Brkich
Necker Family	

The AH Needs Your Photos

Thanks to all those who sent info, articles and photos for this issue. It's fun to see what everyone is doing. Don't forget to send stuff for the next issue.

2012 AABA Annual Auction and Banquet

The annual auction/banquet is coming up soon! It will be October 27th this year at Sahuarro Ranch. We will be cooking the food ourselves again this year. We will supply all the meats, steak, chicken and veggie burgers, and the sides will be a potluck. We will need people to help set up, cook, barbeque, and clean up. Please let Jason know what side dish you will be bringing so we can all plan accordingly.

As mentioned in the last issue of the Anvil's Horn, we will be having team projects for auction items. It makes sense to split into teams from Tucson, the Verde Valley, East Valley, and West Valley. If there are more than enough people, the teams can split up even farther, those are just suggestions. We're thinking of making the requirements of the items made to be an item of furniture. This could be a table, a chair, a fire screen, a light fixture, or even wall art.

We also need help with the usual auction items: planning, calling vendors for donations, setup, tear down, registration, spotters and recorders during the auction. If any of these jobs interest you or you just have a strong urge to help out AABA in some way but don't know how, contact Jason. We will have a planning meeting on the evening of July 10th, so let him know if you would like to be there. You can call 602-717-1459 or email at: jason@grizzlyiron.com.

East Valley Auction Team

With the goal of beating out the Verde Valley Breakfast Bunch, I'll volunteer to head up a team in the East valley. This will be a good opportunity to get to know your blacksmithing neighbors a little better and build a really great auction item.

If you're interested in being part of that team, email me at danshammer@cox.net.

Dan Jennings

AABA Website: AZ-blacksmiths.org

Open Forge: Phoenix

There will not be Open Forge in July (we'll be in Payson), August or September. LooDonk for it again in October

Grizzly Iron, Inc

Open Forge: Tucson

Is suspended until fall.

Vern Lewis Welding AABA Special Pricing

Dan Hurst (ph: 602-316-4140) is our contact person at Vern Lewis. Dan is their tech support and process training specialist. (he also teaches TIG at MCC on Tuesday/Thursday evenings). If you need help deciding on new or used equipment or with a specific welding technique, contact Dan.

AABA member discount is available at any of the 6 Vern Lewis locations, just tell them you're an Arizona Artist Blacksmith Association member.

Mesa Arts Center Classes

New classes start in August, sign up now.
Classes can be searched and registered for at:
www.mesaartscenter.com or 480-644-6500.

Yavapai College Metals

Jewelry I, Jewelry II, and Advanced Projects are offered on Monday and Wednesday with many open lab hours during the week. New classes start in August.

Contact Chris Contos with any questions:
christopher.contos@gmail.com

Pieh Tool Educational Opportunities

Beginner/Intermediate Blacksmithing Classes with Gordon Williams

\$455 per 30 hour class. All materials and equipment are provided.

Bill Pieh Resource for Metalwork at Pieh Tool in Camp Verde, Arizona. Contact: 928-554-0700 or www.piehtoolco.com

MCC Blacksmithing & Welding

Sign up now for fall classes

The MCC blacksmithing program is one of the best deals around - over 60 hours of instruction for just under \$450 and that includes material and propane! Saturday (Jaime Escobedo instructor) and evening classes (Dan Jennings instructor) are available. Blacksmithing is WLD103.

TIG, MIG, Arc, Gas, and Art classes are all available, as is certification in any of those welding methods at Mesa Community College, Southern and Dobson in Mesa.

If you try to register for any Welding Department classes on line, you might find all classes are closed (full). Contact Dan at danshammer@cox.net with the class number (time and days) of the class you'd like to take—I'll get an override number so you can sign up.

For more info go to: www.mesacc.edu

AABA New Member and Membership Renewal Form

Name _____
Address _____
City _____ State _____ Zip _____
Phone _____ Email _____
Professional blacksmith _____ Hobbyist _____ Farrier _____ Blade smith _____
Your main blacksmithing interest _____
Occupation or skill _____
Please check one:
Regular membership (\$30) _____
Family membership (\$35) _____

Mail to: Terry Porter
2310 E. Melrose St.
Gilbert, AZ 85297

Make Check Payable to AABA

Blacksmith Flower

by David Bridenbaugh

Start with some marbles and 1/4 x 1 flat stock cut to 2 inch lengths.

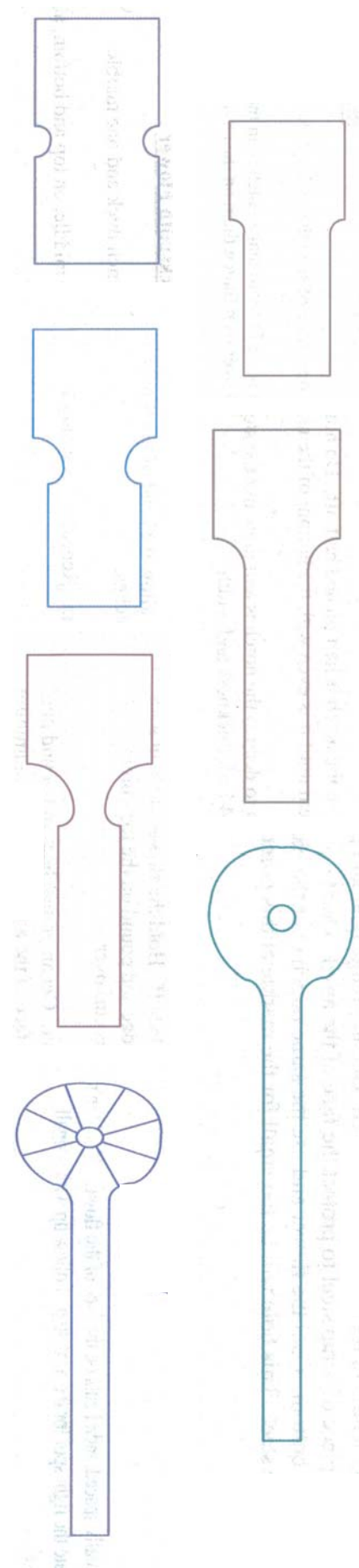
Use a guillotine fuller to make notches, in the middle, on top and bottom, about 3/16 inch deep. If the edges curl over, flatten them on the anvil. Hold on the edge of the anvil so the notch is half on and half off. Protect the flower by not allowing the head of the flower on the anvil. Draw out the stem until it is even with the bottom of the notches. Use the guillotine fuller again to deepen the notches and draw out the stem. Repeat as necessary to draw out the stem to about 1/4 inch thickness and width.

The top and bottom corners of the flower will need to be rounded off. Hold the flower at about a 45 degree angle. Set the bottom corner on the anvil close to the edge and pound on the top corner. Repeat for the opposite corner. Flatten on the anvil if the edges curl over.

Use a 3/16 inch punch to make a hole in the center of the flower. Get an orange heat and Hammer the punch in until you feel it hit bottom. Use a piece of scrap steel to protect the face of the anvil. Don't use aluminum or the steel will bulge out the bottom. Cool the flower and use the same punch over the hardy hole to sheer the little plug out of the steel. This hole will be too small for the marble at this point but we will enlarge it later.

Use a veining or slitting chisel to put 8 equally spaced, radial cuts on the face of the flower. You don't need much depth, just enough to help locate the right spot for the next step. Follow up with a small fuller chisel and then a medium fuller chisel. The hole for the marble will become larger as the steel is spread out by the fuller chisels. It should be about 3/8 inch. Drift the hole out to 3/8 inch if necessary. Place a piece of scrap steel with a 3/8 inch hole over the hardy hole and put the flower on top. Gently hammer the 3/16 inch punch down until it stops. It may all be stuck together now so cool in water before separating so the flower is not deformed. Heat it again, place the flower face down on a block of wood or swage block and hammer gently with a ball pein hammer so it will be slightly convex when viewed from the front of the flower. The basic shape of the flower is now finished. Make the stem round and add a few bends to make it a little wavy. File any sharp edges.

The next and final step is to slowly heat the marble so it melts slightly and settles down into the hole. The marble must be heated up slowly or it will shatter. Place the marble in the center of the flower. Gently grasp the stem with tongs and hold about 3 inches in front of the forge. Wait 3 or 4 minutes and move to the opening of the forge but not inside it yet. Wait another 3 or 4 minutes and move inside the forge. Check every 30 - 60 seconds for the marble to soften enough to settle into the hole. Allow to cool slowly by setting next to the forge.





David Bridenbaugh incorporated flowers (previous page), a bird from Mark Aspery's Mastering the Fundamentals with some of Terry Horne's banded sandstone to make a truly unique paper holder



Gallery: Doug Thompson



Side board: top view and details



Lighting details



Gallery



*Weather vane
by Don Dumler*



Tripod table bases (the cast brass tops were customer supplied) by Dan Jennings



Ferrier's Rasp Tomahawk

By Doug Merkel

I was lucky enough to be able to attend Ryan Johnson's Pipe Tomahawk class taught at the John C. Campbell Folk School in Brasstown, NC. It was only a weekend so things went very fast. One of the first items we made was a classic colonial style small belt axe or belt hawk. These we made from old terrier's hoof rasps (sketch 1) which are good enough steel to hold an edge without having to weld in a tool steel insert.

The one tool you must have is a drift for shaping the eye for the handle, buy or make your own. Most have a 1 1/2 - 2 degree taper. This is important, as the taper is what holds the head to the handle. Wedges to hold on the head are not used for this hawk nor for the pipe tomahawk.

Hot cut or chop saw off the file tang (2). Forge a taper on one end of the file. The taper should be approximately one inch in length, but keep it the same width as the file (3). Then bend this tapered end back on itself. Do this 180 degree bend about two and one-half inches from the end that you just tapered (4). Do not flatten the bend very tight, as you will need to get flux and heat in so that you can weld up the blade. This folding back of the end provides you additional material to work with when you go to forge out the blade. The taper helps in keeping a cold shut from forming when you weld up the blade.

Heat the file roughly in the center and fold the other end over so that the ends line up. Fold it so that the tapered end is now sandwiched in between the other two sides. Leave the open loop in the center, as this will become the eye of the hawk (5). If you closed up the eye too much then open it up with the drift. You can close up the eye by using the post vise. Put the eye drift in place and clamp the file flats in the vise. Do this step hot and it will assist you in the forge welding.

As the rasp is tool steel (who knows what alloy) you need to be a little gentle with the welding heat. Bring the hawk to red heat, flux generously with borax and then bring to welding heat. Try not to bum out the eye while getting the three layers of the blade to weld (6). Once welded, use the eye drift to final shape the eye. If the weld splits next to the eye, then clamp it closed in the post vise with the drift in place, knock out the drift and weld it again. Many of the old original hawks and belt axes made this way have opened welds at the same location.

Once you are satisfied with the weld and the shape of the handle eye then move on to the blade. Use a power hammer or a cross pien of your hand hammer and draw down the beard of the blade. Also draw out the length of the blade as well as shape the cutting edge. Refine the forging as much as you desire (7). Remember that the large opening of the hawk eye is the top of the hawk.

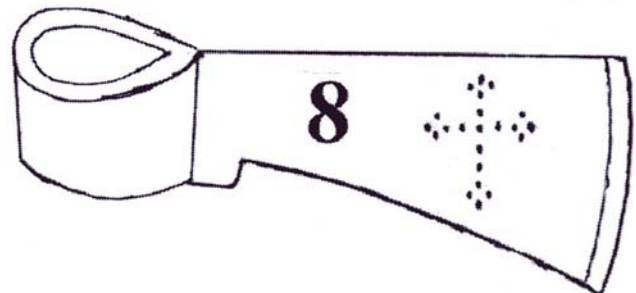
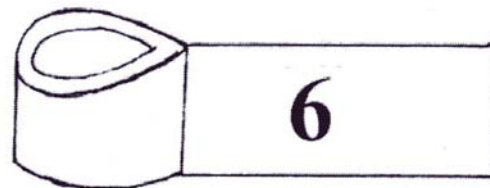
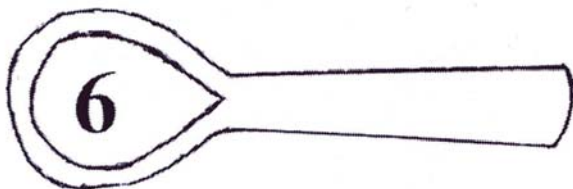
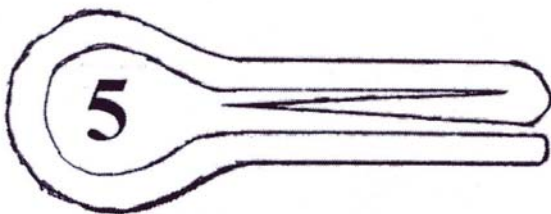
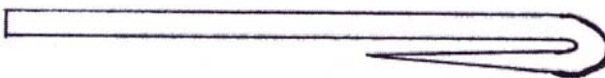
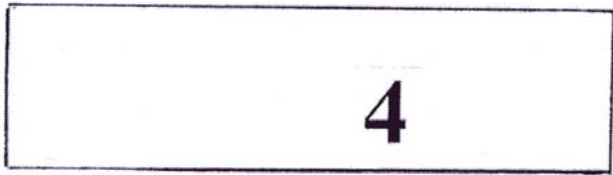
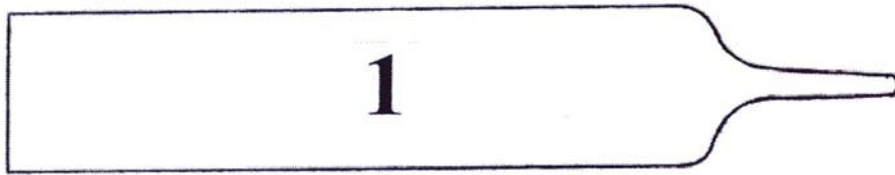
The under cut area of the hawk was normally hot cut away once the blade shape was finished (8). You can forge in this undercut but why do all this extra work and you might just bust out the weld. Many of the original hawks still have the hot cut marks made when the blacksmith cut the notch hundreds of years ago. Hawks of this style were normally made for the Indian trade and were normally ordered by the gross so speed was essential to turn a good profit.

Check the form of the eye one more time after the blade and notch are finished. Check to make sure that the cutting edge is in line with the hawk eye. Put in the drift and use it to do the checking of these angles.

File, cut, stamp, decorate, grind to the shape that you want. Oil harden and temper the cutting edge to peacock color for general use and for throwing. Leave the edge harder if you want to do some finer cutting.

The sample hawk has a tear drop shaped eye. Some of the old hawks had oval, round or even triangle shaped eyes and handles. My source for high quality drilled maple handles for pipe hawks and for good solid handles for the belt or throwing hawks is Dunlap Woodcrafts. They are located at 14600F Flint Lee Road, Chantilly, VA 20151 703631-5147 www.duniapwoodcrafts.com.

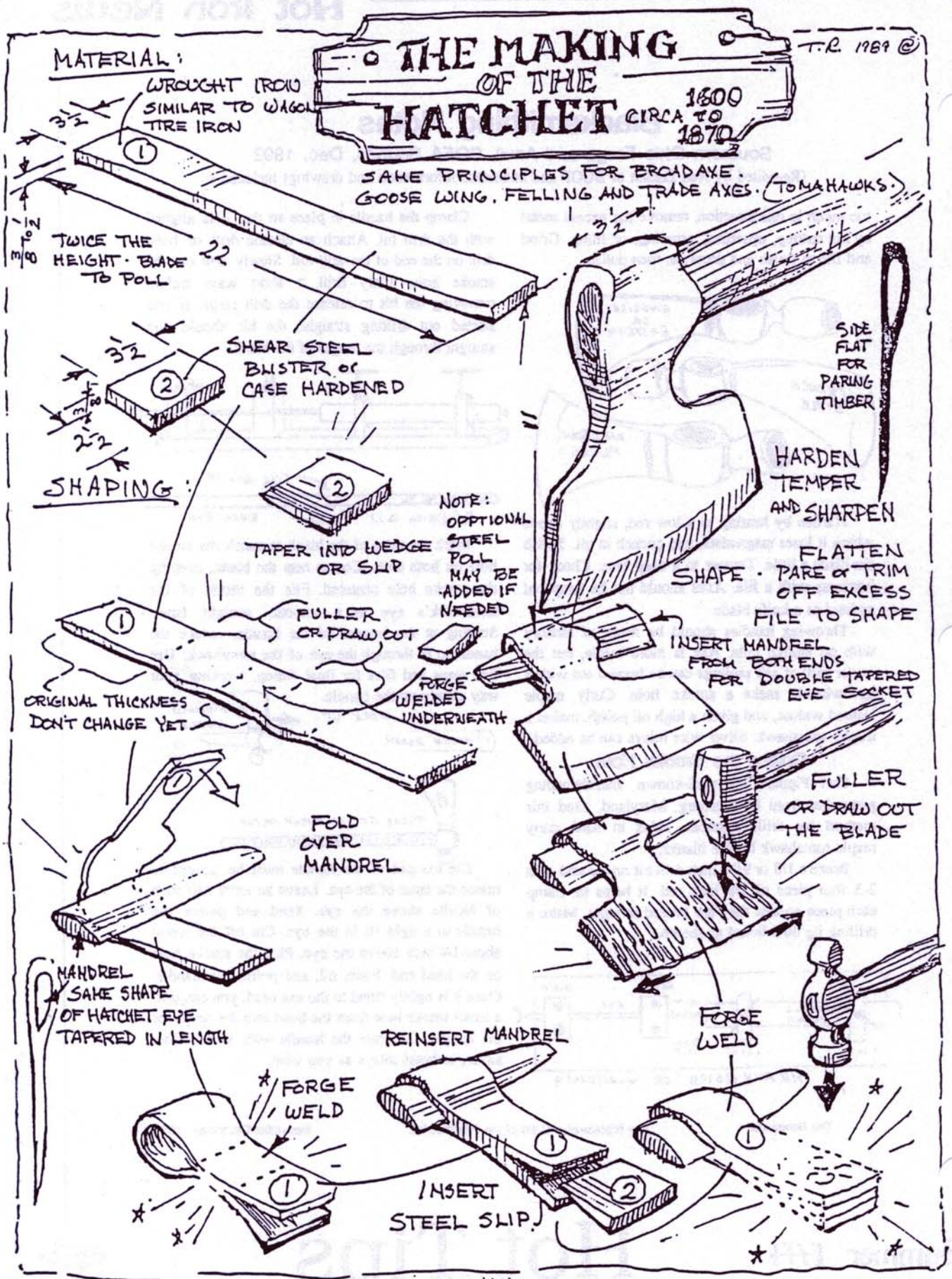
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Ferrier's
Rasp
Belt Hawk

Not To Scale





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For membership info or address change, contact: Terry Porter 2310 E Melrose Street, Gilbert 85297 480-988-2070 trp555@prodigy.net



Eric Thing brought this helmet to the May demo.

Anvilfire.com has a great article showing Eric's methods and shop. Click on Armoury > Raising a Norman Helmet by Eric Thing. It's worth the effort even if you're not into armor.