PHILIP SIMMONS ARTIST BLACKSMITH GUILD
On the Anvil NEWSLETTER

INSIDE THIS ISSUE

Jody's dragon sculpted in aluminum

Hello Friends,

I hope you all are doing well and are keeping busy at the forge, or in my case around the house! My "honey-do" list is getting shorter, but I am looking forward to spending some time in front of the fire this weekend!

The May Jason Lonon class and the June meeting are both cancelled. The class will be rescheduled, perhaps in July (have you ever blacksmithed in SC in July?). I sure hope to see you all in August at Camden.

ABANA cancelled their conference, but we have bought some tickets for their big ticket raffle items. We will raffle off anything we win to the PSABG members. The AACB conference was postponed to July 30th. I am planning to attend and help a good friend with one of the demo's.

Some thoughts on getting better at blacksmithing:

I've been a hobbyist blacksmith and a member of the PSABG for over 15 years. Going to our meetings and watching a demonstration always gets me motivated to get to back to the forge to make something. People come to the meetings for different reasons; buying, selling, seeing old friends, making new ones, and that is great! Don't forget the demonstration though.

One of the easiest things you can do to learn is by watching the demonstrator, asking questions, and taking notes. It's cheap too, compared to going to a class or conference! Even when the Demonstrator is less experienced, they may have picked up something along the way you've never seen. And, some of our more experience smiths have a hard time keeping quiet. They often add a tidbit or two.

Show your interest and pay attention. As a past demonstrator I can tell you it can be discouraging when no one is watching your demo that you've spent a lot of time preparing for!

One of the most influential things that has improved my skills is taking classes. Each class I take challenges my skill level and I usually end the class with a project completed I thought I could never do! If you can't take a class, then try to go to a conference and WATCH a FULL demo. Take notes and Try it when you get home while it is fresh in your mind. This isn't as effective but you will make progress!

Lastly I will leave you with my own hardest most difficult struggle, getting off the couch from watching YouTube blacksmiths doing what I should be doing! This is my biggest weakness!!!

I wish you all good health and safety during these struggles.

Go out and make something!

Jody Durham

WHY H13 IS A GREAT STEEL FOR A HOT CUT OR PUNCH

To give credit where credit is due, the first time I heard this, it was at a demonstration Lloyd gave in Waldie's. At the time, while I deferred to Lloyd's experience and expertise and believed him, I didn't fully understand why it was true. As a result, I didn't try using H13 until fairly recently. As time went by, though, I had heard other blacksmiths talk about different kinds of steel and I was lucky enough to win various pieces of 4140 and 4340 in some Iron in the hat draws, so it eventually sparked enough interest to do some reading about it.

There are still a number of gaps in my knowledge but based on what I learned, I started with a thought experiment to determine what the best tool for hot work would be. Normally, when you temper a tool, you bring the temperature up to the straw/purple range, which is somewhere in the 430 F to 520 F range, and lock it in by quenching in water or oil, depending on the steel (e.g. water for 1045, oil for 5160). Having done so, though, we then lay a piece of steel that's about 1900 F on it and hammer on that steel for a while, driving our carefully heat treated piece into it like a wedge. Or we might punch our carefully heat treated tool into our very hot piece, surrounding it on all sides with that hot steel. As we do so, that 1900 F is bleeding into our tool. If our tool is well polished and we are paying attention, we might notice, from a distance, when it hits purple and have enough time to quench it. If not, it might turn blue, grey, red or even orange before we notice, ruining the temper. Knowing me, I'd probably quench it and keep using it anyway, but this won't be very good. The edge will mush (deform) the first time I use it, and I'll have to continually grind it to reform the edge until I finally break down and heat treat it properly again.

The reason for this is that most of my tools were made out of car springs and the hardness of 5160 (car spring) when first quenched is 62, when tempered at 500 F is 57, but when brought to 1000 F it drops way down to 38. Similarly, 4140 and 4340 start at 56 and end up down at a hardness of 40 by the time you hit 800 F. So none of these tools are ideally suited for hot work, at least not unless you are scrupulous about cool them off between and during use. H13, though, instead being tempered at around 500 F, is instead tempered at around 1000 F, a dark red, where its hardness is still 54. Similarly, A2's hardness at 1000F is 56 and S7's hardness at 1000 F is 51 (1000 F is where you would want to stop with A2 and S7, though).

That means that these steels can stand being brought pretty hot and still keep their temper, still be hard and resistant to deformation. You are far less likely to ruin them, although obviously you'll still want to be careful to cool the tool down between uses, particularly on the thin ends. From this, we can see that steels like H13, A2 and S7 are the best candidates for hot tools. But heat resistance isn't the only category we want to measure. Our next consideration is toughness. A2 is only rated *Fair* on the toughness scale, and if I'm going to be beating on a tool with a hammer, I'm thinking it should be at least *Good*, so we can rule out A2. 4140 and 4340 are *Good* on the toughness scale, making them good for cold work, but they don't have enough temperature resistance for hot work, so we can rule them out. H13 and S7 are both rated *Excellent* on the toughness scale. H13 gives us better hardness at a higher temperature, so we'll give the nod to H13 as our winner.

Life rarely gives you anything for free, though, H13 does have a number of drawbacks. H13 is pretty expensive, hard to come by, and rates a *Difficult* on the formability scale. What is the formability scale? Again, I'm no expert, but from my experience, I think a better name would be the "you-have-to-beat-the- crap-out-of-it-to-get-it-to-move" scale. H13, like S7, 1045 and 4140, only rate a Fair on the weldability scale. You can't use the magnet test when hardening H13, its hardening temperature is way up at almost yellow, at 1850 F, so you need to do that by eye or, better yet, with temple sticks (S7 hardens around orange/light orange; 4140, 4340 and 5160 are around light cherry/light red).

Finally, H13, like S7, is an air hardening steel, so you can't quickly quench it when it does start to get hot. Despite those disadvantages, though, this thought experiment turns out to be true in reality. I ran across a bar of H13, made some tools out of it, I have found H13 to be the best steel I have used for hot work. That's not to say that other steels can't be used and work just fine, it's just that H13 seems to work better. So yes, the short version of the story is that I should have just listened to Lloyd.

David Brandow

Reprinted from THE IRON TRILLIUM, Newsletter of the Ontario Artist Blacksmith Association

For Sale

Fire Bricks – Brand New, Industrial Grade. $1 ea. Ed Sylvester 803.414.2487

Tire Hammer plans by Clay Spencer. Send Paypal for $30US to clay@tirehammer.com. Or check/money to 73 Penniston Pvt. Dr.,Somerville, AL 35670. I can mail a copy or email PDFS.

Beverly shear blades sharpened. Remove blades, mail in small Flat Rate box, include check/money order for $50, includes return postage. clay@otelco.net, 256-558-3658 .

Forklift tine sections for striking anvils, $30. Jody Durham, 864-985-3919 ironsmith@gmail.com

Sewell Pea Coal, washed, $11 per 5 gallon bucket. Will also sell in bulk at lower prices. Derice Hochstetler, Aiken, 803-508-1326

Todd Elder is offering Beginning Blacksmithing and Knifemaking Classes. Contact him at (864-978-7232)

Guild Coal: 3 buckets, $30; 6 buckets or 30 gal barrel—$45.00; 11 buckets - 55 gal barrel - $ 60.00; 15 buckets - 1/4 ton - $70.00; 30 buckets - 1/2 ton - $140.00; 60 buckets - 1 ton - $280.00. Contact **Mike Tucker** 803-316-3707

Upcoming events:

Griz Hockwalt is demonstrating at the Bart Garrison Agricultural Museum of South Carolina for special events and tours. The museum is located off of highway 76 in Pendleton S.C, across from Tri-County Tech. Griz will be demonstrating the first Saturday of each month.

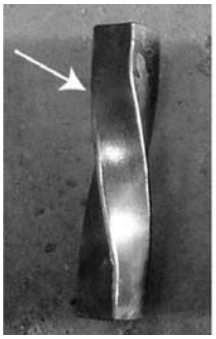
Weekend Class at Jaco Farm with Jason Lonon. Socket Chisel Project for intermediate and advanced smiths. Date to be decided, prossibly in July. Todd Elder is contact (864-978-7232).

2020 Meetings: **June 13, Cancelled**
August 15, Historic Camden, Barry will not be demonstrating
He punked out and will be traveling, if possible.

I Thought Everybody Knew This - Count Ribs to See How Many Twists in a Twisted Bar

Clark Newbold, Ridgecrest *Reprinted from the California Blacksmiths*

Ever needed to match an existing twist, but didn't know how many times it was twisted? Count the ribs, and divide by 4! Here are some examples:



One quarter twist. One rib.

One half twist. Two ribs.

Three quarter twist. Three ribs.

One full twist. Four ribs.

I thought everyone knew this too! If any of you new smiths don't know something, let any of the older smiths know what it is and we will school you! Barry

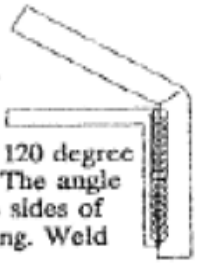
From Flo. Forges, 1990

Jig for Three-Legged Bases

Steve Bloom

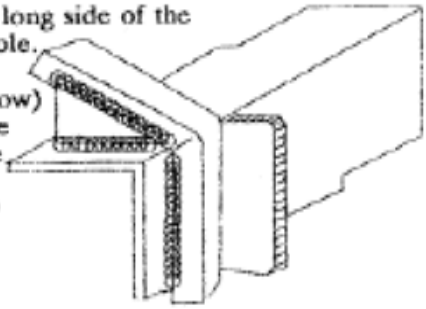
If you need to make several bases or (like me) have some problems with getting the angles right, this jig might help. In successive write-ups, I'll describe a shaping jig for the ares of the legs & two projects (a simplified courting candle-stick & an elaborate copper & basket-work combination).

A. Start with 6" of 1/2" square stock and hacksaw a 60 degree notch 2/3 of the way through.

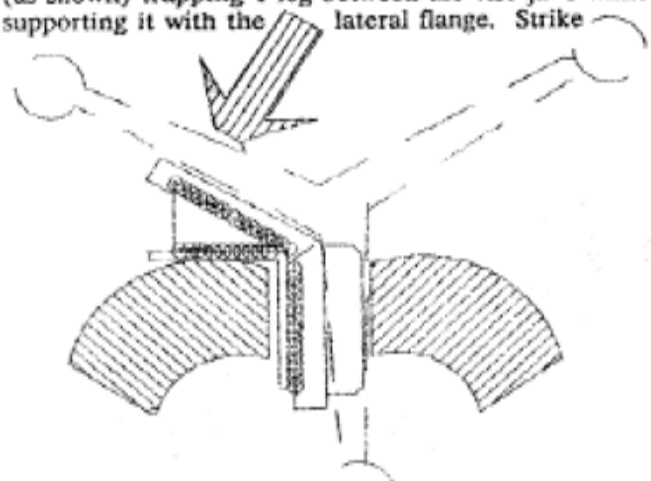


B. Bend the stock as shown (giving a 120 degree arc) & weld to a piece of angle iron. The angle iron should be slightly larger than the sides of your anvil's hardy hole & apprx. 6" long. Weld the bent piece 4" from an end.

C. Weld side gussets between the free-standing portion of the 1/2" stock and the angle iron and weld a flange (1" x 1/4" x 2.5") along one side of the other limb of the 1/2" stock. Grind the edges of the long side of the angle iron so the jig can be inserted into the hardy hole.



D. To use the jig, prepare the leg unit (details to follow) & while still flat & hot, place the jig either in the vise (as shown) trapping 1 leg between the vise jaws while supporting it with the lateral flange. Strike



the other leg as shown to set the correct 120 degree angle. Be sure to compensate for the taper of the legs. Alternatively, insert the jig into the hardy hole & hold 1 leg while tapping the other (this is a nice way to do fine adjustments).

This article was reprinted from the Florida Blacksmith Association. Steve Bloom has written and published many articles over the years. Thanks, Steve! I use a large hexhead bolt to guage the 120 degree angle, but this looks like a better plan. Barry

GUILD WEBSITE - The website is up and running, except for a brief outage last week. I will be adding upcoming events. If you are participating in an event and demonstrating our craft, I would like to post that so members and/or prospective members will know about it and maybe attend. Just send me an email with some details. There will be more content added to it as we go forward. There is Facebook link and a "Contact us page" that sends a message to our hosting website message board. I will monitor it and answer the mail. The best way to access the site is to Google search for "philipsimmonsartistblacksmithguild.com"...what come up is a link entitled "PSABG: Home" or "Home: PSABG". That's it! Save as a Favorite or Bookmark and you will be set and will not have to type the long name again. Thanks to Josh Weston for his expert guidance to get us to where we are today with this project. Ray

Reprinted from the Saltfork Craftsmen Artist-Blacksmith Association Newsletter—

Quick Projects – Leaf/Spoon Swage

Gerald Franklin

A small piece of hardwood (or 4X4) can be used as a great little swage to shape leaves and spoons. Just burn the wood deeper as you use it.

If the "swage" gets too deep, use a belt sander to remove wood until the desired depth is reached. When the wood block is about gone (we're talking years of use here), just replace it with a new one.

The one in the photos is made from a piece of plum tree with an angle iron hardy shank attached with a self-tapping screw.

Shop Tips

Coal Dust

Albin Drzewianowski

The topic of coal dust came up recently. Some beginners do not realize that you can forge using coal dust or coal that has a lot of coal dust in it. On more than one occasion, I have come across someone at the Guild's forge who was sifting out the dust. I explained to him that he was throwing away money. Coal dust is still coal and you can burn it in the forge.

It is a little more work to forge with coal dust but it can be done. You need to moisten the coal dust before you add it to the fire. If you have coal that includes lots of coal dust, then first put it a bucket and add enough water to get the consistency of loose mortar (as if you were going to lay bricks). Then use a forge shovel to slather the "mortar" like mixture on the outside of the fire. The goal here is to have the coal dust coke up before all of the water evaporates. It may take a little experimentation to get the hang of it but the dust can be used in the forge.

Reprinted from The Hammer & Tong (newsletter of the Blacksmith Guild of Central Maryland). Sep/Oct 2015.

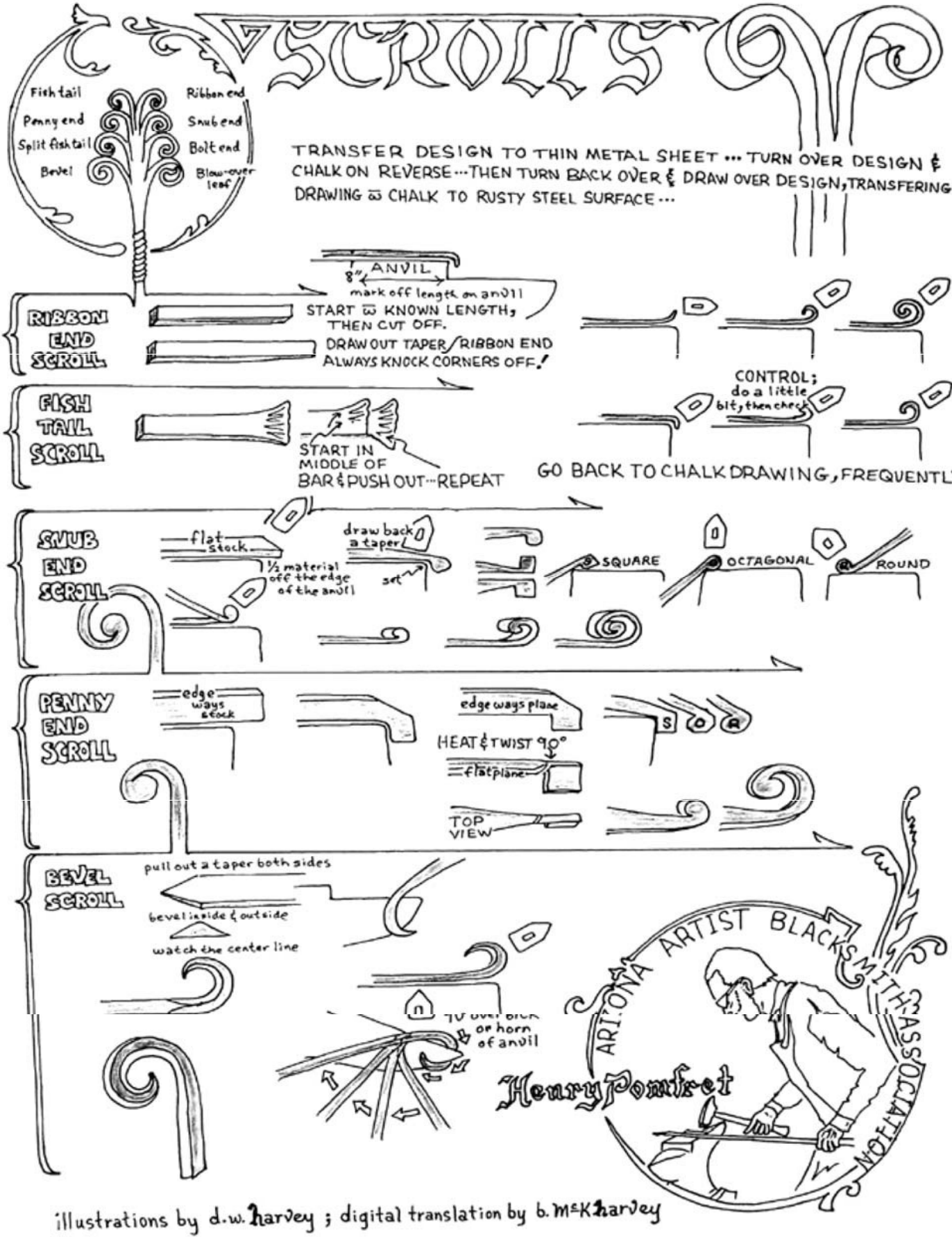
Possible Grant Help for our Artist Blacksmiths

In an effort to promote the South Carolina Arts Commission emergency grant application for artist living and working in SC.

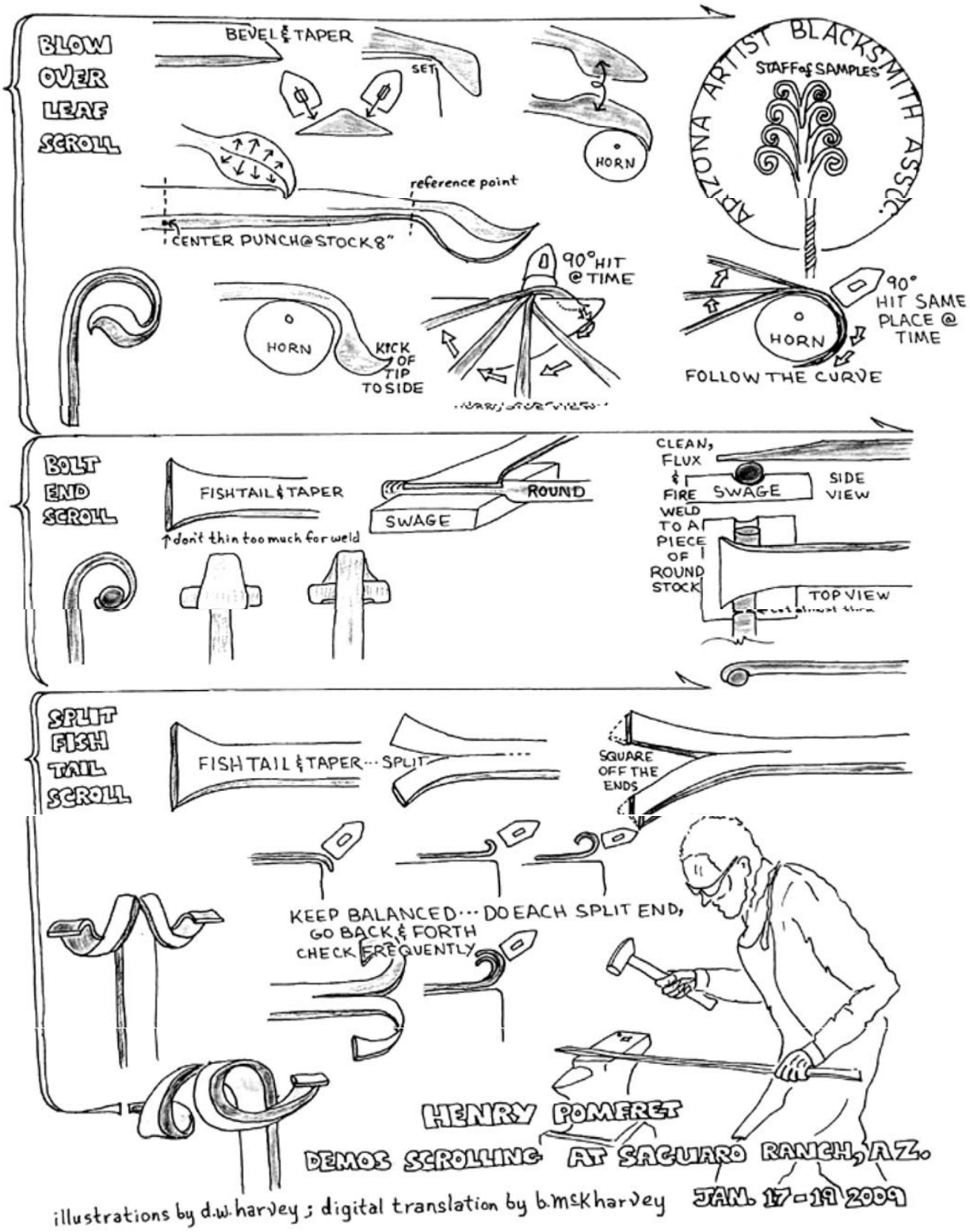
https://www.coladaily.com/business/south-carolina-arts-foundation-announces-relief-fund-for-state-artists/article_efbf489c-8b17-11ea-9f19-671a96781e18.html

For most working artists, who derive more than 50% of our income from our work, we have found little assistance for the visual arts field. It is unfortunate that all artists are made to compete over the smallest piece of the pie, especially in SC. If you are in need then please apply because art is a fundamental part of life, without it we would be lost.

South Carolina Artists 803.602.4814
Dedication - Support - Inspiration - Exhibits https://www.southcarolinaarts.com/grant/relief/



illustrations by d.w. harvey ; digital translation by b. mck harvey



Reprinted from- the AnvilsHorn, Newsletter of the Arizona Blacksmiths Association

There is an excellent writeup of these types of scrolls in the COSIRA books which are downloadable at hlcollege.ac.uk. Barry

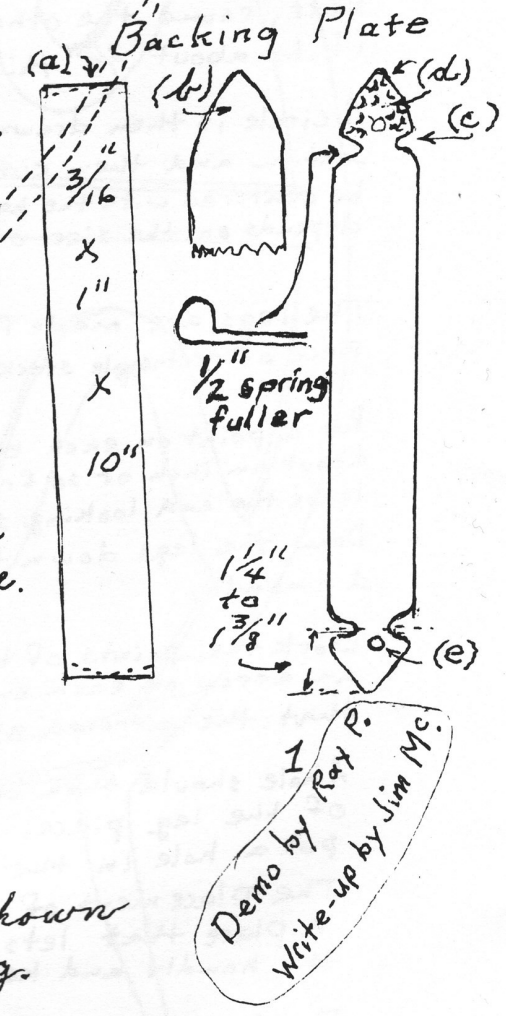
Reprinted from our friends in the Alabama Forge Council in their Bituminous Bits, and they got it from the Rural Smiths of Mid-American clear back in 1994, thank you to all groups who share your newsletters!

Ray's Coat Hook

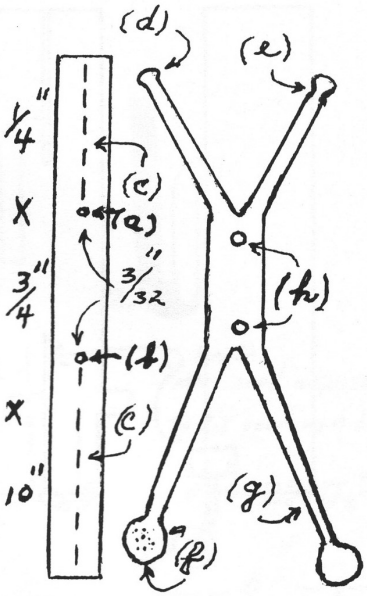
The coat hook shown here is one made by Ray Phelps at his forge as a demonstration piece for our R & M A meeting of Jan. 1994. The basic design for the hook is one shown in "The Hammer's Blow", p. 8; Fall, 1993

Ray made modifications in the original plans that most of us felt were improvements.

1. (a) He began by rounding the ends of the backing plate with a file (a) to prevent cold shuts.
   (b) The ends were then shaped for arrowhead finials.
   (c) Notches were made as shown at (c) about 1¼" to 1⅜" from the ends
   (d) The edges of the arrowheads were chamfered with a hammer and rounded up toward the centerline. Hammer marks were left in to simulate the chipping marks seen in a real arrowhead.
   (e) Holes were drilled in the arrowheads (¼") (as shown at (e)) for wall mounting.



Coat Hook (cont.)



2. (a+b) To make the hooks, Ray used the flat stock shown, first drilling holes at (a) and (b) 3" and 4" from their respective ends. Holes were 3/32".

(c) He then split each end up to the holes.

(d) All the arms were spread and each was upset on the end.

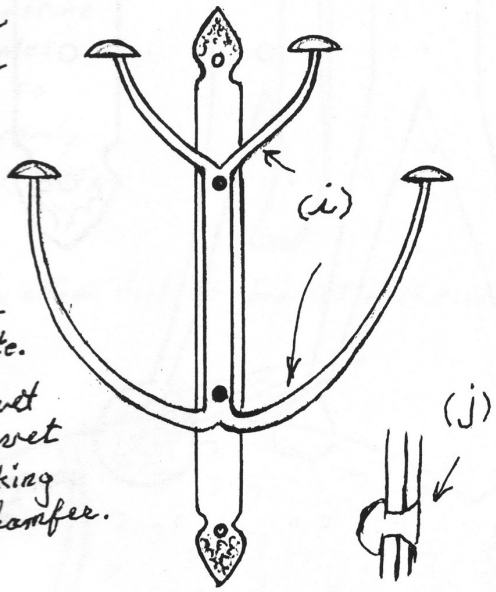
(e) Each end was notched about 3/8" in from the end (but moderately).

(f) Ray forged a 3/4" to 1" penny-foot on each end, cupping each one according to its final position. (See below before cupping.)

(g) Tapering and rounding each arm came next.

(h) Mounting holes were drilled. This step could be last to reduce distortion.

(i) Bend the arms so that they will be an appropriate distance away from any wall you might mount your rack on.



(j) Drill matching mounting holes in Backing Plate. Chamfer Backing Plate holes on back for rivet expansion. Make rivet 36% longer than Backing Plate thickness for 1/3 chamfer.

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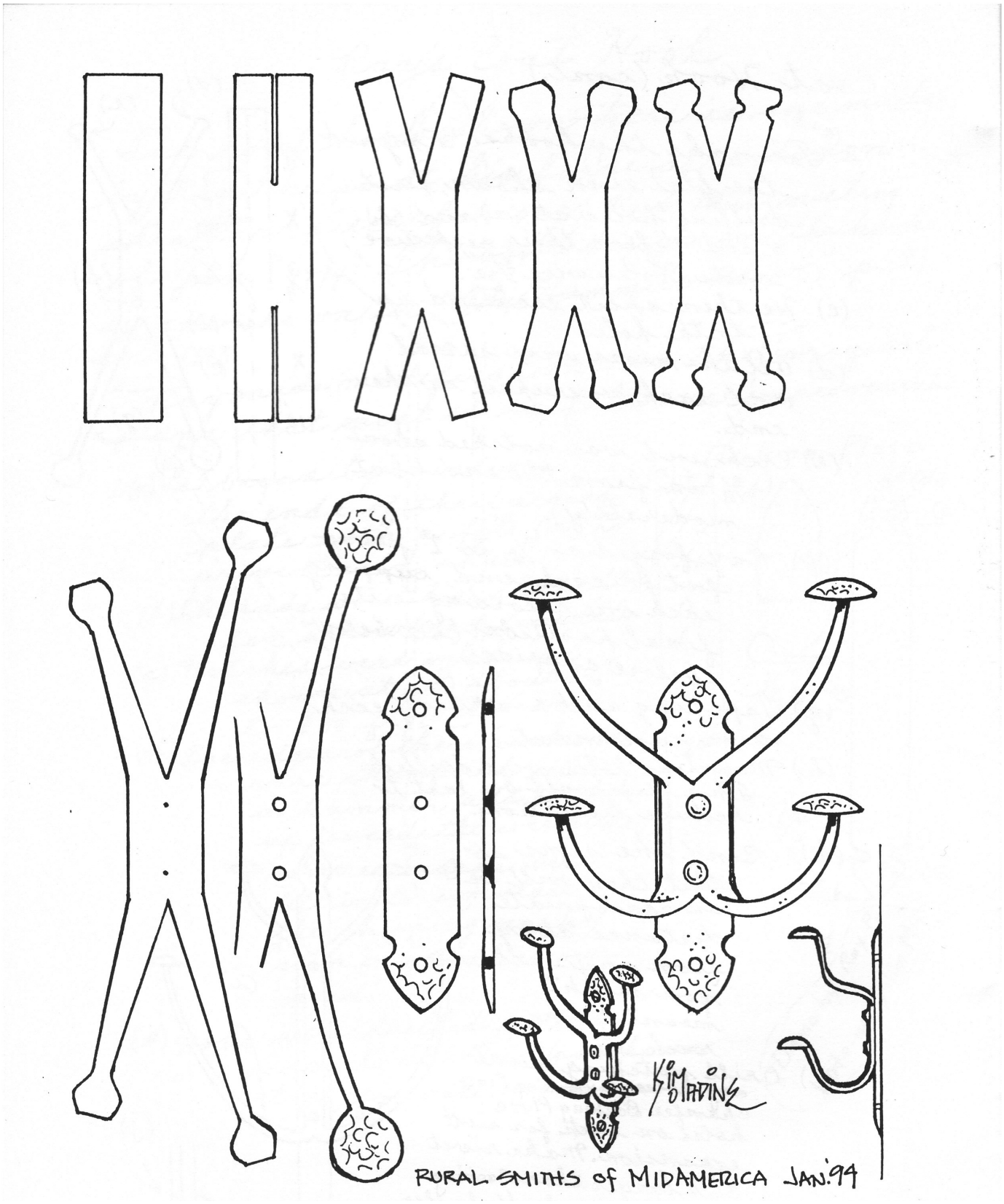
KIM O'HARRON
RURAL SMITHS of MIDAMERICA JAN.'94

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Membership Application

___ New Member___ Renewal

Name: _____Address: _____

City: _____ State: _____ Zip: _____Phone: _____

email: _____ Sponsor_____

Dues are $15.00 per person/family, per year. **Make checks out to PSABG** Please remit to:

C. Ray Pearre, Jr., 4605 Durant Ave., North Charleston, SC 29405

ACKNOWLEDGEMENT AND ASSMPUMPTION OF RISK

I acknowledge that blacksmithing and related activities are inherently dangerous and involve risks and dangers to participants and spectators that may result in serious injury or death. I have considered these risks and I knowingly assume them. I agree that I am responsible for my own safety during Guild events, including wearing appropriate clothing and protective gear and remaining a safe distance from all dangerous activities. I agree to hold Philip Simmons Artist Blacksmith Guild and guest demonstrators of our craft harmless from liability and expenses arising from of my actions and/or omissions.

When was the last time you paid dues?

There is a note below your address on the last page of our newsletters. It will say something like…

"Dues Last Paid – 2019"or"Dues for 2020" are due" or "Dues paid 2020"

This note is updated for each newsletter. We appreciate your prompt payments.

Don’t come to Westminster on June 13th!

Our meeting is again cancelled due to the Covid virus.

David Bush created a railing for his home while in isolation. Were you creative

Mike Tucker is working on a small railing project 100 pickets, 200 tenons and 400 scrolls done “the old way” as Mr. Simmons used to say

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