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THE FORGE FIRE

The Newsletter of the Indiana Blacksmithing Association, Inc.
An Affiliate Of The Artists-Blacksmiths' Association of North America, Inc.

IBA is a Not For Profit Indiana Corporation recognized by the IRS under section 501(c)(3)

9:30 AM is the regular meeting time for IBA Hammer-Ins with beginner training available at 9:00 AM.
PLEASE MAKE SURE TO ASK FOR HELP!

If you would like an IBA membership application form, please contact Farrel Wells, Membership Secretary (765) 768-6235.

BULK LOTS ARE AVAILABLE TO DEMONSTRATORS, SHOPS, SHOWS AND OTHERS WILLING TO MAKE THEM AVAILABLE. WE APPRECIATE YOUR HELP.

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More nearby resources and organizations for blacksmiths:
Rural Smiths of Mid-America:
 Meetings are on the first Saturday of each month
 Call Ron Gill
 317-374-8323 for details

IBA MEETING SCHEDULE	
Check the latest <i>Forge Fire</i> for monthly IBA revisions.	
Jan 21 2023	STEVE KING SHOP PAOLI
Feb 18 2023	KEN DETTMER SHOP COLUMBUS, IN
Mar 18 2023	ANNUAL BUSINESS MEETING TBD
Apr 15 2023	TBD



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Editors Message

Happy New Year to all! I missed the December IBA meeting hosted by Don Reitzel, so I do not have any IBA news to share. I plan to be at Steve King's shop later this month, so hopefully I can provide updates on IBA functions including this year's IBA Conference.

Because it is the start of a new year, I do know that people should be thinking about the March annual business meeting as well as recognition awards.

Every year we have two board of director positions up for re-election. This year Bill Corey and Aaron Baker are up. I have not heard if they intend to run for an additional term. If you would like to run for a board position, please contact Steve King. The February Forge Fire will include a ballot of candidates.

Brad Weaver is the IBA Awards Chairman. Brad is the person to contact if you want to nominate someone for Blacksmith of the Year or for Rookie Blacksmith of the Year. Forms and nomination instructions can be found on the IBA website (<http://www.indianablacksmithing.org/membership.html>).

I looked through my email inbox and did not find any information from any satellite groups. If you sent something to me, I apologize. If you have updates please let me know.

This month we have quite a variety projects reprinted from other blacksmithing newsletters. I hope you find the variety useful and interesting.

Recently I saw some discussion on social media about "why someone should be a member of the IBA". The comments essentially boiled down to being able to get all of the benefits (newsletter, website, Facebook, mentoring and hammer ins) without having to pay dues. That is a short sighted and somewhat parasitic perspective. In my opinion the IBA board has done a great job making it easy to be a member. Dues have not increased with inflation and several years ago the membership was changed from individuals to include all members of a household. Without dues paying members the IBA would cease to exist. I know there are people that are quite happy to let someone pay for their benefits. Thankfully I am not one of those people.

IBA website: www.indianablacksmithing.org **IBA Facebook page:** www.facebook.com/groups/IndianaBlacksmithingAssociation/

IBA Satellite Groups and News

1) Sutton-Terock Memorial Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contacts: Fred Oden (574) 223-3508
 Tim Pearson (574) 298-8595

2) Jennings County Historical Society Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contact: Ray Sease (812) 522-7722

3) Wabash Valley Blacksmith Shop

Meet: 3rd Saturday at 9 AM
 Contacts: Bill Cochran (812) 241-8447
 Max Hoopengartner (812) 249-8303

4) Fall Creek Blacksmith Shop

Meet: 4th Saturday at 9 AM
 Contacts: Gary Phillips (260) 251-4670

5) Maumee Valley Blacksmiths

Meet: 2nd Saturday
 Contacts: Clint Casey (260) 627-6270
 Mark Thomas (260) 758 2332

6) St. Joe Valley Forgers

Meet: 4th Saturday at 9 AM
 Contacts: Bill Conyers (574) 277-8729
 John Latowski (574) 344-1730

7) Rocky Forge Blacksmith Guild

Meet: 2nd Saturday at 9 AM
 Contacts: Ted Stout (765) 572-2467

8) Meteorite Mashers

Contacts: Mike Mills (812) 633-4273
 Steve King (812) 797-0059
 Jeff Reinhardt 812-949-7163

9) Whitewater Valley Blacksmiths

Meet: 2nd Saturday
 Contact: Keith Hicks (765) 914-6584

10) Bunkum Valley Metalsmiths

Meet: 1st Saturday
 Contacts: Jim Malone (812) 725-3311
 Terry Byers (812) 275-7150
 Carol Baker (317) 809-0314

11) Covered Bridge Blacksmith Guild

Meet: 1st Saturday
 Contact: John Bennett (812) 877-7274

12) Snake Road Forge

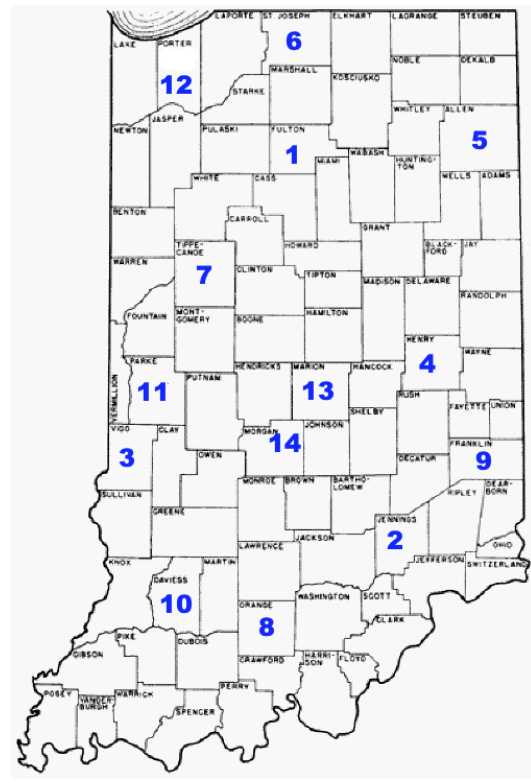
Meet: 1st Saturday
 Contact: Rod Marvel (219) 241-0628

13) Satellite 13

Meet: 4th Saturday
 Contact: Darrin Burch (317) 607-3170
 Doug Wilson (317) 439-7684

14) Old Town Waverly Blacksmiths

Meet: 2nd Saturday
 Contacts: Mike Lyvers (317-728-5771),
 Kenny Hale (765-318-3390),
 Mike Jackson (317-509-9115).



Editor Note:

I did not find any updates from satellite groups. I did have some unexpected events in December and got behind on my emails. If anyone submitted satellite news please let me know.

The Jennings County Blacksmiths will meet on February 11 at Ken Dettmer's shop. The IBA state hammer in will be at Ken's shop the following Saturday.

GEORGE DIXON ON FORGING NEGATIVE SPACE

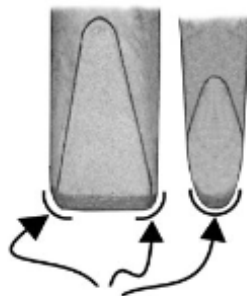
When a forged taper has a fullered (or chiseled) effect that tapers as the bar does it can be the result of using progressively smaller tools. While that approach works, it requires a set of sized tools. It's also a tedious process to blend the taper between tool sizes.

The method shown here uses a single fuller to sink a negative space into the bar. Once that is done, the bar and the fullered line are tapered at the same time.

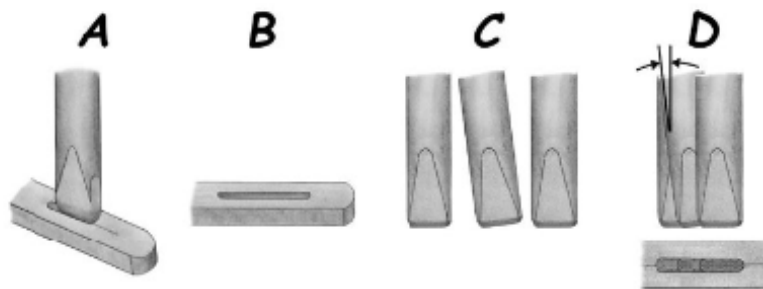
With a layout line established, use the same fuller you'll be using to sink the effect into the hot bar to mark the layout line cold. It only needs to be deep enough to register the fuller after a heat is taken on the bar. Using any other tool to establish the layout line—and then matching a fuller to that line when the bar is bright yellow to near white heat—can be difficult.

Using the same fuller to do the cold layout and the hot fullering matches the tool to the layout, even if the bar is too bright to see the layout line. You'll feel the tool tip register into the layout line.

A fuller used to forge a line in a bar should have the ends of its long edge rounded to the same degree as its working end thickness. A fuller dressed in this manner makes the development of a fullered line much smoother.



Dressed fuller, corners rounded as explained in the text.



Left to right: (A) Cold layout and hot work using the same tool. (B) A cold marked bar, ready to hot sink the fuller. (C) Three fullers showing the process of "set, rock, drag and set" as used in both the layout and hot work. (d) Each move is only half the tool's cutting width, keeping the forged depression smooth and aligned.

Successful development of the fullered line is a result of how the fuller is dressed, set, struck and then moved forward to be struck again. The tool is struck and then it is tipped back slightly (very slightly), and moved forward one half of the tool width before it is set back to vertical and struck again. This approach keeps half of the fuller in the "trench" that follows it. And it places the other half of the fuller onto the surface of the developing effect. It also causes the sidewall of the fuller to blend the last strike into the next one.

How deeply should the fullering sink into the bar? That is a matter of how you want the effect to look. The first times you try this process, keep the fullering about a quarter of the bar thickness. As to how far the effect can be pushed, the photo at the beginning of this article is of a 1/2-inch square bar, which has the same fullering on the opposite side.

Drawing Out a Negative Space

The steps of drawing out a negative space into a taper begin by first drawing out the metal that's past the fullering.



Keep the hammer centered over the back of the fullered bar, as shown above and in the next two illustrations.

Reprinted from the Hammer's Blow, publication of ABANA for those of you who are still not members...



The top two illustrations show how the forging is kept away from the fullering while the initial taper is established. For control I tend to flip the bar every three strikes, otherwise one side of the fullering thins.

The middle illustration shows how the taper begins to include the fullered line. Next, the taper is developed to the back of the fullered line, which draws out the bar and the fullered line together.

The bottom illustration shows the fully tapered bar end, as well as the tapering of the fullered line.

During the forging process, keep the hammer centered over the back of the bar. Maintain the same hammer position when curving the bar, too.

Avoiding a Hot Shut

When a steel bar is being forged—drawn out—it rests on an anvil and is struck with a hammer. The outside of the bar can move faster than the core of the bar as that bar is drawn out. The result can be a “hot shut” at the end of the bar that’s being tapered.

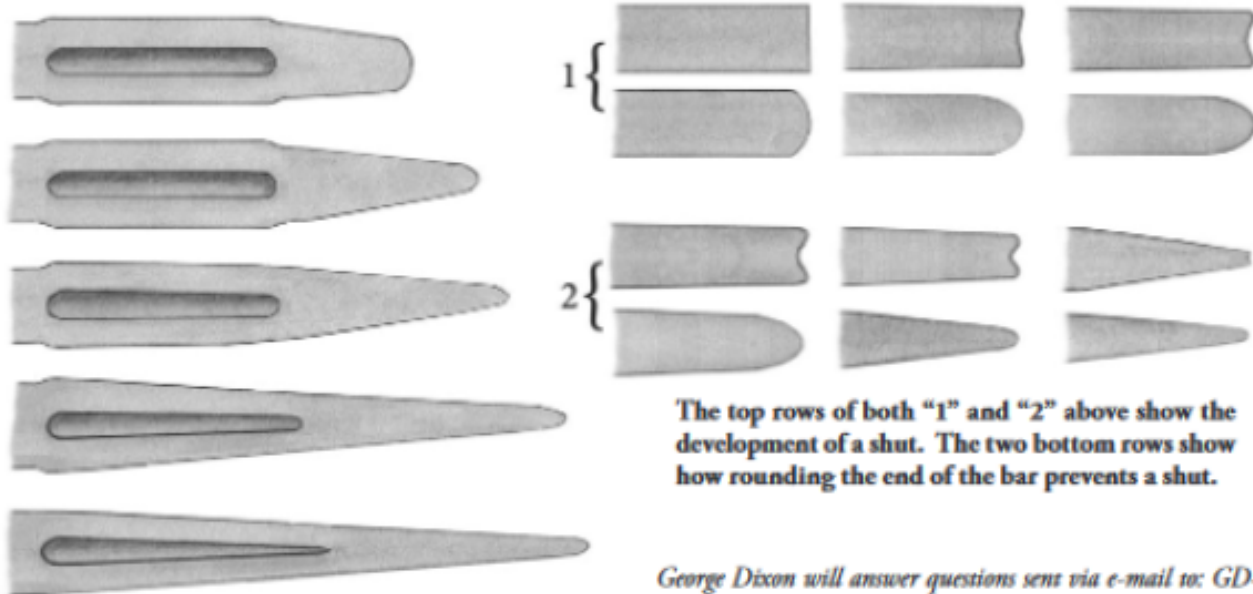
As the forging continues, the core of the bar can lag behind the outside of the bar, which creates a pocket at the tip.

That slight pocket can close, leaving a split at the tip of the taper.

With enough force, the core of the bar will move as fast as the outside does, which prevents a shut.

However, a lot of force behind the hammer and maintaining control of the forging (thickness and length) can be challenging to a new blacksmith.

One solution, which prevents a shut, is to round the end of the bar before forging it. That causes the core of the bar to stay ahead of the outside of the bar. How the rounded end lends itself to the process of drawing out a bar is illustrated below.



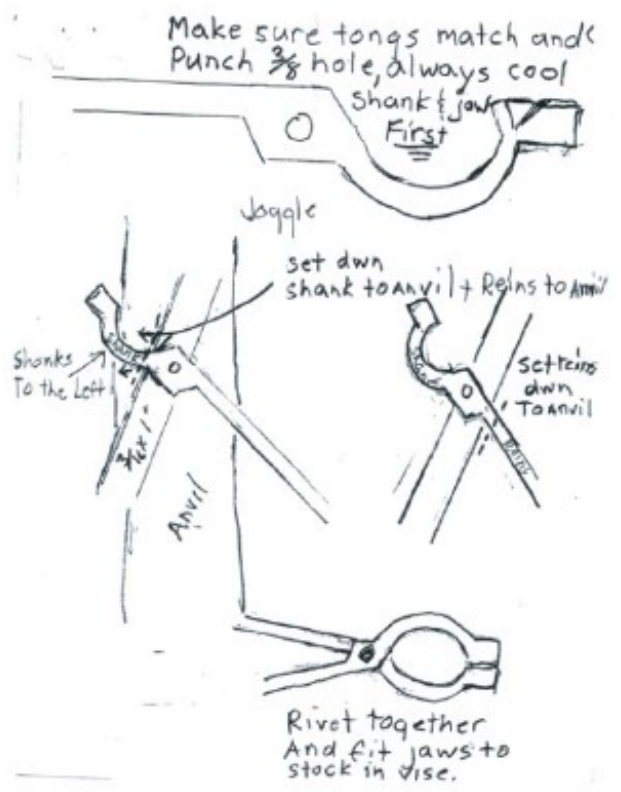
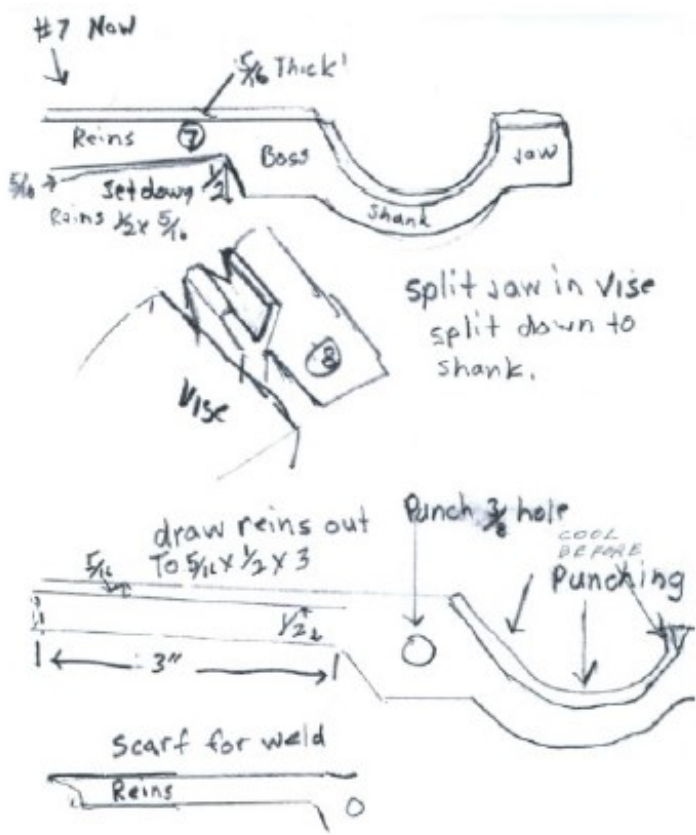
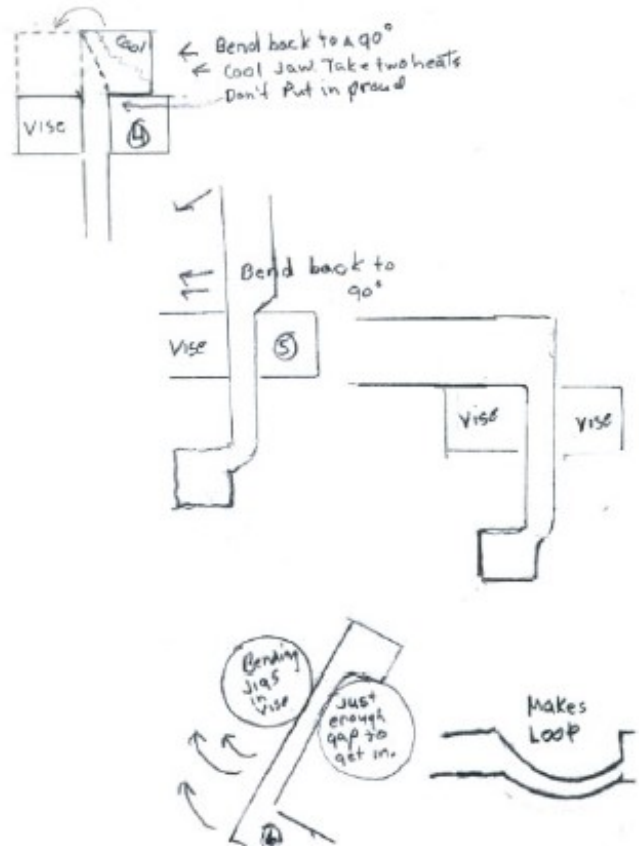
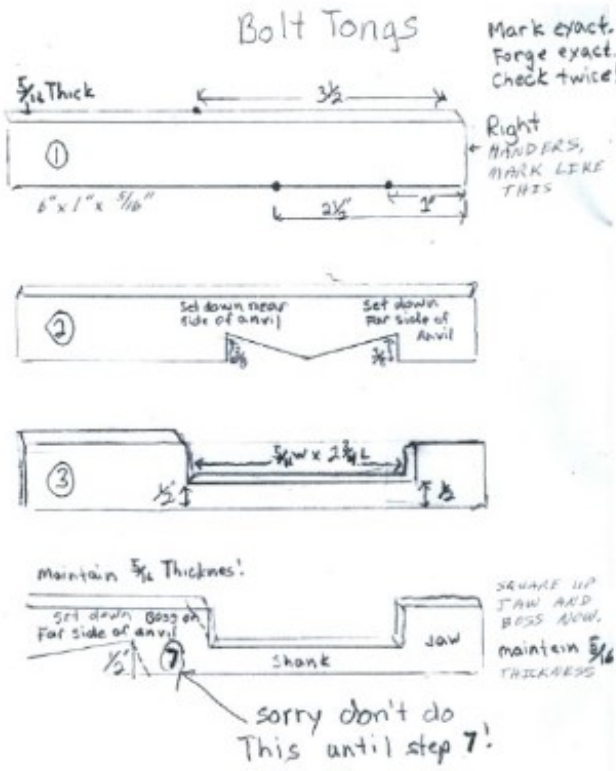
The top rows of both “1” and “2” above show the development of a shut. The two bottom rows show how rounding the end of the bar prevents a shut.

Steps in drawing out a bar containing a negative space

George Dixon will answer questions sent via e-mail to: GD-Blacksmith@charter.net.



Bolt Tong Drawings by Gordon Williams



Scrolling on the Diamond

by Walt Hull

This 2-page article reprinted from the September-October 1997 BAM newsletter. Typed, reformatted and sketches retouched by Michigan Artist Blacksmith Association

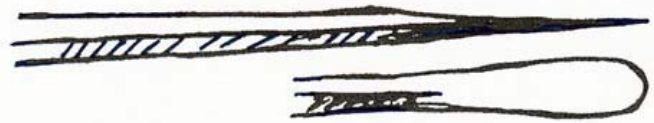
Scrolls never seem to go away. You see scrolls or related curves in modern as well as traditional iron work and on the sides of hotrods and Peterbuilt's because they are an obvious and natural answer to the problem of what to do with the end of a line: curl it down to a theoretical vanishing point. A look I've been working with lately is the scroll on the diamond. The shadows on the stock set off the curve dramatically:



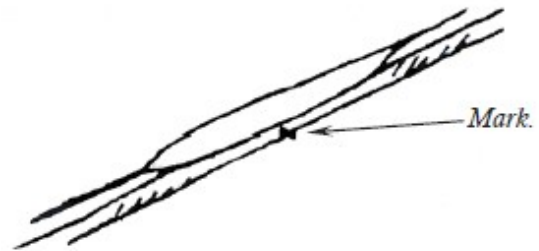
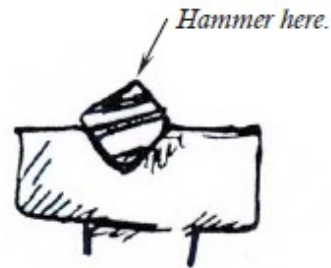
Branching scrolls are visually interesting because they demonstrate that just because you know where a curve has been doesn't mean you know where it's going. Remember that the next time someone gives you "the" mathematical formula for scrolls:



If you split square stock on the diamond you get two pieces with triangular cross-section. To get two branches with diamond cross-section, you have to put them together. Here's an example: cut a piece of 1/2" square bar 16 1/4" long. Mark with a chisel at 8 1/4" from one end and draw each end to 1/4" square, so that one end is 1'-0" from the mark and the other 1'-1" from the mark. Flatten each end on the diamond thus:

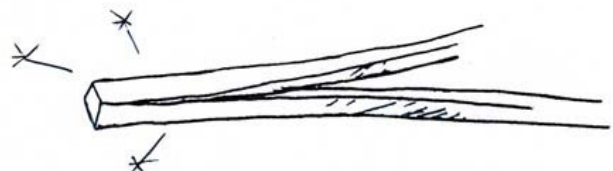


At the chisel mark, lay the piece in a V-block and flatten one side (on the diamond) for about 1" either side of the mark:



I also like to break the corners slightly with the hammer the full length of the stock for two reasons: I like the look, and if it is necessary to strike the corner in forming or leveling the scroll it won't show as a ding in an otherwise sharp corner.

Now chisel in at the mark and fold the two flats together. Take a heat and weld:



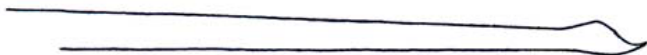
When I weld these I first tap them a couple of times in the V-block to get them stuck and then move to the step and weld on the square:



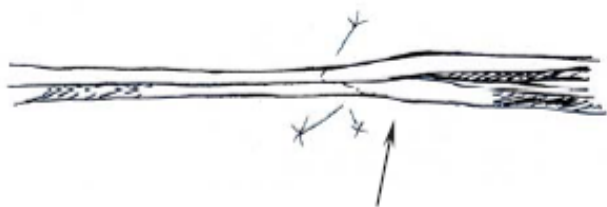
Once you've done a few you'll find it easy to move to the face and scarf in the same heat. Ignore the fact that the branches are on the diamond, and scarf on the square:



Taper and scarf a piece of 5/8" square to match (work on the square – don't let that diamond stuff confuse you at this point) and weld on your other piece.



You should end up with this:



Work this transition smooth at weld heat.

Now you can scroll. Note that you have 2 choices as to how you branch:



Actually, you have to decide clear back there where you flatten the ends, because the flat must lie at 90 to the plane of the scroll.

Scroll the long branch first then the other, and then the other, and then the common part. Be especially



careful at the part where they join, lest you get a kink where the thicker material provides greater resistance. Work hot, it is much easier to do this on a form. If you don't have a form for the scroll you want, make it. Use a scrolling wrench to pull the material tight to the form. Be careful to stay on the diamond. Twist is easier to prevent than to correct.

Here's what I ended up with, but the possibilities are literally infinite.



This 2 page article originally appeared in the Winter 2019 issue of The Hammer's Blow, and is reprinted courtesy of ABANA. All rights reserved.

HB

Forging and Twisting Triangular Barstock

by
Travis Fleming of Artistic Anvil
 and
Al Stephens of Pequea Valley Forge
Athens, Alabama

Have you ever noticed that when you're looking at a recently completed project, the angel on one shoulder tells you "That's really nice," and the devil on the other shoulder says, "Yeah, but what if...?" Anytime a blacksmith is admiring, dissecting, or re-engineering something, that "What if..." moment always comes around.

One day, while looking at some new twists at Travis Fleming's *Artistic Anvil* forge, Al said that he had never seen a twist with an equilateral triangle cross section. (That old "what if?" is a sneaky devil.)

First Tooling

Several days later, Travis stopped by to show Al a perfectly forged equilateral triangle. To form it, he made a bottom tool by cutting a triangle out of a block that could be used under a power hammer. They found that 5/8" round stock was the perfect size to start with.



Image #1

Al then took a 5/8" round piece of S-7, and used his 60 degree "V" tool to make a long triangular top tool and punch.

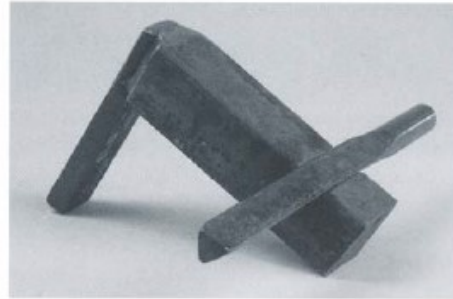


Image #2

Travis had already made several twists, and found he needed a special twisting wrench to hold the triangle material securely. When Al made the wrench, he punched a round hole first, then drifted it with the triangle punch.



Image #3

Al made a block for his power hammer and forged three triangular notches into it, each progressively deeper. He hoped this tool would allow him to work with smaller stock sizes.



Image #4

More Tooling

However, "what if?" kicked in again. "How would they forge a triangle taper?" Well, they used the S-7 top tool to make a tapered swage block. Al made one for the anvil. Travis made some for the power hammer.



Image #5

This was used first to make a tapered punch by forging a round taper, then forming in the swage so different size twisting wrenches could be made.

Next, they made tongs to hold triangular stock properly. Vise blocks were made next. They discovered that a three-jaw chuck on the lathe would hold stuff perfectly.

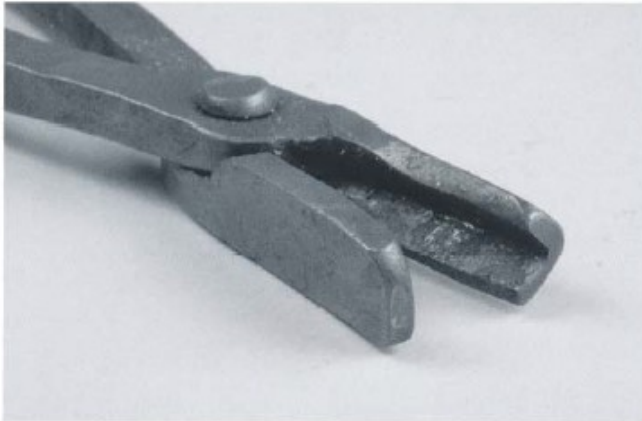


Image #6

Language/terminology/twisting

By this time they realized that they were having problems even talking about what they were experimenting with. They couldn't describe a twist using the standard 1/4, 1/2, 3/4, or full-twist terminology. It had to be 1/3, 2/3, or full. (Or 120 degrees, 240 degrees, or 360 degrees.) They also talked about the number of "flats" or "edges" they counted when twisting. They even numbered the flats on both ends of a piece to help on some early stuff.



Image #7

Applications

Now, what were they going to use these tools, experiments, and terminology to make? A computer search for "hand forged triangles" produced a large variety of dinner bells, some earrings, bracelets and necklaces, and a musical instrument. They found anvil devils and triangle files, but nothing else. Most items used a two-dimensional triangular shaped design element. Al uses flat triangles in several of his production candle holders.

About this time Al had shoulder surgery and was forced to assume old "what if's?" place. Travis began working on a three-legged candle holder, and more "problems" surfaced, such as, "How do you orient a three-sided leg to show off the fact that it has three sides? Why does a straight twisted shaft appear crooked from different sides? Why does a triangle candle pan only look like it's centered from two points of perspective?"

A triangular twist can be used anywhere any other twist can be used. The distinction is very subtle, and might be missed, despite all the work that goes into it. Travis and Al have not yet tried splitting, drifting, or mortise and tenon joints with this triangular cross section yet. Perhaps this is why you don't see blacksmiths forging and working with triangular stock.

Challenge

So here's the challenge: Where can we blacksmiths, the undisputed and most talented artist-craftsmen, go with this shape? ■



Image #8: Candle stand, by Travis Fleming. 16" x 7". Travis also made the candle mold so a friend could pour a beeswax triangle candle for it.

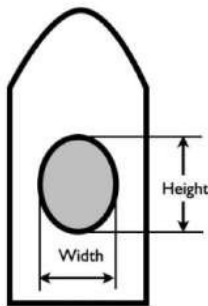
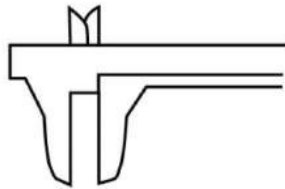
California Blacksmith *Online*

Handling a Hammer Mike Mumford, RoadRunner Forge

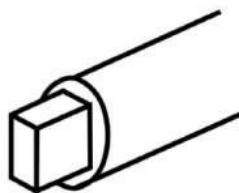
Just like every blacksmith has a different hammer preference, nearly everyone has his or her own preferred way to install a handle on a hammer. This is my preferred way - not that it's any better than anyone else's, just it's how I do it. While it seems intimidating, as a blacksmith you will need to periodically tighten or replace hammer handles -- get used to it.

Handle sizing is your choice. I prefer a moderately large handle - but it's your choice.

1. Cut off any split wood, or other damage. Ideally, a hammer handle should be straight-grained.
2. Measure the size of the eye of your hammer head. I use an inside-outside caliper - a cheapie from Harbor Freight or General will work well. The benefit of the inside-outside caliper is that it will transfer measurements from the eye to the handle.

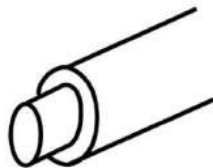


3. Using a fine-tooth saw (such as a hacksaw), cut a groove ring all around the handle. Make the depths the height and width of the eye.



4. Using a wood chisel or a blacksmith's butcher chisel, cut a rectangular tenon. The previously-made groove ring should serve as a stop for the cut.

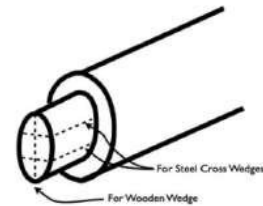
5. With a rasp, round the corners of the tenon. Check the fit with the hammer head, then continue to trim until the head slips onto the tenon. The fit should be moderately tight - you want to leave room for the wedging.



The Afternoon Blacksmith

This is the first in a series called "The Afternoon Blacksmith." This is the second part of the one-afternoon class begun with making the leafing hammer head - I feel that students need to know how to tighten or replace a hammer handle, because they will all loosen in use.

6. Using your hacksaw, make a cut for the wooden wedge on the long axis of the tenon, then make two cuts for the metal wedges. The cuts should go down to just shy of the shoulder where the tenon goes into the parent handle stock.



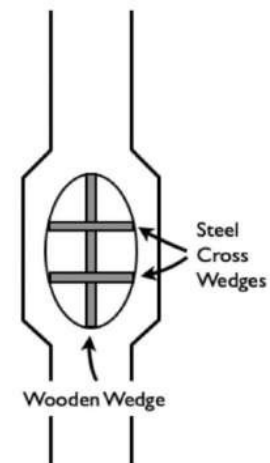
7. Trim a wooden wedge to fit, let it be a bit longer than the cut. Fit the head onto the handle (tenon), then drive the wedge in with a hammer. You'll probably break the wedge off - that's OK if it's driven well into the tenon.

I like composite wedges - very difficult to find. A substitute is wooden door wedges.

8. Drive two metal wedges into the tenon/wooden wedge combo. These will be perpendicular to the wooden wedge - i.e. cross wedging.

Recently I have switched to putting a bit of a soft epoxy (i.e. a lower-strength, flexible-set epoxy) onto the wedges - it seems to help keep from loosening. Let harden.

9. You should be ready to go hammer!





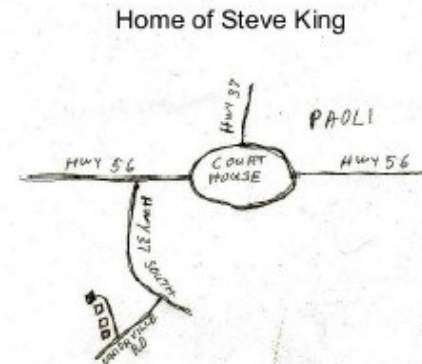
The FORGE FIRE
Newsletter of the
Indiana Blacksmithing Association, Inc.

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Dunkirk, IN 47336-8807

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sender

January 21 Hammer In
Steve King's Shop
1155 S. Paoli Unionville Rd.
Paoli, IN 47454



February 18 Hammer In
Kenny Dettmer's Shop

15721 S 250W Columbus, IN

From the North: take I 65 S to Ogilville / Walesboro (exit 64) turn. right. Go to the 1st cross-roads (300 W). Turn left. Approx 1 mile to the "T". Turn left (600s). Go to 250W. Approx. 4 miles to a brick house on your left.

From the South: I 65N to Jonesville exit 55 turn. right, go to road 950 (in Jonesville). Turn left. Go to 250W turn. right. Kenny's house is approx 1/2 mile on your right .

Please bring a dish to share.