

BOARD OF DIRECTORS

Gary Phillips '14

President:
14800 N SR 167 N
Albany, IN 47320
(765) 789-8316
behere@netdirect.net

Steve King '14

Bill Conyers '15

Vice President:
50964 Lilac Rd,
South Bend, IN
(574) 277-8729
billconyerssr@yahoo.com

Ken Dettmer '15

15721 S 250W
Columbus, IN 47201
(812) 342-4084

Dominick Andrisani '16

3608 Capilano Drive
West Lafayette, IN 47906-8869
PH # (765) 463-4975
andrisan@purdue.edu

Ted Stout '16

8525 W 700 S
West Point, IN 47992-9258
PH# (765) 572-2467
stout8525@tds.net

James Johnston '17

Education Chairman:
806 Twyckingham Lane
Kokomo, IN 46901-1885
(765) 452-8165
kokomoblacksmith@comcast.net

Keith Hicks '17

Secretary:
5184 State Road 252
Brookville, IN 47012
(765) 914-6584

Librarian:

Larry Rosentrader
8715 E. 375 N
Churubusco, IN 46723-9501
260-693-3267
rosentrader@cs.com

Editor:

Bill Kendrick
1280 N 900 W
Seymour, IN 47274
(812) 445-3009
bill.d.kendrick@cummins.com

Treasurer and membership secretary:

Farrel Wells
8235 E 499 S
Dunkirk, IN 47336-8807
PH # (765) 768-6235
flwells@frontier.com

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)

10:00 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 Moe Handy
(317) 862-5647 for details.

IBA MEETING SCHEDULE

Check the latest *Forge Fire* for monthly IBA revisions.

Nov 16 2013	One Armed Blacksmith's Shop Edinburgh, IN
Dec 14 2013	Rocky Forge West Point, IN
Jan 18 2014	TBD
Feb 15 2014	Ken Dettmer Shop Columbus



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smiths

Dec 14 Hammer
In and IBA Board
Mtg at Rocky
Forge

Editors Message

We need candidates for the IBA board of directors. The positions held by Gary Phillips and Steve King will expire in March. Contact Ken Dettmer at 15721 S 250W, Columbus, IN 47201 or call (812) 342-4084. Candidates need to be identified by January 18 in order to be in the February ballot.

We have a couple of very good hammer ins to close out the year. This month we will be at the One Armed Blacksmiths and next month we will be at Rocky Forge. Both hammer ins will have a pitch in lunch, so bring a dish of something tasty to share. Note that the Rocky Forge hammer in will be on the second Saturday in December. This is our usual practice to avoid pressing too close to the Christmas holiday time.

The upcoming hammer ins follow last months excellent hammer in at Jennings County. Charlie Helton conducted a masterful demonstration on making scrolls and scroll fixtures. The topic of scrolls was inspired by next years conference theme of chandeliers. Most chandelier designs incorporate some arrangement of scrolls. Some photographs and a brief description of Charlie's demonstration are shown on pages 6 and 7.

With the strength of Charlie's demonstration, I decided to expand on the theme of scrolls and design. Pages 8 and 9 show two different views on the golden rectangle that is often used to produce a an aesthetically pleasing design. Page 8 shows how to create a rectangle by adding squares. Page 9 shows an alternate method using arcs. Both methods will result in the golden rectangle proportion of 1.618 to 1. Page 10 contains an article on snub end scrolls by Peter Ross. Page 11 shows a method from Clay Spencer to create a scroll using a string.

If you have any additional tips or advise about design and construction of chandeliers please send them to me.

Melvin Lytton will be the feature demonstrator for the December hammer in. Melvin is a blacksmithing instructor at Connor Prairie, so I anticipate a fantastic demonstration and big turn out. I do not know if there is a feature demonstration for the November hammer in. Perhaps Charlie will give us a reprise of his scroll making demonstration

Visit the IBA website at: www.indianablacksmithing.org

IBA Satellite Groups and News

Sutton-Terock Memorial Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contacts: Fred Oden (574) 223-3508
 Dennis Todd (574) 542-4886

Wabash Valley Blacksmith Shop

Meet: 2nd Saturday at 9 AM
 Contacts: Doug Moreland (217) 284-3457
 Max Hoopengartner (812) 249-8303

Maumee Valley Blacksmiths

Meet: 2nd and 4th Saturday
 Contact: Clint Casey (260) 627-6270
 John Schamber (260) 579-7303

Rocky Forge Blacksmith Guild

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

Whitewater Valley Blacksmiths

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

Bunkum Valley Metalsmiths

Meet: 1st Saturday
 Contacts: Doug Neukam (812) 259-4430
 Steve Stoll (812) 486-9668
 Kathy Malone (812) 725-3310

Jennings County Historical Society Blacksmith Shop

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

Fall Creek Blacksmith Shop

Meet: 4th Saturday at 9 AM
 Contacts: John Zile: (765) 533-4153
 Larry Singer (765) 643-5953
 Farrel Wells (765) 768-6235

St. Joe Valley Forgers

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

The Southern Indiana Meteorite Mashers

Contacts: Billy Merritt (812) 338-2876
 Steve King (812) 797-0059
 Jeff Reinhardt 812-949-7163

One Armed Blacksmith's Shop

Meet: 1st Saturday
 Contact: Tim Metz (812) 447-2606

“Doc” Ramseyer Blacksmith Shop

Location: 6032W 550N, Sharpsville, IN 46060
 Meet: 3rd Sunday at 2 PM
 Contacts: Mike Kelley
 Charles Gruell (765) 513-5390

Rocky Forge Blacksmith Guild

Seems forever since we met as a group to exercise our passion of blacksmithing. Well no need to despair, we will have a good chance this Saturday, November 9th, at 9:00 A.M. The Rocky Forge group has been invited to participate in a Hammer-In with the Wabash Valley group at the new blacksmith shop located in the grounds of the Park County Fairgrounds which is on the north side of Rockville on the west side of highway 41. It is easy to find. The shop is situated in the northwest corner of the grounds and was built to support the 4-H blacksmith program for Park County. John Bennett will do a couple of demonstrations and maybe Michael Wollowski will also demonstrate. After those demonstrations it will be open forge time.

There will be a large pot of soup, so we are asked to bring a covered dish to pass that will go with the soup. Also, bring Iron-in-the-Hat items and it might be a good idea to bring a chair. John said there will be 4 coal forges and 4 gas forges with fuel provided, so bring your bucket or bag of favorite tools and metal. Bring some of your work as a “show and tell”. Others are just like us, we like to see what others are making. You guys have some pretty neat stuff that would be good to show.

This will be a fun event and I hope the Rocky Forge members will make a good showing.
 See you all Saturday.

Ted

IBA Satellite Groups and News (continued)

Jennings County Historical Society Blacksmith Shop

The Vernon Historical Society Blacksmiths opened at 7:30am and a fire was started. The late start was caused by having to stop for donuts. Ray Sease started the coffee brewing and some of us went to the "Log Cabin" for breakfast. Brad Weaver made a punch and countersink from re-bar. Charlie Helton Made a set of chain tongs and helped Jack Neukam practice forge welding chain links. Various others worked on personal items. We had open forge until closing. There were 17 present and thanks to Bill Miller we had a very successful iron-in-the-hat. Gerald Williams and myself gave a demonstration of blacksmithing (narrated by Gerald very eloquently) to a group of advanced art class from North Vernon Middle School on Thursday 24th. November 9th will be our last meeting at Vernon for this year. Please try to make it. December meeting will be at my home (139 South Park Drive, Seymour In) for all who cannot make it to the monthly state meeting. This meeting will be brown bag or local eatery. January Meeting will also be at my house, but you will be fed. Hope to see you . Paul Bray

The Southern Indiana Meteorite Mashers

The Meteorite Mashers met this month at Beck's Mill for their annual festival. Had at least 9 blacksmiths present, With Dave Kunkler's lovely young bride Donna taking over the forge when all the men walked across the street to the mill to scope out a site for a blacksmiths shop. As she was there by herself the local newspaper arrived for photos and she stoked the fire and went to it. So Donna Kunkler is the subject of the local paper:)

Next meeting is the Saturday after Thanksgiving, at Jeff Reinhardt's shop in Floyds Knobs. This is the now somewhat infamous "Smoked turkey Hammer-in" as Jeff hickory smokes a turkey for the lunch. Sandwiches of smoked turkey and what ever else other pitch-in.

MELVIN LYTTON TO DEMONSTRATE AT DECEMBER IBA MEETING

On December 14th Melvin Lytton will demonstrate his blacksmithing expertise at the IBA meeting to be held at Ted Stout's Shop in West Point Indiana. The address is 8525 W 700 S, Westpoint IN 47992.
Coffee and donuts start at 8:30 AM and there will be Iron-in-the-Hat.
Melvin teaches basic and advanced blacksmithing at Conner Prairie.

Items for Sale:

Kick Shear:

31 inch metal shear Price: \$400
Contact Bob Lloyd 812-546-4020

Miscellaneous Blacksmith Items:

Coal forge with blower
Gas Forge (needs work)
Anvil
Hand tools, tool boxes, tongs, hammers, horseshoe shears
Contact Devin Hunter 812-552-9141

IBA Satellite Groups and News (continued)

Fall Creek Blacksmith Shop

10 members showed up. Garry started the meeting, with John's wife giving us an up date on John. Mark Thomas was the demonstrator for the day. Mark is a full time blacksmith and does a lot of shows, and sales a lot of blacksmith items to re-in-actors and wholesales to there suppliers. Besides demonstrating several items he talked about the business aspect. Pictured is the tools he travels with and also the tooling he uses on copper candle holders. A good day had by all.



Thanks Mark for demonstrating and sharing with us.

Report from Dave Wells

IBA October Hammer In

Scroll Making Demonstration by Charlie Helton

The project theme for next years IBA Conference is chandeliers. Charlie stated that scrolls are a key element in most chandelier designs, so he decided to provide instructions on making scrolls and scrolling jigs. Charlie brought a half penny scroll and scroll jig. He then provided step by step lessons in how to create your own tooling and scrolls.



Charlie started by talking about the “golden mean”, also called the golden rectangle and sometimes the Greek letter phi. The golden mean is a ratio of proportion that is widely considered to be extremely pleasing to the eye. It is basic principle used in art and architecture, dating back to Aristotle and early Greek civilization.

Once the basic scroll design is established the jig must be made to fit in the “negative” space. Charlie likes the jig to be made of slightly wider stock than the finished piece. In the demonstration a 1/4 x 3/4 scroll was made using 1/4 x 1 jig material. To start the jig is drawn into a taper in the thin dimension.



The end is allowed to fishtail (widen), do not try to control or adjust the wide dimension until the taper is complete. The wide fishtail is necessary to allow the center of the scroll to be started without interference from the rest of the jig. After all of the tapering is complete, bring one edge of the wide dimension to straight line by lightly hammering on the face of the anvil, be careful to straighten without forging. A wooden mallet is a better tool than a steel hammer for straightening.

With the taper complete and one edge straight begin the process of forming the scroll. Work slow and check against the pattern often. The inner most section of the jig will be tight and will create a wedging action against the work piece when forming the final scroll. Creating the scroll portion of the jig is the most time consuming step. Hold it up and check both positive space (the metal) and negative space (the air), looking for flat spots or undesired bend radii. The radius should be getting progressively larger. Working a section at a time will prevent having to back up and start over.



Charlie prefers to mount the jig onto a flat plate. The plate can be used to keep the finished scroll in a flat plane. Other people simply use a flat bar to hold the finished jig. Charlie puts a piece of angle iron on the back of the jig for use in the vise. When bending the scroll, the vise is often higher and more comfortable than the anvil.



IBA October Hammer In

Scroll Making Demonstration by Charlie Helton

With the scrolling jig complete, the next task is to make the half penny scroll. Starting with a 1/4 x 3/4 bar, isolate approximately a 3/4 square section of material on the end of the bar. Use a relatively sharp edge on the anvil to get a clean corner.

The next step is to draw a long smooth taper in the wide section of the bar. The trick is to not destroy the isolated section while creating the taper. Charlie indicated his early attempts were difficult, until he picked up some advice from Rob Gunter.



Draw out the taper on one edge of the bar and let the isolated material hang over the edge of the anvil and pointed down away from the hammer. After the one sided taper is complete, then work it back to a centered taper with light refining blows.

After the taper is adjusted, twist the isolated section 90 degrees. With light blows smooth the twisted section back to square. Then it is time to round the isolated material into a half

penny. The two opposing corners can be rounded fairly easily with hammer and anvil working both corners at the same time. The third corner must be worked back against the transition into the bar. A sharp edged bolster block or swage can be used to prevent the isolated material from being driven back into the bar, which would result in a stress rising cold shut. Charlie advised to round the edges of the penny section. Breaking the sharp edge will hide some of the imperfections in the penny and create a more round appearance.

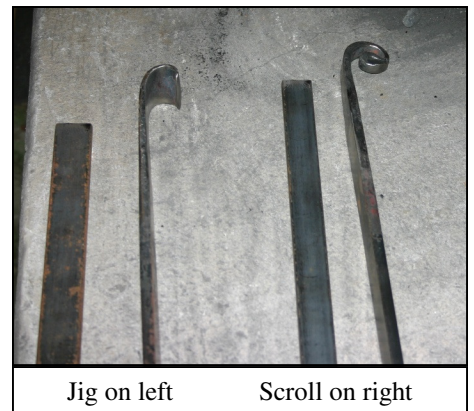
After completing the rounding of the penny section, the initial transition from flat bar to scroll is started on the anvil. The intent should be to create a smooth, expanding scroll from the inside corner



where the bar and penny join to the outside of the bar. This will create a hook that will allow the jig to hold the scroll during bending. When bending the scroll, only work the hot section of the bar. Working a cold section of bar will create a lever action that will pull the scroll away from the jig and distort the scroll into a series of sharp bends and flat sections. Cooling the scroll in the jig will help to prevent distortion.



Finished jig and scroll



Jig on left

Scroll on right

The Golden Rectangle in Design

The Golden Rectangle or Golden Mean also called the Greek letter Phi is a ratio of proportion that is widely considered to be extremely pleasing to the eye. It is a basic principle used in art and architecture, dating back to Aristotle and early Greek civilization. Many objects in nature also follow this proportion. The general proportion is 1.618... to 1. This ratio can be achieved by adding squares to form a rectangle. Two squares of equal size are added to create a 2 x 1 rectangle. Then a square equal to the long side of the rectangle (2 x 2) is added to create a 3x2 rectangle. Then a 3x3 square is added to create a 5x3 rectangle. This progression is repeated until the desired final size is reached.

Scrolls are created from the rectangles by creating a smooth curve that touches the corners where a square joins the next smaller rectangle as shown below.

The starting squares can be any dimension. The point is to maintain the ever growing proportion.

1	1
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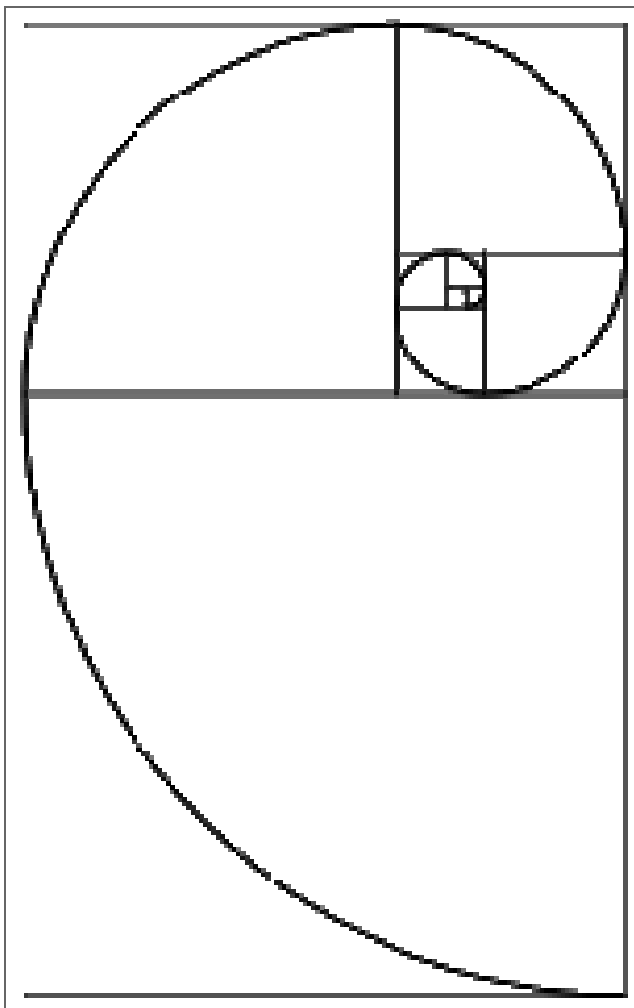
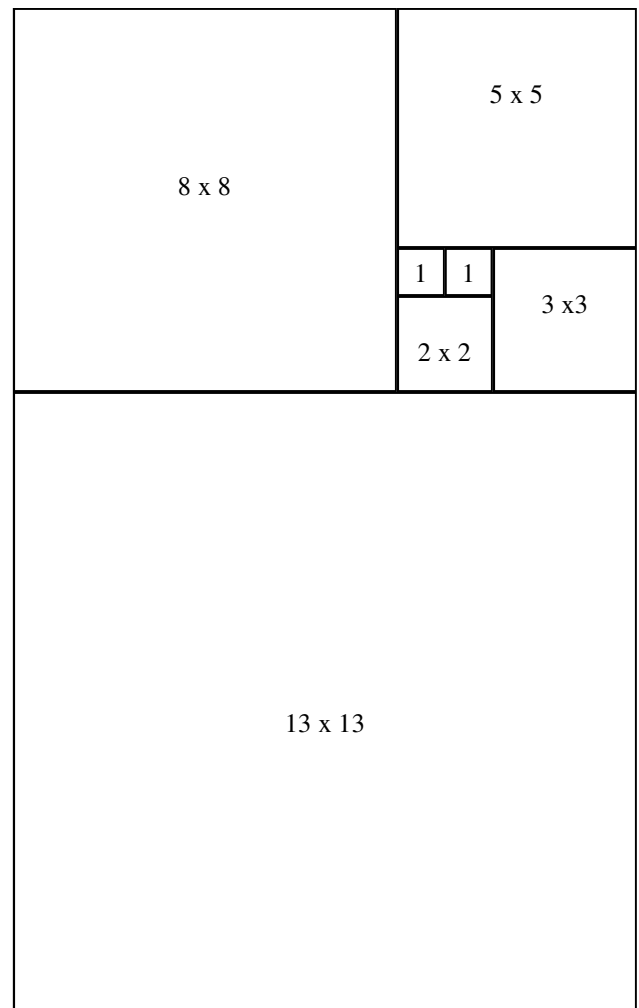
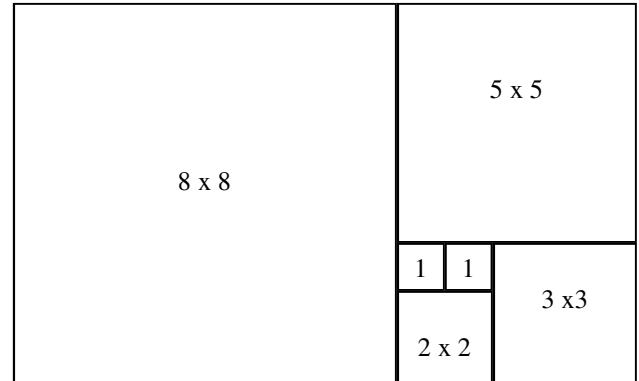
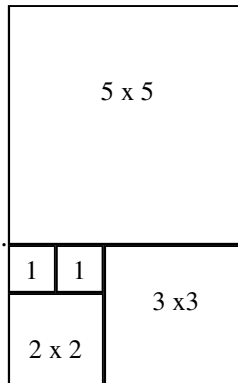
1	1
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2 x 2	
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1	1
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3 x 3	
-------	--

2 x 2	
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CONSTRUCTING A SCROLL FORM FROM THE GOLDEN RECTANGLE

(OR YOU SHOULD HAVE PAID MORE ATTENTION IN GEOMETRY CLASS)

David Hageman

Construct a square **ABCD** and extend two parallel sides.

Bisect **AB** at **E** and set a radius **EC** and swing an arc to intersect at **F**.

Drop a perpendicular line from **F** to **G** to form the golden rectangle **AFGD**.

Note: One could also short cut by simply drawing the rectangle with the ratio **AB:AF** as **1:1.618**

This also gives a new smaller golden rectangle, **BFGC**, which will give a new square **BFHI** and a new smaller golden rectangle **CGHI**, construct square **GHJK**. These progressively smaller squares will be used to draw the spiraling scroll, and the construction may be carried out as long as practical.

To construct the spiral---swing an arc from point **A** to **B** with center **C**, swing an arc from **B** to **H** with center **I**, swing an arc from **H** to **K** with center **J**. Continue with square **CKLM** swinging arc **KM** with center **L**. Continue this progression as far as desired.

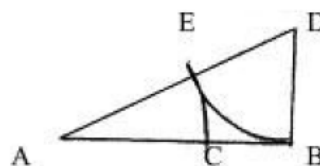
If you do architectural work or furniture, you probably should start with a 12" square, that way you will not have to repeat the drawing at a later time to make a large scroll. You probably could reverse the construction and make a larger rectangle on your paper also.

After about 5 progressions you will probably find you are not getting true squares/rectangles due to inaccuracy in construction. This should not matter much as you can adjust your scroll line slightly

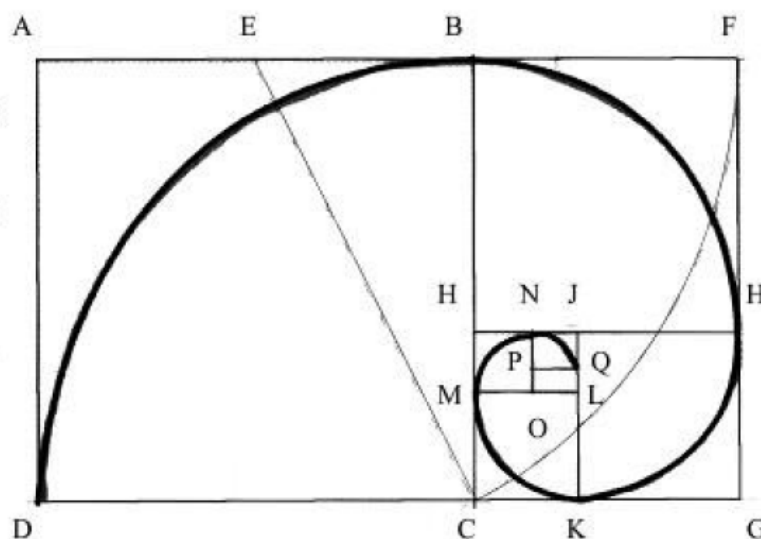
and you will be making your jig to fit inside the scroll drawing.

This spiral is found in nature in the nautilus shell and in the center of daisies and sunflowers.

In the last NEB newsletter (summer 6/05) a pair of "golden dividers" was described. While these can be made in multiples of the ratio 1:1.618, below is another construction to divide any line into its golden sections.



Take line **AB** and construct **BD** perpendicular and where **BD=AB/2**. Connect **AD** and scribe arc **BE** from **D** and then scribe arc **EC** from **A**. The point **C** is the golden section of **AB**.



Reprint from The UMBA Journal April/May 2000

The Upper Midwest Blacksmith Association

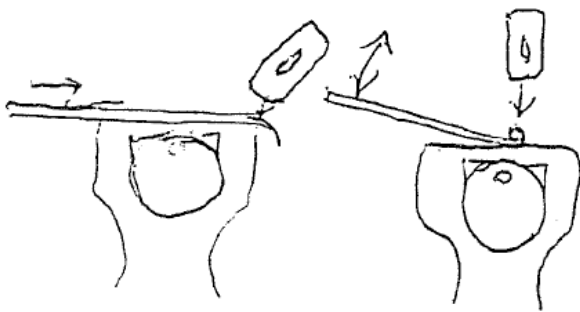
Drawings by JEFF BENSON made at the UMBA Winter Conference
on February 26 and 27 in South Beloit, Illinois

PETER ROSS, Demonstrator

Snub End Scroll

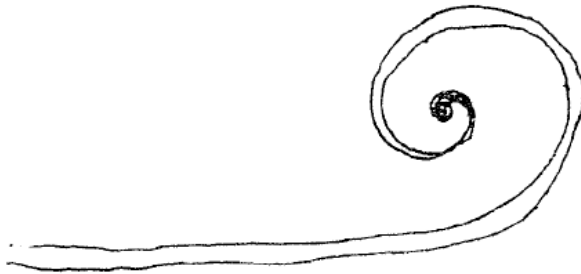


Form a long, thin, even taper.



Start end off
edge of anvil.

Form a tight
roll to look like this.



Finished Scroll.
Peter claims this traditional
method of rolling the snub end
is faster than forging a solid
snub end.

Editors Note:

The above article is one of the many projects listed in the Best of the Forge Fire compilation of blacksmithing articles. Contact Jim Johnston at (765) 452-8165 to get your copy. Hard copies in 3-ring binders are \$25 and CD-Rom are \$20. Shipping charges are \$7 for hardcopy and \$2.50 for CD-Rom. Arrange to meet Jim at a hammer in and save shipping.

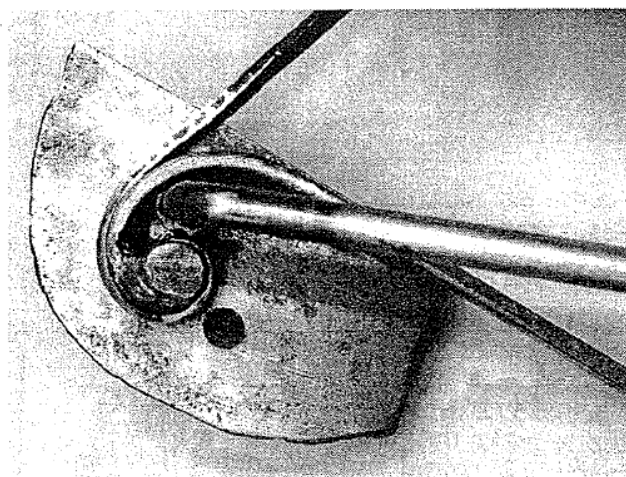
The Best of the Forge Fire can be a great item to put on your Christmas list.

Bituminous Bits

Journal of the Alabama Forge Council

Starter Scroll Jig

Since we had to roll over 360° to work on George's jig, another jig was made to start the scrolls. The scroll did not have to be started except for the very tip and then it was wound only about 90°. The stock was heated again and put on the other jig (previous page) and wound up to the desired point.



Drawing a Scroll

One dictionary gives one definition as: winding around a fixed point and continually receding from it. You are also referred to volute and spiral. There are spirals which stay in one plane and others such as the helix which crosses many planes, like a thread. The "continually receding from it" means that the white space between the succeeding turns of the scroll gets larger for each degree that the scroll turns. There is never a place where the space between gets smaller nor stays the same.

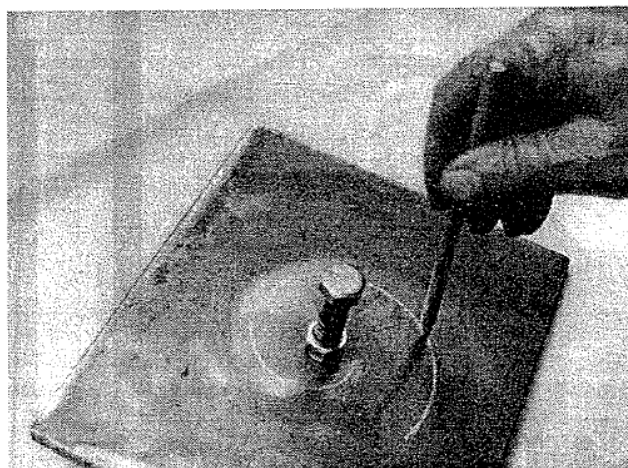
While I was working on the Chapter Rings Grille scrolls, I was trying to get an accurate a scroll as I could get. So I used scroll drawing feature of my computer drawing program, Adobe Illustrator, to draw some accurate scrolls. Printed them out and took them to the shop. I found out that most of my scroll jigs from years ago were not very accurate. The printed scrolls helped my eye to see many flats and kinks that I had not seen in the jigs

Drawing a Scroll

earlier. I used the printed scrolls to develop the scroll jigs for the Rings Grille. I've printed a couple for you to copy and use in your shop.

There have been ways printed about how to construct scrolls by using different centers and using a different fixed radius from each center. This is complicated and still doesn't get an accurate scroll.

There is another toy I had thought about years ago but never seriously tried it. Attach a 1/2" bolt to a sheet of steel with two nuts. Tie a knot in a string or fine wire to go around a pencil. Wind the string around the 1/2" bolt until the pencil is tight against the bolt. Carefully unwind, holding the pencil vertical, while drawing a scroll with pencil. For every 360° the space will grow wider by the circumference of the bolt. For a half inch diameter



and a string of 0.04" diameter, the circumference would be 1.58". This scroll would open very fast.

So a small diameter rod would be a more realistic scroll. A wire (or tape) around a 1/4" diameter would have an increase in width of a little over 3/4".

Maybe a magnet could be used to hold the rod and wind the string above the magnet.

Most scrolls do not have more than 1 1/2 or maybe 2 turns, except for some Spanish scrolls.

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The *FORGE FIRE*

Newsletter of the
Indiana Blacksmithing Association,
Inc.

Bill Kendrick *Newsletter Editor*

1280 N CR 900 W
Seymour, IN 47274

First Class Mail

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If Undeliverable return to sender
With original address legible

November 16 Hammer In One Armed Blacksmith Shop

The Henry Breeding Farm
13730 North 100 West
Edinburgh, IN

Directions: I-65 take exit 76-B (US-31 North toward Edinburgh). About 3/4 of a mile turn right on CR 800 N. Turn left on CR 100 W. The Henry Breeding Farm will be on the left. Park behind the large barn.

December 14 Hammer In Rocky Forge Blacksmith Guild 8525 West 700 South, West Point, In.

From I-74, exit at Waynetown (9 miles west of Crawfordville). Take highway 25 north thru Wingate. Proceed north to the flashing light where highway 28 intersects with 25 at Odel. (The sign reads Odel on both sides). Continue north for 2.5 miles to county road 700 South, turn west (left) on 700 south, Ted's shop is the first building on the left.

From Lafayette follow Highway 25 west to West Point. Proceed on 25 for 2.0 miles to road 700 south, turn west (right).