

RAM

NOVEMBER-DECEMBER 2010



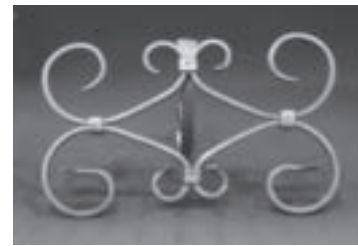
Bob Evans and Phil Cox with 5/8" rod prepared to tie in a knot

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Cover Photo, Bob Evans & Phil Cox.



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ABANA has nothing to say



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Meeting Map pg 28

***Newsletter of the
Blacksmiths
Association
of Missouri***

Volume 27 No. 6
**NOVEMBER-DECEMBER
2010**

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The Newsletter of the Blacksmiths Association of Missouri is published six times a year and is mailed to members of BAM. The annual fee for regular membership is \$25/year; a portion of this amount is for a subscription to this newsletter for one year. Editorial inquiries should be addressed to: **Bob Ehrenberger 6192 Hwy 168 Shelbyville, Mo 63469; (573)-633-2010 or send e-mail to bameditor@centurytel.net** BAM membership inquiries should be addressed to: **Bruce Herzog, 2212 Aileswick Dr., St. Louis, MO 63129; (314) 892-4690 or send e-mail to bjherzog@att.net.** Occasionally some material will be copyrighted and may not be reproduced without written consent by the author. BAM welcomes the use of any other material printed in this newsletter provided the author and this organization be given credit.

NOVEMBER-DECEMBER 2010

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Are you interested in taking a class?

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Memberships are for one year from receipt of dues. Dues are \$25, which includes a subscription to the bimonthly BAM newsletter. Please make checks payable to Blacksmith Association of Missouri.

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- Contributory\$100 yr.
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See reverse

From the Editor

By Bob Ehrenberger

We had another great meeting at the Shaped Steel shop in Liberty. Bob Evans once again had steel drops available for sale at a very good price. The selection was a bit smaller than last year because his business was a little down. Even at that, I saw a lot of steel go out the door. We also had a lot of members make trade items. Sixteen trade items may be close to a record, there was a lot of variety and some real nice work. I had been meaning to incorporate a square knot into something for several years and this gave me the chance to finally do it. Our host, Bob Evans, also used a square knot, but his looked completely different.

The demonstrations included Phil Cox tying knots in steel bars, Bob Evans showed off some of his tooling for bark texturing steel and a scrolling jig for table legs. Finally, Don Nichols showed off some neat twists and a variation off the split cross that yielded a snowflake. While going through the ABANA affiliate newsletters I found an article on making the snowflake, which I included in this newsletter. As a matter of fact, I have included several affiliate newsletter articles this time. They seem to build up, and I usually don't have room for them.

The Swage blocks and cone mandrels that we did a group buy on are in. Scott Woods brought them to the meeting for members to pick up. If you didn't get yours, contact Bob Alexander to arrange a pick up time.

After a wet spring and summer things finally dried out this fall and we had a nice festival and craft show season. The first few were down a little, but the last one was actually better than last year, which was a relief.

I had some complaints that the last newsletter didn't get out in time for many of you to participate in the Terrance Clark design workshop. The information didn't get to me before the September newsletter, and I included it with a hope and a prayer that some of you would get it in time. I know of a few BAM members that made it so that is good. Kate promised me that she would get me the information for the build workshop with plenty of time. There was some talk that the workshop would be put on in conjunction with the Ozark confer-



ence. There is also talk of using the MTS equipment so we can get lots of people involved.

The plans for conference are moving forward. We are looking to highlight some of BAM's own members this year. The demonstrator list is: Bob Patrick, Phil Cox & Sid Suedmeier, Lou Mueller, and Bob Stormer. We still need more volunteers, so if you can help, contact Joe Hurley or Mike McLaughlin.

I talked with John Murray about the January meeting. He doesn't have the demonstration line up finalized yet. The trade item is going to be a bottle opener. John is planning on having a pig roast for

lunch, putting the whole hog on the spit. He has done this in the past and it was a huge hit.

BAM member, Bob Bales' wife sent me a poem about blacksmithing that their daughter Christina wrote for him. I hope you like it, it's on page 18.

Letters:

Hi Bob, I am sorry I did not get this to you by yesterday but I thought I should go ahead and get something written up which can go in the next newsletter.

The Design workshop for the Black Jack Gate Project was held Oct. 9-10 and was quite successful. Currently, Peter Parkinson and Terrence Clark are pulling together all the ideas generated during the event and drawing up a working design for the Gate. The plan is to start the actual forging during the BAM 2011 conference in Sedalia April 29 - May 1 with Terrence and Peter leading a working demonstration at that time. There will be 10 spots available per day (Fri and Sat) and participants will get to work closely with 2 of the best smiths in the world. To participate, please contact Kate Dinneen at kate@hotflashmetalworks or leave a message at 785-841-6271. There will be a fee of \$40 for the day long session.

Thanks, Bob, and again, I am sorry about my tardiness!

Kate

The next Newsletter submission deadline is January 29th.

BAM MEETING NOVEMBER 2010 at BOB EVAN'S, Liberty MO.

By Don Anders

BUSINESS MEETING

The BAM swage block, and cone mandrel buy, from the SALT FORK affiliate was a success. Scott Woods picked them up at the SALT FORK conference and brought them to the November meeting. If enough people are interested, there can be a second buy, please contact Bob Alexander.

If you are interested in making a spare-tire hammer or treadle hammer, contact Bob Alexander or Ken Jansen, Bob for the treadle hammer or Ken for the spare-tire hammer.

The 2011 BAM conference is on track. This is the 20th BAM conference, lets make it a good one. The conference flier should be out soon and will have the schedule in it. There is always a place for another volunteer. Pictures in digital form needed for the conference opening ceremony, the theme is BAM conferences or BAM history. Kate Dinneen is working to coordinate Terry Clark to have a presence at the BAM conference to work on the Gate, for the Blackjack Civil War Battle Site. Additional details will be in the BAM conference flier. The deadline for conference Tee shirt design is December 31, 2010 please submit ideas to Joe Hurley.

Black Friday Hammer-ins at Ken Jansen's and at Ned Digh's.

Treasurer's report given by Bruce Herzog, membership is up to 558 members.

Kate Dinneen is moving ahead with the Blackjack Battle Site gate, check with Kate if you are interested in participating. The current plan is that there will be some work done on the gate at the BAM conference, the rest to be at the end of May. Kate is hoping for a big turnout from BAM.

The Women In The Outdoors is having an event on March 26, 2011. They would like to have a blacksmith teach a class or two that Saturday. Contact Sherry S. Hill cell 816-992-3650 if you are interested www.womenintheoutdoors.org. This is an unpaid position but breakfast and lunch are promised, as well as a hard time from the ladies.

A great big thanks to Bob Evans and his wife. A really good meeting and a fantastic lunch. If you have not attended one of Bob's meetings, you are cheating yourself.

TRADE ITEM COOK BOOK STAND

MADE BY

Mike Maddox
Michiah Lancaster
Seth Lancaster
Don Nichols
Harry Weber
Ed Harper
John Rogers
Bob Evans
Mike McLaughlin
Larry Lutz
Burton Mannell
Scott Woods
Bob Ehrenberger
Isaac Lancaster
Dale Crabb
Mark Lawson

TRADED TO

Ed Harper
Dale Crabb
Larry Lutz
Isaac Lancaster
Mike McLaughlin
Harry Weber
Seth Lancaster
Burton Mannell
Bob Evans
Don Nichols
Michiah Lancaster
Mark Lawson
John Rogers
Bob Ehrenberger
Mike Maddox
Scott Woods

IRON IN THE HAT

DONATED BY

Richard Stubblefield
Richard Stubblefield
BAM library
Don Nichols
John Rogers
BAM library
BAM library
Don Nichols
Don Nichols
Seth Lancaster
Fred Arnold
Ed Harper
Bob Ehrenberger
Don Forlow
Burt Mannell
Don Forlow
Harry Weber
Harry Weber
Phil Cox
Richard Stubblefield
Kate Dinneen
Richard Stubblefield
Andy Herzog
Don Nichols
Donnie Kamp
Phil Cox & Bob Evans

Bob Evans

ITEM

gloves and glasses
key stock & misc
blacksmith Journal
pin stock
50# bag coal
blacksmith Journal
blacksmith Journal
snowflake & pattern
pins and S7
Victorinox knives
misc wood screws
valves
fire poker
misc bolts
?
misc bolts
?
?
wood mallet
gloves & glasses
Jelly spoon
gloves & glasses
Emil Bubash items
pins
hammer handle
demo item
knots tied in steel rod
Large Fire Pit

WON BY

Issac Lancaster
Don Anders
Richard Kamp
John Cowherd
John Cowherd
Fred Arnold
J. D. Rogers
Don Forlow
Bob Evans
Earl C Million
Scott Stager
Don Anders
Andrew McIndoo
Andrew McIndoo
Scott Stager
Seth Lancaster
Donald Stanley
Mel Robinette
Doug Knight
Isaac Lancaster
Seth Lancaster
Dale Crabb
Don Forlow
Bob Evans
Dale Crabb
Don Nichols
John Cowherd

? item was not listed on the note.

Letter from the president;

Well, another meeting has come and gone, I missed part of the demonstrations and most of the scrap was gone when I got there, that's what I get for alarm clock failure. I wouldn't think that they would be that hard to operate after all these years.

Anyway, I did get to see Phil tie some knots, I liked the one done with the crane. I want to try that with a figure "8" and see how it pulls tight.

I don't know for sure about the numbers but we had at least 50 people there again and it was a good time. My thanks to Bob and his wife and the crew there for putting on another meeting.

There are a few items that I brought up that I would like to mention again here.

The swage block and cone mandrel buy is over and Scott Woods brought them back from Oklahoma (thanks Scott). Those that were at the meeting got theirs and the rest are going to be with Bob Alexander as I understand it. If you bought one, get with Bob to arrange pickup. If there is a lot more interest we might consider doing it again.

The Blackjack Battlefield gate design workshop with Peter Parkinson and Terry Clark went real well from what I heard, and the project is moving forward. Terry and Peter will be at the BAM conference and there will be a workshop for the building of the big pieces of this project that will take place there. I think Kate will be putting something together for the newsletter, but we are talking about having maybe 10 people per day at the conference that can participate in building these pieces under the supervision of Peter and Terry. If we do this, it will be at the conference and it will be an additional cost on top of the conference registration to those who participate and that is to help offset the cost of having them at the conference. There will be more information to follow, but Kate will be the contact point for now.

We still need volunteers for the conference. We need someone to run the iron in the hat and raffle. We also need some general volunteers contact Mike McLaughlin or Joe Hurley if you can help out. This will also be the 20th anniversary of our conference and we will be having an Ozark pattern anvil I think. Due to the high cost of this anvil and the fact that we barely break even on the raffle this will probably be the last year we have an Ozark anvil. I have said it before but it bears repeating we have to make money at the conference with the raffle, iron in the hat, and auction to have the spending money to do the things we need to do as an association.

I am having a hammer-in at my shop on Black Friday, there will be some sort of lunch and we will be working on the Arbor/ring project. The theme is anything from the garden.

Ned Digh is also having a hammer-in at his shop on Black Friday, I have been told, for those who don't want to travel as far as my shop. Be sure to check with Ned to confirm this, as I got it second hand.

That is all I have for now.
Happy forging.

Ken Jansen

Phil Cox Knot Tying Demo

by Bob Ehrenberger

Phil had tied a knot in a bar at the last meeting, but I wasn't there to see it or write about it. This time he came prepared to give a more elaborate demonstration.

First, if you don't want hammer marks on the knot it needs to be pulled tight by the ends. On a small bar Phil suggested that you make a 90° bend in one end to have something to hit while pulling the knot tight. If material is limited, you can do just a simple bend, but if you have plenty of length, Phil suggested that you bend it down and then back, so you also have a handle in addition to a place to hit.

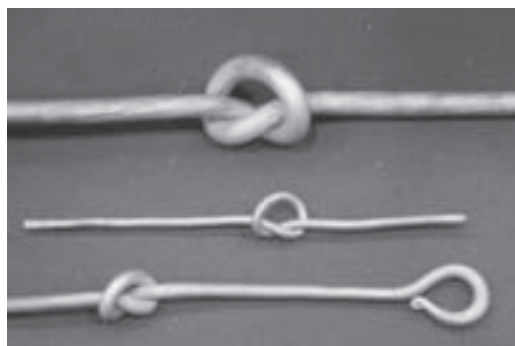
The first knot was made in 1/4" rd. because it is so flexible when hot. Phil took a long heat and smacked it over the horn to get it started. He then wrapped it all the way around the horn and folded the loose end in on top of the loop. After taking another heat, he braced the edge of the loop on the anvil and tapped the loose end through the loop.

The loose end was locked in the vice and he pulled on the other end to tighten it up. Because the 1/4" was so flexible, it tightened up most of the way with little force.

Another heat was taken on the knot and the loose end was clamped into the vice again. This time Phil finished tightening up the knot by hitting the area with the 90° bend. Phil pointed out that it was easier to hit with a piece of rod than with a hammer. He used about 2 ft. of 1" rd. The pictures I have are from before he ditched the hammer and got the rod.

The next knot was tied in a piece of 3/8" rd.. The steps were the same as with the 1/4", except it took more effort to complete each step, and a couple extra heats. Phil pointed out that once the knot was pulled tight, the rods on each side of the knot were perfectly lined up with each other. You could then treat it like a single bar in your project, it just had a knot in the middle.

Phil also pointed out that if you wanted a bar with multiple knots, it was best to start at the end and work your way in. That way you would have less material to feed through the loop when tying the knots in the center.



Phil Cox Knot Tying Demo

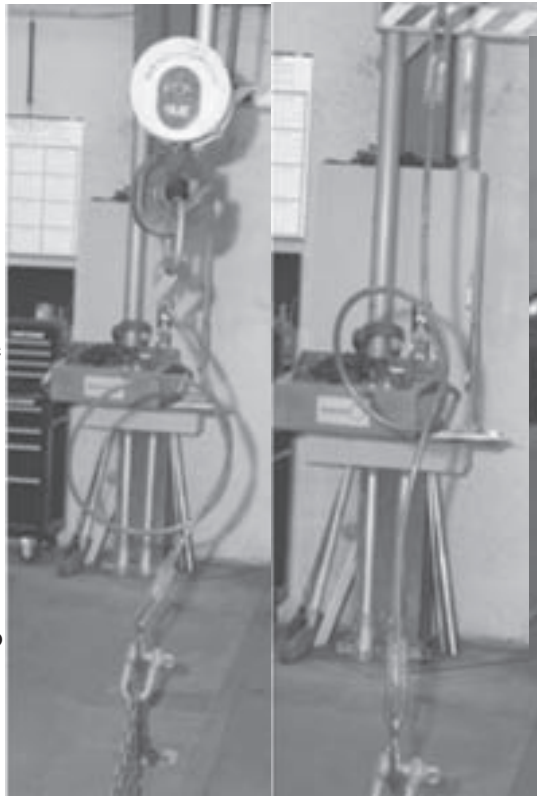
Phil's final demonstration was to tie a knot in a 5/8" rd.. This required a lot more preparation. The rd. was rolled into a ring (see cover photo) using one of Bob Evans rolling machines. A tight bend was made on each end and a chain hook was attached at each end. The demonstration started with the entire bar making a loose overhand knot with just the ends sticking through.

A chain anchored to the floor and the overhead wench were used to pull the slack out of the rod and tighten the knot up to where it would fit into the forge. This took it from a 2' diameter down to about 10" diameter.

The knot was then heated in the gas forge by passing one end all the way through. It was turned once to make sure there was an even heat.

Then back to the wench, where it was pulled from 10" diameter down to about 5" diameter.

It was heated again, and then finally pulled tight. Phil said that you had to be careful not to have any hot spots in the bar or the knot or it would stretch the bar like pulling taffy.



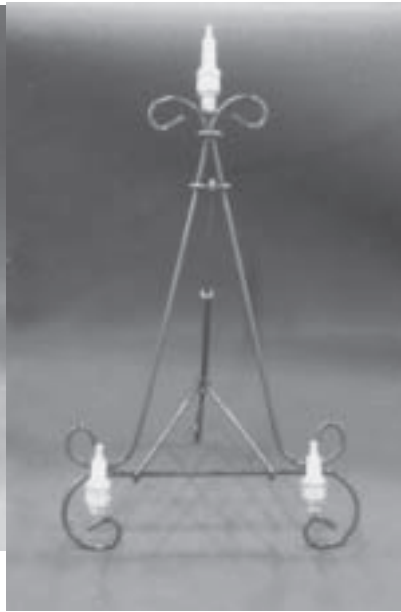
Picture to the right shows how much material Phil started with to tie the knot in the 5/8" bar.



November Meeting Trade Items



Michiah Lancaster



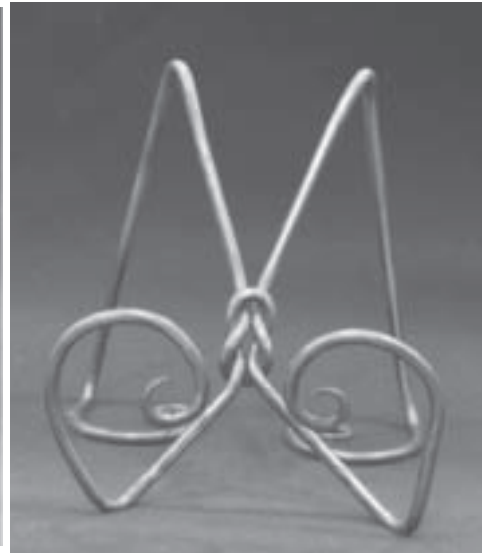
Dale Crabb



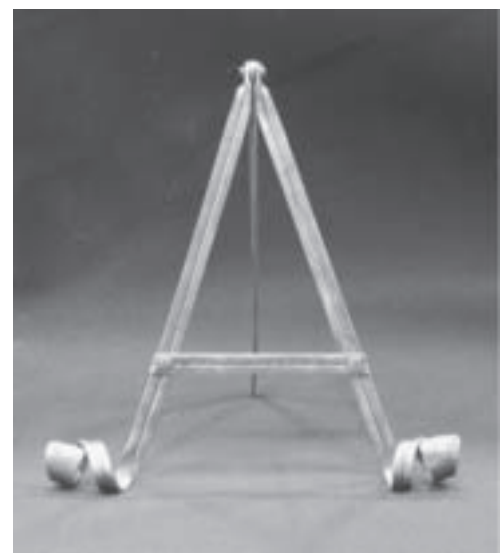
Bob Evans



Mike Maddox



Bob Ehrenberger



Ed Harper



*Mike
McLaughlin*



Scott Woods

November Meeting Trade Items



Mark Lawson



Isaac Lancaster

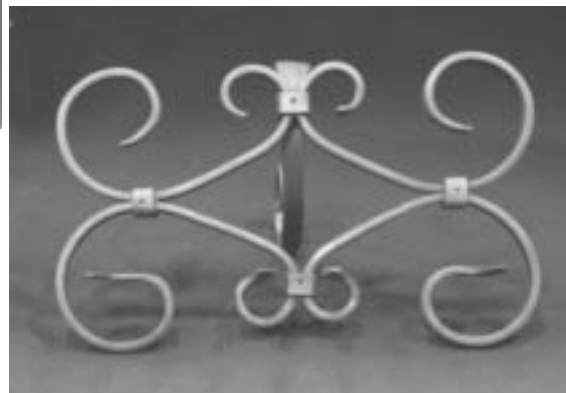


Seth Lancaster



Burton Mannell

John Rogers

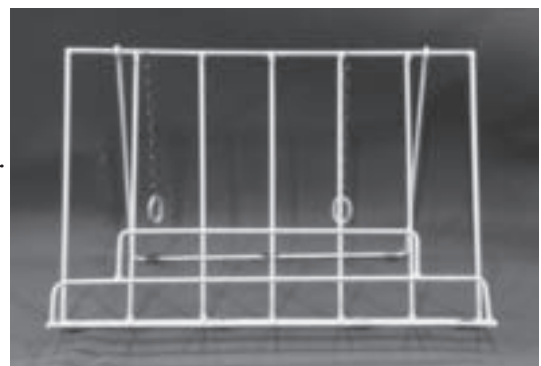


Don Nichols



Larry Lutz

Harry Weber



Principles of Design

Phi, The Golden Rectangle, and Fibonacci
by Boyd Holtan

Reprinted from: Illinois Valley Blacksmith Association July 2010

Beginning smiths are quickly faced with design issues, soon after they have developed the basic blacksmithing forge skills. Since most are interested in ornamental items, the design questions become very important in producing the most attractive and appealing products. There are some very old ideas that may be of interest to these smiths.

If you were asked to design a rectangular sign, what would you choose for the length and width in order to have the most pleasing appearance? Many believe that the most pleasing rectangle is the “Golden Rectangle” with a length about 1.618 times the width. Using that formula, if you wanted a sign 5 feet wide, it should be 5 times 1.618 or 8.09 feet long. There are many rectangles we see in use that are very close to Golden Rectangles. A couple of examples are playing cards and the American Flag.

Back in 1876, Gustav Fechner, a German psychologist, asked many people to choose the most pleasing rectangle from a set of rectangles. He found that over 3/4 of the people chose rectangles very similar to the Golden Rectangle! Fechner’s study has since been repeated at least three times with similar results.

How is the Golden Rectangle made? Let’s start with square ABCD (see Fig. 1) and cut side AB in half at point E. Then draw the diagonal EC in the second half of the square (Fig. 2) Add the length of that diagonal to the side of the first half-square. $AE + EC = AF$. Now, erect a perpendicular at F and complete the rectangle AFGD (Fig. 3). Rectangle AFGD is the Golden Rectangle.

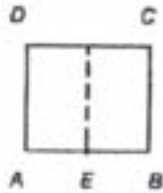


FIG. 1

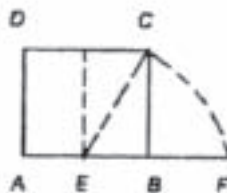


FIG. 2

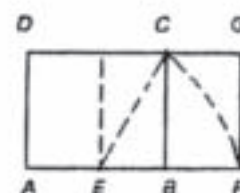


FIG. 3

How do we know that this is the Golden Rectangle? If we let the original square be 1 unit on each side, the right triangle EBC has legs of 1/2 and 1 (EB and BC). If we use the Pythagorean Theorem, we will find that the diagonal EC is:

$$\text{square root of } 5 \text{ divided by } 2 \text{ or; } \sqrt{5} \text{ divided by } 2$$

We can then find the length of the rectangle AF by adding the lengths of AE and EC to get the length of AF. This is:

$$1/2 \text{ plus } \sqrt{5}/2 \text{ or; } 1 + \sqrt{5} \text{ divided by } 2$$

If we use a hand calculator, we can determine that the decimal equivalent is approximately 1.618. This ratio of the length to the width of the Golden Rectangle is commonly called “Phi” or the Golden Ratio. Phi is the initial letter of the Greek name Phidias.

The number Phi is sometimes called the “Divine Proportion” and is often found in architecture and nature. A common illustration of this is the front of the Parthenon in Athens, Greece, built in the fifth century B.C. Its dimensions fit almost exactly into a Golden Rectangle.

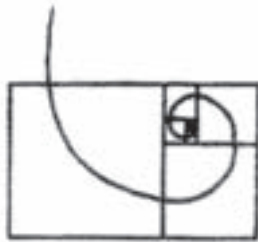


Fig. 4A

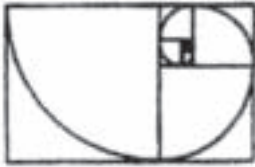


Fig. 4B

The square extended into a Golden Rectangle also has another interesting feature. If we cut off square ABCD (shown in Fig. 3) we are left with another Golden Rectangle, FGCB. In fact, if we cut the square from any Golden Rectangle, a new smaller Golden Rectangle is formed. We can continue to cut squares from the next Golden Rectangle and form a new Golden Rectangle each time.

If we find the center of each of these squares and connect them with a smooth curve, we get the logarithmic spiral which is so commonly used in ornamental iron scroll work (Fig. 4-A). This is the same spiral that is found in the well known sea shell, the chambered nautilus. It is often said that when blacksmith design ideas are needed, look at nature. This is really more than coincidence. Mathematical design is seen often in many areas of nature, as we will find later in this article.

A way to construct an approximation of the logarithmic spiral is to use one vertex of the square and the length of a side of the square as a radius, then draw a diagonal arc (as shown in Fig. 4-B). By properly choosing the center and changing the radius for each square, the spiral can be constructed in our Golden Rectangle.

Phi is a very curious number. It is the only number that, when subtracting 1 from it, is its own reciprocal. Thus, $\Phi - 1$ is $1/\Phi$. Another way of saying this is that $1.618 - 1 = .618$, is also $1/1.618$. This can help us in designing the most pleasing rectangular sign. If we know the width, we can find the length by multiplying it by 1.618, as we did in the beginning of the article. Conversely, If we know the length, we can find the width by multiplying by one less, or .618. $\Phi - 1$ (or .618) is usually called Phi, or Phi Prime, and is often used instead of Phi in computations and discussions.

Readers might remember from their geometry studies, that they were asked to find a point on a line which divided it into mean and extreme ratios. That is, to find a point on a line which divides the line so that the ratio of the whole line segment to the longer segment, is in the same ratio as the longer segment is to the shorter line segment (see Fig. 5). The ratios $(a + b/a)$ and a/b are both Phi.

From Fig. 5 we could make two Golden Rectangles. One would have length $(a + b)$ and width a , while the smaller one would have length a and width b . You might notice that if you draw the figure, the smaller Golden Rectangle is the one left if you cut the square from the larger Golden Rectangle. Thus, in Fig. 3, a is AB and b is BF, with point P at B.

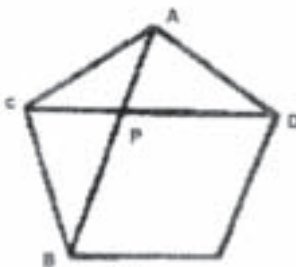
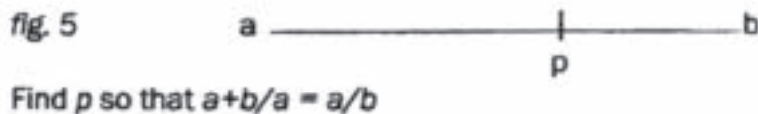


Fig. 6

Phi pops up again in the “Golden Section” of the regular pentagon, or five-sided figure. If we draw diagonals of the regular pentagon, they divide each other in the mean and extreme ratio, or Phi (see Fig. 6). Diagonals AB 0 and CD intersect at P and divide each other in the Golden Ratio, Phi. There are other Phi relationships that the pentagon exhibits. If ail the diagonals are drawn, forming the pentacrest, it becomes the secret symbol of the ancient Pythagorean Society.

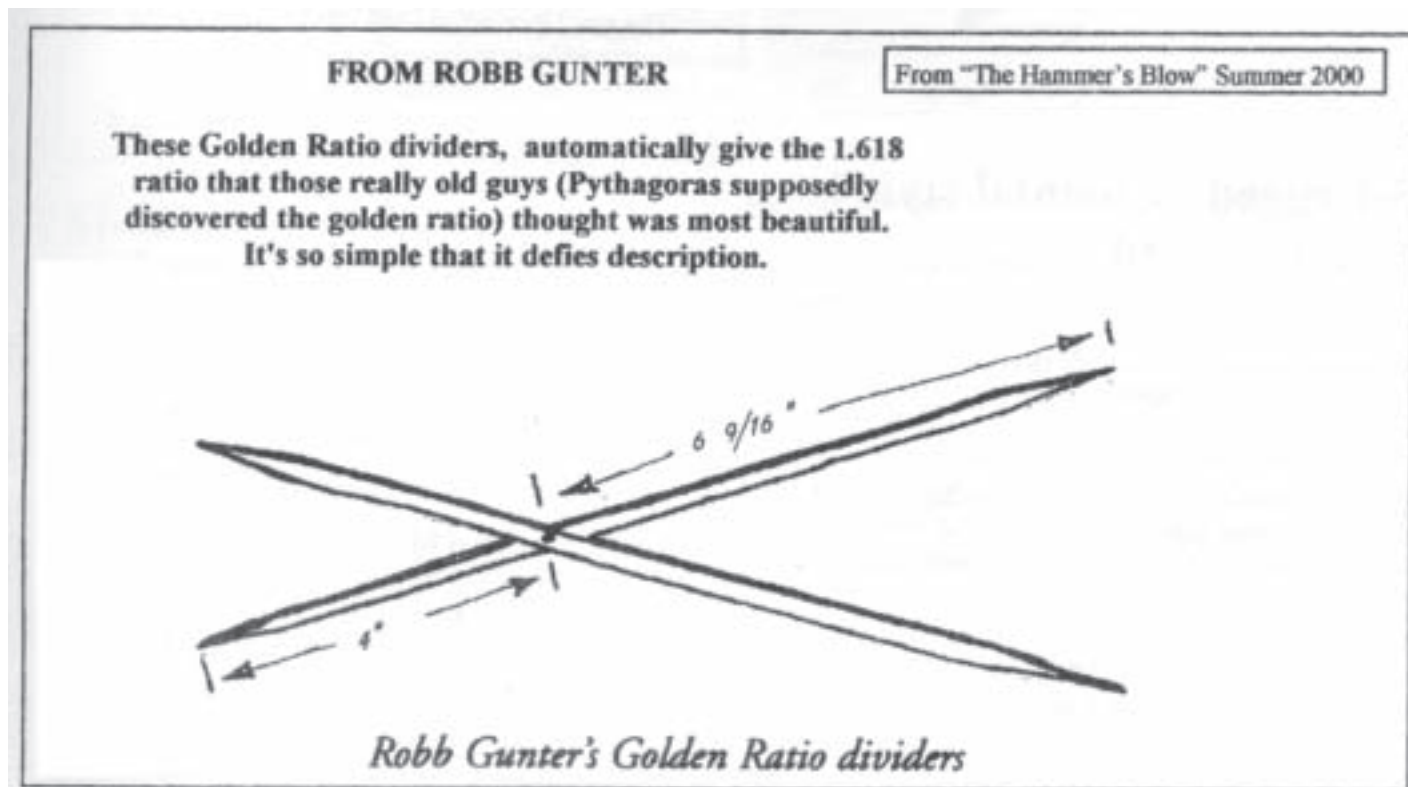
Phi turns up in some unexpected places. In ancient times Leonardo of Pisa (now called Fibonacci) was working with a series of numbers. Starting with 1, 1, he added the two numbers to get the next number, so $1 + 1 = 2$. The next one became $1 + 2 = 3$, then came $2 + 3 = 5$, and so on to get the series: 1, 1, 2, 3, 5, 8, 13, 21, 34, etc. Obviously, the next number will be $21 + 34 = 55$. Adjacent pairs of these numbers (or those next to each other) are often found in nature. For example, the pair 5 to 8 can be found by counting the number of spirals on a pine cone clockwise and counterclockwise. Pineapple spirals appear in the ratio of 8 to 13.

If we take pairs of adjacent Fibonacci numbers and express them as a fraction, and use a hand calculator to divide and find decimal equivalents for them, an interesting thing happens. As we continue with larger and larger pairs, our decimal quotient gets closer and closer to .618 (see Fig. 7). Here is Phi Mathematicians have proven that as the Fibonacci numbers get larger and larger, the ratio of two adjacent numbers approaches Phi as a limit. This can help us if we are working on a design project and forget the number Phi. We can estimate Phi as closely as we like. For example, $1/2$ is not a very good approximation of Phi, but $2/3$ is better. The ratio $3/5$ is better still and $5/8$ is even closer to Phi. We can go up the sequence as far as we like to estimate Phi as closely as we like? That may be why small flags are commonly 3×5 , and larger flags 8×13 .

Most of these relationships are developed in a beautiful paperback book published by Dover. The Divine Proportion, A Study of Mathematical Beauty, by H. F. Huntley, is packed with interesting ideas presented in various levels of mathematical sophistication.

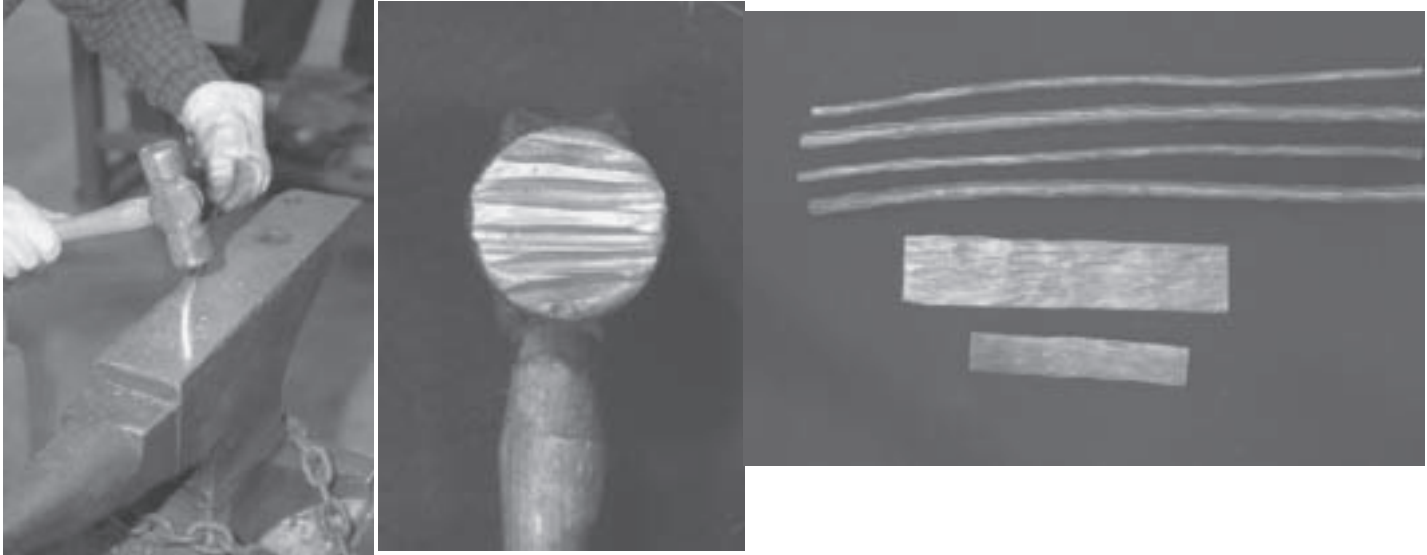
Blacksmithing design, mathematics, and nature are very closely connected. Good design can integrate ideas from mathematics and nature to make the most aesthetic ornamental iron pieces.

Ed. Note: Boyd's article, "Principles of Design" first appeared in the ANVIL'S RING, Summer 1987 issue. He has presented this topic to various classes. This article had to be reset and some drawings may appear out of proportion. Figure 7. was missing in the article that I copied.



Bob Evans' Texturing Tool

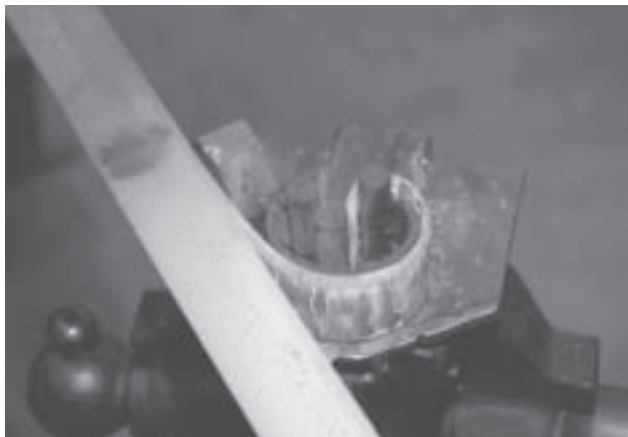
Bob Evans demonstrated how he created a bark like texture on his project. He has a hammer that he made several random cuts in the face of, using an angle grinder. When the steel is hot he hammers the surface with his texturing hammer. By using overlapping hits, he gets a rough surface.



Bob Evans' Leg Jig

Bob showed us how he makes the decorative table legs, like the ones on his gas forge stand and the fire pit that he donated to the iron in the hat.

Bob uses angle iron that he cuts from the bottom to create two flat bars about 10" long. He heats the cut section and bends in a jig mounted in the vice.

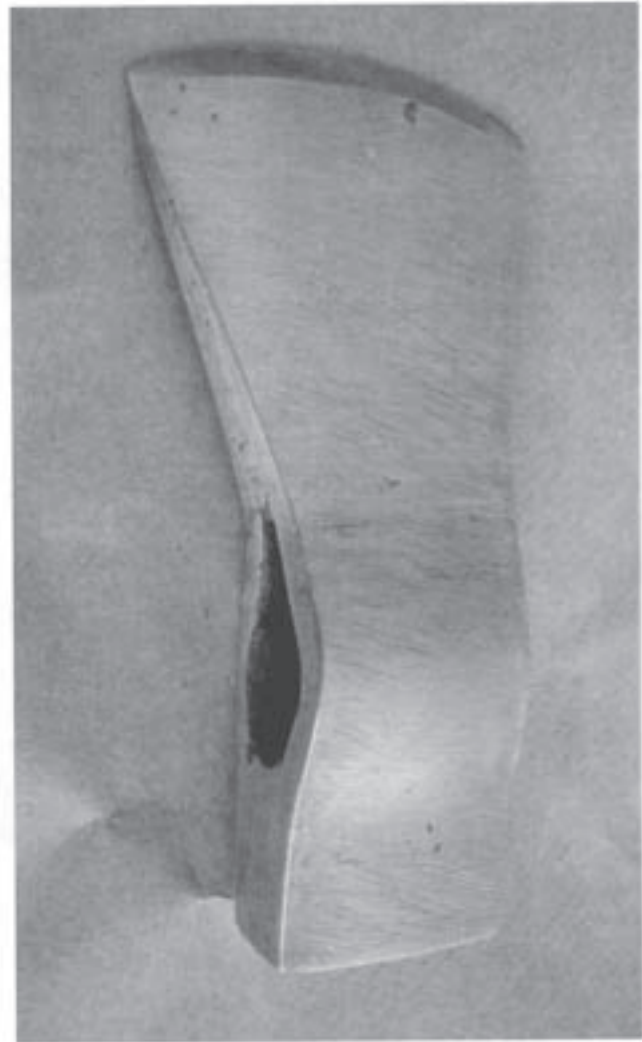
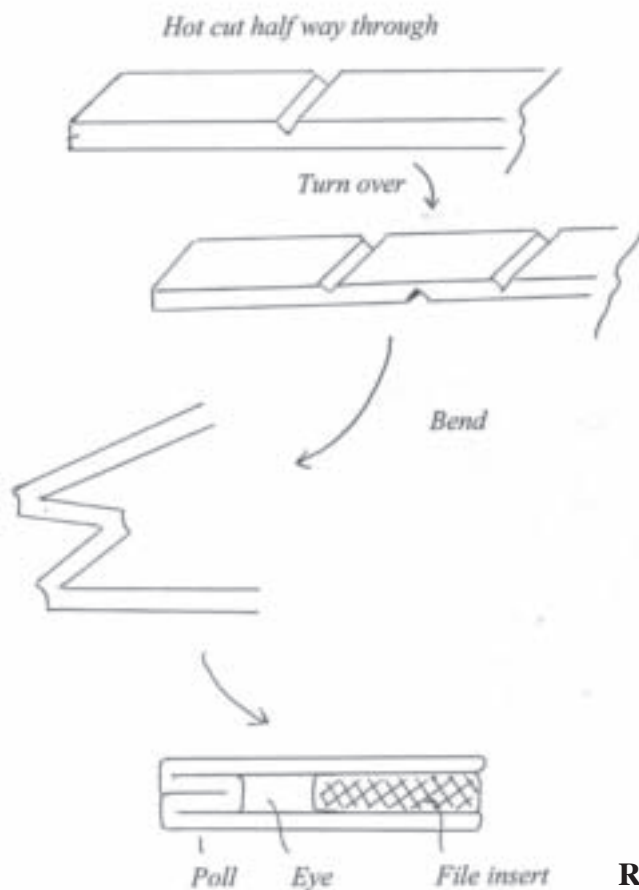


Poll Hatchets

Drawings, photos and text by:
Steve Anderson, a MABA member



Stock size: 1/4 x 1, 1/4 x 1-1/4, 1/4 x 1-1/2 or 1/4 x 2



Because there are so many different styles of hatchets, to determine the original stock length needed and to decide the measurements for the second set of hot cuts, pick one style you like and use those proportions for the poll, eye and blade.

Forge weld the poll and blade, shape, drift eye, grind and temper.

- Grind edges instead of forging to maintain the tool steel center.
- When tempering, quench the bit to within 3/4" of the eye, then let the residual heat in the poll draw the temper to blue/straw.
- If you already have a drift or axe handle made, make the eye to match.

Reprinted from Michigan Artist Blacksmith Association
The Upsetter, Sept/Oct 2010

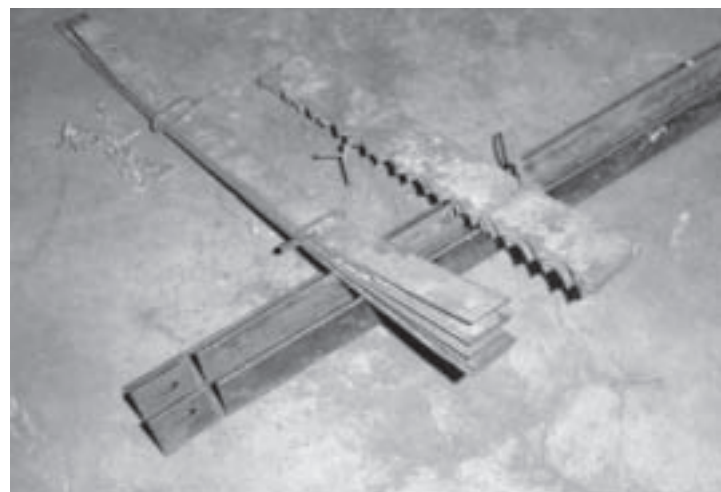
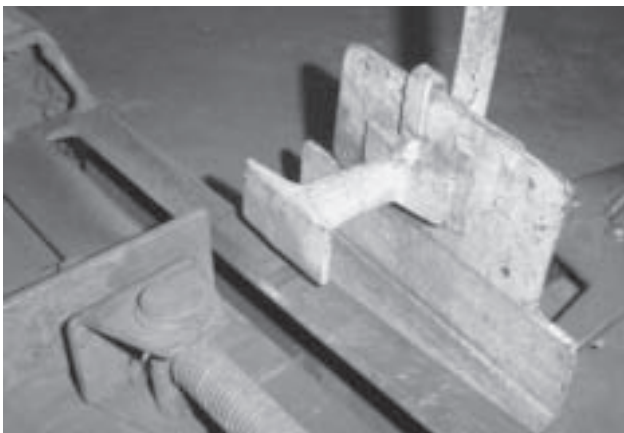
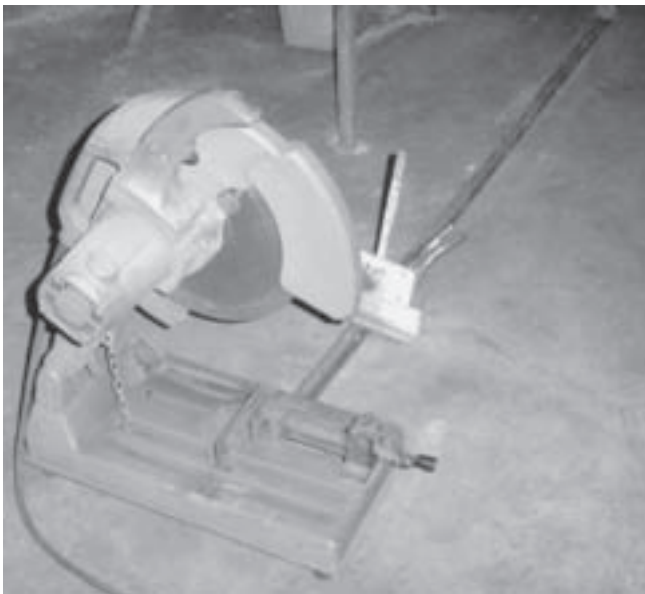
Shop Tip

Chop Saw Aids

By Bob Ehrenberger

When I started blacksmithing full time in 2000, I quickly discovered that I needed a chop saw because of all the stock that I was cutting. For the first couple years, I would lay the 20' sections out on the floor and run my tape out next to them, mark with a soap stone, and then cut. This worked OK when I was cutting things a few at a time, even up to a dozen pieces was manageable. Then I got my first railing job, I had to cut more than 200 pieces all the same length. I decided that I needed a cutting gauge. I looked around the shop and found a piece of light weight channel, originally it had been the edge protector for a piece of plywood on something I had taken apart. The channel had a 1/2" gap just right for a piece of 1/2" sq. stock. I took a piece of 1/2" and bent it at a Rt. angle so that it set down in the groove of the channel. I welded to this a piece of angle iron and a flat plate for the stock to stop against. Along with a welding clamp, this gave me an adjustable work stop. To attach the channel to the saw, I simply cut through the two up legs, leaving the back in tact. When I need a gauge I simply tip the saw, align the slot with the edge of the saw frame, and set the saw down on it. When I started doing the wholesale work, I had a need to cut a lot of candle tubes that were shorter than the closest setting on the work stop. So I made an adapter that hooks on the stop which will come right up to where the blade is. For most of my work I can mark the first piece, clamp it in the saw and then adjust the stop up to the work. If I have to make things exactly right, after I clamp the first piece in, I pull the blade down to the piece and measure from the blade to the end of the piece, this way I know that it will be exactly the right length. I then set the stop and I know that they will all be just right.

Another chop saw trick I have is when the blade doesn't seem to be cutting like it should, it is because the edge has gotten a glaze on it. I remove the glaze by cutting a bundle of thin stock. I use either old band saw blades or binding straps. After a couple cuts through the thin stock, the blade will cut like new again.





The Heart-The Soul-and The Forge

Your heart has met steel
Cold and hard as ice,
It's never died or frozen
Despite its hard, hard life.

Your hands sore and calloused
Though beauty from them comes;
An art devoted and so real
But to many "lost" or gone.

Your devotion strong and noble,
Your heart warm and true,
And mostly the children see,
The man that is really you.

For many a day the hammer rings
Against the anvil strong;
Many a morn a tired body rises
Before the crack of dawn.

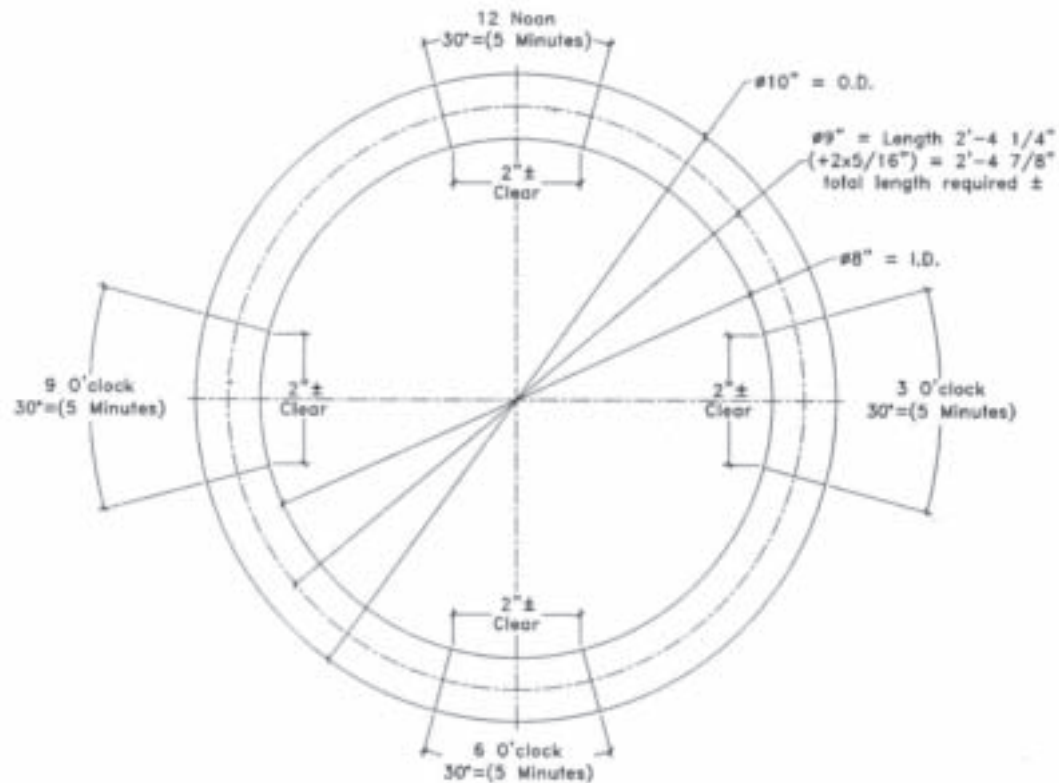
Just like the day before,
Only the weather uncertain each day;
Your heart guides your journey
While your soul paves the way

The real blessing is
The magic that you have forged.
Day in and day out,
Throughout your life.

Unrevealed to man's mind
And obscure from his watch.
There is no other way to measure
The riches forged from love
And things that can't be bought.

-Written by C. Davis Feb. 10, 2001-

Layout for Ring project.

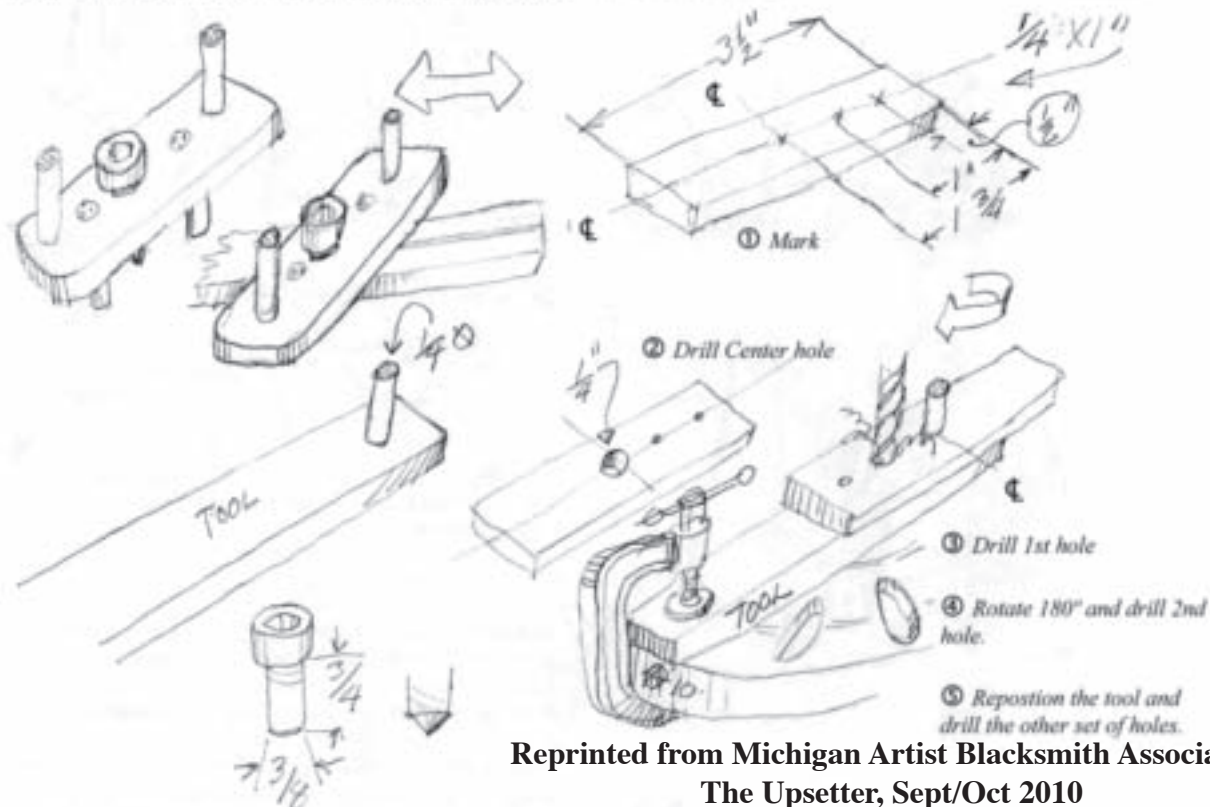


Center Marking Tool

By Steve Alling, MABA member

The trick with this tool is to get the scribe perfectly centered. The first step is to carefully lay out the center line on the bar. Drill the center hole first, then rotate the part around it for drilling the two guide bar holes on the marked center line. By doing this you can be assured the scribe is in the center.

Use a high strength allen-head bolt for the center scribe because it has a round head. You can chuck it in a drill and by running the drill in the opposite direction of your sander you can create a center point. To use the tool extend the scribe point just a little so the tool doesn't rock as you scribe the line. I have shown a tool for two different sizes of stock because they work better if they are not at too severe an angle. To change sides just remove the allen-head bolt and tread in from the other side.



Reprinted from Michigan Artist Blacksmith Association
The Upsetter, Sept/Oct 2010

3D Snowflake

Michael Wollowski

In this article, you will find construction notes for a three dimensional snowflake. Dom Neuenschwander showed me one that Ken Dettmer made based on Don's specifications. Don himself saw someone up north make one of these.

The snowflake is made from a 3" piece of 3/4" square stock. It needs to be cut several ways. To start, make two 1 3/4" cuts along one side, splitting the side three ways. From the opposite end, make two cuts that are 3/4" long, again splitting the side three ways. You will be left with 1/2" in the center that is not cut. The cut layout is shown on the left side of figure 1 below.

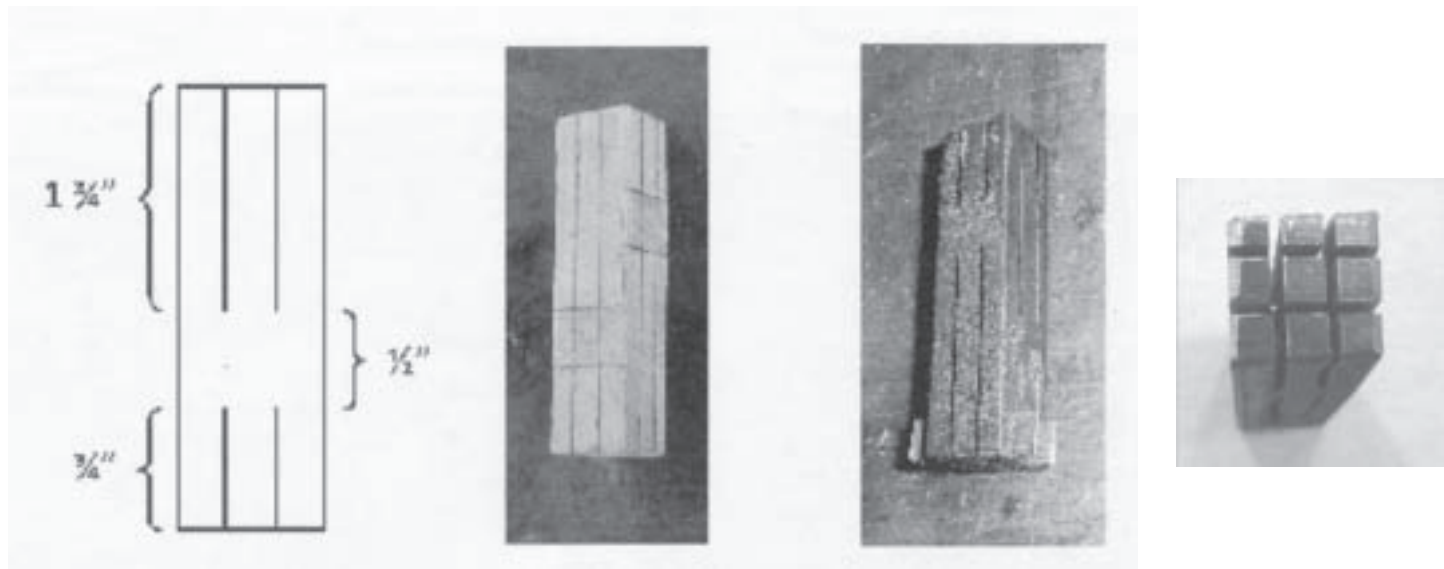


Figure 1: Cut layout (left). blank with marked cuts (center), cut blank with spacers (right)

Turn the bar 90 degrees and make the same cuts except from opposite ends. I like to put masking tape on the steel and draw my lines on it. The marked up blank can be seen in the center of figure 1. I insert some old saw blade piece in the short cuts of one end. This is the end that gets to be put in the vise first. By placing the spacers in the cut, it is easier to open them up later on. The sawn blank, prepared for heating is shown on the right in figure 1.

In order to get the three dimensions, the primary bends are along the long cuts. When bending this piece, it is advisable to use tongs and a vise rather than a hammer and anvil, as the folds will be rather delicate and can easily be bent beyond repair.

To begin, heat up the bar and place the end with the saw blades in the vise so that the saw blades are parallel to the jaws. You need to place the bar in the vise so that the long cuts are about 1/4" proud of the top of the vise. This ensures that there is space for the jaws of your tongs. Bend down the outer two long sides. Before bending the long sides, it helps to open them up with a chisel first and then use flat tongs to grab a side and bend it out. You may have to perform a sequence of grabbing part of the side, bending it, grabbing some more, straightening it with the tongs and bending it. See about producing a nice bend, not too tight and not too wide. The picture on the left side in figure 2 gives you a sense of the radius of the bend as well as how much the long cuts have to be proud of the top of the vise. If the arms are not straight, a chisel can be used to pry them off the vise jaws.

Reprinted from the Indiana Blacksmith Association - The Forge Fire Newsletter Dec 2009



Figure 2: Blank after first set of bends, notice the spacers (left), finished snowflake (right)

Next, put a little bit of heat in the end that contains the saw blades and knock them out. Heat up the bar and cool down the center of the piece. Use a chisel to open up the long ends that are to be bent next. Put the piece back into the forge and heat it up. Now comes the hard part. The entire snowflake will be orange hot and any attempt to cool parts of it invariably cools down other parts that should not be cooled. Furthermore, any bending you do, will upset other parts of the piece. When opening up one of the hands, you will bend the snowflake out of shape, just ensure that when you bend the other hand, you bend it back into shape. You may consider using several heats to open up the two long hands.

The four bent arms should be in one plane. You may consider placing the piece in the hardy hole, placing a piece of pipe over the hands that need to be aligned and gently tapping on it. Notice that the sum of the two hands that have not been bent remains 3" long, yet the sum of the bent hands making up either of the two other dimensions are about 3 1/2" long. This is due to the fact that the outside hands are 1/4" off the center of the bar. The unequal length cannot be helped except for cutting 1/4" off the ends of each of the bent hands and then deepening the cuts by 1/4". You may consider hanging the snowflake so that the bent hands are vertical.

You are now left with having to bend the outside fingers made by the 3/4" cuts. If you split open the fingers with a chisel, you need to cool down the center of the snowflake as the hammer blows will compress the delicate bends at the center of the snowflake. You want to use some fairly narrow tongs to open up the fingers to about a 45 degree angle. Here again, consider using a process of repeatedly grabbing, bending, regrabbing, straightening and bending. Notice that fingers of neighboring hands will end up parallel to each other.

I finished my snowflake by immersing it in vinegar overnight, brushing off the scale using a brush and water and polishing it with an angle grinder and the Dremel tool.

BAM Members Teach Boy Scouts

Nedco Forge, Ham's Prairie, Missouri

Scouts from Troop one, Jefferson City and Troop 50 of Fulton complete the Metal Working Merit Badge.

BAM Members Ned and Esther Digh, Shawn McGraff and Edward Durrill met at Nedco Forge September 18 and 25 th to instruct scouts from the Great Rivers Counsel in the blacksmithing track of the metal working merit badge. 10 Scouts in total, completed the course of instruction and earned the patch.

Esther Digh instructed working with *non-ferrous metals* and Ned Digh, Shawn McGraff and Edward Durrill taught shop safety and basic Blacksmith skills.

Ned and Esther Digh with their grandson Eric Qualls graciously hosted the events.



Nice Mice



By Steve Anderson, a MABA member

Stock Size: 3/4" round.

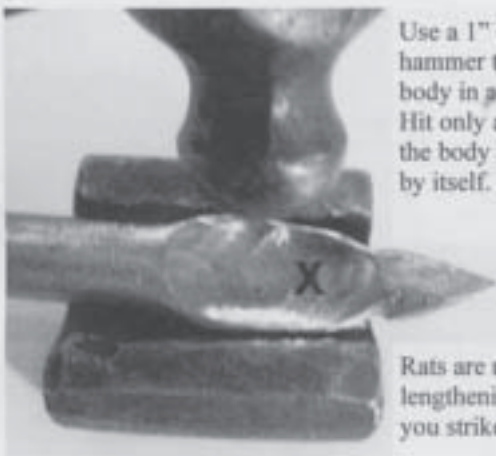
Forge a short, 3-sided taper about 1" long.



Fuller top and sides to form the neck using a narrow fuller.



Use a 1" ball pein hammer to spread the body in a 1-1/4" swage. Hit only at the "X" and the body will lengthen by itself.



Rats are made by lengthening the area you strike.

Fuller top and sides at the end of the body to isolate material for the tail. Then cut off the extra leaving about 3/4" of the stock for the tail.



Forge the tail to 5/16" square, then bend so the tail can be held in the vice with the body resting on the jaws.



File a notch where the ears will start, then round the nose.



Use a tapered diamond point chisel to lift the metal for the ears. Start at the notch and keep the chisel at 45° to the head.



Lift the ears perpendicular to the head using a tapered round chisel. File the area in front of the ears to round off the head.

Form the eyes horizontally to the head using the eye punch.

Forge the tail out. Cut to length and bend to a pleasing shape. File to clean up unwanted forging marks, wire wheel and clear coat or use hot wax to finish. The mice can be made in other sizes from 1/2", 5/8" or 1" round stock by sizing the punches to match.



Chisels and punch used for 3/4" round stock.

Reprinted from

Buy, Sell, Trade

Individual Classified ads

For Sale: 4- Platten tables 3'x3' \$200/ea. 1- Miller 400amp Diesel Welder /w factory air comp. 1084hrs \$4500. 2- coal forges /w hand blowers \$400/ea. 1- antique RR coal forge \$400, 1- European swage block & stand \$450. 2- sml post vices \$75/ea. 2-lg post vices - Indian Chief \$350/ea. 1- Tinner's Anvil \$300. 2- Peter Wright anvils \$350 & \$400. 1- Metal Ace- lg English wheel w/ all anvil wheels & forming dollies \$3000. 2- Victor track torches \$300/ea. 5- steel trusses 55'-0" \$2000. Tony Parra Bonner Springs, KS. 913-208-8831.

Buffalo pan forge rectangular (no exact size but probably 2 by 2.5 feet is the norm, It has a separate blower that is currently locked up. Anvil (no weight) but it is 22 inches long and about 5 wide. Finley Jennings Crane MO 417-369-2993

Commercial / Resource ads

Services:

Beverly Shear Blades Sharpened. Remove blades from shear and ship to Clay Spencer, 73 Penniston Pvt. Drive, Somerville, AL 35670 \$35 plus postage, additional cost for deep notches or blades previously sharpened at angle.

Custom spinning in copper, brass, pewter, and steel. Contact Ken Markley, 7651 Cabin Creek Lane, Sparta, Ill. 62286. Phone: (618) 317-1958 Fax: (618) 443-5284

Little Giant-- We can do repairs on any or all components of your Little Giant front assembly. Contact H. "Sid" Suedmeier 420 4th Corso, Nebraska City, NE. 68410 (402) 873-6603

Roller Blade Treadle Hammers (Clay Spencer design) for Sale or Workshops led to build hammers. Bob Alexander, e-mail to scruboak4@netzero.com, or call 636-586-5350.

Information / Education:

Tong Making Class-Weekend Course 4 people per class - \$125 per person Contact: Charles Comstock Rt.1 Box 20, Deerfield, MO. 64741 (417) 927-3499

Back issues of Jerry Hoffmann's **Blacksmith's Journal**, Call 1-800-944-6134 for more information.

Classes offered. The Ornamental Iron Shop Contact the instructor to register and customize your class. John D. Thompson – Metalsmith 3923 Hwy 25; Hodges, SC 29653 864-374-3933

Mathias Penn is offering introductory & beginning blacksmith classes. 417-683-9000 Tytheblacksmith@yahoo.com

Classes at Pieh Tool Company, Inc. - Camp Verde, AZ The Bill Pieh Resource for Metalwork. Call now for more information and to enroll: (928) 554-0700 or (888) 743-4866. www.piehtoolco.com.

The Upper Midwest Blacksmiths Assoc (**UMBA**) **video library.** An index list can be viewed at www.umbaonline.org They are VHS or DVD-R Cost is \$5 each with \$2 per order shipping There is no return date, you keep the video for this price. All videos are made at group demos, no commercial titles.

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Price is \$30US including postage to US and Canada, \$32US to other countries. Send check or money order 73 Penniston Private Drive, Somerville, AL 35670, Also, lead workshops for chapters or groups to build 15 to 20 hammers. phone 256 498-1498, cell is 256 558 3658, email is clay@tirehammer.com

New England School of Metalwork

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Products:

Heavy duty Frying Pan Blanks: Steel, approximately 9 inch in diameter with 2 inch sides. 12 gauge (2.5 lb.) or 14 gauge (1.75 lb.) thickness. Contact: Bob Tuftee, 3855 Aspen Hills Dr., Bettendorf, IA 52722; bobforge@hotmail.com; (563) 332-4800.

Scrub Oak Forge: We still have the SayMak air hammers from Turkey, the Ozark Pattern anvils, and hand hammers. For more info on the tools contact Bob Alexander at 636-586-5350 or scruboak4@netzero.net

L Brand Forge Coke now packaged in 50 pound bags, 1,000 pound bulk sacks on pallets and 2,000 pound bulk sacks on pallets. Send your zip code for a quote on price including delivery. 1-678-360-3521 or LBrandForgeCoke@aol.com.

Kayne and Son Custom Hardware, 100 Daniel Ridge Road, Candler, NC 28715. (828) 667-8868 fax (828) 665-8303, e-mail: kaynehdwe@charter.net, web site: www.blacksmithsdepot.com. Offering a full line of blacksmithing equipment. We ship and accept Visa and Mastercard.

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SOFA fire pots are once again available. For information contact Bob Cruishank, 1495 W. Possum Rd., Springfield, OH. 45506 Phone: (937) 323-1300 or www.creativeironforge.com or www.sofablacksmiths.com

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Wanted:

Demonstrator List

Fred Weisenborn has started a list of members available for demonstrations, fairs, historic events, and festivals, etc.
417-589-2497 e-mail: jweisenb@llion.org

Around the Anvil BAM has it's very own E-Mail news group. If you would like to participate send an E-Mail to Ed Harper at aramed@grm.net and he will get you signed up.

Check out back issues of BAM newsletter on bamsite.org.

Black Jack Gate Project

By Kate Dinneen

The Design workshop for the Black Jack Gate Project was held Oct. 9-10 and was quite successful. Currently, Peter Parkinson and Terrence Clark are pulling together all the ideas generated during the event and drawing up a working design for the Gate. The plan is to start the actual forging during the BAM 2011 conference in Sedalia April 29-May1 with Terrence and Peter leading a working demonstration at that time. There will be 10 spots available per day (Fri and Sat) and participants will get to work closely with 2 of the best smiths in the world. To participate, please contact Kate Dinneen at kate@hotflashmetalworks or leave a message at 785-841-6271. There will be a fee of \$40 for the day long session.

SAVE THE DATE!!!!



*Blacksmith Association
of Missouri*

ANNOUNCES

**20th Ozark
Conference**

**“THE BEST OF
BAM”**

APRIL 28TH – MAY 1ST 2011

**Watch for information at
bamsite.org**

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4. Jerry Rehagen, (573) 744-5454
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Coal keepers earn \$3.00 a bag. NOTE: PRICE CHANGE

A. Non BAM coal \$.40/lb check \$.35/lb cash bring your own containers. Tim Johnson Springfield, MO 417-886-8032

Upcoming Events:

January 1 - Application deadline for February Scholarship awards.
January 22, 2011-BAM meeting, John Murray, New Melle, MO 636-398-4640, trade item: Bottle Opener
January 29, 2011 **Newsletter submission deadline**
March 19, 2011-BAM meeting, Fred Warner, Wheeling, MO 660-659-2406
April 1 - Application deadline for May Scholarship awards
April 28 - May 1 -**BAM Ozark conference**, Sedalia, MO contact Joe Hurley at acornridge3@yahoo.com
May 21, 2011-BAM meeting, Chris Miller, Doniphan, MO 573-996-4931 trade item: door handle
July 1 - Application deadline for August Scholarship awards.
July 2011-BAM meeting Ned Digh, Ham's Prairie
August -2011 Missouri State Fair Sedalia, MO contact Kent Harbit (660)-647-2349 to volunteer
September 20, 2011- BAM Meeting, Bob Ehrenberger, Shelbyville, MO. (573)-633-2010
October 1 - Application deadline for November Scholarship awards.
January 2012-BAM Meeting A & K Cooperage, Higbee, MO

BAM Good Cook Books

Bob, I had talked to you at the conference about the cookbooks. We were trying to sell them all before the next conference. I would like something put in the next newsletter. They have great recipes from our own members and come in a nice little 3 ring binder that you can add recipes to. They are \$20.00 each (Free shipping to those in the continental USA), Just send your \$20.00 and shipping address to Ed Harper, 202 East Fir, Browning, MO 64630. These would make wonderful Christmas Gifts.

New Members

If you have a new member near you, welcome him to the group and show him the ropes.

Bobinmyer, Blake
707 E. 5th St
Rolla, MO 65401

Breckenridge, Shawn
Rt 3 Box 86A
Appleton City, MO 64724
stbreck@gmail.com
417-321-2567

Claycomb, Donald
85 Wildflower
Linn, MO 65051
claycomb@radiowire.net
573-897-0033

Davis, Jeff
14380 St Rt V
St James, MO 65559
injammer@fidnet.com
573-263-1338

Gordon, Nancy
7000 Sycamore
Kansas City, MO 64133
soaper1@att.net
816-353-3602

Groom, Doyle
4723 350
Stanberry, MO 64489
djgroom@hughes.net

Kamp, Donald
3303 Liv 273
Chula, MO 64635
jdkamp@grm.net
660-639-2205

Langer, Francis
609 Angenette Ave
Kirkwood, MO 63122-6220
fra56langer@hotmail.com
920-723-7955

Morrow, Bryan
30999 Riley Road
Lebanon, MO 65536
mugga1066@yahoo.com
417-588-4410

Mueller, Tom
2428 Garner Road
Hermann, MO 65041
573-694-1174

Musser, John
358 Thousand Acres Road
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573-346-0367

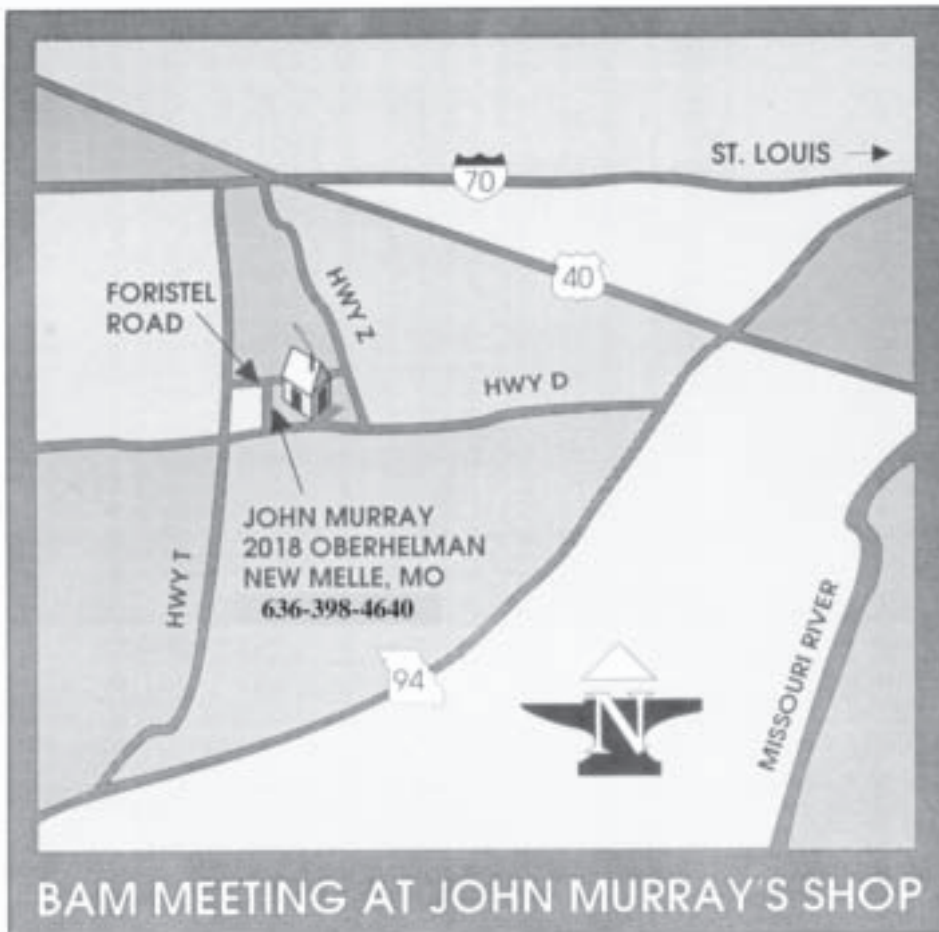
Rohlf, Richard
2904 Bellevue
Bettendorf, IA 52722-4542
563-370-7490

BAM

2212 Aileswick Dr.,
St. Louis, MO 63129

Please send changes to Bruce Herzog, 2212 Aileswick Dr., St. Louis, MO 63129 or e-mail to bjherzog@att.net

Next Meeting: January 22, New Melle, MO.



Location:

2018 Oberhelman Rd New Melle, MO

Directions:

From the East: go South at
Wentzville onto Hwy Z
Turn Rt onto Foristel Rd
Turn left onto Oberhelman Rd

From the West: go South at Foristel
onto Hwy T
Turn left onto Foristel Rd
Turn Rt onto Oberhelman Rd

From the South: Cross the river at
Washington on Hwy 47, At Dutzow
Go North on TT, Turn left onto T,
Turn Rt onto Foristel Rd.,
Turn Rt onto Oberhelman Rd.

Host: John Murray

Phone: 636-398-4640

Food: Provided.

Trade item: Bottle opener