BAM

January/February 2016

Training the next generation of Blacksmiths.

January/February 2016
Volume 33, No 1

Blacksmith Association of Missouri

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Finished Heart from front cover. She was very proud of her hard work.

Always some fun at Pat's shop.

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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 $30/year; a portion of this amount is for a subscription to this newsletter for one year. Editorial inquiries should be addressed to : Jon McCarty 815 Miller Street, New Haven, MO 63068; (636)359-1246,
or send an email to:
bameditor2015@gmail.com
BAM membership inquiries should be addressed to: Bruce Herzog, 2212 Aileswick Dr., St. Louis, MO 63129; (314) 892-4690 or send email to bjherzog@charter.net.

Membership Application

Name:
_____
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St. Louis, MO 63129

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1 year subscription Anvil's Ring: 68.5% $24
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The Blacksmiths' Association of Missouri is an affiliate of the Artist Blacksmiths' Association of North America, and is devoted to the preservation and advancement of blacksmithing and to communication among blacksmiths in Missouri and surrounding areas. The Newsletter of the Blacksmiths' Association of Missouri's goal is to support these aims. Letters to the editor, tech tips, tools for sale or anything else which furthers these ends will be considered for publication.

From the President

By Phil Cox

It wouldn't be a January BAM meeting without a little snow. We can always count on Dale to come thru for us. What a wonderful place to have a winter meeting, and from what I hear it's only going to get better. When the Kirby's do something they do it right. For those of you who live in that area that facility is available for your events.

I thought we had a great turn out considering the weather. I know several people were on their way and wisely turned around and went home. Glad not to hear of any accidents involving our members. Speaking of members we got at least 5 new ones at the meeting. Welcome to all the new ones look forward to seeing you again. Bruce didn't make it to the meeting but I think we are still over 600 members.

Most of the normal reports were not given due bad weather keeping people home. The monthly report I get from Bruce show we are in sound financial condition I can't remember the exact number but >$39,000 is close. More on this later. Mike gave us an update on the coming Conference as usual. He has most things under control but is looking for volunteers workers for set up and tear down also maybe site captains. Get in touch with Mike for the perks and responsibilities. This is a very good way to learn about all that goes into a conference.

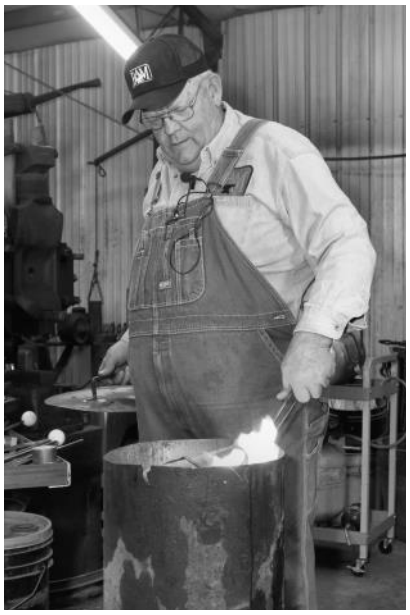
Dale and his buddies are building a Cowboy Church next door to the new building. He really enjoys your blacksmith work and in true Dale fashion came up with a plan for us to help him decorate the church. He joined in the trade item by donating a wonderful rocking chair and 2 drawing tickets to each of the 18 members who had made a trade item. This was in addition to the chair he had already donated to Iron In The Hat. So 18 of us got to draw for a really comfortable chair in exchange for our trade item. Dale got all the trade items to help decorate the church. As usual A barrel was made on site and it too was in the Iron in The Hat.

Dale informed us that next year he would like to host the Jan 2017 meeting, and it should start on Friday evening. Bring your cots so you can sleep in the cooperage. He said we will beat on some iron, eat some good food, drink a little whisky, and have a lot of fun. The date has not yet been set but watch for it.

The new business was a good discussion about up dating the MTS trailer. The one we are now using is 12 years old and is showing it's age. It was agreed that we need to promote BAM's image and this trailer is just not up to the task anymore. The membership voted to have Don Birdsall and myself look into a new trailer. If we do indeed buy a new one I propose we take sealed bids form the membership for the old one. We may be able to do this at the Conference if the new trailer is in our possession by that time. Both Don and I are finding out that waiting till the March 26 meeting may not give us enough lead time to get a trailer made to our specs by the conference. One dealer Don talked to had a plan that might work and one I talked to said if we are pretty sure we want one he might have one built and if we didn't take it he would put it in his stock.

Till next time keep your fires hot and clean and your anvils bright.

Phil



From the Editor

By Jon McCarty

Hello everyone, I will start off with saying the hammer ins this year were great as usual. Kens shop is set up great with numerous forging stations. I really enjoyed getting the chance to try out his big air hammer, something I have wanted to do for a while now.

Pats hammer in was great again this year as well, but I am a tad biased. I have always enjoyed seeing everyone at his shop every year. There were lots of new faces at both hammer ins and plenty of smiths getting dirty.

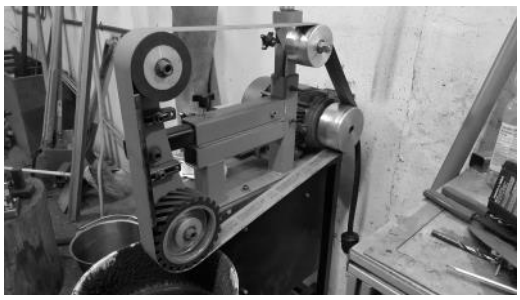
Gas forge workshop, Cost on the forge workshop in going to be $362.00.This will be held at this years 25th annual conference in Sedalia. Each kit will include everything needed to build a forge except for the Freon can. Steve will be bringing the feet, bricks, valves, flare adapters, tubing, and fuel gas adapters. part of the cost is going to cover Steve's travel expenses to have him on hand for the workshop. I currently have 4 spots not reserved. I will need to have payment to me before the March meeting to hold these spots. If you are interested contact me at bameditor2015@gmail.com and I will add you to the list.

The workshop will be split into 2 days with half on Friday and half on Saturday to allow members to also take forging classes.

Michael Gorzel mgorzel@sbcglobal.net has regulators, hose, POL, and gauge kits for sale. Contact him for pricing. He will need orders placed at least one month before the conference to guarantee he can get them in time. Thanks for that Michael.

I will be writing up an article on the build of the 2x72 grinder I built recently. I did however tell a few people I would add a few links to where I got some of the parts. My motor and VFD where bought at Surplus Center surpluscenter.com. It's a 2HP 3500RPM 3phase motor with a 2HP TECO VFD. Contact wheels I purchased off Ebay from seller mmdiamonds77. Seller was great to deal with and so far I am very happy with my purchase. Be aware I had to machine my own bearing pockets and provide my own bearings. I will have more info with my full article. If there is enough interest I would be willing to set up and run a workshop to build these once I work out the couple minor tweaks I would like to make to the design.

Conference is just around the corner, Ken has once again built a drawer cabinet for the auction and needs drawer pulls. They must fit on a 3x5 card. He would like them mailed to him no later than two week before the conference so he can mount them at home in his shop. I know last year my drawer pull caused plenty of problems on site and would have been much easier had I shipped it to him ahead of time.



Ken Jansen's Black Friday Hammer-In 2015

By Bob Stormer

When we got to the shop, Ken had everything set up for making bending forks. As I understand it, Don Anders helped get the shop cleaned out. Ken had three propane forges and his coal forge ready for use. I forgot to count, but I think there were six anvils available. Ken showed two ways to make a bending fork ,using 7/8" diameter sucker rod and bar stock.

Figure 1

The first demo was using the sucker rod that Ken had pre-cut to about 6". The first step was to upset one end about 1" long and a little over 1" diameter (Figure 1). Rather than use a power hammer, Ken used Don Anders for striker. If you visit the BAM website and look at the pictures of the meeting, you'll see that everyone involved in making bending forks did so as a team. After upsetting the end,

Figure 2

Ken hung about 1 1/8" over the side of the anvil and used half-face blows to fuller the stock down to about 1/2". After every strike, he would rotate the stock back and forth 90° (Figure 2). Flatten the head on the diamond to create a large flat section about 3/8" thick (Figures 3 & 4). Fuller the flat

Figure 3

section about 2/3 of the way back from the end to about 3/8/" thick (Figure 5). Draw the end out to about 3/8" square. Draw the handle out to about 3/8" square. Figure 6 gives an idea of what your piece should look like at this stage. The only steps remaining are to bend the end up to form the

Figure 4

second fork tine and dress all the edges. The faces of the fork tines that will contact the piece to be bent need to have a slight radius so they don't mar the workpiece. Figure 7 shows a pre-finished piece and

Figure 5

the demo piece as far as Ken took it during the demo.

The second method of making bending forks Ken showed was to start with bar stock. I believe it was a leaf spring that was about 1 1/2” by about 3/8”. Start by fullering about 3/4” from the end to about 3/8” thick (Figure 8). Draw the end out to about 3/8” by

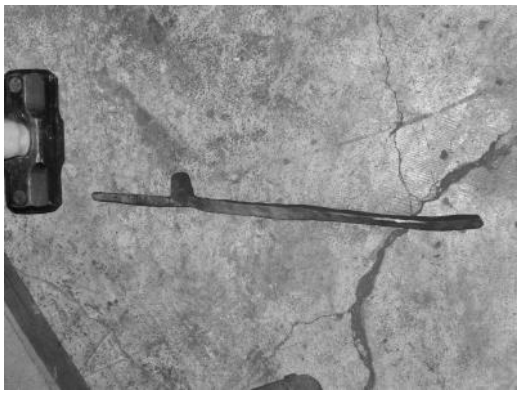


Figure 6

3/8” square. Fuller again to define the start of the handle, and draw the handle out to about 3/8” square. As before, bend the end tine up to form the fork. To make it a little easier to draw the handle out without damaging the rear tine, you can cut an angle out behind the rear tang with a hot cut. See Figure 9. As before, dress all the edges, including the insides of the tines.

At this time, Ken turned the shop over to the attendees to make their own versions of bending forks. The various sizes of step stools were distributed at the workstations so normal height people could work comfortably with Ken's anvils. He also reminded everyone to check with him about which of his hammers could be used for hammering on cold steel. Matthew Burnett made the chili for lunch. On the cold wet day, the chili was the perfect lunch the hungry crowd.

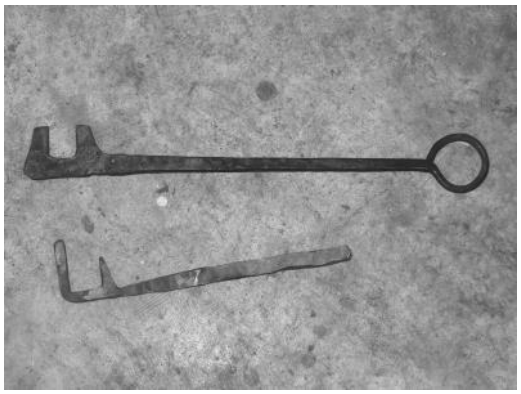


Figure 7

Figure 8

Figure 9

Pat McCarty's Headache Hammer-in 2016

By Bob Stormer

Apparently some of you took my advice from last year and decided to attend this iconic BAM sanctioned event to help ring in the new year. Due to other family commitments, I had to leave right after lunch, so I can't document what took place after that. It's nearly impossible to get an accurate count of how many people were at Pat's shop this year, but I heard a count of 50+. As usual, Pat had two forges set up that could each support two smiths. The forges were kept busy working on the two projects Pat had set up during his introduction, as well as personal projects. Just as important, in my opinion, was the myriad of conversations that take place every year. I saw the following statement on BAM's Around the Anvil blog the day after Pat's hammer-in. "The sheer amount of knowledge contained under one roof at a hammer in or meeting is staggering. The skills displayed and information shared always leave me in awe of our wonderful group. It is a great and powerful thing we have going with BAM and I am very proud to be a member and I look forward to seeing what the future holds for us." That pretty well sums up the reason to attend the various meetings, conferences and hammer-ins.

I know Pat puts a lot of effort in cleaning his shop to get ready for this hammer-in, but I think Mary Jo puts in more time getting ready to feed the hoards of hungry visitors, so I'll start with the food available at these hammer-ins. Donuts and coffee are ready when you arrive about 8AM. That will get you through the initial demos and conversations. Other snack items are brought out during the morning, and starting about 11:30AM, Mary Jo and a band of helpers start bringing the pasole, potato soup, cornbread, desserts, and all the fixins over from the house. The peel and eat shrimp that was introduced last year was also available this year. Hopefully nobody had a diet based new years resolution.

The first item Pat demonstrated this year was a snake made from scrap material, in this case 3/8" square about 12" long. Any square stock would work. Pat used the rule of thirds for proportioning the snake properly, i.e. 1/3 of the length for the head, 1/3 for the body, and 1/3 for the tail. He started by tapering the tail to a dull point. He then overhung the other end over the anvil about 3/4" for shaping the head/neck area. See Figure 1. The main body is the next part to address. Since you start with square stock you must knock off all the sharp edges, and instead of making it round, make it oval. See Figure 2. Eyes and a mouth are then added to the head as in Figure 3. The only task left is to "coil" the snake to your preference, Figures 4 & 5.

The next item demonstrated was a horseshoe heart with an arrow through it, more in keeping with Pat's typical valentine theme at his Headache Hammer-In. Pat started with a new horseshoe, that I think he gets at Dickie Bubs, but a used horseshoe would also work. The center of the horseshoe becomes the pointed part of the heart. You need to spread the ends of the shoe so you can set the inside edge of the shoe over the edges of the anvil to make the point. See Figures 6 & 7. The next step is to round the horseshoe ends over the horn of the anvil to shape the top part of the heart. See Figure 8 (sorry for the blurry picture).

Although I did not see Pat make the arrow for his, it was obviously made from another horseshoe. Figure 9 shows the project piece Pat made before everybody got there. You can embellish the tapered ends, and the point as Wayne Rice did when he made one. See Figure 10.

Another demo I saw was Wayne Rice's rose that he put on the arrow for his horseshoe heart. I think he started with 1/2" by 3/16" stock about 16" long. The first thing he did was to cut notches in the stock to define the rose petals. It looked like the petals were about 1 1/2" long, and grooves were made using a fullering hardie. There were about 12 petals notched out. As you can see from the pictures he cut about 1/3 of the way through the stock to define the petals. The next step was to flatten out the entire strip to about 1/32" to 1/16". Since the metal is very thin here, you need to be careful not to over heat it in the forge during these steps. See Figure 11. After Wayne got the petals all flattened out, he narrowed the stem area down to about 1/4" round. The next step was to bend the stem down to a 90° angle so the petals cold be rolled up in the following step. The idea is to roll the petals tightly to mimic the tight grouping of petals in a real rose. See Figure 12. At this point, keep the bottom edge of the petals even. Once the rose is rolled up, you need to heat the entire rose and push the center of the rose up so the outer petals are a little lower than the inner petals. This allows you curl the edges of the petals over. A scrolling pliers is good for curling the edges of the petals, but I think Wayne used flat nosed pliers. See Figure 13.

Another high point of interest at the hammer-in was Jon McCarty's new home built 2x72 variable speed, 2hp belt sander. See Figure 14. I don't think it was for sale. Jon said he had modifications he wanted to make and add rubber faced contact wheels before he would be satisfied. There was some talk about Jon doing a build article in a future BAM newsletter, which I think would be a very good idea.

Figure 1

Ken Jansen is again building a cabinet to be auctioned at the 2016 BAM Conference, this time with 20 drawers and he needs drawer pulls/knobs made by different smiths. The drawer fronts are 3" high by 5" wide and about 3/4" thick. You are encouraged to get the pulls made and send them to Ken at his home prior to the conference so he knows for sure how many he has and to facilitate easier installation at his shop. This would be a good project for the newer smiths in the group. I believe your name gets written inside the drawer, so whoever wins it at the conference knows who made which knobs. See Figure 15 for last year's cabinet. Contact Ken at 636-295-5844.

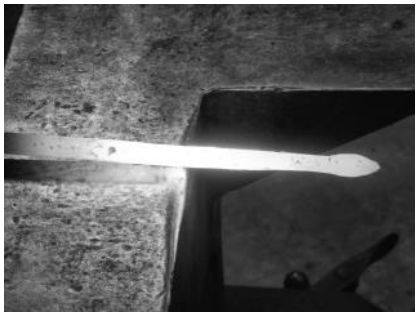


Figure 2

There was a lot more going on than I can document here. I have a tendency to visit with folks I don't take time to see often enough. As mentioned earlier, I had to leave right after lunch, so I missed the balance of the hammer-in and I am sure there was a lot more information and companionship to be had. The pasole I had and potato soup Sheri enjoyed got us all the way to Springfield, IL for our family gathering. Thank you, Mary Jo, and thank you, Pat, for opening your shop to all the BAM members again this year.

Figure 3

There are a lot of pictures of the 2016 headache hammer-in posted on the BAM website "bamsite.org" on the "BAM Photos Page".

Dori wasn't the only one to get into the forge at Pat's. Madison Stepped up to make one herself.

Figure 4

Pat McCarty's Headache Hammer-in Photos cont.

Figure 5

Figure 6

Figure 7

Figure 8

Figure 9

Figure 10

Figure 11

Figure 12

Figure 13

Figure 14

Figure 15

Meeting Minutes ~ January Meeting

By Bob Stormer

President Phil Cox opened the meeting by thanking Dale Kirby of Cooper's Oak Winery for hosting the meeting at his new Higbee, MO facility. Phil also thanked Pacco for demonstrating barrel making and Ken Jansen and Matthew Burnett for demonstrating how to make tongs.

Mike McLaughlin gave a conference report. The conference will be Thursday, April 28th though Sunday, May 1st. The demonstrators are:
Audra and Mike Draper - http://draperknives.info/
Elmer Roush and Lynda Metcalfe - http://www.elmerroush.com/ and http://www.lyndametcalfe.com/
Bob Alexander and Pat McCarty - http://www.washingtonforge.net/
He also reminded everyone of the need for volunteers to help with setup, demonstrator support, raffle ticket sales, and cleanup. Volunteers get free conference registration. Members also need to make things for the gallery, the boutique, and the auction, as well as contribute items for Iron-In-The-Hat drawings. Thursday and Friday evenings will be the usual potluck dinners, so bring something you can share. Thursday evening will also be the opening ceremony. Matthew Burnett is organizing the forging contest this year. Sid Suedmeier will be conducting a "mystery" contest this year with prizes, reportedly not related to the power hammer.

Don Davies will host the next BAM meeting, Saturday, March 26th . in Dawn, MO. The trade item is any cool shop item you use. Don's phone number is 660-745-3350. Directions should be available on the BAM website (bamsite.org) soon.

Phil mentioned the BAM forge workshop is now scheduled to be held at the conference. Steve Gensheimer, designer of the burner used in the forge, will be on-hand to help. He expects to also have extra burners/forge kits for sale.

Ken Jansen is again building a cabinet to be auctioned off at the conference. He needs 18 more knobs/pulls to complete the cabinet. The drawer faces are 3"x5" by about 3/4" thick. He requested that the knobs/pulls that you make be sent to his home two weeks prior to the conference so he can install them in his shop.

Phil mentioned that our treasury is in pretty good shape, thanks in no small part to Mike McLaughlin's managing of the conference as our biggest fund raiser. Phil proposed getting a new trailer to replace the current MTS trailer. The approximate cost be around $5K to $6K. He also suggested we use the trailer for promoting BAM by displaying the BAM Logo, website, phone number, et.al. on the new trailer. Since our trailer is used at ABANA events, and BAM is very highly thought of by other ABANA charters, we should have a trailer that is commensurate with our reputation. The new trailer would be the same size as the current one, 16', and capable of carrying about 6000 lbs. Ken Jansen made a motion to accept Phil's suggestion and it was seconded by Joe Hurley. The motion was passed by the membership. Phil and Don Birdsall will get some information on new trailers to present at the next meeting.

Dale Kirby is building a new, non-denominational church near his new winery building and offered to donate an additional bentwood rocking chair for raffle if those who submitted trade items would allow him to put all the trade items, cross with a candleholder, in his new church. Everyone agreed, and the winner of the bentwood rocker raffle was Rick Kesselring.

The meeting was adjourned.

Ken Jansen and Matthew Burnett Dem ~ January Meeting

By Bernie Tappel

Due to an oversight, there was no demonstrator lined up for the meeting on January 9. Dales shop is still a work in progress, so there was a limited amount of equipment available. There was a gas forge, a couple of anvils, and a slack tub. However, Ken Jansen happened to have a hand hammer and a pair of tongs in his truck. Matthew Burnett scrounged up an 8 lb. sledge hammer from somewhere in the cooperage shop. The only steel they could find laying around, except for some barrel bands, was a piece of 1/2" rebar. As we all know, rebar is far from an ideal material to use for blacksmith projects; however, they teamed up to present an excellent demonstration using minimal equipment.

They decided to make a pair of tongs from the rebar. The first step was to make a hot punch from a short piece of the rebar that would be needed to punch the rivet hole. Ken forged this out quickly, explaining as he went some of his theories on drawing out steel.

After the punch was finished, they cut two lengths of the rebar for the tongs. Ken upset one end of each bar into what he terms a "tootsie pop" to give him a little more stock to form the jaws and boss area of the tongs.

When he had the end upset to his satisfaction, they began forming the tongs. The first step at the near side of the anvil was to form the area for the tong jaws. Using half on/half off blows the step is formed that starts the jaw shape. They were making a modified flat jaw tong with a fullered groove lengthwise to hold a piece of round stock securely.

The next step on the far side of the anvil was to form the boss part of the tongs. This involved rotating the stock ¼ turn to the left and flattening the boss immediately behind the previously flattened part for the jaws. This again involved half on/half off blows to create the transition area from the jaw to boss.

After a section was flattened for the boss, the next step was to form the transition to the reins. This involved another ¼ turn to the left on the far side of the anvil and more half on/half off blows to set the flattened boss area down to the start of the reins.

Once this transition was finished, with Ken directing and Matthew striking, they drew out a nice rectagonal tapered rein on each side.

Once the reins were finished, they punched a rivet hole in each side, using the punch that Ken made at the start of the demo. After the hole was punched, the tongs were riveted and adjusted to fit to a piece of the rebar stock that Ken had. When the tongs were adjusted to securely hold the stock, Ken then adjusted the reins to lay parallel and to be a comfortable distance apart while holding on to the intended stock size. He explained how to slowly cool the tongs after the adjustment, working the reins back and forth as they cooled to insure a smoothly operating pair of tongs.

After the tongs were finished, Matthew, using another piece of the rebar, did a nice demo of forging a flux spoon.

This was a great demonstration in several ways. Not only was it a nice demo of tong making, it demonstrated to some of the newer members, that you don't need a huge shop full of fancy tools to get started in blacksmithing. The only tools used to create the tongs and the punch needed for the rivet hole, was a source of heat (the gas forge), and something to beat on (in this case an anvil, but could just as easily have been a steel block), one pair of tongs, and a hammer, with a tub of water nearby to selectively cool portions of the steel. By using a longer piece of stock to start with, Ken was able to hold on to the steel without using tongs while the end of the piece was being formed for much of the process, cooling the other end as necessary. Also, with Matthew wielding the sledge hammer, there was no need for a power hammer to draw out the reins.

Thanks Ken and Matthew for stepping up at a moment's notice to provide another great BAM meeting demonstration!

Trade Items from January Meeting

Made By:
Preston Williams

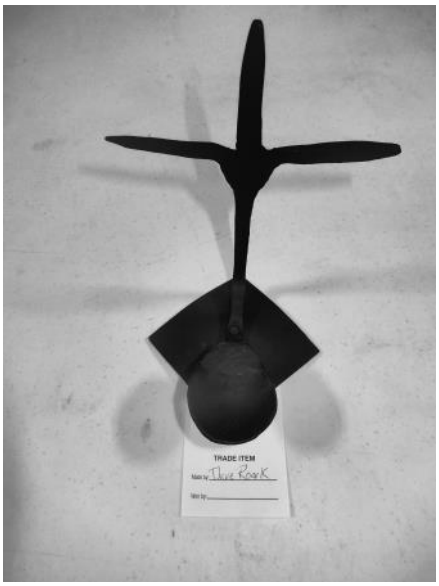
Made By:
Mike Nave

Made By:
Mike O'Neil

Made By:
Phil Cox

Made By:
Bernie Tappel

Made By:
Chris Miller



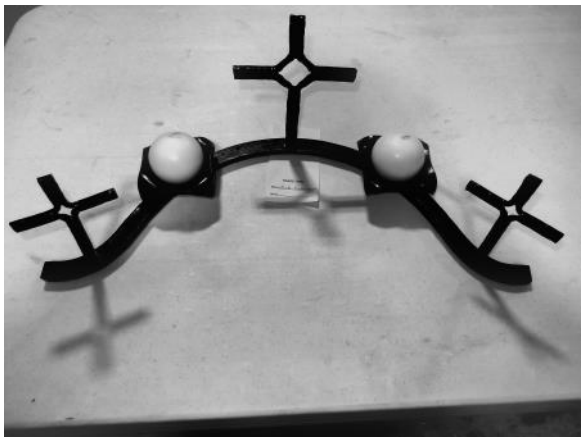
Made By:
Dave Roark

Made By:
Bob Stormer

Made By:
Matt Dickson

Made By:
Don Birdsall

Made By:
Rick Kesselring



Made By:
Chris Owen

All trade items were traded to Dale Kirby to go into a church that he is building.

Made By:
Mark Clifford

Made By:
Steve McCarthy

Made By:
Ken Jansen

Made By:
Don Anders

Made By:
Jacob Arnold

Made By:
Tom Patterson

Iron in the Hat - January Meeting

Donated by	Won By	Item
Dale Kirby	David Rosemann	Barrel
Dale Kirby	Bentwood Rocker	Lori McCarthy
Matthew Burnett	Kent Harbit	Twist Sample Rebar
Mike McLaughlin	Kent Harbit	Metal Grate/ Bench Seat
Mike Gentzsch	Alex Putman	Misc Metal
Matthew Burnett	Brian Cooper	Railroad Spikes
Mike Gentzsch	Chris Miller	Brass Wire Brush
Chris Miller	John Utley	Truck Leaf Spring
Earl Million	August Griffen	3/8" Rake Teeth
Earl Million	John Huff	1/2" Rake Teeth
John Huff	Matt Dickson	Bucket of Horseshoes
Don Birdsall	Earl Million	Bearing Races

MTS Workshop

Number 1-beginner Workshop Saturday April 2nd 2016

Number 2-beginner workshop Saturday April 9th 2016

Location:
Ray Scott:
HCR 2, Box 196
Eminence, MO. 65466

No daytime phone number
Evening telephone number 573-226-5541
Start time 8:00 am. Sharp.

Students should be there and ready to go at 8:00 am. Both days.
Students must wear safety glasses while instruction and workshops are
being run.
Students need to bring a lunch both days.
Water will be available.
Students should wear cotton or wool clothing, no synthetic type of
clothes.
Gloves and aprons are not provided.
Must be a BAM Member (Insurance requirement)
$30.00 dollars for a one
year membership.

Cost of each workshop is: $30.00 dollars per student per day.

Instructors are:
Ray Scott
Don Birdsall
573-364-7223

Directions to Ray Scott's Shop:
At Eminence, MO.
Go east on highway 106 five miles to highway V go north two miles. Look
for a white fence on right side of the highway, turn at the gate and
drive down to the shop.

If not a member sends membership dues ($25.00 dollars) to:

Bruce Herzog
212 Aileswick Drive
St. Louis, MO.

Send payment for workshops to Ray Scott at the above address.
Any questions call:
Ray Scott or Don Birdsall

Thank you and hope to see you at the workshops.

Shop Tips

By Jon McCarty

I received several replies to the questions from the last issue. Lets start off with a very informative reply from Don Birdsall on Tumblers.

It does not matter what the material is, aluminum, brass, copper, steel, gem stones, rocks and anything else you might want to deburr and polish. The items can be tumbled or vibrated. For this article I will stay with tumblers

There is considerable science and physics involved in using tumblers in industry, but for the back yard blacksmith, I will try and explain how to build and use one type.

You will need six large truck tires when I say large I mean 16 to 20 inch diameter and the widest tire you can find, a racing tire from a racecar would be ideal. Why six, you will use at least that many different grits of polishing medium to get a good finish. This method is not fast, it could take 6 or more weeks to get a finish you want. You start with a very course medium, small rocks, pieces of scrap steel etc. after several days or possibly a couple of weeks, you move the items to the next tire and reduce the size of the medium by half of what the first size medium was. This continues 24/7 till you have put the items though all 6 tires. Each time you move the items, you can put new items in the first tire and start them going.

Also the medium must be kept moist at all times, not dripping wet, if left to dry out your parts could start to show scratches and damage. You should stop the tumbling action once a day and check each tire to see how the cleaning process is going, and adjust for it. How many items can be done at one time, I cannot tell you each time you start a new batch, you will have to let the machine run a few days and check your parts to see how they are coming along. Most of the time you will probably put too many in and will have to take some out till you discover the correct amount for that load.

The length of the drive shaft will be calculated by the width of the large tires the space you want between the tires, the bearings used for support, and the drive unit, are you going to use belts or chain and sprocket. I prefer chain and sprocket drives, less chance of slipping when trying to start the unit.

You will need a drive shaft 1-1/2 inch or 2 inch drive shaft .You can use a smaller diameter shaft but you will need extra pillow block bearings and supports between the tires for support. You do not want the drive shaft to flex and bend, it needs to be kept straight. With all this weight the drive shaft needs to be either large enough to support the weight or supported with bearings.

Now back to how to assemble the tires. You will now need 6 inflatable wheel barrel wheels and tires or some kind of wheel and tires. If the axle hole in the small tire wheels is smaller than your drive shaft then you need to cut out the existing hub and weld in the correct size hub, try and get the new hub welded in as close to center as possible, the hub needs to be long enough out one side to install a 3/8 -16 tread set-screw. (Makes repair in the future easier)

The 6 small wheels and tires are spaced evenly along the drive shaft, with space left between to service every tire, also leave room at one end for outboard bearing and room at the other end for bearing and drive pulley or sprocket. Now you put the large tires over the smaller tires, with the small drive wheels and tires on the inside of the larger tires. Now can you see why a large axle or plenty of bearing supports is needed to hold all this weight plus parts and medium?

Build a frame to hold this contraption, how high off the floor, How heavy, what you use, just make sure the base is wide enough to stand in place and not turn over cause of the rotational force being applied when it is running. Just make sure to align the motor pulley or sprocket and the drive shaft so you do not have unnecessary wear, also make sure your drive shaft bearings are in alignment you do not want to wear out the bearings any faster than normal.

A 1 HP motor should run this ok; you do not need high rpm's. If you are going to use a pulley system I would recommend a variable speed pulley. That will help in adjusting the speed, a better way would be to use a variable speed control on the motor. Just make sure the motor is able to run with a variable speed control.

If using a chain and sprocket a variable speed control will be needed. The correct speed is when the items and some of the medium rides up the side of the tire

to about 140 to 150 degrees from the bottom then free falls back down into the medium, If the tire is rotating to fast the items may not fall but just continue going around, if too slow the items do not fall far enough to gain enough momentum to help in deburring and polishing. From here on you will be using polishing grits that range from coarse to ultra-fine. I have not tried any of these at my shop. While I was working I maintained tumblers for several years and this information was gained from that experience. If anyone has more questions please call or email me and I will try and help you find a solution to the problem.

I did not go into using a round tank as a tumbler, they will work but it is a lot more work getting the tank set up correctly. The Internet has tons of information and other ways to build a tumbler; I suggest you do some research you may find an easier way to build one.

A little more on polishing mediums:
Rough-cut metal pieces mixed with coarse gravel would be a good starting medium.
A smaller grade gravel mixed with a small amount of pea gravel for the second time.
Coarse sand for the third time
Finer sand for the fourth time
Walnut shells for the fifth time

Ken Jansen emailed me this explanation on tongs and his thoughts on Tumblers.

High carbon steel is used for tongs so you can make them lighter to do the same amount of work. I use sucker rod almost exclusively as I can make the reins nice and thin and the jaws smaller and still get a good result."

As to the tumbler I use an old concrete mixer with wood to replace the metal mixing veins and scrap steel as the medium."

Kens reason for using high carbon steel in tongs was the same I heard from several people. While using mild steel works just fine on some types and sizes using a higher carbon steel can yield a much lighter pair to do the same job. Higher carbon steels will also hold shape better at higher temps. The down side to this is you can no longer quench your tongs to cool them if they are getting hot.

Thanks to everyone who sent me emails or stopped me at a meeting to pass along your answers. It is greatly appreciated.

This issue's question.

I have been having some problems with getting forge welds to stick lately. I have a few things I plan to try. Please send me any tips or pointers you have concerning forge welding. I am looking for tips for both gas and coal forges, fluxes, techniques and even useful tooling.

Send your tips or questions to bameditor2015@gmail.com with the subject "Shop Tips"

Historic Forge

By Heather McCarty

I found this article and thought it was pretty good, especially after reading that at the January meeting Ken and Matthew were able to demo out of some scraps. I think this piece fits just nicely.
I hope you enjoy it.

Tools from the junk yard
March—April 1993
Volume 10—No. 2

Tie rod ends from cars and light trucks make good set tools for you forge work. The reasons for using the tie rods are: a number of sizes to choose from, a swelled area with a hole in it (eliminating the need for a primary punching operation) and a decent carbon content for reasonable workability.

1. Cut off the length you need for the tool and save the rest for straight tools.

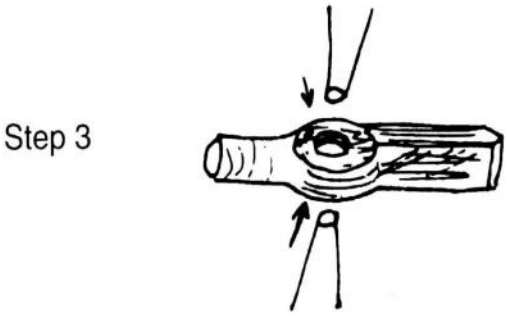
2. Forge the blade.

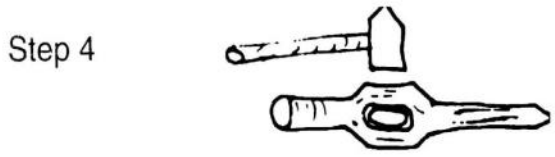
3. Punch both ways (to enlarge the hole).

4. Flatten sides to make an oval hole. Upset striking end and forge thicker if desired.

5. To harden, heat the metal to its critical temperture—the minimum temperature at which a magnet will not stick. Quench and buff until shiny.

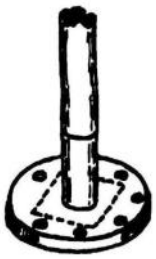
6. To temper, slowly heat the metal back from the edge so that colors run to the edge. We prefer a dark bronze (about 500 degrees) for cold chisels, and a blue -red (about 575 degrees) for hot chisels. If unsure of heat treatment, anneal in wood ashes and try again.





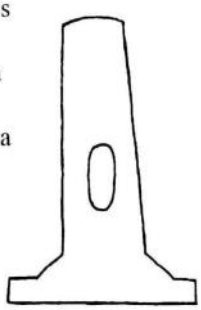
The finished tool

Truck axle flatter



A truck axle can be forged into an excellent blacksmith's flatter. Cut the axle as shown in the sketch (left). This will make a 3 1/2 inch face. Forge 4 inches of the axle to a slight square taper approx. 5 inches long. Punch a hole for a handle. Grind all surfaces smooth.

— Wiliam Plant, The Rivet



—Joe Jay and Pat Cheatham, The Texas Forge Review

34th Annual New Salem Hammer In

April 9 - 10, 2016

10:00 AM - 5:00 PM both days

A GALLERY TO EXHIBIT YOUR WORK WILL BE AVAILABLE

Please bring an item for our auction to help support the hammer-in.

BRING YOUR OLD TOOLS AND ITEMS TO SELL ON TAILGATE ROW

This Year's Demonstrator

Dorothy Stiegler

Dorothy Stiegler started smithing over 40 years ago in Olympia, WA and has since moved her business to California. Dorothy is respected among her Blacksmithing peers as one of the best and has taught at national and international conferences all over the world. As an educator, entrepreneur and one of America's first professional female smiths, Dorothy is rightfully considered a Master in her field. Her ability to create beauty and art in any form of metal is a gift. She takes great joy in connecting with her clients and building them pieces that even they could never have dreamed up themselves.

Dorothy will be working in both bronze and iron during her demonstration.

Lunch is available on site.

There is food & lodging near the demonstration area.
New Salem has campsites available with or without electricity.
For more information email me at bluestoneforge@gmail.com

New Salem State Historic Site is 20 miles northwest of Springfield, IL on Route 97. Hammer In is in the maintenance building. Look for the the anvil signs.

EYE PROTECTION MUST BE WORN IN THE DEMONSTRATION AREA

Name_____

Address_____

City_____ State_____ Zip_____

Phone ( ) ____ - _____ email _____

Early Registration Fee (before April 1, 2016): $15/day _____

Late Registration or at the door: $20/day _____

Saturday night dinner: $5/person _____
(Dinners available with early registration only)

Make checks payable to New Salem Lincoln League

Total _____

Mail to: Bluestone Forge
ATT'N: Hammer In
P.O. Box 1077
Galesburg, IL 61401

2016 Conference Demonstrator Bio's

Pulled from their respective websites.

Lynda Metcalfe

Lynda Metcalfe began blacksmithing and designing architectural ironwork during her undergraduate degree gaining a BA (Hons) 3D-Design (Metals) at the West Surrey College of Art & Design in England. After graduating in '92 she apprenticed with an architectural blacksmith in England and worked on a variety of large scale projects.

Lynda was the metals artist-in-residence at the Appalachian Center for Crafts in Tennessee in 2000/2001, has taught blacksmithing at the John C Campbell Folk School and the Appalachian Center for Crafts and demonstrated for state and local blacksmithing groups. Since 2001, Lynda has worked from the shop in Brasstown she shares with Elmer Roush.

Lynda Metcalfe began her interest in 'metal stuff' assisting her father in the repair and maintenance of her cars & motorcycles as a teenager and progressed to her undergraduate degree in 3D Design Specializing in Metals from the then West Surrey College of Art & Design in England (now part of the Surrey Institute). The course offers a broad based design and making education in hand-crafted metal objects at various scales (jewelry to architectural ironwork) and using a variety of processes & methods (fabrication/sand casting/machined work).

After graduating Lynda spent most of her creative time working on forged steel projects and turned to working at a smaller scale after assisting a Mokume Gane workshop run by Bob Coogan at Appalachian Center for Crafts in 2001. It sparked a keen interest and became the focus of jewelry explorations. Lynda currently splits her time between making ironwork to commission and jewelry that is carried at local galleries.

Elmer Roush

I make hand forged functional hand tools, weapons and implements from 10th Century Viking Axes to 18th Century American tomahawks and in all sorts of other directions. My main focus in blacksmithing is making tools for other people to use.

I forge things one at a time or in very small runs so I can show you the actual items offered for sale, I have also been numbering my work as I make it for a while now, so you'll see that in the information too. Each piece is individually forged from steel or wrought iron bar stock, and some are pattern welded. During the hot forging I define the shape and proportion of the item. Then, to varying degrees, the pieces are refined with cold work at the bench using filing, chasing, sanding to give extra embellishment.

Pat McCarty

Pat has been blacksmithing for more than 20 years and is an instructor for the Traditional Chest Class at the John C. Campbell Folk School. He has studied under Uri Hofi of Israel and is featured in the book, Treasure Chests, by Lon Schleining. He is a member of: The Blacksmith Assoc. of Missouri (BAM), The Artist Blacksmiths Assoc. of North America (ABANA), and is a Juried member of the Best of Missouri Hands. He has demonstrated and participated at: the fall craft festival in Silver Dollar City, The Missouri Heritage days for Rockwood School District, The Taste for the Arts festival in 2007, and the Masters of Steel show at the Kunstlerhaus Gallery in Herman, Mo.

Bob Alexander

Bob has spent 23 years of his life as a carpenter and has always enjoyed woodworking and furniture making. Around 1992 he took on the additional interest of blacksmithing - first as a hobby, then a career when he opened a shop in 1995 offering clients work from colonial to contemporary. Bob has studied with Clay Spencer, Doug Hendrickson, Jerry Darnell, Tom Clark, Uri Hofi, Joe Miller, and other renowned smiths. In 2003, he first heard a resonator guitar and fell in love with the sound, which led to his learning to play and construct them.

Mike and Audra Draper

My name is Audra Draper I am 47 years old. I was born in Blythe, CA in 1969. My family moved to Riverton, Wyoming in 1970. Like many I married early and was divorced by 21. I met Mike in 1992, we joined our 2 families together in marriage in 1994 and began a crazy journey raising 6 children.

In 1992 I began working for Ed Fowler ABS Master bladesmith at the Willow Bow Ranch, east of Riverton Wyoming. Soon after hiring on the ranch, I joined the ABS. In 1996 I made the journey to the BLADE show attempted for and received my Journeyman smith rating. In 1997 Mike and I purchased land out in the country and began building our home. Mike refers to it as "The Retirement project"!

The year 2000 was a big year and filled with changes. I applied for and passed the rigorous qualifications to become the worlds first female Master bladesmith. Mike sustained a back injury while working that ended his career as a heavy equipment mechanic. In 2001 Mike began working full time in the shop. Mike continues to make knives and specializes in folding knives with stainless steel. I found that fixed knives with damascus blades is where my passion lies. Mike and I both enjoy sharing our knowledge, we offer a week long, bed, breakfast and bladesmithing course here at Draper Knives in Wyoming. It is an opportunity to visit Wyoming, learn a new skill and obtain a knife that you made yourself.

Please welcome our

New Members

Michael Andert
1833 Hollow Tree Court
Chesterfield, MO 63017

Jacob Arnold
7150 West Hussey Road
Clark, MO 65243

Rich Bohne
1293 Spring Lake Road
Quincy, IL 62305

Nathan Canier
24730 225th Street
Le Claire, IA 52753

Larry Dodd
1028 Washington Street
Doniphan, MO 63935

Austin Ferraiuold
019 West Hudson
Buckner, MO 64014

Ben Hatcher
14100 State Highway U
Mineral Point, MO 63660

Robert Hillemann
P.O. Box 191
Ellsinere, MO 63937

Christopher Jones
1007 Towery
Malden, MO 63863

Ray Kirkwood
1723 Weil Road
Lebanon, IL 62254

Teilla Lathrop
26819 Wasson Road
Sedalia, MO 65301

Nick Miller
9805 Audrain Road 9904
Centraila, MO 65240

William Muenks
1622 Bald Hill
Jefferson City, MO 65101

David Murphy
2903 12th Street
Harlan, IA 51537

Shawn O'Rourke
5907 South Hill Street
Littleton, CO 80120

Alex Putman
1750 Morningside Drive
Nixa, MO 65714

Sebastian Rhoades
4174 Camden Line Road
Lebanon, MO 65536

David Rosemann
11751 CR 2180
St James, MO 65559

Joshua Worley
4147 State Road F
Fulton, MO 65251

BAM Tailgate

Buy, Sell, Trade

Individual Classified ads:

For Sale: Anvil's Ring Magazine collection Sept '73 thru Present. $350 Bob Woodard Edwardsville, IL 618-692-6508

Real slate chalkboards for your shop various sizes and prices call Matthew Burnett for details (816) 575-2798

Wanted Tire bender contact Roy Johnston 636-662-2126

Commercial / Resource ads:

Services:

Beverly Shear Blades Sharpened. Remove blades from shear and ship to Clay Spencer, 73 Penniston Pvt. Drive, Somerville, AL 35670 $41 includes return postage, additional cost for deep notches or blades previously sharpened at angle.

Little Giant-- We can do repairs on any or all components of your Little Giant front assembly. Contact Roger Rice, Midwest Machine, 6414 King Road, Nebraska City, Nebraska 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, or (417)-321-2286 cell

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

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.

Mathias Penn is offering introductory & beginning blacksmith classes. 417-543-2148
Tytheblacksmith@yahoo.com

oldschoolcrafts Blacksmith School, Joe Davis 12625 Lawrence 1175, Mt Vernon, MO 65712 phone 417-461-0387 on the web www.oldschoolcrafts.org E-Mail old-schoolcrafts@hotmail.com

David Norrie blacksmithing school in Colorado
David Norrie 303-859-0770 http://www.forgewithintention.com
or http://www.davidnorrie.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.

Blacksmithing E-books on CD
Now eight titles are available on CD, $4/each, or all eight books, $24 postpaid. More books are in production and will be available soon- order on-line at www.blacksmithingebooks.com, or check/MO to Brian Gilbert, 3404 Hartford Dr,. Chattanooga, TN 37415.

Ray Clontz Tire Hammer Plans by Clay Spencer
Send check/money order for $30 to Clay Spencer, 73 Penniston Pvt. Drive, Somerville, AL 35670-7013. Includes postage to US and Canadian addresses. Other countries e-mail clay@tirehammer.com for price. 256-558-3658. Tire Hammers for sale contact me for current price

New England School of Metalwork
www.newenglandschoolofmetalwork.com 1-888-753-7502

Power Hammer page
I've taken some time to collect and post old info, catalogs and brochures on power hammers. The link of our NEB web page to this information is: http://www.newenglandblacksmiths.org/power_hammer_info.htm Ralph Sproul

Rochester Arc & Flame Center! Featuring Blacksmithing,
Welding & Glass Blowing, over 30 classes available for all levels of interest, rocafc.com 585-349-7110

For Sale: Power Hammer instruction DVDs. $125 per set. Clifton Ralph, 4041 W 47st, Gary, Indiana, 46408 (219)980-4437

Products:

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

Heavy-Duty Fry Pan Blanks 9" diameter, tapered sides 12
Or 13 gauge steel (approx.2 pounds) no predrilled holes for the handle $12.00 each..1-4, $10.00 each.5-9, $9.00 each...10+. Shipping: $5.00 plus$1.00 each frypan Bob Tuftee 563-332-4800 6 Hollows Court LeClaire, IA 52753

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

Chile Forge- Next generation gas forges www.chileforge.com David Starr 520/360-2141

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.

D.L. Schwartz Co. Blacksmith and Farrier supplies. 2188 S. US 27, Berne, IN. 46711, 1-800-955-3064

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

USA Dealer for REFFLINGHAUS ANVILS, 77 to 1250 lb.
European 2 horn with or without upsetting block & side shelf.
Over 100 sizes and styles available. Guaranteed face @ HRC59
Dick Nietfeld www.blksmth.com Phone (308) 384 1088

Wanted:

Blacksmith business cards. I would like to put together a collage of Blacksmith business cards.
Bring them to a meeting or mail them to me with your dues.
Bruce Herzog
2212 Aileswick
St. Louis, MO 63129

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

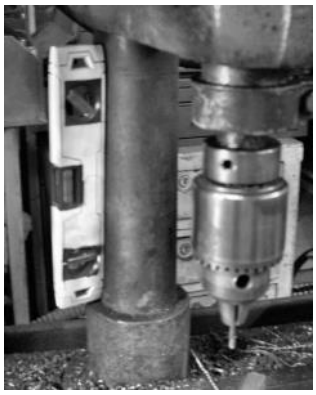
Around the Anvil BAM has its very own E-Mail news group. If you would like to participate there is a sign up link on the bamsite.org or send an E-Mail to Bernie Tappel at
bamweb@embarqmail.com and he will get you signed up.

Check out back issues of BAM newsletter on www.bamsite.org. It now has a search feature to help you find old articles.

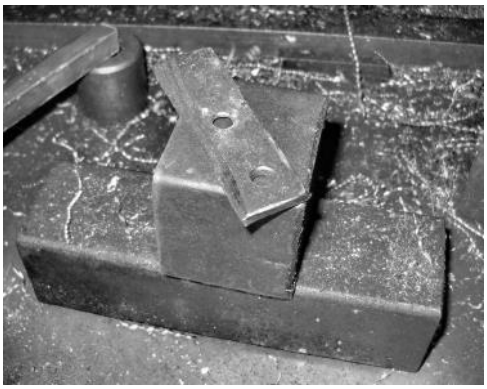
Ad Policy: Blacksmith related ads are free to BAM members. Personal ads will run for two issues.
Resource ads are ongoing at my discretion. Send to BAMeditor2015@gmail.com, or call 636-359-1246

Shop Tip (Drilling)

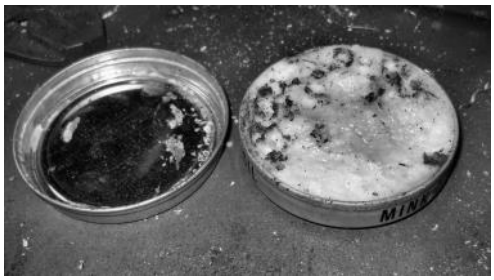
By Bob Ehrenberger



I keep a magnetic base level on my drill press to make sure that I'm drilling straight through my piece. This is especially important when getting ready to rivet something. Once the piece is in place I put the level on it and then adjust the work rest up and down until the piece is level.



A tip I got from a Francis Whitaker video, was when you have to block your work up on the drill press use metal blocks. They will be more stable and hold up to lots of use. I added to this the idea to put a thin 1/8" piece with a hole in it as a sacrifice piece and to give someplace for the drill tip to go when it breaks through the piece I'm drilling.



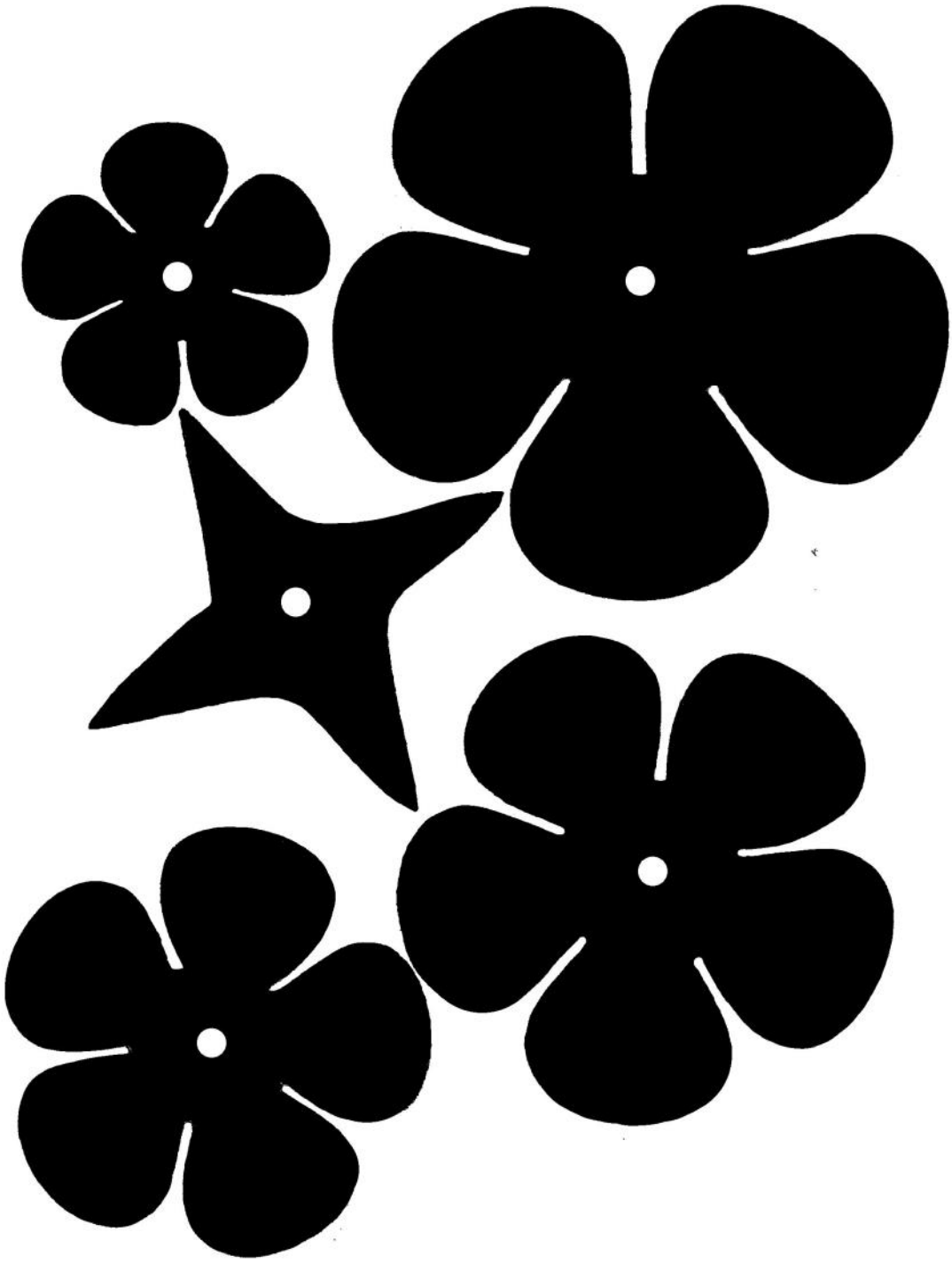
A tip I got from Phil Cox was to use beef tallow as a lubricant on the drill instead of oil. It does a good job and is a lot less messy. I keep mine in and old shoe polish tin so the mice don't find it between uses.

In order to always be able to find my chuck key, I have a piece of 1/4" x 1" material with a 1/4" hole in it mounted at the base of my drill press. I try real hard to always put the key in the holder between uses, so I know where it is when I need it.

Finally in order to keep all the miscellaneous stuff I need on the drill press. I made a small tray that holds my square, a ruler, file, center pinch, scribe, white pencil, soap stone, and some spacers that are used to set rivets.

Upcoming Events

March 26th 2016 - BAM Meeting Don Davis Braymer, MO 64624
April 2nd and 9th 2016 MTS workshop, Eminence MO 573-364-7223
April 28th-May 1st 2016 Ozark Conference, Sedalia MO



Template for cutting rose out of 18ga steel plate

BAM Scholarship/Grant Program

I. Scholarships and Grants will be awarded by the Scholarship/Grant Committee to BAM members in good standing and have been an active member of BAM for two years. Decisions of the Committee will be final.

II. Scholarships up to the amount of $1000 will be granted by the Scholarship/Grant Committee to an individual (1) to attend a recognized educational program or (2) to train under a recognized blacksmith craftsman (see notation on page 2) for the purpose of learning new and/or advanced blacksmithing skills. The submission of an appropriate application is required.

III. Grants of $250 or $500 can be made by the Scholarship/Grant Committee to (1) fund a workshop in a member's own shop (2) train and/or share skills with fellow blacksmiths or (3) to complete a one on one mentorship with a skilled blacksmith craftsman for skill enhancement. The submission of an appropriate application is required.

IV. The Committee is to consist of 3 members who serve rotating 2 year terms appointed by the BAM President. The President will appoint one of these members chairman of the committee.

V. The Committee will be responsible for publicizing the Scholarship/Grant Program and for suggesting changes to these guidelines as may seem appropriate. Changes are to be approved by the Board of Directors of BAM.

VI. The Committee will determine the number and amounts of scholarships/grants based on the amount of funding approved by the Board of Directors.

VII. The Committee Chairman will have the responsibility of requesting funds from the Board of Directors for the calendar year.

VIII. Eligibility: Only members in good standing in BAM may receive scholarships and grants and the scholarship committee members are not eligible to receive a scholarship/grant while serving on the committee. No member may apply for a scholarship within one year after receiving a previous scholarship. Applicants who have not received a scholarship within three years prior to their application will be given priority.

IX. Applications must be received 30 days before the date of the award unless waived by the Committee Chairman and/or President of BAM

X. **Scholarship Recipient**: Every Scholarship recipient, within three months after completing the event for which the scholarship is granted must submit a written description of the event to the BAM Newsletter (appropriate pictures and diagrams may be included). Within one year, the recipient must also demonstrate what was learned as a consequence of the scholarship either at a BAM meeting or on a video tape to be placed in the BAM Library.

XI. **Grant Recipient:** One of the following four options can be selected: (1) chose to write an article for the BAM Newsletter describing the workshop they conducted or the skills taught to fellow members; (2) write an article describing the mentorship experience; (3) provide diagrams and directions of the items made during a sponsored workshop; (4) present a demonstration at a BAM meeting.

XII. The Scholarship/Grant Committee will prepare an appropriate application forms for both the Scholarship and Grant Program. In addition, the forms will be published in the BAM Newsletter

XIII. Scholarship and Grant applications must be submitted to the Scholarship Chairman, Esther Digh, 6792 CR 424, Fulton, MO. They will be shared with the other committee members and a decision will be made. The recipient will be notified in writing of his/her selection.

XIV. Questions about Scholarships or Grants can be addressed to the Scholarship/Grant Chairman.

Please note: Members of the Scholarship Committee may contact applicant for additional information on the individual(s) teaching the selected event.

SCHOLARSHIP APPLICATION

Name:

Address:

Phone Number: E-Mail Address:

The education program/workshop do you wish to attend:

The location of the event:

Individual responsible for the event and/or teacher for the event:

Identify the costs to attend the event:

Tuition
Travel
Lodging/meals
Other

Briefly, describe how attending the particular class/event will advance your blacksmithing skills and be helpful in promoting the craft of blacksmithing. Identify the specific skills you expect to learning during this learning experience.

I understand that as a requirement of receiving this scholarship, I will be required to submit an article about the education experience attended with appropriate notes and diagrams to the BAM Newsletter no later than 3 months after attending the event AND within 1 years of the event, I will present a demonstration of the newly learned skills at a BAM meeting or complete a video tape to be place in the BAM Library.

Signed_____ Date_____

Mail to Esther Digh, 6792 CR 424, Fulton, MO 65251

GRANT APPLICATION

Name:

Address:

Phone: E-Mail Address:

Identify one of the two options for Grants you wish to complete:

Identify the objective(s) of the workshop to be conducted or the objective of the mentorship:

Identify the instructor of the workshop or the mentor selected for the educational experience:

Identify the expected outcomes or skills to be learned from this experience:

Identify the costs of this educational experience (materials, fuel, travel, handouts, propane, etc:

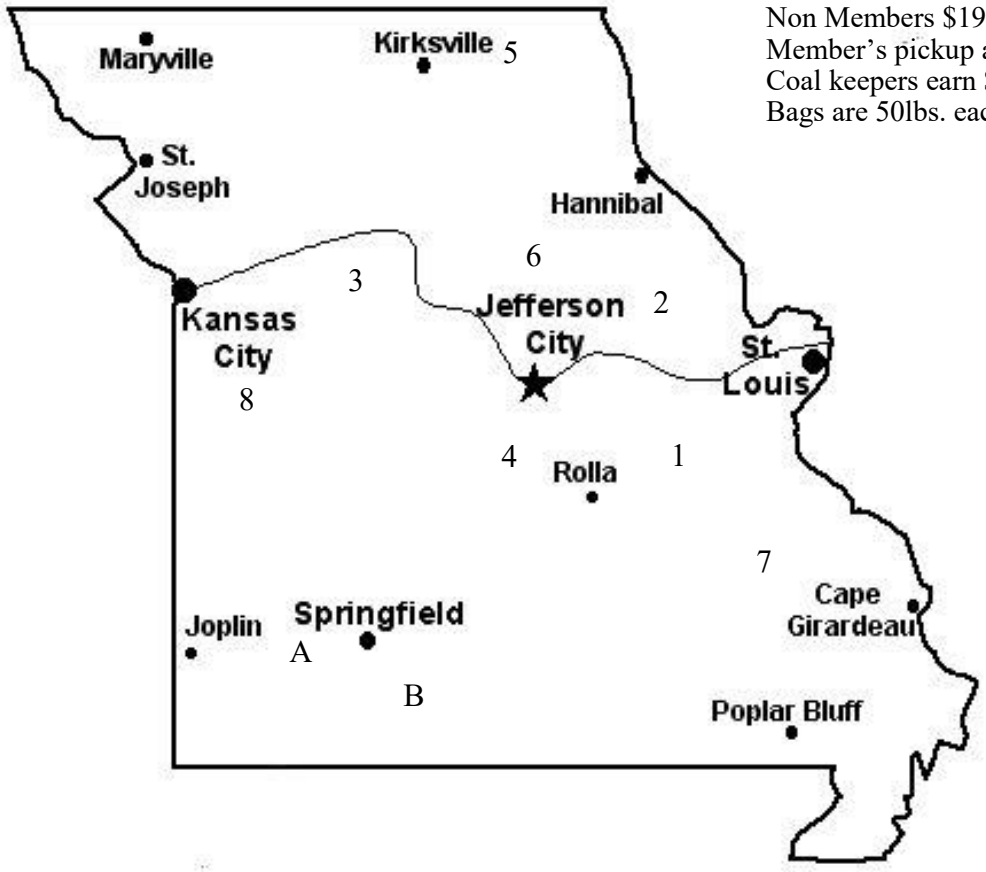
Select one of the following to complete after the educational experience:
_____ (1) Write an article for the BAM Newsletter about the workshop conducted and the skills taught;
_____ (2) Write an article describing the mentorship experience;
_____ (3) Submit diagrams and directions for making the items made during the workshop;
_____ (4) Present a demonstration at a BAM meeting.

Signed: _____Date:_____

Mail to Esther Digh, 6792 CR 424, Fulton, MO 65251

BAM Coal Stations

Price per bag:
BAM Members $14.00
Non Members $19.00
Member's pickup at Bob Alexander's - $12.00
Coal keepers earn $3.00 per bag
Bags are 50lbs. each



1. Bob Alexander (636) 586-6938
   14009 Hardin Rd.
   DeSoto, MO 63020

2. Ken Jansen (636) 295-5844
   2257 Carter Rd.
   Moscow Mills, MO 63362

3. Doug Clemons (660) 595-2257
   29377 Durango Ave.
   Malta Bend, MO 65339

4. Jerry Rehagen (573) 744-5454
   390 Bozina Valley Trail
   Freeburg, MO 65035

5. Joe Hurley (660) 379-2365
   or (660) 626-7824
   Route 1 Box 50
   Downing, MO 63536

6. Paul Lankford (573) 473-7082
   25849 Audrain County Road 820
   Mexico, MO 65265

7. Bob Maes (573) 866-3811
   Route 1 Box 106 K
   Millersville, MO 63766

8. Bryan Lillibridge (660) 638-4536
   1545 NW 300
   Urich, MO 64788

Non BAM Coal

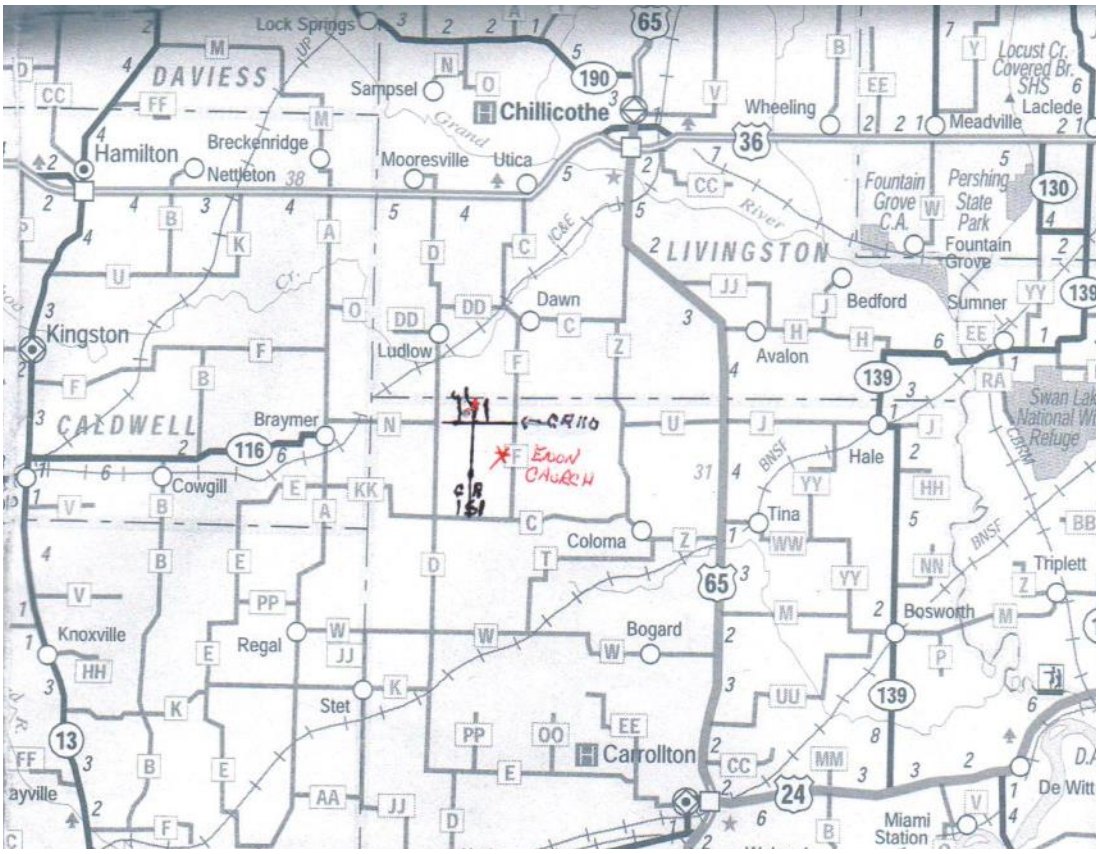
A. Tim Johnson, Springfield, MO 417-886-8032 - $.40/lb. check, $.35/lb. cash. Bring your own containers.
B. Good blacksmithing coal for sale $12 per 50# bag with bulk delivery available.
Matthias Penn Rt. 1 box 479-S Ava, Mo. 65608. (417)-543-2148.
Or e-mail tytheblacksmith@yahoo.com.

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@charter.net

Next Meeting: March 26, 2016

Don Davis 10525 CR 151, Dawn, MO 64638



Trade item: Cool or Useful items used around your shop. Food will be available.