New Jersey Blacksmiths Association
"EAGLE"

N.J.B.A.

NJBA Volume 26, Issue 3 10/21/23
.http://www.njblacksmiths.org

Upcoming Events

Nothing is currently scheduled.

Editor change

I have decided to start doing the newsletter again. I did it for many years and had to stop a few years ago for family reasons. I am hoping to get four issues out a year as we used to. So far this is the second, oh well.

NJBA future

At the present time I am acting chairman and editor. I am dropping the chairman position. It is not a lot of work, but I don't want or think I should have to do all both jobs. Bruce Freeman is acting as treasurer and membership and has been for years. So basically at this point there are two of us running the organization and neither of us are Spring chickens. Marshall has opened his shop to run numerous meets and open forges since the beginning of NJBA, and still does, so it is not fair to ask more of him either.

We need to have members step up if we want NJBA to continue. Just because others have been doing it doesn't mean that they have the jobs for life. When NJBA started there more people wanting to be involved and the work load was much lighter. A few members stepping up to help can keep NJBA here. It cannot always be expected that someone else will do it or that everything should be free. Sometimes you have to work to make thing happen. Years ago we held more meets and workshops because people were involved in making the events happen.

Being involved can be rewarding!

Past Meets

Walnford day
05/21/23

Bruce Freeman, Larry Brown and Bob Crowder met at Marshall's Farm at 9am to load the equipment and transport it to Walnford.

Bruce forged an S-hook for a chain trammel holdfast for the anvil. Larry forged the treadle. Bob demoed forging nails. Bob Bethke stopped by and watched for about an hour. Bill Ker arrived about noon, and demonstrated nails and S-hooks.
No pictures are available.

Princeton University Meet
10/07/23

Bob Crowder, and I met Marshall Bienstock at his farm around noon on Friday, 10/6/23 to help load the six forging stations for the open forge meet. Kevin Lamb, of Princeton U. showed up a little later in a van, and loading went swiftly.

The weather forecast for Saturday was not promising, but the last report I saw in the morning suggested that rain and thunderstorms wouldn't hit Princeton before 3 PM. I picked up Marshall and drove to Princeton,

NJBA Board of Directors

New Jersey Blacksmiths Newsletter
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Farmingdale, NJ 07727-9998
NJBA's Website:
http://www.njblacksmiths.org
NJBA's Facebook Page:
https://www.facebook.com/njblacksmiths/

Open Forge Meets

Anyone 18 years or older is welcome to try their hand one time at our open forge meets. NJBA members may participate any time the forge is open. (The application form is on the last page of this newsletter)
Monday Night Open Forge, Howell, NJ
NJBA Director Marshall Bienstock hosts an open forge meet every Monday evening at 7 PM, except major holidays. (Please call ahead on holidays to make sure the forge will be open.) 732-221-3015

Participation in Hands-On Events

Participation in NJBA-sponsored hands-on events is limited to adults (i.e., 18 years or older).
This rule was effected as of December 2016, when NJBA was having problems with its insurance coverage (which has since re-placed). This policy applies to workshops, open forge meets, demonstrations, etc.
This policy does not apply to open forge meets and similar events that are sponsored by youth-oriented organizations such as scouts or schools with the aid of NJBA equipment and members.

NJBA Newsletter:

njblacksmiths.org/archive/index.htm
or use the link on the NJBA web site for the current newsletter.

passing through a downpour on the way, and arriving before 10 AM.

What it all about!

Andy Kossowsky and Bob Bethke were there to help with the set-up and forges, and Princeton U. student Joseph (Joe) Roberts, who told us he's been forging for years, volunteered to do so. A number of other students also stepped up to help. We got the six canopies set up fairly quickly and proceeded to set up the rest of the apparatus.

Dr. Craig Arnold showed up and lent a hand as well, then gave a talk to the students, including required safety precautions. Once the forges were ready to go the students got their turns at forging -- just about the time it started raining, albeit not for very long.

With Joe volunteering to handle one forge and Dr. Arnold on another, Marshall, Bob, Andy and I were each able to give our attentions to the remaining four forges. I lost count of the number of students who got to try their hands at forging, but once on a forge, they were reluctant to quit. I repeatedly exhorted the bystanders to "be assertive" to get their turn.

I spotted one student sitting in a wheelchair and asked whether she wanted a turn -- which she did. She had a competent and capable air about her, so I mentored her for a while, excluding others from the forging station so the wheelchair could fit beside the forge and anvil. Since the forging station wasn't set up for use from a wheelchair, I filled in for her occasionally on actions like quenching a piece or clamping it in the vise -- pointing out to her

that, had the area been arranged differently, she could have done it all herself -- but all the real work she did herself. She seemed quite pleased with her results.

Four o'clock rolled around and we had to start encouraging the students to finish up. We started breaking down the equipment, but of course it had to start raining again then, but fortunately not hard or for very long. After most of an hour I had to announce to the last students still working that they had ten seconds to finish up -- much to their dismay. Hence we were late getting all the equipment loaded back into the van, which Kevin then drove back to Marshall's Farm, while Marshall and I car-pooled back.

Marshall apologetically begged off to some prior commitment, but I promised to *guilt* him about it later. Kevin and I unloaded the wet canopies into Marshall's shop, and then managed to unload the van and put all the equipment away properly, though I had to shine my

car's headlights into the storage container in order to see colors by which we distinguish the six forging stations.

All in all, it was a very successful open forge meet. But what with coal dust and oil from the blowers, I was rather disreputable by the time I got home. A long, hot shower felt very good, but at my age a couple doses of ibuprofen and a couple days' rest proved needed as well.

Write up by Bruce Freeman

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On-Line Cope Cutting Templates For Pipe or Tubing

By Jim Carothers

Lately I have had to saddle (cope) cut a few pieces of tubing for a fence project. This site will make templates that you can down load and print off. They saved me a lot of time in making those saddle cuts.

http://metalgeek.com/static/cope.pcgi

The intersection angle does not have to be 90^ and the intersection can also be offset from the centerline. I usually add about .05 to .07‖ the OD of the pipe to be cut to allow for the thickness of the wraparound template

Easy to Make Leaf Veining Tool

By Steve Anderson, A MABA member

Using an ⅛ inch diameter fuller, distinct straight or curved veins can be easily made.

Make a tight 180° bend in the center of a 32 inch piece of ½ inch round rod.

Bend 1 ¼ inch, 90° in a vise.

Make a second bend in the vise allowing enough length to clear your hardy hole by at least ½ inch. Bend the ends as far down as your vise allows.

On the anvil, hammer the short end down to the long end.
Now forge the doubled over end so it fits nicely into your hardy hole.
For anvils with hardy holes larger than one inch, use a piece of angle iron of approximate size as a shim.

Place it in the vise, bend the two rods down, and hammer to 90°. While hot, place it in the hardy hole and make sure it seats level with the anvil's face.
By making a slight taper between the rods, larger as well as tapering veins can be made, using 1/8, 3/16, 1/4, and 5/16 inch fullers.

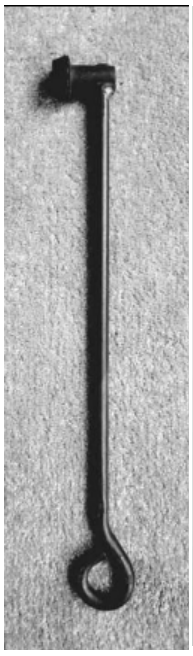
Fullers should be slightly curved to allow "walking" and corners of edge rounded to blend in.

Also refer to Bill Morrison's unique keyhole design that combines both a vein tool and a leaf cup on page 19 of the November-December 2018 issue of the Upsetter. The January-February 2019 cover picture is a sample of Bill Morrison's excellent forged leaves.

It's a Better Fit By Glenn Horr-A little tip for small rods in a large stand tubes. Allows a three point contact. Use what ever angle fits your stand or make an angle. Cut the angle and bend tabs so it will stay in the tube. See photos below.
FYI: If you are using square tubing, weld your threaded nut on the corner so you get the same three point contact. I find it holds better.

It's All About How You look at It! By Don Pfaff

If you have an extra chuck key laying around the shop, think of it as a floral punch and use it accordingly. Don Pfaff changed one of his into this handy tool with a daisy of an impact! Add a handle and cut off the indica-tor pin to about 1/32" or not quite flush. The key is made from a high carbon steel which will likely mushroom. Do not use your favor-ite hammer to avoid "dings" from the chuck key material. You are ready to use this bo-tanical punch to add a vine or floral display detail in your work. Who knew!! It all the way Don sees the world through his safety glasses!



Twisting Fixture by Jim Carothers

My wife wanted a dozen simple wall hooks, each to have a blacksmith twist. I've had this twisting fix-ture a long time, but I don't think I have shared it with the community. I credit James Wolfe, Jasper, Alabama area for showing this to me many years ago.
Shop made, length adjustable, twisting fixture for making right hand – left hand back to back twists. Like most all shop made tools, this is made from available scrap.




If you are making one, be sure to allow enough space for the wrench that you will use for the actual twisting. The end plates here a 3/8" x 3 flat stock; were I to do this again, I'd likely use 1/2" for a bet-ter grip and would make it 4" wide. ..Slots are for 1/4 , 5/16 , 3/8 , & 1/2" bar


New Jersey Blacksmiths Newsletter

Multi-Position Bending Fork by Jim Carothers

For quite some time I've been noticing that many farriers are also really good blacksmiths and that some of their tools are special or different for their work. In particular, some of the farriers' anvils have two really handy bending pins (like a bending fork on its side) sticking out from a side of the anvil.

At the 2005 Saltfork Craftsmen ABA Annual Conference (http://www.saltforkcraftsmen.org), I also noticed that professional demonstrator Peter Happny repeatedly used a heavy bending fork mounted in the anvil hardie hole. However, Peter's bending tool was not pinned solidly to the borrowed demo anvil; each time he hit or pulled on a piece of metal the bending fork would move.

Photo 01: From these observations came the idea for the Multi-Fork you see presented here in these notes. This is simply a combina-tion of the farriers' horizontal bending pins and traditional anvil mount-ed vertical bending fork. I turned the legs of the vertical fork 45 de-grees to the anvil center line; it seems to be handy for me in that orien-tation. My cut-off hardie is also rotated the same way as this bender.

As old as the blacksmith's craft is and as new as I am at this craft, I expect that I am not the first person to think of making a bending tool like this. The pins are spring steel; the inside spacing between the legs of both forks is 1". The pins are not heat treated – only annealed after forging to shape. The parts were preheated before welding.

Notice also in Photo 01 the tapered pin lying on the anvil. This was made from 1/2 of a horseshoe (my favorite piece of scrap steel).

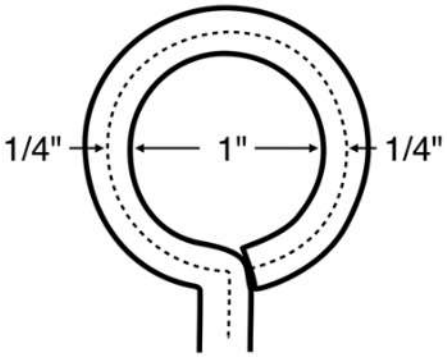
Photo 02 shows the Multi-Fork firmly pinned to the anvil. With only a light hammer tap on the tapered pin the tool is locked in the hardie hole. You can turn the anvil stand over before moving the tool.

Photo 03 shows how the pin is used with a hardie stem or peg made from U-bending basic flat bar stock. For my tools that I want firmly mounted to the anvil (anvil cone for example), I have been making the hardie stems in this manner. A second benefit is that the tools are lighter than if the hardie stem was solid bar.

Photo 04 shows the end of the U-shaped hardie stem and the tapered pin as seen from the underneath side of the anvil heel. I really like this old Trenton anvil, but the factory did not do any finishing work to the under sides of the heel or the horn.

Campfire Cooking Through the "Eye's" of a Blacksmith

Cody Sadberry, Lakeside



First, we need to calculate how much material (length) is required to make the eye. This is accomplished with the following formula:

Circumference equals Diameter time Pi $C = D \times \pi$

For this example we'll use 1/2" round stock. Let's say we want an eye with a 1" inside diameter.

Taking a centerline measurement of our 1/2" stock shows that we have 1/4" on either side of the inside diameter. That gives us 1/4" + 1" + 1/4" or 1 1/2".

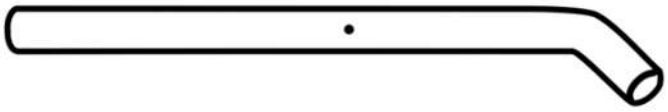
So, using our formula $C = D \times \pi$, we can insert our measurements. $1.5 \times 3.14 = 4.71$. For our purposes here, 4.75" is close enough. So for a 1" inside diameter eye, on a piece of 1/2" round bar, we need 4 3/4" of length for the eye.

Knowing how to calculate this has great value if you need to make multiple bars with eyes on both ends and they have to be the same length.

Now let's forge an eye:

Step 1: Measure 4 3/4" from one end of the bar and mark it. Transfer that pencil mark onto the bar with a center punch, or "knick" it using a sharp edge on your anvil with a hammer blow.

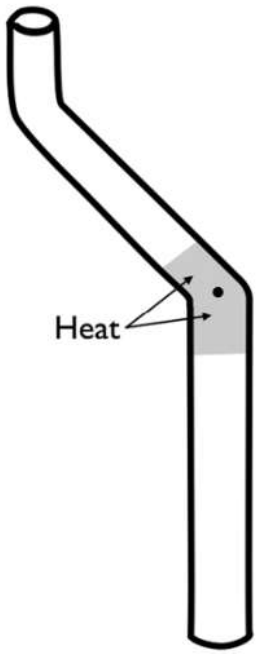
Step 2: Take a short heat on the end of the bar and knock it over on a soft edge of the anvil. Bend about 1/2" to 3/4" to somewhere around 45°.



Step 3: Take a heat at the mark you made for the length when you measured for the eye. Turn the bent over tip "up" and bend to a little more than 45°. Bend it a little farther than you think you need.

Tip - Quench on either side of the heated mark to localize heat for the bend.

Step 4: Take a heat on the whole length for the eye and start "turning" the eye on the horn of the anvil using "glancing" blows to minimize hammer marks as much as possible. Remember to lower your tong hand as the eye comes around. As you start to close it up you can move to the anvil face and begin to "roll" it up much like a scroll. Work back and forth between the two to move the metal where you need it to go. Take it slow. Don't go too far too fast! Utilize heat to get it to bend where you want it to bend. Remember to sight down your work as you go and keep things straight. Ideally we want a round eye, not a teardrop shape. A perfectly round eye is very difficult to accomplish. Do your best!



Now that you have learned how to turn a proper eye, let's put that very versatile skill to use!

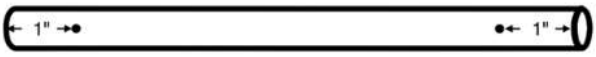
Project #1: Modular Cooking Grate
Cody Sadberry, Lakeside

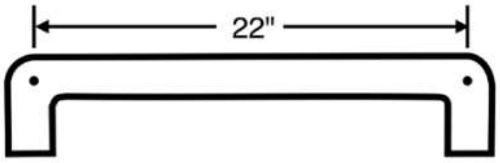
Material: 20 1/2 feet of 3/8" round bar cut into 2 - 24" sections; 10 - 20" sections

Steps:

Make the two crossbars.

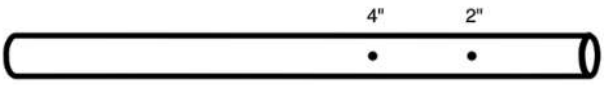
1. Take both 24" sections and mark 1" from either end. Transfer your pencil marks with a center punch or put a 'knick' with a hammer blow on a sharp edge of the anvil.





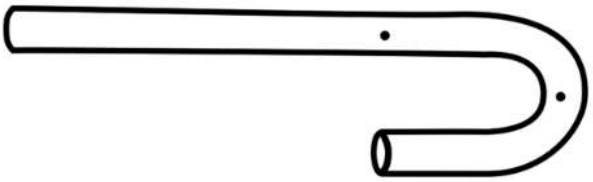
2. Take a short heat at each mark and bend to 90°. (quench on either side of the mark to localize heat).

Make the 4 stakes



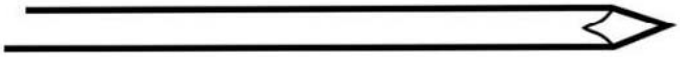
3. Mark 4 of the 20" sections at 2" and 4" on one end of the bar.

4. Heat the first 2" and bend a hook "U" shape. The end of the hook should line up across from the 4" mark.



5. Take a good heat at the 4" mark and bend in the opposite direction. Fold it tight. (quench on either side to localize heat). Re-heat if needed to get it completely folded. Make all four of these.

6. Forge a short taper on the ends of the bars.



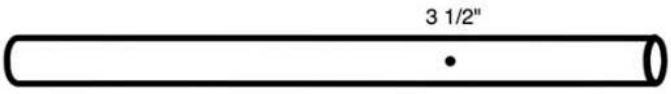
Make the 6 eyes that make up the grates

7. Calculate your measurements for a 3/4" eye using 3/8" round bar.

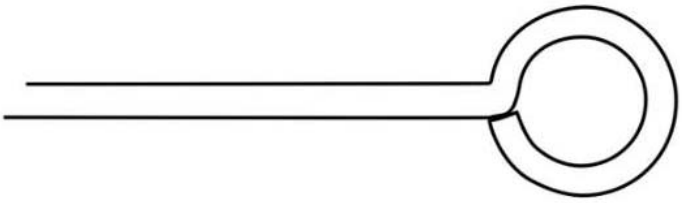
$C = D \times \pi$ $0.375 + 0.75 = 1.125\ D$

Therefore $1.125 \times 3.14 = 3.5$. This is the length we need for the eyes.

8. Take the last 6 20" sections and mark 3.5" from one end of each.

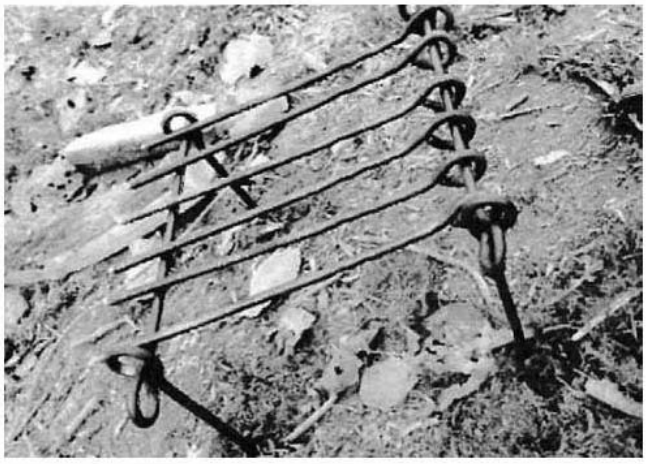


9. Using the skills you have just learned in the prior lesson, turn an eye with a 3/4" inside diameter on all 6 sections.



10. Assemble grill grate. For closer spacing of the grill grates, more can be added.

Time to build a fire!



This 3-page article re-printed from the March/April 2021 edition of California Blacksmith the newsletter of the California Blacksmith Association

Storyboard –Kitchen knives

By Geoff Feder of Feder Knives

Heart Hook With a Ball

By Steve Alling, a MABA member

The Achilles heel of this project is the problem of the two different sizes where the ball and the hook meet. If you're not careful it will crack at that joint. So, this is the process I followed to try and stress that joint the least.

1) Mark the stock out.

2) Put in the off set to start the ball end. Don't make this neck too thin, when the ball is being formed it will naturally thin.

3) Split the heart. Open up the sides and file any rag off. After you have cleaned up the cut, bring the two legs back together so you have a good place to hold when it comes time to form the ball. I notice a lot of people start with the file 90 degrees to the surface when they file these sharp edges. This makes the sharp edge catch in between the teeth of the file. So start on any sharp edge like this or corners by lowering the file closer to parallel to the surface, and as you push the file forward raise your hand. That way you won't end up with that chattery beginning.

4) Start the ball, this is where a lot of smiths get into trouble. They end up flexing this joint too much by not having the part under the hammer directly over the anvil. This is basically squishing the metal into a ball. The cold shuts won't affect the finish ball. This is where that old adage that the hammer hand is the brawn and the tong hand is the brains. Because you'll be raising and lowering the tong hand and also turning it side to side.

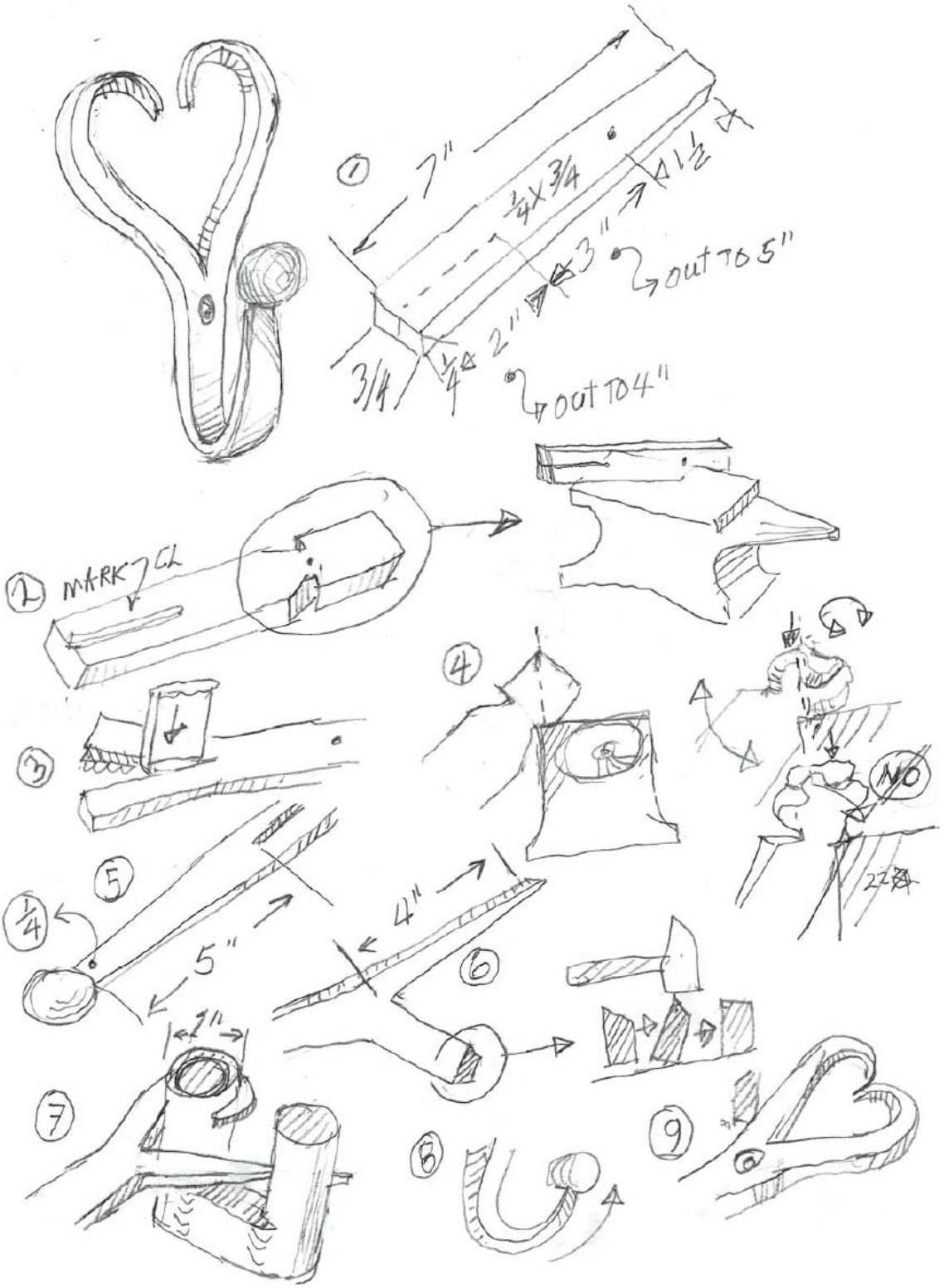
5) Draw out the hook. Here you want to be careful you don't stress the joint between the forging and the ball.

6) Draw out the sides of the heart. You can hold the work with a pair of bolt tongs, that way you won't put stress on the ball joint. These legs will have a angle side left from splitting. When you start forging you want to angle the sharp end up so you can square up the work, then you don't end up with a trapezoid.

7) I added a 1 inch OD (3/4 ID) piece of pipe to one leg of my bending fork which made a convenient size for the heart. When the two legs have been shaped, if they don't meet in the middle they can be tapped together.

8) Bend the hook for the ball.

9) Drill and countersink for hardware.


1
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Crane's Head

By Otto Bacon, A MABA member

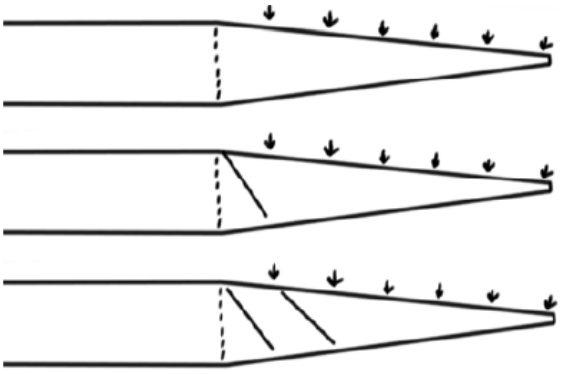
A couple decades ago I visited a historic site in England. The blacksmith was making fire pokers with this crane's head as the handle. He said it was an ancient English pattern and I was welcome to copy it. Over the years, I have used it in several variations on a number of projects.

Start out with 1/2" square rod. Make a chisel mark three inches from the end, and one 5 inches from the end.

Starting at the three inch mark, draw a taper almost to a point. Slightly chamfer the corners of the tapered section with light hammer taps. The length of this taper determines the length of the cranes feathered plume.

Taper with chamfered corners-

Now you need to twist the tapered plume. If you simply heat it up and try to twist by the small end, you will end up with a twist on the first little bit only. You have to do it in stages. Heat the taper to bright red and clamp the bar in your vise right at the base of the taper. Using tongs, grasp the taper about 3/4" to 1" from the vise and twist to your satisfaction. Now do another heat and twist the next 3/4" to 1". As the taper gets smaller, you must twist a shorter section. Make sure the twist on each section matches the previous. There is no "do over" on this.



Twist the taper in several sections as shown by arrows.

At the 5" mark, completely fold the bar back on itself. Use a wooden mallet to avoid damaging the corners of your twist. (I realize there is a regular hammer in the picture, but I really did use the wooden mallet).

Draw the folded part out to form the beak.

Now add the nostrils with a pointed punch.

Using a wooden mallet, form the crane's head over the horn of your anvil. (now you can see my well used and abused wooden mallet).

Add the eyes with an eye punch. Be careful to get them lined up from one side to the other. You think it won't show, but it will.

Shape the neck to suit and polish with a wire brush.

From MABA Upsetter 1-2/23

Shop Tip Making a Simple Bender
by Bob Ehrenberger

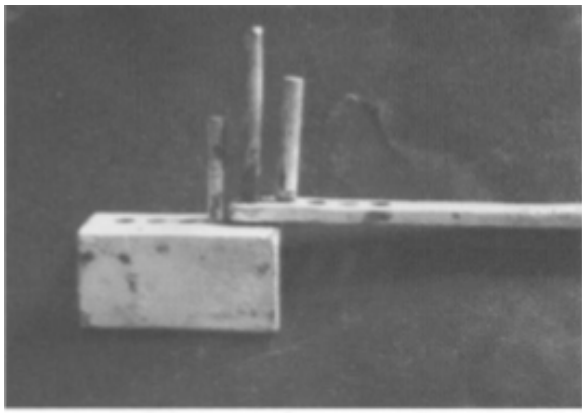
A couple years ago, I had a friend lose the handle to her violin case. She had sent it off, with all the rest of the hardware, to get it brass plated, and the plating company lost it. They needed a replacement and it had to match the original.

Bender parts, handle, base, three pins

It needed to be made out of 1/8" round stock with four sharp bends. Pretty simple, right, wrong, when I bent it in the Hossfeld bender the radius on the bends was way too big. When I tied to clamp it in the vice and bend it over with a hammer, there were marks on the piece from both the vice and the hammer.

What I needed was a miniature bender that would make tight bends in light stock and not leave marks. The solution was so simple. I drilled several 5/16" holes in a piece of 1-1/2" x 1-1/2" x 1/4" angle iron. I then drilled a series of holes in the end of a 5/1x63/4"" flat bar. I rounded off the end of the bar to reduce the Bender parts, handle, base, three pins clearance required. I cut 3 short pieces of 5/16" round stock and I was done. The first set of holes were too far apart for the 1/8" stock, so I ended up drilling the opposite end of the bar, with the first hole real close to the pivot hole. The bender worked nicely and I was able to make the violin case handle in no time. Since then, I have used my little bender on a regular basis for all kinds of bending operations. It can handle up to 1/4" cold and 5/16" hot.

I have discovered that I really only needed one position for the pins, since by the time you get to where you needed to move the pins for clearance, the bender was not heavy enough for the job any way. When I tried to skip a hole and put the pin in the next one, it was too far out. So I use one end of the bar for 1/8" and 3/16" and the other end for 1/4" and 5/16" stock. You could probably scale this up using a larger angle iron and a larger bar. You could make this bender in 15 minutes, wouldn't be as good as a Hossfeld, but it would from scrap lying around your shop be portable and really cheap.
Reprinted from Bamsite.org



You could make this bender in 15 minutes, from scrap lying around your shop.

New Jersey Blacksmith Association
90 William Avenue
Staten Island, New York, 10308
Attn: Larry Brown, Editor

NJBA Membership Renewal, Ballot, and Volunteers' List

(Please check your mailing label for the year your membership expires. If "2018"or less, your dues are due immediately, and must be paid for your vote to count. If "2019"or greater, you may vote without making any additional payment.)
Mail completed renewal form and ballot, along with check for dues, to:
NJBA Election, P.O. Box 224, Farmingdale, NJ 07727-9998
Name _____
Address_____
City, State, Zip _____
Phone Numbers: Day _____ Eve. Cell
Email address _____
My check is enclosed: [ ] $20 (regular membership dues), or [ ] $40 (business membership dues)

Ballot for Board member election

The following board members are up for reelection, please print and return this page if you wish to choose individual directors or send their names in as an email. If you want to re-elect all of them please check all and return the page or email "All" to; brownln@icloud.com. Mail to; NJBA, P.O. Box 224, Farmingdale, NJ 07727-9998

Nominee	Nominee	Nominee
[ ] All	[ ] Eric Cuper	[ ] Bruce Ringier
[ ] Billy Barrett	[ ] Dave Ennis	[ ] Thomas Santomauro
[ ] Marshall Bienstock	[ ] Bruce Freeman	[ ] Ben Suhaka
[ ] Bob Bozzay	[ ] Daniel Lapidow	[ ] Dan Yale
[ ] Larry Brown	[ ] Mark Morrow	

NJBA Volunteers List

"Please put my name on the list of potential volunteers:" (Circle all that apply.)
Availability: Saturdays Sundays Weekdays
Interests: Demonstrating Coaching Novices Assisting at Workshops
Experience: Novice Intermediate Experienced Professional

Please fill this out and send it in!
We need your input!

NJBA Board of Directors

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Dan Yale
732-372-8076

New Jersey Blacksmiths Newsletter

Official NJBA Address
NJBA, P.O. Box 224
Farmingdale, NJ 07727-9998
NJBA's Website:
http://www.njblacksmiths.org
NJBA's Facebook Page:
https://www.facebook.com/njblacksmiths/

Open Forge Meets

Anyone 18 years or older is welcome to try their hand one time at our open forge meets. NJBA members may participate any time the forge is open. (The application form is on the last page of this newsletter)
Monday Night Open Forge, Howell, NJ
NJBA Director Marshall Bienstock hosts an open forge meet every Monday evening at 7 PM, except major holidays. (Please call ahead on holidays to make sure the forge will be open.) 732-221-3015

Participation in Hands-On Events

Participation in NJBA-sponsored hands-on events is limited to adults (i.e., 18 years or older).
This rule was effected as of December 2016, when NJBA was having problems with its insurance coverage (which has since re-placed). This policy applies to workshops, open forge meets, demonstrations, etc.
This policy does not apply to open forge meets and similar events that are sponsored by youth-oriented organizations such as scouts or schools with the aid of NJBA equipment and members.

NJBA Newsletter:

njblacksmiths.org/archive/index.htm
or use the link on the NJBA web site for the current newsletter.

passing through a downpour on the way, and arriving before 10 AM.

What it all about!

Andy Kossowsky and Bob Bethke were there to help with the set-up and forges, and Princeton U. student Joseph (Joe) Roberts, who told us he's been forging for years, volunteered to do so. A number of other students also stepped up to help. We got the six canopies set up fairly quickly and proceeded to set up the rest of the apparatus.

Dr. Craig Arnold showed up and lent a hand as well, then gave a talk to the students, including required safety precautions. Once the forges were ready to go the students got their turns at forging -- just about the time it started raining, albeit not for very long.

With Joe volunteering to handle one forge and Dr. Arnold on another, Marshall, Bob, Andy and I were each able to give our attentions to the remaining four forges. I lost count of the number of students who got to try their hands at forging, but once on a forge, they were reluctant to quit. I repeatedly exhorted the bystanders to "be assertive" to get their turn.

I spotted one student sitting in a wheelchair and asked whether she wanted a turn -- which she did. She had a competent and capable air about her, so I mentored her for a while, excluding others from the forging station so the wheelchair could fit beside the forge and anvil. Since the forging station wasn't set up for use from a wheelchair, I filled in for her occasionally on actions like quenching a piece or clamping it in the vise -- pointing out to her

that, had the area been arranged differently, she could have done it all herself -- but all the real work she did herself. She seemed quite pleased with her results.

Four o'clock rolled around and we had to start encouraging the students to finish up. We started breaking down the equipment, but of course it had to start raining again then, but fortunately not hard or for very long. After most of an hour I had to announce to the last students still working that they had ten seconds to finish up -- much to their dismay. Hence we were late getting all the equipment loaded back into the van, which Kevin then drove back to Marshall's Farm, while Marshall and I car-pooled back.

Marshall apologetically begged off to some prior commitment, but I promised to *guilt* him about it later. Kevin and I unloaded the wet canopies into Marshall's shop, and then managed to unload the van and put all the equipment away properly, though I had to shine my

car's headlights into the storage container in order to see colors by which we distinguish the six forging stations.

All in all, it was a very successful open forge meet. But what with coal dust and oil from the blowers, I was rather disreputable by the time I got home. A long, hot shower felt very good, but at my age a couple doses of ibuprofen and a couple days' rest proved needed as well.

Write up by Bruce Freeman

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On-Line Cope Cutting Templates For Pipe or Tubing

By Jim Carothers

Lately I have had to saddle (cope) cut a few pieces of tubing for a fence project. This site will make templates that you can down load and print off. They saved me a lot of time in making those saddle cuts.

http://metalgeek.com/static/cope.pcgi

The intersection angle does not have to be 90^ and the intersection can also be offset from the centerline. I usually add about .05 to .07‖ the OD of the pipe to be cut to allow for the thickness of the wraparound template

Easy to Make Leaf Veining Tool

By Steve Anderson, A MABA member

Using an ⅛ inch diameter fuller, distinct straight or curved veins can be easily made.

Make a tight 180° bend in the center of a 32 inch piece of ½ inch round rod.

Bend 1 ¼ inch, 90° in a vise.

Make a second bend in the vise allowing enough length to clear your hardy hole by at least ½ inch. Bend the ends as far down as your vise allows.

On the anvil, hammer the short end down to the long end.
Now forge the doubled over end so it fits nicely into your hardy hole.
For anvils with hardy holes larger than one inch, use a piece of angle iron of approximate size as a shim.

Place it in the vise, bend the two rods down, and hammer to 90°. While hot, place it in the hardy hole and make sure it seats level with the anvil's face.
By making a slight taper between the rods, larger as well as tapering veins can be made, using 1/8, 3/16, 1/4, and 5/16 inch fullers.

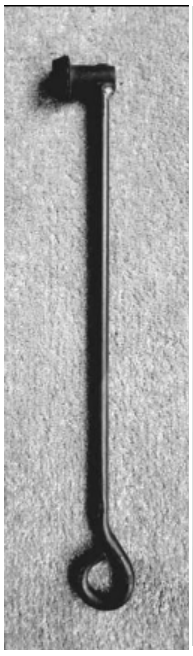
Fullers should be slightly curved to allow "walking" and corners of edge rounded to blend in.

Also refer to Bill Morrison's unique keyhole design that combines both a vein tool and a leaf cup on page 19 of the November-December 2018 issue of the Upsetter. The January-February 2019 cover picture is a sample of Bill Morrison's excellent forged leaves.

It's a Better Fit By Glenn Horr-A little tip for small rods in a large stand tubes. Allows a three point contact. Use what ever angle fits your stand or make an angle. Cut the angle and bend tabs so it will stay in the tube. See photos below.
FYI: If you are using square tubing, weld your threaded nut on the corner so you get the same three point contact. I find it holds better.

It's All About How You look at It! By Don Pfaff

If you have an extra chuck key laying around the shop, think of it as a floral punch and use it accordingly. Don Pfaff changed one of his into this handy tool with a daisy of an impact! Add a handle and cut off the indica-tor pin to about 1/32" or not quite flush. The key is made from a high carbon steel which will likely mushroom. Do not use your favor-ite hammer to avoid "dings" from the chuck key material. You are ready to use this bo-tanical punch to add a vine or floral display detail in your work. Who knew!! It all the way Don sees the world through his safety glasses!



Twisting Fixture by Jim Carothers

My wife wanted a dozen simple wall hooks, each to have a blacksmith twist. I've had this twisting fix-ture a long time, but I don't think I have shared it with the community. I credit James Wolfe, Jasper, Alabama area for showing this to me many years ago.
Shop made, length adjustable, twisting fixture for making right hand – left hand back to back twists. Like most all shop made tools, this is made from available scrap.




If you are making one, be sure to allow enough space for the wrench that you will use for the actual twisting. The end plates here a 3/8" x 3 flat stock; were I to do this again, I'd likely use 1/2" for a bet-ter grip and would make it 4" wide. ..Slots are for 1/4 , 5/16 , 3/8 , & 1/2" bar


New Jersey Blacksmiths Newsletter

Multi-Position Bending Fork by Jim Carothers

For quite some time I've been noticing that many farriers are also really good blacksmiths and that some of their tools are special or different for their work. In particular, some of the farriers' anvils have two really handy bending pins (like a bending fork on its side) sticking out from a side of the anvil.

At the 2005 Saltfork Craftsmen ABA Annual Conference (http://www.saltforkcraftsmen.org), I also noticed that professional demonstrator Peter Happny repeatedly used a heavy bending fork mounted in the anvil hardie hole. However, Peter's bending tool was not pinned solidly to the borrowed demo anvil; each time he hit or pulled on a piece of metal the bending fork would move.

Photo 01: From these observations came the idea for the Multi-Fork you see presented here in these notes. This is simply a combina-tion of the farriers' horizontal bending pins and traditional anvil mount-ed vertical bending fork. I turned the legs of the vertical fork 45 de-grees to the anvil center line; it seems to be handy for me in that orien-tation. My cut-off hardie is also rotated the same way as this bender.

As old as the blacksmith's craft is and as new as I am at this craft, I expect that I am not the first person to think of making a bending tool like this. The pins are spring steel; the inside spacing between the legs of both forks is 1". The pins are not heat treated – only annealed after forging to shape. The parts were preheated before welding.

Notice also in Photo 01 the tapered pin lying on the anvil. This was made from 1/2 of a horseshoe (my favorite piece of scrap steel).

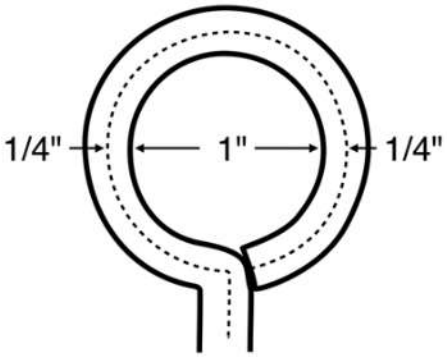
Photo 02 shows the Multi-Fork firmly pinned to the anvil. With only a light hammer tap on the tapered pin the tool is locked in the hardie hole. You can turn the anvil stand over before moving the tool.

Photo 03 shows how the pin is used with a hardie stem or peg made from U-bending basic flat bar stock. For my tools that I want firmly mounted to the anvil (anvil cone for example), I have been making the hardie stems in this manner. A second benefit is that the tools are lighter than if the hardie stem was solid bar.

Photo 04 shows the end of the U-shaped hardie stem and the tapered pin as seen from the underneath side of the anvil heel. I really like this old Trenton anvil, but the factory did not do any finishing work to the under sides of the heel or the horn.

Campfire Cooking Through the "Eye's" of a Blacksmith

Cody Sadberry, Lakeside



First, we need to calculate how much material (length) is required to make the eye. This is accomplished with the following formula:

Circumference equals Diameter time Pi $C = D \times \pi$

For this example we'll use 1/2" round stock. Let's say we want an eye with a 1" inside diameter.

Taking a centerline measurement of our 1/2" stock shows that we have 1/4" on either side of the inside diameter. That gives us 1/4" + 1" + 1/4" or 1 1/2".

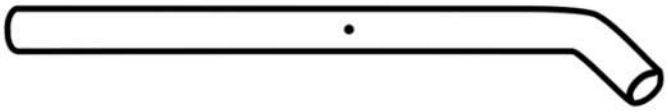
So, using our formula $C = D \times \pi$, we can insert our measurements. $1.5 \times 3.14 = 4.71$. For our purposes here, 4.75" is close enough. So for a 1" inside diameter eye, on a piece of 1/2" round bar, we need 4 3/4" of length for the eye.

Knowing how to calculate this has great value if you need to make multiple bars with eyes on both ends and they have to be the same length.

Now let's forge an eye:

Step 1: Measure 4 3/4" from one end of the bar and mark it. Transfer that pencil mark onto the bar with a center punch, or "knick" it using a sharp edge on your anvil with a hammer blow.

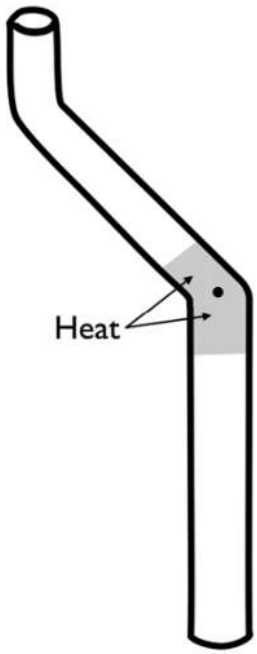
Step 2: Take a short heat on the end of the bar and knock it over on a soft edge of the anvil. Bend about 1/2" to 3/4" to somewhere around 45°.



Step 3: Take a heat at the mark you made for the length when you measured for the eye. Turn the bent over tip "up" and bend to a little more than 45°. Bend it a little farther than you think you need.

Tip - Quench on either side of the heated mark to localize heat for the bend.

Step 4: Take a heat on the whole length for the eye and start "turning" the eye on the horn of the anvil using "glancing" blows to minimize hammer marks as much as possible. Remember to lower your tong hand as the eye comes around. As you start to close it up you can move to the anvil face and begin to "roll" it up much like a scroll. Work back and forth between the two to move the metal where you need it to go. Take it slow. Don't go too far too fast! Utilize heat to get it to bend where you want it to bend. Remember to sight down your work as you go and keep things straight. Ideally we want a round eye, not a teardrop shape. A perfectly round eye is very difficult to accomplish. Do your best!



Now that you have learned how to turn a proper eye, let's put that very versatile skill to use!

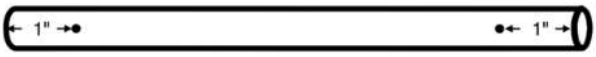
Project #1: Modular Cooking Grate
Cody Sadberry, Lakeside

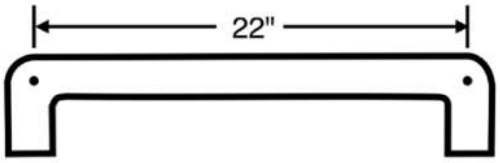
Material: 20 1/2 feet of 3/8" round bar cut into 2 - 24" sections; 10 - 20" sections

Steps:

Make the two crossbars.

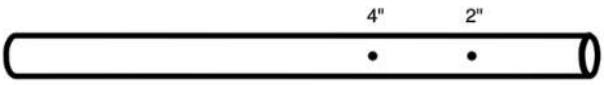
1. Take both 24" sections and mark 1" from either end. Transfer your pencil marks with a center punch or put a 'knick' with a hammer blow on a sharp edge of the anvil.





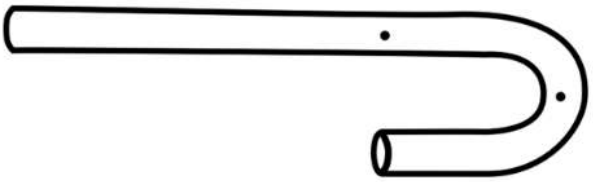
2. Take a short heat at each mark and bend to 90°. (quench on either side of the mark to localize heat).

Make the 4 stakes



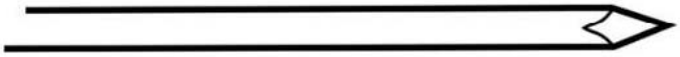
3. Mark 4 of the 20" sections at 2" and 4" on one end of the bar.

4. Heat the first 2" and bend a hook "U" shape. The end of the hook should line up across from the 4" mark.



5. Take a good heat at the 4" mark and bend in the opposite direction. Fold it tight. (quench on either side to localize heat). Re-heat if needed to get it completely folded. Make all four of these.

6. Forge a short taper on the ends of the bars.



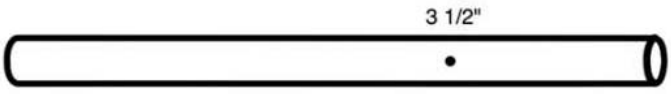
Make the 6 eyes that make up the grates

7. Calculate your measurements for a 3/4" eye using 3/8" round bar.

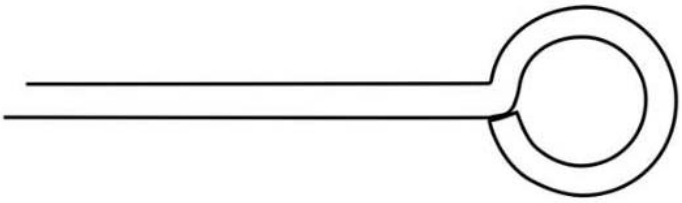
$C = D \times \pi$ $0.375 + 0.75 = 1.125\ D$

Therefore $1.125 \times 3.14 = 3.5$. This is the length we need for the eyes.

8. Take the last 6 20" sections and mark 3.5" from one end of each.

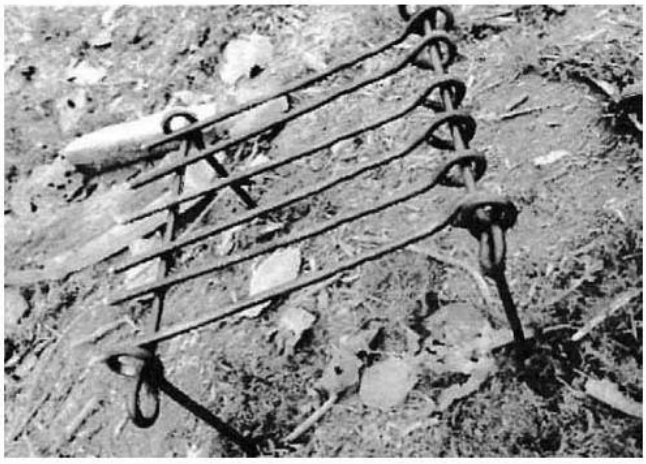


9. Using the skills you have just learned in the prior lesson, turn an eye with a 3/4" inside diameter on all 6 sections.



10. Assemble grill grate. For closer spacing of the grill grates, more can be added.

Time to build a fire!



This 3-page article re-printed from the March/April 2021 edition of California Blacksmith the newsletter of the California Blacksmith Association

Storyboard –Kitchen knives

By Geoff Feder of Feder Knives

Heart Hook With a Ball

By Steve Alling, a MABA member

The Achilles heel of this project is the problem of the two different sizes where the ball and the hook meet. If you're not careful it will crack at that joint. So, this is the process I followed to try and stress that joint the least.

1) Mark the stock out.

2) Put in the off set to start the ball end. Don't make this neck too thin, when the ball is being formed it will naturally thin.

3) Split the heart. Open up the sides and file any rag off. After you have cleaned up the cut, bring the two legs back together so you have a good place to hold when it comes time to form the ball. I notice a lot of people start with the file 90 degrees to the surface when they file these sharp edges. This makes the sharp edge catch in between the teeth of the file. So start on any sharp edge like this or corners by lowering the file closer to parallel to the surface, and as you push the file forward raise your hand. That way you won't end up with that chattery beginning.

4) Start the ball, this is where a lot of smiths get into trouble. They end up flexing this joint too much by not having the part under the hammer directly over the anvil. This is basically squishing the metal into a ball. The cold shuts won't affect the finish ball. This is where that old adage that the hammer hand is the brawn and the tong hand is the brains. Because you'll be raising and lowering the tong hand and also turning it side to side.

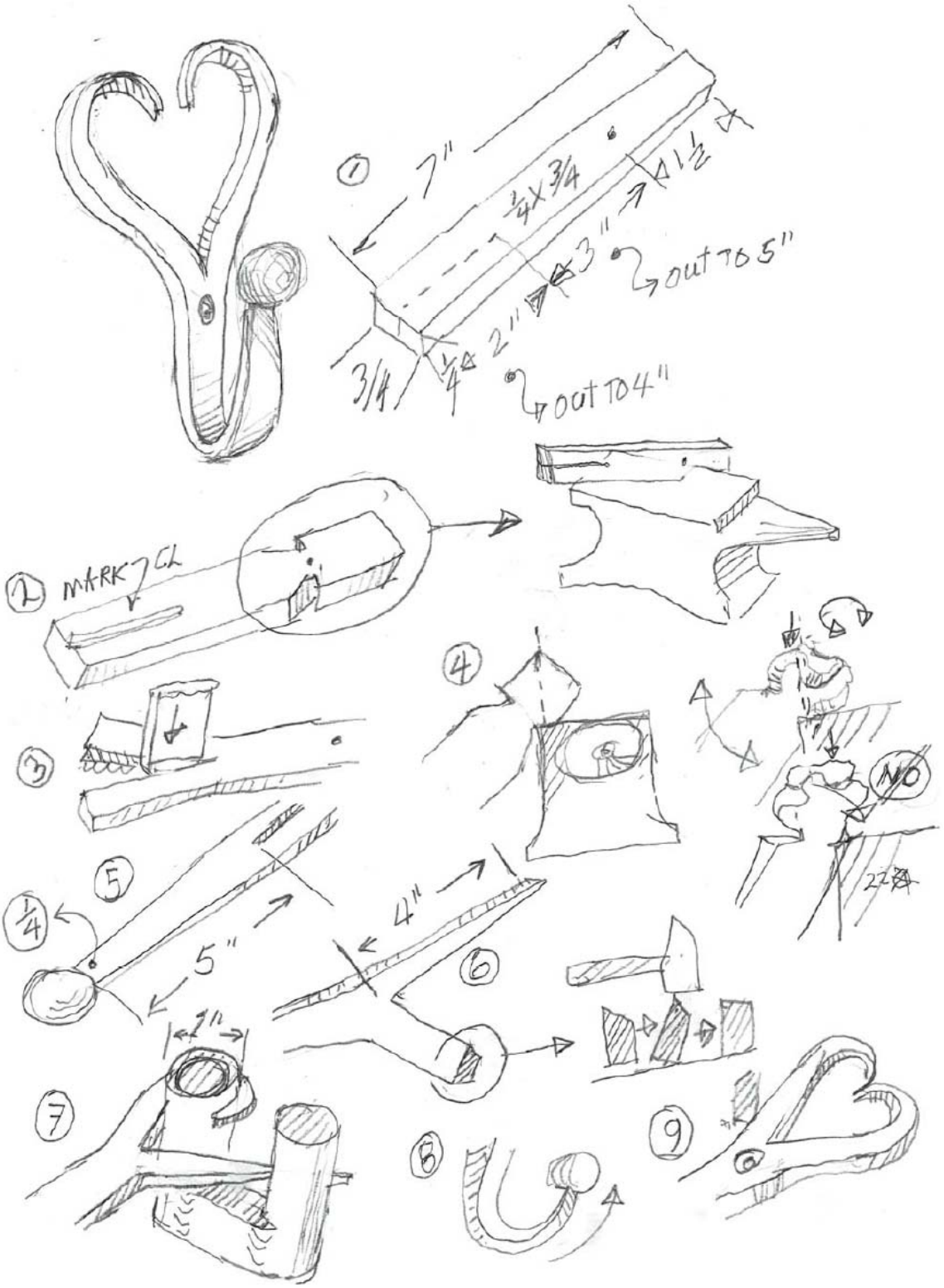
5) Draw out the hook. Here you want to be careful you don't stress the joint between the forging and the ball.

6) Draw out the sides of the heart. You can hold the work with a pair of bolt tongs, that way you won't put stress on the ball joint. These legs will have a angle side left from splitting. When you start forging you want to angle the sharp end up so you can square up the work, then you don't end up with a trapezoid.

7) I added a 1 inch OD (3/4 ID) piece of pipe to one leg of my bending fork which made a convenient size for the heart. When the two legs have been shaped, if they don't meet in the middle they can be tapped together.

8) Bend the hook for the ball.

9) Drill and countersink for hardware.


1
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Crane's Head

By Otto Bacon, A MABA member

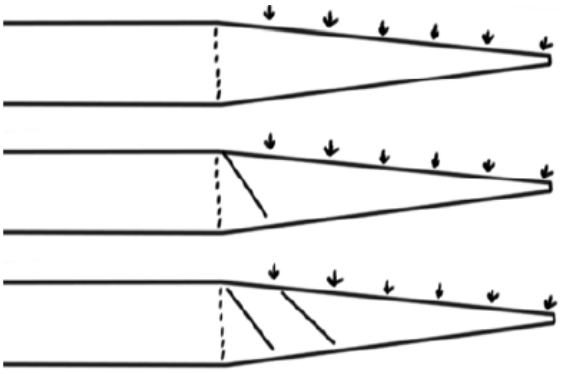
A couple decades ago I visited a historic site in England. The blacksmith was making fire pokers with this crane's head as the handle. He said it was an ancient English pattern and I was welcome to copy it. Over the years, I have used it in several variations on a number of projects.

Start out with 1/2" square rod. Make a chisel mark three inches from the end, and one 5 inches from the end.

Starting at the three inch mark, draw a taper almost to a point. Slightly chamfer the corners of the tapered section with light hammer taps. The length of this taper determines the length of the cranes feathered plume.

Taper with chamfered corners-

Now you need to twist the tapered plume. If you simply heat it up and try to twist by the small end, you will end up with a twist on the first little bit only. You have to do it in stages. Heat the taper to bright red and clamp the bar in your vise right at the base of the taper. Using tongs, grasp the taper about 3/4" to 1" from the vise and twist to your satisfaction. Now do another heat and twist the next 3/4" to 1". As the taper gets smaller, you must twist a shorter section. Make sure the twist on each section matches the previous. There is no "do over" on this.



Twist the taper in several sections as shown by arrows.

At the 5" mark, completely fold the bar back on itself. Use a wooden mallet to avoid damaging the corners of your twist. (I realize there is a regular hammer in the picture, but I really did use the wooden mallet).

Draw the folded part out to form the beak.

Now add the nostrils with a pointed punch.

Using a wooden mallet, form the crane's head over the horn of your anvil. (now you can see my well used and abused wooden mallet).

Add the eyes with an eye punch. Be careful to get them lined up from one side to the other. You think it won't show, but it will.

Shape the neck to suit and polish with a wire brush.

From MABA Upsetter 1-2/23

Shop Tip Making a Simple Bender
by Bob Ehrenberger

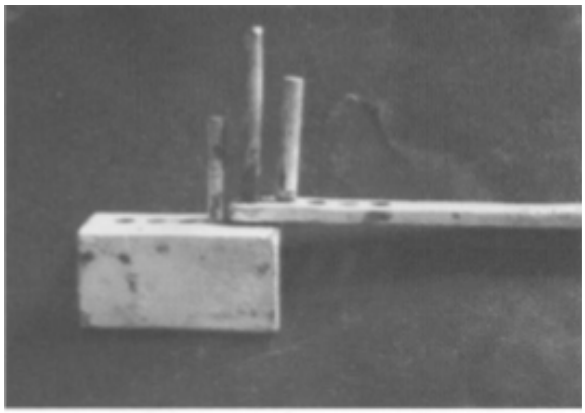
A couple years ago, I had a friend lose the handle to her violin case. She had sent it off, with all the rest of the hardware, to get it brass plated, and the plating company lost it. They needed a replacement and it had to match the original.

Bender parts, handle, base, three pins

It needed to be made out of 1/8" round stock with four sharp bends. Pretty simple, right, wrong, when I bent it in the Hossfeld bender the radius on the bends was way too big. When I tied to clamp it in the vice and bend it over with a hammer, there were marks on the piece from both the vice and the hammer.

What I needed was a miniature bender that would make tight bends in light stock and not leave marks. The solution was so simple. I drilled several 5/16" holes in a piece of 1-1/2" x 1-1/2" x 1/4" angle iron. I then drilled a series of holes in the end of a 5/1x63/4"" flat bar. I rounded off the end of the bar to reduce the Bender parts, handle, base, three pins clearance required. I cut 3 short pieces of 5/16" round stock and I was done. The first set of holes were too far apart for the 1/8" stock, so I ended up drilling the opposite end of the bar, with the first hole real close to the pivot hole. The bender worked nicely and I was able to make the violin case handle in no time. Since then, I have used my little bender on a regular basis for all kinds of bending operations. It can handle up to 1/4" cold and 5/16" hot.

I have discovered that I really only needed one position for the pins, since by the time you get to where you needed to move the pins for clearance, the bender was not heavy enough for the job any way. When I tried to skip a hole and put the pin in the next one, it was too far out. So I use one end of the bar for 1/8" and 3/16" and the other end for 1/4" and 5/16" stock. You could probably scale this up using a larger angle iron and a larger bar. You could make this bender in 15 minutes, wouldn't be as good as a Hossfeld, but it would from scrap lying around your shop be portable and really cheap.
Reprinted from Bamsite.org



You could make this bender in 15 minutes, from scrap lying around your shop.

NJBA Membership Renewal, Ballot, and Volunteers' List

Mail completed renewal form and ballot, along with check for dues, to:
NJBA Election, P.O. Box 224, Farmingdale, NJ 07727-9998

Name _____

Address_____

City, State, Zip _____

Phone Numbers: Day _____ Eve. Cell:_____

Email address _____

My check is enclosed: [ ] $20 (regular membership dues), or [ ] $40 (business membership dues)

Ballot for Board member election

The following board members are up for reelection, please print and return this page if you wish to choose individual directors or send their names in as an email.

Mail to; NJBA, P.O. Box 224, Farmingdale, NJ
07727-9998

NJBA Volunteers List

Nominee	Nominee	Nominee
[ ] All	[ ] Eric Cuper	[ ] Bruce Ringier
[ ] Billy Barrett	[ ] Dave Ennis	[ ] Thomas Santomauro
[ ] Marshall Bienstock	[ ] Bruce Freeman	[ ] Ben Suhaka
[ ] Bob Bozzay	[ ] Daniel Lapidow	[ ] Dan Yale
[ ] Larry Brown	[ ] Mark Morrow	

"Please put my name on the list of potential volunteers:" (Circle all that apply.)

Availability: Saturdays Sundays Weekdays

Interests: Demonstrating Coaching Novices Assisting at Workshops

Experience: Novice Intermediate Experienced Professional

Please fill this out and send it in!
We need your input!