May 2021

THE FORGE FIRE

The Newsletter of the Indiana Blacksmithing Association, Inc.

An Affiliate Of The Artists-Blacksmiths' Association of North America, Inc.

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

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

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

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

The Forge Fire is the newsletter of the Indiana Blacksmithing Association Inc. (IBA) IBA is an affiliate of the Artist-Blacksmiths Association of North America Inc. Permission is granted to other similar non-profit organizations to reproduce uncopyrighted articles originally appearing in *The Forge Fire* provided credit is given the original source.

More nearby resources and organizations for blacksmiths:

Rural Smiths of Mid-America:
Meetings are on the first Saturday of each month
Call Ron Gill
317-374-8323 for details

IBA MEETING SCHEDULE

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

May 7-9 2021	REGIONAL CONFERENCE SUTTON-TEROCK SHOP
June 19 2021	IBA HAMMER IN SNAKE ROAD FORGE
July 23-24 2021	REGIONAL CONFERENCE BUNKUM VALLEY METALSMITHS
Sep 3-5 2021	REGIONAL CONFERENCE COVERED BRDGE SHOP

INDEX

Dates to Remember

June 19
Hammer In
Snake Road Forge

July 23-24
Regional Conf
Bunkum Valley

August 6-22
Indiana State Fair

Sept 3-5
Regional Conf
Covered Bridge

Editors Message

It looks like things are popping out for the IBA. The first regional conference is set to begin at the Sutton-Terock shop as I finish typing this message. Two additional conferences are on slate for July at Bunkum Valley and September at Covered Bridge. Currently the plan is for each regional conference to have a similar format: Friday night short demo, Saturday main demo with iron-in-the-hat, and Sunday clean up. Each location has camping space, although power&water hook ups may not be available.

The board does have a zoom meeting scheduled for 6:00PM on May 13. The purpose of the meeting is to review the first regional conference and plan any adjustments for the later ones. If you have thoughts or comments after the Sutton-Terock conference, feel free to join the zoom meeting or pass your comments directly to a board member. Meeting details are posted in last months Forge Fire.

Conference attendance is free of charge to all current IBA members. IBA annual membership period is June 1 to May 31. Be sure to renew your membership, if you have not done so already. A membership form was printed on page 4 or the April Forge Fire, or you can download a copy from the IBA website: http://indianablacksmithing.org/membershipapplication.pdf

Snake Road Forge has scheduled an IBA hammer in for June 19. This will be the first regular hammer in in over a year. This is also the first IBA hammer in at Snake Road Forge. They were scheduled to host last May, before Covid protocols shutdown most gatherings. Snake Road Forge is located between Merrillville and Valparaiso, which is in the central time zone. Rod Marvel passed along some pictures from a recent hammer in. Those pictures are posted on page 4.

Bill Corey is working with the Indiana State Fair Board in plans for IBA participation at this year's state fair. I am not aware of the final details. The fair board may require some specific social distancing protocols, possibly plexiglass shields, that are yet to be worked out. To adhere to Indiana State Fair requirements, selling will not be allowed at the IBA exhibit. Anyone desiring to sell items will need to get a permit directly from the Fair Board.

Speaking of Bill Corey, he provided two articles this month. Both articles cover some specialty tongs. The articles are very detailed and easy to follow. The slot jaw tongs are of particular interest to me. I find them easier to use than box jaw tongs when working flat stock.

The IBA is popping out. Be safe and enjoy.

IBA Satellite Groups and News

1) Sutton-Terock Memorial Blacksmith Shop
Meet: 2nd Saturday at 9 AM
Contacts: Fred Oden (574) 223-3508
Tim Pearson (574) 298-8595

2) Jennings County Historical Society Blacksmith Shop
Meet: 2nd Saturday at 9 AM
Contact: Ray Sease (812) 522-7722

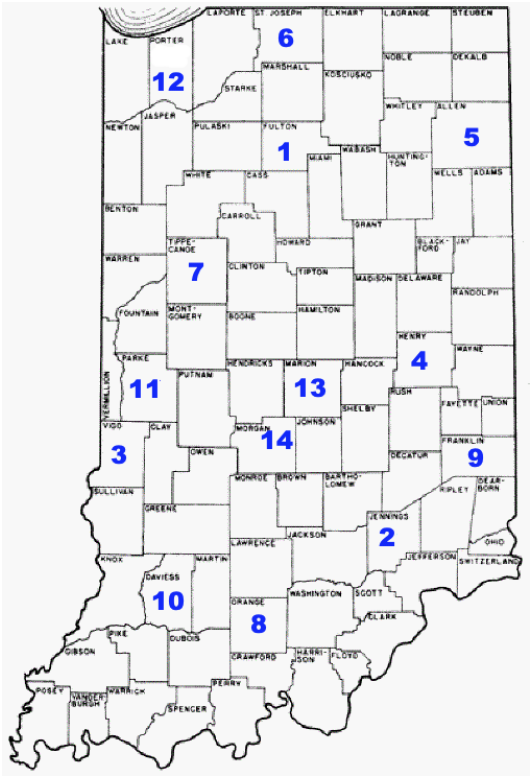
3) Wabash Valley Blacksmith Shop
Meet: 2nd Saturday at 9 AM
Contacts: Doug Moreland (217) 284-3457
Max Hoopengarner (812) 249-8303

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

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

6) St. Joe Valley Forgers
Meet: 4th Saturday at 9 AM
Contacts: Bill Conyers (574) 277-8729
John Latowski (574) 344-1730

7) Rocky Forge Blacksmith Guild
Meet: 2nd Saturday at 9 AM
Contacts: Ted Stout (765) 572-2467



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

9) Whitewater Valley Blacksmiths
Meet: 2nd Saturday
Contact: Keith Hicks (765) 914-6584

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

11) Covered Bridge Blacksmith Guild
Meet: 1st Saturday
Contact: John Bennett (812) 877-7274

12) Snake Road Forge
Meet: 1st Saturday
Contact: Rod Marvel (219) 241-0628

13) Satellite 13
Meet: 4th Saturday
Contact: Darrin Burch (317) 607-3170
Doug Wilson (317) 439-7684

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

Jennings County Historical Society Blacksmith Shop

The Jennings County Historical Society Blacksmith Shop opened by Dave Good who made a fullering punch. Ray Sease worked on the power hammer, making a dandelion transplanting tool! Dave also made two leaf hangers and a 3"x3/8"round ring. Kenny Dettmer made the door prize.

See you May 8th . Bring iron in the hat, and wallet. Paul Bray

Bunkum Valley Metalsmiths

The Bunkum Valley Metalsmiths met on Saturday May 1st. We had a good mix of young and not so young smiths. The ladies were sewing and fabric painting. Plenty of food for lunch and sweet tooths.

Please note we will not be having a meeting in June at our usual time.

We have been asked to host the Southern Regional Conference. The tentative dates are Friday July 23rd and Saturday July 24th. Please mark your calendar. We will be sending out more information as plans are finalized.

IBA Satellite Groups and News (continued)

Meteorite Mashers

The Meteorite mashers met at Jeff Reinhardt's shop for the April meeting. While it was a dreary drizzly kind of day, lots of good fun was had. Some beginners forge class was done, some tool making was done. Much catching up on old friends was done. A very nice Iron in the hat was held, with many really nice items brought to support our guest of honor Butch Sparks, who arrived later in the day fresh from the hospital. Iron in the hat proceeds were donated to Butch. Our next meeting will be at Jason Bowman's shop in Elizabeth Indiana.

Snake Road Forge

Easy Slot Jaw or RR Spike Tongs

By
Bill Corey

Good tongs are an extension of your hands, allowing you to securely hold pieces that would otherwise be too hot to handle. There are a larger variety of tongs than any other tool, each size being sized to hold primarily one size and shape of material.

Note: The word “Tongs” is a noun and is the proper way to refer to one or many pair of these stock holding tools. The word “Tong” is a verb and refers to the act of using the “Tongs” or to “tong or pick up a piece of material.”

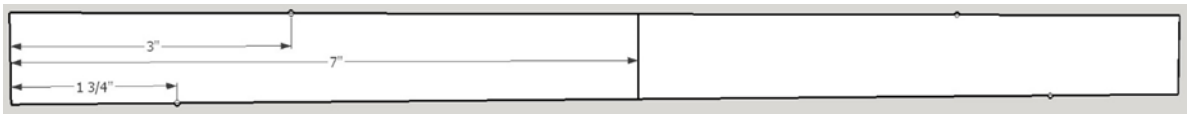
Properly forged tongs need to hold work securely… or they are dangerous!

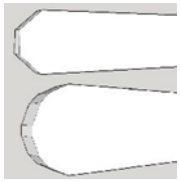
Slot Jaw Tongs are very good for flat stock of a certain size and can be used to hold round or square stock also.

Railroad Spike Head Tongs are specifically made for holding the head of a RR spike and are very good for that purpose however that is about the only thing they can be used for.

These tongs are made from flat bar with a twisted jaw and the final step of forming the bits is what determines which style of tongs they are.

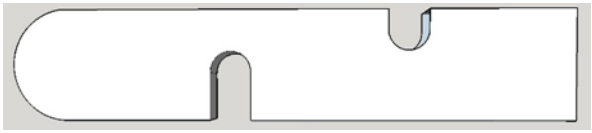
- Start with 14” of 3/8” X 1” laying out the location of the bits at 1 ¾” and boss at 3” with a center punch on both ends.
  Note: Holding the center punch as close to the edge as possible will cause a small dimple to protrude from the side of the flat bar making it easier to locate the mark when the stock is hot.



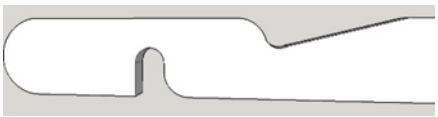


- Bring the stock to a yellow heat at the end and round off the end of the bits. Start by hammering a 45-degree angle on each side, then hammering the corners down to round.

- Bringing the stock to a yellow heat and using a piece of 3/8” round bar or fuller, drive it down at the 1st punch mark leaving about 3/8”. Turn it over and at the 2nd punch mark drive it down about 5/16” deep.

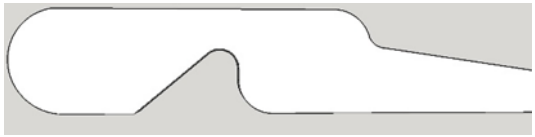


- Once again bring the stock to a yellow heat and draw down behind the 2nd fuller mark to start the reins. Start this at the far side of the anvil on a rounded corner drawing down to the bottom of the fuller as is displayed in the illustration. Also round off the corners of the section between the two fullers or the “boss.”

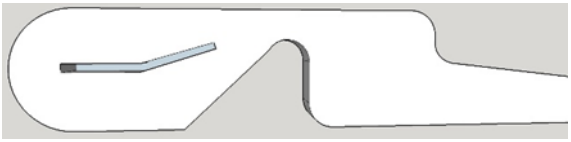


- Then draw down gradually from the fuller for about 4” or so down to approximately 3/8” square ending up close to 10” total for each rein.

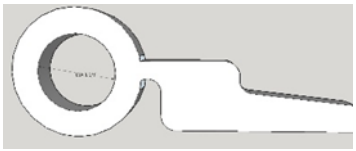
- Next at the near edge of the anvil, also on a rounded corner with the stock at a good yellow heat draw down from the first fuller at a sharp angle as is shown in this illustration.
  Note: Forge down to the bottom of the fullers carefully as to not leave a cold shut where the bottom of the fuller meets the drawn down section.
  Note: At the point of forging after forging down the fuller at the back of the boss and prior to tapering down to 3/8", the stock can be cut then drawn down and scarfed for forge welding on 3/8" round bar for reins. Refer to the "**Welding on Reins**" section at the end of this document.



- Now also at a yellow heat and using a slot punch, punch a slot in the bit. This can be done in two parts to create a longer slot that also extends down into the transition between the bit and boss. This step can also be accomplished by using a round punch to punch a hole at each end then a hot cut chisel to slit between those two holes. Using this method however will leave some rough scarf that will need to be cleaned up with a file.



- Now once again working at a good heat, drift the slot just now forged round and forge it into a circle that between 1 1/8" and 1 ¼" at the in-side diameter.

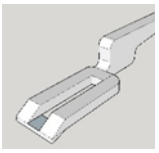


- Take a good yellow heat on the shank of the bit (between the bit and boss) and twist the bit 90 degrees. At this time the direction does not matter.

This is the point where we are either forging Slot Jaw or RR Spike Head tongs (or possibly Bottle Opener Tongs) 🙂

For Slot Jaw Tongs;

- Forge the circle just forged for the bit and flatten it lengthwise to a width just slightly wider than the stock that will be held with the tongs aligning the center of the slot with side of the boss on the same side of the hand in which you hold tongs while forging. So, for a right-handed smith (swinging the hammer with your right hand) center the slot even with the left side of the boss.
  Note: The alignment of the center of the slot with the side of the boss is important however to which side is not as much.
- Taking a short heat on the very end of the bit and over a rounded edge on the far side of the anvil taper and round the end just enough to expose the slot to the end of the bit. So that when you look right at the end of the bit with the rein away from you, you can see the entire depth of the slot.



For Railroad Spike Head Tongs;

- Forge the circle back to the boss so that the slot is almost perpendicular to the rein leaving a slot wide enough to fit over the rim of a RR spike head. For the Rail Road spike to be centered on the tongs when held forge about ¼ of the ring to one side of the bit and ¾ to the other.
- Continue for either style of tongs;

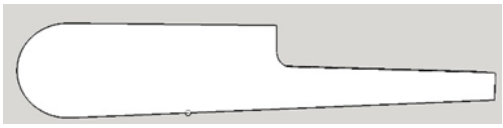
- Take a good yellow heat and in the center of the boss punch and drift a 3/8” hole. (Or to whatever size of rivet that will be used.)
- Perform all of the above steps on the opposite end of the original stock then draw out the rein area completely.
- Cut the reins in at the midpoint.
- At this point make sure each half of the tongs are formed identical.
- Then rivet the two halves together.
- Using the size of stock that these tongs will hold align and forge to fit that stock.

Welding on reins

A couple of things I have found that helps me is 1, I start my forging on the bits at the final punch mark or at the back end of the boss then draw this down and get it ready for welding. This helps ensure that the small areas of the forged down bits don’t get damaged when reaching welding heats in the fire. (It also is easier to scrap the piece when I mess it up since I haven’t done all of the bit forging already.) Also 2nd a piece of 10” long 3/8” round bar is approaching to hot to hold when forge welding onto the bit so to not need to use two sets of tongs for the weld I leave the 3/8” stock 20” long and then cut it at the mid-point when I’m ready to finish up the tongs prior to riveting.

As these instructions are not meant to state how to forge weld, I will not elaborate on the finer points such as how to scarf.

- Step one is to take a short heat on each end of the 3/8” round bar and upset the ends to prepare them for the weld unless the reins are in two pieces then of course just upset the end being welded on to the bit.
- After upsetting scarf each end in preparation of the weld.
- On the section of the bit just behind the boss, draw the stock down from the fuller to a width of just about 3/8”. This section should draw out to about 3” or so. Then scarf that end also.



- Bring both the rein and bit to a welding heat and good luck.
- Perform the same steps to the other bit and then continue with your forging as is detailed above.

Now use these tongs to make more tongs!

Easy V-Bit Bolt Jaw Tongs

By Bill Corey

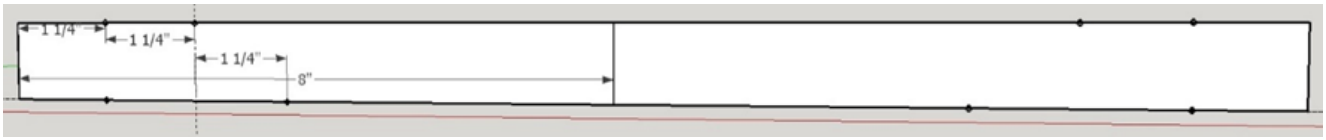
Good tongs are an extension of your hands, allowing you to securely hold pieces that would otherwise be to hot to handle. There are a larger variety of tongs than any other tool, each size being sized to hold primarily one size and shape of material.
Note: The word “Tongs” is a noun and is the proper way to refer to one or many pair of these stock holding tools. The word “Tong” is a verb and refers to the act of using the “Tongs” or to “tong or pick up a piece of material.”

Properly forged tongs need to hold work securely… or they are dangerous!

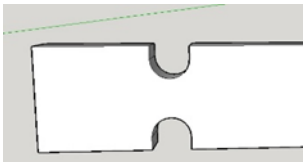
V-Bit tongs are very good for holding square and/or round stock of a certain size and can be adjusted slightly for holding different size of stock.

These tongs are made from flat bar with a twisted jaw and can be modified slightly to hold many different sizes and styles of stock. With a slight modification to the jaws they can be used for holding flat bar which will be indicated later on.

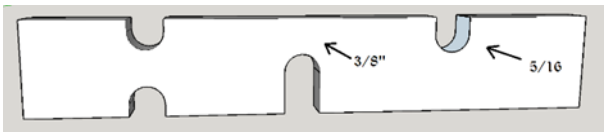
- Start with 16” of 3/8” X 1” laying out the jaws with a center punch on both ends.
  Note: Holding the center punch as close to the edge as possible will cause a small dimple to protrude from the side of the flat bar making it easier to locate the mark when the stock is hot.



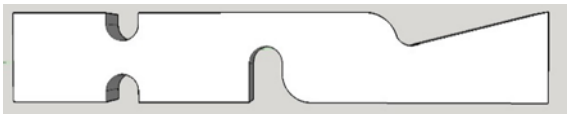
- Take a good yellow heat and using a guillotine style tool (or the reins of a set of tongs) fuller in from both sides at the first punch marks down almost 3/8” deep. Do this and the following fullers in multiple steps, using the fuller for 3-4 hammer blows then flatten the sides that spread out.



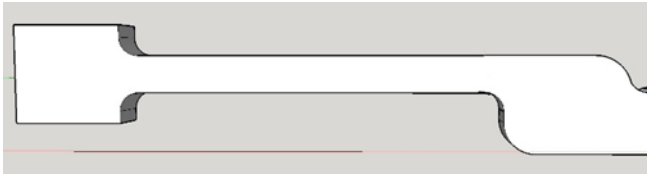
- Using a piece of 3/8” round bar or fuller, drive it down at the second punch mark leaving about 3/8”. Turn it over and at the third punch mark drive it down about 5/16” deep.



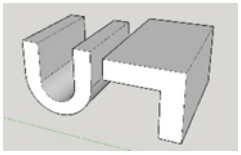
- Draw down behind the third fuller mark to start the reins tapering down gradually for about 4” or so down to approximately 3/8” square ending up close to 10” total for each rein. Also round off the corners of the section between the 2nd and 3rd fullers or the “boss.”
  Note: Forge down to the bottom of the fullers carefully as to not leave a cold shut where the bottom of the fuller meets the drawn down section.
  Note: At the point of forging in the illustration, the stock can be cut then drawn down and scarfed for forge welding on 3/8” round bar for reins.



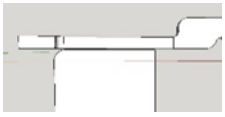
- Now draw out the section between the 1st and 2nd fullers to approximately 3/8” square, then forge off the corners to octagon, then those corners to hexadecagon, then those corners to a triacontadigon (or basically round.)



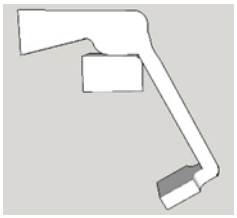
- Take a good yellow heat on the shank of the bit (between the bit and boss) and twist the bit 90 degrees. At this time the direction does not matter.
- Now using either the step of the anvil or a V-Swage and a cross peen hammer forge the bits into a V shape unless you are opting for the U-shaped bits to hold flat stock. For those forming the bits will come after setting the rivet. As 3/8” is fairly thick for the bits, they can down be drawn out either lengthwise to make a longer bit or in width to make a wider v-bit. They can also be widened out and then forged into a U=Shape around the size of stock wanting to be held for use holding flat bar as was mentioned above.



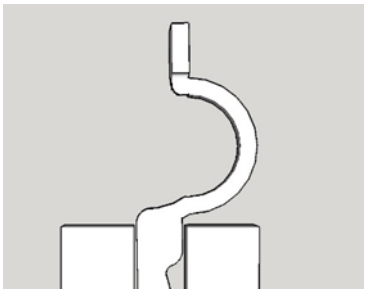
- Next using a rounded edge on the far side of the anvil forge the bit over at a right angle.



- Next using the same rounded edge on the far side of the anvil set the bit just past the edge and using a rounded face hammer forge the shank of the bit down.



- Then holding the boss in the jaws of a vice and holding the bit with a pair of tongs, strike the shank of the bit with a rounded face hammer shaping it into an arch.
- Take a good yellow heat and in the center of the boss punch and drift a 3/8” hole. (Or to what ever size of rivet that will be used.)



- Perform all of the above steps on the opposite end of the original stock then draw out the rein area completely.
- Cut the reins in at the mid point.
- At this point make sure each half of the tongs are formed identical.
- Then rivet the two halves together.
- Using the size of stock that these tongs will hold align and forge to fit that stock.

Welding on reins

As is stated above, after drawing out from the fuller at the back end of the boss you can weld on reins. I prefer 3/8” round bar for reins and for these tongs I use a 10” length. You can size these to whatever length you like, maybe longer for using around a gas forge or shorter if you prefer shorter tongs.

A couple of things I have found that helps me is one, I start my forging on the bits at the final punch mark or at the back end of the boss then draw this down and get it ready for welding. This helps ensure that the small areas of the forged down bits don’t get damaged when reaching welding heats in the fire. (It also is easier to scrap the piece when I mess it up since I haven’t done all of the bit forging already.) Also a piece of 10” long 3/8” round bar is approaching to hot to hold when forge welding onto the bit so to not need to use two sets of tongs for the weld I leave the 3/8” stock 20” long and then cut it at the mid-point when I’m ready to finish up the tongs prior to riveting.

As these instructions are not meant to state how to forge weld I will not elaborate on the finer points such as how to scarf.

- Step one is to take a short heat on each end of the 3/8” round bar and upset the ends to prepare them for the weld unless the reins are in two pieces then of course just upset the end being welded on to the bit.
- After upsetting scarf each end in preparation of the weld.
- On the section of the bit just behind the boss, draw the stock down from the fuller to a width of just about 3/8”. This section should draw out to about 3” or so. Then scarf that end also.
- Bring both the rein and bit to a welding heat and good luck.
- Perform the same steps to the other bit and then continue with your forging.

If the V-Bit was used and drawn out to make the bit longer at this time a square file can be used to file a V-Notch across the bit so that stock can be held at a right angle to the tongs.

Now use these tongs to make more tongs.!

The $64,000 Question- "Should I Get a Treadle Hammer?"

By Steve Alling, a MABA member

I've been asked this many times over the years and my answer is always the same. If you're an ornamental smith I highly recommend getting a treadle hammer after you have your basic shop set up. (Knife makers won't find the treadle hammer as helpful.)

A treadle hammer makes it so much easier to use tools such as chisels, drifts, or fullers where you don't have to waste time using a hold down on your anvil and leaves your hands free. The treadle hammer is like having an apprentice with a sledge hammer.

There are two basic models of treadle hammers. One the hammer swings on hinges, the second I prefer as the hammer moves up and down vertically. Both do basically the same thing. A treadle hammer is not a baby power hammer. They're too slow to use to draw out material, you can do it much faster by hand.

Some of the things that I like to see on a treadle hammer are good size dies 4 x 5 inches or so. The bottom die is held in place with a hardy hole, preferably the size of the one on your anvil. You can use all your bottom and top tools that you use on your anvil on your treadle hammer. And the upper die is held in a hardy hole with a wedge or sometimes with a bolt. These large dies meet parallel to each other so they're wonderful for straightening and flattening.

Another essential tool is a holder for your tools under the hammer, because you should never use the hammer with your hands under the ram. You won't have a bruise, you'll have a crushed bone! So, there are several tools that can be used to hold your chisels and fullers. Some guys make a dedicated pair of tongs and configure their tools to fit neatly in the jaws. I prefer a variation on a tool that our dear friend Lud Lazarowicz invented. You can find it in the archives of The Upsetter 2011 Sept/Oct page9. If you use hand held tools under the hammer you need to build an absolutely positive foolproof stop so that the hammer won't hit your hand. You can use handheld cold chisels to do chasing work and so forth but it must be a foolproof set up.

The tools you use under the treadle hammer can be very short as opposed to the ones you're holding in your hand over hot metal. This saves a lot of expensive tool steel and also shorter tools are much less likely to kick out on you. I make some tools for fullering lines on work that are only ¾ of an inch high with a welded handle.

You can use your blacksmiths magician and other spring fullers under the hammer. On my hammer, I made a hardy hole attachment that fits outside the bottom die so the fullering tools I use on my anvil will center under the treadle hammer.

I make all my cutting tools, out of spring steel or better. But, for fullering and tools that just leave impressions like ball end tools and veining tools I make out of mild steel. Because the treadle hammer always hits square the tools don't seem to take as much abuse and you spend less time with the tool in contact with the hot metal while you're adjusting your aim.

The height of the anvil on a treadle hammer should be about mid torso because you're using your hands as opposed to your anvil where you want to have a full swing of your hammer. Now this can vary because some smiths like to sit at the treadle hammer so of course that treadle height would need to be adjusted.
In conclusion, I find my treadle hammer to be one of my most useful additions to my shop. This said, being able to weld greatly enhances your use of the treadle hammer. There are so many little things you can stick together with a weld under the hammer that would be hard to make otherwise.

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

Farrel Wells *Membership Secretary*
8235 E 499 S
Dunkirk, IN 47336-8807

First Class Mail

Address Correction Requested
If Undeliverable return to
sender

June 19 Hammer In
Snake Road Forge

38N 600W, Valparaiso, IN 46385

Directions: I-65 exit 249 (Crowne Point East 109th Ave). East 109th Ave becomes CR 100S. After about 7 miles turn left on CR 600W. Drive about 1.4 miles, shop is on the left.

Note: This part of Indiana is in Central time zone.

Forge Master: Rod Marvel ph: (219) 241-0628

July 23-24 Regional Conference
Bunkum Valley Metalsmiths

14586 North CR 1100 East, Odon IN

Directions: Take US 231 south and then SR 58 towards Odon. After the turn-off from US 231, go for 2 miles, and then turn right so as to head north on CR 1100. After another 2 miles, Jim's place is on the right.

Forge Master: Jim Malone ph: (812) 725-3311