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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 Indiana Blacksmithing Association, Inc., its staff, officers, directors, members, and hosts and the *Forge Fire*, specifically disclaim any responsibility or liability for damages or injuries as a result of any construction, design, use, manufacture or other activity undertaken as a result of the use, or application of, information contained in any articles in the *Forge Fire*. The Indiana Blacksmithing Association, Inc. And the *Forge Fire* assumes no responsibility or liability for the accuracy, fitness, proper design, safety, or safe use of any information contained in the *Forge Fire*.

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More nearby resources and organizations for blacksmiths:
Rural Smiths of Mid-America:
Meetings are on the first Saturday of each month
Call Ron Gill
317-374-8323 for details

IBA MEETING SCHEDULE	
Check the latest <i>Forge Fire</i> for monthly IBA revisions.	
Jun 17 2023	NO MEETING
July 15 2023	SNAKE ROAD FORGE
July 28– Aug 20	INDIANA STATE FAIR
Aug 19 2023	TBD



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Editors Message

Check the front cover for some updated IBA contact information:

Dave Kunkler has taken over the role of treasurer. Contact Dave for issues regarding bills or reimbursements.

Rob Hough is the new membership chair. Contact Rob for membership renewals. New membership forms have been printed with instructions to mail to Rob.

Bill Kendrick remains as editor, but has a new email address.

Satellite Forge Masters please check to see that the correct contact information is listed for your satellite group

The **2023 IBA Conference** was a big success. We had roughly 180 people in attendance. I saw quite a few younger people at the registration table, which is a good indicator of the strength of our organization. We had four great demonstrations. Registration, IBA store, iron-in-the-hat, auction, basket class, library and Blue Moon Press were all located in the commercial building. This was a big upgrade from previous building locations.

This year there were no nominations for the Clifton Ralph Blacksmith of the Year award. I know the IBA has many, many talented smiths. The lack of nominations really means we missed an opportunity to acknowledge someone. Please keep that in mind as we look to next year.

2023 IBA Awards

Farrel Wells	IBA Lifetime Achievement Award
Kathy Phillips	Paul Moffett Award
(no nominations)	Clifton Ralph Blacksmith of the Year
Chase Smothers	IBA Rookie of the Year

2023 Conference Awards

Gallery

1 st	Tinka Berger
2 nd	Chase Smothers
3 rd	Chuck Henderson

Done at Home

1 st	Dan Borowski
2 nd	Bill Corey
3 rd	Chase Smothers

Forging Contest

1 st	Jonathan G & Kurt F
2 nd	Josh Sampson & Darren Bender-Beauregard
3 rd	Phoebe Ann Raper & Jeff Williams

The **Indiana State Fair** runs July 28—August 20. Bill Corey is the point person for the IBA. Contact Bill at (317) 919-1047 or email: bc65925@gmail.com if you would like to participate. If you have a group who are willing to look after the shop for a full day or more, I know Bill would appreciate that.

The next **IBA hammer in** will be hosted by Snake Road Forge on July 15. Note the shop is in the Central time zone.

Dates to Remember

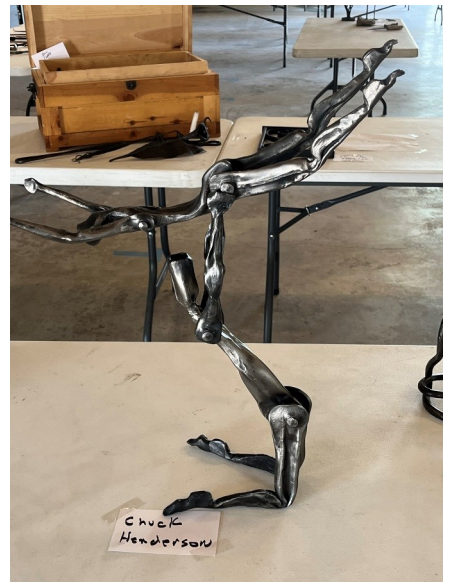
July 15 IBA Hammer In at Snake Road Forge

July 28—Aug 20
Indiana State Fair

IBA website: www.indianablacksmithing.org **IBA Facebook page:** www.facebook.com/groups/IndianaBlacksmithingAssociation/

2023 IBA Conference





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: Paul Bray (812) 521-7177

3) Wabash Valley Blacksmith Shop

Meet: 3rd Saturday at 9 AM
 Contacts: Bill Cochran (812) 241-8447
 Max Hoopengartner (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

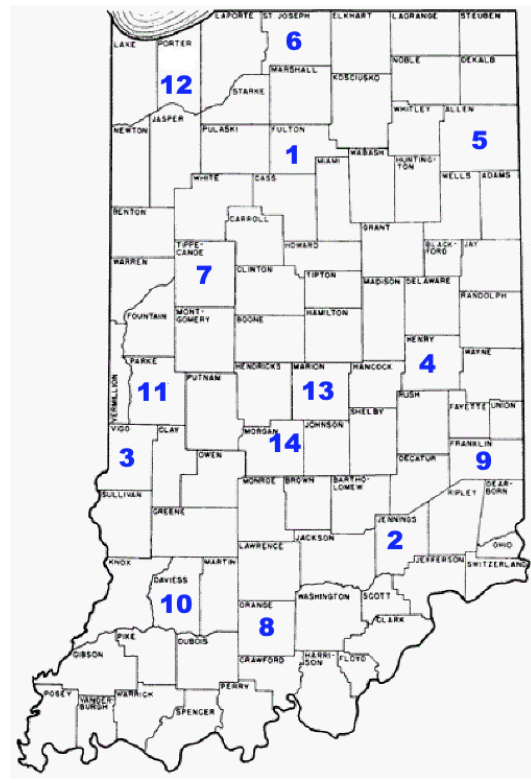
Meet: 1st Saturday
 Contact: Rod Marvel (219) 241-0628

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

This meeting was primarily a working day. The work was led by Kevin Walsh. The 50# hammer was moved and the old base was removed. Rebar was added to the new base and concrete was poured. Plans to reset the hammer after concrete cures at June meeting. Dave Good fired up the forge and made a swedge block. He then reformed the handle on a steak turner. The conference being the first weekend, please bring anything you have for the tool box to the conference.

Hope to see you there.
 Paul Bray

The Rounding Hammer

By Steve Taylor with Mark Aspery

This hammer is based on Brian Brazil's style of rounding hammer, that I believe Brian learned while working for Alfred Habermann in Europe.

Before we begin making the hammer, I think that it's important that we look at some of the tooling.

This hammer is made by a smith and striker team, and as such, the anvil height is set to make the striker more comfortable and efficient.

The anvil is purpose built, and in this case, consists of a block of mild-steel 3-inches thick, 5-inches wide and 7-inches long. The block has a 1-inch hardy hole set at one end of the block.

The block is welded to a section of 1/2-inch steel plate. The plate has a round hole cut in it to allow clearance for any hardy hole related tooling or techniques.

There are three legs welded to the



underneath of the steel plate. The legs are 2-inch square tubing, 1/4-inch thick wall (hitch receiver material).

The tubing is capped to prevent it sinking into soft dirt. The caps are larger than the tubing to give added support, and have a 1/2-inch hole drilled into them to allow the anvil to be pegged out in the dirt to prevent movement.

The length of the legs, and ultimately the height of the anvil surface from the ground, is dictated by the height of your striker, but a good average height would be 24 to 26-inches to the top of the anvil face from the ground.

This allows for the material and top tooling to be added to the anvil height and still have your striker hit flat and square to the work with ease.

The tongs are made from 1/2-inch round bar, upset around the boss area to accommodate the rivet, with longer than usual jaws to grasp either end of the stock.

The jaws of the tongs are also set wide to allow the hammer material to fit between them.

If you want to stay with one pair of tongs, then the jaws should be set in such a way that they can grab the hammer material at the eye, and hold the stock securely.

Turning the stock end for end is shown at right; the punch is on the next page.



Tongs gripping the stock with the tips of the jaws in the hammer eye



To turn the bar end-for-end, lift the tongs and turn the bar to lay on its left corner



Continue to turn the tongs to the left (counterclockwise) allowing the bar to pivot in the tongs



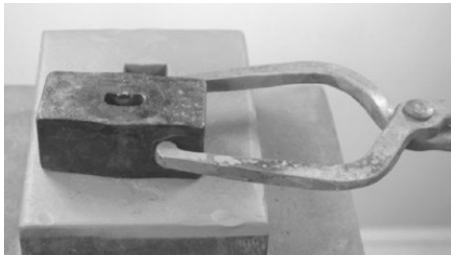
Continue turning the tongs to the left. Note the jaws of the tongs are drawn for support where they make a bend



The bar should continue to pivot between the jaws as you continue to turn the tongs



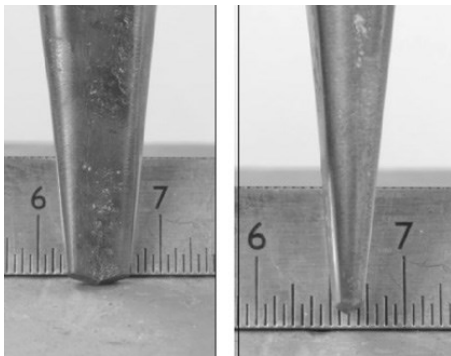
The bar should continue to pivot between the jaws as you continue to turn the tongs



The stock now sits outside of the tong jaws, and has turned end-for-end, with the same side of the bar up



The hammer-eye punch has a slight point and is bevelled on each side. Punch is 1/2" wide by 3/16" thick



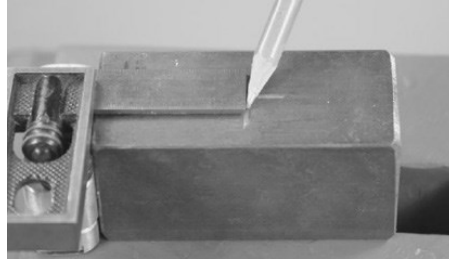
I'm going to demonstrate making a 2 lb rounding hammer, starting from 1.5-inch square material. Brian prefers round stock, but I feel that there are some advantages to using square stock if you are just starting out making this style of hammer.

The 1.5-inch 1045 square stock is cut to 3.25-inches in length. I prefer to use 1045 (heavy axle material) as it's easy to find, but 4140 works just as well.

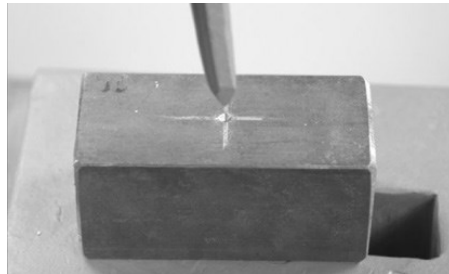
Using a pair of 'Dog-leg' dividers or an adjustable set-square (shown), find the center of the bar, both lengthways and width-ways.

Mark and center punch both sides of the bar, this will aid in placing the hammer-eye punch.

A uniform heat is critical when punching a hole in the middle of the bar. If one side of the proposed hole is hotter than the other, the tool (in this case the punch) will migrate to the path of least resistance – and that's the hotter side.



Using a set of Dog-leg dividers or an adjustable square, find the center of the block



Center punch the middle of the block. Note that this punch has a square end, making it easier to find when hot

Stand the hole vertically in the solid fuel fire to get an even heat, turning 180° as needed.

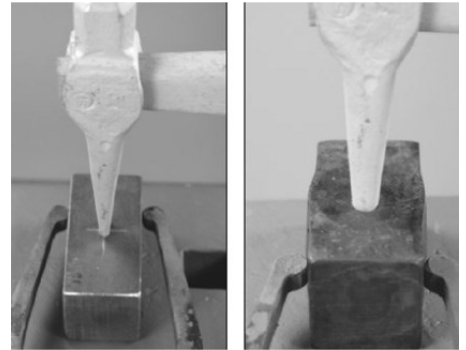
You don't need to worry if there is a gradient of heat from top to bottom, just make sure that the bar is equally hot from one side to the other.

In an effort to keep the hole centered, I'm going to turn the bar, end-for-end, between blows. Notice the position of the tongs on the stock as you examine the photographs of the process.

The slot punch has a tough job punching through a thick billet of medium carbon steel. The slot punch shown here is of the same steel alloy as the billet and the only way the slot punch survives is if the punch stays cool and the billet stays hot.

I clear the punch after each single hit, and cool the punch in water.

Once you have the hole well started on one side, then switch to the other side while, again, turning the bar end-for-end between blows.



Working from one side, punch half way through the bar. Turn the bar end-for-end between blows

Aim to join the two holes in the center of the bar.

Working solely from one side of the bar until you feel the anvil will push an excess of material ahead of the punch to the side that's resting on the anvil.

That's going to be difficult to rectify when drawing the cheeks of the hammer, which we want to be identical in size and shape.

There are other advantages to joining the hole in the center of the bar such as:

if you don't quite get a penny-on-a-penny hole, then the hole can possibly be straightened out within the bar by the drifting action. Also, any rag formed on punching is buried within the hammer-eye.



Turn the bar over and punch from the other side, again turning the bar end-for-end as you work



The result of the work of the punch

The business end of the slot punch is ground to best handle the heat, and although the punch is pointed, not flat faced, it does produce a slug.

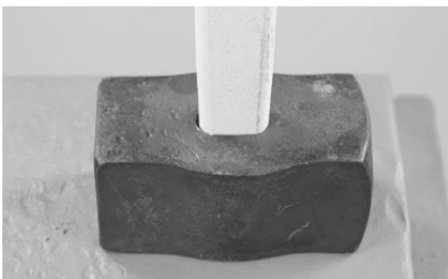
With the hole punched, it's time to start the drifting process.

I say process because it's not a one-time deal. We're going to do a little bit with the drift, then we're going to work on the cheeks of the eye (spreading the hole along the centerline of the bar). Then we're going to catch up with the drift, then spread some more...and so on.

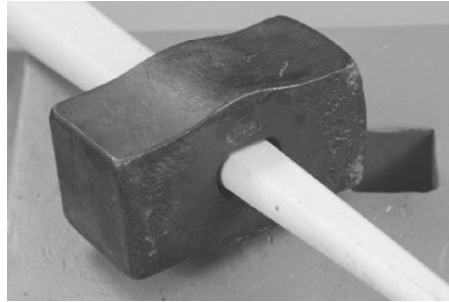
If you attempt to get all the drifting done now, the hammer-eye will be stretched far too much to be suitable for practical purposes – not insurmountable, but not what we're aiming for with this project.



Support the block over the hardy hole and drive in the tapered drift



Drive the drift until it fills the hole created by the punch, no more



Turn the bar over and drift from the other side

At this stage the block of steel has had the sides blown out slightly proud of the bar, but the top and bottom should be reasonably flat.

We are now going to isolate the material for either face of the hammer, as well as define the material for the cheeks of the hammer.

I have two sets of top and bottom fullers. One set is forged to 1/2-inch diameter, half round, and the other is set to 3/4-inch diameter, half round. Utilizing the 1/2-inch diameter set of fullers, you are going to create a 1/2-inch groove behind each face of the hammer.

If you've worked with a striker and these type of tool often, then you may go straight to using both tools together at the hardy hole.

If you're not so practiced, and I'm going to presume that that's the case, then we'll build some training wheels to get you started.

As the top and bottom of the hammer are flat, you can place it on the face of the anvil with either the top or the bottom surface uppermost.

You are going to place the fuller in such a spot as to leave 1/2-inch of material for each face, while giving the eye about 1/8-inch of clearance.

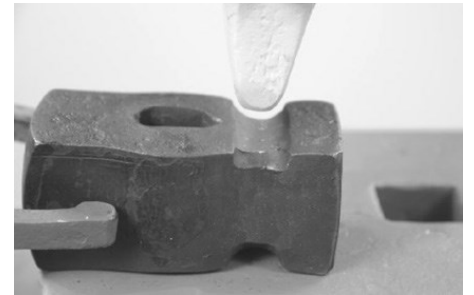
No need to go too deep as you fuller a groove, just make a shallow depression that you can use to capture the bottom fuller later.

Turn the bar over 180 degrees, so that the opposite side is uppermost, and repeat the process.

It can be advantageous to have a



'Being flat, the stock will sit on the anvil as you create a fullered groove defining the body and the faces



Work the top and bottom surfaces. The sides have been pushed out by the punch and are not flat

'pillow' of 1/2-inch diameter, half round stock or less, to place under the hammer as you fuller the second groove above.

Now, with the 1/2-inch bottom fuller in the hardy hole, rest one of the grooves on the fuller. You can see in the next photograph that the tongs being used grip the material in the punched eye.

Make sure that you're holding the stock level, and turn the bar 90-degrees.

Looking from above, you should see both of your grooves on either end of the bottom fuller. Place the top fuller immediately over the bottom fuller and have your striker deliver one blow.

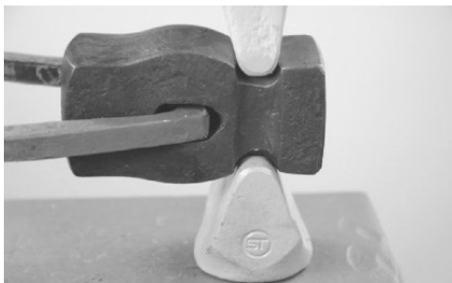
Check your alignment and have another go.

To keep the fullering equal in the bar, turn the bar over 180-degrees, so that you are working on the other side of the bar and repeat the process.

You should already have a mark to go by. Make sure that it's in the right place and have your striker deliver a couple of blows.

Now turn the bar 45-degrees and knock the corners off within the grooved material. Again, to keep the material centered on the centerline of the stock, work all four corners individually.

When you're happy with the result, change ends and repeat the process.



Capture one of the grooves on the bottom fuller and turn the bar 90°. Fuller the sides of the face

Having these grooves in place allows a little clearance for the fuller that you will use to pull out the cheeks of the hammer, protecting the two hammer face ends from damage.

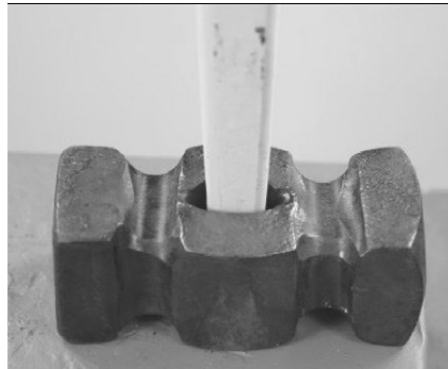
You may find that the above work has stretched you hammer-eye a little, by pulling some material into the groove – not a problem! Ignore the damage at this point in time.



Turn the bar around and complete the same steps on the other end

Turning your attention to spreading the cheeks of the eye, you will be working directly over the punched and drifted hammer eye. That hole will need to be protected from damage as you spread the cheeks to the hammer.

At the moment, the top and bottom surfaces of the hammer are still reasonably flat. Place the hammer eye over the hardy hole and tap in the drift into place.



Re-drift to correct for any damage to the hammer eye. Drive the drift in until it 'seats' in the hole

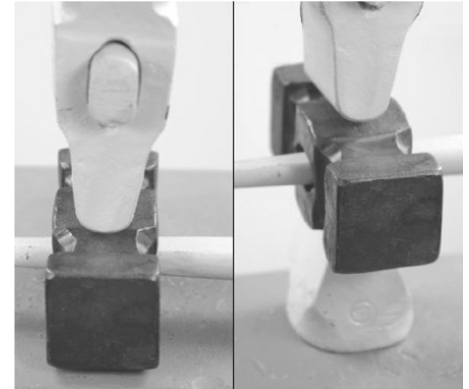
You're not trying to re-size the eye, just set the drift securely in the hole, filling its perimeter.

As you are working with a tapered drift, only one side of the eye will be filled completely, there is a gap surrounding the drift on the other side.

With the hammer now firmly attached to the drift, move to the flat face of the anvil and with the eye horizontal, use your 3/4-inch top fuller and mark the bar along the centerline as seen going from face to face of the hammer.

Don't kill the stock with your fuller, just make a slight groove – as you did earlier when isolating the material for the two ends of the hammer, then turn the bar over and do the same on the other side of the bar.

Now place the 3/4-inch bottom fuller into the hardy and further refine the center grooves, working on both sides of the bar. Don't go too deep



Start to spread the center of the cheeks on the face of the anvil, refine the work between matched fullers

yet. Wait until you have the accompanying left and right grooves in place.

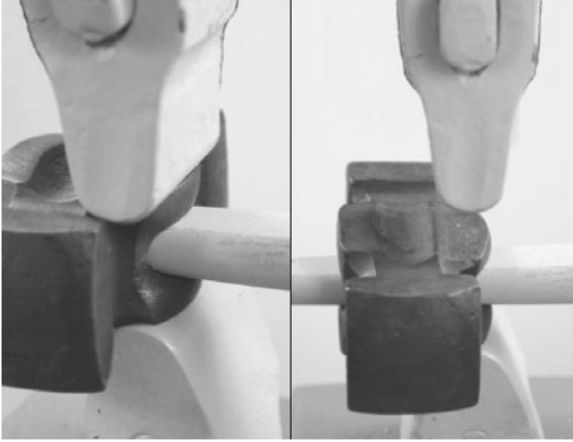
Going too deep now creates vertical walls on the edges of the fullered groove, these can, without care, create cold shuts later as you fuller either side of the central groove.

If at any time the hammer feels loose on the drift, then tap the struck end of the drift onto the face of the anvil to secure the hammer. Be wary of falling scale as you do this – wearing a welding glove here may be to your advantage.

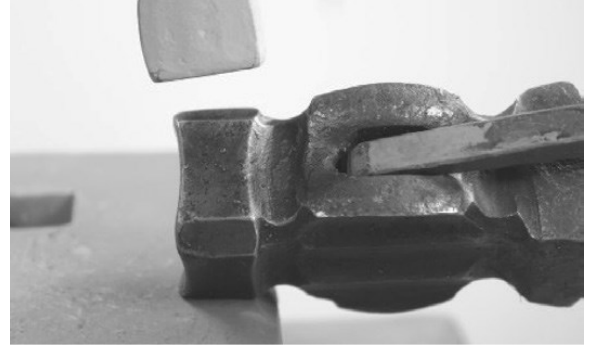
Once you are happy with the center grooves, then move the fullers towards the struck end of the drift, where the drifted eye has support. Moving the other way will collapse the eye.

Depending on the work that you have done, you may or may not be able to go back to the face of the anvil to start the upper grooves on the hammer cheeks.

Working towards the struck end of the drift, create a second fullered groove on the cheeks of the hammer



Use a set hammer as you work with your striker to knock the corners off each face



If you can, then do so, otherwise work over the bottom fuller.

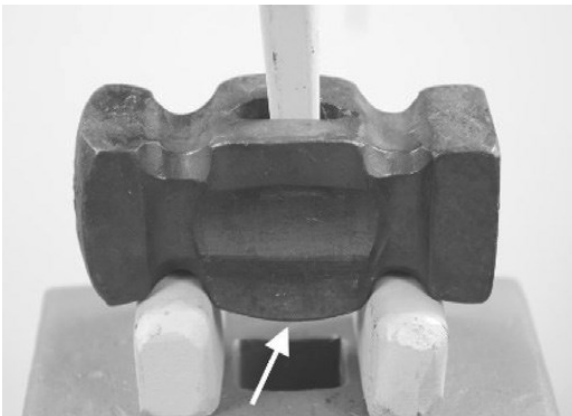
Knock the drift out of the hammer eye by placing the tip of the drift on the anvil face and giving the hammer stock a crack with your hammer – perhaps crack's not the right word...

If the drift doesn't immediately pop free, then rest one end hammer stock on the face of the anvil and have your striker hit the other end with their sledge. That should be enough to loosen the grip of the hammer-eye on the drift.

The issue now is working the other side of the hammer. As you have spread the cheeks on one side of the hammer with the fuller, the hammer no longer sits flat on the anvil.

I have spacer blocks that I can position either side of the hardy hole to support the hammer head while I drive in the drift from the other side of the hammer eye.

Supports are required to prevent damage to the cheeks as you drift from the other side of the bar



Take another heat, and after driving the drift in from the other side of the hammer, work the lower surface of the hammer cheek.

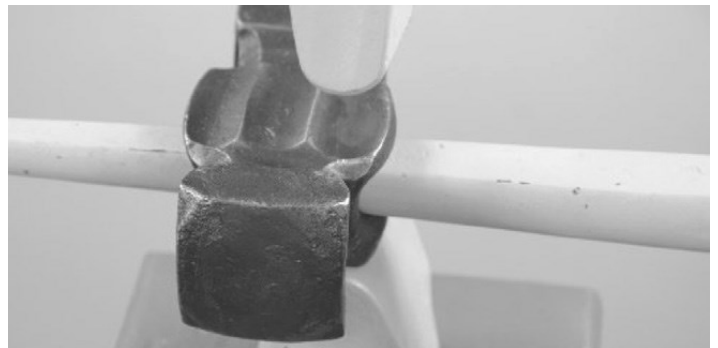
For any one heat, you are restricted to working the center of the cheek and the groove immediately to the drift

struck end. The lower groove is unsupported by the drift and the eye will be damaged by the fullering action.

Work the fullered grooves down until they are equal in depth to the grooves around each face.

The preceding steps show that you are limited in width for your top and bottom fullers by the distance between the grooves for both faces.

Once you're happy with the results of drawing the cheeks of the eye, then it's time to turn your attention to the ball face of your hammer.



Again, working towards the struck end of the drift, create a third fullered groove on the cheeks of the hammer

The finished eye is a waisted eye. Setting the drift in at opposite ends to create the waist.

Drift from the top of the billet on the last go, making that end of the eye a bit larger. I mark the billet to remind me which is the top of the billet.

"Square, octagon and then round". Knock the corners off the faces so that you're left with an octagon. Knock those corners off until you get a round end to one face of your hammer.

Depending on your workshop and its contents, you might want to stay with the heat and hot rasp the round end to a dome.

If you've a large belt grinder available, then move on to the other face of the hammer.

I like the flat face of my hammer to be octagonal. Having the corners knocked I find to be very useful, especially when drawing down.

Rasp the face when you're done. A flat face to me has a crown, around 1/16th-inch proud of the edges.

When all the rough work is complete, take a general heat to the lower critical temperature of the steel that you're using.

Let the hammer soak in the heat for a little while, and either stress relieve (allowing the hammer to cool at the side of the forge or anneal the hammer-head in a bucket of Vermiculite or builders lime.

Dress the faces and heat treat according to the steel used. I use strips of worn out grinder belts to shoe polish the bottom edges of the eye, so that I don't get shavings when set the handle into the billet.

Editor Note: This article reprinted from the California Blacksmith Association July-August 2021 online newsletter issue



The ball-face or rounding face of the hammer



The flat face of the hammer



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

Rob Hough
Membership Secretary
9790 N Sharp Bend Rd
Albany, IN 47320

First Class Mail

Address Correction Requested
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sender

July 15 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