October 2019

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.

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.

Oct 19 2019	**KEITH HICKS SHOP**
Nov 16 2019	**JOHN BENNETT'S SHOP**
Dec 14 2019	**TBD**
Jan 18 2020	**TBD**

Editors Message

We have some hammer ins on the schedule. Keith Hicks is hosting us this month and the Covered Bridge Blacksmith Guild is hosting November. If you are interested in hosting a hammer in, contact Gary Phillips at (260) 251-4670 or behere@netdirect.net.

As I write this, the Upper Midwest Regional Blacksmith Conference at Pontiac, IL is about to start. It should be a good conference with Terry Sheridan and Steve Williamson demonstrating.

I have not heard any real news to share. I hope connect with folks at the hammer ins and have some news for the November edition. Enjoy the articles.

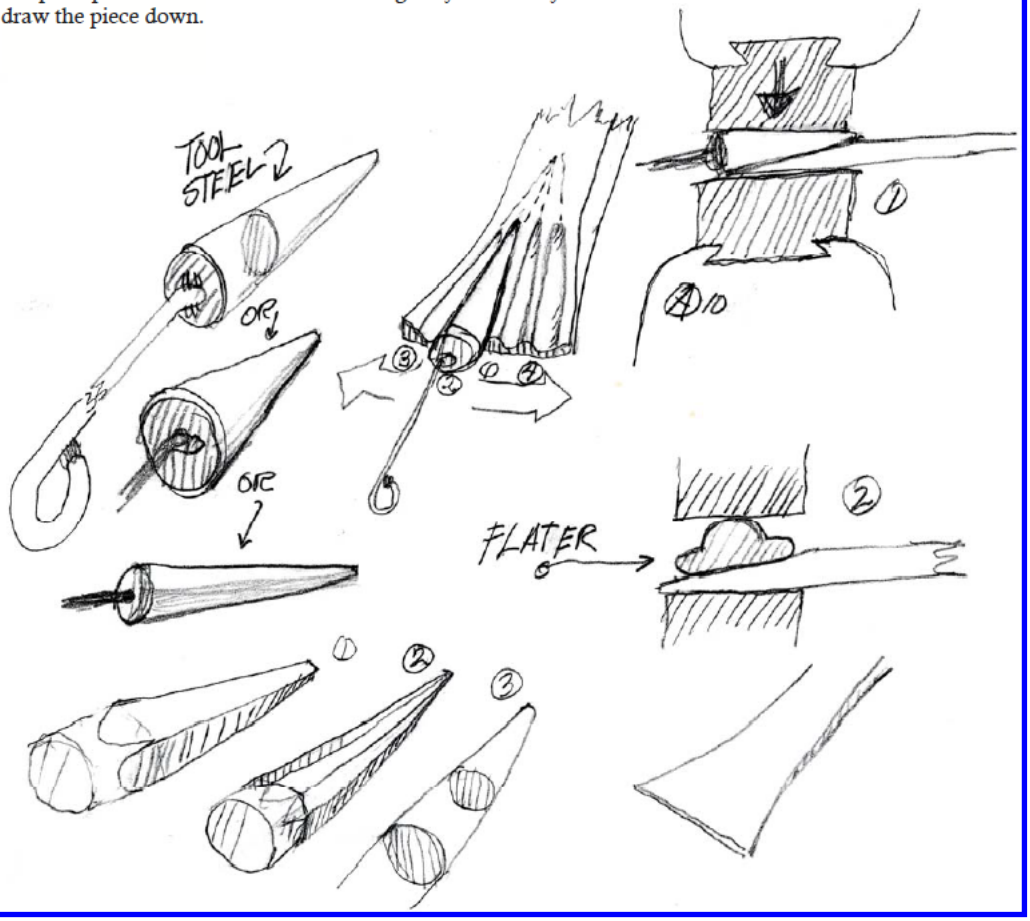
Conical Drawing-Out Tool

By Steve Alling, a MABA member

This article reprinted from the Sept-Oct 2019 edition of the The Upsetter, newsletter of the Michigan Artist Blacksmith Association

Make your cone out of a good tool steel and make the length of your cone so that it's angle matches the angle you want to draw to.

Keep the point of the cone toward an imaginary center as you draw the piece down.



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Dates to Remember

Oct 19
Hammer in at Keith Hicks

Nov 16
Hammer in at Covered Bridge

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

IBA Satellite Groups and News

1) Sutton-Terock Memorial Blacksmith Shop
Meet: 2nd Saturday at 9 AM
Contacts: Fred Oden (574) 223-3508
Dennis Todd (574) 542-4886

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

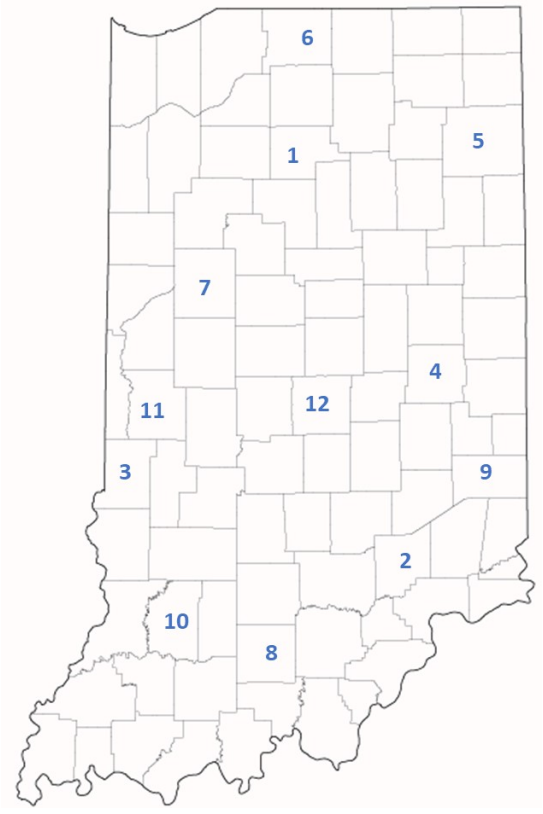
8) Meteorite Mashers
Meet:
Contacts: Mike Mills (812) 633-4273
Steve King (812) 797-0059
Jeff Reinhardt 812-949-7163

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



Meteorite Mashers

Our meeting this month was held as it were at the SOFA Quad State.Our longest meeting each year. Our next meeting will be at Steve King's newly renovated shop in Paoli In.

Jennings County Historical Society Blacksmith Shop

The Jennings County Historical Society Blacksmiths met on Sept. 14 at Vernon. Dave Good built the fire and got things started. Kenny Dettmer worked on the 50# hammer and Brad Weaver made two hooks from re-bar. Brett Luker was mentored by Kenny while making a "S" hook. Dave forged welded a wrought iron dam spike. Bill Newman made a tool rest for an old, hand cranked, grinder. Alex Spellman worked on an item from a ball-bearing. Dave forged welded a piece if leaf spring to wrought iron, split the eye and drifted for a camp ax,while adding a cutting edge to the blade. We had 14 people who signed in. our next meeting will be here on October 12th . Hope to see you then. As usual, bring iron in the hat and a healthy wallet ! Paul Bray

IBA Satellite Groups and News (continued)

Bunkum Valley Metalsmiths

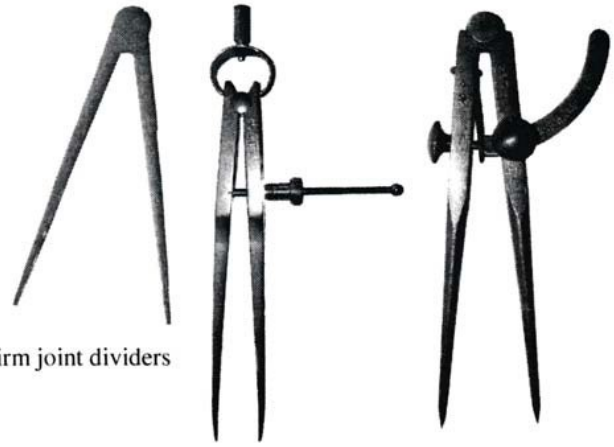
We met Saturday the 4th with great forging weather! We had a special guest Brad Weaver who shared the details of the IBA awards available. We enjoyed having him spend time with us. Tim was extremely happy to win Brad's door prize, new tongs.

There was forging, story telling, good food and good friends. There was even some hatchet throwing. We welcome visitors. Thank you Brad!

Some Under Used Tools

Carl Davison
Northeast Blacksmiths Association

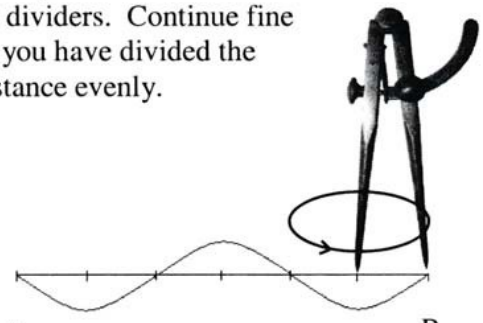
We all use rulers for layout work and checking measurement throughout our work. I certainly wouldn't be without one and have many strategically placed in my shop, so one is always handy. Dividers and calipers however are too often forgotten about and can be extremely reliable and handy tools if given the chance. When Peter Ross demonstrated making a pair of 5 leaf firm joint dividers he spoke about how rulers were not available for early craftsmen. Blacksmiths relied more on their eye, and dividers to transfer measurement and proportions. Of the 3 types of dividers shown below I prefer the wing dividers for blacksmithing and general shop work. They can be set and locked in position so there is less of a chance they will be changed in handling. Most of the wing dividers like the ones pictured below have a fine adjustment knob on the side that is extremely handy. By keeping the tips sharp you can scribe your reference mark when you are laying out pieces to be cut or center punched, scribe a circle or an arc. Once set, the dividers are a quick reference on a hot piece of steel as compared to checking the fractional divisions on a ruler especially when repetitive items are being made. As the name implies they can't be beat when it comes to dividing up a line into equal segments or laying out repetitive equal measurements in a line. To divide a measurement AB into six equal parts, set your dividers to approximately 1/6th of the distance and step off the distance. If your last division falls short of point B, 1/6th of the remaining distance to B should be added by opening the dividers. If your last division is past point B 1/6th of the distance past B should be taken off by closing the dividers. Continue fine adjustments until you have divided the distance evenly.



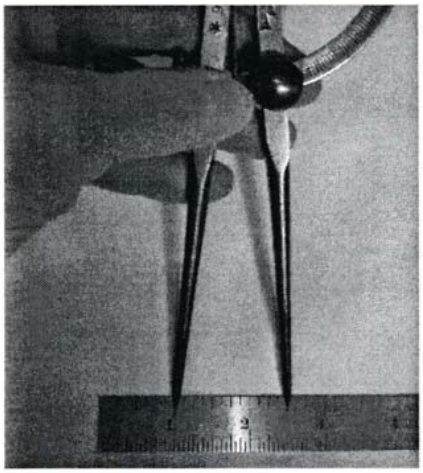
firm joint dividers

spring dividers

wing dividers

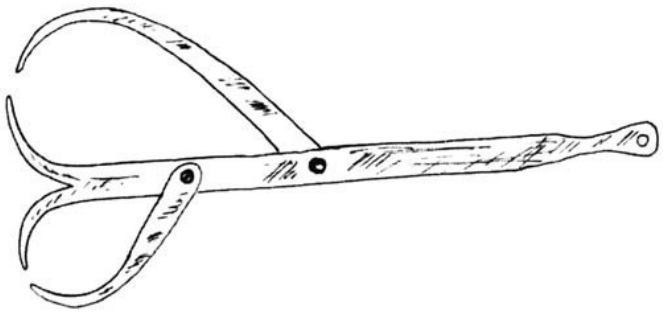


A B



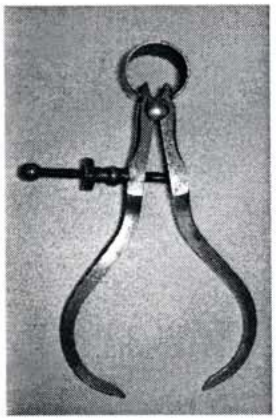
proper way of setting dividers with a ruler

Calipers are another tool that can be helpful. When you need to check if the width or thickness of your forging has reached it's targeted size a pair of outside calipers are very useful. Traditional blacksmith calipers have a double caliper. You can use one caliper side for width and the other side for thickness. You can also use the pair as a go/no go gage for one critical measurement.

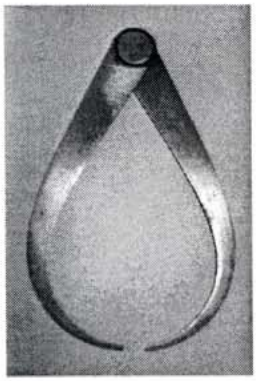


This 3 page article reprinted from Fire & Iron the newsletter of Northeast Blacksmiths Association Spring 2011

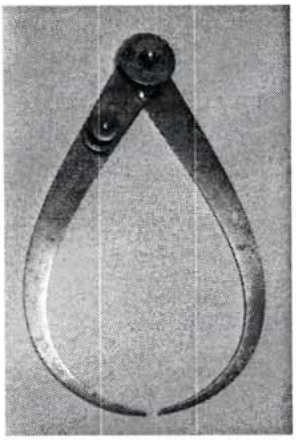
Like dividers there are numerous different types of calipers available. For general shop work any of the below pictured outside calipers would be fine. Although the locking calipers pictured below are usually used for precision machinist work the ability to tighten the thumb wheel to lock them in place makes them less likely to lose their set while being used. They also have a fine adjustment feature which can be handy. Inside calipers are also available in the spring style, firm joint or locking type. If you are setting outside calipers to a specific measurement one tip is placed on the rulers end and the other tip is adjusted to the desired measurement making sure to keep the tips both even to the ruler edge. Inside calipers can be accurately set by setting outside calipers and then transferring that measurement to the inside calipers as shown below. Using calipers inside or outside are extremely useful for transferring measurements from an item that you want to duplicate.



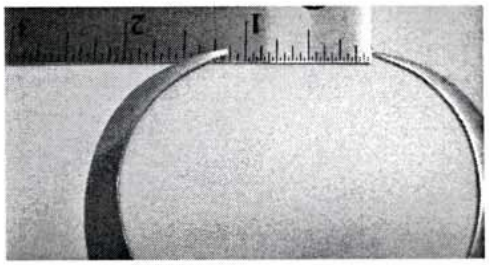
spring outside calipers



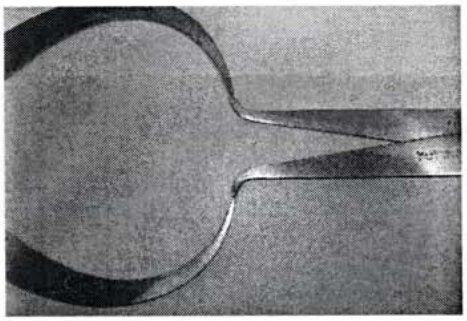
firm joint outside calipers



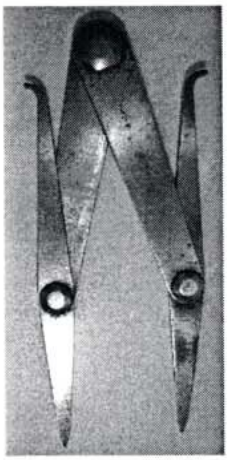
locking outside calipers with fine adjustment

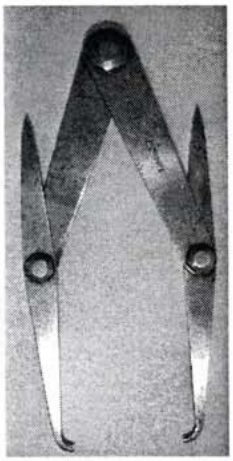


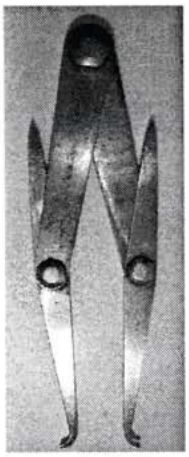
setting the outside calipers



transferring outside caliper measurement to inside caliper or inside to outside

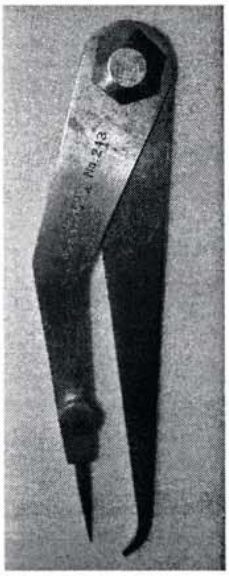




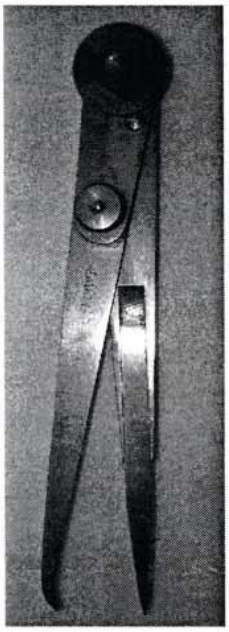


Combination divider / calipers are a three in one tool.

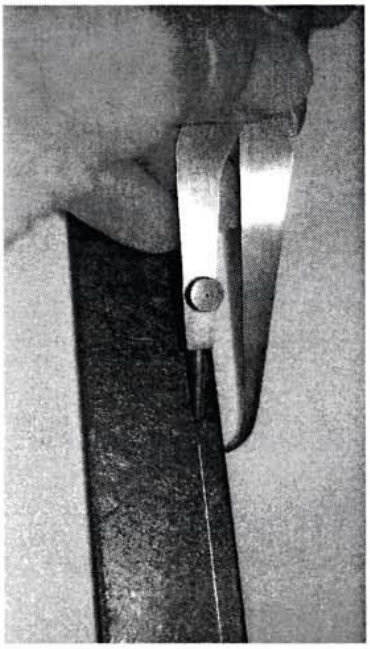
Hermaphrodite calipers have one leg shaped like a caliper, and the other with a scribe point like a divider. They are mainly used to scribe a line parallel to the edge of material or to locate the center of a piece of stock. They are set by placing the caliper end on a rulers end and moving the scriber point to the desired measurement on the ruler. Be sure to keep the caliper end and the scriber point parallel to the rulers edge to maintain an accurate measurement. Hermaphrodite calipers are also useful for checking or transferring measurements as the caliper end hooks well to the end of a piece of stock.



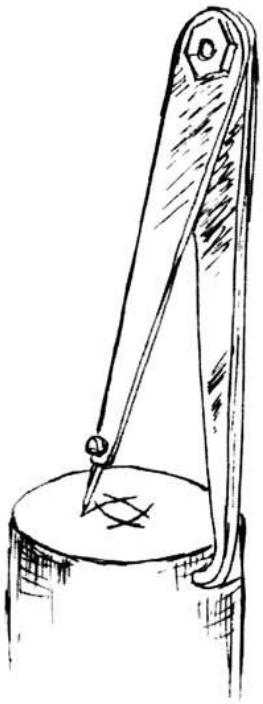
firm joint hermaphrodite caliper



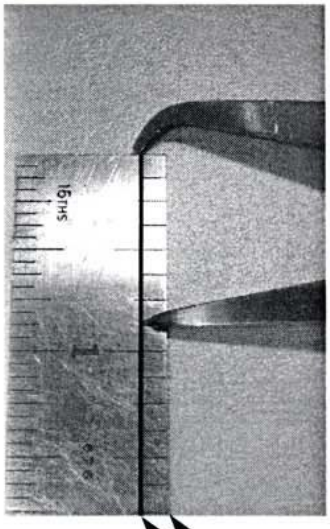
locking hermaphrodite calipers with fine adjustment



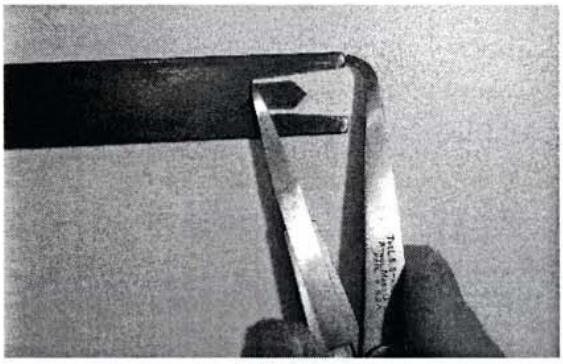
scribing a line parallel to the edge of stock



locating the center



Hermaphrodite caliper end and scriber parallel to ruler edge



checking a measurement

Kinyon Simple Post Vise

Reprinted from the Anvil's Horn A Publication of the Arizona Artist Blacksmith Association March 2012 edition

Answering a plea for a simple post vise, Ron Kinyon came up with an alternative to trying to find and buy a 100 year old vise or spend big on a new Pakistani made vise. We think this vise actually performs better than the alternatives.

- The jaws are removable which allows them to be virtually any size and shape.
- The jaws have a bit of clearance to the posts, which allows some conformity to tapered work.
- The bottom pivot is adjustable to accommodate widths up to 43' while maintaining parallel jaws.
- The vise can be built any height.
- Build cost is around $150. (depends on choice of base and number and style of jaws).

The posts are 2 x 2 X 1/2 wall box tube. The jaws are built on receiver tube cut 3" long (2 1/2 X1/4 wall box). 1 X 1 1/2 cold rolled steel make the jaws. 3/8" X 3" strap makes the top jaw gusset and the lower pivot brackets. 3/8 X 1 1/2 strap is used for the clamp. Grade 8 bolts make the pivots and the clamp stop.

The screw is 1 1/43' Acme because the nut is 2" across the hex. The Acme threaded rod can be purchased from Enco in 3' or 6' lengths. However, each vise only requires 4 1/2". A little lathe work is required.

Options for the base include 3 legs, a base big enough to stand on, and a receiver tube concreted underground (making the vise solid with the earth, but removable for storage).

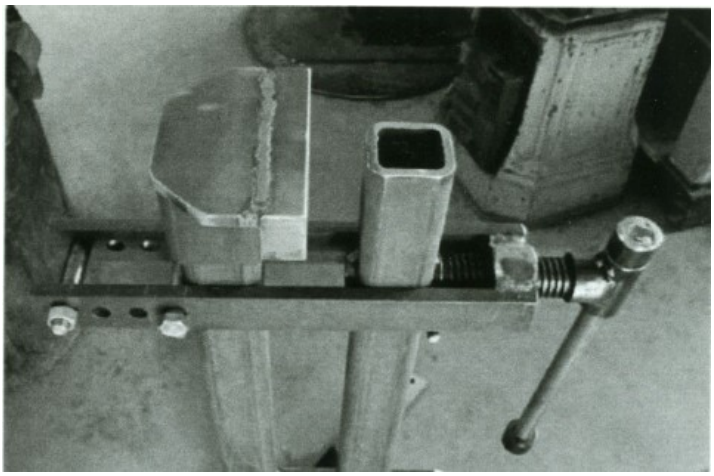
Ron is planning to host a few vise building workshops sometime in the future. If you are interested in attending one email Ron at ronkinyon@ aol.com

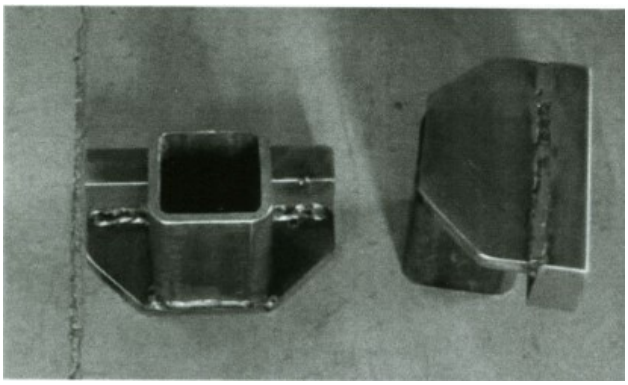
If you build one on your own let Ron and I know what great ideas you came up with.

Ron used receiver tube to attach the bottom of the vise to the base. Here you see two possibilities.

R: Notice he welded the tube to a smaller plate and bolted it to the large plate. It would be difficult to weld to the large plate without it warping, which would make the base wobble.

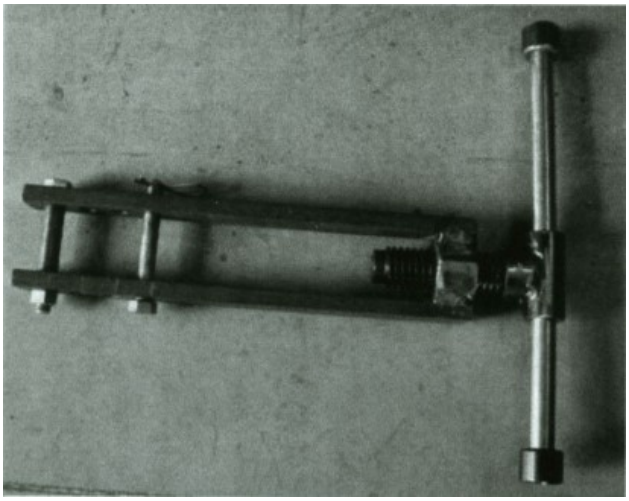
Jaws: the 3/8" gusset is flush with the top of the 1 X1 1/2 and tops the 2 21/2 square tube. Clamping and carefully tacking the pieces before welding will keep everything square. These jaws are 5” long, but they could be any length. All material is mild steel, so far. We don’t know if another material would be advantageous.

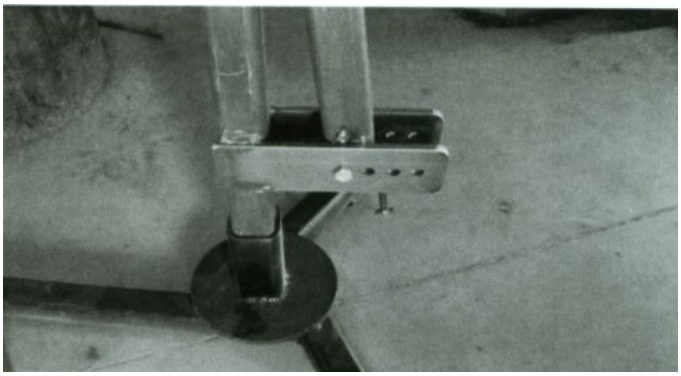




The ends of the posts are left open. The 1/2” diameter pivot holes and the clamp holes are 1” apart. The hole in the moveable post is drilled 1/4” off center which allows the post to be turned 180 degrees for a 1/2” adjustment. The 1/2” adjustment may not be required, as the jaws hold tightly throughout 1 inch of adjustment.

The pivot tube fits tightly in the 3/8 X 3” plates to keep it from moving left and right. The bolt protruding downward from the outside of the pivot tube retains an extension spring. The other end of the spring is connected to a hook on the fixed post with a 43’ length of chain. When the pivot point is moved to another hole, the chain can be lengthened.

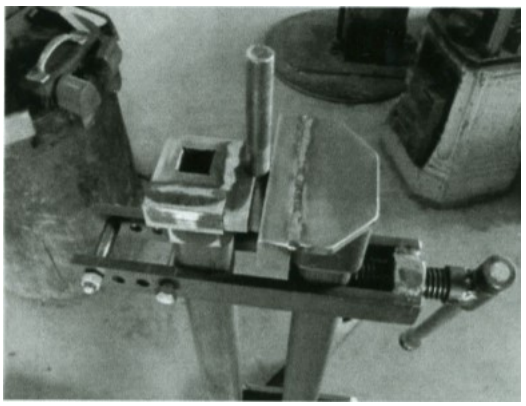




The bolt at the left has a piece of tube 2” long to keep the clamp spaced properly.

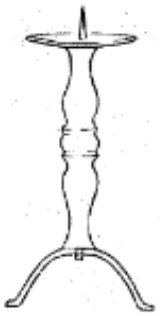
The 4- 1/2” long acme screw is turned to 1” diameter on the clamping end which will allow the screw to be removed if it mushrooms during use. The other end is turned to fit the ID of the 1” x .125 DOM (3/4;’). The handle is 3/43’ with the DOM forming the end stops.

Ron made one jaw with a 1” square hole to fit his hardies.

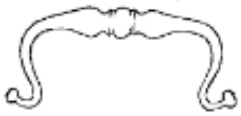


MAKING A DECORATIVE DIE

by Bill Robertson



This project is a result of the Walt Anderson Founders Scholarship, awarded by FABA, which provided the opportunity for me to spend several days with Tom Latane at his shop in Pepin, Wisconsin. Tom uses this die for door pulls and as a decorative pattern on projects such as candle stands. Using the following process many similar dies can be easily made for all sizes of stock.



STEP 1: Making the Die Jig

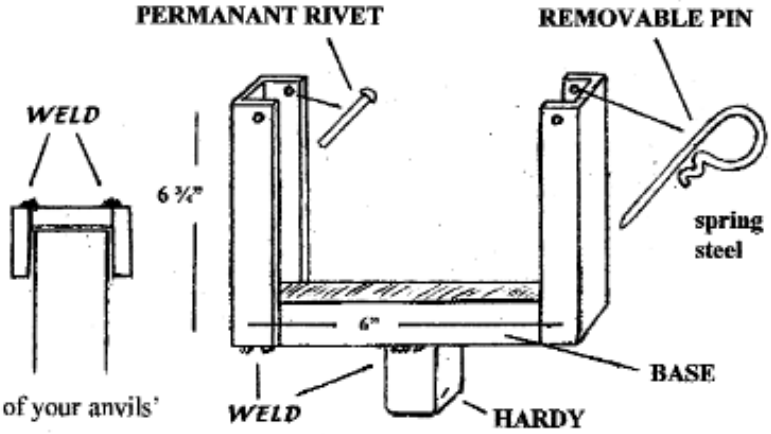
Materials needed:

1045 tool steel 1-inch square. x 2 feet (two 6-inch sections and two 5 ½ inch sections). This can be purchased at your local *Metal Supermarket* for about $10 per foot.

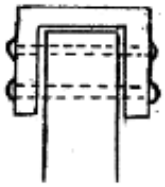
Flat mild steel 1 x ¼ inch x 3 ½ feet (six pieces 6 ¾ inch long)

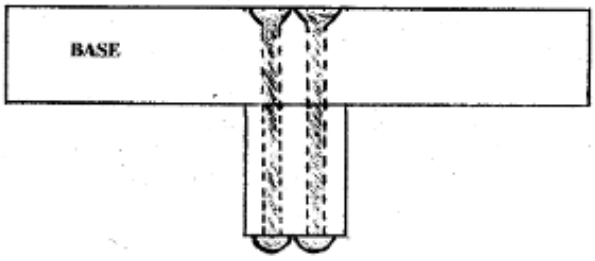
Square mild steel 1 ½ inches long (the size of your anvils' hardy)

A small piece of spring steel for the removable pin



Note: If you do not have welding equipment you can make this jig by substituting 1/4 inch flat stock, 3 inches wide for the sides. Hammer it around your 1-inch square stock to form a channel for your sides and rivet it to the base. You can also attach the hardy by drilling several holes through the base and hardy, recessing the holes in the base and riveting the two together.

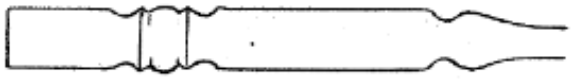




STEP 2: Making the Die Patterns

Materials needed:

¾ inch round mild steel 12 inches



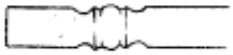
Kasenit (surface hardening material). This can be purchased through the *Brownells* catalogue for $10.55 (order #479-001-100). Their phone number is 515-623-4000 (Rob Gunter's quench will work as well).

Small round and half round files

This 2 page article reprinted from the December 2000 edition of the Clinker Breaker, the newsletter of the Florida Artist Blacksmith Association.

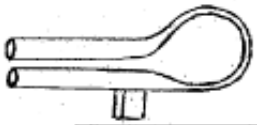
Making a Decorative Die page 2

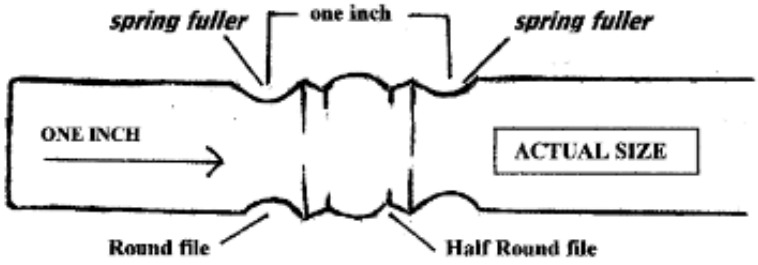
Die Pattern A



Using a spring fuller, fuller a ¼ inch deep depression 1 inch or so back from the end of the round stock.

Next fuller a ¼ inch depression 1 inch further in from that.





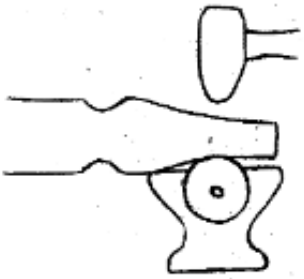
File the center of the two fullered areas to the desired shape. Next heat the die pattern area to critical (where a magnet does not stick), and coat with *Kasenit*. Reheat to a bright red then quench in cold water.

Die Pattern B

From the other end of your round stock that now has Pattern A on it spring fuller a ¼ inch depression 2 inches back from the end.

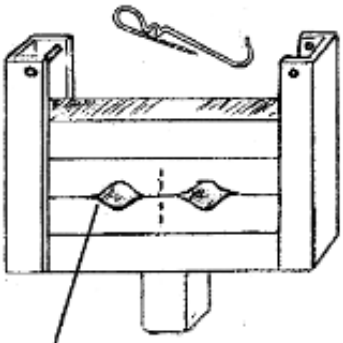
Next using a wide cross-peen hammer fuller the end over the horn of the anvil and file to finish.

There is no need to surface harden this die pattern with *Kasenit*. It has enough mass and no refined detailing so it will hold up fine when making the die.



STEP 3: Making the Die

You are now ready to use your die patterns to form the impressions into the die blanks.

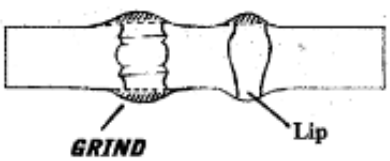


A gap develops on the sides. This is good. It may be necessary to grind them down even more if bite marks appear on your work when you are using the die. Also place a chisel line down the middle of the die blanks on one side. This will make sure that you get the dies set on top of each other the same way each time.

Heat two 5 ½ inch pieces of the square stock (die blank) to an orange heat. Note you do not use 6 inch sections because the metal will stretch when forming the dies. It may become necessary to trim some off the ends if it starts to bind in the die jig.

Place one hot piece of the die blank into the die jig, center a die pattern on it then place the second hot piece on top. Place a cold square piece on top of that. The top piece saves wear and tear on your die.

Hit with a heavy sledgehammer. After the first blow turn the die pattern ¼ turn and hit again. When able, place the pin in, it will keep the dies from jumping out. Continue until the two die blanks touch. Be careful that the pattern is lined up properly before each blow. You can feel for this by turning the die pattern back and forth slightly.



Repeat for the second pattern.

When cool grind the sides down.

You can refine how the die performs by how much you grind the sides and the lip of the pattern. You can use modeling clay to see how the die performs.

After you are done grinding, heat the dies to critical and quench in water to harden

You are now ready to use your new die (use ¾ inch round stock in the dies)

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

October 19 Hammer In
Keith Hick's Shop

5184 State Road 252 Brookville In. 47012.

From I-74 take the Lawrenceburg/ St. Leon exit. Turn left onto IN-1 North. Continue on IN-1 till it tees into US 52. Turn right onto US 52 towards Cedar Grove. Go about a mile and turn left onto Big Cedar road. Go to the end of Big Cedar road and turn left onto IN 252. I'm the second place on the left. Look for a school bus in the yard.
From Brookville turn east onto IN252 (by the court house). Go for just under 7 miles and again look for the school bus in the yard.

Pitch in lunch

November 16 Hammer In
Covered Bridge Blacksmith Guild Shop

It is being hosted by the CBBG at the 4H blacksmith shop at the fairgrounds north of Rockville. It is a pitch in lunch with ham and beans. If anyone wants to participate in the trade item it will be a ladle.

Doors open at 9. Dave Wells will be demonstrating techniques required to make traps.