



On the Anvil

Philip

August 24, 2010



I would like to thank everyone who came to Camden and with stood the heat, man it was hot!! And a special thanks to Ray Pearre for helping me hosting the meeting. I hope I didn't bore any one with my demo and someone got something from it.

The next meeting will be October 9th at Jeff Hatfield's place in Woodruff; I'm looking forward to it.

Someone asked about the knifemakers in the guild getting together or having a meeting in between the Guild meetings to share info and ideas, I'm all for that.

The Guild had another great iron in the hat; Thanks to all members who made things, there were some pretty nice things there. Let's continue to do this. There were a lot of nice comments on the things that were in the iron in the hat.

Ann Suggs sent me a card asking me to put in the news letter her deepest appreciation to the folks that helped with the auction and making it a success and they are Jerry and Bessie Fowler, Cary Epps, Ron Barton, Billy Ridgill, Mike DuBois and Ray Pearre.

I'm still working on getting another class for sometime in October or November. If you have any questions you can contact me by email or phone at the address on the officers' page.

Adrian Parks is our new web-master, if have any photos of projects or pieces you have done please send him your images and information so the Gallery can be updated. His contact information is on the officers' page too.

Keep Ann Suggs and Suggs family in your prayers.

Sincerely, Michael Tucker

Iron-in-the-Hat

Item	Donated By	Won By
Hammers	Mike Tucker	Bill Burgess
Bucket of Sewell Coal and Cables	Layne Law	Gerald Alsbrook
Pepper Relish	Bill Burgess	Bruce Hester
A dozen RR spikes	Joe Holladay	Dennis Shoemaker
Saw Blade	Heyward Haltiwanger	Charles Meyer
Saw Blade	Heyward Haltiwanger	Chris Herron
Cross	Tony Etheridge	Meck Hartfield
Swell Knife	Tony Etheridge	Linda Creek
100 liter SS Drum	Perry Thomasson	Larry Wiles
Rail Track	Perry Thomasson	John Tanner
OSPHO Metal Cleaner	In memory of Jimmy Suggs	Chris Herron
Miscellaneous Metal	In memory of Jimmy Suggs	Johnny Marks
Insulators	In memory of Jimmy Suggs	Perry Thomasson
Lug Wrench	In memory of Jimmy Suggs	Johnny Marks
Hay Hook	In memory of Jimmy Suggs	Chris Herron
Damascus Knife	Meck Hartfield	John Tanner
Dragon Door Knocker	Meck Hartfield	Willie Locklear
Leaf Key Ring	Jerry Fowler	Brenda Hester
Heart Hook	Jerry Fowler	Jesse Barfield
Plant Stand with Plant	Bill and Linda Creek	Hayward Haltiwanger
ABANA Tee Shirt	ABANA	Ray Pearre
Hammers	Larry Wiles	Willie Locklear
Copper Palmetto	Mike Bell	Chris Herron
Horseshoe Rasps	Willie Locklear	Perry Thomasson
Horseshoe Rasps	Willie Locklear	Chris Herron
Rosemary and Sage	John Tanner	Jesse Barfield
Trivet	John Tanner	Willie Locklear
Spiral Candle Holder	Gerald Alsbrook	Jesse Barfield
Gourd Bird House	Sharon Alsbrook	Meck Hartfield
Two Plant Hangers	Neal Lynch	Jesse Barfield
Harness Hooks	Jesse Barfield	Layne Law
Assorted Pop Rivets	Jesse Barfield	Johnny Marks
Hoof Pick	Jesse Barfield	Layne Law
Hoof Pick	Jesse Barfield	Johnny Marks
RR Spikes	Johnny Marks	Bill Burgess
Spoon	Pam and Court Campbell	Jerry Fowler
Truck Springs	In memory of Jimmy Suggs	Layne Law
Tool Box	ML Tanner	Willie Locklear
Tool Box	ML Tanner	Cary Epps

It looks as if the quality of our donations is improving. Thanks to all of you. I wish that I could have been there to sweat with the rest of you.. Through your generosity, the scholarship fund grew by over \$591!!!

For Sale

Fire Bricks – Brand New, Industrial Grade. \$1 ea. Ed Sylvester

803.414.2487 803.796.3749

127 pound Peter Wright Anvil Chip in of face/side \$325 Barry Myers

A CHEAP TRICK FOR A METAL CUTTING BANDSAW

By: Tommy Ward, Mississippi Forge Counsel

The blades on many horizontal bandsaws can be moved to a vertical position for freehand cutting, but operation in the vertical mode without some means of supporting the work can be difficult, with accuracy hard to achieve and a real possibility for broken blades and physical mayhem.

Like any other cutting tool, safe and effective operation of a bandsaw requires that the work be stable, well supported and properly aligned – none of which are possible when balancing a piece of stock on the diminutive blade guide plate of a horizontal bandsaw. The obvious correction for this problem would be to equip the machine with an auxiliary work table, however most saws I've seen don't have one, and even when available the auxiliary tables are often dinky little things that are ill-suited to supporting long or heavy stock and require some effort to install.

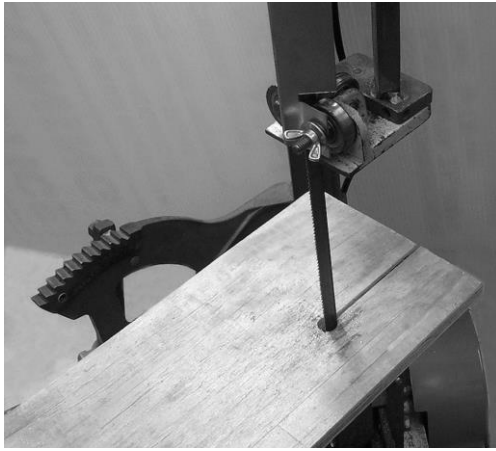
A recent project required a number of accurate cuts to be made in 3/8" flat bar, and necessitated that I devise a way to handle the work in a safe and comfortable manner. The solution I came up with is a table that is supported on one end by the saw's blade guide plate and held securely in place by the jaws of the vise. The beauty of this set-up is in its utter simplicity of construction and installation.

The project can be easily constructed from two pieces of scrap wood, with the work surface constructed of 1/2" or 3/4" plywood, and a support crossmember made from "two by" stock. Make the table whatever size you'd like; the only critical dimension being to cut the support crossmember to a height that will allow the table to lay level on the blade guide plate.

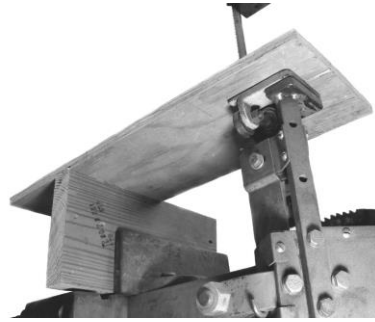
Cut a slit in the off end of the table to allow it to slide past the blade for installation and drill a clearance hole roughly the width of the blade where it passes through the table at the end of the slit. Then clamp the support crossmember in the saw's vise and mark its mounting location with the clearance hole properly positioned at the blade. I made a shallow dado cut across the bottom of the table and secured the support crossmember to it with carpenter's glue and a couple of flat head screws, but a simple butt joint would work too – just make sure the crossmember is square to the kerf of the saw blade.



Easily constructed auxiliary work table improves safety and accuracy when operating a horizontal band saw in a vertical position.



Installation is a snap – simply swing the blade assembly to vertical, slide the end of the table into position with the blade, and tighten the vise jaws against the support crossmember



.A thin kerf and clearance hole allow table to be quickly installed over the saw blade. Underside view shows the auxiliary table supported by the saw's blade guide plate, with the mounting crossmember held firmly in place by the vise jaws.

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December 2009**



Guild News and Planning

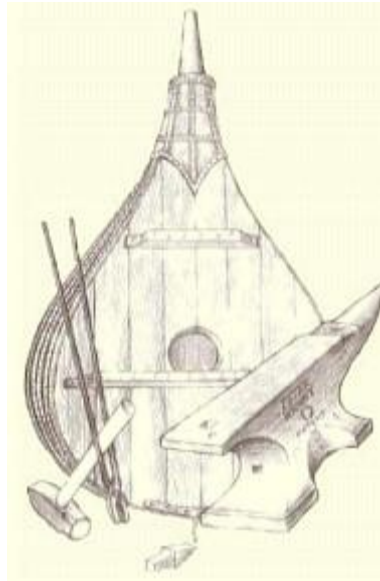
Month	Location	Host	Demonstrator
October 9	Spartanburg	Jeff Hatfield	?
December	Sumter	Mike Tucker	Jerry Darnell
February	Conway	Bob Hill	?
April	Magnolia Gardens	Bill and Linda Creek	?
June	Westminister	Roger. Gail, Jerry and Bessie	?Mr.

Donald Shively put in dibs on next October's (2011) but that is still too far away to plan too much yet,

Two \$700 Francis Whitaker Scholarships are available for the Traditional Joinery Project class at John C. Campbell taught by Clay Spencer, November 7 – 12. See the webpage for details or contact Barry.

Membership List

Not published in Online Version



PUNCHING by James Fleming

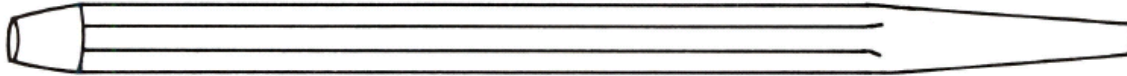


fig. 1

James Fleming is a professional blacksmith and frequent contributor to the Anvil's Ring. For the past six years, he has combed the National Archives researching and resurrecting books on blacksmithing most of them long out of print and unobtainable. From his research, he has gleaned material for his current series of articles on basic blacksmithing operations. To receive more information on book reprints and The Blacksmith's Source Book: An Annotated Bibliography, write: James Fleming, Rt. 1, Box 784, Bonanza, Oregon 97623.

Punching holes in metal is one of the basic operations the blacksmith is called upon to perform repeatedly. In this article I will cover some of the basic ways to punch a hole and the tools used to produce them. Why punch a hole instead of drill it? There are certain advantages of punching. A punched hole swells the metal around it, making the area stronger. It follows that when punching a relatively narrow cross section, a pleasing swelling is produced along the borders of the bar. The holes can be fashioned in a variety of different shapes besides round. Time and energy can be saved in the execution of a piece if it doesn't have to be allowed to cool, then drilled, then reheated before the next step can be performed.

Why drill a hole instead of punch it? Drilling is a machining operation that produces a precisely sized hole. It does not produce a swelling along the edges of the work. In thin or delicate work drilling won't distort the piece such as a leaf finial on a handle, as would occur by punching. Drilling can be faster, especially when a number of holes are to be produced and strength and visual welling are unimportant considerations.

Punching a Hole

To punch a hole in $\frac{1}{4}$ " flat stock, the starting point is first located with a center punch. This mark should be bold as a light mark will be difficult to find when the

bar is at heat and scaling. The bar is then heated to a bright orange yellow and placed on the flat of the anvil. The appropriate sized punch (figure 1) is then placed vertically over the mark and driven $\frac{2}{3}$ of the way through the stock, or until a certain resistance is noted from the anvil beneath (figure 2). Turned over 180° , the bottom of the stock will show a dark spot where the end of the punch cooled it. The punch is quenched then located over the spot and lightly started into the backside. When the punch is thus set, the operation is moved over the pritchel hole and the punch driven through to the depth creating the right sized hole. A small plug of metal the same size as the end of the punch will fall away from the work, corresponding to the amount of metal removed. During punching, a small can of water should be kept close to the anvil to cool the punch occasionally to keep it hard. If this is not done the end of the punch can become overheated, soft, and will mushroom inside the stock, preventing its removal. If this happens, two methods can be applied to remove it. First, the punch can be driven further into the work, its tapered profile forging a larger hole through which the mushroomed end can be easily removed, though to large a hole could be thus created, ruining the work. Second, the stuck punch can be placed upside down through the hardie hole with the work resting on the anvil face, and another punch used to drive the first one back out. Since both ways tend to make a mess of the job, it behooves one to be careful and not get it stuck in the first place.

Punching a Hammer Head

Punching thick stock, of 1" or thicker, the help of a striker is often used. In this case a handled punch (figure 3) is held over the work by the smith and struck by the helper. The thicker the stock, the more care must be exercised to keep the punch vertical and the hole centered, lest the hole become lopsided. The stock is marked to locate the starting point, heated to the maximum forging temperature for that alloy, placed on the face of the anvil and the punch located

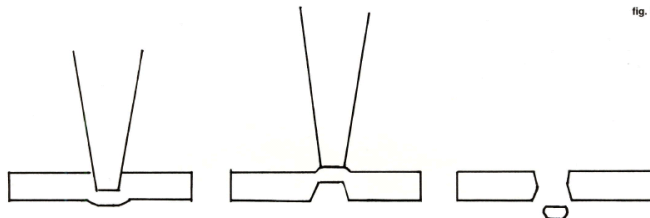


fig. 2

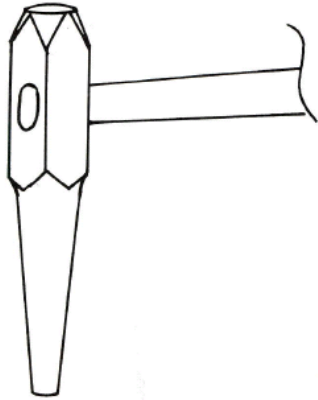


fig. 3

over the mark. The helper then starts the hole with a light blow to assure that everything is lined up. A heavy initial blow can drive the punch askew, causing injury and damage to the punch, the work, or the anvil. When the hole is started the helper delivers strong blows to form the hole quickly. The smith should jiggle the punch after every blow to prevent its getting stuck. Every third or fourth blow the punch should be removed and cooled, and a little powdered coal or charcoal placed into the deepening hole prior to replacing the punch [dipping the punch in beeswax is much easier and works better than coal – Ed.]. The gasses created by the powder will help prevent the punch becoming stuck, and may act to keep it cooler against the hot metal. The hole is punched through from one side until it creates dark spot on the underside, then the work is turned over and finished from the other side over the pritchel or hardie hole. The tapered shape of the punch will form an hour glass shaped hole when driven in equally from both sides, a desirable feature in a hammer head as it will secure the hammer handle more firmly to the head.

Drifting

Punches, whether square or round, handled or not, are made to taper, both to allow different sized holes to be made from one tool, and to prevent sticking in the work. While in some products, such as the hammer head, such a taper is desirable, in many other cases a uniformly dimensioned hole is required. Once a hole is punched it can be made uniform by using a drift. A drift is an unhandled, barrel shaped tool the maximum girth of which equals the desired shape and size of the finished hole. The drift is tapered at both ends to allow its passing completely through the stock (figure 4). Drifts can form a variety of symmetrical and a symmetrical hole depending on their shape as long as the end of the tool is small enough to fit into the already punched hole. If it is too large, the drift will act as a punch itself, or a ream, cutting off metal along the path of least resistance as it is forced through. Drifts of several different sizes may be employed to form larger holes.

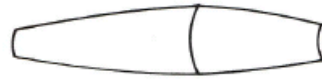


fig. 4

When the hole is larger than the hardie hole, the punch or drift may not pass through it without getting stuck. In that case either a bolster or a swage block may be used instead (figure 5). A bolster is a doughnut shaped steel ring with a center hole slightly larger than the punch or drift. The tool can then be driven into or through the work without difficulty. The swage block is a large cast iron or steel block with different sized square, round, and rectangular holes in its body. The work to be drifted is placed over the appropriate hole and the tool driven through. It is important to select a bottom hole close to the punch or drift size to prevent the work from distorting into the depression.

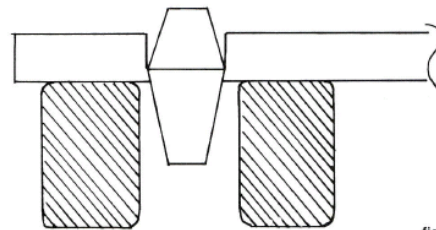


fig. 5

Power Hammer Punching

Holes can be punched with the power hammer using specially designed tooling for the purpose (figure 6). The punch is much shorter to allow as much room as possible for the hammer die to accelerate and develop power. It must be attached to a handle for the smith to maintain control. The work is marked and heated placed on the anvil die and the punch located upright over the mark. A light blow is used first to set the punch into the work, followed by harder blows until the hole is nearly through. Care must be exercised here to prevent the punch from contacting the anvil die which could damage the die or the punch; the latter causing the punch to stick in the work. Before punching the backside a handled bolster is placed on the anvil die to receive the punched plug and the end of the tool. The bolster hole should be slightly larger than the punch to prevent distortion. Unless a special jig is used to hold the bolster securely onto the anvil die, a helper must be used, leaving the smith the control of the stock and punch. The hole thus created can be further sized with the application of a drift or drifts over the bolster under the power hammer.

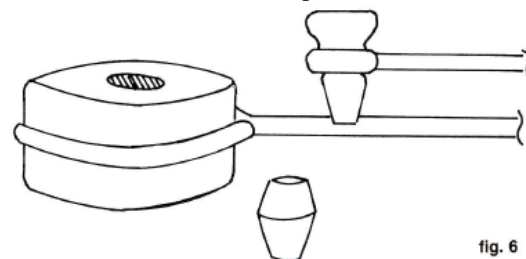


fig. 6

Slitting

When punching close to the margins of the work or when punching a large hole in relatively small stock, say a 1/2" hole in a 1/2" bar, stretching will occur in the narrowest cross section causing the bar to become weaker at that point. While this effect can be controlled somewhat by cooling the thinner portions before drifting to final size, another approach is called for. Instead of using a punch, a hot cut makes the initial opening through the work in line with the bar, the length being half again as long as the finished hole is across. The cut area is heated and placed level in the vise just outside of the jaws and struck from the other end of the bar as though upsetting the heated portion (figure 7). This action opens the slit enough for a drift to be started which is driven into the finished size over the pritchel or appropriate bottom recess in the swage block. The net effect is to form a hole of maximum sidewall thickness with a slight shortening of the bar. This shortening must be taken into consideration when making many holes in a bar as for a railing or gate.

Piercing

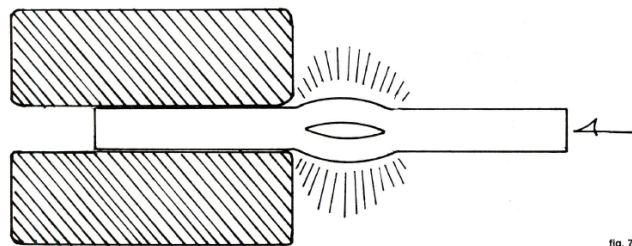
Piercing, unlike punching, causes very little distortion of the stock and is useful for making holes in finished forgings and in thin stock. The piercing is done with a standard punch but from one side only. The bottom of the stock must be carefully supported by a bolster nearly the exact size of the piercer. The metal is heated, placed over the bolster and punched. The piercing will produce a slug of nearly the same dimensions as the tool end with correspondingly little distortion of the work. Such holes can be made with a hand punch cold over a lead backing plate, but the holes thus made, especially square ones, will be overstressed and possibly cracked at the margins. Often it is desirable to make square holes in a bar without any distortion of the margins. In this case the metal is first removed with a drill, and then drifted into its final square shape with a square punch or drift.

Punches

Punches are usually made of medium carbon steel, 50 to 60 points carbon to allow their being hardened and

tempered for longer wear. The natural tenacity of this steel offers good usability even when the temper is ruined by overheating in the operation, which is often unavoidable. Once the punch is forged to shape it should be annealed to relieve residual stresses and then hardened and tempered at each end to provide good wear. The punch must be softer than the hammer which strikes it or the face of the hammer will be damaged. Likewise, for the working end which may from time to time come into forceful contact with the anvil face. By tempering the working end to a blue, a toughness is obtained which will not be altered at any temperature below 600°F. This temper is softer than either anvil or hammers, only the tool will wear. Punches which are held in the hand should be made long enough to prevent discomfort on the hand which holds it over the heated metal. 10" is not too long. A punch should be handled if it is to be struck with a sledge hammer. A less satisfactory alternative is to hold the hand punch with a pair of tongs when employing a striker. Due to the repeated heating, cooling and striking of any punch stresses can develop in the working end causing that end to fracture and break off. When this happens, it is usually in the middle of a job, so some provision must be made to get the tool back into operation immediately. The offensive end is first cut or ground off to a point well above the cracked zone, then returned to the fire and re-forged to the proper shape. Best results will be obtained if the tool is then fully annealed before heat treatment, but satisfactory service can be obtained by hardening and tempering directly after forging. Such shortcuts should only be used on your own tools as necessary and never on a customer's tool as residual stresses will likely cause a nearly failure at or near the heat treated area.

Punches can be made in a variety of shapes beside square or round, such as diamond and heart shaped. As long as the shape is symmetrical, the same punch can be used from both sides to make a proper role. If the hole is not symmetrical as for example a bleeding heart decoration in an ax blade, two punches mirror images of each other can complete the hole from both sides. If the stock is thin, enough asymmetrical shapes can be pierced from one side only, thus eliminating the need for an opposite shaped back punch.



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Membership Application

Dues: \$15 per person/family, annually

New member: ___/___/___ Renewal: ___/___/___

Name: _____

Address: _____

City: _____ State: _____ Zip _____

Phone: _____ E-mail _____

Please remit dues to: Ray Pearre, 4605 Durant Ave., N. Charleston, SC 29405

ACKNOWLEDGEMENT AND ASSUMPTION OF RISK

I acknowledge that blacksmithing and related activities are inherently dangerous and involve risks and dangers to participants and spectators that may result in serious injury or death. I have considered these risks and I knowingly assume them. I agree that I am responsible for my own safety during Guild events, including wearing appropriate clothing and protective gear and remaining a safe distance from all dangerous activities. I agree to hold Philip Simmons Artist Blacksmith Guild harmless from liability and expenses arising out of my actions or omissions.

October 9, 2010

Our hosts: Jeff and Tammy Hatfield
800 Waddell Rd, Woodruff, SC 29388
864-476-7477 864-216-3707

**Bring something nice, maybe something you've forged
for Iron-in-the-hat and a side or dessert**

From the North: Take I-26 to hwy 221 towards Woodruff, go to fourth paved road to the right across from golf course - Waddell Rd , go 1.5 miles to two story white house w/ green roof on right with blacksmiths all around the place.

From the South: I-85 to Hwy 101 across from BMW towards Woodruff. Go approx. 10 - 12 miles turn left on Wofford Rd next to Woodruff Chevrolet, go to end of road and turn right on Waddell Rd, go one mile on left with the same blacksmiths as mentioned above.