"WRABA Tips and Techniques"

Issue 3
2008

This is a yearly collection of newsletter tips and techniques originally published in other affiliates newsletters

QUICK & CHEAP HOLD DOWN CLAMP FOR ANVIL WORK

Anthony Goodrum

I started with a 9" drill press locking clamp item # 36221 from Harbor Freight. It sells for $7.99 regular but is on sale pretty often in their sale catalogs for less.

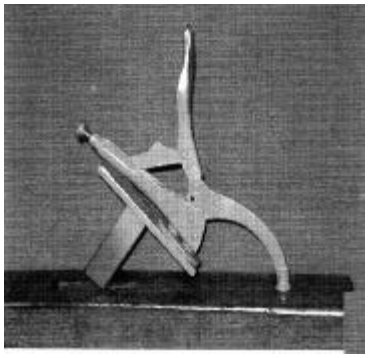
I cut the metric bolt off the bottom, I didn't worry about cutting it off flush nor did I grind it flush because I wanted to plug weld to it. I cut a 3" piece of 1" square stock (to fit in my hardie hole), a 5" piece of 1/4" X 1 1/2" flat bar made up the rest of the components for the project. I drilled two 3/4" holes in the 1/4" plate in order to plug weld the 1" stock & the clamp to it. The holes were drilled at 3/4" & 3" from one end. Plug weld the 1" stock on first to the hole at 3", then center the clamps cut off bolt area on the opposite side in the end hole & plug weld the clamp to the 1/4" plate.

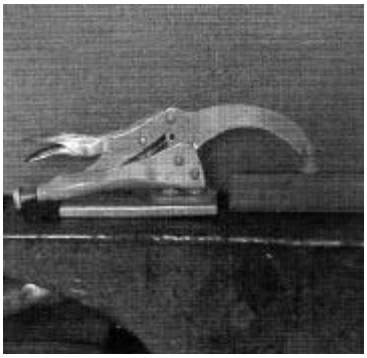
The clamp will adjust for stock on the anvil from 0" to 3". There is enough binding action on the long 1" piece in the hardie hole to insure a good bind on the anvil top. Needless to say none of these stock sizes are cast in iron, use whatever you have available, naturally you will need a piece that fits your anvils hardie hole.

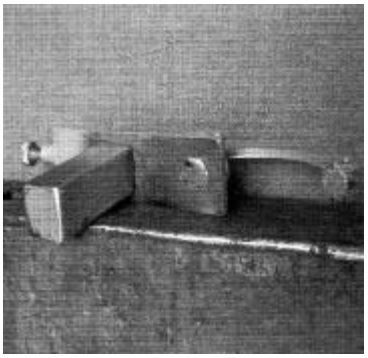
Harbor Freight has a new drill press locking clamp available now that rotates, 1 haven't seen it but from the picture it appears it is mounted to a plate & may be a better choice for this project. It may entail less work by not having to cut off a bolt. It sells for the same $7.99 price as the one I used, the item number for it is #47429.

I have one of the pipe clamp type hold downs that Clay showed several years back but it requires knocking a wedge out to get it off the anvil, this quick & cheap one just pulls out quickly. I don't think it will have the holding power of the pipe clamp hold down but for small & light work it should work just fine.

From ALABAMA FORGE COUNCIL NEWSLETTER







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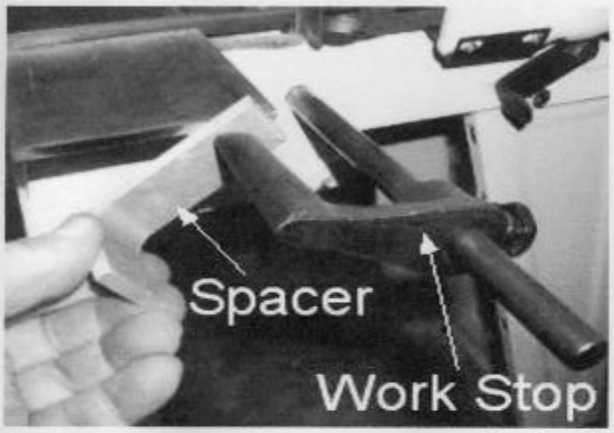
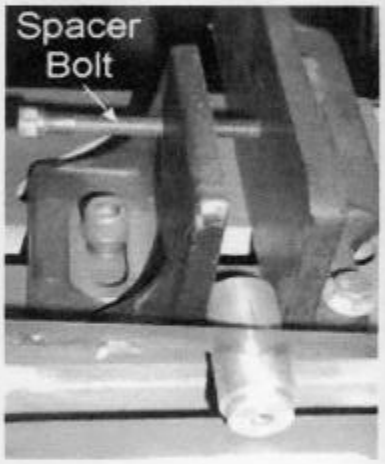
From the Home Metal Shop Club www.homemetalshopclub.org

Horizontal Cut-Off Bandsaw Tips

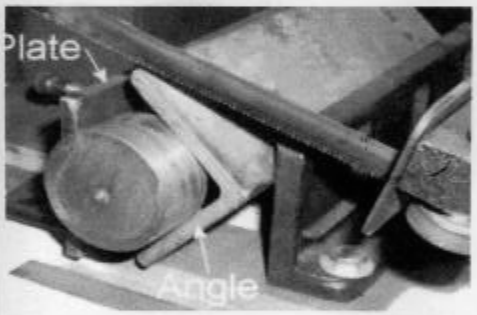
by *Dick Kostelnicek* - HMSC Member



When I make repeat cuts, I use the saw's work stop to set how far the work extends beyond the blade. However, I also use a scrap of metal as a spacer between the end of the bar being cut and the saw's work stop. Then, I tighten the vise, remove the spacer, and complete the cut. The clearance, provided by the spacer, prevents the *drop* (piece cut off) from jamming between the blade and the work stop.



To cut a piece that is too short to be adequately held in the saw's vise, I run a 1/4-20 spacer bolt, that is threaded through the back of the movable jaw, up against the fixed jaw. That way I don't have to search for just the right thickness spacer to place in the other end of the vise. Sometimes the piece being cut is just a scrap that is too short to be held in the saw's vise. I extend the jaws by using a piece of angle and a flat plate that provide a three point contact gripping the short piece to be cut. The moveable jaw extension plate has a threaded bolt at its back end (not seen) that contacts the crotch in the angle so that the saw's jaws remain parallel when the vise is tightened.



My saw does not have a forced coolant-lubrication system. This creates a problem only when I cut soft aluminum, which tends to cold weld itself in the blade's gullets. The aluminum build up can be so great on a thick cut that the tooth's set provides insufficient kerf and the blade begins to drift to one side or the other. In order too prevent aluminum buildup, I touch a bandsaw wax stick periodically to the blade's teeth. In fact, I prefer to cut right through the stick's paper tube to a depth of 3/4 of the blade width to apply wax to the teeth and wipe clean the sides of the blade.

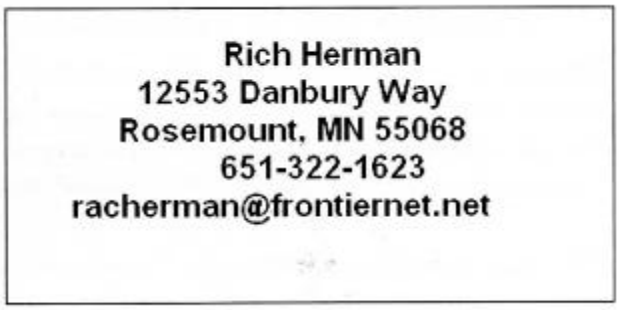
Technology Talks Business Cards

By Rich Herman

So, you have been taking all those blacksmithing classes and learning how to make lots of neat stuff. Steak turners and fireplace pokers have been given to all of your friends and relatives and you have somehow managed to collect a nice-sized pile of tools in the area you call a workshop. You start to think it is time to perhaps go to the next level and try to start selling some of your products in order to pay for all this fun you are having. You happen to be at a party talking to some new friends and mention that you have been learning about blacksmithing and they start to get interested, mentioning several things they could use and appear to appreciate the work involved so they would be willing to pay a reasonable price for the items. They ask you how to contact you in a couple of days to get more information, and you realize that your name and phone number scribbled on a piece of paper looks woefully inadequate. You have now reached the point you need to present a more professional image and you really need to have some sort of business card to put it across. But how do you get some business cards? Going to a professional printer is going to result in a pretty generic looking card for probably more money than you want to spend. So, here is our project for today, developing a business card to express your individuality for a reasonable price.

The first step is to go to an office supply store and get some business card blanks. There are many different brands and styles available for a variety of prices and quantities, but typically you can get 200 blank cards for $13-$20, or less than 10 cents a card. Be certain to get a style that will produce a clean edge when separated, or you may have to go through and trim each card with a scissors, resulting in uneven sizes. Use at least a micro perforated separator or Avery has a "Clean Edge" style that works well. I found a product produced by Avery that is identified as product number 8875 that is a Matte White card, 2" x 3 *Yi"* in size, with 10 cards per sheet and identified as having a Clean Edge with no perforations. I am sure there are plenty of other brands and styles that will work as well, but for the purposes of this article, that is what I am using.

When you get home, the next issue you face is designing the card. The simplest card would be to have some text describing who you are and how to contact you. The basic information you need to include is your name, address, and phone number. If you are electronically connected, then you also should include an email address. A web site (if you have one) with pictures of your shop and some of your products is another useful bit of information to include.



The next step in complexity would be to add some text describing what you do, so when the person looks at the card, they remember why they got it and why they want to call you. If you have a color printer, colors may be used to emphasize different parts of the card such as your name or your description of what you do.

At this point you will probably want to think about how to get this info actually on the card. Fortunately the paper companies that produce these cards recognize this problem and have done their best to simplify it as much as possible. Two different methods are available for designing the cards on your computer, either using a special template in Microsoft

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Word, or by using a specially designed application provided by the printing company. Since my cards were produced by Avery, I went to their web site at http://www.avery.com/ home.html and went to the link for Software/Templates to download their free DesignPro 5 Limited program.

After downloading the program, I took a few minutes to install it and play with it, and learn how to use it.

But I soon *realized* that it would be nice to spice it up a little more. After all, blacksmithing is supposed to be a creative skill, the cards did not seem to have much pizzazz. So, I decided to play with some of the fonts first to make it a little more interesting. The standard font I used was Ariel and I had already used bold for all the letters, so I decided to add the "Blacksmith" title following my name and I wanted to pick a font with medieval feel. I selected a font on my system called Blackletter686 BT. For the line on the bottom I used Book Antiqua and I selected italics to make it stand out.

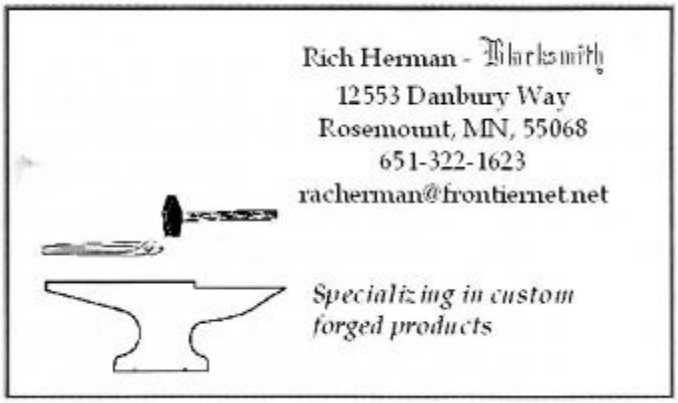
To go to the next level, I needed to get into the world of Clip Art. In case you are not familiar with Clip Art, this is a technique for publishing with graphics dating back to the days in the publishing world when cut and paste meant

scissors and a bottle of glue. Books back then were produced with standard

pictures, usually in the format of line art, of generic images that publishers would cut out of the book and paste on their master documents to illustrate the subject of the article. Today there are hundreds of libraries of digital clip art images available for electronic users to copy and insert into desktop publishing documents. Many of these libraries charge a fee to buy their images, but there are many images available for free downloading from the web. The first place you will want to check is on our own guild website. A nice set of blacksmith-themed images by Franklin Garland is

located at http://www.metalsmith.org/graphics/ for you to download. I looked at this collection and found a nice anvil outline graphic that I wanted to use. I decided to add some tools, and was able to eventually find a set of blacksmith tongs at http://etc.usf.edu/clipart/galleries/business/tools.htm and a hammer (hammerll.bmp) at http://classroomclipart.com/ At this point, I have converted all of the standard text to Book Antiqua font, and added the new images and shift things around. Looking a little better, but I think I can improve it some more.

So for my next step, I go to some old magazines and books searching for an image of a sign frame, so I can hang my virtual shingle on the business card. I was fortunate to find a picture and used my scanner to bring it into my computer and then modified it in Microsoft Paint.



The final result, with a little juggling around and playing produced this as a final result: So, as usual, I come to the big decision point - when to stop. I could continue on with this and add more colors, some actual pictures of some of my work, but remember the size of the piece of paper you are working on. I have achieved my goal of providing my contact information, a description of what I do, an idea of the process used to produce my products, and a possible example of an application for one of my products.

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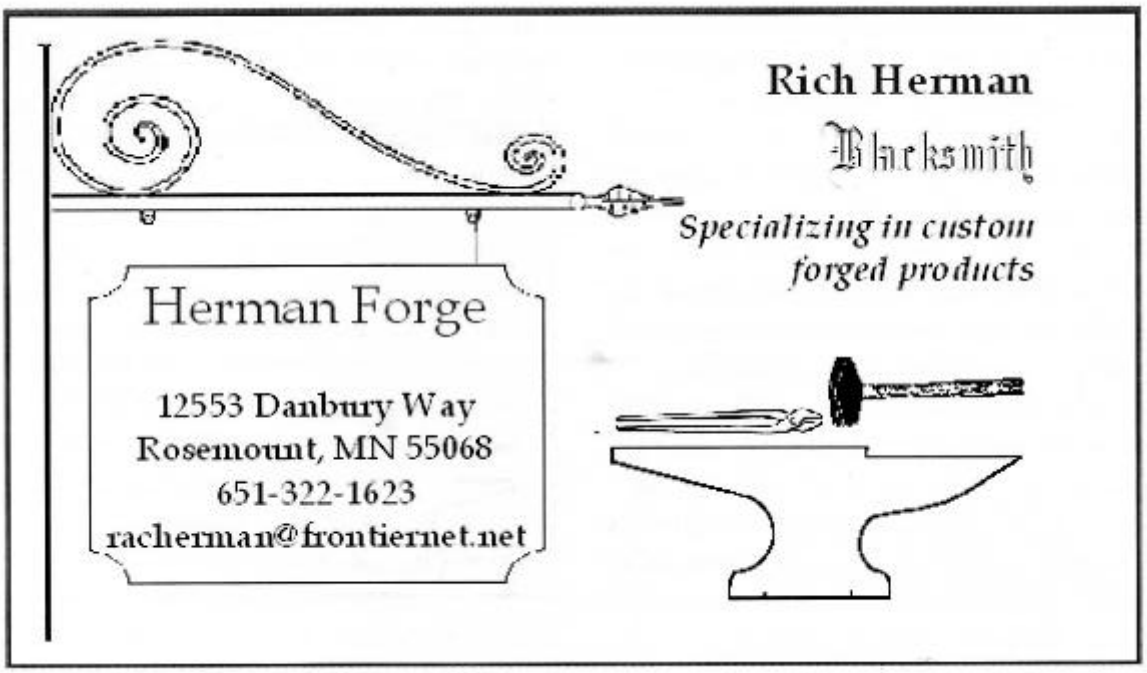

Paper and compare it to the card stock to make sure the spacing is correct. In my case I found that it was slightly off so I had to edit the template and modify it. When you print the card, it is a good idea to only print a few, perhaps only one or two sheets in case you decide later to make more adjustments.

You will need to be careful with the cards to avoid moisture; the ink used in inkjet printers tends to be water soluble and runs if the cards get wet. If you need more durable cards it may be necessary to find a laser printer to make cards than will resist smearing.

Hopefully, this will give you enough information to help you put together something to introduce yourself. Explore the internet for more web sites with clip art, use one of the search engines to search for "clip art" and other key words for what you want. It is also possible to take graphics from web pages and import them into your design. Play with various graphics editing

programs to convert color pictures into simple black and white diagrams. There are many things you can do to develop some interesting cards. It might be fun to set aside an area of our Show and Tell at the next meeting to have everyone put up a copy of your card and share ideas on some different designs.

From The "Metalsmith"

"WRABA Tips and Techniques"

Morning GlorieS By George Witzke

The curse of custom work is that you have to take the projects as they come. Initially, landing a canopy bed project with a morning glory theme was exciting. That is until I realized that the customer wanted the flowers to resemble real morning glories. Imagine that! My first twenty attempts to emulate a morning glory flower were maudlin at best. As luck would have it, I went to a blacksmith gathering and lo and behold someone had brought a morning glory flower on pipe that they had done in a class. Thank you Susan Frary of Las Cruces.

For those of you who are familiar with morning glories, you may also recall that there are a gazillion flowers and leaves on those vines. I have perfected Susan's technique and am averaging 4.8 flow-ers per hour. Thirty-eight point four down, only 96 bazillion to go!

To make start with *1/2* inch ID schedule 40 pipe. Over several heats, alternate between upsetting the end of the pipe and working the edge over the anvil horn to create the flare. The corner edge of flat dies on a power hammer can make short work of flaring the petals once started, but it can be done just as well with a little more work over the horn. Next using a V shaped spring swage clamped in the vice, or with a chisel and V swage, cut 5 proportionately distanced veins in the flower face. Back at the anvil curl the petals to give dimension between each vein. Then with a fullering , gulletine swage the neck of the pipe down about 2 inches away from the flared end. Finally, hammer that down to a gentle taper

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From The "Metal smith"

Looking For A Stocking Stuffer

How to Make a Bottle Opener

By Al Olson

A couple years ago I was taking a blacksmithing class, and at the end of the day I was grumbling about not having a bottle opener. Mike Garrett of Helenville, WI heard me and said "Give me a few inches of quarter-inch square stock." Well I didn't have that either, but quickly converted some 3/8" round. Mike proceeded to make an opener as I watched. Not only did it work, thankfully, it's simple and graceful design really impressed me.

I have since made several of these and fine tuned my process to be able to end up with a repeatable item. It's not hard to make something that works, it is hard to replicate the same graceful design every time. Small deviations along the way make for big end result differences. It's all in the details. You'll need these hand tools: a favorite hammer, *1/4"* tongs, 3/8" tongs, scrolling tongs, steel square/ruler, hardie cut-off/hot cut chisel, flux, at least 4.5" of 3/8" round stock, a small file, and emery paper.

I still start out with 3/8" round stock, as I find *1/4"* square stock to have too fine of an appearance and corners that are too rounded, even though it would function just fine — I'm after a certain look. I square up roughly 6" worth, being careful to not get a diamond cross section. If you are getting a diamond cross section, then you're not striking parallel with the face of the anvil. Your hammer is tilted slightly one way or the other and you're very consistent about it. Look for the impressions in the steel each time you strike for clues to help you remain parallel with the anvil face. I have used a slot gauge to determine the squared-up dimensions and all I can say is that it's between 1/4" and 5/16". Usually I simply use my eye and just reach the point where all the corners become sharp consistently down the length. This has been very repeatable process for me.
Measure and cut off exactly 4.75". Using 1/4" tongs to hold the piece, taper only one side of one end, maintaining the original width along the other side. This taper extends from the end to the center of the piece. Turn the piece around and make the exact same taper. I don't fully complete one taper then go to the other. I sneak up on both of them, going back and forth as needed. These tapers are not sharp at their point, but a little blunt (1/16" x 1/4"), without sharp corners. Touch them with a file if you need to. You are ready to proceed when the two tapers are identical and the total length is 6-5/8" long. It's more important to get the symmetry right and the ends at the correct bluntness, than a perfect total length, if you have to choose.

At this point I use my hardie cut-off and a steel square. Holding the piece in my tongs so that the tapers would be viewable from the side and not the top, I rest it on the cut-off tool and use the square to measure the center. With the center directly over the cutting tool, move the piece 5/16" away from center; nothing less than that. 3/8" would be the very most offset. Mark it there with a healthy nick, deep enough to be able to recognize it easily when it comes out of the fire. The nick also helps you bend it at the right spot, too, because the material is thinner there. Next time it comes out of the fire, fold the piece over on itself right at the nick, with the nick on the outside of the bend. True it all up so it's tight and square with itself.

While the thick, folded end is still hot, dip about 3/4" of it in flux and put it back in the fire for a welding heat. You don't have to hit it hard to just accomplish the weld. I flatten the welded spot out a bit and intentionally do not refine it back to the original width. That gives you more surface area to pry against, and adds a third dimension to the overall appearance. If it's really unsymmetrical, then I'll tidy it up a bit. Also if you refine it too much the end gets too long. I do however clean up the resulting taper so there's a smooth transition to it. This end also is blunt, very blunt, (3/16 x 5/16), without sharp corners. I'll call that the "common end", the shorter leg the "pick", and the longer leg the "scroll" for lack of better names.

So reheat the common end and bring it back to the anvil extending it over the far edge with the pick side down against the anvil. Give the end a slight curve; better to do this now

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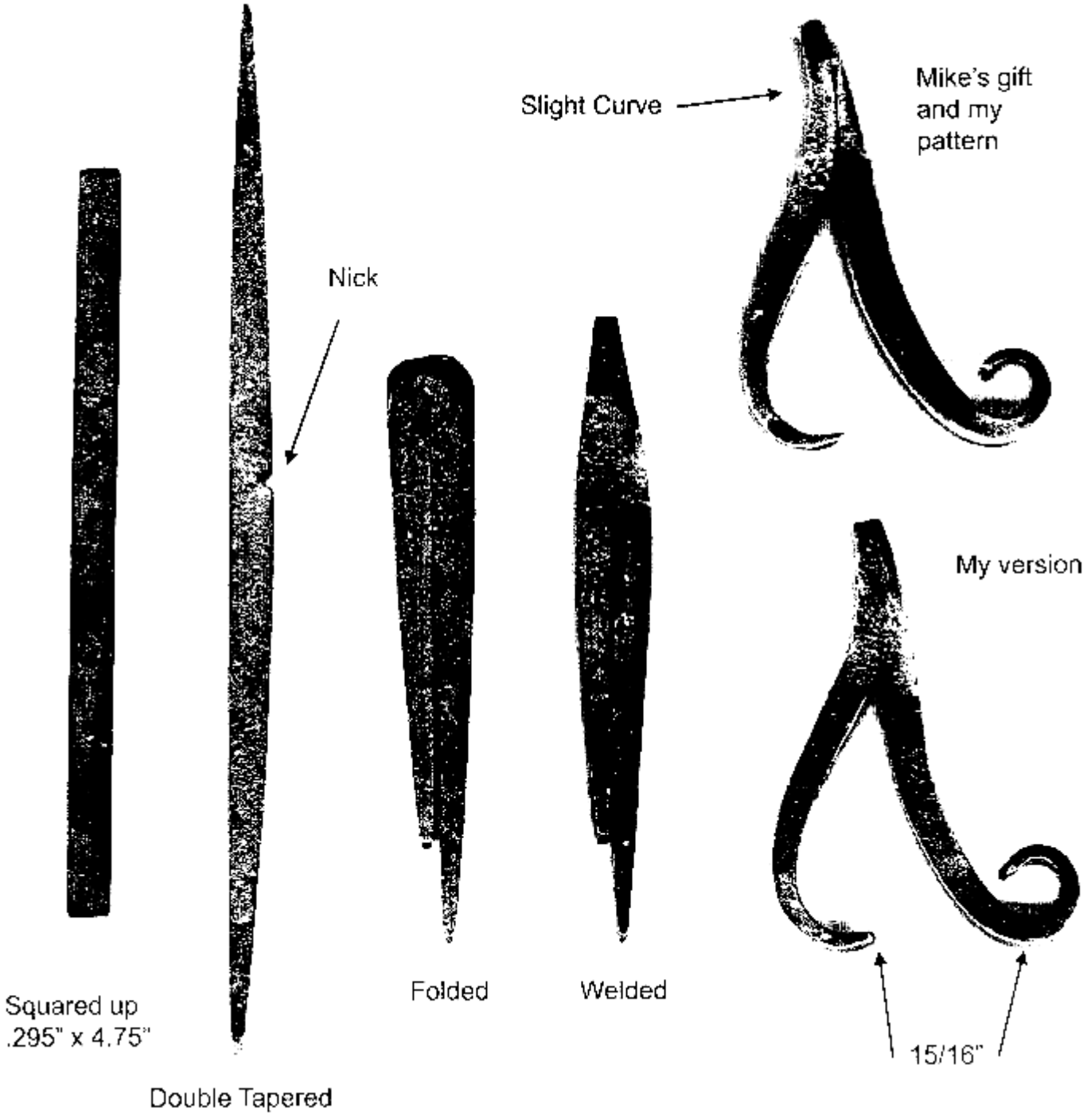


Taken from the "Metalsmith"
Newsletter of the Guild Of Metalsmith's

than later, small but important detail. (Look at the images to see what I'm talking about.)

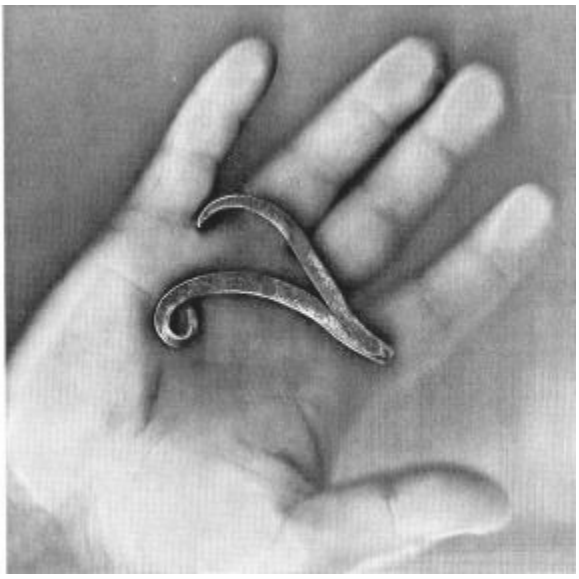
Now heat up the whole thing while you open your vise jaws about 1/4". Put the common end in the vise, but don't pinch it — you don't want jaw scars on it. It's tapered there anyway, so you more or less rest it in the jaws, and then spread the legs apart simply using your tongs.

After the legs are apart, I just use a pair of 3/8" tongs to hold the common end in my left hand and a pair of scrolling tongs in my right to get the final shapes in both legs, one at a time. This isn't so easy because there aren't any straight lines for reference. I use Mike's gift opener as my pattern and compare to it often.

As you manipulate it from now on, tap it flat on the anvil each time before you put it back in the fire. That makes your life easier. Do not hold one leg and try to bend the other, they will both bend, and it just gets frustrating. It's also easy to get tight-kinked spots that look really bad. The whole thing should be flowing graceful curves.

It can be helpful sometimes to put a short piece of 1/4" round stock in your vise to use as a mandrel for tightening up the scroll, if you're having trouble with that. Speaking of that, I almost close my scrolls because I found that my original will frequently hook my keychain in my pocket, creating a big wad to pull out with my fist. By closing the gap more it's not a problem.

When I'm happy with the shape, I wire brush it really well and will often take it to a buffing wheel or use emery paper to polish the corners, ends, and smooth the scaled surfaces. That makes it feel nice to hold in your hand and comfortable in your pocket. Also, Mike said he usually punches a hole on the common end so that it could be put on a split ring key chain. I don't do that just because I'd have too much stuff on my ring, but something for you to consider. I do carry it in my pocket frequently and it never shows signs of rust because it's always being polished.
You can hold it and use it however you like, but here's how I do it: I pull it out of my pocket holding it (see image) in my palm, then wrap my hand around it just tight enough to not drop it. The bottle is in my left hand at the transition between neck and body. Without exposing the opener for anyone to see it, or looking at it myself, I (quietly) rest the scroll on top of the cap and position the pick under the lip. Pulling up and towards me, I pry off the cap. The cap and opener go back in my pocket. With a smile I hand my friends a drink. Don't put the death grip on it! You'll just chip bits of glass by squeezing the pick into the bottle and prying until you're face turns red. It aint that hard! Less squeezing, more prying. If you have that slight'lean' to the left (see images) in your final shape, then your prying effort is partially upward which is easier, rather than completely horizontal, which is a little harder.



You could make an overall longer opener which would give you better leverage, but it becomes less pocket-sized if that's OK with you. Go for a distance of 15/16" between the end of the pick and the very bottom of the scroll.

I highly recommend quality control testing before giving them to your friends. Since I have practiced this a time or two, I can do this pretty smoothly without raising suspicions. When someone does notice and says "How'd you do that?" then I'll show them. Have a look at the actual size, story board images for more clarification. F.Y.I: When out of context, you will typically have to tell people what it is, and supply some operating instructions. Enjoy.

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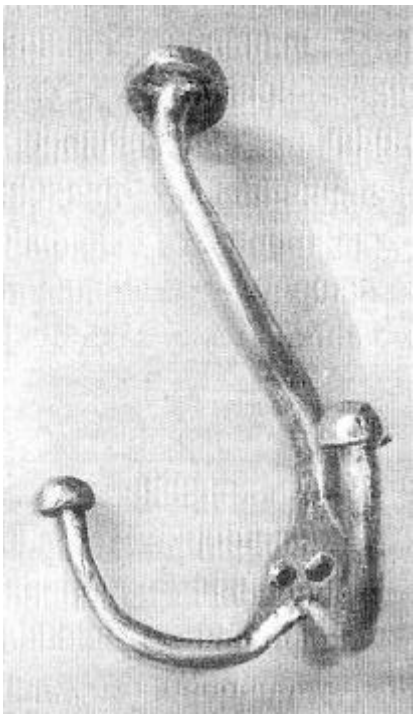
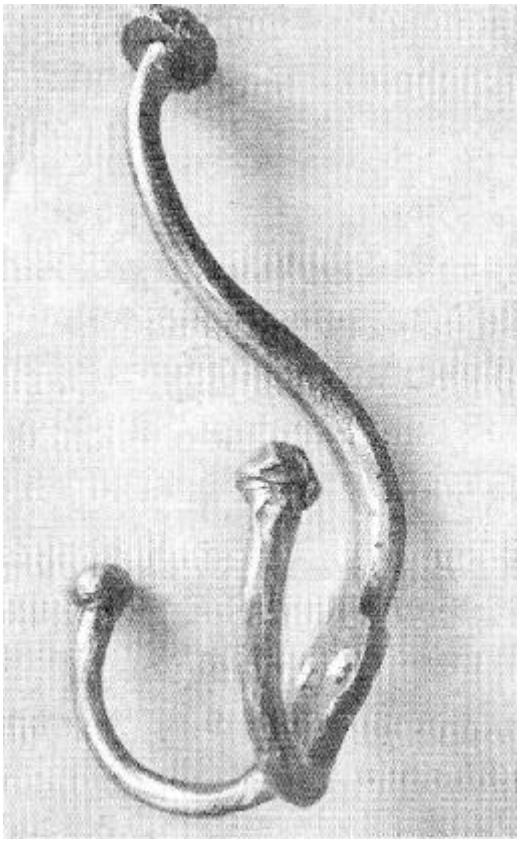
Coat & Hat Hook

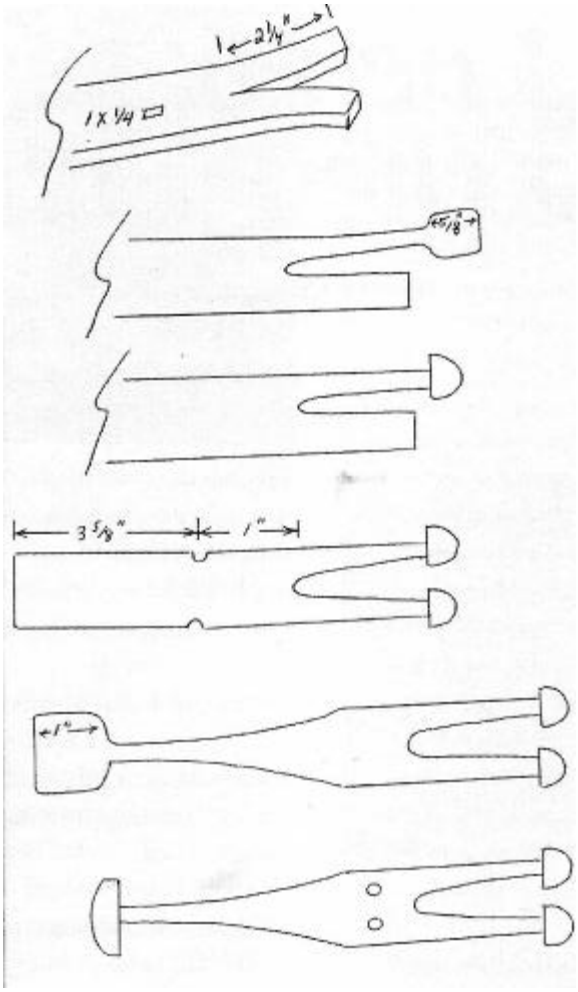
By Steve Anderson

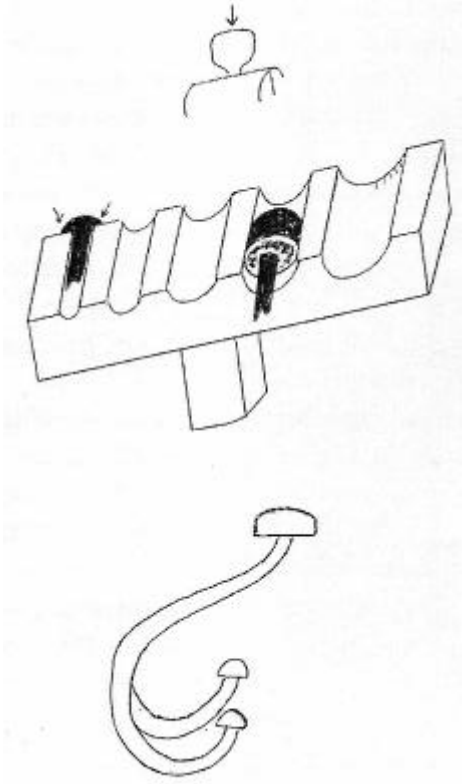
Drawings, text and photos by Steve A MABA Member

Reprinted from The Upsetter, Newsletter ot'the IVlichigan Artist Blacksmith's Association, July-Aueust 2008









Split stock with a hot cut.

*Put vertically in the vise to clean up the end of the split.

Bend one leg up and one leg down. Forge leg to round, leaving 5/8" of mass on the end.

Forge the mass on the end to a domed ball (or ball shape) Repeat for the other leg.

Fuller 1" back from the split and cut off to length.

Forge tapered to round, leaving 1" mass on the end.

Forge mass to a domed dick or other desired shape. Drill and countersink or punch and bob 3/16" holes

To Form the ends:

Upset in vise

Round to a cylinder

Shape and center end

Shape and center end.

Bend bottom hooks first. They should be about 45 degrees from the wall and 90 degrees apart. The top hook should reach farther out.

Pine Cone Ornament

By Steven Spoerre, a MABA member

Reprint from The Upsetter, Newsletter of the Michigan Artist Blacksmith's Association, Nov-Dec 2007

The overall height of this pine cone, is 3 *1/4"* tall, the stem adds another 1".

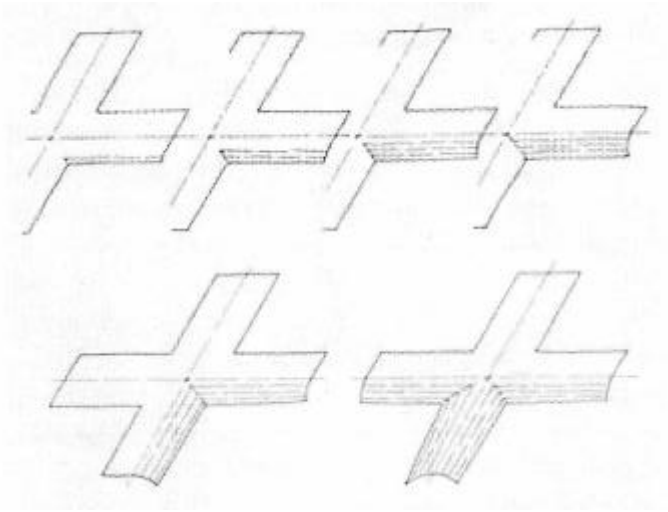
Made out of 30 gauge steel it weighs about 3 ounces.

With the patterns provided, transfer the shapes on to the sheet steel. Cut out all the pieces with the tin snips. Cutting the pattern pieces out cleanly is good, but slight deviations will give the pine cones a natural appearance.

Round off all the ends of the scales by eye.

Using the wide jawed pliers, start at the edge of the scale and curve/curl it downwards. As you take small "bites" towards the center of the scale, move the corner of the pliers towards the center of the pattern. See sketches below.

NOTE: The ends of the scales are drawn square to better see the developing curve



Tools and Material:

If laid out carefully, all of the pieces can be cut out of a 3" x 24" strip of 30 gauge sheet steel,

- 7" of #9 wire
- Ruler
- Scribe
- Tin snips- straight, smooth edge
- Wide jawed pliers, the one pictured is 2" wide, or Vise-grip sheet metal tool.
- Round nosed pliers
- Rectangular punch (junk screwdriver)
- Center punch

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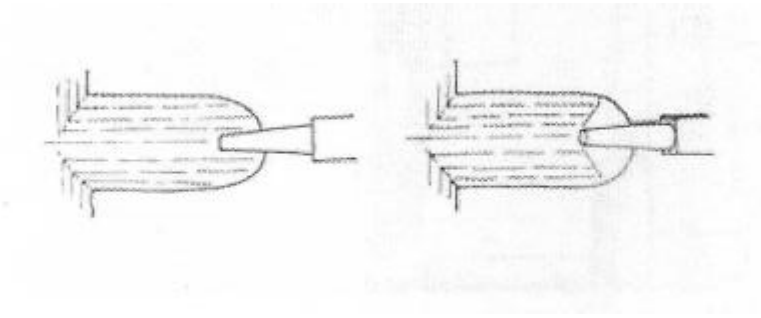
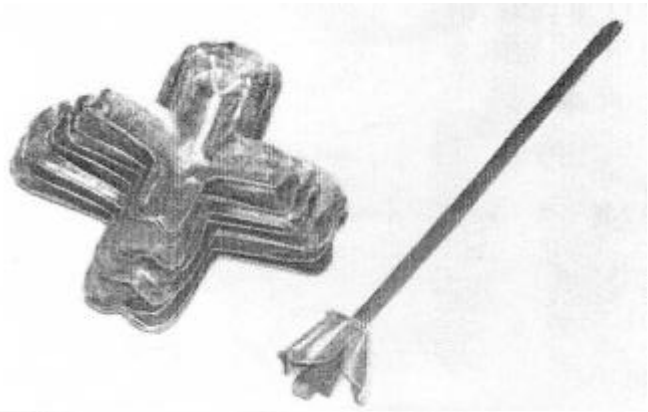
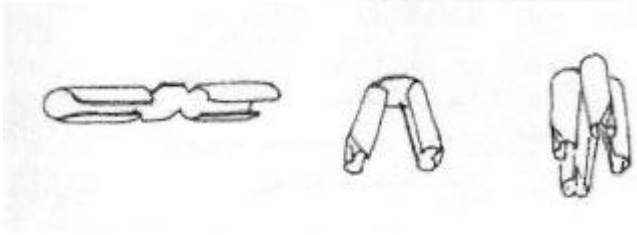
After the center line of the scale is reached, go to the next flat edge, curve the edge down and progress around the entire piece. Repeat this for all the layers.

For more detail, on the ends of each scale, place the round nose pliers on the center line and bend the end down about 45 degrees. The larger pattern pieces had about 3/8" bent down, the center pattern pieces about *1/4"* and the smallest"+" (plus) shaped pieces were bent a little more than 1/8". See below.





Stack the layers in order from largest to smallest.



Tightly curl the pair of 2-scale center pieces (patterns a & b). Fold the 2 scales of the smallest piece down 60-90 degrees. Nest the 2 pieces together and fold the last 2 scales down around the smallest piece. Use the round nose pliers to crease the ends of these scales also.

Flatten the entire length of the 7" piece of *#9 wire,* cold on the anvil, then straighten. Fold 3/4" of one end back on itself. This becomes the center point for the pine cone.

Dress the rectangular punch so it will make a hole slightly larger than the flattened wire.

Punch a hole (in line with 2 of the scales) with the rectangular punch through the bottom of the 2 assembled center pieces. Slide them onto the flattened wire all the way down to the doubled end.

Each layer is staggered 45 degrees, so look the orientation of the punched hole in the center pieces and punch the next layer (pattern c) 45 degrees from it (in line with the inside corners of two scales).

To give the pine cone more dimension the next 5 layers will be spaced out on the flattened wire by using a center punch to swell the edges of the wire.

With the center pieces and the first layer as low on the wire as possible, measure up %" and mark. Place a cutting block on the face of the anvil, place the assembly on the block with the measured mark facing up. Place a center punch on the mark at the edge of the flattened wire. Drive the center punch deep enough to create a swell of metal out of the edge. Repeat on the other edge of the mark.

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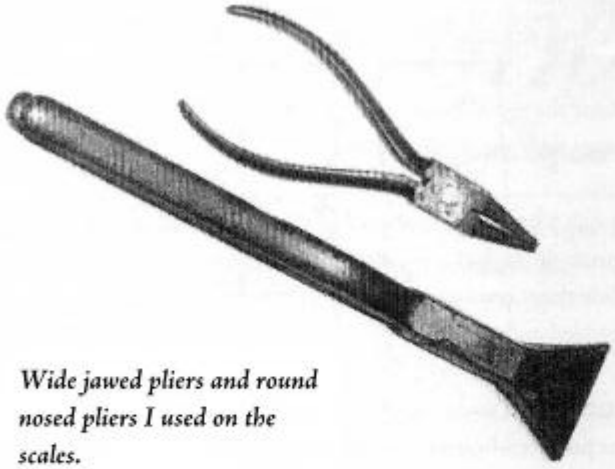
Only putting on 6 of the layers gives you a small pine cone.

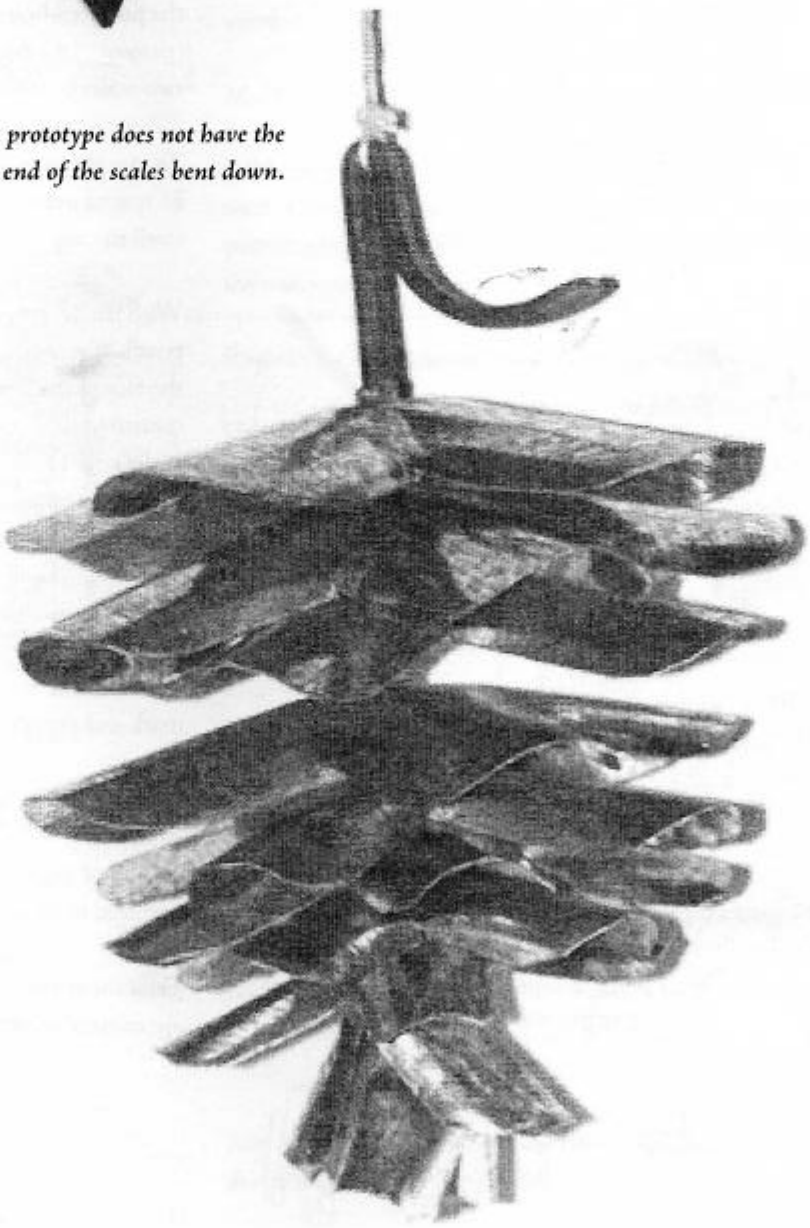
Copper might be a nice material to try – and some patinas.

Good thing about this little project – I got out in the shop, could sit there and listen to the radio, and did I mention . . . I was out in the shop?



Wide jawed pliers and round nosed pliers I used on the scales.

This prototype does not have the end of the scales bent down.



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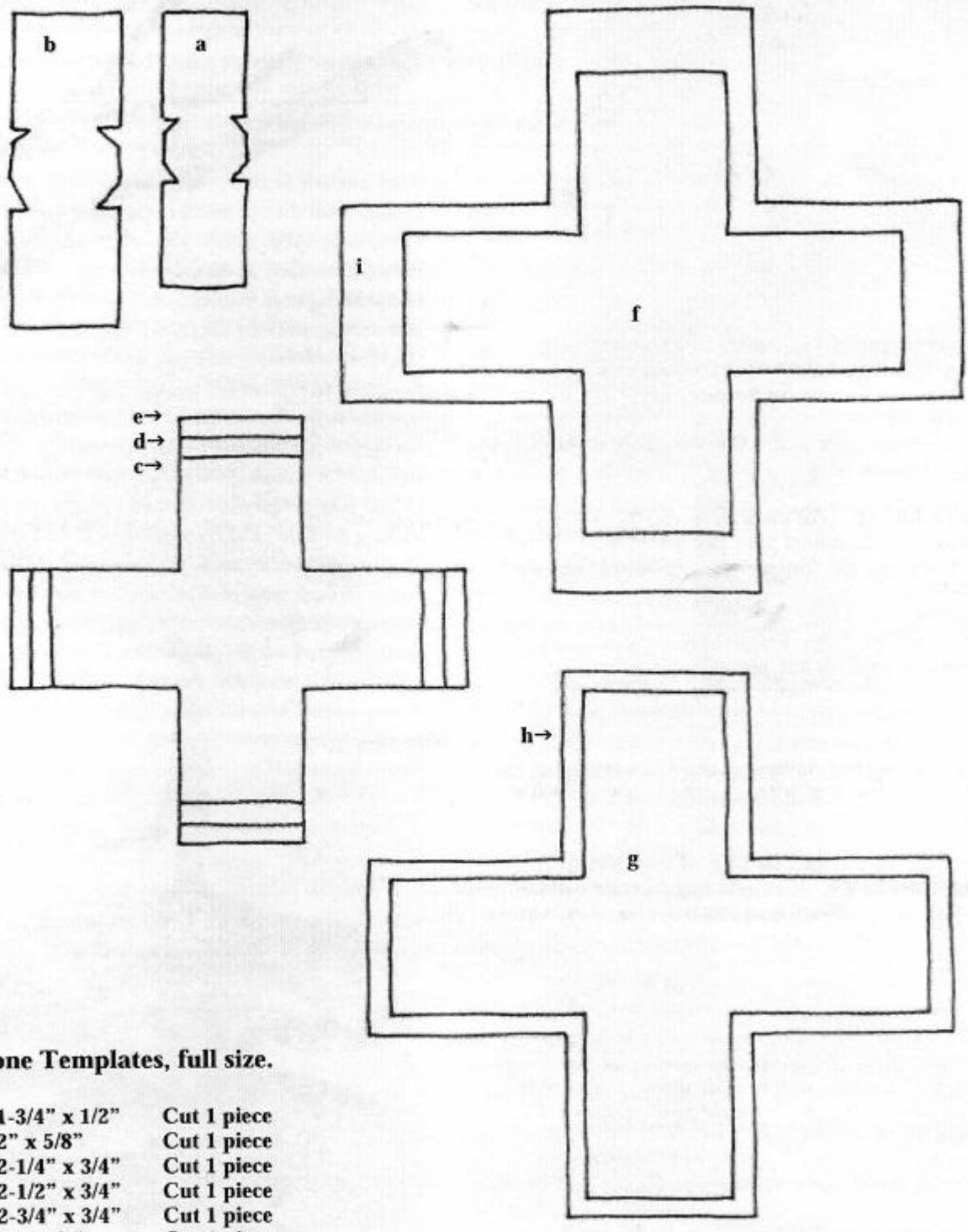


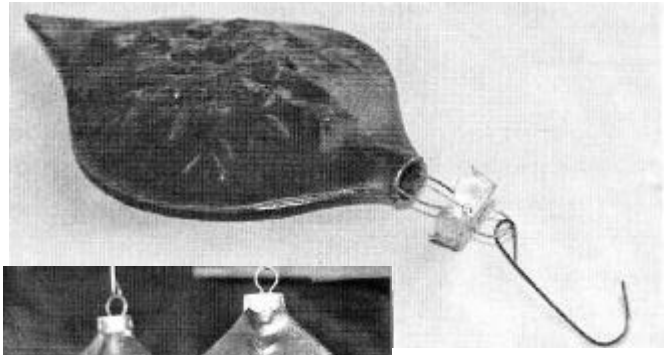
Pine Cone Templates, full size.

a	1-3/4" x 1/2"	Cut 1 piece
b	2" x 5/8"	Cut 1 piece
c	2-1/4" x 3/4"	Cut 1 piece
d	2-1/2" x 3/4"	Cut 1 piece
e	2-3/4" x 3/4"	Cut 1 piece
f	3" x 7/8"	Cut 1 piece
g	3-1/4" x 7/8"	Cut 1 piece
h	3-1/2" x 1-1/8"	Cut 2 pieces
i	3-3/4" x 1-1/4"	Cut 2 pieces

Christmas Ornaments

Story by Tim Mann, Murphys, California * Photos & Illustrations by Eden Sanders

Several years ago, I was looking for a simple project to introduce artsy iron to the students of the welding class at Columbia College, Remembering a demo by Dorothy Stiegler of Elizabeth Brim's blow-up technique, I found the perfect project. It uses little material and few tools, easily made. It requires some welding and has the thrill of doing something unexpected with really hot steel. Why not steel Christmas ornaments:[1]



Materials. 6 *1/2"* x 5" w gauge mild, ungalvanized steel and a 12" length of 1/4" steel brake line.

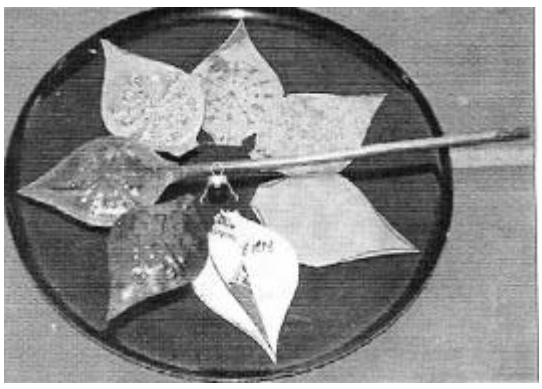
Tools. 4 *1/2"* angle grinder, swivel pad Vise-Grip", oxyacetylene outfit or TIG welder, soft jaws for vise, simple repousse tools, opener (long round taper with a chisel tip), pitch or lead. Make half pattern on folder paper to ensure both sides are the same. I use a 3" diameter circle with the bottom drawn out to a point and the top curving up to an 11/16" flat where the blow up tube fits and the ornament cap and hook will go.

Math note. Yes, I know, for a 3/8" diameter hole, I only need 1 3/16" total material, but when you edge weld, you use the extra 3/16".

Unfold your pattern and trace onto metal. If you like the pattern and plan to use it again, trace it onto 26-28 gauge galvanized sheet metal and cut out with tin snips. Rough cut to a little beyond the line with whatever you use to cut 22 gauge stock.

Mark one side of each piece *in* so that the rest of the steps will be done with the two pieces in the same orientation. Put *in* to *in.* Align as best you can, paying close attention to the top flats. Grip in the center with the swivel pad Vise-Grip". Grind both pieces simultaneously down to the line. Split apart, and clean up the burr left from grinding. On the in sides draw what you wish for the design. Keep the design V4" to 3/8" away from the edge to make the weld easier. Fast and easy is a snowflake, but I have also done logos as gifts for suppliers. Technically, this makes it repousse, but I consider this more *of stamped from the inside.*

Follow your design with repousse tools into an appropriate backing medium. I use two layers of sheet lead cut to fit like a saddle over an anvil that works well for simple designs and is available from roofing suppliers and sheet metal shops. For a more elaborate design, I would use pitch (www. northwestpitchworks.com), but that would increase cost and time for what is supposed to be a simple project. **Safety note.** Don't lick or eat lead.



Realign the two pieces in to in. The stamping process has undoubtedly bulged out the middle, but that is OK. What you need to look for is how tight the edges come together. Flatten by putting the in side on the face of the anvil and pressing on the center with the palm of your hand, or give it a few whacks with your fist. When you have a reasonably good fit, clamp lightly in the Vise-Grip*. Fine tune the edges by tapping any gaps closed with a hammer.

"WRABA Tips and Techniques"

The Weld. If you know how to TIG weld, I don't need to tell you how to weld this up. For the rest of us, an oxyacetylene torch works just fine. A 000 tip in a regular torch or a half-tip in a Henrob will do the job. Set the acetylene and oxygen pressure at 4 psi for both types. An edge weld without rod is one of the easier welds to make, but if you have never done one, practice on some scrap 22 gauge first.

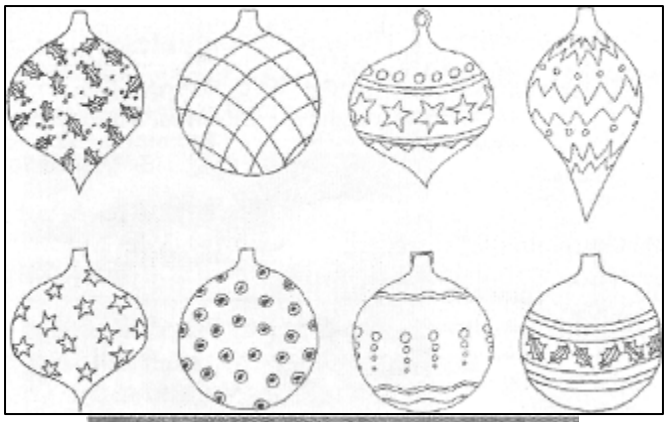
Tip 1, Always work from thin to thick — thin being the corners or points, thick being the middle of piece.

Tip 2. Keep the bead moving. Increase your speed as you push more heat ahead of the weld. Try to keep a consistent bead size and weld depth.

Tip 3. Watch ahead of the weld pool for a developing gap. If you see a gap, **stop the weld!** With material this thin, if the sides separate, you will have a very hard time making a good weld and will most likely burn off one side or the other. Take this time to tap the edges together before continuing to weld. *(This is a tip I need tattooed on my forehead. I get cocky and figure I can make it work. Boom! Two hours of prep work lost to save one minute.)* Do not weld across the top of the flat. Lightly grind any inconsistencies off the weld to smooth the edge and *fair* the curves.

Place the ornament between soft jaws in a vise, taking care not to mash the design. Heat the area at the top flat to a red heat and work the chisel tip of the opener between the sides. Then drive it down to create the opening for the brake tube.

Weld the brake tube in place. This weld requires welding rod. Heat the parent metal to just where it starts to sweat and add a drop of rod. What you are trying to do is plug holes, not weld for strength. The weld does not need to be pretty but must be air tight. Check to see if it is adequate by putting air pressure into the ornament. The sides should move a little as you squirt the air.



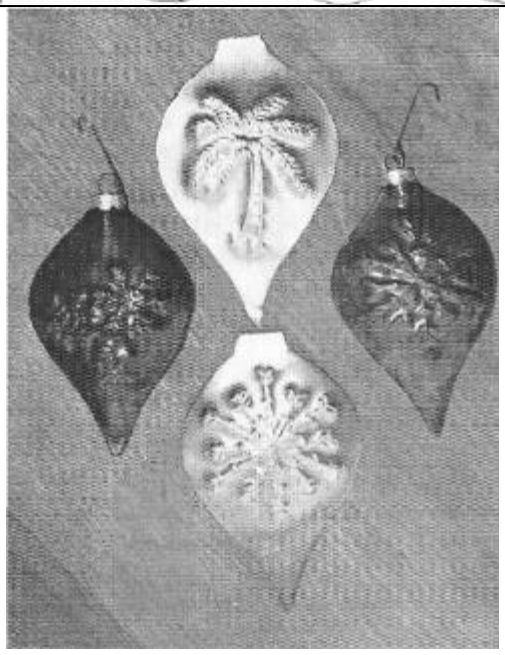
.**Safety Note.**
Because the brake tube appears to be coated, take care not to breath
fumes.

Fun Part.
Heat the entire ornament to a red heat and inflate.
Setting the compressor at low pressure gives me more control of this process and keeps me from over inflating the shape.
Lightly wire brush off the scale.

Finish.Leave the tube on for the next couple of steps as a handy handle. With a wire wheel in the grinder, take off the rest of the scale. I normally reheat to a red heat and let cool to get a consistent coat of scale. As it cools you can highlight the design by lightly brushing with a brass brush. Finish with a couple of coats of clear gloss finish.

Now remove the tube. If you made a crummy weld (desirable), you can rock the tube out. If not, place the tube end in a vise and cut it off with a hacksaw. Insert the ornament cap with a book and enjoy

Merry

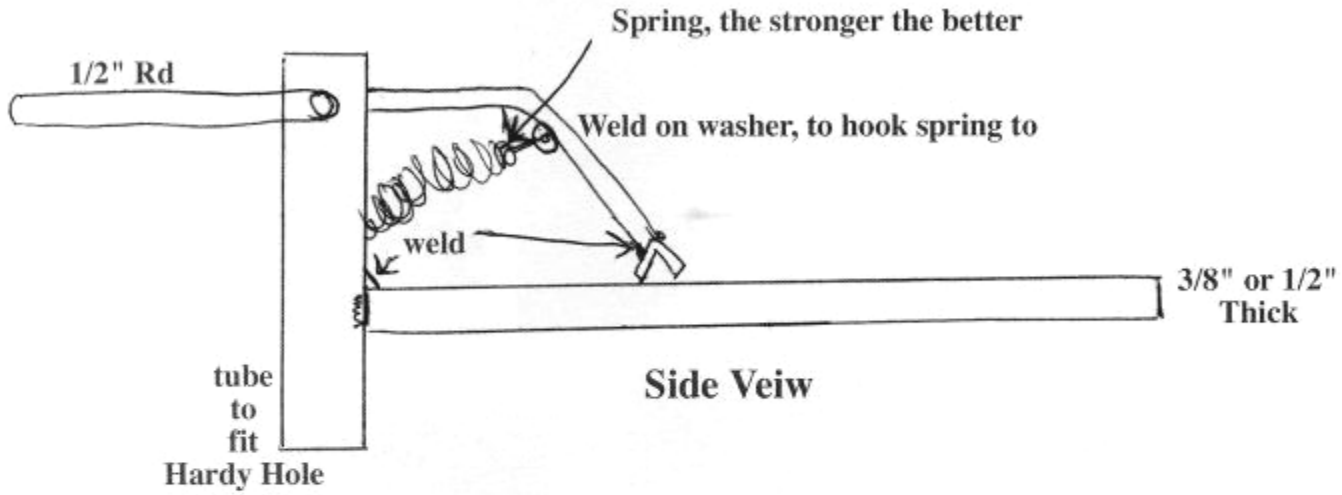


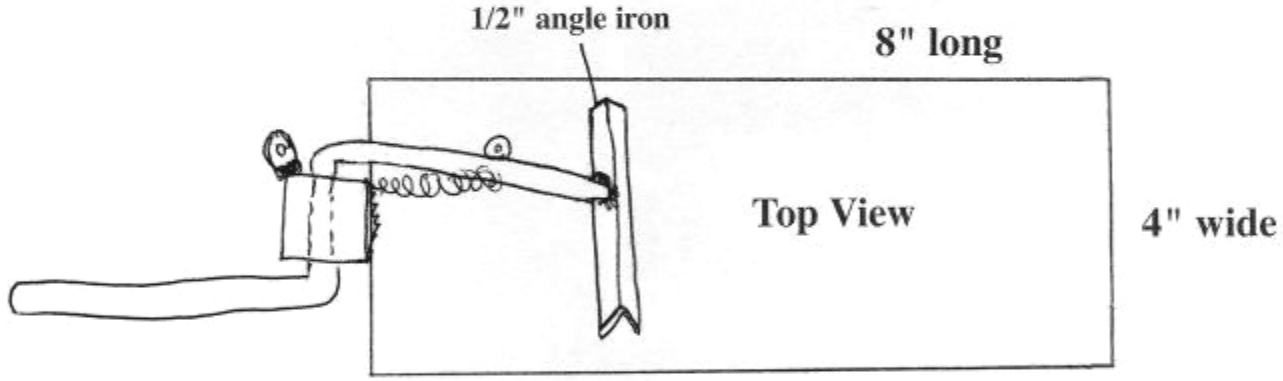
"WRABA Tips and Techniques"

Blacksmith Helper Works Cheap

By Don Nichols

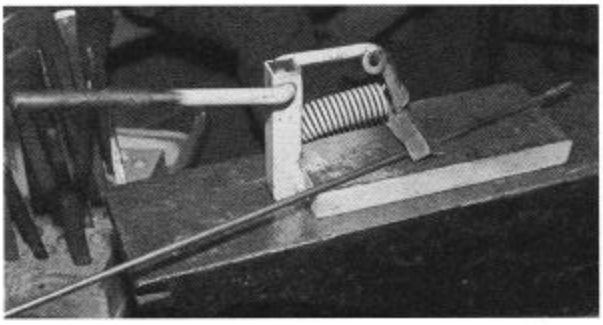
From BAM Newsletter





Use to hold material.

If you want to cut something, put an aluminium cutting plate on top of the work plate.
If it's small, put small end under angle iron,
it will hold it as you cut it off and it will not fly off to places unknown.



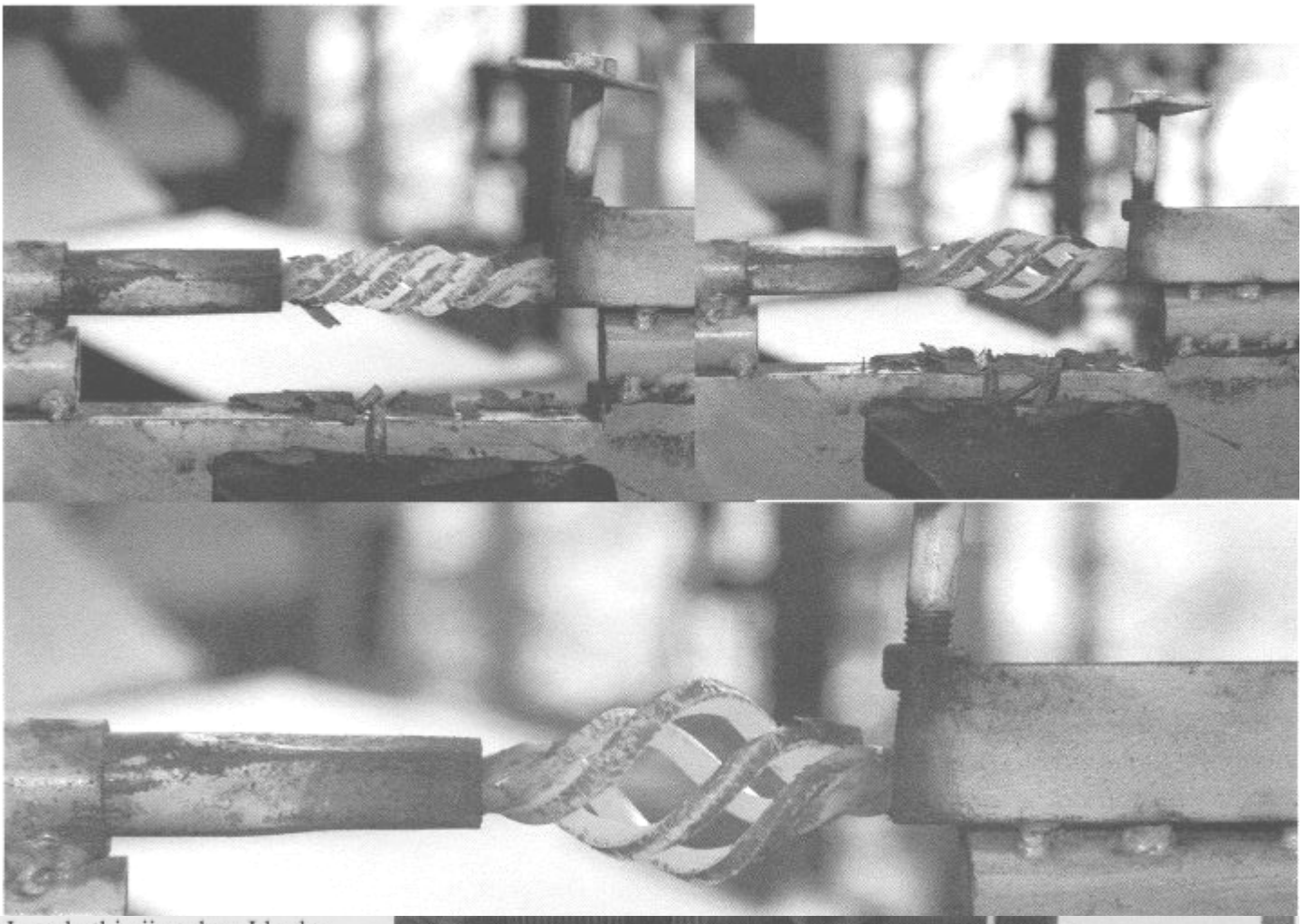
I noticed that on the hold down Don had made he had a notch in the angle iron to help position small rods. He also positioned the spring lower on the arm. I'm not sure why, but the spring may have been too long for the position of the washer.

"WRABA Tips and Techniques"

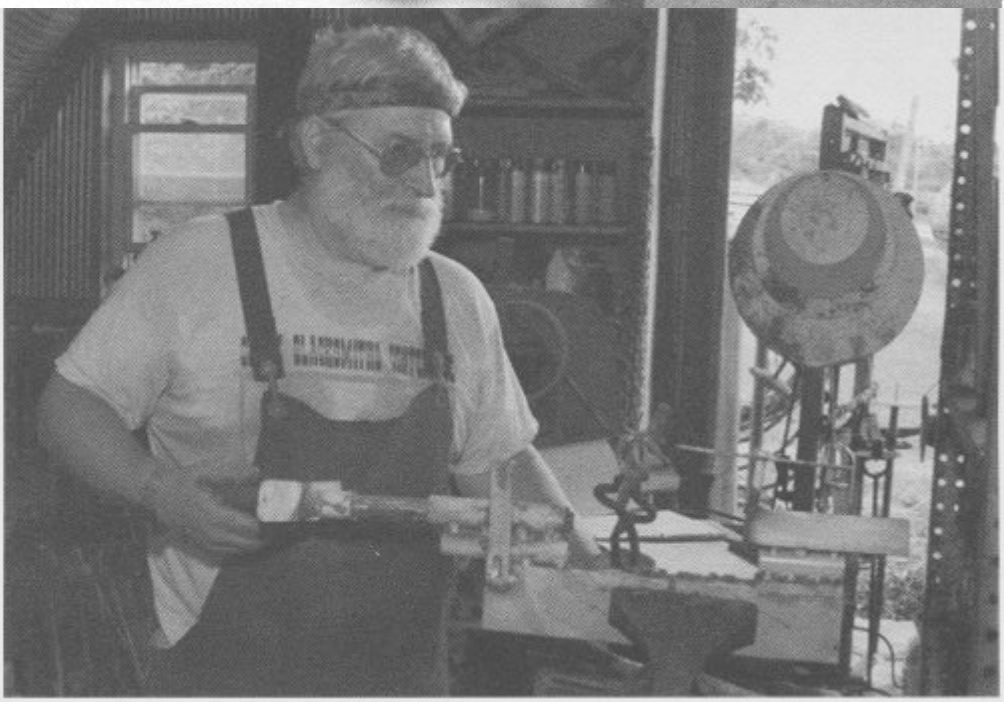
My Basket Twisting Jig

By Bob Ehrenberger

From BAM Newsletter



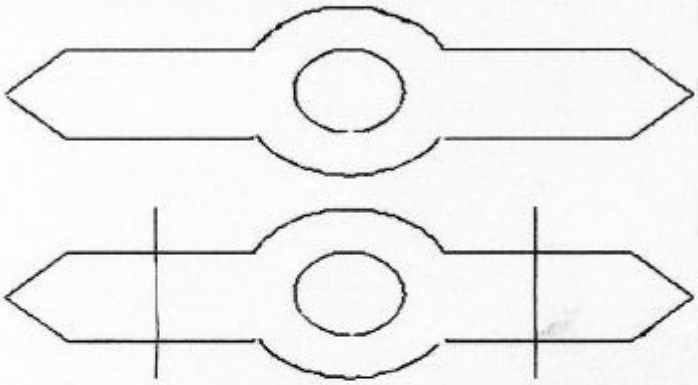
I made this jig when I had a project that required a couple hundred baskets all the same. The twisting is done using a pipe that has been forged down to be a tight fit on a bundle of 4 - 1/4" bars. The other end of the bars fit into a screw down stop. The twisting pipe is held in alignment by a larger (close fitting) pipe. I have a replaceable spacing collar slid over the twisting pipe that controls the amount upset, so all the baskets come out the same length. If all the bars are the same length to start with, they will also have the same diameter when finished.



"WRABA Tips and Techniques"

It's Your PICK!
By Dave Lint

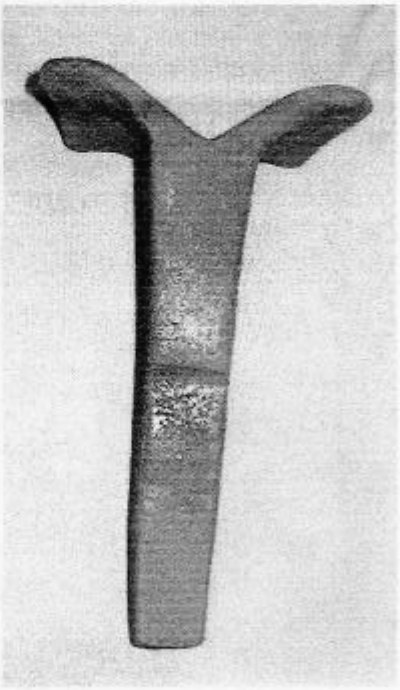
Need a quick anvil stake you can customize? This is a great "re-purpose" project that will make use of that extra pick you have no intention of using. Or "pick" one up at a garage sale or flea market and make a collection.
Note: Select heavier picks that will match your hardy hole or else you will have to upset the "ends" to fit...lots of work!

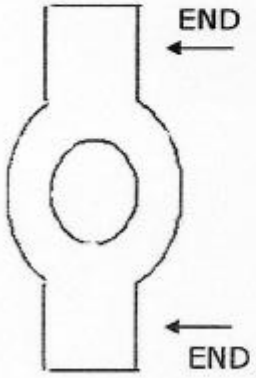


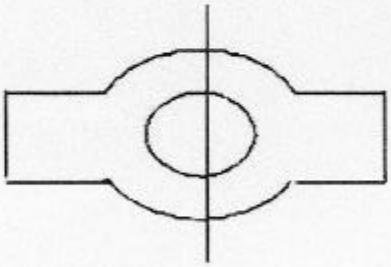
Remove handle from pick

Cut off excess, leave approximately 4 or 5 inches on each side of the eye.

Drive each 'end" into hardy hole on your anvil so it fits.





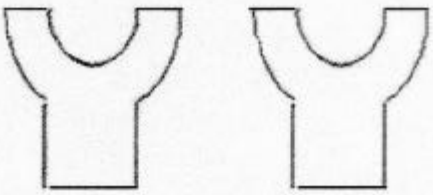


Cut in half for 2 Stakes !

Now you have two stake which you can shape for custom work!

Great idea and use for an old garden tool!

Keep one and have one to give away!



From PAABA Newsletter

"WRABA Tips and Techniques"

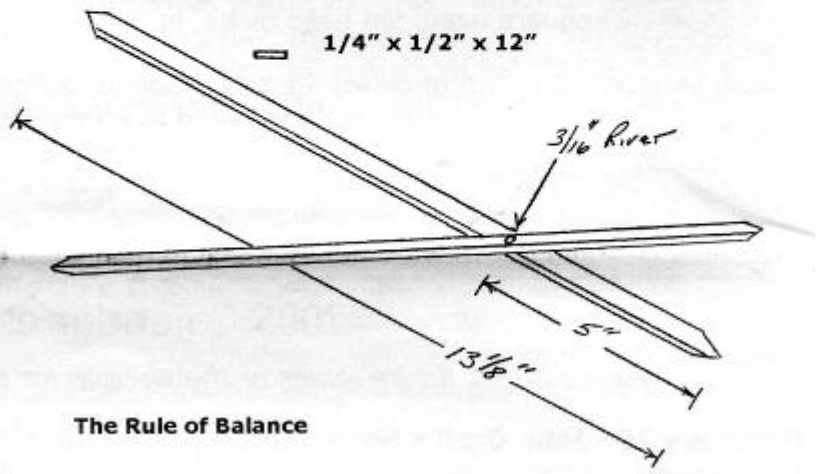
From PAABA Newsletter

Play by the Rule!

by Dennis Gilkey

After the Allegheny Ludlum Tour, which was a great experience, I attended a Ferrier's clinic by the president of the American Farriers Association on shoeing Draft horses. This was an excellent demonstration and event. President Craig Trinka talked about a pair of dividers which he called the "Golden Rule". It was also referred to as the "Rule of Balance" or "Pleasing to the Eye". Sunday morning I went to my shop and made a pair, which did not take long. You just needed a few basics and put it together. You need 2 – ½ X1/4 flat bar 12" long. Forge both ends to a point (grind or file as needed) to a total length of 13 1/8" measure from one end to 5" on both pieces, drill 3/16" diameter hole in the wider dimension, rivet together so that they will move snugly. I have been playing with this tool to see what it can do. It can show you balance.

For instance, using the small end, measure from the end of your finger to the first joint, the large end of the dividers will be the distance from the first joint to the second joint and so on, all the way to the elbow.



The Rule of Balance

Example 2 – Measure an electrical outlet cover plate. The small end dimension and the large end dimension will be long dimension. A credit card will be the same way. I've been measuring everything in the shop that is "pleasing to the eye" (art) and the tool proves itself. Find a classic picture of a female figure, small end to her waist and long end will be her hips. That's as pleasing to the eye as it gets. Make one and play with it, you will be amazed at what this tool will show you. I haven't figured out scrolls yet, so if anyone else knows about this tool, I would be interested in hearing from you.

Compliment any fly press

by Gene Chapman

A trove of tools and tool holders

From Hot Iron News

I use the P-6 fly press I purchased in 2003 as much as possible and, over the years, have made quite a bit of tooling for it.

The press is bolted to a beefy welded steel frame which is anchor bolted to the concrete floor. A storage shelf under the table is a handy feature.

There are some excellent fly press sites on the internet.

The press has four drilled and tapped 1/2-inchx13 holes in the table. These are used to bolt a fence to the table, the fence being handy for decorative work.

An old baking pan fits in a steel frame and is removable. The frame has a stub of steel tubing which fits into a piece of tubing welded to the press table. The pan then makes a handy storage space for press hold downs, wooden screw spacers, "T" Allen wrench, brush, etc.

A home made dipper can be filled with water for cooling tooling if needed.

Here are some 1-inch Whitney punches bought at a blacksmith conference. A smith friend had boxes of punches that he had bought surplus.

I paid a buck each and bought around 50. Though this was before my press was delivered I knew they would be useful for decorative and other tooling.

Pictured are the ones most used: teardrop, round, square, conical, walking chisel, rectangular and domed.

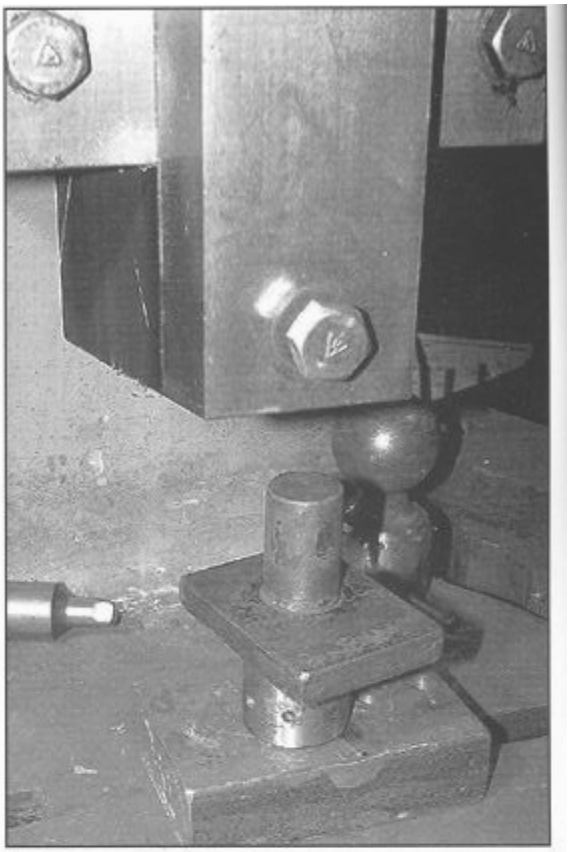
Most have been modified using a belt grinder.

One nice thing about used punches, they are fairly cheap, if you're lucky, and are heat treated.

When grinding, cool frequently in water.

"WRABA Tips and Techniques"

Some tool holder detail

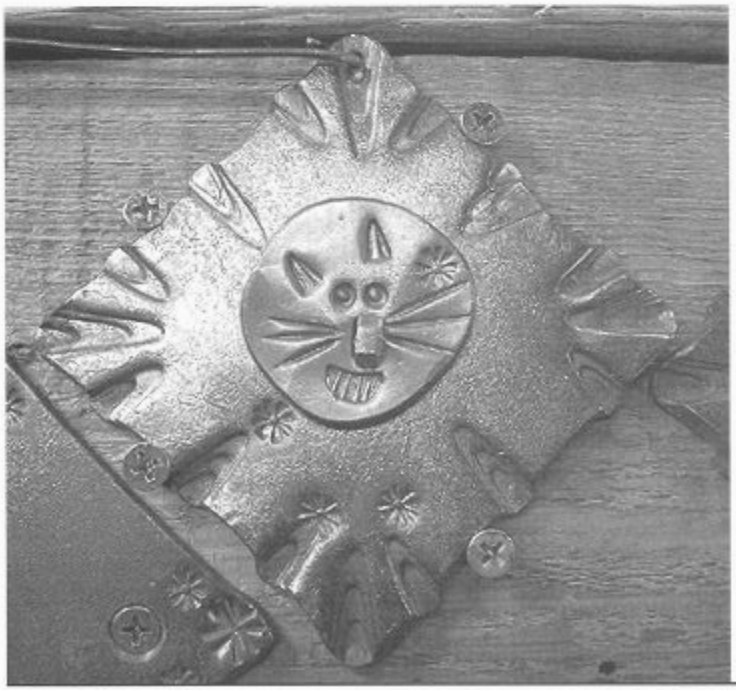


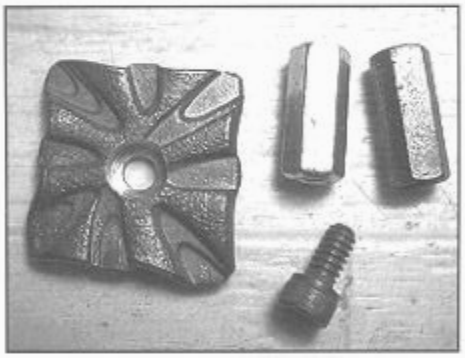
While reseaching fly press info on the internet, a tool holder was recomended to fit the hole in the ram, in this case, a 1" hole. The idea was to distribute force over a larger area of the ram. Since I had some tooling made to fit over a 20 ton hand operated hydraulic press and wanted to use the tooling on the fly press, I came up with this.

The tool holder sits under the ram. It has threaded 1/4-inchx20 holes to hold one-inch tooling. One and 1/5-inch ID pipe, welded to various tooling, slides over the bottom of the holder and is held with 1/4-inch x 20 Allen head screws.

All tool holding parts are mild steel except for set screws.

A 2-inch trailer hitch ball welded to a 1&1/2-inch ID pipes makes a handy dishing tool.





Copper cat Christmas tree ornament, also door knob pull. The cat knob has a brass threaded standoff, which I made, silver soldered to the back. The steel forged knob has a threaded coupling nut attached to the knob with a 10-24 Allen head screw. The knob is counter bored, the screw top almost level with the knob top. The shiny zinc plating can be painted black if desired.

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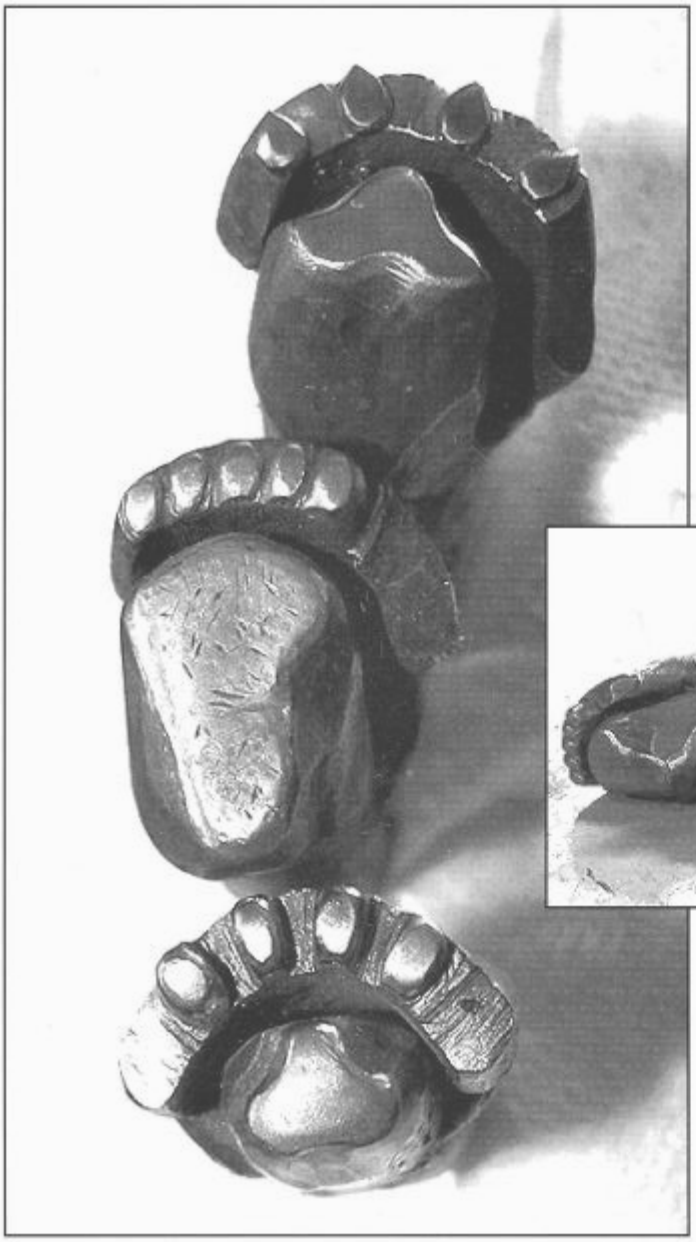


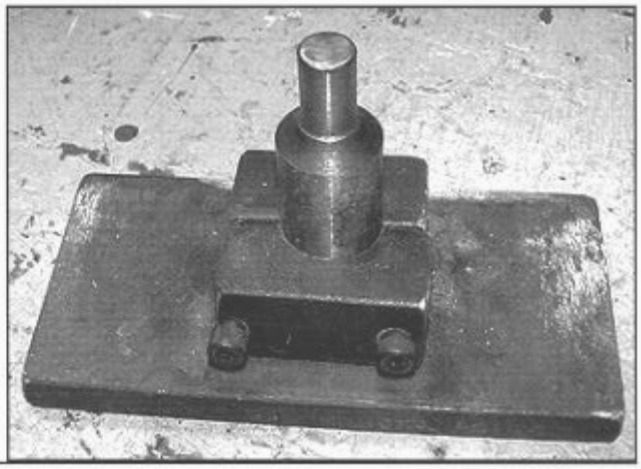
Foot stamps

The steel used for these stamps is auto lug wrench, my favorite for deco stamps. I think it's medium carbon steel and can be filed, ground, drilled, sawed when annealed or normalized.

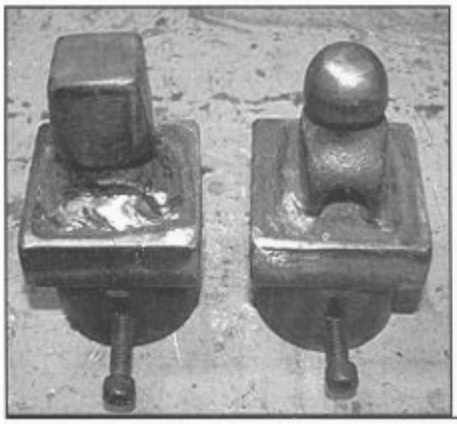
The tool holder for the foot prints is a piece of 1" cold rolled steel with a 9/16" hole drilled in it. It so happens the lug wrench stock used just slips nicely into the 9/16' hole. The welding isn't pretty but beefy.

Tooling bottom punch holder

Tool holder for 1" punch stock. The 1" square bars were drilled with a 1" drill, some metal was ground off each side so the clamp holds the stock tightly. The back clamp is welded to the base.

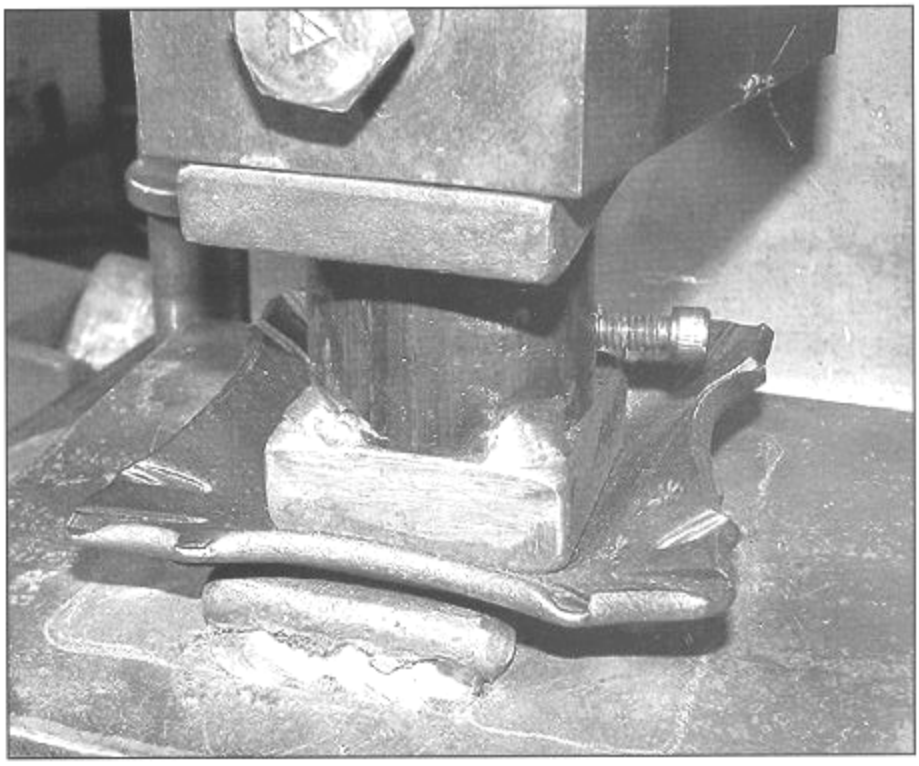


Ball pein tooling



A ball pein hammer was cut in half, one half forged square and welded to pipe mounts. The square part was heat treated.

Forging with flat plate tooling



Forging a flat plate into a tray is easy work for the fly press.

Four 12-inch x 2-inch round bar pieces with the ends rounded are welded to a plate with about 3/8-inch clearance on each side for the 2-inch flatter.

The 4-inch x 4-inch is heated and placed on the fixture. It takes several hits with the press then the fixture is removed, another heat taken and the piece is forged again with the flatter on a plate to make sure the bottom is flat.

Note that lines are penciled with a silver pencil on the dishing fixture to center the hot decorative plate.

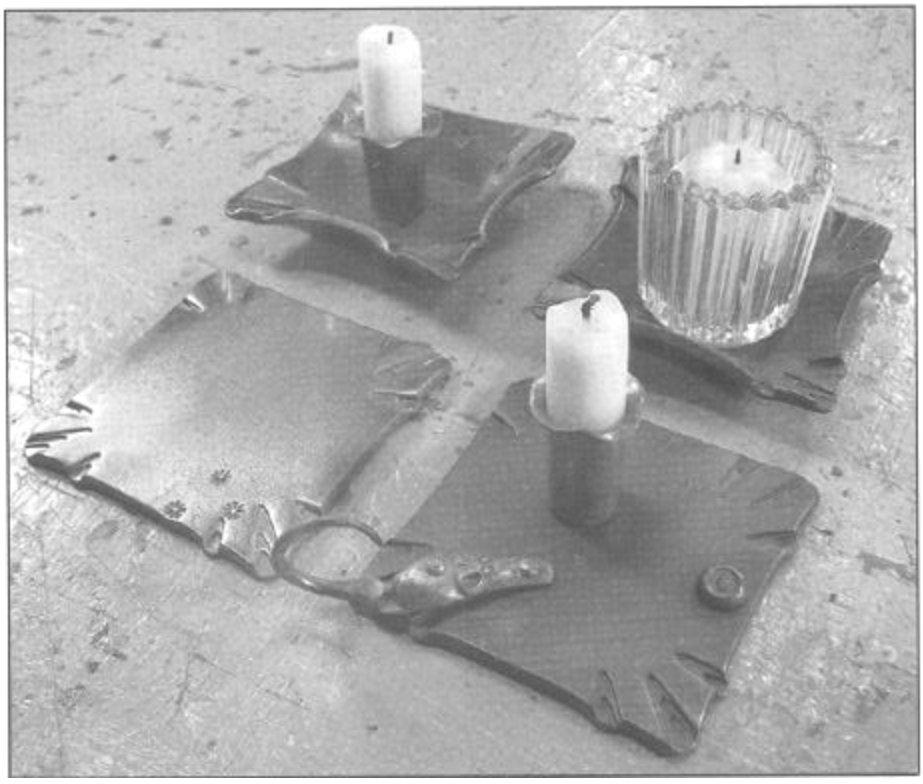
Even with this tooling each forged tray/dish comes out a bit different.

Four trays

Flat forged fly press decorative stamped 3/16-inch x 4-inch x 4-inch plates can be used as candle platforms or on the right a candleholder with copper mouse (fly press forged in a bottom die) and decorative steel rivet with ladybug stamped into rivet.

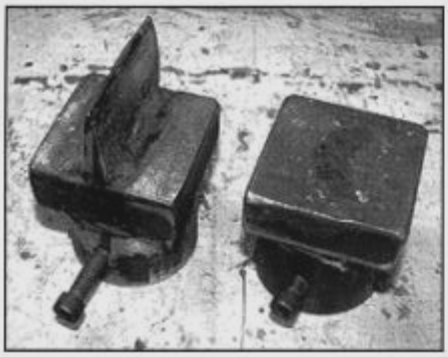
These are just a couple ideas that evolved from the flat decorative fly press forged plate.

The top two have been dished on the fly press, a copper candle cup is riveted to the top left dish. The top right dish can be used as a tray or votive candleholder.

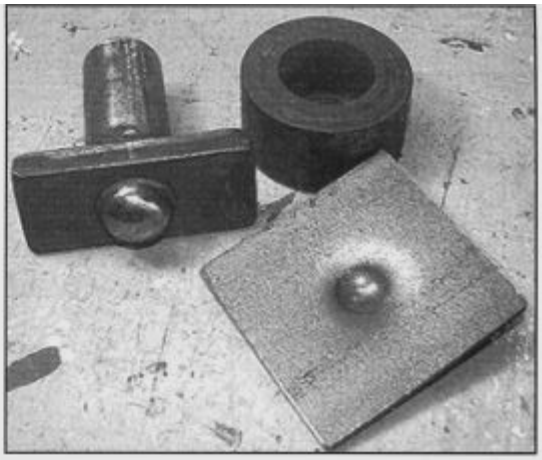


"WRABA Tips and Techniques"

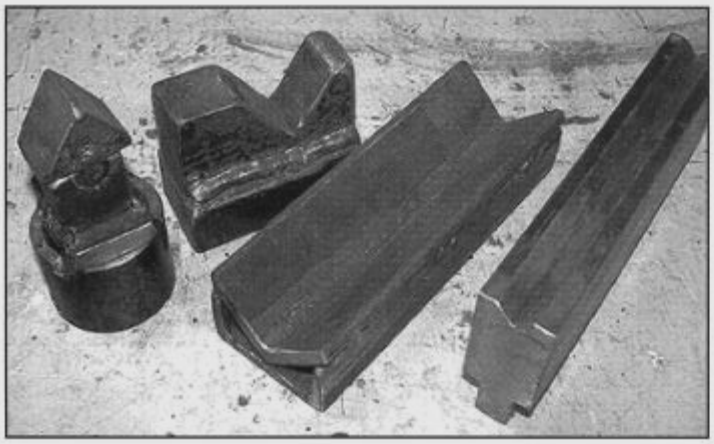
More tooling



Tooling flatter hot cut forged from a file and a 2-inch x 2-inch flatter.



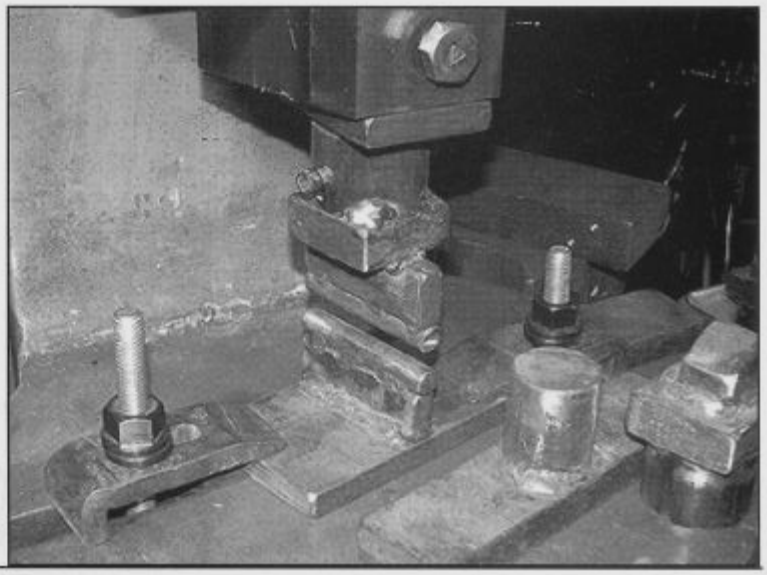
This fly press tool holder has a ball bearing about 7/8-inch in diameter, plug welded in a hole in a plate which is welded to 1-inch round stock. The test piece, 3/16-inch X 2-inch x 2-inch mild steel, was forged cold using a old round die on the bottom. This could be used for trivet legs on larger steel pieces.



Bending tooling (photo at left). The piece on the right was bought on Ebay. The company selling it sold it by the inch - it's about 6" long.

Tooling table holder

Top and bottom fuller mounted on fly press. The fullers, butcher, flatters are all mild steel. A bottom holder in the foreground with butcher on the right. The flypress came with two table clamps but not with bolts and nuts.



NOTE

Gene will be exhibiting his fly press technique at the Spring NWBA Conference in May in Enumclaw.

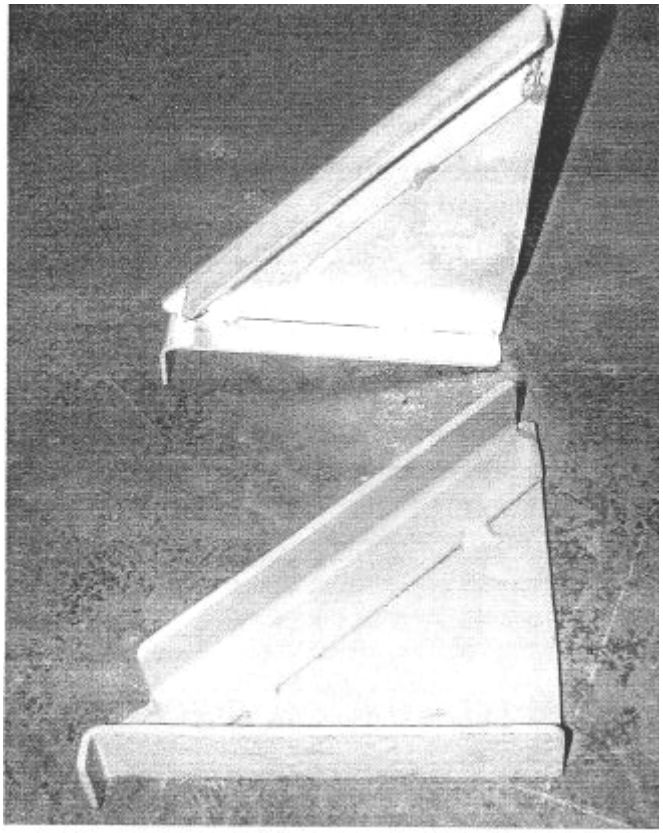
Angle Cutting Guide For Bandsaw or Chopsaw

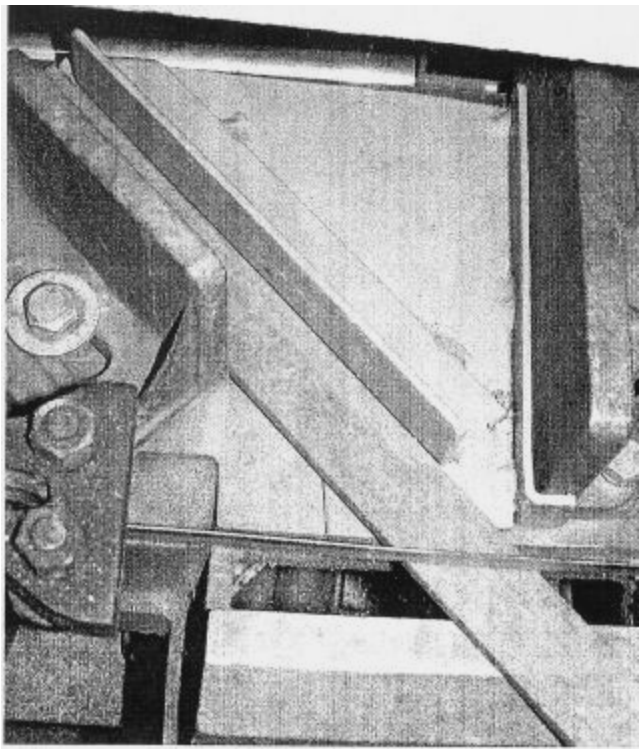
By Tom Anderson

Do you have a bandsaw or chopsaw and have you taken the time to adjust the backstop so it cuts accurately at 90 degrees only to find out shortly after doing so that you have the need to cut something on an angle?

I came across an item on the web a while back, I think it was on a woodworking site, that had a solution to that problem, a jig that can be placed between the backstop and the self adjusting holddown to secure items to be cut at an angle without the need to readjust the backstop.
I recently had to cut a number of items at a 45 degree angle so I decided it was time to build a jig. Here is what I came up with: **As** you can see it's fairly simple. A Plate (I used 1/4 inch thick plate) approximately the width of the backstop cut to the angle you need (in my case 45 degrees). A piece of angle iron approximately the length of the angled side of the plate welded to the plate to serve as a backstop. And finally a piece of flatstock (I used 1 by 1/8 inch) with a 1/2 inch right angle bend at one end to catch the end of the backstop closest to the blade to keep the jig from slipping out as the holddown crank is tightened against the piece to be cut as shown here:

It didn't take me any longer to assemble the jig than it would take to adjust the back stop once for the angle and then back to 90 degrees. You probably realized I know this because I had to make that adjustment one last time to cut the plate at a 45 degree angle to make the Jig.



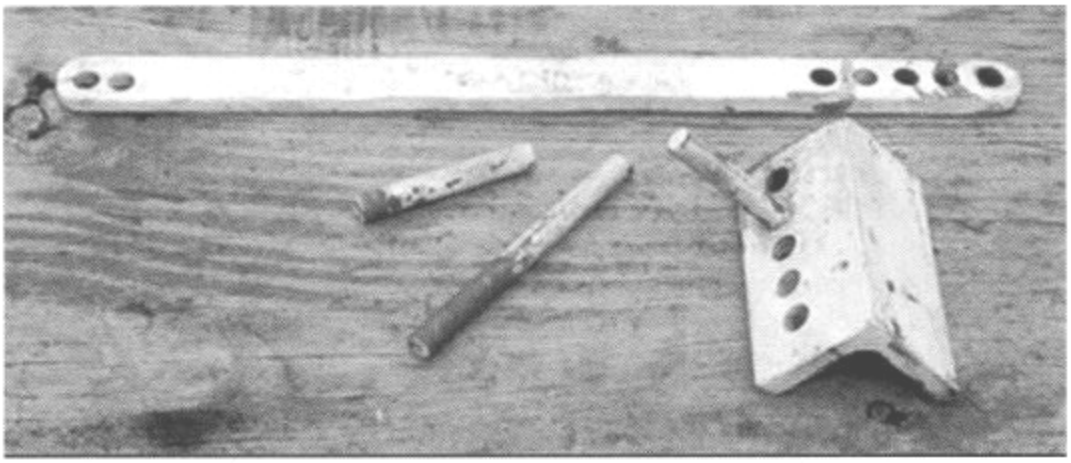


Reprinted from The "Hammer & Tong" newsletter of the "Blacksmith's Guild of Central Maryland"

Shop Tip
Making a Simple Bender

By Bob Ehrenberger

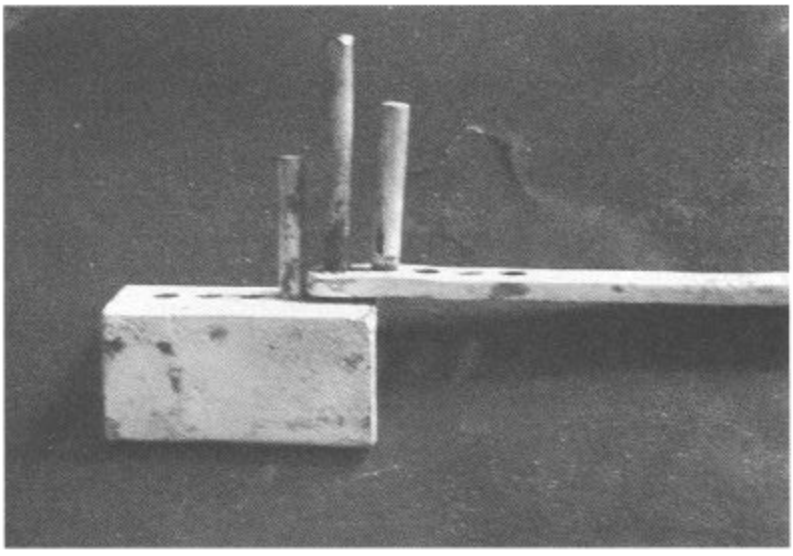
A couple years ago, I had a friend lose the handle to her violin case. She had sent it off, with all the rest of the hardware, to get it brass plated, and the plating company lost it. They needed a replacement and it had to match the original. It needed to be made out of 1/8" round stock with four sharp bends. Pretty simple, right. Wrong, when I bent it in the Hossfeld bender the radius on the bends was way too big. When I tried to clamp it in the vice and bend it over with a hammer, there were marks on the piece from both the vice and the hammer.



Bender parts, handle, base, three pins

What I needed was a miniature bender that would make tight bends in light stock and not leave marks. The solution was simple. I drilled several 5/16" holes in a piece of 1-1/2" x 1-1/2" x 1/4" angle iron. I then drilled a series of holes in the end of a 5/16" x 3/4" flat bar. I rounded off the end of the bar to reduce the clearance required. I cut 3 short pieces of 5/16" round stock and I was done. The first set of holes were too far apart for the 1/8" stock, so I ended up drilling the opposite end of the bar, with the first hole real close to the pivot hole. The bender worked nicely and I was able to make the violin case handle in no time.

Since then, I have used my little bender on a regular basis for all kinds of bending operations. It can handle up to 1/4" cold and 5/16" hot. I have discovered that I really only needed one position for the pins, since by the time you get to where you needed to move the pins for clearance, the bender was not heavy enough for the job any way. When I tried to skip a hole and put the pin in the next one, it was too far out. So I use one end of the bar for 1/8" and 3/16" and the other end for 1/4" and 5/16" stock.



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

You could probably scale this up using a larger angle iron and a larger bar for the handle. It wouldn't be as good as a Hossfeld, but it would be portable and really cheap.