G.O.D.'s Own Scarf

by Daryl Nelson
from the Puget Sound Region
NW Blacksmith Association

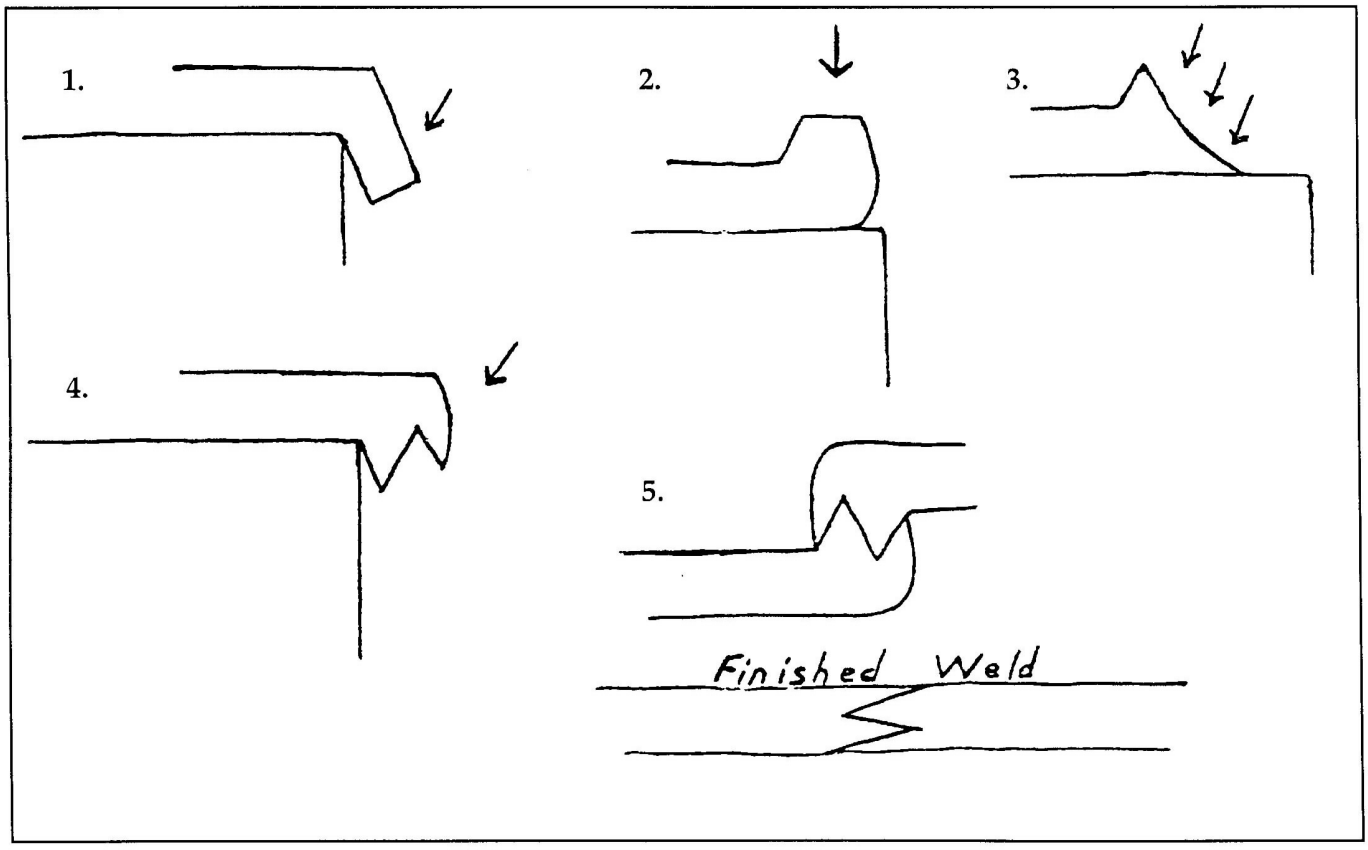
Late August in a small town in eastern Washington, a group of about 15 smiths and farriers gathered for a two-day palaver hosted by Chesaw Ideal Forge. The agenda had included Tom Bredlow and two more men. Mr. Bredlow had to cancel at the last minute, leaving many people disappointed and even keeping some from attending. Little did they know, for the men who did perform were also masters at the forge. Mr. Bob Marshall, from Mission, BC, and a small brawny man from Wales, Mr. Glyn Owen David. Mr. David was two times the British Champion Farrier, and is a working blacksmith at a coal mine in the hills of Wales.

Mr. David astounded the crowd with his wizardry at the forge as he produced various shoes and tools, using many techniques and tools none of us had ever seen before, and with the smoothness and exact ness that comes only from many years at the anvil. On more than one occasion he had everyone keeping time with their feet to a lively tune he would tap out while he and Mr. Marshall drew out heavy stock.

One of the many things Mr. David taught us was a scarf unlike any I have seen. I was so impressed with this scarf that I had to try it shortly after returning home. Time and time again I tried to miss a weld using this scarf by fumbling, dropping and generally fouling up, but succeeded in missing one only after a long day in a dirty fire and dropping one of the pieces twice at an orange heat. So I have duly dubbed this

"G.O.D.'s Scarf."

The procedure is to bend the two pieces being jumped at about an 80 Deg. angle, 3/4" from the ends, and upset, keeping your angle. The end of the scarf is then planed and bent sharply back up. It gives you a non-slipping scarf that produces a layered weld. Try it.
You'll like it.



Ring Roll

by Art Miller, Riverside, California

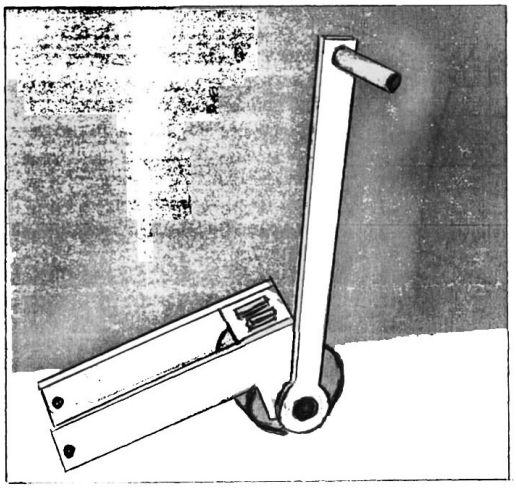
In the need for a ring roller I copied and scaled down a ring roller used in a fabrication shop. .It's made from miscellaneous cutoffs and was fabricated with a cutting torch, a cutoff saw, drill press, hand grinder and an arc welder.

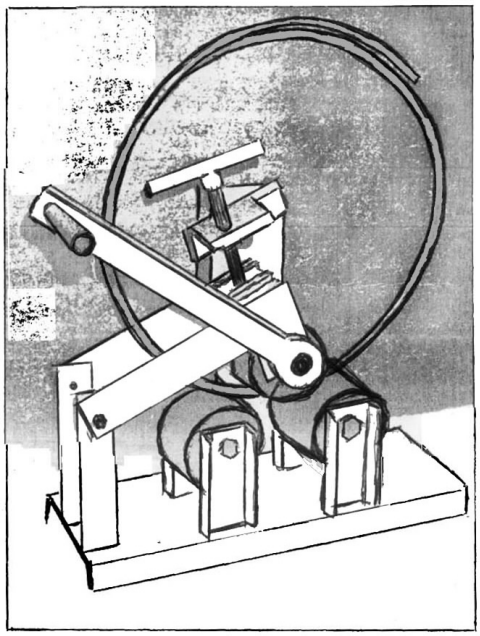
The fixed roller and crank assembly is removable from the base to allow installation and removal of welded rings.

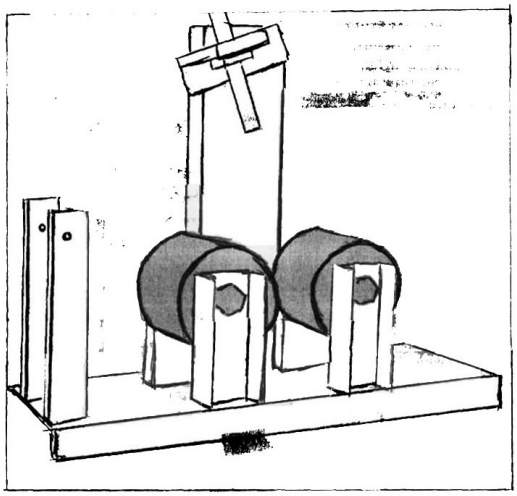
The 2 1/2" wide rollers are made from Sch. 40 pipe (3 1/2 O.D.) with 1/4" plate end caps.

3/8" bolts are used for axles. The fixed roll has a 3/4" diameter shaft with the fixed roll pinned through this shaft with a 1/4" diameter rod which is brazed to the pipe roll O.D.

Tip: The roller will not bend the ends of the materials. The length of the straight section will depend on your roller spacing. Mine leaves a little less than 2" straight on each end. So I calculate the ring material length (C=Pi x mean diameter) and add 4". Cut stock and prick punch 2" from end of stock. Lay out ring length and prick punch at other end of material. Roll ring and cut off at punch marks.







Foundations!

A Resource for Beginners.
by Bud Oggier
the Anvil's Ring/Spring 1987
Part 5

"Hi, Jean. Good to see you!

"Thought you might have had about all of the old goat you could stand and weren't coming back. How's the shop coming?"

"Good. I've redone all the exercises we went through here and didn't have too much trouble. I brought along a 6" leg vise I'm thinking of buying but I'd like to have you look at it first."

"Hey, that's fine. Why don't you bring it in and we'll look it over.

"That's a pretty good-looking vise, Jean; it's not too small and looks in pretty good shape. Let's take the screw out and see how much it's worn. Notice the box or nut is not fastened to the vise but fits rather loosely in the rear leg. What I'm looking for here is excessive wear on the screw and how much play there is in the nut. I'm also looking for any places where the thread is coming loose from the shaft. The thread in the nut and on the shaft were made from 1/4" square stock wrapped around the screw shaft, taken apart, and one piece brazed to the shaft and the other into the nut. This was usually done with copper but sometimes brass was used. Well, this one looks fine. They can he repaired but it's certainly no job for a beginner.

"Let's take out the screw that holds the moving leg to the vise and see if it's bent or badly worn. It seems to be okay and hasn't had too much wear. Now that it's back together again, let's check the "slop" or side play in the moving leg. In this one, the side play is minimal with no excessive slop. Of course there has to he enough clearance on the sides or it couldn't move. The last thing to look for is whether the vise is twisted. Notice when we tighten up the screw that both jaws come together evenly. If it had been abused much, the jaw faces would no longer be parallel and that would have been a problem. Note that the tops and sides of the jaws have not been beaten up too badly; that's a good sign. This vise still has a lot of good use in it. I don't know what the fellow wants for it but vises like this one sell for somewhere between $50 and $150 depending on their condition and how badly the owner wants to sell. If the price is in that range, this would be a good vise to have in your shop.

"Jean, it sounds like your shop is coming together and you're far enough along that we better spend a little lime on making tools.

"The biggest change you'll find is that we will be working with a material that can be hardened. Up to now everything we've used has been mild steel. You'll notice that tool steel doesn't move under the hammer as fast as mild steel but the operations are the same. Tool steel is also more sensitive to heat: you need to do all your forging between an orange and mild red heat. If it gets any hotter than that, it will tend to break and if you go any colder, you may develop forge cracks. These cracks may not show up until we harden the tool and if that happens, the tool is usually ruined. Temperature limits vary from one tool steel to another, but generally all forging should occur within this orange to red-orange.

"All the old blacksmith tools were made from a straight carbon alloy. Modern tool steels come in all kinds of alloys. Additional elements are added to enhance particular properties. Chrome, nickel, molybdenum, tungsten, manganese and silicon are a few of the more common elements added.

"We're going to start out by making a cold chisel. I make mine from octagonal stock, that is, it has eight sides. I'll never get it mixed up with any other since it's the only octagonal stock I keep in the shop. Where buy it, it's sold as a chisel steel, hut it's mostly 1060 carbon with a little molybdenum and chrome in it to make it a bit more shock-resistant and tough.

"First we'll forge a taper about 3 1/2" long on one end, keeping the width the same, and have it about 1/8" thick at the end. Remember, Jean, work your piece between orange and bright red. Here we go. As in the earlier exercise on forging a taper, start at the end, make a blunt taper, then work it back to the desired length. Give it a few blows on the sides to bring it back to width, then go hack to the taper. See, my

piece is getting cold—it's just about to the point where I need to reheat. There is a strong temptation to keep on forging and not take the time to reheat hut that's courting disaster; it's better to take the added time and do it the way you're supposed to.

"I'm ready to start again. I'll just finish out this taper, he sure the sides are straight, and straighten out the chisel blade so it's aligned in the middle of the bar. There, that looks pretty good. There's one thing left to do on this end—I'm going to put a cut across the end of the chisel about 1/2" back from the end and about 1/16" deep. We'll use that to check our piece after hardening.

"Okay, Jean, your turn. Work it hot and keep it straight. You're doing well, Jean, but notice that your piece is curling up a little—that's because you don't hold it quite flat on the anvil and with each blow it gets bent up a little. Nothing serious but try not to let it happen—it will save you straightening time. You could have gotten a little more out of that heat before you went back into the fire, but better to quit early than work it too cold.

"Your taper is finishing up fine. Give it a few light blows to even out any hammer marks, then straighten it up. The chisel you used for putting the cut across the end is a hot cut chisel. The only real difference between it and the one we're making is that the cutting edge is much sharper than a cold chisel and the blade is thinner, if you used it on a cold piece, the edge would turn or deform because it doesn't have enough thickness to stand the shock. Well, let's cut these off to about 7' long and finish up the other end.

"While the bar is heating let's talk a minute about how to tell where 7" is. My method is to put a chalk mark on the anvil 7" back from the edge. Then when I bring out my piece I set it at the mark, put my hammer on the piece at the anvil's edge, and move both the piece and hammer together to the hardie or hot cut end and set the edge of my hammer right above the edge of the hardie. When you cut the piece, hit it so that the hardie is in the middle of your hammer face, hit it once and turn the piece to the next flat and so on around the piece. When it is almost cut through, hit it so your hammer lands just beyond the hardie or grab the piece with a pair of tongs and twist it off. The hardie is quite hard, but a hammer blow on it can nick it very badly.

"Now that our pieces are cut to length, we need to put a short taper (only about 3/4" long) on the striking end so it doesn't burr over too fast and also reduce the thickness by about 1/3". Well, my piece is ready now. Remember to hold your piece up at an angle so the taper forms on both the top and bottom at the same time. Strike each flat until it is tapered back the right length and turn the piece to the next flat. There—now a few blows on the end to flatten the striking end and my chisel is forged. Your turn!

"Now our pieces are ready for heat-treating or hardening, Jean. All the hammering we did on these chisels has put a lot of internal stress on them which could cause us trouble during hardening, so we're going to anneal them to relieve all the internal stress. To do this, we need to heat the pieces to a bright red and cool them very slowly. A lot of different methods are used to slow- cool; some of the more common ones are to bury the hot piece in sand or ashes or lime. I like to use sifted wood ashes; they act as a good insulator and keep oxygen from getting to the piece, which creates scale.

"Usually when I know I'm going to do some annealing, I set my bucket of ashes on top of the stove for a couple of hours and warm the ashes up some. If the pieces are real small (1/4"_1/2" thick), I'll heat a couple of pieces of scrap in the forge, lay one in the ashes, put my hot pieces on it and cover them with another piece of hot scrap—then put ashes over the whole works. When doing this, Jean, the piece needs to be hot all over, so you may have to move it around in the fire a little to get an even heat. Looks like these pieces are ready— into the ashes and cover them up.

"We won't disturb them until tomorrow. In the morning these pieces will be dead soft, stress-free and ready to heat treat. See you then!'

This article was reprinted courtesy of the author Ed Oggier, The Anvil's Ring and ABANA. It was originally published in the Spring Issue of the Anvil's Ring 1986, Volume 14 Issue 4. Reprinting of this article must be declared through the ABANA publishing committee

Building Blocks

A "Back to Basics" project
The Anvils Ring/ Summer 1987
by Dorothy Stiegler
Part 3

Here we are again with our leaves, scrolls and bracket. I hope you are having fun with this; I sure am! All of you who have trouble getting into the fire because the lawn needs mowing and the screens need to be put up, just hand this finished project over to your spouse or friend—you'll be amazed at all the time that suddenly becomes available to you. Instead, they're going to think up a lot of neat things that need to be made for your home and may even trot out there with you to strike or lend a hand.

The first thing we need to do is determine which way the piece should hang, i.e., long or short side down, and then where the leaves should go. Lay everything down on the table and put the two large pieces together. Remember, this will need holes, so when you lay the leaves down, keep in mind how to get a screwdriver or socket set in when mounting it (see Fig. 1). If you made six leaves, use the five best. Design-wise, uneven numbers are usually best (if you made four, use three, etc.).

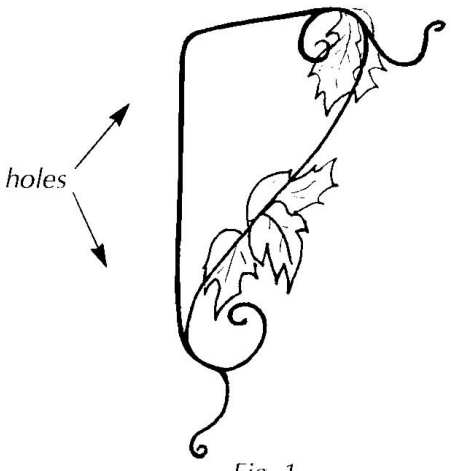


Fig. 1

Look at the piece with the leaves laid in different positions and change them around until your eye views it smoothly, without having to dart around. Generally, the larger group will be at the bottom or you can trail them down the outside curve of the scroll, perhaps. This is where you add that special touch that only you can give the piece. Those nice long stems will come in handy here. When you've decided where everything goes, draw it out on the work table and mark the leaves so you can remember where each belongs.

If you are really basic and don't know how to work tool steel, remember these four pointers: 1) Don't hit it unless it is hotter than red. 2) Don't get it hotter than light yellow. 3) Cool it off in oil at a red heat and keep it moving when you get done. 4) Get Jack Andrew's book The Edge of the Anvil and read the section on tool steel, following step-by-step.

Now we are ready for the holes. You can drill if you wish, but I punch mine because I like the way it looks. Hopefully, you have a round drift tapered punch; if you don't, you may convert an old pritchel or center punch. In the meantime, you can make a fast punch that probably will hold up for two holes.

Mark the center of the bar at the point where the holes will go into the bracket. Do this cold, with something that will dimple the work so you can see it later, when it's hot. Assemble your hammer, a helper (if you have one) with another pair of tongs, your punch and a quench bucket of water (to keep the tool cooled off).

After heating the bracket in the fire, bring it out and hang it over the anvil with the "L" shape down the far side. Punch the hole holding the punch over the dimple you made earlier. When you feel the punch bottom out on the anvil, quickly flip the bracket over; if you see a dark ring in the heated portion, you are ready to back-punch the hole. Quench the tool in water and dry it on your pants leg.

It's harder if you're working alone, of course, but not that hard. Reheat the piece and flip the bracket over, find the black ring again, and with the ring ideally positioned over the pritchel hole of the anvil, place the punch over the ring and strike in quickly with the hammer, punching it out. if you have a thick piece, putting green coal fines in the hole will help

keep the tool from sticking.

Reheat and drift the hole to the desired size, then do the second hole. Be sure to space them so you have one near the top of the bracket and one closer to the bottom (keeping in mind the inner scroll and screwdriver handle). If anything is out of alignment at this point, straighten it out again. Make sure to keep your tool quenched and wiped off as you go; this keeps your tool working and the work hot.

Hot collars are next—this piece looks great with a vine wrap. I use 3/16" round stock (gas welding rod is great). Lay the scroll down on the table with the bracket around it again. The curves all touch at some point, hopefully. if they don't, then look for a place where, if you pinch it with the tongs, it will back into itself. This is where the top collar goes (see Fig. 2-A).

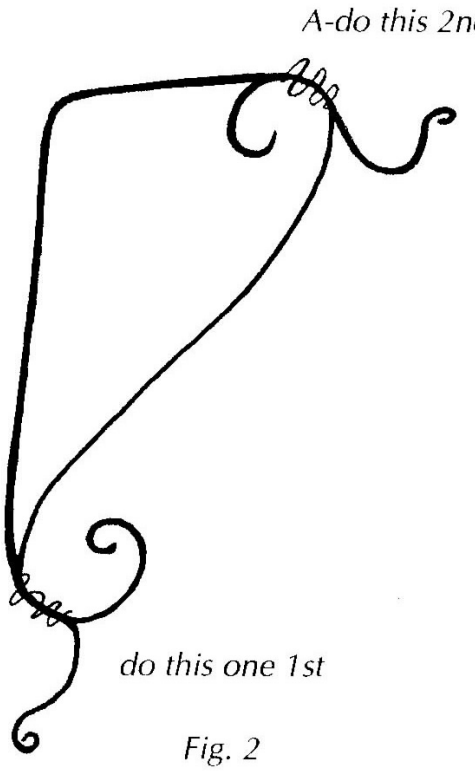


Fig. 2

The other collar needs to go on the bottom side of the lower curve—otherwise the bracket won't sit flush against the wall. Measure (at the collar site) all the way around the two pieces three times. Then multiply the thickness of the collaring material by 2 1/2. Add those two numbers together and add an additional 1" for the "tails". This may seem like a lot of material—it will vary a bit depending on where you start on the scroll.

The nice thing about this type of hot collar is that it's okay if you end up with extra because you can wrap a little more, curl the tendril, or whatever. Before wrapping, taper each end of the material a little and make a point—looks better if you do.

Put the bracket and scroll into the vice so the collar area is up and cleared from the face of the vice. Choose a pair of tongs that grip the collaring material tightly (if you don't have any, vice grips work great)—these will be the wrapping tongs. Get another pair of tongs that will go over the bracket, scroll and wrap all at once~—these will be the holder tongs. If you have a gas torch, you are going to find the wrapping particularly easy. Think about where the wrap has to go to clear the spaces between the scroll and bracket.

One scroll is facing out, but one is facing inward, and you will need to maneuver the end of that wrap inside the triangular opening of the bracket. I'd do the easy one first, myself (see Fig. 2). You will do well to try a couple of dry runs first—this will show you what you'll need to do so you'll be ready when you get the parts hot.

While holding one end with vice grips, take a heat halfway down the wrapping material, then take it to the work and place it on the curve where you want the scroll. Next use the large tongs to trap the wrap, scroll and bracket together. The vice grip hand can wind the wrap 1 1/2 full turns fairly quickly. Switch to another pair of holder-size tongs, and while the wrap is still hot, drag it around tightly, especially where it has gaps (a torch is handy here). Finally, wire the other scroll end shut with a piece of wire so the work stays together.

Now put the already half-collared end into the forge to heat the other half of the wrap, then place it back into the vice. Holding the already wrapped part snug with the big tongs, grasp the heated end with vice grips and pull it around. Then turn the piece around in the vice and do the other end. You may

need to pre-bend strategic parts of the wrap so you can get it through the inner space. Let the wraps cool and shrink tightly. You'll find that with a little dexterity, you will have a clever hot collar and a one-piece bracket.

If you didn't get the leaves made, you will still have a pretty finished piece, ready to hang. I always wire brush here and clean it up as I go. If you made leaves, gather these up now. Get a piece of 1/4" by 3/4" strap and put it sideways in the vice—this will to be your mandrel. If your leaves are going to go around two pieces, use two pieces of strap. On this operation it will be helpful if you do a dry run first.

Stick only the stem of the leaf into the fire and when hot, use the horn of the anvil to curl the stem up some. Select a pair of tongs that can act as holders again and take the still-hot leaf over to the mandrel trapping the end on the bar (s). Now wind the leaf around the mandrel. This will probably be easier because you have more leverage from that end. Don't make it tight yet, just get it to hold.

If you have heat left, unwind only enough to get it off. If the piece is too cold, take the bar and leaf to the fire and heat the tail up again. You are going to want to leave some of the corkscrew shape in the leaf for when you start on the main piece. Hopefully, this will allow you to get it onto the piece in one heat. Do all the leaves this way. Remember, you can face one or two out on either side of the finished piece so it has neither front nor back when finished.

After everything is start-curled think about what goes where. Do the leaf that will be impossible to do last, first (think it through). You can "dry run" maneuver the leaves onto the bracket while they are cold—this will help you see where each one will need to be gripped or squeezed to get the tail to wind itself snuggly around the scroll. Each leaf will hold itself on fairly neatly if pre-curled, reheated, and then wound onto the scroll—it will shrink-fit and be fairly snug.

I sometimes do have to put everything back in the fire and, with two tongs, coax it around the work. Of course, for those of you with a gas torch, this is faster and easier, but the idea here is to realize you don't have to have a lot of tools and a great forging background to make neat things. Make simple things and cleverly hook everything together into something that only looks complicated. You will want to think it through first, however, to make sure you do step A before step D.

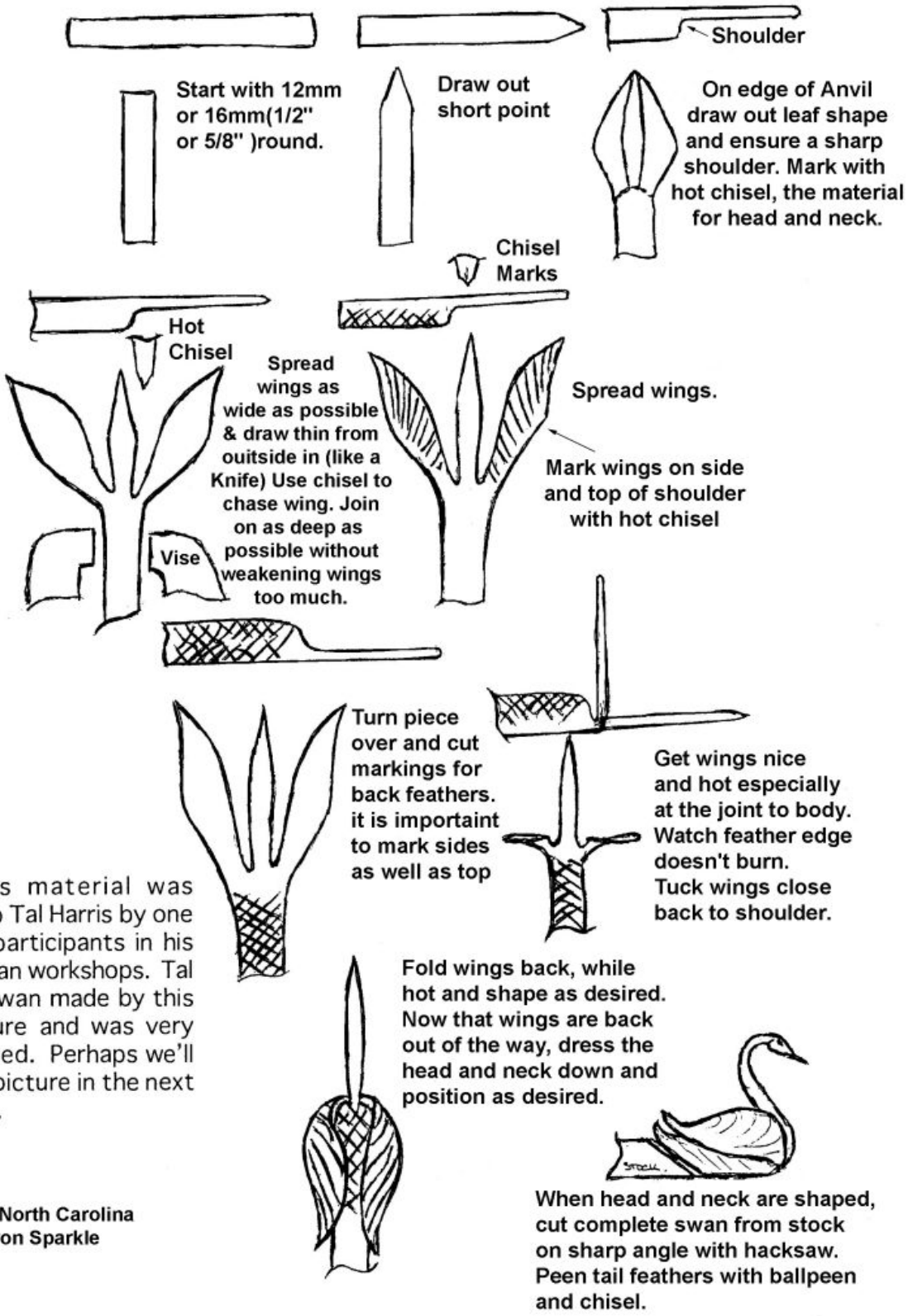
After everything is snuggly on, and you like the position of the leaves (they turn easily on their stem if you decide you want to face one slightly differently) wire brush again. Emery paper is also a good scale remover. If you've kept the work fairly clean as you went along, this part goes more quickly.

After it's descaled, heat it up carefully to about 500 deg. (an oven's nice here) and if you have a brass brush (even a plastic handled one) highlight the iron by rubbing it with the brush. This is really effective. Then, before the piece cools, spray with WD4O and wipe clean with a rag. My Lindsay is no longer in diapers, so I have great rags—real soft, too.

I think you'll end up with a nice finished product and hopefully I'll get to see some of these leaf hangers some day. just get out there and get started, even if you think you can't do it when you begin. Think it through, break it down into parts, make the parts, and put them together. It's great fun!

This article was reprinted courtesy of the author Dorothy Stiegler, The Anvil's Ring and ABANA. It was originally published in the Summer issue of the Anvil's Ring 1987, Volume 15 Issue`. Reprinting of this article must be cleared through the ABANA publishing committee

Forging a Swan, by Burke Hobba, Queensland, Australia



This material was given to Tal Harris by one of the participants in his Australian workshops. Tal saw a swan made by this procedure and was very impressed. Perhaps we'll have a picture in the next *Sparkle*.

From the North Carolina Hot Iron Sparkle

NAME _____

ADDRESS _____

CITY_____

STATE/PRO V. _____

COUNTRY_____

ZIP (+4)/POSTAL CODE_____

PHONE # _____

EMAIL _____

Order Online, Mail, Call or Fax your Check or Credit Card Payment to:

ABANA
P.O. Box 816
Farmington, GA
30638-0816 USA
706-310-1030 VOICE , **706-769-7147**FAX, WWW.ABANA.ORG ABANA@ABANA.ORG

ABANA

___ Regular Member $45.00
___ Senior Citizen (Age 65+) $40.00
___ Full Time Student $35.00
___ Foreign Member $60.00
__ Foreign Member, Air mail $80.00
__ Public Library-USA $35.00
___ Contributory $100.00

MASTERCARD OR VISA ACCOUNT NUMBER

_____-_____-_____-_____

EXPIRATION DATE ____ ____

Join ABANA or Check out other area chapters!

Northeast Blacksmiths Association

Northeast Blacksmiths holds its meets twice a year at the Ashokan Field Campus in New York State.

The Ashokan campus is located in Olivebridge, N.Y., several miles west of Kingston, N.Y. The meets are held the first weekend in May and in the first weekend in October every year. The main demonstration is in the blacksmith shop and there is a "Hands On" workshop for beginners. A main demonstrator is brought in for each meet, food and bunk-house style lodging are provided as part of the cost of the weekend long meet.

Contact : Tim Neu
to register for hammer-ins
or subscribe to the newsletter;
Tim Neu, Ashokan Field Campus,
447 Beaverkill Rd.
Olivebridge, N.Y. 12461 [914]657-8333
For more information check out the web site; <http://nba.abana-chapter.com/>

Join The Pennsylvania Blacksmiths Association!

_____
Name

_____
Address

_____
City, State, Zip code

_____
Home / work Phone # **E-mail (optional)**

ABANA Member? O **Yes** O **No**
Can you host a PABA meeting? O **Yes** O **No**
Are you willing to demonstrate at a PABA meeting? O **Yes** O **No**

_____
Suggestions for PABA demonstrations

What is your skill level?
O Beginner O Intermediate O Advanced O Professional

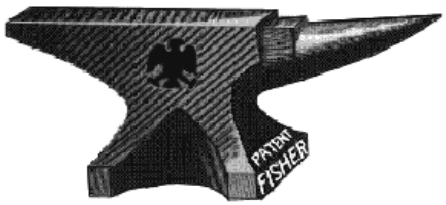
Send your completed application with $ 10 (one year dues) to;
Treasurer Gene Degenhardt
271 Stoney Lane
Lancaster, PA 17603

PABA Membership Application
Membership is from
Jan. 1 — Dec. 31

PENNSYLVANIA Artist BLACKSMITHS' ASSOCIATION

New Jersey
Blacksmiths Association
90 William Avenue
Staten Island, New York 10308
Attn: Larry Brown, Editor

New Jersey Blacksmiths Association



"EAGLE"
FISHER & NORRIS, Trenton, N. J.

How to Join or Renew your Membership in NJBA:

NJBA Dues are $18 per year (as of July 1, 2001).
Please make your check out to: "NJBA"
Please mail checks to:
NJBA, P.O. Box 195, Howell, N.J. 07731

Please include payment with the information listed below. You will receive a postcard confirmation of your membership, and will receive a newsletter within a month. NJBA's "year" runs from June to June. If you join mid-year, the postcard will offer a prorated dues option which will then allow you to extend your membership till the following June. The following information will be listed in a roster available to other members.

Name _____ Home Phone_____
Address _____ Day Phone _____
City _____
State _____ Zip _____
E-Mail _____ Skill Level (optional)_____
Comments _____