

SOFA SOUNDS

SOFA
SOUTHERN OHIO FORGE & ANVIL

APRIL/MAY 1985

c/o 1135-6 Spinning Rd., Dayton, OH 45432-1641

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MARK YOUR CALENDAR:

(NOTE: Members are encouraged to bring along tools or items they have made for display. Don't park on the grass areas.)

April 6th - 1:PM

BUSINESS MEETING followed by a short demonstration of knife making by Ron Thompson. Work on the homestead gate will start at 10:AM and continue after the meeting and demonstration. Come early and bring your favorite forging hammer and tongs for holding flat stock.

May 4th - 1:PM

BUSINESS MEETING followed by a short demonstration on the use of an acetylene torch by Emmert Studebaker. Work on the homestead gate will continue as previously mentioned.

June 1st - 1:PM

BUSINESS MEETING followed by a demonstration on making a hardy by Hans Peot. Work on the homestead gate will continue as previously mentioned.

MEETING NOTES:

The February 2nd business meeting was short due to the need to start work on the homestead gate:

- Ron Thompson, the 1985 Quad-State Round-up Chairman, announced that he had arranged for Ted Tucker to be one of the primary demonstrators. Mr. Tucker is the author of the excellent book "Practical Projects for the Blacksmith". It was also announced that those participating in the setting up and running of the Round-up would only be charged half the normal registration fee for the event.

- The ram's head fireplace poker I made and donated to the raffle was won by Dayton member Owen Vance. It sure was nice to see the highly experienced blacksmiths there buy several chances on this piece - thanks guys.

The homestead gate design has been finalized and, as I mentioned in the last newsletter, it will be a piece to be proud of when finished. Several ovals in the design will have cut-outs depicting various aspects of the Studebaker history.

Creative & Friendly

The March 2nd business meeting was again short:

- Ron Thompson announced that he had arranged for Peter Ross, resident master blacksmith at Williamsburg, to be the second primary demonstrator. He has also arranged for Larry Wood, Bruce Washington, Mark Bokenkamp and Jim Rublee to do half-day demonstrations and is trying to arrange the third primary demonstrator. Ron mentioned that both Ted Tucker and Peter Ross asked what the group wanted demonstrated so get your input in to Ron on this. This year's Round-up is shaping up to be quite an event. At the next meeting Ron will have a list of sub-chairman positions in a number of areas (e.g., registration, signs, entertainment, concessions, tooling, safety, etc.) and will ask for volunteers. In the past, the Round-up has been set up and run by just a small group. This year Ron intends to get far more people involved to make the job easier all around. If you can't make this meeting, please call Ron at Sidney number 492-2259 to find out which positions are available. Remember, early volunteers get the choicest positions. Positions will include being "gofers" for the demonstrators in which case you get a ring side seat.

- Since I did not have other items lined up, I donated a very nice 10" drawknife, a pair of heavy-duty flat stock tongs, and a "mystery prize" for the raffle. The drawknife was won by Ken Hambel of Castle Rock, CO (who mailed in \$10 to be split between two drawings). The tongs were won by Bellbrook member Bill Hinze. The mystery prize (a coffee cup saying "Your The Best") was won by New Carlisle member Gerald Hawkins.

The raffle items for the next meeting will be a pair of holed tongs (for holding the cleated end of a souvenir horseshoe) made (using a welder) by Hans Peot and a very nice, two piece shovel pan jig made by Dave MacDonald. How about you guys writing up an article on how you make these items for the newsletter?

I was encouraged to see Hans and Dave donate these items for the raffle. We have raffled off some rather nice items so far and I hope it continues in the future by chapter members donating excess tools or finished items, like the ram's head poker, to the raffle. We are offsetting about 2/3rds of the cost of the newsletter through this effort. If you want to donate something, but can't make the meetings, please call me to arrange pickup. If you would like to mail in money to buy raffle tickets (50¢ each), you can sent it to me. If you win, you can pick up the item from me. Cash contributions to the newsletter would also be welcome.

Following the business meeting Pandora member Keith Summers demonstrated making brass and copper ladles using one of Ron Thompson's cast iron swage blocks. It was noted that brass and copper, unlike iron, become soft when heated to a red color and quenched. At one point Keith showed this by bending the brass as if it was a sheet of lead. It becomes hard through work hardening. Say Keith, how about you also writing up an article on this for the newsletter.

After the demonstration work on the homestead gate continued with several members taking home work to do for the next meeting. We had three forges and eight anvils in use. The sound of several anvils in use at the same time is something to behold. Larry Wood did one of his "see there ain't nothing to it" forge welds of two 3/4" pieces using a fire which probably had a clinker in it the size of a softball. Larry pointed out that a common mistake in lap welding is to not upset enough material to where the weld is noticeably larger than the end result desired. Thus, when the weld is drawn out, it matches the two pieces joined. I have seen Larry forge weld two 1/2" square bars and then twist the weld area - cold as I recall. That is a solid weld! In a future newsletter I hope to have a sketch of the gate and forging notes by Larry and/or Steve Roth. This effort will only complete part of the gate. In the future, we will be doing a curved arch over the gate as another group project. Frankly, I think that this is a great group learning experience.

SOFA baseball-type caps (one size fits all) and 1985 ABANA Calendars are available at the meeting, or by mail, from Hans Peot (6245 S. Scarff Rd., New Carlisle, OH 45344). Caps are \$4.00 (\$5.00 by mail). Calendars are \$3.00 (\$3.75 by mail).

OTHER EVENTS, DEMONSTRATION OPPORTUNITIES AND EMPLOYMENT OPPORTUNITIES:

Students can work with Francis Whitaker from April 14-20th to upgrade the blacksmith shop at the John C. Campbell Folk School, Brasstown, NC 28902 (making tools and repairing equipment). For further info, contact the school.

The Southeastern Regional Blacksmith Conference will be held May 17-18th at Madison, GA. Demonstrators: Fred Caylor, Michael Saari, Ivan Bailey, Jack Andrews, Mike Ross, Joe Hansbury and Jud Nelson. For brochure send SASE to Joe Humble, 5029 Montcrest Dr., Chattonooga, TN 37416 - (615) 344-9649.

The Bellbrook Sugar Maple Festival would like to have several blacksmiths demonstrate (and sell products) on April 13th (from noon to 6:PM) and April 14th (from noon to 5:PM). For further info contact either Don Driskell or James S. Hilt in Bellbrook.

The Arrowhead Summer Camp for Boys is looking for a resident blacksmith to provide blacksmithing lessons from July 13th - August 22nd. They have a fairly well equipped shop. Room, board, and laundry, plus a salary depending on qualifications. For further info contact them at Tuxedo, NC 28784. Possibly a nice vacation opportunity.

Jack Brubaker is looking for an apprentice/helper to assist him on a major project. If interested, contact him at Goat Hill Crafts, Valley Branch Rd., RR #2, Box 210, Nashville, IN 47448.

FINISHES - PART III:

18. RECIPE #2 - Ask a body and paint shop operator to mix 1/2 pint of clear automotive enamel, cut it with some flatter to reduce the gloss, add a little dryer or retarder to allow 1.5 - 2.0 minutes brushing time. Experiment with a couple of mixes to get the effect you want. Brush only - do not spray. Brush on completely a thin coat, set aside or hang on a wire to dry. This finish is excellent and strong, brings out the beauty of the iron. It hides nothing. The mix soaks deep into the pores and scale. After some trial and error you will get just the right amount of flatter in your formula to give "Patina elegante". Have your metal at "warm to touch" temperature and clean. (By Jim Converse).

19. CLEAR ACRYLIC - Here is a heat-resistant finish which I use and like: Clean the surface to be coated thoroughly, preferably by sandblasting. Be sure the surface is dry and oil-free. Spray with VHT #SP-115 Clear 1200°F Flame-Proof Coating. This clear acrylic is packaged for Sperex Corp. of Gardena, CA 90248, and is available from automotive-supply houses. Use this finish only where the ventilation is very good, as the carrier is a chlorinated hydrocarbon and is quite toxic. It gives a very tough finish, quite resistant to handling, heat, and salt. (By Carol Sakowski).

20. LIQUID FLAX SOAP - To get a nice finish on metal put enough liquid flax soap (pure vegetable oil soap available at some grocery stores) in a bucket of water to cloud the water. Heat the piece five times to a dull red, each time quenching in the soapy water and wiping it dry afterwards, or until it takes on a bluish-black, soft surface which is very permanent. Warning though, if you intend to use the water later for quenching your iron, you will find the cooling time is slowed down by the soapy water. (By Roger Lorange).

21. BLACK SHEET RUST PREVENTIVE - Before black plate (iron sheets apparently - ks) is ready to receive a rust protective coating, it is necessary to render the surface free

from grease and scale, for which purpose the sheet iron is placed for some time into a warmed solution of 1 part sulphuric acid in 10 parts of water, whereby the impurities become detached, a process which may be assisted and accelerated by scouring with sand. Then rinse in clean water and rub dry in sawdust. The sheets thus prepared are placed for a short while into a feeble solution of blue vitriol, where they assume a reddish coloring. Next, they are rinsed in water, and after that moved to and fro, for a short time, in a feeble solution of hyposulphite of soda acidulated with a little hydrochloric acid. They result is a dark-blue coating on the sheets, which prevents all oxidation. (Originally from Henley's Formulas for the Home and Workshop, 1902, revised 1927).

22. SCENTED FINISHES - This is a twist on Francis Whitaker's recipe for steel finishes. Use equal parts oil, beeswax and turpentine, but substitute lemon oil or pine oil for the unboiled linseed oil. It gives the finished product a nice smell. If you can't find a "real" old-time hardware store which sells these oils, use salad oil (or the unboiled linseed oil) and buy the concentrated scent which you want and add enough of it to give the finish coating a nice scent. It perks up sales! I did this with non-food-use items such as bookrests and trivets and sales at that shop rose. Sales stayed the same at the shops where I had not done this. Items stocked are pretty much the same for all of them. Lemon-fresh Joy move over! (By Carol Sakowski).

23. GALVANIZING - Anything for exterior use in a high humidity climate gets hot dip galvanized. Cold galvanize zinc-rich paint is good to touch up welds. (By Beau Hickory).

24. MINWAX - Use Minwax wood finish for exterior pieces. (By Kent Reeves).

25. LAMPBLACK AND LINSEED OIL - Apply a mixture of lampblack and linseed oil. When dry, finish with beeswax and alcohol. This is nice but messy. Very thin fluid stove blacking does the same job. (By Beau Hickory).

26. COLORLED HIGHLIGHTS - First paint with auto body lacquer-primer, then colored paint (e.g., Chinese Red). Then apply stove blacking. Then rub with steel wool so the color shows on high spots. Good for tables, etc. (By Beau Hickory).

27. POWDER-GILDING PROCESS - Precoat with shellac or slow drying lacquer, then dust on powdered color - it doesn't have to be gilt - try blue and green peacock colors. (By Beau Hickory).

28. FLOOR WAX - Use high acrylic floor wax as a finish.

29. RECIPE #3 - Use the following mixture: one part spar varnish or "long oil varnish" plus three to four parts linseed oil, plus drier and lampblack. (By Dave Zatz).

SOURCES: #18-20 and #22 - from the newsletter of the Upper Midwest Blacksmiths Ass'n. #21 - from The Silent Swedge, newsletter of the Indiana Blacksmiths Ass'n. #23-29 - from the newsletter of the Northeastern Blacksmiths Ass'n.

MORE ON DAMASCUS STEEL:

The February 1985 issue of Scientific American contains the article "Damascus Steels" by the two researchers mentioned in the Feb/Mar 85 newsletter. It provides extensive details on how the Damascus steel blades were produced. If you are interested in Damascus steel, remind me to bring the article to the next meeting.

In addition, Larry Wood gave me a filler item out of the Antique Week/Tri-State Trader, Sept. 3, 84, which said, "Why is Damascus steel so desired by knife collectors? Like Japanese blades, Damascus is made of a combination of soft and hard steels, layered

many times. This combination enables the blade to have an exceptionally sharp edge plus superb flexibility. And, where Damascus can accumulate up to 1,800 or more layers, some Japanese blades can have in excess of four million". However, while four million layers sounds like a lot, it is only 20 overlaps on an original five layer blank. The writer of this article also confused "Damascus steel" with "Damascus pattern steel". I thought that Japanese samurai sword blades were made using the same basic procedures as Damascus sword blades. Is anyone familiar with Japanese sword making?

MAKING A RAM'S HEAD FIREPLACE POKER by Bud Rolston:

1. If you don't intend to taper down the poker by the hook, start with a piece of 1/2" square stock about 36" long.
2. On one end, draw out 2 1/2" to 1/4" x 1/2" x 5 1/2" to 6" for the horns. (See Illustrations A and B - I-A & I-B).
3. 1 1/4" back from where the horns start, round 1 1/2" to form the neck. Bending this area square can result in a crimp in the metal. (See I-B).
4. If you intend to put a decorative twist near the head, you can heat the metal starting about 1" below the bottom of the neck and twist it as is once around or, to get a nicer twisted rod bundle effect, put in grooves in the middle of the four sides about 4" long, round the square edges, and then twist. I made a die for my power hammer to give a four-leaf clover effect to this area which is then twisted.
5. Split the horns down the center to the head. I use a bandsaw to get an even cut. Then draw the horns out to the taper desired. (See I-C).
6. 5/8" back from where the horns start, use a hardy to cut about 2/3rds of the way through the head to allow this area to fold over easily. Fold the top half of the head back. (See I-D). The cut goes on the side such that the horns will be on top once folded. (See I-E).
7. Prepare the top and bottom half of the head for forge welding. Forge the head together, draw it out some, and chamfer the four corners of the face. Chamfer the bottom of the head less than the top. (See I-F).
8. Upset nose and mouth area a little to improve the appearance. (See I-G).
9. Make the facial features as indicated in I-H. As you punch in the nostrils, the top of the nose will raise up slightly to form a nice nose.
10. Heat the neck area, quench the head, and carefully bend the head over to form the top half of the top of a backward "S". (See I-H).
11. Facing the face, twist both horns to the outside in different directions. If the area already twisted begins to twist too much, cool off this area. (See I-H).
12. Using a pair of pliers or the anvil horn, curl horns to the size desired, roll them completely to the head and then use a pair of pliers to pull out the horns like a spring. Adjust shape of horns as desired. (See I-I).

NOTE: To avoid metal fatigue and breaking off of the horns, try to keep the first inch or so of the horns as cool as possible when you are not working on that area.

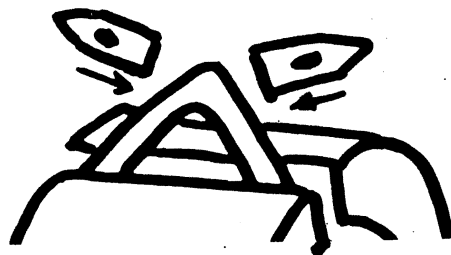
(EDITOR'S NOTE: I made the poker raffled off at the February meeting slightly different than Bud's. Starting with instruction #5, I draw out this area as much as possible. I then split the horns through using a hand-held chisel at the base of the horns (to

ensure a centered cut here) and a handled hot cut for the remaining cut, leaving the last 1/2" uncut to hold the horns together. I finish splitting and tapering the horns later. Then I continue with Bud's instructions. The dimple punch I made has a small hole drilled in the center to give a pupil effect to the eyes. While Bud holds his dimple punch at about a 45° angle to the head, I hold mine closer to the head and put the eye at the back of a half-moon groove. I think this gives more character to the eyes. Once the head is bent, I finish cutting the horns and separate them by holding the head vertical in a leg vice and using a hot cut. I use a fuller (blunt) chisel to round out the horn base at the top of the head into a shallow "v" and continue this "v" down the forehead about 3/8". To do the final work on the horns, I bend one horn towards the back of the neck while working on the other one and then reverse their position. This way one horn sticks out in front and the other is kept out of the way without having to bend either horn out to the side (with the resulting metal fatigue). Since the horns were tapered earlier, all I need to do is true up the square where the chisel cut distorted it. I also draw out the tips a little. To roll the horns I put the first 3/8" over the anvil edge, bend it about 90°, turn the head over and then roll the horns to the head using frequent heats. If one of the horns does break off, take Larry Wood's suggestion - turn it sideways and make the head into a coat hook. If one of the horns burns off short while in the fire, you can still make it into a goat or Eland. Ram's head door handles and knockers are also quite attractive.

I would like to encourage other members to send in material for the newsletter. Bud just gave me the illustrations, I wrote up the instructions, and he then proofed them. However, on something I am not familiar with, I would need basic directions. I will do the typing required so don't worry about sending me handwritten material. Share your projects, ideas, etc. with your fellow members.

SHOP TIPS: (When a shop tip from one newsletter has been repeated in another newsletter [and I picked it up from there], the original newsletter is cited as the source. In most cases, these shop tips have been paraphrased from the original write-up or illustrations for consistency of format).

To upset for squaring a corner, heat the corner to white hot and clamp it in a vice such as illustrated. Now hit the corners, alternating from opposite directions. I use a 1 1/2 lb hammer in my non-hammer hand and a 1 lb in my hammer hand. Use light, rapid blows. The heavier hammer in the non-hammer hand makes up for the lack of strength there and evens up the pressure of the hits. I have used this on 5/8" stock. (By Bob Bergman from the newsletter of the Upper Midwest Blacksmiths Ass'n).

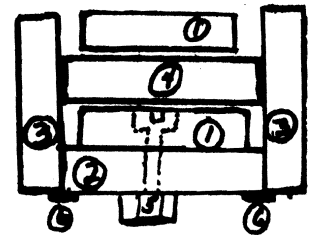


Steve Roth said he picked up the following shop tip from Ed Sutz at a Quad-State Round-up a couple of years ago: to clean out rounded bottom firepots, take an old garden hoe, cut the handle off short, and grind the cutting edge to fit your bowl. You can then easily clean out your firepot bowl.

For a cheap abrasive blade saw, just put an abrasive blade in your table saw. It sure beats a hacksaw when cutting stock like 1/4" x 1 1/2" and gives a smooth, straight cut as well.

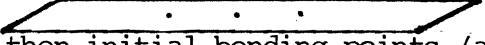
When doing work which requires an occasional forge weld often, by the time you pull out the clinkers, you don't have enough coke to make a good forge welding fire. Adding additional raw coal creates additional clinkers and takes time to form coke. To remedy this, each time you bank up your fire when you finish work, let the blower run awhile to form additional coke. The next time you start a fire take most of this coke and put it aside in a bucket. Then, when you need additional coke, it is readily at hand.

For the beginning blacksmith:

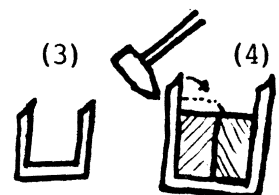
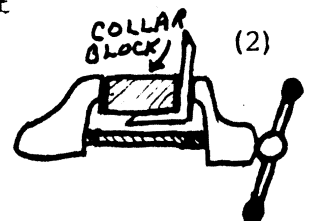
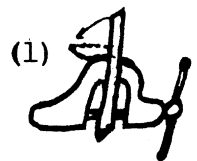


- Acquiring special purpose tongs, such as a set of box tongs, can be difficult. Here's how to make box tongs to hold $3/4"$, $7/8"$, $1"$, $1\ 1/8"$, $1\ 1/4"$, $1\ 3/8"$ and $1\ 1/2"$ flat stock: Find a pair of flat stock tongs with the jaws about $3/4"$ wide and $3/8"$ thick. Grind jaws to $3/4"$ wide. Out of $1/4" \times 1\ 1/2"$ stock cut out pieces the length of the jaws and $1/16"$ wider than the sizes above (i.e., $13/16"$ for $3/4"$). The extra $1/16"$ is to allow the stock to fit in easily. Out of $1/4" \times 1"$ stock cut off 14 pieces the length of the jaws. Next have the $1/4" \times 1"$ pieces welded to the $1/4"$ sides of the pieces cut out of the $1/4" \times 1\ 1/2"$ stock to form a box open at the ends and top. To fit these to the pair of tongs, countersink the head of two machine bolts to the inside of the bottom jaw. Using the holes as a guide, drill corresponding holes in the bottom of the boxes you made. Bolting on the box for the size of stock you are working allows seven box tongs from one original pair of tongs by changing the box size as necessary. Illustration guide: 1) original jaws, 2) $1/4" \times 1\ 1/16" \times$ jaw length, 3) $1/4" \times 1" \times$ jaw length, 4) $3/8" \times 1"$ stock being worked, 5) bolts and 6) welds.

- When you are making chain links, make an extra one and use it to hold the reins of the tongs together as you are using them. In this way, you just have to hold the reins without having to squeeze them together to hold the stock.

In cutting material to the proper length for use as collars, the formula to be used for collaring square or rectangular shapes is perimeter of the material to be collared plus 2 1/2 times the thickness of the collar material. The bevel on the ends of the collaring material should be two times the thickness of the collaring material facing in the same direction (i.e., ).

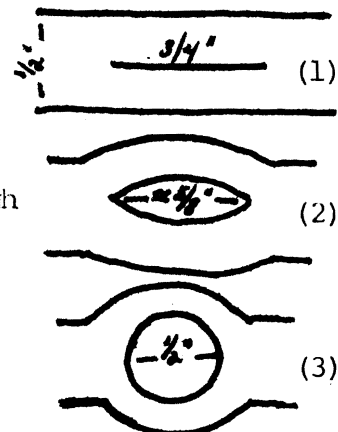
Mark center point on the collar and then initial bending points (at one half the thickness of the material to be collared on each side of the center mark). Bend the first leg in a vice with the bevel facing down (See illustration 1). In making this first bend of the collar, it is critical that it be a sharp corner, a worn leg vise will not do this. If there is no sharp corner on the vice, take a piece of heavy angle iron, at least a quarter inch thick, grind the face until there is a really sharp corner, then case-harden with Royal Hardening Compound - it will last a long time. Then bend the other leg around a collar block which is a few 1/100's undersize of the material to be collared, held in a vice also. This bevel will face up. The collar block around which this second bend is made should be two inches wide, so the first bend will not touch the vice jaws (See illustration 2). This block should also be ground to a sharp corner and case-hardened.



These two bends are done cold. After the second bend, turn the block and collar over and check the first bend to see that it is tight on the block. Put in vice and tighten up if necessary. At this point, you should have a "U" shaped collar with both bevels facing in the same direction (See illustration 3). Place the cold collar in position, drive the material to be collared down tight. If the collar springs open, heat the lower corners just to the yield point with a torch, and squeeze together with a pair of tongs. This really cinches the collar tight at the bottom. Then heat the collar from half way up to a white heat and clinch over with sliding blows starting at the bottom of the side which will put that bevel facing up. Repeat on the other half. This procedure keeps the collar tight and eliminates the need of backing up with a hammer. It also allows one to do large jobs where it would be impossible to heat the collar in the forge, get it in position and still have enough heat to clinch it tight. A perfect collar will have the tip of the top piece of the collar bevel

exactly at the base of the other collar bevel with the two bevels centered over the center of the collared material and with no slack around the collar. Remember that the collar will shrink slightly when cooled. Two good size collars are $1/4" \times 3/4"$ for exterior gates and grillwork and $3/16" \times 5/8"$ for other work. (By Francis Whitaker from the newsletter of the Indiana Blacksmiths Ass'n, amplified by being at the demonstration during which the notes were taken and subsequent correspondence with Mr. Whitaker).

Another demonstration by Mr. Whitaker was a split and punched hole for a hammer head or joint. To illustrate, he put a $1/2"$ hole in $1/2"$ square stock. You need a regular chisel with a $3/4"$ wide cutting edge (or 50% wider than the size hole desired) and a slitting chisel which is between these two sizes. Start with the regular chisel from both sides (see 1). When you are almost through in the center, switch to the slitting chisel (which looks like an oval shaped drift with a sharp chisel point). This will leave an oval shaped hole (see 2). Next upset to drive slit ends together until you have a more rounded hole. Then drift hole to $1/2"$. You should end up with a $1/2"$ hole with close to $1/4"$ stock on both sides (see 3). It appears that with a properly shaped slitting chisel you could do the slit oval expansion and drifting in one operation/heat, eliminating the upsetting operation. If you are going to make a series of holes (say for a grill), experiment first to see how much closer two punched marks will be as a result of the hole and then mark the stock accordingly. They should move closer by $1/2$ the diameter of the hole (e.g., to wind up with $1/2"$ holes 6" apart [center to center], the slit center marks would be $6 1/4"$ apart since the hole draws $1/8"$ on each side - $3/4"$ slit to $1/2"$ hole). (From the newsletter of the Indiana Blacksmiths Ass'n, as amplified by my notes and memory).



When you need to bend two pieces of metal in the same shape (such as the bars for a front porch fireplace wood holder), hold them together with vice grips (or clamps) and then bend both at the same time. ... If you need to make a number of holes in the same place on several pieces of steel, make a guide which fits over the metal. Then drill through predrilled holes in the guide. You only have to measure once. (By Paul Lundquist in the newsletter of the Upper Midwest Blacksmith's Ass'n).

Good forge aprons can be made out of the inside of a worn out leather coat found cheaply at garage sales. Check under the lining to make sure that it is real and not imitation leather. Just cut off the collar and arms and then down the sides. Hold it against you to see where additional leather needs to be trimmed off. Also cut strips for the neck and waist straps. I think leather coats make real nice aprons - especially for \$2 to \$3. (By Don Williams from the newsletter of the Illinois Valley Blacksmith Ass'n). (You could also trace another apron for the cut out. - ks).

When a piece is forge welded and the rod or bar has been hammered too small or has a rough weld, reheat the weld area and hit the cold end with a hammer. This will upset the weld area and it can be smoothed out to the proper dimensions. (By Bill Planzer in the newsletter of the Appalachian Area Chapter - ABANA). (You can do this with the large weld area staying in the fire if the rod or bar is long enough. - ks).

To remove a wedge from a handle (say to retemper a hammer head), arc weld a washer to the wedge lying down. Fill in the hole with weld. Let it cool and pry it out with a chisel. (By Bob Bergman). To take out a bolt on which the head has sheared off, place a washer over the end of the broken stud (the hole in the washer must be the same size as or smaller than the bolt stud), and arc weld on the washer filling in the hole all the way. Then weld a nut to the washer. Let it cool and unscrew the stud with a wrench. (By the Cookeville Blacksmith). (From the newsletter of the Upper Midwest Blacksmiths Ass'n).



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