June 2008

The Florida
Clinker Breaker

Florida Artist Blacksmith Association - Established May 18, 1985

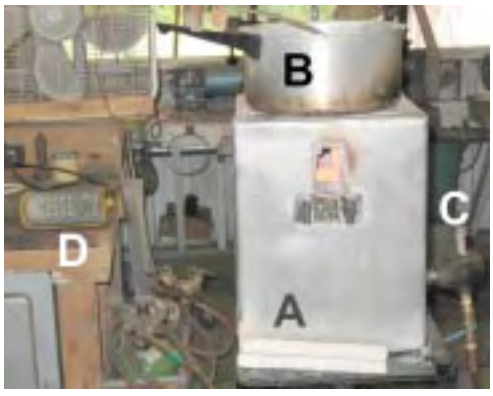
Editorial Musings

Rex hasn't sent me anything, so I get to use his space. As you may recall, I asked if our members would elect to have their copy of the newsletter transmitted to them electronically. So far, 18 folks have signed up -- out of approximately 280 -- or about 6%. Conversely, these folks will save FABA over $400 annually. This will be the first issue handled that way and I'll know in a few days how well it's working. You can just e-mail me to get on the list -- Please do!

The Board authorized me to rent server space for a significantly larger website for FABA. We now have the space and I hope to do the transfer as soon as this issue gets put to bed. Once the website proper has been moved and is working, the Clinker Breaker archive will start to be uploaded (all 270 issues or so). With a little luck (and if my brother doesn't get tired of me using his DSL line), I hope that will be done by the July issue.

This issue contains the continuation of my article on stick tang knives. Come on folks, someone out there MUST want to contribute something to the newsletter! I am grateful to the coordinators and am happy to print the pictures of the meetings, but some of the rest of you must be doing something you want to share, If it's not polished, so what - it's easier for me to reformat and play with pictures than it is to come up with something to say every month.

I hope to get the hardness tester article together by next issue along with the details of my May meeting (see the next column over).



Report from the Northeast

Steve Bloom

Approximately 25 folks showed up at my shop for a day of messing with venturi burners for gas forges. The basic idea was that I published an article on the "T" version of a burner and thought it might be interesting to do a side-by-side comparison of gas consumption of a variety of burner types.

One of the problems with information on burners is that little of it is actually comparable. A blown burner running at 0.5 psi but using a 0.25" orifice cannot be claimed to be more fuel efficient than a venturi burner running at 10 psi using a 0.035" orifice unless the work done and the fuel consumed are known.

To that end, I decided to use a new vertical gas forge as a test bed (picture to the left). The unit uses 1.5" of kaolwool outside of refractory bricks, all wrapped in stainless steel shell (A). Burners are inserted through a lateral port (1" coupling) to a uniform depth (C). The amount of work is measured by bringing 4 liters of water from ambient temperature (around 75F) to 200F (B) with the temperature monitored by a digital pyrometer (D). The LP bottle (20 lb unit) is weighed before and after each run.

Burner designs were a bell burner, a "T" burner, and a sidearm burner. Effects of changing the dimensions of the bell and the size of "T" as well as the distance of the gas orifice from the narrowing on the burner were explored. We also took a look at the effect of orifice size. We only made a couple of runs during the meeting - and one of which I now suspect of being bogus, so I'm re-running some of the experiments and will publish a comprehensive report next time.

What did go well was the chili and the food generously brought along by the folks that showed up. We had a trailer full of stuff for Buck-in-the-Bucket (I didn't get a dollar amount from Ken - my bad) and actually forged out some bells for small burners. I'll include a description of burner construction in the forthcoming report. See you at the fish fry in Barberville on the 7th.

Upcoming Events

The calender includes events of interest to the blacksmithing community. The regions have no boundaries - everyone is welcome everywhere. Come to more tham one if you can. We hold regular meetings in each region on the following Saturdays of each month: NE-1st, NW-2nd, SE-3rd, SW-4th except for quarterly Statewide meetings. The actual dates vary so check the schedule below. Our meetings are informal gatherings around the forge. Prospective members are always welcome. Come for all or any part of a meeting, bring your tools or just watch. Most meetings run from 9AM to 4PM and you'll need to bring lunch if not otherwise noted. If you have any questions about meetings, please contact the Regional Coordinators:

Northeast Region	**Ken Knight**	**352-339-0629**	**Ironken@AOL.com**
Northwest Region	**Billy Christie**	**850-421-1386**	**chriswoodforge@embarqmail.com**
Southeast Region	**Ed Aaron**	**561-748-9824**	**edaaron9824@bellsouth.net**
Southwest Region	**Jerry Wolfe**	**941-355-5615**	**wolfeforge@juno.com**

June 2008

NE 07 Barberville - Ben Rogers making several types of chain; Fish fry is scheduled and covered dishes that go along with the fry will be appreciated.

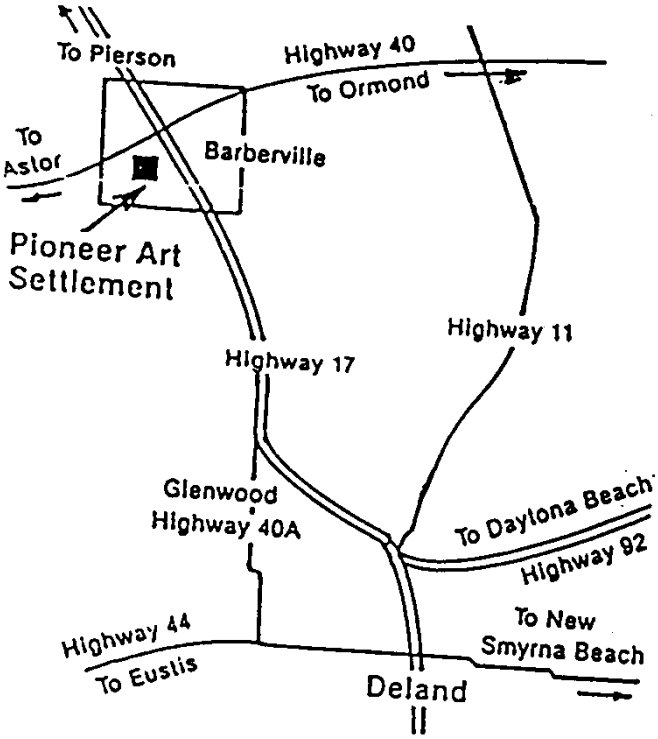
NW 14 Jim and Ann Hartman, Perry, FL

SE 21 Until further notice-Tanah Keeta

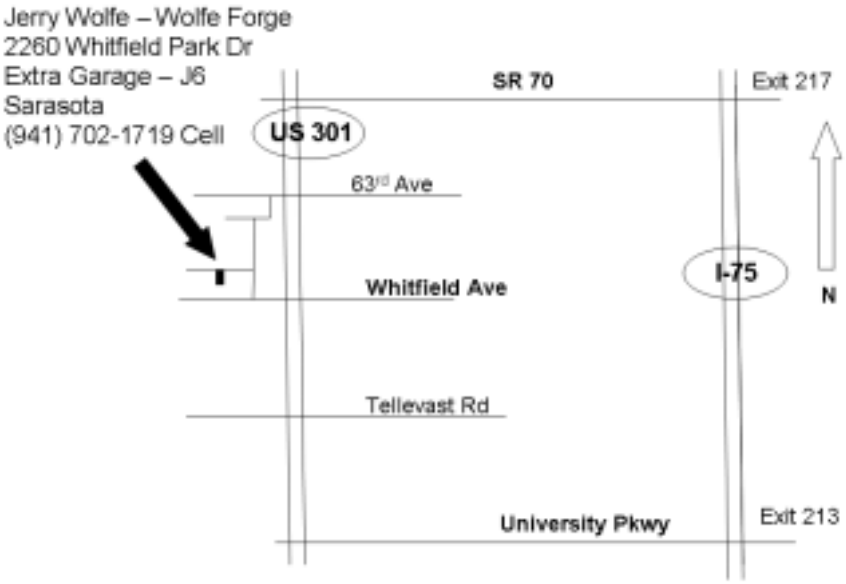
SW 28 Wolfe Forge - see Pg.3 for details

Jim & Ann Hartman's Forge located at 1307 Houck Dr. in Perry, FL. Directions: From Alt. 27 turn west onto Industrial Park Drive and go past the airport you will encounter a stop light & proceed straight. (Industrial Park Dr. turns into Houck Rd. at the stoplight). Go ½ mile past stoplight and 1307 will be on your left. (1.6 miles from Alt 27)

NW Region - June 14



NE Region -June 07



SW Region - June 28

Boy Scout Camp: from I-95 exit go east onto Indiantown Rd, go north (left) onto Island Way (1st traffic light). Stay on it until it ends at Country Club Dr. Go left—it ends at the entrance to Boy Scout Camp.

SE Region - June 21

Current Events

SW - June 28 - Wolfe Forge and the demonstration will be beginning of making a table using mortice and tenon techniques. The table will be the start of our "auction project". Bring a dish or item to share for the lunch and bring an item for the Iron in the Hat raffle to raise funds for FABA. Demonstration starting at 9AM.

Future Events

NE - till further notice - Barberville open forges
NW - July 12 – Rick and Joyce Jay, Fountain, FL

Report from the Northwest

Mark Stone & Billy Christie

The Northwest Region held its April 12th meeting at the Panhandle Pioneer Settlement in Blountstown, FL. We had 33 Blacksmiths sign in to watch Jesse Frank make iron from ore, using a Kodai Furnace (which is a shaft furnace smelting process). The day before Jesse built the shaft out of four slabs of concrete, wrapped in three places with chicken wire and then used mortar to somewhat seal the adjouning corners. He then started the fire with a propane burner to light the charcoal. When the charcoal was good and hot, the propane burner was removed and a blower was added to feed the fire. He continually added charcoal, ore, and flux until he had enough of an iron bloom to work with. He knocked down the stack, removed the iron bloom and placed it into a hot coal forge while we did iron in the hat and lunch. The "Iron In The Hat" brought in $109. Clyde Payton also donated a cooking tripod with a forged adjustable chain made from horseshoes. The tripod was auctioned off and brought in an additional $50.

The luscious lunch was provided by the settlement's Linda Smith and her wonderful helpers. They served bean pot containing a variety of beans, sausage & ham along with deviled eggs, corn casserole, coleslaw, fruit salad, cherry cobbler, pound cake, and cornbread. We were all feeling fat and happy.

After lunch, Jesse continued working the iron bloom. When the bloom is removed from the stack, it resembles coral, very porous. He lightly taps the bloom to start closing the gaps. He then adds flux and sand and continues the process until the bloom is one forge-welded solid mass of iron from which he can forge a blade. Thanks Jesse & helpers for a very interesting and educational meeting.

Report from the Southeast

Susan Dunsmoor & Ed Aarons

The April 19th meeting at ArtsWork Unlimited in SW Miami had around 25 people attend, even though it was a good drive for most. We were happy to see Anne and Ray Reynolds make it after a flat tire and a brief tour of Miami. Owners Art Ballard and Phil Heermance welcomed everyone, and then gave a tour of the shop. There were many demonstrations on the various equipment. The shop is set up with a lot of tools for forging and fabrication, as they build mostly artistic gates, railings and home furnishings for the Miami area. There was texturing and forging on two different air hammers, and a demonstration of a custom bending table built by a machinist. Also shown were techniques for plate forming in aluminum, including annealing and shaping. Another machine demonstrated was the PullMax, a machine using small dies for hammering in textures, veins, doming and a variety of impressions to make many different forms.

Sue working on aluminum bird

Components

Art forging an aluminum leaf

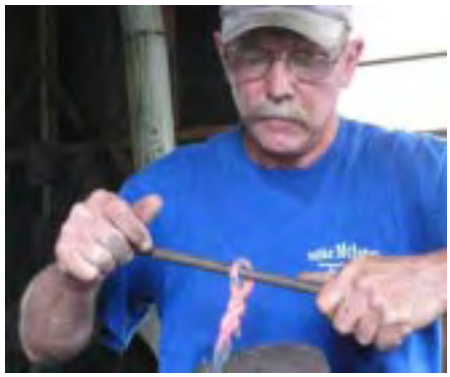
After a wonderful lunch provided by ArtsWork and many dish contributors, some of the crowd decided to do some forging. Using the gas forge and the 60 lb air hammer, Pete Yockey demonstrated how to forge a knife, while two young smiths hammered on some of their own pieces. While the hammering continued, there was a painting

demonstration, focusing on dry brushed patinas, coloring, and an aluminum dolphin got a lovely green patina. Thank you to the lunch contributors, and for a good Iron in the Hat. And thanks to the gang at ArtsWork for showing off the shop: Art, Phil, Brian, Sue, Duane and Alyse.

Report from the Southwest

Jerry Wolfe

Our April 26th meeting at the Zolfo Springs Pioneer Park was attended by ten folks. We had a great time learning from Mike McIntyre the local farrier in that area. Mike demonstrated the techniques of making a horse shoe and shared some of his experiences with horses. Mike also made a fork with a nice leaf and a twisted handle. Lunch was GREAT and then several folks made leaves in the afternoon.



Notices, For Sales & Want-Ads

BLACKSMITH COAL

$22 per 100 lb bag (Pickup only) - Pioneer Settlement, Barberville, FL - Call for details: 386-749-2959 - www.PioneerSettlement.org

To help answer "Where do you get coal?". Here is another source that was supplied by Sarah McMurray.

Bar K Blacksmith Supply in Zephyrhills is offering 100 lb at $18. Contact Kim at 1-800-800-2023.

300lb Hay Budden anvil, serial number 29139. Approximately 100 years old and in good usable condition. Located near Fort Lauderdale, Florida. Asking $600 obo. Please call or email for more information. Jack Barke 954 309-8903 jbhorseshoeing@hotmail.com

Atlas Model MFC Horizontal-Vertical mill

The mill is a step up from the toy Unimat type. It has a 5.5" vertical travel, 3.5" in-out travel and an 18" left-right table. It comes with both horizontal (slit saws, gear cutters, etc.) and vertical (3/8" end-mill) attachments as well as a power transverse feed. This unit has served me well for the last decade but I'm upgrading to a Bridgeport clone (at 5x the price). It will slot guards, mill non-ferric materials and mill steel (with light cuts). I'm asking what I paid for it - $600 and it is available immediately (expect about 200 lbs of gear). Contact Steve Bloom - 352-528-6508 or use the editor's e-mail address

5th Annual Fitchburg Forge-In Blacksmith Festival

Fitchburg Riverfront Park
Commercial Street/Boulder Drive
Downtown Fitchburg, MA
October 18, 2008

The 5th Annual Fitchburg Forge-In is a juried competition for metal artisans, sponsored by the City of Fitchburg and Achla Designs taking place on October 18, 2008 in Fitchburg, Massachusetts. Cash prizes are awarded for the Decorative Panel Competition (theme: "Along the River") and for a live competition consisting of three divisions and three sessions.

You may want to also consider becoming a vendor at the event selling your work. For more information, visit http://www.discoverfitchburg.com/blacksmithfestival.html, or call Katrina at 978-345-9602.

Coordinated by community volunteers, the Annual Fitchburg Forge-In Blacksmith Festival has successfully showcased artisans from all over the world for the past four years. We welcomed over 2,000 visitors at our last Festival and we expect

many more this year.

The Festival is geared toward families and the arts. The exciting Forge-In live competition where blacksmiths create metal works of art in traditional ways using fire and anvils makes this an unusual event. The Great Pumpkin Carve offers all family members the opportunity to win cash prizes for their pumpkin creations, which can be carved at the Park during the Festival. They are lit at dark and placed along the Nashua River wall for judging. Artists, crafters and antique dealers are invited to sell their wares and live music, seasonal foods from local non-profit organizations, as well as children's activities are ongoing throughout the day.

Admission to the Festival is free and is made possible by the many businesses, individuals and organizations that contribute to this event. Our promotional efforts have highlighted this event to the public on every calendar in the region, as well as nation-wide, as one of the premier festivals in New England. The Festival will be promoted through advertisements, press releases, public service announcements, flyers, radio and local television.

Forging Wrought Iron-

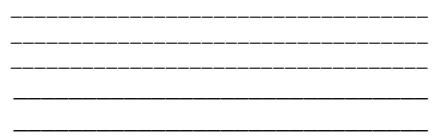
Andy Vida
(scavenged from TheForge - Editor)

I don't think there is anything magical to share about working wrought iron- just that when one SEES it being done, things stick a whole lot mo' bettah than when something is merely talked about. Besides, most of you probably already know this stuff. But some examples would include splitting, and slitting 'n drifting.

When splitting (let us say to make a fancy end in a guard) the first thing to do is drill a hole at the point where the split is to terminate. If you can punch it, even better, but in cases where the hole is deeper than it is wide, drilling is the way to go. Once drilled, split normally or saw (that isn't cheating, BTW - sawing in this manner has been a big part of industrial smithing for a long time and often produces a better result) the iron as needed. The hole will make a BIG difference in preventing the split from continuing past the desired depth. But you must still exercise caution, especially with the lower grades of iron. Keep the heat way up as the split is opened and upset into form. Also, upsetting the iron at the point where the split will terminate is often helpful when upsetting the split, say, into a 'T' because all that hammering tends to thin things out. The extra meat is very helpful in these cases.

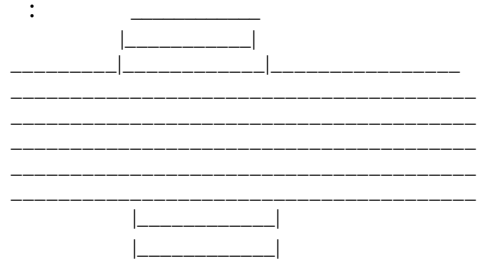
Slitting and drifting must be handled in a similar manner precisely because of the iron's propensity for splitting at the most inopportune times and places. Let us say that you have a great sword for which you wish to fit a wrought iron guard. Certainly (and probably) you will simply drill a hole from which the opening for the blade will be fashioned. But what if you decide it has to be forged? You may decide that you want this because you intend on showing off your skill as a smith and want to etch the piece to show the flow of the iron AROUND the tang, rather than being rudely interrupted by it. The traditional and proper method for forging would be to slit and drift. The problem is that wrought splits like a mad cow. The solution is simply to slit ACROSS the grain, rather than along it. This may require that you upset the iron at the site of the intended splitting in order to have enough meat to accomplish it. So picture the bar with a bulge in the center - place your slitting chisel 90* to the grain and open it up. From there, drift in the normal fashion with the exception that you work at a high yellow heat at all times. Observe:

The iron initially:

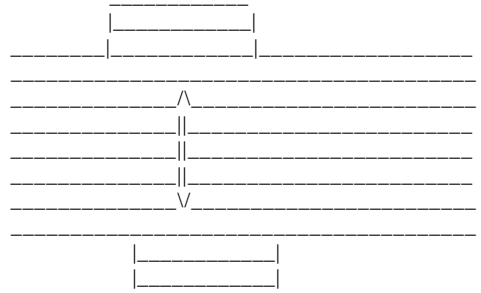


<- Grain ->

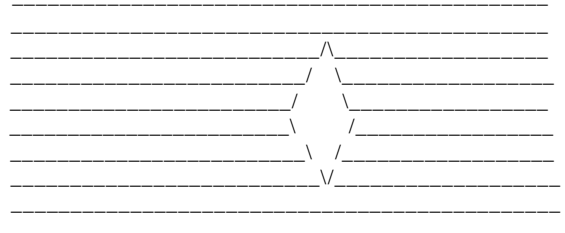
Upset



Slit across the grain - cuts fibers cleanly:



Drift and forge hole to whatever form you need:



Ah. welding... one more tip. When welding wrought to steel the two materials often need to be temporarily attached to

each other because of the nature of the welded joint. For example, when making hammers, the wrought body is joined with the steel face by taking a chisel to the hot steel at the four edges that will adjoin the iron and raise a bur on each that is similar to a clincher nail (a curved nail, usu. for shoes) that are perhaps 1/4 to 3/8 inch in depth. Cool the steel and place it on a work surface with the barbs facing upward. Raise the iron to a high yellow heat, align the mating surface with the steel and gently but firmly tap it home with the steel face. The result should be two pieces delicately locked together. Place the mass into the fire IRON END DOWN (this assumes coal fire) and bring to a welding heat and proceed normally.

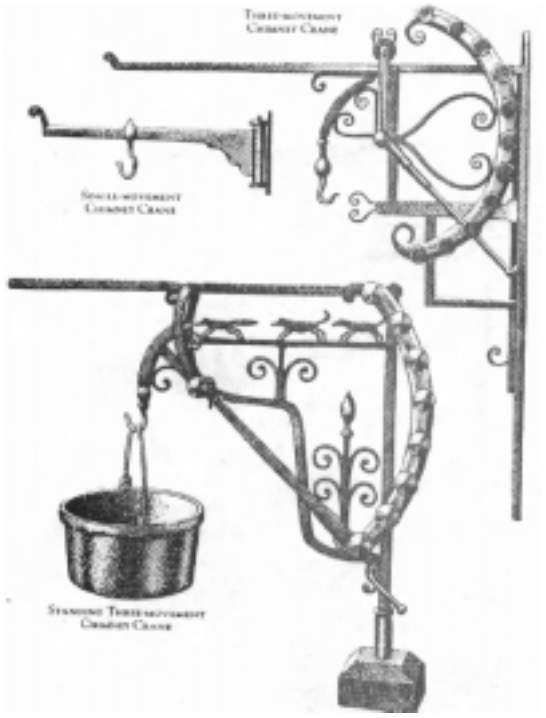
One can also rivet pieces together. The important factor is knowing what your materials need in terms of heating in order to be joined. Wrought iron must weld at high yellow heat, yet steels will typically weld at much lower reds. That is why you place the iron in the fire like that. The iron gets most of the heat and by the time the steel comes up to a bright orange, the iron is nice and greasy, drippy-hot. I've not done this in a gas forge, but I would surmise that the lack of ability to focus heat can be compensated for with atmosphere control. I would fill the forge with carbonaceous material such as bone meal (stinky) or walnut shells and keep it well charged throughout the welding operation. If you can create a highly reducing atmosphere with mixture control, that is another way.

Etching for effect. One reason I like wrought so much is because of the patterns one can raise in etching a finished piece. I have found hydrochloric acid to be a good etchant. Ferric chloride is also good (which you will obtain as your HCl is used up and turns yellow and then yellow-brown) but much slower. Vinegar also works very well but one needs the patience of a saint and the luxury of several days or even weeks of time to see results. I hear that nitric works well also, but have yet to try it. I will warn you away from hydrofluoric acid, which is extremely dangerous. Just trust me on this one that you do not want to use it.

I usually limit an etching "session" to anywhere from 5 to 15 minutes. The time depends on what I want in terms of depth, the nature of the iron (samples differ widely in terms of how quickly they etch down) and the character and condition of the etchant. Usually I will hit the work with steel wool between sessions. This breaks down the ridges that can be very sharp and produces a softer, warmer looking result that is less likely to catch on materials. Also, wooling the work in stages makes for a happier smith because if you wait until you have a deep etch, you will tear up the wool, which gets caught in the sharp striations, and cause you to spend unpleasant time picking strands of 000 wool out of your work. If you don't have gloves on, you may find yourself swearing to bring a blush to sailors and truckers alike as you stab yourself with nasty sharp iron spines that will NOT come out until the wound festers. Save yourself the aggravation and work smartly from the outset. You will thank yourself (and me :) :) :)) in the end.

Just as with wood, wrought iron has a grain and that grain often has a plain and a quartered aspect. The plain aspect will produce an etch that looks much as the face of a plainsawn wood board with the various waves. The quartered aspect will look like the edge of a plainsawn board, that is, straight and tight. These characteristics can be used to one's advantage if one knows where and how each aspect will show in a finished piece. Etching after very rough forging can provide enough information to allow you to alter subsequent forging activity so that the finished faces will be oriented to the grain as one wishes them. It is a lot of extra work and probably not worth doing in 99% of cases, but if there is that special piece where one wants one sort of grain or the other, it may be worth the extra effort. But be cognizant that wrought iron tends to be a very mixed bag with great variation. Because of this, one may have more than small trouble in finding a suitable piece. I will also mention that the plain aspect of the grain usually becomes apparent on the face that sees the most hammering and the quartered on the faces that see the most compression.

OK, I have to go out and put the other chicken coop back together now. Regards, Andy



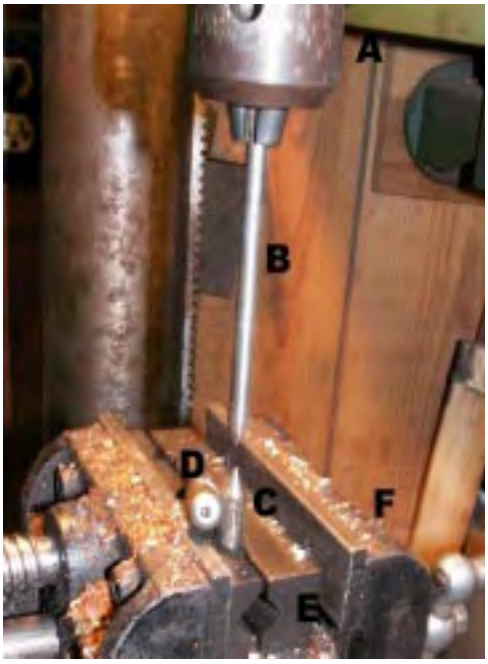
Knife Construction - Stick Tang Blades I - Handles & Pommels

Steve Bloom

(Continued from May issue)

Handle:

Handles have to comply with several constraints - they have to enclose the tang, they have to fit the hand, they have to have a decent interface with the guard and pommel, and they ought to look and feel good. A lot of these constraints are value judgements - what fits one hand may not fit another - but the general concept holds. The handle may be a single block or be a composite of multiple pieces. I'll primarily talk about the block approach but good examples of the composite approach can be seen in any Japanese hilt (tsuka). Not only are there two pieces of wood making up the handle, the cavity for the tang is typically confined to one piece and the other piece acts as a 'lid' - a non-symmetrical arrangement that combines superior resistance to shearing the glue bond with simplifying the construction.



Fig,13: Boring holes through handles

The block approach starts with making a hole that runs through the center of the block from the guard to the pommel planes (true whether we're talking wood or stag). You want a hole large enough for the tang but no larger so as to preserve the maximum strength of the material. Since the tangs on my blades are usually wide at the guard (3/4" is typical) and taper to 1/4" at the pommel, I also need to make a triangular cavity rather than just a simple cylindrical hole in the block. What works for me (Fig.13) is a combination of a drill press (A), a cross-vise (F), angle-blocks (E), a dead center from a lathe (C) - though any cylindrical piece of steel with a centered point will do), and an alignment tool (B or D). The scheme is to first mark the hole location on the ends of the block (Fig.14) and to drill a shallow hole at those locations. Then clamp the lower point (C) in the vise using the blocks, temporarily insert the bit to be used (normally a 1/4" twist drill), and adjust the vise to chuck separation such that the handle just fits between the lower point and the drill bit. Remove the drill bit and either insert a long rod with a centered tip (B) or a laser pointer (D) in the chuck. If you're using a laser, just make sure the chuck jaws depress the on switch. The rod is easier and cheaper than the laser but not as cool. Now, adjust the cross vise to bring the points together and lock the vise. Reinsert the drill bit, slip the handle onto the lower point (that's what the shallow hole in that end is for), and fire up the drill press. You can now hold the block in one hand and feed the drill into the shallow hole on the 'up' side (Fig.15). When you run out of travel on the drill press, flip the block and drill from the other side. The holes will meet in the center. Since I need a triangular cavity, I drive a sacrificial 1/4" hard wood dowel into the hole (taking care to leave a cavity at the end of the handle) (Fig.16). I can then drill shallow holes on the guard side to either side of the dowel and repeat the process described above to run two converging holes through the block (Fig.17). What is left of the dowel can be pushed out and the resulting cavity should be close to what is required.

Fg.15: Drilling the block

If the handle is crown stag, then drilling a hole all the way through may be problematical - especially if the handle curves. For those applications, a shorter tang and an extra long end

Fig.14: Handle layout

Fig.16:Wide tang layout

mill (Fig. 18) have proved helpful. Especially for crown stag, I find that drilling a large hole along the interface of two blocks of wood then using the blocks as vise jaw liners makes a convenient way to stabilize the handle when drilling or milling. I have also found that a side-cutting bit and a air die grinder makes a useful tool for enlarging and shaping cavities in antler and stag.

Fig.17: Drill flanking holes

Even with a triangular cavity, the tang may still not fit. A quick way to open the cavity is to make a stand-in for the tang, i.e., a piece of steel with approximately the same shape and thickness. Clamp the piece of wood in the vise (no oak jaws this time!) and heat it to a cherry to yellow temperature with a torch. Slide the block of wood onto the heated "tang" and the cavity ought to be large enough now to accommodate the real tang. If you do this, be very aware that lots of woods, especially the tropical ones that are so popular with knifemakers are really bad news when they burn. Be sure to have more than adequate ventilation and a good respirator. I use a positive pressure mask system that pumps outside air into a half mask. You'll also find that a welding glove is useful when you shove the block of wood home. Over time, you will accumulate a collection of pseudo-tangs, so the time involved in making one will be spread over multiple blades. The trick is to put them somewhere where you won't recycle them into something else after you forget why you made them in the first place.

Fig.18: Stag and end mills

We now have a blade with a guard and a handle that slips over the tang. It's now time to mate the two. I'm familiar with the concept that a disk sander combined with a foot switch makes mating the handle to the rear of the guard a breeze, but since I don't have that equipment (shocking, no?), I just use my Bader. The process consists of mating the two, holding the unit up to a light, and determining the high point, i.e., the location where the handle first touches the guard. I envision how the plane of the handle has to be modified to remove that high point and then try to hold the handle at the correct plane to the belt. The process repeats until I don't see any light between the guard and the handle. Over the years, I've gotten it down that I don't have to start over too often.

The Pommel:

The termination of the handle is another highly variable element in the design of a blade. The simplest (and in my opinion, the worst looking) solution is a circular pommel perpendicular to the tang in both the top-bottom and left-right directions - probably held on by a commercial acorn nut. Of course, some of my machinations that will be described here will probably strike some of you as way too much trouble for the result. C'est la vie.

I prefer a pommel that is oblong and I'll run through two ways I handle the problem. The first uses an external fastener (but not an acorn nut!). In both cases, a threaded section is needed to connect the pommel to the tang. In Fg.19, a short section of a 1/4-20 bolt (A) has been arc welded to the tang. Arc welding thoroughly trashes the grain structure of the steel of the pommel. I normally do the weld before heat treating and since my heat treat includs normalization, the problem goes away. If you weld the bolt section after heat treating, you should normalize and anneal the tang end with a torch.

A connector nut (B) will connect the threaded section of the tang to the bolt. The handle is traced onto the pommel material (C) and sawed out. The location of the bolt hole is done with a center punch running through the handle and a blind 1/8" hole is drilled into the handle side of the pommel below the bolt hole to act as a socket for a blind pin.

The bolt to be used is a stainless steel button-headed bolt (domed head, Allen wrench driven).

The idea is to file grooves in the bolt head radiating out from the corners of the hex hole. Filing is MUCH easier when a simple file jig (Fig.20) is made - basically a piece of brass round stock with one end drilled and tapped for a given bolt size and the other end pressed into a section of hexagonal stock (because the vise can grip it better - that's why!). The

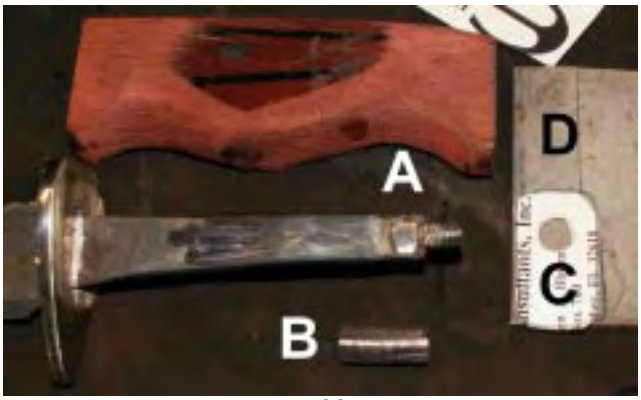


Fig.19: Pommel layout

result is shown in Fig.21.

The handle is assembled (see the paragraph on adjusting the bolt angle on this page) with the blind pin installed and the bolt tightened down, ground to the final shape, disassembled, wiped down with acetone to remove all oils and dust, packed with colored epoxy, reassembled, bolt and pin inserted and tightened and any excess epoxy wiped off. After the epoxy cures, the handle is buffed, heated gently, and melted beeswax is flowed over all surfaces (with the excess wiped off).

Fig.20: Flower Bolt

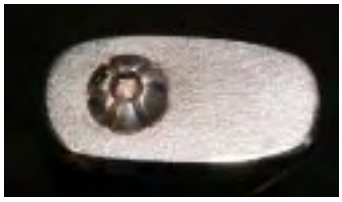


Fig.21: Flower bolt

The second way I handle a pommel is an internal fastener. They can come in two flavors. The easiest way is simply use a thick block of material. Use a transfer punch (or a thin pencil) and mark the material through the handle or make a template and use it to determine where the tang bolt hits the pommel. The material can then be drilled and tapped (probably using a normal and then a bottom tap). The trick is not to drill through the block and to have enough threading to actually hold the pommel on securely. While I've made plenty of blades this way, I find the balance of the knife is often compromised by the pommel weight (though that depends on the size of the blade too).

I've solved this problem by either soldering or welding a connector nut to the back side of the pommel. I typically use stainless steel for pommels and use the setup shown in Fig.22 The location of the nut is determined (see preceding paragraph). An adjustable wood clamp (A) holds everything in the correct location, the pommel plate is protected with masking tape (B) (because I use a flux-core MIG that spatters everywhere), and a pair of nuts (C) on a bolt (D) completes the setup. The nuts are welded together and welded to the plate. A similar rig can be used to solder or braze the components together - just be careful not to solder the bolt in place.

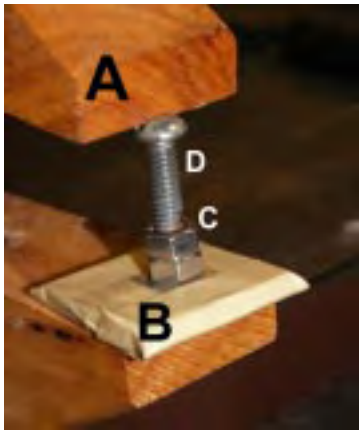


Fig.22: Welding jig

Now is when the cheap

Fig.23: Pommel bolt

nature of my being comes into play. One could measure the maximum length from the bolt hole to the edge of the handle and make a circular plate with that dimension as the radius of the plate. You would then screw it down, scribe the outline of the handle on the plate, remove the plate, saw on the scribed lined and reinstall. The more oblong the handle, the greater the waste of material.

There is, however, another problem. The pommel plate must sit square and flat onto the handle, it cannot meet at an angle and leave gaps. One way to achieve this is to simply bend the threaded section attached to the tang to the correct angle. I've found that protecting the majority of the threaded section with a connector nut and using a long piece of steel with a matching bolt (Fig, 23 - the yellow bar) is a good combination. The nut is installed, the bar is threaded into the handle and the bar is turned down. When the bar seats against the handle (for a full rotation), the tang bolt will have been bent correctly. You can also just put a nut on the tang bolt - whack it in the hopefully correct direction, assemble the handle, and guesstimate the next correction needed. Repeat until you're satisfied.

There is a further wrinkle in all of this - how to minimize material waste, i.e., cut out only the pommel you need and guarantee a flat fit that snugs down exactly at the right moment to simultaneously align the pommel and thoroughly tighten the handle components (Fg. 24). Connect the tang bolt with a "U" joint. This is a great trick for stag handles. You can control the rotation angle of the pommel by using a set nut with the connector nut (Fg. 23). You move the connector nut on the tang bolt, lock it down and trial assemble the handle. Repeat until it comes out the way you want.

Fig.24: "U" Joint

FABA Officers

President	**Rex Anderson**	**850-385-9259**	**rranderson00@comcast.net**
Vice President	**Charles (Hippie) Pate**	**850-997-6986**	**-unknown-**
Treasurer	**Juan Holbrook**	**352-374-8888**	**juanylindagrace@aol.com**
Secretary	**Jim Labolito**	**850-567-6464**	**fernforge@comcast.net**
Program Chairman	**Mark Stone**	**850-668-9527**	**markham62@comcast.net**
Newsletter Editor	**Steve Bloom**	**352-528-6508**	**sabloom@ironflower.com**
Past President	**Bill Robertson**	**850-668-2876**	**applecrossforge@nettally.com**
Trustee NE	**Kathy Thomas**	**386-985-4756**	**ramsheadstudios@bellsouth.net**
Trustee NW	**Ron Childers**	**850-878-8537**	**munlaw2@hcsmail.com**
Trustee SE	**Ralph Nettles**	**561-747-5489**	**-unknown-**
Trustee SW	**Jerry Wolfe**	**941-355-5615**	**wolfeforge@juno.com**

Steve Bloom, Editor; P.O. Box 760; Archer, FL 32618; (352) 528-6508 or **smith@blacksmithing.org; http://www.blacksmithing.org**

FABA MEMBERSHIP APPLICATION
Florida Artist Blacksmith Association, Inc.
Founding member Southern Blacksmith Association.
Date _____ New Renewal

Name_____
Address_____
_____
City State Zip
Phone:Home_____Work:_____
E-Mail_____
Spouse's Name:_____

Send application & a membership fee of $25.00 to

Juan Holbrook, FABA Treasurer
6418 NW 97 Court
Gainesville, FL 32653

Make check out to FABA. Your FABA membership begins when we receive your payment and lasts one year Membership is for a family.

Don't list me in the directory [____]

1st Class Postage

Juan Holbrook, Membership Records
6418 NW 97 Court
Gainesville, FL 32653

The Florida Clinker Breaker
FLORIDA ARTIST BLACKSMITH ASSOCIATION

June 2008