# PHILIP SIMMONS ARTIST BLACKSMITH GUILD NEW SLETTER

Iron in the Hat 2
For Sale//Upcoming Events 3
Tagane – Japanese Inlay and Chisels 4-5
Blacksmiths on Ships 6-7
Forgng a vise mount 8
Braided Handle Tip 9
Common Names of



The August meeting was held at the Revolutionary War Park in Camden, SC as we always do in the warmer part of the year. No one got a chill that I saw. Two of our best blacksmiths performed the demonstration, Mike Tucker and Phil Rosche forging a Viking style cross pein hammer head using 1-1/2" square, 1045 steel. 1045 is a medium carbon steel that only gets so hard, but it's better to have an anvil that's harder than your hammer than a hammer that's harder than your anvil. Four inches of 1-1/2" square makes a cross pein hammer head of about 2-1/2 pounds. Mike marked the hole 2" from the end of the bar and center punched it. Mike said to only center punch on one side, the bottom mark may move when you start punching from the other side.

Mike and Phil heated the bar up and started punching from top. They did this until they could feel the anvil with the punch. They flipped the bar over, looked for the dark spot made by the punch, and then punched from bottom. They drove the punch through from both sides. When the punching was done, they went to a hammer eye drift and drifted from both sides. Ultimately you want an hour glass shape if looking at hole from the side.

Next, Mike and Phil forged the pein of the hammer. Mike held the bar while Phil swung the sledge hammer, with the end of the bar on the edge of anvil. After they got the pein forged, they drove the drift back in and forged on the sides of the hammer where drift goes through the eye. They did this both with the sledge hammer and a flatter. The last forging they did was with a small, 1" set hammer to give some slope away from the eye on the top of the hammer head.

They let the bar cool, and cut the hammer head off using a Porta band. Mike explained that to harden the hammer, heat it up to about 1500 degrees— bright orange, and quench in water. He next heats up the drift to red hot and loosely drives it into the eye to temper

the eye. He lets the hammer head sit with the hot drift in it for about 20 minutes to soften the eye. Mike and Phil donated a handled hammer they had made a week before, for Iron in The Hat. Thanks to Phil and Mike for an excellent demonstration. We had new smiths in the crowd that had never seen a hammer head being forged, I'm sure it took the mystery out of the process. An extra thanks to Phil for writing up the demonstration portion of this newsletter as I missed half of the demo chasing down the chicken for the meal

The meal: the aforementioned chicken plus potato salad and lots of sides brought by our helpful membership and good cooks

There were approximately 45 members present at the meeting.

New Members: Matthew Nelson, Julian Yannetti, and returning member, Paul Alford. Welcome!

The Iron In The Hat donations were some of the nicest I've seen they brought in. Derice Hockstetler forged a harness type hook with a long horn steer head on top and Heyward Haltiwanger took it home! Lots of other nice items were in the running that showcased the great skills of our Guild members. Derice received one free year of membership. The IITH garnered \$595 for the treasury. Thank you very much! Stay tuned, we might do this again in the future or something like it.

If you know of someone in our Guild that is sick and need of our thoughts and prayers or help after the hurricane, let us know.

Thanks for all you do to support our Guild, and if you do nothing, you could up your game

Jesse

# IRON IN THE HAT

#### Item Donated By Won By Safety Glasses Blackwell Hardware

Safety Glasses Safety Glasses Safety Glasses Grinding Disks Grinding Disks Grinding Disks Grinding Disks Hammer Making Kit Phil Rosche Copper Necklace Tony Etheridae

Hatchet w/ Damascus Bit Flux Spoon Damascus Knife Camp Knife

**Turkey Foot Poker** Flatter R-Monel K-Monel Mower Blades **Brass Planter Drift Pins Drift Pins** Ferric Chloride Saw Blade Steel Bilbo Catcher Book - The Forge

Cookbook 18th Century Snake File R/R Knife Spring Chisel Harness Hook Silver and Copper Ring

Silver and Copper Ring Fredrick Cross

Texas Longhorn Hook Coal Shovel Steel Choker

Pulleys (3) Tow hook Drive chains (3) **Tow Chains** Letter Opener Coil Spring

**Hammers Blow Mags Anvils Ring Mags** Small Set Hammer

Demo Hammer Horseshoe Rose

Sterling Earings/Box Lawn Mower Blades and

Aluminum

Blackwell Hardware Blackwell Hardware Blackwell Hardware Blackwell Hardware Blackwell Hardware

Blackwell Hardware Blackwell Hardware Todd Elder

Heyward Haltiwanger Meck Hartfield

Wylie Hartfield Charles Still Charles Still Chris Herron Chris Herron Tommy Taylor Leo Hanna Mike Long Mike Long Chris Herron Chris Herron Joe Marsh Joe Marsh Joe Marsh Charles Meyer **Charles Meyer** Jason Jaco Jesse Barfield Jason Jaco

Jason Jaco **Duke Baxter** Derice Hochstetler Ed Sylvester Ed Sylvester Ed Sylvester Ed Sylvester Ed Sylvester Ed Sylvester

Ed Sylvester William James John Tanner John Tanner John Tanner

Mike Tucker/Phil Rosche **Patrick Walters** 

Jamie Herndon Jamie Herndon John Tanner Jason Jaco John Hartfield

Heyward Haltiwanger

Mike Tucker Charles Still Chris Herron Chris Herron **Duke Baxter** Jesse Barfield John Tanner Jason Jaco Jean Meyer Charles Still Michael Merrikan Michael Merrikan

**Duke Baxter** Jonathan Lynch Rick Thompson Joe Marsh Rick Thompson Jamie Herndon

Jason Jaco Joe Marsh Jason Jaco Jonathan Lynch Jamie Herndon **Duke Baxter** 

Adam Hevia Jamie Herndon **Charles Still** Jean Meyer

Chris Herron Jesse Barfield

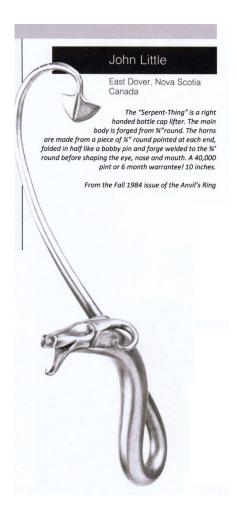
Heyward Haltiwanger Michael Merrikan Meck Hartfield Rick Thompson Joe Marsh Meck Hartfield Joe Marsh Meck Hartfield Todd Elder

Meck Hartfield **Duke Baxter** Todd Elder **Duke Baxter** Ray Pearre

John Tanner Rick Thompson

# Not seeing the Content you want?

Submit requests for the kind of info and articles you are interested in, or better yet, submit an article yourself!



# For Sale:

Fire Bricks – Brand New, Industrial Grade. \$1 ea. Ed Sylvester 803.414.2487

**Tire Hammer Plans**: Send a check or money order for \$30US or send \$32US to Paypal.Me/ClaySpencer. <a href="maileo-clay@otelco.net">clay@otelco.net</a>. PDFs will be e-mailed outside US.

**Beverly shear blades sharpened.** Remove your blades and send in USPS small flat rate box with check for \$41US Clay Spencer 73 Penniston Pvt. Drive, Somerville, AL 35670-7103.

**Blacksmith Classes:** Beginner to Advanced. Glenn Owen, Hemmingway. Contact Glenn at forgeontheridge@yahoo.com or www.forgeontheridge.com.

Forklift tine sections for striking anvils, \$30. Jody Durham, 864-985-3919 ironsmith@gmail.comSewell Pea Coal, washed, \$11 per 5 gallon bucket. Will also sell in bulk at lower price. Derice Hochsteller, Aiken, 803-221-2218

# **Upcoming Events**

October 13-15, PSABG at the SC State Fair. Contact John Tanner to volunteer. 803.422.4714.

October 12–15, Autumn on the Ashley at Magnolia Gardens, Contact Ray Pearre. Friday will be a hammer-in. Saturday and Sunday is a craft fair.

Living History Park, North Augusta. 18th Century Event. October 21, 22. Barry Myers and Bob Kaltenbach will be demonstrating.

Colonial Days, Camden, November 4-5. Joe Marsh, Barry Myers and Bob Kaltenbach will be demonstrating. There is an admission fee.

December Guild Meeting. December 2, Lexington County Museum. 231 Fox Street, Lexington, SC Heyward Haltiwanger Host, Todd Elder to demonstrate a hatchet.

1st Saturday, Blacksmithing, Bladesmithing, Farriering and art fair at Dreamcatcher Forge near Table Rock 12-4PM vendors, food, music, & games. Come hammer, fellowship, and sell your wares. 265 Mt Bethel Rd, Pickens SC 29671 Shawn Ellis <a href="www.dreamcatcherforge.com">www.dreamcatcherforge.com</a> Defforge@gmail.com 864-650-4542

2nd Saturdays Blacksmith demonstrations at Roper Mountain Science Center, Greenville, SC, Ryan Calloway contact.864-386-5546

3rd Saturdays Blacksmith demonstrations at Hagood Mill, Pickens, SC. Often, our own Griz Hockwalt and Shawn Ellis

Although I didn't have a picture of Derice's longhorn hook, I found a reasonable facsimile and here it is: Barry



# tagane ~ Japanese Inlay & Carving Chisels

Jay Burnham-Kidwell, Golden Valley, Arizona

This article was received from Jay at the 2011 Spring Conference, where he was a demonstrator. It was also published in a slightly different form in Anvil's Ring, Spring 1988. Look for Jay's demonstration at 2017 Spring Conference.



Japanese inlay and chiseling tools are referred to as tagane. I have included here those most often used. I have about 20 tagane tools in assorted sizes, although it is not unusual for a craftsman to have 100 - 300 different chisels. I use mine on ferrous and non-ferrous metals, and have discovered that beefier tools work better on iron and steel. These tools are struck with chasing, riveting or ball peen hammers weighing between 3 oz. and 1 lb. The chiseling is traditionally done with the chisel directed toward the smith. I find this to be a good general method since I can observe both the tool and its progress through the task. One should wear safety glasses and be aware of metal chips (sharp!) and tool slippage.

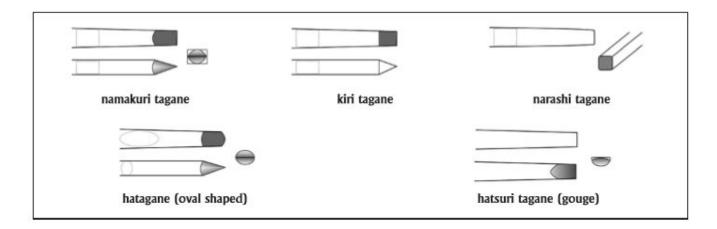
#### Materials

New. O-1 drill rod, W-2, cut nails.

Recycled. Hay rake tines, coil springs, potato digger links, etc.

Tool Sizes. 4" - 6" length, 1/8" - 5/8" thickness; oval, flat, square, round.

If required, normalize or anneal the steel. Cut to size (hot or cold), and forge it to 95% of the finished shape. Normalize or anneal again. Cut, grind, file and sand to shape. Harden and temper as per instructions for the particular steel you employ. Or, if unknown, harden ½" of the working end, and quench in oil. Brighten the steel with abrasive paper, temper to straw, and quench in oil. Sharpen the tool, strop on a piece of end grain wood, and road test. You can test the hardness of a tool by shaving your thumbnail. Carefully!



16 California Blacksmith www.calsmith.org March/April 2017

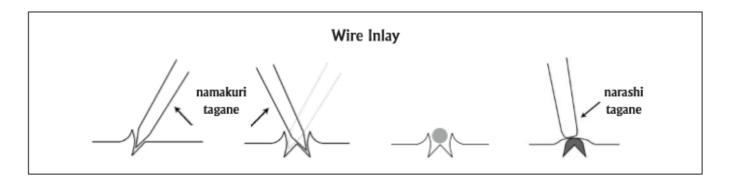
4

# tagane

If the tool has been tempered too soft, anneal, re-harden and re-temper. I use cooking oil as a hardening medium and prefer my tools to be hard and tough rather than hard and brittle. Also, it is usually better to find a good supply of the same alloy or tool steel to use. I use O-1 oil-hardening drill rod, which is very cost efficient and easily obtainable. It is also easily heat-treated by the craftsman.

When using chisels, do not use too heavy a hammer or too great an angle, or the edges may break. Sharpen your tools occasionally during use. I use a hard Arkansas stone and oil to sharpen. 1200 grit emery paper can also be used to touch up tools.

The chisels used for inlay may also be used for carving. The making of inlay, engraving and carving chisels is generally the same. Commercially made die-sinker's chisels are also useful.



Inlay into mild steel seems to work favorably. Wrought iron is softer, although it may be prone to chipping. Inlaying into carbon, alloy or tool steel is possible, depending on which alloy is chosen. I have had good luck with O-1, S series and 4140. As with any metalsmithing endeavor, the possibilities and materials are endless.

To inlay metals into steel, anneal the substrate metal (mild steel) and the inlay material. Lay out the pattern on the substrate by scribing, using Dykem® or Wite-Out®.

For wire inlay, use the namakuri tagane or the kiri tagane to make a continuous cut on the both sides of the mark on the substrate metal. (see illustration above).

# CAUTION. The edges of the cut will be extremely sharp!

Place the annealed wire in the cut, and gently tap the wire down with a light hammer. Use the narashi tagane to tap both sides of the cut back down. When cutting the channel for the wire, try to create a slight dovetail for the wire to expand in as it is tapped down. The inlay can be left above the substrate or cut flush with the surface by filing and sanding.

To inlay larger flat and/or raised relief pieces into the substrate, use the inlay itself or a template to scribe the outline, and use the namakuri tagane to cut the outline. Use the kiri tagane to remove metal from the center of the area. Both chisels can be used interchangeably, depending on the form and shape of the inlay. If metal *stitches* are raised during the chiseling, all the better, as it will help hold the inlay in place.

March/April 2017 www.calsmith.org California Blacksmith 17

# **Blacksmiths aboard Ships**

# by Robert Hungerman

Recently I was reading the book *USS Constellation:* on the Dismal Coast by C Herbert Gilliland. It is the reprinting of a journal of a crewman on the USS CONSTELLATION during 1859 to 1861. The journal, written by Willie Leonard, is a day to day recounting of life about the Sloop of War as it was deployed to the African coast as part of the fleet to interdict slave ships. One paragraph mentioned the Ship's Armorer and the author footnoted this as "Blacksmith". Having always been interested in the CONSTELLATION and curious as to how the ironwork aboard ship was handled I wrote to the Historic Ships organization in Baltimore to ask them for information. Mr. Paul Cora was nice enough to research my questions about the type of forge and coal used during that time. I reprint his letter below:

# Mr. Hungerman,

Thank you for your note which was forwarded to me. Based on the available evidence, I can say to you that yes, a blacksmith would have been among CONSTELLATION's crew. According to the US Navy Table of Allowances for 1854, under the Carpenter's Department there is a separate section titled "Smith's Tools and Stores". This list includes, among many other things "Forge, complete" of which the ship's allowance was 1. Beyond this, I don't have any specific information on the type of forge which the Navy would have equipped the ship. The additional materials in the Allowance include an anvil, bellows, bench vises, numerous types of files and hammers, plyers [sic], punches, and many types of materials such as iron rods of various forms and quantities, as well as 60 pounds of assorted steel.

In the same Table of Allowances, under the Master's Department, "Coal, hard" is listed with two sub categories - "Smith's" and "Charcoal" with the quantity listed as "As much as required, and with reference to stowage."

I hope this information is of help to you, though I'm afraid the specifics about the forge itself would require more research.

Please let me know if I can be of any additional help.

Yours sincerely,

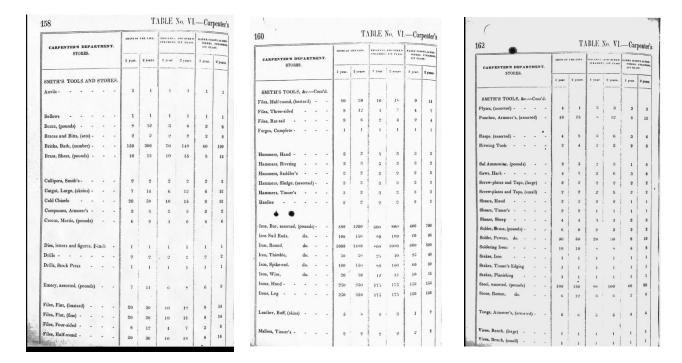
#### **Paul Cora**

# **Curator of Historic Vessels and Collections**

I find a few things interesting. First is that the Blacksmith was under the Carpentry Department, also that the coal was part of the Ship's stores and under control of the Quarter Master. Since the Blacksmith was also the Armorer there is the additional topic of guns and gunsmith tools, which I did not inquire about. It would be interesting to know where on board the forge was used. If you have toured the CONSTELLATION you may have seen the Orlop deck, which is below the Gun Deck. Many of the work areas are located here, but would they have run a forge here or on the main deck out in the open with wind and so much canvas sail nearby?

Included are scans of the Navy Tables of Allowances. The CONSTELLATION was listed a RAZZE SLOOP and its allowances are the two right most columns in these tables. There are listings for one and two-year voyages.

I will continue to research into Blacksmiths on historic sail ships and provide any information that comes my way.



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# A Paper on Anglo-Saxon Ironwork

Patrick Ottaway has kindly posted his PhD thesis on mid-late Anglo-Saxon ironwork to the web (see below). I found Mr. Ottaway's thesis to be readily accessible from a blacksmith's perspective and I commend them for addition to your personal blacksmithing library. regards, Allen Dyer

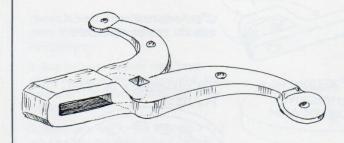
http://www.pjoarchaeology.co.uk/academic-consultancy/anglosaxon-ironwork.html

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I realize that this may not be interesting to some of our lesser computer savvy smiths, but Christopher Herron is going to be ecstatic. Barry

# Forging a Vise Mount

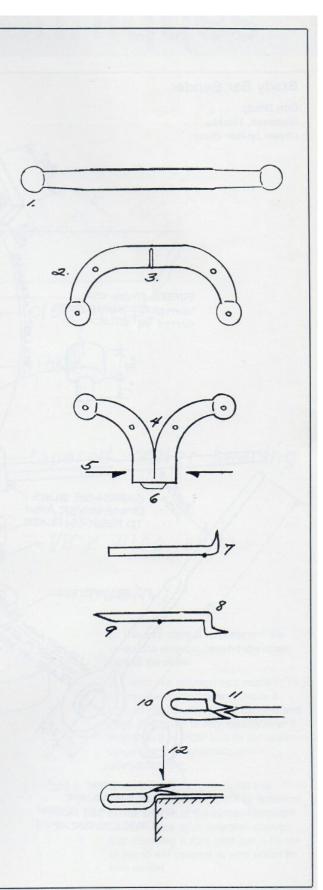
John Dittmeier Smyrna, Delaware

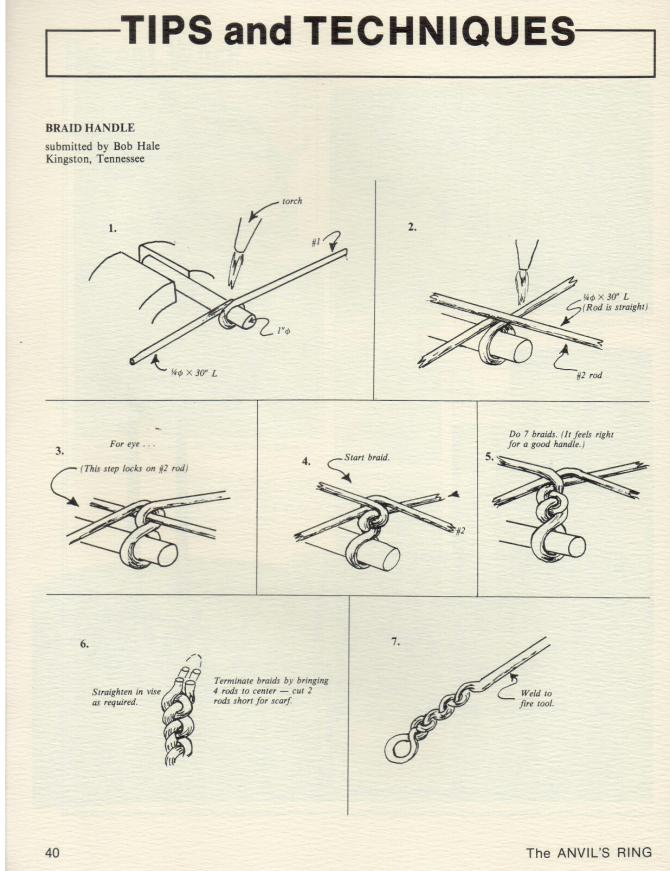


From his tool collection, Bill Gichner has shown me a vise mount which is an excellent exercise in forgework. Using two lengths of flat bar, the original smith produced a heavy-duty but shapely mount. Here is how we have surmised his general steps.

First, cut two lengths of 17 and 8 inches from 1.5  $\times$  0.5 inch bar. Then, with the longer length,

- 1) Forge circle ends and bevel the upper edges (not shown).
- 2) Curve the last six inches of each side and punch holes.
- 3) Hot cut through and nearly across at the midpoint.
- 4) Bring the arms about the remaining tab and hammer together till touching.
- 5) Forge weld this segment.
- 6) Scarf the middle of the new flat edge. Next, with the shorter length,
- 7) Upset and scarf one end as shown.
- 8) Make sharp bend one inch away and work towards a square corner.
- 9) Scarf other end.
- 10) Bend about midpoint to bring the two scarves to touching.
- 11) Hot fit the three scarves of the two pieces.
- 12) Forge weld.
- 13) Heat the collar, drift for a clean inner rectangle, and forge flat the collar's sides.





# COMMON NAMES OF CHEMICAL SUBSTANCES

Many of you have rightly noted the great frustration involved with reading a precious, old formula infused with colorful, but cryptic, ingredients. Here, to set you straight and put your mind to ease, is a lexicon of the common names of chemical substances, compiled and contributed by the Whisenants of the Oregon Bladesmiths Association. One word of caution, if you are unsure of the dangers of using any of these substances, play safe and avoid their use. The only thing more precious than that piece of iron is you.

Meerschaum

Milk of lime

Mosaic gold

Oil of vitriol

Oleum

Orpiment

Oxene

Peach ash of pearl ash

Peroxide

Plaster of paris

Plamago, black-lead

Potash

Potash alum

Prussian blue

Prussic acid

Pyro

Quick lime

Quick silver

Realgar

Red lead Red oripiment

Red prussiate of potash

Rochelle salt

Salammoniac

Saleratus

Salsoda

Salvolatile

Saltpeter (bengal) Saltpeter (chili) niter

Salt of Harts horn

Salt of sorrel

Sig

Slaked lime

Soda ash

Sour water

Spirits of Harts horn

Spirits of salts

Sugar of lead

Tanic acid, tannin Tartar emetic

Tin ashes

Verdigris

Vinegar

Vermillen

Vitriol

Vitriolic acid

Washing soda Water glass

White copperas

White lead

White vitriol

Yellow prussiate of potash

TAIL OF NEWT AND BATS WINGS

Magnesium silicate

Calcium hydroxide suspended in H2O

Tin bisulfide

Sulfuric acid

Fuming sulfuric acid

Arsenic trisulfide

Sodium peroxide

Potassium carbonate

Hydrogen peroxide

Calcium sulfate

Grafite

Potassium carbonate

Potassium aluminum sulfate

Ferric-ferrocyanide

Hydrocyanic acid

Pyrogallic acid

Calcium oxide

Mercury

Arsenic sulfide Lead oxide

Arsenic bisulfide

Potassium ferricyanide

Potassium and sodium tartrate

Ammonium chloride

Sodium or sometimes Potassium bicarbonate

Sodium carbonate

Ammonium carbonate and bicarbonate

Potassium nitrate

Sodium nitrate Ammonium carbonate

Potassium acid oxalate

Urine

Calcium hydroxide

Sodium carbonate Dilute sulfuric acid

Ammonia

Hydrochloric acid

Lead acetate

Galle tannic acid

Antimony potassium tartrate

Stannic oxide

Copper acetate

Acetic acid

Cinnabar

a sulfate of iron or copper

Sulfuric acid Sodium carbonate

Sodium silicate

Zinc sulfate

Lead carbonate

Zinc sulfate

Potassium ferrocynaide

YOU CATCH

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# Membership Application

	New Member Renewal
Name:	Address:
City:	State: Zip:Phone:
email:	Sponsor
Dues are \$15.00	er person/family, per year. Please remit to:  C. Ray Pearre, Jr.  4605 Durant Ave.

# ACKNOWLEDGEMENT AND ASSMPUMPTION OF RISK

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

# When was the last time you paid dues?

There is a note below your address on the last page of our newsletters. It will say something like...

"Dues Last Paid - 2016" or "Dues for 2017 are due" or "Dues paid 2017"

This note is updated for each newsletter. We appreciate your prompt payments.

# October 7, 10 AM 6 Lewis Rd Hemingway SC 29554 Glen Owen is both Host and Demonstrator!

Bring a side or dessert and something nicely forged for Iron-in-the-Hat. Let's keep up the effort shown at the Camden Meeting.

Directions: coming from the north of Hemingway on 41/51 there is a mobile gas station on the left and Lewis Rd will be on the right side when entering Hemingway. The blacksmith shop is second building on the right side on Lewis Rd. We are right across the street from Hemingway hardware store. Parking is on the back of the building.

Glenn's number is <u>870-897-0234</u> if you need help., but we will probably make fun of you if you can't find Hemingway...