Saltfork Craftsmen Artist-Blacksmith Association February 2020



Blacksmith and Helper Sharpening a Plow Share Depew, Oklahoma. Circa 1940.

(Source: Library of Congress, Photographer: Russell Lee, 1903-1986)

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Editor's Notes:

Saltfork Craftsmen 2020 Director Elections:

The terms for four SCABA Directors are up this year. Eric Jergensen, J.J. McGill, Ricky Vardell and Russell Bartling are all up for re-election.

If you would like to run or nominate someone else to be on the Board of Directors, please do so as soon as possible. We will hold elections for these positions at the Annual Picnic in April.

Please send any nominations for other candidates to either the Secretary, any current Board member or the newsletter editor by March 22nd to be on the printed ballot.

-Russell Bartling, Editor

The Saltfork Craftsmen Artist-Blacksmith Association, a non-profit organization Our purposes are the sharing of knowledge, education and to promote a more general appreciation of the fine craftsmanship everywhere. We are a chapter of the Artist-Blacksmith Association of North America.

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Visit our Saltfork Craftsmen Website: www.saltforkcraftsmen.org



President's Notes:

Well another month has come and gone and so far it has been a fairly light winter. Its has been a little slow for me this month and that's is fine with me after the holidays.

I wanted to go to Bryon's meeting but they were forecasting ice and I didn't feel safe going. He did say he had a fair turn out.

Don Garner had a good meeting. When we left home it looked like a pretty day. When we were about two miles from his house it was so foggy you couldn't see the end of your hood. It cleared off about lunch time. He had a new member there with his wife and I think they had a good time. I had a



new member that came to our shop to take a one-on-one class. Don and Monte showed up and we had a good day. He worked all day and he was a very good student.

I have talked to Russell and I think he would appreciate the club members sending in more pictures of your projects to be placed in the newsletter. They say for those of you who take photos with your phone camera it is simple.

Don't forget to let Russell know when you want to host a meeting for the news letter.

Keep your hammers shiny.

- Mandell Greteman

All Regional Meetings are Free to Attend and are Always Open to Any Member or Guest...

New to Saltfork or just want to check out Blacksmithing but don't know where to start? These meetings are a great place for new members or guests who just want to see what it is all about to come network with like minded people. If you want some pointers on how to get started, there is always someone happy to help get you started hammering. And guests are always welcomed.

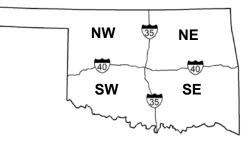
Want to host a meeting? The meeting hosting form can be found on the last page along with membership application form. If you want to host a meeting in any area please fill out one of the host forms on the website under the calendar section or in the newsletter and e-mail the information or mail the hard copy form in as soon as possible. If you mail a form, please call or e-mail to verify that it is received. E-mail is the most convenient for me but you can also phone in the information if you prefer. The sooner the meeting is scheduled, the more time there is to get the word out to potential attendees. -Russell Bartling 918-633-0234 or <u>rbartling@ionet.net</u>

What's My Region?

The four main regions are currently defined within the state by being separated by I35 and I40. (For example, the NW region is anything north if I40 and west of I35.)

All meetings are encouraged. These boundary definitions and regional meeting dates are a suggested framework to facilitate orderly meeting scheduling, planning and promotion with a minimum of overlaps and a maximum exposure to the greatest number of members. Not all meetings fit precisely within a rigid boundary definition and members in an area may want to hold meetings on a date that doesn't match their physical region or at a location other than their own region. This may be especially true in the center of state for areas that are close to the I35 and I40 boundary crossing. Special events such as shows, fairs, etc. may also dictate adjustments to the meeting dates within a region.





The regions are meant to be a simplification and clarification to the regional boundaries rather than a rigid restriction to any meeting scenario. *Saltfork members all belong to one club.* Regional boundaries are not intended to imply division within the club, but are intended to help spread distribution and promote monthly meetings.

Safety

Blacksmithing can be an inherently dangerous exercise. There is no substitute for personal responsibility and common sense and no list of safety rules can adequately cover every situation. Every person who attends a meeting, demonstration or event sponsored by the Saltfork Craftsmen Artist Blacksmith Association (SCABA) or its members does so at their own risk and assumes all responsibility for their own safety needs. The SCABA organization, its officers, members, demonstrators, volunteers and guests disclaim any responsibility for any damages, injuries, or destruction of property resulting from the use of any information or methods published or distributed by SCABA or demonstrated at workshops, meetings, conferences or other events. SCABA recommends proper attire and safety gear and standard shop safety procedures appropriate for blacksmithing and shop work during any event where blacksmithing and other related methods are involved. Safety attire includes, but is not limited to, appropriate clothing, eyewear, hearing protection, gloves, and face shields when appropriate. It is every individual's responsibility to provide for their own safety, to determine what safety gear is appropriate for each situation and to provide, maintain and use that gear as appropriate for each individual situation.

2020 Workshop Schedule

Tong Making Class

February 29th (9:00 AM) Elk City Blacksmith Shop

The tong making class has been scheduled for February 29th at 9:00 AM. Class will be held at the Route 66 Blacksmith Museum in Elk City. Cost is \$30. Materials and lunch are provided.

Contact Mandell Greteman to register or if you have any questions.

This intermediate level class will not have enough time to cover beginner blacksmithing fundamentals. Basic forging proficiency is required as a pre-requisite.

If you can handle a hammer to forge and you understand/can perform the basic forging steps, you should be able to complete this class.

Have an idea for a workshop or class? If you have an idea for a workshop that you would like to attend (or teach), please let the workshop coordinator know so that details for time and place can be worked out.

Mandell Greteman is the SCABA Workshop Coordinator. Contact Mandell at 580-515-1292.

2020 REGIONAL MEETING SCHEDULE				
NE Region	SE Region	SW Region	NW Region	
(1st Sat)	(2nd Sat)	(3rd Sat)	(4th Sat)	
Jan 4th	Jan 11th	Jan 18th	Jan 25th	
(Open)	(Byron Doner)	(Open)	(Rory Kirk)	
Feb 1st	Feb 8th	Feb 15th	Feb 22nd	
(Open)	(Byron Doner)	(Open)	(Monte Smith)	
Mar 7th	Mar 14th	Mar 21st	Mar 28th	
(Open)	(Open)	(Bruce Willenberg)	(Mandell Greteman)	
Apr 4th	Apr 11th	Apr 18th	Apr 25th	
(Open)	(Open)	(SCABA Picnic)	(Don Garner)	
May 2nd	ay 2nd May 9th May 16th	May 23rd (Terry Kauk)		
(Open)	(Open)	(Open)	May 23rd (SW-JJ McGill Boy Scouts)	
Jun 6th	Jun 13th	Jun 20th	Jun 27th	
(Open)	(Open)	(Jim Obenshain)	(Open)	
Jul 4th	Jul 11th	Jul 18th	Jul 25th	
(Open)	(Open)	(Open)	(Open)	
Aug 1st	Aug 8th	Aug 15th	Aug 22nd	
(Open)	(Open)	(Open)	(Open)	
Sep 5th (Open)	Sep 12th (Open)	Sep 19th (Ricky Vardell - JJ McGill - Sulphur Tractor Show)	Sep 26th (Ron Lehen- Bauer as Host - Don Gar- ner as Contact Person)	
Oct 3rd	Oct 10th (Conference	Oct 17th	Oct 24th	
(Open)	Setup Work Day)	(Conference Weekend)	(Rory Kirk)	
Nov 7th	Nov 14th	Nov 21st	Nov 28th	
(Open)	(Bill Phillips)	(Open)	(Bob Kennemer)	
Dec 5th	Dec 12th	Dec 19th	Dec 26th	
(Open)	(Open)	(Open)	(Open)	

2020 Fifth Saturdays:

February 29th (Tong Making Class in Elk City - See Workshop Schedule) May 30 (Open) August 29th (Open) October 31st (Open)

February 2020

NE Regional Meeting February 1st : Open.

SE Regional Meeting February 8th: Will be hosted by Byron Doner at his shop located at 6520 Alameda, Norman, OK 73026.

The trade item is "something Valentiney"

Lunch will be provided but please bring a side dish or dessert to help out. Contact Byron at 5405-650-7520 if you have questions.

SW Regional Meeting February 15th: Open.

NW Regional Meeting February 22nd : Will be held by Monte Smith at his shop at 8848 N. 2010 Rd, Hammon, OK 73650.

From Hammon, go 7 miles north on HWY 34 to E0880 Rd (There is a Moorewood Baptist Church sign) then turn west and go 3 miles. Turn south and go $\frac{1}{2}$ mile to the entrance on the east side of the road.

The trade item is a froe. Lunch will be provided but please bring a side dish or dessert to help out.

Contact Monte at 580-497-6015 if you have questions.

March 2020

NE Regional Meeting March 7th: Open.

SE Regional Meeting March 14th: Open.

SW Regional Meeting March 21st: Will be hosted by Bruce Willenberg at his shop located at 12250 Nelson Lane, Norman, OK 73026. Take Hwy 9 east from Norman to 120th St. Then go south 1.5 miles to Nelson Lane (old country dirt road.) Then go east 200 yards to first drive on the south.

The trade item will be something that makes you think of spring (flowers, fruit or bug). I would really like to see a lot of trade items. Its a lot more fun if the table has lots of trade items from all the different smiths. Everybody bring one!

Lunch will be provided (chili and grilled sausages) but please feel free to bring a side item or dessert to help out.

Contact:Bruce Willenberg at 405-227-4547 or brskw1976@yahoo.com if you have questions

NW Regional Meeting March 28th: Will be held by Mandell Greteman at his shop in Foss, OK.

The trade item is a "hamburger flipper" (spatula.) (Don't forget to use a food-safe finish. - Editor)

Lunch will be provided but please bring a side dish or dessert to help out. Contact Mandell at 580-515-1292 if you have questions.

Around the State...

NW Region December Meeting:

The NW Region December meeting was held earlier than normal in December so the meeting write up and photos appear in the January newsletter.

NE Region January Meeting: No Meeting was held in January.

SE Region January Meeting: The SE Region January meeting was held by Byron Doner in Norman, OK:

The weather-folks had been predicting snow only on Saturday for a week or more, so when I went out to get coffee at about 6:15, I was happy to see they had once again lied. Then Joe Hamil came in at 6:30 and was raving about how slick it was. I thought he was just messing with me till I looked outside and everything was white! Then when others started coming in, they all said that the highways weren't slick, so I decided that it must have only been snowing, and getting slick right in my area. Then Jason O'Dell came in madder than a wet hen at all the idiots he had been dodging all the way from Harrah! Travis Gabbard came all the way from Fletcher, and said he never seen any slick spots until he turned off highway 9, two miles south of my place.

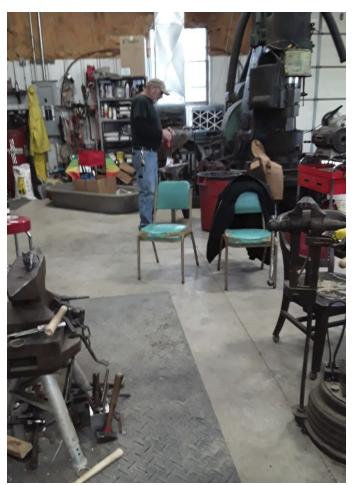
I believe we had 4 trade items. Kinda light on trade items, I thought, since we had 19 folks sign the sign-in sheet.

A big Thank You to Sharlene Willenberg, and my wife Carol for making us chili!

Carol was worried because we pretty much ate all the chili and beans. I told her that I thought everyone got some, and not to worry. Usually we have a bunch leftover, and I was kinda looking forward to getting to eat it later. I guess once in a while it does come out just right. When we were raising our kids, it happened a lot because it seemed like every time I sat down on toilet, it was time for a new roll of paper! Sorry, I'm getting off track again.

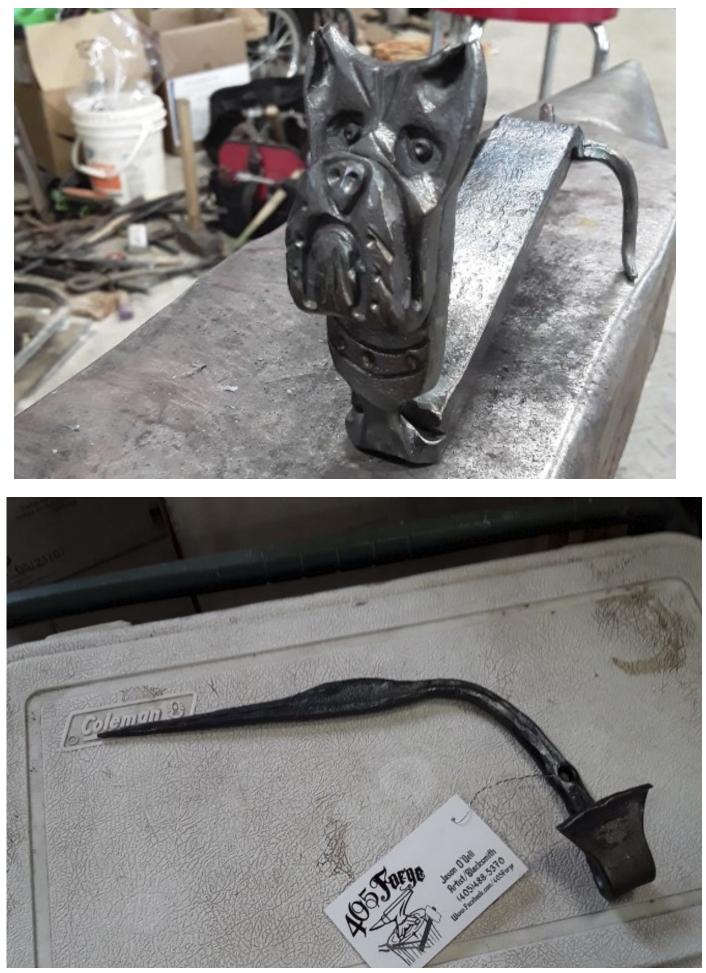
We actually had to open the overhead doors a little bit because guys were running gas forges and having a good time hammering. I hope my meeting in February doesn't have any snow, or ice!

Thanks to all that came and had a good time! See ya in February. - Byron



Saltfork Craftsmen Artist-Blacksmith Association





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SW Region January Meeting: No Meeting was held in January.

Saltfork Gate Project!

This is a new group project that is open to all Saltfork members. The project is a four foot high by sixteen foot long gate to be displayed outside at the Route 66 Blacksmith Shop Museum at Elk City.

Participating members will be given a steel ring that can be filled with any (family appropriate) forged work that will fit in the ring and be permanently attached to it. Each ring is 10 1/4" O.D. and made of 3/8" round. Most of the rings will be connected at the four cardinal direction points (N, S, E, W) by welding. A small spacer of 1" by 3/8" will be placed between the connection points of each ring.

Try to keep the projects inside the rings from projecting more than approximately 4" out from either face. Otherwise, the design and connection methods to the ring are strictly up to you.

There will be a central large ring with a Saltfork Craftsmen title.

Mandell Greteman is coordinating the project and will provide the standardized rings. All of the rings will be provided to ensure they are a standardized size. Once the projects are returned, Mandell will weld them into the gate to be displayed at the museum.

There is space for 56 ring projects in this gate. If there are more participants, additional gates will be made and installed inside the blacksmith shop.

Contact Mandell if you have any additional questions or to find out where to obtain one of the project rings: **Mandell Greteman 580-515-1292**.

Concept Sketch for the Gate Project:





Two new gate projects by Gerald Franklin

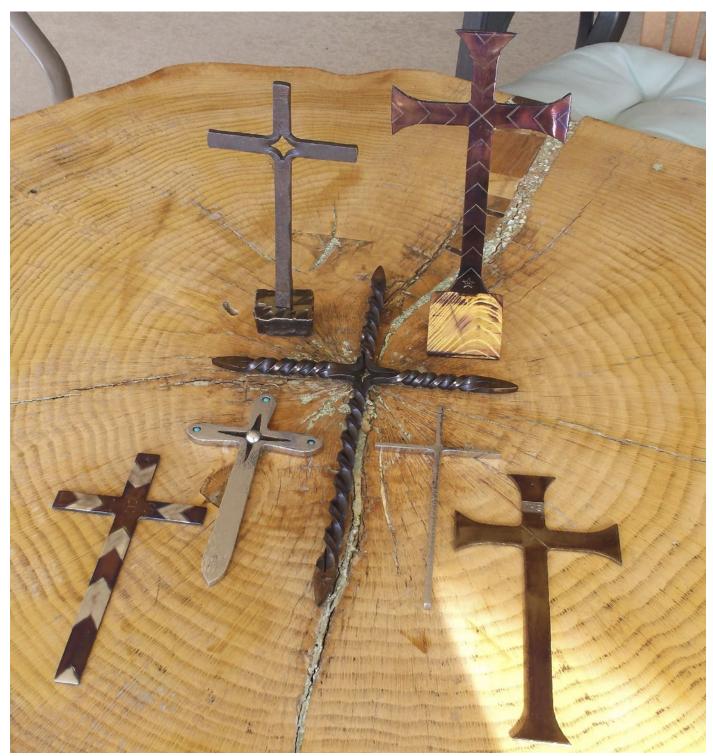


Saltfork Craftsmen Artist-Blacksmith Association

Member Gallery

Crosses by Gerald Brostek:

This group of crosses created by me and donated to the Methodist Church will be sold and the proceeds will be used to buy materials for the construction of handicap access ramps.



Member Gallery (Continued...)

Candle Holder and Pine Cone By Rory Kirk:



A Sun Dial for Heidi's Garden

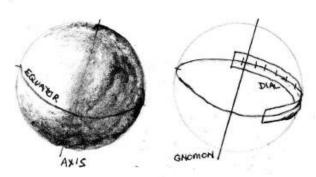
Fred Mikkelsen

If you poke a stick in the ground, and the sun is shining, it will cast a shadow. Longer in winter and shorter in summer, if you live in the Northern Hemisphere. Measuring time by the sun's shadow has intrigued mankind for thousands of years and if you "Google" sundials, you will find it still does. There are many who work at developing more intricate and accurate sun dials, developing complex mathematical formulae and creating some beautiful sculptural solar time keepers. The earth's wobble causes seasonal errors of + 15 or - 15 minutes or so, be advised not to set your watch by one.

They all have this commonality: The "stick" that casts the shadow is called a gnomon (silent "g" as in gnome) and a dial (the surface upon which the shadow is cast) The shapes of these two parts can be one of many configurations but their arrangement is what makes the darn thing work. There are 7 different classifications and a computer search lead me to wish I had been more attentive during Solid Geometry and Algebra II classes 50+ years ago!



Jerry Hoffmann's "The Blacksmith's Journal" has featured a couple of designs over the years and September

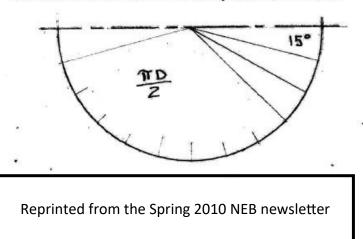


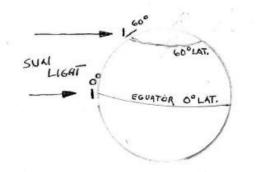
of 2004 #164 had the idea that inspired me. It details the building of an equatorial sundial and he states this is the simplest of the classes of instruments. This is so named because it mimics the plane of the equator and uses a "bow string" gnomon to cast the shadow. Armillary Spheres incorporate this type technology but are more ornate and complicated to construct. Heidi wanted something simple and plain, so much the better for her Father to forge!

If you were at the equator, the "dial" part of your time piece would be parallel to the earth's surface but as you

move toward the North, the "dial" needs to be tilted toward the sun so it stands parallel to the equator. This amount of "tilt' is equal to the latitude at your location. So that had to be figured into the design along with the flowers that would grow around where the piece would be permanently mounted. This is the explanation of the "tilt" for you to consider as you design your project.

Jerry's was 8 inches across and that would be too small in my case so I had to do some math to lay out a 12 inch dial.





I drew out a half circle with a 6 inch radius (12 inch diameter) to calculate the length of steel needed for the dial. 18.8496 inches rounded off to 18-7/8 inches. This type of sundial uses increments of 15 degrees between the hours and I plotted off 12 segments just to make sure I was headed in the right direction. That made each segment 1.5408 inches that I called 1-9/16 inches. I then transferred the layout to my 2 x 1/4" flat stock and incised the lines and stamped the numbers working with my treadle hammer and the stock cold. A couple of passes made the "right impression" and the first number I stamped in the dial was the number 3 and I got it backwards! \mathcal{E} Well that "error" makes the piece that much more "unique".

We all save odd stuff thought to be "just junk" by normal people and I had a cast iron wheel that was 12 inches in diameter and just the thing to get an even and consistent bend in my dial. I rigged it in my post vise with a clamp to anchor the end of the dial for hot bending. I learned early on that when bending to a form, one must pull the material and never try to bend more than what is hot, this keeps the bend smooth and kink free.

Next the "flagged ends" of the dial were forged being careful not to get the bent part of the dial hot enough to become distorted. Power wire brush and clear flat acrylic finish and we are ready to move on to the upright support.

The base is a piece of cast iron that once was the base of a floor lamp, minus its decorative cover (more junk). The upright was a left over piece from a sign bracket project I did a few years ago but it required being bent so that the point where I would mount the dial was 41 degrees 44 minutes from the horizontal (the latitude here in Scituate, RI)

The Gnomon was forged from a piece of 3/8 rnd and I used a piece of wire to guesstimate how long it needed to be. Assembly followed with the riveting of the gnomon to the dial and bolting the dial to the upright. I disguised the bolts as flowers and added a bronze butterfly to the gnomon because of the flower garden setting.

Heidi sees this as "a gorgeous addition" to one of her perennial gardens and a focal point in that section of taller plantings, now that it is set pointing true north, 15 deg. east of magnetic for us in RI.



You may not have a "Heidi" but I'll bet you have someone who would appreciate a solar timepiece.



Fall 2019

New England Blacksmiths

This article is reprinted courtesy of the New England Blacksmiths newsletter Fall 2019, Originally published by NEB in 2010.

Reprinted from THE IRON TRILLIUM FALL 2012

WHY H13 IS A GREAT STEEL FOR A HOT CUT OR PUNCH

To give credit where credit is due, the first time I heard this, it was at a demonstration Lloyd gave in Waldie's. At the time, while I deferred to Lloyd's experience and expertise and believed him, I didn't fully understand why it was true. As a result, I didn't try using H13 until fairly recently. As time went by, though, I had heard other blacksmiths talk about different kinds of steel and I was lucky enough to win various pieces of 4140 and 4340 in some Iron in the hat draws, so it eventually sparked enough interest to do some reading about it.

There are still a number of gaps in my knowledge but based on what I learned, I started with a thought experiment to determine what the best tool for hot work would be. Normally, when you temper a tool, you bring the temperature up to the straw/purple range, which is somewhere in the 430 F to 520 F range, and lock it in by quenching in water or oil, depending on the steel (e.g. water for 1045, oil for 5160). Having done so, though, we then lay a piece of steel that's about 1900 F on it and hammer on that steel for a while, driving our carefully heat treated piece into it like a wedge. Or we might punch our carefully heat treated tool into our very hot piece, surrounding it on all sides with that hot steel. As we do so, that 1900 F is bleeding into our tool. If our tool is well polished and we are paying attention, we might notice, from a distance, when it hits purple and have enough time to quench it. If not, it might turn blue, grey, red or even orange before we notice, ruining the temper. Knowing me, I'd probably quench it and keep using it anyway, but this won't be very good. The edge will mush (deform) the first time I use it, and I'll have to continually grind it to reform the edge until I finally break down and heat treat it properly again.

The reason for this is that most of my tools were made out of car springs and the hardness of 5160 (car spring) when first quenched is 62, when tempered at 500 F is 57, but when brought to 1000 F it drops way down to 38. Similarly, 4140 and 4340 start at 56 and end up down at a hardness of 40 by the time you hit 800 F. So none of these tools are ideally suited for hot work, at least not unless you are scrupulous about cool them off between and during use. H13, though, instead being tempered at around 500 F, is instead tempered at around 1000 F, a dark red, where its hardness is still 54. Similarly, A2's hardness at 1000F is 56 and S7's hardness at 1000 F is 51 (1000 F is where you would want to stop with A2 and S7, though).

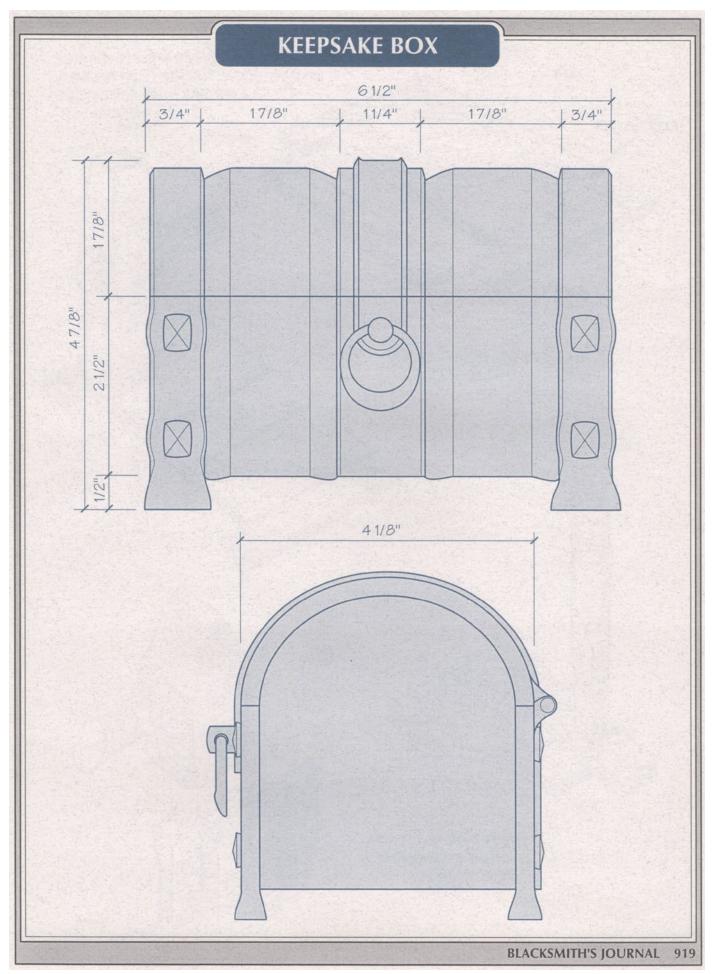
That means that these steels can stand being brought pretty hot and still keep their temper, still be hard and resistant to deformation. You are far less likely to ruin them, although obviously you'll still want to be careful to cool the tool down between uses, particularly on the thin ends. From this, we can see that steels like H13, A2 and S7 are the best candidates for hot tools. But heat resistance isn't the only category we want to measure. Our next consideration is toughness. A2 is only rated *Fair* on the toughness scale, and if I'm going to be beating on a tool with a hammer, I'm thinking it should be at least *Good*, so we can rule out A2. 4140 and 4340 are *Good* on the toughness scale, making them good for cold work, but they don't have enough temperature resistance for hot work, so we can rule them out. H13 and S7 are both rated *Excellent* on the toughness scale. H13 gives us better hardness at a higher temperature, so we'll give the nod to H13 as our winner.

Life rarely gives you anything for free, though, H13 does have a number of drawbacks. H13 is pretty expensive, hard to come by, and rates a *Difficult* on the formability scale. What is the formability scale? Again, I'm no expert, but from my experience, I think a better name would be the "you-have-to-beat-the- crap-out-of-it-to-get-it-to-move" scale. H13, like S7, 1045 and 4140, only rate a Fair on the weldability scale. You can't use the magnet test when hardening H13, its hardening temperature is way up at almost yellow, at 1850 F, so you need to do that by eye or, better yet, with temple sticks (S7 hardens around orange/light orange; 4140, 4340 and 5160 are around light cherry/light red).

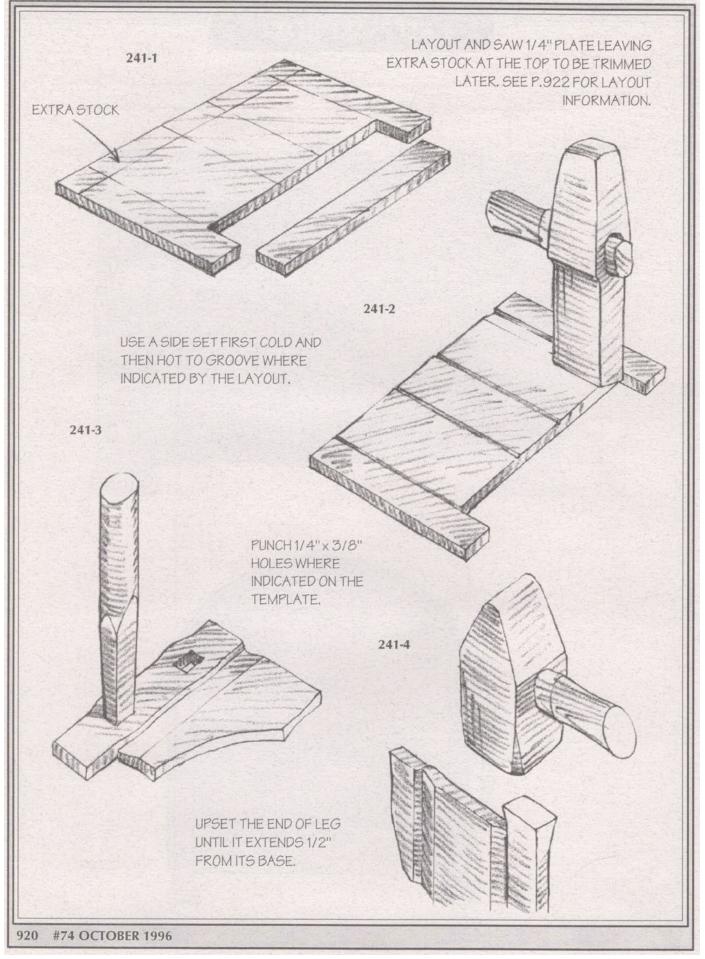
Finally, H13, like S7, is an air hardening steel, so you can't quickly quench it when it does start to get hot. Despite those disadvantages, though, this thought experiment turns out to be true in reality. I ran across a bar of H13, made some tools out of it, I have found H13 to be the best steel I have used for hot work. That's not to say that other steels can't be used and work just fine, it's just that H13 seems to work better. So yes, the short version of the story is that I should have just listened to Lloyd.

David Brandow

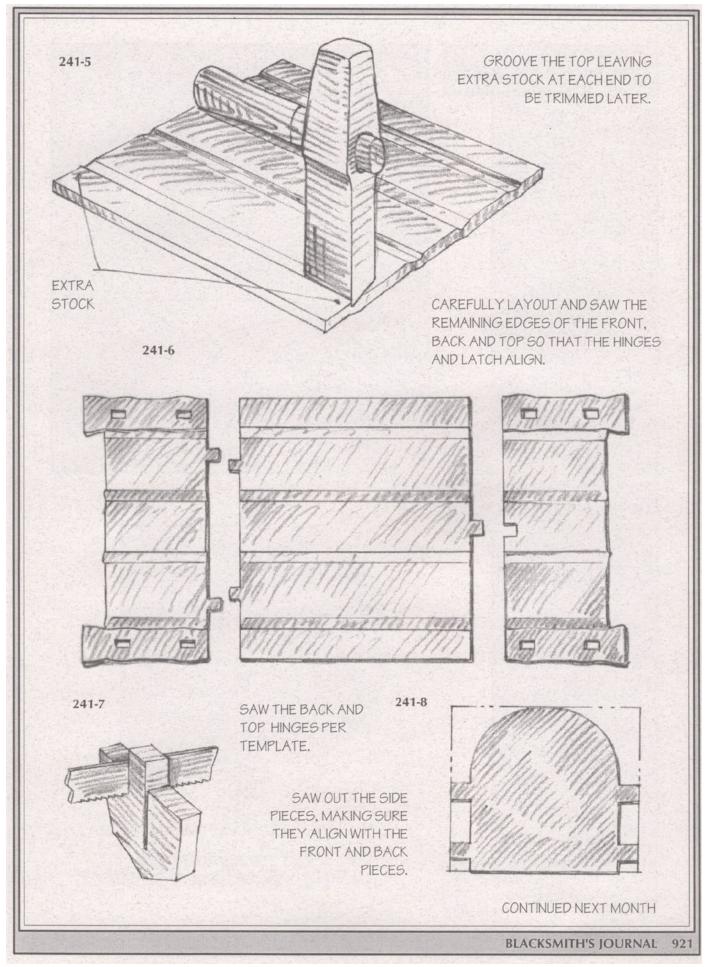
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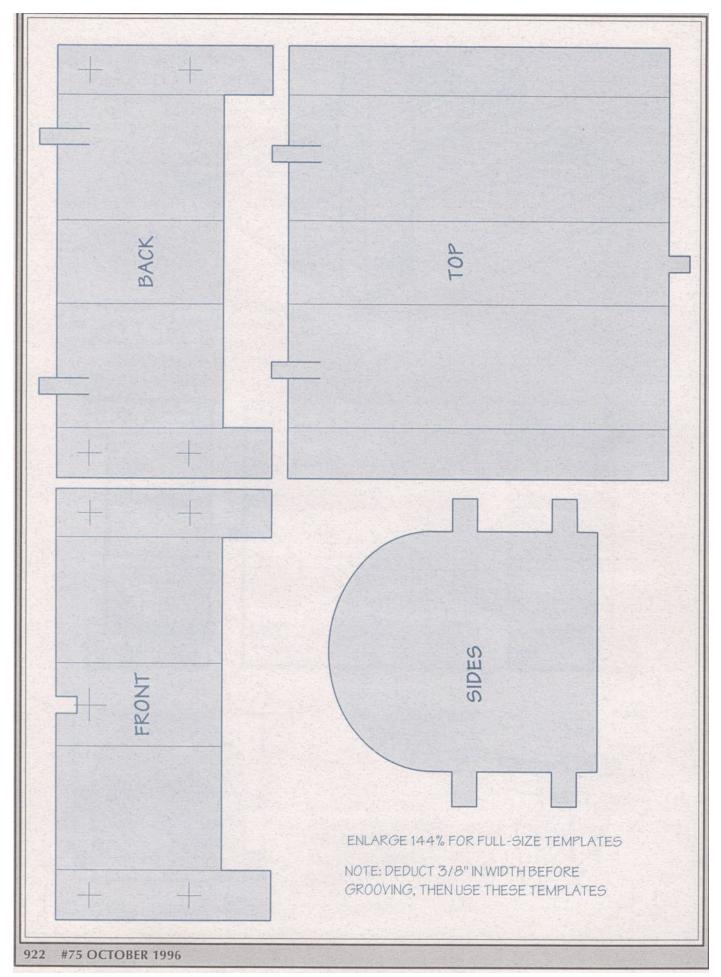
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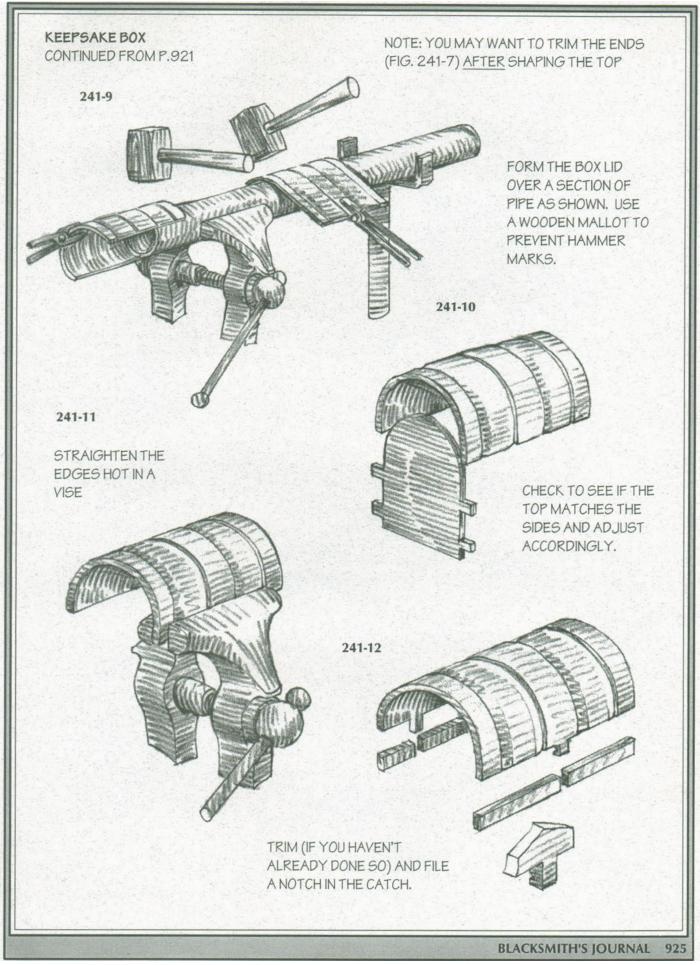
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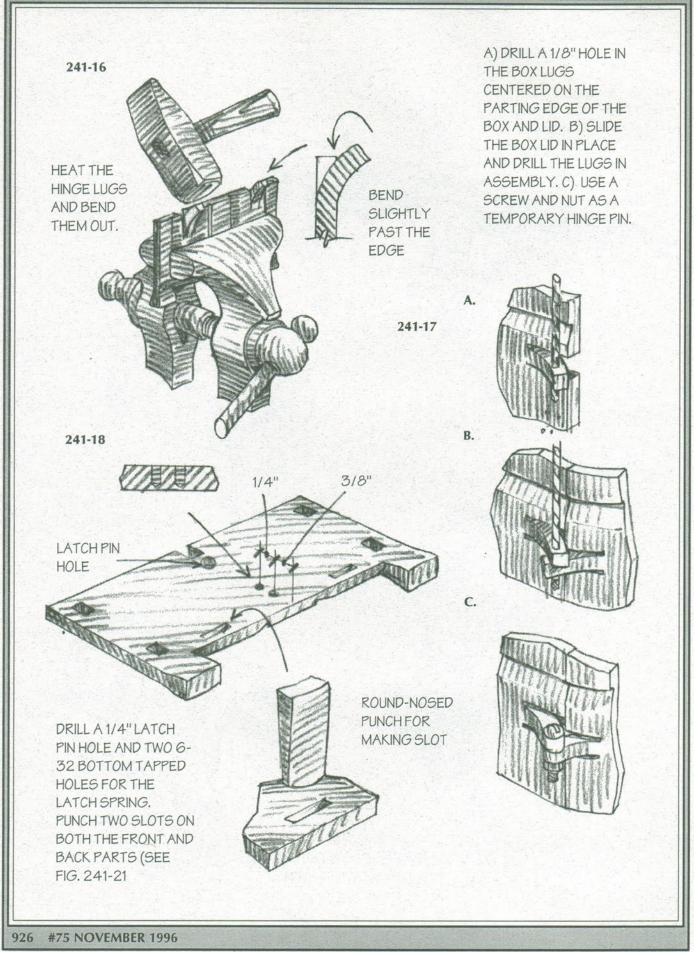
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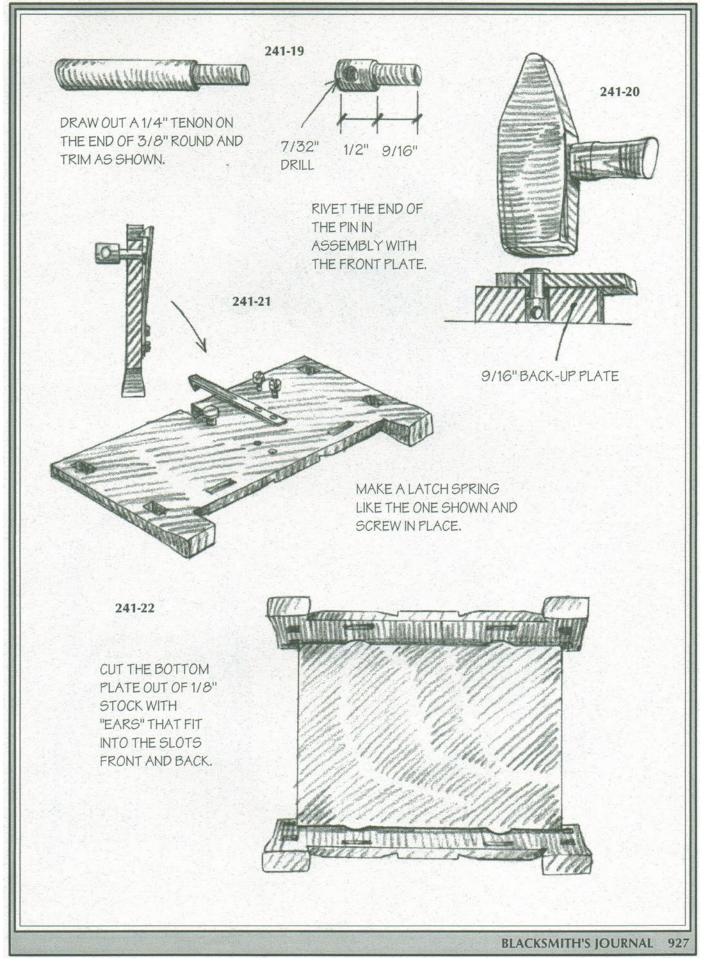
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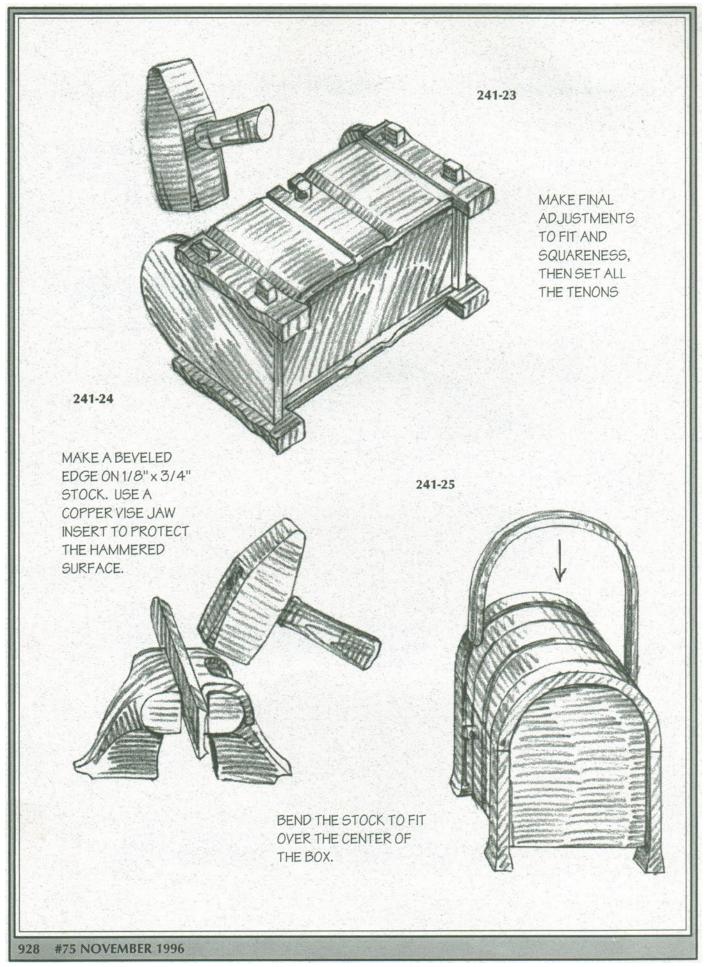
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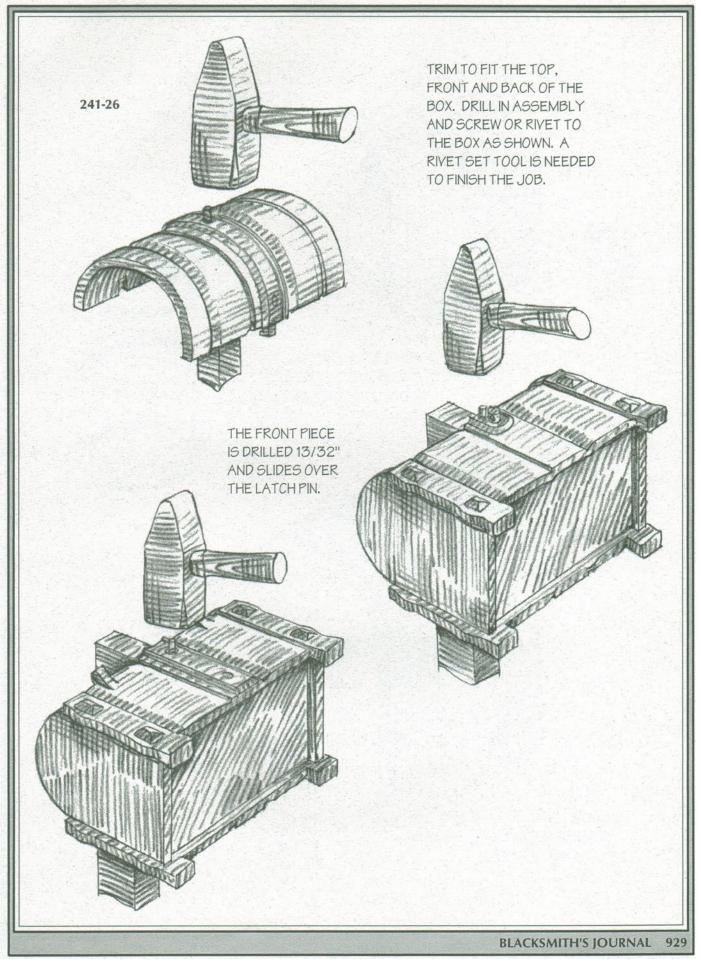
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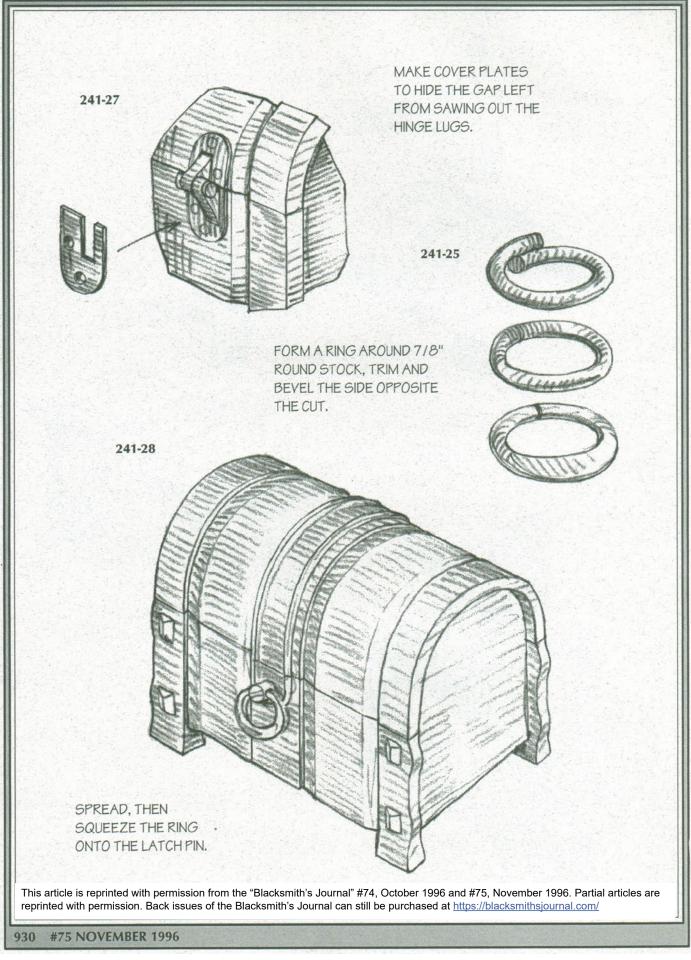
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Welded Hinge Instructor Certification Demonstration David Gottfredson, San Diego

Stock

 $\frac{1}{4}$ " x $\frac{3}{4}$ " x 20" (enough for both halves) $\frac{3}{8}$ " dia x 12" (for Pintle & Mandrel)

Tools

Blacksmith hammer w/cross peen.

 $\frac{3}{8}$ " tongs for holding round stock.

Tongs for holding/supporting end of bar stock (flat, box jaw, etc.).

Welding gear - low-IR glasses, borax, brush, light rounded hammer (optional).

This relatively simple welded hinge is useful where a durable hinge is desired. It is more durable than a turned-eye hinge because the welding prevents the eye from opening with use and abuse. A key aspect of the hinge is the square corner that provides a solid starting point for the weld and helps prevent the eye from peeling open.

Note. These hinges can be made in a variety of shapes and sizes, but for this demonstration we will be using $\frac{1}{4}$ " x $\frac{3}{4}$ " flat stock and $\frac{3}{8}$ " diameter round stock. For other sizes, simply adjust the following calculations and dimensions accordingly.

Pintle & Mandrel

Making the pintle and mandrel first is a good way to warm up for this project.

Pintle. The pintle is simply the pin that the hinge turns on. The length of the pintle needs to be double the hinge stock width plus a little extra. How much extra is primarily a matter of aesthetics. Another thing to consider is assembly of the overall project for which you are making these hinges. For example, say you are installing a door with three hinges. You might want to increase the length of the pintle on the hinges from top to bottom so that the bottom hinge engages first, followed by the middle hinge and then, finally, the top hinge. For this project we will just have the pintle extend about ¹/₄" above the hinge after assembly.

We are using $\frac{3}{4}$ " stock so the pintle length is $2 \times \frac{3}{4}$ " + $\frac{-1}{4}$ " = $\frac{-13}{4}$ ".

To aid in assembly, put a slight taper in the end that will be exposed,

but don't extend the taper into where the barrel (*eye*) will be. Otherwise, the hinge could be a bit sloppy when it is assembled. If you do the tapering now, before cutting the pintle off your 12" length of material, you won't need tongs! Cut off to required length and set aside. (*Don't lose it!*) That's all there is to the pintle.

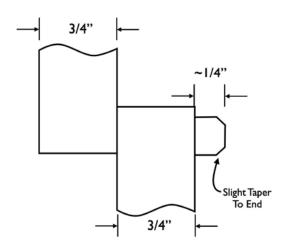
Mandrel. If you don't already have a ³/₈" diameter mandrel, now is a good time to make it. Remember, a mandrel and drift are not the same thing. A drift is used to enlarge and shape a hole to a specific size and/or shape. A mandrel is an object around which the metal is forged and shaped. In this case we will be using the mandrel to help shape the hinge eye or barrel. The working area (i.e., ³/₈" diameter) of the mandrel needs to be **at least** the width of the hinge material, preferably 1" to 2" longer.

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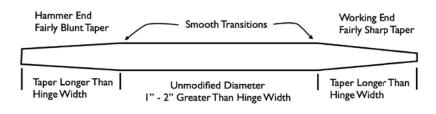




This article is reprinted courtesy of the California Blacksmith Association

newsletter Jan-Feb 2020.

Use the remaining $\frac{3}{8}$ " diameter stock that you used for making the pintle. You want the unaltered length of the $\frac{3}{8}$ " diameter stock sufficient to wrap the hinge material around. For this project, 2"-3" overall is good. You also need to taper the ends so that the mandrel can be easily inserted into or knocked out



of the hinge barrel. The tapers need to be a bit longer than the width of the hinge material to ensure that it comes out easily. Make sure there are smooth transitions so that the mandrel doesn't hang up. The working end can be rather pointed; the hammer end should be blunter or it will mushroom and bend easily. An overall length of about 6" is a good size for this mandrel.

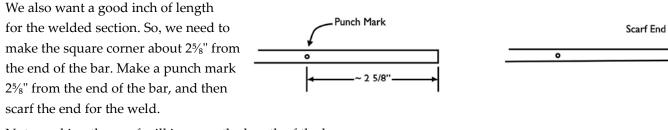
The Welded Hinge

Layout. The first thing we need to do is determine the length of material required for the barrel and welded section.

The general formula for the length of material required for the barrel is the circumference of the hole plus one thickness of the hinge material for every 180° of turn. So in this case, add two thicknesses.

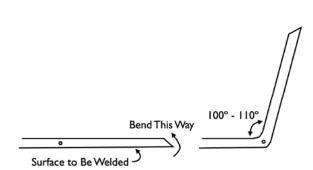
 $L = \pi D + 2T$

Using blacksmith math, L = 3 x $(\frac{3}{8})$ + 2 x $\frac{1}{4}$ = $1\frac{5}{8}$ "



Note, making the scarf will increase the length of the bar slightly $(\sim \frac{1}{8}")$ relative to the punch mark you just made. You can ignore this.

Using the edge of the anvil or a vise, make a relatively tight bend at the punch mark and away from the welded surface to an angle of 100° to 110°. Do not bend to 90° at this time or you will get cracking in the corner of the bend as you proceed.

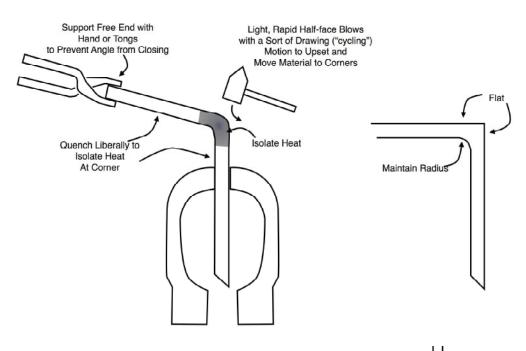


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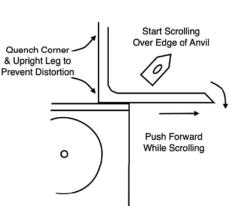
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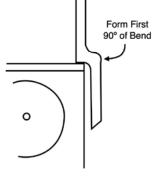
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Forge the square corner using a light, rapid drawing motion of the hammer to upset and move material into the corner. Quench the ends liberally to isolate the heat in the corner. DO NOT let the angle close to less than 100° until the corner is completely formed. Once the corner is formed, close up the angle to 90° and true up the sides.



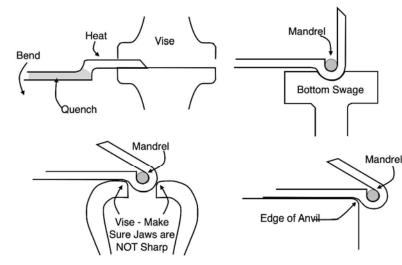
Begin forming the first 90° of the barrel by quenching the square corner and scrolling over the edge of the anvil. Take care not to distort the square corner and keep everything true.





Continuing the scroll to complete the barrel can be a bit tricky. Quench the parts that you are happy with and continue along the length until the barrel is closed. Use the mandrel as needed. Shown below are various methods for shaping the barrel.

It is often useful to *freehand* the entire barrel as much as possible so that the eye ends up a bit small (*but not too small*). Then heat the barrel to a near-welding heat; drive the mandrel in to reshape and open the barrel slightly, and then, with the mandrel in place, reclose the barrel.



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Now we're ready to weld!

Clean up your fire, and remove any clinker that may have formed. Build up the fire.

General rule of thumb is to have the coal/

coke at least twice as deep as the fire pot. Heat the metal evenly in the reducing part of the fire. Clean and flux as needed. It's best to have the barrel facing up for most of the heating to prevent it from burning. As the piece nears welding heat, rotate frequently in the fire to ensure uniform heating. Remember, both parts to be welded must be at the same temperature or they just won't weld.

Eye Too Small

On first welding heat, hang the barrel over the edge of the anvil and work at scarf and square corner. On second welding heat, use a rounded cross-peen to strike in the corner to help set the weld at the square corner.

Continue to work at welding heat, taking care to not burn the barrel or to distort the eye. On subsequent heats, complete the weld

and taper the material back down to $\frac{1}{4}$ " thickness. Don't increase the $\frac{3}{4}$ " width. Blend in the scarf joint. The hinge will lengthen a bit during this step.

The hinge has been welded!

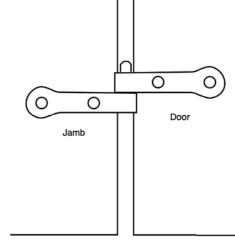
Before separating the hinges from the parent stock, complete the other hinge half on the other end of the bar. It's easier to handle the bar while completing the second half of the hinge BEFORE you install the pintle.

Install the Pintle

Once you have completed both hinge halves, BUT BEFORE separating the halves from the parent stock, it is time to insert the pintle. Remember the pintle you made at the beginning of this exercise?

The orientation of the pintle is important; it must be installed in the bottom (lower) half of the hinge, and it must point up. For example, if the hinge is being installed in a door jamb, you need to determine if it will be installed on the left side or the right side of the door and orient the pintle accordingly.

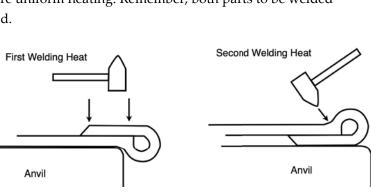
Hopefully, if anything, the barrel shrank a little during welding so that the pintle fits snugly. Once you determine the correct orientation for the pintle, heat the barrel to a near welding heat and drive the pintle through the barrel until the (*non-tapered*) end of the pintle is flush with the bottom of the hinge. Because we need both pieces to be at the same welding temperature, set the hinge aside for a few minutes to let the pintle absorb some of the heat from the hot barrel. This will make it easier to bring both pieces up to welding heat.



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Heat Barrel &

Drive in Mandrel

To Open Up



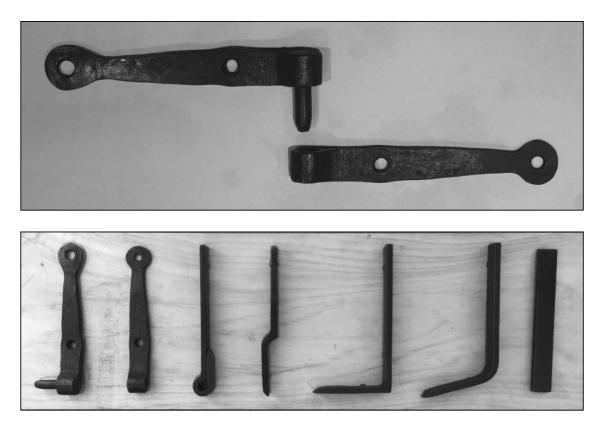
Finish Closing

Eye Around

Mandrel

The pintle does not need to be welded with a full, tight 360° weld. Essentially, it just needs to be tack-welded to ensure it doesn't work its way out in use. Thus, focus the weld at the bottom. Don't point the pintle down into the fire, or it will burn!

Once the pintle is in place, cut the hinges to the appropriate length from the parent stock. Finish the ends with finials of your choosing, and punch holes as needed. Note that punching a hole through the welded area will add additional strength when the hinge is mounted.



That's it! Congratulations, you've made a welded hinge. There are many different styles, so do some exploring. *And have fun!*





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ALEX RUIZ TEXAS KNIFE MAKERS GUILD FORGED IN FIRE CHAMPION

JAMES HUSE HUSE KNIVES FORGED IN FIRE CHAMPION

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8:00 AM OPEN TO THE PUBLIC

ALL CLASSES OPEN, VENDORS SET UP, FOOD TRUCKS ON SITE

\$10.00 PER PERSON FREE FOR CHILDREN UNDER 10

ENTRY DONATION TICKET USED FOR HOURLY DRAWING FROM 2:00 PM TO 6:00 PM



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Saltfork Craftsmen Artist-Blacksmith Association

SATURDAY, APRIL 25

8:00 AM

ALL CLASSES OPEN, VENDORS SET UP, FOOD TRUCKS ON SITE

\$10.00 PER PERSON FREE FOR CHILDREN UNDER 10

ENTRY DONATION TICKET USED FOR HOURLY DRAWING FROM 10:00 AM TO 5:00 PM

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BOLSTERS & GUARDS

JIM POOR

BLACKSMITH FORGING TONGS

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TEXAS SKI RANCH

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VENDOR & EXHIBITOR LIST



Saltfork Craftsmen Artist-Blacksmith Association





ABANA 2020 Conference

Washington County Fairgrounds 392 Old Schuylerville Rd. Greenwich, NY

Information Available at

www.abana2020.com abana2020 on facebook abana.org **ABANA** Central Office 423-913-1022

We will be featuring 8 disciplines of Smithing with at least three talented Smiths in each.

ART: with Daniel Miller, Zeevick Gotleib, & Ellen Durkan

Historic: with Peter Ross, Dick Sargent, & Bob Valentine

TOOLS: with Patrick Quinn, Jeffery Funk, & Eric Schatzel

KNIVES: with Matt Parkinson, Lin Rhea, & Jeff Helm

POWER: with Bruce Jarrell, Steve Parker, & Randy McDaniel

FARRIERS: with Dave Farley, Roy Bloom, Tom Willoughby

TEACHING: with Mark Aspery, Gerald Boggs, & Randy Augsburger

FARM: with Joel Tripp, Judson Yaggy, Derick Glaser, & Lucian Avery

The Patient Order of Meticulous Metalsmiths with Tom Latane, Peter Renzetti, Carl Close & other exceptional craftsmen.

The lecture series will be featuring such notables such as Albert Paley, Howard Schechter, Doug Wilson, Bill Hochella, Leigh Morrell & members of the demonstrator staff.

There will be a youth teaching venue and family programs for the non blacksmiths.

The raffle will include a BAM box donated by Pat McCarty and a Big Blue power hammer.

The Iron in the Hat is pleased to announce the return of Len Ledet with his special blend of entertainment and wackiness.

The Saturday evening banquet is back with a New England style BBQ.

We will have a beer tent serving a local micro brew and a local distiller will be pouring our own signature Slack Tub bourbon. Collectable laser inscribed 2 liter wood casks can be purchased filled with our special label. See the website for information on the cask which can only be pre ordered and can only be picked up at the conference.

Early registration is now open at :

abana2020.com



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ABANA 2020 Conference

Washington County Fairgrounds 392 Old Schuylerville Rd. Greenwich, NY

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Scheduled Activities

Demonstrations all day every day at our 8 demo sites. There will be a riveting lecture series featuring such notables such as Albert Paley, Howard Schechter, Douglas Wilson, Bill Hochella, Leigh Morrell, and others Join the party at the Blacksmith Arms Pub serving local micro brews. We are proud to announce our own private label Slacktub Bourbon. Available by the glass, bottle or collectable 2 liter wooden cask. See the website for information on pre ordering the laser inscribed cask. These must be pre-ordered.

Breakfast, Lunch, Dinner will be available onsite from a variety of food vendors and food trucks.

There will be extensive tailgating, most under roofs. The northeast is the epicenter of the largest accumulation of

blacksmithing equipment in the country. If you can dream of it, it will likely be at this conference

We are inviting all the vendors we have come to expect at an ABANA conference.

There will be nightly competitions organized by Mark Aspery to be held at the Teaching site

Of course there will be Iron in the Hat hosted by Len Ledet. We also will be having a large item raffle featuring a Big Blu power hammer and Pat McCarty is donating a BAM box once again for this event. An added bonus will be it is

going to be filled with handmade tools from some of the finest blacksmiths in the country.

We are hoping for a strong outpouring of support for the curated gallery exhibition and hope to have items donated to the live auction of art & craft scheduled for Saturday night.

For this conference the banquet will be revived with a Saturday night BBQ northeast style, included with registration. Come and enjoy the warmth and fellowship of blacksmiths from around the world. This will be a party the likes of which has not been enjoyed at an ABANA conference in some time.

Don't miss what is sure to be an event that will be talked about for years.

For Sale: For Sale by James L. Kirkland, Jr. Contact by E-mail if interested.



For Sale: For Sale by James L. Kirkland, Jr. Contact by E-mail if interested.



For Sale:

Blacksmith Tools, Anvils, Trip Hammer and Other Items

Call Shirley at 580-365-4470 Fletcher, OK

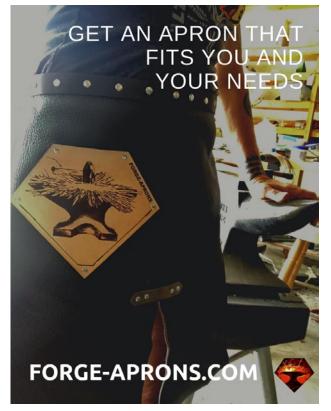
Shirley's late husband was Saltfork member Bob McKelvain. Detailed list of sale items, photos or prices are not currently available. Contact Shirley for details.

For Sale: 15 Lb Tire Hammers:

\$1,200 for everything from the base plate up. Two rounding dies included as standard. Has 1/2 HP 115V Motor. Contact: David Barfield - 580-595-1476



Saltfork Craftsmen Artist-Blacksmith Association



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Bill Davis Forge Welded Tomahawk DVD

This DVD is now available to members for a minimal cost (cost of DVD's is minimal to cover reproduction and shipping if applicable.) Contact the SCABA Librarian, Don Garner, if you would like to get a copy of this DVD. Don Garner: 580-302-1845 (Call or Text. If you get voice mail, Please leave a message.)



Thank you to our Conference Vendors who gra-

ciously donated items for the Conference Auctions!

Their contributions helped

to support SCABA. Please consider patronizing these vendors to

return the favor!

For Sale:

Tire Hammer Plans by Clay Spencer

Send a check or money order for \$30 US to Clay Spencer, 73 Penniston Pvt. Drive, Somerville, AL 35670-7013. Or send \$32 US to Paypal.Me/ClaySpencer. E-mail me at clay@otelco.net. PDFs will be e-mailed outside US. Phone 256-558-3658

Beverly shear blades sharpened

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

For Sale: I have numerous old tools and collectible items of various kinds including blacksmith related tools and equipment. Too many tools to list them all. Inventory is always changing. Contact: Craig Guy (SCABA Member), Piedmont, OK Cell Phone: 405-630-7769 (Call or Text)

SCABA Library DVD's Available:

This is a partial list of the DVD titles available to members from the SCABA Library. Contact the Librarian (Don Garner) if you would like to obtain a copy of any listed title or if you have questions on any other titles that may be available. Additional titles are listed on the website. DVD's are available for a very minimal cost to offset the blank disc and cases or sleeves. Shipping cost applies if you need these delivered by mail.

- Robb Gunter Basic Blacksmithing parts 1,2,3 and the controlled hand forging series
- Clay Spencer SCABA conf.2013 pts. 1,2 and 3
- Jerry Darnell 18th century lighting, door latches and hinges
- Brent Baily SCABA conf. 2011
- Mark Aspery SCABA conf. 2011
- Robb Gunter SCABA conf. 1998
- Robb, Brad and Chad Gunter 2009 joinery, forging, repousse, scrollwork, etc.
- Bill Bastas SCABA 2002 pts. 1 6
- Jim Keith SCABA conf.2007
- Power hammer forging with Clifton Ralph pts. 1 5
- Doug Merkel SCABA 2001
- Bob Alexander SCABA 2008
- A. Finn SCABA 2008
- Bob Patrick SCABA 2004
- Gordon Williams SCABA 2010
- Daryl Nelson SCABA 2010
- Jim and Kathleen Poor SCABA 2001
- Ed and Brian Brazeal SCABA 2006
- Ray Kirk Knives SCABA 2002
- Frank Turley SCABA 1997
- Frank Turley SCABA 2003
- Bill Epps SCABA 2003
- M. Hamburger SCABA 2007

Librarian: Don Garner 580-302-1845 (Cell) Call or Text. If you get voice mail, please leave a message.

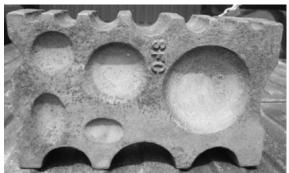
Have an Item for Sale? Item Wanted?

If you have any items that are appropriate for Blacksmiths that you would like to list in the Shop and Swap section (or items you are looking for), please send me your description, contact info, and any photos that you have.

SCABA Swage Blocks

\$200.00 plus shipping. (Same price to members and non-members.)





SCABA Floor Cones

\$200.00 plus shipping.

(Same price to members and non-members.)

To order swage blocks or cones, contact our distributor:

Nolan Walker at Nature Farms Farrier Supply in Norman, OK.

405-307-8031

Club Coal:

Saltfork Craftsmen has coal for sale. Coal is in 1-2" size pieces The coal is \$140.00/ ton or .07 /pound to members. **No sales to non-members.**

NW Region coal pile located in Doug-

las, OK. If you make arrangements well in advance, Tom Nelson can load your truck or trailer with his skid steer loader for a fee of \$10 to be paid directly to Tom. Tom has moved his skid steer and must now haul the loader to the coal pile to load you out, hence the \$10 charge. You may opt to load your own coal without using Tom's loader. The coal can be weighed out at the Douglas Coop Elevator scales. Contact Tom Nelson (580-862-7691) to make arrangements to pick up a load. Do not call Tom after 9 PM!! Bring your own containers and shovels. Payment for the coal (\$.07 per pound) should be made directly to the Saltfork Treasurer.

NW Region Coal Pile in Thomas:

Don Garner now has a new pile of club coal available for sales to SCABA members. The shop is at 23713 E 860 Rd in Thomas, OK. (One mile west, then one mile north of Thomas.) Contact Don at 580-302-1845 (Cell Phone) to arrange details for purchases.

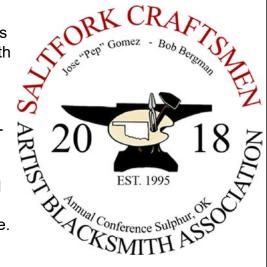
NE Region coal location: ****NOTICE:****

Charlie McGee is no longer hosting the coal pile in the NE region. If you would be interested in hosting a location in NE, let one of the SCABA Board members know.

S/C region coal location: Club coal is now available at Norman at Byron Doner's place. Call Byron to make arrangements to come by and get coal.

SCABA T-Shirts!

2018 Saltfork Collector T-shirts are available with the 2018 Conference Logo. \$20.00 (plus shipping if applicable.) Contact Josh Perkins to check sizes and quantities that are still available.



Legacy SCABA T-shirts and long sleeve denim shirts are also available on clearance while supplies last. T-Shirts are \$5.00 and Denim Shirts are \$10.00. (Plus shipping if applicable.) Contact Josh Perkins to check sizes and quantities that are still available.

If you would like to purchase shirts, contact Josh Perkins (918) 269-3523.



Have an Item for Sale? Item Wanted?

If you have any items that are appropriate for Blacksmiths that you would like to list in the Shop and Swap section (or items you are looking for), please send me your description, contact info, and any photos that you have.

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	-	Date		
First Name			Last Name	
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City				StateZip
Phone (Best N	Number to Cont	act) ()		
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You do NOT	need a Paypal ac			l registration/renewal is immediate.
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Date: Month Name: Meeting Addr Host Phone (I Host e-mail Trade Item: Lunch Provide Please provide	NE ress: Best Number to ed: e detailed direct asis.	Day Contact) (_ Yes ions and/or a ma itsmen Regional Ave	SW	NW

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