N.J.B.A. Newsletter

NJBA Volume 20, Issue 1 02/02/16
http://www.njblacksmiths.org

Editors Soapbox

News letter is late, so I apologize. We have a new web address do to problems the old server was having,

www.njblacksmiths.org

NJBA is twenty years old this year!

We have some meets with opportunities to learn, forge or teach others what you know. Come out and chat or get your hands dirty! Let's boost the attendance at the upcoming meets. **If you know of a demonstrator you would like to see or recommend contact a board member.** We need to boost the activity of our members! If more members do a little we will have a stronger organization. **If you are interested in helping please contact one of the board members listed on page 2.**
Larry Brown, Editor

Upcoming events for 2016

Get you calendars out and mark these events down. Please bookmark our web site and check for updated meet information. Remember most of our meets have an "Iron in the Hat" drawing, so be sure to bring something. Meet information starts on this page and continues on page 3.
At the moment there are no confirmed meets Keep an eye on the web site
Middlesex County Fair—We are looking for members to commit to helping cover our time there. You do not have to be an experienced smith to help man or woman this event! Contact Bruce Freeman if you want to help, please read the info on page about the fair.

THE BARNES FOUNDATION STRENGTH AND SPLENDOR:

About mid December I went to see the Barnes Foundation museum and the exhibit Strength and Splendor. I have had the book on the works in the museum Musée Le Secq des Tournelles in Rouen, France for at least 25 years and have sat and looked at the pictures and tried to see how the items were made too many time to count. Although this only had a small amount compared to the museums holdings there were still many items that could be viewed at a very close distance and many from more than one side.

Some pieces were much smaller than I imagined making the detail that much more interesting and many of the locks and keys were masterpieces from locksmiths long ago when the guild system was in place in France.

I admit I wanted to pick up and handle some of the more exposed pieces, but under the watchful eye of security I refrained, not wanting to be escorted out.

If you have not renewed, this is probably your last newsletter!

The New NJBA Web Site!

The NJBA Web Site is:

http://www.njblacksmiths.org

The Newsletter is at:

http://www.lightningforge.com/njba/index.htm

or use the link on the NJBA web site for the newsletter.

Official NJBA Address

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NJBA Board of Directors

Directors are only available with hard copy

I was amazed to see the amount of riveting and notching used in the pieces where I had previously assumed forge welds and couldn't tell from the pictures. The museum had published a book on the exhibit which I felt was a good buy to help remember all I had seen.

The rest of the museum is a fantastic collection of art works specializing in work by Renoir and other painters. Mixed in in various themed assemblages were sculptures, furniture, household items from the past and quite a bit of mostly American ironwork. They sell a book on the artwork in the museum, which I also bought to get a better look at some of the ironwork displayed in the museum.

Although the Strength and Splendor exhibit has closed there is still a large amount of iron work to be viewed in the museum and I would recommend stopping there if you are going near Philadelphia.

Middlesex County Fair, 2015

by Bruce Freeman

On Monday, Aug. 3, after applying some finishing touches to the lightweight forge equipment, I loaded it all up -- including three forges, firepots, hoods, flues, blowers and stands, anvils and anvil stands; one vise and stand; two 10-gallon slack tubs; two canopies; plus coal, kindling and hand-tools -- into my little Nissan pickup truck to take to the Middlesex County Fair.

At about 3:30 PM, Larry Brown, Tom Majewski, and I met at the fairgrounds to set up. In about 45 minutes, we'd unloaded my truck, set up two canopies, three lightweight forges, complete with hoods, flues, and blowers, three 55-lb anvils and stands, and one leg vise. Aside from the anvils, no single item to be moved weighs more than 40 lb, so the work was light. By the time NJBA members Damian and Heather Toryak (and kids) arrived at about 4:30 PM, there was nothing left to do but to fire up the forges, which we proceeded to do.

I began to re-forge the stanchions we use around the perimeter of our site to support a rope to exclude the public, a job I didn't finish till Tuesday. (The pigtail coils on top of some of these were too tight to permit larger ropes to be strung without considerable finagling, and someone, sometime, had bent up the step flange which was intended to be used to sink the stanchions into the ground -- resulting in stanchions difficult to set up by foot or hammer.) Tom made a handle for another tin can, giving us a second water dipper. Larry made us several stakes from 3/8" rebar, which will fit inside the 1/2" holes on the legs or bases of some of the equipment.

I wasn't keeping tabs on what Damian made on Monday, but across the three days he was there he made two musical triangles. I also worked on a ladle made from a 4" square

piece of 1/8" steel, but I haven't finished the handle for it yet. Wednesday evening I did a quick demo of a penny-end, mainly for Damian's benefit.

The fair itself was the same as always, with wrestlers on one side of us and musicians on the other, crafts demonstrators (leather, weaving, rug-making, etc.) opposite us, a barn full of old farm and machine tools behind them, Boy Scouts and an arena with acrobats to the north. There were also lots of food vendors, commercial and community-interest booths, rides, games, 4-H animal displays, etc. We've been lucky with the nearby musicians -- these two fellows sing old country songs and do a good job of it, albeit they do some songs a couple times across an evening.

Damian, Heather and I started to strike the site on Wednesday, and the two of them did as much as possible, including putting up both canopies, before leaving in time to get some sleep before their respective workdays on the morrow. They offered to stay later, but I knew I couldn't bring my truck back onto the fairgrounds till after the 11 PM closing (and indeed it was closer to 11:30 that I was able to drive in), and I knew I could load all the equipment by myself -- which would have been an unutterably impossible task with the old equipment. (Nonetheless, I don't plan to repeat this experience, mainly because the weight is a bit too much for my old pickup truck, which I discovered needs new rear shocks!)

The Fair complicated matters a bit by turning off the overhead string of lights before I finished; but, fortunately, the main lights proved adequate.

Last year, by contrast, we transported our (heavy) equipment in the old NJBA trailer -- which weighed in, loaded, at 3500 lbs and required at least a heavy pickup truck with a break actuator to haul -- and it took four of us at least an hour to set up. Some of that work was heavy -- like moving the (125-lb +) anvils and the heavy oak stumps they sat on, and setting up the heavyweight blowers and vises. Exhausting work! The following Friday, seven people broke down the site and stowed the equipment in the trailer, though with that many working none of us was exhausted. This level of effort has been inhibiting our demonstrating! That heavy equipment LOOKED fine, but was entirely disproportionate to the light forgings we do at demonstrations.

Obviously, a lot has happened, vis-a-vis our equipment, since last August. We've held two successful workshops to fabricate anvil stands, firepots and folding forge tables.

We've had some additional Monday evening sessions at Marshall's forge, finishing up some of those things, and in addition I have taken home a lot of it to work on myself. In particular, fabrication of the legs for the folding forge tables did not go as smoothly as I'd expected, and we had to make some modifications, after which I still had to take them home to fit the things up in a multi-step process that has resulted in three working forges so far.

* * * * *

Middlesex County Fair 2016

It was only two years ago that NJBA was able to set up at the Middlesex County Fair on the Sunday before the fair opened, then demonstrate from Monday through the final Sunday, before loading the trailer and hauling it out that evening. This was great for NJBA, as our demonstrations attracted a lot of interest from the crowd; however, it took manpower, which we got it from participation from the membership.

Then two things happened: (1) David Macauley died, depriving us of the person who had championed this event. (I had always tried to support the event, but it was David who worked alot it.) And (2) the fair changed its Sunday closing time to 10 PM, making it im-

possible for us to bring the trailer in for loading till after that time, which, in turn, lost us the entire weekend, due to the need to get a truck there to tow the trailer. (We were able to get that help on the Friday evening.)

Well, the lightweight equipment has changed that, but this year I found I could not generate many commitments to attend. I rather suspect that if NJBA committed to being there all week, we'd get a lot more participation from members and generate a lot more interest from the crowd, but there's a limit to human endurance. Since I am just not up to running this event for five evenings plus the full weekend, I went with the commitments I got -- for Monday through Wednesday, our requisite three days. (We're paid for three days.)

Contact Bruce Freeman to commit to next years fair! A lot of people are not needed to accomplish keeping this event going. You can be a beginner and get forging experience while helping with this event. Larry Brown

Forge Hoods for the Lightweight Forges

by Bruce Freeman

Back in August, I prototyped a forge hood from stainless steel for use with the new lightweight forge tables we're making. The job went pretty well and we used that hood at the Middlesex Co. Fair, along with the two I'd made from galvanized steel many years ago. Rather than schedule a workshop for the forge hoods, I solicited assistance at the 8/24/15 and 8/31/15 Monday Night Open Forge meets at Marshall's shop. Damian Toryak joined me both days, and Tom Majewski on the second day. Despite some problems with the HF metal shear, we succeeded in cutting out the remaining hood blanks. On two of these, we then folded up the tabs and made the two creases to square off the base, then rounded the top, ready for riveting and for receiving the collar piece. One more we did some work, but not so much, and the other two

Since then I finished the rough forges -- tabs, creases, and rounding the tops. I also made five more collars to receive the flue pipes. All these pieces I took home to my shop to work on, but autumn painting chores and winter weather delayed me till recently. So far I've welded up the collars, but I still need to assemble the hoods with rivets -- the work of a day or two more.

Princeton Open Forge Meet, Oct. 10, 2015

by Bruce Freeman

http://www.princeton.edu/prism/blacksmith_2015/photos/index.xml

Only three blacksmiths turned out for this event this year, but the turn-out among Princeton students was excellent. Billy Barrett arrived early with his forge and anvil, as well as a display table showing his work. Matt Vallon (NJBA member and grad student at Princeton U.) arrived with a gas forge and anvil about the same time that I showed up with three light-

weight coal forges, one leg vise, four anvils, coal, slack tubs, and tools. I also brought three collapsible canopies, but it was a bright sunny day, so we only erected two of them, to provide some relief from the sunshine.

Princeton U. provided the steel stock, but Billy and I had to cut it down from 5' lengths, for which purpose we each had brought angle grinders with cut-off wheels. Don Schoorman (the Senior Technical Support Staff member who runs the metallurgy lab), Mike Wang (president of the PUMRS) and Sandra Lam (Academic Program & Communications Coordinator) were present to provide assistance and/or to take photographs.

Princeton professor Craig Arnold gave a talk to the metallurgy club (the Princeton U. chapter of the Materials Research Society)

while we fired up the forges. Then Billy gave a basic blacksmithing demonstration to the crowd of students. Matthew tended to a small group, who seemed to be trying to make swords out of the mild steel stock provided by Princeton. I ran around keeping the other three fires burning while introducing individual students to forging. With only three experienced hands tending the students at the forges, things got a bit hectic.

Having been at it since early in the day, I took a break around 1 pm to enjoy the lunch Princeton U. provided -- cheeseburgers, hotdogs, chicken, various salads, drinks, Italian ices, cookies and brownies. Then I got back to work, and started cleaning forges of clinker, while rebuilding the fires that were

consistently neglected by these novice blacksmiths.

Despite the crowds (sometimes four per forge!) and hubbub, the students seemed quite taken with blacksmithing. Several tried twisting square stock. One made a hook and punched it. Billy coached others in more complete projects, like wall hooks. I kept telling new groups of students to feed coal into the fires from the perimeter, but kept encountering hollow fires throughout the day. Eventually, I demonstrated the "Hockenbury Heart" (see separate article) to a few of the students.

We started shutting down around 4 PM, but had hangers-on working nearly 1/2 hour longer. Eventually, we prevailed upon them to shut things down, and we started breaking down. All in all, it was a very successful open forge meet.

The Hockenbury Heart

by Bruce Freeman

Many years ago Luke Gasoir showed me a clever way to make a heart of round bar stock. In Luke's technique, you fold the rod sharply back on itself and weld the tip where it touches the rod, giving you something resembling the eye in an enormous needle.

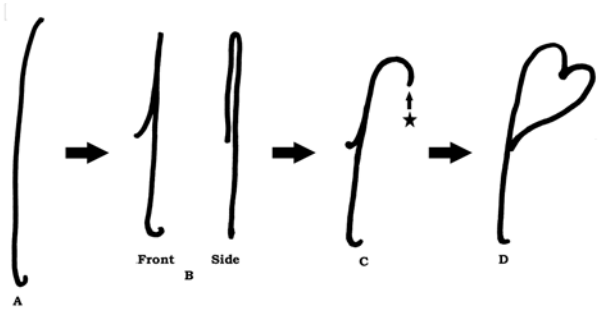
Next you expand the middle of this over

Figure 1

the horn till it's quite wide and rounded. Finally you flip the tip over, and, voila', you have a heart. I've done this a few times, but always had trouble getting the heart to come out symmetrical.

Recently, it occurred to me that when kids make Valentine's Day hearts in school, they fold red paper in half, cut the outline of one side, then unfold -- automatic symmetry. It occurred to me to try this in iron by bending into a hook the doubled rod from Luke's method and then unfolding the hook to reveal a heart. I had planned to try this, but before I could, I attended the Lord Stirling 1770s Festival (held at the park of that name) which featured a variety of craftsmen.

Figure 2



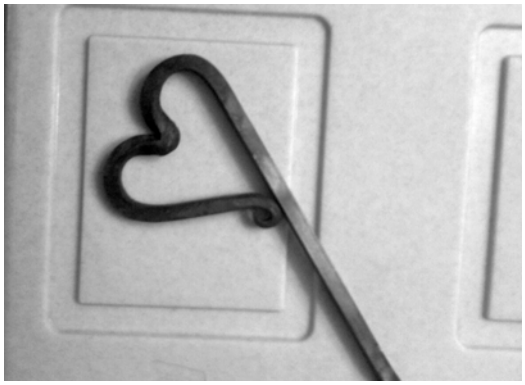


Fig 3

Amongst these was blacksmith Bruce Hockenbury, to whom I introduced myself. He proceeded to show me a trick to make a heart that was based upon the same Valentine's heart trick I had thought of. His approach was simpler, though, because it requires no welding. He gave me the heart (made as the handle -end of a back-scratcher) that he made for this demonstration. (See Fig. 1)

I've since made a couple of these hearts and they're pretty easily made. The first (Fig. 2) I made of round stock as a demo to Damian Toryak. The second (Fig. 3) I made of square stock as a demo at the Princeton U. open forge day.

The following description of how to make this heart is mine -- Bruce Hockenbury gets the credit, I take any blame. Take about 18" of 1/4" to 1/2" round or square stock, and form the ends as you prefer. (See Fig. 4A.) Bend one end as shown in Fig. 4B. Curve the middle of the bend as shown in Fig. 4C. Now heat only the end of the curve, as indicated by the star and the small arrow in Fig. 4C, and bend open the heart as in Fig. 4D.

Trivet

NJBA Holiday Party

NJBA closed the year on December 6th with our traditional Holiday Party.

Once again Marshall and Jan graciously hosted the party. There was a very good turn out and the food and the selection was great.

Many thanks to Marshall for opening their home to us and making this a great party!

Northeast Blsacksmiths Meet At Ashokan NY

http://www.northeastblacksmiths.org/
The Spring demonstrator is Carl Close,
April 22, 23, 24 For more information check the website

Blacksmith Guild of Central Maryland's 28th Annual Blacksmith Days, May 21 & 22, 2016, at the Carroll County Farm Museum, Westminster, MD
http://www.bgcmonline.org/index.php?bsd2016
Featured Demonstrators:
Sheldon Browder and James Michael Walker
2016 Forging Contests 1. Forged wrapped eye

tomahawk – Only the tomahawk head will be judged 2. Forged candle stick or holder 3. A decorative twist sample – no longer than 6 inches *Contest items must have been forged since BSD 2015; Forging stations available on site to complete contest items; Demonstrators will judge contests on design, technical details, and overall execution; The judges decisions are final; First, Second, and Third prizes will be awarded for each forging contest.
Flyers and registration forms can be downloaded from the website. Please share with anyone who may be interested.
This will be another outstanding event. Please let me know if you have any questions.
Ted McNett President BGCM

ABANA 2016 Conference Salt Lake City

July 13-16, 2016

It only happens every two years and you won't want to miss this one!
It's time to plan to attend the 2016 biennial conference of the Artist Blacksmiths Association of North America, to be held at the Utah State Fairpark in Salt Lake City. The site boasts a large tree lined grass area for the demonstrations.

The marketplace and lectures will be inside air conditioned spaces. There is on-site space for camping and RV's. Salt Lake City offers a Trax rail system that runs from the airport to downtown, with the Fairpark as one of the stops.

There are many hotels an easy walk from any of the stops and world class restaurants downtown besides.

The theme for the conference is Education and we've designed a program to promote hands on learning. There are many classes with projects ranging from beginner to advanced. Projects such as Animal Heads, Tongs, Forge Welding, Damascus Billets, Repousse', Fold Forming, and Patination will all be presented as hands on classes.

This year there is a dedicated Youth Tent, for the younger aspiring smiths to try their hand at projects. We will have a railing workshop with John Barron, of which the railing will be installed at the handicap ramp of the historic Pioneer building site at the Fairpark. The workshop will cover measuring the site, designing the railing, forging and assembling all the parts, and finally installation on Sunday morning.

Jake James, This year Farrier Products Distribution has sponsored a tent for Farrier demonstrations. Some of the biggest names in the farrier world will be showing off their skills. . and it's all forging not shoeing horses!

The Gallery reception Friday night will include hors-d'oeuvres, and a plated dinner Saturday night preceding the fine art auction. You will have a chance to bid on projects that were made during the conference along with many other items donated by talented smiths.

Also, don't forget to book your room now! Salt Lake is a popular place that time of year and rooms go fast. Even if you aren't sure, you can hold your reservation with a credit card and it won't cost anything if you cancel before the conference.
https://www.abana.org/Conferences/2016/index.html Central Office at (423) 913-1022

Demonstration Opportunities and Help Wanted

Waterloo Village is looking for an additional part time Blacksmith. This person does not have to be a master smith. Basic smithing, willing to demonstrate and interpret for school children and general public. Please see below and pass on. Waterloo is located just north of I 80 exit 25 more or less central to north Jersey.
Ron Jani

Hello Ron,
We are looking for a second part-time Blacksmith to work and care for the blacksmith shop at Waterloo and do demonstrations. Generally the hours would be during Spring, Summer and Fall and weekend availability is a MUST.
If you know anyone who might be interested please pass this along.
Andrea L. Proctor
Resource Interpretive Specialist
Waterloo Village Historic Site
waterlooris@gmail.com
973-347-1835 Waterloo Village office
609-203-4140 Waterloo Village cell

Pennsville Historical Society
My name is Don Steinhauser and I am a member of our Pennsville Historical Society located in Pennsville NJ which is across the Delaware River from New Castle, Delaware. Each , early summer on the first Saturday of June, this year June 4th , we open our Victorian era farm house and the grounds to the public to experience life in 1800's. We have various exhibits and other activities to share with the public. Blacksmithing was a key component of life in the bygone days and we are wondering if there are any blacksmiths nearby who would be interested in participating. Farm Day times are 11:00 to 3:00 on June 4th.
I'll await your reply.
Regards,
Don Steinhauser
Ph 856 217 1973
Email steinhauser80@comcast.net

Hi all,
I live in south Jersey near Pennsville and responded to Don S above. We agreed that I would set up a simple demo there in June.
I have been looking for a decent, vintage portable forge for a while. Does anyone have one for sale or recommend a source?
Thanks in advance,
Mark Scott
609-876-9507

I received this email, if anyone has stuff to sell especially near him, please contact him directly, Larry Brown

Ted McNett
<stonejugforge@embarqmail.com>
I received a call from Jay Patrick looking to buy a vise and punches for 16 ga metal, possibly other tools. He lives on Long Island so Maryland is a little bit of a hike. His number is 631-878-8572. Not sure if you have any info that could help him out.
The Blacksmith Guild of Central Maryland, Inc.

I received an odd piece of mail, recently. This fellow, G. Apgar, is apparently a historical reenactor of the Revolutionary period. He's seeking to get some ironwork made. He seems also to be interested in inducing a costumed blacksmith demonstrator to come out for this Piscataway event. If any of you are interested in either of these, or know someone who is, let me know and I'll provide more details. Bruce Freeman
---------- Forwarded message ---------- From: Debbie Apgar <dapgar@rulmail.rutgers.edu> Date: Tue, Feb 9, 2016 at 2:26 PM Subject: From George Apgar To: freemab222@gmail.com
Hi, This is his sister Debbie, writing a note from George Apgar
FM:1776 Village Cokesburg Blacksmith Jacob Bucket-Ebgert Colonial 18th Century NJ Blacksmiths Wanted
1666 Happy 350th Birthday Piscataway-Newark
contact: 732 297-6686 or 732 745-3030 X308 for work-work-work

Controlled Hand Forging Lesson 11, part 2

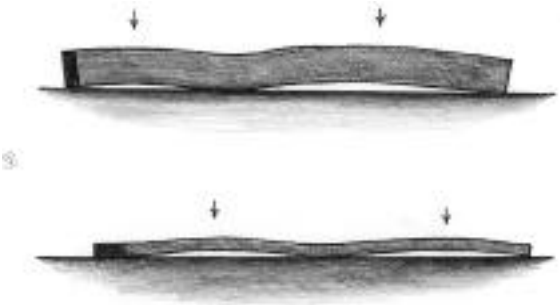
Drawing Down- Part Two

by Jay Close
Illustrations by Tom Latané,
photos by Jay Close and Jane Gulden
Lesson # 11- Drawing Down- Part Two

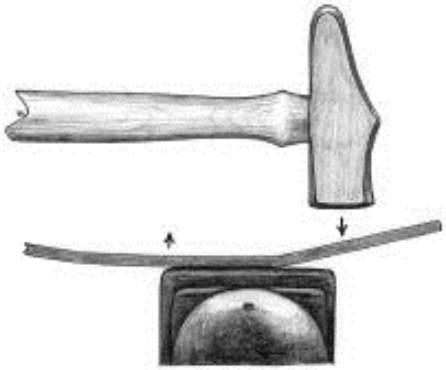
Definition: Reducing the cross-sectional area of a bar.
Lesson: Resizing a 1/2 inch square bar into a 1/4 by 5/8 inch rectangular bar by hitting the bar "on the flat."
Troubleshooting
Straightening

Straightening could be a lesson of its own. These comments will get you started.

For the sake of these directions, assume that bends, twists and dimensional issues are all independent problems that can be addressed independently. This is far from the case in reality.

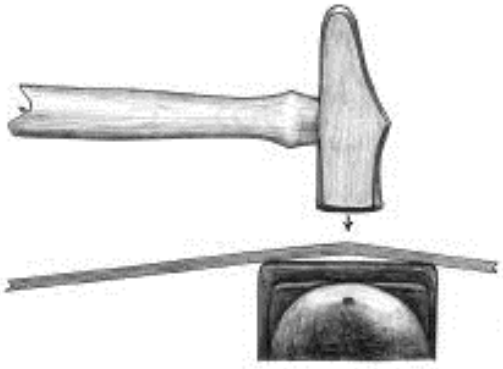


Areas to address for straightening.



Ineffective approach to straightening

If you have kept the bar relatively straight as you worked it, little additional attention to this is needed at the end of reshaping. That needed attention can be done at room temperature.



Ineffective approach to straightening

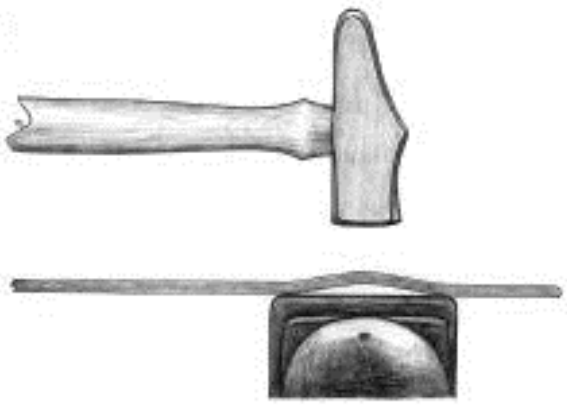
Straightening is not a single operation but a series of corrections starting from the major working toward the subtle, a process of progressive refinement.

Approach straightening with a strategy. Some work from one end of the bar to the other. Some start in the middle and "chase" any crookedness out to the ends. These approaches work well for subtle correction.

Generally it is best to tackle the big problems first, then work on the more subtle ones.

Decide which plane of the bar needs most correction. Start where the most work is needed, sorting out the major issues first.

In practice you will likely work back and forth, correcting problems both on the edge and on the face.



An isolated bend in an otherwise straight bar.

Secondary bends revealed after correction of the primary bend.

Putting the bar on the anvil with the concave part of the bend up makes for ineffective straightening. The correcting blow just levers the holding hand up. This works much better if the bar is hot.

More effective is to place the bend with the convex portion up. The bend is supported on either side by the anvil creating a “bridge” effect. Then your correcting blow will drive the bend down and straight.

Experiment making your correction different places and orientations on the anvil face. One correction might need to be angled across the face to support a long, gentle curve. A more "spot" correction can be made with a sharp blow over the hardie hole.

When straightening, as in all forging, be decisive. Inspect your work. Decide where the problem lies and how to hold the work on the anvil to correct it. Take one, maybe two, correcting blows at the appropriate spot and check your progress.

Avoid a multitude of random, light, pecking blows. Hit with authority and immediately inspect your work. Always seek to make the needed changes with as few hammer blows as possible.

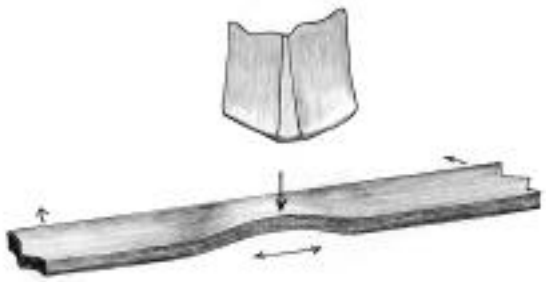
Sometimes correcting one problem reveals another. In the case below, correcting one bend as illustrated shows there are really two more bends that need addressing. Once the bar is fairly straight along one plane, repeat the straightening on the other. Recheck the bar for straightness and start to work on more subtle problems. To accommodate the inevitable thick and thin places, and wide and narrow areas, keep in mind that the goal is the mass of the bar evenly distributed around an imaginary center line.

Dealing with twist:

If you have kept after the twisting as you worked there will be little remediation needed when finished.

A variety of small problems can mask a more subtle twist, so it is often best to work on the small problem areas first. You can then be left with one or two gentle twists to correct at the last.

If the twist is localized so it can be supported on either side by the anvil, treat it like a bend. Put the twist up and hit an authoritative corrective blow.



Correcting a localized twist.

This kind of twist and this kind of correction will show that the bar is actually bent at that spot. After flattening the twist, you will have to remove a bend.

For twists that can not be readily supported on either side by the anvil, the simple cant of the bar that worked well while the iron was hot is unlikely to be effective cold.

Photo 11: Correcting a twist with a pair of tongs and the bar held in the vise horizontally.

Sometimes you must resort to the vise and a pair of tongs or twisting wrench to eliminate twist. Situations will vary, but working from the middle of the bar out to the ends is frequently convenient.

Photo 12: The bottom bar has been burned. The top bar has been burned then slightly up set and reworked – alas, the damage has been done.

Hold the bar with the twist exposed just past the vise jaws. Place the tongs or wrench at the point needed to make the correction and bring the twisted bar in alignment. Hold the bar either vertically or horizontally, as seems most handy.

Texture

Your quest for a smooth, hammered texture on the bar begins with where you heat it in the fire. Heat the bar in the neutral part of the fire. If it is poked down into the oxidizing zone, you will have increased scale and a smoothing challenge.

Do not overheat the bar. If your bar looks like a Fourth of July sparkler when taken from the fire, you have pitted its surface and made a smooth texture almost impossible, particularly if you are already near final dimensions.

Photo 13: The marks left on the bar came from this poorly dressed hammer face.

Hint: If you should overheat a section of your workpiece, immediately cool it in the slack tub to below burning temperature and get to work. You may save the bar.

Photo 13A: Can you see the corner that marked the bar?

If your hammer face is too flat or has sharp edges, this too will make a smooth texture challenging.

Keep the anvil free of scale as you work. If the bar comes from the fire excessively scaly, scrape it clean on the corner of the anvil using the hammer to apply downward scraping pressure. Do not take much time doing this as you are wasting the best, softest part of the heat. But it is sometimes necessary. A wire brush could be employed, but that needlessly involves picking up another tool and delays getting to work with the hammer.

Photo 14: Scraping along a sharp anvil corner to get rid of scale before forging. Use the hammer head to apply downward pressure.

Remember to work all sides of the bar. Not only is this critical for achieving the proper shape, but it means that scale is not being trapped between the work and the anvil where it can impress an undesirable texture.

Finally, work the bar down to a dull red. The bar has stopped scaling by then. This is your opportunity to work the surface without troublesome oxide.

Photo 15: Four sections of re-sized bar exhibiting different textures.
From left to right:
A. Smooth, even texture;
B. An acceptable texture from a hammer with a more radiused face
than the first example;
C. A fairly even texture but definitely not smooth;
D. A poor texture achieved by heating in the oxidizing part of the fire, not cleaning the anvil of scale, and not working all sides of the bar to a dull red heat.

Photo 16: A close up of D.

Photo 16A : A close up of "C."

Photo 16B: A close-up of "B."

Photo 16C: A close up of "A."

FORGING DYNAMICS

Cross-sectional area:

Comparing cross-sectional areas is a good way to compare the masses of two different bars or two different shapes.

For example, suppose you wondered whether a bar 1/2-inch by 1/2-inch had sufficient material to allow forging into a bar 1/4-inch by 1-inch.

Multiply the width times the thickness of each bar–

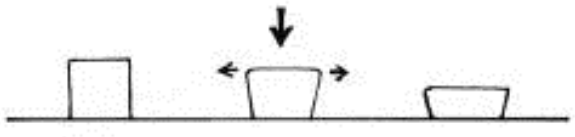
1/2-inch times 1/2-inch equals 1/4-inch

1/4-inch times 1-inch equals 1/4-inch

Each bar has the same cross-sectional area and it seems like you should be able to get the needed 1/4 inch by 1 inch bar from the one that is 1/2-inch square.

However, hitting with the face of the hammer spreads the work all directions from the middle of the face. Material is used stretching the bar longer as well as wider. In practice, you can not readily forge 1/4-inch by 1-inch bar from another bar with equal cross-sectional area.

Work all sides. Achieving a smooth, hammered texture is not the only reason to work all sides of the bar. It also helps to achieve the proper shape. The force of the hammer blow on the face of the bar is absorbed so that the force is not transferred all the way through. Were you to hit from only one side, particularly on a thick bar, you would soon create a trapezoidal cross-section.



Cross-section of a bar becoming trapezoidal when hit only from one side.

The I-beam effect:

You may notice the edges of your bar mushroom out, creating a hollow on the flat surfaces. The cross-section looks like an I-beam. This happens because you are working the edges (1) at too low a heat, (2) hitting too lightly, or (3) with a combination of the low heat and light hammering. The ef-

fect of your hammer blow is dramatically concentrating on the bar surface. The shape change is not being forced into the middle of the bar. (See Photo 18)

Photo 18: A really bad case of the the I-beam effect.

Ergonomic tips

Stand comfortably, weight on both feet evenly. Get close to the anvil so you can hit down on the work– you shouldn't have to reach for it.

Don't bend at the waist. It is hard on the back and makes your face more vulnerable to the rebound of a misplaced hammer blow. The bend at the waist also limits the acceleration of your hammer swing to a very small arc. An ineffective blow results.

Take long, smooth hammer strokes. As you raise your hammer, at the top of its swing it should be outside of your vision. If you can see your hammer head at all times you are limiting its travel, its speed and the strength of its blow.

Do not keep a white-knuckle grip on the hammer. Propel the hammer forward, then hang on for the ride. Feel how the hammer rebounds and make use of the rebound to help bring the hammer back.

Use the handle length. If you must choke up on the hammer handle, your hammer is probably too heavy for you. By using the full length of the handle you increase the speed and the power of the blow.

RELAX

Above all pay attention to your body and what it is telling you. Hand forging is physical. If you are not conditioned, injuries are a possibility even with the best technique. Warm up. Stretch and continue to stretch as you work. If it hurts, **STOP!** Evaluate what you are doing. Rest and recover. If problems persist, seek professional help.

Photo 19: What is wrong with this picture?
The bend at the waist is hard on the back. The face is more vulnerable to anything coming off the anvil. The waist bend also minimizes the travel of the hammer, hammer speed and the power of the blow are negatively effective. The grip close to the hammer head suggests the hammer may be too heavy. The "choked" grip shortens the arc of hammer travel. and the power of the blow.

Reprinted from the Hammers Blow
Spring 2005

Photo 20: Do not be afraid of the the anvil. Step up close to it so you are not reaching for the work, but can strike downward with authority.

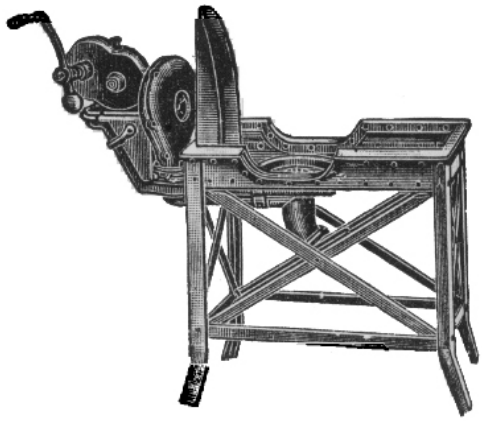


Photo 21: Perhaps not the paragon of forge technique, this smith is standing upright and is close to the anvil. He is gripping the handle near its end. He has raised his hammer out of his field of vision and is thus beginning to maximize the effect of the hammer swing.

Blacksmithing Workshops and Classes:

Academy of Traditional Arts
Carrol County Farm Museum
500 South Center St. Westminster, MD 21157
(410)848-7775 (410)876-2667

Adirondack Folk School
P. O. Box 2, 51 Main Street
Lake Luzerne, NY 12846
Phone: (518) 696-2400
http://www.adirondackfolkschool.org/

Center for Metal Arts,
44 Jayne St. Village of Florida, New York
(845) 651-7550 info@centerformetalarts.com

New England School of Metalwork
7 Albiston Way Auburn, Maine 04210
207-777-6211 Toll Free 888-753-7502
Fax 207-784-5383
http://www.newenglandschoolofmetalwork.com/

Peters Valley Craft Education Center
19 Kuhn Rd., Layton, NJ 07851 (973)948-5200
pv@warwick.net www.pvcrafts.org

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Brasstown, NC 28902
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Business Members

We would like to thank those who joined with our new Business Membership category .
Business dues are $40
Please show them our support

Marshall Bienstock, Marshall's Farms
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732-938-6577, 732-780-0871
jlfmib@optonline.net

Eric Cuper Artist Blacksmith
109 Lehman Lane, Neshanic Station, NJ 08853
908 642-6420 ericuper@msn.com

Bruce Hay, Jr.
50 Pine St., Lincroft, NJ 07738

Open Forges

If any members have a forge at home and work in the evenings or weekends and want to open it up to help a few local guys, let me know, Larry Brown, editor, as we get requests from members who have a hard time traveling to some of the open forge locations.
Please contact, Larry Brown, Editor.
We want to encourage all to join us at:

Monday Night Open Forge in N.J.

Marshall Bienstock is hosting an open forge in his shop at 7 pm almost every Monday night (Please call ahead on holidays to make sure , (732-221-3015)

Open Forge in Long Island

Sunday from 10:00 am to 6pm.
Starting the 1st Sunday in November until the end of April. Please call ahead to confirm and get directions. Ron Grabowski, 110 Burlington Blvd. Smithtown, NY (631) 265-1564 Ronsforge@aol.com
In Northern Delaware and Southern NJ, contact Kerry Rhoades or John Chobrda
Kerry (302) 832-1631 John (302) 838-1960 (609) 610-3501 (cell)

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Join ABANA or Check out other area chapters!

Northeast Blacksmiths Association

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

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

Contact : Tim Neu to register for hammer-ins or subscribe to the newsletter;
Tim Neu,
511 Beaverkill Rd.,
Olivebridge, N.Y. 12461
For more information check the web site;
www.northeastblacksmiths.org

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Send completed application and $25 (one year) to: PABA Treasurer - Doug Dayger - 492 Quaker Lake Rd , Binghamton, NY 13903

www.pabasite.org

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

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New Jersey
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90 William Avenue
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Attn: Larry Brown, Editor

Index For NJBA
Volume 20, #1
02/11/16
Pages 1–10;
Reports and Meetings
Pages 11—17 Controlled hand forging
Page 18 Ad and information page

NEW NJBA WEB SITE!
www.njblacksmiths.org

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NJBA Dues are $20 per year
NJBA Business Dues are $40 per year
Please make your check out to: "NJBA"
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