2. Notice the angle of the hammer and of the bar, as well as bar placement on the anvil.

3. Side view of the set-up shape. Notice how the thickness of the parent stock has increased towards the tip.

Step One Take a bright yellow heat two inches long. Place the heated portion level on the anvil with the end even with a rounded far edge of the anvil to prevent the angled edge of the hammer from contacting the anvil face. Place the bar standing on edge so that you are looking at the thickness of the material, and with the end you are holding slightly elevated. Begin to forge the end with a slightly angled hammer, just about the width of your hammer face. (See Photo 2) Continue forging to lengthen the taper to produce a symmetric angle to both sides, being careful to keep the taper centered to the parent bar.

3a. Top view of the set-up shape. Notice that the width of the parent stock has decreased towards the tip.

Forging dynamics: If you only work one side of the bar, mushrooming of the metal on one side will occur. This happens because more force is coming from the hammer, displacing more material than the force from the anvil. You will need to rotate the bar 180 degrees, alternating blows on the opposing sides, to avoid this problem.

At this point, the bar has decreased in width, but increased in thickness. This is your set-up shape, and should measure 1 1/2" long. (See Photo 3, and 3a)

4. Correct position of the bar and set-up shape on the anvil to begin drawing out the ribbon taper

Step Two Take a bright yellow heat two inches long, placing the end being forged in the same area of the anvil as in Step 1, with the

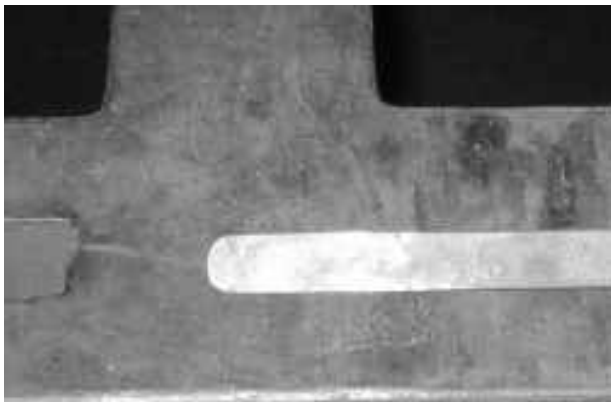
4a. If the set-up shape is forged too thin, the metal will fold when drawing out the ribbon taper, as shown here.

wedge perpendicular to the face of the anvil. (See Photo 4)

Keep the bar parallel to the face of the anvil as you re-establish the thickness. You will witness the width you reduced begin to widen as the thickness begins to reduce. Forge rhythmically and symmetrically, rotating the bar 180 degrees at regular intervals to maintain an even width.

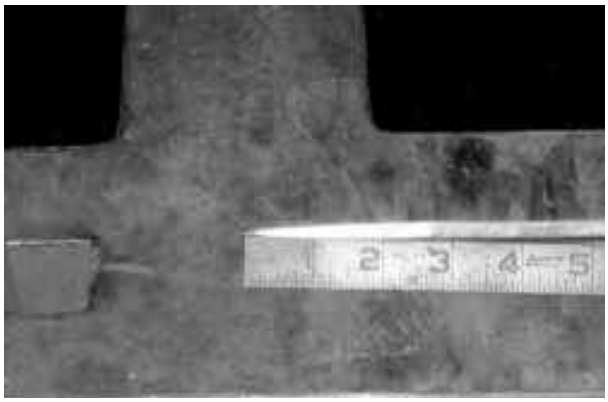
5. Correct position of the bar on the anvil to finish the ribbon taper. Notice that the bar is slightly elevated on the holding end. Note also the angle of the hammer.

Next, slightly elevate the holding hand and begin to forge the very end of the bar, angling the hammer face in a complimentary angle to the raised bar. (See Photo 5)



6. Top view of finished ribbon taper

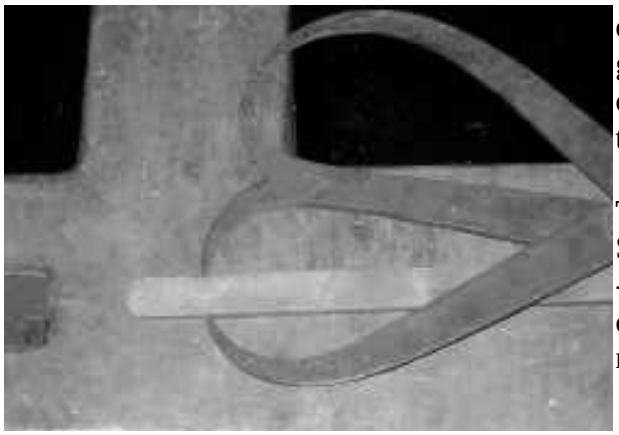
As you forge, you will see the set-up shape begin to transform into the intended shape. As your proficiency of forging grows, alternate the blows to forge the thickness and the blows controlling the width. Rhythmic forging is important, as it allows you to incorporate more forging blows of various purposes into each heat; enabling you to get more work done. Keeping the taper on center is an ongoing process, and best not left to waiting until the taper is completed. (See CHF lesson #11 for straightening techniques, the Hammer's Blow, Vol 13, #2, Spring 2005.)



7. Side view of finished ribbon taper, and checking with straight edge.

To increase the length of this type of taper, first make sure that the width has been established.

Then proceed to forge the bar back, behind the tip, drawing out more of the parent bar into the taper. (See photos 6 and 7 for the final shape of the ribbon taper.)



8. Checking width of ribbon taper with outside calipers.

Targets:

-The taper should be centered on the bar.

-Edges should be straight, faces flat. (No concavity or convexity. Check with a straight edge.)

-The bar should maintain the original parent stock width. (Check with outside calipers, see photo 8.)

-With practice, you should be able to make this taper in one heat.

-Two to three heats would be acceptable for the first attempts.

-The finished taper should be 2 3/4", plus or minus 1/16".

Note: If you subtract the non-forged portion of the bar from the overall length of the starting length, the difference will tell you how much of the bar was used for the taper. This is useful information, providing you observed the original stock size.

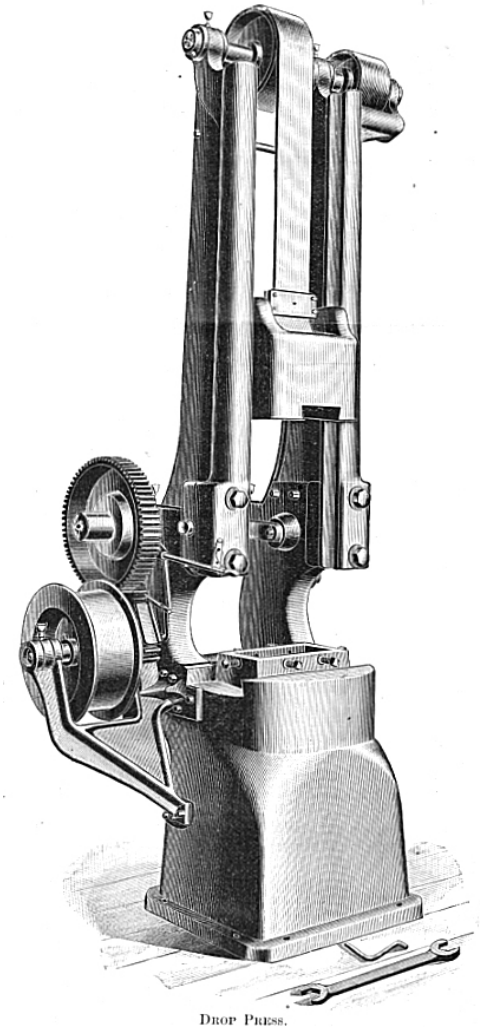
-The end of the bar should not be more than 1/64" (one sixty fourth of an inch) in thickness.

Note: An alternate process to minimize the 360 degree spread of material would be to use the horn of the anvil to draw out the taper. This could be done in conjunction with the set-up shape (resulting in vastly different results), or by itself, eliminating the set-up shape altogether. The rounded shape of the horn acts as a cross peen, or fuller, directing most of the material in two opposing directions.

Terms

Set-up shape

- A shape that is made early in the forging process to facilitate, anticipate, and define the final shape of the forging.



Drop Press.

A Simple Integrated Gate Hinge Design

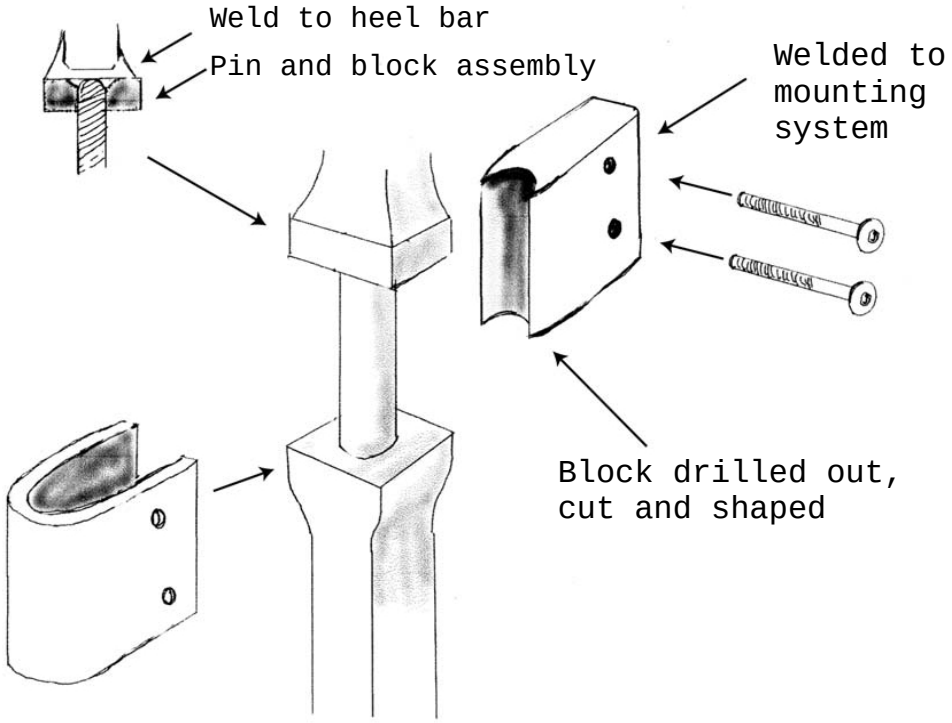
story & illustrations by Alan Drew, Carmel

The hinge system for this gate is a gudgeon and pintle style hinge, integrated into the gate structure. The material for the gate is silicon bronze, with the pin made of stainless steel.

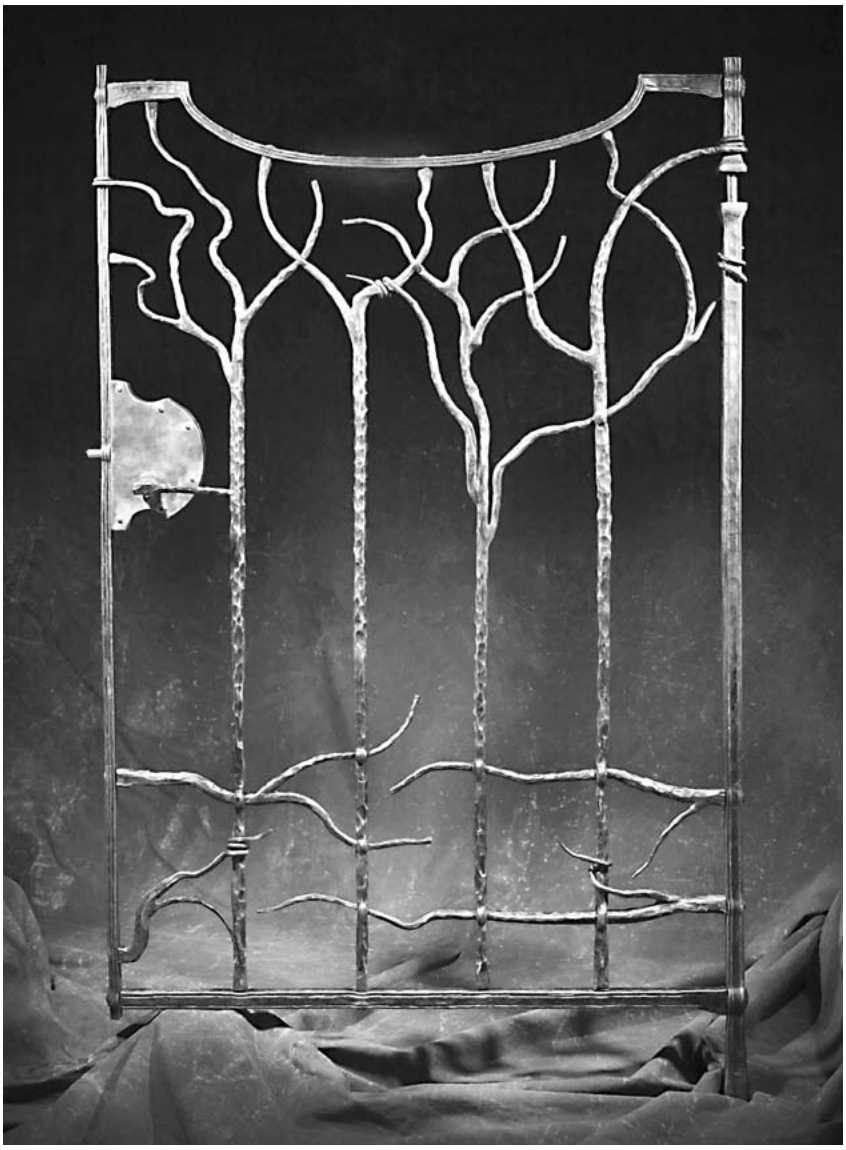
As shown, the heel bars of the gate are upset to flow into the hinge area. Rather than forge the silicon bronze heel bar down to become the hinge pin, I insert the stainless pin into the heel bar, welding it into place. This gives me an accurate location for the pin.

On the bottom of the heel bar, I use an oversized block, drilled out to accept another stainless pin, bearing and grease fitting. This block is then welded to the heel bar. The assembly is then shaped and textured to match the rest of the bar. The bottom bearing and pin are mounted to the sill.

To make the (upper) journal, I drill out a bronze block and then saw it in two at the halfway point of the hole. This block is then tapered slightly coming into the hole.



Gate Hinge



To lock it all together, a piece of 1 4" bronze strap is hot formed around the journal to make a saddle strap. This piece is cut to size and then drilled for two 1 /4" through-bolts with acorn nuts to secure the hinge. This journal block is then welded to whatever system is being used to attach the gate to the wall or pier.

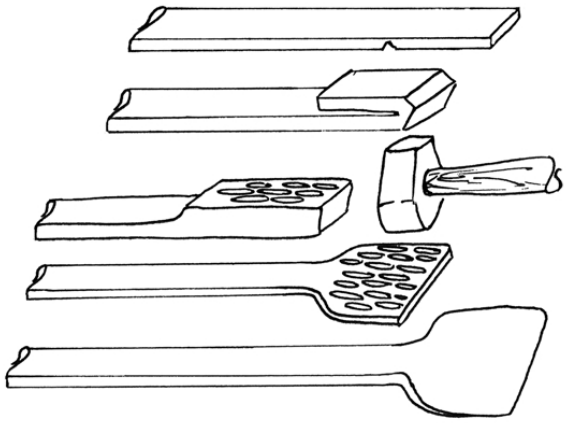
About the Gate

This was a commission for a client in Carmel. It was going to be installed about two blocks from the beach, so we chose silicon bronze for the material. The gate is designed for a 36" wide opening, about 56" high. It was made to open one way – uphill – with the bottom bar of the gate being set about 5 1/2" from grade so that the gate won't drag. The latch is hand-made, using stainless and bronze parts with a simple, though not traditional, galvanized coil compression spring. The latch was assembled with screws so that the spring can be easily accessed and replaced if necessary.

November/December 2012 www.calsmith.org
California Blacksmith

A Spatula Story

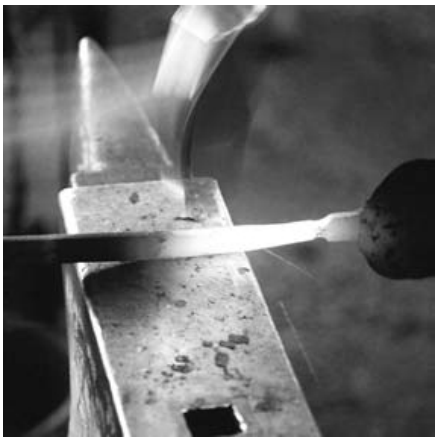
Demo by Mark Aspery, Springville
photos by John Graham,
illustrations by Eden Sanders



Someone forgot to bring a spatula for the hamburgers on Saturday night, and there just happened to be a 24” piece of 3/4” x 1/4” flat bar on hand that could be made into a spatula. Coincidence?

1. Illustrations show the faggot weld and spreading and thinning of the spatula.

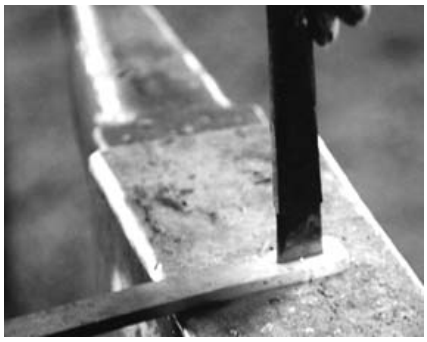
2. Fuller at the transition from the handle to the base of spatula.



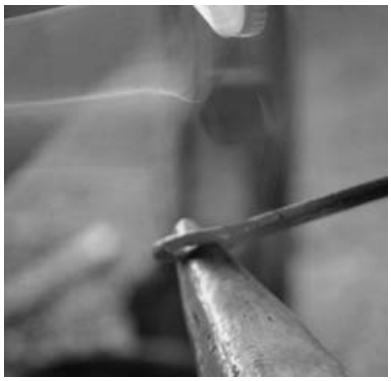
3. Put a 5" taper on the handle back from the fuller.

4. Illustrations show the zigzag bend at the base of the handle.

5. Slit hole at end of handle for hanging.
Make chisel one and a half times the diameter of the hole size.



6. Drift hole. The circumference of the drift should equal two times the length plus twice the width of the slit.



7. Shape the hole and round off the edges on the bick/horn.

8. Fuller the sides of the handle below the hanging hole.

9. Bevel the end of the handle, tapering the bevel for about 4" to give it a nice shape.

10. Final handle.

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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 bunkhouse 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

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Attn: Larry Brown, Editor

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Ballot

To vote for a nominee, please check the box next to his name.

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