

THE FOLLOWING ARTICLES ARE FROM THE NOV./DEC. 2007 UPSETTER, NEWSLETTER OF THE MICHIGAN ARTIST BLACKSMITH'S ASSOCIATION

This 3 page article is reprinted from The New England Blacksmiths newsletter, Scrap Box issue- Fall 2002

A YELLINESEQU QUATREFOIL

By FRANCIS WHITAKER

T. Reinertsen © 1991

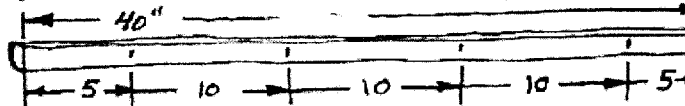
AS SHOWN BY FRANCIS ON SEP. 28, 1991 AT THE NEW ENGLAND BLACKSMITHS' FALL MEET IN THE SOUTH COUNTY MUSEUM, NARRAGANSETT, R.I.

NOTES AND DRAWINGS BY TOM REINERTSEN

SAMUEL YELWIN USED THIS METHOD OF FORGE WELDING A QUATREFOIL FROM ONE STRIP OF METAL - IT IS FASTER THAN FORGE WELDING 4 SEPERATE PIECES INTO ONE.

① BEGIN BY DETERMINING THE LENGTH REQUIRED BY MEASURING YOUR DESIGN FROM ONE LOOP - TIP TO TIP FOR OUR EXAMPLE = 10" MULTIPLY BY 4 (4 LOOPS) = 40 inches.

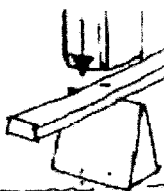
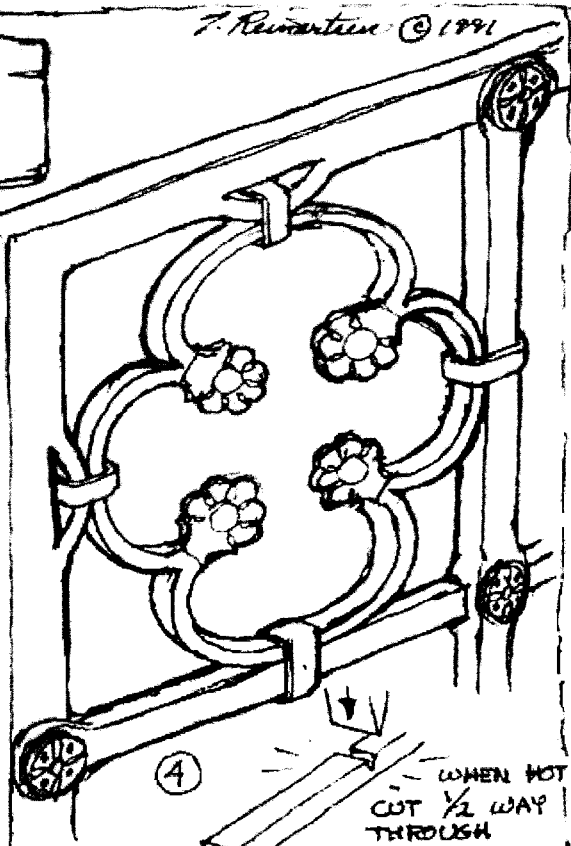
② CUT A STRIP OF METAL 40" LONG. (1/4 x 1/2 STOCK)



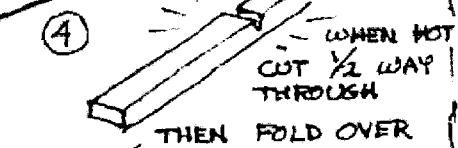
* MARK OFF 1/2 LOOP - or 5" THEN 3 LOOPS OF 10" (AND FINISH UP WITH 1/2 LOOP OF 5" ALWAYS MEASURE FROM ONE END OR PLACE - THIS

ALL MEASUREMENTS ARE TAKEN FROM THE SAME POINT SO THEY WILL ALL BE ACCURATE.

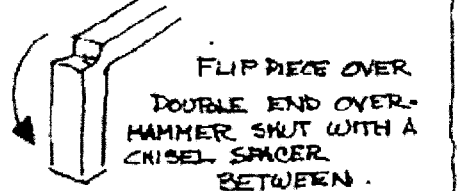
③ NICK THE STRAP AT THE MARKS WITH A HARDIE OR CHISEL THEN HEAT AT THE FIRST MARK.

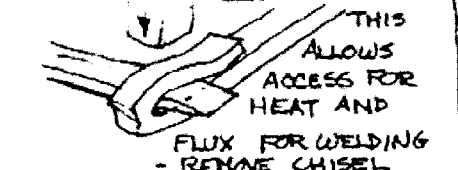
④ WHEN HOT CUT 1/2 WAY THROUGH THEN FOLD OVER



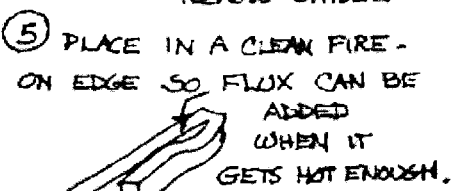
FLIP PIECE OVER DOUBLE END OVER - HAMMER SHUT WITH A CHISEL SPACER BETWEEN.



THIS ALLOWS ACCESS FOR HEAT AND FLUX FOR WELDING - REMOVE CHISEL

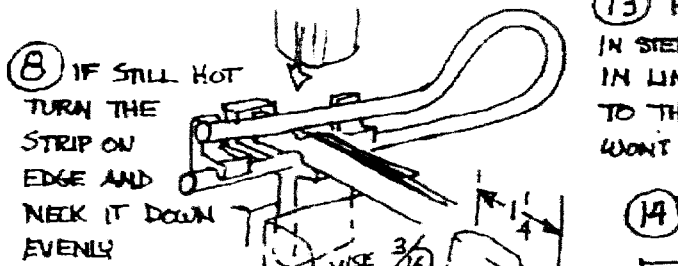
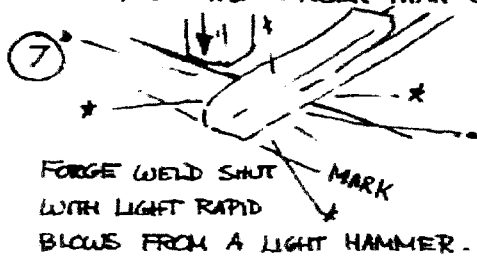
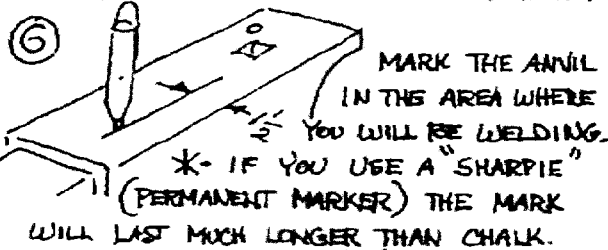


⑤ PLACE IN A CLEAN FIRE - ON EDGE SO FLUX CAN BE ADDED WHEN IT GETS HOT ENOUGH.

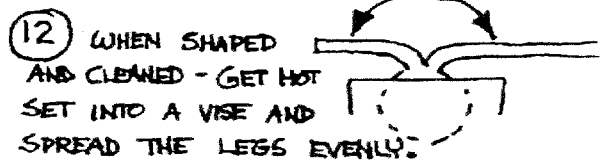
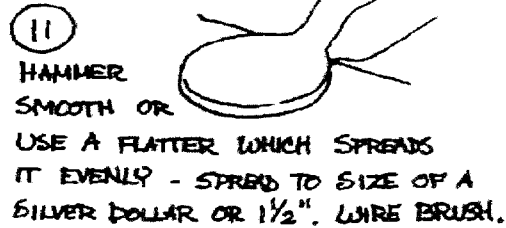
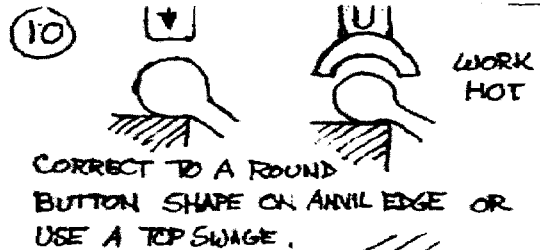
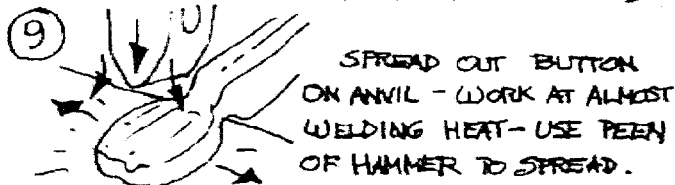


This 3 page article is reprinted from The New England Blacksmiths newsletter, Scrap Box issue- Fall 2002

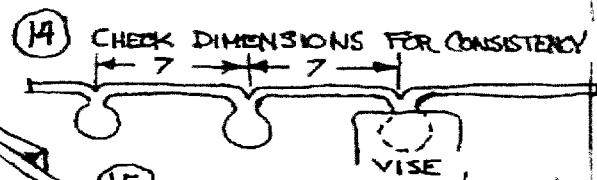
Note. IF AS IN THIS CASE - YOU WANT TO WELD $1/4$ INCH - THEN ADD AN EXTRA $1/4$ " TO THE WELD, BECAUSE WHEN THE ENDS ARE SPREAD LATER IT WILL TEAR OPEN THE FIRST $1/4$ INCH LEAVING $1/4$ WELDED. THEREFORE PLAN ON WELDING $1/2$ INCH.



IF YOU HAVE A NECKING DOWN JIG SET IT FOR $1/4$ WITH A $3/16$ SPACE AND ALL THE WELDED ENDS WILL MATCH
* - IF EVERYTHING IS SET - YOU CAN DO THE NECKING DOWN WITH THE SAME HEAT FROM THE FORGE WELD - FLIP THE PIECE 180° OVER TO MAKE SURE NECKING IS CENTERED



13 PROGRESS ALONG IN STEPS TO THE NEXT IN LINE * DONT PROCEED TO THE OPPOSITE END OR ELSE YOU WONT BE ABLE TO WORK IT PROPERLY.



15 AFTER 4th WELD PREPARE TO SCARF BOTH ENDS BY FIRST UPSETTING
* Note - WHEN POSITIONING PIECE IN THE VISE LET THE PIECE IN THE VISE JAWS COOL DOWN BEFORE CLAMPING SHUT SO AS TO PREVENT DISTORTION.

This 3 page article is reprinted from The New England Blacksmiths newsletter, Scrap Box issue- Fall 2002

(16) UPSET THE END

(17) CHAMFER ON ANVIL

(18) STEP DOWN FOR PROPER SCARP ON ANVIL EDGE

(19) DO OPPOSITE END TO MATCH WHEN THEY ARE BENT TOGETHER

(20) USE SCROLL FORK IN VISE AND RING TONGS TO BEND COLD TO THE PROPER FORM - MATCH TO A LAYOUT

(21) LINE UP AND OVERLAP ENDS FOR FINAL WELD

* Note - THE BUTTONS WILL LOOK CLOSER TOGETHER ON THE WELD SIDE - BUT AFTER THE WELD THEY WILL SPREAD APART AS THE METAL IN THAT AREA IS REDUCED TO ITS PROPER DIMENSION.

(22) REMEMBER TO POSITION OVERLAP PROPERLY ON HORN FOR WELDING SO THE HAMMER BLOWS WILL DRAW THE METAL TOGETHER!

(23) PLACE IN CLEAN FIRE - HEAT UP - FLUX - GET TO WELDING TEMPERATURE AND QUICKLY BUT LIGHTLY WELD SHOT -

(24) CORRECT THE WELDED AREA UNTIL IT IS RETURNED TO THE CORRECT DIMENSIONAL CROSS SECTION.

(25) CHECK AND COMPARE TO DESIGN - CORRECT WHERE NECESSARY.

(26) PROCEED TO BOTTOM DESIGN TREATMENT OF YOUR CHOICE

This 1 page article is reprinted from ABANA's, The Hammers' Blow, Fall 1997

Quatrefoils: (A compilation of several letters written by Francis).

"Finding the exact length for the material for a quatrefoil to fit an exact dimension has been a problem. At my final workshop at the Campbell Folk School, the answer to the length of material in relation to the size of the quatrefoil was resolved. We had four sizes to work on, 7", 8", 9" and 16". The ration remained the same for all of them, 4.75 times the diameter of the quatrefoil."

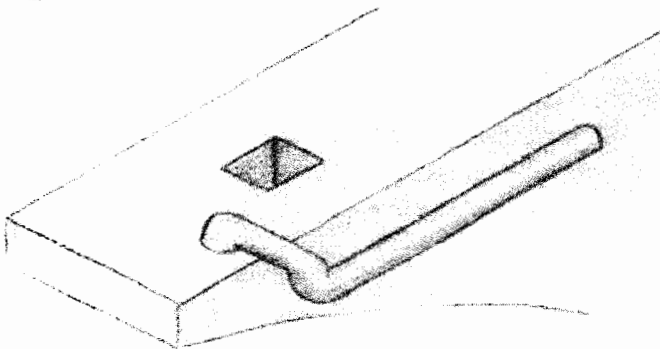
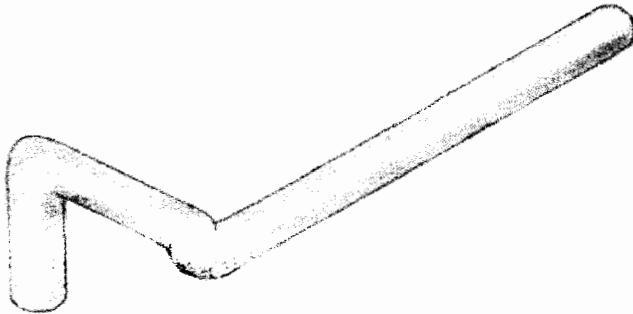
One of the tools I saw in Francis' shop was a simple but very effective "blacksmith's helper" that fit into the pritchel hole of the anvil. It was made in such a manner that it was easy to use and swung out of the way when you were done, leaving the anvil unobstructed.

It is worth showing below as a project just about any smith can both accomplish and use.

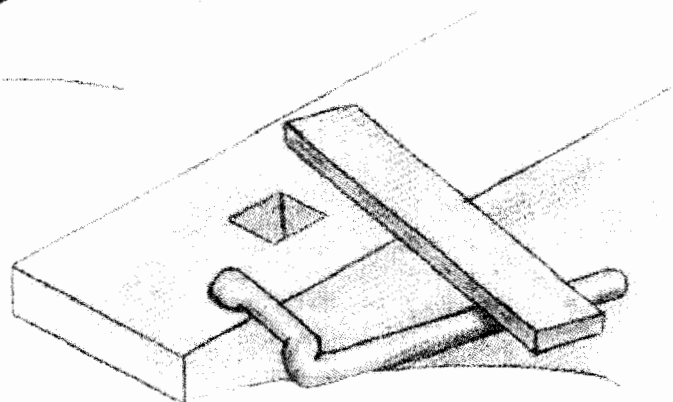
Francis Whitaker



Francis demonstrating.



The top of the rod is level with the top of the anvil.



"Draw a full sized layout" Francis Whitaker