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Flowers & Plants
Step by Step Projects
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Garden Ironwork
Send in your favorite piece of work made for use outside in the yard or garden --whatever you like to make. We all learn that way. Small and simple is best.

Conference Recap
There will be lots of people doing lots of things that most of us won't know about at the ABANA Conference with a full schedule on the program. We will be reporting on some of these.

"Men take on the nature and the habits and the power of thought of those with whom they associate in a spirit of sympathy and harmony."

-- Henry Ford

Flowers that Bloom in the Spring

Photo & Directions by
Roy Plumlee of Tamaroa, IL

Stigma & Stamen:
Assemble a bundle of six 16 gauge wires surrounding one 14 gauge wire (Fig 1). Gas weld one end of the bundle to secure the "bunch". Cut off the bunch, approximately 1/2" up, with the center 14 gauge wire protruding a little further out than the other six 16 gauge wires (Fig 2).

Stem:
Forge a 12 inch length of 5/16 square, roughly rounded for texture. Gas weld the stigma and stamen assembly to one end of the stem (Fig 3).

Corona:
Forge one end of a piece of 5/8 o.d. black pipe to a point (Fig 4). Cut off to 1-3/4" (Fig 5). Flair the open end to a bell shape (Fig 6). Texture with chisel and cross peen for a natural look. Drill hole through the end to slip over the stem (Fig 7).

(continued on pg 3)
The Coloring of Iron
by George Martin
of Norongo Valley, CA

Here are four basic methods to color iron products: polish, paint, wet chemicals, & heating methods.

Polishing - When polished or sanded, iron is covered with a matte or satin clear lacquer such as polyurethane. This finish has a limited life or two to five years. The rather bland appearance of bare iron can be livened up by polishing in varying or circular directions.

Paint - In using paint, remember that iron need not always be painted black. And the life of a paint job depends more on the surface preparation and primer, as well as on the actual paint quality.

Wet Chemicals - Chemical coatings depend on the development of surface oxides which come in a wide spectrum of reds to brown to black. The one absolute prerequisite for any such coating is an absolutely clean, grease-free surface before you start. Abrasive cleaning or sand blasting is best. Acid etching is an old method, but nowadays presents disposal and fume problems. Blue or brown coatings are best produced from commercial gun blue or brown, available at gun and hardware stores. Recipes are available to make your own, but they are dangerous and require many safety procedures for use and disposal. They are not covered here.

Heat Coloring - Heat coloring is very common and lots of literature exists on it. Basically it is burning oil, such as linseed oil, on the metal surface. Old engine oil is just as satisfactory but much cheaper. Again, the part must be cleaned, and all mill scale must be removed. Blacken the piece as soon after cleaning as possible to prevent rust. Heat the metal with a torch in one hand and paint the oil on with the other. The temperature is critical. Too hot, and the engine oil will leave a grey residue that has to be sandblasted off. Too cold, and there are wet spots of oil that are messy. The right temperature is about 600 degrees, a blue temper color. Small pieces can be heated on the forge and dumped into a can of oil. (Caution: FIRE DANGER) Remember, the finished color will depend on the surface underneath.

Temper colors themselves are very pretty, but the oxide coat is very thin and wears off easily. It will work for things that are not handled, like chandeliers. As with wet chemical, and other heat methods, the finished color is not always predictable. If you client is in love with a certain color, tell them to provide the paint.

Protective Coatings - Waxing or lacquering, after coloring, protects the finish. Try a mixture of 50% paraffin wax, 30% to 40% beeswax and the rest carnauba wax. The mixture is melted (Caution: FIRE DANGER), add turpentine until it is no longer brittle when cold. Test it by dipping a nail in the hot wax and chilling under cold water. It should remain soft but not liquid. When waxing, warm the iron surface with a torch until the wax liquefies. This will give a thin, even coat. In the case of exterior construction, the part should be re-waxed as soon as the first trace of rust appears. If that process is repeated two or three times, a patina is built up which is extremely corrosion and abrasion resistant. On the other hand, a single waxing will last about a year. Clients should be advised.

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Flowers that Bloom...
-continued-

Petals:
Forge two pieces of 7/8 o.d. black pipe to blunt points and cut off to 1-1/4" (Fig 8). Make three cuts lengthwise on each piece of the pipe with a hacksaw, so as to divide into thirds (Fig 9), leaving approx. 1/4" of the material uncut. Spread hot, forging petals to shape (Fig 10).

Assembly:
Slip corona onto the stem over the stigma and stamen, then gas weld to the stem (Fig 11).

Slip one set of petals onto the stem, up against the back of the corona and gas weld to the stem (Fig 12).

Slip the second set of petals onto the stem up next to the first set and gas well as before (Fig 13).

Clamp the stem in a vise and heat the stigma and stamen with a torch. Use a pick or nail to separate the six stamens from around the stigma (Fig 14).

Carefully heat the ends of all seven members to melting point. At that point, a ball of molten metal will form on the end of the wire. Quickly remove the flame before burning, and the sphere will solidify (Fig 15). Reshape wires while hot with pliers and bend the stem just behind the petals to finish.

Leaves can be added to the stem at this point if desired.

Wheat Heads
Helmut Hillenkamp - Santa Fe, NM

The closest I came to ever making a flower was forging a stack of wheat in a sign for a local bakery. I lined up horse shoeing nails and ran a TIG bead with silica bronze across the heads. The whole was welded to a 1/4" round stem. The tips of the nails are milled down a bit so that nobody will hurt themselves. It looked pretty nice and was really quick.
Video Tape Review
by Jim Ryan

Instead of a book review this issue, here is a brief review of a great video tape from Walt Scadden. Ordering information is included in the want ads.

Walt calls his tape "12 Ways to Help You Survive in Business as an Artist, Craftsman, or Creative Person". He starts out by listing the items to be covered in this tape and they are all very necessary to the survival of a business. The way he handles us all is to lump all artists, craftsmen, and creative persons as "artisans". All our work places or areas of creations are referred to as "studios", and all the items we produce are "products". This business information that can be used by any form of creative person --artisan that is, whatever your medium.

The tape handles, in detail, the problems of a business plan, the cost of operating your business, and production time. He says that we all think we are always productive, but "it just ain't so". Walt covers the rates to charge based on the costs of studio, materials, wages, profit, and advertising.

As for advice, Walt recalls that we all get too much of it. People just fall all over themselves to give us advice. He calls this "The Good, the Bad, and the Ugly".

There are six points that we all need to know before we can make a pitch to a customer. And then there are the subjects of information, budget, competition, and confidence. (Is that 12?)

Anyway, it is a very helpful tape, told by someone that has been there and has set up a business, making it run. I recommend it to anybody who is an artisan in business or thinks that they might like to make a business of artistic ironwork.

CATTAILE
by Kim Thomas
Brunswick, OH

"My wife, Frieda, decided to show me up one day, along with my blacksmith friends. She made this cattail and entered it in our club's show.

She made the stem by forge welding a piece of crane cable so it would have the grain of a real plant. Then, the head was forged from copper pipe so it would naturally have a brownish-red color. The leaf was forged from bronze. I can't wait to see what she does next!"

E-Mail
Communique

Attention e-mail users: ABANA members want to know who you are and connect!

Gil Watkins on CompuServe would like you to contact him via e-mail. His electronic address is 73114.1162

Professional blacksmiths and other interested individuals are invited to contact Charlie Orlando via his e-mail address orlandoc@anyalfa.cc. alfredtech.edu or write to: PO Box 37, Belmont, NY 14813 or phone (716) 268-7383.

If you have an e-mail address and would like to be able to communicate with other smiths through electronic communication [any network], send him your e-mail address. He will collect all the responses and send you a list of all who have responded. Or meet him in St. Louis.

'94 ABANA CONFERENCE AUCTION

Tom Clark, Auction Committee Chairman would like to remind you that you can send items for the various auctions ahead of time to the ABANA Conference in St. Louis. But, if you can not get them shipped in time, bring them with you and they will be accepted (very gladly) at registration time.

ISSUE OF NUMBERING

The Hammer's Blow Vol 1, #4 does not exist. Some of you noticed that the Winter '93/94 issue began the year with issue #1 to coincide with the yearly quarters.
5 Petal Forged Flower
Toby Hickman, California

Fig 1 - Fuller 1" back on a 1" to 1-1/4" round bar, to 3/8" round. Cut off 1/2" beyond fuller.

Fig 2 - Forge or swage one end to 3/8".

Fig 3 - Put swaged end in a 3/8" bolster.

Fig 4 - Upset to 1/2" thick.

Fig 5 - Mark center lightly with a center punch, then by eye or with a compass, mark a 3/8" circle.

Fig 6 - Lightly center punch 5 equal points on the circumference of the 3/8" circle and cold chisel a line diagonally from each point to the perimeter of the block.

Fig 7 - With a hot set, cut a sloping cut from the 3/8" circle to the edge of the block leaving approx. 1/8" uncut at the edge.

Fig 8 - Using a side set, bevel one side of each cut to the edge of the next, ending up with a ratchet-looking shape with 5 divisions.

Fig 9 - Using a 1/4" to 3/8" fuller, fuller a groove almost to the edge of the block 1/8" to 3/16" from the bottom of each division, allowing material at the edge to bulge over.

Fig 10 - Fuller a second and third groove in each division allowing material to bulge into adjacent division and partially fold over the first groove.

Fig 11 - Using a 3/8" punch with a checker pattern cut into it with a triangular file, make an impression 3/16" deep.

Fig 12 - Use the 3/8" stem to rivet flower to whatever.
Start with a lag screw, 3/8" or 5/16" and 3-1/2" length. Drop in a header.

Center punch deeply.

Use a round ball punch to flare out the punched holes.

Draw out shank for stem, holding the leaf end. Allow 1/2" for the leaf.

When the stem is drawn to shape, flatten the screw end for leaf. Chisel in veins. Threads will make pointed edges on the leaf.

Bend the leaf up under the flower and shape to suit. It could also be wrapped around something for decoration.

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HAND FORGED DOOR HANDLE

by Vladimir Sidorenko, Russian Union of Blacksmiths
translated by Bob Jacoby, Florida Artist Blacksmith Association

Door handles have been made for ages - 10 centuries, to be precise. Their size, shape and decoration changed with time. Yet, the basic outline has remained the same. It is based on a contrast between a bulky body and flat ornamental mounting flanges.

To make a door handle, start with a 300mm (11 3/4") length of 20mm (3/4") mild steel square stock. The ends of the workpiece must be cut square. Local upsetting is required to make the workpiece thicker at the ends (Fig 1).

To upset the ends of the workpiece, heat in from one end of the stock 2 or 2.5 times the width of the workpiece. For example, heat 3/4" square stock 1-1/2" to 1-7/8" in from the end being upset.
HAND FORGED DOOR HANDLE
- continued -

Heating must be slow because metal starts heating from the surface. Heating must also be even; uneven heating will create different shades of color in the workpiece. To avoid uneven heating or overheating, a bed of white/red coal is kept between the workpiece and the tuyere of the forge. The flame must be even, bright yellow, and slightly smokey; this is known as a "neutral" fire. Heat the workpiece to a bright yellow, almost white color.

Upsetting is done at temperatures ranging from 750 degrees to 1150 degrees Celsius (1375 degrees to 2100 degrees Fahrenheit). These temperatures must be maintained throughout the process. The forge must be clear of slag and the coal must stay in a compact heap. The best fire is created when the coal "bakes" to form a crust on top. [See Blacksmith's Journal, Volume 1, #3 - Cave Fire]

The butt-end (struck end) is slightly cooled in water before upsetting. The heated workpiece is placed vertically on the anvil and struck from the top (Fig 1). Rotate the piece left or right around its axis after each hammer blow.

Work quickly, so that no flash forms at the edges; flashing can cause cracks. When the workpiece cools to light red, straighten if necessary and put it back into the forge.

Next, the areas directly behind the upset ends are drawn out to approximately one half their original size. (3/4" square stock is drawn down to 3/8".) This area which will form the curved portion of the handle (also called the stand-off) should be 25-30mm (approx 1") in length. The transition from the thick handle to the thin stand-off can be formed with a hand held spring fuller (Fig 2).

Twisted square stock is more appealing when longitudinal grooves are cut into the center of each side before twisting (Fig 4). When cutting the grooves, a slitter is used and slid roughly one third of the length of the cut already made with each hammer blow. A slitter is preferred over a hot cut because the sharp ends of the hot cut's cutting edge can cause cracks in the finished piece. The slitter's cutting edge should have a round profile. The blade of the slitter should be cooled in water every 3 or 4 blows so that it will not soften.

The drawing out is then done on the horn of the anvil (Fig 3) turning the workpiece 90 degrees after each blow. Be careful to maintain the square cross-section of the stock.

Fig 3

Fig 4
HAND FORGED DOOR HANDLE
- continued -

After the grooves have been cut, flatten the upset ends with a sledge-hammer to create the mounting flanges. The workpiece is then air cooled and a grinding wheel is used to make the mounting flanges even in size and shape.

To twist the grooved handle portion, heat the middle hand section only. Iron pipes are slipped over the ends of the piece before it is placed in the forge with the blower turned off. Burning coal is heaped over the workpiece and it is left in the forge to heat slowly. Once the handle portion is bright red, water is used to cool the ends and the handle is twisted as shown in Fig 5. If the handle bends while twisting, it can be straightened using a wooden mallet on a tree stump. This will protect the edges from damage.

The decorative tines are then drawn out and finished so that all parts are symmetrical. A hand file can be used at this stage. Note, be careful while forging the tines. Those that are not being worked should be bent upwards before the workpiece is placed into the forge. Otherwise, they may burn and break.

After the tines are drawn and shaped as shown in Fig 6-c, the mounting holes are punched. These should be located in the largest portion of the mounting flange. One 1/4" hole in each end is sufficient. Round pliers or tongs are then used to make the decorative scrolls on the mounting flanges.

Bending and shaping are the final steps. First, a vice is used to bend the mounting flanges to 70 degrees or 80 degrees. The stand-off/handle juncture is then bent on the anvil horn. Finally, the workpiece is put on the anvil and straightened along all planes and axis.

Finishing and coating are done after all forging is complete. The workpiece is put in water and scrubbed with a wire brush to remove the scale. The workpiece is thoroughly dried at the side of the forge and then rubbed with vegetable or machine oil. An iron plate is placed on top of the coal in the forge and the coated piece is set on top of the plate. When the oil stops smoking, the finish is complete. This process can be repeated to achieve an even finish.

Next, mark the mounting flanges as shown in Fig 6-a. With a cutting saddle placed on the anvil, cut the flange as shown in Fig 6-b. Again, a slitter is the preferred tool here to minimize cracking and breaking.

Fig 5

Fig 6
Conferences & Events

Jun 04-05  INDIANA BLACKSMITHING ASSOC - Tipton, IN

Jun 11-12  ILLINOIS VALLEY BLACKSMITHING ASSOC - Pontiac, Illinois

JUN 15-19  ABANA INTERNATIONAL CONFERENCE
"Fire & Fusion" is the theme of the 1994 biennial conference
to be held at Washington University in St. Louis, Missouri --
hosted by the Blacksmiths Association of Missouri (BAM).
If you know a non-ABANA member who needs a packet,
have them send a post card with their request to: ABANA
Conference '94, PO Box 453, Valley Park, Missouri 63088.

Aug 26-28  ROCKY MOUNTAIN SMITHS WORKSHOP -
Carbondale, CO

Sep 09-11  ALABAMA FORGE COUNCIL - Tannehill, AL

Sep 16-18  NEW ENGLAND BLADESMITHS GUILD
will be hosting its 12th annual Bladesmiths Seminar at the
Ashokan Field Campus in Kingston, NY. The seminar will
include lectures and demonstrations covering a broad range
of technical and practical aspects of knifemaking by several
of the country's foremost blacksmiths. Contact Tim Neu c/o
Ashokan Field Campus, 477 Beaverkill Rd, Kingston, NY
12401 or call (914) 657-8333 for more information.

Sep 21 Deadline: The second juried ABANA exhibit will be
held from 12/11/94 to 02/05/95 at the National Ornamental
Metal Museum. Current ABANA members are eligible to
submit up to 3 slides by 9/21 along with a $15 entry fee.

Sep 24-25  QUAD STATE ROUND-UP - Tipp City, OH

Oct 08-09  FLORIDA ARTIST BLACKSMITHS ASSOC -
Barberville, FL

Dec 11 to Feb 05  "ABANA COMES OF AGE" Exhibit at the
National Ornamental Metal Museum, celebrating the 21st
anniversary of ABANA's founding.

Wanted:

Professional Blacksmiths and other metalworkers to meet
with other interested professionals to discuss and possibly
act on the organization of a professional division of ABANA.
The meeting will take place at the 1994 ABANA Conference
at Washington University, St. Louis, MO at a day and time
to be announced. If you do not expect to make the
conference but are interested in expressing your view,
contact Charles Orlando - PO Box 37 - Blemont, NY 14813
or phone: (716) 268-7383.

Nazel Hammer Owners who are interested in forming a
group. Starting with those interested who will be at the
ABANA Conference as well as other ABANA members who
own Nazel Hammers. Contact Dean Piesner - 30 King Street
- St. Jacobs, Ontario NOB 2N0 - Canada.

Info on Doctor & Dentist Tools - Does anyone have ANY
information on the tools that doctors & dentists used during
the early 1900's and prior? What did the "Blacksmiths"
make for them or did they?? Any facts, articles or direction
would be appreciated! Jim "Nanook" Hutto c/o Anvil Hut -
4211 S. Sinclair - Flagstaff, AZ 86001.

Job Openings

Industrial Blacksmithing Opportunity - Well established (47
yrs) Blacksmith and Metal Bending business has a need for
a skilled blacksmith with leadership qualities to help run a
well-equipped shop. Applicant must have knowledge of
basic ferrous metallurgy and experience in open frame
hammer work. Opportunity for excellent compensation and
full range of benefits. Send resume to: Raymond Weiss -
Max Weiss Company, Inc - 8625 W. Bradley Rd
Milwaukee, WI 53224. (414) 355-8220.

Class Updates - JUNE

03-05  Pipe & Sheet Forging - Peter Happny at Peters
      Valley Craft Center

05-11  Bladesmithing - Dr. James Batson at Allison's Wells
      School of Arts & Crafts, Inc.

06-10  Damascus - Hugh Bartrug at Touchstone Center for
      Crafts

10-12  Blacksmithing Techniques - Charles Orlando at
      Peters Valley Crafts Center

17-20  Foundations of Blacksmithing - Gil Meeker at Peters
      Valley Crafts Center

20-24  Ornamental Blacksmithing - Mark Cellura at
      Touchstone Center for Crafts

24-26  Blacksmithing Processes Applied to Sculpture -
      Brent Kington at Peters Valley Crafts Center

British Artist Blacksmiths Assoc (BABA)
"Return to the Iron Age" international conference will be held the 1st weekend in
August at Blits Hill Open Air Museum in

David Townsend, Forgemaster at Capricorn
Architectural Ironwork, Ltd - Tasso Forge - 56
Tasso Rd - Hammersmith, London W6 8LZ
ABANA
MEMBERSHIP APPLICATION

NAME __________________________________________ PHONE( ) ____________________________

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Indicate type of membership applying for:  
☐ NEW MEMBER? ☐ RENEWAL MEMBER?
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☐ OVERSEAS SURFACE MAIL $50.00

I __________________________________________ hereby apply for membership in the Artist-Blacksmiths' Association of North America and enclose $ _______ as my annual membership dues for one year (subscription included).

☐ CHECK OR MONEY ORDER ENCLOSED (WRITTEN ON U.S. BANKS ONLY)  ☐ VISA ☐ MASTERCARD

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