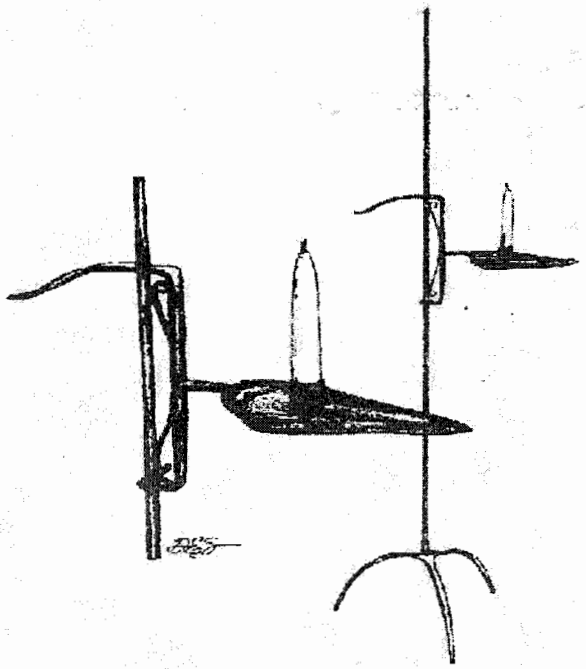


Forging a Colonial Standing Crusie Lamp

by Ken Gould
with illustrations by the author
and Dave Smucker

Having been awarded an AACB scholarship, I would like to start by thanking all of the members of the AACB for this opportunity and encourage others to apply for future blacksmithing scholarships.

I must admit I was a bit apprehensive, but decided to push my abilities by signing up for the intermediate level Colonial Lighting class taught by Jerry Darnell at the John C. Campbell Folk School July 6th thru 11th 2003. Jerry has been a smith for over 34 years and didn't waste any time. We completed 5 projects in 5 days, each requiring one or more forge welds. All projects were from 18th century period lighting and included:

- Rush and Candle Holder
- Standing Crusie Lamp,
  (Each of the above required the welding of 2 pieces of flat stock to form a 3 leg base.)
- Two Tier Virginia Chandelier with four arms per tier (8 welds)
- Two Candle Ships Lamp made by forge welding a loop on the end of a 3/8 inch rod and then splitting the loop for the 2 arms
- Trammel Crusie Lamp with welded and sized keepers for the trammel slides
- Pricket (form of a rush holder) using a basic fold over with a bar welded into the center to form the 3 arms.

Being an intermediate class, Jerry expected everyone to be competent at forge welding. This proved to be the hardest part of the class for most of the eight students. The first project took me seven attempts to get an acceptable weld. The good part of this is the second day it only took 4 tries, the 3rd day 2 tries and a "got it the first time" on the last day. I have concluded that I should attempt some type of forge weld every time I light a fire until it becomes second nature.

In addition to the 5 days of smithing, a little history was in order. Jerry explained that early settlers didn't have cultured bees for beeswax and typically could not afford to purchase candles. Settlers often made candles from animal fats and/or crude oil/grease mixtures. In addition to problems with them melting in warm weather, the candles had to be kept in sealed containers so that rats would not eat them. The early Rush and Candle Lamp had a spring passing thru and against a slot to hold a grease soaked rush for daily use, and a candle holder on the opposite side for additional lighting when the family had "company" come to visit. The Crusie Lamp was a pan that held heavy oil / grease with a wick draped thru it and over the edge where the wick was lit. The heat melted oil in the pan to feed the wick. As time progressed and more volatile oils became

available, a lid was put on the pan of the Crusie Lamp to prevent flash fires and it was called a "Betty Lamp". The word Betty was a slang term for "bedding" which is an old English term for "oil". Thus, a Betty Lamp is an Oil Lamp.

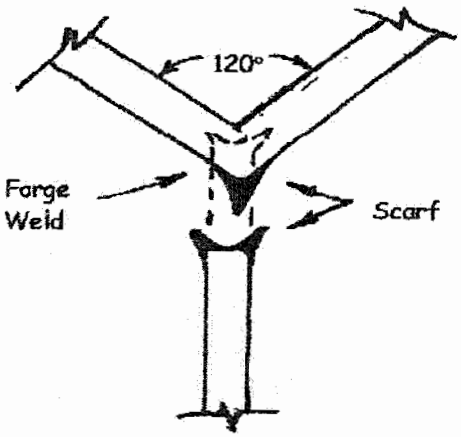
Enough history.

Of the projects completed, the Standing Crusie Lamp probably required the most varied skills. The following explanation and sketches demonstrate how this lamp is made. The Crusie Lamp consists of a 3 legged base, an upright, a bail with spring (to hold the bail against the upright), a pan and a holder to attach the pan to the bail. As a variance and to make this lamp more "usable", we added a candleholder in the center of the pan.

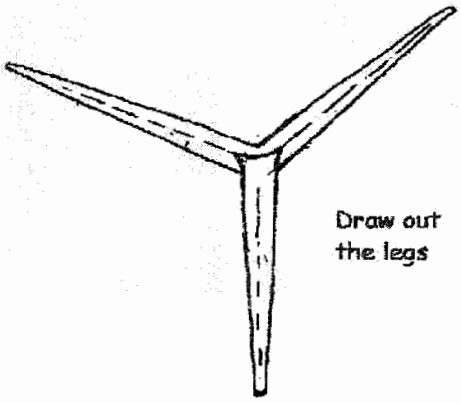
The pieces are made as follows.

Part #1) Base.

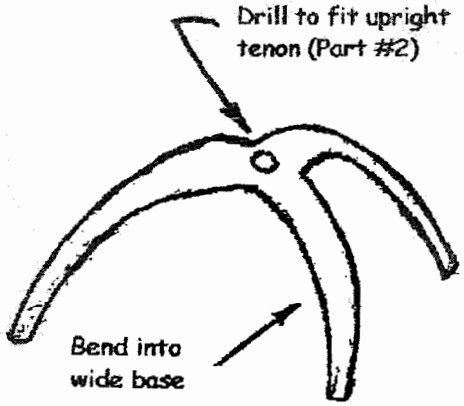
This is made from two pieces, one 14-inches long and the other 7-inches long, of 3/16 inch by 3/4 inch flat stock. Heat the 14-inch piece in the center and form a sharp edged 120-degree flat bend in the center. Scarf the long side at the bend for welding to the short piece and set aside. Scarf one end of the short piece as shown in the drawing below and proceed to forge weld it into a 3-legged triangle as shown.



Using a pair of offset tongs, grip one leg just past the weld and proceed to draw the leg out. At approximately the 1/2 way point; the leg should be 3/8 inch square. Continue to draw out to 1/4 inch at the end and round the last 2 to 3 inches.



After completing all 3 legs in this manner (drawn to same length), bend the legs over the anvil horn to form a wide 3-leg support base.

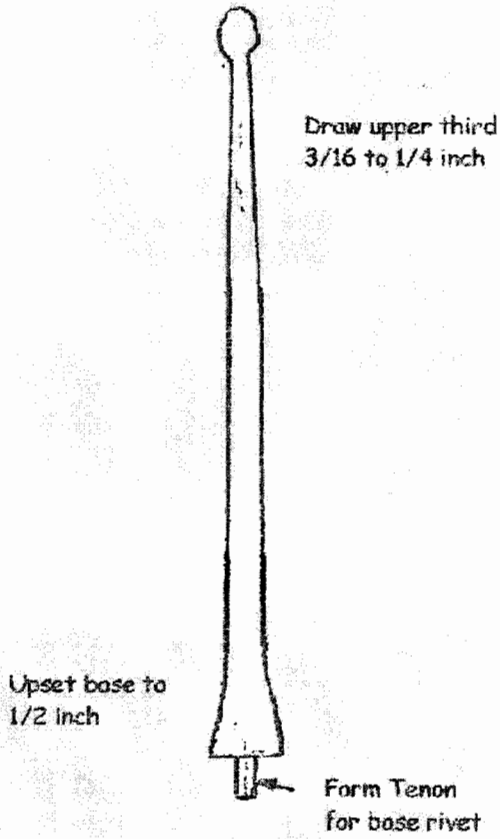


Punch or drill a hole in the center of the base to fit the tenon you will make on the upright. (Part #2).

Part#2) Upright.

Using a 33-inch piece of 3/8 rod, upset 2 to 3 inches on one end to 1/2 inch and form a 3/8 inch diameter tenon long enough to rivet through

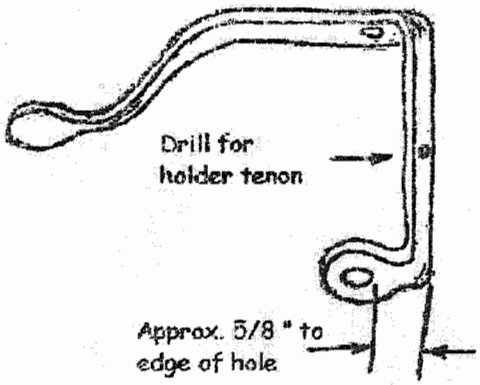
the base. Past the upset, hammer track the sides and draw the last third of the rod out tapering to approximately 1/4 inch or slightly less, leaving material on the tip end for a ball or finial. The upright should be approximately 36 inches long after drawing out and look similar to the drawing below when the finial is completed.



Part#3) Bail.

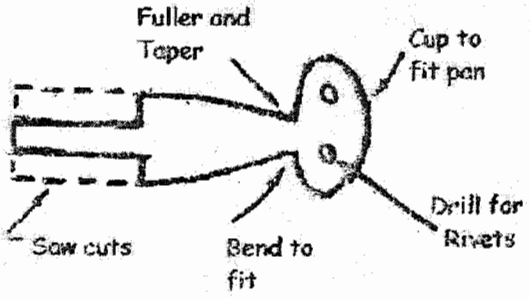
From a 14-inch length of 3/4 inch by 3/16 inch piece of flat stock, fuller 3/4 inch back on one end and round the end into a circle. Punch a 3/16 inch hole in center of round and drift to 3/8 inch. When this is complete, draw out the other side of the fuller into a smooth transition. Fuller and round the opposite end but do NOT punch hole here. Approx 7-1/2 inch from the drifted hole punch a second 3/16 inch hole in the center of the bail and with a drift, fit to the taper on the upright. Bend as shown in the drawing at the top of the next column.

In the center of the 6 inch flat shown in the drawing, drill a 3/16 inch hole to accept the holder tenon.



Part#4) Holder.

The holder is used to attach the pan, bail and spring together. Start with a length of 3/16 inch by 3/4 inch stock and fuller back approximately 3/8 inch on one end. Now form this into a "bean". Cup the bean to fit the pan on a swedge block and draw out the opposite side of your fuller for a transition. . Approx. 1-1/2 inch back cut off the stock and saw into thirds, cutting 1/2 inch deep as shown below.

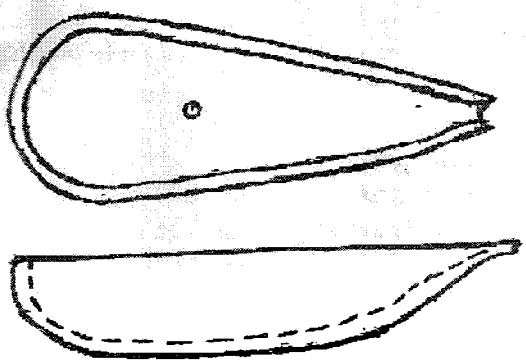


Cut off outer two sides leaving center material then round to 3/16 inch dia. for a tenon. Tenon must be long enough to pass thru bail and spring with stock left to rivet together. Bend bean at approx 90 degrees to holder. Adjust bend to make upper edge of pan and holder

parallel to each other. Bean end will later be drilled and attached to pan using 1/8 inch rivets.

Part#5) Pan

Cut an elongated oval shaped piece of 16 or 18 gauge stock for the pan and shape as shown.



The pan is made with about 3/4 inch to 1-inch sides and narrows on the end leaving an open lip for the wick to pass thru. This should look similar to drawing when complete and have a flat bottom. In center of pan, drill a hole for riveting the candleholder to the pan.

Part#6) Spring

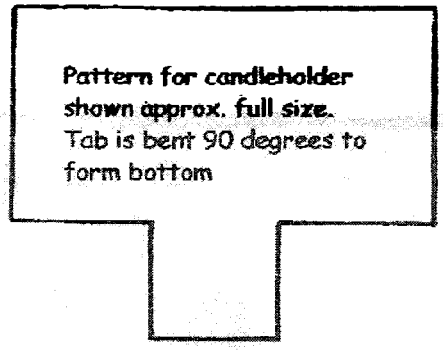
The spring is made to apply pressure between the bail and upright, to keep the bail and pan from slipping. Flatten a piece of 1/4 inch stock to 3/8 inch wide and fit to inside of bail. Curve the spring, backbend and swedge a curve to hold against the upright. See drawing. Punch or drill a hole in the center of spring to match tenon on holder for later assembly.

Cup end to follow upright

Editor's note: Jerry uses 1055 for the springs. A number of years ago he obtained a large supply of scrap stock – intended for screwdrivers – works great for these springs. You could also use "grave yard flower stand material" that David Walker showed at the Clinch River meeting. It too is about 1055. Spring stock will work, garage door springs or hay rake springs are a good source. You can also most likely use A36 if you quench it. Dave

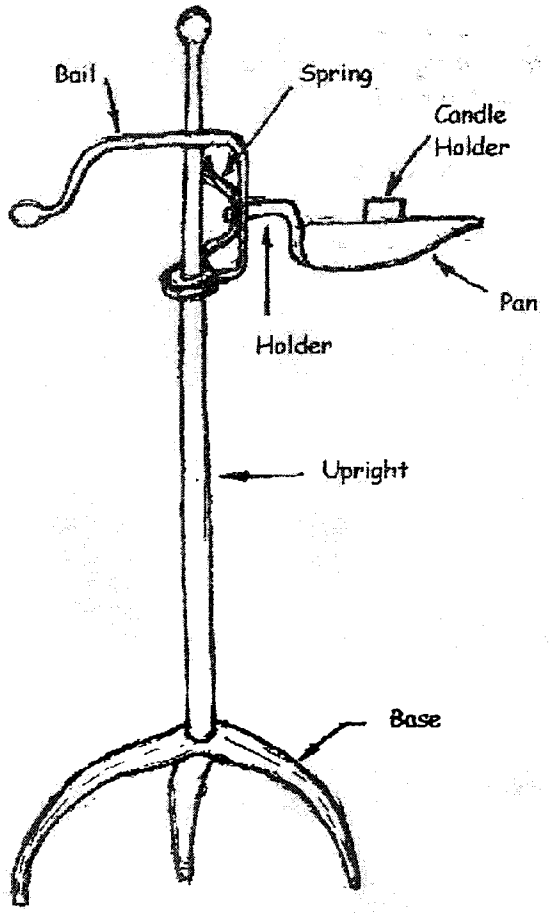
Part#7) Candleholder

From sheet stock, - 16 gauge - cut a standard candle holder and form around 3/4 inch diameter bar on a swedge block. Form the large section around the bar and then bend up to the tab to form the bottom. Leave a little slot for removing candle stub. Candleholders were made this way in colonial times - not from a piece of pipe. Drill hole in bottom of holder for riveting to pan.



To assemble, drill 1/8 inch holes (2) in bean on holder matching to the back of pan, then rivet together. Rivet candleholder to center of pan. Put holder tenon thru bail and spring and rivet together. Put upright tenon thru base and complete rivet. Slide bail and spring assembly over upright for final assembly. Apply a traditional finish of beeswax and linseed oil.

Watching our instructor, a good smith should be able to complete this project in 2-3 hours or less. As a student, my 1st piece took approximately 6 hours to complete. The final assembly should resemble the drawing on the next page.



Attending the John C. Campbell Folk School was a great experience and I hope to attend again in the future. Bruce Gillis told me prior to taking the class that in one week I would improve my skill level by at least 9 months. Looking back on the projects; forge welding practice and other skills that I was able to see and try, I have to agree. I again encourage all AACB members to apply for the scholarships that are offered. They are a tremendous way to improve skills, obtain new ideas and meet many interesting people.

Editors Note: First a thanks to Ken for his fine article. I hope for more articles from Ken.

Interested in more information on Colonial Lighting? There is a very good web site that details many of the different types of lighting and candles from Colonial times.

It can be found at:
http://www.ramshornstudio.com/early_lighting_1.htm

The drawings on the cover and lead-in to this article are based on a Standing Crusie Lamp that Jerry Darnell had at this year's class. I got some pictures of it and they were the basis for my sketches. To me this lamp is a true example of artistic form and function. It is very stable yet has very graceful flowing lines. No part is too heavy or too bold - it just looks right.

You can see another example of this type of light in Colonial Wrought Iron -- the Sorber Collection by Don Plummer.
Dave