Hook and Eye Latch

A simple and common item used around the house, shop and farm is the hook and eye latch. It is used to secure gates, cabinets, doors, etc. It also uses several of the basic blacksmithing techniques of tapering, bending, drawing out and calculating materials.

We will be using ¼" round stock. You will notice from the picture above that there are 3 eyes that need to be made. To calculate how much material is needed, we need to take into account how these eyes will be used. Basically, we need to be able to pass a ¼" round bar through the eye without binding. So the size of the eye needs to be the width of the stock plus about an 1/8" inch clearance on each side. So that gives us an inside diameter of the eye of ½". To this we need to add the thickness of the of the stock being used for the eye to get the diameter of the centerline of the stock used. In this case we add ¼" to our ½" for a diameter of ¾". Using the formula for a circle, diameter times PI, we will get the length of the stock needed for the eye. Using an approximation of PI we get 3 x .75 = 2.25. We will round this up to 2.5 to make things easy.

We have 2 eyes, each of which will require 2.5" of stock plus 1" for the nail portion which comes to 6". Add to that one eye without the nail we need 8.5". We will use another 2.5" for the hook. Add to that

the length of the hook which can be variable. For our exercise, we will do a 5’ length. So, our total stock will be 16”.

We will start by making an eye on each end of the 16” piece and then cut the off. These will be the nail eyes. The nail is made by tapering and drawing out keeping a square cross section for them.

Next, make the hook by tapering and bending. Then make another eye but before closing it put one of the nail eyes in the eye.