

Dragon Heart Pendant

By Valorie Clifton

This intermediate level tutorial is intended for those with prior skills in the areas of sawing and riveting.

This pendant is meant to be subjective. Some may see a pretty heart; some may see mermaids. I see a pair of serpentine dragons forming a heart. This pendant is pierced using a jeweler's saw, riveted to a base plate and inlaid with Wubbers EnCapture Artisan concrete.

I created a template to accompany this tutorial, complete with the shapes to cut out of the metal and placement marks for the holes to be drilled for the rivets.

If you prefer a cleaner, more modern look, the back plate can be cut the same size as the face plate for a no-frills, simpler pendant. The results are beautiful both ways. I used black pigment powder, but other colors can be used to personalize this pendant.

I created this using copper, but it would look great in silver. The finished size is approximately 2 ½ inches tall (3 inches with the bail attached) by 3 inches wide.



Materials List

- 18 gauge copper sheet (face plate)
- 22 gauge copper sheet (bail)
- 26 gauge copper sheet (back plate)
- Wubbers EnCapture Artisan Concrete with black pigment powder
- 4 - ¼ inch long, 14 gauge nail-head rivets (or you can create your own rivets using 14g. wire)

Tool List

- Safety glasses and particulate mask
- Rubber cement
- Jeweler's saw and blades, size 2/0 or 3/0
- Bench pin
- Template (provided with this tutorial)
- Flat jeweler's file with fine teeth
- Sandpaper or sanding sponges, fine grit
- 100 micron and 80 micron sanding film, or equivalent sandpaper grits.
- Flex shaft or rotary tool
- Rotary tool sanding drum (medium to fine grit)
- Grit-embedded, fiber texture wheel (optional)
- Gwen Youngblood's Riveting Essentials Kit (optional)
- Sharp wire cutter pliers
- 1.5mm hole punching pliers
- Heavy duty metal snips or shears
- Bench block or anvil
- Liver of sulfur (optional)
- WUBBERS Medium Oval Mandrel Pliers
- WUBBERS Apprentice Flat Nose Pliers
- WUBBERS Apprentice Round Nose Pliers
- WUBBERS Apprentice Nylon Jaw Pliers
- WUBBERS Artisan's Mark Sharp Texture Hammer
- WUBBERS Artisan's Mark Planishing Hammer or a riveting hammer
- 1.5mm drill bit
- Awl or metal punch
- Medium sized, hard rubber mallet

Step 1:

Print the template and cut out the pieces for the pendant. Using the rubber cement, glue the bail piece to 22 gauge copper, the back plate piece to 26 gauge copper and the face plate piece to 18 gauge copper; coat both the metal and the back of the paper for best adhesion. Allow the glue to dry (it doesn't take very long at all). *Don't worry about excess glue on the metal sheet; it can be easily rubbed off later.*



Step 2:

You can use heavy duty metal shears to cut excess metal from the template pieces.

Using the rubber mallet and bench block, gently tap the pieces to flatten them if the shears curled the metal. I find it easier to saw copper that has been lightly work hardened.



Step 3:

Using the awl and mallet or a metal punch, mark the holes for drilling (the 4 larger dots) where indicated. Also mark a dimple in the center of each black area of the design to be pierced.

The divots created by the awl make it easier to begin the drilling process without having the drill skitter across the metal.

Mark the small accent dots. These dots are too small for drilling holes, but they are a nice accent; strike the awl several times to leave a good impression.



Step 4:

Drill a hole in the center of each design, and for each rivet hole.



Step 5:

Carefully insert the saw blade through the drilled holes in the design and tighten the blade in the saw frame. I prefer to remove the bulk of the design first, and then return to saw the fine detail portions. Take your time and saw carefully, keeping your fingers out of the way of the blade. If you need to enlarge some of the spikes, use your best judgment.

Be very careful to support the center heart portion of the design while filing! The heart is only supported by two tiny bits of copper and can twist and break off, ruining all your hard work. Take great care to treat the center portion carefully during both sawing and sanding.



Step 6:

Using the flat file, carefully file any outer sharp edges and burs for all 3 pieces, and then sand all pieces smooth using sandpaper or sanding sponges. Try to maintain the curves and angles, especially with the bail.



Step 7:

Sanding sponges work wonderfully for smoothing the edges. You can also gently sand the front of the pierced back plate to remove any obvious burrs or sharp edges.



Step 8:

Cut thin strips of the 80 micron sanding film and use them to sand the inside of the pierced pieces. If you have a bench pin vise, it works wonderfully for holding items to sand, as shown in the photo.

Only a gentle sanding is needed, unless you need to refine the shape or erase jittery saw marks.



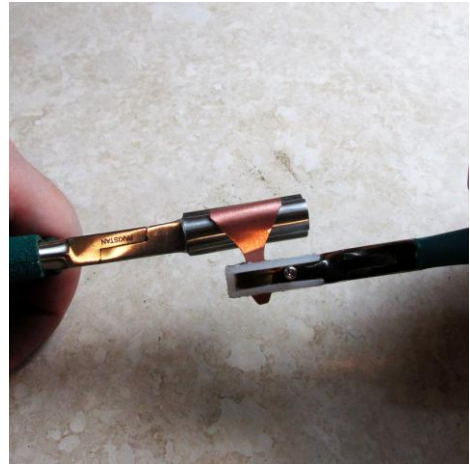
Step 9:

If desired, texture the front plate using the fiber texture wheel. Chances are that this texture will need to be redone after the concrete is added to the piece, but I wanted to illustrate the use of the texture wheel.



Step 10:

Gently fold the bail in half around the smallest jaw of the Wubbers Medium Oval Mandrel Pliers. Carefully pinch the lower portion of the bail that will be riveted in place using the Wubbers Apprentice Nylon Jaw Pliers. Align the two drilled holes. After forming the bail, slightly open the bottom part in order to slide the bail onto the pendant for riveting.



Step 11:

The edge of the back plate needs to be stretched in order to form the ruffles. Using the WUBBERS Artisan's Mark Sharp Texture Hammer, gently texture the outer edge of the back plate. This will stretch the copper and cause it to ruffle quite a bit.



Step 12:

Using the rubber mallet and the bench block, gently flatten the back plate, striking ONLY in the center and out toward the edges, but not striking the outer edge of the oval. The metal may lightly wrinkle and ruffle, but that's OK. You may need to turn the piece to the back to hammer that side, also.

This is a good time to put your maker's mark on the back, if desired.



Step 13:

It's time to rivet the 3 pieces together! Carefully center the face plate against the back plate. Using the hole punching pliers and the hole in the top of the front plate as a guide, punch the rivet hole for the center top of the back plate.

Pinch the pendant in between the legs of the bail so that one portion is in the front and one in the back. *An optional way to attach the bail is to have the entire bail in the back of the pendant.* Carefully align the holes for the front plate, back plate and bail.

Insert the nail head rivet with the head in the front of the pendant, through all 4 layers (bail, front, back, bail). Cut the wire to the correct length (*I used Gwen Youngblood's Riveting Essentials gauge for 14-gauge wire as my guide*).

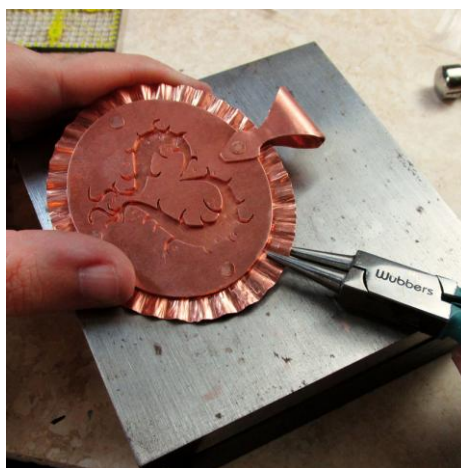
Lay the pendant face down on the bench block, taking care to keep the bail off the edge of the block (see photo). Using the rounded face of a Wubbers Artisan's Mark Planishing hammer or a riveting hammer, gently spread the rivet in the back of the piece, but don't fully flatten the rivet until the other 3 holes are punched and riveted.

Repeat this process for the other rivets.



Step 14:

Using the WUBBERS Apprentice Round Nose Pliers, gently grasp the edge of the back plate and slightly twist to the right. Reposition the bottom jaw of the pliers in the indentation just created and twist to the left. Repeat this process all around the edge, moving the pliers and twisting to form a ruffle similar to the ruffle on the edge of a piece of fabric.



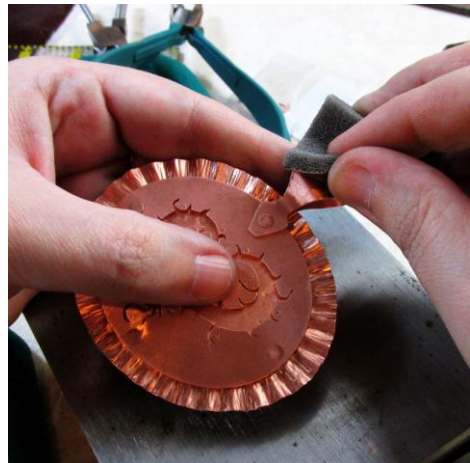
Step 15:

Using the rubber mallet and bench block, gently tap along the face plate to ensure that it sits flush on the back plate. This also gently pushes the ruffles toward the front of the pendant, which makes it more comfortable to wear.



Step 16:

Using the sanding sponge or sandpaper, refine all the edges, paying particular attention to the bail. A sharp bail will shred a leather cord.



Step 17:

This is what your piece should look like at this point.



Following the manufacturer's directions, patina the copper with Liver of Sulfur solution, if desired. I like to patina prior to adding the concrete, even if I may need to touch up the patina later.



Step 18:

Prepare the Wubbers EnCapture Artisan Concrete according to package directions, using the included black pigment powder. I added just a little more of the liquid solution to mine for a pancake batter consistency - approximately 1-2 oz. extra.

Carefully fill the pierced areas with the concrete. Gently tap the side of the pendant with a wooden dowel or a similar, non-marring tool to remove excess air bubbles. You can also gently tap the back of the pendant on the table top, taking care not to splatter concrete.

It is very important to remove as much of the excess concrete as possible by either gently scraping across the pendant or by carefully wiping with a damp cloth or paper towel. Try not to scoop concrete out of the pierced areas, but try not to make a big mess that will have to be cleaned up later.

Remember that the bail will cause the pendant to sit at an angle, so position the pendant with the bail hanging off a flat surface so the pendant is level. Allow the concrete mixture to dry overnight.



Step 19:

After the concrete is thoroughly dried (remember, overnight is best), it's time for cleanup. This process can take a while depending upon how messy the concrete is on the copper.

I like to use a sanding drum with my flex shaft tool. *Be sure to wear safety goggles and a particulate mask, as this will be a very messy process!* Be gentle and conservative with the sanding drum. Any scratches on the concrete will have to be sanded out later, so take great care with this step.

Sand until the piercing is revealed, being very careful not to mar the copper. It's best to sand back and forth, in parallel lines for an overall texture on the copper.

This process also will reveal tiny pieces of aggregate in the concrete, which is very neat! You may also uncover small air pockets.

Step 20:

If you look carefully at this photo, you will see what happens if you're careless with the sanding drum. Those scratches will have to be polished and sanded out.

Carefully sand the piece using sanding sponges or sand paper. Once the scratches were removed, I decided to texture my front plate using deliberate scratches. The front plate can be textured using the fiber texture wheel, the sanding drum or other sandpapers. *You must be careful to not over-sand the concrete.*

For my pendant, I used 100 micron sanding film to sand across the pendant in several different directions to create a gentle texture.

Reapply the Liver of Sulfur solution as needed; it does not seem to affect the concrete. Gently burnish with a brass brush and soapy water, and gently polish the pendant using steel wool or any metal polish, removing as much patina as desired.



Congratulations! Your pendant is complete! This photo shows my results.



Review Questions

- 1) True or False: Excess rubber cement is very difficult to remove from sheet metal.
 - a) True
 - b) False
- 2) True or False: It is very important to support the center portion of the heart during sawing and sanding.
 - a) True
 - b) False
- 3) True or False: The divots created by an awl or metal punch help to prevent a drill bit from skittering across the surface of metal during drilling.
 - a) True
 - b) False
- 4) True or False: Great care should be taken to clean up as much excess concrete as possible before setting aside to dry overnight.
 - a) True
 - b) False
- 5) True or False: Liver of Sulfur solution will ruin and stain Wubbers EnCapture Artisan Concrete.
 - a) True
 - b) False