

Spiral Staircase for a North Woods Home

By Jeff Benson

with photos by Jane Benson

In 1996, blacksmithing attracted me to attempt some woodworking gouges for a carved bed I was making. I struck hot metal and was bitten by the smithing bug instantly. Over the next couple years I transitioned from home builder and woodworker to full time blacksmith. The ability to design and create my own tools, the plasticity of hot steel and the wide variety of forming techniques all drew me into blacksmithing. What continues to fascinate me is the ability to manipulate a piece of hot steel into an elegant finished product. I enjoy meeting with clients, developing a design that reflects their personality and interests, and then making it come to life.

I was asked to create a spiral staircase in late 2010 for a new construction home in northern Wisconsin. I had previously worked with the clients so they were familiar with my work.

For many years their family enjoyed weekends at an old log cabin, but age dictated that it was time for the cabin to come down. It would be replaced by the new home where my clients would retire. They wanted the 14 foot spiral staircase from the main floor to the loft to be the architectural centerpiece of their new home.

We collaborated to design a staircase which would reflect the home's setting atop a small hill overlooking a scenic northern Wisconsin lake. The clients gave me a list of 27 specific flora and fauna to include in the railing. They also had several small sentimental items which they wanted incorporated into the design. What resulted was a north woods panorama that starts under the surface of the lake and proceeds up the hill and ends in the night sky. Atop the central log column, a bald eagle sits overlooking the lake.

The project scope included a central log column; step support brackets; treads; handrail and five forged decorative panels that fit between the vertical posts.

The staircase was built in phases. In my shop I set up the 14 foot log column, attached the stair support brackets and





Jeff Benson, homebuilder, woodworker, above all, blacksmith.



The snake emerging from a piece of driftwood was one of a variety of small forged pieces which adorn each tread of the stairway. It can be seen below on the fifth tread from the top.





construction treads along with 6 vertical posts and the handrail.

Everything was then assembled on site and the curved railing panels were tack welded to assure proper fit. Temporary railing panels were also fabricated so the clients could move in while I finished the detail forging in the decorative panels. After on-site fit-up all parts were disassembled and brought back to the shop to be sandblasted and finished.

The starting newel post was made to look like a weathered cedar tree trunk. I started with 4 inch 11 gauge round tube and cut three long narrow wedges out of the top half of the tube. The resulting gaps were closed and welded to give a slight taper to the tube. Three formed pieces of 14 gauge sheet were welded to the bottom to form root flares. I created raised knots with some creative welding techniques. Some deep grooves were hot chiseled in and the entire surface was textured with a small hand held rivet hammer and a dull chisel bit.

I forged some leaves from bar stock, cut other leaves and petals from sheet steel then chiseled in veins. They were then heated, textured and formed over anvil stakes or sunk into depressions in a wooden stump to shape them. The pickerelweed blossom had nearly 50 hand-forged parts welded together into a very lifelike form. All of the critters were forged, including an eagle, a turtle, a salamander, a variety of insects and more. Often it required several prototypes before I achieved the desired results.

Throughout the project I created tools and jigs, one example being a form to bend the top and bottom rails for the five panels. Leafing hammers, stakes and spring swages for the air hammer, and a new larger eye punch for the eagle were others. I was forced to try different approaches and techniques to create what I saw in my mind's eye.

In late November 2011, I installed the decorative panels and the eagle. The homeowners were thrilled, and, after nearly a year and 900 hours of labor, so was I.

Left, clockwise, Bloodroot flower finished with cold chiseled veins and compound curves. Plasma torch cut fern with forged fiddlehead. Notice the neat bite-marks where the caterpillar has chewed the fern — a little surprise for the client. Iris showing petals using compound curves. Complete pickerelweed blossom made up of 50 hand-forged elements.



Forged eagle sits atop the central log column and looks out over the lake.



Benson and helper bend a railing frame piece on a form built specifically for this staircase.



Completed newel post looks just like weathered cedar tree stump.



Hand-forged elements, which became a pickerweed blossom.



Newel post in process. Benson welded sheet metal pieces on to a pipe base to flare the bottom of the tree stump.