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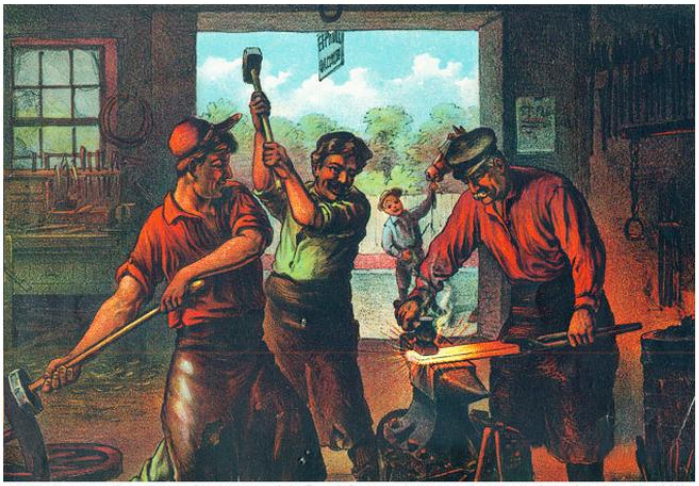

A blacksmith and two strikers. Illustration from the sheet music for "The Jolly Blacksmiths." Washington State Historical Society Collections, 1994.1.2.389.

Hammers and Anvils: Blacksmithing at Old West Forge

by Claire Gebben

Ever wonder where horseshoes, chains, and chisels come from? We'll give you a clue—they are made of steel. Steel is made from iron ore that is found in minerals and rocks that are dug from the earth. For centuries, blacksmiths have worked steel into useful objects such as swords, tools, latches, and iron gates. It's only in the last few decades that these objects have been made by machine.

"Blacksmithing used to be an everyday kind of activity," says Tim Middaugh of Old West Forge, a smithy nestled in the hills outside White Salmon, Washington. Tim is a dentist who practices and teaches blacksmithing in his spare time. "Kids would stop by the forge [the smithy] to watch the blacksmiths. The craft was intuitive to them, a part of daily life. Today, there are very few blacksmiths left. I traveled all over the country to learn from the ten or twelve blacksmiths who were keeping the craft alive all these years. I learned what I could from them, and now I'm passing that knowledge along."

It is Day One of a four-day Beginning Blacksmithing class. Five of us students sit in front of Tim's work station with notebooks and pens. We've traveled from around the Northwest to be here, a retiree, a research scientist, a gardener, an English teacher, and a writer. Each of us can't wait for the chance to start forging hot metal.

The time-honored method for teaching blacksmithing is by demonstration. Blacksmithing has been taught this way for hundreds, even thousands of years. The Master Blacksmith demonstrates how to make something while students and/or apprentices observe. Then, we try it ourselves.

The first thing Tim demonstrates is how to make tools: A punch to make holes in metal, a walking chisel to cut in groves, a hot cutter to slice all the way through hot steel. "Every blacksmith makes his or her own set of tools," he says. "Trust me, we'll use them. A blacksmith is always needing to make tools for this and that job, as the need arises."

Tim's work station has a forge (the "oven" for heating the metal) and an anvil. The anvil, trademark symbol of the blacksmith, is a large block of solid metal used as the "work table." On the anvil, the hot steel stock is

pounded. The horn is used for curves and circles. Other essential equipment includes a hammer, a pair of long-handled tongs, and a large wood barrel of water called a slack tub.

Tim lights his propane-fueled forge and it starts to roar. Blacksmithing work is hot, heavy, and noisy. All of us wear heat-resistant gloves, safety goggles, and ear plugs.

The demonstration begins.

The first step is to bring the steel to a hot enough temperature that its shape can be changed through pounding. With a pair of tongs, Tim places one end of a steel bar in the forge. The forge is around 1800 degrees Fahrenheit in temperature—that's about 18 times hotter than a super hot day!

In the forge, gray steel changes from cherry-red in color to orange to bright yellow. Tim grips the bar with his tongs and places the hot end on the anvil. Holding the steel firmly against the anvil, he beats on it with his hammer. With each blow, sparks fly, and the bright tip begins to flatten—a chisel in the making.

It will take several "heats" and poundings to bring the metal to a wedge. Tim's tongs get hotter with every reheat: To cool them, he dips the tongs in a bucket of cold water. The water hisses and the tips steam when he pulls them back out.

Once the chisel is formed, Tim sets it aside to slowly cool, or "anneal," and instructs his students to get to work.

It's not as easy as it looks.

"Be patient," Tim advises. "Work on hammer control and the power will come."

In the next demonstration, Tim smoothes and sharpens his cooled chisel with a grinder. Then he reheats the entire piece to yellow-orange, lifts it out of the forge with the tongs, and sticks the tip in a vat of oil. The chisel bursts into flame. Carefully, Tim swishes it back and forth, checking the metal once in a while as he waits for it to reach the proper temperature. When he sees an amber color moving up the metal, he douses the chisel completely in oil and sets it aside to cool. Chisel finished.

In all, that first day we make five different tools, and for the following three days we use our tools to make other stuff: fireplace pokers, scrolls, and plant hangers. Tim demonstrates how to draw out metal to a tip, then curl it into a scroll; how to shape metal into leaves; how to split a bar of steel in half. We punch holes in hot steel and connect two pieces of metal together with a glowing hot rivet.

In my mind, though, the very best part is learning to strike. Striking is when two blacksmiths work together. It is especially useful when working on bigger, heavier pieces of steel.

"The striker is the smith's helper, who strikes the hot steel with a sledge at the smith's direction," Tim says. A heavy sledge hammer and a two-handed, focused blow wield the power needed to move metal along. "First the smith hits the steel where he wants a strike. It's the striker's job to hit exactly where the smith hits. It is the striker's obligation to concentrate and strike as directed."

The practice of striking reveals both the skills and challenges in the art of blacksmithing. Blacksmiths must learn to trust one another, to rely on one another's strength, and to communicate through rhythm and timing. Sparks fly, the hammers clang, and the hot metal is shaped to order.

The art of blacksmithing had almost disappeared when, in the 1970's, the craft finally experienced a revival. The Northwest Blacksmith Association (NWBA), founded in 1979, is now going strong, with over 500 members in its thirty-first year. Tim Middaugh is the Education Chair of NWBA.

CLAIRE GEBBEN really gets into her writing projects. Her visit to Old West Forge was actually research for a novel she is writing about a 19th century blacksmith who came to America from Germany. Claire writes for the Mercer Island Reporter and blogs about her life adventures. She is an MFA student in creative writing with the Northwest Institute of Literary Arts.