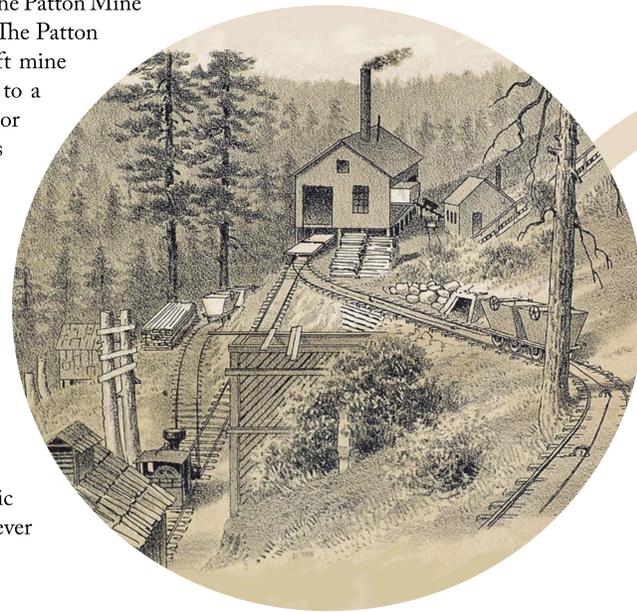


Food for the Furnace: Iron Ore and Charcoal

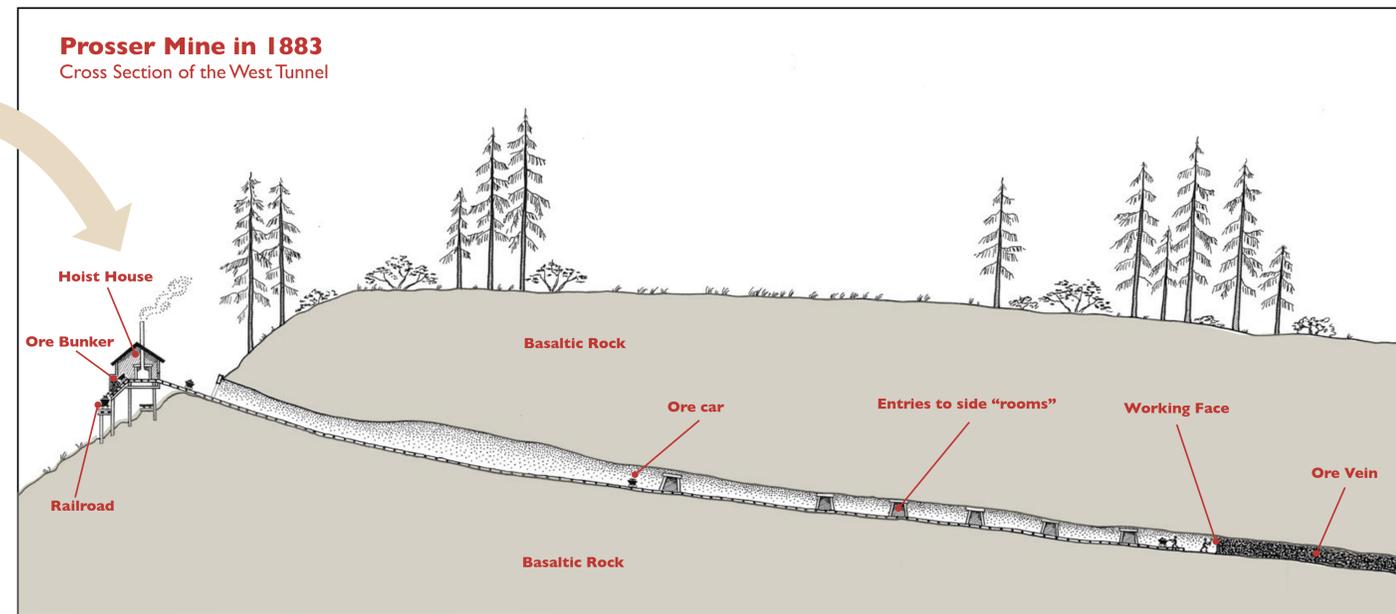


The Mines

Ore for the Oswego Furnace was obtained from two mines: the Patton Mine south of the lake and the Prosser Mine on Iron Mountain. The Patton Mine was an open pit mine. The Prosser Mine was a drift mine with horizontal tunnels that penetrated the mountainside to a depth of about 800 feet. By 1893 the mine had four tunnels or "adits" that branched into a network of "rooms." The ore was extracted by the room and pillar method, which involved leaving large blocks of ore to support the roof. When an area had been worked as far as possible, the pillars were removed beginning with the supports farthest from the entrance. As the room was gradually caved in, the ore was shoveled into small cars, hauled to the entrance, and dumped in bunkers. A narrow gauge railway hauled the ore down to the furnace. The type of ore found in Oswego is a hydrated form of hematite known as bog ore or limonite. Bog ore was created millions of years ago by blue-green algae living in airless swamps. The ore seam on Iron Mountain is sandwiched between two layers of volcanic rock. It varies from six to fifteen feet in thickness and was never exhausted before the furnace shut down.



The Prosser Mine. Detail from a Supplement to *The West Shore*, 1889. Courtesy of the Lake Oswego Public Library.



Smoldering charcoal pits. Photo courtesy of the Connecticut Historical Society, Hartford, Connecticut.

Charcoal Making

Charcoal was the preferred fuel for iron making for thousands of years because it burned with intense heat and produced little smoke. However, the process of turning wood into charcoal created prodigious amounts of smoke. Charcoal was made by charring wood in earth-covered mounds built on level clearings called "hearths" or "pits." Oswego's charcoal was made exclusively of Douglas fir trees cut by Chinese laborers.

Cordwood, cut into four-foot lengths or billets, was delivered to the hearth where the collier built the mound. He stacked the billets in two tiers around a pole and filled the gaps with lap wood. The finished stack was about thirty feet in diameter and twelve feet high. The mound was covered with leaves and soil to cut off oxygen. The charring process took about two weeks. During that time the collier tended the smoldering mound night and day to ensure it didn't catch fire. Burning was regulated by opening and closing air inlets around the base of the mound. The most dangerous part of the job was jumping up and down on top of the mound to tamp down air pockets. The finished charcoal was allowed to cool for about one week before it was raked out.

In 1880 the Oswego Furnace consumed an average of two acres of timber per week. Iron companies needed vast tracks of timber to fuel their furnaces. They practiced an early version of forest management, which involved clear-cutting woodlots and then letting them re-grow for twenty years before cutting them again. In spite of this attempt at sustainability, charcoal making led to deforestation because the size and number of furnaces kept growing. Eventually, coke, made from bituminous coal, replaced charcoal as the fuel of choice. Lack of a coal supply was a major factor in the demise of the Oswego iron industry.

