the necessary adjuncts for mining and manufacturing iron on an extensive scale.

The first step for the establishment of an iron manufacturing plant here was taken in 1865, when the Oregon Iron Company was organized, with a capital stock of $200,000.00. The articles of incorporation bore date February 23, 1865. Operations were immediately commenced, and the first pig iron was made August 24, 1867. This was the first iron ever made west of the Rocky mountains. During the time this company operated the plant, about ten years, it turned out seven thousand four hundred and sixty tons of pig iron. In 1878 the Oswego Iron Company bought the Oregon Iron Company's property, and had made eighteen thousand five hundred tons of pig iron at the time of selling out to the Oregon Iron & Steel Company, October 26, 1882. This last named company operated the works until November, 1885, during which time it made fourteen thousand six hundred and sixty-three tons of pig iron. At the last named date the works were closed, and have remained so since. About the first of September next, work will begin with a greatly enlarged plant and complete modern equipments.

The first charcoal furnace erected was run by water power, and had wooden tubs and cylinders. These wooden appliances were removed during the time the Oswego Iron Company owned the plant. The difficulty which led to closing the works in 1885 was amicably adjusted last year, and the company reorganized with a paid up capital of $1,500,000.00, and the first step toward resuming operations was the construction of new works throughout. The old plant was entirely discarded. Even a new mine was opened. January 1, 1888, the construction of the new furnace was begun, and the work was pushed to completion. The blast furnace has a thirteen-foot bosh and is sixty feet high, with six five-and-one-half-inch tuyers. The bosh walls are protected by water blocks, and the column of the furnace is lined with fire brick two feet in thickness, with a back wall of red brick eighteen inches thick. The down-comer gas flue, from the furnace to the stoves and boilers, is of wrought iron, six and one-half feet in diameter, lined with fire brick. For heating the blast, there are three stoves of fire brick, with wrought iron shells, fifteen feet in diameter and seventy-five feet high, with conical tops. These stoves are lined with a checker work of fire brick. This checker work is heated to a white heat by waste gas from the furnace, then a cold blast is turned on at the reverse side and forced up and down through the stoves until it absorbs the heat, when it is carried back to the furnace. The blowing engine is of the Weimer type, having a total weight of one hundred tons and a capacity of eight hundred horse power. The capacity of the blow is twelve thousand cubic feet of air per minute, with ten pounds pressure to the square inch. The power for running this machine is furnished by two batteries of French type boilers. No fuel is used either in generating steam or in heating the stoves, this service being performed entirely by waste gas from the furnace. The smoke-stack is of wrought iron, nine and one-half feet in diameter and one hundred and sixty feet high, and is lined with nine inches of fire brick from bottom to top. The elevator has two cages, one ascending while the other descends, and is capable of lifting five thousand pounds. The stock house is sixty by one hundred and eighty feet, with two ore bins, or bunkers, with a storage capacity of three thousand tons each. The lime house, in one end of this building, holds three thousand tons of lime rock. Seven hundred thousand feet of lumber were used in the construction of this stock house.

The mine of the company is about two and one-half miles west of Oswego, and is connected with the works by a narrow gauge railroad. It is a fissure vein of brown hematite, averaging ten feet in thickness, the ore yielding forty per cent. metallic iron. The old mine penetrated the hill in which the ore is found for a distance of about a thousand feet. The ore is first shoveled into cars in the mine, hauled out and dumped into bunkers, from which cars on the Oregon Iron & Steel Company's narrow gauge railway are loaded and drawn to the furnace stock house. There it is weighed on the cars and dumped into the crusher, from which it passes to the bunkers in the stock house. From there it drops into receptacles, is weighed again and hoisted to the top of the blast furnace, where it is charged. The molten metal from this furnace is cast into pig iron, and is then ready for further manufacture.

The charcoal kilns are thirty-six in number, located near the furnace. They are of the bee hive pattern, thirty feet in diameter and thirteen feet high, each with a capacity of fifty cords of wood, which makes twenty-five hundred bushels of coal, and they can be turned twice a month. The railroad track runs along above the kilns, which are charged from the top. It requires the coal from one hundred cords of wood to run the furnace one day to its total capacity of fifty tons. A cable road takes the coal from the kilns to the furnace.

The company's pipe foundry has a main building sixty-eight by one hundred and eighty feet, supplied with one ten-ton steam crane and three five-ton hand cranes. It has a large pit for casting pipes vertically, and a capacity for turning out twenty-five tons daily, pig iron being taken from the furnace and remelted for this work.