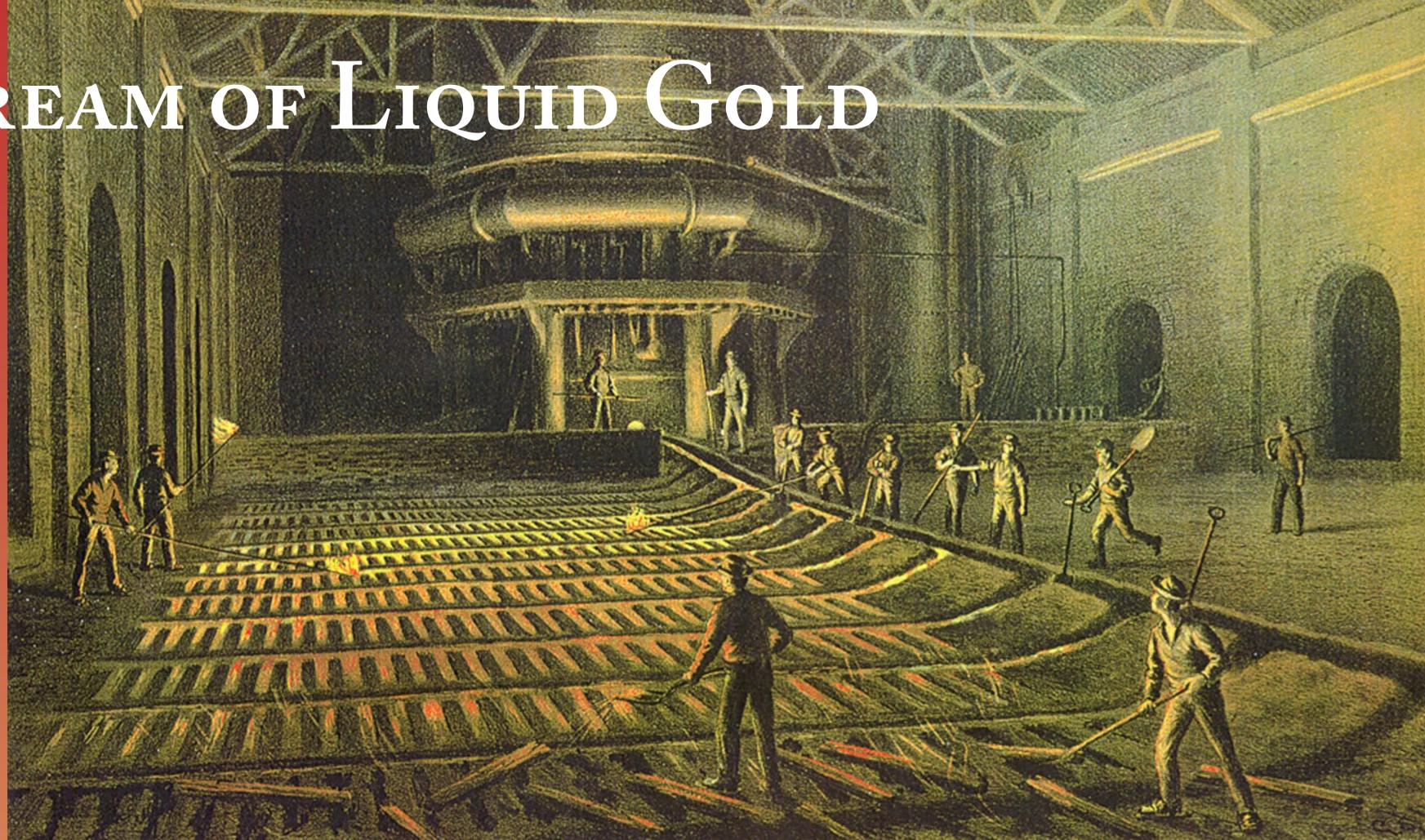


LIKE A STREAM OF LIQUID GOLD



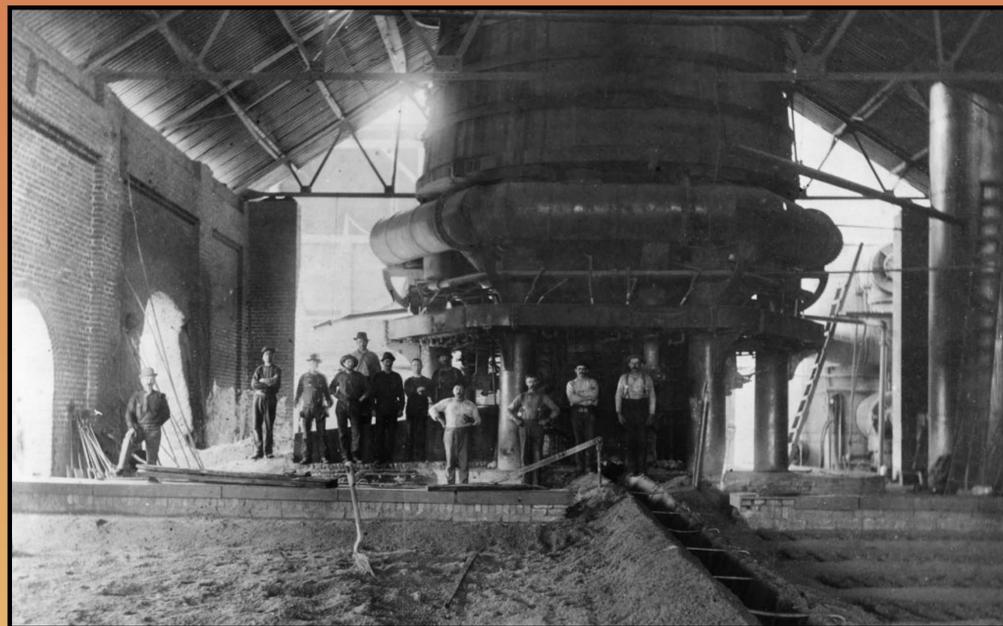
WHAT IS PIG IRON?

Molten iron from the furnace was cast in the form of crude bars called “pig iron.” Early ironworkers saw a resemblance between the pattern of trenches in the sand floor and a sow nursing a row of piglets. So they named the long trenches “sows” and the short ones “pigs.” A typical bar of pig iron was about 38 inches long and weighed about 100 pounds. Most of the iron produced in the second furnace was used for manufacturing pipe in the company’s pipe foundry.



Left: Color lithograph of the Oswego casting house from *West Shore* magazine, November 2, 1889.

Left Below: Workers pose in front of the furnace in this 1890s photo. The large pipe encircling the furnace is the bustle pipe. It supplied hot air to six blast pipes that injected it into the furnace. Courtesy of the Lake Oswego Public Library.



Extracting metal from ore is the first step in manufacturing any iron or steel product. This is usually done in a blast furnace in a process called smelting. Because blast furnaces take so long to heat up, they work continuously for months at a time and are “charged” with raw materials every 15 to 20 minutes. Charcoal, iron ore, and limestone are fed into the top of the furnace and hot air is injected into the bottom. Over the course of 6 to 12 hours, molten iron drips down and collects in the hearth. Slag, containing impurities from the ore, floats on top of the iron, like oil on water. This makes it easy to separate the iron and slag. The Oswego Furnace was reportedly tapped twice a day, at five a.m. and at five p.m. It was a dramatic sight as this eyewitness account reveals:

“Descending into the casting-house, we take our stand under the roof in front of the furnace, for the purpose of seeing how ‘pigs’ are cast.... It is just previous to casting time, and the fire is roaring and rushing out at the bottom of the furnace with a deafening noise, loud as thunder.... All over the floor of the casting-house sand lies to the depth of eight or ten inches. This is now shoveled aside, and beams of wood of the length and shape of the intended ‘pigs’ are laid gridiron fashion upon the floor, in number proportioned to the expected extent of the casting. The sand is next shoveled between all these pieces of wood, pressed in quite hard, and the beams then taken out, thus leaving a series of gutters, or moulds, as shown in the engraving.

“A long, principal gutter is formed in the sand from the furnace to the moulds.... A man takes his station by the side of the main gutter with a spade in his hand—for a purpose presently to be noted—and all is ready. One of the workmen near the furnace pokes away the sand, etc., from the mouth or hole from which the metal is to issue, until a round, red spot is seen; then an iron bar has its end vigorously driven into the spot, the mouth is opened, and presently out pours the molten metal, glistening, throwing out myriads of fiery sparks, and looking in the daylight exactly like a stream of liquid gold. A way it flows down the furrow to the first row of moulds, which it immediately fills; and the man with the spade now steps forward and sticks his implement across the entrance gutter, to prevent the admission of any more metal to that series. It now flows to the next row, which it fills, and so on, until the whole of the moulds are filled, or there is no more metal forth-coming.”

From *The Manufacturer and Builder*, vol. 2, no.3 (March 1870).

