

dition to our artificial resources, rendering us quite independent of eastern manufacturers for an extensive line of articles indispensable to progress. Anchors, chains, steamship shafts of the largest dimensions, railroad iron, and a multiplicity of other equally valuable aids to commerce, manufactures and agriculture, are the products of this prominent industry.

The Union Foundry is the pioneer on this coast, having been commenced in a very humble and unpretending manner in 1849, but has kept pace with the growth of the city and State, and now covers an area of 50,000 square feet, on which every branch of the business is conducted, with eminent skill and success.

The Miners' Foundry is amply supplied with the requisites for conducting a large business, and employs an average of one hundred and fifty hands; the number varying somewhat to correspond with the pressure upon its capabilities. Its annual consumption of the raw material is about 2,200 tons of iron, pig and wrought, and between 700 and 800 tons of coal.

In 1850, the Pacific Iron Works were added to our growing manufacturing interests, and have met with very gratifying success. Engine lathes, iron planers, drills, punches, shears, and many other tools and implements of kindred character are made here in great excellence. From one hundred and thirty to one hundred and forty hands are almost constantly employed, and the consumption of raw materials amounts annually to 800 tons of coal and 2,000 tons of iron, including pig, bar, and plate.

Stove castings, ornamental iron fronts for buildings, fences, etc., are specialties in the Etna Works, which consume an average of 700 tons of iron, and employ 34 men.

Iron castings of every possible description used in the construction of buildings, are turned out in quantities to suit at the Atlas Works, which keep a force of thirty men in constant occupation. Much of the iron which adorns the fronts of many buildings in San Francisco was the product of this establishment.

The Fulton Works employ sixty men, and consume annually 600 tons of iron and about 400 tons of coal.

Iron safes, doors, shutters, vaults, mantels, etc., are the regular products of the Phoenix Works, occupying the time and skill of 25 workmen and consuming between 280 and 300 tons of iron every year.

The Empire, Pioneer, Eureka, Columbia and other foundries, are all in the full tide of successful operation, while the Risdon Boiler Works find no lack of demand for the admirable products of its skill and industry; nor is this demand glutted by the large surplus furnished by the Portland Boiler Works.

It has become proverbial that machinery of nearly all kinds—especially for mining purposes, agricultural implements and mechanics' tools—are made in San Francisco of a better quality and more serviceable character than anywhere else in the Union. A knowledge of this important fact, as ascertained by actual use and comparison, is driving foreign and Eastern fabrics of this kind from all our domestic markets, as well as those of distant interior points such as Utah, Idaho, Montana, Arizona and even New Mexico. Fanning machines, corn-shellers, and other simple implements of kindred character, and of San Francisco manufacture, are now frequently seen among the Pimo, Maricopa and Papago Indians, to whom they prove invaluable assistants.

Of notable importance are the Selby Silver and Lead Smelting and Reduction Works, covering a vast expanse and fitted with every appliance for conducting these operations on a grand scale. They are the most extensive and complete in the Union, and are susceptible of being greatly enlarged. This establishment is most advantageously located, at the

very edge of deep water, where the heaviest ships can load with facility and dispatch. The works are now capable of consuming 1,200 tons of lead and silver ore per month, for refining, and 1,000 tons per month for smelting and reduction. On several occasions 1,000 tons of pig-lead per month have been landed in New York, and a regular monthly supply of from 400 to 500 tons is maintained for exportation to the East, besides the large quantities required for domestic and interior consumption. The superiority of our lead is now universally admitted, while the quality of the sheet lead, lead pipe, and shot turned out at the Shot Tower—which is not auxiliary to the Smelting and Refining Works—is not equaled by the like fabrics of other places. Two sets of hands are employed, night and day, and number collectively over 130 men, many of them having families which are comfortably and independently supported through the agency of this great industry. In addition to the lead obtained from the ores by these works, large quantities of gold and silver ore are also extracted, amounting during the past year to the handsome sum of over \$800,000. The importance of such enterprises cannot be over-estimated. Large and numerous as are the gold, silver, lead, copper and zinc working establishments of San Francisco, they are not yet adequate to the full and efficient working of those leading interests, but their capacity is capable of indefinite extension, with the prospect of being fully taxed at no very remote period.

This city contains fourteen different establishments devoted to the manufacture of gold and silver ware, employing an aggregate capital of \$225,000, and fabricating articles valued at \$430,000 per annum.

The business of assaying and refining gold and silver is energetically pursued, with profit, affording large facilities, indispensable to a first-class gold and silver producing region. Heavy sums, formerly shipped to Oriental countries in Mexican dollars, as the only exchangeable medium for teas, silks, spices, etc., are now forwarded in refined silver and gold bars, facilitating commerce, and rendering our precious metals available for trade on a more liberal basis. Most of the gold and silver coined at the Branch Mint, is now refined at private offices. Nearly one-half the entire gold and silver product of this Coast is refined in San Francisco.

Our wooden fabrics are diversified and important, although for some of the materials employed we are dependent upon Eastern supplies. This is especially the case in the manufacture of wagons, buggies, carriages, and other articles requiring the use of hickory, white oak and walnut. We are fairly furnished with saw mills; sash, door and blind factories; cooperages; furniture makers; billiard table constructors; piano makers; wooden ware and broom manufacturers; boat builders; and other similar concerns, numbering one hundred and twenty-two, turning out an aggregate annual value of \$4,000,000 worth of perfected articles.

The brass foundries of San Francisco are six in number, with a joint capacity for running about 180 tons of brass and copper per year, and employing, in the aggregate, from 150 to 160 men.

A. S. Hallidie is proprietor of the only wire and rope works on the Coast. The establishment went into operation in 1857, and has met with a large measure of success, the demand being somewhat urgent, and steady. This gentleman has recently invented a cheap and ready mode for the conveyance of ores to mill, by means of buckets or cars suspended on wire ropes, which traverse mountainous ridges inaccessible to ordinary modes of transportation. The works are capable of supplying from twelve hundred to fourteen hundred tons of wire rope per annum, besides manufacturing largely in the way of screens, sieves, wire cloth, cables for suspension bridges, and other like articles.

The Woolen Mills of San Francisco have earned