

the same time there is being manufactured machinery for quartz-mills, sugar-mills, saw-mills, marine and stationary engines, with a locomotive steam engine occasionally thrown in. The rapid construction of the Central Pacific Railroad towards Salt Lake City is now opening up a new market for the industry of our people, as thereby Montana and Utah Territories will become larger consumers of the products and manufactures of this coast. A vast mineral region in Eastern Nevada and Utah also will be opened up to prospectors and become developed, the requirements of which in machinery must also be supplied from the foundries and machine shops in this city. Looking forward to the important events which promise to take place in a few years after the completion of the trans-continental railway, observers of the progress made hitherto by our people can readily see that the industries in metal in this city are on the threshold of a stimulation and development unprecedented in the annals of any manufacturing city of the Union. It needs only the discovery of extensive deposits of iron ore at convenient points of access along the coast to complete facilities for iron manufactures which are not enjoyed by any commercial city in the Union. Among the most prominent and important foundries in this city are the following, all of which are so extensive in their appointments as to be able to do any work in their line that may be required.

THE UNION FOUNDRY.—These works, located on the northeast corner of Mission and First Streets, were first established in 1849 by James and Peter Donahue, who were the pioneer foundrymen in the State. Possessing the smallest foundry facilities at its commencement, it has steadily increased in its equipments, until it now occupies an area of over 50,000 square feet, and gives constant employment to three hundred men. The foundry is now conducted by H. J. Booth & Co., who are the pioneers in manufacturing locomotive engines, two of which, weighing thirty-two tons each, were delivered in 1865. These locomotives, "California" and "A. A. Sargent," have been doing constant service on the San Francisco & San José and the Central Pacific Railroads, and are considered by railroad experts to be equal in capacity and workmanship to the best of their class produced elsewhere.

THE MINERS' FOUNDRY.—This foundry is located on the east side of First Street, near Folsom, and in extent and quality of appointments, ranks in the first class of such establishments in this city. The proprietors are Messrs. Howland, Angell & King, who have made a specialty in manufacturing mining machinery and stationary engines, among which latter is included the Hicks engine, for which they are the sole agents for the Pacific Coast. This firm are also contractors for the ornamental and other iron work to be used in the construction of the new State Capitol now being erected at Sacramento city. When in full operation, the Miners Foundry gives employment to about two hundred and seventy-five men, and from the style of work made, consumes more raw material than any other establishment on the coast.

THE PACIFIC FOUNDRY.—These works are located on the east side of First, opposite Minna Street, extending, as is the case with the other foundries mentioned, through to Fremont Street. The manufactures of this foundry are very varied in their nature, but are specially noted for the production of sugar mill and refining machinery, and marine engines, a large number of the first named, including vacuum pans, having been supplied to the Sandwich Islands; and quite a number of the latter of large size and power furnished to vessels employed in the bay and coast trade. The firm, consisting of Messrs. Ira P. Rankin, Albert P. Brayton, and A. C. Austin, transacting business under the

name of Goddard & Company, are also sole agents for the manufacture of the celebrated "Hartford" engines, which are favorably known on this coast.

THE VULCAN IRON WORKS.—These works, located on First near Natoma Street, were established by George Gordon and Steen, who, in 1855, transferred them to an incorporated company under the above name. The demands for manufacturing have now increased so largely that it has not only caused the extension of the original works through to Fremont Street, but also the erection of buildings of equal extent on the opposite side of the latter named street. These works now occupy the most space, and are as complete in their appointments as any other foundry in the city, boilers and mining engines being the specialty in manufacture.

RISDON IRON AND LOCOMOTIVE WORKS.—This company was incorporated during the present year, with \$1,000,000 capital stock, comprising among its names some of the most important steamship proprietors on the Pacific Coast. Since the incorporation it has absorbed the large boiler establishment of Coffey & Risdon, whose proprietors are connected with the operations of the new company. The works are located at the southeast corner of Beale and Howard Streets, and occupy an area of two hundred and twenty-seven and a half feet square, on which is a boiler shop of one hundred and thirty-seven and a half by ninety-six feet, foundry one hundred and thirty-seven and a half by forty-five feet, and machine shop ninety-six by ninety-eight feet, the latter being galleried three stories high. Although only completed in May, 1868, the works are first class in appointments, the lathes and other tools having no superiors in size or other requirements. The proprietors claim to have the largest lathe on the Pacific Coast, it being able to finish shafts forty-eight feet long and twenty-five tons weight. Some idea of the magnitude of the operations of these works can be formed from the fact that they are now engaged in furnishing the Spring Valley Water Company, under contract, with 40,000 feet boiler iron pipe, thirty inches diameter, which is to take the place of the Company's present wooden flume.

The works have a patent riveting machine for making boilers, which is said to rivet equal to hand work, and is the only one of its kind on the coast. There are two hundred and seventy-five hands employed in these works, who, in addition to other work, turn out five hundred feet of the water-pipe above named *per diem*. Steel boilers, the first made on this coast, was exhibited at the late Mechanics' Fair by these works.

GOLDEN STATE FOUNDRY.—This foundry is located on the east side of First near Market Street, and is owned by Messrs. Palmer, Knox & Co. Employment is given to eighty men, amalgamating pans and mining machinery being produced in large quantities.

THE ÆTNA FOUNDRY.—This foundry is located on Fremont Street near Natoma; Messrs. Hanscom & Co., proprietors. Mining machinery, force and lifting pumps and turbine wheels are manufactured in large quantities, the last being a specialty. They also produce the Hanscom improved steam pump for feeding boilers, Carvalho's steam super-heater, and the celebrated Pendergast white iron stamp, shoes and dies.

THE FULTON FOUNDRY.—This foundry is located on Fremont, opposite Minna Street, Messrs. Hinckley & Co. being proprietors, who do a very extensive business in iron castings, steamboat and mill machinery, and force and lift pumps. The works are very complete in tools, and of size sufficient to supply most all kinds of machinery needed.

EMPIRE FOUNDRY.—This foundry is located at