

precious metals, is carried on to a considerable extent in California. Although there are several establishments in the first named department located in various portions of the State, owing to the universal adoption of the milling process for the reduction of metals, this business is not carried on to that extent that might be reasonably supposed. There are fifteen assay establishments in San Francisco, among which the following occupy a prominent position: Rogers & Brown, Hentsch & Berton, Falkenau & Hanks, B. B. Thayer, O. C. Pope, and J. A. Bauer. The most extensive refinery of metals in the State, next to the U. S. Mint at San Francisco, is the San Francisco Assaying and Refining Works, located on Brannan, near Seventh street, San Francisco. This refinery consists of a substantial brick structure, one story high, one hundred and thirty feet in length, and sixty feet wide, fitted up with a powerful steam engine and all the necessary apparatus for melting and refining metals in large quantities. The office of the establishment is at No. 416 Montgomery street.

**CHEMICALS.**—Although the returns made in this department during the past year amount to only about \$60,000, the demand for all articles of this character consumed in the numerous metallurgical, photographic, and manufacturing establishments generally is steadily increasing. The oldest concern of this character is that of E. Judson & Co., on Valencia, between Fifteenth and Sixteenth streets. The operations here have been mainly confined to the production of acids, this manufactory having, for the past twelve years, furnished the nitric, sulphuric, and muriatic acids used in the U. S. Branch Mint in San Francisco. The large quantities of nitrate of soda used, are imported from Chile and Mexico; and, notwithstanding large beds of sulphur are found all along this portion of the Pacific, the article required here is imported from Europe.

The Pacific Chemical Works, established by Messrs. Falkenau & Hanks, six months ago, on Sixteenth, between Folsom and Harrison streets, manufacture every article in this line for which there is any demand here, and are fully prepared to fill all orders for the trade. Their apparatus is extensive, and they are engaged in the manufacture of acids and every variety of chemicals used in metallurgical, photographic, and other operations—all kinds of medical and pharmaceutical preparations, pigments and dye-stuffs. They are also prepared to make assays and scientific chemical investigations, analysis of mineral waters, our mineral and metallurgical products, and commercial articles.

**SALT.**—Large deposits of salt are said to exist in certain portions of California lying beyond the Sierra Nevada Range, and farther south in the Territory of Arizona. Their distance from navigation, and the consequent cost of transportation, render their working impracticable at present. Extensive deposits of a similar character are found in portions of the State of Nevada, from which the large quantities of the article used in working the silver ores of that region are procured. The manufacture of salt from seawater by solar evaporation is carried on to a considerable extent in Los Angeles and Alameda Counties, the latter works being immediately across the Bay from San Francisco. Large quantities of rock salt are also shipped to this market from the mines of Carmen Island, on the coast of Lower California. Four mills are engaged in grinding the product from these sources, while a considerable portion is used underground for the northern codfish trade, mining purposes, and pickling meats and vegetables. About 35,000 tons were ground at the mills in this city during the past year. Notwithstanding the extent to which the business has already been carried, it may be regarded as only in its infancy here.

**OILS AND PAINTS.**—One of the most thorough and complete establishments for the manufacture of oils and paints to be found in the United States has been completed, and will shortly go into operation in San Francisco. The building, which is located on King street, between Second and Third streets, near the Bay, is a substantial brick structure on a solid rock foundation, and is 43 feet front by 96 deep, with four stories and a basement in which the engine and the larger portion of the heavy machinery is placed. The chimney is ninety-one feet in height. The fifty-horse power engine used; driving the extensive machinery of this establishment was manufactured at the Vulcan Iron Works in this city; and embodying all the recent improvements in this department, is one of the most perfect specimens of the kind ever produced here. A large hopper is located in the basement, from which the seed to be crushed is conveyed to the upper floor, to be stored in bulk until such time as it may be needed. A large iron tank is also provided for receiving the oil. The two tempering stones, located on the second floor, which are of solid blocks of Angel Island stone, are seven feet in diameter and eighteen inches across the edge, and are each near five tons in weight. The iron bed plate traversed by them weighs near 3,000 lbs.

Four rollers for crushing, and three hydraulic pipes, are located on the same floor. The third story is occupied by the machinery for crushing oil cake for feed, and for other purposes. The machinery, which is of a capacity sufficient to crush 4,000 bushels of flax-seed per week, is calculated for crushing linseed, castor-bean, mustard, rape and other seeds manufactured. There is also connected with this establishment a mill for the grinding in oil of white lead and zinc paints, and the manufacture of every variety of paints used in manufactures and arts. The entire arrangements have been under the superintendence and direction of Mr. B. P. Brunner, who visited all the principal establishments of the kind in the United States and Europe for the purpose of inspecting their works; and this mill is the embodiment of his observations. The powerful presses used are the inventions of this gentleman, patented some years since. Notwithstanding the soil and climate of California, are well adapted to the culture of flax-seed, owing to the want of a market for this product, which drawback is obviated by the going into operation of this manufactory, there has been but little of this article raised. Until a sufficient quantity can be furnished at home, the company will be compelled to draw their supplies from Calcutta and other countries abroad. The cultivation of the castor-bean promising to prove a profitable crop in this region, through the introduction of this manufactory, considerable attention is devoted to the subject.

**TURPENTINE, PITCH, AND ROSIN.**—The manufacturing of these articles engages the attention of numerous enterprising firms in this State and Oregon. In Yuba and Butte Counties the production is nearly one hundred tons per month, which can be increased to an almost unlimited extent, as the supply of the raw material is abundant. Notwithstanding the low prices obtained for these important articles of trade during the past year, the receipts from the interior are regular, and their production must afford to those engaged in the business a remunerative return.

**OIL REFINERIES.**—There are two establishments engaged in the refining of crude petroleum in San Francisco, one of which is owned by Stanford Brothers, and the other by Messrs. Hayward & Coleman; the first of which produced, during the past year, about 35,000 gallons, and the latter 45,000 gallons of the refined article, although, owing to the non-arrival of a supply of the crude article, operations have been slightly interfered with. Mr. Charles Stott

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