marine blasting, boring artesian wells, etc. They are successfully employed throughout this coast and the Eastern States. Offices 14 and 26 Wall Street, New York, and 315 California Street, this city.

BRASS AND BELL FOUNDRY.—The new and extensive works of W. T. Garratt & Co., situated on the corner of Fremont and Natoma streets, San Francisco, are the largest Brass Works on the Pacific coast. W. T. G. & Co., commenced business in San Francisco at a very early day and have steadily increased their facilities and their manufactures are now widely and favorably known. Their present works, (the buildings for which cost about $24,000) occupy a space of 75x137½ feet, and consist of substantial earthquake proof brick buildings of two stories—the lower one being 16 feet and the upper 15 feet in clear hight, the buildings being divided into departments as follows: Stock and wareroom, 40x75 feet; brass finishing shop, 40x75 feet; machine shop for heavier work, 37x75 feet; pattern shop, 37x75 feet; foundry, 37x75 feet. The works will accommodate 100 workmen; the foundry being capable of turning out about two tons a week of the smaller kind of castings, and a much larger amount when the work is of a heavier character. The manufactures to be found at these works include church and other bells, brasswork for marine and stationery engines, water gates, steam and water valves and cocks, all kinds of fittings for steam, fire and hydraulic machinery, hose couplings, gongs, steam, vacuum and water gauges, brass tubing, oil pumps and lubricators; and all such articles as may be found or manufactured at a first-class establishment of the kind.

Office at the Works, corner Fremont and Natoma streets.

Water Companies.

SPRING VALLEY WATER WORKS.

The original Spring Valley Water Company was incorporated in June, 1858, and in July, 1861, the water from Islais creek was introduced into the city by the company.

The present organization is formed by a consolidation of the San Francisco City and Spring Valley Water Works Companies. Date of incorporation, January, 1865.

The present works receive their supply from two sources—Lobos and Pillarcitos creeks. Lobos creek is a stream of pure, fresh water, emptying into the bay near Point Lobos, which supplies two millions five hundred thousand gallons daily. The distance of the stream from the Plaza is three and a half miles, in a direct line. The water is elevated by four double acting pumps, with a capacity of four millions of gallons daily, propelled by two steam engines of two hundred and fifty horse power each, to the distributing reservoirs on the adjacent hills, the highest being three hundred and eight feet above the city base, located at the corner of Hyde and Greenwich streets; the second, which is situated immediately below, at the intersection of Hyde and Francisco streets, is one hundred and forty-five feet above the city base. The capacity of the first is four millions of gallons, and that of the lower, seven millions.

Pillarcitos Creek is situated east of the coast range of mountains, distant from San Francisco about fifteen miles, in a southerly direction, and seven hundred feet above the level of the sea.

A large dam has been constructed in the Pillarcitos Valley, which is ninety-two feet in hight and six hundred feet long, containing one thousand millions of gallons, and is drawn from as required in the city reservoirs. From the east end of tunnel number one, the water is conducted by a flume five by two feet, into a filter and sand-box, in its passage through which it is cleansed from vegetable matter and sediment; it then enters tunnel number two, where the water undergoes another purification, and after passing through thirteen miles of thirty-inch wrought iron pipe, and one mile of forty-inch flume, enters tunnel number three, from whence Lake Honda and the city distributing reservoirs are supplied.

Lake Honda has a capacity of thirty-five millions of gallons, and supplies the city by means of three miles of cast iron mains to the reservoir on the corner of Buchanan and Market streets, which contains two millions of gallons, and was the main distributing reservoir, supplying two-fifths of the city.

The Company has constructed a new reservoir, of fourteen millions of gallons capacity, near Holly Park, called College Hill Reservoir, which is the main distributing reservoir for the lower part of the city. There is also a large reservoir in San Andreas Valley, thirteen miles south of the city, containing four thousand six hundred and fifty millions of gallons. The water level is four hundred and thirty feet above the city base, from which the city will have a never-failing supply of the pure element.

The present amount of pipe laid down in the city proper, is one hundred and thirty miles. Capital stock of the company, $8,000,000, in eighty thousand shares of $100 each.

LAKE TAHOE AND SAN FRANCISCO WATER WORKS.

The rapidly increasing population of San Francisco has caused our citizens to study the momentous question of its water resources. As it is possible that at no distant day the present means of supply may become entirely insufficient for our demands, a number of gentlemen conceived the idea of bringing the waters of Lake Tahoe to this city. To show the vastness of the undertaking, we give the following extent and cost of the work: Lake Tahoe has a superficial area of two hundred and forty square miles, with an average depth of fifteen hundred feet; it is situated in the Sierra Nevada mountains, at an elevation of six thousand feet above the sea, and distant from San Francisco one hundred and fifty miles. The company have constructed a dam on the Truckee river, at the outlet of the lake, and a second four miles below its outlet, near Squaw Valley. From thence the water is to be conveyed by aqueduct to the eastern mouth of the tunnel through the Sierras, and thence by canal along Forest Hill Divide, which includes Michigan Bluff, Bath, Iowa Hill, Wisconsin Hill, Yankee Jim's, Forest Hill, and numerous other mining camps, with an abundant supply of cheap water. The water required for towns and cities will be taken out of the American River at a point above the mining grounds, and run in an open canal, to or near Auburn, and thence by pipe one hundred and twelve miles to San Francisco, supplying on its route Sacramento, Vallejo, Benicia, Stockton, Oakland, etc., and affording along its entire course ample quantities for towns, mines, mills, and agricultural purposes. The capital stock of the company is $20,000,000, divided into twenty thousand shares of $1,000 each. The estimated cost is $10,000,000. The officers are: President and Chief Engineer, A. W. Von Schmidt; Trustees: A. W. Von Schmidt, David Hughes, Robert Simson and Joseph Trench. Office: Pioneer Building, 808 Montgomery Street.

To bring the water to San Francisco, a tunnel four and a half miles will be constructed through the mountain, connecting the lake with the north fork of the American River, through the bed of which the water will be carried about twelve miles.

NEW WATER COMPANIES.

During the past few years several new enterprises have been organized to supply this city and vicinity with water, but beyond the simple announcement of their incorporation, with the exception of the Lake Tahoe Company, but little progress has been made in their operations.