

twenty-two Hose or Branchmen; eleven Hook and Ladder men; four Drivers and one Care-taker of buildings and apparatus. The Chief Engineer, and the Engineers and Firemen of Steam-Engines are under full pay, while the Hose and Hook and Ladder men receive a remuneration of from \$50 to \$90 per annum, according to the position they hold.

There are seven horses and five drivers required, which are always on hand, night and day, and are furnished by contract at a little over \$2,000 per annum, the corporation furnishing stabling for the horses and sleeping apartments for the drivers at the fire-engine stations.

The old force of volunteer companies consisted of from 250 to 300 men and officers, under no efficient control, and constituted an organization at once ruinous to the morals of a large portion of the young men composing it, and highly detrimental to the peace and goodwill of the city.

The actual expenditure for the present brigade is little more than half that for the previous volunteer force, as shown by the following returns taken from the published report of the City Finances:—

Cost of Brigade in 1859.....	\$15,581 63
“ “ 1860.....	14,884 37
“ “ 1861.....	11,250 57
“ “ 1862.....	8,992 27

Steam power was used for only a portion of 1861. In 1862 the Department had only the two steam engines in operation. The returns of cost of the Department here given do not include cost of new engines, hose, or hydrants, but include all salaries and other working expenses, and also water furnished by Water Company and by carters. The cost of new machines and apparatus will not be greater than with the system of hand power.

Another heavy item of expense under the old system, was the immense destruction of side-walks, from running the various hand engines and machines thereon when proceeding to fires, and the endangering of life and limb, which is now entirely obviated; and the saving to the citizens in the decreased rates of insurance on all property, since these engines have been in operation, is far more than sufficient to pay the whole annual cost of the Brigade to the city.

We take the following history and description of the steam fire-engine from a paper read before the Society of Arts, England, “On the Suppression and Extinction of Fires,” by Charles B. King, M.E., and published in the Journal of the Society for March 20th:—

#### The Suppression and Extinction of Fires.

By CHARLES B. KING, M. E.

In extinguishing fires of any magnitude the steam fire engine must ever hold the foremost place, not

only on account of the development of power, but on the more important score of economy. A great check to their adoption and improvement in this country was the opposition so many years maintained by the London Fire Engine Establishment, acting under the advice of the late Mr. Braidwood, who subsequently became a warm advocate of steam fire engines.

The first steam fire-engine was constructed in England by Mr. John Braithwaite,\* in the year 1830; it was worked at the burning of the Argyll Rooms, the English Opera House, and several other large fires. It consisted of a 6-horse power steam-engine, and the pumps worked thereby, which were swung upon a carriage drawn by two horses. Steam sufficient for working could be obtained in the course of thirteen minutes. This engine particularly distinguished itself at the conflagration of Messrs. Barclay, Perkins and Co.’s brewery, for, after the fire, and the total loss of the steam-engine and pumping apparatus of the establishment, it rendered considerable service to the proprietors of the brewery in pumping for twenty-five days the beer brewed in the part of the building that was saved, to the vats, 50 feet above the level of the street. As the pump was 6½ inches in diameter, and made 30·14 strokes per minute, it could pump in a day of ten hours 8,640 cubic feet, and in 25 days, 216,000 cubic feet of liquor to the height of 50 feet. Subsequently, Messrs. Braithwaite and Co. built three engines, one called the “Comet,” for the Prussian Minister of the Interior, which is still in existence at Berlin.

The Americans then took up the subject, and Capt. Ericsson, an English engineer,† obtained the gold medal offered in 1840 by the New York Mechanics’ Institute, “For the best plan of a steam fire-engine,” which was very similar to the engines of Mr. Braithwaite. Soon after this Mr. Paul R. Hodge built a steam fire engine in New York, designed for auxiliary steam propulsion. About 1850, Mr. A. B. Latta, of Cincinnati, U. S., constructed an engine, with self propelling gear weighing 10 tons, which was guided, and in difficult places helped forward, by a pair of horses, their use being advocated on the ground that a machine running alone had a tendency to frighten other horses. Within a few years steam fire engines have been adopted in Philadelphia, Boston, New York, Baltimore, and other cities of the United States; builders having variously and widely modified the earlier plans, while some have made entirely new ones. The main feature of all these plans is the boiler, which is constructed for the rapid generation of steam, and marvellous results have been obtained. Mr. Latta’s engines have begun work in from three to five minutes from the application of the match. The engines built by the Amos Keag Company, of Manchester, New Hampshire, have begun in three and a-half minutes. Those of Messrs. Silsby, Mynderse, and Company, Seneca Falls, New York, have begun in five or six minutes. These differences are doubtless due to the varied amounts of heating surface each boiler presents. The engines

\* Messrs. Braithwaite and Ericsson.—[Ed. London Engineer.]

† Captain Ericsson is a Swedish Engineer, and, while a partner of Mr. Braithwaite, constructed the steam fire engine attributed by Mr. King to the last named gentleman. Captain Ericsson’s New York Engine was similar to that built by him in London.—[Ed. London Engineer.]