

The Canadian Engineer

Vol. III.—No. 2.

TORONTO, JUNE, 1895.

PRICE, 10 CENTS
\$1.00 PER YEAR.

The Canadian Engineer.

ISSUED MONTHLY IN THE INTERESTS OF THE

CIVIL, MECHANICAL, ELECTRICAL, LOCOMOTIVE, STATIONARY
MARINE AND SANITARY ENGINEER, THE MANUFACTURER,
THE CONTRACTOR AND THE MERCHANT IN THE
METAL TRADES.

SUBSCRIPTION—Canada and the United States, \$1.00 per year; Great Brit-
ain, 6s. Advertising rates on application.

Offices—62 Church Street, Toronto; and Fraser Building, Montreal.

BIGGAR, SAMUEL & CO., Publishers
Address—Fraser Building, MONTREAL, Q UE
E. B. BIGGAR
R. R. SAMUEL
Toronto Telephone, 1892. Montreal Telephone, 2589.

ALL MANUSCRIPTS, EDITORIAL CORRESPONDENCE, NEWS ITEMS, ETC.,
SHOULD BE ADDRESSED TO THE MONTREAL OFFICE.

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For THE CANADIAN ENGINEER.

FIRES AND FIRE ENGINES IN THE OLDEN TIMES.

BY WILLIAM PERRY, HYDRAULIC ENGINEER, MONTREAL.

(Continued from last issue.)

The oldest sketch of a complete set of apparatus for extinguishing fire that I have seen is a cut representing the interior of a laboratory or smelting furnace, in the *De Re Metallica* of Agricola. The implements are a syringe, a sledge hammer, two fire hooks, and three leathern buckets conveniently arranged against a wall. The syringe itself was not generally used in Europe till late, for it was not till the close of the 16th century that "hand squirts," as they were named, were introduced into London. Previous to that time watchmen, buckets, hooks and ladders, only were in use. Cutting away with axes and throwing water from buckets are mentioned by Petronius and Gervase of Canterbury. The owners of houses or chimneys that took fire were fined, and men were appointed to watch for fires and give the alarm. In 1472 a night bellman was employed in Exeter to alarm the inhabitants in case of fire, and in 1558 leathern buckets, ladders and crooks were ordered to be provided for the same city; no application of the pump seems to have been then thought of.

Syringes continued to be used in London till the latter part of the 17th century, when they were superseded by more perfect machines. An account of them and the mode of working them would make a modern fireman smile. They were usually made of brass, and held from two to four quarts. The smaller ones were about two feet and a-half long and an inch and a-half in diameter, the bore of the nozzles being half an inch. Three men were required to work each, which they achieved in this manner; two, one on each side, grasped

the cylinder with one hand and the nozzle with the other, while the third one worked the piston. Those who held the instrument plunged the nozzle into a vessel of water; the operator then drew back the piston and thus charged the cylinder, and when it was raised by the bearers and in the required position, he pushed in the piston and forced, or rather endeavored to force, the contents on the fire. Some of these syringes are preserved in one or two of the parish churches of Venice. I have one syringe that was used in London at the great fire in the year 1666, in my possession.

It can excite no surprise that London should have been almost wholly destroyed in the great fire of 1666, when such were the machines upon which the inhabitants chiefly depended for protecting their property and dwellings. If the diminutive size of these instruments be considered, the number of hands required to work each, beside others to carry water and vessels for them, the difficulty and often impossibility of approaching sufficiently near so as to reach the flames with the jet, the loss of part of the stream at the beginning and end of each stroke of the piston, and the trifling effect produced—the whole act of using them appears rather as a farce, or the gambols of overgrown boys at play, than the well-directed energies of men to subdue the raging element.

In Asia syringes have probably been always in limited use. They are the only instruments of the pump kind now known there, if China be excepted. Very effective engines on the European plan are made by the Chinese.

The fire engines of the Turks are an improvement on the syringe, but not much more effective. The author of "Sketches of Turkey" observes, when speaking of fires in Constantinople: "Indeed, when we afterwards saw the machines used by the Turks to extinguish fires, we were not surprised at the feeble resistance which they could oppose to the progress of the devouring element. The engines, in fact, are not larger than those employed with us to water gardens. They have but a single chamber, which is about eight inches long by three or four in diameter; they are readily carried about by hand." Commodore Porter, in his interesting account of "Constantinople and its Environs," says their fire engines "are like those we use in our gardens for watering the beds and walks, and deliver about as much water as a good large syringe. When an alarm of fire is given, a man seizes on one of these and runs to the spot indicated, with the engine on his shoulder; another brings a skin of water, pours it into the reservoir and they pump away." A characteristic anecdote is thus facetiously related by Commodore Porter: "They had heard of the fire engines and fire companies in the United States—how half a shingle could be burnt and the engines save the other half from the flames. They could not understand it. Mr. Eckford fortunately arrived with his beautiful ship, having one of our engines on board, requiring some twenty men to work it. The Capudan Pacha heard of it. 'Mash Allah! let us see it,' exclaimed the old man. The engine was brought on shore and placed