MUNICIPAL DEPARTMENT

PROPER DIAMETER OF FIRE HOSE.

Mr. B. L. Stowe, vice-president of the Eureka Fire Hose Company, writes an article for the New York India Rubber World on the proper diameter of fire hose. The question of size is, the writer declares, far from being the least important one which confronts the purchasers of fire hose. It is, of course, desirable that the largest sized streams possible should be available in case of fire, and it would be easy to construct estimates of the annual saving in fire losses which might be effected under certain conditions with hose of greater diameter than is now in general use. It might be shown how great a proportion of water discharged through a hose of small diameter is evaporated as it falls in spray on the flames, thus becoming useless for fire extinction. The real problem, however, is one of practicability. For instance, when it is considered how greatly the weight of a fire hose, carrying a stream of water, increases in proportion to its increase in diameter, it is plain that a limit may easily be reached beyond which the present race of firemen will not be capable of handling the hose effectively. The writer refers to the paper on this subject read by Mr. John R. Freeman before the American Society of Civil Engineers. He points out that the contents of a foot length of 2½ in. hose are 58.905 cubic inches, while a 3 in. hose, not appreciably larger to the unpracticed eye, contains 84.8232 cubic inches. The cubic contents of a 3½ in. hose are nearly twice as great as those of a 2½ in. hose, and of course the weight is proportionally increased. Then there has also to be considered the bearings of these figures upon the abrasions which must be experienced when the hose is dragged over the ground, across curbstones, and through windows and other openings into buildings. Increased strains are also put on curvature when the diameter of the hose is increased. This is, of course, of importance, since all fire hose, in practice, is subject to curves. Mr. Stowe has come to the conclusion, after much careful investigation, that he must favour a 2½ in. hose as the leading hose for fire department use. He admits the advantages of larger hose for special purposes, on account of the greater volume of water controlled, or the throwing of a large stream for a greater distance than is possible with a 2½ in. hose. But the disadvantages are also very serious.

GENEVA'S FOUNTAIN.

The fountain that the municipality of Geneva has recently established at the entrance of the port of that city is certainly the largest fountain that exists upon the surface of the globe, since it is no less than 300 feet in height. It may be seen from a great distance in clear weather, detaching itself like a great white sail flapping through the effect of the wind.

The city of Geneva possesses a most complete distribution of water under pressure, the motive power for which is obtained from an artificial fall established upon the Rhone at the point of the lake. The water for domestic purposes and for the running of certain motors is raised to a height of 215 feet above the level of the lake. For the distribution of motive force it is raised to a height of 460 feet. The reservoir is an open air one, and is situated upon the top of Bessingers at a distance of three miles from the turbine building. A very ingenius regulator, invented by Mr. Turrettini, assures the uniformity of pressure in the piping.

The length of the first pipe line is about forty miles and that of the second about sixty. It is with this latter that the fountain conduit is connected. The latter is set in play only on Sundays. It is sometimes set in operation also on week days in the evening. Instead of a single jet of great height several are then utilized that do not rise so high. Powerful electric light projectors, placed in a structure nearby, brightly illuminate them with their rays of varied colors, which transforms them into a luminous fountain of the most beautiful aspect.

The ratepayers of Nanaimo, B. C., have defeated the by-law authorizing the Council to purchase the present waterworks system.

The water of the town of Digby, N. S., is brought from over a hill back of the town, and no engines are required in case of fire, sufficient pressure being given.

Carlisle has its sewers ventilated by their attachment to thirty tall factory chimneys, which, of course, create a strong up draught, besides heating and destroying disease germs in the effluvia carried up.

It has been calculated that there are over 50,000 reservoirs for impounding water, for irrigation purposes, in the Madras Presidency, varying in size from an embankment 200 yards in length to a couple of miles in length, and often longer. There is a special section of the Madras Public Works Department set aside for the express purpose of tank restoration schemes.

An interesting report upon a series of experiments in filtration has been issued by Mr. W. J. Dibdin, chemist to the London County Council. The trials were made at the northern outfall precipitation works with burnt ballast, pea ballast, coke breeze, sand, and certain proprietary materials. The experiments proved that coke breeze gave the highest average as regards purification powers. A further series of experiments was then arranged with that material, the results being eminently satisfactory. The conclusions which Mr. Dibdin has come to are surprising to the ordinary mind. It appears that microbes form an important element in the purification of water, and the Council's chemis. says that "the contact of the micro-organisms with the effluent to be purified must be effected by leaving such effluent at rest in the filter for a greater or less time, according to the degree of purification required. . . . . After each quantity of effluent has been dealt with, the micro organisms must be supplied with air, which is readily effected by emptying the filter from below, whereby air is drawn into the interstices."

The subject of sewer ventilation was recently brought before the meeting of the British Medical Association. Mr. J. Parry Laws, who read a paper on the subject, expressed the general opinion of physicians when he said that although the hypothesis which regarded sewer air as capable of disseminating the morbific germs of disease is proved beyond reasonable doubt to be an erroneous one, we must not therefore forget the immense benefits and the saving of life that modern sanitation, mainly influenced by this hypothesis, has brought about. Whatever the ultimate verdict be, whether sewer air is harmless or otherwise, it will always be the imperative duty of those charged with the care of the public health to insure rapid and efficient removal of all sewage and refuse matter, and, above all, to guard against defective drainage and probable pollution of water supplies. The more light that is thrown upon the dissemination of those diseases which have been, he thought, erroneously associated with sewer air, the more evident does it become that a polluted water supply, and, as an incidental result, a polluted milk supply, are amongst our most insidious foes.

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