

# MUNICIPAL DEPARTMENT

## PORTLAND CEMENT FOR STREET PAVEMENTS.

Portland cement has been used in some parts of the United States for paving small sections of streets with much satisfaction. The city of Bellefontaine, O., has adopted this material for street paving on a liberal scale, according to Cement and Engineering News. The following description of the method of construction is given.

Excavate street 6 inches below grade line if sub-strata is gravel, sand or porous soil; if clay or an impervious soil, excavate 4 inches more and fill that with cinders, gravel or broken stone. Thoroughly roll to proper section, lay sub-drains of 3-inch tile inside each curb line. Pavement is laid in two courses: 1st layer, 4 inches thick, consists of 1 part Buckeye Portland cement and 4 parts clean gravel or broken stone and sand, proportion of gravel to sand, 2 to 1. Materials are thoroughly mixed by machine, just enough water being added so that, when well rammed, water will show at surface.

Second layer, or top 2 inches thick, which takes the wear, consists of equal parts Buckeye Portland cement and clean, sharp sand or crushed granite, including all grains to the size of a pea. Only the best of cement should be used for this purpose. The top layer is thoroughly rammed. Both bottom and top layers are divided during construction into rectangular blocks about 5 feet square, with edges neatly finished. The joints of blocks coming directly over pipes are made like the key stone of an arch, so they can be lifted up without disturbing neighboring blocks when repairs to pipes are necessary. To secure a positive foothold for horses, the surface should have v-shaped grooves 1 inch wide and 3-16 inch deep, 4 inches apart, and running at right angles with the street. Surface should be finished with an ordinary plasterer's wooden float. Curbs are part of outer blocks, and consist of 1 part cement to 3 parts fine gravel. Materials for 1 square yard equal 144 lbs. cement and 4 cubic feet of gravel. Anybody accustomed to working cement can do the work.

Taking quality of work into consideration, cement pavement is cheaper in first cost than stone, asphalt or brick, while cost of repairs is slight.

## LEGAL DECISIONS AFFECTING MUNICIPALITIES.

DAME F. CARPENTER vs. The TOWN OF MAISONNEUVE.—The plaintiff claimed \$5,400 damages from the town, alleging that she was the proprietor of certain buildings in the town, and that defendant had established works for manufacturing electric light on a property adjoining hers,

that the noise and black smoke proceeding from defendant's works caused the plaintiff great damage and prevented her from leasing her property. The Superior Court maintained the action to the extent of \$225, holding that defendant had not done all that was possible to diminish the inconvenience.

QUINN v. TOWN OF ORILLIA.—Judgment in action tried without a jury at Orillia. Action to restrain defendants from pulling down portions of buildings put up by plaintiff in alleged contravention of a fire limit by-law. The plaintiff was the owner of two small farm buildings connected together and being within the limits set out in a by-law of defendants passed for the purpose of fixing fire limits and regulating the erection of the buildings within those limits. A fire took place and one of the buildings was partly destroyed. Plaintiff proceeded to replace with wood the portions destroyed. By sec. 496, sub-section 10, of the municipal act, 1892, a corporation has power to pass by-laws "for regulating the repairing or alteration of roofs or external walls of existing buildings" within the fire limits, so that the said buildings may be made more nearly fire proof. The provision of the law passed by the defendants was "that all buildings damaged by fire, if rebuilt or partially rebuilt, shall be made fire proof." Held, that this was in excess of the powers of the Council and could not be enforced. Judgment for plaintiff, as prayed, with costs. Entry stayed for 30 days. Pepler, Q. C., for plaintiff. McCosh (Orillia) for defendants.

## WATER SUPPLY AND THE DEATH RATE.

The Engineering News says: There is food for reflection for officials in towns, where a high death rate from typhoid fever has led to a demand for a purer water supply, in some figures which the Jersey City, N. J., Evening Journal has obtained, showing the reduction in the death rate from typhoid fever that has accompanied the substitution, as the city supply of pure water from the highlands of New Jersey for the polluted water of the Passaic River. In January, 1895, the city's water supply was a mixture composed of 28 per cent. pure water and 72 per cent. Passaic River water, and the deaths from typhoid fever numbered 28. In February the percentage of pure water was 40 per cent. and the number of deaths 30, showing

that the percentage of pure water in January had been too small to have any effect. In March, April and May the percentage of pure water was increased respectively to 43, 58 and 50 per cent., and the number of deaths fell to 16, 9 and 6. In the five months from June to October, inclusive, the percentage of pure water averaged about 80 per cent. and the number of deaths 4 per month. During the next four months pure water alone was used and the number of deaths averaged only 3 per month. It is estimated on the basis of these figures that the introduction of a pure water supply has saved 75 deaths from typhoid fever in Jersey City in the last eight months, and, in considering this statement, it is to be remembered that similar experiences have followed the substitution of highland or filtered water supplies for polluted ones in at least a dozen or more cities in Europe and the United States."

## PROTECTION OF WATER MAINS.

A cheap device to prevent the freezing of a water main, apparently laid too near the surface, is in use in Rutland, Vt., says Engineering News. The main is 8 inches in diameter, and 329 feet of it was burst by freezing in the winter of 1894-5. The committee on water proposed to lay a sewer in the street and maintain circulation in the water pipe by wasting water into the sewer. The pipe was purchased, and the city engineer, Mr. Sidney Smith, was requested to give grades for laying it. He found that the sewer in that street should be designed to serve quite a territory, as yet sparsely populated, and should be provided with an underdrain to serve higher wet land. He suggested that instead of building the sewer a well should be sunk into the porous material some distance below the surface and a hydrant branch be connected with it. Accordingly, Mr. J. M. Davis, superintendent of waterworks, sank a 12-inch sheet steel curb to a depth of 30 ft., removing the sand with a 6-inch stovepipe pump. A 3/4-inch pipe was laid from the hydrant branch to the well and provided with a valve. The job cost \$94, against \$1,200, as the estimated cost of the proposed sewer. During cold weather the valve is opened and the water allowed to flow continuously to the well. During the winter of 1895-6 and up to January 1, 1897, the water main has been kept from freezing by this device.

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