

MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.

their pavements to the house of commons, which led to the adoption of his system and to his appointment as surveyor of roads. Within a few years he had personally supervised the road making in twenty-eight counties in England and during his life nearly every traveled road and street in Great Britain was a monument of his success. Being a retiring man he declined the order of knighthood. His remains now rest in a village churchyard of one of Scotland's smallest towns.

Thomas Telford was the second. He was made president of the Institute of Civil Engineering of London from its commencement, and retained the position until his death, many years afterward. He received the order of knighthood early in his paving career and is admitted to have been one of the greatest engineers of the world. His remains now rest in Westminster abbey, where England finds a final resting place for those whom she highly honors.

The system of paving inaugurated by these men has since been followed in the building of seven-eighths of all the paved roads and streets now existing, not only abroad, but in our own country as well.

The value of a good pavement, and the importance of keeping it in good condition in our larger cities, can not be over-estimated. A perfect pavement has not and probably never will be found. It should be smooth and hard to give a sure foot-hold for animals, not becoming slippery by use, be as noiseless and free from dust and mud as possible, be easily and cheaply cleaned, and be of such material and construction that it can be readily taken up and relaid when necessary gas and sewer connections are to be made. Economy of maintenance also requires that the material used at the surface be of such nature as will form perfect bond and be durable.

Streets used for different purposes demand different pavements. Thus, a street in the centre of a wholesale district in a large city where transferring of heavy merchandise is constantly being done, requires an altogether different pavement from a street used for part or boulevard purposes, where no heavy drafting is allowed. The question before us naturally divides itself into the following heads or subdivisions:

First—Pavement adapted to the wholesale and other districts of our cities where heavy drafting is done.

Second—Pavements adapted to the retail portion of a city.

Third—Pavements adapted to the best residence portion of a city, where the expense is not an object so much as superior quality of paving.

Fourth—Pavements adapted to other streets where original cost must be borne in mind.

A correspondent of the *Engineering News* states that "In 1880, while in charge of the Central Falls (R.I.) water works, I encountered about 1,000 feet of six-inch pipe which had been previously laid for fire service, and only used when required for that duty, laid with cement joints. As the saving to the district would warrant the experiment, I recommended this pipe to be connected with the complete system then under construction, in order to test, by actual experiment, whether it could remain in service. The result was entirely satisfactory, not a leak being detected, and I presume it still remains in good condition. The pressure in this pipe is exceptionally high, according to my recollection over 100 pounds to the square inch.

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I am, sir, your obedient servant,

THOMAS MONRO,

Engineer in charge of Welland Canal Enlargement.

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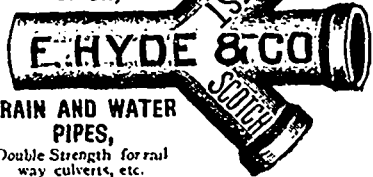
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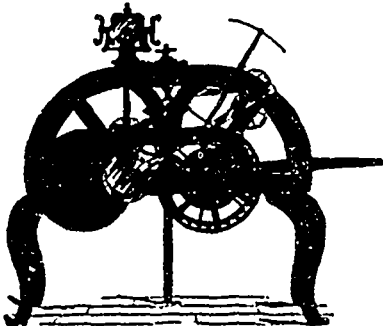
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