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BRICK ROADS: MATERIAL, CONSTRUCTION AND MAINTENANCE.*

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Permit me to state briefly what I believe constitutes an ideal roadway. It is a pavement which wears smooth and clean and needs no caretaker to keep it in repair, no matter what the character or quality of traffic which passes over it. A pavement which is weather-proof, flood-proof, dirt-proof, wear-proof, and so practically time-proof. A pavement which affords an open and easy highway from country to city every day in the year for any and all sorts of traffic. A roadway over which pleasure vehicles may speed with safety to the driver and without injury to the vehicle or pavement. A roadway over which heavy service trucks may draw loads of several tons at a speed rivalling, if not exceeding, that of the so-called fast freight trains, without damage to the truck or the roadway. A roadway over which a farmer may easily haul with one horse what requires a team on ordinary roads, or with one team as much as two teams will commonly haul. A pavement over which one may journey in comfort, for it is a dustless pavement.

That is precisely the kind of a pavement you can construct of vitrified brick, and that, too, at a cost but little more than is now being paid for our temporary roadways. When you consider that the only cost of such a pavement is its first cost, you must admit that ultimately it is the cheapest pavement you can build. I think I can demonstrate to your satisfaction that practically there is no wear on a properly constructed brick roadway. Here is my proof, and if "seeing is believing," it is most convincing.

Eighteen years ago there lived in Sandusky, Ohio, a wise and painstaking engineer, Mr. John W. Miller; may his tribe increase. Under his direction a mile of brick pavement, part city street and part rural road, was laid, extending from the centre of the town out into the suburbs. Over this pavement during all these years has daily passed

much traffic. To-day the pavement is perfectly smooth from one end to the other.

Fortunately, while this pavement has been torn up at times for the laying of gas mains, water pipes, etc., it has, luckily, always been replaced as carefully as it was originally laid, so that to-day it is as good as any new pavement. As you know, most pavements are damaged irretrievably by being torn up, but when such work is done properly, no

harm is done to a brick pavement, as demonstrated in this case. During these eighteen years not one dollar has been spent on this pavement for repairs, yet it is still an ideal roadway and bids fair to continue such for another twenty years, or perhaps twice that length of time.

A portion of the main business street of Sandusky was paved the same year (1904) as the other roadway, and with brick of the same grade, but evidently with much less care in the method of construction. To-day, it is a rough and undesirable pavement. This pavement was laid under the same specifications as the good pavement, but as I will show you, some minor but very essential details of construction were carelessly slighted. Mr. Will. P. Blair, secretary of the National Paving Brick Manufacturers' Association,

of Cleveland, Ohio, and others who have been studying this subject for some years, determined if possible to learn the real cause of failure in one pavement and the remarkable success in the other. Accordingly, experts recently visited Sandusky and with the co-operation of the city engineer, had a stretch of some fifty square feet of each pavement, the good and the poor, taken up.

The good pavement was perfectly bonded from top to bottom, every course of brick was intact, just as when it was first laid. The foundation was right to begin with, and there was a two-inch sand cushion, thoroughly compressed, affording a smooth, even bed for the brick, and insuring a comparatively noiseless pavement. The cement filler had been so applied that both sides and ends of each and every brick was imbedded in it. You will see by the pictures



Fig. 1.—A Section of Pavement.

This illustrates the perfect application of the cement filler.

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