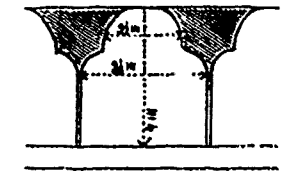
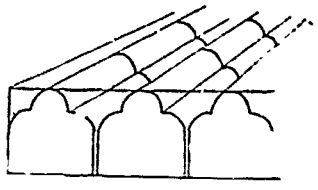
MUNICIPAL DEPARTMENT

BRICK AND ASPHALT COMBINED FOR STREET PAVEMENTS.

One of the great needs of the present day is a substantial and cheap street pavement. The man who can combine the springiness of macadam, the smoothness of asphalt, the durability of granite and the cheapness of brick will have something with "millions in it." All sorts of things have been tried or suggested—iron, rubber, compressed paper, and even lead.

J. J. Jeter, of Kansas City, is the inventor of a paving scheme at least novel and original. It is to combine vitrified brick and asphalt, and obtain thereby a measure of cheapness and an ideal pavement. No tests of Mr. Jeter's pavement have been made, and it has not been passed upon by paving experts. Mr. Jeter proposes to make vitrified brick eight inches long, four inches thick and three and one-half inches wide at the base. Midway these bricks are beveled





to a narrowness of two and one half inches, leaving a narrow oval top surface Each end is beveled in the same way, making each brick the shape of a blackboard eraser The idea is to lay these bricks on a concrete foundation and fill the interstices with asphalt This would make a running series of molds from curb to curb two inches deep and one inch wide The pavement would appear as a thread of brick running through an asphalt surface, each center of brick being three and one-half inches from the next. Mr. Jeter claims this pavement will not run, and therefore can be laid on steep grades; that the thread of brick provides a foothold for horses, and that two-thirds of the asphalt material is saved. He figures the pavement as profitable at $2 a square yard. Asphalt in Kansas City is now $2.60 a yard, and brick $1.45.

An objection would be the rolling of the asphalt into the interstices, but Mr. Jeter is confident that the rolling can be accomplished. Another objection is the variance in the resistance of the vitrified brick and the asphalt, but he is equally confident on that score.—Kansas City Star.

WHAT DESTROYS OUR STREETS.

Without doubt the heavy cartage and drayage of modern times have much to do with the perishableness of modern pavements. The hardest rock itself cannot long withstand the continuous grind of heavy loads supported upon narrow tires. To this foolish and destructive fashion of building carts and drays designed for the transportation of great weights the bulk of failure in modern pavements is due. It must be remembered that the celebrated roads of antiquity were never subjected to similar tests, and that the smaller the surface called upon to sustain great weight the less naturally will be the resistance power offered, and the greater will be the pressure upon the point of contact. If anyone will take the trouble to ascertain the weight of an average load whose like is hauled by hundreds through all our chief cities daily, measure the width of the tire and then figure the pressure per square inch to which a pavement is exposed, based upon the fraction of a circle which touches a straight line, he will have a better idea of what road builders of the present day have to contend with. This width of cart wheels and tires should be regulated by law with a view of municipal economy, and each Commonwealth should endeavor by legislation to enforce honesty in the laying of foundations for every foot of pavement used.—Lippincott's Magazine.

RESERVOIR DAMS.

A series of articles on reservoir dams in Le Géneie Civil, by M. A. Dumas, contains an account of the principal failures of which authentic records are available. So far as earthen dams are concerned, M. Dumas finds the catastrophe has always arisen from one of the five following causes: 1. Perviousness of the dam itself, or of the ground on which it stands. 2. Insufficient size of tee byewash leading to the water topping the bank. 3. The laying of pipes for drawing off the supply through the bank. 4. Wave action on the interior face of the dam, which in the case of large and deep reservoirs, exposed to strong winds, should be protected not merely by stone pitching, but by a bearing masonry wall on the inner slope. This wall should at the same time be made in comparatively small sections, so that unequal settlement shall not cause serious dislocations. 5. The use of unsuitable material in the core.

NOVEL ENGINEERING FEAT.

A novel method of bridge construction has been resorted to over the Brisbane river at Indooroopilly, in Australia. The main span was built on shore and launched like a boat. The steel span was put together, in line with the bridge, partly on the bank and partly overhanging the river. When completed, it was necessary to run it out into position, so that its southern end, running from the bank, should rest on the stone pier in the middle of the river. A strong tramway was laid down, which carried the northern end on massive trolleys; the southern end was borne on a hulk of 1,000 tons, and two lumber trestles were built on her amidships, on the top of which rested the span. A powerful cable, attached to a steam winch, hauled the huge span into position, to the great satisfaction of the naturally anxious engineerrs.

DEFECTIVE FIRE APPARATUS.

The Secretary of the Fire Underwriters' Association has written to the mayor of St. Catharines, calling his attention to the extremely defective arrangements and equipment of the local fire department. Complaint was made that at the recent fire at the opera house, the hose was almost useless, and caused much delay by which much greater damage was done than would have occurred had the hose been in good order. It was also alleged that the hose has proved a failure frequently in that city. When the underwriters' complaints were submitted to the chief of the fire department, says the Insurance Chronicle, he had nothing to say in rebuttal, but praised the brigade for their excellent work. That, however, is not the point. It is bordering upon absurdity to have an efficient fire brigade, so far as the bravery and skill of the men are concerned, and to furnish them with apparatus which breaks down when required. In calling attention to the defects in the fire protection at St. Catharines, the underwriters have done the citizens a valuable service. The infrequency of fires in small cities and towns often leads to the hose being neglected. The mayors and reeves throughout the country should make it one of their duties to have the fire department tested at regular intervals, so that, when needed, the apparatus will be ready for prompt and efficient service.

SCRAPING SMALL WATER PIPES.

The Engineering Record of Aug. 24th has an article on this subject. During the fall of 1894 about 25,000 ft. of 3 in. water pipes in Geelong, Victoria, were cleaned at a cost of about $840 by means of a scraper attached to a jointed rod made of pine sticks 20 ft. long and 1¼ in. square. The sticks were connected by screw couplings and made a rod stiff enough to drive the scraper through a tuberculated pipe for 500 to 600 ft. without objectionable flexure, although some of the pipes were badly obstructed. The scraping tool is made of a central spindle of ⅜ in. round steel about 2 ft. long, flattened [illegible] to form a small boss near one end, through which a square hole is punched. In using the apparatus a trench about 12 ft. long and 2½ ft. wide is opened on the line of the pipe to be cleaned, a portion of the pipe is cut out and the scraper with its attached rod is inserted, enough water being left running in the pipe to facilitate the action of the scraper.

A new ambulance carriage has been invented by Dr. Honig, of Berlin, which is propelled by cyclists, and consists of a kind of litter resting on a frame with five wheels, three in front in the form of a tricycle, and two at the back. The drivers, accordingly, sit one at each end of the litter, which is covered by a removable roof.