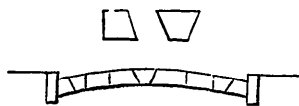


bleness to liquids, and at the same time, moveableness of the parts of the paving.

The following rules spring directly from a consideration of the proper way of applying this principle.

The pressure must be lateral, and be produced by blocks independent of the paving itself; and those blocks must be moveable at pleasure. For this last purpose, the pressure must also be in great degree independent of the curb-stone, which is the reverse of the rule of common arches; that is to say, each cross rib of paving must be moveable without destroying the equilibrium and solidity of the whole. The pressure too, must act along as well as across the road, and be equal every way; as well as be capable of being removed in the same manner. The blocks too, which cause this pressure, should be independent of each other, to prevent wear and tear as much as possible; and to meet accidents and violent jolts. But they should not all be of the same form. If these rules be well followed up, two of the above mentioned requisites of a model paving will be met, namely, 1st, that it be solid, and impenetrable to liquids; 2nd, that the blocks be moveable piecemeal without the solidity of the whole being disturbed, or difficult to be restored at once. The principle of the arch, and that of the printed forms, afford examples how this may be accomplished. A square made in this way would have a certain number of blocks rendered solid and uniform by a pressure. The sides of this square must be oblique, a series of other blocks with corresponding slants would be as it were keys to the arch along and across the road, and so bind the paving together by the pressure springing from the curb stones against the footpath, and extending over the whole paving. To move each block, it is only necessary to take up what may be called the key of the whole, which by the described pressure preserves the general solidity: and this key, as now shown, is but a single stone. The whole of the new work, instead of being cubic blocks as at present, will be blocks with two different slants, thus. A glance at these two figures shows the form of the proposed paving. The frame to keep the blocks in the square form independently of the pressure of the keys of the arch, is meant to be a band of iron wire preserved from rust by being packed with bitumen liquid.



These are only new steps to be taken in order to meet the conditions of the case as above stated.

The specification of the patent fully explains the various ways in which this principle may be applied. The blocks in frames, or masses of stone, are too wide at the bottom to sink into the earth as single stones do. The pressure of the keys of the arch, kept up unbroken by the weight of those masses; so that the cause which tends to break up a common road, adds to the solidity of this. Besides, the stones being pressed together close the joints become scarcely visible; and the road presents no inequalities or holes, so that the carriages pass along more smoothly, and there is less wear of the materials; whilst the absence of earth in the crevices will lessen the quantity of mud on the stones, adding pleasantness to economy. A material advantage in the proposed method is, that the repairs will be made quickly with stones ready to fit into their places, or by taking out damaged ones. The present methods cover the streets with rubbish, and obstruct them most inconveniently. By this method, all the work will be prepared at home; and the damaged frames and stones, after being replaced by new ones, will be brought back to the yard to be repaired for future use. One more advantage remains to be mentioned. The proposed method is applicable to all kinds of materials; which may vary in different localities. Even wood may be adapted to our principle; and artificial substances may be moulded conformably with it. If the expense, too, of cutting granite be too high for certain purposes, rough, or used stones may be taken. In these last, a groove must be run round for the iron binders; and a plaster of bitumen and quartz will square the angles and niches were necessary.

The cost of this method varies in different places, and according to the materials used.

Quartz, and bitumen cement of about six inches thick comes to 6s. 8d. the square yard in Paris. To this must be added 7½d. for levelling the ground if wanted; and a good profit will be realised there at 7s. 6d. to 8s. a square yard of paving complete. The London prices of materials are all higher, except for granite work, and for the materials for bitumen from the gas houses. Skilful labour does not vary much in the two countries.

The great economy of the new method arises from its result; as the new roads will last the longer, and admit of cheap repairs.

The *Minerva*, from Kirkaldy, arrived at Adelaide, South Australia, on the 11th of January.

Experiments have been made to ascertain the applicability of slate to other uses than the covering of houses. The result has been the discovery that, as a material for paving the floors of warehouses, cellars, washhouses, barns, &c., where great strength and durability are required, it is far superior to any other known material. In the extensive warehouses of the London Docks it has been used on a large scale. The stones forming several of the old floors, having become broken and decayed, have been replaced with slate two inches thick; and one wooden floor, which otherwise must have been relaid, has been cased with slate one inch thick, and the whole have been found to answer very completely. The trucks used in removing the heaviest weights are worked with fewer hands. The slabs being sawn, and cemented closely together as they are laid down, unite so perfectly, that the molasses, oil, turpentine, or other commodity which is spilt upon the floor, is all saved; and, as slate is non-absorbent, is so easily cleaned, and dries so soon, that a floor upon which sugar in a moist condition has been placed, may be ready for the reception of the most delicate goods in a few hours. Waggon or carts, containing four or five tons of goods, pass over truckways of two inch thick slate without making the slightest impression. In no one instance has it been found that a floor made of sawn slate has given way; in point of durability, therefore, it may be considered superior to every other commodity applied to such uses. The consequences of this discovery have been, that full employment is found in the quarries which produce the slates, and that additional employment has been given to the British shipping engaged in the coasting trade.

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THE LATE COLONEL WILLIAM LIGHT.—It having been proposed to erect a Monument in London to the memory of the much lamented Colonel WILLIAM LIGHT, late Surveyor-General of SOUTH AUSTRALIA, and founder of the City of ADELAIDE, all parties who have benefited, and are receiving benefit, from the extended intercourse now carried on between this kingdom and South Australia, and who can duly appreciate the great debt of gratitude due to the memory of that gallant and scientific officer, as well as some of his old Companions in Arms, will doubtless feel anxious to lend their assistance towards such a mark of respect to his memory.

RAIKES CURRIE, Esq., M.P., FRANCIS WILSON, Esq. H. KINGSCOTE, Esq., G. PALMER, Jun., Esq., and F. W. COLLARD, Esq., have undertaken to act as Trustees for any fund that may be collected for the above purpose, and as soon as a sufficient sum has been received to warrant the commencement of a Memorial, a General Meeting of the Subscribers will be called by Public Advertisement, and a Committee chosen from among them to carry out the object of the Subscription.

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At a late meeting of the Royal Academy of Sciences and Belles Lettres in Brussels, M. Rameaux laid before the Academy the results of his enquiries as to the mean number of pulsations in man. These, it is said, establish so positive a relation between the number of pulsations and the stature of the individual, that, by using the tables of growth which M. Quetelet has given in his *Physique Sociale*, for the two sexes, the corresponding number of pulsations for each age may be deduced; and the numbers so calculated agree in the most satisfactory manner with the numbers obtained by observation.

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