

while in a semi-plastic condition, pressed and cut in grooves by enormous iron rollers. This seems not to have been successfully manufactured and laid but in a few cities of continental Europe, consequently its adoption has not been general. Perhaps Babylon was paved in this manner, as it is certain that asphaltum was used extensively at that time, it being the cement with which the great walls, encircling the mighty city, were constructed. This very useful mineral, had for a great number of centuries passed almost entirely from use, but the abundance in which it exists in California has drawn to it the attention of the scientist and the inventor, by whom it is appropriated to some of the many purposes designed by nature, and it bids fair to resume its place in the arts it formerly held.

The Belgian, Russ, MacAdam and several kinds of wooden pavements have been tried in various cities in Europe, each taking the popular favor for a short time, and giving fortune and fame to the inventor. A section of Battery Street, in front of the Custom House, was laid with the Russ Pavement several years since, and while lasting well is objectionable from its slippery surface, noise and cost. The McAdam is used on Mission and several other streets, and while answering well for country roads, becomes too dusty in summer and too muddy in winter for a city like San Francisco. In 1863 the Nicolson wooden pavement was patented and became the rage, and it was believed that perfection had been attained. This was laid extensively in every progressive city in the Union, and its popularity was unbounded. This popularity, and the fortune made, were great incentives to invention, and a large number of patents for different styles of pavement were obtained. The rapid decay of the Nicolson Pavement soon destroyed its popularity and it is no longer laid in our streets.

The Stow Pavement, an invention of this city, has superseded the Nicolson, and bids fair to have an equal popularity. This was patented in December, 1867, since which date there have been laid of it in the streets of San Francisco 906,931 square feet, costing twenty-five cents per square foot. This pavement is of blocks of wood, the grain, or fibre, standing vertical, resting on a smooth bed of sand, into which is driven a wedge made of board of the length of the block, holding the latter in place. Gravel, and hot coal tar, or bitumen, is spread on the surface and into the spaces between the blocks. It is simple, neat and easily laid, but the question of durability, contraction and expansion, must be tested by time. The City Paving Company say that, having thoroughly tested all the various styles of street paving now in use, they have arrived at the conclusion that the Stow Foundation Pavement is preëminently the best, and as a consequence of this conviction have entirely discarded all others, and that this particular pavement is greatly growing in demand.

The "Imperishable Stone Block Paving Company" is a new organization of San Francisco, founded on a species of pavement, the combined invention of Messrs. Skinner, Bonnet and Forge, and patented in July and November, 1870. This is a concrete of eighty per cent crushed rock and twenty per cent asphaltum, heated and mixed together, and while plastic formed under great pressure into blocks similar to those used in wooden pavement, but with corrugated sides, and is then laid on a bed of sand with slight interstices between the blocks, which spaces are filled with a softer substance of the same material as the blocks. A section of this pavement was laid in July, 1870, between the rail tracks on Montgomery Street, at the intersection of California, and awaits the trial of use to prove its value. This pavement has also been laid in a few other localities of the city, but being a recent invention and awaiting the perfecting of machinery for manufacturing the blocks, has not yet come into extended use. The material cannot be affected by the weather, and it is claimed that the concrete as prepared and pressed for use will support a greater pressure than the hardest granite. The essentials of a perfect pavement are cheapness, durability, abundant supply of material, smooth surface while at the same time it affords a good foothold for horses, noiselessness, cleanliness and that it may be easily taken up and replaced. All these qualities are claimed by the "Imperishable Stone Block Paving Company" for their asphaltic concrete, and they propose to lay the pavement for twenty-five cents per square foot. A machine, which is an ingenious piece of mechanism, has been made for the manufacture of these blocks, and this style of pavement will undoubtedly be tried in every part of the Union, an honor to California invention, and furnishing a market for one of her many mineral productions.

Many of the streets of San Francisco were formerly planked, but the rapid and irregular wear of this style of pavement has forbidden its extension or reconstruction. The pavements now in use here are the Cobblestone, MacAdam, Stow and Imperishable Stone. The contour of San Francisco's site, being of hill and plain, requires different styles of pavement, as that cheapest and best suited for a level street would not answer for a steep hillside. As yet the matter is quite experimental. The old style of cobblestone is still extensively used, its first cost being but from eighteen to twenty cents per square foot, and the material lasting and cheap.

On the third day of January, 1870, a Resolution was adopted in the Board of Supervisors as follows: *Resolved*, That the question of the condition of streets and sidewalks, be and is hereby referred to a special committee, with authority to investigate the whole subject and report to this Board, the form or forms of carriage or foot pavement deemed by them best for this city, and giving any other information which in their opinion will be of value to this Board in this connection.

The committee, after several months of investigation, eliciting some of the facts which have been presented in this article, and receiving proposals and explanations of some twenty different kinds of paving, concluded with the following recommendations:

COBBLE PAVEMENTS.—Your committee recommends that a thorough investigation be made of the hitherto cost of repairs of our cobbled streets, with a view to a plan for repairing or replacing them all.

ASPHALT.—We recommend that the present popular plan of making sidewalks of this material be continued and encouraged.