H. M. STOW.

Brick Pavement.

No. 168,805. Patented Oct. 11, 1875.

Fig. 1.

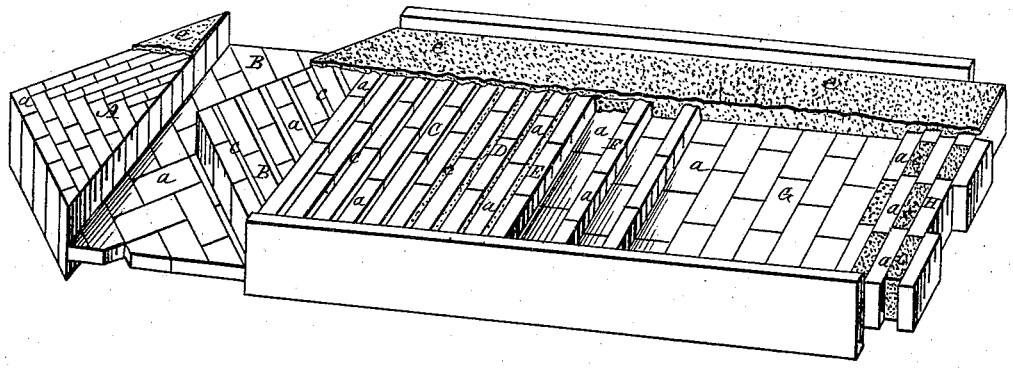
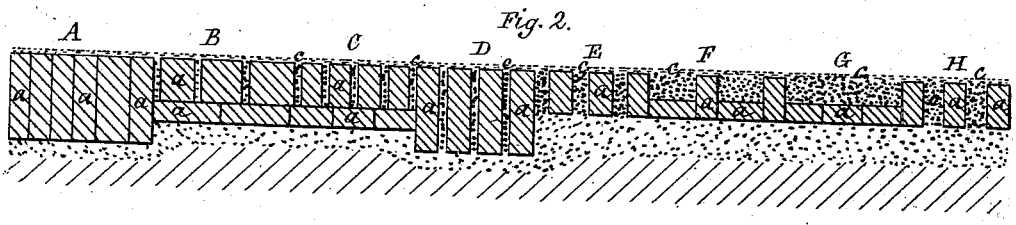


Fig. 2.



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UNITED STATES PATENT OFFICE.

HENRY M. STOW, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN BRICK PAVEMENTS.

Specification forming part of Letters Patent No. **168,805**, dated October 11, 1875; application filed July 20, 1875.

To all whom it may concern:

Be it known that I, HENRY M. STOW, of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Pavements for Road or Carriage Ways; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents, in perspective, a portion of the pavement, partially completed and partially uncovered, so as to show the material of and the manner of preparing the foundation. Fig. 2 represents a longitudinal vertical section taken through the plan, as shown in Fig. 1.

My invention consists in a pavement, the base or substructure of which is composed of bricks laid with intervening spaces, cells, or recesses between them for the top dressing to flow or settle into to form a union between them, and with interposed sand, gravel, or concrete between them, and a composition covering to form the surface-way and finish.

To enable those skilled in the art to make and use my invention, I will proceed to describe the same, with reference to the drawings, which show the several forms in which I can apply and use my invention.

The earth upon which the pavement is to be laid should be first rolled or rammed to make it solid, and over this is placed a thin layer of sand, so as to bed in the bricks in good order. Upon this foundation, or upon any other, more or less elaborate and expensive one, I place or lay bricks *a* in any of the forms—flatwise, edgewise, endwise, or portions of each—in which bricks are or can be laid or embedded, so as to leave spaces, cells, or recesses between, to better hold the top dressing by allowing it to flow or settle into such spaces, cells, or recesses, examples of which are shown as follows:

At B the bricks are represented as laid flatwise, and when two courses of bricks are used the under one is laid flatwise, and the upper one edgewise, with intervening spaces *c* between the bricks of the latter course, to be filled with sand, gravel, broken stone, or concrete, and said upper course is laid diagonal across the under one, by preference. At *c* the upper course is laid in lines at right angles to the line of roadway, with intervening spaces between the courses of bricks to be filled, as above mentioned. At D, as seen in Fig. 2, the bricks are represented as set upon their ends, and in a single course, with intervening spaces to be filled, as above stated. At E, as seen in Fig. 2, the bricks are shown as in a single course, set upon their edges, and with intervening spaces between them to be filled as stated above. At F the bricks are shown in edgewise courses alternating with flatwise courses, and a filling of broken stone, sand, gravel, or concrete, or mixtures thereof, between the edgewise bricks and upon the flatwise course. At G the same general plan as that seen at F is shown, except that, instead of alternating the flat and upright bricks, the latter are at greater distances apart, leaving an enlarged space or cell for the reception of the filling. At H the bricks are represented in single course—laid or set upon their edges, so as to leave spaces between them for the filling.

In all of these examples the foundation or substructure is made of brick, with intervening spaces between them for the reception of broken stone, sand, gravel, or concrete, or mixtures thereof. The spaces in example H, instead of being continuous, alternate with the bricks, the latter being laid in lap-joint, as seen in Fig. 1. The bricks are to be well settled down, and the filling compactly put in, so as to form a solid foundation or substructure.

The brick previous to being laid I treat as follows: First, I make a composition of about ninety parts of coal-tar pitch, four parts of kerosene or dead-oil, four parts of unslaked lime, and two parts of sulphur, not, however, confining myself to these precise ingredients or proportions, as other compositions in which coal-tar pitch is the predominating constituent may be used. This composition is heated up to a boiling point or thereabout, and the hard-burned bricks I propose to use are placed in it, and remain therein until thoroughly saturated with the composition. It is preferable to heat the bricks before their immersion in the composition, and as a matter of economy the bricks should be taken from the kiln in

which they are burned, and while still hot, and then and there immersed in the composition. When the bricks are hot, and so immersed, the composition does not require to be heated to so high a temperature.

The foundation of bricks being so prepared and laid I then prepare a composition for the top or finishing course of the pavement as follows: To eighty-five parts of coal-tar pitch I add three parts of dead-oil or coal-tar, eight parts of unslaked lime, four parts of sulphur, and add clean sharp sand until the composition is of the consistency of stiff mortar. A layer of broken stone, gravel, or sand, or mixtures of each, of from one to two inches in thickness, well saturated with hot pitch, or pitch and coal-tar, having been laid upon the brick foundation, and well rammed or rolled, then the top or finishing course *e* of the composition above described, about one inch thick, is evenly spread down, and a heavy roller run over it until it is evenly and regularly packed down, and in a few hours it may be driven over.

While the ingredients and proportions given for the top or finishing course will answer for most temperatures, it may require some modification for extreme temperatures. The coal-tar pitch, however, is always the predominating ingredient in the composition. The saturation of the bricks with the composition makes them harder, tougher, and less liable to fracture than the untreated bricks. They add somewhat to the cost of the pavement thus prepared, but it is more enduring. A cheaper brick foundation may be made by using hard-burned bricks as they come from the kiln; but this would be a brick foundation and come within the scope of my invention and claim therefor; and in this latter case the bricks are laid, with intervening spaces, cells, or recesses, sharp sand being well worked into the joints, and then with a maul or large flat swage driven or settled down until they are smooth on the surface and firm on the foundation, the spaces, cells, or recesses being left for the top dressing to bed into, and so firmly hold to the bricks. I then flood the pavement with boiling-hot coal-tar, or a composition of about seventy-five parts of coal-tar, twenty parts of dead-oils, and five parts of unslaked lime, which will fill the cells or pores of the brick, and render them durable by making them impervious to water or moisture.

Having thus fully described my invention, what I claim is—

1. A pavement composed of hard-burned bricks placed on an earth foundation, with intervening spaces, cells, or recesses for the top dressing to bed into, and thereby firmly unite with the brick substructure, and so prevent peeling off, as described and represented.

2. In a pavement having a hard-brick foundation laid with intervening spaces, cells, or recesses a concrete top dressing, composed of coal-tar pitch, dead-oil or coal-tar, unslaked lime, sulphur, and broken stone, gravel, or sand, prepared and applied substantially as herein described and represented.

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Witnesses:
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