S. E. GROSS.

Pavement or Roadway.

No. 218,960. Patented Aug. 26, 1879

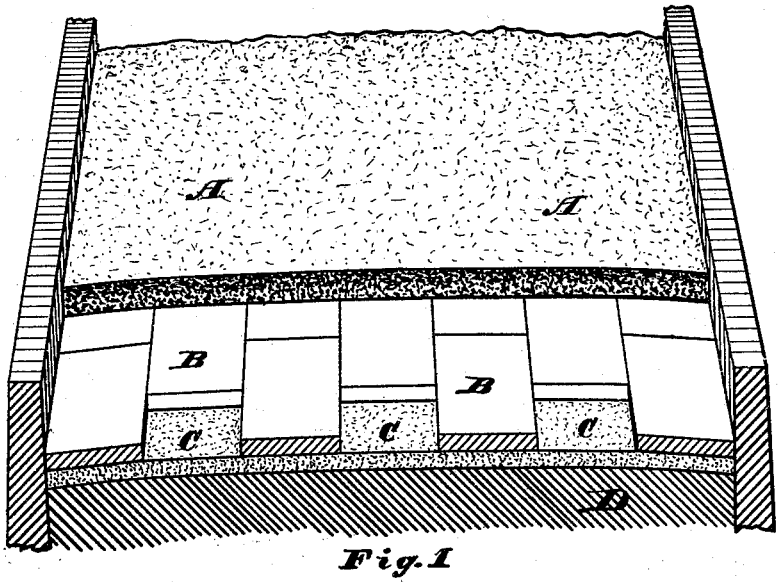

Fig. 1

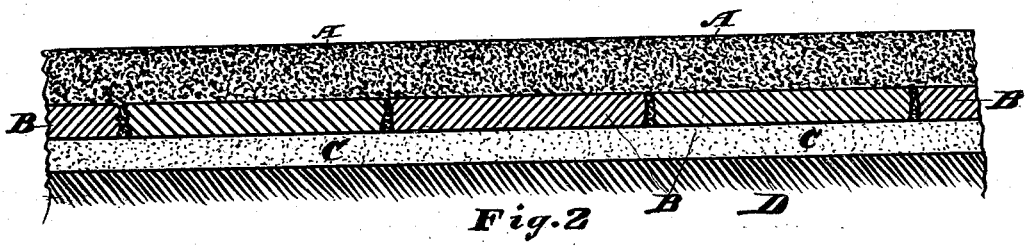

Fig. 2

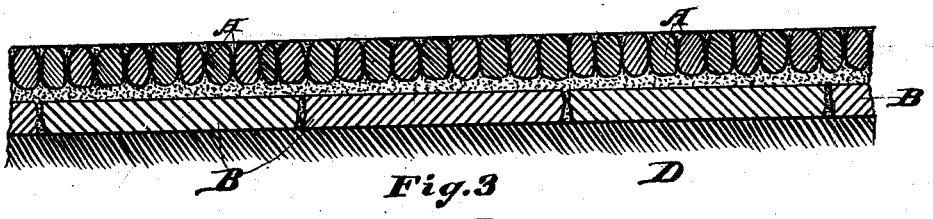

Fig. 3

Attest:

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UNITED STATES PATENT OFFICE.

SAMUEL E. GROSS, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN PAVEMENTS OR ROADWAYS.

Specification forming part of Letters Patent No. **218,960**, dated August 26, 1879; application filed July 25, 1879.

To all whom it may concern:

Be it known that I, SAMUEL E. GROSS, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Pavements or Roadways, which is fully set forth in the following specification and accompanying drawings.

Figure 1 is a perspective view of one form of my pavement or roadway, and Figs. 2 and 3 are longitudinal vertical sections of modifications of the same.

The object of my invention is to furnish a practical and durable pavement or roadway; and it consists in a foundation of flat stones or flagstones laid on their flat surfaces upon a sub-bed of sand or other suitable material, with an upper layer or wearing-surface of fine crushed stone, macadam, gravel, or cobble-stones.

Referring to the drawings, A designates, in all the figures, the upper layer or wearing-surface. B designates, in all the figures, the flat stones or flagstones. C designates, in Figs. 1 and 2, the sub-bed of sand, upon which the stones are placed; and D, in all the figures, represents a properly-prepared road-bed or layer of earth, gravel, slag, cinders, or other suitable material.

The flat stones or flagstones, their positions, the manner in which they are laid, and the part which they serve in producing an effective and durable pavement are of primary importance. They may be laid in irregular sizes and without reference to courses; but I much prefer to lay them in courses running lengthwise or crosswise to the street, the flagstones in adjacent courses breaking joints, and especially to lay them in courses about two feet in width, the stones being from two to four inches in thickness and from two to six feet in length. These dimensions and this adjustment of the stones permit of their convenient handling and also present a feasible sectional foundation, which can readily be removed in sections for the laying and repairing of water, sewer, and gas pipes, and as readily replaced. They may be laid close together on a sub-bed of sand, preferably about three inches thick, and the joints filled with cement and made water-proof, as shown in Fig. 1, or they may be laid on sand, earth, gravel, slag, cinders, or other suitable material, with joints loose fitting and filled with the material of the upper or wearing surface, as shown in Figs. 2 and 3.

The upper layer or wearing-surface, A, I prefer to make about five inches thick; but the thickness most desirable in any particular instance will depend considerably upon the kind of travel to which it will be subjected. In park-roadways, boulevards, or light-traveled thoroughfares it may be lessened in quantity with equally good results. The fine-crushed stone and macadam may be indiscriminately mingled, or the coarser particles may be placed at the bottom and the finer above, and I sometimes mix with cement and concrete it. When I use gravel I prefer such kind as contains cementing properties. Sometimes by lessening the quantity of each I make the layer A consist of two thinner layers, the one of gravel and the other of macadam, that one being placed uppermost which may be most desirable in any particular case. A portion of the material or materials of the upper course, A, may extend down into the interstices between the flat stones or flagstones, as shown in Figs. 2 and 3, in which case it acts as a key or binding material to the courses.

I much prefer a bed of sand for the stones; but if from cost, lack of suitable material, or other cause, in any case it may be so desired, the layer or sub-bed of sand C may be omitted and the stones laid directly upon the layer or road-bed D, composed of earth, gravel, slag, cinders, or other desirable material.

When I use cobble-stones for the upper or wearing surface I set them on and in a cushion of sand, cement, composition of coal-tar, asphalt, or other suitable substance or substances, as shown in Fig. 3.

Among the many advantages of this pavement are the following: By my method of laying the flat stones or flagstones a greater economy is effected than by any other foundation in the requisite quantity and cost of the upper course, of whichever specified material it may consist, and there is also an increased durability and uniform wearing capacity to the pavement. The bed-rock compacts the sub-bed and remains immovable. It prevents the upper course from sinking and being driven into the earth below, and thus prevents a loss

of material as well as the wearing of ruts and holes in the pavement or roadway.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The pavement or roadway herein described, and consisting of an upper layer or wearing-surface of fine-crushed stone, macadam, gravel, or cobble-stones placed upon a foundation of flat stones or flagstones laid upon their flat surfaces and resting upon an under layer or sub-bed of sand, substantially as described, and for the purposes set forth.

2. The combination of the layers or courses A and B, as and for the purposes specified and shown.

3. In a pavement, the combination of the layers A, B, and C, the whole constructed substantially as described, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of July, A. D. 1879.

SAMUEL E. GROSS.

Witnesses:
NICHOLAS VANDERMAY,
ASSOR COBB.