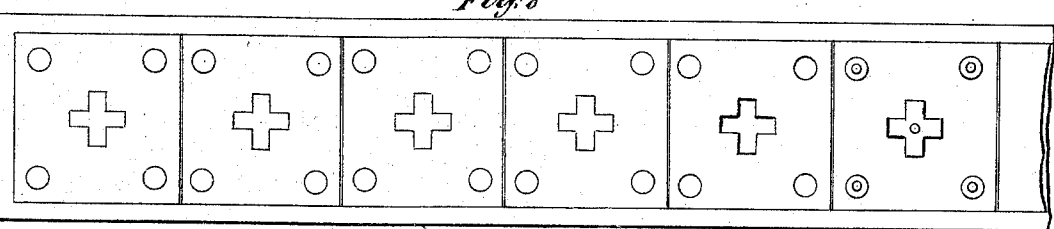
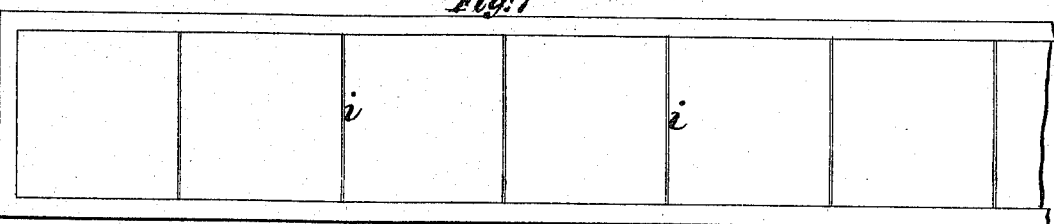
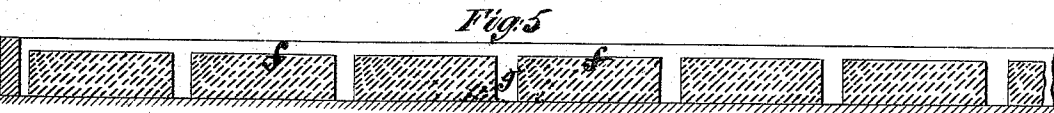
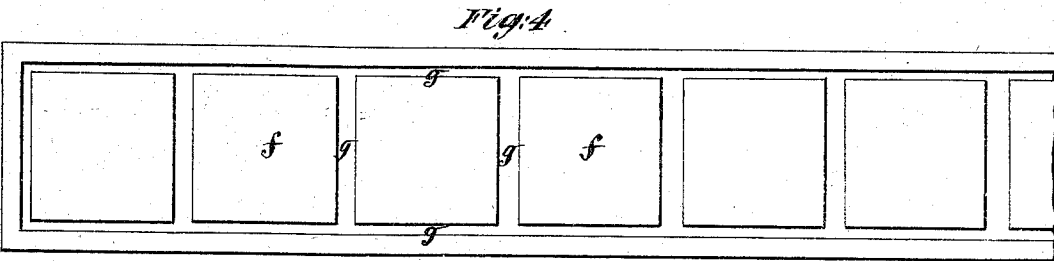
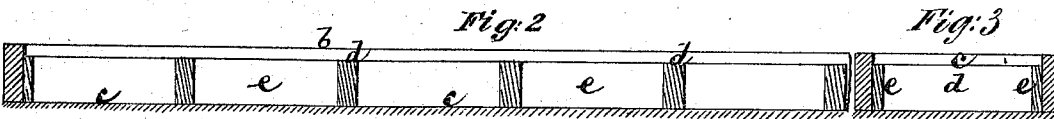
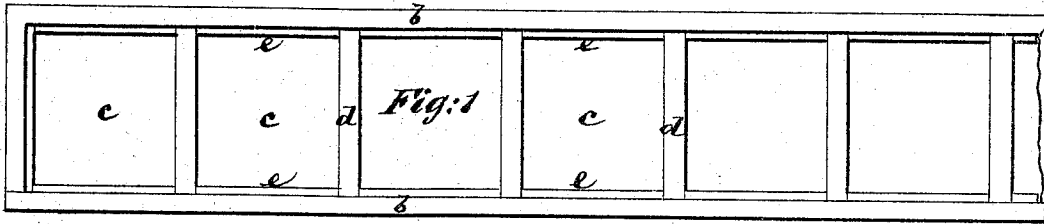


G. W. DEAN.
Concrete Pavements.

No. 142,444.

Patented September 2, 1873.



Witnesses: { Michael Han
Fred Furness

George H. Dean
By his attorneys
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UNITED STATES PATENT OFFICE.

GEORGE W. DEAN, OF STAMFORD, CONNECTICUT.

IMPROVEMENT IN CONCRETE PAVEMENTS.

Specification forming part of Letters Patent No. **142,444**, dated September 2, 1873; application filed June 5, 1873.

To all whom it may concern:

Be it known that I, GEORGE W. DEAN, of Stamford, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Concrete Pavements, of which the following is a specification:

This invention consists in a pavement composed of coarse and fine concrete laid in a continuous and solid body, and afterward divided into blocks. The particular and essential feature of said invention is that the coarse concrete, of which the blocks are mainly formed, is protected on the edges and sides as well as on the upper surface by a covering of fine concrete, substantially as hereinafter described.

In the accompanying drawing, which forms part of this specification, Figure 1 represents a plan of a walk as laid out or prepared to receive my improved pavement; Fig. 2, a longitudinal vertical section of the same; and Fig. 3, a transverse vertical section thereof. Fig. 4 is a plan, showing only the coarser blocks as laid, and Fig. 5 a longitudinal vertical section of the same. Fig. 6 is a longitudinal vertical section of the walk after the fine concrete has been laid, and Fig. 7 a plan after the concrete has been divided into blocks. Figs. 8 and 9 show a plan and longitudinal vertical section of a similar walk in which the blocks are ornamented by fanciful inlaid designs of coloring matter.

Similar letters of reference indicate corresponding parts.

In the construction of this pavement, the material used may be Portland cement mixed with coarse gravel, clinkers, and sand, or any similar and suitable compound; but in all cases the concrete is of two grades, coarse and fine. Thus, for the purposes of strength and economy the bulk of the walk is made of coarse material, requiring only a small proportion of cement; but the face and side dressing of the blocks, into which the walk is divided, is preferably either clear cement or a mixture of fine sand and cement.

The manner of laying the pavement on a narrow walk is as follows, referring, in the first instance, to Figs. 1, 2, and 3 of the drawing: I first remove the earth to the desired depth for the concrete, and roll the surface hard. Then, unless there should be a stone curbing

to answer the purpose, I erect narrow boards *b b* along the edges of the walk, and, by setting up strips *d d* two inches thick, more or less, across the walk, divide the same into spaces of greater or less dimensions. I also place strips *e e*, about one-half the thickness of the parting-strips *d d*, against the inside of the curb-boards *b b*. As these parting and side strips are only used in connection with the coarse concrete, they need not be any higher than we desire to make that layer—say, two inches high on a pavement three inches thick.

Having now divided the walk into boxes *c c*, I fill a number of the same with coarse concrete, taking them in a continuous manner, and as many of them as it may be convenient to finish off with the upper layer before the bottom layer has had time to set. After the boxes *c c* are thus filled with coarse concrete, and the latter well compressed, the parting-strips *d d* and the side strips *e e* are removed, as represented in Figs. 4 and 5, leaving blocks *f* of coarse concrete with spaces *g* surrounding them. These spaces are immediately filled with fine concrete, and the faces or top surfaces of the coarse blocks covered with the same fine material, and the walk brought up to its full height. This being pressed down and beveled off with a trowel or float, the walk is a continuous and solid body of concrete, as shown in Fig. 6.

The next operation is to divide the concrete into blocks, and this I do in the following manner: Laying a straight-edge on the face of the walk in the direction and at the same places where the parting-strips were set up, these points being determined by pins in the ground or marks on the curb, I take a trowel or other suitable instrument, and, guided by the straight-edge thus applied, cut down through the center of the fine concrete, which united the blocks of coarse concrete, and thus divide the walk into as many blocks as I had formed boxes, (see Fig. 7,) each block, it being now understood, being enveloped on the sides and edges, as well as on the face, with fine concrete.

While the strength and economy which result from the use of coarse concrete for the main body of the walk are indisputable, such material would not only be objectionable as regards finish, but would prevent dividing the pavement into blocks, as described, owing to

the impossibility of running the knife or trowel through it; hence the necessity of using only fine material where the intersections are made; but this fine concrete between the coarse blocks not only enables us to make these intersections, but it also serves as a protection to the blocks, keeping out dampness, and binding the two layers together, by which the scaling off of the top layer is effectually prevented; hence the use, to attain these several ends, of the parting-strips *d d* and the side strips *e e*.

The walk being now completed, when sufficiently hard fine sand or ashes may be swept over it, and the narrow spaces between the blocks filled up; or, if it is a floor that is tiled with concrete, such spaces may be filled with putty, thereby making it water-tight, excluding the circulation of the air, and restricting the progress of flames, if the building should be on fire.

Broad avenues that are several blocks in width are constructed in the same manner as the narrow walk herein described, taking the same in consecutive sections. These, too, may be laid off in squares, diamonds, or such forms as fancy may suggest.

If in laying walks it is desirable to make the blocks of different colors, I lay them off in the same manner as hereinbefore described, but first fill such of the boxes only as are required of the same color, having in this case used side strips all around each box with the coarse layer, so that these isolated blocks when completed

may have the covering of fine concrete on all the edges, as before described. When these blocks have become hard I fill the intervening spaces with concrete, finishing off the surface with the color I desire, and using with the coarse layer such strips as are necessary to attain the desired object, viz., the enveloping of the coarse concrete with fine. While these last-formed blocks are in a plastic state I separate them from the others by running a knife or trowel around them, substantially as before described.

I purpose also ornamenting the surfaces of such walks by means of patterns of various kinds, consisting of strips, letters, emblems, &c., set up in the walk and the concrete run around them, such patterns being withdrawn after the concrete has set, and the molds or spaces left by them filled with concrete of a different color from that of the surrounding surface. Figs. 8 and 9 illustrate such method of ornamenting the walk.

What is here claimed, and desired to be secured by Letters Patent, is—

A pavement for roads, walks, and floors, composed of blocks of coarse concrete, veneered on their faces and sides or edges with fine concrete, and separated one from the other, substantially as herein shown and described.

GEORGE W. DEAN.

Witnesses:

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