H. L. Cranford.

Stone Pavement.

No. 93,280. Patented Aug. 3, 1869.

Fig. 2.

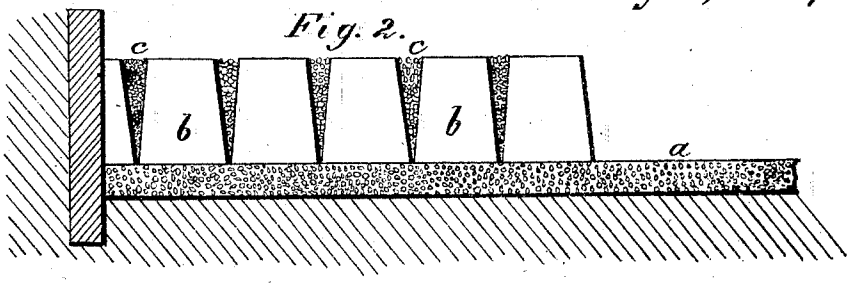
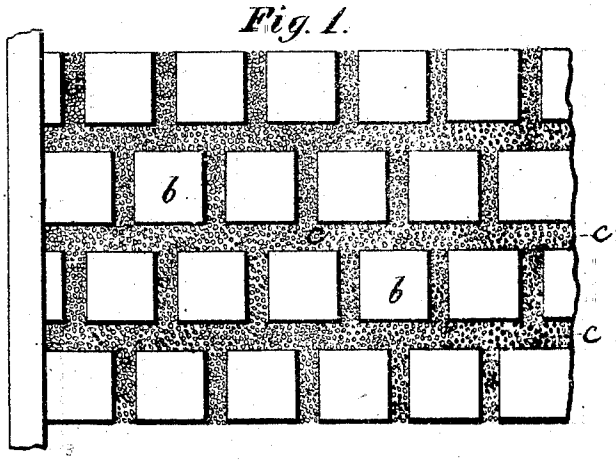


Fig. 1.



Witnesses.

Geo. A. Macker

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per L. W. Serrell

Atty.

United States Patent Office.

HENRY L. CRANFORD, OF BROOKLYN, NEW YORK.

Letters Patent No. 93,280, *dated August* 3, 1869.

IMPROVEMENT IN COMPOSITION-PAVEMENTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY L. CRANFORD, of Brooklyn, in the county of Kings, and State of New York, have invented and made a new and useful Improvement in Composition-Pavements; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a plan of the said pavement, showing a portion of the roadway, and

Figure 2 is a vertical section of the same.

Similar letters denote the same parts.

Pavements have heretofore been made, in which a composition of sand or ashes and gravel, or broken stones, mixed with tar or other bituminous materials, has been applied to the surface of cobble or other stone pavement, as may be seen in Letters Patent, No. 88,139, granted March 23, 1869.

The present invention is an improvement upon the said invention, and relates to a mode of laying stone pavements.

Heretofore stone pavements have been laid either upon sand or gravel, or upon a concrete of hydraulic cement or broken stone.

In the first instance, the blocks of stone are liable to be disturbed from one of three causes, or from all combined:

First, water penetrates between the stones, causing the foundation to settle, in consequence of the percolation of the water.

Second, passing weights drive down some stones more than others, in consequence of inequalities of size in the supporting-base or under sides of the stones, and greater density in the sand or earth at one place than another.

Third, frost disturbs the pavement, and renders the same irregular.

With the hydraulic-cement concrete foundation, there is no elasticity, the concussion of the horses' hoofs is severe on the animal, and the vehicles are jarred and rapidly injured.

In all the stone pavements heretofore laid, it has been necessary to dress off the stones more or less accurately, to aid in avoiding the difficulties before named, and to render the roadway sufficiently smooth.

My invention is intended to remove the difficulties before mentioned, and produce a pavement that is superior to those before constructed, and can be laid at a comparatively small cost.

I grade the roadway to the proper level and camber, roll the same, and spread thereon a composition of gravel or broken stone, or cinder and ashes, or sand, in about the proportion of two-thirds of the former and one-third of the latter, rendered adhesive or plastic by sufficient tar or bituminous material. This makes an elastic concrete that is very durable, and impervious to water and frost.

In the drawing, this is represented by the layer *a*.

Upon this layer *a*, the stones *b b* are set. These stones are to be split or hewn, or selected of the proper size and shape. They may be cubical, of the character known as "Belgian blocks," but I prefer to have said blocks slightly pyramidal, with the stones nearer to each other transversely of the street than longitudinally, in order that wheels of vehicles may not pass in between the blocks of stone.

The blocks, when made slightly pyramidal, with the largest end downward, may be six inches square at the base, and five inches by five and a half inches at the top, in order that the composition may be introduced into wedge-shaped openings; but the blocks may be of any other desired measurements.

I fill in between the blocks with the plastic composition aforesaid, as at *c*, and ram or roll the same, and the said composition is sufficiently thick upon the stone surface to render the pavement even and of the desired smoothness.

By using blocks of this shape, it will be seen, as at *c*, that a wedge-shaped mass of concrete, such as is described, is driven down between the stone, and the constant effect of the travel over the pavement is to pack this wedge of concrete more firmly than before, and to make this pavement firm and reliable.

Pavement made in this manner, is—

First, partially elastic and very easy for both horses and vehicles.

Second, the water is excluded from the foundation, hence the frost will have no effect, and the pavement cannot sink.

Third, none of the materials employed can be injured by age or atmospheric influences.

Fourth, the stone blocks are made to adhere to each other, and weights are taken on a large extent of surface.

Fifth, as the surface of the pavement wears away, the asperities of the stone will be removed, as well as the plastic composition. For this reason the stones do not require to be dressed with great accuracy.

Sixth, the surface is such that horses cannot slip, because the material between the stones does not wear smooth, and is always sufficiently elastic to give a foothold.

Seventh, the durability of this pavement is very great, and the cost but little, if any more than other stone pavements.

Eighth, this pavement is promotive of health, because of the disinfecting qualities of the tar used, and also because it is impervious to moisture and filth, the latter being easily swept away or washed off

the surface, instead of soaking into the blocks or between them, as is the case with the ordinary wood and stone pavements.

What I claim, and desire to secure by Letters Patent, is—

The combined stone and composition-pavement, prepared and laid substantially as set forth.

Also, the wedge-shaped filling of composition, introduced between the stones, as and for the purposes set forth.

In witness whereof, I have hereunto set my signature, this 10th day of July, 1869.

HENRY L. CRANFORD.

Witnesses:

GEO. D. WALKER.

CHAS. H. SMITH.