

(No Model.)

F. G. JOHNSON.
PAVEMENT.

No. 340,123.

Patented Apr. 20, 1886.

Fig. 1.

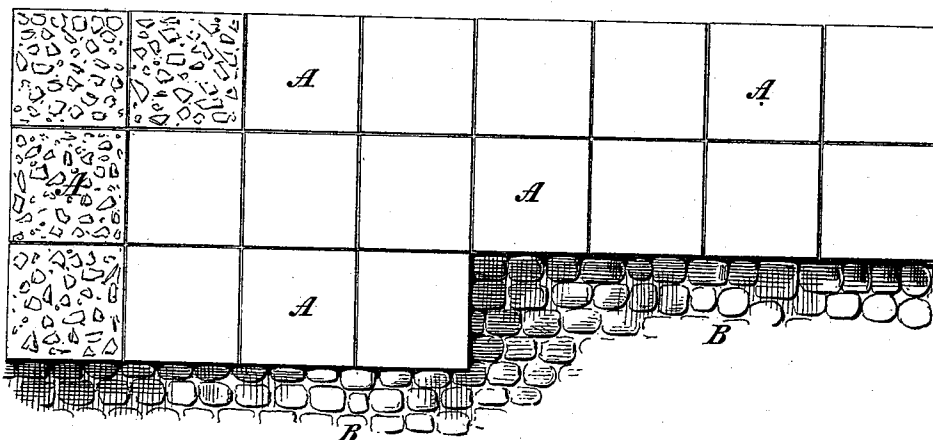


Fig. 2.

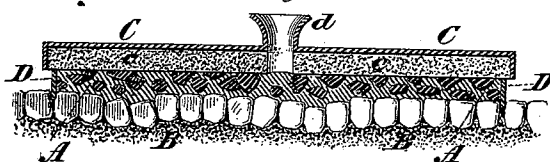


Fig. 5.

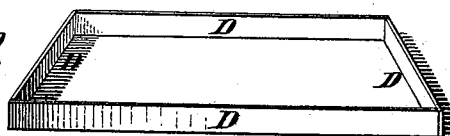


Fig. 3.

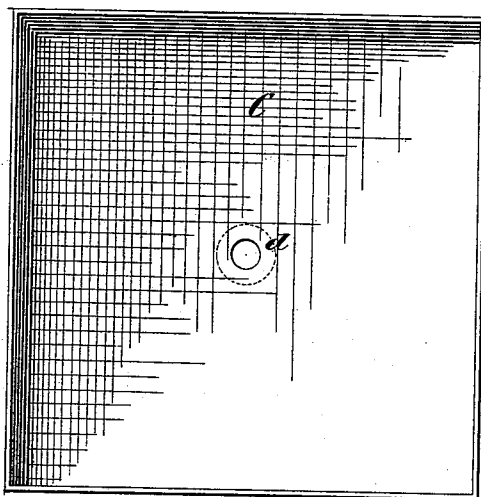
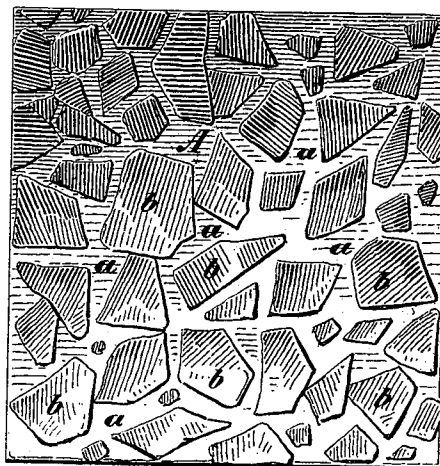


Fig. 4.



WITNESSES:

Gustave Dietrich.
Geo. J. Malinar.

INVENTOR

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UNITED STATES PATENT OFFICE.

FRANK G. JOHNSON, OF NEW YORK, N. Y.

PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 340,123, dated April 20, 1886.

Application filed September 17, 1885. Serial No. 177,325. (No model.)

To all whom it may concern:

Be it known that I, FRANK G. JOHNSON, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Pavements, of which the following is a specification.

My invention relates to that class of improvements in pavements which has for its chief object a flat and smooth surface without sacrificing foothold and durability or rendering it too expensive to be afforded. I attain these objects by the method illustrated in the accompanying drawings, making a part of the specification, in which—

Figure 1 is a top view; Fig. 2, a vertical section showing part of the apparatus for making the pavement; Fig. 3, a top view of Fig. 2; Fig. 4, a top view of the pavement, enlarged; and Fig. 5, a perspective view of a metallic frame.

Similar letters refer to similar parts throughout the several views.

The pavement consists of three parts: first, a foundation, which, preferably, may consist of cobble or other stones, because they are cheap, and for the reason that in many cities they are already laid; second, a dressing consisting of broken or crushed stone broken into fragments ranging about from the size of a hazelnut to that of a butternut, spread over the foundation and rammed down and leveled off, and sufficiently thick to level up and conceal the cobble-stones or other suitable foundation; and, third, melted or molten iron poured upon and into the dressing, whereby the interstices between the broken fragments are filled and the fragments of stone are joined together, the fragments of stone and iron forming a level stone and iron concrete over the foundation. The iron uniting the fragments inseparably together and the broken stone, being the major part of the bulk of material above the foundation, afford sufficient friction for the horse. Besides, as the broken stone will wear down a little faster than the iron, additional foothold will be thus secured, while the general surface will be practically flat and smooth.

The concrete dressing of stone and iron, instead of being laid or made continuous, is divided into squares of a yard or so across, (shown in Fig. 1,) in a manner hereinafter ex-

plained, in order to facilitate the laying and the taking up of the pavement.

A more detailed description of the construction of the pavement is described as follows:

A A A, Fig. 1, represent the upper surface of the pavement divided into sections about a yard square, the three squares on the left showing the fragments of broken stone, which are also better illustrated by *b b b* in Fig. 4, in which figure *a a a* represent the iron between the fragments of broken stone, only that for clearness of representation the spaces between the fragments are relatively too large in the illustration. This disproportion between the iron and broken stone, and for the same reason, obtains in the view Fig. 2, as when the broken stone is properly rammed down (before the melted iron is poured on) the proportion of broken stone to the iron in bulk is about as one to six or eight, or even greater, depending upon how closely the broken stone is rammed before being concreted by pouring the iron.

B B, Figs. 1 and 2, represent the foundation shown in the drawings as cobble-stones.

D D, Figs. 2 and 5, represent a frame the size of the squares in Fig. 1, consisting of a narrow strip of thin sheet-iron bent at right angles, which is termed the "molding-frame."

C C, Fig. 2, represent a metallic plate bent down at right angles on the edges and lined or filled with molding-sand *c c*, through which is a gateway, *d*, to pour the melted iron upon the broken stone. This plate, for convenience, is termed the "molding-plate," the top view of which is represented by Fig. 3.

The method of laying the pavement is described as follows: When the cobble-stone pavement is all ready laid, and is to be employed as the foundation, the loose dirt is first to be swept off, after which the cobble-stones are to be covered over for a considerable distance with the broken stone sufficiently to conceal the crowns of the cobble-stones, and then to be well rammed down, to compact the fragments of broken stone as closely together as possible. Having done this, one of the molding-frames (D D, Figs. 2 and 5) is then driven down edgewise into the broken stone until it strikes the cobble-stones, leaving the upper edge flush with the rammed broken stone. The molding-plate, (C C, Figs. 2 and 3,) being

somewhat larger in area than the molding-frame (D D, Figs. 2 and 5) and lined with molding-sand, is laid on the edge of the molding-frame and over the broken stone 5 contained therein. This being done, the melted iron is now to be run through the pouring-gate *d*, Figs. 2 and 3. The iron being hardened by cooling, the molding-plate is removed and the molding-frame remains. 10 Thus one section or square of the pavement being laid and finished, other sections are laid around and contiguous to the first, and so on.

The molding-frame divides the pavement into square sections, which can be taken up 15 here and there as required for laying gas, water, steam, and other pipes.

A portable furnace, of course, is employed for melting the iron.

Other materials besides crushed stone—for 20 instance, iron-slag, or a mixture of crushed stone and iron-slag—may be employed with the melted iron. Therefore I do not limit myself to the use of crushed stone with the melted iron; neither do I limit myself to the

employment of cobble-stones or square blocks 25 of stone for the foundation, as broken stone and coarse sand combined, or broken stone and cement, may be used for the foundation.

Having thus described my invention, what I claim as new and useful, and desire to secure 30 by Letters Patent, is—

1. In the construction of pavements, the combination of melted iron *a a* and crushed stone *b b*, substantially in the manner and 35 for the purposes described.

2. In the construction of pavements, the combination of melted iron *a a*, crushed stone *b b*, and the foundation-stone B B, substantially 40 as and for the purpose set forth.

3. In the construction of pavements, the combination of melted iron *a a*, crushed stone *b b*, and molding-frame D D D, substantially 45 as and for the purpose described.

FRANK G. JOHNSON.

Witnesses:

JNO. J. MALMAR,
E. H. ADAMS.