

S. Nicolson.

Wood Pavement.

N^o 11,491.

Patented Aug. 8, 1854.

Fig. 2.

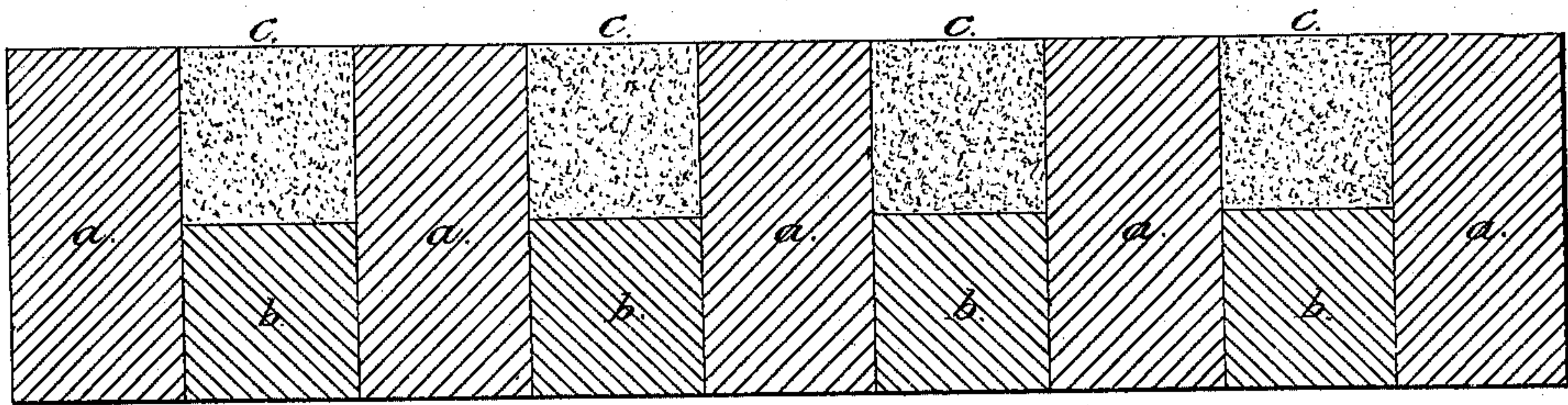
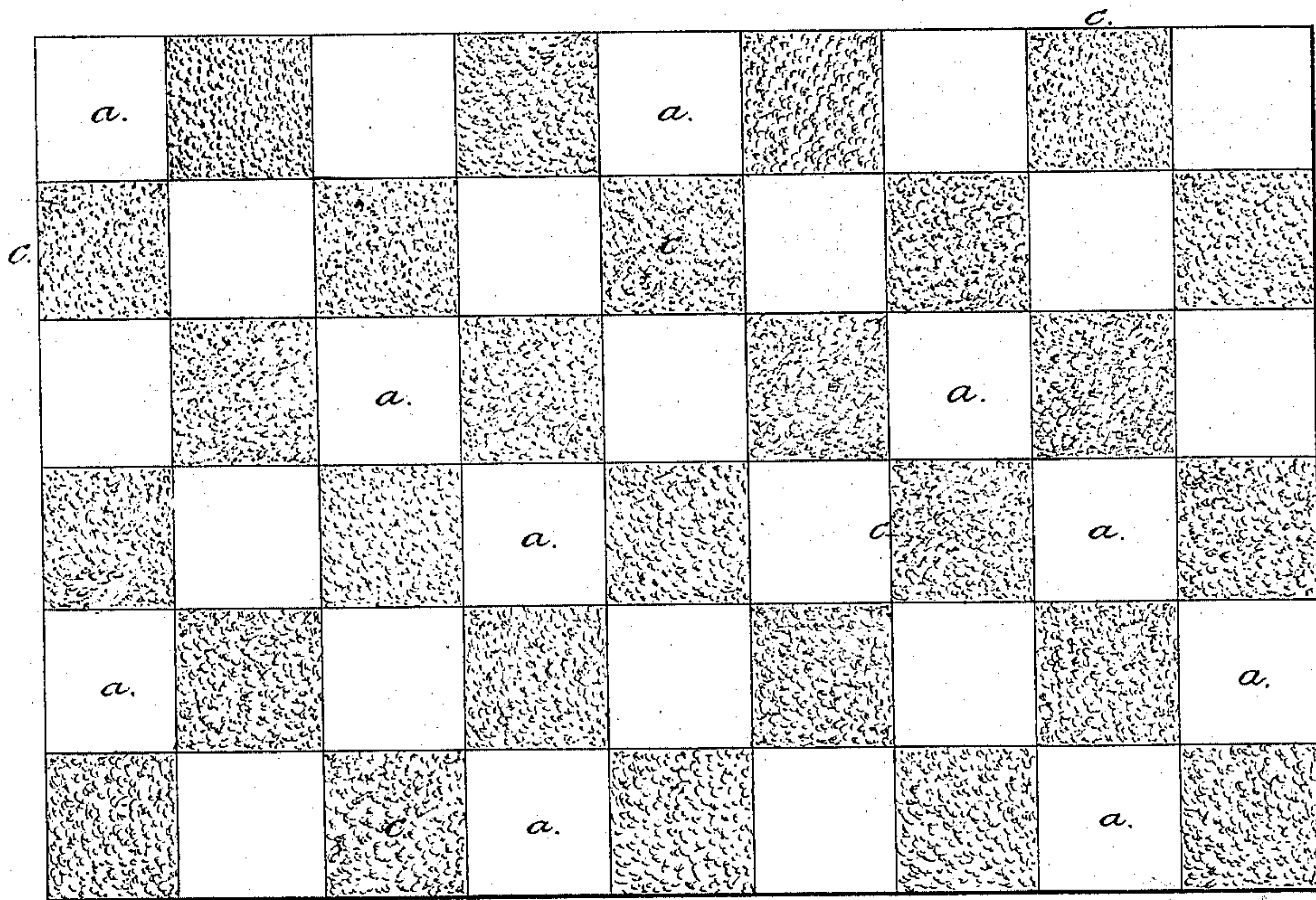


Fig. 1.



UNITED STATES PATENT OFFICE.

SAMUEL NICOLSON, OF BOSTON, MASSACHUSETTS.

WOODEN PAVEMENT.

Specification forming part of Letters Patent No. 11,491, dated August 8, 1854; Reissued December 1, 1863, No. 1,583.

To all whom it may concern:

Be it known that I, SAMUEL NICOLSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and
5 useful Improvement in Wooden Pavements; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references
10 thereof.

Of the said drawings, Figure 1, represents a top view of my improved pavement. Fig. 2, is a transverse and vertical section of it.

In carrying out my invention, I make use
15 of two sets or series, *a, a, a, b, b, b*, of wooden blocks. They are cut from joist or timber four inches square or of other suitable dimensions in cross section, the longer blocks, *a, a, a*, being made about eight inches in
20 length, while the shorter blocks or those represented at *b, b, b*, are formed about half the length of the others. These blocks are placed end upward and are arranged both transversely and longitudinally so that the
25 long and short blocks shall be arranged alternately in each direction or run as seen in the drawings. Such an arrangement of them leaves cells, or cavities, *c, c, c*, between the said blocks, each of the said cells being
30 bounded by four of the larger blocks and having its bottom formed by one of the shorter blocks. The upper surfaces of the long blocks when thus placed together, present a checkered or tessellated appearance
35 and they will exhibit the open space or cells arranged together in a similar manner. Into each of these cells, a small quantity or larger of coarse salt may be put and the cells filled up with small broken stone or coarse
40 gravel, the whole being firmly rammed so that the upper surface of the mass in each cell shall be firm and level. Next mineral or vegetable tar or pitch is to be poured over the whole surface of the pavement and into
45 the cells or cavities containing the broken stone or gravel so as to penetrate entirely between the pieces of stone or gravel, and cement them together. The tar permeating
50 into the squares containing the broken stone, will cause the masses of the same to adhere firmly to the surrounding blocks, and will admit of expansion of the mass by the weight of the wheels of carriages in passing over them; such expansion serving to fill up
55 such space as might otherwise be made by shrinkage of the wooden blocks. In order to

prevent the blocks from being forced below one another, they may be pinned together with wooden pins extending from block to block.

60 Instead of the broken stone and tar, any other suitable cementing materials or cement may be employed in the cells. I prefer however common tar or pitch and gravel or broken stone, as such in practice has been
65 found to operate to great advantage, and to be very durable in use and to present a surface over which it is very difficult for a horse's foot to slip or slide as it will on the ordinary wooden pavement when its surface
70 is wet or covered with mud.

The smaller blocks, *b, b*, serve to uphold the masses of cement and stone in the cells, and when such masses are compacted by any
75 blows upon them or the rolling of wheels over them instead of being pressed down so as to slide down between the blocks they are made to spread laterally and thereby completely close up the joints between the blocks
80 and themselves and so as to prevent water from passing down into the joints between the blocks. As the salt will slowly melt it will penetrate into the wood and aid in preserving it from decay.

The earth upon which the pavement is to
85 rest may be prepared to receive the pavement by covering its surface with tarred paper, or other preventive to moisture being absorbed from the ground by the wooden
90 blocks.

My invention may be carried out in another form, that is to say, the long blocks may be arranged side by side and in
95 rows transversely of the roadway and with spaces about one inch in thickness between each two rows of them, in each of which spaces, a strip of board may be introduced, the width of the board being equal to about
100 half the length of the block. These boards being made to rest on the surface of the ground create with the rows of the blocks long cells or grooves extending transversely
105 across the roadway, such cells or grooves being subsequently filled with broken stone or gravel, and tar or cement. I do not however consider this method of carrying out my invention of so much value as the first
110 on account of the broken stone and tar or cement not being arranged between the blocks in longitudinal as well as transverse directions.

In order to prepare the earth of a road-

way for the reception of my improved pavement, instead of employing tarred paper as above described the upper surface of the roadway after being suitably graded may
5 be covered with lime, mortar, or hydraulic cement, which may be laid over it about two inches in thickness, or it may have a super-structure of flooring of cheap boards laid over it, the pavement being afterwards laid
10 upon such boards. I would remark however that in view of the great durability of this pavement, (for the purpose of experiment, I have had some of it in use for six years on a road over which the travel has been very
15 great,) such flooring would seem to be unnecessary. Some of the advantages of my improved pavement are to be found in the hold that it offers to the feet of horses; in the little noise that is produced by carriages
20 in passing over it, the absence of noise resulting from the peculiar character of the materials of which the pavement is composed. This pavement is also very durable; its durability being occasioned by reason of
25 the friction of the travel over it being produced upon the slightly elastic extremities of the fibers of the wooden blocks. Moisture is excluded from the wood by the materials employed for the support of the blocks, also
30 by the preventives, also by the tarry covering which is placed over the top surface as hereinbefore described.

My pavement has the advantage of great cleanliness in comparison with most other pavements, because in the first place, as there
35 is very little wear of its upper surface, very little dust is likely to form upon it, and such as does form upon it is quickly removed by rains and winds.

What I claim as my invention is—

To so combine or arrange the blocks or wooden portion of the pavement, that there may be cells or channels formed by such arrangement between them as described and
40 for the reception of tar and gravel or materials of like character, and that each cell or channel shall have a wooden bottom for the tar and gravel cement to rest on, whereby
45 when the mass of tar and stone in each cell is pressed down by the wheels of carriages it shall be prevented from being forced
50 through the cavity and be caused to be spread in lateral directions so as to maintain a firm and close joint between the adjacent blocks such as will operate to prevent
55 water from passing down between their joints.

In testimony whereof I have hereunto set my signature this twenty-ninth day of March A. D. 1854.

SAMUEL NICOLSON.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.

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