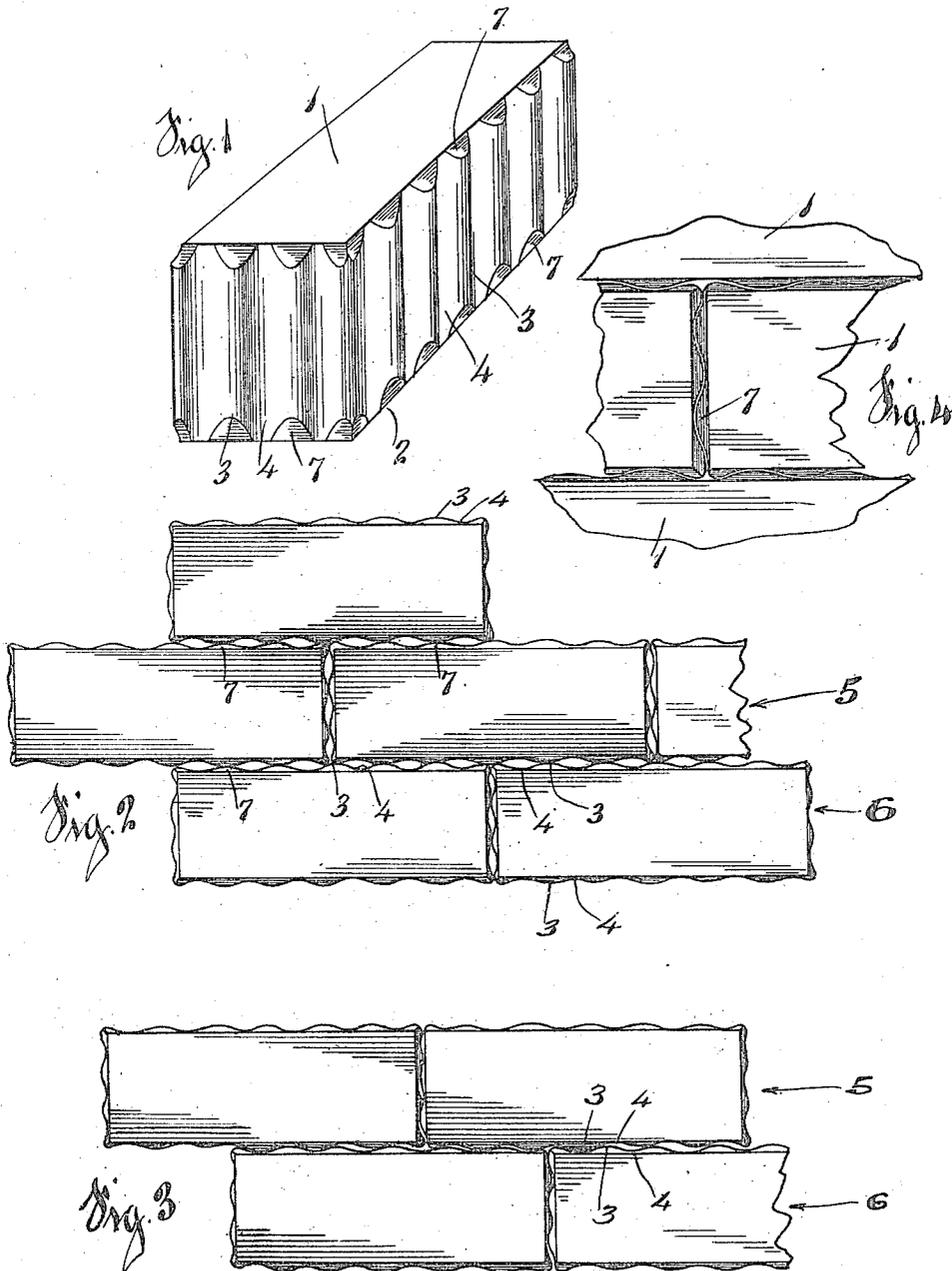


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WOOD PAVING BLOCK AND PAVEMENT.  
APPLICATION FILED JULY 15, 1916.

1,268,123.

Patented June 4, 1918.



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WOOD PAVING-BLOCK AND PAVEMENT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY C. INNES, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Wood-Paving Blocks and Pavements, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to wood paving blocks which may be either treated with creosote oils, or untreated as desired. In the present practice, rectangular blocks of wood are employed in street paving and the like, usually impregnated with oils, and laid with the grain vertical, in staggered courses cross-wise of the surfaces to be paved. In such paving, the blocks are necessarily laid in fairly close contact with each other to prevent looseness during a period of shrinkage, and a plastic semi-solid poured into the small spaces between the blocks, to afford a possibility for expansion of the blocks should occasion present. The edges of the blocks in such pavements are exposed to considerable wear unless supported, and as they are unprotected are likely to break down along the vertical faces and ends by the wear of horses' shoes and pressure of metal tires of vehicles and the like.

Moreover, in such pavements, the expansion due to heat and moisture takes up more than the small spaces between the blocks in some instances and causes the paving structure to buckle, or to squeeze out the oils in the wood and above all to strain the fibers of the wood, with a result in the impairment of the strength of the pavement.

To avoid these difficulties, it has been the practice, borrowed from the old block paving with untreated blocks, to lay between the blocks some sort of spacing medium, or else to form this spacing medium integral with the blocks themselves. If the spacing pins or lugs on the blocks are crushable, then after once there is any crushing strain, or breaking the supporting spaces, the pavement becomes loose, except so far as the filler may prevent, and the crushable nature of the spacing means is all consumed.

The many blocks laid in a pavement's wearing surface have a varied degree of

strength and density, dependent upon the heart or sapwood. The extent of the possible absorption of fluids by the different blocks depends upon the relation to the heart wood of the tree from which same was cut. Such absorption must necessarily be varied, and hence the expansion of the blocks laid in a pavement is not uniform throughout. Therefore a provision to provide for a minimum or maximum enlargement of the blocks without any crushing effect or injury is sought.

It is my object to provide a wood block, the same to be treated or untreated, which is capable of sliding into different positions upon expansion without breaking down the fibers of the block. It is a further object to provide a block which can be set originally into various positions of separation from adjacent blocks so as to allow for the expanded or contracted condition of the block at the time of laying.

It is further desired to provide at the surface of the pavement, a minimum or a maximum opening space, to better serve as a foothold for the horses in traveling over same and secure to the greatest extent, supporting wood fibers beneath, as well as affording a space for occupancy of suitable viscous waterproofing filler.

These objects I accomplish by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed, wherein the vertical sides or ends of the blocks are provided with a series of alternating curves or corrugations of substantially uniform shape and size so that the same may interlock with each other, and having the top and bottom sides or ends preferably chamfered to the neat lines of the depressed curves.

In the drawing,

Figure 1 is a perspective view of a block.

Fig. 2 is a plan view of courses of block laid with maximum spacing.

Fig. 3 is a like view of courses of block laid with partial reduction of spacing, the ends of the blocks being oppositely curved so that the blocks partially intermesh at the ends also.

Fig. 4 is a detail plan of the blocks in several courses shown as entirely intermeshing.

The blocks are formed in the shape of a

parallelepipedon, square in cross section and rectangular in longitudinal section. They have a flat top 1 and a bottom 2, and the sides and ends are cut in special fluted shape, the grain of the blocks running parallel with the sides.

The flutes or corrugations in the blocks may be of any desired conformation or multiple. The preferred form, as shown in the drawing, consists in regular waves having crests 3 and troughs 4. As shown, the curves or waves on the ends are of the same conformation as those on the sides, although this is not absolutely necessary.

A particular feature of the curves is that they are uniform on any set of blocks so that the blocks will intermesh with each other when placed in position with the crests of one block lying in the troughs of another. The ends of the blocks may be made with one end curved partly oppositely to the other, so that they will partly interlie each other, or else they may be made uniform on both ends so that only the crests will touch. In either case, the plan adopted must be followed throughout so as to give the proper uniformity.

In laying the pavement, the workman can never make a mistake and lay a block with the grain running horizontally of the paved surface, as the curved surfaces will then lie uppermost. Accordingly it is not necessary to cut these blocks with the height greater than the width to prevent this, and the cross section of the blocks may be safely made square, or other dimension, if desired.

The blocks are chamfered or beveled both top and bottom at 7, said bevel running at preferably a steep pitch from the trough of the furrows or corrugations. Thus the only parts cut away are the extended fluting in the block. This chamfered nature of the blocks provides a good foothold for horses.

It will be understood that the blocks are to be laid lengthwise across the street, in staggered relation with each other. As shown in the drawing, a course 5 of blocks is laid across the street or other surface to be paved, and then another course 6 laid in staggered relation thereto. It is not possible to get absolute accuracy in the laying of blocks, and it is not expected that all of the blocks in any two courses will bear the exact relation to each other.

Specifications for the kind of wood to be used in a pavement, its percentages of heart wood, determined by the number of rings, and the pounds treatment of creosote oil per cubic foot of wood and its classification are variable in various cities. Dependent upon the above and the age of the treated blocks, also the season whether dry or moist, must serve as a guide in the laying of the blocks for best results. For this purpose, the proposed block can meet such require-

ments and is obtained in the manner of laying same as a pavement.

The general plan, however, will be to lay the courses together so that when the blocks are swelled or expanded, they will fairly closely interlie each other; see Figs. 3 and 4. If the blocks are shrunk and dry, which will more often be the case in good weather, then the blocks are to be placed with the curves out of mesh, as shown in Fig. 2. It will be understood that there can be no exercise of judgment in spacing the ends of the blocks, as each course will be perfectly straight and the space or lack of space between the ends of the blocks dependent upon how they are shaped originally and not upon how they are laid, if the rule is followed that the blocks should contact with each other in all instances.

When the unequal expansion takes place of the varied density of the blocks, the pressure of one on the other due to the curves, will be to cause a sliding adjustment of the various blocks into closer mesh with each other, thereby taking up the unit expansion without crushing the blocks, pressing out their oils, or buckling the pavement. The fact that crests adjoin crests between sides or ends of blocks will not militate against sliding movement, as the blocks will not move in straight lines.

The relationship of one course of blocks with an adjoining course is possible at all times of starting the course by cutting or "batting" a block at the desired place, which will regulate in a measure the spacing between the blocks, as also the "breaking of joints."

As above stated, the exact relation may vary, and this variation will tend to give a balance to the pavement, which will, in a measure, prevent a general movement of the blocks all in one direction.

The blocks except in very exceptional cases will always wholly or partly intermesh with each other, which will tend to support the chamfered edges provided for a foothold for horses. In the event of the blocks being spaced with the greatest opening, the chamfered foothold edge would be protected by means of the extending crests of the blocks.

The space between the blocks, including the portions chamfered away, will be filled with plastic or granular products in ordinary practice, and the movement of the blocks will not be sufficient under all but exceptional strains to squeeze out an appreciable amount of this filling.

There is in the block no part which is designed to be crushed, as the corrugations or waves will not be enough to expose the blocks to this danger. As is well known, the corrugating of an edge does not render it liable to breaking down on lateral pres-

sure, and as has been said, a vertical pressure on the blocks will not result in the breaking down of the curved outline, because the freedom of the blocks to intermesh serves as a protection.

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

1. Wood paving comprising blocks having fluted sides running with the grain, said blocks placed so that the curves do not entirely intermesh, whereby a sliding movement will be allowed of the blocks into fur-

ther mesh without buckling the pavement or crushing the blocks.

2. A wood paving comprising blocks of substantially rectangular shape, and having a horizontal flat upper surface cut across the grain and vertical sides cut in complementary curves and reverse curves with the grain of the wood, whereby the space between like blocks in laying the same will be possible of regulation to allow for expansion and contraction, while the blocks will abut each other at all times.

HARRY C. INNES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."