

W. HANLEY.  
PAVING BLOCK.  
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926,062.

Patented June 22, 1909.

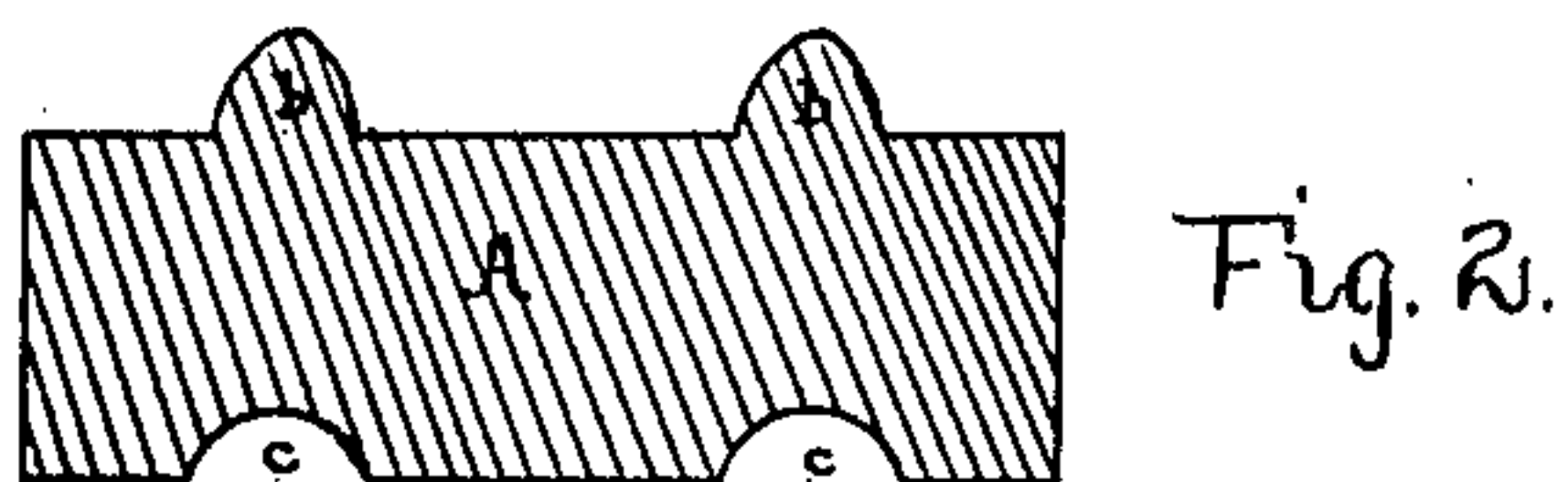
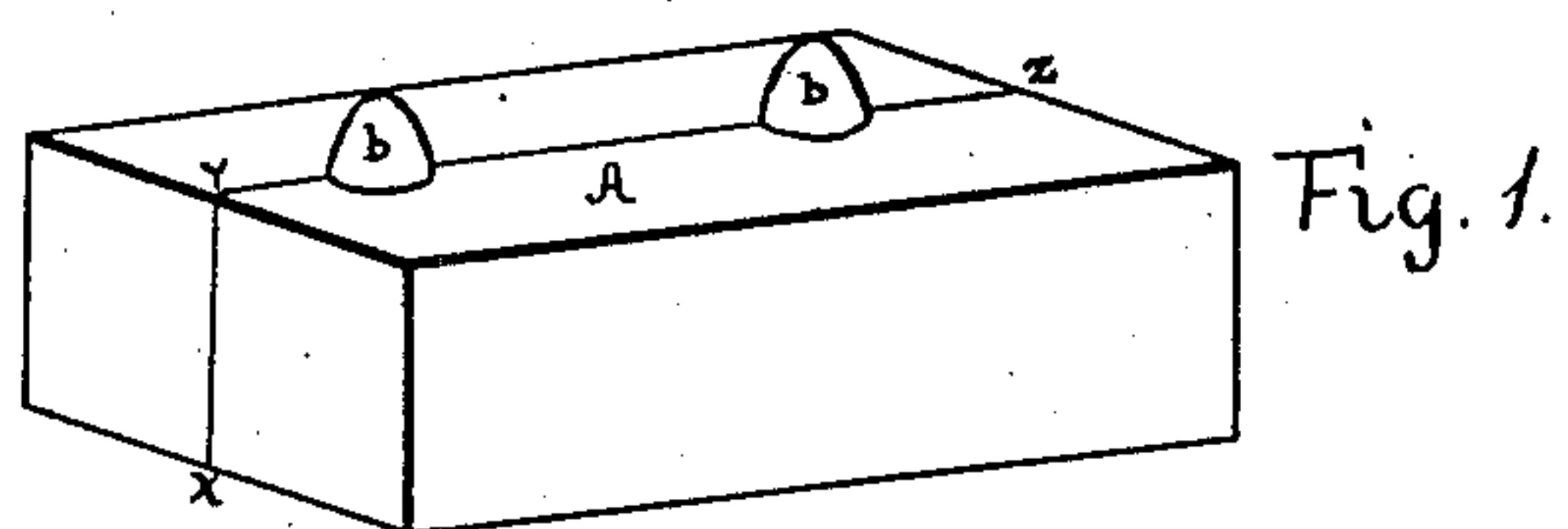
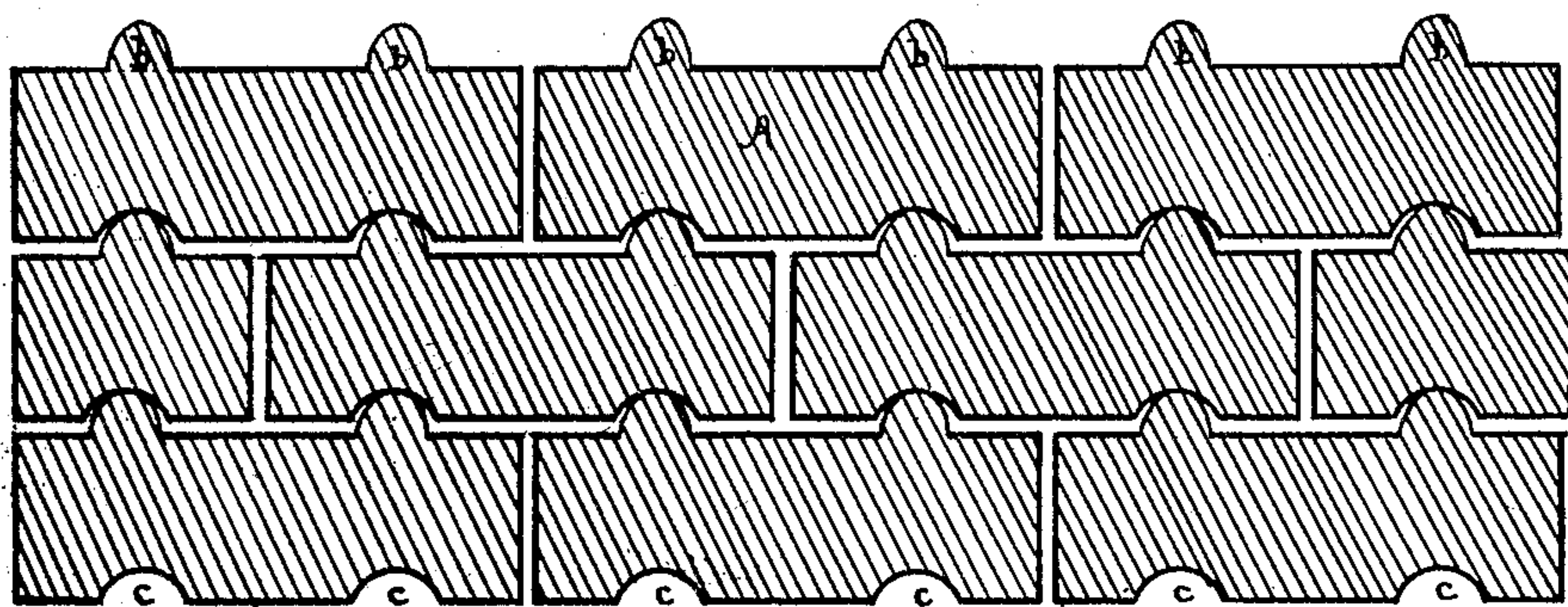


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## PAVING-BLOCK.

No. 926,062.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed February 9, 1909. Serial No. 476,945.

*To all whom it may concern:*

Be it known that I, WILLIAM HANLEY, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Paving-Blocks, of which the following is a specification.

This invention relates to improvements in paving bricks or blocks for paving highways, streets, drive-ways, alleys and walks. In paving highways, it has heretofore been found necessary to erect substantial and permanent curbing on each side of the highway to be paved, within which curbing the paving bricks or blocks are laid, the curbing being necessary because each paving brick or block is laid loosely in its bed with spaces intervening between each for grouting, as well as for permitting the laying of the same loosely where the highway is on a curve, the spaces to be filled with grouting, as well as for permitting the laying of the said brick loosely to permit of crowning of the center of the highway, the spaces to be filled with grouting: by reason of brick being so laid the curbing has been found necessary to prevent the bricks from loosening in their bed and creeping or sliding toward the sides of the highway. The curbing thus necessary for paving of highways with bricks or blocks adds so largely to the cost thereof that bricks or blocks for paving country highways have not been used to any extent. During these latter times when travel by automobile and touring car is so extensive, and is on the increase, there is a growing demand for better highways, and several of the States responding to that demand have enacted laws for the building and maintaining of highways, under which many miles of macadam road have been constructed. It has been found, however, that the broad and swiftly revolving tires of the motor cars suck up from the surface of the macadam road, small particles of the broken stone and materials forming the same, thus causing much dust to arise and ruts to be worn in the surface of the macadam road.

The object of this invention is to provide an improved paving brick or block having in combination features permitting expan-

sion and contraction of the pavement; uniform strength of each paving brick throughout; permitting spaces for grouting; permitting interlocking and laying in pavement without use of curbing, thus bringing the cost of the paving down to a limit which will justify to a large extent the use of such paving blocks, and the elimination of the dust nuisance caused by automobile travel over highways paved therewith.

This invention includes special features of construction hereinafter described and particularly pointed out in the claims.

An embodiment of the invention is illustrated in the accompanying drawing, forming part of these specifications, in which—

Figure 1 is a perspective view of my improved paving block; Fig. 2 is a section taken on line *x. y. z.* Fig. 3 is a central longitudinal section through a portion of a pavement as laid with said paving blocks.

The blocks A are made rectangular in plan as shown in Fig. 1, and of such thickness, width and length as is customary for paving blocks. The blocks are laid on edge in the pavement with their ends pointing cross-ways of the pavement or highway. Two bosses or projections *b*, being paraboloid in form or any other suitable form, are molding on one side or face of the paving block. These bosses or projections, which may be called males, are in line with the longitudinal center of the face of the brick or block, as shown by the line *x. y. z.* which is centrally also between the edges thereof, and each boss is from the ends of the paving block a little less than one-fourth the length of the block; that is, each boss is on each longitudinal side of the center of the face, a distance of half way from the center to the end, plus about one-eighth of an inch for grouting space at the ends. On the other side of each paving block are two depressions *c* corresponding in position to the bosses on the reverse side thereof. These depressions, which may be called females, are in the shape of the concave surface of a segment of a hollow sphere, and are slightly more shallow in depth than the length of the corresponding paraboloid bosses on the other side thereof; thus the paving blocks when laid on edge, face to face, so as to break



joints, will permit the male bosses to mesh loosely with the female depressions, the end of the bosses being in contact with the bottom of the corresponding depressions, leaving a space between the faces of the blocks when laid in the pavement, which spaces may be filled with grouting of cement, asphalt, or other substance. The blocks when so laid in the pavement also interlock each block with the other, thus holding each other in place without the need of any curbing at the sides of the pavement; the interlocking of said blocks are pivotal, one block against the other, by reason of the male paraboloid bosses being longer than the depth of the female concave depressions, and the blocks being in contact only at the point where the end of the male bosses are in contact with the bottom of the female depressions, permitting a transverse movement of each block relative to the other, thus providing for expansion or contraction of the pavement.

The special features of construction of my paving block with the male paraboloid bosses, and with the female depressions shaped like the concave surface of a segment of a hollow sphere, permits of paving blocks so constructed being laid in pavement closely together, leaving only the required spaces for grouting, etc., and thus notwithstanding the fact of the longitudinal irregular shrinkage of the paving blocks due to the burning and vitrifying process to which they are subject. The special features of construction of my paving blocks under this invention, also preserves and maintains a uniform thickness, area, and strength of each block throughout the same, thus reducing the liability to breakage, liability to breakage being an objectionable feature in other forms of interlocking or wedge-shaped paving blocks.

I am aware that bricks have been made having boss projections on one face thereon, and corresponding recesses formed on the opposite face thereof, but so far as I am aware no bricks have been shaped like mine, and no bricks have ever been made with the boss projections on one face thereof paraboloid in form, while the depressions on the other side thereof are shaped like the concave surface of a segment of a hollow sphere, which is a novel feature of my invention, giving it certain advantages over all paving blocks of earlier construction, in that blocks of earlier construction are designed to lie close and tight upon each other in course, by reason of the bosses on one side thereof being of the same length, breadth and area as the depth, breadth and area of the corresponding depressions on the other side thereof, which construction is imprac-

tical for use because of the fact of the irregular shrinkage of paving blocks while undergoing the burning and vitrifying process to which they must be subjected, and which shrinkage by so much shifts the relative position of the bosses and depressions so that many of the blocks thus made will not fit into each other, or permit of being laid together in pavement.

The novelty of my invention consists in a brick or paving block of the special features of construction as described, having in combination when laid in pavement the interlocking feature to obviate the necessity of curbing, together with the feature preventing the blocks fitting closely or tightly the one to the other, (excepting that the outside point or end of the male bosses is in contact with the bottom of the corresponding depressions), permitting spaces for grouting, together with the feature of the blocks lying in place pivotal one with the other, permitting a transverse movement of each block, and allowing for expansion and contraction, together with the feature of the bosses, because of their peculiar form, having sufficient play longitudinally in the depressions as will permit the paving blocks being laid properly together in the pavement, notwithstanding the longitudinal irregular shrinkage of the blocks while being burned and vitrified, together with the feature of a uniform thickness and area of each block throughout for the purpose of strength, all of which features in combination are obtained by the special construction of the male paraboloid bosses on one side thereof, and the female depressions shaped like the concave surface of a segment of a hollow sphere on the other side thereof, as herein described.

Having thus described my invention, what I claim is:

1. A paving brick having projections on one of its sides and depressions on the opposite side thereof, said projections being of greater length and less width than the depressions whereby contact is permitted between the end of the projections and the bottom of the depressions of adjacent blocks, the difference in width allowing for contraction and expansion and irregularities in manufacture, substantially as described.

2. A paving brick having projections on one of its faces paraboloid in form, and depressions on the opposite face corresponding in position, said projections, by reason of their shape, contacting at their ends with the bottom of the recesses of adjacent blocks but leaving a space between their adjacent walls, substantially as described.

3. A pavement comprising a series of blocks, each block having projections on one



of its faces and depressions on its opposite  
face so as to interlock with adjacent blocks,  
the projections being of greater length and  
less width than the depressions, whereby an  
5 interlocking structure is secured, rendering  
unnecessary the use of curbing and at the  
same time providing for irregularities in  
manufacture, such as shrinkage, without in-

terfering with the interlocking action, sub-  
stantially as described.

In testimony whereof I affix my signature  
in presence of two witnesses.

WILLIAM HANLEY.

Witnesses:

EDWIN E. TAIT,  
KATHARINE BURKE.