

(No Model.)

S. E. HURLBUT.
PAVING BLOCK.

No. 456,378.

Patented July 21, 1891.

Fig. 1.

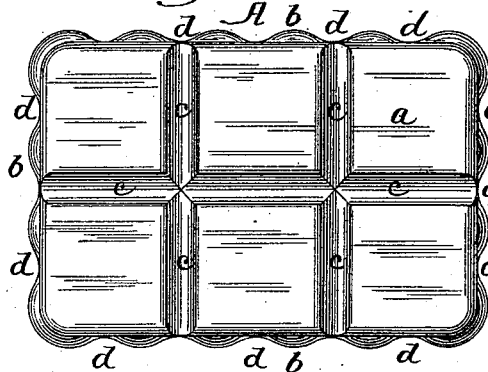


Fig. 2.

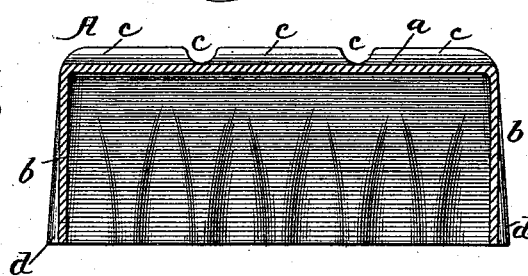


Fig. 3.

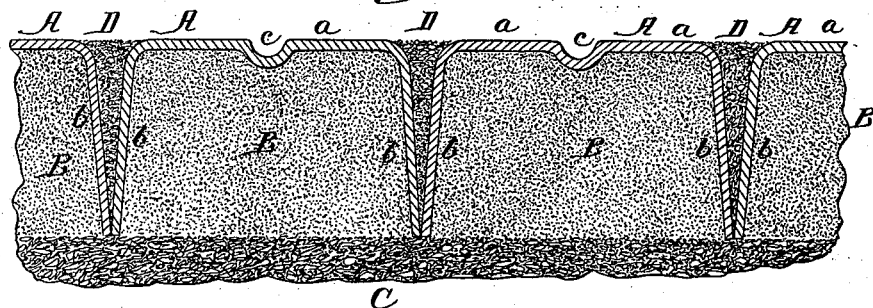


Fig. 4.

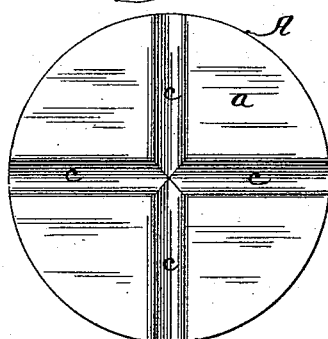
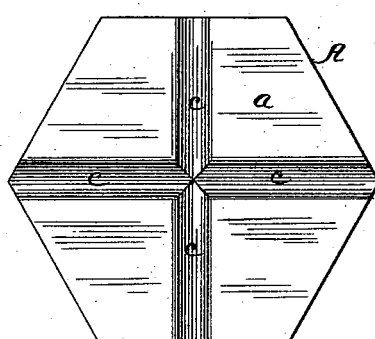


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

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PAVING-BLOCK.

SPECIFICATION forming part of Letters Patent No. 456,378, dated July 21, 1891.

Application filed October 7, 1889. Serial No. 326,176. (No model.)

To all whom it may concern:

Be it known that I, SETH E. HURLBUT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Paving-Blocks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a top or plan view of the block. Fig. 2 is a longitudinal section of the block of Fig. 1. Fig. 3 is a cross-section of several blocks, showing a mode of laying the blocks on a roadway or street. Figs. 4 and 5 are plan views showing other forms of blocks.

The object of this invention is to construct a block for paving purposes which will be strong and durable and which can be laid without any trouble and inconvenience, and when laid form a road-bed or surface that will be smooth and uniform, and on which travel will be had without jar and slipping; and to this end the nature of the invention consists in providing a paving-block formed of a metal plate struck into shape to have top and side walls, with an open bottom for filling the interior, in providing grooves or depressions for the top wall, and making the side walls fluted, and in the several parts and combination of parts hereinafter described, and pointed out in the claims as new.

In the drawings, A represents the paving-block, consisting of a plate of steel or other suitable non-frangible metal which can be struck, drawn, or formed into shape without cracking or breaking, to have a top wall *a*, and a wall *b*, extending entirely around the two sides and ends of the block. The block shown in Figs. 1, 2, and 3 is of a rectangular oblong shape; but such blocks could be square or round, as shown in Fig. 4, or sexagonal, as shown in Fig. 5, or of other shape, as may be desired, the blocks, no matter what their shape, to have a top wall *a* and a wall *b*, so as to form a cup-shaped block with an open bottom. The top wall *a*, as shown, is provided with longitudinal and cross grooves *c* in the form of block of Fig. 1, and with grooves *c* in the forms of blocks of Figs. 4 and 5, which

grooves form ribs in the under face of the top wall *a* and give such wall rigidity and strength to resist the effects of the travel of vehicles over the pavement when completed. The wall *b* is formed with alternating depressions and elevations to produce a fluted surface *d*, by which a slight incline of the wall *b*, as a whole, from the top to the bottom in an outward direction is had, as shown in Fig. 2. This fluting or ribbing of the wall not only strengthens and fortifies such wall against strain, but also forms a face which permits of expansion and contraction without changing or affecting the level of the top wall.

B is a filling of any suitable material, such as cement and sand, or sand or other mixture which will pack and fill the interior of the block, as shown in Fig. 3.

C is a foundation of broken stone, sand, gravel, or other material, on which the blocks A can be laid in any usual and well-known manner, which foundation can be formed in the same manner as the foundation for other paving-blocks.

D is a filling for the spaces between the blocks, as shown in Fig. 3.

The plate from which the block A is formed can be a steel plate rolled to the thickness required—say from an eighth to a quarter of an inch—and cut into plates of the size and shape to produce the form of block and for each block to have a top *a* and a side *b*. The forming of the block into shape from its plate can be had by means of suitable dies coacting to draw the side and end wall *b* into place without affecting the metal, and such dies can be so formed as to produce the grooves *c* for the top *a* and the fluting or ribbing *d* for the side and end wall *b*, and this without breaking or cracking the metal, and such grooving and fluting enables a thin plate to be used and to possess greater strength and rigidity than a heavy thick unribbed plate, thereby making the block out of light material with the greatest advantages of strength, rigidity, and durability. The grooves *c* give a foothold for horses and the flutes *d* permit of expansion and contraction, so that the level of the blocks will be maintained.

It has been found in practice that wooden paving-blocks are not lasting and soon wear

uneven, producing ruts and holes in the pavement, and that stone pavements are so uneven as to cause a constant jar to vehicles traveling thereover, and it has also been found
 5 that asphalt and other smooth-surfaced pavements soon wear out, and when worn out cannot be easily repaired, so that with all pavements now in general use each has its own special objectionable feature, and it is to overcome the defects and objections of other paving that the present invention is designed.

It will be seen that when laid the blocks A will present an even and uniform surface, which will be practically smooth for the running of vehicles thereover, as the space between the blocks and the grooves c does not break the traveled surface to any appreciable extent, and, again, the surface presented for the foothold of horses is one on which slipping cannot occur, as a general thing, for the reason that the surface is a continuous one and not formed of small faces, as is the case with stone, block, and other similar pavements, the result being a broad flat face, on
 25 which the feet of the animal can set square and solid. Again, the pavement is practically noiseless, as it presents a smooth plane surface on which the wheels roll without jumping, and as the interior of the blocks is
 30 filled it follows that the noise must be deadened, and consequently the street will not resound with the constant thumping and jar of vehicles nor the striking of the feet of the animals. Again, the blocks when once settled to place will be held solid as against the tendency of the contact of the wheels pulling them out, because the blocks are even, and no projecting edge is had for the wheel to strike; and, again, the blocks will be practically immovable, owing to the cup shape
 40 and the action of the filling between the side walls, and at the same time, if required, a block can be easily taken up and replaced by a new one in case of repair. It will thus be
 45 seen that by using the blocks A a pavement is produced having all the advantages of strength, durability, an even-running surface practically noiseless, and which can be laid easily and can be readily repaired, and
 50 such advantages arise from making the block of a thin metal plate struck into shape to have a top and side wall, leaving an interior for a filling and having the adaptation of expanding and contracting without changing
 55 the lay of the block.

The blocks A, made of metal with a top and

side walls, are also adapted for paving or tiling sidewalks, floors, and other places, and when so used the blocks can be of smaller dimensions than for paving streets, and the side wall can be of a less height, and, if desired, the top wall can be laid out in patterns of different design.

The block formed from a steel plate struck into a shell or box form possesses great
 65 strength and rigidity and enables a light plate to be used, as the act of forming the plate into the block solidifies and strengthens the material, so that a block of this construction will be stronger and firmer than a
 70 block otherwise formed and of a greatly-increased thickness. Furthermore, a pavement laid with these steel-shell blocks will not have the objectionable features of upheaval of the blocks, as the fluted side walls provide for expansion and contraction, thereby preventing upheaval of the blocks from this cause; and, furthermore, each and every portion of the steel-shell block formed as described has a uniformity of strength and an
 75 equal strain at all points, so that one portion is not weaker than another. It will thus be seen that this construction of block possesses lightness with great strength and rigidity, presents a smooth, uniform, and level surface for travel, will not upheave, provides for
 80 expansion and contraction without affecting the top or traveling surface of the pavement, and has a unity of strength at all points.

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

1. An improved paving-block having a top and fluted depending sides or walls formed integral from a steel plate struck up into shell shape, substantially as and for the purposes
 95 specified.

2. An improved paving-block having a corrugated or grooved top and fluted depending sides or walls formed integral from a steel plate struck up into a shell shape, substantially as and for the purposes
 100 specified.

3. A pavement composed of blocks, each block having a top and fluted sides or walls formed integral from a steel plate struck up into shell shape, and an interior filling for each
 105 block, substantially as and for the purposes specified.

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Witnesses:

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