

(No Model.)

J. A. CHANLER.  
PAVEMENT.

No. 475,234.

Patented May 17, 1892.

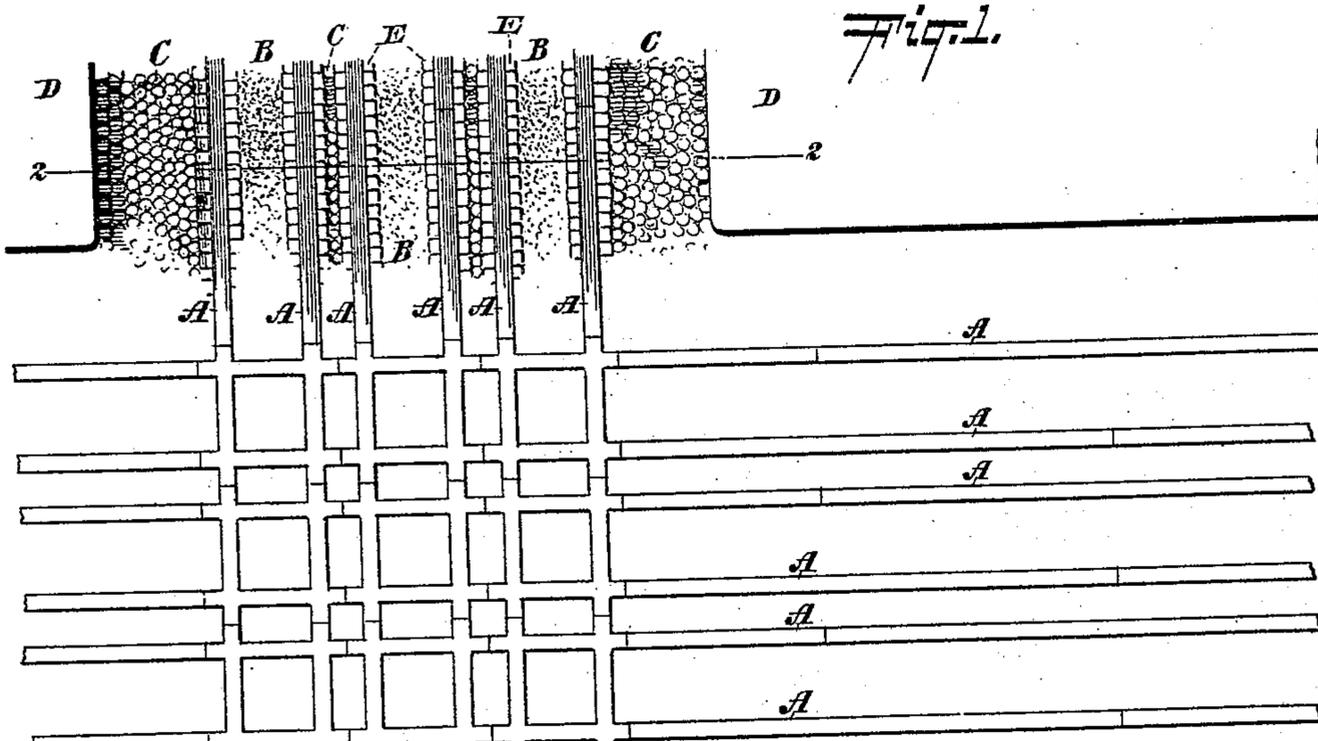


Fig. 1.

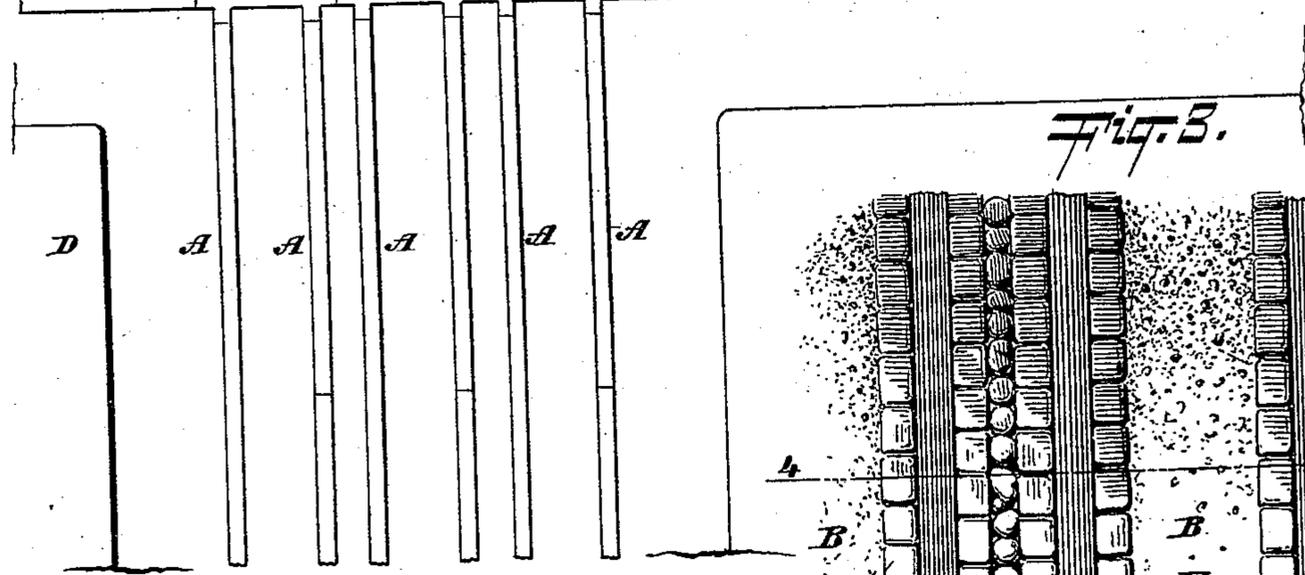


Fig. 2.

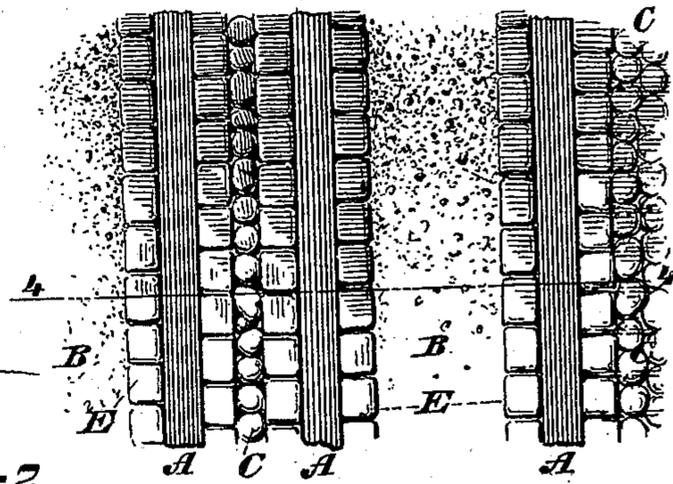


Fig. 3.

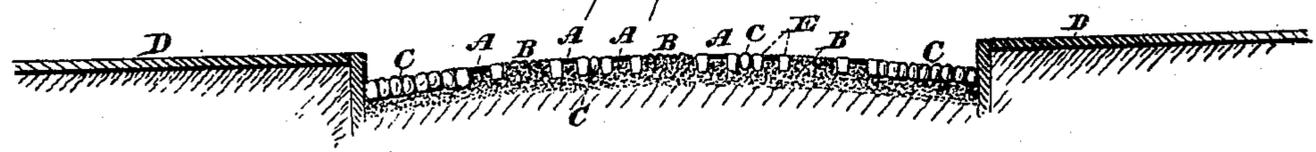
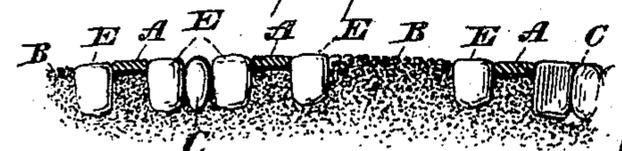


Fig. 4.



WITNESSES:  
*Gustav Dietrich*  
*H. V. N. Phelps*

INVENTOR  
*John Armstrong Chanler*  
 BY  
*D. L. ...*  
 ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOHN ARMSTRONG CHANLER, OF NEW YORK, N. Y.

## PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 475,234, dated May 17, 1892.

Application filed March 4, 1892. Serial No. 423,689. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ARMSTRONG CHANLER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Pavements, of which the following is a specification, reference being had therein to the accompanying drawings.

Prior to my invention pavements for streets of a durable character have been constructed in a variety of ways, the four principal of which are as follows: first, of blocks of stone set closely together from curb to curb upon a suitable foundation; second, blocks of wood similarly set; third, continuous surface of asphalt; fourth, surface of broken stone commonly known as "macadam." All these forms of pavement present certain features of inferiority. The pavements made of blocks of stone are rough, disagreeable to ride over, and easily become uneven by depression of individual blocks or sections. The wooden pavements are found to be pleasant to ride over, but lacking in durability, owing to the permeation of moisture. The asphalt surfaces are convenient to travel over for the occupants of vehicles, but are exceedingly slippery and dangerous for horses. The macadam or broken-stone pavement, while excellent as a holding-surface for horses' feet, is difficult to keep clean, especially if of an extended character.

I am aware, too, that certain pavements have been patented in which horse-tracks and wheel-tracks of different materials or constructions have been provided. For instance, wheel-tracks of asphalt have been combined with horse-tracks of concrete and sunken wheel-tracks of stone or iron have been combined with horse-tracks of stone; but these forms of pavement present difficulties which have impaired their usefulness and which my improved pavement overcomes. The asphalt with the constant traffic of wheels is not durable. The more it is worn the rougher it becomes, this tendency constantly increasing. The concrete presents no better foothold for the horse than the asphalt. It is substantially the same material, except that it is cheaper; but the pavement still is far more expensive than mine, and, moreover, has none of the advantages of a pavement such as mine with

horse-tracks and wheel-tracks of essentially different materials. Stone or iron wheel-tracks sunk below the general surface of the roadway present obstructions to traffic well known in connection with ordinary street-car tracks in which the top surface of the roadway is also cut into ruts or grooves or ridges. Moreover, they are known only in combination with stone horse-tracks.

My invention is that of an improved pavement, which will combine the good features of former pavements and obviate the difficulties or many of the difficulties incident to each of them.

In the drawings annexed hereto, in which similar letters of reference refer to similar parts throughout the various views, Figure 1 is a plan or top view of my proposed pavement or roadway; Fig. 2, a cross-section thereof on line 2 2; Fig. 3, an enlarged detail top plan view, and Fig. 4 a cross-section thereof on line 4 4.

I construct my pavement and roadway as follows: I first lay upon suitable ties or stringers, or both, a series of parallel flat rails A A sufficient to accommodate the travel of the street or road.

I have illustrated in my drawings three parallel lines of travel and three pairs of such rails, and in most cities the streets are wide enough for three or four lines of travel and three or four parallel lines of such rails. These rails I make, preferably, of Bessemer steel of suitable thickness—say one-half inch in thickness—and very much broader than ordinary rails for street-cars. I recommend a breadth of from eight to twelve inches for each rail. These rails may be set, if desired, upon steel or iron ties, or the ties or stringers may be laid in a cement bed, to promote the durability of the structure. At the sides of the streets or roadways, between the exterior line of rails and the curb D and between each pair of rails at the points marked C, I fill in the surface with a stone pavement, preferably of cobblestones or granite blocks. I also sometimes lay a single line of cut blocks of stone along both sides of each line of rails, as shown at E E. Between the rails of each pair, at the points marked B in the drawings, I fill in with a composition, such as macadam, and lay the same upon a suitable foundation, (hydraulic

concrete preferred,) which will insure as far as possible the maintenance of the macadam at the plane of the upper surface of the rail A and the stone filling C of the street. Thus  
 5 my improved pavement consists, essentially, of a combination of flat rails having their top surface flush with the general surface of the roadway and having between them a composition surface, such as macadam, of the same  
 10 level as the rails, but differing from them in that it forms a proper holding-surface for the feet of horses.

The stone pavements C at the side of the street and between the pairs of rails are an  
 15 optional modification, whose design is to keep travel in the center of the roadway as far as possible and upon the line of rails, and the stone bordering for the rails acts to protect the pavement from transverse traffic. The  
 20 rails will also tend to break up what would otherwise tend to be a continuous surface of the macadam, will form leveling-lines, by which the surface can be always brought up to the true level, and will always afford a  
 25 smooth and easy surface for the wheels of vehicles. Thus my pavement combines a smooth even surface for the wheels of vehicles, and at the same time a good holding-surface for the feet of horses, and means due to the above  
 30 combination of features which render the maintenance of the roadway at a true level always easy, and the composition or charac-

teristic of each part of the pavement tends to assist and render unobjectionable any otherwise objectionable features of the other parts. 35

The use of my improved pavement will result in great economy both in the wear and tear of vehicles, in the expenditure of force in drawing vehicles, and in the saving of horses' feet in traveling over the pavements. 40

What I claim, and desire to secure, is—

1. The roadway constructed, substantially as described, of flat iron rails laid with their top surfaces flush with the general surface of the roadway, said flat iron rails being of sufficient width and so located as to be adapted to wheels of common vehicles and filled in between with macadam or similar composition, substantially as and for the purposes described. 45

2. The improved roadway consisting of the flat iron rails A, laid with their top surface flush with the general surface of the roadway, the macadam or composition B, and stone filling C, all combined together substantially as and for the purposes described. 50

In testimony whereof I affix my signature, in presence of two witnesses, this 24th day of February, 1892.

JOHN ARMSTRONG CHANLER.

Witnesses:

J. WARREN BIRD,  
 H. V. N. PHILIP.