

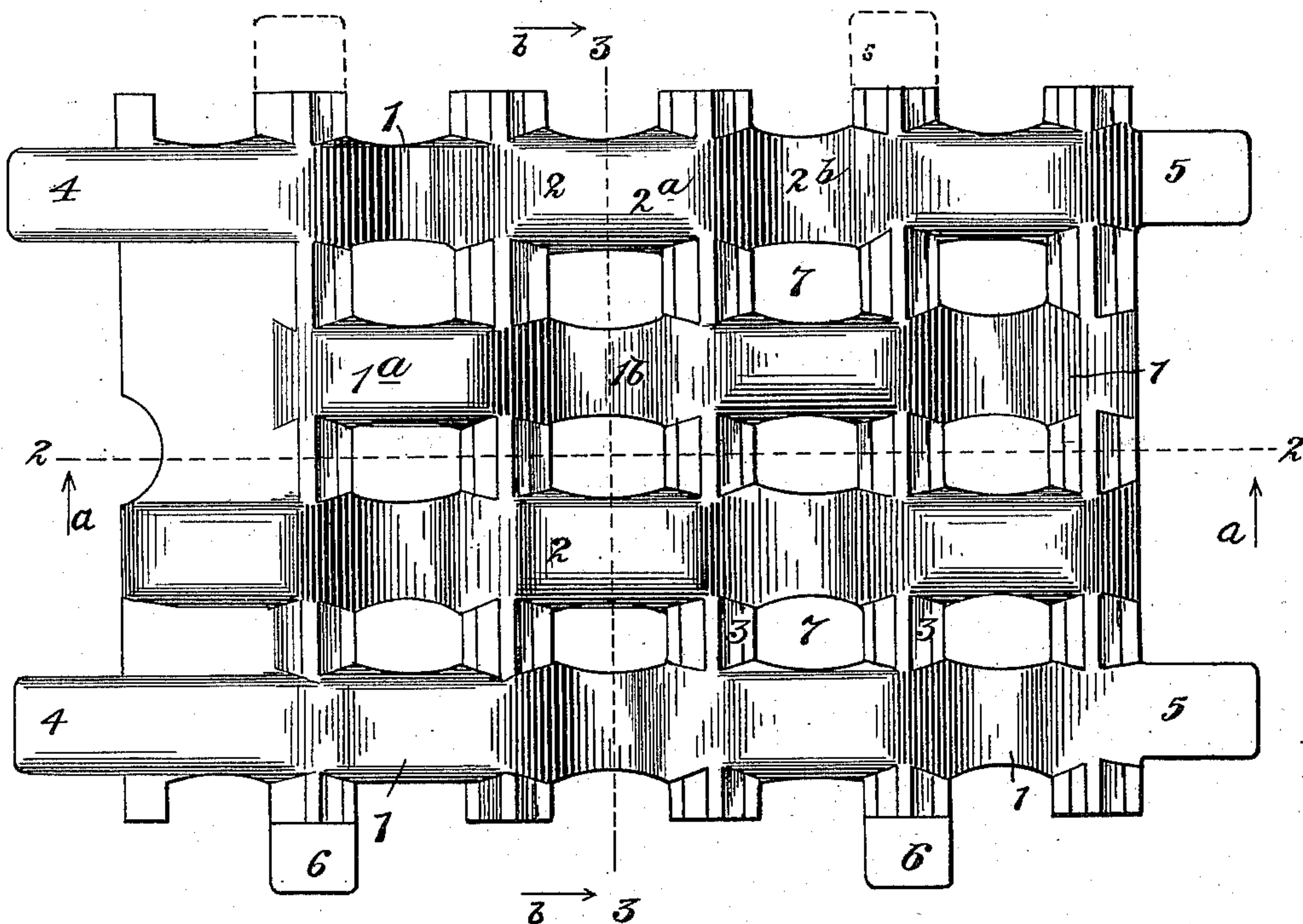
(No Model.)

R. J. CARSON.  
PAVEMENT.

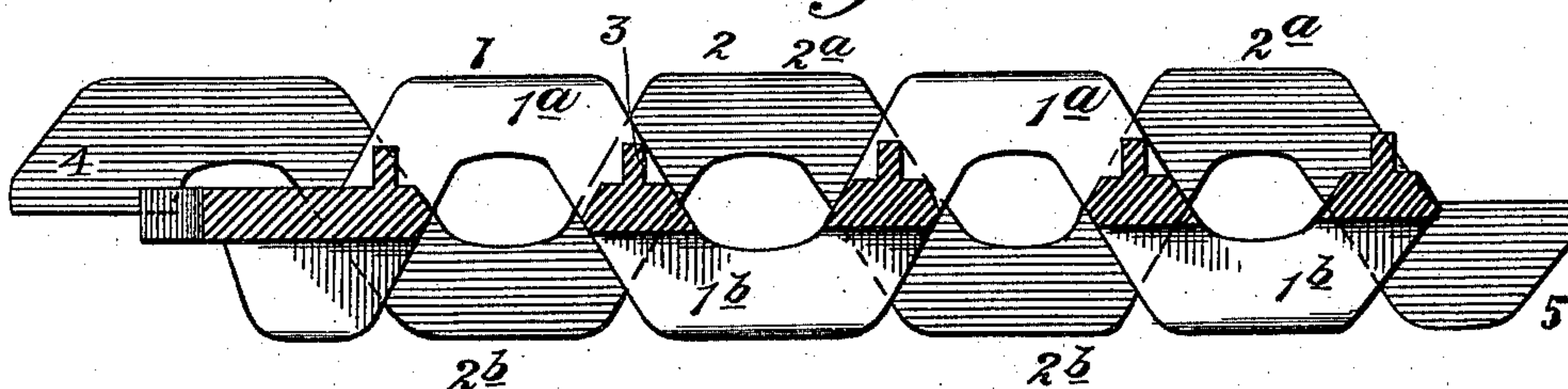
No. 598,670.

Patented Feb. 8, 1898.

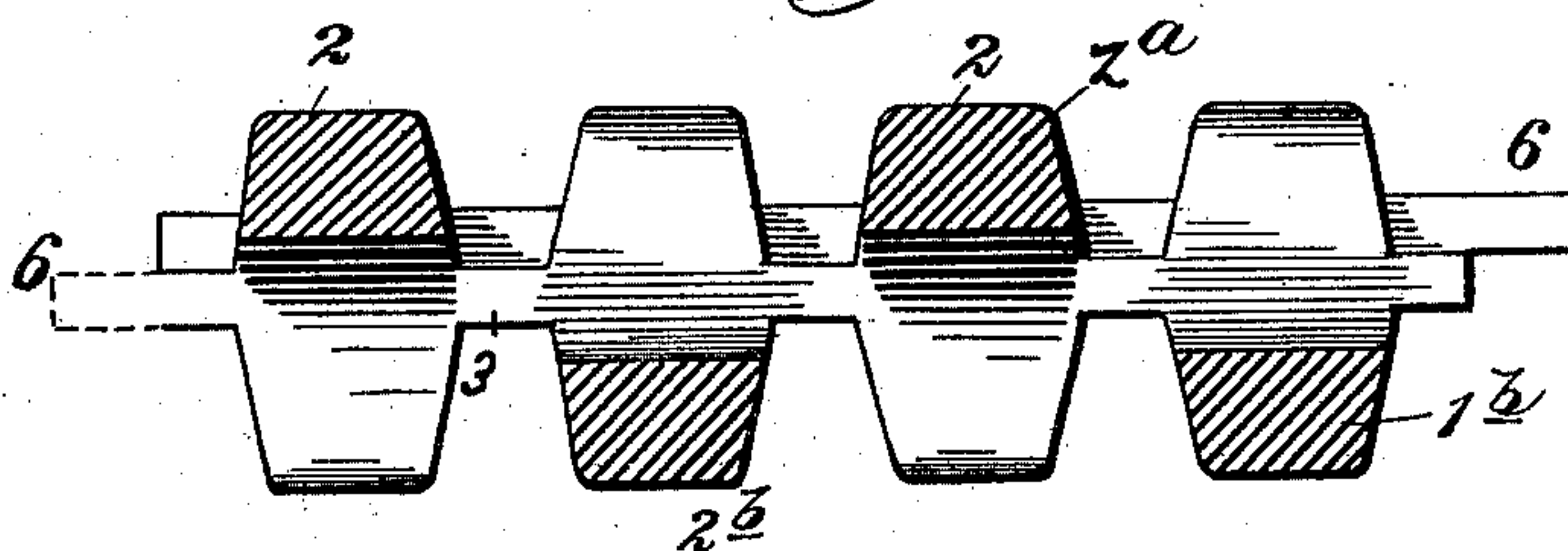
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

ROBERT J. CARSON, OF NEW YORK, N. Y., ASSIGNOR TO THE IRON-CLAD ASPHALT PAVING COMPANY, OF NEW YORK.

## PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 598,670, dated February 8, 1898.

Application filed February 17, 1897. Serial No. 623,768. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT J. CARSON, a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Pavements, of which the following is a specification.

The object of my invention is to provide paving frames, blocks, or sections for use in connection with asphalt or other suitable paving material, whereby a rigid surface may be produced in connection with the paving material, so as to prevent ruts and depressions from forming in the pavement.

The invention consists in a frame, block, or section composed of a series of bars that are curved sinuously, serpentinely, or in ogee form, connected together by suitable cross-pieces, whereby the curved or undulating portions of the bars form a tread or truss for a wheel or foot at each upper curve and whereby the intermediate lower curves form a base for the block or section. By preference these curved or sinuous bars alternate in a right line—that is to say, the convex portion of one bar may be alined with the concave portion of the adjacent bar. Asphalt or other suitable paving material is placed in the paving frames or blocks either before or after laying the frames on a foundation to fill the spaces between the several curved or sinuous bars and to cover them to a slight degree, if desired. By such an arrangement a smooth roadway may be produced wherein asphalt and iron alternate in supporting wheels and other traffic.

The invention also consists in the novel details of improvement and the combinations of parts, that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a plan view of one of my improved paving frames or blocks. Fig. 2 is a section on the line 2 2 in Fig. 1, looking in the direction of the arrows *a a*; and Fig. 3 is a section on the line 3 3 in Fig. 1, looking in the direction of the arrows *b b*.

In the accompanying drawings, in which similar numerals of reference indicate corresponding parts in the several views, 1 and 2 are bars which are curved in and out sinu-

ously, serpentinely, or in double-ogee form, as clearly shown in Fig. 2—that is to say, these bars are curved upwardly and downwardly or corrugated, whereby one convex portion 1<sup>a</sup> will be adjacent to a concave portion 1<sup>b</sup>. As shown, the surfaces of the convex portions 1<sup>a</sup> of the part 1 are substantially on a plane to constitute a tread for wheels, &c., and the surfaces of the concave portions 1<sup>b</sup> of part 1 are also on a plane to form a base to rest upon a foundation. By preference the parts 1 and 2, which are practically alike, alternate in position on a right line—that is to say, the convex portions 2<sup>a</sup> of one bar 2 are in line with the concave portions 1<sup>b</sup> of the adjacent bar 1, and the concave portions 2<sup>b</sup> of one bar are in line with the convex portions 1<sup>a</sup> of the adjacent bar. By this means the several convex surfaces 1<sup>a</sup> and 2<sup>a</sup> form a surface which is broken by the spaces between the several parts 1 and 2, as seen in Fig. 1; but the relative positions of the parts 1<sup>a</sup> 1<sup>b</sup> 2<sup>a</sup> 2<sup>b</sup> may vary from those shown. These curved or sinuous bars are placed vertically—that is to say, the curves run up and down—thereby forming trusses.

The several parts 1 and 2, which constitute the main portion of the paving frames, blocks, or sections, are connected together in a firm and rigid structure by suitable intermediate connecting parts. These parts I have shown in the form of arms 3, and by preference the bars 1 and 2 and the connecting-arms 3 are all cast in a single structure of suitable metal—such as cast-iron, for instance—the whole constituting my improved paving frame, block, or section.

Suitable means may be provided for interlocking the contiguous or adjacent edges of the several paving-frames which are to be placed side by side to constitute a road-bed. I have shown the frame as provided at one end with outwardly-projecting lugs or ears 4, which, by preference, will be a continuation of the corresponding bar 1 or 2. At the opposite end of the frame is an extension or lug 5, the lugs 4 and 5 being arranged to overlap one another when the frames are side by side, so that one frame will have a bearing on another. The side or sides of the frame adjacent to the sides having the lugs 4 and 5 will



also, by preference, be provided with suitable lugs 6, arranged so that those on one side will overlap those on the opposite side of the adjacent frame; but the frames that lie contiguous to the curb need not have the lugs 6.

In constructing a pavement embodying my invention a suitable foundation, say, of concrete with or without a top layer of asphalt will first be made, and then my improved paving frames or blocks, either before or after being filled with paving material, will be laid thereon side by side, so as to cover the surface of the foundation or road-bed, the lugs at the sides of the several frames being caused to interlock.

A suitable paving material—such as asphalt, concrete, or the like—is next filled in upon the blocks or sections so laid, if the blocks have not been previously filled, and then rolled as usual in laying pavements. It will be understood that this paving material will pass through the openings or spaces 7, Fig. 1, which are shown between the several bars 1 and 2, and will also surround the latter. By preference a layer of paving material will be spread over the surface of the bars to conceal them. With this arrangement as a wheel travels over the road it will find a bearing on one or more of the convex portions 1<sup>a</sup> and 2<sup>a</sup> of the bars 1 and 2, and the presence of these bars in the road will prevent ruts and depressions from forming therein. The presence of the blocks or sections in the material of the roadway will prevent the paving material from displacement or creeping under the action of loads and of the elements in conjunction therewith. The convex surfaces of the bars 1 and 2 will also afford a foothold for horses' shoe-calks and will materially assist them in drawing loads over a smooth pavement. As the sinuous or doubly-curved bars 1 and 2 form trusses, great strength is secured in the paving-frames with a minimum of metal, the advantage of which will be apparent when it is considered that heavy loads must travel over these frames, while the cost must be as low as possible. Therefore by having the paving-frames of curved or sinuous bars connected together by suitable cross-arms a paving-frame can be made that will be sufficiently strong to withstand the rough

usage to which it may be put, while at the same time the cost will not be so great as to prevent its practical use.

I do not limit my invention to the precise details shown, as the bars may have any other suitable curves than those shown, if desired, and may be connected together in any other suitable manner, and other suitable means may be provided for interlocking the adjacent bars together.

Having now described my invention, what I claim is—

1. A frame to be filled with paving material, composed of a series of curved or sinuous bars forming trusses connected together, the curves of said bars extending in a plane perpendicular to the surface or tread of the frame, the convex portion of one bar alternating with the concave portion of another bar, and spaces between said bars adapted to receive paving material, substantially as described.

2. A frame to be filled with paving material, composed of a series of curved or sinuous bars, which curves or sinuosities extend in a plane perpendicular to the surface or tread of the frame, thereby forming trusses said bars being connected together by intermediate arms all cast of a single piece of metal, and having spaces between said bars, to receive paving material, substantially as described.

3. A frame to be filled with paving material, composed of a series of curved or sinuous bars, having their curves extending in a plane perpendicular to the surface or tread of the frame thereby forming trusses, certain of said bars at opposite sides of the frame being extended outwardly, the one over and the other under, to interlock when the frames are placed adjacent to each other, substantially as described.

Signed at New York city, in the county of New York and State of New York, this 16th day of February, A. D. 1897.

ROBT. J. CARSON.

Witnesses:

T. F. BOURNE,  
F. V. LEVY.