

(No Model.)

J. E. KNOCHE.

PAVEMENT.

No. 398,055.

Patented Feb. 19, 1889.

FIG. 1.

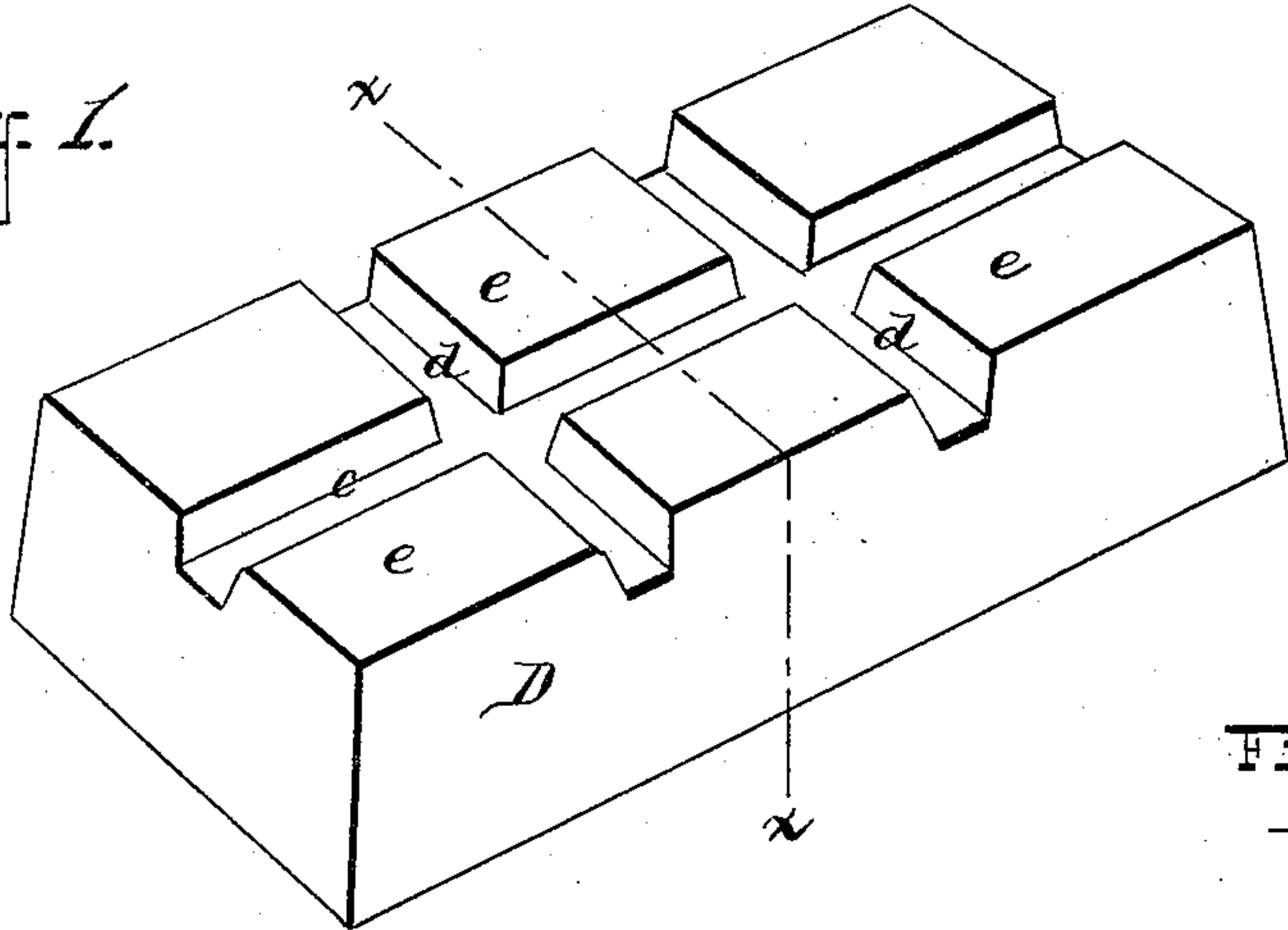


FIG. 2.

FIG. 3.

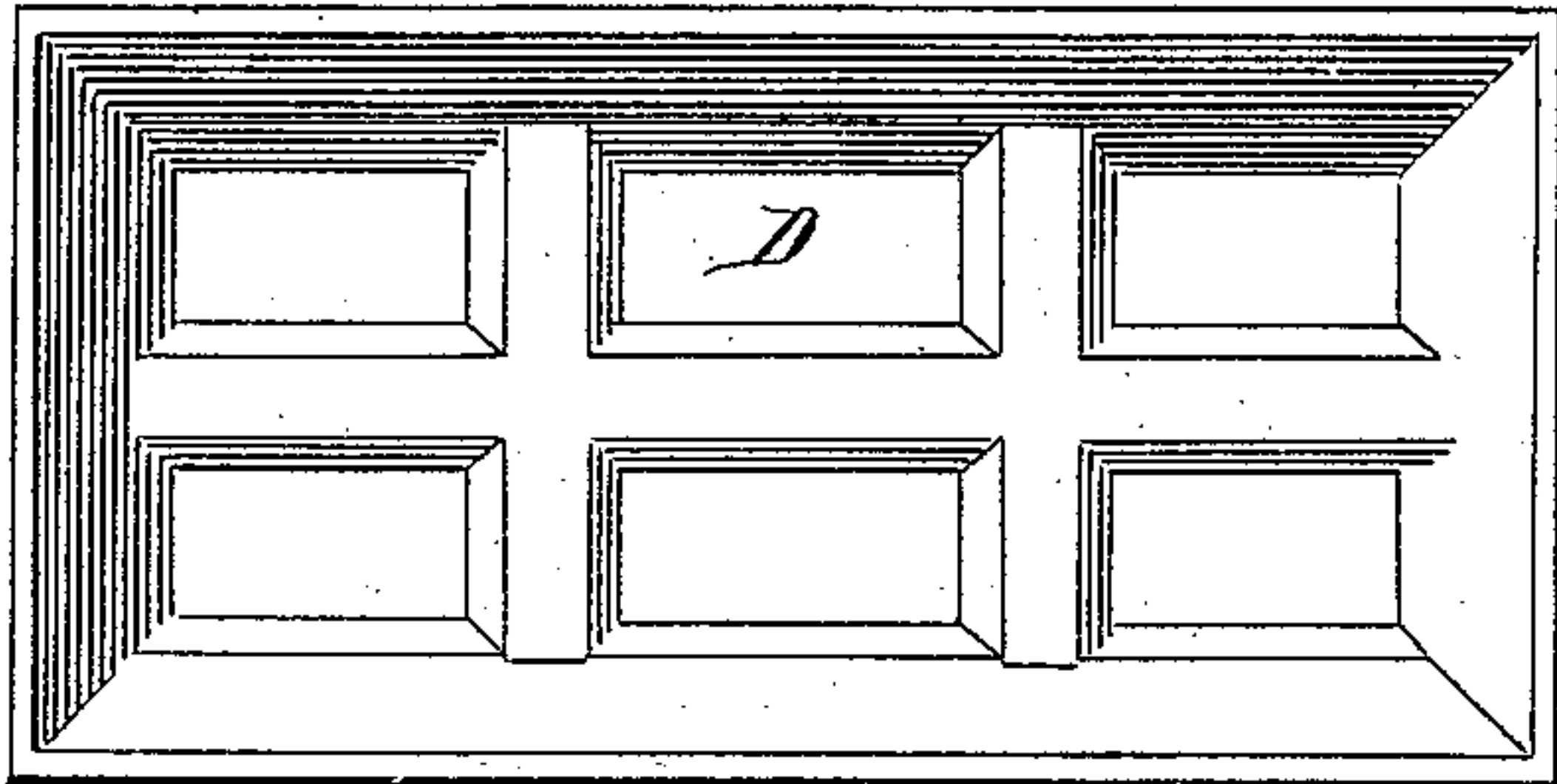
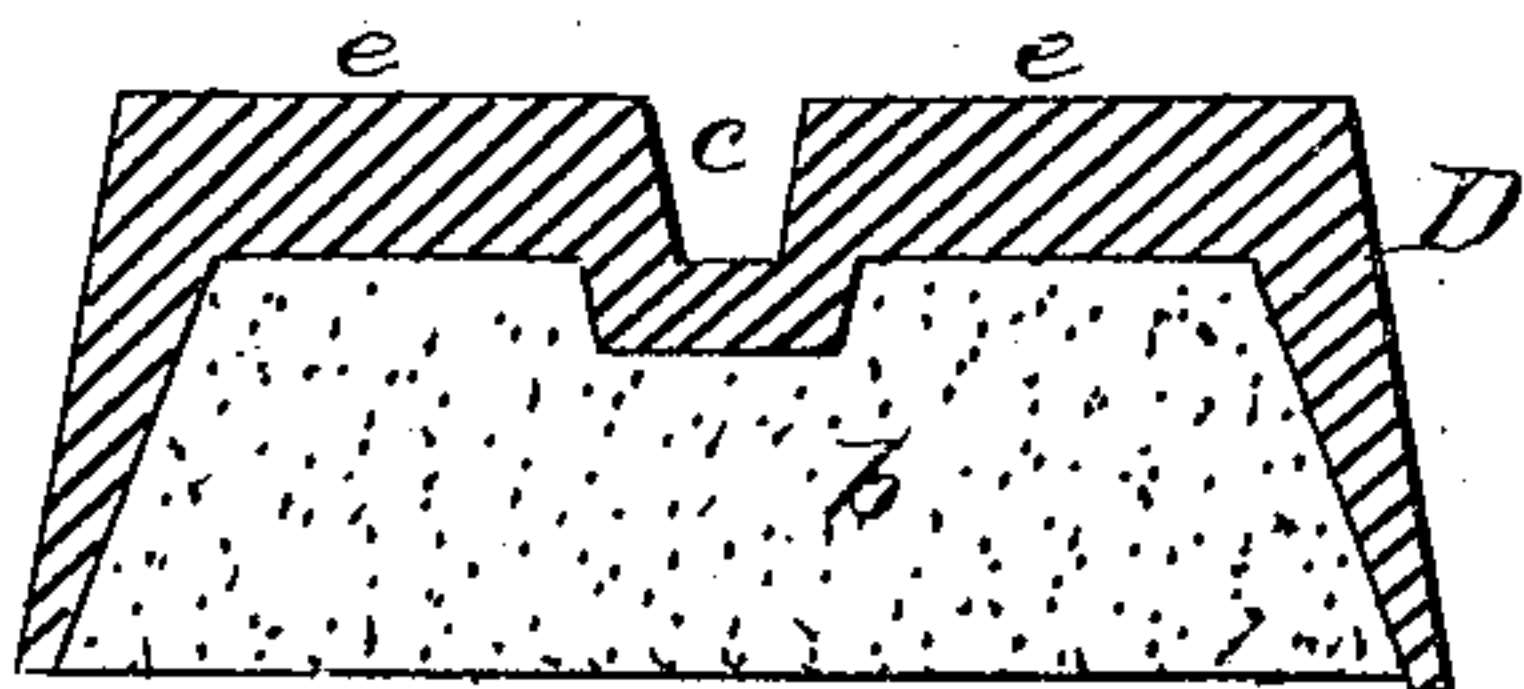


FIG. 4.

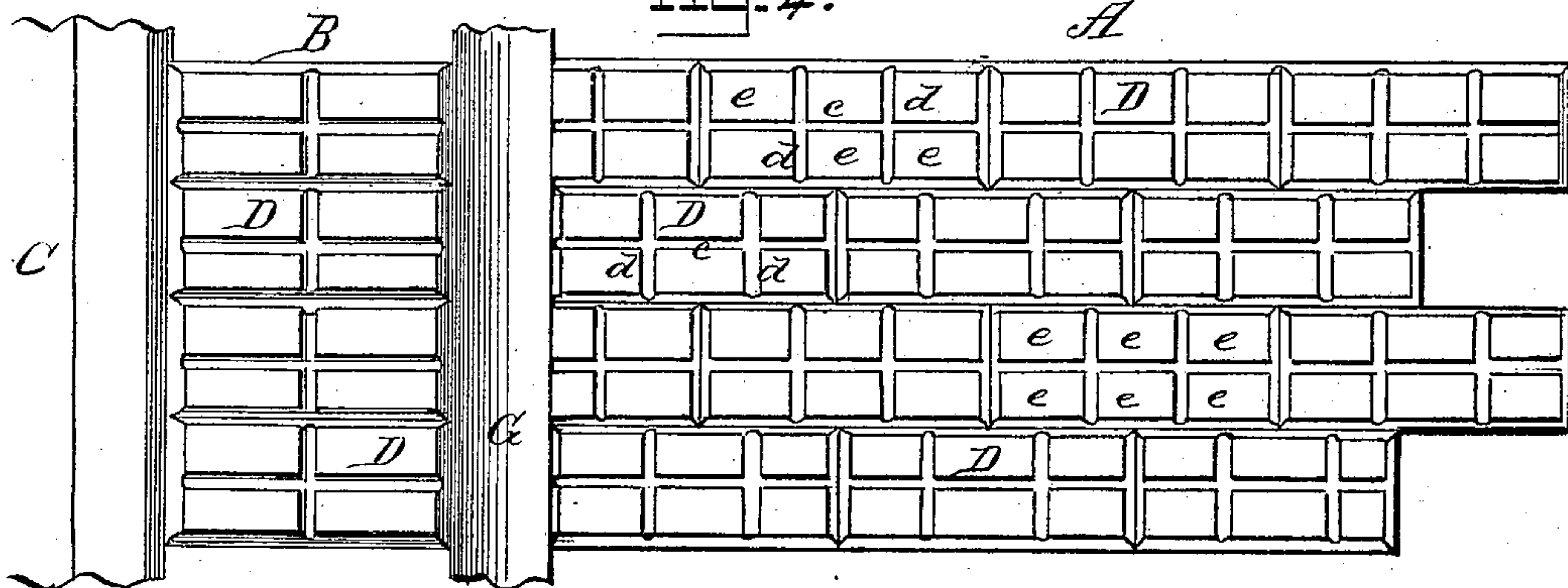
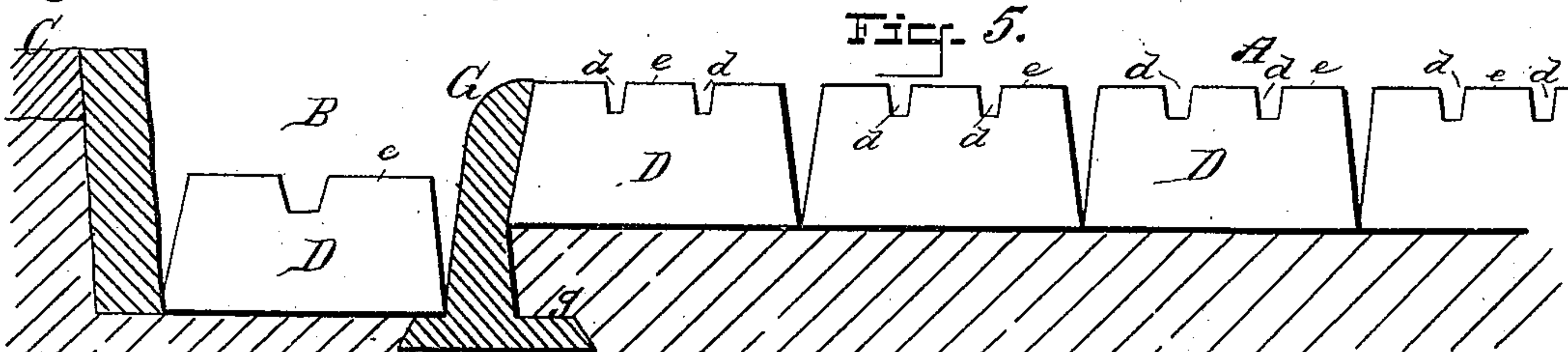


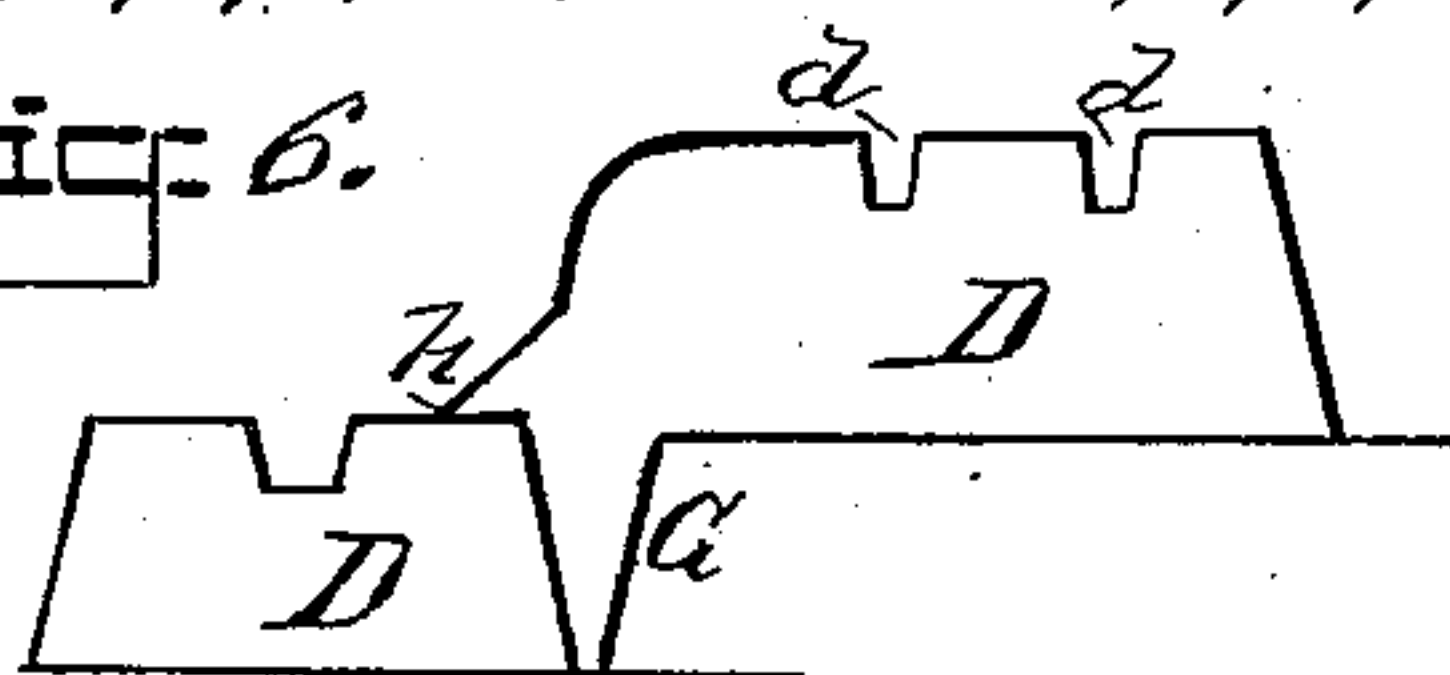
FIG. 5.



WITNESSES:

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FIG. 6.



INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHANN EDUARD KNOCHE, OF SAN JOSÉ, CALIFORNIA.

PAVEMENT.

SPECIFICATION forming part of Letters Patent No. 398,055, dated February 19, 1889.

Application filed July 7, 1888. Serial No. 279,275. (No model.)

To all whom it may concern:

Be it known that I, JOHANN EDUARD KNOCHE, of San José, in the county of Santa Clara and State of California, have invented a new and
5 useful Improvement in Pavements, of which the following is a full, clear, and exact description.

This invention relates to pavements constructed mainly of hollow metal blocks or
10 shells, which may either be left empty or be filled with concrete or other material, and which are checkered on their upper surfaces to prevent horses when traveling thereon from slipping, also to give the hoofs and calks of the
15 animals a firm hold; and the invention consists in a novel construction of such a pavement and in a combination therewith of gutter-blocks and flanged side supports to the pavement, substantially as hereinafter described,
20 and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

25 Figure 1 represents a view in perspective of one of the pavement-blocks. Fig. 2 is an under view of the same. Fig. 3 is a transverse section thereof upon the line $x x$ of Fig. 1. Fig. 4 is a plan view of a metal-paved carriage-way in part, with gutter and sidewalk
30 in part, all in accordance with my invention. Fig. 5 is a transverse sectional view of the same, and Fig. 6 is a view showing a modified construction of the flanged support which
35 unites the carriage-way pavement with the gutter.

A indicates the carriage-way of the road, B its gutter, and C one of the sidewalks in part.

Substantially similar pavement-blocks are
40 used both for the carriage-way A and the gutter B. These blocks D, which are hollow, are each in the form of a shell, closed on their tops but open below, and made of iron, steel, or other good and suitable metal. Said blocks
45 D may be made of any desired length, width, and depth, of parallelogrammic form, but with their sides and ends of tapering construction, so that they are of less area at their tops than at their bottoms, and when laid side by
50 side or end to end leave a tapering space in

between them, which may be suitably filled in with earth or other material. In changeable climates strips of wood, felt, or other yielding material may be laid in between the blocks to allow for shrinkage and expansion.

55 In every case the ground should be suitably prepared and leveled before laying the blocks, which in the construction of the carriage-way are arranged side by side crosswise of said way, and so that they break joints at their
60 ends with the next parallel row of blocks. This may be done by making the outside blocks of each alternate row of only half the length, or otherwise proportioning the outside blocks to thus finish the carriage-way as re-
65 gards breaking joint. Each of these hollow metal blocks, which may or may not be filled in with concrete, b , or other suitable material, is equally divided on its top, by a central longitudinal groove, c , and cross-grooves d , to
70 form on the carriage-way surface six raised portions, e , of like area, which form a good checkered surface to prevent horses from slipping and to secure a good hold for their hoofs and calks. To economize metal in the con-
75 struction of these blocks, and at the same time to give them increased strength where more strength is required, they are made of reducing thickness in a downward direction at their sides and greater thickness at their tops. This,
80 in conjunction with the tapering form of the blocks, combines both lightness with strength and a broad base and reduces the expense of the blocks.

To form the gutter B between the pavement 85 of the carriage-way A and the sidewalk C, any number of rows of the pavement-blocks D, which may, if desired, be differently grooved on their tops, are laid lengthwise of the gutter at any required depth, and combined with
90 these or row of gutter-blocks next to the carriage-way A is a metal flanged support, G, to the side of the carriage-way pavement, and which stands as high above the surface of the gutter-block as the depth of the gutter, and is
95 flush at its top, which is rounded; with the outer adjacent row of blocks of the carriage-way. This flanged support G (shown in section in Fig. 5) forms the edge of the gutter, where in a city the horses stand, tramp, and
100

paw, and it is made of suitable strength to resist such wear and tear. Said support G, which is made up in sections of suitable length, is shaped or set sloping to bear against the outer sides of the outer row of blocks composing the carriage-way, as shown in Figs. 4 and 5, said support G or its several sections either being made with a base-flange, *g*, as shown in Fig. 5, or with an overlapping angle-piece, *h*, as shown in Fig. 6, and serving to brace the gutter-blocks and adjacent carriage-way blocks together, and in which Fig. 6 said support G is cast on and integral with the blocks D of the carriage-way next to the gutter.

A pavement constructed as described will be strong, durable, and comparatively noiseless, may readily be taken up and replaced to lay down gas, water, and other pipes, including pipes for various electric wires; and if the ground on which the blocks rest be properly prepared and pressed there will be no settling of the blocks after replacing them.

Having thus fully described my invention, I

claim as new and desire to secure by Letters Patent—

1. In a pavement composed of metal blocks, the metal blocks D, of shell-like construction, open at their base but having closed checkered or grooved tops and tapering downwardly-diverging sides of diminishing thickness toward their bases, substantially as specified.

2. In a street or road having a carriage-way, A, gutter B, and sidewalk C, the carriage-way and gutter pavements each composed of metal shell-like blocks D, constructed as described, and metal flanged supports G, extending from the gutter-blocks up to the tops of the adjacent carriage-way blocks and arranged to bear against the sides of the latter and to brace them and the gutter-blocks, essentially as shown and described.

JOHANN EDUARD KNOCHE.

Witnesses:

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C. F. FREITAG.