

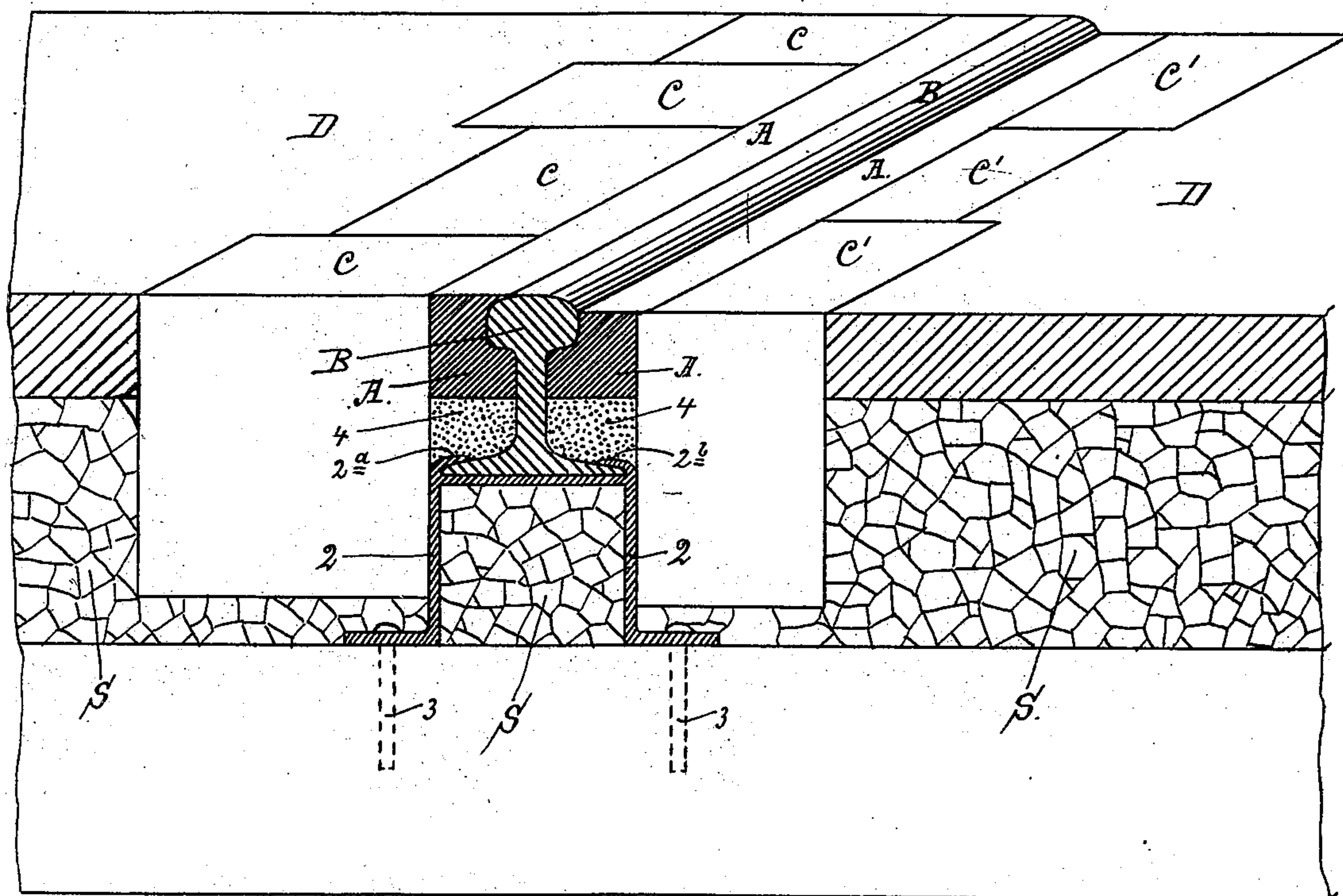
(No Model.)

G. C. WARREN.

METHOD OF LAYING RAILWAY RAILS IN PAVED STREETS.

No. 512,343.

Patented Jan. 9, 1894.



WITNESSES.

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GEORGE C. WARREN, OF UTICA, NEW YORK.

METHOD OF LAYING RAILWAY-RAILS IN PAVED STREETS.

SPECIFICATION forming part of Letters Patent No. 512,343, dated January 9, 1894.

Application filed May 5, 1893. Serial No. 473,163. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. WARREN, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Railway Structures for Paved Streets; 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 appertains to make and use the same, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon, which form part of this specification.

In the drawing, the figure shows general perspective and in cross section, my improved construction.

Referring more particularly to the reference letters and figures in a more specific description, 1 indicates the railway tie. A suitable number of these ties arranged at proper intervals are provided, and under each rail B of the track on each tie is provided a chair 2 of suitable height to allow the use of paving blocks or stones of the desired depth. The chair may be secured to the rail by bolts or spikes as shown in dotted lines at 3. The chair is provided with lips 2^a, 2^b, which engage the lower flanges of the rail and secure it firmly. This particular construction, however, is not absolutely essential for I may provide a continuous stringer under the rail in lieu of the chair 2, and the stringer may be of wood or of metal either in the form of cross section of the chair shown or otherwise. Likewise the lips for engaging the rail may be modified and independent pieces provided.

On the top of the chair is mounted the rail B with the bearing face of its head flush with grade of the street on the outside.

On either side of the rail and chair I provide retaining walls formed of a row of large paving blocks C on outside and C' on inside, which are of suitable depth to reach nearly from the tie to the surface and are preferably placed as alternate headers and stretchers on the outside of the rail, substantially flush with the tread of the rail, and on the inside of the rail the paving blocks are pref-

erably laid as alternate thick and thin stretchers with their surfaces about one-half inch below the tread of the rail.

At the outside of the paving blocks is the regular pavement D, either of asphalt or other suitable material.

At S is shown a broken stone or concrete foundation.

On top of the flanges which form the base of the rail and between the vertical web and the adjacent row of paving blocks, I provide a cement grouting 4. This cement or grouting extends about half way up the web of the rail on either side and is preferably poured and tamped in so as to fill all open spaces.

On top of the grouting 4 and on either side of the rail head, I provide a semi-elastic filling, composition or mastic A. The surface of the filling on the outside is flush with the pavement and top of the rail and on the inside the surface of the filling is even with the surface of the pavement and about one-half inch below top of rail. The composition A is specially prepared of asphaltum or bitumen with a body material of sand, clay, pulverized limestone or similar matter, in the proportion of about twenty to thirty percent. of bitumen soluble in carbon bisulphite (CS₂) and the balance of the body material.

A substitute composition of coal tar resinous and other artificial cements or bitumen, with sand or body forming material may be used. All of these compositions form an elastic mastic which can be melted and poured.

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

1. A T headed rail, a support therefor, a retaining wall parallel with and a little removed from the head of the rail, a concrete grouting resting in whole or in part on the base web of the rail and partially filling the space between the retaining wall and side of the rail, and an elastic mastic resting on the concrete grouting and occupying the space between the side and head of the rail and the retaining wall, combined substantially as set forth.

2. The combination of a pair of fixed inde-

pendent parallel retaining walls, a rail support, a rail having a rounded head mounted on the support between the walls with the face of the head substantially even with the
5 upper edge of the walls, and an elastic mastic on either side of the rail between the head and web of the rail and the retaining wall forming an elastic support for the rail against

lateral movement and an elastic bearing for the flange of a wheel substantially as set forth. 10

In witness whereof I have affixed my signature in presence of two witnesses.

GEORGE C. WARREN.

Witnesses:

GEO. A. GAYMONDS,

GEORGE C. CARTER.