

No. 708,522.

Patented Sept. 9, 1902.

E. M. BUNCE.
RAILROAD TIE.

(Application filed Dec. 12, 1901.)

(No Model.)

2 Sheets—Sheet 1.

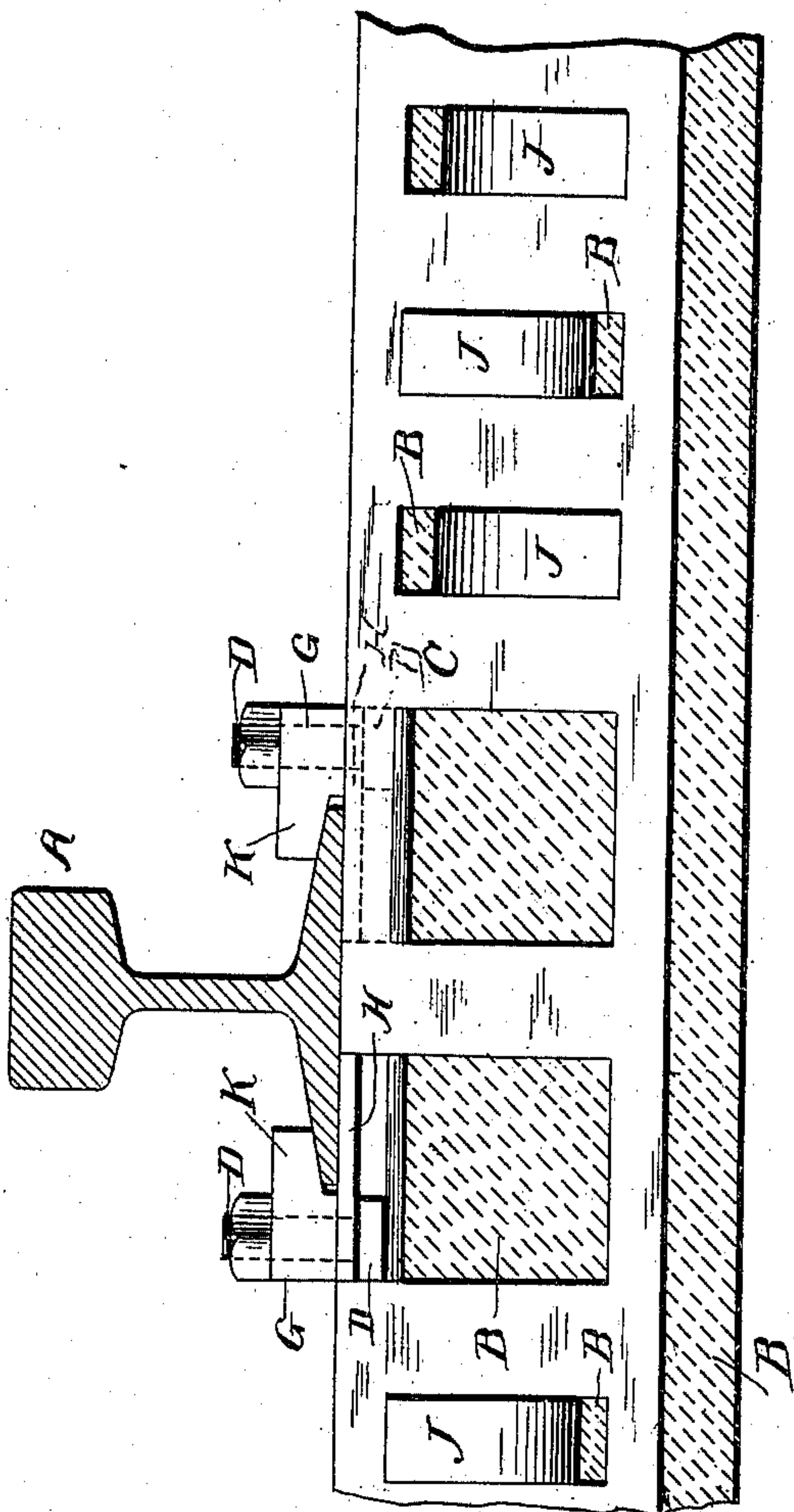


Fig. 2.

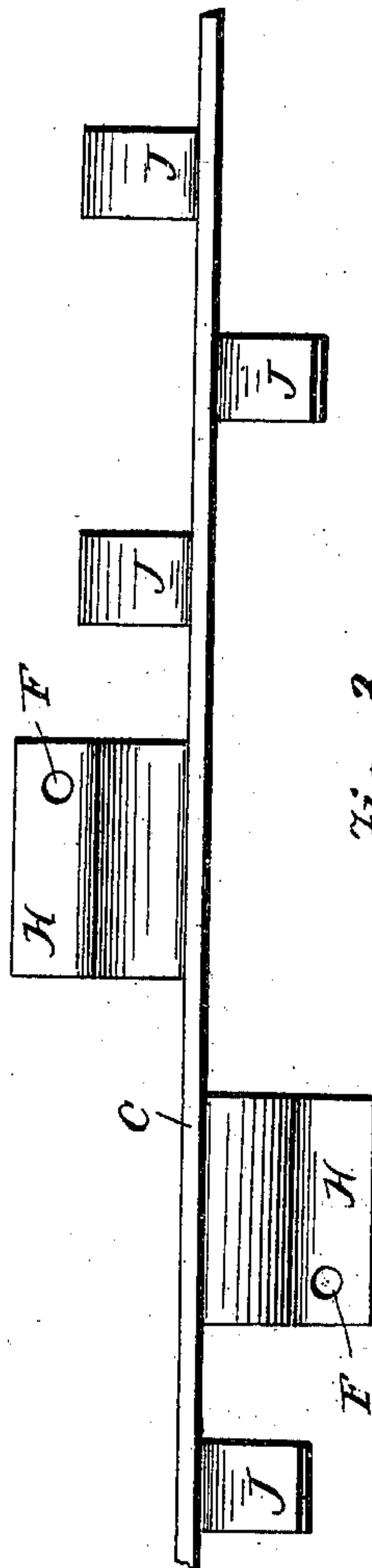


Fig. 3.

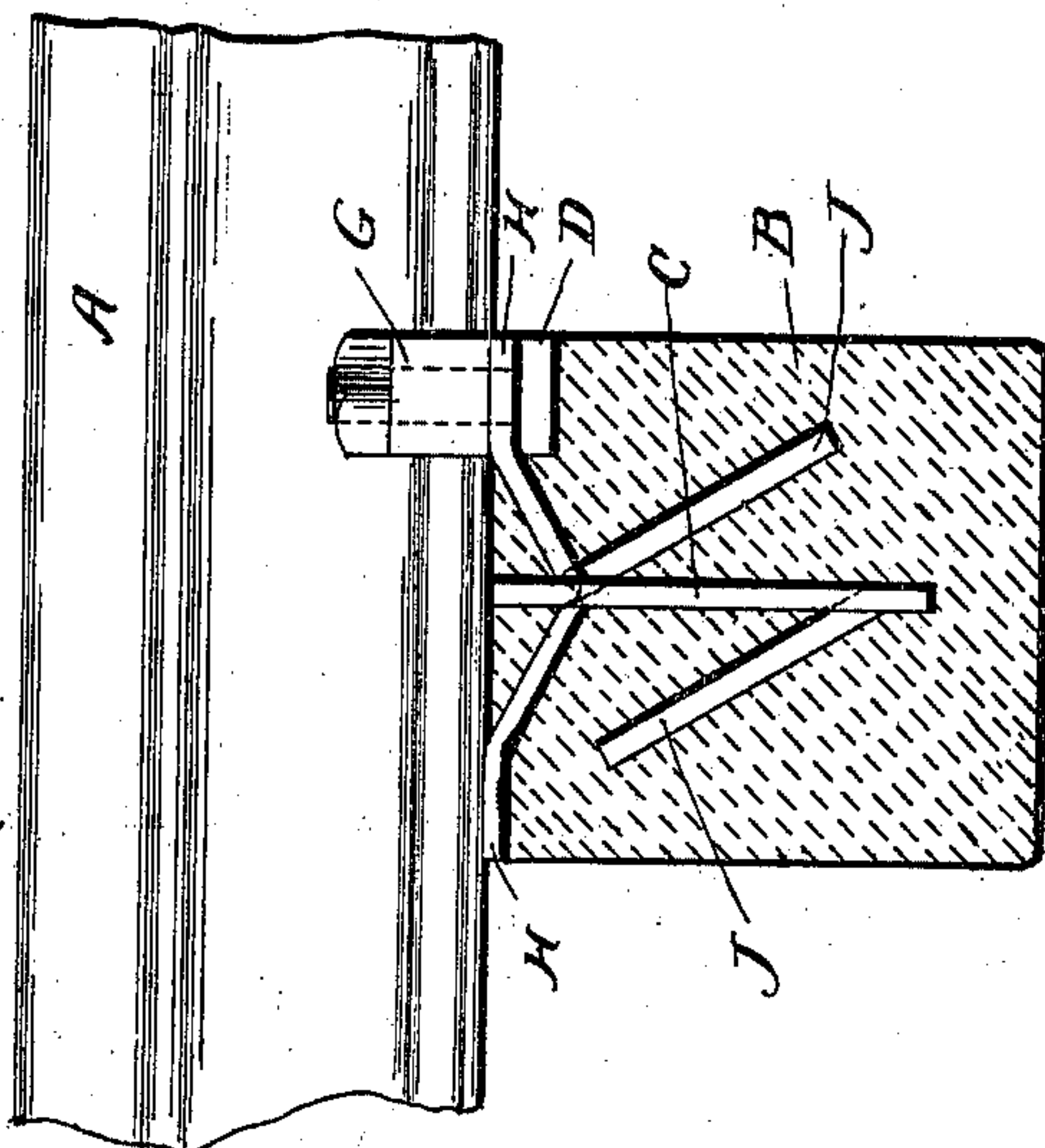


Fig. 1

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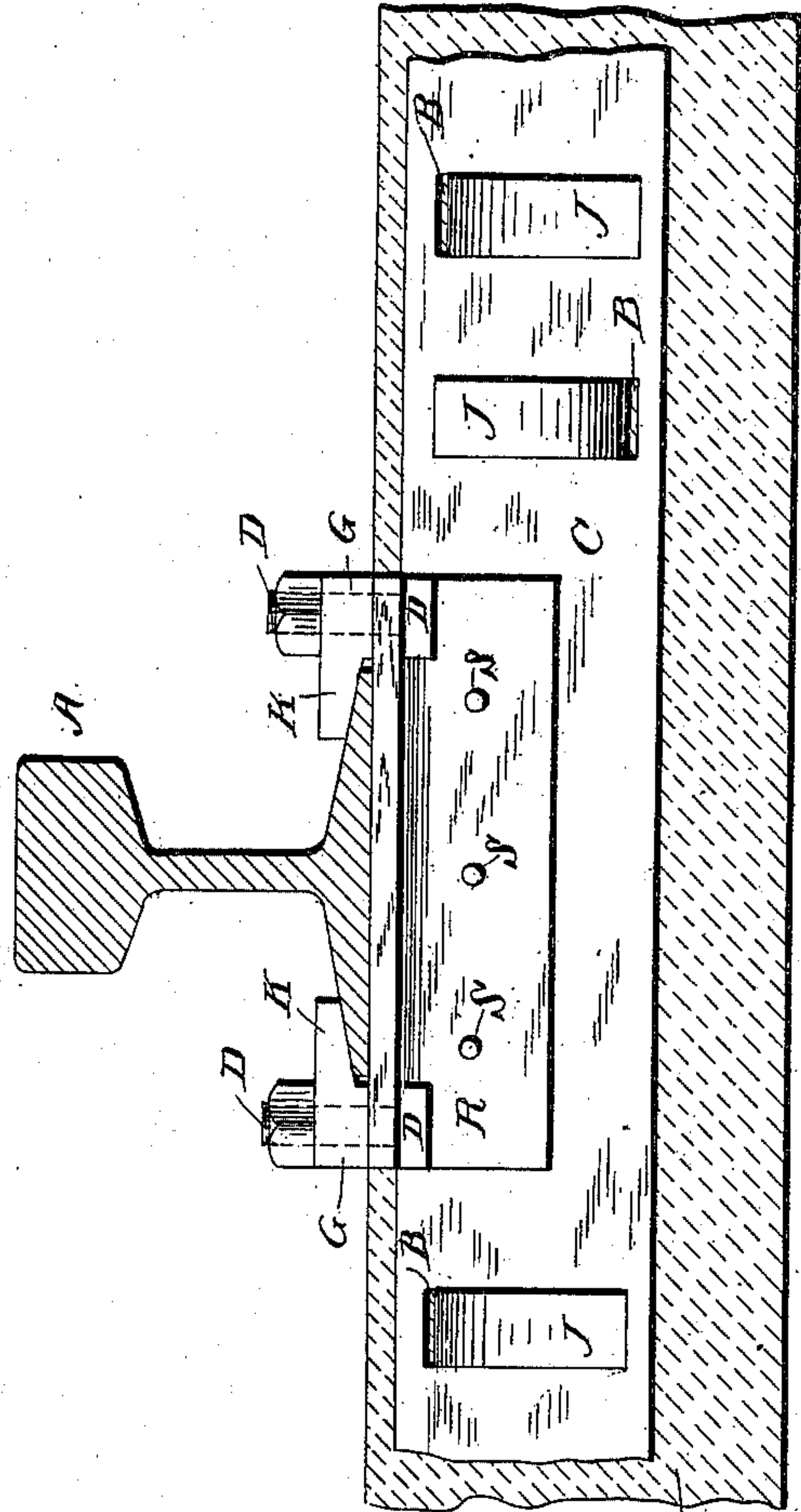


Fig. 5.

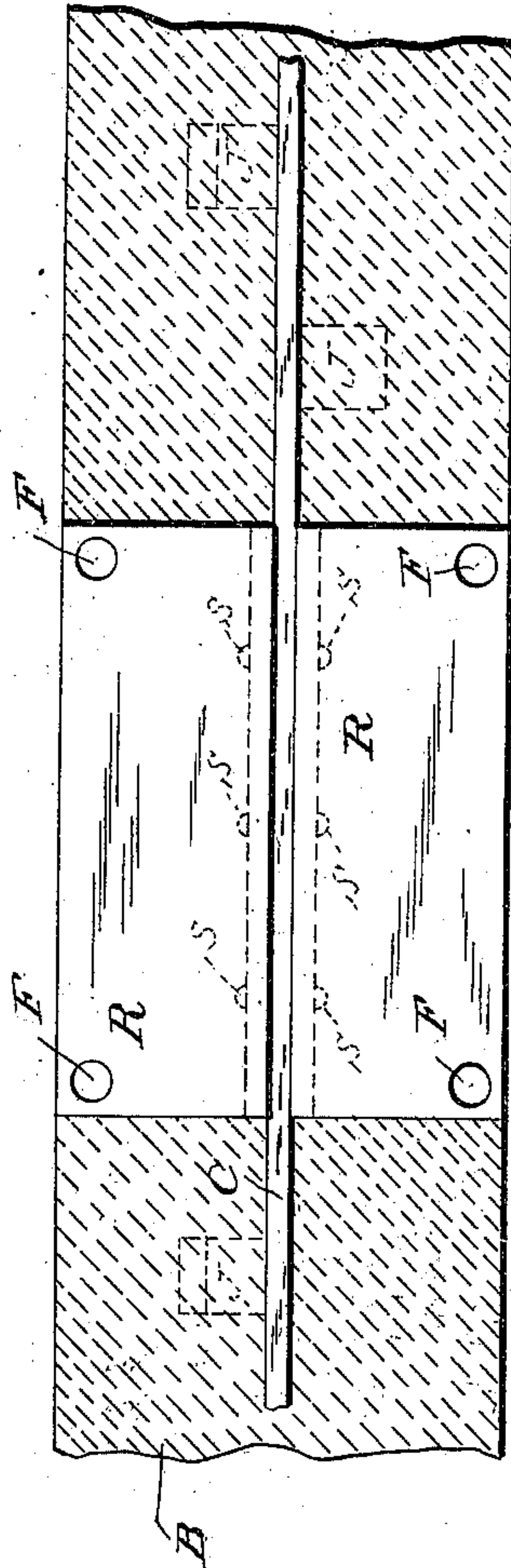


Fig. 6.

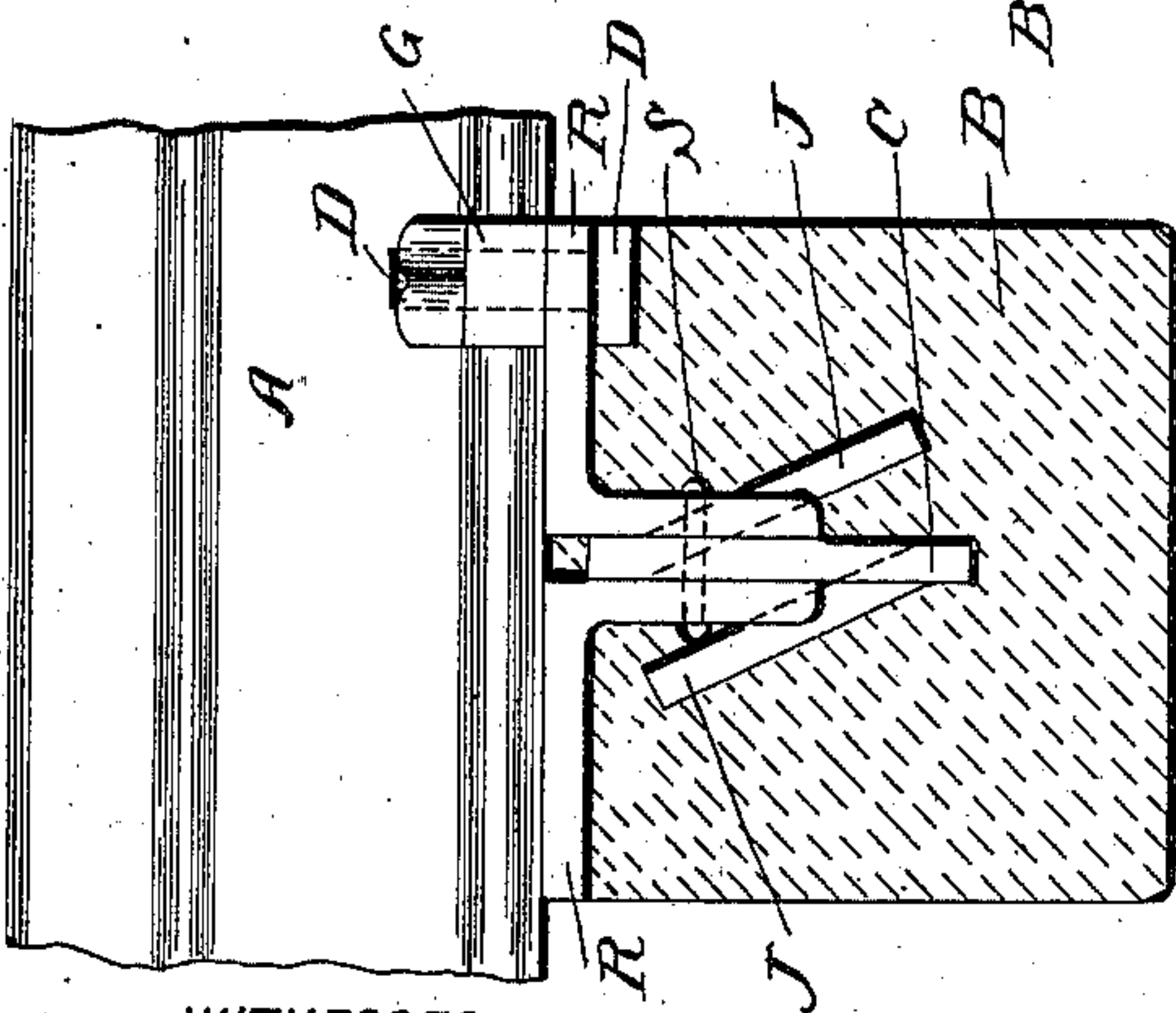


Fig. 4.

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UNITED STATES PATENT OFFICE.

EARL M. BUNCE, OF COLLINWOOD, OHIO.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 708,522, dated September 9, 1902.

Application filed December 12, 1901. Serial No. 85,557. (No model.)

To all whom it may concern:

Be it known that I, EARL M. BUNCE, a citizen of the United States, residing at Collinwood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Railroad - Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to composition railroad-ties.

The object of the invention is to form an improved tie of metal and cement and to so shape the metal that the rail may be readily attached thereto.

A further object is to form a tie of a single metal beam or frame having properly-disposed flanges to which the rails may be bolted and anchor-arms extending from the body of the beam to assist in binding together the beam and the cement or composition part.

A further object is to produce a beam for a railroad-tie which may be stamped and formed from a single plate of metal.

The constructions herein shown and described are modifications of the invention shown and claimed in my copending application, Serial No. 84,351.

Referring to the drawings, Figure 1 is a cross-section of the tie. Fig. 2 is a longitudinal section thereof. Fig. 3 is a top plan view of the metal frame of the tie. Figs. 4, 5, and 6 are respectively similar views of a modification.

Referring more particularly to the drawings, the rail is indicated at A. The tie is formed of a metal beam C, which is embedded in a cement or composition body B, which is molded around the frame. One edge of the frame is flush with the top of the tie, and the base of the rail rests thereon. A further support for the rail is formed by flanges H, which are struck out from the body or web of the frame and are bent up flush with the top of the frame. These flanges are provided with suitable holes F, through which extend the bolts D, which secure the rail to the tie by

means of clips G, through which the bolts extend, said clips having extensions K, which overlie the base of the rail. Any other suitable or proper means may be used for attaching the rail to the tie.

J indicates anchor-arms which are struck out from the body of the frame and are bent laterally at an angle thereto, preferably to each side alternately. These arms serve to bind the parts of the tie together, and particularly the frame of the body, so that there is no danger of its being lifted therefrom. It is to be noticed that the arms J are wider horizontally than vertically, so that their broad sides face the sides of the tie instead of the ends. It is believed that this anchors and holds the beam in the cement body with less liability to split the latter than would otherwise be the case. The formation of the flanges H and arms J leaves openings in the web of the frame, through which the molded material extends when the tie is made, which thereby assists in retaining the parts together.

It will be seen that the tie is formed of a single plate of metal and that the same is firmly embedded and retained in the cement body of the tie. A cheap and durable article for the purpose intended is thereby constructed. Such a tie gives a firm support to the rails, and they may be readily and easily secured thereto or detached therefrom.

In the modified form illustrated in Figs. 4, 5, and 6 the flanges upon which the rails rest are formed separate from the main frame of the tie by means of angle-irons R, attached by bolts S to the main frame C of the tie.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a composite railroad-tie comprising a flanged metal beam having anchor-arms struck up therefrom, forming openings therethrough, and an inclosing body of molded material extending through said openings, of rail-retaining bolts engaging the flanges.

2. A railroad-tie comprising a metallic beam embedded in a block of molded material, said beam having flanges forming seats for the rails and arms projecting from the

frame into the molded material, said arms presenting their broader sides in a horizontal plane.

3. A railroad-tie comprising a metallic
5 beam embedded in a block of molded material and having integral flanges forming seats for the rails and anchor-arms projecting laterally into the molded material, said flanges and arms being struck up from the body of
10 the beam producing openings therein through which the molded material extends.

4. A composite railroad-tie comprising a

single metal plate having rail-supporting flanges and anchor-arms struck up therefrom, the wider sides of which are faced upwardly, 15 forming openings therethrough, and a body of molded material inclosing said plate and arms and extending through the openings.

In testimony whereof I do affix my signature in presence of two witnesses.

EARL M. BUNCE.

Witnesses:

JNO. A. BOMMhardt,
LOTTIE NEWBURN.