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PATENTED DEC. 4, 1906.

J. B. STRAUSS.
OPEN BALLASTED FLOOR FOR RAILWAYS.
APPLICATION FILED FEB. 19, 1906.

2 SHEETS—SHEET 1.

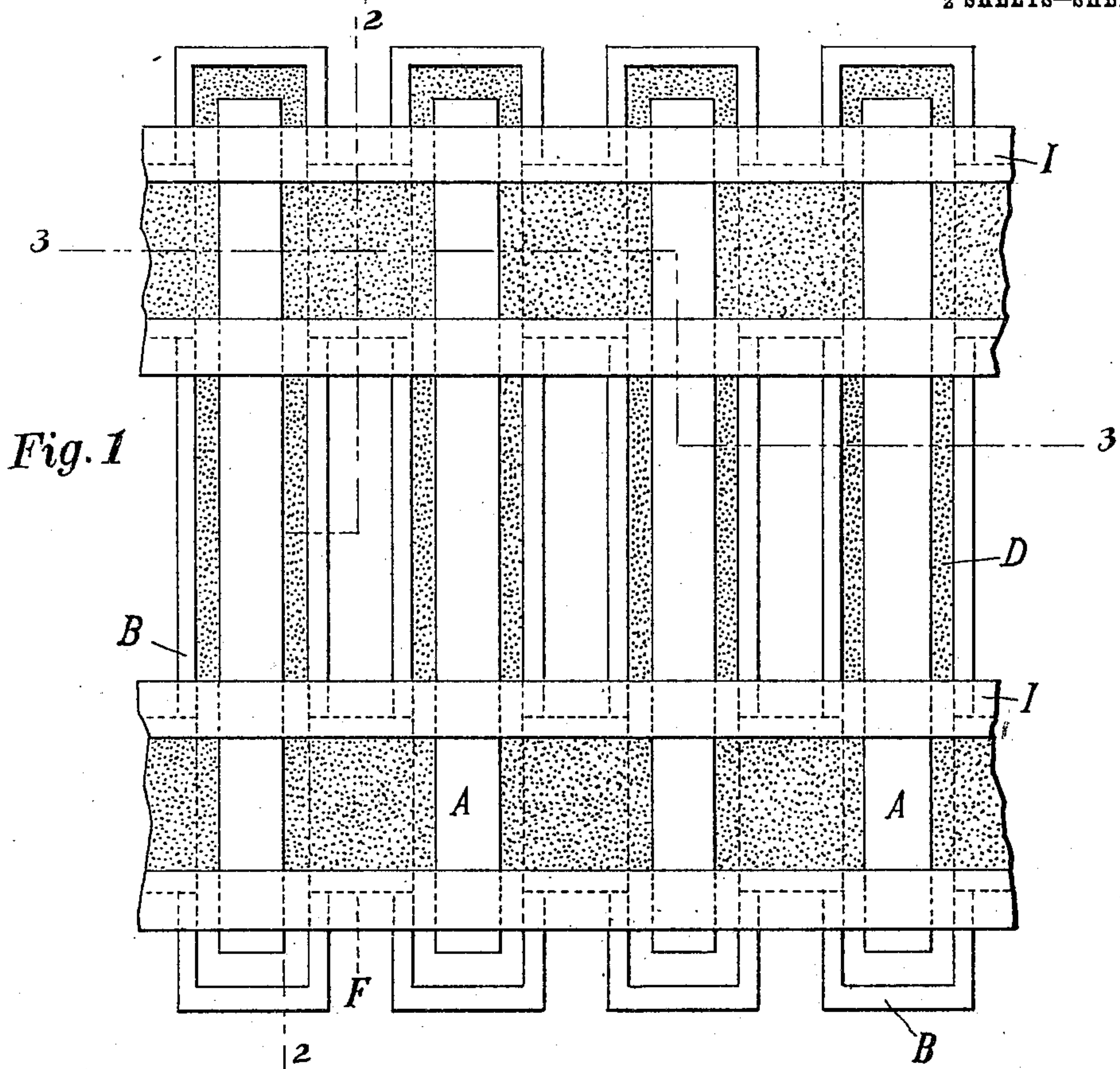
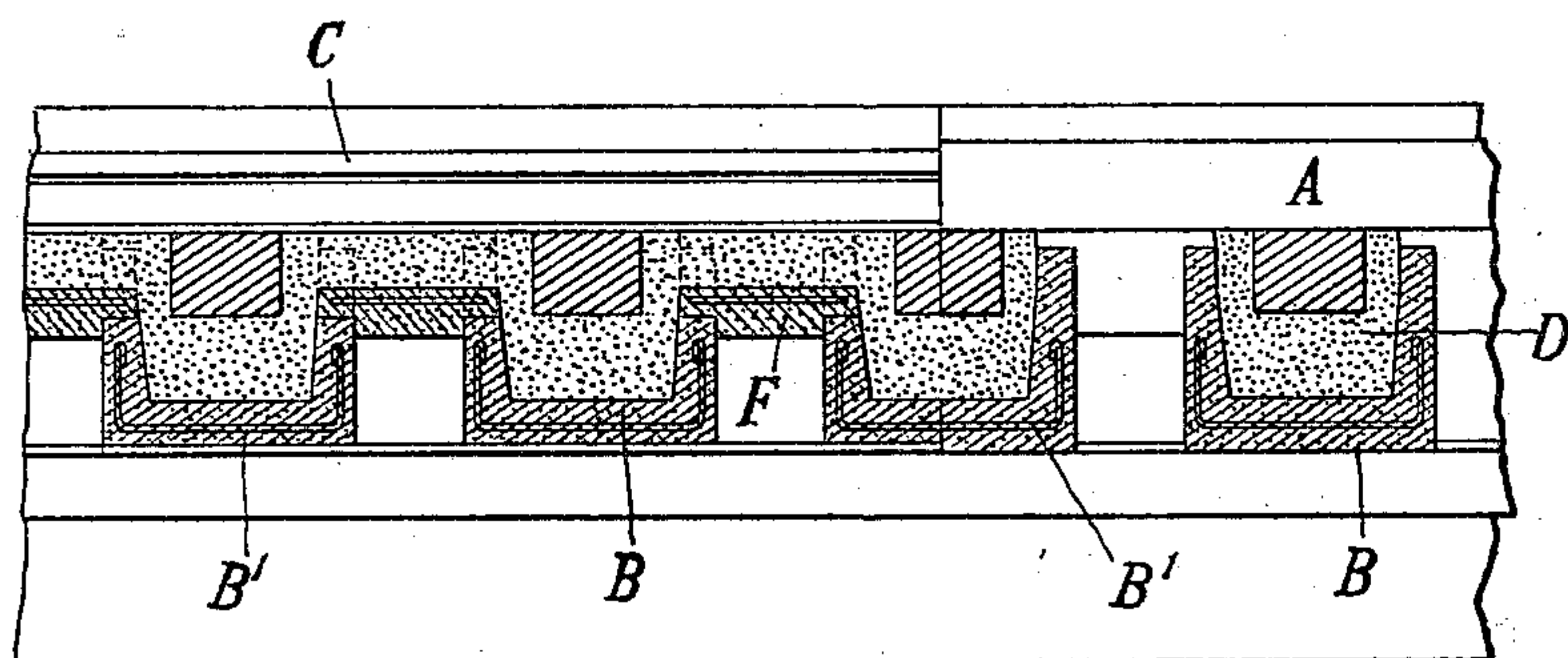


Fig. 3



Witnesses

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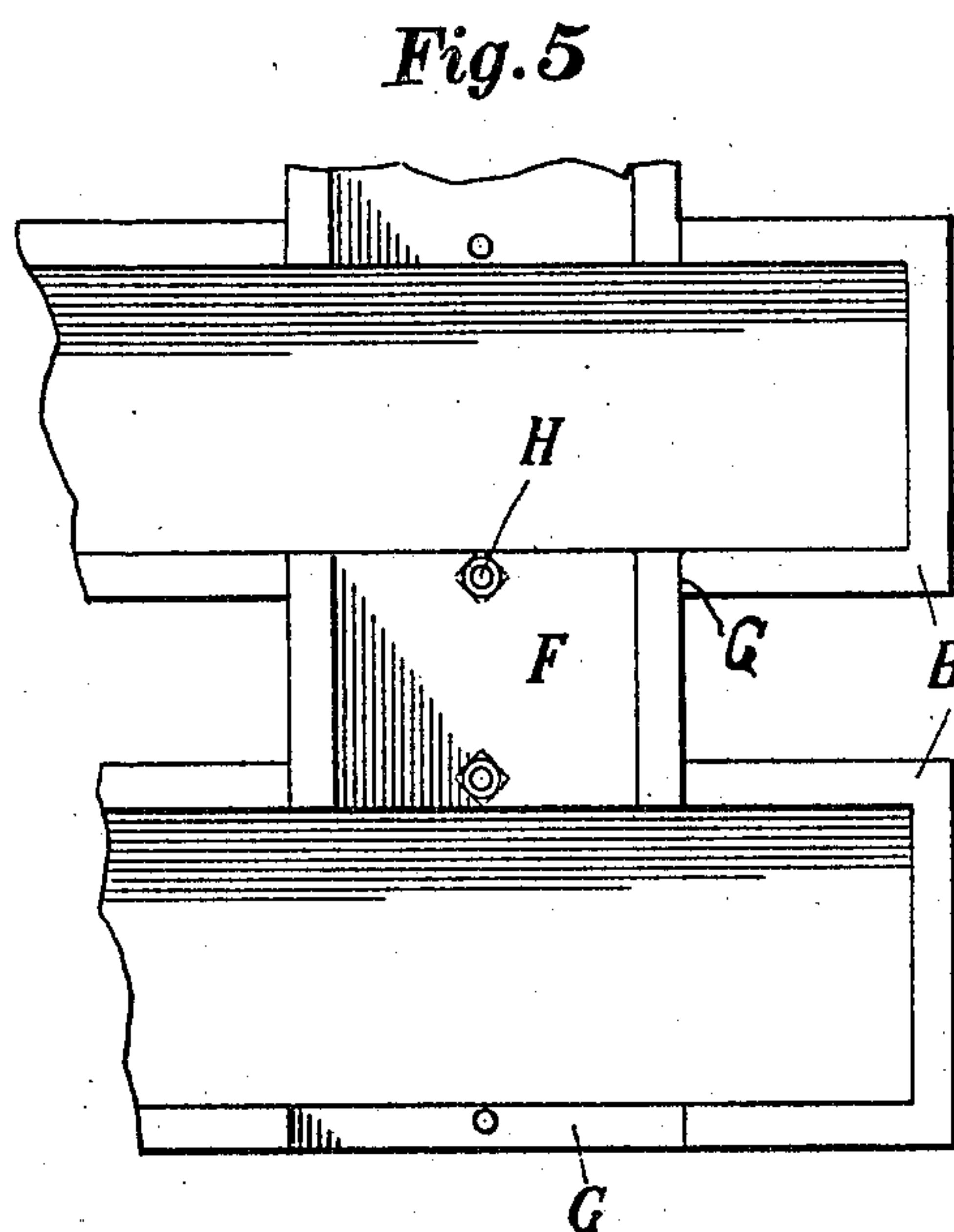
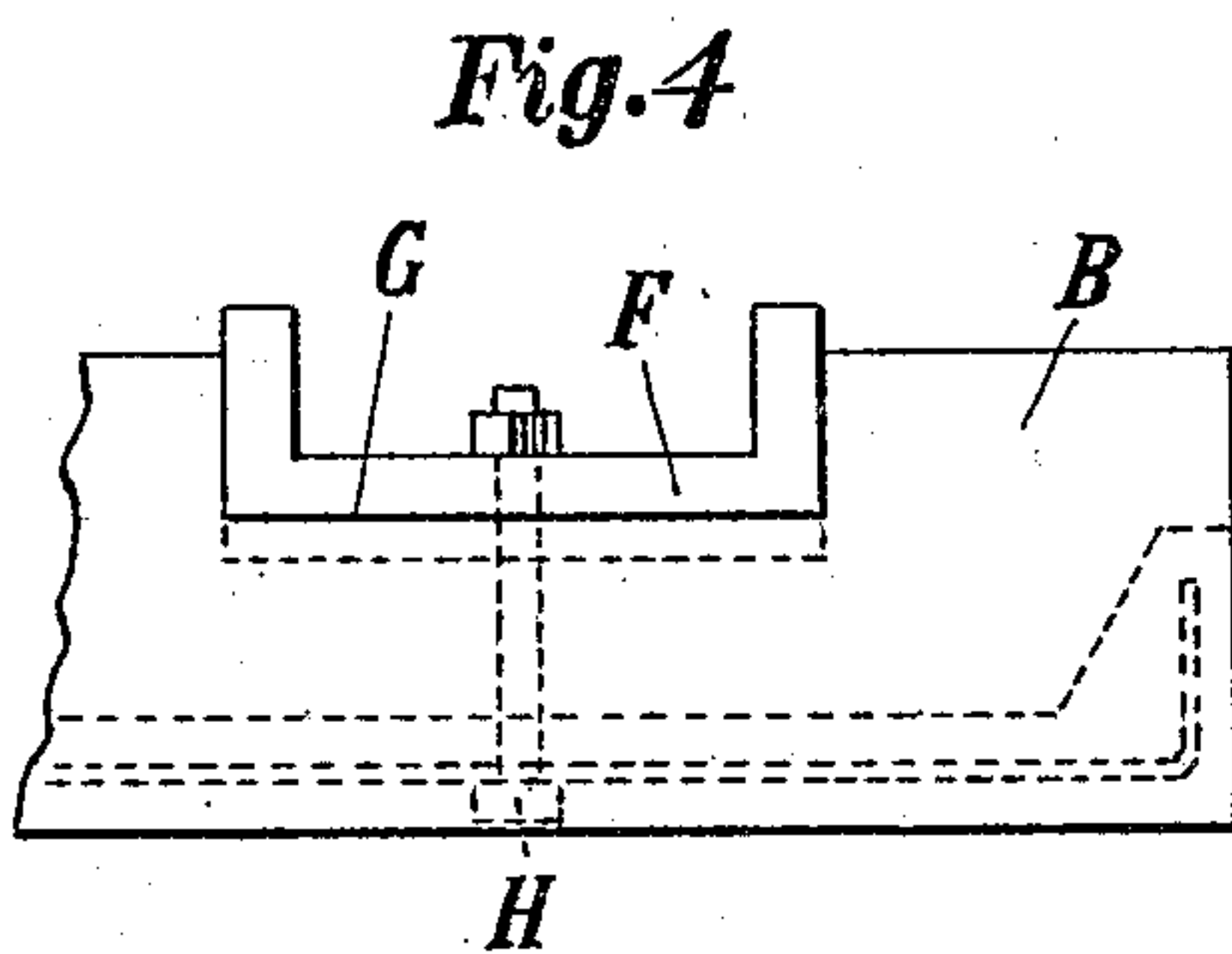
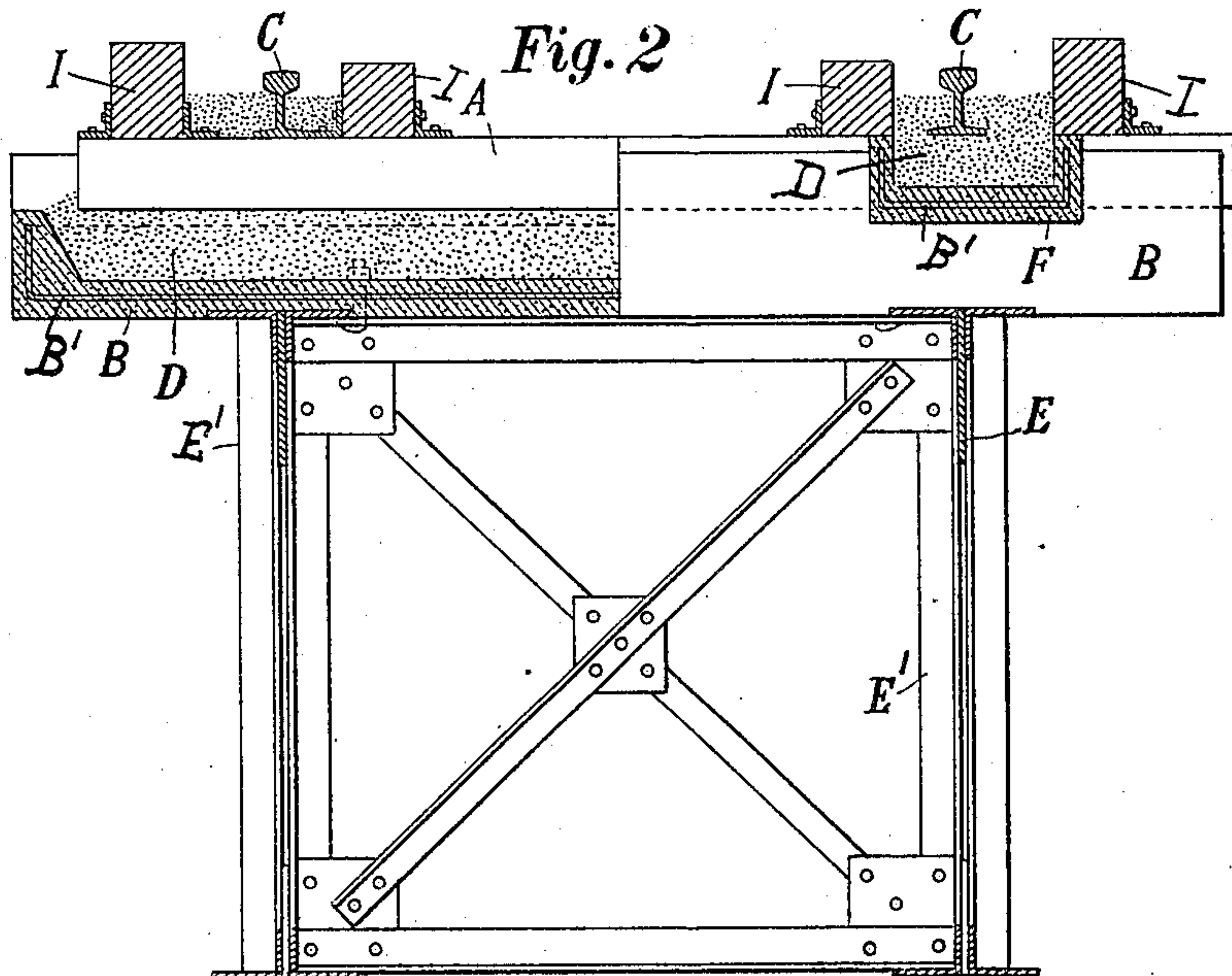
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH B. STRAUSS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE STRAUSS
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OPEN-BALLASTED FLOOR FOR RAILWAYS.

No. 837,647.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed February 19, 1906. Serial No. 301,774.

To all whom it may concern:

Be it known that I, JOSEPH B. STRAUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Open-Ballasted Floors for Railways, of which the following is a specification.

My invention relates to open-ballasted floors for railway-bridges, elevated railways, and the like, and has for its object to provide a new and improved construction of this description.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view of a portion of a device embodying my invention with rails removed to show underneath construction. Fig. 2 is a sectional view taken on line 2 2 of Fig. 1. Fig. 3 is a sectional view taken on line 3 3 of Fig. 1. Fig. 4 is a side elevation of one of the cross-ties. Fig. 5 is a plan view of two cross-ties, showing the connecting-piece between them.

Like letters refer to like parts throughout the several figures.

In the drawings I have shown my invention as applied to an elevated railway, but it is of course evident that it can be applied to bridges and other structures.

In carrying out my invention I provide a series of separated cross-pieces. These cross-pieces may be termed multiple ties, each consisting of two separate parts A and B, the part A adapted to be connected with the rail C and the part B adapted to be connected with the support upon which the floor is carried, there being provided an intermediate cushioning material D between the two parts.

The part A may be an ordinary wooden tie. The part B is hollowed out to receive the part A and the cushioning material and may be made from any desired material. As herein shown it is made of concrete-steel, the steel being shown, for example, in Figs. 2 and 3 at B'. Any desired cushioning material may be used—such, for example, as crushed-stone ballast. A series of these multiple ties are placed side by side, with an open space between them, and are supported upon the girders or stringers E, carried by the supporting structure E'. The ties are con-

nected near each end—that is, at the points where the rails C are placed—by connecting-pieces F. These connecting-pieces are preferably made of concrete and are also hollow, being in the form of troughs open at each end.

The parts B are cut away at the points where the connecting-pieces are connected, as shown, for example, at G, Figs. 4 and 5. The ends of the connecting-pieces fit into the space where the parts B are cut away and are fastened to the parts B in any desired manner—as, for example, by the bolts H, embedded in the parts B. The connecting-pieces F are provided with the cushioning material, they being filled with this material.

It will thus be seen that the rails C are supported upon the parts A and the portions of the rail between the parts A rest upon the cushioning material in the connecting-pieces F. Suitable guard-rails I may be placed one on each side of the rail C.

It will be seen that by this construction I am enabled to produce a ballasted floor which is open and which, while it secures all the advantages of ballasted construction, is of such a character that snow, &c., may be readily cleaned from the floor and pass through the open spaces. This device also, because of its open nature, does not obstruct the light and weighs less than the solid ballasted floor.

In view of the fact that the floor is made up of a series of separated pieces renewals can be readily made by renewing and replacing these pieces without disturbing to any great extent the rest of the floor.

In the specification and claims I have used the term "concrete." By this I mean to include concrete either used alone or having strengthening-pieces embedded in it, forming what is called "concrete-steel."

I claim—

1. A floor for railways comprising a series of separated cross-pieces upon which the rails are supported and provided with cushioning material, connecting-pieces between the cross-pieces at the points where the rails are placed, and cushioning material between said connecting-pieces and said rail.

2. A multiple tie for railways comprising two separated parts, one adapted to be fastened to a support, and the other to the rail,

and an intermediate cushioning material between said parts.

3. A multiple tie for railways comprising a concrete receptacle, a tie contained within
5 said receptacle, and cushioning material between the tie and the receptacle.

4. A floor for railways comprising a series of separated multiple ties each consisting of two parts, the rail resting upon one part, the
10 other part resting upon a support, and cushioning material between the two parts, a connecting-piece between each multiple tie at the points where the rails are placed, and consisting of a hollow piece with cushioning material therein, the cushioning interposed be-
15 tween the rail and the connecting-piece.

5. A floor for railways comprising a series of separated multiple ties each consisting of an outer concrete receptacle, a part contained
20 therein upon which the rail is carried, and an intermediate cushioning material between said part and the receptacle, a series of connecting-pieces between the said receptacles

at the points where the rails are located and each piece attached to the adjacent recep- 25
tacles, said pieces provided with cushioning material interposed between them and the rails.

6. A ballasted floor for railway-bridges, provided with open spaces. 30

7. A ballasted floor for roadway-bridges, having ballasted parts alternating with open spaces.

8. A ballasted floor for railroad-bridges with means for ballasting each tie sepa- 35
rately.

9. A ballasted floor for railroad-bridges with transverse and longitudinal ballast sections.

10. A ballasted floor for railway-bridges, 40
consisting of longitudinal and transverse ballasted receptacles.

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Witnesses:

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