

(No Model.)

R. L. CALDWELL.
COMPOUND RAIL.

No. 584,574.

Patented June 15, 1897.

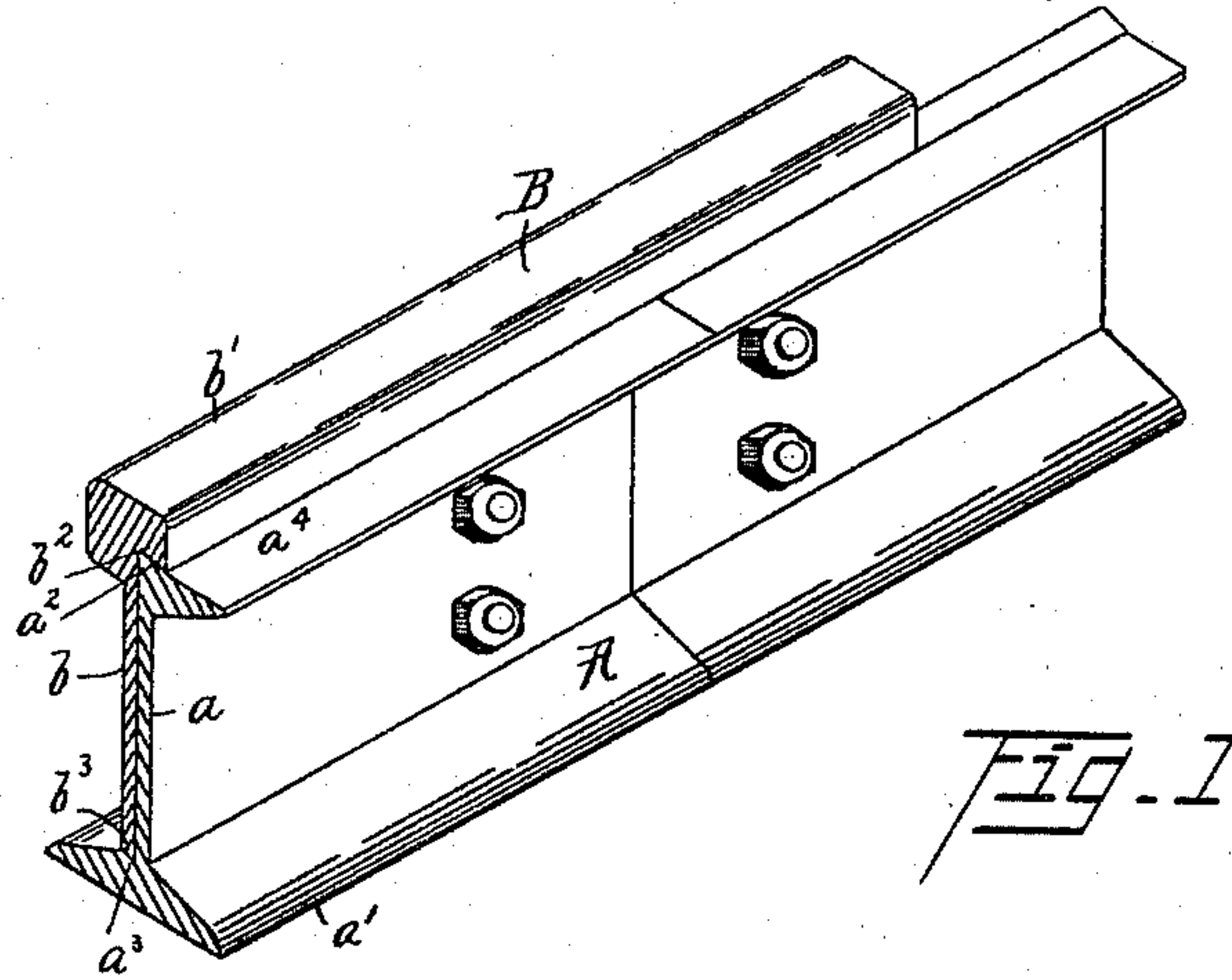


Fig. 1

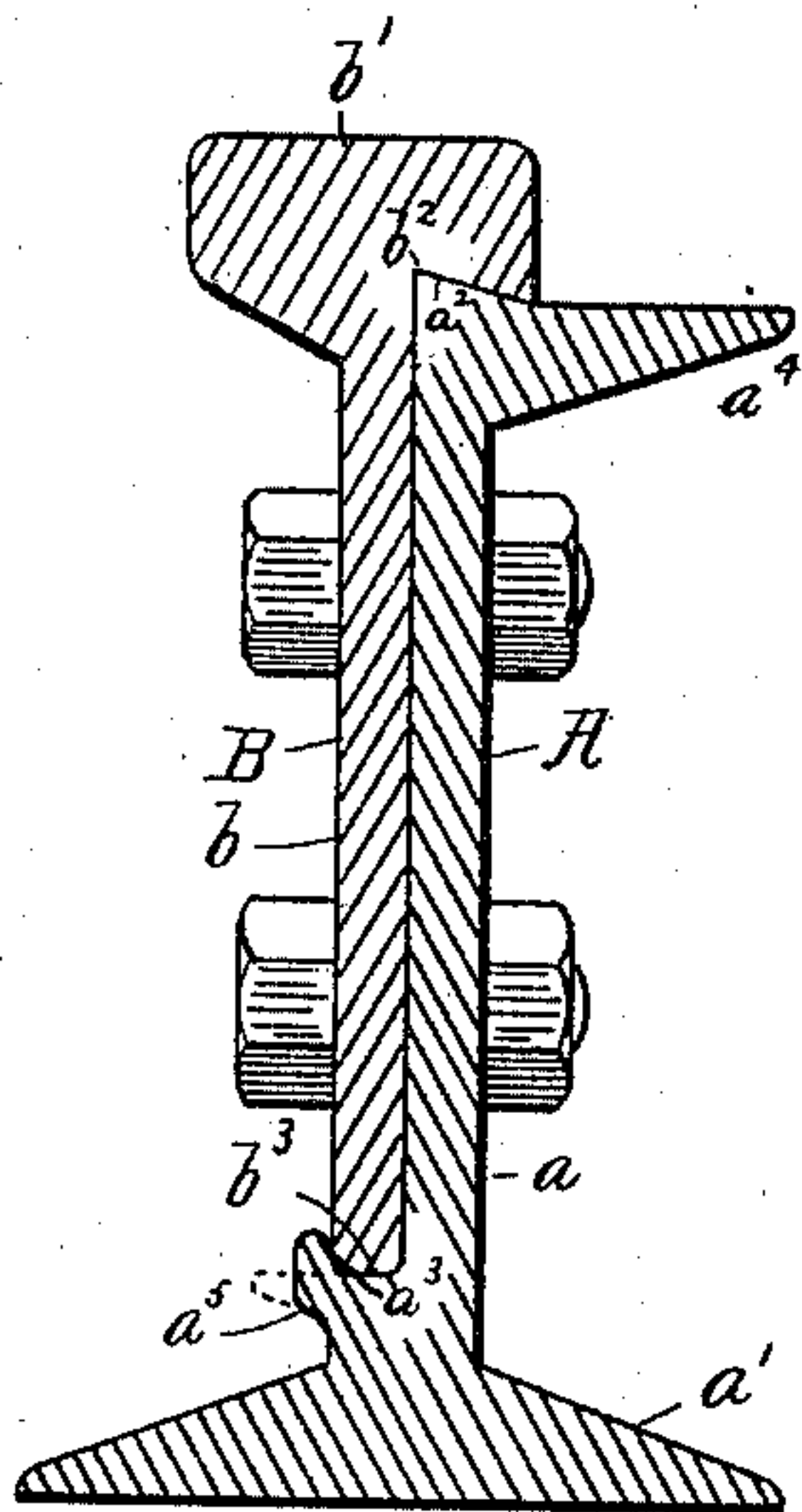


Fig. 3

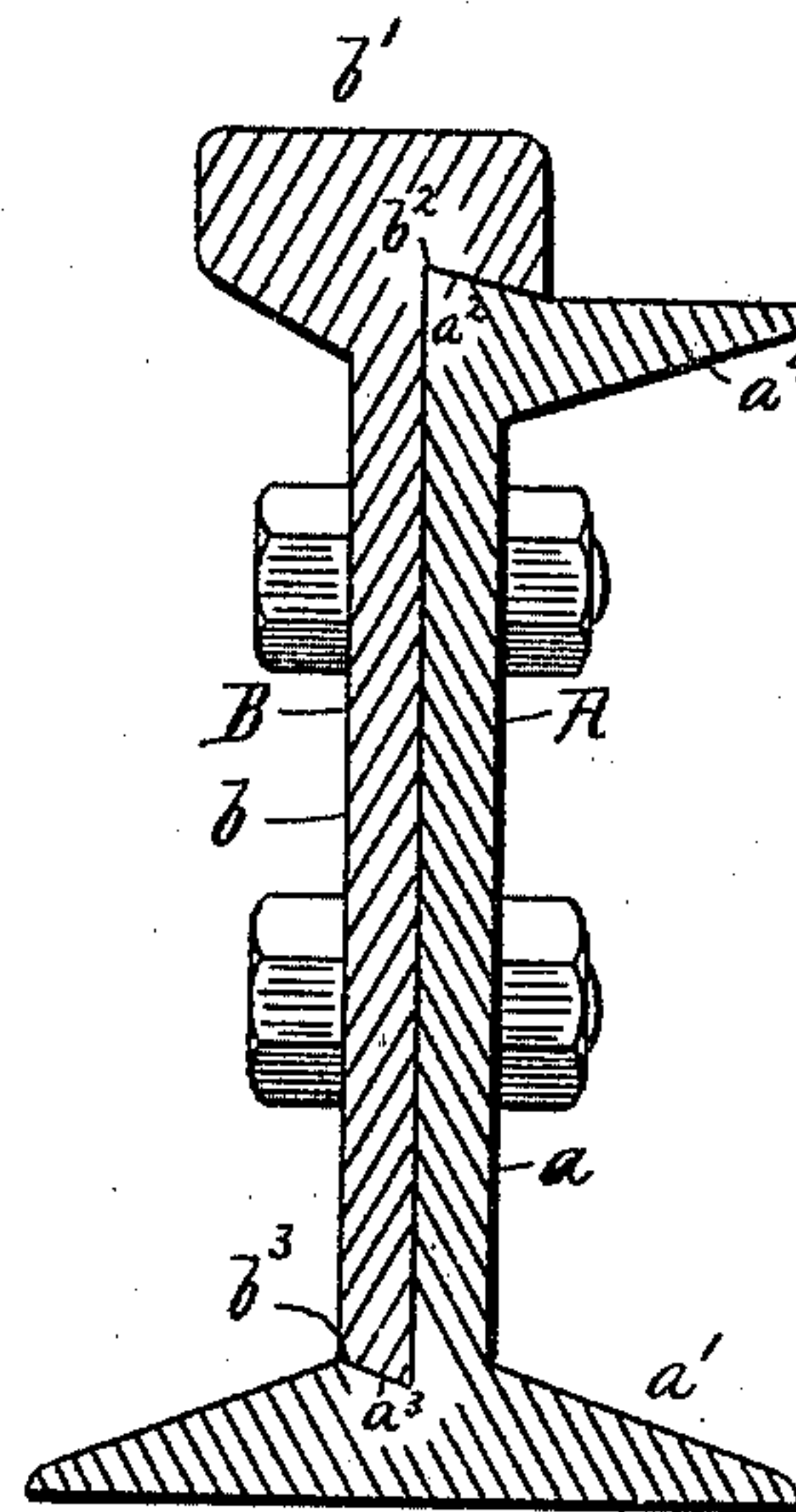


Fig. 2

Witnesses.

F. Griswold
Helen M. Hutchison

Inventor.
Robert L. Caldwell
By *E. L. Hurston*
his attorney

UNITED STATES PATENT OFFICE.

ROBERT L. CALDWELL, OF CLEVELAND, OHIO.

COMPOUND RAIL.

SPECIFICATION forming part of Letters Patent No. 584,574, dated June 15, 1897.

Application filed March 16, 1896. Serial No. 583,437. (No model.)

To all whom it may concern:

Be it known that I, ROBERT L. CALDWELL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Compound Rails; 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.

My invention relates to an improvement in compound rails for railway-tracks.

One object of the invention is to provide a compound girder-rail composed of two sections, as follows: first, a section comprising the web, the foot on the lower edge of the web and projecting to both sides thereof, and the laterally-projecting girder-flange which is formed upon the upper edge of said web, and, second, a section comprising a web and the ball or tread upon its upper edge. This second section carrying the ball is subjected to substantially all of the wear, and it does not rest upon the ties at all, but is wholly supported by the other section, as shown. The practical advantage of such construction is due to the fact that when the rails have been once laid, gaged, and fixed upon the ties the rail-section which carries the foot and the girder-flange need not be disturbed to permit the section which carries the ball (and upon which is substantially all the wear) to be removed and a new section substituted. Girder-rails are for most part used for street-railway tracks, and in most cities the pavement is laid between the rails and generally outside the rails. In many cities the use of girder-rails is obligatory. With a girder-rail constructed as shown it will generally be unnecessary to take up any of the pavement between the rails, because the section carrying the girder-flange, which is the inner section, need not be disturbed, and the girder-flange will remain as a permanent part of the road-bed between the tracks, or perhaps more properly between the balls of the rails.

Another object of the invention is to provide a compound rail composed of two sections which are so shaped that they may be

cheaply formed between suitably-shaped rails.

The invention consists in the construction and combination of parts hereinafter described, and pointed out definitely in the claims.

In the drawings, Figure 1 is a perspective view of my improved compound rail. Fig. 2 is a transverse sectional view of the rail shown in Fig. 1, and Fig. 3 is a similar section of a slightly-modified construction.

Referring to the parts by letter, A represents the supporting-section, which includes the vertical web a and the base or foot a' , which extends to both sides of the web. This foot is the only part of the completed compound rail which bears upon the ties. The plane of the inner face of the web cuts the base midway between its edges of said foot. A girder-flange a^4 is also formed upon the upper edge of the web A, projecting laterally from one side thereof.

The tread-carrying section B consists of a vertical web b and the ball or tread b' on its upper edge. This ball extends on both sides of the web, and that part of the ball which extends inward from said web rests upon the top edge a^2 of the web a . The said top edge is very slightly beveled, and in that part of the ball which engages with it there is a shallow slightly-beveled groove b^2 , wherefore a weight upon the tread of the rail tends to draw the two sections toward each other. The lower edge of the web b enters a groove a^3 , formed in the upper side of the laterally-projecting rib a^5 , formed on the web near the foot. When the rail is formed, this rib projects in the manner shown by the dotted lines in Fig. 3; but in the last pass through the rolls this rib is bent upward, thereby forming the groove a^3 . The upturned portion of the rib does not reach a vertical position, but is inclined, and therefore the inner part of this portion, which engages with the beveled lower edge of the web b^3 , is beveled. The tread-section B is therefore supported at two points—viz., under the inner side of the ball and at the lower edge of the web—and at both points of support there are engaging inclined surfaces which cause the rails to draw to-

gether. The rail-sections are preferably placed so as to break joints, as shown, and they are secured together by transverse bolts or equivalent devices, which because of the described construction of the rail-sections are subject to very little strain.

The chief advantage of the described construction is that when the rails have once been laid, gaged, and fastened to the ties they do not need to be disturbed, nor need their fastenings be loosened in order to permit the tread-sections when worn to be removed and replaced by new sections.

Having described my invention, I claim—

1. In a compound rail, the combination of a supporting-section A consisting of a web *a* having its upper end slightly beveled, the foot *a'* which extends on both sides of said web, a girder-flange *a''* extending laterally from one side of the upper edge of said bar, and the beveled groove *a'''*, with the section B consisting of a web *b* having a beveled lower edge which enters said groove, and a ball *b'* extending on both sides of said web and having a shallow groove in the under side of the in-

wardly-extended part of said ball, and bolts for securing said sections together, substantially as and for the purpose specified.

2. In a compound rail, the combination of a supporting-section A consisting of a web *a* having its upper end slightly beveled, a foot *a'* which extends on both sides of said web, a guide-flange extending laterally from one side of the upper edge, and a bent-up rib on the opposite side of said web near the foot, thereby forming a groove in said rib, with the section B consisting of the web *b* having a beveled lower edge and a ball extending on both sides of the upper edge and having a beveled groove in the under side of the inwardly-extended part of said ball, and bolts for securing said sections together, substantially as and for the purpose specified.

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

ROBERT L. CALDWELL.

Witnesses:

E. L. THURSTON,
L. F. GRISWOLD.