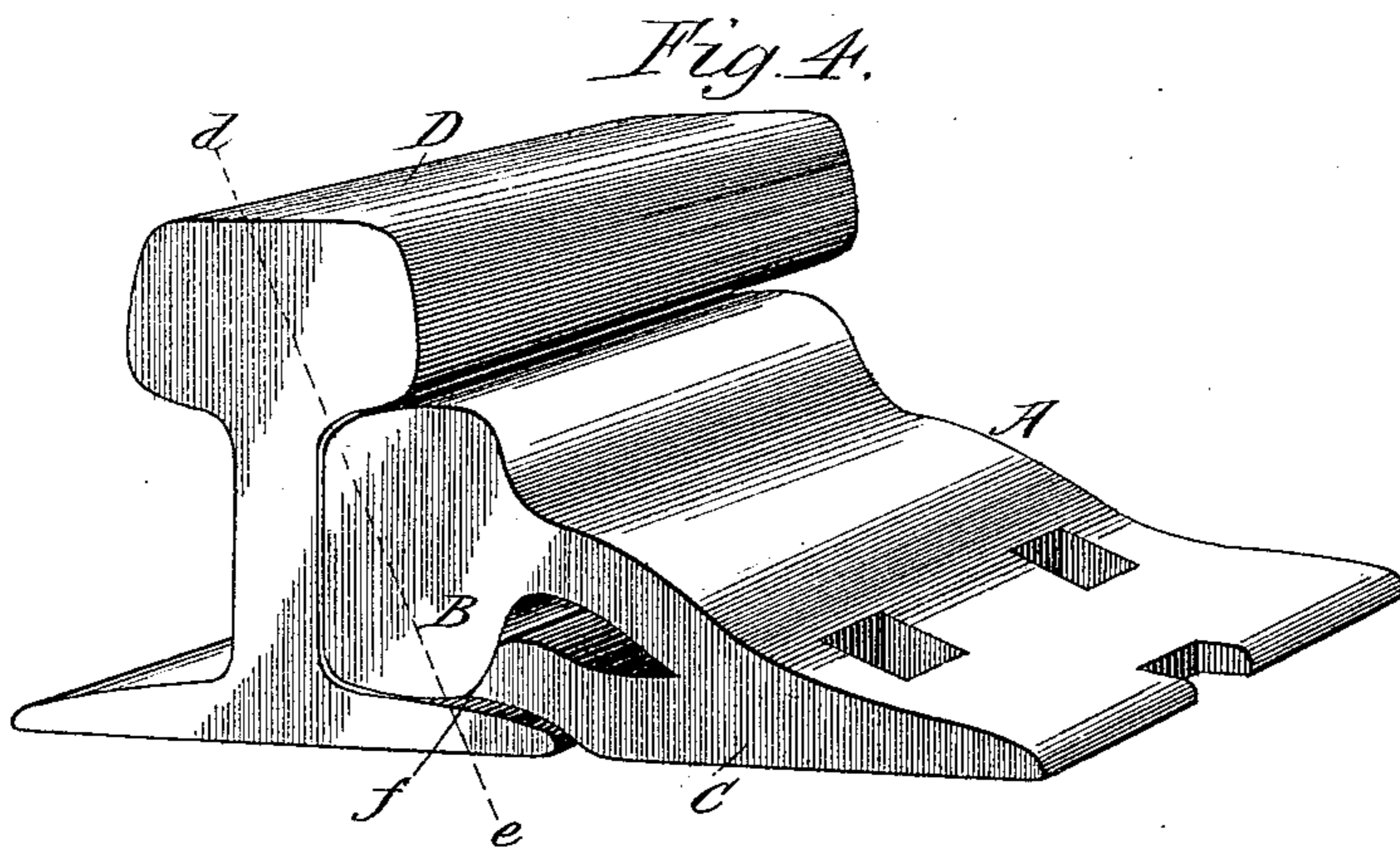
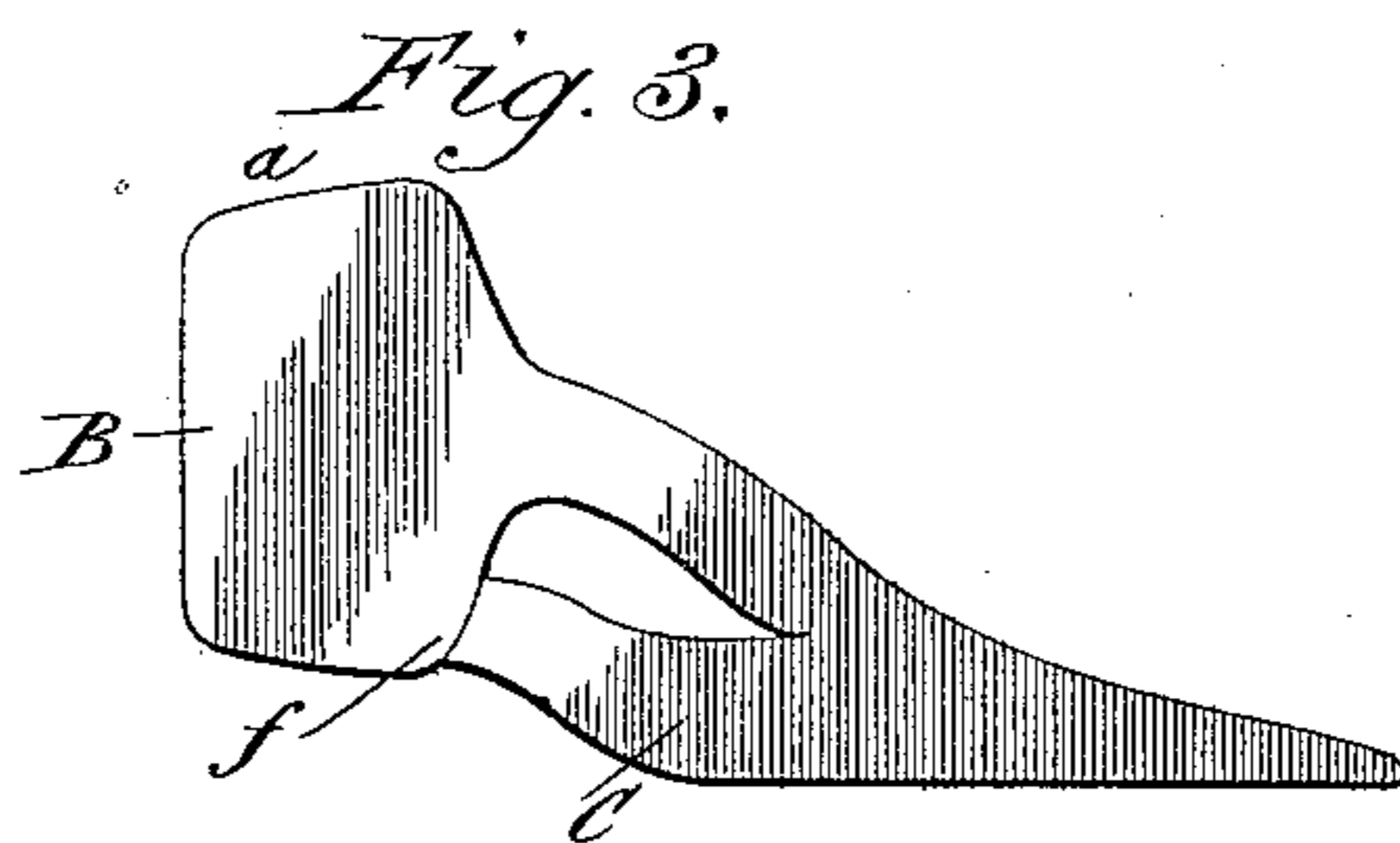
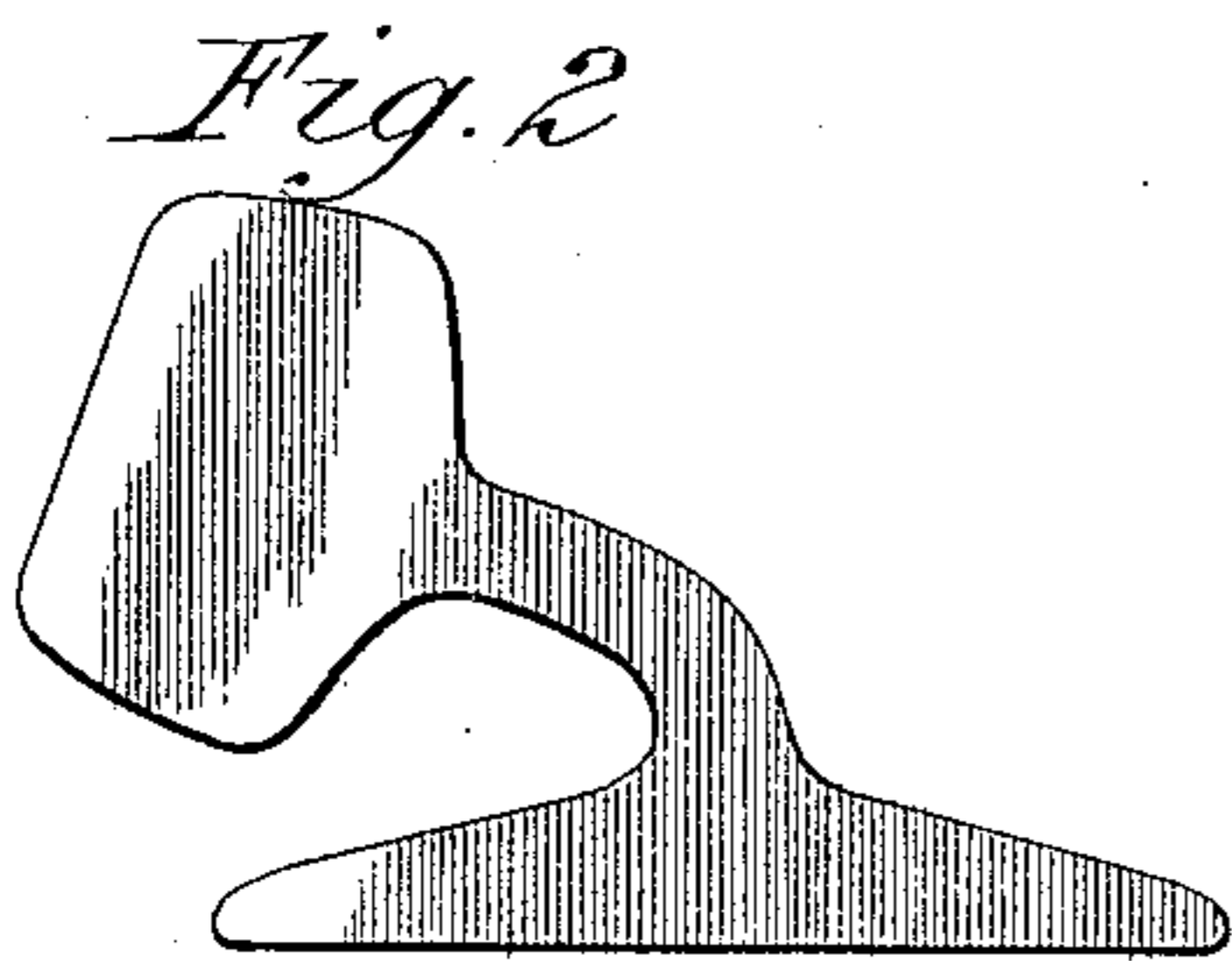
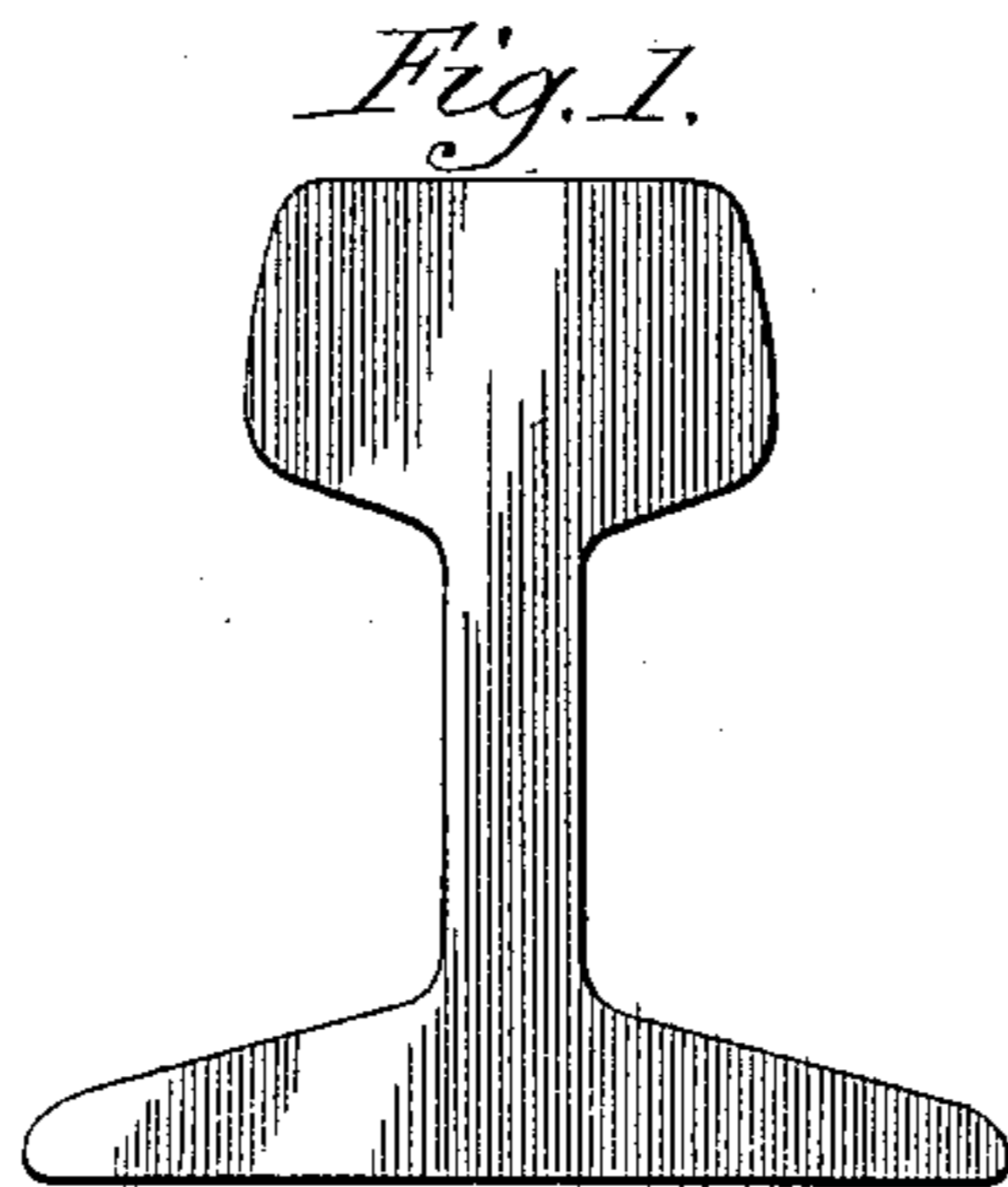


(No Model.)

C. ALKINS.
RAIL BRACE.

No. 329,991.

Patented Nov. 10, 1885.



Witnesses,

L. J. Mann,
Martin Olsen

Inventor,

Charles Alkins

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Attys.

UNITED STATES PATENT OFFICE.

CHARLES ALKINS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE AJAX FORGE COMPANY, OF SAME PLACE.

RAIL-BRACE.

SPECIFICATION forming part of Letters Patent No. 329,991, dated November 10, 1885.

Application filed August 31, 1885. Serial No. 175,779. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALKINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail-Braces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to an improvement in rail-braces; and it consists in such a construction of said braces as will allow the top of the rail being braced in a much stronger manner than heretofore.

The special object of my invention is to provide a brace for securing railroad-rails in place upon ties and holding said rails from being forced outward or spread by the lateral pressure of the engine and car wheels. Heretofore braces have been made principally from cast-iron or malleable and wrought iron. The objection to the former is that, owing to the brittleness of cast-iron, the braces are often broken and rendered useless, and to the latter—those made from wrought or malleable iron—the objection is its expensiveness. To avoid these difficulties, I propose to make a brace from old cast-steel rails and pieces thereof.

It is well known that in making ordinary rails, and before the same are shipped, the ends thereof, by reason of being irregular or being exfoliated, or by reason of the too great length of the rails, or in order to obtain smooth and sound ends and to bring all the rails to the desired lengths, a portion of the ends are cut off to a greater or less length; and, further, in repairing railroad-tracks worn rails are removed, the ends of the rail that have become exfoliated are cut off to a greater or less length, and these pieces so cut off and old steel rails are of little or no commercial value.

My improvement consists in a new article of manufacture made from sections of the proper lengths of this refuse material and old rails; and, further, in a rail-brace of a new and useful conformation, especially so in this, that the part of the rail-brace which is presented against the rail is very heavy and substantial, and fits not only underneath the head of the rail and supports the same perpendicularly, but also fits up closely against the web of the rail, which is the weakest part of the same as against lateral

strain, and also rests upon the flange of the rail. Thus constructed, my brace fits close up against the head, flange, and web of the rail and reinforces it at all parts of its contact, my rail-brace thus having the most of its metal and a sufficient amount thereof at a point where the blows and strains are received, so that to a greater or less extent the shock of the blow or strain will exhaust itself in the increased body of metal there presented, instead of being translated with full force to the foot, where it is fastened to the ties, which is the lighter part of the brace, and thus protects the rail from lateral strain and from the force of the blow or shock to which the rail is subjected, all of which will more fully appear by reference to the accompanying drawings.

Figure 1 is an end view of the rail section or blank for the brace. Figs. 2 and 3 represent the same after having been subjected to the blows of the hammer. Fig. 4 shows the same in position against the rail.

After the rail is cut to the desired length, as shown in Fig. 1, the same is heated and subjected to a severe blow with a hammer over a die, and assumes the position of Fig. 2. It is then subjected to an additional blow or blows from the hammer over a second die, and assumes the position of Fig. 3, which, after being punched for spikes, is ready for use. After having received a sufficient complement of blows from the hammer while hot and while upon the second forming-die, said die being of such a conformation as to bend the flange up while bringing the head B of the rail-section over to a vertical position, the heated flange and head are brought together at *f*, thus practically uniting them as firmly as if by a weld.

D represents the rail of the track; A, the brace when finished and ready for use; B, the head of the brace; C, the foot of the brace.

After the brace is placed in position against the rail it is manifest that the resulting blow or strain of the passing train, as indicated in Fig. 4 by the dotted lines *d e*, which falls entirely within the base of the re-enforced head of my brace, and therefore the center of gravity as to said brace being within the base of the said re-enforced head, almost the entire disturbance of the shock or blow is received and exhausted in said re-enforced head.

I am aware that rail-braces have been made from wrought or malleable iron in which the head thereof has been presented to the flange, web, and head of the rail, and I do not claim
5 such special construction.

I am also aware that rail-joints have been made containing as an element in their construction a rail-section having its web inclined relative to its flange and base, and I do not
10 therefore broadly claim such formation of a rail-section; but I am not aware that a rail-section of the conformation described in this application has ever been used or patented for any purpose.

15 While I have stated as the object of my invention to be the utilizing old steel rails and refuse ends of steel rails or parts thereof, it is obvious that my brace can be made by cutting up and utilizing new rails, if it should be desired.

20 Having now fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a rail-brace constructed, substantially as described, out of the fag or refuse ends of T-rails. 25

2. A rail-brace having the re-enforced solid head B so combined with a railroad-rail as to come in contact with the head, web, and flange thereof.

3. A rail-brace in which the foot C is extended to meet the head B, to form a support thereof, substantially as described. 30

4. A rail-brace constructed from a section of T-rail in which the flange of said section is bent so as to form a support for the bent head of the same. 35

CHARLES ALKINS.

Witnesses:

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