

No. 858,388.

PATENTED JULY 2, 1907.

A. J. HARMS.  
SUPPORT FOR RAILWAY RAILS.

APPLICATION FILED NOV. 14, 1906.

Fig. 1.

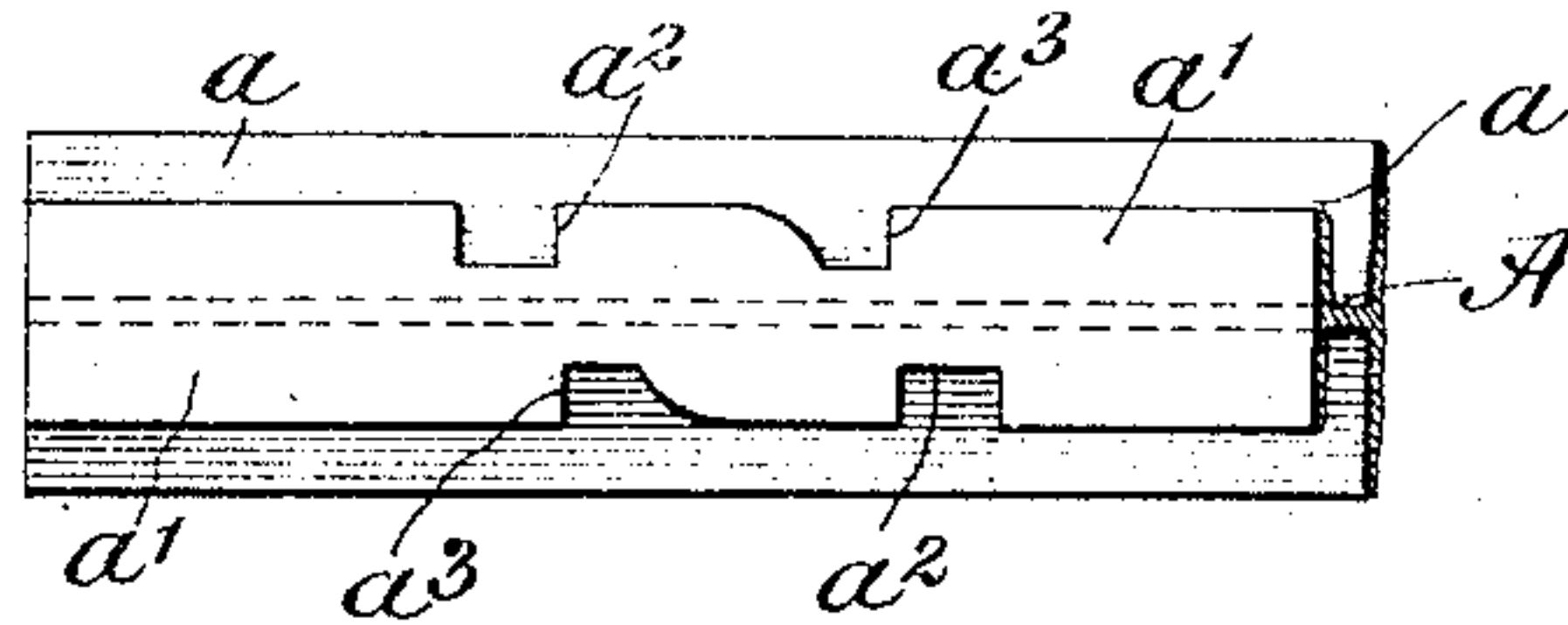


Fig. 2.

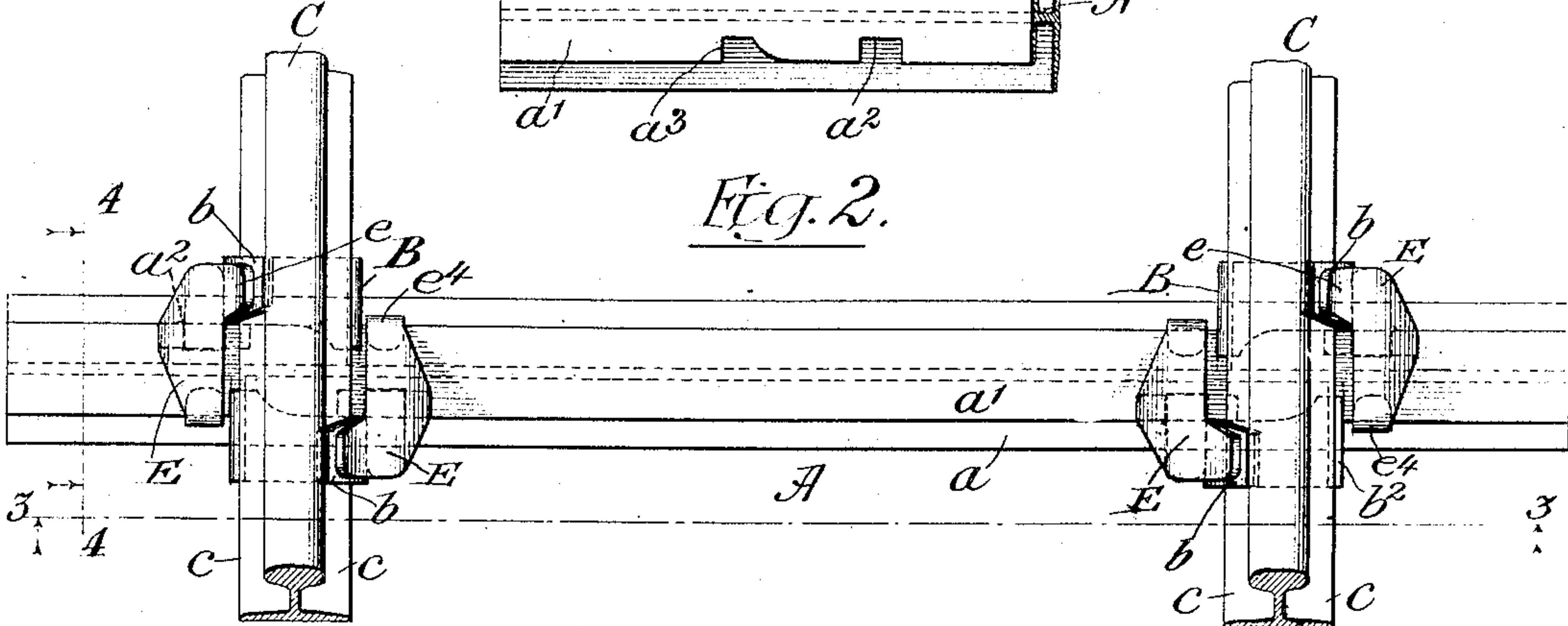


Fig. 3.

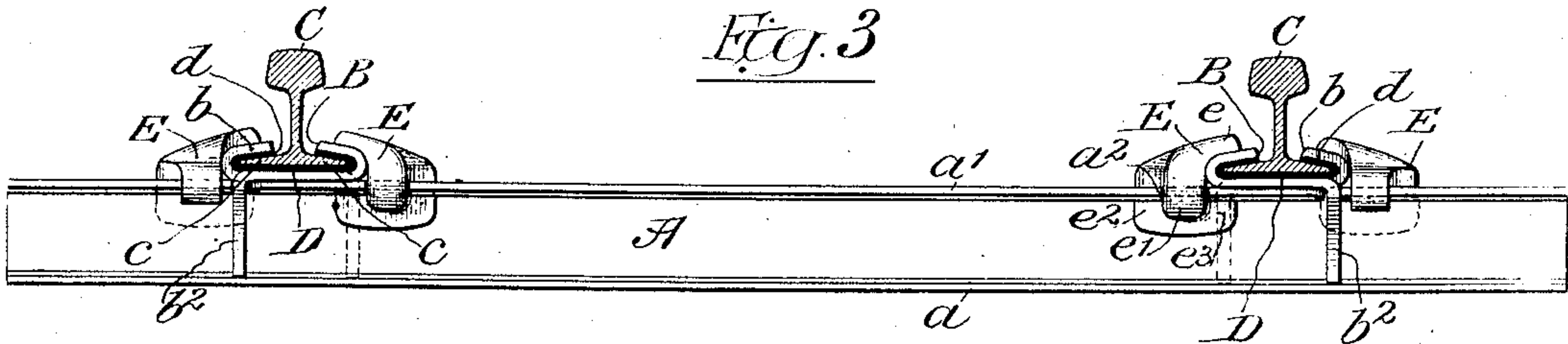


Fig. 4.

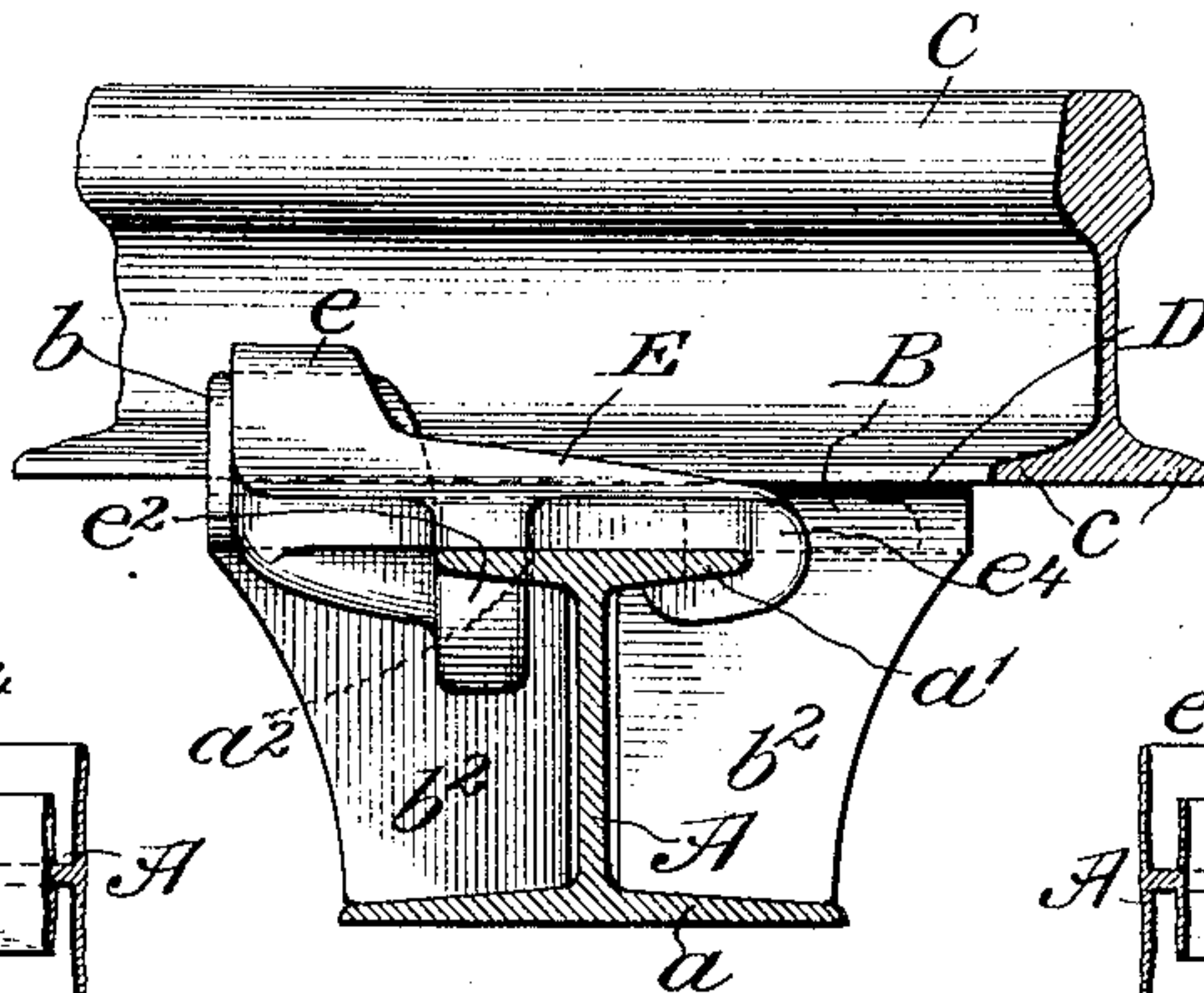


Fig. 5.

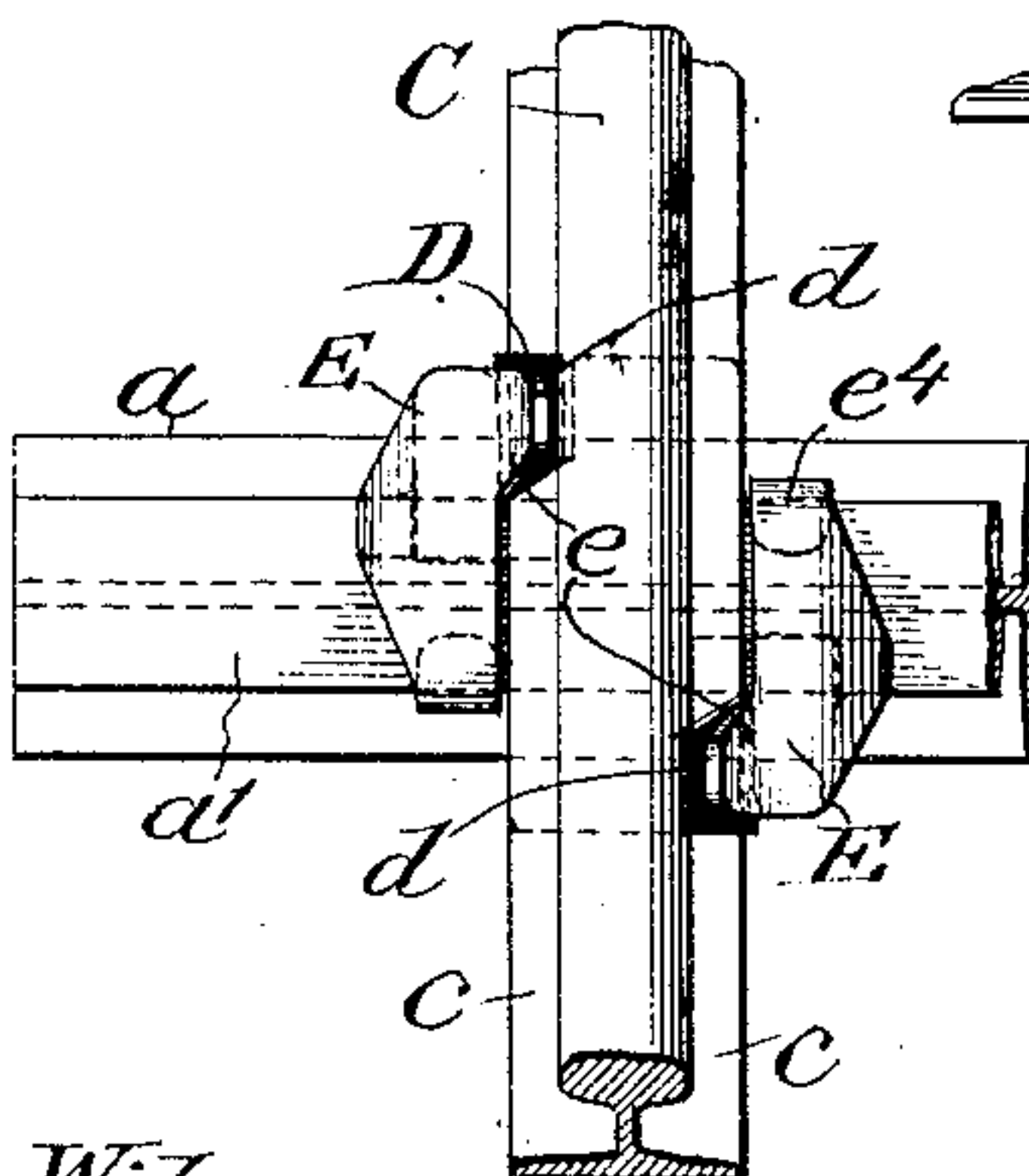


Fig. 7.

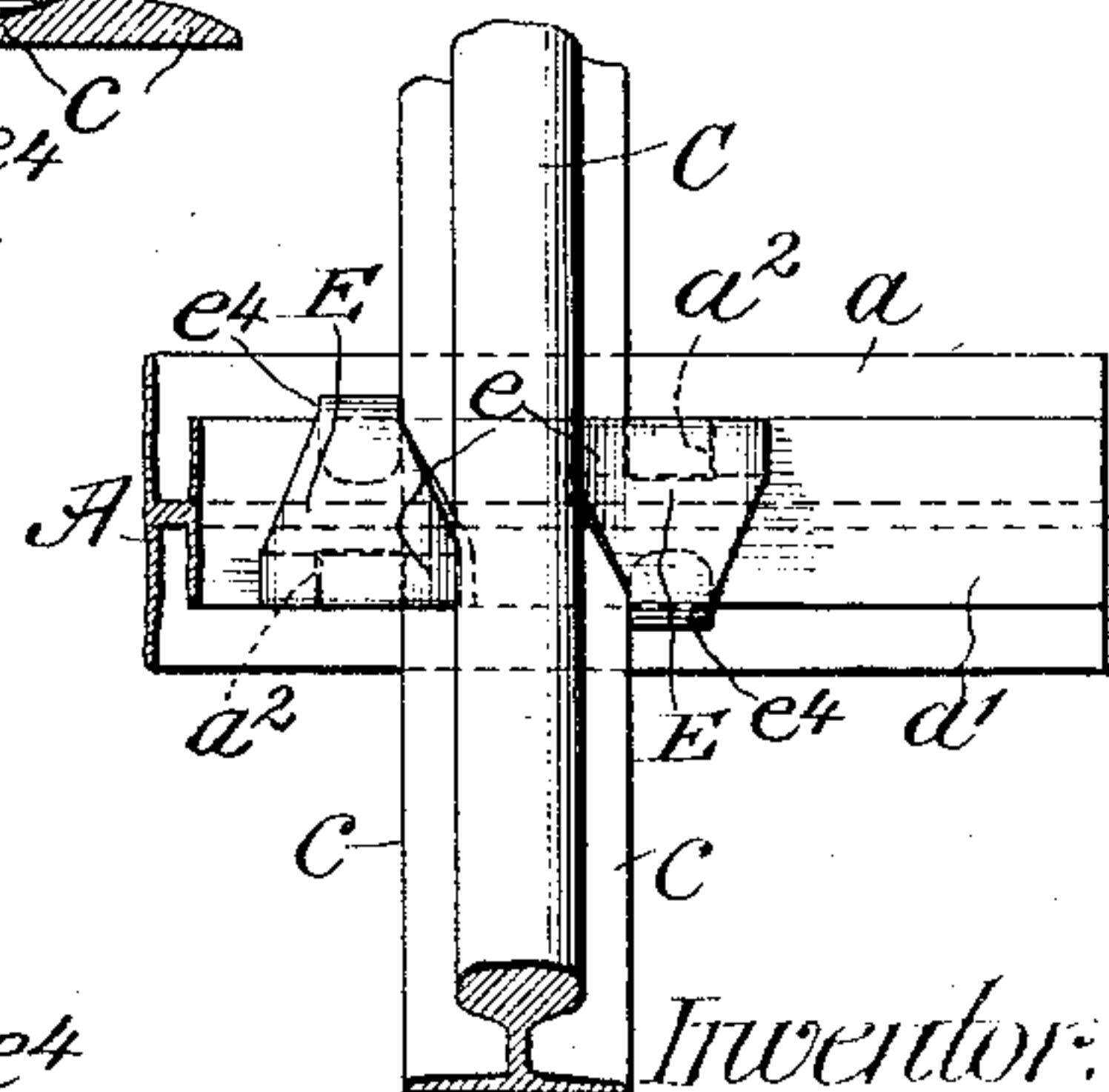
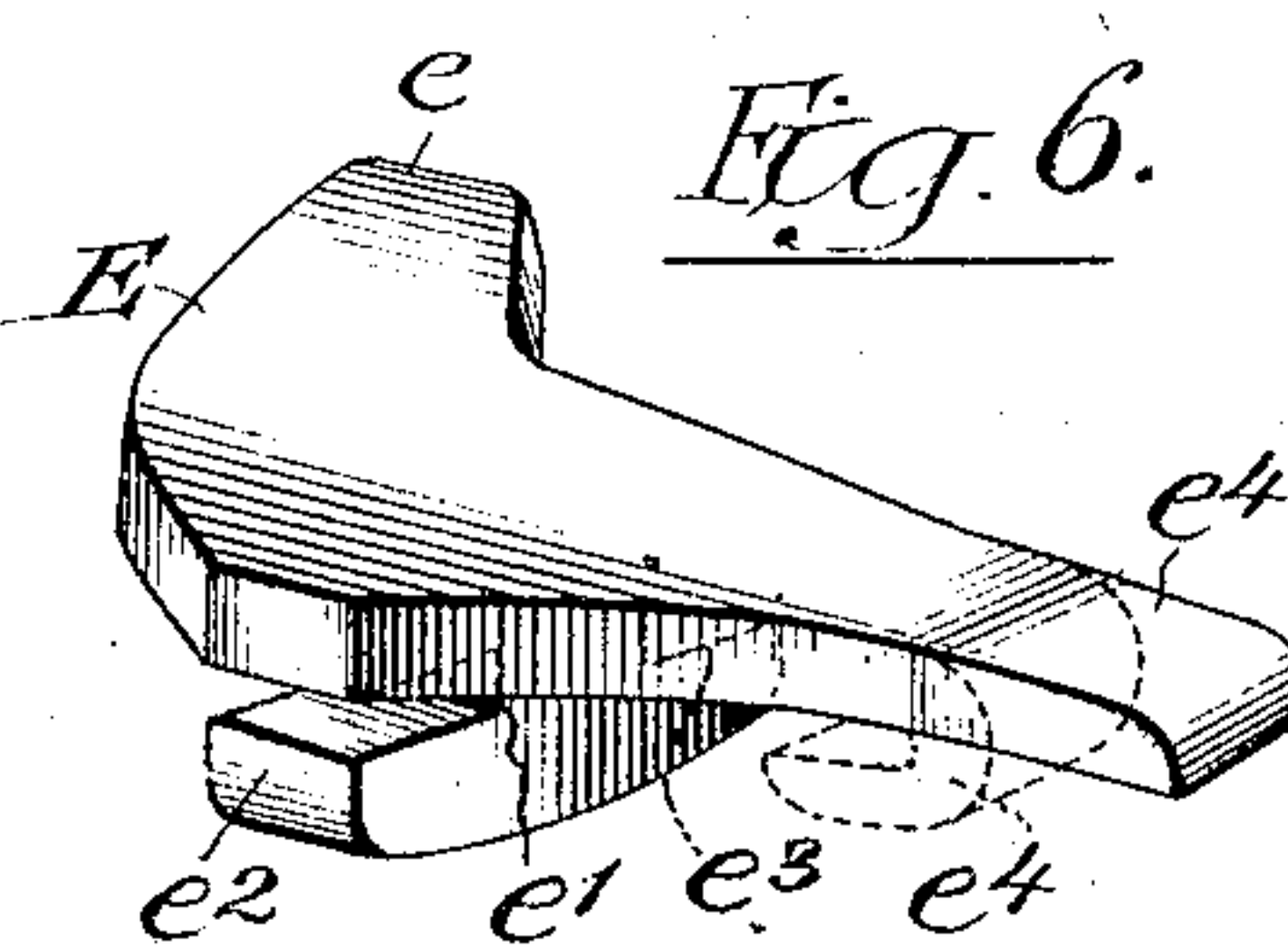


Fig. 6.



Witnesses:-

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# UNITED STATES PATENT OFFICE.

ALBERT J. HARMS, OF VICTORIA, ILLINOIS.

## SUPPORT FOR RAILWAY-RAILS.

No. 858,388.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed November 14, 1906. Serial No. 343,461.

*To all whom it may concern:*

Be it known that I, ALBERT J. HARMS, a citizen of the United States, residing at Victoria, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Supports for Railway-Rails, of which I declare the following to be an exact, full, and clear description, reference being had to the accompanying drawings, forming part of this specification.

10 This invention has for its object to provide an improved construction of metallic support for railway rails, the main purpose of the invention being to provide a simple and effective means for holding the rails in secure position upon the tie.

15 The invention consists in the features of improvements hereinafter described, illustrated in the accompanying drawings and particularly pointed out in the claims at the end of this specification.

Figure 1 is a plan view showing a portion of the metallic tie for use in my improved invention. Fig. 2 is a plan view of the tie, the rails and parts for holding the rails in position upon the tie. Fig. 3 is a view in vertical section on line 3—3 of Fig. 2. Fig. 4 is an enlarged view in vertical section on line 4—4 of Fig. 2. Fig. 5 is a plan view showing a form of the invention in which the metallic tie plates shown in the preceding figure are omitted but upon which an insulating sheet or plate is employed. Fig. 6 is a detail perspective view of one of my improved clamp plates. Fig. 7 is a plan view showing a form of the invention in which oppositely disposed retaining plates are employed for directly engaging the base flanges of the rail.

In the accompanying drawings A designates the cross tie that is formed by the broad base flanges  $a$  and with the head flanges  $a'$ . Each of the head flanges  $a'$  is formed with a slot  $a^2$  the purpose of which will presently appear, and when tie plates of the form hereinafter described are used in carrying out the present invention, the head flanges  $a'$  of the cross-tie will also be formed with notches  $a^3$ .

In the embodiment of the invention shown in Figs. 1 to 4 of the drawings there is mounted between each of the rails C and the cross tie A a metallic tie plate B that rests upon the head of the cross tie and has diagonally disposed and inwardly turned ears or flanges  $b$  that overlap the base flanges  $c$  of the rail C. As shown also a plate or sheet of indurated fiber D is interposed between the tie plate B and the base of the rail C and this sheet of indurated fiber D has ears or flanges  $d$  corresponding to the flanges  $b$  of the tie plate B. The form of tie plate shown in the accompanying drawing forms no part of my present invention as it is substantially the same as that described and claimed in an application filed by me in the U. S. Patent Office August 17, 1906, Serial No. 330,938. As shown each tie plate B is formed at its diagonally opposite corners with the

ears or flanges  $b$  to engage the opposite base flanges  $c$  of the rail C at opposite sides of the cross tie A, and at points opposite each of the raised flanges  $b$ , the tie plate B is formed with depending flanges  $b^2$  that preferably extend downwardly to the base flanges  $a$  of the cross tie A. The depending flanges  $b^2$  as shown in Fig. 4 sit within the notches  $a^3$  of the cross tie A and the inner portions of these flanges  $b^2$  extend close to the web of the cross tie and engage with the head flanges  $a'$  of the cross tie. The sheet of indurated fiber D which sits upon the tie plate B has ears corresponding to the flanges  $b$  of the tie plate B and serves to insulate the tie plate from the rail C. The parts as thus far defined are fully set forth in my above mentioned application, Serial No. 330,938 and it will be understood that when the rails are to be placed upon the cross ties, a tie plate B with a sheet of indurated fiber thereon will be placed above the cross tie A, the ears  $b$  of the tie plate being so disposed that the base of the rail C may pass between these ears  $b$  after which the plate B will be turned to the position shown in Fig. 2 of the drawings so that the ears or flanges  $b$  of the tie plate shall interlock with the base flanges  $c$  of the rail C while the depending flanges  $b^2$  of the tie plate enter the notches  $a^3$  of the cross tie A and interlock therewith. In order to hold the tie plate and the rails in secure position upon the cross tie, I have devised the construction of the retaining plate or clamp plate next to be described. This retaining plate or clamp plate E is preferably formed of malleable or like metal that may be bent and will not readily fracture. The clamp plates E will preferably be used in pairs as illustrated in the drawing. Each of the retaining plates E is shown as comprising a body portion having an upwardly turned flange  $e$  adapted to extend over the corresponding base flange  $c$  of the rail C and to extend also over the flange  $b$  of the tie plate B when such tie plate is employed. Each retaining plate E is also formed upon its under side with a T-shaped projection, the contracted portion  $e'$  of which is adapted to enter one of the slots  $a^2$  in the corresponding head flange  $a'$  of the cross tie A and from these contracted portions  $e'$  project laterally the lugs or flanges  $e^2$  and  $e^3$  that will sit beneath the portions of the head flanges  $a'$  at each side of the slot  $a^2$  of the cross tie A. Each retaining plate is also formed with an extended end portion  $e^4$  adapted to be reverted as indicated by the dotted line in Fig. 6 and when so reverted to engage the head flange  $a'$  of the cross tie A. Referring still to the construction shown in Figs. 1 to 4 of the drawing it will be seen that after the tie plate B and sheet of indurated fiber D have been set in position with respect to the cross tie A and the rail C one of the retaining plates E will be slipped in place so that its contracted portion  $e'$  shall enter a slot  $a^2$  of the cross tie A while the lugs or projections  $e^2$  and  $e^3$  sit beneath the head  $a'$  of the cross tie. The extended end  $e^4$  of the retaining plate E will then be bent down-



wardly from the position shown in full lines to the position shown by dotted lines in Fig. 6 and when thus bent downwardly will pass beneath and securely engage the head flange  $a'$  of the cross tie. It will thus be seen that the retaining plate E will effectively serve to hold the parts in the position shown in Figs. 2, 3 and 4 of the drawings.

It is not essential to my present invention that the tie plate B should be employed nor that the sheet of indurated fiber D should be used. In Fig. 5 of the drawing I have shown the retaining plate E used for holding the rail in position and in this figure of the drawing a sheet of indurated fiber D is shown as interposed between the base of the rail C and head of the cross tie A and the ears or flanges  $d$  of this sheet of indurated fiber extend between the ears  $e$  of the retaining plates E and the base flanges  $c$  of the rail.

In Fig. 7 of the drawing my invention is shown as used without either the tie plates B or the sheet of indurated fiber D, and when thus used the retaining plates E directly engage with the base flanges of the rail C. When the plates B are omitted the slots  $a^3$  may also be omitted from the head of the cross tie A.

It will be understood that the precise details of construction set out may be varied without departure from the spirit of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A support for railway rails comprising a cross tie having a flanged and notched head in combination with a retaining plate having a depending portion to enter the notched head of the cross tie, said retaining plate having also at one end a flange to engage the base flange of the rail and having at its opposite end an extension adapted to be bent downwardly to engage the flange head of the cross tie.

2. A support for railway rails comprising a cross tie having a notched and flanged head in combination with a

retaining plate having a depending portion adapted to enter the notch in the head of the cross tie, said depending portion of the retaining plate having a part adapted to project beneath the head of the cross tie adjacent said notch, said retaining plate having at one end a flange to engage the base flange of the rail and having at its opposite end an extension adapted to be bent downwardly into engagement with the flanged head of the cross tie.

3. A support for railway rails comprising a cross tie having a flanged and notched head in combination with a retaining plate having at one end a raised flange to engage the base flange of the rail and having at its opposite end an extension adapted to be bent downwardly and beneath the flanged head of the cross tie, said retaining plate having also a depending part adapted to enter a notch in the head of the cross tie to hold the retaining plate against lateral movement.

4. A support for railway rails comprising a cross tie having a flanged and notched head in combination with a retaining plate provided at one end with a raised flange to engage the base flange of the rail and having at its opposite end an extension adapted to be bent downwardly to engage the flanged head of the cross tie, said retaining plate having a depending part to enter the notched head of the cross tie and to project beneath and interlock with said head of the cross tie.

5. A retaining plate of the character described comprising a body portion adapted to extend across the top of the cross tie, said retaining plate having at one end a raised flange to engage the base flange of the rail and having at its opposite end an extension adapted to be bent downwardly to engage the head flange of the cross tie, said retaining plate being provided with a depending portion to engage the head flange of the cross tie.

6. A retaining plate of the character described having a raised flange to extend over the base flange of the rail and having an extended portion adapted to engage the head of the cross tie, said retaining plate having also a depending portion laterally extended to interlock with the flanged head of the cross tie.

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Witnesses:

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