

EDWARD WILLIAMS.

Improvement in Railroad-Rails.

No. 115,142.

Patented May 23, 1871.

FIG. I.

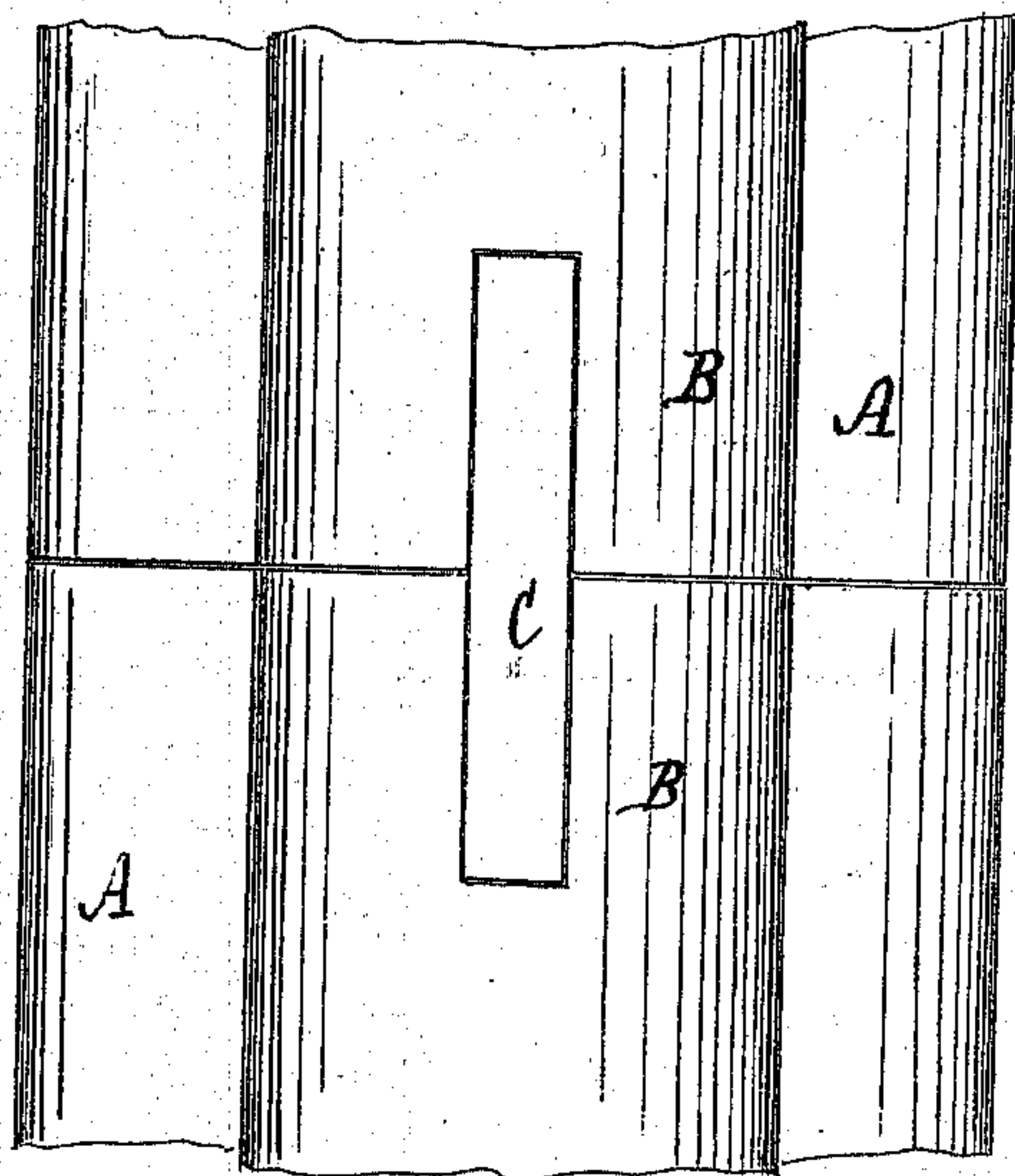


FIG. II.

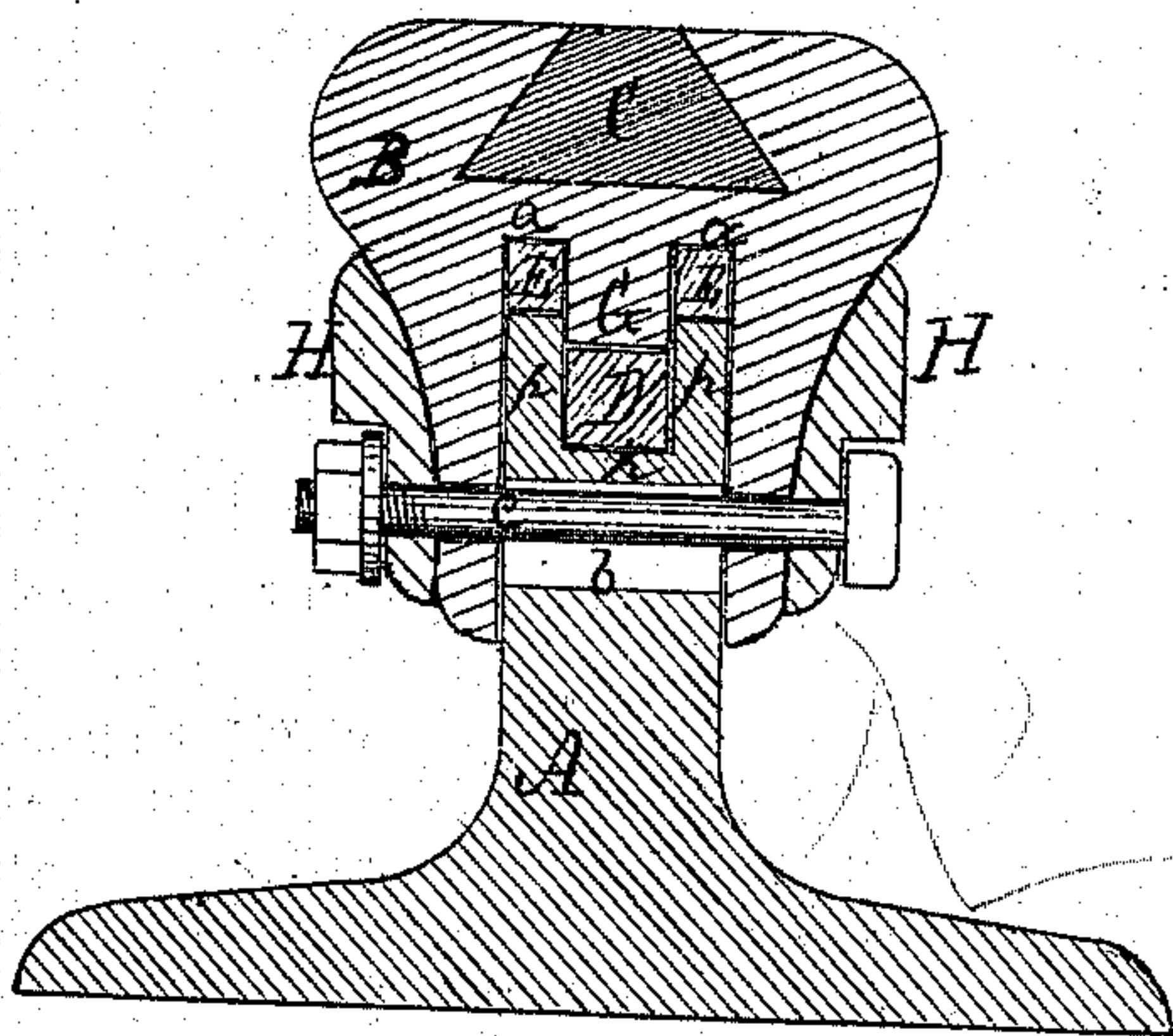
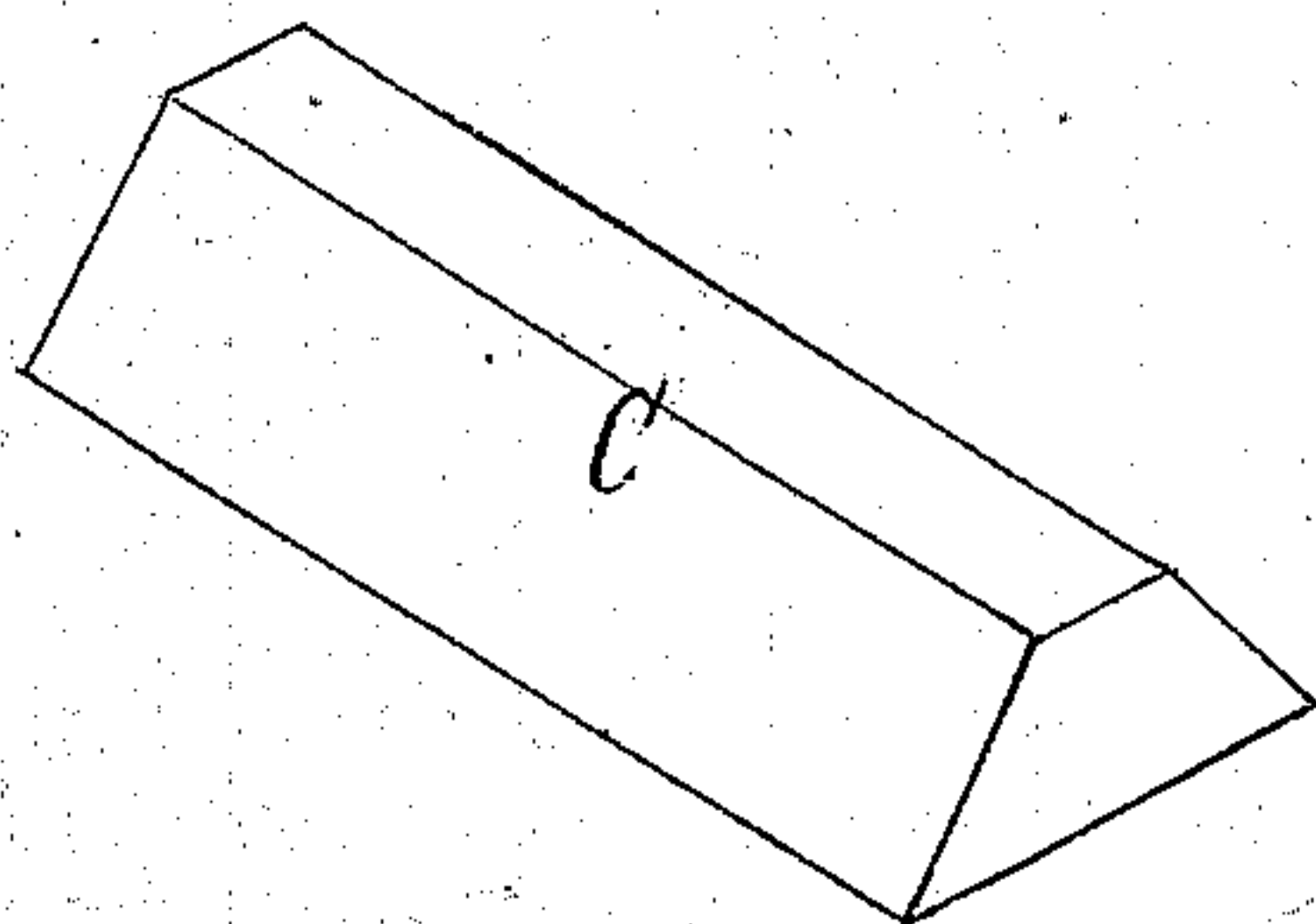


FIG. III.



Witnesses.

R. F. Osgood

E. Williams

Inventor.

Edward Williams,
By J. Fraser & Co.,
Attys.

UNITED STATES PATENT OFFICE.

EDWARD WILLIAMS, OF BATAVIA, NEW YORK.

IMPROVEMENT IN RAILROAD RAILS.

Specification forming part of Letters Patent No. 115,142, dated May 23, 1871.

To all whom it may concern:

Be it known that I, EDWARD WILLIAMS, of Batavia, in the county of Genesee and State of New York, have invented a certain new and useful Improvement in Railroad Rails, of which the following is a specification:

Nature of the Invention.

This invention consists in the combination, construction, and arrangements of certain parts, all of which will hereinafter more fully be set forth.

General Description.

In the drawing, Figure 1 is a plan, Fig. 2 a cross-section, and Fig. 3 a perspective, view of the joint-piece.

A represents the base of the rail, and B the head. These parts are united by bolts *c c*, which pass through the depending lips of the former and slots *b b* of the latter. This allows a vertical movement of the head upon the base as the wheels pass over. The interior of the head is rolled with a central longitudinal tongue, *G*, and a groove, *a*, on each side of it. The top of the base is also rolled with a central groove, *K*, and side tongues *p p*. The tongues and grooves of the two parts correspond and intermatch, and fit together as pressure is applied on top. A packing, *D*, of rubber or equivalent material, rests in groove *K* under tongue *G*, and similar packings *E E* in grooves *a a* above tongues *p p*. I thus not only have a central layer of rubber, but also side ones, which give a wide elastic bearing to the head of the rail. These packings, it will be noticed, are separate and detached, and the side ones are situated above the center one. The feature of novelty in this part of my invention is the special formation of the contact surfaces between the head and base, consisting of the tongues and grooves *G K* and *a a p p*, whereby the packing may be placed therein in separate layers, forming a broad elastic surface.

I am aware that rubber packing has before been used, but in a single body, and simply lying between the flat top of the base and corresponding flat surface of the groove in the head.

By the use of separate and disconnected

packings a more uniform and elastic tread is produced, as, when the pressure comes irregularly on one side, the tendency is not to roll or twist the packing over, as would be the case if in a single piece, but to press down vertically. This arrangement also prevents the pinching and cutting of the packing that occur by the "twist" which occurs if used in a single body.

Another important advantage is that the tongues and grooves, by intermatching and fitting together, brace the rail more strongly against lateral or twisting strain. This is especially true when the contact surfaces are made broad, as in my improved form.

In order to employ a continuous packing at the joints of the rails, and prevent cutting of the packing at that point, I employ an improved joint-piece, connecting the ends of the rails, as follows: In the rolling of the rails I split or cut the ends, and insert, for a suitable length, a plug, which, in cross-section, is in dovetail or wedging form, but flat both on the upper and under surfaces, the latter being the widest. In the act of rolling the iron of the rail closes around the plug, and when complete the plug is drawn out, thus leaving a perfect socket of dovetail form.

In laying the rails in place the joint-piece *C* is placed in the contiguous sockets, thus forming a complete joint. The tread upon the rail causes the metal to close more and more closely around the joint-piece, thus always keeping it tight, and preventing any cutting of the packing, which would be caused by leaving the ends of the rails loose. *H H* are fish-plates, which serve to strengthen the top part or cap of the rail, and, at the same time, serve as washers for the longitudinal bolt *c*.

I am aware that joint-pieces bridging the ends of the rails have before been known, but not of dovetail form, embedded in the surface, so as to be self-tightening. I am also aware that steel strips of dovetail form have been rolled into the tops of the rails to take the tread, but not forming joint-pieces.

I simply claim a joint-piece constructed and applied in this manner, and combined with the interposed packing, as before described.

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

The head B, formed with the depending lips, tongue G, and grooves *a a*, as described, arranged, and operating in connection with the base A, formed with the grooves K and tongues *p p*, with the separate packings D E E interposed within the grooves, as shown, the head B, with its depending lips, being secured to the base A by the horizontal bolt *c* passing through the depending lips, base A, fish-plates H H, and playing within the horizontal slot

b, the whole constructed substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EDWARD WILLIAMS.

Witnesses:

R. F. OSGOOD,

G. WILLM. MIATT.