

GEORGE W. N. YOST.

Improvement in Railway Rails.

No. 125,426.

Patented April 9, 1872.

Fig. 1.

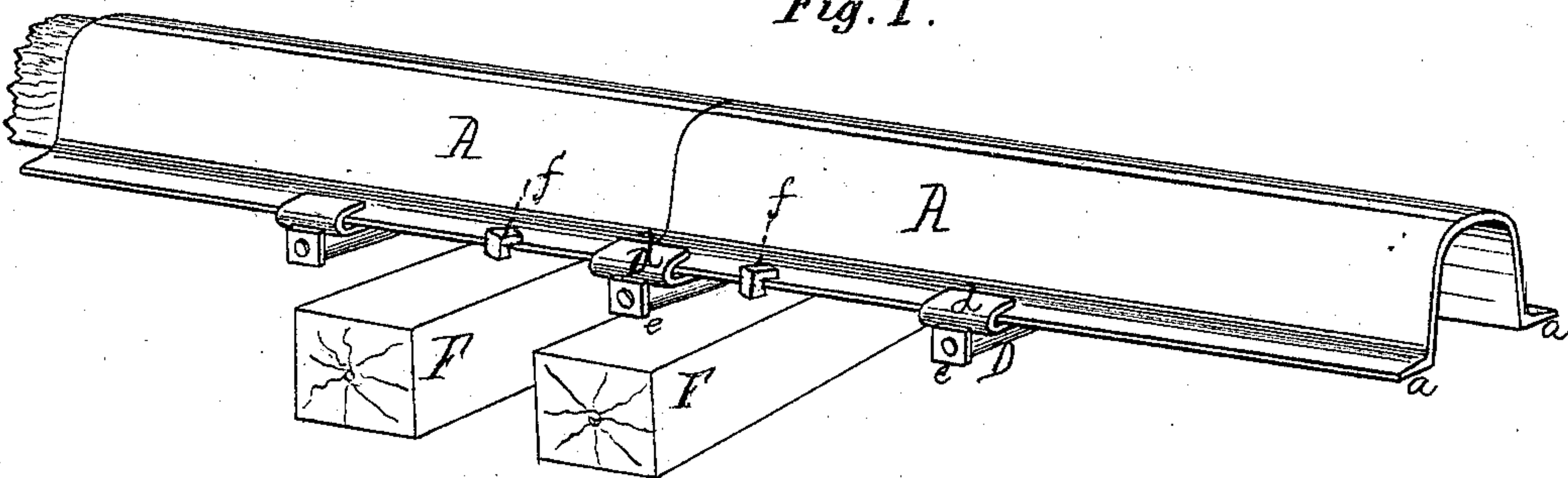


Fig. 2.

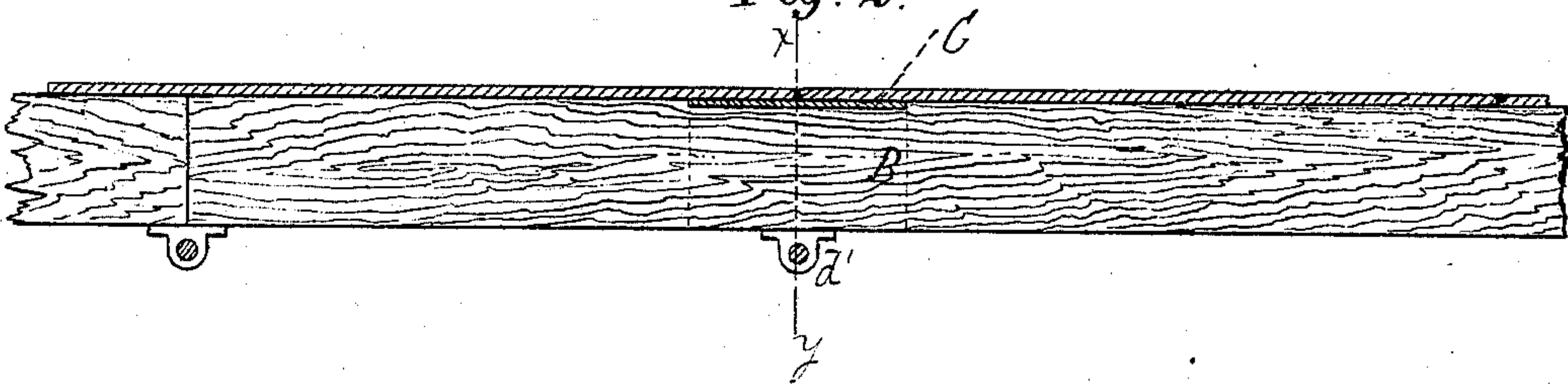
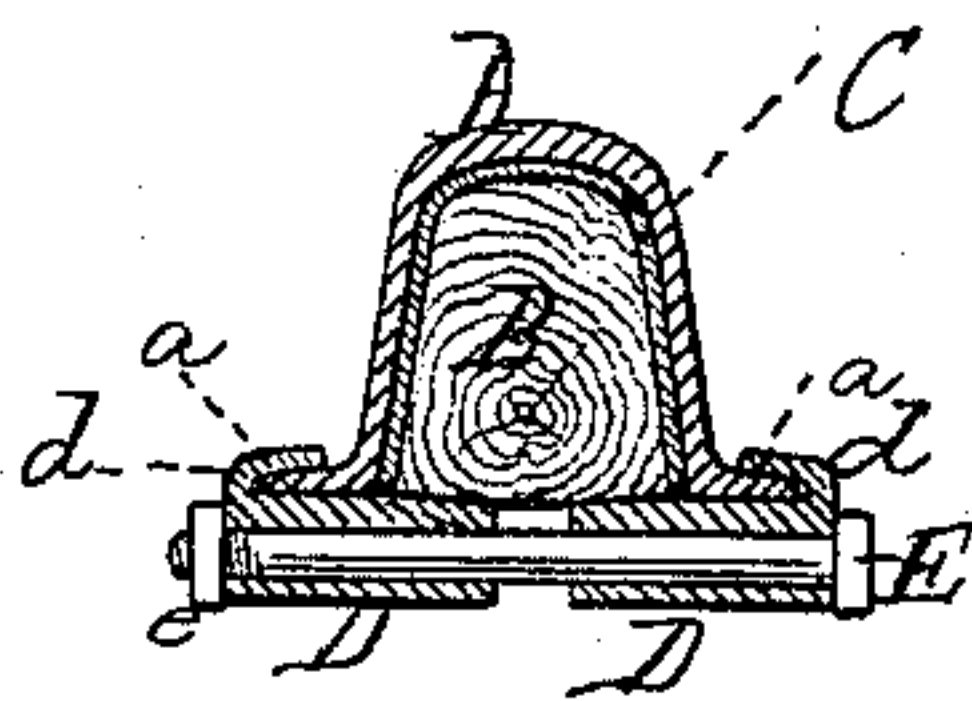


Fig. 3.



Witnesses

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2 Sheets--Sheet 2.

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Fig. 4.

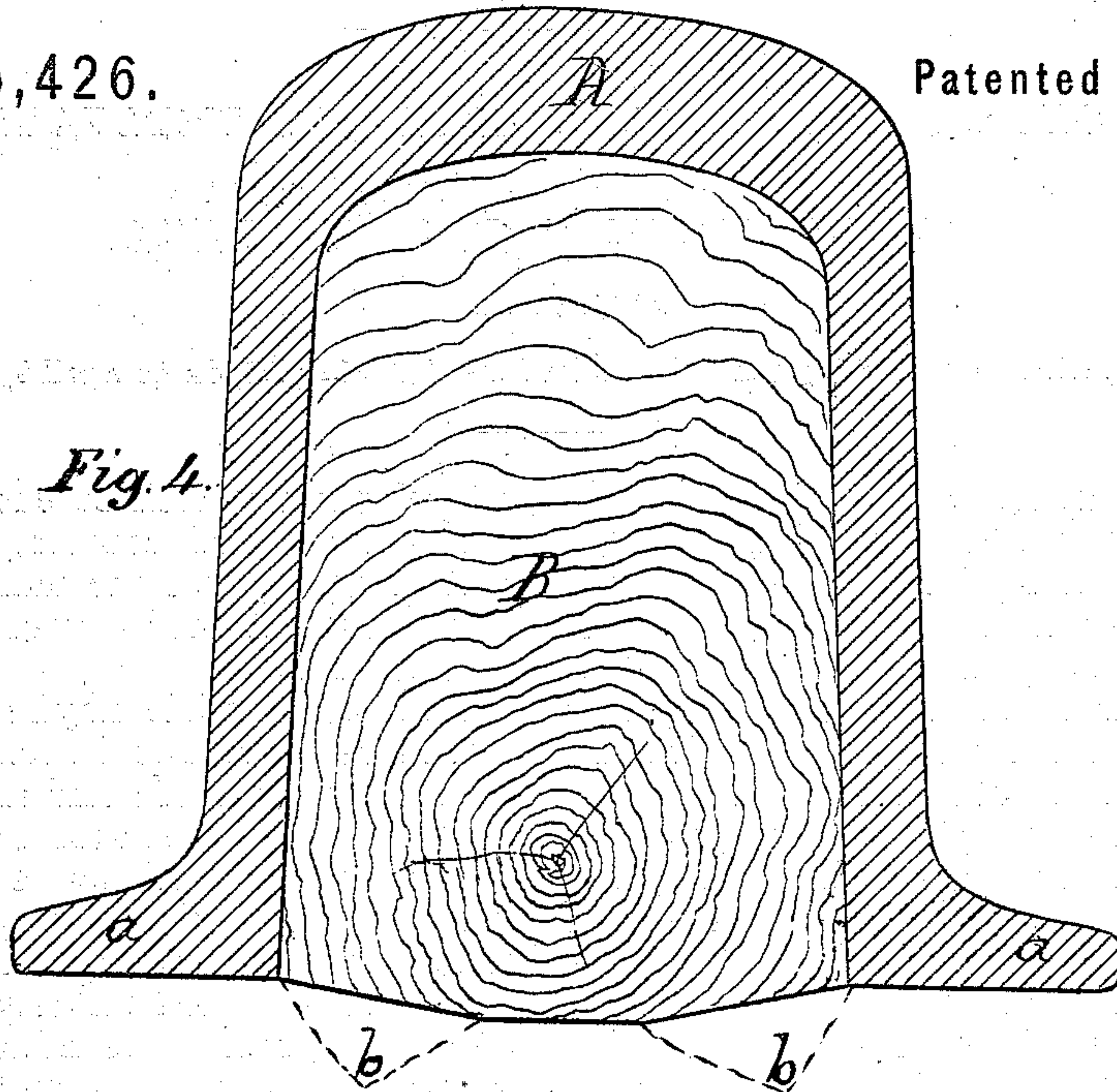
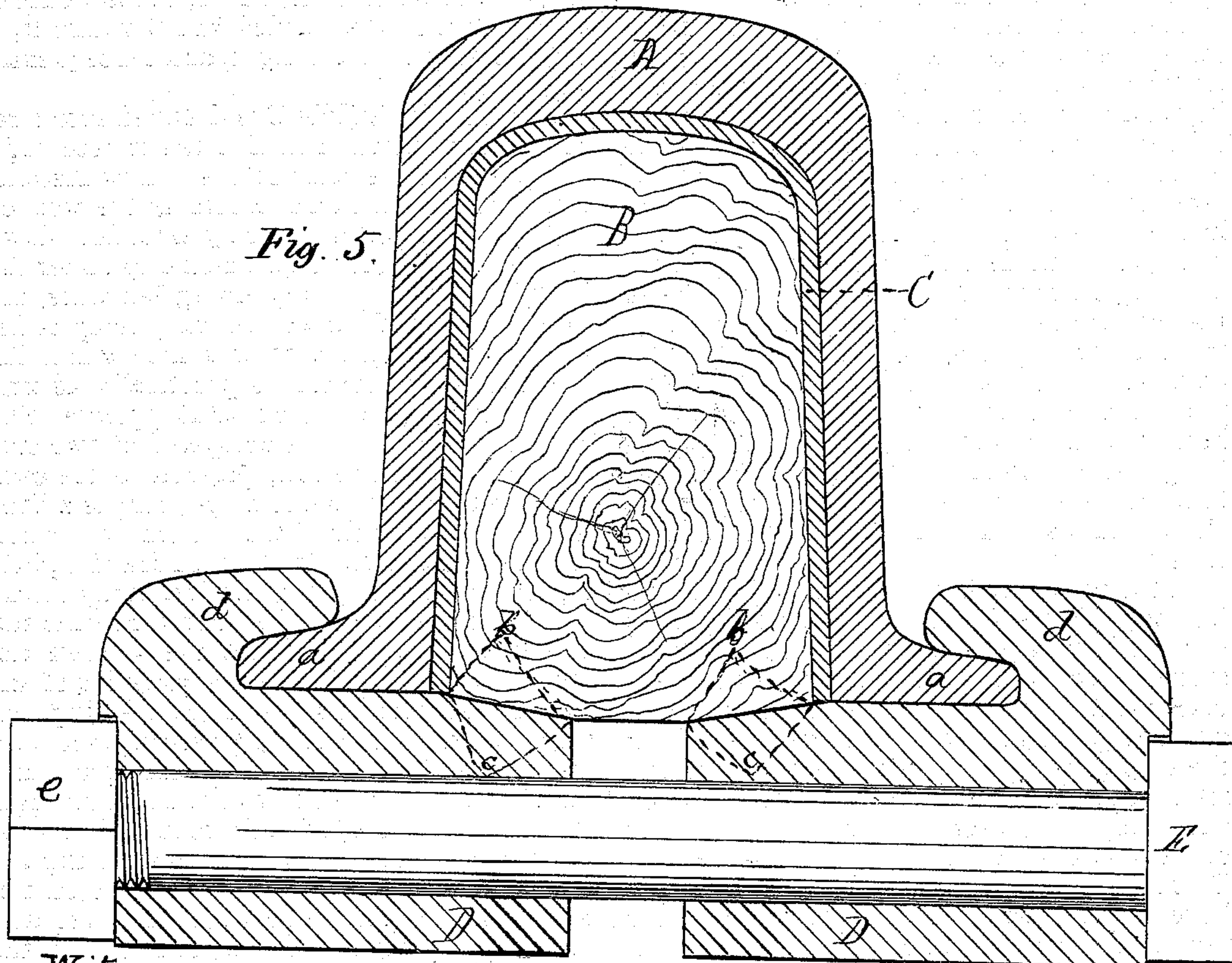


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. N. YOST, OF CORRY, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY RAILS.

Specification forming part of Letters Patent No. 125,426, dated April 9, 1872.

To all whom it may concern:

Be it known that I, GEORGE W. N. YOST, of Corry, county of Erie, State of Pennsylvania, have invented certain new and Improved Combined Elastic Railway Rail, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 represents a perspective view; Fig. 2 a longitudinal vertical sectional view; Fig. 3 a transverse sectional view; Fig. 4 an end view; and Fig. 5 an enlarged full-sized transverse vertical sectional view.

Similar letters of reference denote corresponding parts in all the figures.

The invention consists in combining a strong continuous wooden rail with, and nearly inclosed by, a hollow metallic rail, whose metallic flanges or feet are spiked directly to a series of cross-ties or sleepers; in combining a metallic saddle with the wooden and metallic rails, arranged over the wooden rail and within the hollow metallic rail at each joint of such metallic rail, and extending to and resting upon the coupling-stirrup; and in combining a beveled bottom surface of a wooden rail arranged within a hollow metallic rail with a correspondingly beveled inner top surface of a coupling-stirrup; in such manner as to extend the middle of the bottom of a wooden rail slightly below the flanges or feet of the inclosing metallic rail, so that the metallic rail shall bear and rest on the wooden rail, and not entirely on such flanges or feet.

In the drawing, A indicates a hollow metallic rail; B is a strong continuous wooden rail; C, a metallic saddle; D, a series of clamps or stirrup-blocks; E, a series of coupling screw-bolts; and F, a series of cross-ties or sleepers. *a* is a horizontal longitudinal flange or foot on the bottom of each fork or leg of the hollow metallic rail A; *b*, a beveled surface, beveled outwardly and upwardly from near the middle on each side of the bottom of the wooden rail B. *c* is a beveled surface corresponding to the beveled surface *b* of the wooden rail B on the top of the inner part of each clamp or stirrup-block D. *d* indicates a lip, or catch, or hook, projecting upwardly and over, and inwardly on the outer end of each stirrup-block D. *d'* is a sleeve on, or a hole through, the bottom part

of each stirrup-block D. *e* is a screw-nut on the screw end of each coupling-bolt E; and *f* is a spike lapping onto the flange *a* of the hollow metallic rail A, and driven into each cross-tie or sleeper F.

The wooden rail B may be of any sound wood, but is better of oak, hickory, maple, or other hard wood; and the timber, if seasoned, may be in its otherwise natural state, but is better if "ironized," or otherwise prepared, so as to prevent swelling, shrinking, or rot. The top is rounded, and the top and sides dressed and smoothed so as to fit closely within the hollow metallic rail A. The hollow metallic rail A may be of iron or steel, and in consequence of the support of the wooden rail B within it, it may be very thin and light, and consequently very cheap.

The metallic saddle C is dropped into a recess in the wooden rail B fitted to receive it, and prevents the ends of the hollow metallic rail A at the joint from brooming the wooden rail under and within; and by extending down and resting on the coupling-stirrup under the joint, it makes a firm, unyielding fish-plate, and thus the joint of the wooden rail, being under and within a solid part of a hollow metallic rail, the combined rail is practically as firm and continuous as if made without joints. The coupling-stirrup D E is composed of two stirrup-blocks, D, and a coupling-bolt, E, the combined length of which stirrup-blocks is a little less than the width of the bottom of the hollow metallic rail A, so that when drawn tightly together by the coupling-bolt the stirrup-blocks will press the sides of the hollow metallic rail closely and solidly against the wooden rail between; and the beveled surface *b c* of the wooden rail and stirrup-blocks, meeting conversely, makes the coupling-stirrup act as a wedge, and forces the wooden rail tightly and solidly up into the hollow of the metallic rail. The wooden rail B, of itself, is intended to be stout enough to support the heaviest engine; but, covered with the hollow iron or steel rail A, the combined rail is both lighter and stouter than any railway rail in use, or known in the trade. And not only is it lighter and stouter, but it is cheaper than any other in use. Besides, wood being quite elastic—more elastic than any other substance of the same strength

and stiffness—and the middle of the bottom of the wooden rail B extending slightly below the hollow metallic rail A and resting on the wooden sleepers F, so that the metallic rail bears and rests on the wooden rail, and the metallic rail being so light, the combined rail is almost as elastic as an entirely wooden rail—a great advantage and saving in the lamination of wheels, axles, and general rolling stock, and in the ease and stillness of riding.

Another and crowning benefit of the invention is its safety. The hollow U-form shape of the metallic rail A gives the greatest possible bearing strength to any given weight of rail, and, of itself, is not easily broken; and the stout, stiff, elastic wooden rail cushion or packing B under and within it, renders the breaking of the combined rail almost impossible. But if the hollow metallic part of the rail should break, it cannot get displaced; its very shape and nature will keep it over and on the wooden part; or even if a piece so break as to be thrown off, the stiff, stout wooden part still remains to keep the track intact and cars and trains in place till trackmen find and repair the damage.

Having now described my invention, what

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

1. A continuous wooden rail, fitting within and inclosed by a hollow arched or U-shaped metallic rail, provided with feet or flanges adapted to be spiked directly to the ties or sleepers, substantially as described.

2. The combination, with the wooden rail and the hollow U-shaped rail, as described, of an arched or U-shape saddle, located at the joints of the metallic rail and extending down to the bottom of the wooden rail and resting upon the stirrup or clamp, as described.

3. The combination of the continuous wooden rail, the inclosing arched or U-shaped metallic rail, the U-shaped intervening saddle, and the clamp or stirrup arranged for joint operation, as described.

4. The combination of a beveled bottom surface of a wooden rail within a hollow metallic rail with a beveled top surface of a coupling-stirrup, substantially as described.

G. W. N. YOST.

Witnesses:

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