

*R.R. Rail,*

N<sup>o</sup> 23. 778,

*Patented Apr. 26, 1859*

Fig. 1.

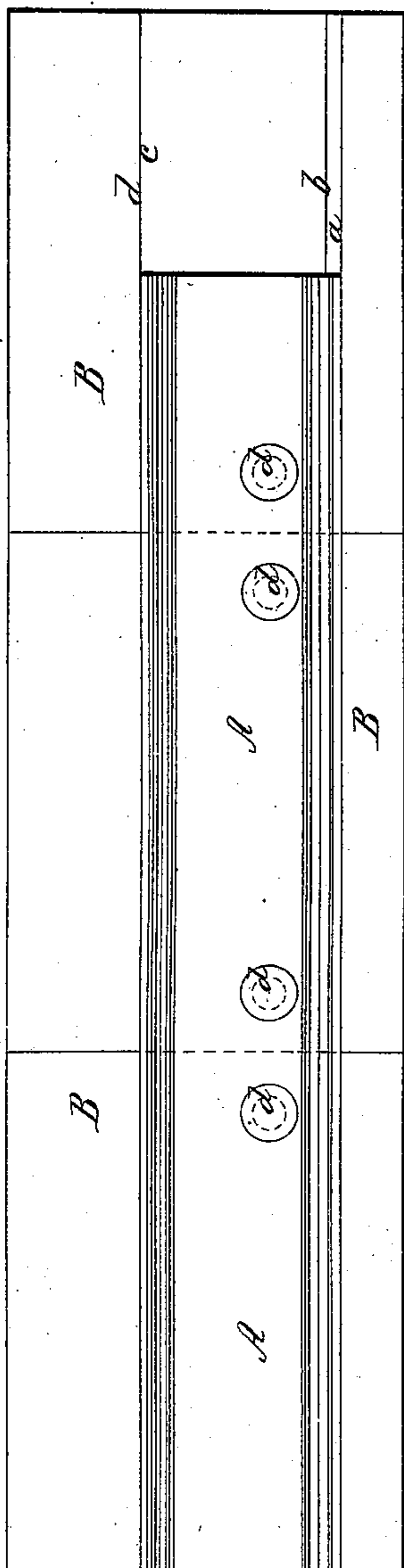


Fig. 2.

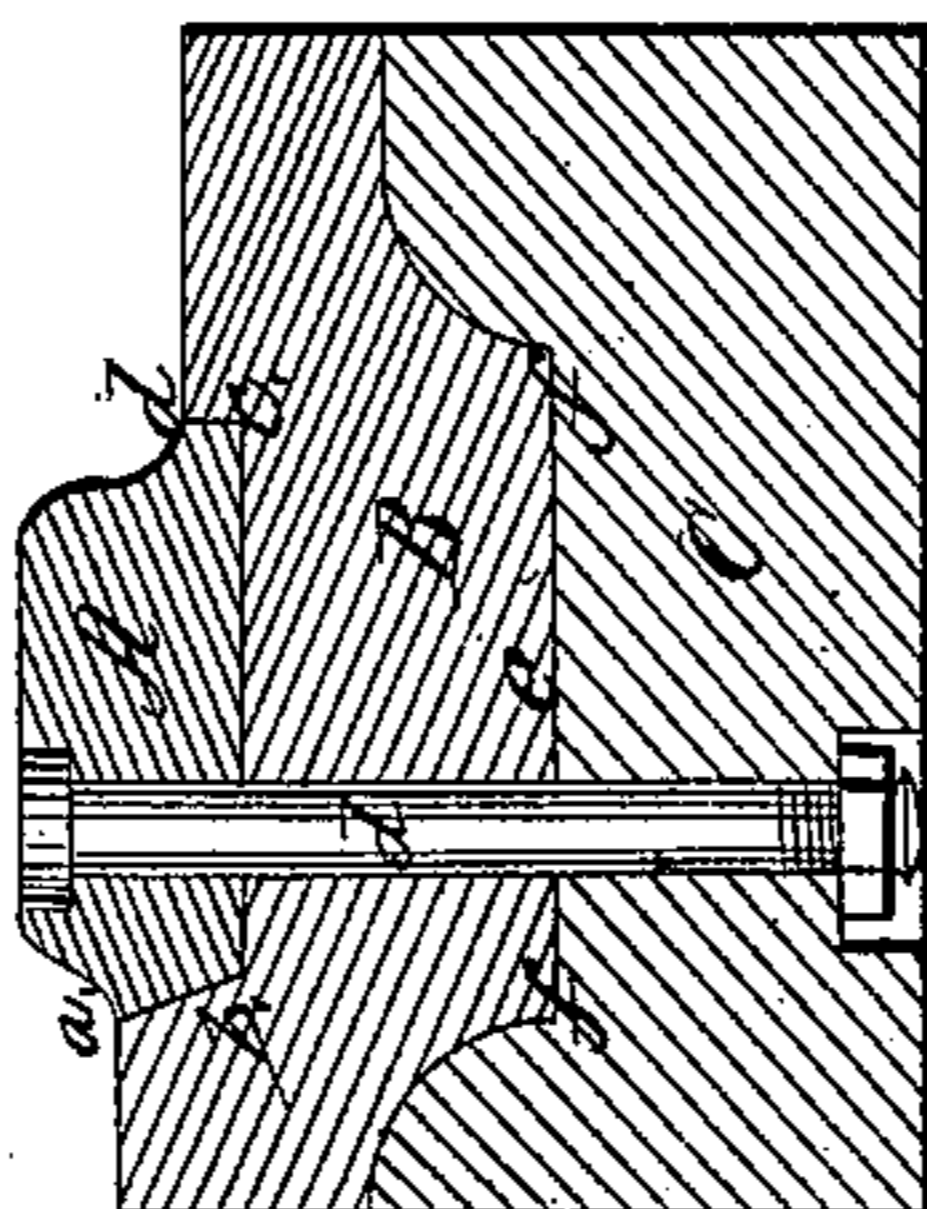
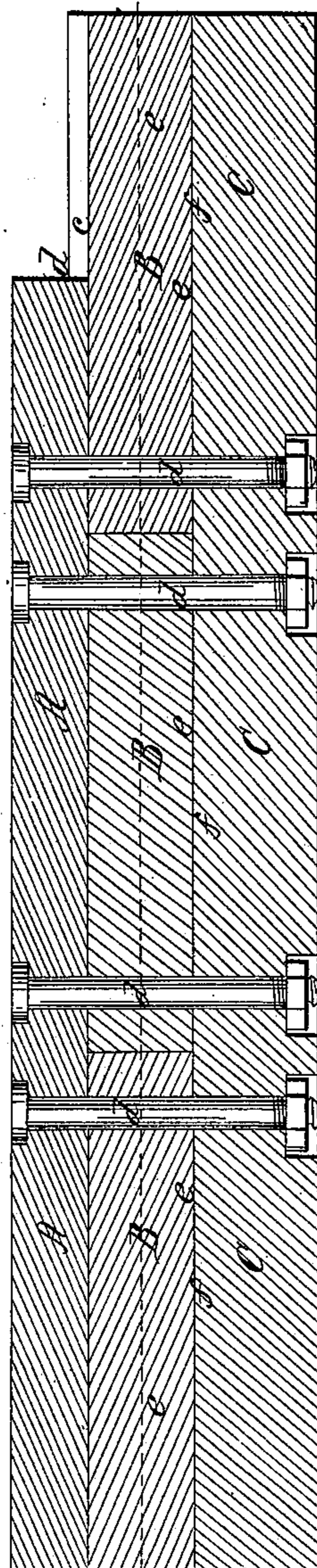


Fig. 3.



Witnesses;  
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# UNITED STATES PATENT OFFICE.

SAMUEL NICOLSON, OF BOSTON, MASSACHUSETTS.

## RAIL FOR STREET-RAILROADS.

Specification of Letters Patent No. 23,778, dated April 26, 1859.

*To all whom it may concern:*

Be it known that I, SAMUEL NICOLSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Rails for Railroads; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 denotes a top view; Fig. 2, a transverse section, and Fig. 3 a longitudinal section of a rail made in my improved manner.

I have devised my improved rail more particularly for street or what are termed "horse railroads" although I am not aware of any reason why it may not be useful for railways whose carriages are propelled by steam power.

The greatest amount of wear on the rails of street railways is in that part on which the wheels of the carriages rest and run. It is very desirable that this part should be made of wrought iron, and that the rest of the rail should be of cast metal, for in such a construction of a rail not only economy of cost, but strength may be attained to the best advantage.

In carrying out my improvement, I make the rail, in part, of a long tread band bar or strip A, of wrought iron about one inch in thickness and two and a half inches in width, it having the form in transverse section as shown in Fig. 2. This bar is to rest on or in a series of recessed cast iron bearers B, B, B, each of which may be of any desirable length and be formed in transverse section as shown in Fig. 2, viz, with a recess *a b c d*, extending from end to end of it, and conforming to the lower part of the tread band A, and so as to support it laterally by one or two shoulders *a, b, c, d*.

The cast iron bearers are to be arranged end against end or with only sufficient space between each two of them to allow of their extension, which may be engendered by ordinary atmospheric changes of temperature. When laid together or end to end and placed on a wooden stringer C, they are to receive within their grooves, the wrought iron tread band A, which is to extend from one to another of them so as to cover the joints between them or "break joints" according to

common parlance. To secure the whole together and to the timber or stringer C, a series of bolts *d, d, d*, should be carried downward through the tread band, the several parts B, B, B, and the stringer. Furthermore, each bearer B, may be formed with a tongue or extension *e*, projecting downward from it as shown in Figs. 2 and 3, and into a corresponding groove *f*, made longitudinally in the stringer, the same serving to relieve the bolts more or less from lateral pressure or shocks of the wheels.

By means of the continuous tread band and the set of continuous bearers extending entirely underneath it and applied to it as described, a rail will be formed which will admit of removal of the tread band when worn and the substitution of another or fresh tread band without rendering it necessary to discard the remainder of the rail. Besides this, it entirely dispenses with chairs as ordinarily applied and used. A rail of this kind is not intended to be supported by chairs, but to rest on a stringer touching its entire under surface.

The tread band binds all the bearers together in longitudinal directions, and they and the band mutually support each other in lateral directions. Furthermore, the grooved bearers support the tread band, so as to prevent it, in a great degree, from being spread laterally under the rolling action and downward blows of the wheels.

There are many varieties of compound rails of the T or U kind, all of which require height for what is termed the neck. They also generally rest on ties and not on a continuous bearing. My rail is compressed together as it were, or is of a flatter nature, it being wider than it is high, the wrought iron bar forming a projection above the base plate, while an extension from the latter fits into the wooden sill.

I do not claim a wrought metal rail and a set of chairs placed under it with wide spaces between them and supported on sleepers in the usual manner of constructing railways. Nor do I claim the compound T and U rails as ordinarily made, but

What I do claim is—

1. My improved rail or combination of the flat bar rail or tread band A, and the continuous metal bearing or carrier B, ap-

plied together so as to be supported by a wooden sill substantially as specified.

2. I claim making each bearer not only with a grooved upper surface, but with a  
5 projection or lip at bottom for the purpose of producing uniformity of strength in the section of the rail, and of entering a corre-

sponding groove in the stringer C, and supporting the rail and its spikes or bolts against lateral strains.

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Witnesses:

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