

(No Model.)

3 Sheets—Sheet 1.

E. H. ASHCROFT.
CONSTRUCTION OF RAILROADS.

No. 388,240

Patented Aug. 21, 1888.

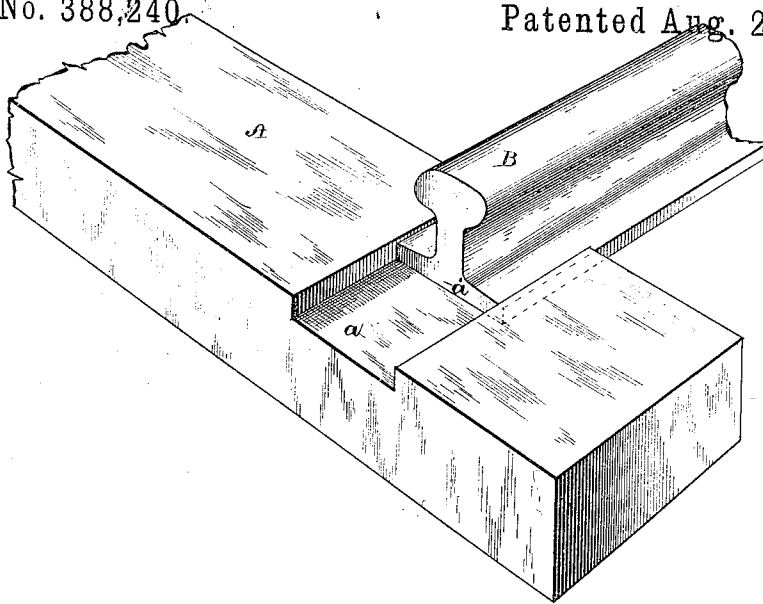


Fig. 1.

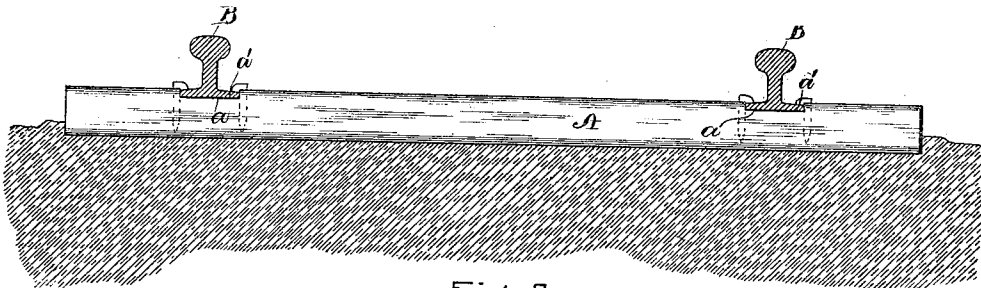


Fig. 2.

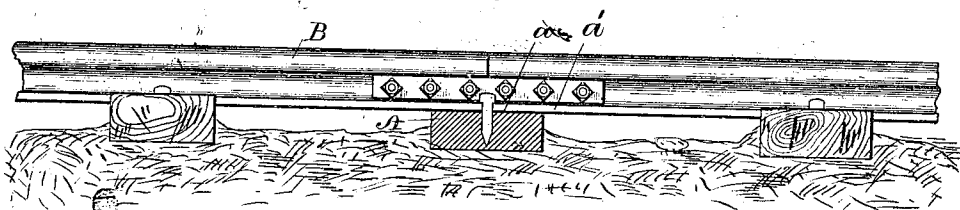


Fig. 3.

WITNESSES.

E. P. Small.
J. W. Deane.

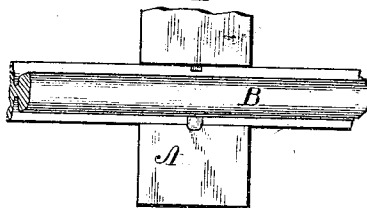


Fig. 4.

INVENTOR.

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by his atty
Charles S. Reynolds.

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3 Sheets—Sheet 2.

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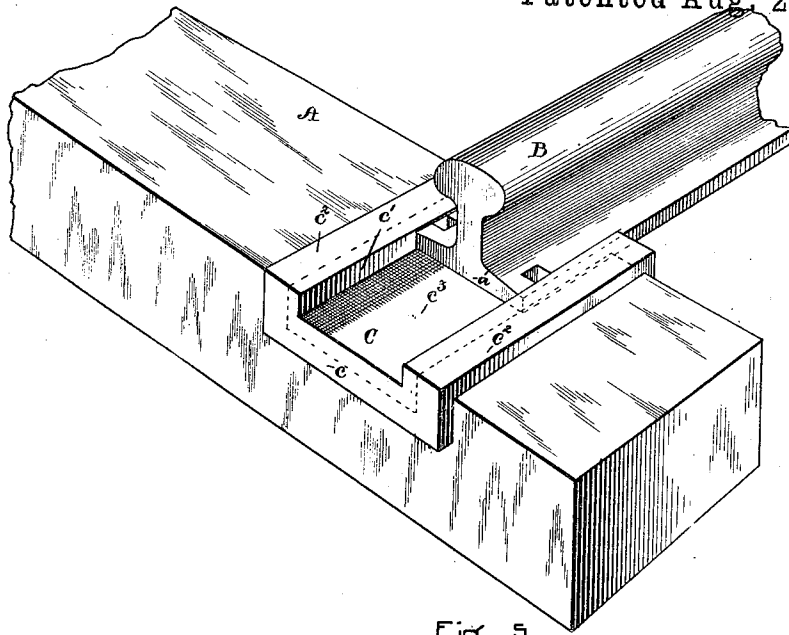


Fig. 5.

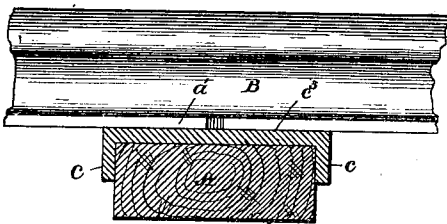


Fig. 6.

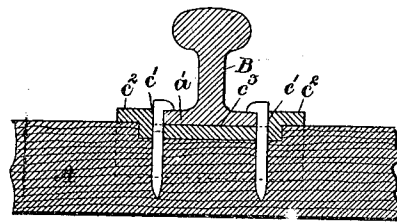


Fig. 7.

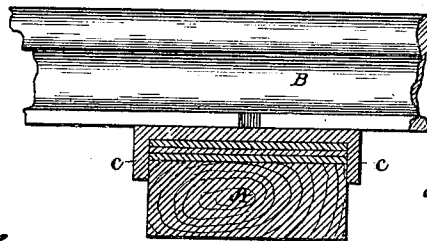


Fig. 8.

WITNESSES -

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(No Model.)

3 Sheets—Sheet 3.

E. H. ASHCROFT.

CONSTRUCTION OF RAILROADS.

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Patented Aug. 21, 1888.

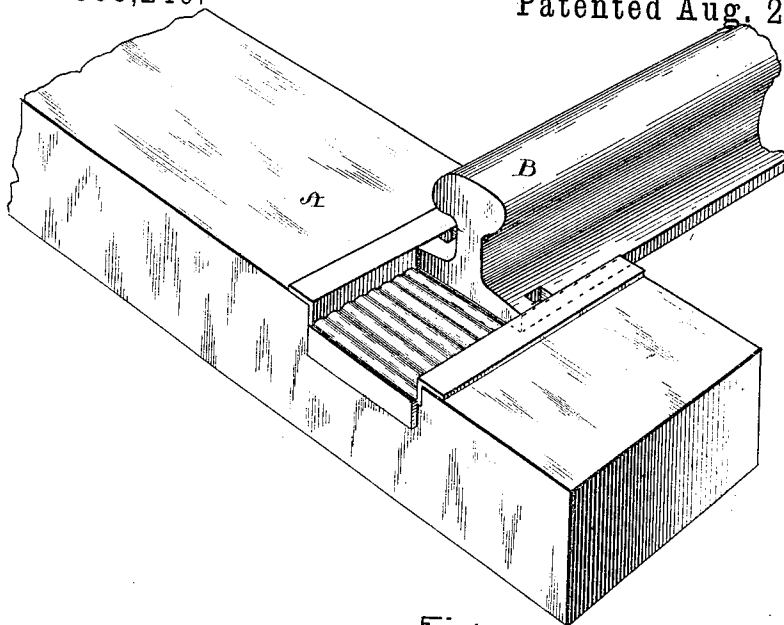


Fig. 9-

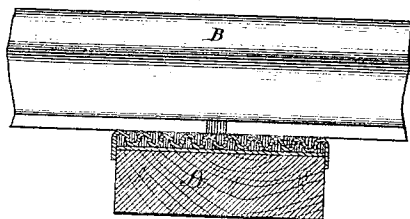


Fig. 10.

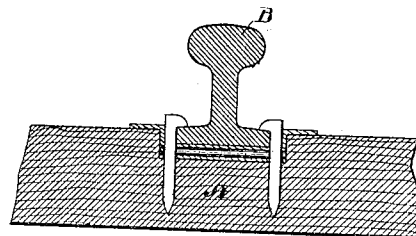


Fig. 11.

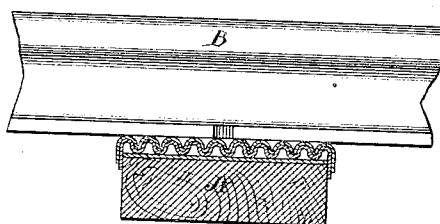


Fig. 12.

WITNESSES—

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J. P. Small.

INVENTOR—

Edward H. Ashcroft

by his attys
Clarke & Raymond

UNITED STATES PATENT OFFICE.

EDWARD H. ASHCROFT, OF LYNN, MASSACHUSETTS.

CONSTRUCTION OF RAILROADS.

SPECIFICATION forming part of Letters Patent No. 388,240, dated August 21, 1888.

Application filed February 6, 1888. Serial No. 263,070. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. ASHCROFT, of Lynn, in the county of Essex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Construction of Railroads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to the construction of a railroad whereby the rails are tied together by the cross-ties or sleepers, which also support them in a more effectual manner than is the case with the present construction.

Heretofore rails have been supported upon the upper surfaces of the sleepers or cross-ties, and are prevented from moving laterally thereon and spreading from each other by spikes driven into the sleepers or cross-ties, and in some instances by metal tie-bars, which, however, do not act to support the rails.

By my invention I cause the sleepers or cross-ties not only to act as a support for the rails, but also to tie the rails securely together in a manner to cause them to act in this capacity without the employment of the ordinary spike; or, rather, to supplement the ordinary spike and enable the ordinary iron tie bar or rod to be in a measure dispensed with.

This result is accomplished by sinking in the upper surfaces of the sleepers or ties channels of a width and depth to receive the base of the rails, or a chair of peculiar construction upon which the bases of the rails rest.

In the drawings, Figure 1 is a view in perspective representing a section of a sleeper and the end of a rail to illustrate my invention.

Fig. 2 is a vertical section taken through two parallel rails and showing the sleepers and a part of the road-bed, to further illustrate the construction and operation of my invention.

Fig. 3 is a view, part in side elevation and part in section, of my improved road-bed.

Fig. 4 is a detail view in plan. Figs. 5, 6, 7, and 8 refer to a slight modification, which is hereinafter described. Figs. 9, 10, 11, and 12 also relate to a slightly-different form of the said modification.

Referring to the drawings, A represents the sleepers or cross-ties, and they are of the or-

dinary kind of wood employed in railroad construction.

a represents the cross channels or recesses extending from the upper surfaces of the ties or sleepers and of the width of the base *a'* of the rails B and of a depth about that of the thickness of the base, and into these recesses or channels the rails are placed and fastened by spikes, or in any other desired way. This is the most simple form of my invention, and when so embodied I prefer to protect the sleepers or ties in and about the channels or recesses by coating the upper surface thereof with tar or other wood-preserved. The more elaborate form of invention is represented in Figs. 5 to 12, inclusive, where I have represented the channels in the cross-ties or sleepers made deeper to receive a metal chair, C, of a width to closely fit the channels or recesses and having end flanges, *c*, which extend downward on each side of the sleeper or tie, side walls, *c'*, and outwardly-extending flanges *c''*, which extend upon the surface of the sleepers. The space *c''*, between the side walls, *c'*, is of a width to receive the base *a'* of the rail, and in the main should be below the upper level of the sleeper or tie which supports it.

The downward-extending flanges *c* should be of a length sufficient to permit of the interposition of one or more flat plates between the under surface of the chair and the surface of the recess or channel, for the purpose of adjusting the chair properly in the sleeper as the sleeper becomes worn, and also for the purpose of enabling the two or three independent plates to be placed between the chair and the sleeper to absorb vibration.

It will be observed that this construction provides for a uniform and accurate gage—a most absolute preventive of the spreading of the rail, each tie or sleeper, or a large number of ties or sleepers, (because it is not necessary that every tie or sleeper should be thus secured,) acting not only as a support to which the rails are bolted, but also as a tie to prevent their lateral displacement in a much more secure and effective way than is possible by the use of spikes alone.

In Figs. 9 to 12, inclusive, I show the base or rail-support and the chair made corrugated instead of flat. This provides a somewhat

yielding or elastic connection between the rail and the sleeper. I prefer when this construction is employed that there be interposed between the corrugated base or support and the sleeper a flat metal plate, as represented in Fig. 12, and upon which the corrugated base of the chair rests. If desired, the chair may have one or more additional corrugated plates superimposed, for the purpose of providing additional strength. I prefer that the chair be formed from sheet metal by striking up.

It will be observed that a chair having the side flanges furnishes the rail with a bearing of greater area on the sleeper than the base of the rail alone provides, and this is of considerable importance, in that the integrity of the sleeper is longer maintained.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the sleepers or ties A, having the recesses or channels *a*, the metal chair C, having the flanges *c*, and the side walls, *c'*, which are placed in said recesses or channels, with the rail B, the bases of which are placed on said chair between the side walls thereof, as and for the purposes described.

2. The combination of the sleepers A, having the cross channels or recesses *a*, the metal chair C, having the side walls, *c'*, and the out-

wardly-extending flanges *c''*, and the rails B, the bases *a'* of which rest upon said chairs between the walls *c'*, as and for the purposes described.

3. The combination of the ties or sleepers A, having the cross channels or recesses *a*, the chair C, having the downward-extending flanges *c*, the walls *c'*, and the outwardly-extending flanges *c''*, with the rails B, the bases *a'* of which rest upon the side chairs and each other, and the said walls *c'*, substantially as described.

4. The combination of the sleepers A, having the cross recesses or channels *a*, the chairs C, having the downward-extending flanges *c*, the walls *c'*, and the outwardly-extending flanges *c''*, one or more plates interposed between the chair and the sleeper, and the rails B, the bases of which rest upon the upper surface of the chair between the walls *c'*, substantially as described.

5. The combination of a chair having the corrugated base or rail-supporting surface, with one or more additional corrugated reinforcing plates, substantially as described.

EDWARD H. ASHCROFT.

In presence of—

F. F. RAYMOND, 2d,
E. P. SMALL.