

(No Model.)

P. H. FONTAINE.  
RAILROAD RAIL JOINT.

No. 443,076.

Patented Dec. 16, 1890.

Fig1.

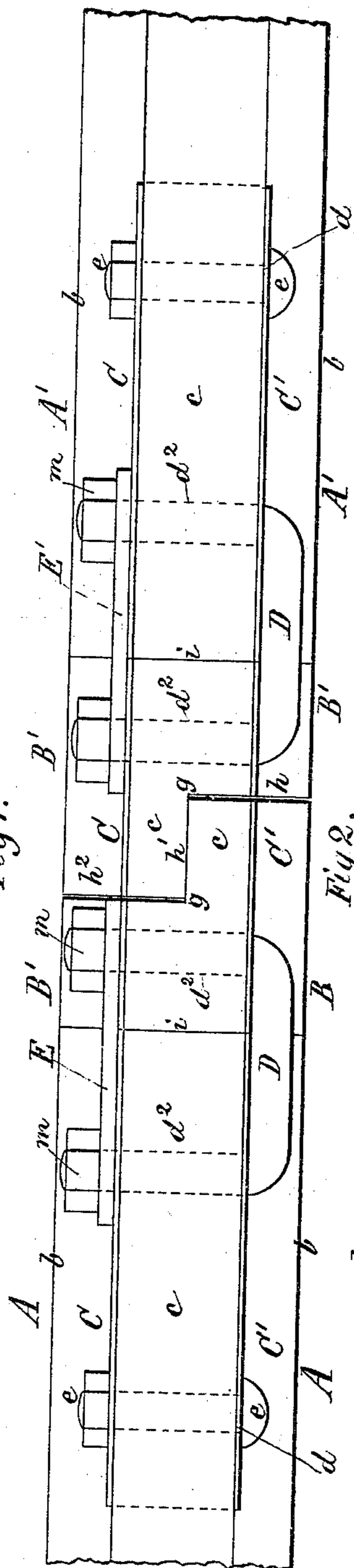


Fig2.

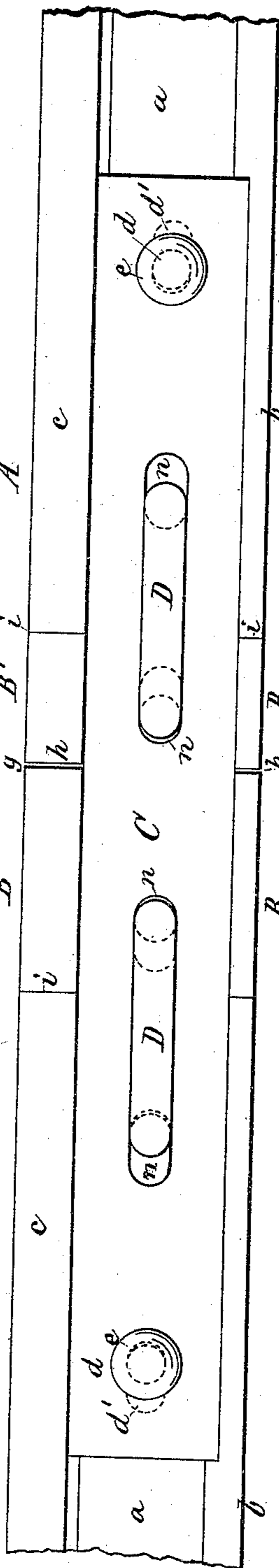
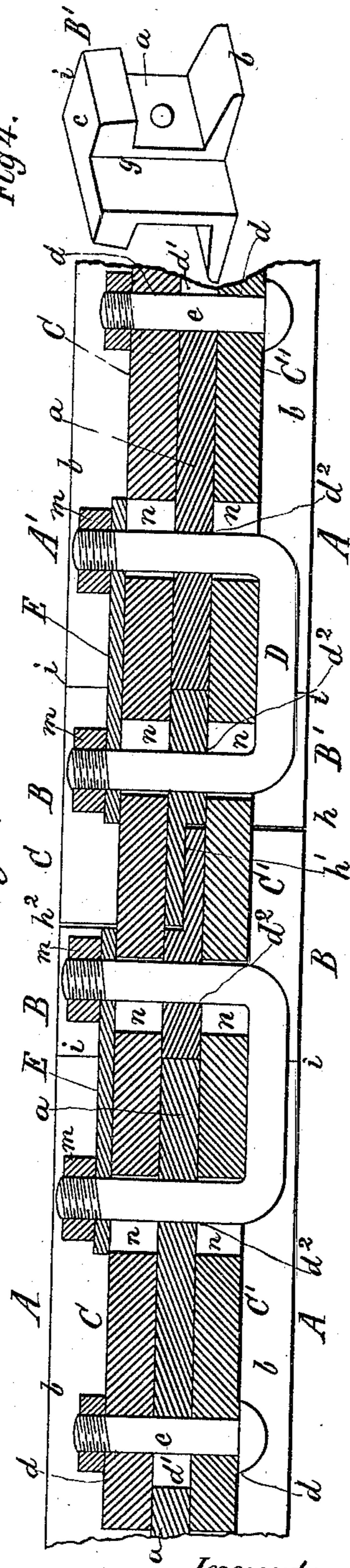


Fig4.



Witnesses:  
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Inventor:  
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# UNITED STATES PATENT OFFICE.

PATRICK H. FONTAINE, OF ELMO, VIRGINIA.

## RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 443,076, dated December 16, 1890.

Application filed April 24, 1890. Serial No. 349,251. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK H. FONTAINE, a citizen of the United States, residing at Elmo, in the county of Halifax and State of Virginia, have invented certain new and useful Improvements in Railroad-Rail Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in providing each end of a pair of rails of a railroad-track with a hard metal or steel terminus or finishing portion and having said portions adjoin, or nearly so, one another, and held in proper relation to each other by means of the ordinary fish-plates and U-bolts, nuts, and tie-washer plates, each end portion and each rail being provided with its own U-bolt, nuts, and tie-washer plate, all as will be hereinafter described and claimed.

It also consists in constructing the said hard-metal finishing portions, respectively, with a vertical rabbet-shoulder, and having one lap upon the other and both held in position by means of ordinary fish-bars, the U-bolts, nuts, and tie-washers.

In the accompanying drawings, Figure 1 is a top view of two portions of a pair of rails provided with my invention. Fig. 2 is a side view of the same. Fig. 3 is a horizontal section of Fig. 1, and Fig. 4 a perspective view of one of the hard metal or steel finishing ends of the rails.

A A' indicate two rails constructed of ordinary railroad-rail metal; B B', hard metal or steel finishing ends of said rails.

C C' are the ordinary fish-bars applied against the webs *a a* of the rails and resting upon the flanged base portions *b* and bearing up against the T-head portion *c* of said rails. These fish-plates are applied at the junction of the two rails, and their ends extend right and left a sufficient distance beyond such junction, and they are provided with holes at *d d*, and through said holes the ordinary fastening-bolts *e* are passed, oblong slots *d'* being formed in the webs of the rails to allow for expansion and contraction of the rails at

the points where the bolts pass through the fish-plates and said webs. The respective hard-metal finishing end portions B B' are best for the purpose shown when constructed with a rabbet-shoulder *g*, as by this construction one half of the width of one of the pieces can be made to overlap another half of the other finishing-piece and thus form a zigzag joint, as at *h h' h<sup>2</sup>* in Fig. 1, and also in Fig. 3; but the meeting ends of the said finishing portions might be made to form simply a straight vertical joint. These finishing end pieces are fitted closely by their vertical surfaces *i* against the end vertical surfaces of the rails, and are tied firmly to said rails by means of U-bolts D and tie-washer plates E, the U-bolts being passed through the finishing portions and through the webs of the rails, and also through the fish-plates and tie-plates, and receiving on their ends confining-nuts *m*, as shown. At the points where the U-bolts are applied holes *d<sup>2</sup>*, corresponding to the diameter of the branches of the bolt, are provided in the finishing end portions and in the webs of the rails, and coinciding oblong slots *n* are provided in the fish-bars. By this construction the fish-bars are allowed freedom to expand and contract, and the end portions, while held firmly against the ends of the rail, are allowed to move apart and toward each other at the junction *h h' h<sup>2</sup>* of said end portions.

By my invention each rail at its hard-metal finished terminus is rendered very enduring, and liability of its being battered at said point is very greatly lessened, and the necessity for making the rails of a high grade of steel throughout their length or of chilling the ends of the rails is avoided; and, furthermore, whenever the finishing ends become so worn and battered as to be dangerous they can be removed and new finishing portions substituted therefor at very slight expense as compared with the expense of furnishing entirely new rails.

An equivalent of the U-bolts would be two separated bolts applied in the same holes that the branches of the U-bolt occupy, one bolt passing through a finishing end piece forward of the end of the rail proper and the

other bolt passing through tie washer or washers and fish-bars and the rail proper in rear of its end.

End finishing-pieces, when rabbeted so as to lap one another vertically and form a zig-zag joint, are not necessarily confined to the special means shown for holding the said rabbeted end pieces firmly to the rails, as other equivalent means could be adopted without departing from my invention of a two-part joint-connection comprising rabbeted end finishing hard-metal pieces.

What I claim as my invention is—

1. A rail-joint connection consisting of two hard-metal (as iron or steel) end finishing-pieces, connected, respectively, to the ends of rails and made to adjoin, or nearly so, one another, and held in position by bolts passed through the same forward of the ends

of the rails and also through the rails in rear of their ends, substantially as described.

2. A rail-joint connection comprising two hard-metal (as iron or steel) end finishing-pieces, U-bolts passed through the end finishing-pieces forward of and in rear of the ends proper, fish-bars, tie-plates, and confining-nuts, substantially as described.

3. A rail-joint connection consisting of two hard-metal (as iron or steel) end finishing-pieces rabbeted and lapping one another vertically, and suitable means for holding them in position, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

PATRICK H. FONTAINE.

Witnesses:

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