(No Model.)

2 Sheets—Sheet 1.

J. STAPLES.

RAILROAD FROG.

No. 258,259. Patented May 23, 1882.

Fig. 1.

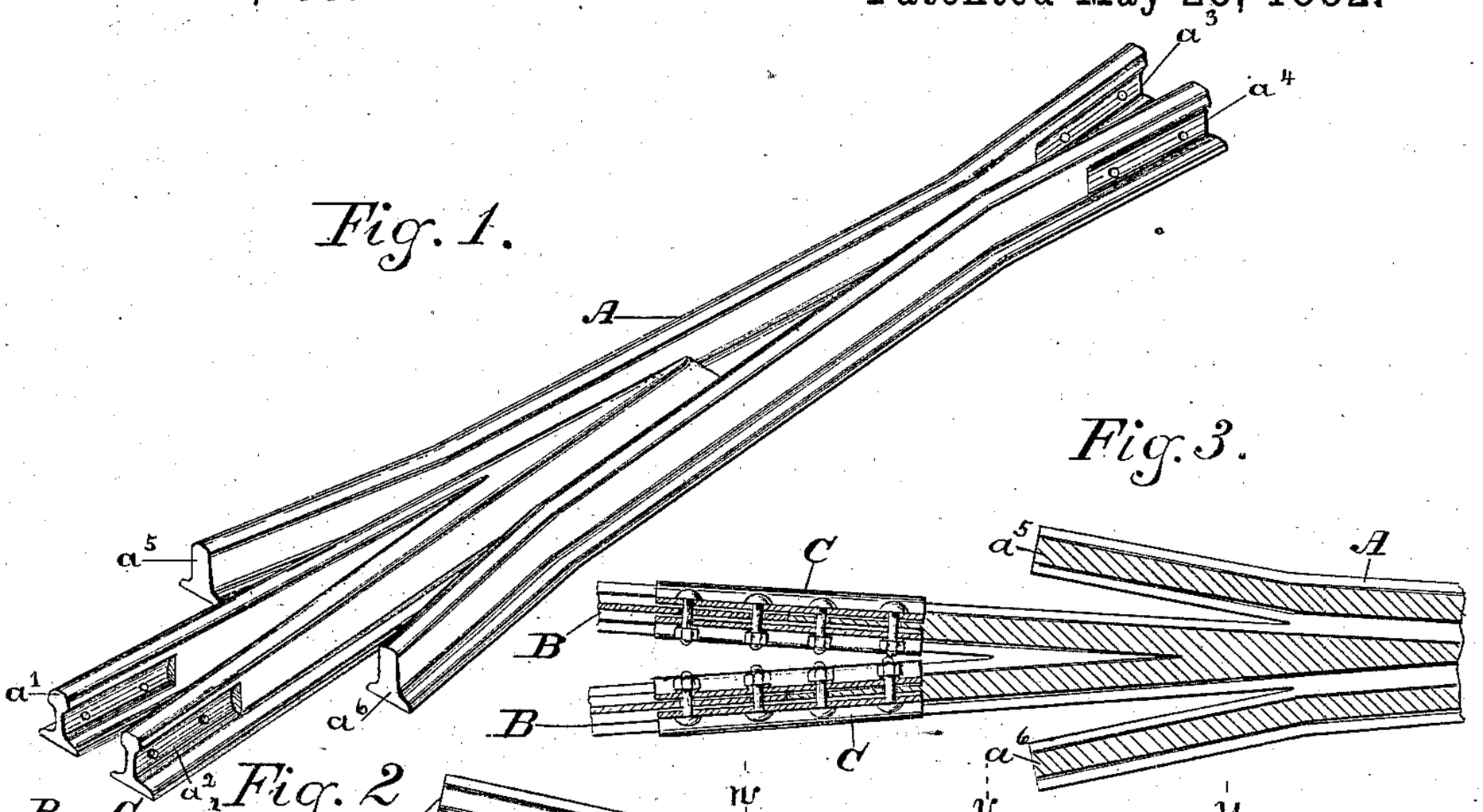


Fig. 3.

Fig. 2

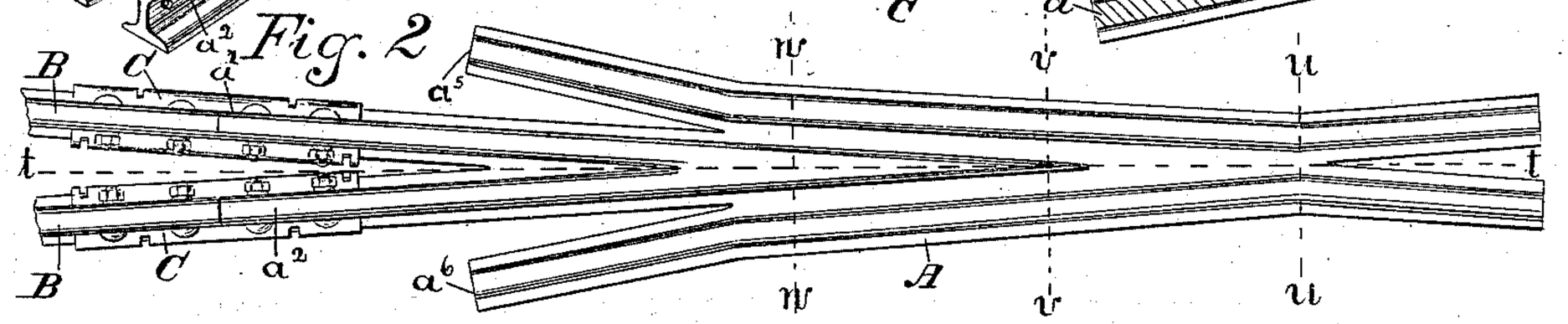
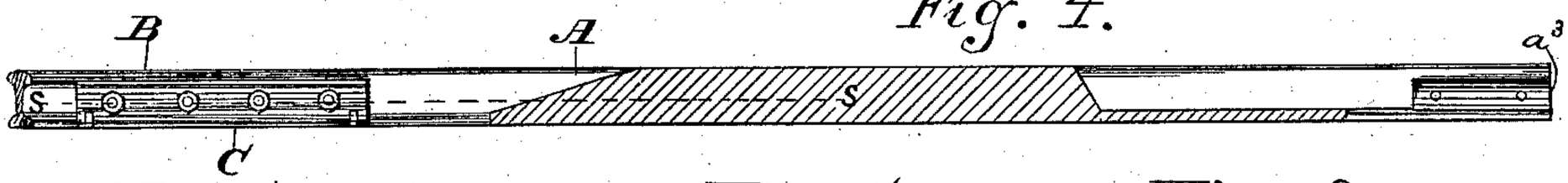


Fig. 4.



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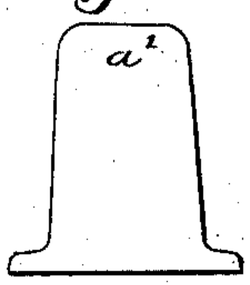
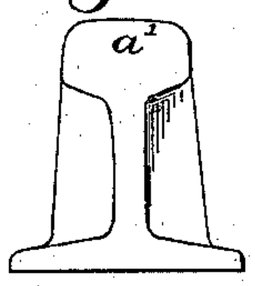


Fig. 6.



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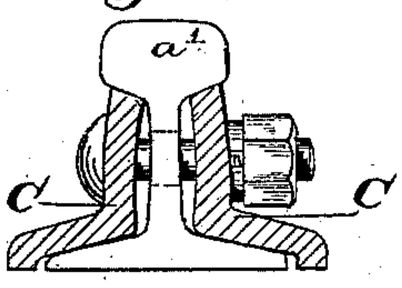
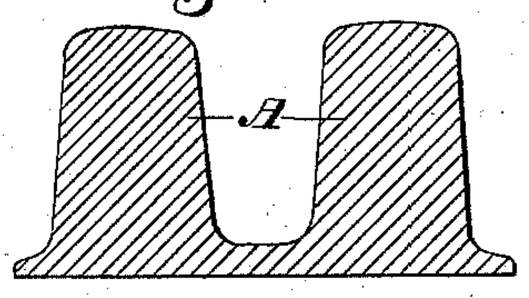


Fig. 8.



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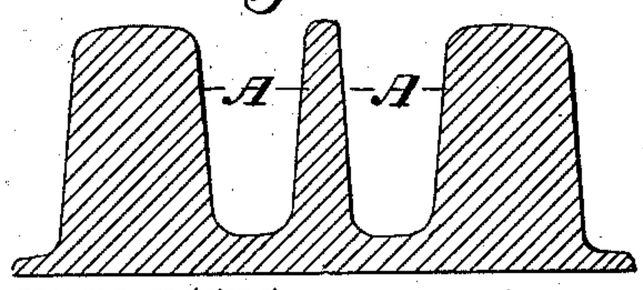
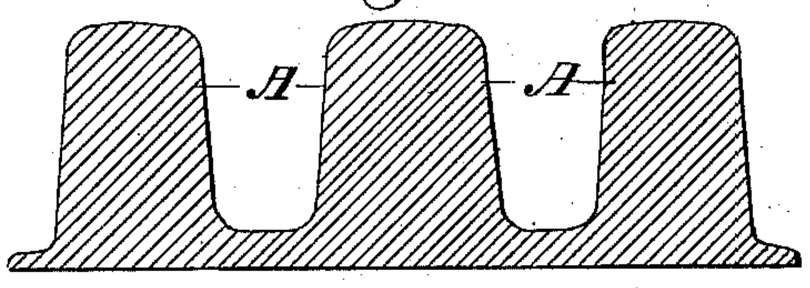


Fig. 10.



WITNESSES.

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(No Model.) 2 Sheets—Sheet 2.

J. STAPLES.

RAILROAD FROG.

No. 258,259. Patented May 23, 1882.

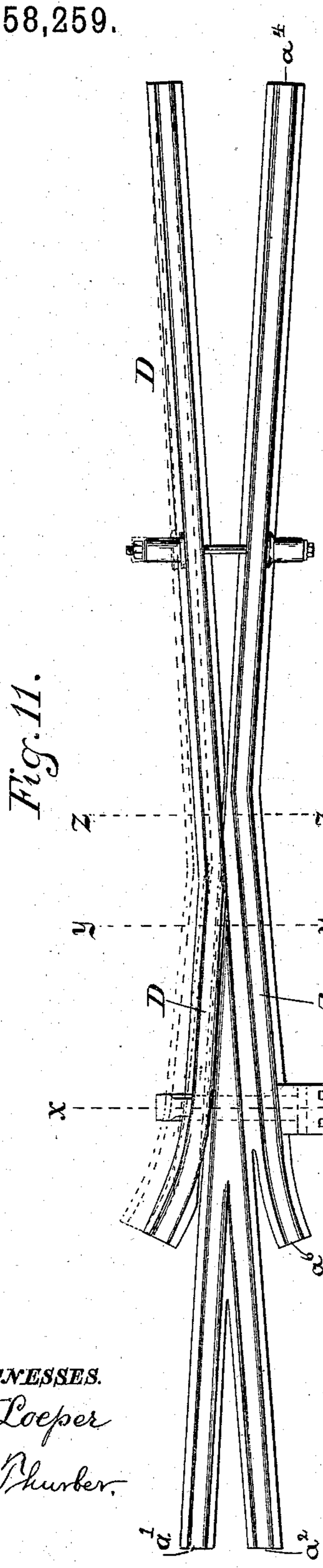

Fig. 11.

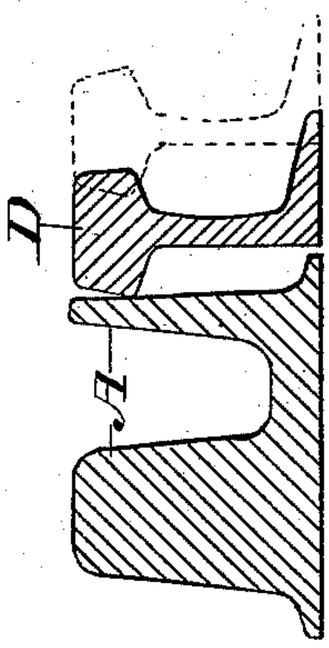

Fig. 13.

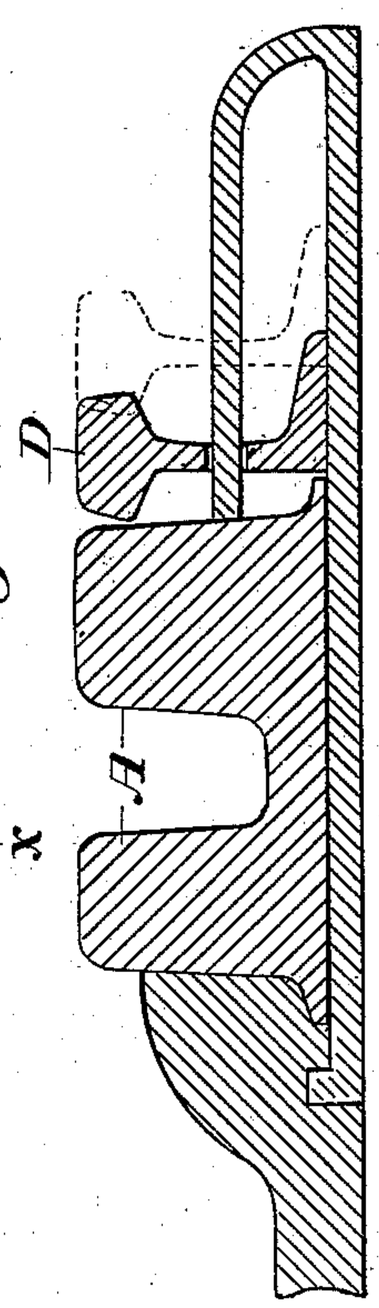

Fig. 12.

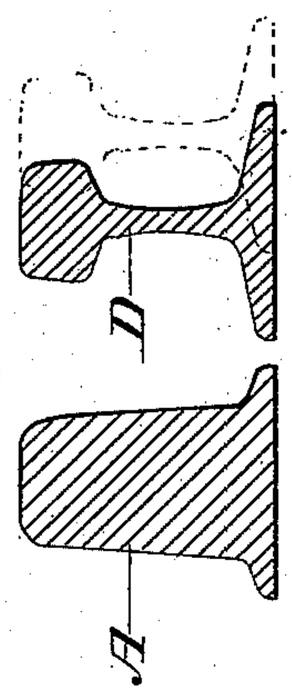

Fig. 14.

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UNITED STATES PATENT OFFICE.

JOSHUA STAPLES, OF INDIANAPOLIS, INDIANA.

RAILROAD-FROG.

SPECIFICATION forming part of Letters Patent No. 258,259, dated May 23, 1882.

Application filed January 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA STAPLES, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Railroad-Frogs, of which the following is a specification.

My said invention consists of a railroad-frog produced by rolling it complete in the form desired in substantially the same manner that rails are rolled.

In the process of producing this frog I employ a set of rolls wherein the grooves or depressions are of the same outline as the completed frog, said rolls being preferably adapted for use in an ordinary rolling-mill, and after the form is rolled I remove metal from the sides of each end to which a railroad-rail is to be connected until its form is similar to the form of said rail, preferably by the use of a planer, for a distance sufficient to receive one end of the angle-bar or fish-plate by which the connection is made, and punch or drill holes to receive the bolts which hold said fish-plates in place, in the ordinary manner.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a railroad-frog constructed in accordance with my invention; Fig. 2, a top or plan view of the same, sections of railroad-rails being connected to one end; Fig. 3, a longitudinal vertical section of the same, looking downwardly from the dotted line *s s;* Fig. 4, a horizontal section, looking upwardly from the dotted line *t t;* Fig. 5, an end elevation of one of the ends to which a rail is to be connected in the form in which it leaves the roll; Fig. 6, a similar view in finished form; Fig. 7, a like view with angle-bars attached; Figs. 8, 9, and 10, transverse sections on an enlarged scale on the dotted lines *u u*, *v v*, and *w w*, respectively; Fig. 11, a plan view of a modification of my invention embodying a spring-frog; and Figs. 12, 13, and 14, transverse vertical sections, illustrating its construction, on the dotted lines *x x*, *y y*, and *z z*, respectively.

In said drawings, the portions marked A represent the frog, having the track-rail portions a', a^2, a^3, and a^4 and the guard-rail portions a^5 and a^6; B B, ends of ordinary track-rails, connected to the portions a' a^2; C C, the angle-bars or fish-plates, (angle-bars being shown;) and D in Figs. 11, 12, 13, and 14 a spring-rail, which in that construction is necessary to complete the frog.

The drawings herein are intended to show the form of the several parts of the frog at the points indicated which I consider preferable, and to make clear the feasibility of constructing frogs in this manner and their superiority over common frogs when so constructed.

Cast-metal frogs are not desirable for railroad use unless the surfaces are protected with steel plates, as without this addition they have neither the strength nor wearing qualities desired, while with it the expense is much larger. Wrought-metal frogs as heretofore made have been troublesome and expensive to manufacture, and have not been so uniform as has been desirable, unless at the expense of much labor. My frog, when the proper rolls are once fitted up, can be produced from the best material used for making railroad-rails as easily as the rails themselves, as rapidly as may be desired, and at much less expense than the inferior frogs which have heretofore been used.

The particulars of my invention may be recapitulated as follows: The frog is first rolled in the ordinary manner known in rolling-mills in substantially the form shown, all in one piece. The ends are then squared off. Such of the ends as are to be connected with rails are planed out until they are of the regular rail form for so much of their length as is necessary to accommodate the fish-plate or angle-bar. The bolt-holes are punched, and the frog is ready for use if a solid frog, and, if a spring-frog, by the addition of the regular spring-rail peculiar to that class of devices. The frog proper, being of a single piece, does not have to be made up in the slow and expensive manner in which common frogs are made, and is much more solid and durable when finished.

In applying my invention to a spring-frog it is only necessary to leave off one of the solid side rails and substitute a spring-rail, as shown.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a rail-

road-frog constructed of rolled metal, the several portions thereof being rolled all together and in a single piece, substantially as set forth.

2. A railroad-frog rolled in a solid piece in the general form in which it is intended to be used, having its ends planed out to correspond with the form of the rails to be used in connection therewith, in combination with said rails and angle-bars or fish-plates, which fit into said planed-out places and are secured therein, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 16th day of January, A. D. 1882.

JOSHUA STAPLES. [L. S.]

In presence of—

C. BRADFORD,

CHAS. L. THURBER.