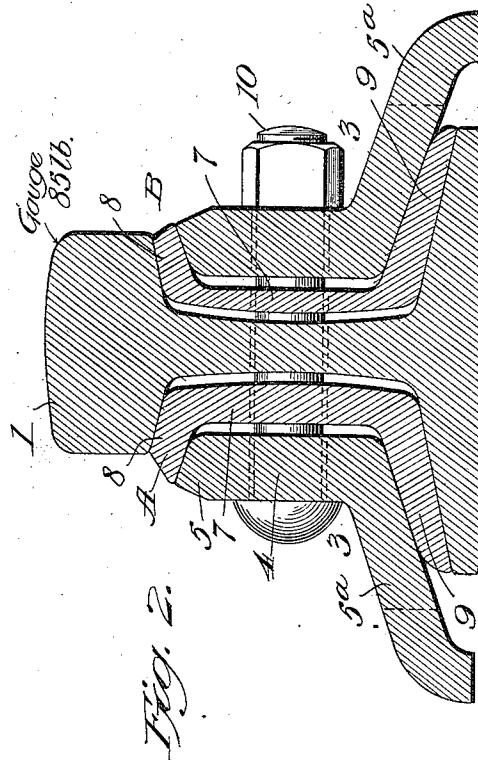
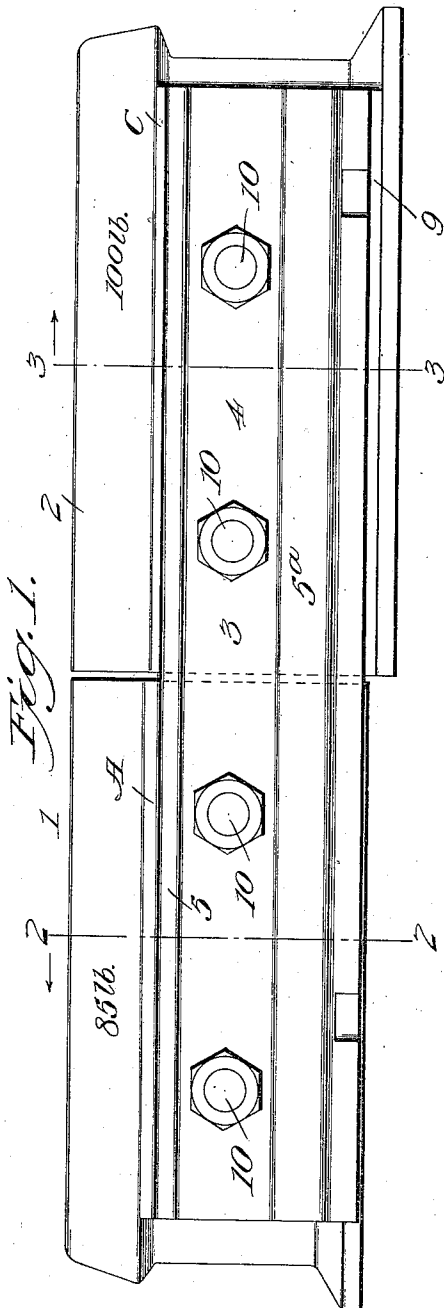


B. WOLHAUPTER.
 ANGLE BAR STEP JOINT.
 APPLICATION FILED JUNE 10, 1911.

1,045,350.

Patented Nov. 26, 1912.

3 SHEETS—SHEET 1.



Witnesses

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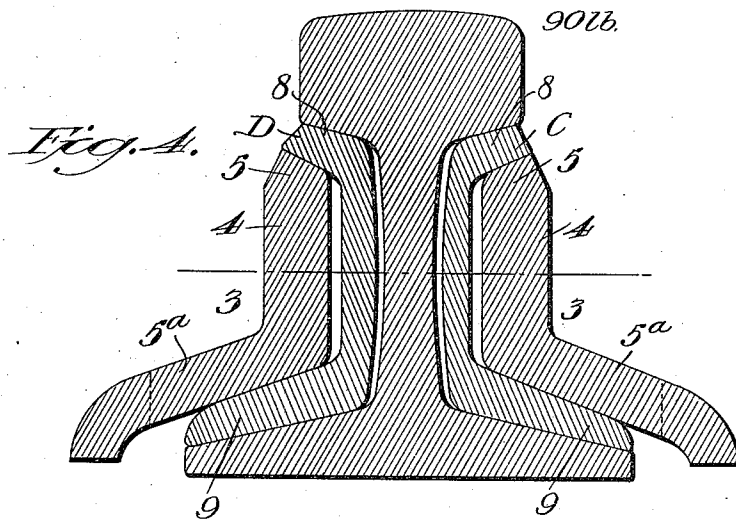
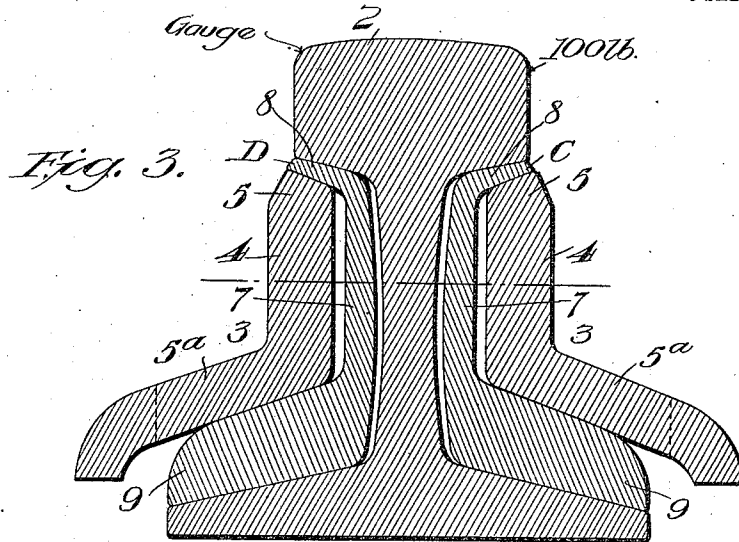
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3 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF NEW ROCHELLE, NEW YORK, ASSIGNOR TO THE RAIL JOINT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ANGLE-BAR STEP-JOINT.

1,045,350.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed June 10, 1911. Serial No. 632,505.

To all whom it may concern:

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Angle-Bar Step-Joints, of which the following is a specification.

This invention relates to an angle bar step or compromise rail joint comprising means for connecting the abutting ends of rails of different heights and sections in such a manner that the gage side and top surfaces shall be in alinement.

Primarily, the invention has in view a step joint for dissimilar rails wherein rolled angle bars of the plain or reinforced type may be employed, and which angle bars are without offsetting of any character, the same being of uniform cross section throughout, and not only interchangeably employed on either side of the rails, but are so associated with filler members that a single size of angle bar may be employed for connecting any number of combinations of different rail sections.

The present invention is therefore intended to provide an improvement in step joints which permits the making of joints alike with different rail sections of a group by fitting fillers or filler members to the end of each rail section, it being proposed to make a cross section of each rail with its fillers of such form that they are all alike, and will fit into one joint proper, that is, between the same angle bars or splice bars, common to them all, and which will bring the gage side and top surfaces of all the rails into alinement with each other. In this connection, the principle involved is that there are two points in the filler members which coincide and which have the same position with regard to the point of intersection of the gage and top surface, of all rails in the series used with the splice bars.

With these and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts

hereinafter more fully described, illustrated and claimed.

The essential features of the invention are necessarily susceptible of embodiment in various forms of construction without departing from the scope of the invention, but certain preferred and practical embodiments are exemplified by the accompanying drawings, in which—

Figure 1 is a side elevation of an angle bar step joint constructed in accordance with the present invention. Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1. Fig. 3 is a similar view on the line 3—3 of Fig. 1, through that end of the joint receiving the larger of the two rails. Fig. 4 is a transverse sectional view showing the change in the filler members to adapt the same angle bars (of Figs. 1, 2 and 3) to a still different rail section, such for instance as a ninety pound rail. Fig. 5 is a diagrammatic view, omitting the joint bars, illustrating the two dissimilar rails with their gage side and top surfaces in alinement and showing the relation of the various fillers to adapt the structure to splice bars of uniform size and cross section throughout; the larger rail and the fillers therefor being shown in dark lines, and the smaller rail and the fillers therefor being shown in light lines. Fig. 6 is a detail end view of the joint proper, or joint bars shown in spaced operative relation to fit the fishing spaces of the registering fillers, such for instance as shown in the superimposed Fig. 5.

Like references designate corresponding parts in the several figures of the drawings.

To exemplify the invention, there is shown in Fig. 1 of the drawings a rail joint including the abutting end portions of two dissimilar rails 1 and 2 respectively, the rail 1 being shown as the smaller rail, for example an eighty-five pound rail, while the rail 2 is shown to be the larger one and may be for example a one hundred pound rail. Duplicate joint bars 3 are applied upon the opposite sides of the abutting rail ends and fit the fishing spaces of the filler members associated therewith in a manner

to be more particularly explained. According to the present invention, the said joint bars are preferably of the angle bar type, each consisting of an upright splice member
 5 4 having at its upper edge the usual bearing head 5 and at its lower edge formed with the inclined outwardly extending foot flange 5^a which may or may not be provided with a depending reinforcing girder
 10 6, as suggested in Fig. 6 of the drawings, said foot flange overlying the rail flange. The opposite angle bars 3 are made alike and are intended to be manufactured in quantities of rolled steel by the usual rolling mill processes, the said bars being also
 15 designed without offsets of any character and having a uniform cross section throughout. To adapt these similar angle bars, which are straight and uniform throughout,
 20 to any number of different sized rails, each of the rails has a pair of filler members applied to the opposite sides thereof, all of the filler members being of different cross section so as to suitably chock the rails with-
 25 in the angle bars to bring the top surfaces and the gage side of the rail heads in alignment.

In the illustration of Figs. 1, 2 and 3 of the drawings, the filler members A and B
 30 respectively on opposite sides of the eighty-five pound rail, designated by the numeral 1, are plainly shown in Fig. 2 of the drawings, while the filler members C and D, respectively on opposite sides of the one
 35 hundred pound rail, designated by the numeral 2 are plainly shown in Fig. 3 of the drawings. Each of the filler members comprises an upright web part 7 lying between the web of the rail and the splice bar, and
 40 provided at its top edge with an inclined outwardly extending top flange 8 interposed between the under side of the rail head and the bearing head of the splice bar, and at its
 45 lower edge formed with an inclined outwardly extending foot piece 9 that lies between the rail flange and the foot flange of the angle bar. All of these filler members can be made of either rolled or cast steel
 50 or of malleable iron. The various portions of the filler members A, B, C, and D are so proportioned and shaped as to support the dissimilar rails at the proper elevation and in such position that the gage side and top surfaces thereof are brought into alignment
 55 with each other when fitted up with the similar and uniform angle bars 3—3. For instance, in connecting the eighty-five pound rail with the hundred pound rail, it is evident by comparison of Fig. 5 of the
 60 drawings with Figs. 2 and 3 that the filler member A at one side of the eighty-five pound rail is provided with a thinner foot piece 9 and with a thicker top flange 8 than

the corresponding portions of the filler member C at the corresponding side of the one
 65 hundred pound rail, in order to provide for the proper stepping up of the smaller rail to the surface of the larger rail as well as the proper inseting of the smaller rail to bring the gage thereof in alignment with the
 70 gage of the larger rail. Complementally the filler member B at one side of the eighty-five pound rail is provided with a thinner foot piece 9, a thinner web part 7, and a thicker top flange 8 than the corresponding
 75 portions of the filler member D arranged at the corresponding side of the one hundred pound rail. It will thus be seen that the proper proportioning of the size of the web, top flange, and foot piece of the fillers
 80 provides for adapting the same angle bars for connecting a variety of combinations of dissimilar rails. This is further illustrated in Fig. 4 of the drawings where the joint bars 3—3 are shown adapted to a
 85 ninety pound rail.

From the foregoing it will be obvious that a further distinct advantage of the invention resides in the fact that by merely inter-
 90 changing the filler members upon opposite sides of the rails, either a right-hand or left-hand joint can be formed, thereby eliminating the necessity of employing different members for these two kinds of joints, as
 95 is necessary where the joint bars are provided with offset portions. It will be understood that each particular rail section is provided with a specific set of filler members of its own, but so related to all of the other
 100 filler members of the group of rails to be connected by the same joint bars, that such joint bars may be employed in the manner hereinbefore pointed out. The usual series
 105 of joint bolts 10 are employed to fasten together the various joint parts.

I claim:

1. A step rail joint including dissimilar rails, opposite angle bars having a uniform cross section throughout, and filler members
 110 interposed between the angle-bars and the rails and fitting the fishing spaces at both sides of each rail end.

2. A step rail joint including dissimilar rails, angle-bars of uniform cross section throughout and spaced from both rails, and
 115 filler members fitting the fishing spaces and said angle-bars.

3. A step rail joint including dissimilar rails, opposite angle-bars of uniform cross section throughout and spaced from both
 120 rails, and filler members arranged at both sides of each rail end and fitting the fishing spaces and the angle-bars.

4. A step rail joint including dissimilar rails, opposite angle-bars having a uniform
 125 cross section throughout and spaced from

both rails, and filler members interposed between the angle bars and the rail ends and fitting the fishing spaces at both sides of each rail, said filler members being differently proportioned and interchangeable.

5 5. A step rail joint including dissimilar rails, opposite duplicate angle-bars of uniform cross section throughout and spaced from both rails, and a pair of filler members applied to opposite sides of each rail

and cooperating with the angle bars to bring the tops and one side of the rail heads in alinement, the filler members on opposite sides of the rails being interchangeable.

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

BENJAMIN WOLHAUPTER.

Witnesses:

EUGENE HEYWOOD,
F. A. BANNON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."