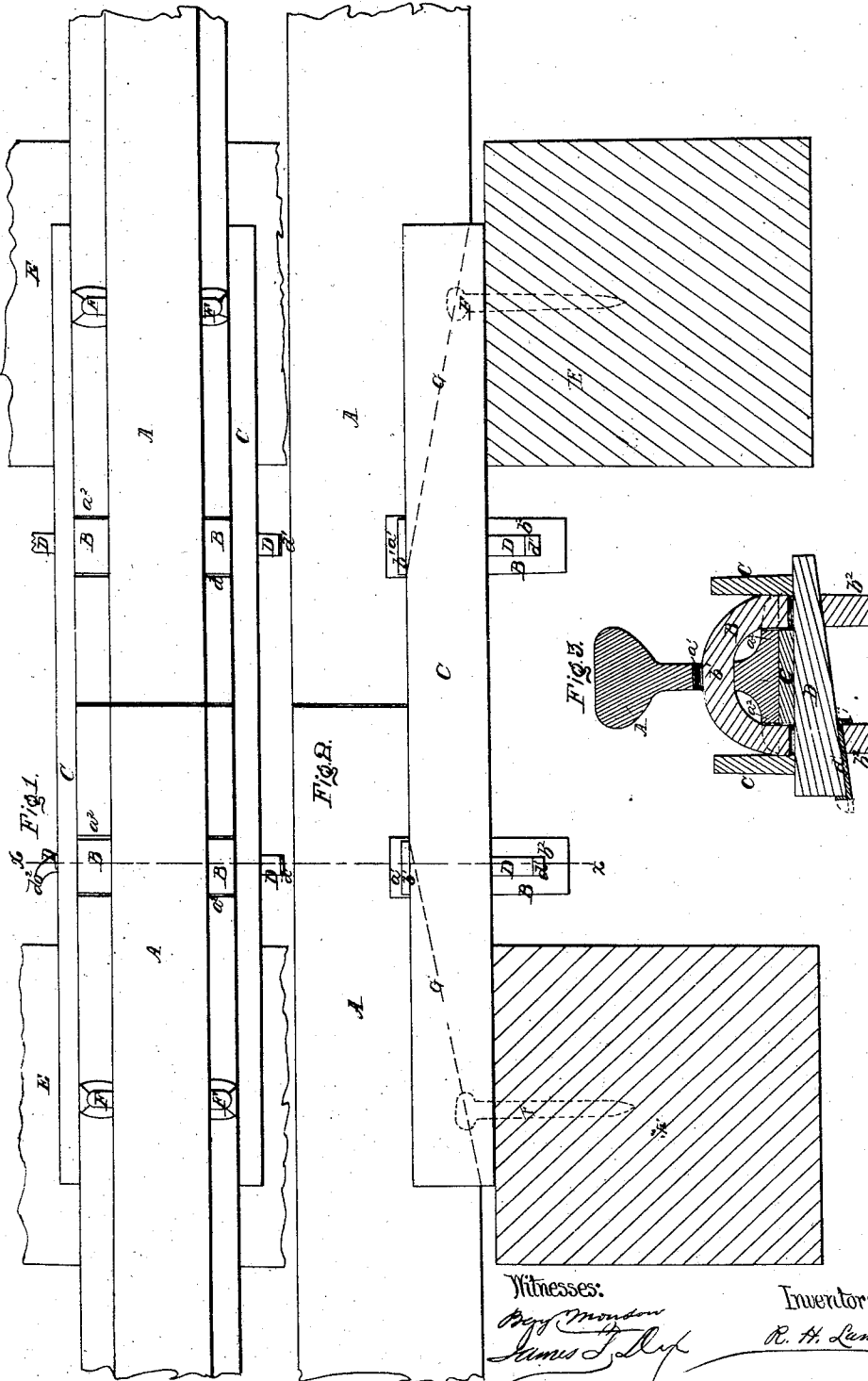


R. H. Lamborn.

Railroad Rail Joint.

N^o 41,437.

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Witnesses:

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R. H. LAMBORN, OF ALTOONA, PENNSYLVANIA.

IMPROVED JOINT FOR RAILROAD-RAILS.

Specification forming part of Letters Patent No. 41,437, dated February 2, 1864.

To all whom it may concern:

Be it known that I, R. H. LAMBORN, of Altoona, in the county of Blair and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Joints; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view, Fig. 2 a side elevation, and Fig. 3 a transverse section through the dotted lines *x* of Figs. 1 and 2, of two rails joined together by means of my said invention, like letters of reference indicating the same parts when in the different figures.

The object of this invention is the production of a bridge-iron joint for railroad-rails that will not be costly or difficult of construction, application, and repair, and that will be more durable and reliable for the purpose than any of the joints now in use.

It consists, substantially as hereinafter described and specified, in the construction and use of a channel bar or trough of sufficient strength and length to support and keep in "line and surface" between the usual cross-ties the abutting ends of the rails, without the addition of splints, blocks, or other strengthening devices for the purpose, in combination with two yokes or clevises passing through the said rails and the bottom of the said channel-bar, near the said ends of the rails, and fastened in any suitable manner beneath the channel-bar.

My invention also consists in the employment, as hereinafter described and specified, of wedge-keys through the legs of the yokes or clevises, so that they shall bear directly across the under side of the channel-bar for the purpose of fastening the rails down firmly in the said bar, the latter being secured to the cross-ties by means of the usual spikes or bolts.

In the drawings, A A are the two abutting rails; B B, the yokes or clevises; C, the channel-bar; D D, the wedge keys; E E, the cross-ties, and F F the spikes.

The abutting end of each rail A A is cut square off, and at about three and a quarter inches, more or less, from the end a square hole, *a'*, about an inch high and an inch and a half wide, more or less, is punched transversely

through the rail between the head and foot flanges of the same, and the foot-flange on each side cut away below the hole about three-quarters of an inch in depth and an inch and a half in width, more or less, as indicated at *a*², Figs. 1 and 3.

The channel-bar C is a wrought-iron trough of rectangular cross-section, having its upright sides made about two inches high in the middle and sloped down at their ends, as indicated by the dotted lines G G in Fig. 2, to allow access in driving or drawing the spikes F F. It is made long enough to rest with its ends respectively upon the two adjacent cross-ties F F, substantially as shown in Figs. 1 and 2. The inside width of this channel-bar C corresponds with the width of the flanged bottoms or bases of the rails, and has square holes *c' c'* (see Fig. 3) made through its bottom to correspond with the cuts *a*² *a*² of the rails A A when the ends of the latter are abutted together in the middle of the said channel-bar C, substantially as shown in the same figures.

The yokes or clevises B B each consist of a short wrought-iron bar of rectangular cross-section, about one and three-eighths of an inch wide and three-quarters of an inch thick, bent round at its middle *b'* until its legs *b*² *b*² are brought parallel to each other and at such a distance apart as will adapt them to enter easily the two opposite cuts *a*² *a*² of the rail A after its one end has been carried through the larger hole, *a'*, which is directly above the said cuts, as will hereinafter be more fully explained. The legs *b*² *b*² are also punched for the reception of a key-wedge, D, entering from one into the other, as seen in Fig. 3.

The key-wedges D D are each of rectangular cross-section and tapered in the usual manner. They are made long enough to project from each side of the channel-bar C after they have been driven firmly into their respective seats in the legs of the yokes or clevises B B in applying the invention.

The cross-ties E E are placed in the usual manner, about twenty inches apart from center to center, the ends of the channel-bar C resting directly upon them, as seen in Figs. 1 and 2. The spikes F F, which secure the channel-bar C to the cross-ties E E, pass through appropriate notches in the bottom flanges of the rails, and also through corre-

sponding holes in the ends of the said channel-bar and tightly into the cross-ties, as heretofore.

In applying my said invention, the channel-bar C is first laid down upon the cross-ties E E, and the ends of the two rails A A then laid in the same, so that the joint between the former will be in the middle of the latter, and consequently the cuts $a^2 a^2$ of the said rails will correspond with the through-holes $c' c'$ in the bottom of the channel-bar C.

The yoke or clevis B of each rail is now to be inserted. This is readily effected by raising the end of the rail, passing half the length of the clevis through the hole a' , and then lowering the rail again into its former position, so as to cause the legs $b^2 b^2$ of the clevis to pass through their appropriate holes $c' c'$ in the channel-bar. The two yokes or clevises having been thus adjusted into combination with the rails and channel-bar, their respective wedge-keys D D are then to be driven into them below the channel-bar, so as to firmly bind down the ends of the rails in the latter, substantially as represented in the drawings. The rails may now be "aligned in track" and the channel-bar secured firmly down to the cross-ties by driving the spikes F F in the usual manner.

The wedge-keys require to be secured against becoming loosened in using the track, and this is readily effected either by inserting, together with the key, a thin strip, d' , of sheet metal, and then bending its ends, as seen in the drawings, or by twisting the smaller end of the key after it has been driven home, as seen at d^2 in Fig. 1.

The ends of the legs of the yokes B B may be screw-cut and nuts applied thereon for the purpose of fastening them beneath the channel-bar; but the employment of the wedge-keys D D, as described, is believed to be more suitable, because nuts work loose from vibration, and especially because screws, becoming rusty, are difficult to detach in "repairing track."

In the operation of this railroad joint it will be readily seen that the channel-bar C will of itself form a sufficient support for the ends of the rails between the cross-ties; that the yokes or clevises, fastened down and operating together with the sides and bottom of the channel-bar, will rigidly keep the ends of the rails in "line and surface" in the said bar or trough, and that the latter, being securely spiked fast to the cross-ties, will effectually

keep the whole in perfect alignment under use.

It will be manifest that the different parts of this joint can be manufactured with facility and cheapness, because the channel-bar has a section which is easy to form in the "rolls" and the lengthy bar can readily be cut off in suitable lengths and punched for the yokes. The yokes can, if required, be cut off from a lengthy bar, punched for the keys, and bent ready for use by simple automatic machinery, and the wedge-keys are of the simplest form, and can easily be made rapidly by simple machinery.

In "laying track" it will only require that the parts be simply placed in juxtaposition upon the cross-ties and the keys and spikes driven.

In repairing track a rail may be quickly and easily taken out and another substituted at any time without disturbing the adjacent rails and fastenings. It is, therefore, not costly and difficult of construction, application, and repair, and, it is believed by the undersigned, will be more durable and reliable as a bridge-iron joint than any heretofore used.

In the construction of the different parts of this joint I wish it to be understood that I do not intend to confine myself to the precise sizes and forms described and represented, as these must, of course, be varied to suit the sizes and forms of the rails which may be used; but,

Having fully described my improved joint, what I claim as new therein of my invention, and desire to secure by Letters Patent, is—

1. The use of the channel-bar C, in combination with the yokes or clevises B B, fastened under the said channel-bar in any suitable manner, (for the purpose of securing the ends of the track-rails, as described,) the same being constructed and arranged together, substantially as described and set forth.

2. In combination with the track-rails, channel-bar, and yokes or clevises, arranged together as described, the employment of the wedge-keys D D, for the purpose of fastening the said parts together, as described and set forth.

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Witnesses:

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