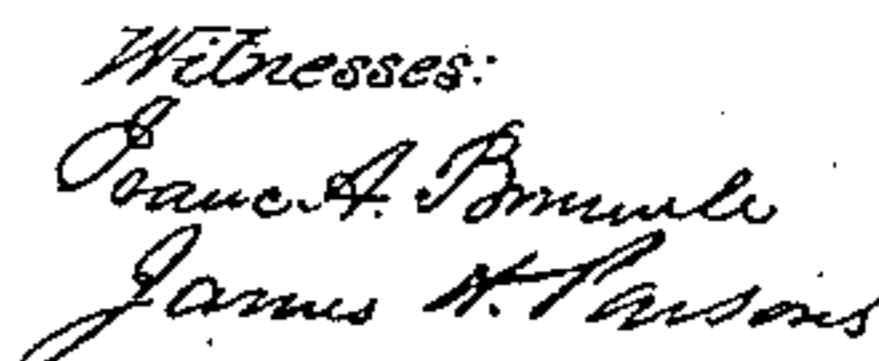


RAIL COUPLING FOR RAILROADS.

No. 39,435.

Patented Aug. 4, 1863.



UNITED STATES PATENT OFFICE.

SAMUEL VANSTONE, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN RAIL-COUPPLINGS FOR RAILROADS.

Specification forming part of Letters Patent No. 39,435, dated August 4, 1863.

To all whom it may concern:

Be it known that I, SAMUEL VANSTONE, of Providence, in the county of Providence and State of Rhode Island, have invented a new and improved method of making the "rail-coupling" for railroad rails for which Letters Patent were issued to Levi B. Tyng, of Lowell, Massachusetts, bearing date the 18th day of February, A. D. 1852, and numbered 34,452; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a transverse section of the said coupling (full-sized) applied to the rail. Fig. 2 is a transverse section of the "half-bar" of which the said coupling is formed by my improved method. Fig. 3 is a transverse section of the half-bar after the first operation of rolling. Fig. 4 is a longitudinal view of the rail-coupling (half-size) applied to the contiguous ends of two rails. Fig. 5 is a longitudinal view of two half bars riveted together preparatory to welding. Fig. 6 is a transverse section of the same. Fig. 7 is a front elevation of the rolls employed for welding the two half-bars. Fig. 8 is a plan and section of the same by the line A A of Fig. 7.

Similar letters of reference indicate corresponding parts in all the figures.

The distinctive features of the said rail-coupling, as set forth in the schedule attached to the aforesaid Letters Patent, are, first, a longitudinal stiffening-rib, O, Figs. 1 and 4 of the accompanying drawings; second, two thick rigid jaws, *a a*, which clamp the stem *f* of the contiguous ends of two rails by means of rivets passing through the same; third, a bow, *m m*, of the proper thickness to yield or spring sufficiently by setting the rivets *rrrr* to embrace the ends of the rails firmly, and adapt itself to any slight variation in the size of the rails thus coupled, the Coupling thus formed having the additional peculiarity of coupling the ends of the rails between the sleepers or cross-ties instead of upon such sleepers as in the ordinary way by means of a chair.

The methods of making the said coupling set forth in the said schedule, and indeed all methods hitherto employed for that purpose, have proved more or less objectionable, for

the reason that an expensive quality of iron was required to be worked into that shape, and that an undue amount of manual labor was necessary in working the iron by such methods, which increased the cost of the manufacture to a degree that prevented the introduction of the coupling to public use. The invention in this case is intended to remove these objections, and thereby cheapen the manufacture of the coupling, both by using a cheaper quality of iron and by reducing the expenditure of manual labor in working the same.

My invention consists, first, in making a bar of iron equivalent in form and dimension transversely to one half of the coupling when divided vertically in the middle of the stiffening-rib O, as shown in Fig. 2; secondly, in fastening two such bars together at each end by means of rivets, as shown in Figs. 5 and 6, or otherwise, and welding the divided halves of the stiffening-rib solidly together by means of suitable rollers, and, thirdly, in cutting the bar thus formed into lengths of fifteen or twenty inches, as may be required, for the coupling, and clipping the corners of the stiffening-rib, O, as shown by dotted lines in Fig. 4.

The half bar, Fig. 2, may be made of a flat bar of iron, B, the thicker portion of which is about seven-eighths of an inch thick, and the thinner portion about one-half an inch thick, by passing the said bar between suitably-formed rollers, to first draw and crimp the bar in the form shown in Fig. 3, and by passing the same between other rolls it is drawn and otherwise shaped into the half-bar, Fig. 2.

The construction and arrangement of the rolls for forming the half-bar do not differ in any essential particular from those generally used for rolling iron bars, except that peculiarity of form necessary to give the required form to the half-bar, which will be readily understood by any machinist familiar with the turning and shaping of such rolls, and need not therefore be herein described.

The next operation is that of welding the two half-bars together. To do this I put the two bars together as it is intended they shall finally be welded, and after drilling one or more holes through the divided rib O at each end of the bar, I rivet the ends together, as shown in Figs. 5 and 6, which prevents the

two half-bars from being displaced in the subsequent operations of heating and welding. The bars thus fastened together are then heated to a welding heat in a suitable furnace, and by means of an arrangement of rolls with a former, which will presently be described, the divided halves of the rib O are by rolling welded solidly together, thus forming a bar of the required shape transversely for the coupling, and while this bar is red-hot it is to be cut into lengths of fifteen or twenty inches, as is required for the couplings, by means of one or more circular saws suitably arranged for the purpose. These lengths or pieces of the bar are then taken to a pair of shears, and the corners of the rib O are clipped off, as shown by dotted lines in Fig. 4, when, after drilling the holes for the rivets *r r r r* through the jaws *a a*, the coupling is finished and ready for use.

Figs. 7 and 8 represent the construction and arrangement of the rolls used for welding the divided rib O together. The rolls D and G are wrought into the form intended for the exterior surface of the coupling, while the interior surface, which embraces and is to be occupied by the rails, is shaped or maintained in the desired shape by means of the former H,

which may be of wrought-iron, and firmly bolted to the frame M of the rolls, in its proper relative position therewith, as shown, or the said former may consist of a detachable piece or mandrel, to be inserted in the space between the jaws *a a* of the bar, as it is taken from the furnace and held in the proper position, when the bar is introduced between the rolls by a stop or arm extending from the frame M, in the same manner and position as the arm *h* of the former shown, against which the mandrel or detachable former brings up and rests as the bar passes through the rolls.

Having described my improved method of making the said rail-coupling, I wish it understood that I do claim the half-bars when bolted or riveted together, as this has been done before.

I claim—

The welding of two such half bars together, substantially as described, the bar thereby formed to be cut into the requisite lengths or pieces to form the aforesaid rail-coupling, substantially as and for the purpose set forth.

SAMUEL VANSTONE.

Witnesses:

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JAMES H. PARSONS.