(No Model.)

O. H. LANG.

SUSPENDED RAIL JOINT.

No. 523,796. Patented July 31, 1894.

Fig. 1.

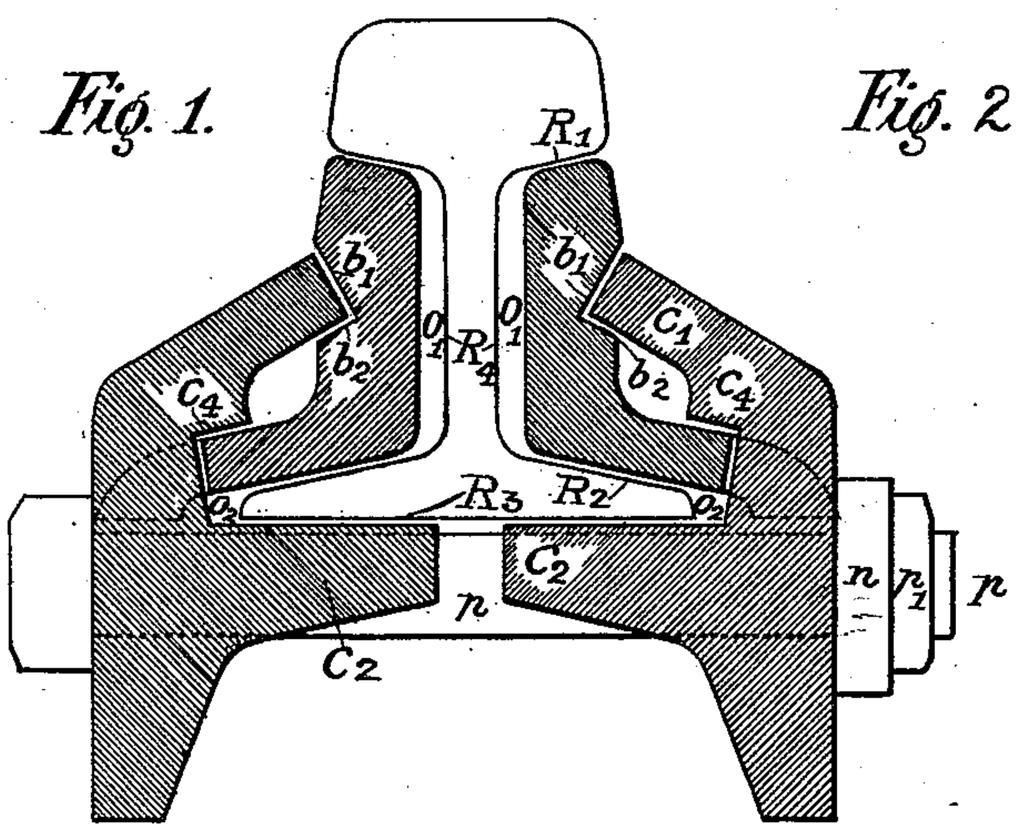


Fig. 2.

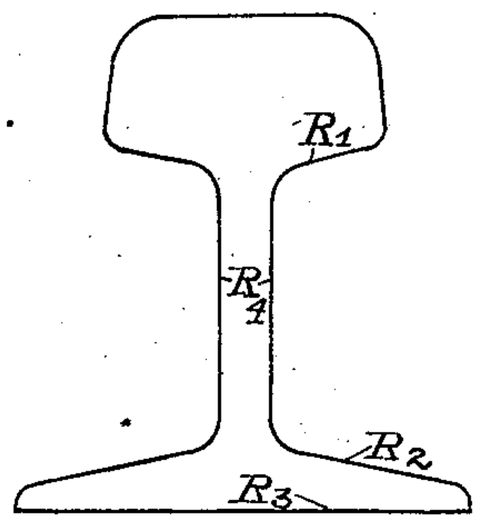


Fig. 3.

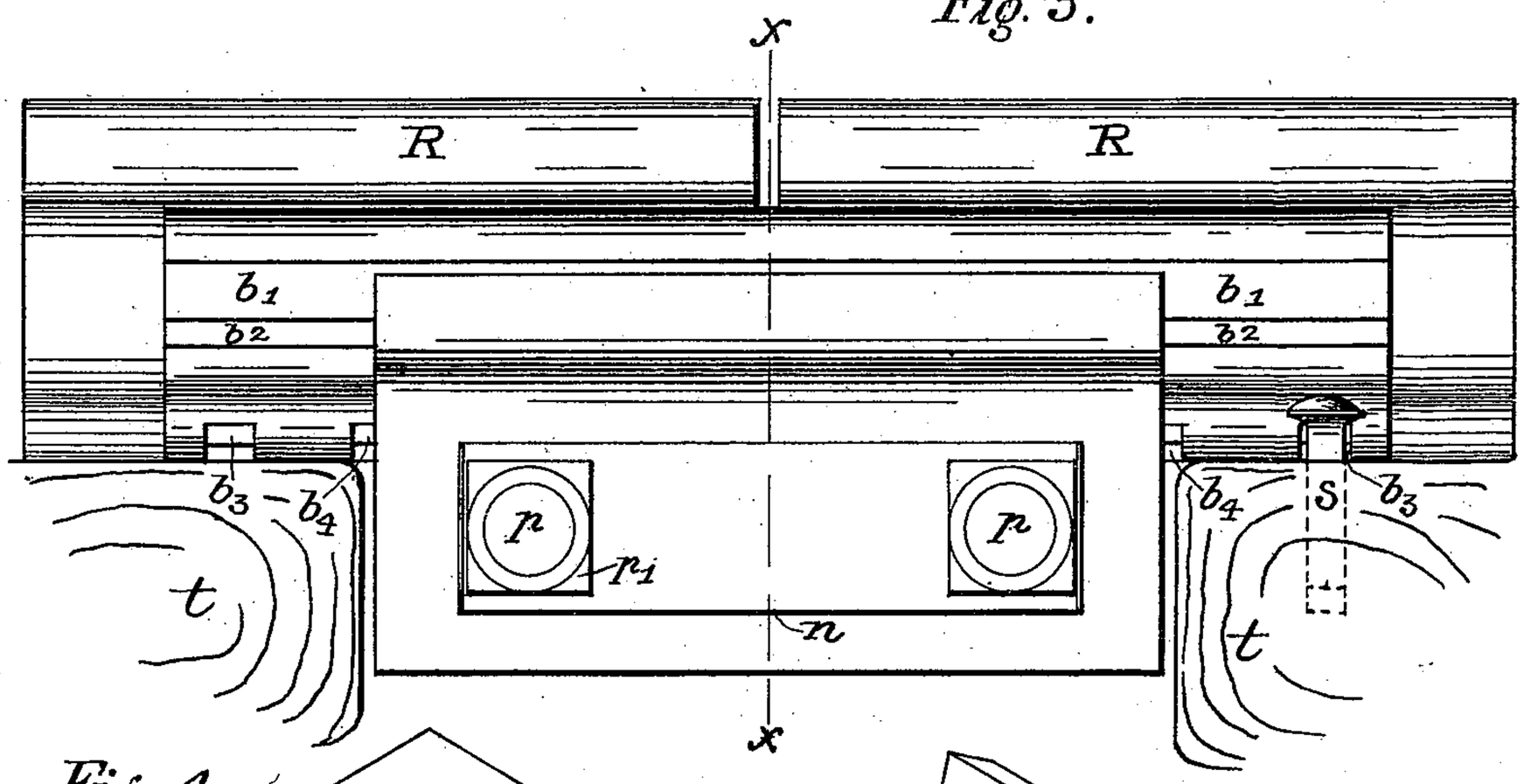


Fig. 4.

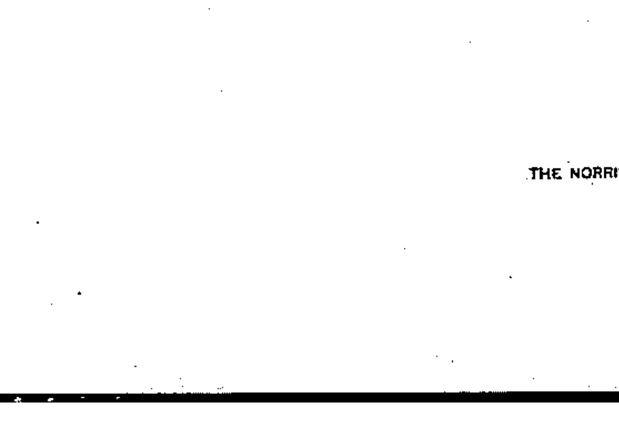
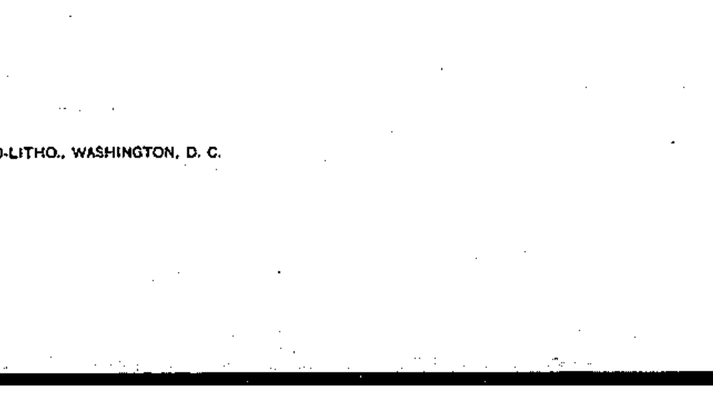


Fig. 5.



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UNITED STATES PATENT OFFICE.

OTTO H. LANG, OF DALLAS, TEXAS.

SUSPENDED RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 523,796, dated July 31, 1894.

Application filed April 18, 1894. Serial No. 508,039. (No model.)

To all whom it may concern:

Be it known that I, OTTO H. LANG, a resident of Dallas and State of Texas, born in Baden, Germany, but five years a resident of the United States, having filed a declaration to become a citizen of the United States, in Dallas county, Texas, in the year 1892, have invented a new and useful Suspended Railway-Rail Joint, of which the following is an exact specification.

My invention relates to improvements of the well known anglebar railjoint with two anglebars placed opposite, and bolted to and through the meeting rail ends.

The objects of my improvements are, first, to reduce the use of bolts to a minimum, especially avoiding the use of railbolts; second, to introduce a novel fastener, which secures a perfected manner of tightening, transforms the common anglebar joint into a perfect suspended joint, allows the rails to expand and contract, without danger to the joint, guards against creeping, and provides for adjustment of both, fastening and support by one single operation. I attain these objects by a combination of two anglebars, two clamps, and two bolts, admitting any kind of nutlock.

Everything is clearly illustrated in the accompanying drawings, in which—

Figure 1. represents a section taken at line $x\,x$, of Fig. 3; Fig. 2. an end view of rail; Fig. 3 a side view of the joint; Fig. 4 a perspective view of the clamp, and Fig. 5 a perspective view of the anglebar.

Similar characters refer to similar parts throughout the several views, whereby the letter relates to the part as a whole, and the annexed figure to its detail.

R designates the rails. There are no holes in web of rail, but at a point of about half rail length, a slot might be cut at both sides of base of rail, to secure same to ties and assure expansion and contraction from center of rail toward the ends.

R′, R², R³, R⁴ refer to sides of rails, upon which pressure is exerted by anglebars and clamps.

b relates to anglebars. They are of the usual shape, but differ in some details from the general anglebar. Their strength is not reduced by boltholes, they are supposed to be of somewhat heavier section, and their back is provided with a groove, formed by two inclined sides b' and b^2. This groove offers proper bearing area for the clamp and gives the advantage, that in case of bending the joint by heavy load, the resistance of the whole clamp is called to act. The base of *b*, which rests for a distance of half tie width on the abutting ties *t*, shows three notches b^3 and b^4. b^3 to receive spike S, securing *b* to *t*.

b^4 corresponds in length to the length of clamp, being designed to take up *c*.

Clamp *c* consists practically of two wings c' and c^2. The bottom side of c' has the same inclination as b', but c^4 the same as base of *b*. c' acts as brace against *b*, c^2 as support to R³. Two bolt holes c^3 are bored into *c*, either square or round, depending upon the bolt and nutlock to be used. The bolts, when inserted pass below the base of rail, uniting the two clamps *c*. The length of *c* corresponds to the clear distance between the abutting ties *t*, thus supporting the free ends of the meeting rail-ends.

n refers to a nutlock, here being simply a thin plate of iron, screwed to *c*, ends turned against p' after tightened.

All parts are put in their respective places essentially as shown by Fig. 1., leaving spaces o' and o^2 for adjusting and assuring the full power of the wedges, common to all principal parts.

All main parts are secured against slipping longitudinally. *b* by *s*, driven through b^3 into *t* and *c* by resting in b^4. The combining pressure is furnished by *p*. p', screwed tightly transfers the force to *c*, *c* to *b* and R³ and *b* to R′ R² and R⁴. Therefore the force which acts against *c* creates equal pressure to R′ R² R³ R⁴, that is all available sides of the rail, that can be utilized in framing a railjoint. Therefore the clamp appears to be a fastener as well as a support in one piece. In case of wear or loose joint a turn of p' adjusts both support and fastening simultaneously. *c* as fastening does not decrease the strength of the parts by bolt holes, as railbolts do, and distributes the pressure over a larger surface more perfectly and economically. Besides this, *c* avoids the danger arising from the

necessity of having a disproportion in size of diameter of bolt and boltholes, which after the least little wear of the parts, increases the loosening effects. R can easily expand and contract between *b*. *c* acts as perfect support, because same is not assured by a mere excess of material of some parts, but created by actual force, equal to the force, which combines the parts.

All members of the joint are intended to be rolled of iron or steel, though the clamp *c* might be of cast steel.

I am aware of Patents No. 393,320, dated November 20, 1888, to Allen, and No. 463,082, dated November 10, 1891, to Stever, and do not claim anything described therein. But

What I do claim as my invention, and desire to secure by Letters Patent, is—

The railjoint herein set forth comprising non-perforated rails and angle bars, and clamps to retain the angle bars in position consisting of upper limbs overlying the angle-bars and engaging them laterally upon a substantially intermediate line between the upper margin and the angle thereof, and lower limbs extending horizontally beneath the rail and perforated to receive transverse bolts beneath the rail base substantially as set forth.

OTTO H. LANG.

Witnesses:
F. G. BALDWIN,
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