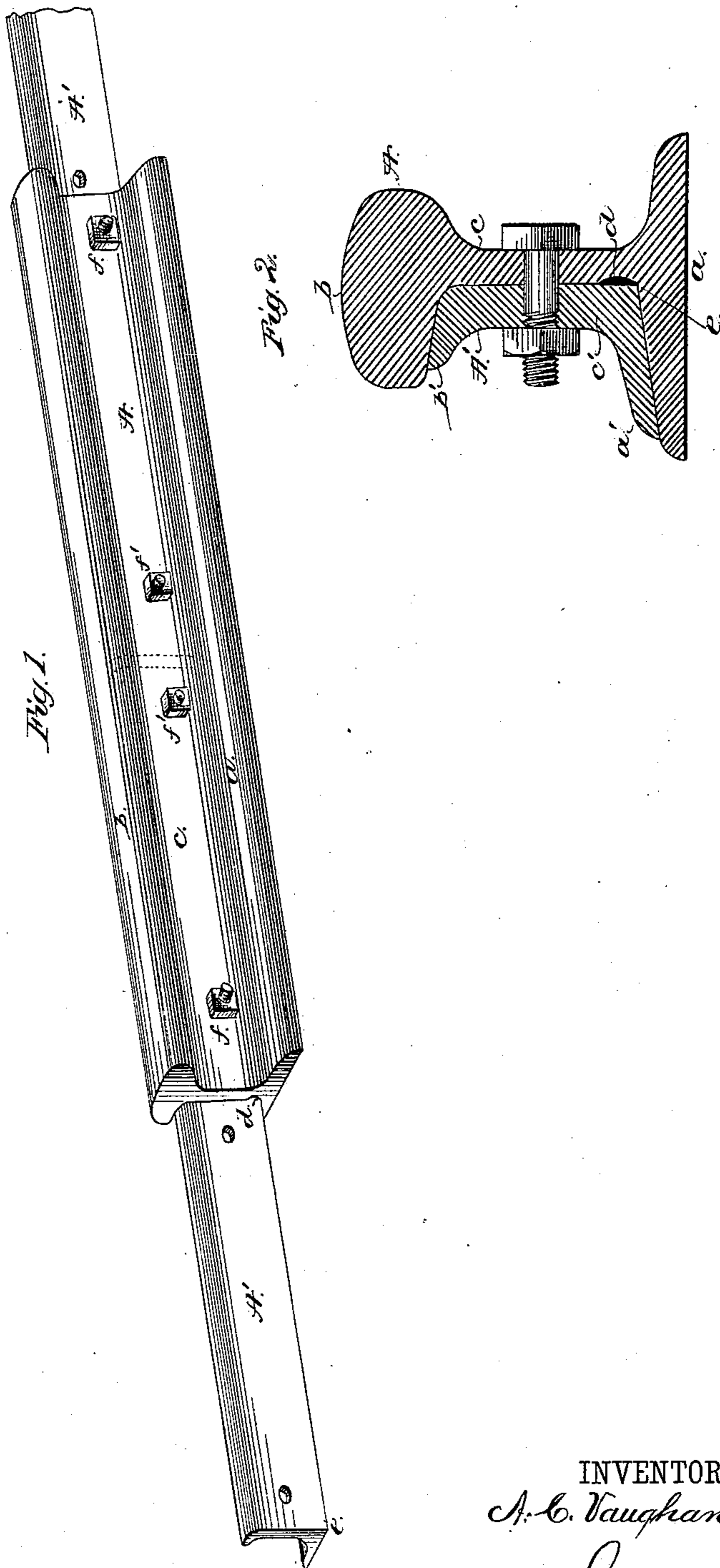


A. C. VAUGHAN.
Railroad-Rail.

No. 226,811.

Patented April 20, 1880.



WITNESSES:

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AARON C. VAUGHAN, OF SCHANE'S CROSSING, OHIO.

RAILROAD-RAIL.

SPECIFICATION forming part of Letters Patent No. 226,811, dated April 20, 1880.

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To all whom it may concern:

Be it known that I, AARON C. VAUGHAN, of Schane's Crossing, in the county of Mercer and State of Ohio, have invented a new and Improved Railroad-Rail; 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, forming part of this specification, in which—

Figure 1 is a perspective view of three of the rail sections, showing the mode of laying them, the sections, however, being shorter in proportion than they would be in practice, for want of space. Fig. 2 is an enlarged cross-section of the rail taken through one of the connecting-bolts.

My invention relates to a continuous rail of the T-shape class, built up of two longitudinal sections arranged with lap-joints and designed to render the track smoother and safer and to dispense with fish-plates.

It consists in dividing the rail longitudinally into two sections, which, when put together, complete the T-shaped form, with the line of division running through the web, a portion of the base, and a portion of the tread, and forming one of the sections with the larger base and tread portion and the smaller web portion, and forming the other section with the smaller base and tread and larger web portion, and then laying these sections alternately, whereby the joints of one set of sections alternate with the joints of the other set, so that all the joints are lap-joints and the rail is a continuous one of an equal T-shape cross-section throughout its entire length.

The invention also consists in constructing the two sections so that they fit together with a wedging action to take up worn slack; and, further, in constructing that section of the rail which has the larger base portion with a groove at the point where the corner or angle of the other section bears upon it, and in extending the base-flange of the smaller section to range of contact with the spikes, as hereinafter fully described.

In the drawings, A represents one longitudinal section of the rail, and A' the other. The section A of the rail includes the larger portion of the base *a* and the larger portion of the tread *b*, but the lesser half of the web *c*,

as shown in Fig. 2, while the section A' comprehends the larger half of the web *c'* and a small portion, *a'*, of the base, and a small portion, *b'*, of the tread. In locating the line of division of the rail the cut which bisects the tread and that which cuts through the upper portion of the base converge toward each other as they approach the web portion of A, so that the section A' fits in with a wedging action, so as to take up any worn slack and avoid any jingling of the rails. Just at the point where the web portion of A joins the base I form a groove, *d*, the object of which is to avoid a sharp angle at this point, which is required to prevent steel from suddenly snapping or breaking, and which also serves to secure a solid support for the edge of the section A', which, it will be seen, is made with a square corner, *e*.

In fitting the two sections of the rails together, said sections, which are made of equal length and preferably about thirty feet long, are placed together, with the ends of one set of section A meeting about midway the length of the other set of sections, so as to form a continuous rail of uniform transverse size connected by lap-joints. These sections I bolt together with the same number of bolts *f f'* that are ordinarily used for fastening fish-plates, but arranged differently—*i. e.*, instead of having two bolts at each end of each rail, making four in all, I arrange one bolt, *f*, at the end of each section, and two bolts, *f' f'*, in the middle, for connecting the abutting ends of the rail-sections on the other side. For permitting a slight endwise movement in adapting the rail-sections to expansion and contraction without bending, I form, as usual, the bolt-holes in one or both of the rail-sections in the nature of horizontal slots to compensate for this.

In making use of my invention I do not confine myself to the location of the abutting joints of one set of rail-sections midway the rails of the other section, as this is not necessary, and can be departed from so long as the sections on one side break the joints of the sections on the other. When the two sections of the rails are thus bolted together the weight of the trains on the tread of the rail is sustained partly by the portion of the web which

is connected to the base and tread and partly by the other section, A', which rests under the overhanging edge of the tread, and forms a stronger support than if the rail were made solid.

In constructing the sections of the rail it will be seen that their uniform transverse character permits them to be rolled like ordinary rails, and afterward laid to form a track without special appliances or any further expense than that attendant upon the laying of the old form, saving, in fact, the additional bulk of iron contained in the fish-plates.

Among other advantages of my invention I may mention that the extension of the portion *a'* of the section A' to nearly the edge of the base *a* causes the heads of the spikes to rest against the said portion *a'*, so that if the bolts which hold the two sections together should break, or the nuts come off, the section A' will still be held in place, and will afford a support to the tread, for the reason that the spike-heads prevent it from moving laterally out of place. The basic support which the flange *a'* affords also prevents the tilting of the section A' in sidewise direction.

Another advantage is as follows: In all kinds of rails, whether of steel or iron, it sometimes happens, from inherent flaws or the extreme influence of the weather, or both combined, that the ordinary solid T-shaped rails break, and involve accidents of a serious character. Now, when the rails are made continuously of two sections, A A', as in my invention, there is but a small chance for flaws to exist in both sections at the same point, and hence, if either section should break, the continuity of the track is not necessarily de-

stroyed, but the other unbroken section will still afford sufficient support to the train to prevent it from leaving its position on the track, thus reducing to a minimum the accidents from this cause.

Having thus described my invention, what I claim as new is—

1. A continuous T-shaped railroad-rail formed of two longitudinal sections, one of which sections has a wedge-shape re-entrant cut, and the other of which section is of a corresponding wedge shape in cross-section to take up worn slack, and with the said sections laid with lap-joints, as described.

2. A railroad-rail of the T-shaped pattern divided longitudinally through the web, base, and tread, with one section having the larger base and tread portion and the smaller web portion, and the other section with the larger web portion and the smaller tread and base, the said sections being bolted or laid together in the lap-joint manner, as described.

3. The section A, having the groove *d*, in combination with the section A' and the cross-bolts, as and for the purpose described.

4. A railroad-rail of the T-shape pattern, composed of two longitudinal sections, A A', with the base of the smaller section A' resting upon the base of the larger section and extended to range of contact with the spikes, as described.

The above specification of my invention signed by me this 21st day of February, 1880.

AARON C. VAUGHAN.

Witnesses:

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