

(No Model.)

F. C. WEIR.  
EXPANSION RAIL JOINT.

No. 411,362.

Patented Sept. 17, 1889.

Fig. 1

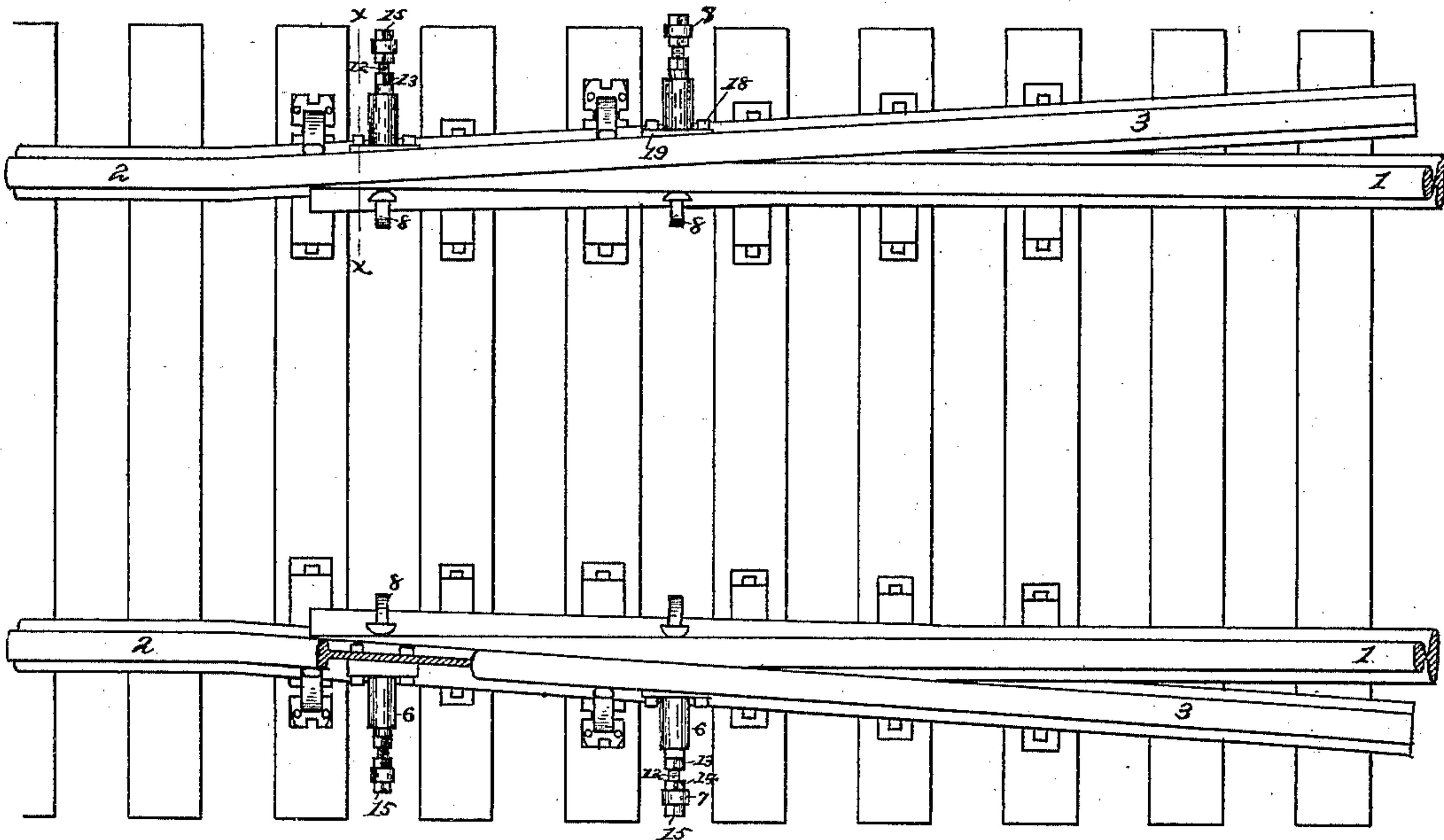


Fig. 2

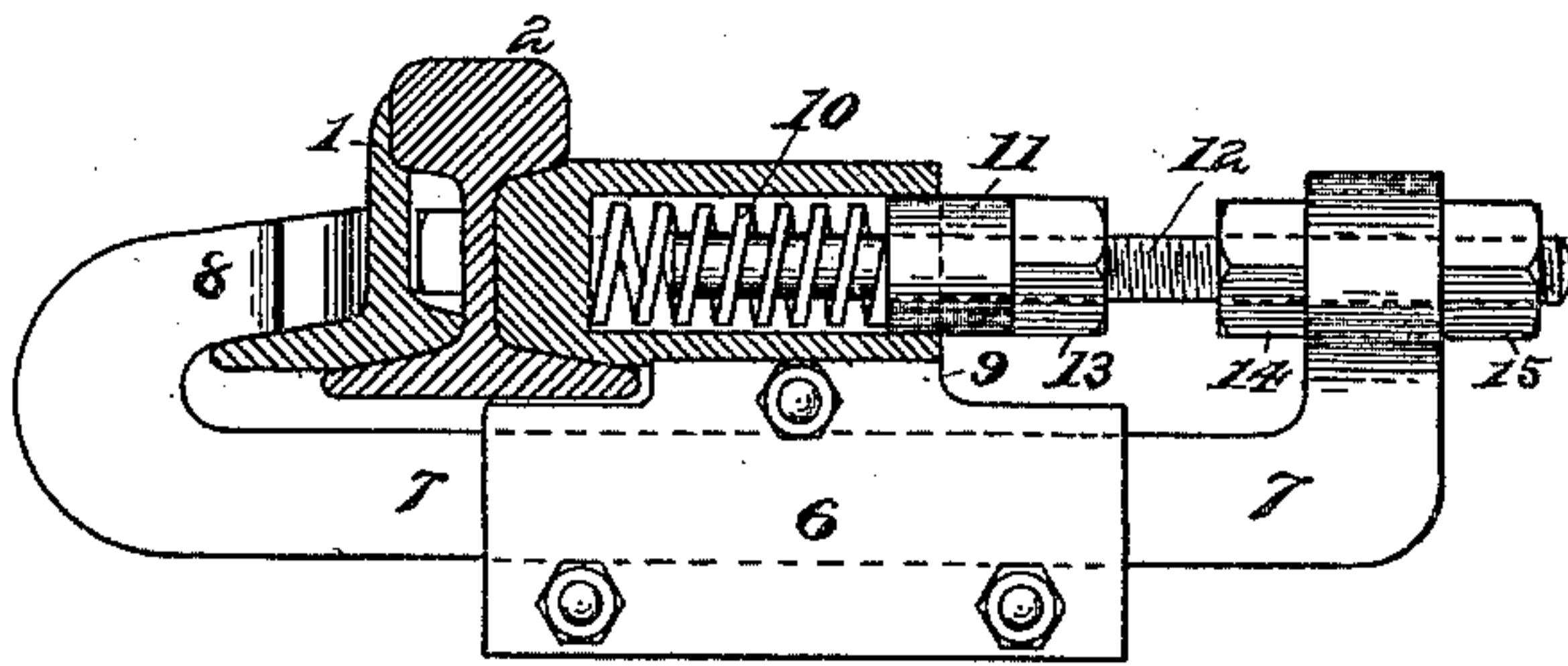


Fig. 3

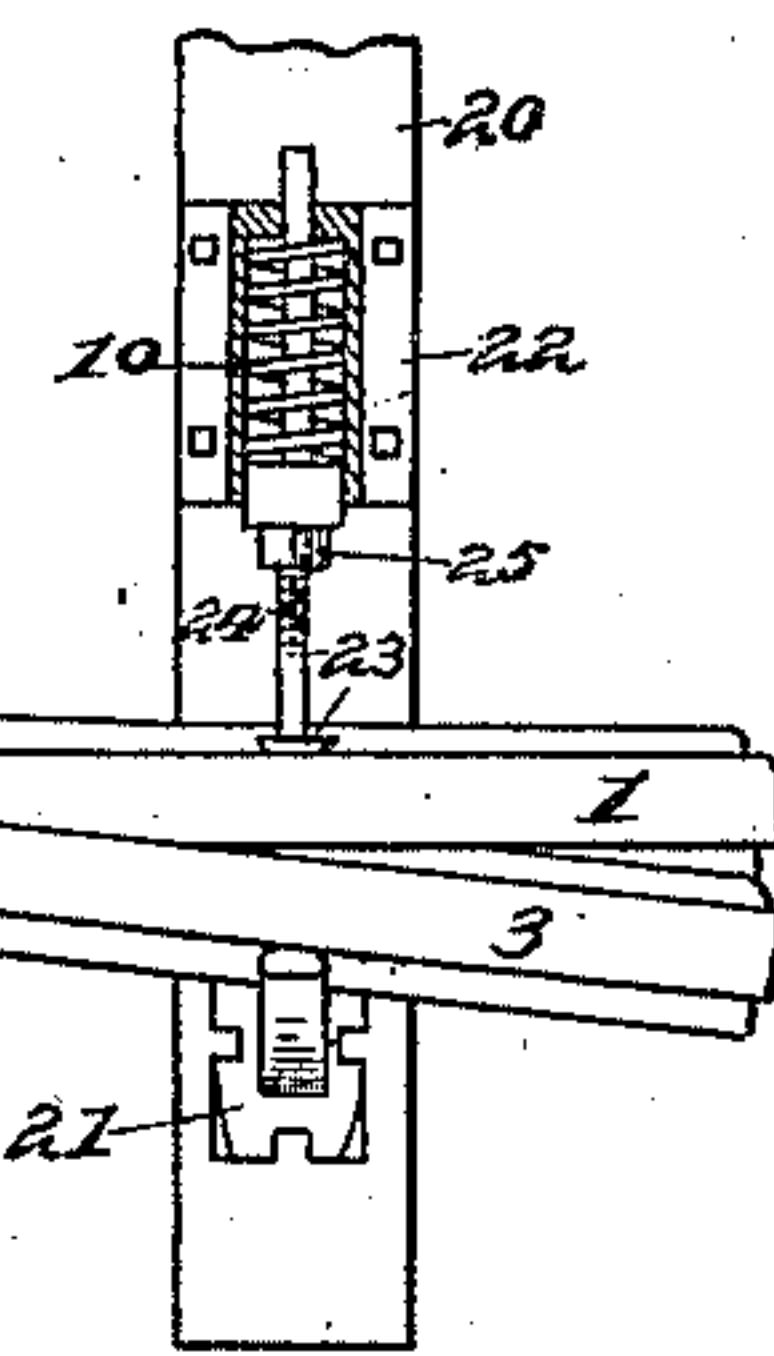
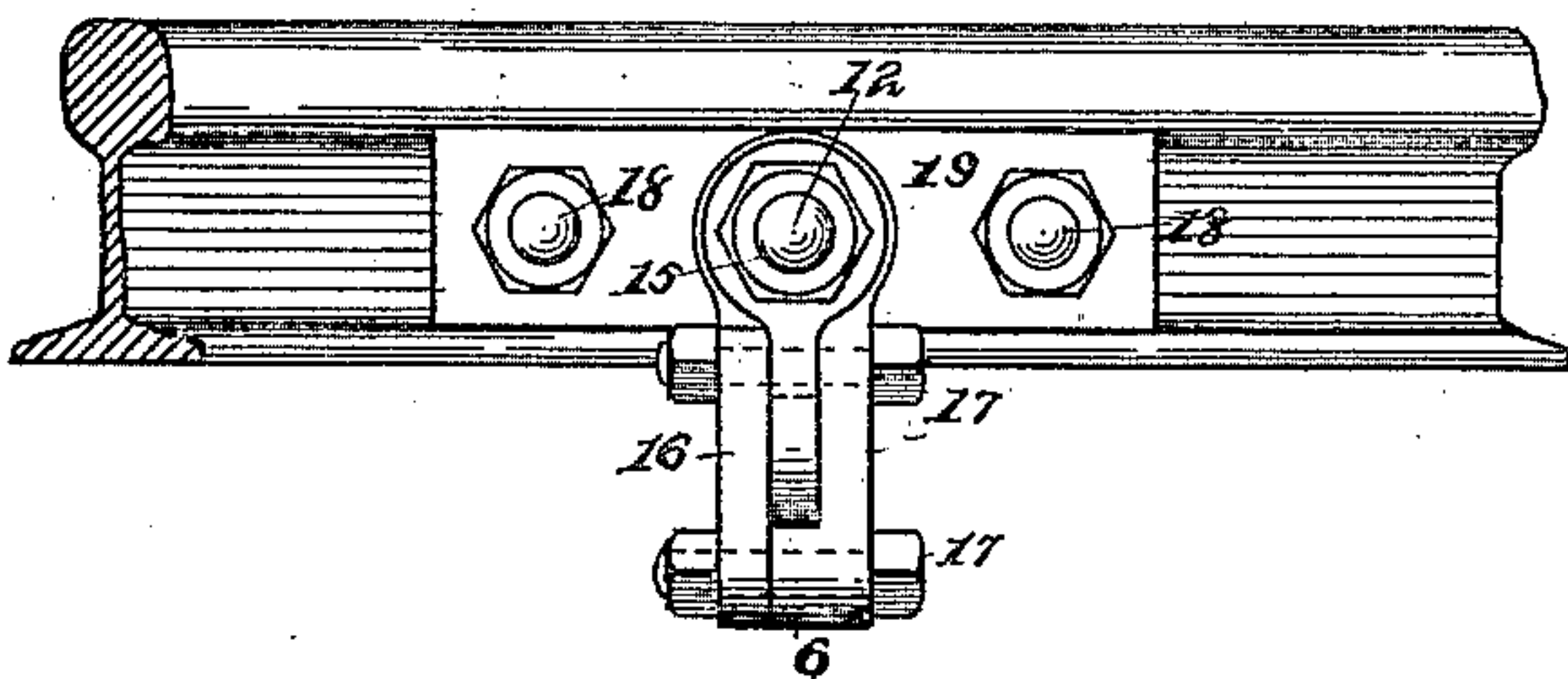


Fig. 4



Witnesses

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# UNITED STATES PATENT OFFICE.

FREDRIC C. WEIR, OF CINCINNATI, OHIO.

## EXPANSION RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 411,362, dated September 17, 1889.

Application filed July 10, 1889. Serial No. 317,030. (No model.)

*To all whom it may concern:*

Be it known that I, FREDRIC C. WEIR, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Expansion Rail-Joints, of which the following is a specification.

The object of my invention is to provide an expansion-joint for the main-line railway-track for use upon bridges and road-beds, such as heavy grades and other places where necessary, whereby the expansion and contraction of the rails will be taken up in the joint-connection automatically by the expansion and contractile forces produced by the changes of temperature, all of which will be fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top plan view of my improvement. Fig. 2 is a sectional elevation on line *x x*, Fig. 1. Fig. 3 is a side elevation of Fig. 2. Fig. 4 is a modification of the clamp-brace shown in Figs. 2 and 3.

1 1 represent the main-track rails, or that part of the road-bed in which compensation for expansion and contraction of the rails is provided. The opposite end of said track-section may have the same construction as that shown in Fig. 1, so that both ends of the compensatory track are provided with a similar joint.

2 2 represent the main-track rails of the road-bed on either side of the former section of road-bed.

The rails 1 1 are tapered after the manner of forming split switch-rails. The inner ends 3 of the rails 2 2 are each bent outward outside of the main-track rails 1 after the manner of rails for split switches, and the split ends of the main rails 1 abut against the main-track rails 2 inside of the angle and at the proper place to make a straight-line track. It is necessary to hold these rails firmly in position laterally, yet allow the rails 1 to creep longitudinally within the joint as the track-rails contract or expand under the influence of the temperature. To accomplish this I provide a yielding clamp-brace. The preferred form of constructing this brace is

shown in Figs. 1, 2, and 3, in which figure 6 represents a guide-box; 7, a clamp-bar, which is preferably bent at the inner end to form a brace 8, abutting against the end of split rail 1. On the top of said guide-box 6 is mounted a housing 9, the inner end of which is shaped to fit the rail 2, and to which it is secured by bolts 18, passing through the box 19, secured to said housing 9. 10 represents a coil-spring, which seats against the inner end of said housing and against the collar 11 at the outer end. 12 represents a screw-rod. The inner end of said rod is projected into the housing to serve as a guide for the coil-spring 10. 13 14 15 represent set-nuts, by which the spring is regulated to yieldingly hold the clamp 8 against rail 1. The nut 13 may be turned out or in to increase or decrease the tension of the spring. I have shown the guide-box made of two sections or parts, 16 representing the plate on one side, which is secured by bolts 17. The clamp-arm 7 is allowed to move longitudinally in the guide-box whenever the rail 1 moves forward or backward. The spring contracts or expands under the pressure applied to said clamp-arm through the rail 1. When the rail 1 creeps forward, it being of wedge form contracts the spring and moves bar 7 longitudinally. When said rail 1 contracts, the retractile force of spring 10 draws the clamp-brace 8 freely against said rail 1. This same result is accomplished by the modification shown in Fig. 4, in which case 20 represents a tie of the road-bed; 21, a fixed brace spiked to the tie; 22, a spring-housing secured to the tie. 10 represents the coil-spring; 23, the movable clamp-brace abutting against rail 1; 24, a rod supporting the spring in the housing, and 25 a nut for regulating the tension of the spring. A similar spring-clamp brace is provided on the inside of the opposite rail. The device shown in Figs. 1, 2, and 3 is the best, however, as it does not depend upon spikes to hold the brace against the rails, and is therefore more reliable than said modification.

Having described my invention, what I claim is—

1. An expansion rail-joint for the main track of a railway, composed of the split rails

1, abutting the main rails 2, and secured thereto by a spring-clamp, substantially as herein specified.

2. An expansion rail-joint composed of the  
5 split main rails 1, abutting the inside of the main rails 2, the former being held laterally against the latter by a yielding brace abutting the inside of said rails 1, substantially as specified.

10 3. A rail-clamp composed, substantially, of the arm 7, embracing the split rail 1 and fixed rail 2, and carrying a yielding support, so as to allow rail 1 to move longitudinally with said support, substantially as specified.

4. In combination with the rails 1 and 2, 15 the clamps 7, carrying the brace, and compensating spring supported in the guide-box 6, which holds the clamp laterally and allows it to move longitudinally, substantially as specified.

In testimony whereof I have hereunto set my  
hand. 20

FREDRIC C. WEIR.

Witnesses:

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T. SIMMONS.