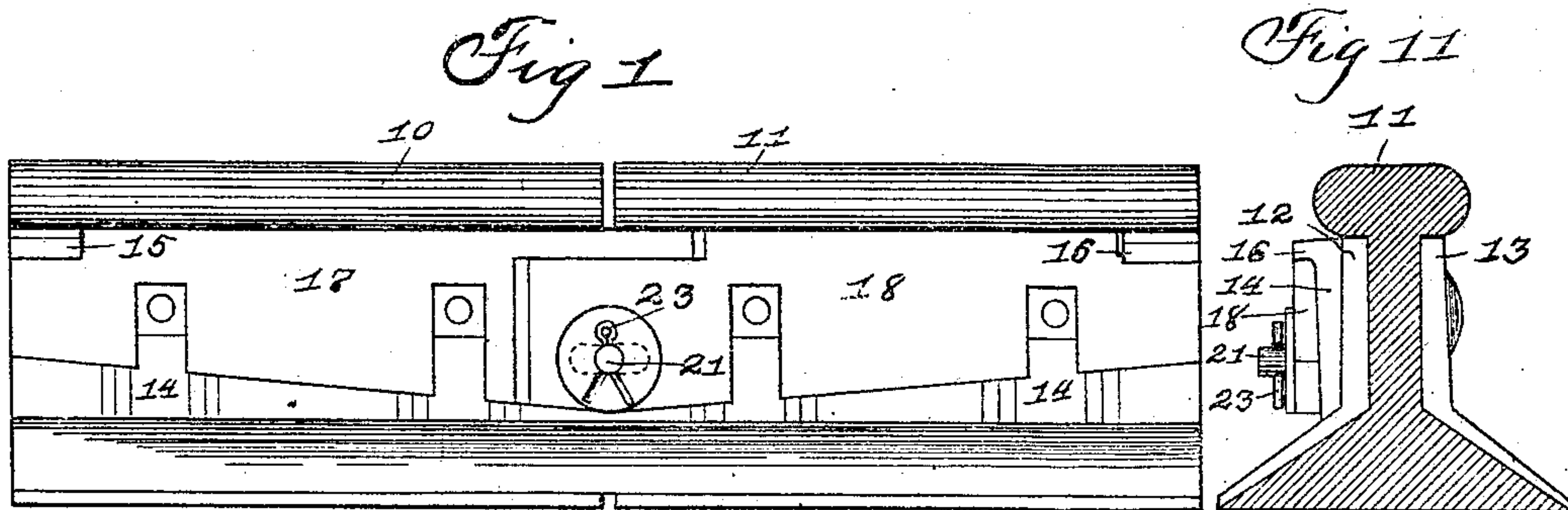
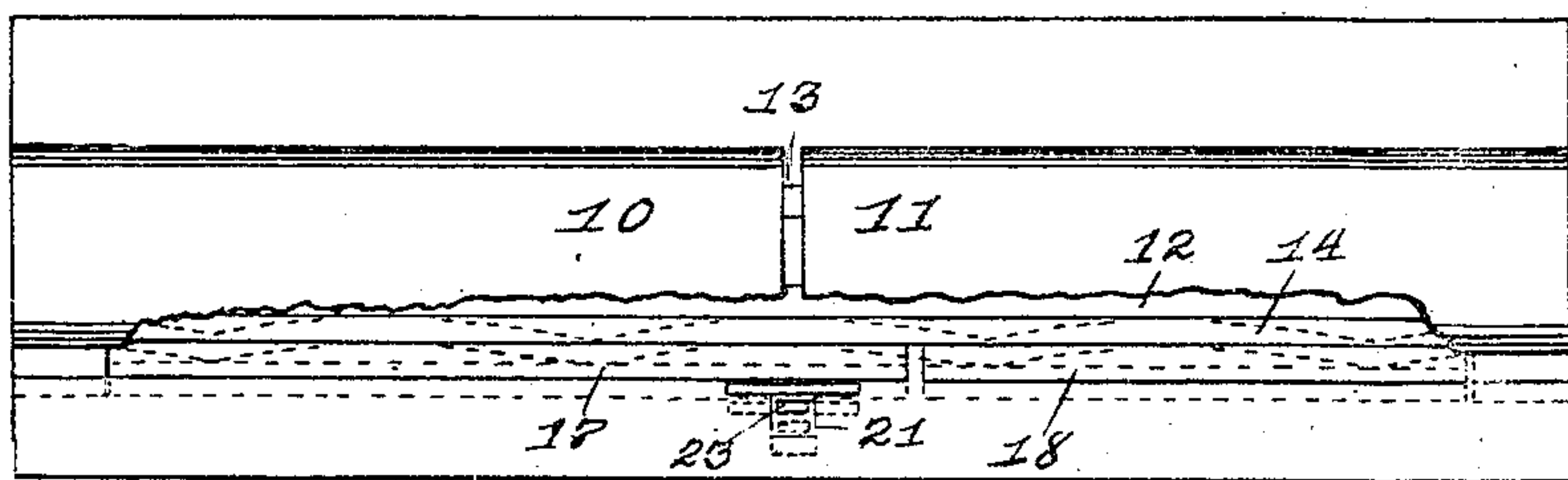
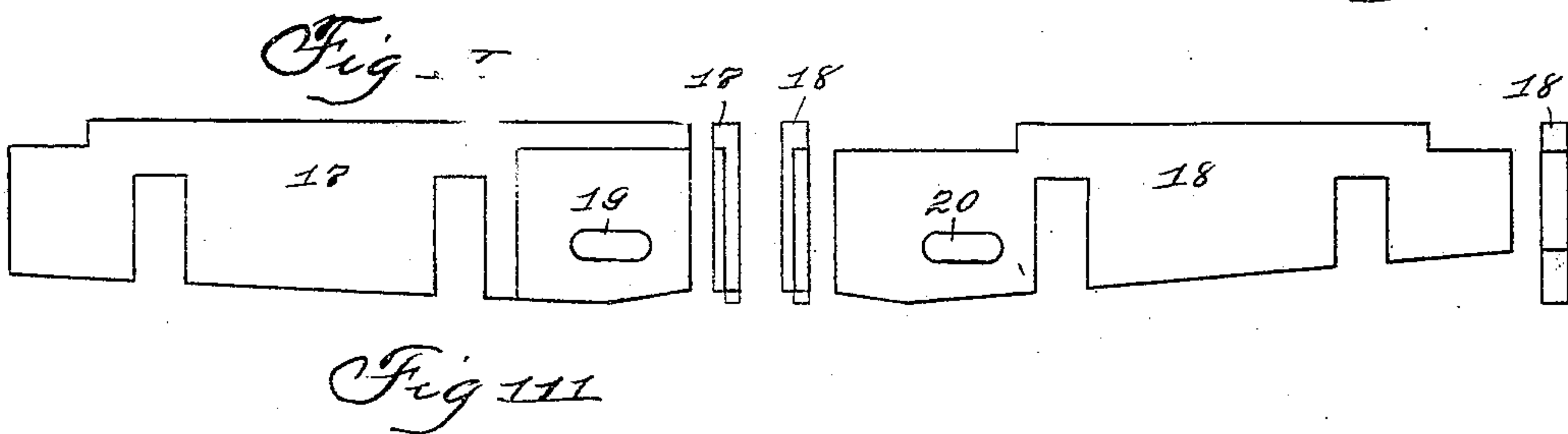
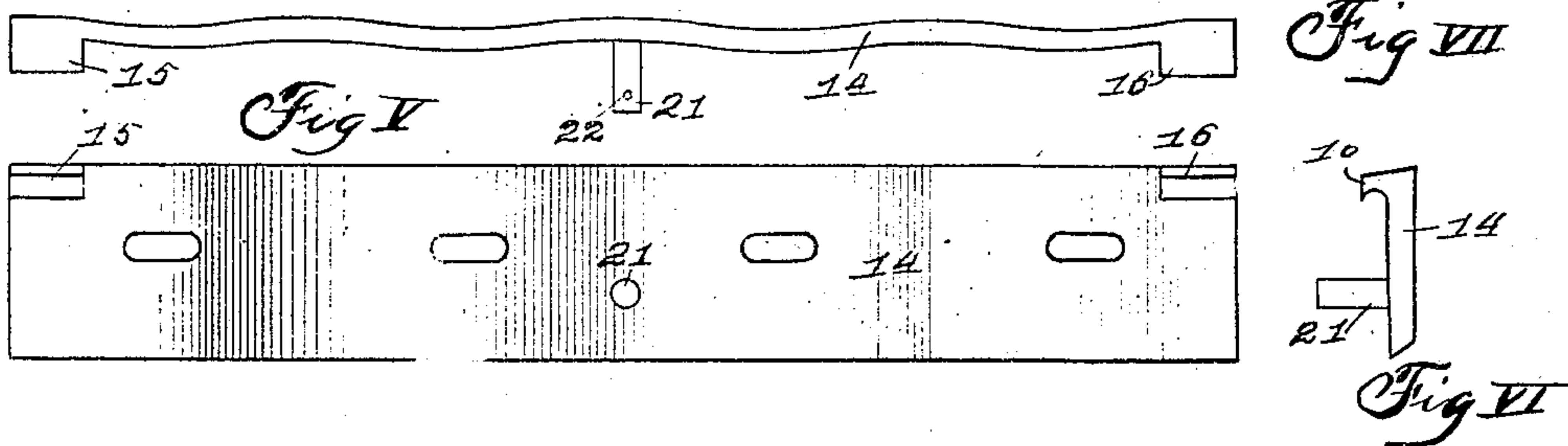


A. D. SIMPSON.
NUT LOCKING DEVICE FOR RAIL JOINTS.
APPLICATION FILED JUNE 9, 1909.

951,291.

Patented Mar. 8, 1910.



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ALBERT D. SIMPSON, OF BRIGHTON, IOWA.

NUT-LOCKING DEVICE FOR RAIL-JOINTS.

951,291.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT D. SIMPSON, a citizen of the United States, residing in Brighton, county of Washington, and State of Iowa, having invented a new and useful Improvement in Nut-Locking Devices for Rail-Joints, of which the following is a specification.

The object of my invention is to provide a nut locking device for rail joints which will form a tight, flush, joint and which will not be affected by the expansion or contraction of the steel.

A further object is to provide such a device in a simple, strong, durable and inexpensive, construction.

My invention consists of certain details of construction, hereinafter set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure I shows a side elevation view of a rail joint fitted out with my device; Fig. II shows an end elevation view of the same, the rail being in section; Fig. III shows a plan view of the same, a portion of the rail being broken away, and the dotted lines indicating the position of the parts of my device before they are bolted to the rail; Fig. IV shows detail views, in front and end elevations, of my nut locking plates; Fig. V shows a front elevation view of the take-up plate which I employ; Fig. VI shows an end elevation view of the same; and, Fig. VII shows a plan view of the same.

Referring to the accompanying drawings the reference numerals 10 and 11 are used to indicate the ends of two adjacent rails, designed to be secured together, in the usual manner, by angle-irons 12 and 13, which are of the ordinary construction.

The numeral 14 indicates the take-up plate I employ, which consists of one sheet of spring metal bent, as shown in Fig. VII, so that in plan it presents a wavy appearance. Projecting forwardly from each upper end of the plate is a hook shaped finger, or lug, 15 and 16 respectively, designed for purposes hereinafter set forth. This plate is provided with a series of oblong shaped orifices, designed to receive the bolts which connect the angle-irons to the rails, when the parts of my device are joined.

The numerals 17 and 18 indicate companion plates designed to be secured to the rails 10 and 11 respectively, said plates each being provided with rectangular re-

cesses designed to engage the nuts on the bolts on their respective rails, as fully illustrated in Fig. I. These plates are designed to overlap, when the parts of my device are joined, and the outer and inner surfaces, respectively, at their joining ends are cut away, as shown, for the purpose of receiving each other in making the joint, so as to present a flush straight joint, as illustrated. In each of these overlapping ends, I have provided oblong orifices, 19 and 20, respectively, designed as companions for receiving a cylindrical lug 21, on the plate 14. The upper and outer end of each of these plates are cut away, as shown, to receive their respective forwardly projecting hook members on the plate 14. The lug 21 is provided with a transverse orifice 22, designed to receive a key 23, when the parts are joined. The plate 14 is designed to be of such a size as to be adapted to engage the entire vertical surface of the angle-iron, to which it is secured.

In assembling and securing the parts of my device and forming the rail joint the angle-irons are first secured, in the usual manner, to the rails. It is obvious that the orifices in the angle-irons through which the securing bolts pass, are oblong to permit of the end expansion and contraction of the rails, but as this is the usual and ordinary construction for angle-irons, I have not illustrated these orifices. The take-up plate 14 is then placed in position, the ends of the connecting bolts projecting through their respective oblong orifices, and these orifices being companions to their respective orifices in the angle-irons are designed to be exactly similar to, and in line with them. By construction the waves in this spring take-up plate are so arranged that the orifices are in the waves which project outwardly from the side of the rail. The nuts are then placed on the connecting bolts and screwed home until the waves are practically out of the spring metal take-up plate, thus obviously forcing the spring therein from its normal position and firmly clamping the plate to the angle-iron. The locking plates are then placed in position on the take-up plate, the hooked members engaging the recesses therein, as shown in Figs. I and II, and the rectangular recesses engaging their respective nuts, or taps, and the overlapping members engaging each other, the cylindrical lug 21 passing through the companion oblong ori-

fices, therein. The key 23 is then inserted and the parts of my device are all joined and the rail joint in readiness for operation.

By this construction it is apparent that the
5 nut locking plates will be securely held in position by means of the lug and key and the hooked members on the plate 14 which engage the ends of their respective plates.

The end expansion and contraction of the
10 rails is, obviously, provided for by the oblong slots in the angle-irons, take-up plates and the companion nut lock plates, as by this construction the last named plates are enabled to pull away from each other and
15 still maintain their relative positions to their respective parts and not affecting the locking of the nuts.

As the take-up plate is constructed of spring metal, which, in its normal condition,
20 is bent in wavy form, as shown in Fig. VII, and in its clamped position to the rail is flat or practically straight, as shown in Fig. III, it is obvious that when any lateral contraction occurs the waves in the plate will flare
25 out and maintain its clamped position to the nuts on the bolts, thus maintaining a rigid and solid rail joint. As the said plate is slotted, as hereinbefore described, it is ap-
30 parent that the end expansion or contraction of the rails will have no effect upon the operation of this plate as a take-up for lateral contraction.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:

1. In a nut locking device for a rail joint a spring metal take-up plate, secured to one of the angle-irons, said plate being provided with oblong orifices to receive the se-
40 curing bolts; companion plates, secured to said spring metal plates, and overlapping at their inner ends, said overlapping portions being provided with oblong orifices in line with each other, and said plates also being
45 provided with rectangular recesses to receive the nuts of the bolts secured in their respective rails; a cylindrical lug secured to the spring metal plate and designed to project through the oblong orifices in the com-

panion plates and a key to hold said plates 50 thereon, substantially as shown and described.

2. In a nut locking device for a rail joint a spring metal take-up plate, provided with oblong orifices to receive the securing bolts, 55 clamped to one of the angle-irons; nut locking plates, provided with rectangular recesses to receive the nuts on their respective bolts, said plates overlapping at their inner ends and provided with oblong orifices in 60 said overlapping portions; means to secure said plates together, for slidable movement, and also to secure them to the take-up plate, all arranged and combined substantially as shown and described. 65

3. In a rail joint, a take-up plate formed of a strip of spring metal bent so as to gently curve in and out and being provided with oblong orifices to receive the bolts securing the angle-irons to the rail ends; outwardly 70 projecting hooked members at each upper end of said plate; an outwardly projecting lug, provided with a transverse orifice, centrally located on said plate, substantially as shown and described. 75

4. In a nut locking device for a rail joint, the combination of a take-up plate formed of spring metal bent in and out, and oblong orifices therein, to receive the bolts securing the angle-irons to the rails; a hook shaped 80 member extending outwardly from each end of said take-up plate; a lug, provided with a transverse orifice, centrally located on said plate; nut locking plates, provided with rectangular recesses to receive the respective 85 nuts on their securing bolts, overlapping at their central portions, and provided with oblong, companion orifices to receive the lug on the take-up plate, and each also provided with a recess to receive the hooked member 90 on its respective side of the take-up plate; a key to engage the transverse orifice in the aforesaid lug, all arranged and combined substantially as shown and described.

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