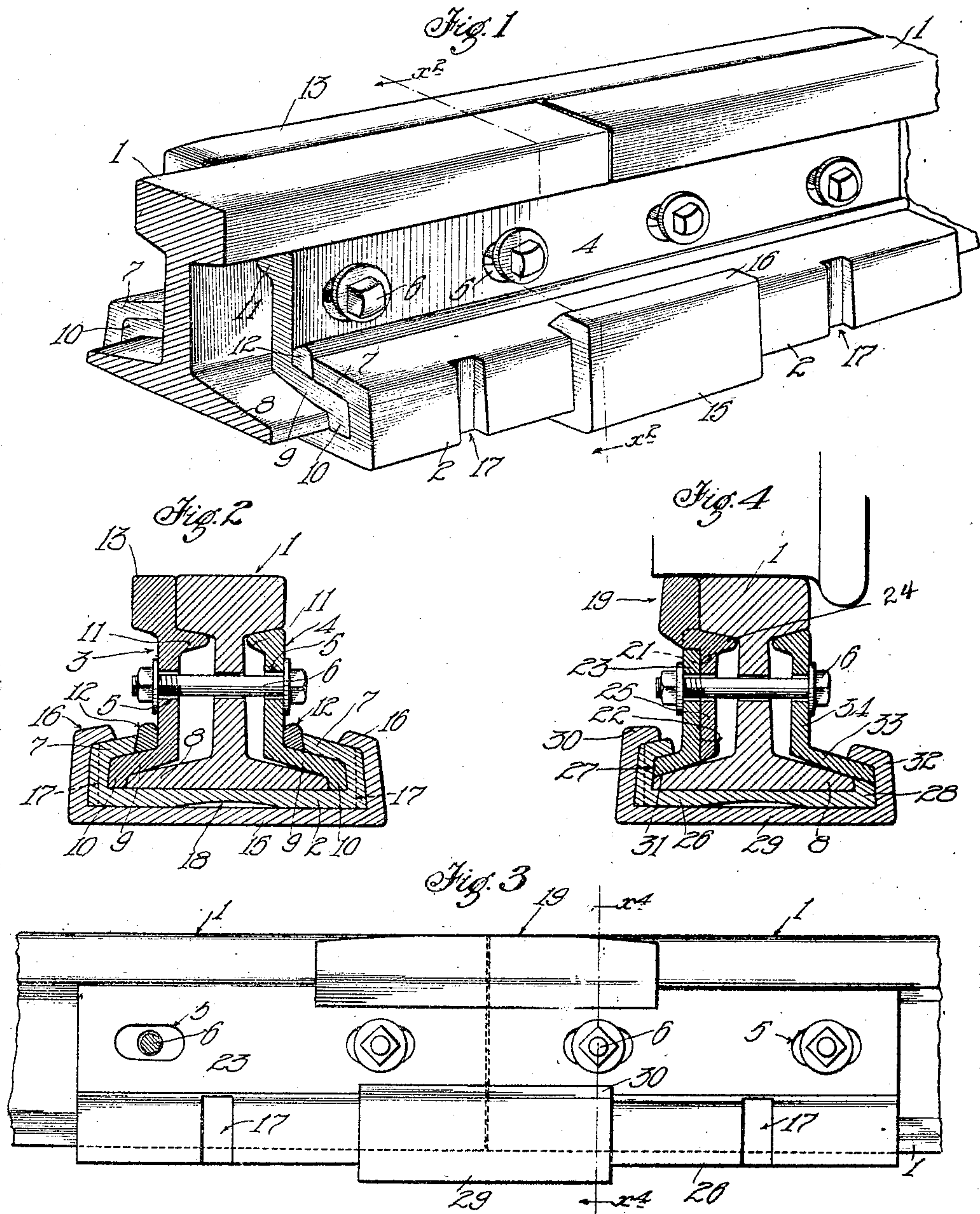


R. N. WALTON.
RAIL CLAMP.
APPLICATION FILED NOV. 8, 1904.

934,376.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



Witnesses
A. P. Knight

Inventor
Richard N. Walton
by Townsend & Bross
attys

R. N. WALTON.

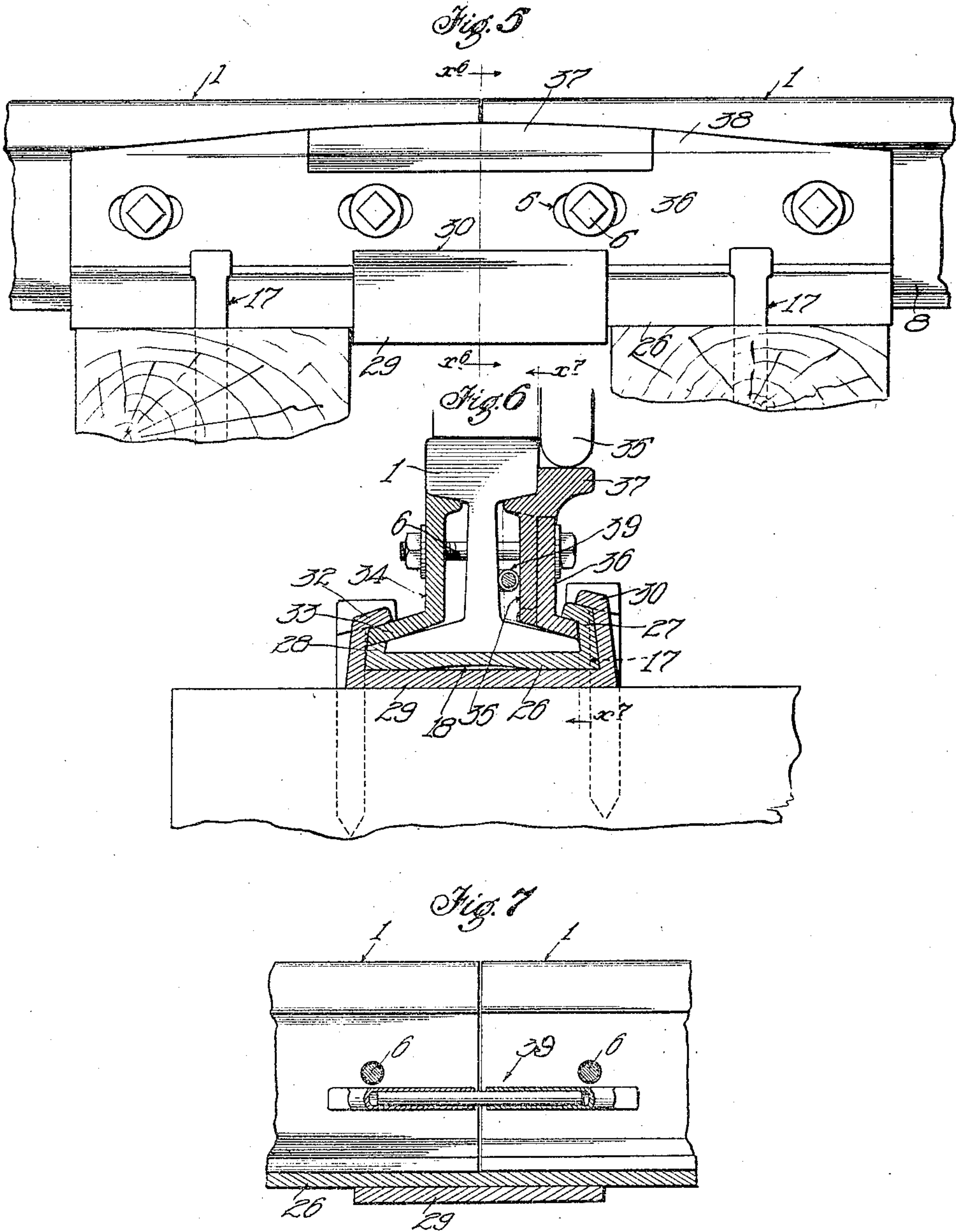
RAIL CLAMP.

APPLICATION FILED NOV. 8, 1904.

934,376.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 2.



Witnesses
J. M. Knigh
A. P. Knigh

Inventor
Richard N. Walton
by Thomas Bros.
attys

UNITED STATES PATENT OFFICE.

RICHARD N. WALTON, OF LOS ANGELES, CALIFORNIA.

RAIL-CLAMP.

934,376.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed November 8, 1904. Serial No. 231,845.

To all whom it may concern:

Be it known that I, RICHARD N. WALTON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles, State of California, have invented certain new and useful Improvements in Rail-Clamps, of which the following is a specification.

The main object of this invention is to provide a rail clamp of great strength and rigidity which will at the same time be cheap to manufacture.

Another object of the invention is to provide a rail clamp in which the weight will be distributed in the most advantageous manner, the parts being reinforced where extra strain is incurred.

Another object of the invention is to provide for replacement or renewal of the parts subject to wear.

Another object of the invention is to provide for a certain amount of elasticity in a lateral direction so as to aid in retaining the bolts and nuts in place while at the same time maintaining maximum rigidity in a vertical direction.

The accompanying drawings illustrate the invention.

Figure 1 is a perspective showing one form of the invention providing an outside tread or bridge for carrying the wheels over a joint. Fig. 2 is a vertical section through the joint of the form shown in Fig. 1, on line x^2-x^2 in said figure. Fig. 3 is a side elevation showing another form of the invention showing a removable tread member. Fig. 4 is a section on the line x^4-x^4 in Fig. 3. Fig. 5 is an inside elevation of another form of the invention provided with a tread or bridge portion on the inner side of the rail for engagement with the flanges of the wheels. Fig. 6 is a section on line x^6-x^6 in Fig. 5. Fig. 7 is a sectional view on the line x^7-x^7 in Fig. 6 showing a rail bond provided within the clamp.

1 designates adjoining portions of two adjacent rails which are to be joined by the rail clamp, the said clamp comprising a chair or base member 2, adapted to be placed under the rails and to engage with and support the bottom of the rails, and two side or fish plate members 3, 4, each of which engages at its foot with the foot or base flanges of the rail and with said base member, and at its upper portion with the head of the rail, these several parts so interlocking with

one another and with the rail that they will provide a substantially unyielding structure connecting the ends of the rails firmly as regards lateral and vertical displacement even without the aid of the usual clamping bolts. It is preferred however, to employ such bolts to tighten the parts and provide a more secure fastening. For this purpose each of the fish plate members, 3, 4, has perforations 5 to receive the bolts 6, the heads and nuts of which bear upon the outer side of said members to press them tightly against the rails. This interlocking of the parts may be variously provided for.

In the form shown in Figs. 1 and 2, the base member 2 has upwardly and inwardly extending flanges 7, which extend directly from the body portion thereof and are removed sufficiently from the base flanges 8 of the rail to enable the interposition between them of outwardly and downwardly extending flanges 9 on the members 3, 4,—said flanges 9 terminating in downward flange extensions 10 which engage between the substantially vertical portions of the rail base and with the flange 7 to hold the rails tightly against lateral displacement. The upper portions of members 3, 4, are provided with inturned lugs or flanges 11 engaging under the rail head on each side and acting in conjunction with the parts engaging with the foot of the rail to hold said members firmly against vertical displacement and giving a support for the rail ends that is practically unyielding in such direction.

Keys or wedges 12 may be driven between the ends of the respective flanges 7 and the body of the adjacent member 3 or 4 to tighten the parts, said keys being preferably dove-tailed as shown, to prevent their dislodgment. One of said members 3 or 4 may be provided with a tread portion or bridge 13 extending up along the side of the rail head substantially flush with the top of the rail. In Figs. 1 and 2 this bridge portion is shown on the member 3 on the outer side of the rail so as to engage and support the outer portion of the tread of the wheels rolling there-over as they pass a joint.

15 designates a reinforcing member extending under the base member 2 and provided with upwardly and inwardly extending flanges 16 which embrace and engage the flanges 7 so that when the parts are assembled as hereinafter described, the said member 15 will take a part of the vertical and

lateral strain at the point where such strain is greatest, viz. directly at the joint, said member 15 being preferably of less length than the member 2.

17 designates notches or grooves in the side of the base member 2 for the reception of the usual spikes.

In putting the clamp in place on the rail, the rail ends will be raised sufficiently to allow the base member 2 to slip there-under, the distance between the inner edges of the flanges 7 being sufficient to enable the base or foot of the rail to be passed there-between by properly tipping the member 2 and inserting one of the foot flanges 8 first below one of the flanges 7 and then raising the member 2 or lowering the rail to bring the rail in contact with said member. The side members 3, 4, may then be slipped into position by sliding them longitudinally along the rails and within the flanges 7. If the reinforcing member 15 is used it may be placed on the member 2, before or after the latter is set in position, or the reinforce 15 may be sweated or integrally formed on member 2. The keys 12 having been driven into position and the retaining bolts 6 put in place, the structure will be completed.

The inclination of the flanges 9 on the members 3, 4 is preferably slightly greater than that on the top of the base flanges 8 of the rail so that said flanges 9 are raised slightly from said base flanges, even when the parts are tightened, with the result that an outward spring or pressure will be produced on bolts 6 and keys 12 on the central portion of the members 3, 4, said members bearing at 10 and 11 against the rail, this outward pressure serving to retain the locking keys 12 and also to lock the bolts 6, in the well known manner of a spring-washer. Furthermore this spring action tends to hold the parts firmly down on the base member 2. Base member 2 may have a longitudinal concavity 18 to increase this elastic bearing.

It is preferred, especially in case where the service is heavy, as in steam railway work, to make the tread or bridge portion removable so as to enable it to be removed when worn out without discarding or wasting the main body of the clamp. It is also preferred to make this renewable tread portion serve as a reinforcement for the member to which it is attached. For this purpose one of the side members, indicated at 23 in Fig. 4, is provided with a detachable plate or member 19, resting thereon and preferably engaging between seats, shoulders, or lugs formed by notching or omitting the central portions of flanges 21, 22, respectively at the top or bottom of said member 23. The said member 19 has an inwardly extending flange 24 engaging under the head of the rail so that when the parts are put in place and the fastening bolts 6 are

screwed tight, the member 19 will be clamped tightly between the member 23 and the rail. The downwardly extending portion 25 of said member 19 extends inside of the member 23 and forms a reinforce therefor. In this form of the invention the upwardly and inwardly extending flange 27 is provided only at one side of the base member 26, the other side having a low flange or lip 28 to extend up alongside the edge of the base flange 8 of the rail, the rail being gripped between this flange and the flange 27. The reinforce plate or member 29 is in this case provided with an upturned and inturned flange 30 at one side, engaging over the flange 27 on member 26, which in turn engages over the flange 31 on member 23. At its other side, member 29 has an upturned and inturned flange 32 extending over the flange 33 on the member 34, that is formed similarly to the member 4 above described except that it terminates at the edge of the base flange 28. The bridge or tread portions above described may be rounded or slightly beveled at the ends to permit the wheels to run smoothly thereon. Said flanges 30 and 32 each extend inwardly to a point inside the edges of the base flange of the rail to more firmly hold the parts of the device together.

The above described constructions are especially adapted for use with wheels having a wide tread, that will extend over and run on the bridges 13 and 19.

In case narrow tread wheels as indicated at 35, are used, for example in street railway work, a construction, such as shown in Figs. 5 and 6 is desirable, the inner side member 36 being provided with a disconnected bridge piece 37 resting thereon and clamped between said member 36 and the rail in a similar manner to the member 19 above described, the top of its tread portion, being, however, below the top of the rail so as to receive and engage the flange of the wheel as it passes over the joint. In this case also, the flanges or heads 38 at each end of the member 36 are provided with receiving surfaces to engage the wheel flange and carry it smoothly on to the tread or bridge 37, the parts 37 38 being convexly curved.

In case a rail bond is desired, for example, in electric railways, it may be placed within the space left between the inner side of either of the said members and the rail, for example, in Figs. 6 and 7, the bond indicated at 39 is interposed between the member 35 and the web of the rail.

What I claim is:—

A rail clamp comprising the base member 2 adapted to be placed under the rails and engage and support the bottoms of the rails, the fish plate members 3 and 4 having outwardly and downwardly extending flanges 9 and downward flange extensions 10, the

lower faces of the extensions being level
with the lower faces of the rails and resting
upon the base member 2, and there being
flanges 11 extending inwardly from the
5 upper edges of the fish plates under the
ball of the rail, and there being flanges
7 extending upwardly from the edges of
the base member 2 outside of the flange
extensions 10 and inwardly outside of the
10 flanges 9, and there being a bridge portion
13 integral with one of the members 3 or 4
and extending up along the side of the rail
flush with the top of the rail and across the
joint between the two rails, dove-tailed keys
15 12 driven between edges of the flanges 7 and
the faces of the fish plates 3 and 4, and the

reinforcing member 15 under the base mem-
ber 2 and provided with inwardly and up-
wardly extending flanges 16 which embrace
the flanges 7, said reinforcing member ex- 20
tending across the joint between the two
rails, and there being notches 17 in the sides
of the base member 2 for the reception of
spikes.

In testimony whereof, I have hereunto set 25
my hand at Los Angeles California this 1st
day of November 1904.

RICHARD N. WALTON,

In presence of—

ARTHUR P. KNIGHT,
JULIA TOWNSEND.