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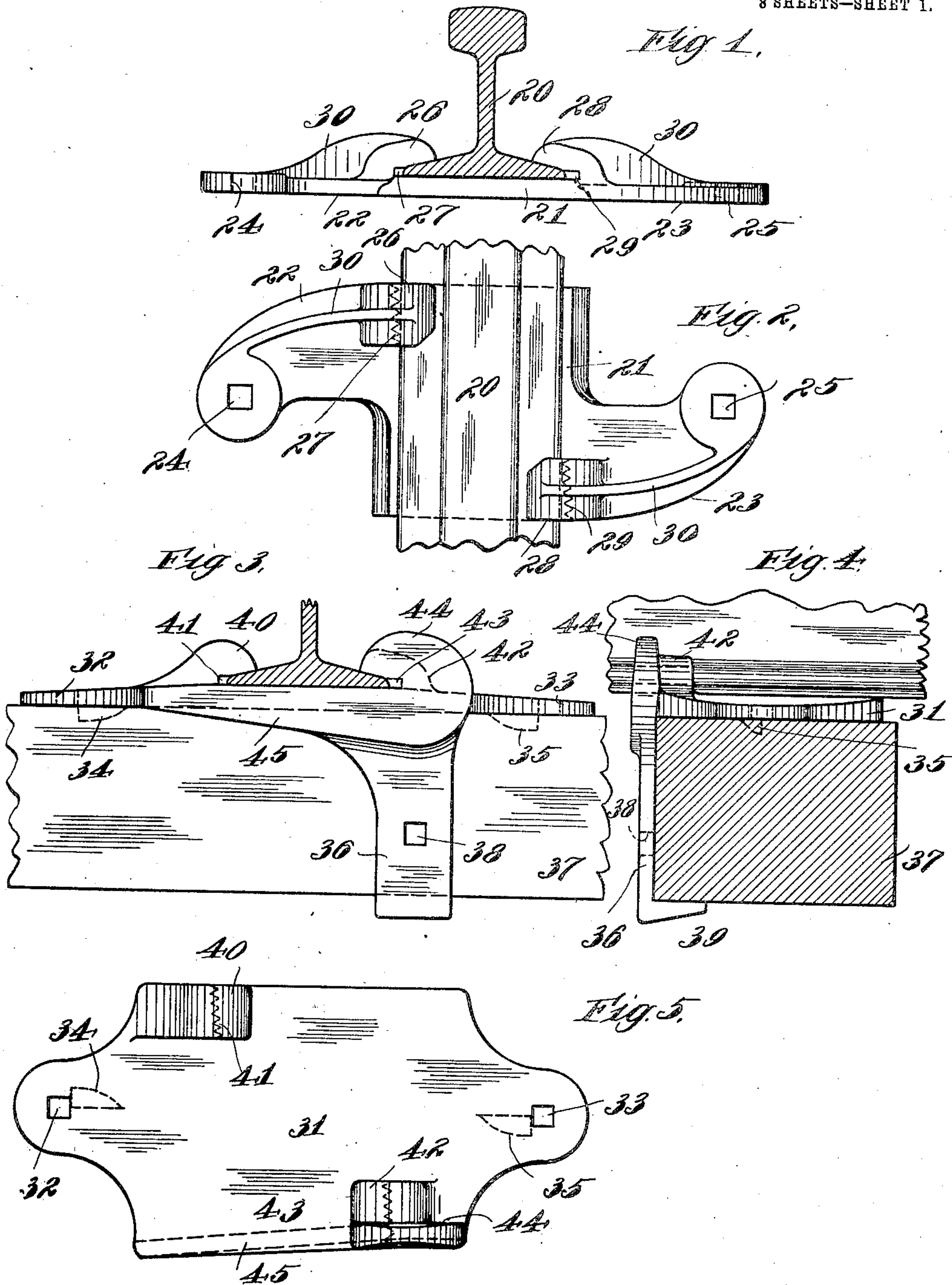
H. M. PLAISTED.

RAIL CLAMP.

APPLICATION FILED JULY 13, 1908.

Patented June 15, 1909.

8 SHEETS—SHEET 1.



Witnesses
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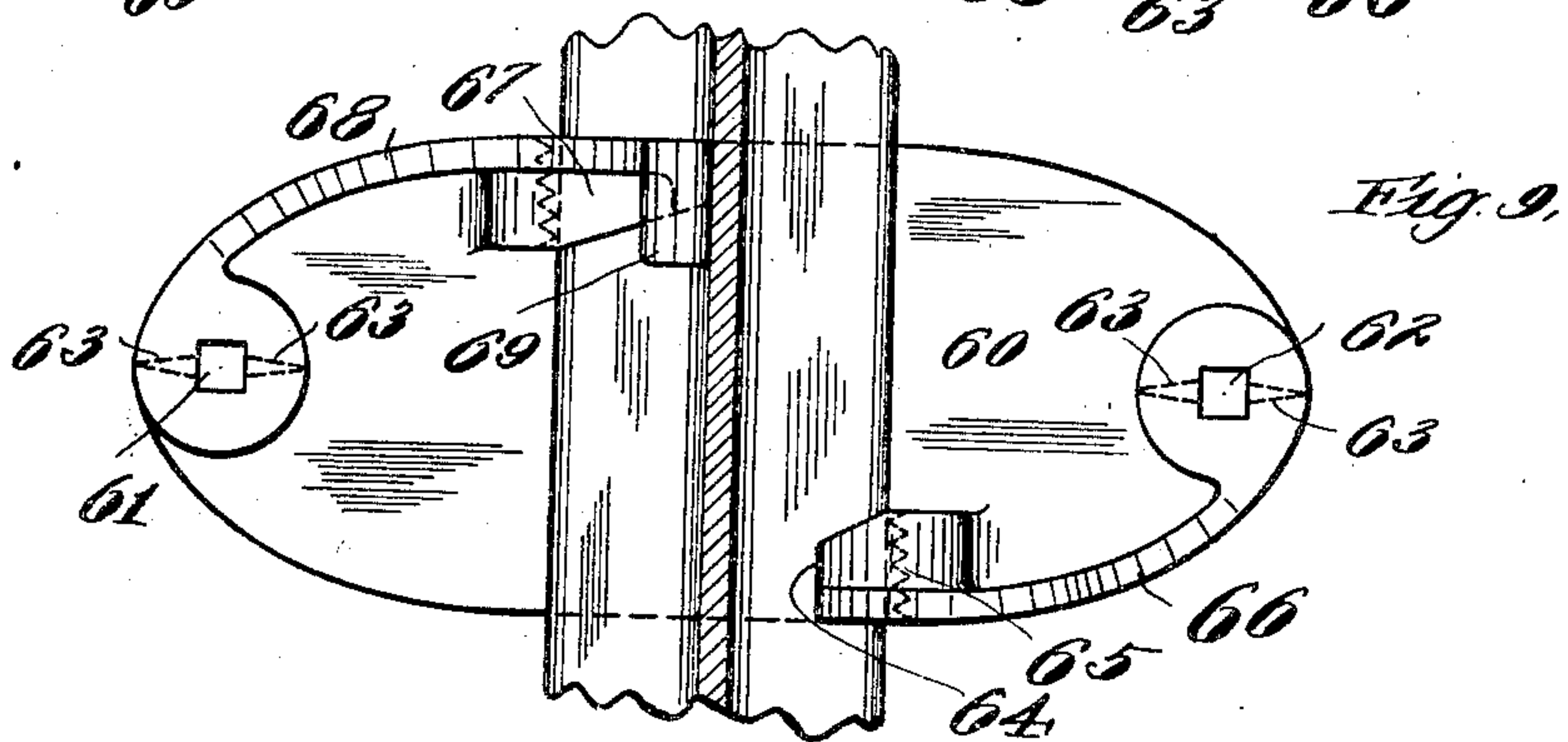
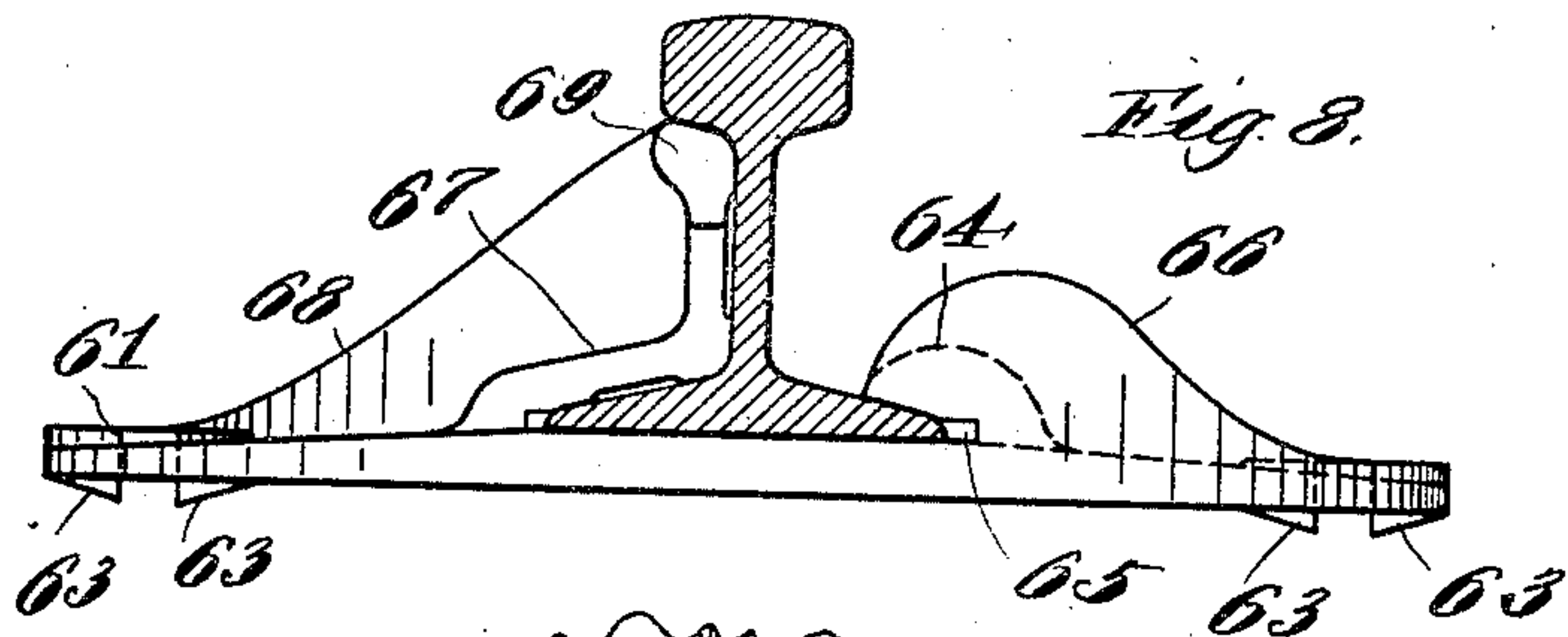
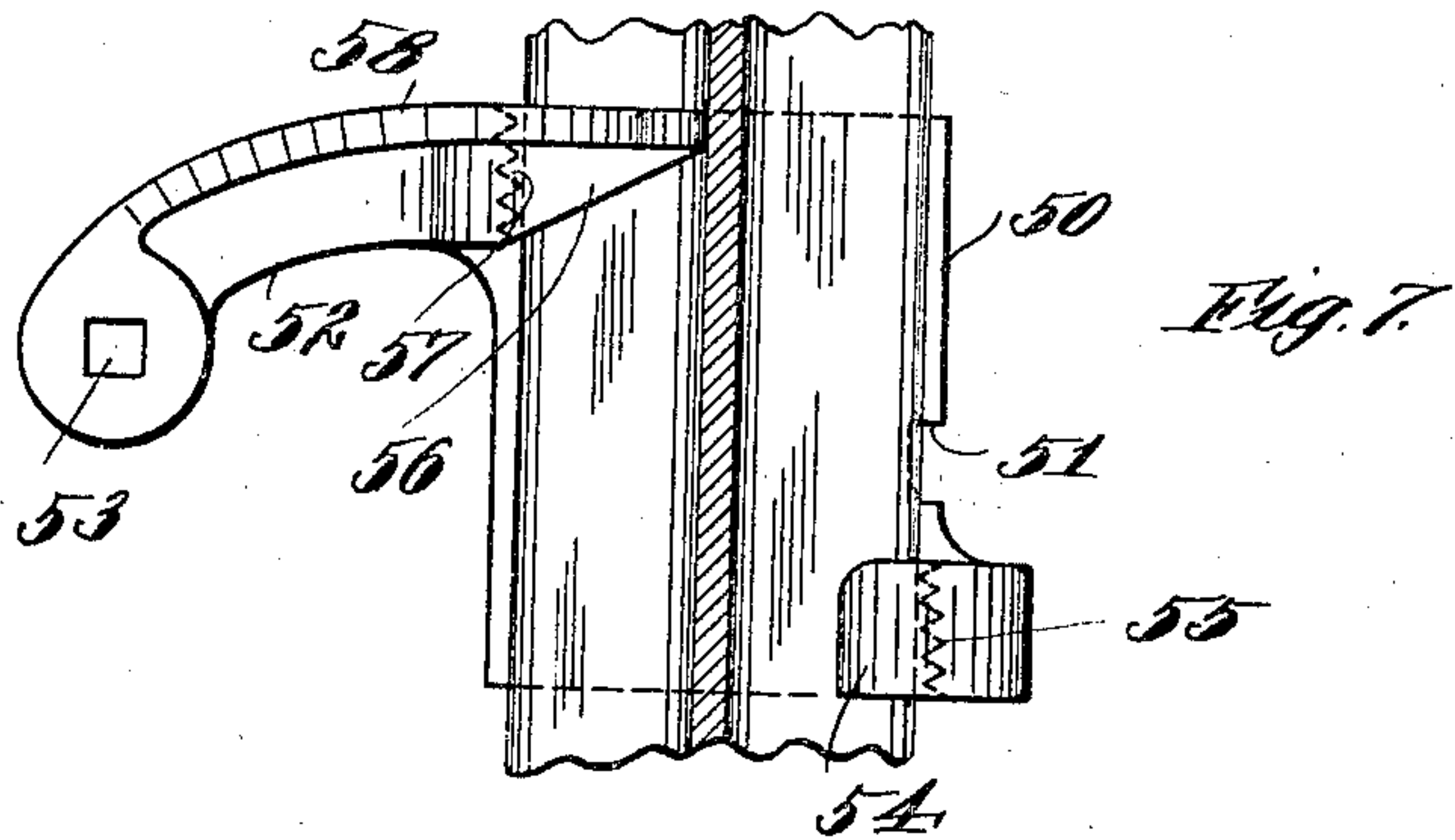
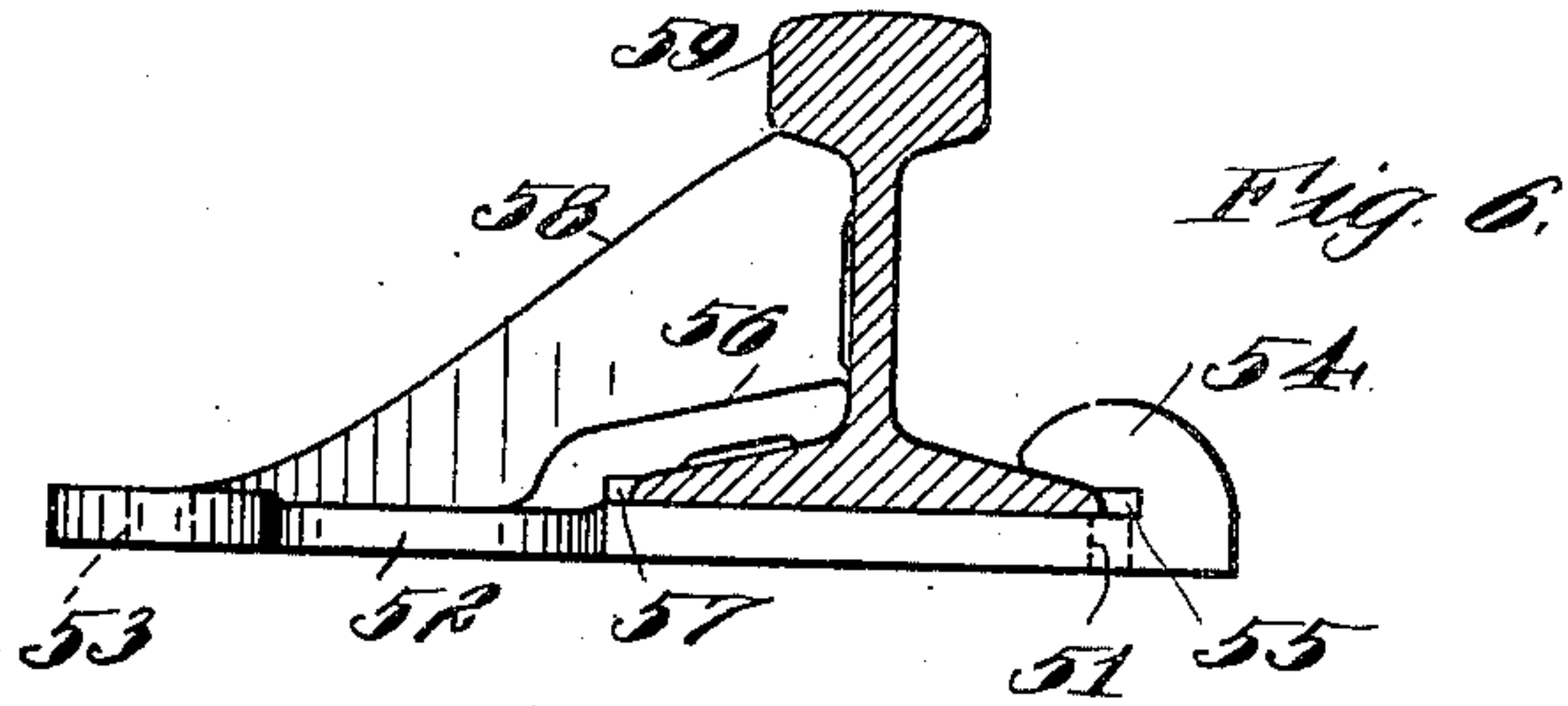
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8 SHEETS—SHEET 2.



Witnesses
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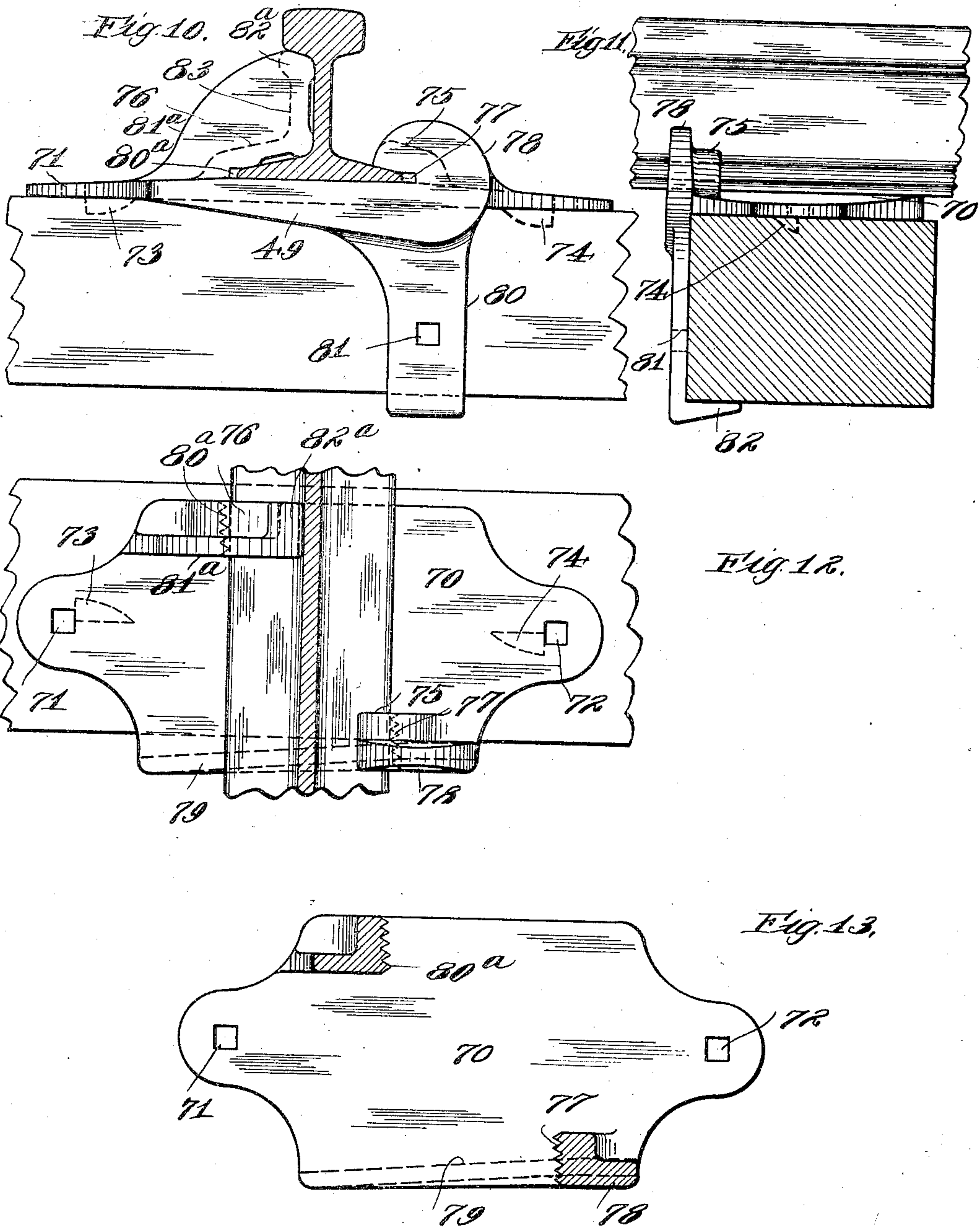
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3 SHEETS—SHEET 3.

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Witnesses
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UNITED STATES PATENT OFFICE.

HAROLD M. PLAISTED, OF GRANITE CITY, ILLINOIS, ASSIGNOR TO AMERICAN STEEL
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RAIL-CLAMP.

No. 924,932.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed July 13, 1908. Serial No. 443,369.

To all whom it may concern:

Be it known that I, HAROLD M. PLAISTED, a citizen of the United States, residing at Granite City, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Rail-Clamps, of which the following is a specification.

My invention pertains to that class of devices known as railroad rail clamps or chairs, its main object being the provision of a clamp of this character which will consist of one piece, which may be readily and quickly applied to the rail, and which will be of comparatively light weight and economical of manufacture.

My improved clamp not only secures the rail in position against longitudinal displacement, but also effectively withstands the side thrust imposed on the rail more or less severely at curves in the track, preventing the rail from shifting transversely and from turning over laterally, at the same time properly bracing and supporting the rail head.

On the accompanying drawings, which form a part of this specification, I have illustrated several embodiments of this invention, and on these drawings—Figure 1 is a vertical section through a railroad rail showing one of my improved clamps in side elevation; Fig. 2 is a plan view of the construction shown in Fig. 1; Fig. 3 is a side elevation of a modified form of clamp illustrating a portion of the rail in section and a part of a cross-tie or sleeper in elevation; Fig. 4 is a vertical cross-section through the cross-tie or sleeper, showing in end elevation the clamp illustrated in Fig. 3; Fig. 5 is a plan view of the clamp illustrated in Figs. 3 and 4; Fig. 6 shows in side elevation a modified form of clamp applied to a rail illustrated in vertical section; Fig. 7 is a plan view of the construction shown in Fig. 6 with the head of the rail omitted; Fig. 8 is a view similar to Fig. 6 illustrating a still further modification of the clamp; Fig. 9 is a view similar to Fig. 7 of the clamp shown in Fig. 8; Fig. 10 is a side elevation of another modified form of clamp, the rail and cross-tie or sleeper being indicated; Fig. 11 is a view at right angles to the view illustrated in Fig. 10; Fig. 12 is a plan view of the construction shown in Figs. 10 and 11, the head of the rail being cut off; and Fig. 13 is a horizontal section at the rail base through the clamp

shown in Figs. 10, 11 and 12, no indication of the rail and cross-tie being shown.

In Figs. 1 and 2 I have indicated applied to a railroad rail 20 an improved form of rail clamp consisting of a central base 21, from the opposite edges of which extend outwardly a pair of arms 22 and 23 forming extensions or additions to the base 21, the three parts constituting a complete base-plate with a flat under surface adapted to rest on a cross-tie. The outer end of each arm or section 22 and 23 is provided with an aperture 24 and 25, respectively, there-through for the accommodation of spikes of the usual and ordinary construction. On the top face of the arm or portion 22 adjacent to the rail there is provided an integral hook-shaped clip or clamp portion 26 adapted to overlap one of the lower flanges of the base of the railroad rail 20, the inner surface of this clip or clamp being preferably supplied with serrations or teeth 27 adapted to bear against and press into the edge of the rail flange. At the opposite end of the central base 21 and at the inner end of the arm or section 23 a similar clip or clamp 28 is provided also equipped with teeth or serrations 29. In order to strengthen the unitary or integral structure shown and described the clips or clamps 26 and 27 may be braced and strengthened by the vertical tapered ribs 30, as is clearly indicated. The clamp is placed below the rail 20 and is applied to the base or oppositely-extended flanges of the latter by turning the clamp around so that the base or flanges of the rail may pass between the clips or clamp portions 26 and 28, these being spaced apart sufficiently for the reception of the rail in the manner indicated. The clamp is then turned back again so as to bring one of the apertures 24 or 25 in the proper position on the top of the cross-tie or sleeper, a spike, screw, or other fastening means being driven through the hole into the sleeper. The clamp is then further turned, this spike or other fastening means acting as a pivot, until both of the hook-shaped clips and their serrated or toothed surfaces 27 and 29 bear firmly against the flanges of the rail base, whereupon another spike is passed through the other aperture 24 or 25, as the case may be, so as to maintain the clamp in fixed position firmly grasping and securely holding the rail in position. To those skilled in the art it

will be obvious and apparent that the rail is so held as to prevent its longitudinal movement, sidewise shifting, and lateral overturning.

5 In Figs. 3, 4 and 5 I have set forth a modified construction of clamp having a flat base 31 apertured at its opposite ends at 32 and 33 for the accommodation of spikes, and equipped on its under surface with a plu-
 10 rality of prongs or barbs 34 and 35 preferably oppositely-inclined, as is clearly illustrated. Depending from one edge of the base 31 I provide an arm 36 adapted to lie against the side of the cross-tie or sleeper 37
 15 and supplied with a spike hole 38, the bottom end of this arm having an inturned retaining or holding finger 39, shown most clearly in Fig. 4. At one edge and on its top surface the base 31 has a clip or clamp 40
 20 adapted to engage the outer flange of the rail, this clip preferably having teeth or serrations 41 intended to bite into the edge of the flange as in the previous instance. On its opposite edge the base 31 has a similar
 25 clip 42, serrations 43, and a vertical rounded strengthening rib 44 which extends around and projects downwardly from the edge of the base, forming a depending strengthening
 30 marginal flange 45, somewhat angularly disposed to the central longitudinal axis of the base. This clamp is applied to the rail as in the previous instance, a spike being then
 35 driven into the sleeper or cross-tie 37 through the hole or aperture 33, forming a pivot around which the clamp may be swung so as
 40 to cause its clips or hook-shaped clamps and serrated surfaces to firmly grip the opposite portions of the rail base, as is clearly illustrated, spikes being then driven through the
 45 remaining hole 32 and the aperture 38 of the depending arm 36, its finger 39 in this position of the parts being below the cross-tie or sleeper and aiding in preventing the rail from
 50 overturning sidewise and the clamp from lifting or rising from the cross-tie. The teeth or prongs 34 and 35, during the initial or preliminary movement of the clamp while it
 55 turns about its spike pivot, press somewhat into the surface of the cross-tie or sleeper, owing to the weight of the rail, and act by
 60 coöperation with the cross-tie to assist in maintaining and keeping the clamp in proper position while the remaining spikes are being driven in place. After all the spikes have
 65 been driven home the teeth or prongs 34 and 35 are more firmly and deeply embedded in the surface of the sleeper and assist in maintaining the clamp and rail in proper position. When the rail held by this clamp is sub-
 70 jected to a sidewise thrust, as by a train passing around a curve in the track, the outer clip 40 prevents outward displacement of the rail, while the inner clip or finger 42, which is strengthened by the rib 44, and
 75 assisted in remaining immovable by the arm

36, the spike in aperture 38, and the inwardly-turned finger 39, prevents the rail from overturning laterally or sidewise, as it has a tendency to do under such circumstances.

The clamp illustrated in Figs. 6 and 7 has a base 50 notched at 51 for the reception of a spike, while projecting outwardly from the opposite edge of the base there is provided an extension 52 with a hole 53 therethrough at
 75 its end for the reception of another retaining spike. The clip 54 with its serrated surface 55 is substantially like the clip 40 of Figs. 3, 4 and 5, while the clip at the opposite edge of the base, characterized 56, bears upon the
 80 top surface of the rail flange and has a serrated or toothed portion 57 adapted to press into the edge of the flange, like hook 26 (Fig. 1), but differs in the outer edge of the clip being equipped with a tapered brace 58
 85 at its upper end shaped to conform to and adapted to bear against and support the under surface of the rail head 59. The manner of applying this clamp to the rail and the functions of its parts are so obvious that they
 90 need but little comment, it being only necessary to state that the brace or bracket 58 assists in supporting the head of the rail and in preventing sidewise overturning of the rail.

Another modification is shown in Figs. 8
 95 and 9, this embodiment of the invention having a substantially-elliptical shaped flat base 60, apertured at its opposite ends at 61 and 62 for the spikes, and having on its under surface adjacent to the spike holes oppo-
 100 sitely-inclined downwardly-projected prongs or barbs 63 adapted to press into the top surface of the sleeper or cross-tie and assist in preventing displacement of the clamp. On one side of the rail the clamp is equipped
 105 with a clip 64 preferably having on its inner face serrations or teeth 65, the clip being strengthened by a vertical upstanding curved rib 66. The clip or clamp 67 on the opposite side of the rail is substantially like that
 110 shown in Figs. 6 and 7, except that the bracket 68 at its end beneath the head of the rail is supplied with a head or enlargement 69, giving the same an extended bearing be-
 115 neath the rail head. In general effect and function the construction of Figs. 8 and 9, as is apparent, is much like that of the clamp shown in Figs. 6 and 7.

An additional embodiment or modification of the device is shown in Figs. 10 to 13,
 120 inclusive, this particular clamp having a flat base 70, spike holes 71 and 72 at its opposite ends, reversely-arranged barbs or prongs 73 and 74 on its under surface, and a pair of clamps 75 and 76 adapted to co-act and bear
 125 against opposite portions of the rail base. The clip 75 which is supplied with serrations 77 is strengthened by a curved rib or flange 78 which extends along the under surface of the base, forming a depending flange 79 sub-
 130

stantially like that indicated in Fig. 3. The base also has a downwardly-extended arm 80 apertured for a spike at 81 and equipped at its lower end with an intumed retaining finger 82, this part of the device being also substantially like that of Figs. 3 and 4. The clip 76 which has a roughened surface 80^a adapted to engage the edge of the rail flange also bears against the top surface of the flange and has rising from its top surface a strengthening brace or bracket 81^a which has an extended bearing 82^a beneath the head of the rail, this bearing being connected to the top surface of the clip by a web 83. It will, therefore, be apparent that this form of clamp embodies a number of features and structural elements illustrated in a plurality of devices shown in the other figures. The operation of the device and the function and purpose of its various parts are so apparent from the above description that further mention of the same is not deemed necessary.

It should be apparent to those skilled in this line of industry that the various embodiments of my invention comprise one-piece or unitary-structure rail clamps which may be firmly and securely anchored or spiked to the cross-ties or sleepers, and are adapted not only to grip the rails so as to prevent lengthwise displacement thereof, but also by hooking around and being spiked to the cross-ties and being provided with braces or brackets beneath and supporting the heads of the rails, overturning of the rails laterally or sidewise is prevented,—this tendency to tip over being occasioned by the lateral thrust of a train or truck when it passes around a curve in the railroad tracks.

Although I have shown and described a number of embodiments of this invention, these are not the only structures which may be provided incorporating my invention and therefore it is to be understood that the invention is not limited and restricted to the precise and exact structural details set forth.

I claim:

1. A rail clamp having an apertured base-plate adapted to rest on the top surface of a cross-tie or sleeper and be fastened thereto by spikes passed through said apertures, said base plate having opposed clips displaced longitudinally of the rail and adapted to grip opposite edges of the rail base and a depending arm adapted to rest against and be fastened to the side of the cross-tie, substantially as described.

2. A rail clamp adapted to rest upon and be secured to the top surface of a cross-tie or

sleeper and having on its top surface opposed clips to grip opposite edges of the rail base, said clamp having a depending arm adapted to lie beside the side of the cross-tie, said arm having at its lower end an intumed finger to engage the bottom surface of the cross-tie, substantially as described.

3. A one-piece rail-clamp having a base-plate adapted to rest on and be secured to a cross-tie or sleeper and having on its top surface a clip to grip the inner flange of the rail base and a bracket for the outer side of the rail adapted to bear against and brace the rail-head, said clip and bracket being displaced longitudinally of the rail, said clamp having a depending arm intended to be secured to the side of the cross-tie, substantially as described.

4. A one-piece rail clamp having a base-plate adapted to rest on and be secured to a cross-tie or sleeper and having on its top surface a clip to grip the inner flange of the rail base and a bracket for the outer side of the rail adapted to bear against and brace the rail-head, said clamp having a depending arm equipped with a finger to engage the under surface of the cross-tie, substantially as described.

5. A one-piece rail clamp having a base-plate adapted to rest upon and be secured to a cross-tie or sleeper and having on its bottom surface prongs or barbs, said base-plate having on its top surface opposed clips adapted to grip opposite edges of the rail flange, said barbs or prongs constituting ratchet teeth adapted to be pressed into the tie by the weight of the rail during the preliminary rotary adjustment of the clamp, the prongs or barbs being driven fully home into the tie when the clamp is secured to the cross-tie or sleeper, substantially as described.

6. A one-piece rail clamp having an apertured base-plate adapted to rest upon a cross-tie or sleeper and be secured thereto by spikes passed through said apertures, said base-plate having on its top surface opposed clips to grip opposite edges of the rail flange and having on its bottom surface prongs or barbs, whereby said prongs or barbs are pressed into the tie by the weight of the rail during the preliminary rotary adjustment of the clamp and are driven fully home into the tie when the clamp is secured thereto by the spikes, substantially as described.

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Witnesses:

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