

W. N. HARING.
TIE AND RAIL FASTENER.
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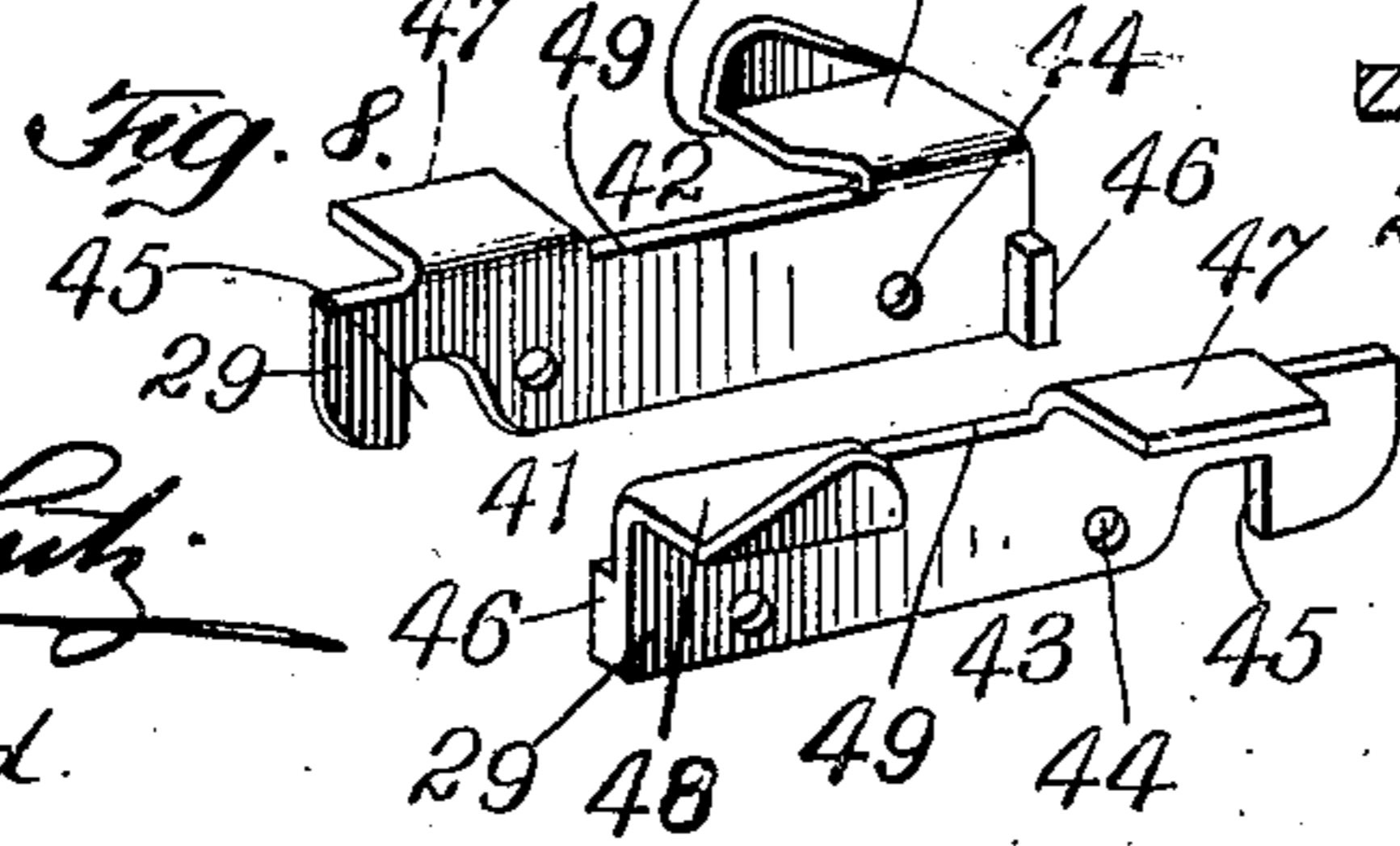
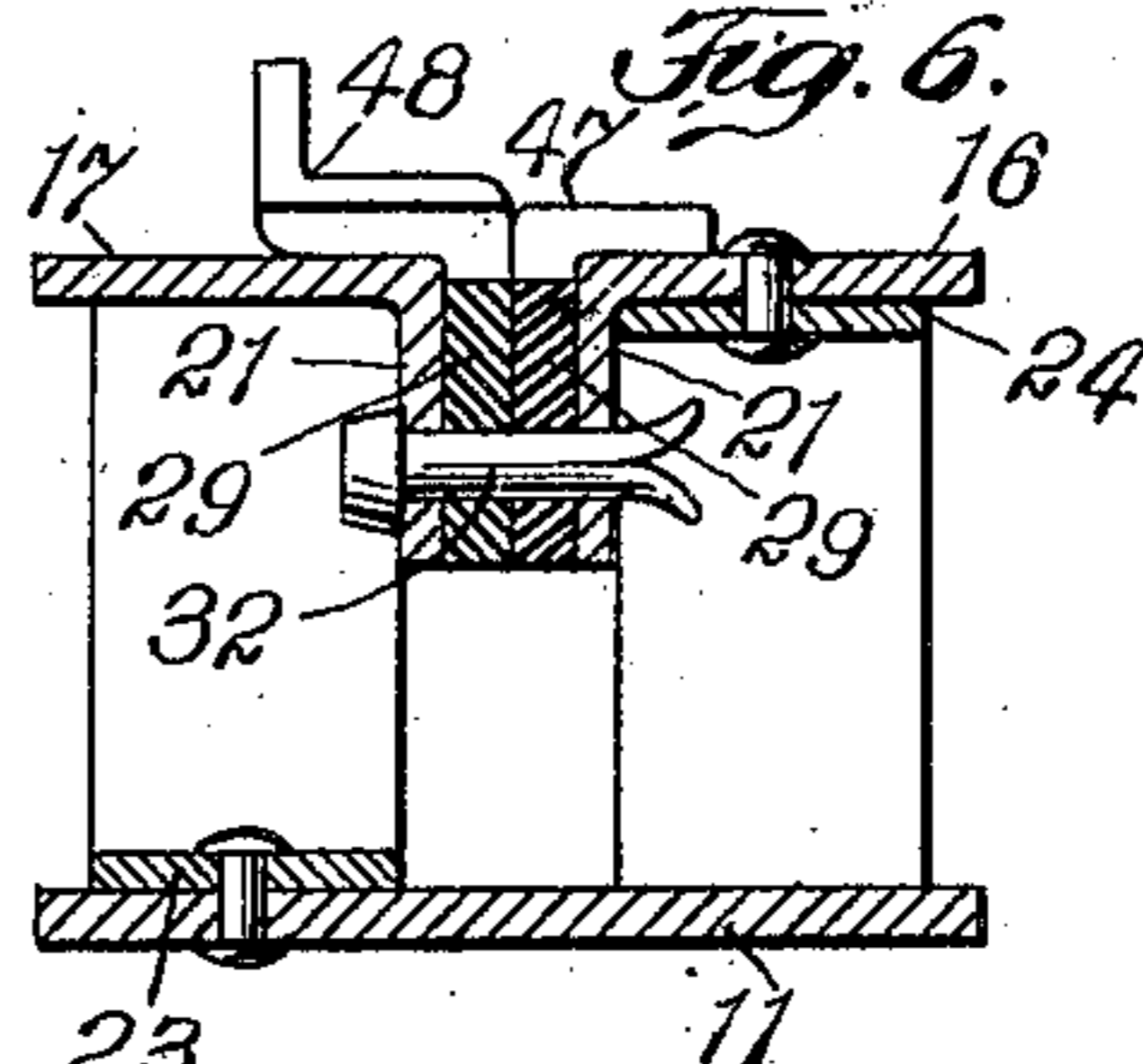
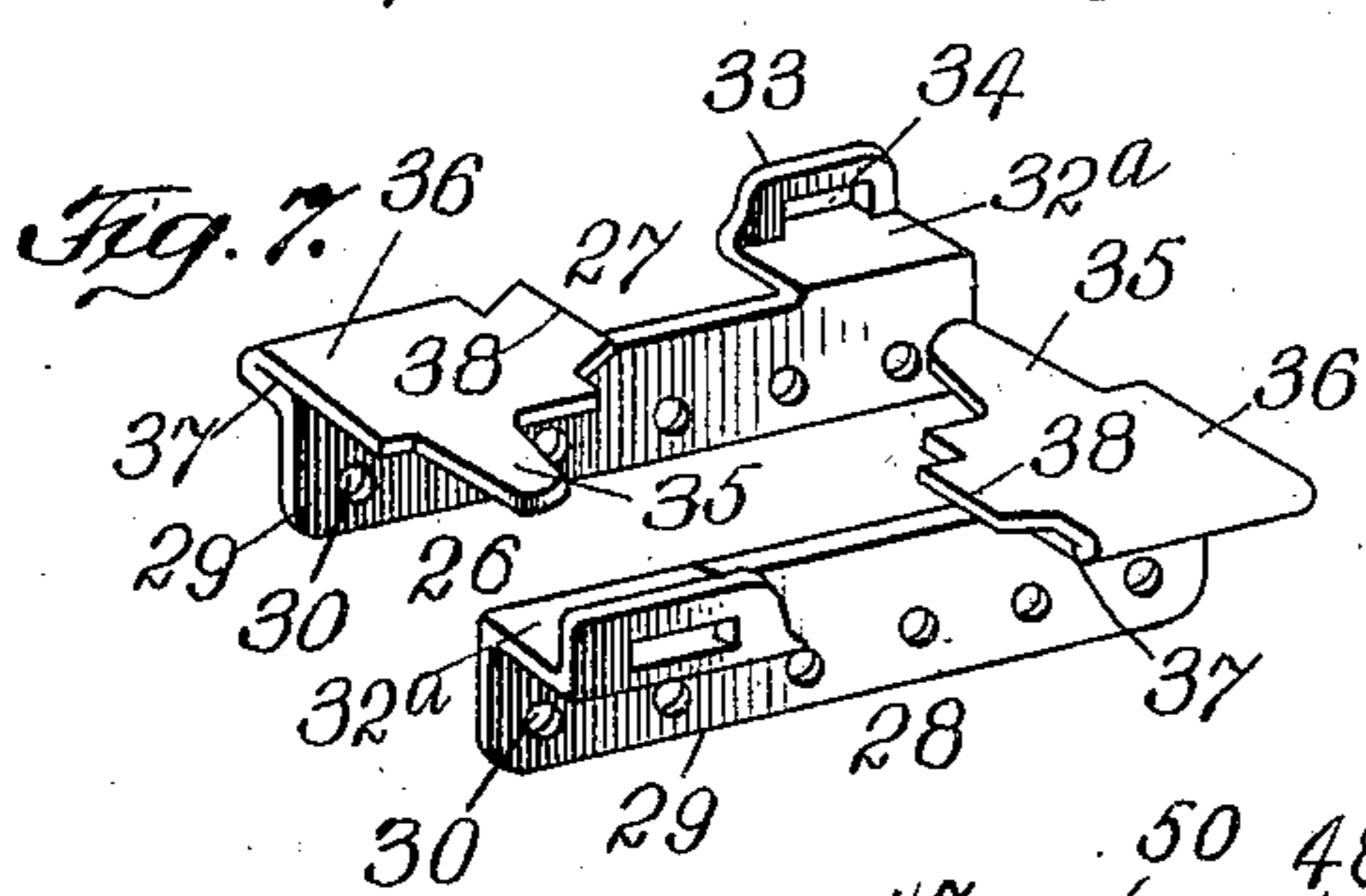
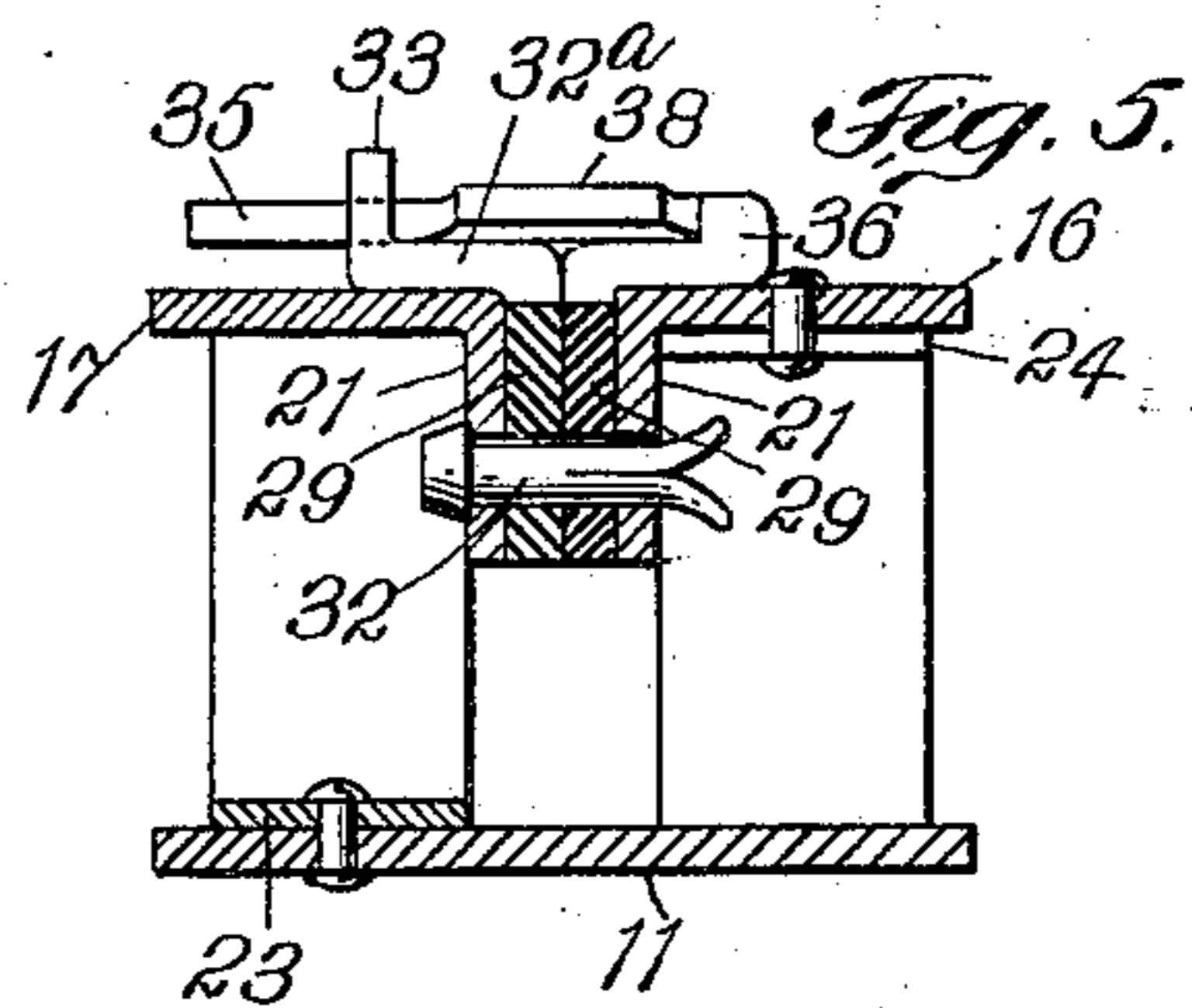
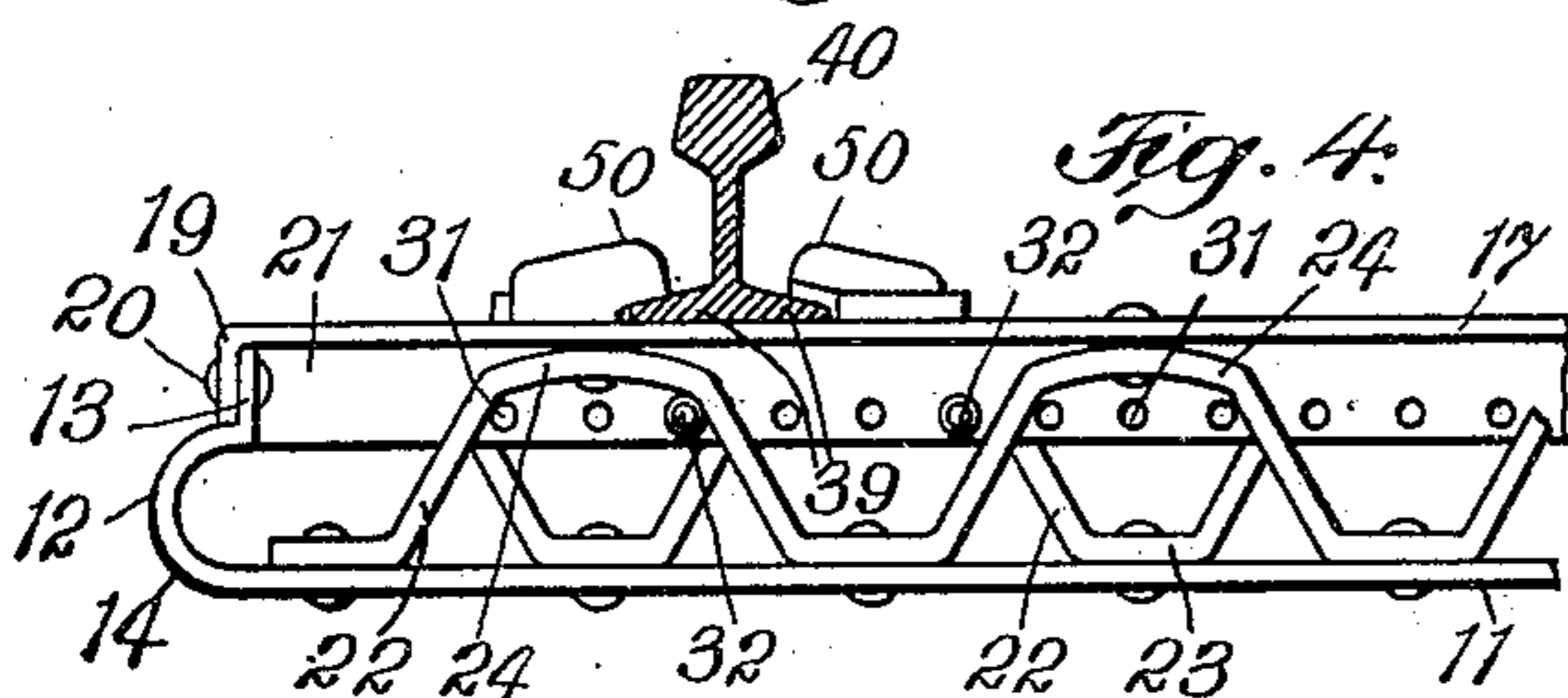
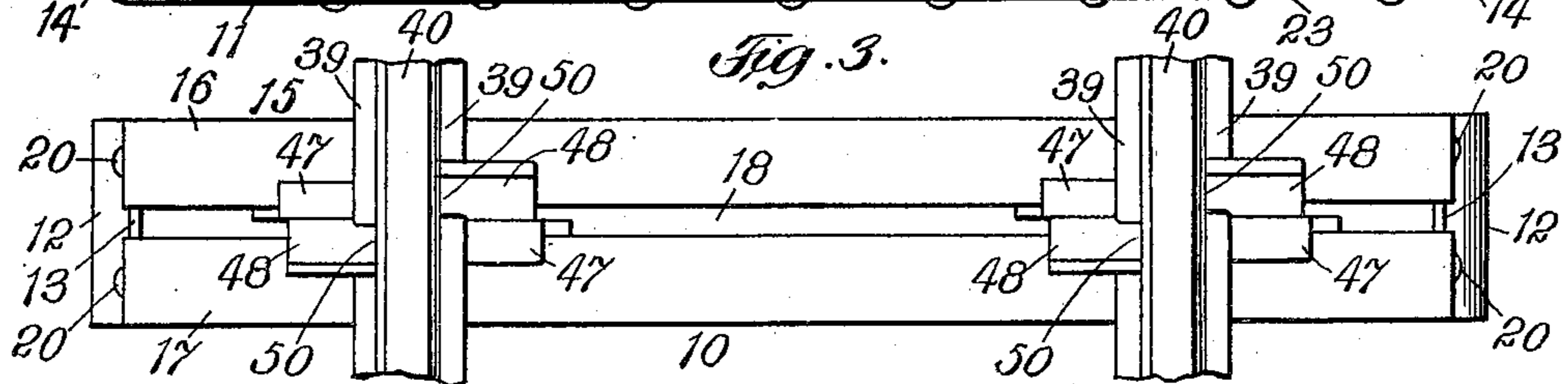
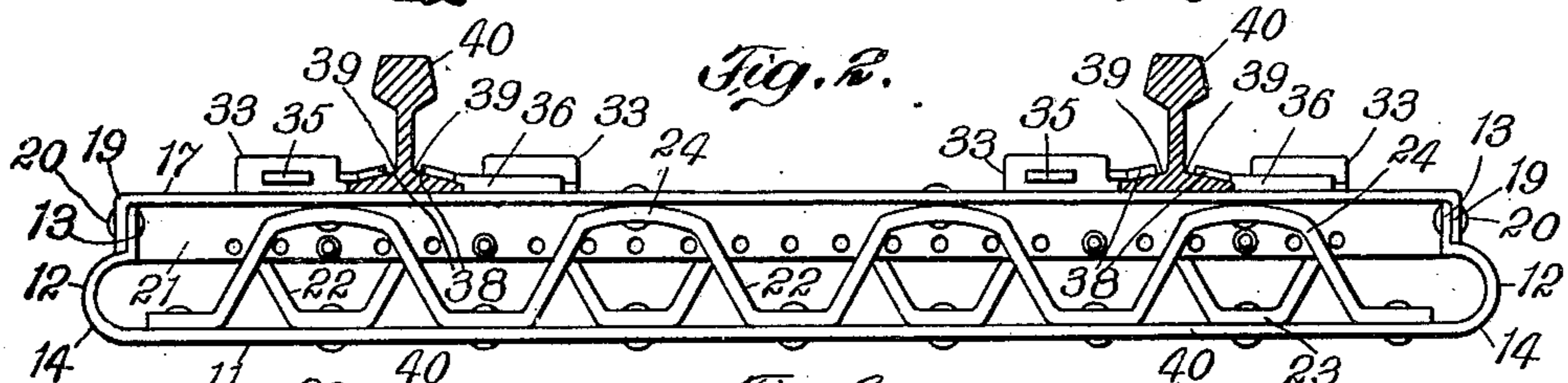
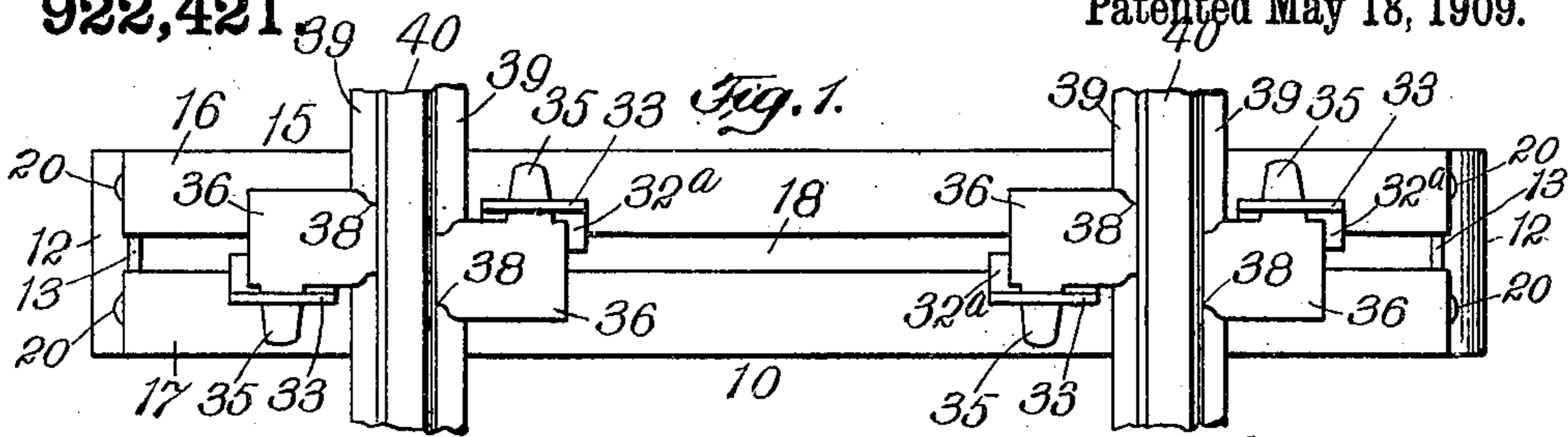


Fig. 10.
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UNITED STATES PATENT OFFICE.

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TIE AND RAIL-FASTENER.

No. 922,421.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM N. HARING, a citizen of the United States, and a resident of Nyack, county of Rockland, and State of New York, have invented certain new and useful Improvements in Ties and Rail-Fasteners, of which the following is a full, clear, and exact description.

This invention relates more particularly to a metallic tie and fastening means for railroad rails.

The primary object of the invention is to provide a tie which will positively hold the rails and prevent the same from spreading as is often the case with the usual method of holding the rails, and which often results in accidents and loss of life and property, and which device is so made that not only will it economize in the use of wood, but will also serve to permit being ballasted in a better way than with the usual wood tie.

Another object of the invention is to provide a tie which is so constructed that it will be very strong yet very light.

A further object of the invention is to provide simple and efficient fastening devices for the rails which can be adjusted to fit different widths of tracks, and also which are so constructed as to interlock and thereby prevent the rails from becoming displaced, thus dispensing with the usual spikes employed in connection with the usual form of wood tie.

A still further object of the invention is to provide a tie which may be used to entirely displace the wood tie, or which may be used at intervals to displace the ties only in part, thus adapting the tie to be employed in connection with the usual method of supporting the rails, and which device is so made that the rails can be placed at an angle as well as at right angles to the tie.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a plan view of one form of device embodying my invention. Fig. 2 is a side elevation showing the rails in section. Fig. 3 is a plan view of a different form of fastening device. Fig. 4 is a side elevation of the fastening device shown in Fig. 3. Fig. 5 is a transverse section of the device shown in Figs. 1 and 2 on a somewhat

larger scale. Fig. 6 is a transverse section of the form of device shown in Figs. 3 and 4. Fig. 7 is a perspective view of the two members of the fastening device detached from the rail and from each other. Fig. 8 is a perspective view of the members of the fastening device shown in Figs. 3 and 4; and Figs. 9 and 10 show the rivets before and after the ends are spread apart.

Each tie 10 is of metal of sufficient thickness to give rigidity thereto, and comprises a base member 11 which extends the entire length of the tie and has its ends bent or made to extend upwardly, as at 12, so as to provide a fastening part 13 and a curved part 14 at each end thereof, the curved part 14 serving to make the tie elastic. The top member 15 comprises two parts or members 16 and 17 arranged in parallel relation with respect to each other and to the body of the base member 11, and the parts 16 and 17 are spaced apart to provide a longitudinally-extending groove or space 18, and have their ends bent or formed so as to extend downward, as at 19, so as to be fastened by rivets 20 or otherwise to the ends 13 of the base member 11. These parts 16 and 17 are each angular in cross section between their ends 19 to provide a downwardly-projecting flange 21 and each member is supported lengthwise thereof by a corrugated truss brace 22 which extends substantially the entire length of the structure of the tie. The truss braces 22 are corrugated and are provided with fastening parts 23 which are adapted to be secured to the base member and curved parts 24 as strengthening means for the parts 16 and 17, and to give the latter the required resiliency, and the truss braces are reversed and arranged so that the fastening part 23 of one truss brace will be opposite the space between the fastening parts 23 of the other truss brace of the tie, thus serving to better maintain and hold the members of the structure of the tie together.

To clamp and hold the rail in position to prevent spreading and to hold the same properly various means may be employed. As shown in Figs. 1, 2, 5 and 7, I provide a plurality of clamping or fastening devices 26. Each fastening device may comprise two opposed members 27 and 28. The members 27 and 28 are similarly constructed, and each is provided with a flange 29, in which are openings 30 which are adapted to register with

openings 31 in the downwardly-extending flanges 21 of the parts or members 16 and 17. The two members 27 and 28 of the devices 26 are made to interlock and hold the rail as will be presently described, and the devices can be adjusted along the groove or slot 18 between the parts 16 and 17, in which groove the flanges 29 are adapted to fit, and when the openings 30 are brought into alignment with the openings 31 the said devices are held against movement by one or more rivets 32 one end of which is split and forced apart as shown in Figs. 5 and 10, thus adapting the fastening devices to be adjusted to different distances apart. The members 27 and 28 are each provided with an outwardly-projecting part 32^a, and this part has an angularly formed end 33 in which is a slot 34 for the reception of the finger or projection 35 of the other member. This finger or projecting part 36 of each member is integral with the part 35 and the part 36 is formed by bending over a part of the flange 29 upon itself, as at 37, and each part 36 is provided with a clamping and engaging tongue 38 under which the flanges 39 of the track rail 40 are adapted to fit when the members are made to interlock by forcing the ends or fingers 35 of one member into the slots or openings 34 of the other member, and thereby prevent relative movement of the members when in an interlocked position. The rail has its flange 39 clamped by the engaging tongues or parts 38, and the tongues incline slightly to fit the incline of the flanges of the rails, and are so arranged that the rails can be readily slipped under and between the tongues of the members 27 and 28, or the members can be placed on the rails before the rails are placed on the ties. By arranging the openings 30 in the fastening devices to be slightly above the openings 31 of the tie, the split rivets 32 will force the fastening devices toward the tie and thereby clamp the rail rigidly to the tie.

The metallic tie with its fastening devices can be spaced apart similar to the spacing of the ordinary wood tie or they may be spaced apart a greater distance and the usual wood or other tie employed in connection with the metallic ties 10 to properly support the rails.

In Figs. 3, 6 and 8, the tie is substantially the same as the construction already shown, but the form of clamping or fastening device 41 is somewhat different. Here two interlocking members 42 and 43 are each provided with openings 44 adapted to register with the openings 31 of the tie, and each member is provided with a cut-away part or notch 45 in which is adapted to fit a lug or finger 46 of the opposed member, so that when the two members are placed together, they will be interlocked and relative movement of the same prevented. Each member is provided with an overlapping lip or flange part 47

which is adapted to fit on the upper surface of one of the members 16 and 17 of the tie, and at or near the other end is provided with an angular overhanging portion 48, which is adapted to rest upon the same member of the tie, and is cut away, as at 49, to provide a tongue or clamping part 50 and to provide a space for the flange of the track rail to fit and be held. By this means the members are made to interlock and the rail is prevented from spreading or becoming displaced and the clamping means are easily constructed and placed in position to permit the rails to be adjusted to various distances apart.

It will be understood that changes in the form, dimensions, proportions and minor details may be resorted to without in the least departing from the principle of the invention.

From the foregoing it will be seen that a simple and efficient tie for railway purposes is provided; that the tie is simple, strong and can be easily made and assembled; that simple and reliable fastening means are provided which can be readily applied to and held as a part of the tie; that by the means shown the rails are absolutely prevented from spreading or displacement, thus avoiding the liability of accidents and at the same time providing means for properly securing the ties to the road-bed by ballasting, and that the improved device is strong and durable and comparatively inexpensive in the cost of manufacture in view of the convenience in assembling the several parts.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. The combination with a metallic railway tie, of a plurality of fastening devices, each comprising two separable members, each member provided with a projecting part adapted to engage the rail flange and with a part having a slot therein and a tongue adapted to fit into the slot of the opposite member to interlock the members of the fastening devices.

2. The combination with a metallic tie, of a plurality of fastening devices, each comprising two separable members, each member provided with a flange and a projecting tongue adapted to engage the rail flange and with a part having a slot therein and a tongue adapted to fit into the slot of the opposite member to interlock the members of each clamping device, and means for holding the flanges of the clamping devices to the tie.

3. The combination of a metallic tie having a base member and two parallel members separated by a space, and each provided with openings therethrough, and a plurality of fastening devices for the track rails, each provided with flanges adapted to fit into the space between the tie members and having

openings therein adapted to register with the openings of the tie members, and means for holding the devices to the tie.

4. The combination of a metallic tie having a base member and two parallel members held at their ends to said base member, said parallel members being separated from each other by a space and each provided with openings therethrough, and a plurality of fastening devices for the track rails, each provided with flanges adapted to fit into the space between the tie members and having openings therein adapted to register with the openings of the tie members, and split rivets for holding the devices to the tie.

5. The combination with a metallic tie, having a base member and two parallel members provided with downwardly extending flanges and separated from each other by a space and each provided with openings therethrough, and a plurality of fastening devices for the track rails, each provided with flanges adapted to fit into the space between the tie members and having openings therein adapted to register with the openings of the ties, and means for holding the clamping devices to the tie flanges.

6. The combination with a plurality of adjustable fastening devices adapted to engage the flanges of the track rails, of a tie having a base member with upwardly extending ends and two parallel members spaced apart and secured to the base member at the ends thereof, and corrugated truss braces secured to the parallel members and the base members, and so arranged relatively to each other that the part of one brace which is fastened to the base member is opposed to the part of the other brace that is fastened to the top or parallel member.

7. The combination with a plurality of fastening devices adapted to engage the flanges of the track rails, of a tie having a base member with upwardly extending ends, and two parallel members spaced apart and secured to the base member at the ends thereof, and

to which the devices are held, and corrugated truss braces secured to the parallel members and the base members.

8. The combination with a plurality of adjustable fastening devices having means adapted to engage the flanges of the track rails on opposite sides thereof, of a tie having a base member with upwardly extending ends and two parallel members secured to the base member at the ends thereof, and corrugated truss braces secured to the parallel members and the base members, and so arranged relatively to each other that the part of one brace which is fastened to the base member is opposed to the part of the other brace that is fastened to the top or parallel member.

9. The combination with a fastening device adapted to engage the flanges of a track rail, of a tie having a base member and a top member secured to the base member at the ends thereof, and a corrugated truss brace secured to the top member and the base member.

10. The combination with fastening means adapted to engage the flanges of a track rail, of a tie having a base member provided with upwardly extending ends and a curved part to yield under pressure, a top member secured to the upturned ends of the base member, and means for securing the top member to the base member.

11. The combination with fastening means adapted to engage the flanges of a track rail, of a tie having a base member, a top member, and a corrugated truss brace secured to the top member and to the base member and provided with curved portions where secured to the top member.

This specification signed and witnessed this twenty-sixth (26th) day of September A. D. 1908.

WILLIAM N. HARING.

Witnesses:

WALTER DAWSON,

CHAS. M. HILL.