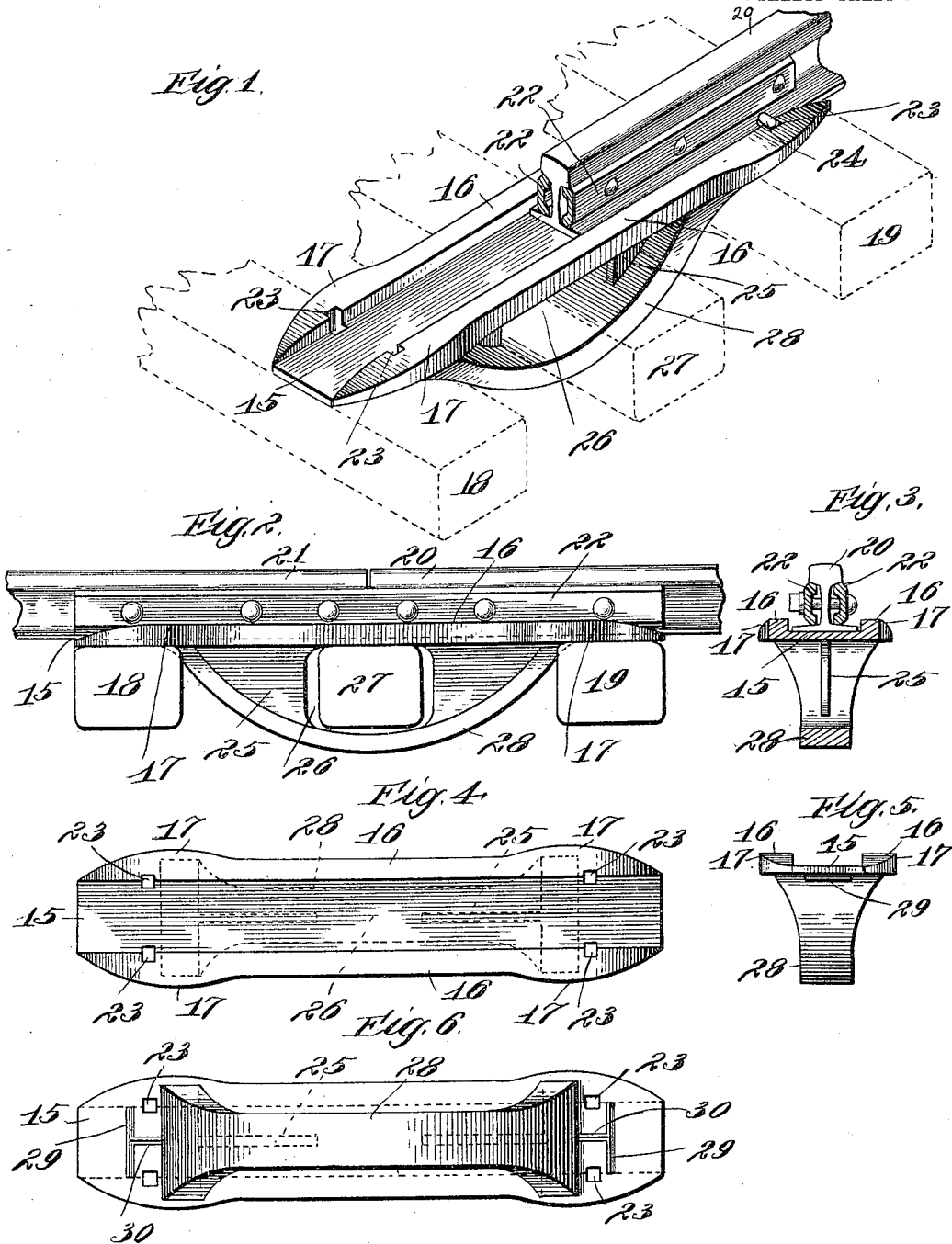


962,423.

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THREE TIE RAIL SUPPORT.
APPLICATION FILED JUNE 29, 1907.

Patented June 28, 1910.

2 SHEETS—SHEET 1.



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Fig. 7.

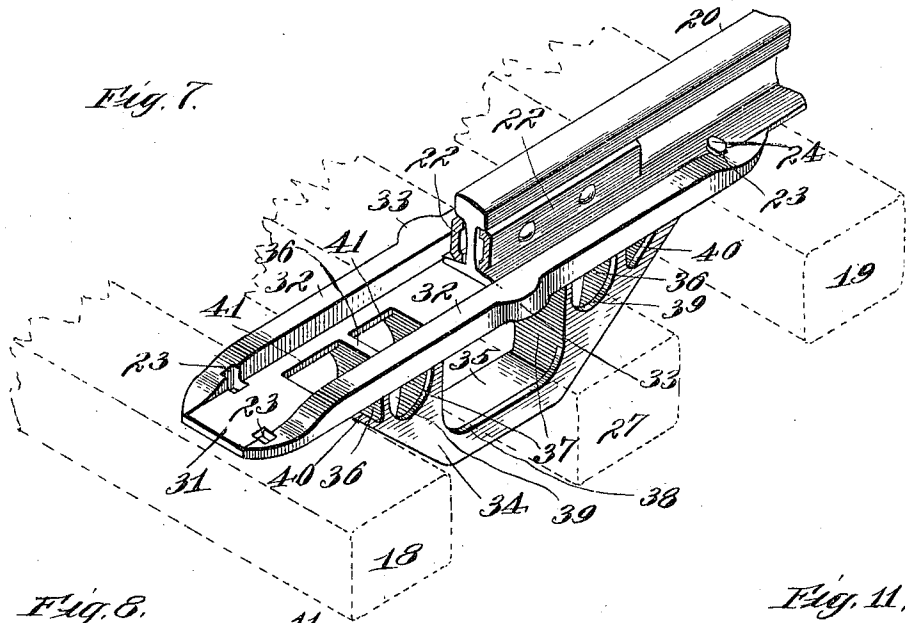


Fig. 8.

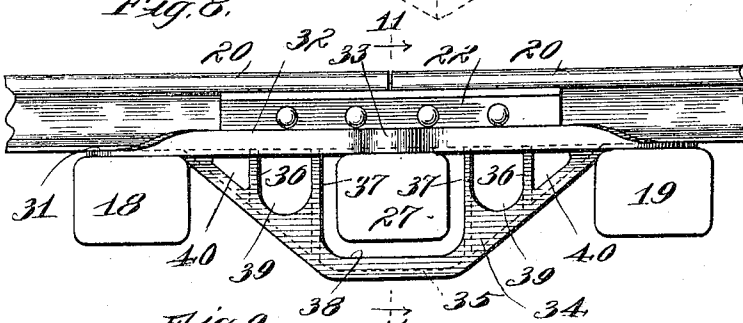


Fig. 9.

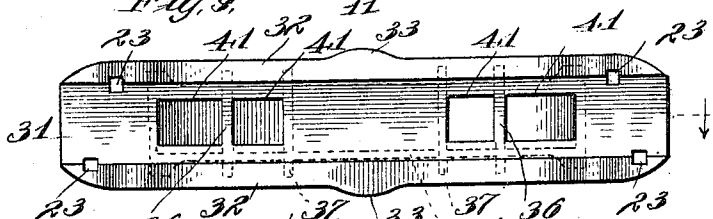


Fig. 10.

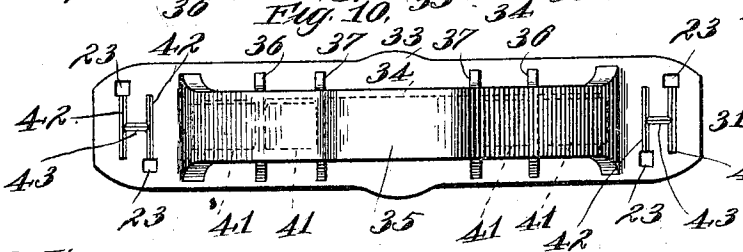


Fig. 11.

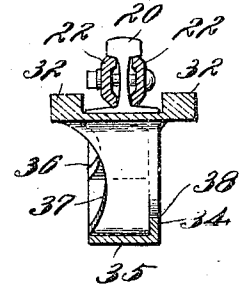
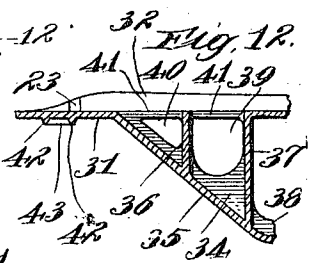


Fig. 12.



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UNITED STATES PATENT OFFICE.

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THREE-TIE RAIL-SUPPORT.

962,423.

Specification of Letters Patent. Patented June 28, 1910.

Application filed June 29, 1907. Serial No. 381,493.

To all whom it may concern:

Be it known that I, GEORGE G. FLOYD, a citizen of the United States, residing at Granite, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Three-Tie Rail-Supports, of which the following is a specification.

This invention aims to provide a multiple tie rail-joint support which is intended to rest at its ends upon a pair of cross-ties and is apertured or recessed between its ends for the accommodation and reception of one or more other cross-ties, the tension portion of the structure lying beneath the intermediate ties. The rails are fastened to the top of the support and owing to its length and its resting upon and support by a number of ties, the load of the trains passing over the rails is distributed upon the ties and not concentrated at any particular place. The same spikes which fasten the support or bridge to the ties also secure the rail-ends to the support or seat, displacement or poor alinement of the rails either sidewise or vertically being effectually prevented. By an efficient and proper distribution of the metal of the seat or support one of great rigidity and strength is secured with the employment of a moderate amount of metal.

On the accompanying drawings which form a part of this specification, I have illustrated two desirable embodiments of my invention, like reference characters referring to the same parts throughout the various views.

Figure 1 is a perspective view of one form of my improved rail-joint support, and illustrates one of the rail ends and portions of the fish-plates, the cross-ties being indicated in dotted lines. Fig. 2 is a side elevation of the seat or support shown in Fig. 1, and illustrates a pair of rail ends, the fish-plates and three cross-ties. Fig. 3 is a central vertical section of the structure shown in Fig. 2, the middle cross-tie being omitted. Fig. 4 is a top plan view of the seat or support shown in Figs. 1, 2 and 3. Fig. 5 is an end elevation of the same. Fig. 6 is a bottom plan view of the same. Fig. 7 is a perspective view similar to Fig. 1, showing a modified form of support. Fig. 8 is a side elevation of the support shown in Fig. 7, and illustrates in addition the adjacent rail ends, fish-plate and cross-ties. Fig. 9 is a

top plan view of the seat or support shown in Figs. 7 and 8. Fig. 10 is a bottom plan view. Fig. 11 is a vertical cross-section on line 11—11 of Fig. 8, the middle cross-tie being omitted; and Fig. 12 is a central vertical longitudinal section of a portion of the support on line 12 of Fig. 9.

Referring first to the rail-joint support or bridge illustrated in Figs. 1 to 6, inclusive, it will be noticed that the same is a unitary structure, being cast in a single piece and that it has a main horizontal plate portion 15 along the opposite longitudinal edges of which are upstanding ribs or flanges 16 widened somewhat near their ends at the points 17 located over the corners of the cross-ties 18 and 19 upon which the ends of the support rest. The pair of flanges 16 are spaced apart sufficiently to accommodate between them the ends of the adjacent rails 20 and 21 connected together on opposite sides by the pair of fish-plates 22 bolted or otherwise secured to the opposite sides of the webs of the rails. Vertical apertures 23 at the ends of the support and over the ties 18 and 19 extend through the plate 15 and partially intersect the ribs 16. These holes 23 are adapted to receive the spikes 24 which act not only to fasten the support to the ties, but by engagement with the lower flanges of the rails, to maintain the same securely in position on the support. In order to strengthen the cast metal seat or bridge, the under face of plate 15 is provided with a vertical longitudinal belled plate or web 25 apertured at 26 for the accommodation of the middle cross-tie 27 and provided along its curved lower margin with a flange 28 extended from both sides thereof, the flange passing beneath the middle cross-tie 27, as is clearly indicated. The rail ends are joined together ordinarily over the middle tie 27 as illustrated, and owing to the fact that the support rests upon three or more ties, the load imposed upon the rails is sufficiently distributed over the ties so that no one at any time is subjected to an excessive load or pressure.

Although I have illustrated this form of support as being adapted for use with three ties, it will be apparent to those skilled in the art that if it appears desirable more than one aperture 27 may be provided in the web 25 for the accommodation of a plurality of intermediate ties. If desired to aid in

maintaining the support in place, the under surfaces of the ends of plate 15 may be equipped with transverse and longitudinal sharp-edged ribs 29 and 30 which are adapted to become embedded in the surface of the ties 18 and 19.

In Figs. 7 to 12, inclusive, I have shown a modified form of seat or bridge which is also preferably cast in one piece and has a horizontal plate 31 adapted to rest at its ends upon cross-ties 18 and 19. Along its longitudinal edges plate 31 has the vertical ribs or flanges 32 which may be somewhat widened out or thickened, if desired, at their central portions at 33 over the middle cross-tie 27. The rails rest upon the support and are connected together in the same manner as described above, and the support and rails are held in place as in the previous instance by spikes 24 passing through holes 23. Projecting downwardly from the under surface of plate 31 and extended longitudinally of the support at one side of the center is a bellied web or vertical plate 34 having extended inwardly from its bottom edge a flange 35. Integral with and connecting web 34, flange 35, and plate 31, are a plurality of vertical transverse webs or struts 36 and 37. Struts or webs 37 are spaced apart sufficiently to allow the passage of the middle cross-tie 27 between them, plate 34 being apertured or omitted at 38 to accommodate this cross-tie. For a reduction of weight, the vertical plate or web 34 may be also apertured at 39 and 40 and the horizontal supporting plate 31 may be provided, if desired, with the recesses 41 for the same purpose. It may be desirable in some cases to grind or smooth off the top surface of plate 31, and when the holes 41 are present it is apparent that the extent of surface to be ground off is materially reduced. Plate 31 at its ends and on its under side is provided with the transverse and longitudinal sharp ribs 42 and 43 which by being pressed into the face of ties 18 and 19, aid in holding the support in position and preventing its shifting. Since the rail ends rest upon this bridge or support and the latter is sufficiently strong and rigid to give but slightly, if any, under the weight of the trains passing over the rails, it is apparent that the rails may be kept in vertical alinement under all conditions, the spikes 24 keeping the rail ends in lateral or sidewise alinement at all times. Although the seat or bridge shown and described is more or less of a skeleton construction, owing to the distribu-

tion of the metal therein, it possesses considerable strength and great rigidity. It will be noticed that the tension flange 35 is maintained at an unvarying distance from the plate 31 by the plurality of vertical webs 36 and 37 which act as struts.

To those acquainted with this art it will be obvious that a number of minor changes may be made in the structure and form of the seats or supports described above, and it is apparent that the appended claims include not only the specific structures outlined, but all such obvious modifications.

I claim:

1. A cast-metal rail-joint support comprising a plate portion adapted to rest upon a plurality of cross-ties and having an integral depending bellied plate or web apertured for the reception of a cross-tie and flanged along its lower margin, substantially as described.

2. A cast-metal rail-joint support comprising a plate adapted to rest at its ends upon a pair of cross-ties and having a depending bellied vertical web apertured for the accommodation of a cross-tie, said web being flanged along its lower edge and having a plurality of vertical cross webs connecting said flange with the under surface of said plate, substantially as described.

3. A cast-metal rail-joint support comprising a plate adapted to rest at its ends upon a pair of cross-ties and having a longitudinal depending bellied vertical web apertured for the accommodation of a cross-tie, said web being flanged along its lower edge and having a plurality of vertical cross webs connecting said flange with the under surface of said plate, said longitudinal bellied web being apertured between said cross webs for a reduction of weight, substantially as described.

4. A cast-metal rail-joint support comprising a horizontal plate adapted to rest at its ends upon a pair of cross-ties and having a longitudinal depending bellied vertical web centrally apertured for the accommodation of a cross-tie, said web being flanged along its lower edge and having a plurality of vertical cross webs or struts connecting said flange with the under surface of said plate, said horizontal plate being apertured between said cross webs or struts, substantially as described.

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