S. V. BACON.

PLASTIC TIE.

APPLICATION FILED DEC. 29, 1916.

1,239,073.

Patented Sept. 4, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

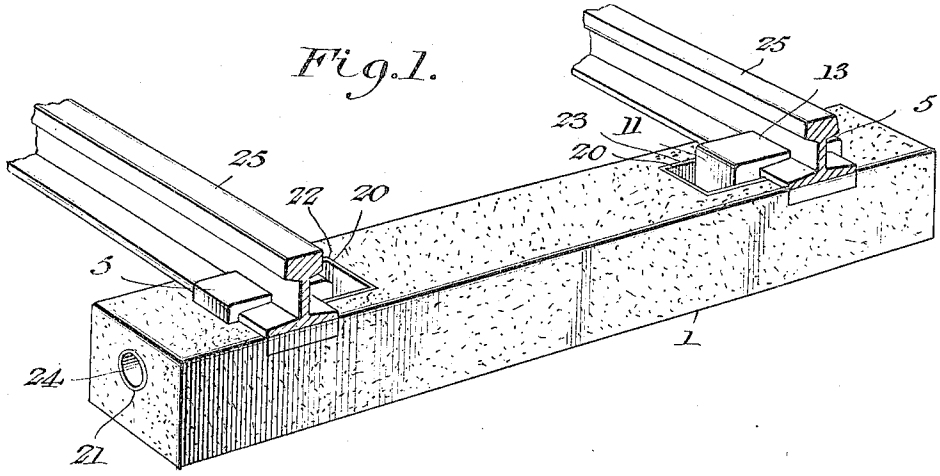


Fig. 2.

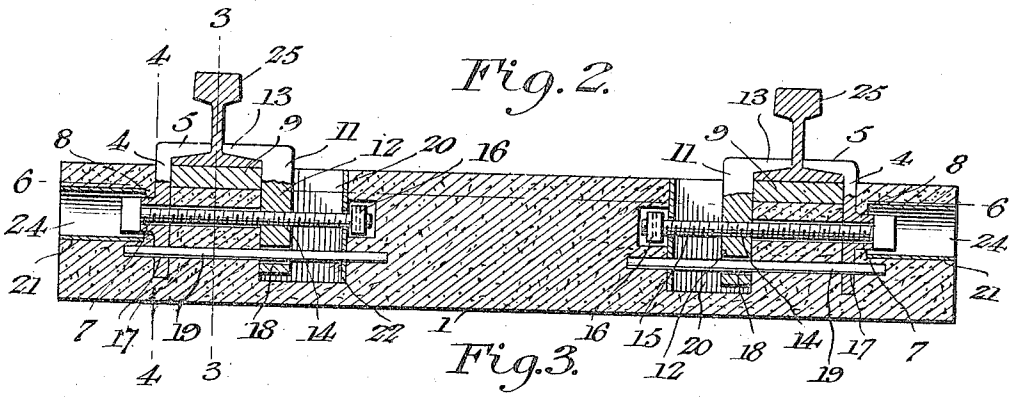
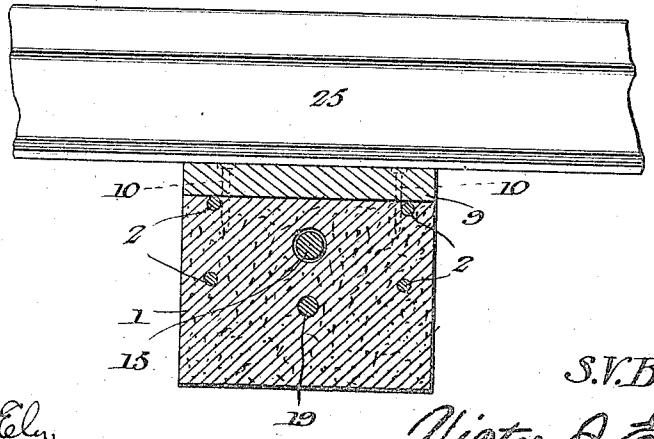


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 5.

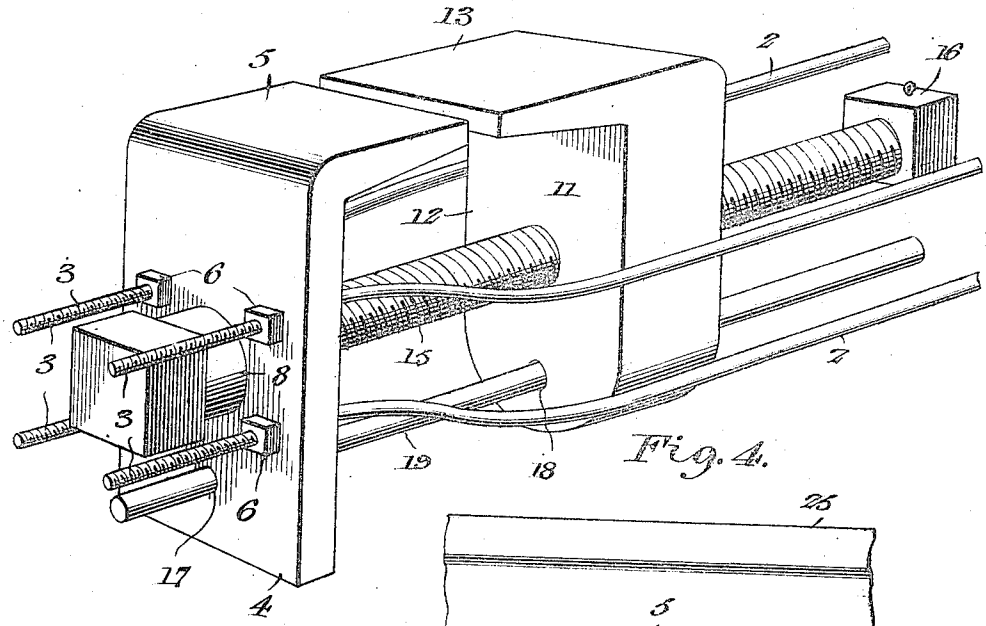


Fig. 4.

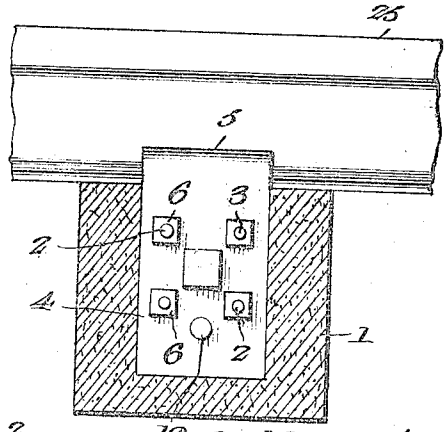
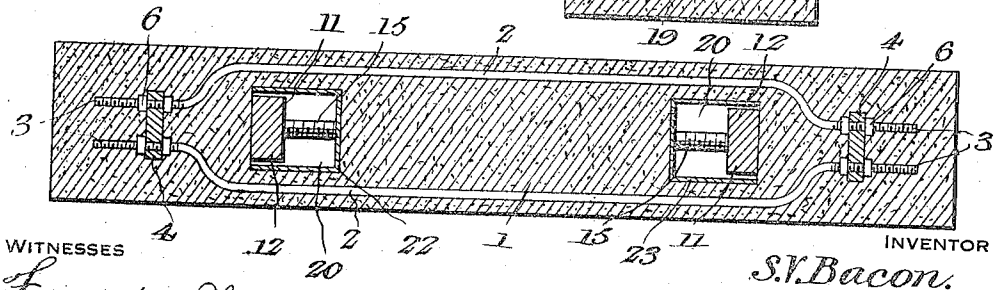


Fig. 6.



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PLASTIC TIE.

1,239,073. Specification of Letters Patent. Patented Sept. 4, 1917.

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To all whom it may concern:

Be it known that I, SAMUEL V. BACON, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Plastic Ties, of which the following is a specification.

The present invention relates to improvements in the construction of reinforced plastic ties for railway rails, and the primary object of the invention is to produce a tie of this character whereby the rails can be easily and quickly secured thereon and the proper resiliency afforded to the said rails.

It is a further object of the invention to construct a plastic tie having parallel reinforcing bars therein and adapted to adjustably receive, in the course of construction, a plate including a rail-engaging lip which plate when secured to the bars, additionally reinforces the structure, the upper bars supporting cushion members upon which the rails rest, while disposed between the said bars is a rail-engaging member, means passing through the plate and co-engaging with the said member for removably adjusting the same with respect to the rails, when the said rails are arranged upon the cushion members, and the said adjusting means also serving for locking the said rail engaging means upon the rails.

It is a further object of the invention to produce a plastic tie which shall be of a comparatively simple construction, cheap to manufacture and at the same time strong and durable.

With the above and other objects in view the improvement resides in the construction, combination and arrangement of parts set forth in the following specification and falling within the scope of the appended claims.

In the drawings:

Figure 1 is a perspective view of a tie constructed in accordance with the present invention, illustrating the arrangement of the rails thereon,

Fig. 2 is a central vertical longitudinal sectional view through the same,

Fig. 3 is a transverse sectional view taken approximately centrally of one of the rail receiving cushion plates or members,

Fig. 4 is a sectional view approximately on the line 4—4 of Fig. 2,

Fig. 5 is a detail perspective view looking toward one end of the reinforcing bars and illustrating the means of adjustably securing the plate thereto as well as the arrangement of the rail-engaging member between the bars and the adjusting and guide means therefor, and

Fig. 6 is a horizontal sectional view approximately on the line 6—6 of Fig. 2.

The body 1 of the tie is constructed of plastic material and during the process of construction I arrange in the mold in which the said tie is formed, longitudinally extending parallel bars arranged in upper and lower pairs and indicated by the numerals 2. These reinforcing bars, adjacent to the ends of the tie are bent inwardly toward each other and continued in parallel relation as indicated by the numerals 3, the said portions 3 being threaded. By threading the inturned ends of the bars the same not only more effectively engage with the plastic body which is tamped around the said bars, but provides means whereby I am permitted to adjustably associate the outer rail-engaging members to the said reinforcing bars. These outer members each include a body or plate 4 which has its upper edge inturned or otherwise provided with a rail-engaging lip 5. The body or plate 4 is provided with spaced openings through which the referred to ends 3 of the reinforcing bars 2 pass, and threaded upon the said ends 3 and contacting with the opposite faces of the plate 4 are nuts 6. By this means it will be noted that the member 4 is effectively sustained upon the bars and it will be further noted that the said member 4 serves as additional means for reinforcing the plastic body of the tie. The member 4 is centrally provided with an opening 7, the said opening, upon the outer face of each of the bars being surrounded by a sleeve 8.

The numerals 9 designate the rail blocks. The blocks 9 are pereferably constructed of wood or other suitable yieldable material and are of a width to fully receive the rails, so that the resiliency of the rails will not be impaired. Each of the rail blocks 9 is arranged below the lip 5 of each of the members 4 and rests upon the upper parallel bars 2. The plastic body of the tie effectively retains the blocks thereon, but if desired elements, such as nails, bolts or the like, may be passed vertically through the said blocks to contact with the opposite edges of the bars 2, the same being indicated by the dotted lines in Fig. 3 of the drawings and being indicated by the numerals 10. Ar-

ranged inwardly of the blocks 9 and disposed between the opposite pairs of parallel bars 4 are the inner rail-engaging members 11. Each of these members includes a substantially rectangular body 12 of a less width than the distance between the bars 2, but of a width approximately equaling that of the lip 5 of the members 4, while upon the upper corner of each of the bodies 12 is formed a flange providing a lip 13 that is directed toward the lip 5 of the members 4. The body 12 of each of the members 11 is provided with a threaded opening 14 which is arranged in a line with the opening 7 in the members 4, and the numeral 15 designates a threaded member in the nature of a bolt which is guided by the sleeves 8 through the openings 7 in the members 4 and which engages with the threads in the openings 14 of the members 11. The numeral 16 designates a stop member arranged upon the inner end of the shank of each of the bolts 15, the said stop being preferably in the nature of a nut, a cotter pin passing through the alining openings in the said nut and in the bolt. Below the bolt 15 and passing through alining openings 17 and 18 in the members 4 and 11 respectively is a guide rod 19 upon which the members 11 are adapted to travel. By reference to the drawings it will be noted that the plastic body 1 of the tie inward of the rail-receiving blocks 9 is provided with elongated openings 20 entering from the top of said tie and within these openings are disposed the rail-engaging members 11, while the ends of the tie are provided with rounded openings 21 whereby a suitable instrument, such as a socket wrench, may be received therein and engaged with the heads of the bolts 15 to turn the said bolts and to adjust the rail-engaging members 11 with respect to the rail-engaging members 4. Preferably the side and end walls of the opening 20 are protected by reinforcing plates 22 and 23 respectively, and if desired the rounded openings 21 may have their walls likewise protected by a metallic cylinder 24.

From the above description it will, it is thought, be apparent that the rails 25 may be easily and quickly secured upon the ties when engaged by the lips 5 and 13 of the members 4 and 11 and may be effectively secured upon the ties without necessitating the employment of spikes or analogous devices and further that the weight of the tie will insure the same against turning, lateral or longitudinal movement when the same is arranged in the roadbed.

Having thus described the invention, what I claim is:

1. A concrete tie including in its construction parallel reinforcing bars, a plate including a rail-engaging lip secured to the bars, a rail-engaging member disposed between the bars, and means passing through the plate and co-engaging with the rail engaging member for longitudinally adjusting the latter with respect to the plate.

2. A concrete tie including in its construction upper and lower parallel reinforcing bars, a plate including a rail engaging lip adjustably secured to the bars adjacent to the end thereof, a rail-engaging member disposed between the bars, and means passing through the plate and guided by said plate for co-engaging with the said rail engaging member for removably adjusting the latter with respect to the plate.

3. A concrete tie including in its construction upper and lower parallel reinforcing bars, a plate including a rail-engaging lip secured adjacent to the ends of the said bars, a rail receiving cushion member contacting with the plate below the lip thereof and supported upon the upper bars, a rail engaging member disposed between the bars, and means passing through the plate and co-engaging with the rail-engaging member for longitudinally adjusting the latter with respect to the plate and with respect to the rail cushion members.

4. A tie having a body constructed of plastic material and having metallic reinforcing rods embedded therein and which are arranged in upper and lower parallel pairs, said rods adjacent to the ends thereof being turned inwardly toward each other and continued longitudinally and the said ends being threaded, a plate at each end of the tie having an inturned rail-engaging lip and provided with openings receiving the threaded ends of the said rods, nuts upon the rods contacting with the opposite faces of the plate, and each of said plates having a central opening, a rail-engaging element including a substantially rectangular body disposed between the rods and arranged one adjacent to each of the referred to plates, the body of each of said rail-engaging members having its upper corner formed with a rail-engaging lip, each of said bodies having a threaded opening, a headed threaded member passing through the referred to openings in the plates and through the threaded openings in the rail-engaging members, stop elements upon the said threaded members, a rail receiving block upon the upper bars and disposed below the lips of the referred to plates, and the body of the tie having openings for the longitudinal movement of the rail-engaging members and having openings in a line with the heads of the threaded members.

5. A concrete tie including in its construction upper and lower parallel reinforcing bars arranged in pairs, a plate including a rail-engaging lip adjustably secured to the rods adjacent to each end of the tie, a rail block supported upon the upper bars and secured by the ties and disposed below the

rail engaging lips of the said plates, a rail-engaging member disposed between the bars inwardly of each of the rail blocks, a guide rod connected with each of the referred to plates and passing through openings in the rail-engaging members, said plates having each an opening, a sleeve surrounding the opening and projecting outwardly of the plates, said rail-engaging members having each an opening, and an adjusting element comprising a headed threaded member guided through the sleeve and opening in the plate and engaging with the threads in the opening in the rail-engaging member, and stops for the said threaded members.

In testimony whereof I affix my signature.

SAMUEL V. BACON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."