Aug. 30, 1938. R. G. STACKHOUSE 2,128,272

RAILROAD TIE

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Fig. 1.

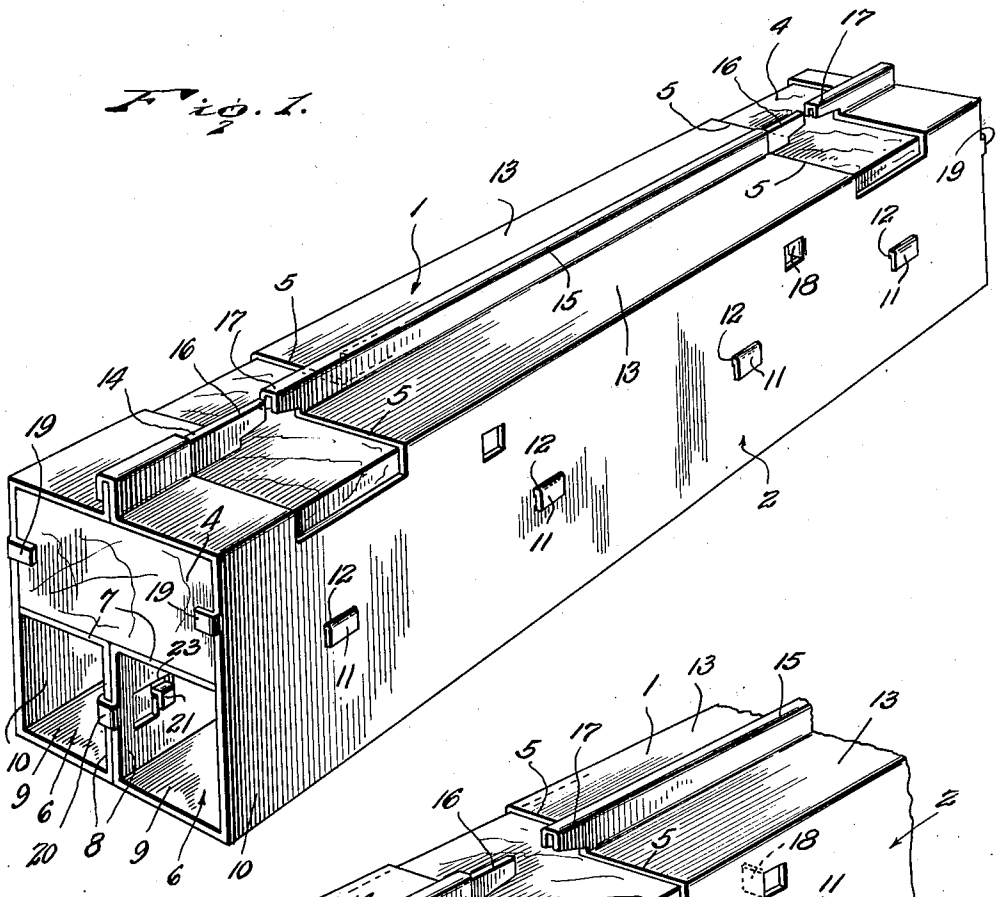
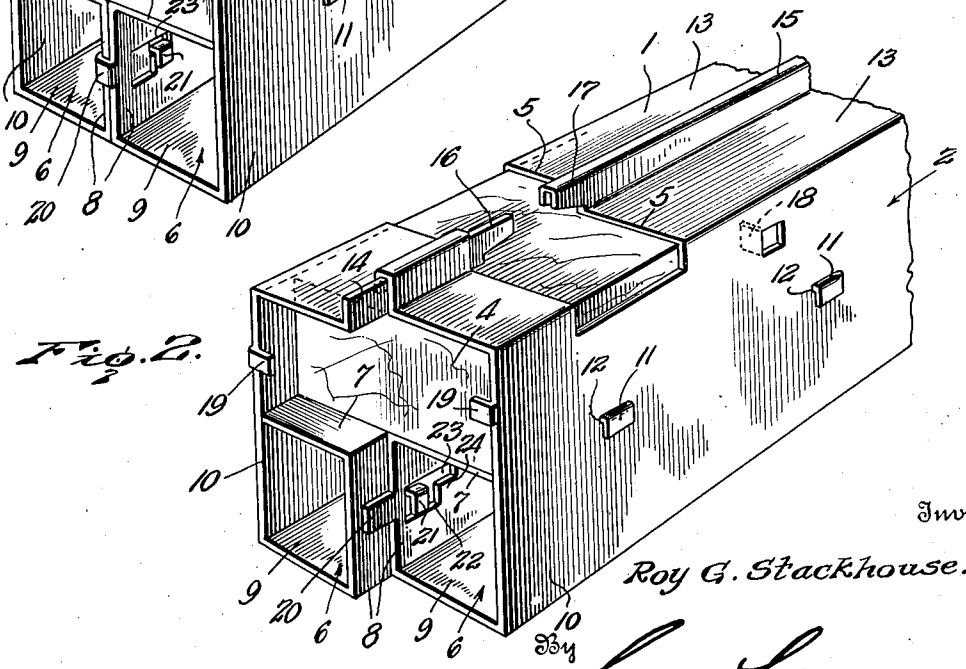


Fig. 2.



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Fig. 3.

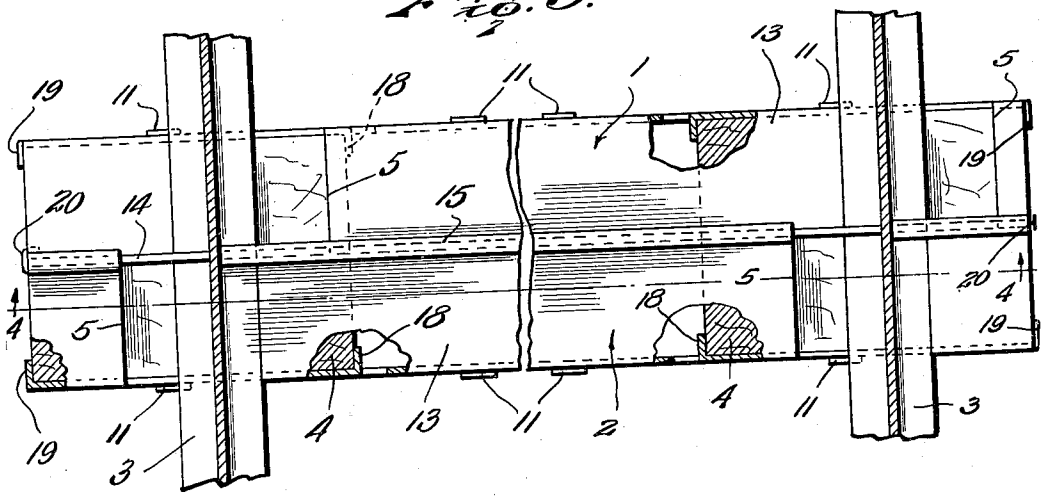
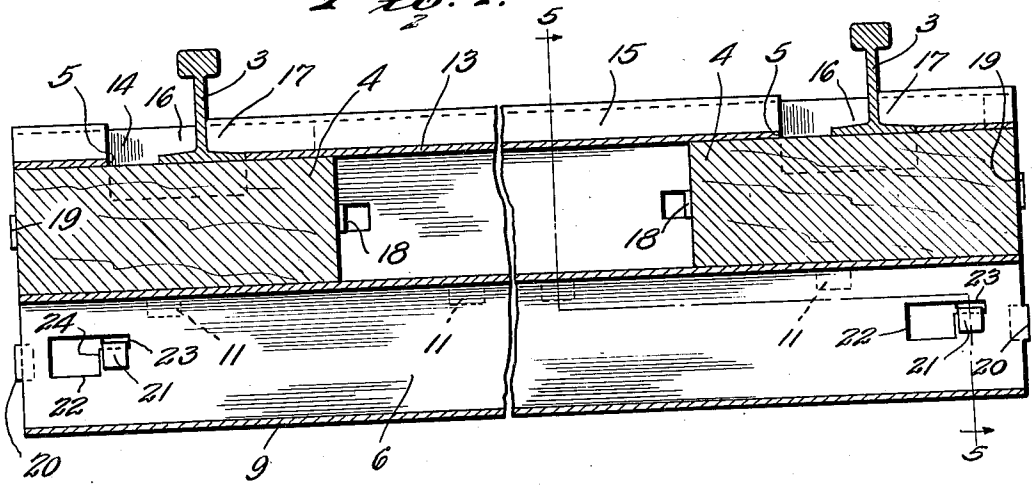


Fig. 4.



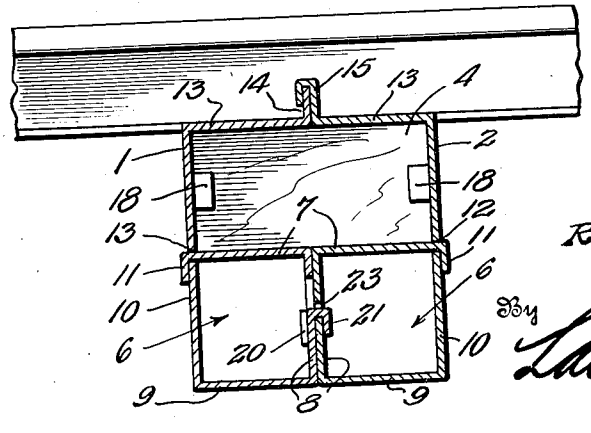


Fig. 5.

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RAILROAD TIE

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Fig. 6.

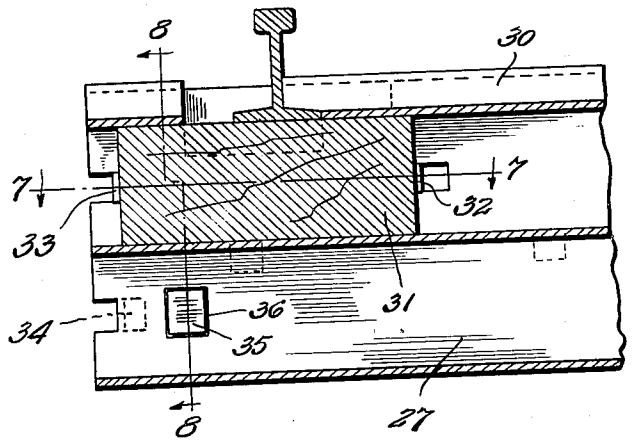


Fig. 7.

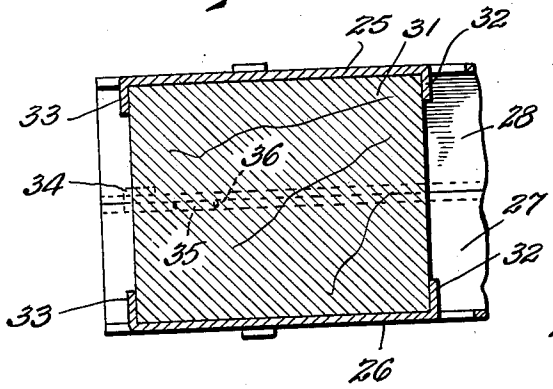


Fig. 8.

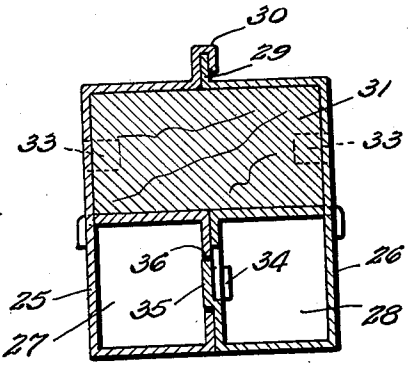
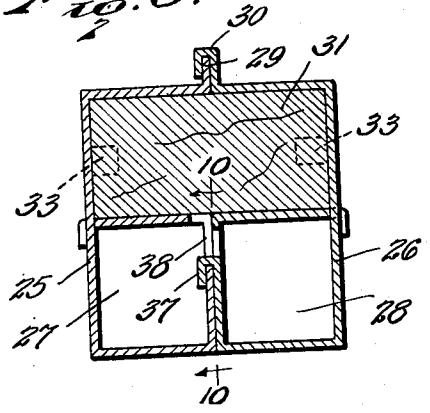


Fig. 9.



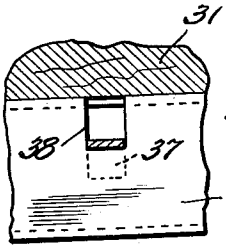


Fig. 10.

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2,128,272

UNITED STATES PATENT OFFICE

2,128,272

RAILROAD TIE

Roy G. Stackhouse, Birmingham, Ala.

Application February 18, 1937, Serial No. 126,467

7 Claims. (Cl. 238—55)

This invention relates to a railroad tie and one object of the invention is to provide a tie which may be formed entirely of metal except for the provision of blocks mounted in end portions of the tie for rails to rest upon, the tie being so constructed that it will be very strong and capable of withstanding the weight and pounding when a train moves along a track.

Another object of the invention is to provide a tie of such construction that, when rails are set in place upon the rail-engaging blocks, portions of the tie may be moved into overlapping engagement with side portions of the rail bases and thus very firmly hold the rails in place without the use of spikes or other auxiliary securing means.

Another object of the invention is the provision of a tie formed of sections which may be shifted longitudinally of each other and thus moved into and out of position to firmly support rails with portions of the tie sections overlapping side portions of the rail bases.

It is another object of the invention to so form the companion sections of the tie that after rails have been set in place and one section slid longitudinally of the other into position to secure the rails upon the wooden blocks mounted in end portions of the tie the two rail sections will be firmly held in the rail-supporting and securing condition and the wooden block also prevented from sliding out of place.

The invention is illustrated in the accompanying drawings, wherein

Figure 1 is a perspective view of the improved tie,

Figure 2 is a perspective view of one end portion of the tie showing the companion section in position to permit a rail to be set in place upon the rail-engaging block,

Figure 3 is a view showing the improved tie principally in top plan and partially in section,

Figure 4 is a sectional view taken longitudinally through the tie upon the line 4—4 of Figure 3,

Figure 5 is a sectional view taken transversely through the tie upon the line 5—5 of Figure 4,

Figure 6 is a sectional view taken longitudinally through an end portion of a tie having a modified construction,

Figure 7 is a sectional view taken along the line 7—7 of Figure 6,

Figure 8 is a sectional view taken transversely through the tie along the line 8—8 of Figure 6,

Figure 9 is a view similar to Figure 8 illustrating another modified form of tie, and

Figure 10 is a sectional view taken along the line 10—10 of Figure 9.

This improved railroad tie consists of companion sections, indicated in general by the numerals 1 and 2, the two sections being so connected with each other that they may be slid longitudinally from the position shown in Figure 2 to the position shown in Figure 1 after rails 3 have been set in place upon the tie with the bases of the rails resting upon the portions of the wooden blocks 4 exposed through the openings 5 formed in the upper wall of the two sections.

Each of the rail sections 1 and 2 is formed from a rectangular blank of strong sheet metal which may be steel or any other desired material. The blank is folded longitudinally to provide the rail section with a tubular lower portion 6 which is rectangular and preferably square when viewed in cross section or end elevation, as shown in Figures 1, 2 and 5, and provided with an upper wall 7, an inner side wall 8, a bottom wall 9 and an outer side wall 10. Tongues 11 extend transversely from the edge of the upper wall 7 which abuts the side wall 10 and these tongues are passed outwardly through slots 12 formed in this side wall and then bent downwardly to firmly secure the upper wall against the outer side wall. The walls 10 of the two sections extend upwardly above the upper wall 7 of the tubular base portions of these rail sections and each blank is bent to provide a portion 13 extending inwardly in vertically spaced relation to the top wall of the tubular base of the tie section. The two inwardly extending portions 13 of the tie section cooperate with each other to provide a top wall for the tie and one has its free inner side edge portion bent upwardly to form an upstanding flange 14 while the other has its corresponding portion bent to provide an upstanding channeled flange 15 of such dimensions that the flange 14 will be snugly received therein, as clearly shown in Figure 5. By this arrangement the two tie sections will have their top wall portions 13 held in engagement with each other to form a top wall for the tie but the two sections may be slid longitudinally of each other. The openings 5 are cut from the portions of the blank which form the top wall of the tie, and upon referring to Figures 1 and 2, it will be seen that outer end portions of the two openings 5 extend downwardly a short distance into the side walls 10 of the tie. It will also be noted that the blanks from which the two tie sections are formed are so cut that, when they are bent to provide the flange 14 and the channeled flange 15, the flange 14 will be formed with bills 16 at one side of each of its openings 5 and the channeled flange 15 will be formed with bills 17 extending from the oppo-

site side of each of its openings 5. These bills overlap opposite side portions of the bases of the rails 3, as shown in Figures 3 and 4, and firmly hold the rails upon the block 4 which are housed in the end portions of the tie. The blocks fit snugly into the end portion of the upper chamber of the tie where they are supported upon the tubular base portions of the two tie sections and inner ends of the block bear against tongues 18 which are struck from the side walls 10 intermediate the tubular base portions of the tie section and the top wall forming portions 13 thereof. Other tongues 19 extend from ends of the side wall and are bent inwardly to have abutting engagement with outer ends of the two blocks. It will thus be seen that, when the tie sections are secured in the position shown in Figure 1 by bending the end tongues 20 carried by the inner side wall of the tubular base portion of the tie section 2 over ends of the inner side wall of the tubular base portion of the tie section 1 from the position shown in Figure 2 to that of Figure 1, the two blocks will be very firmly held in place and prevented from slipping out of the end portions of the upper chamber of the tie. Hooks 21 which are formed by bent tongues struck from the inner wall 8 of the tie section 1 pass through openings 22 formed in the side wall 8 of the tie section 2 so that the two tie sections may have their side walls 8 disposed in face to face engagement with each other. When the tie section 1 is shifted longitudinally of the tie section 2 from the position shown in Figure 2 to that of Figure 1 the tongues 21 move into the reduced end portions 23 of the openings 22 and have close contacting engagement with the portion 24 of the side walls 8 of the tie section 2. By this arrangement the hooks 20 and 21 will cooperate with each other to very firmly hold the base portions of the two tie sections in close contacting engagement with each other.

When this improved tie is in use, it is assembled as shown in Figure 1 with the block fitting into the end portions of the upper chamber of the tie. The tongues 20 are left in the extended position shown in Figure 2 and either one or both of the tongues 19 will also be left in the extended position so that the tie section 1 may be slid longitudinally of the tie section 2 to the position shown in Figure 2. This shifting of the tie section 1 longitudinally of the tie section 2 moves the bills 16 away from the bills 17 a sufficient distance to permit the base portions of the rails to be set in place upon the blocks. The tie section 1 may then be driven longitudinally of the tie section 2 from the position shown in Figure 2 to that shown in Figure 1 and the bills 16 and 17 will then have gripping engagement with opposite side portions of the bases of the two rails and the hooks or tongues 21 will be disposed in the reduced end portions of the slots 22. The tongues 19 of the tie section 1 can then be bent inwardly against outer end faces of the blocks and the tongues 20 bent about ends of the inner walls of the tie section 1 and the two tie sections will be very firmly held in engagement with each other and prevented from shifting longitudinally of each other out of the position shown in Figure 1 in which the bills 16 and 17 will very firmly grip the base portions of the two rails and hold the rails firmly in place upon the wooden block. The fact that the tie is formed of steel or other strong metal will cause the improved tie to have long life as the only portion thereof which is liable to be damaged by exposure to rain, snow and other weather conditions are the blocks 4 and these blocks can be very easily and cheaply replaced when necessary.

In Figures 6, 7 and 8, there has been illustrated a modified form of tie. In this embodiment of the invention, the two sections 25 and 26 of the tie are in most respects similar in construction to the sections 1 and 2 previously described. Tubular base portions 27 and 28 are provided which correspond to the base portions 6 and the upper wall of the section 26 is formed with an upstanding flange 29 engaged in the channel 30 of the section 25. A block 31 fits in each end portion of the tie within the upper chamber thereof where it is supported upon the tubular base portions 27 and 28 and this block is held in place by tongues 32 and 33 corresponding to the tongues 18 and 19. Attention is called to the fact that the tongues 33 and the tongues 34 which correspond to the tongues 20 and hold the inner side walls of the tubular base portions together are cut from the walls of the two sections instead of projecting from these sections. This causes the blocks to be set inwardly from ends of the tie so that they will be well shielded from exposure to weather and also allows the blanks from which the tie sections are formed to be stamped or otherwise cut from sheet metal without loss of metal which occurs when the tongues project from edges of the blanks. In order to prevent the two sections from accidentally shifting longitudinally or vertically relative to each other, there have been provided tongues 35, one of which is cut from each end portion of the inner wall of the tubular base portion of the section 28 and is received in a companion opening 36 formed in the inner side wall of the tubular base portion of the section 27. The tongues 35 are offset, as shown in Figure 8, and fit snugly into the openings 36 when the two tie sections are united, and when the tongues 34 are bent, as shown in Figures 6 and 7, the two sections will be firmly held in engagement with each other and prevented from slipping longitudinally or vertically. The blocks 31 can then be fitted into the upper chambers of the tie with their inner ends abutting the tongues 32 and the tongues 33 bent inwardly to engage outer ends of the blocks and hold the blocks in place under the rails.

The tie illustrated in Figures 9 and 10 is of the same construction shown in Figures 6, 7 and 8, except the tongues which are carried by the inner side walls of the tubular base portions of the two tie sections. Therefore, corresponding parts have been indicated by the same reference numerals. Referring particularly to Figure 9, it will be seen that the inner side wall of the tubular base portion of the section 26 has each end portion cut to provide a tongue which is bent to form a hook 37 adapted to engage through a companion slot or opening 38 formed in the inner side wall of the base portion of the section 25. The openings of the tubular base portion 27 instead of being formed midway the height of the base portion are cut from the upper end of the inner side wall and extend slightly into the upper wall of the base. Therefore, when the two tie sections are applied to each other and the flange 29 engaged in the channel 30, the tongues 37 may easily pass downwardly through the extended upper end portions of the openings 38 and through these openings to a position in which the bills of the hooks engage the inner face of the side wall of the base 27 of the section 25. The two sections will thus be very firmly secured together and prevented from accidentally slipping out of proper relation to each other.

Having thus described the invention, what is claimed as new is:

1. A railroad tie comprising a body having companion longitudinally shiftable sections extending longitudinally of each other in side by side relation to each other and providing a base formed of tubular members and a chamber over the base extending the full width of the body and open at its ends, openings being formed in upper walls of said sections, rail-engaging members carried by said sections and extending longitudinally of the body in overlying relation to the openings from opposite sides thereof for overlapping opposite side portions of rail bases, blocks fitting snugly within said chamber and extending the full width thereof and having rail-engaging portions exposed through the openings, and means for securing said sections in a set position after longitudinal adjustment thereof and maintaining the rail-engaging members in overlapping relation to rail bases to secure the rails in place upon the exposed portions of said block.

2. A railroad tie comprising a body having a base portion formed of tubular members in side by side engagement with each other and a chamber above the base portion extending the full width of the body, the upper wall of the body being formed with openings extending downwardly into side walls of the body, blocks fitting snugly in the upper chamber and having portions exposed through the openings in the upper wall of the body for engagement by bases of rails, and means carried by said body for securing rails firmly upon the exposed portions of said block.

3. A railroad tie comprising a body having companion sections disposed in side by side relation to each other, each section having a tubular base portion, an outer side wall extending upwardly from its tubular base portion and an upper wall portion extending from the upper edge of the outer side wall, said sections having inner walls of their tubular base portions contacting with each other and their upper wall portions slidably connected with each other for longitudinal adjustment of one section relative to the other, the upper wall portions and the upper portion of the outer wall above the tubular base portion forming an upper chamber extending the full width of the body above the tubular base portion, blocks fitting snugly in end portions of the chamber between the tubular base portion and the upper wall portions of said sections, said sections having their upper wall portions formed with cooperating openings extending transversely across the same and downwardly into their outer side walls for exposing portions of said blocks, means carried by the upper wall portions of said sections for overlapping rail bases from opposite sides thereof and securing rails upon exposed portions of said blocks when a section is slid longitudinally of the other in one direction, and means for securing said sections in the longitudinally adjusted position.

4. A railroad tie comprising a body having companion sections disposed in side by side relation to each other, each section having a tubular base portion, an outer wall rising from the tubular base portion and an upper wall portion, the upper wall portions extending towards each other from said outer walls and formed with upstanding flanges, the flange of one section being of channeled formation and slidably receiving the flange of the other section to slidably connect the sections for longitudinal adjustment, blocks in said body between the tubular base portions and the upper wall portions of said sections, the upper wall portions being cut to form openings extending across the top of the body and exposing portions of said blocks, the flanges of said sections having portions extending partially across the openings from opposite sides thereof and constituting rail-securing members for overlapping rail bases from opposite sides thereof and holding the rails firmly upon the exposed portions of the block when a section is slid longitudinally of the other in one direction, and means for securing the sections in the adjusted position.

5. A railroad tie comprising a body consisting of companion sections disposed in side by side relation to each other, each section being formed from a blank bent to provide a tubular base portion extending longitudinally thereof, an outer side wall extending upwardly above the tubular base portion and an upper wall portion extending inwardly from the outer wall and terminating in an upstanding flange, the upper wall of the tubular base portion having tongues extending through openings formed in the outer wall and bent against the outer surface thereof, said sections having inner walls of their tubular base portions disposed in face to face engagement with each other, the inner wall of the tubular base portion of one section being formed with openings having reduced portions, tongues extending from the inner wall of the tubular base portion of the other section and extending through the openings and engaged in the reduced end portions thereof, the flange of one section being bent over to form a channel slidably receiving the flange of the other section, said sections having their upper wall portions formed with alined cut-outs providing openings in the upper wall of the body and said flanges being cut to provide rail-engaging members overlying the cut-outs, blocks fitting snugly between the base portions and the upper wall portion of said sections with portions exposed through the openings formed by the cut-outs in the upper wall portions, tongues carried by the side walls and engaging ends of said blocks, and tongues carried by the inner wall of the tubular base portion of one section and bent to engage the inner wall of the tubular base portion of the other section to secure the sections in a set position.

6. A railroad tie comprising a body formed of companion longitudinally extending sections, each section having a tubular base portion and an upper portion, the base portions being disposed in side by side relation to each other and the upper portions defining a chamber above the base portions, means for detachably and slidably connecting the upper portions with each other, the said upper portions having rail-engaging members adapted to engage and secure base portions of rails, the tubular base portion of one section having its inner side wall formed with openings, and tongues struck from the inner side wall of the base portion of the other section and engaging in the openings of the first section to prevent accidental sliding movement of the sections relative to each other.

7. A railroad tie comprising a body formed of companion longitudinally extending sections, each section having a tubular base portion and an upper portion, the base portions being disposed in side by side relation to each other and the upper portions defining a chamber above the base portions, means for detachably and slidably connecting the upper portions with each other, the said upper portions having rail-engaging mem-

bers adapted to engage and secure base portions of rails, the tubular base portion of one section having its inner side wall formed with openings leading from its upper edge and extending into the upper wall of the base portion, and tongues struck from the inner side wall of the base portion of the other section and bent to form hooks passing through the openings of the first section and straddling the inner wall thereof to prevent accidental sliding movement of the sections relative to each other.

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