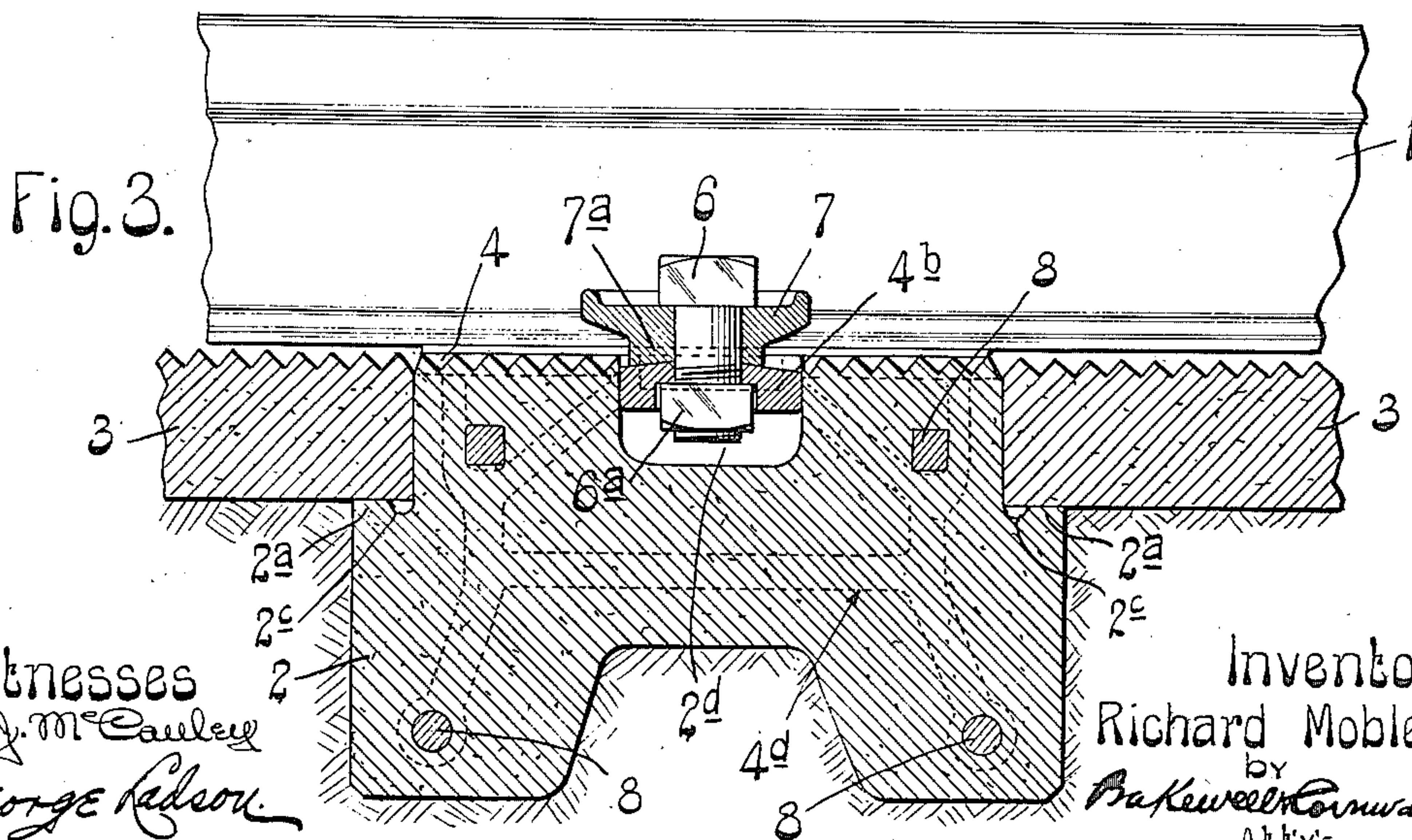
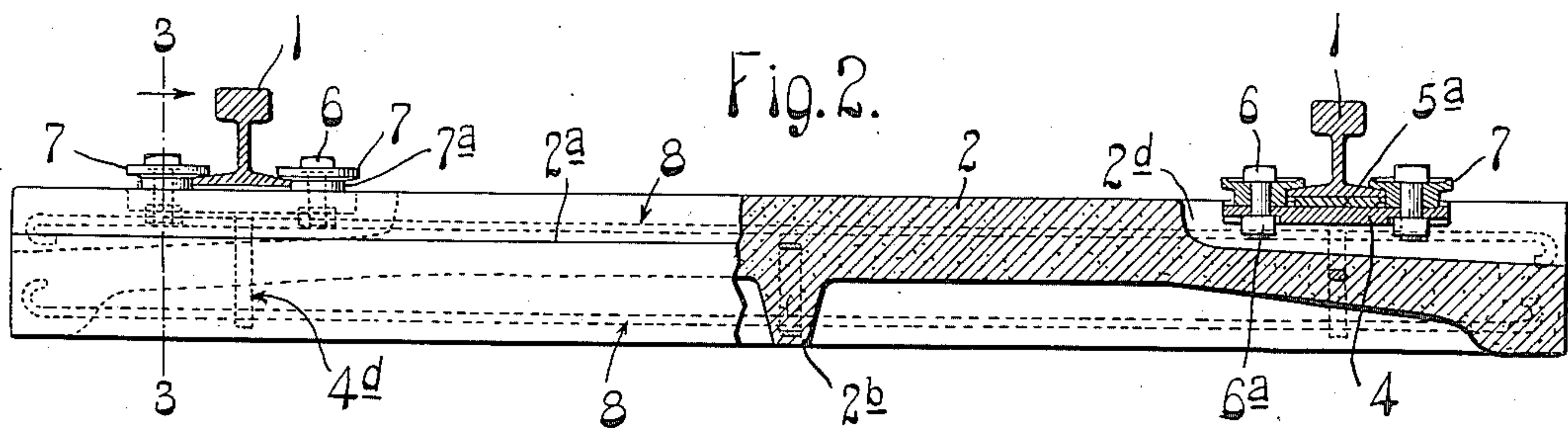
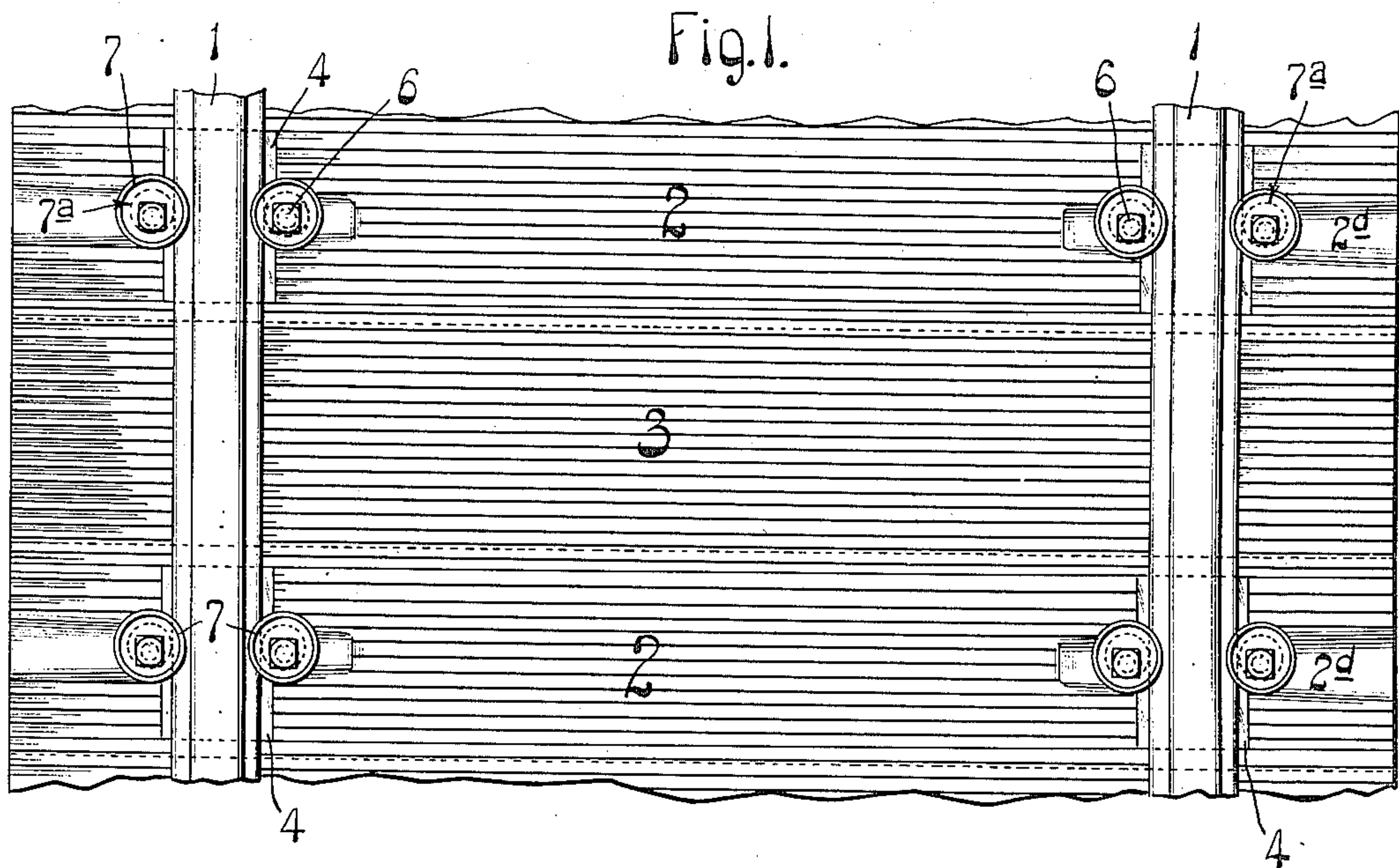


R. MOBLEY.  
RAILWAY ROAD BED.  
APPLICATION FILED DEC. 14, 1908.

966,465.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



Witnesses  
W. J. McCauley  
George Radson

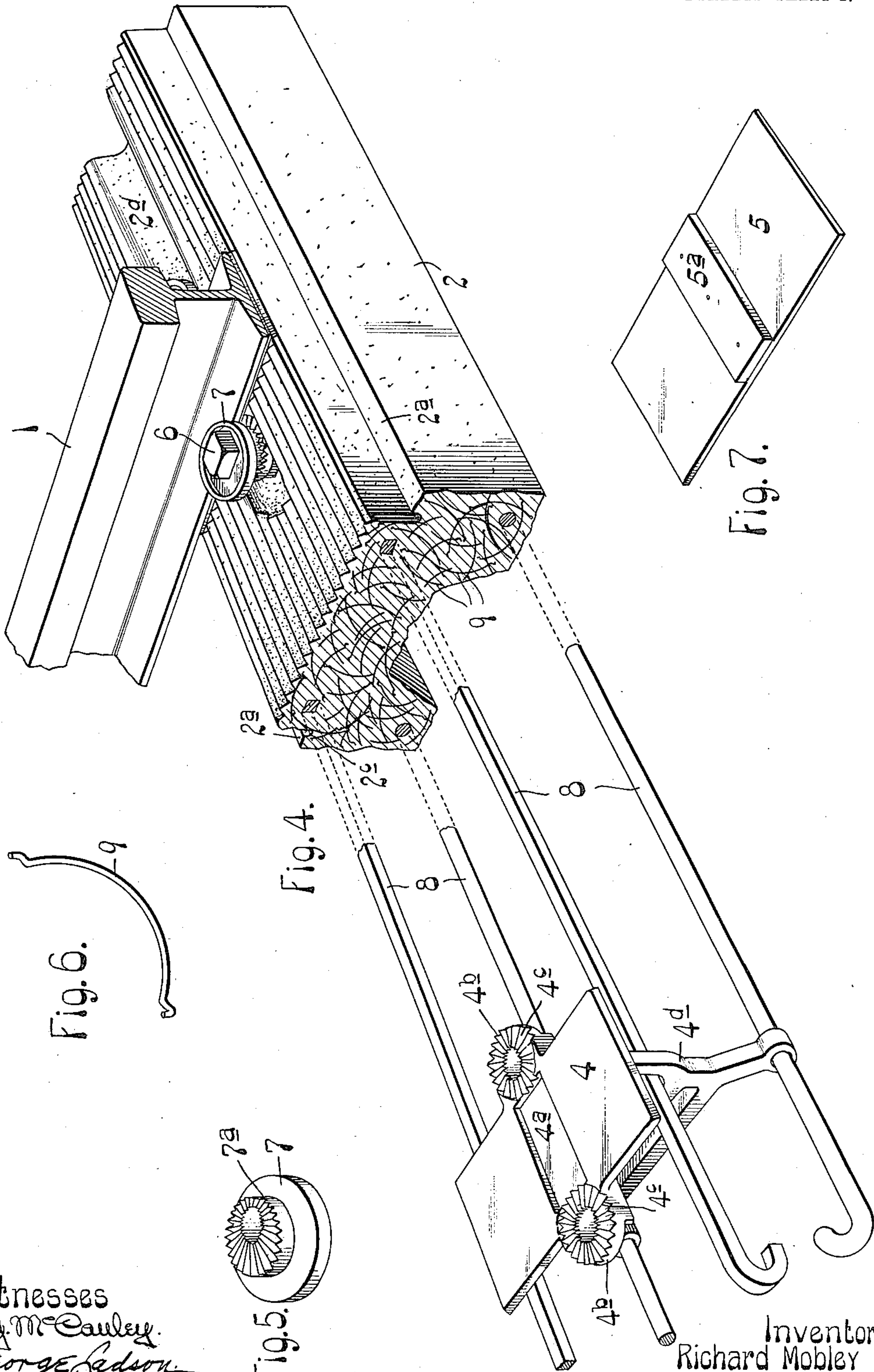
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2 SHEETS—SHEET 2.



Witnesses  
A. J. McCauley  
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Fig. 5.

Inventor  
Richard Mobley  
by *W. K. Russell* Attorney



# UNITED STATES PATENT OFFICE.

RICHARD MOBLEY, OF ST. LOUIS, MISSOURI.

## RAILWAY ROAD-BED.

966,465.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed December 14, 1908. Serial No. 467,425.

*To all whom it may concern:*

Be it known that I, RICHARD MOBLEY, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Railway Road-Beds, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved road-bed; Fig. 2 is an elevational view, partly in section; Fig. 3 is an enlarged sectional view on the line 3—3 of Fig. 2; Fig. 4 is a detail view showing the skeleton work of one of the bed sections; Fig. 5 is a detail view of one of the adjustable clamping heads, showing the same inverted; Fig. 6 is a detail view of one of the metal "fibers" used as a reinforcing medium for the cement body; and Fig. 7 is a detail view of one of the rail cushions.

This invention relates to a new and useful improvement in road-beds for railways, the object being to construct the road-bed in sections of concrete, the space between the rail-carriers or ties being occupied by removable blocks which not only tend to make the road-bed dustless, but also provide a water shed to prevent the water in cold weather from freezing in the ground or in the cinder bed in which the concrete ties may be embedded.

The tie element of my improved road-bed is made up of concrete molded about a skeleton frame, said concrete preferably containing fibers of bent wire or other metal forms which are preferably bent or formed with lateral projections at their ends. These curved wires answer as reinforcements in tying the body of the concrete together substantially in the same way that fibers, hair or bristles reinforce plaster.

Bearing plates or chairs are provided at each end of the tie or cross bearer for the rails, adjustable clamping heads being mounted thereon to cooperate with the base flanges of the rails to hold said rails in position. Cushions are also preferably arranged between the rails and their supporting chairs.

In the drawings, 1 indicates railroad rails, which may be of any suitable cross section.

2 are the cross bearers or tie members of the road-bed, and 3 are the intermediate members. The tie 2 is preferably provided with lateral shoulders 2<sup>a</sup> for supporting the intermediate members 3, and in laying the road-bed a foundation of ballast, cinders or other appropriate material may be employed, and the ties 2 tamped up in the usual and well known manner. The ballast is preferably built up to the shoulders 2<sup>a</sup> so as to firmly hold the tie in place. The tie 2 is hollowed out on its underside, as shown in Fig. 2, and provided with one or more cross flanges 2<sup>b</sup>, which, in the tamping of the material, become embedded and tend to prevent longitudinal movement of the tie. The ties 2 and the intermediate members 3 are preferably provided with longitudinal grooves or serrations on their upper surfaces, so that rain or water can be conducted off laterally to the side edges of the road-bed. A close joint is preferably made between the members 2 and 3, and the shoulder 2<sup>a</sup> may be provided with a groove 2<sup>c</sup> (see Fig. 3) which will tend to conduct any water falling in the crevice between the parts off to the side edges of the road-bed. The purpose of thus preserving as far as practicable the ballast or dirt road-bed in a dry condition is to obviate objectionable results which might follow the swelling of a wet dirt ballast incident to frost or freezing in cold weather.

4 indicates a bed plate constituting a chair for supporting the rail 1, said chair being preferably in the form of a casting and having a depression 4<sup>a</sup> in its upper surface, in which is received the projection 5<sup>a</sup> on a cushion 5 (see Fig. 7). Cushion 5 is preferably of fibrous material and is interposed between the bed plate 4 and the rail 1 not only for the purpose of deadening sound but also for the purpose of cushioning the rail and thus enabling rolling stock to travel over my improved road-bed at high speeds. The projection 5<sup>a</sup> fitting into the recess 4<sup>a</sup> locks the cushion 5 in position and prevents any movement thereof should the rails "creep" in service. The bed plate 4 is also provided with ears 4<sup>b</sup> containing openings



for receiving bolts 6. The upper surfaces of these ears are provided with radially disposed ratchet teeth serrations 4<sup>c</sup>, as shown.

7 is a circular clamping member having a serrated boss 7<sup>a</sup> to cooperate with the serrations 4<sup>c</sup> above described. This serrated boss is eccentrically positioned with respect to the circular head 7 so that said head may be adjusted rotatively about the bolt 6 as an axis to engage rail flanges of different widths. When properly adjusted, the head 7 is clamped in position by the bolt 6. A recess 2<sup>d</sup> is made in the ends of the tie 2 under the ears 4<sup>b</sup>, so that the nuts 6<sup>a</sup> which cooperate with the bolts 6 may be slipped in proper position by hand, and the bolts 6 introduced from the top. The nuts 6<sup>a</sup> are preferably received in a nut seat on the under-sides of the ears 4<sup>b</sup>, and are thus prevented from being turned when the bolt 6 is screwed home. The object in putting the nut underneath instead of on top is to enable both the bolt and the nut to be removed from the tie and replaced by new bolts or nuts in the event of breakage. If the bolt was cast in the ear and could not be removed the wearing of the threads of such inseparably-connected bolt would destroy the usefulness of the entire tie. Again, if it was sought to make the belt removable, in the manner in which the nut may now be removed, the recess 2<sup>d</sup> would have to be made considerably deeper, which would tend to weaken the tie at this point.

The bed plates 4 have depending members 4<sup>d</sup> embedded in the concrete of the tie, and cooperating with these depending members 4<sup>d</sup> are reinforcing tie rods 8 which extend longitudinally the tie and preferably have their ends hooked or bent as shown in Figs. 2 and 4 so as to provide proper interlock.

In mixing the concrete preparatory to its introduction into the mold, which mold contains the parts to be embedded in the concrete in a manner well known in this art, short pieces of wire 9, preferably curved and having their ends bent as shown in Fig. 6, are introduced into the mass of plastic concrete and thoroughly mixed therewith. These wires of course may be shaped as angles and be of varying cross sections, such as square wire, which may be twisted or formed in any other way to insure a secure fastening in the concrete. These wires are used as reinforcements and act substantially the same as hair or bristles mixed with plaster.

I am aware that minor changes in the construction, arrangement and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what

is claimed as new and desired to be secured by Letters Patent is:

1. A concrete railway tie having a recess formed in its under side, metal fibers distributed throughout the entire body of the tie, there being grooves formed in the top surface of said tie, and a series of reinforcing rods longitudinally disposed in the body of the tie.

2. In a railway road-bed, the combination with concrete cross tie members provided with shoulders, of longitudinally grooved intermediate removable tie members supported by said shoulders; substantially as described.

3. A concrete railway cross tie provided with longitudinally disposed recesses in its under-side, which recesses are intercepted by a transversely disposed central reinforcing web; the entire top surface of which tie being grooved longitudinally.

4. A concrete intermediate filler block designed to be removably arranged between cross ties, the upper face of said filler block being provided with longitudinally disposed grooves; substantially as described.

5. A concrete railway tie, provided in its under side with a recess there being grooves formed in the top surface of said tie, metal fibers distributed throughout the entire body of the tie, a series of reinforcing rods longitudinally disposed within the tie, bed plates arranged on the tie adjacent its ends, and skeleton frames depending from the bed plates and engaging the longitudinally disposed rods.

6. A concrete railway tie having metal bed plates at or near each end, notched lugs extending therefrom, and rotatively adjustable clamping heads cooperating with said lugs; substantially as described.

7. A concrete railway tie, provided in its under side with a recess, metal fibers distributed throughout the entire body of the tie, a series of reinforcing rods longitudinally disposed within the tie, bed plates arranged on the tie adjacent its ends, skeleton frames depending from the bed plates and engaging the longitudinally disposed rods, the entire surface of the body of the tie being grooved longitudinally, and there being lateral shoulders formed on the sides of the tie, and extending the entire length thereof.

8. A concrete railway tie having a metal bed plate with extensions embedded in the tie, embedded reinforcing rods connecting said extensions, and rotatively adjustable rail-clamping devices having eccentric clamping surfaces arranged on opposite sides of said bed plate whereby rail base flanges of different widths may be received and clamped in position; substantially as described.

9. A concrete railway tie having metal bed plates at or near each end with rein-



forced skeleton extensions embedded into the tie beneath said bed plates, and rods connecting said extensions, the ends of said rods being bent for attachment to the concrete; substantially as described.

10. As a new article of manufacture, a concrete railway tie reinforced by longitudinal rods and metal fibers, and the entire top surface of which tie is grooved longitudinally.

11. A railway tie comprising an elongated body of concrete in the under side of which is formed a recess, metal fibers distributed throughout the entire body of the tie, reinforcing rods longitudinally disposed within the body of the tie, bed plates located on the tie adjacent the ends thereof, skeleton frames depending from the bed plates and engaging the reinforcing rods, and a pair of adjustable rail engaging devices arranged on each bed plate.

12. A concrete railway tie having a recessed metal bed plate, and a cushion arranged on said bed plate and provided with a projection which enters said recess; substantially as described.

13. In a railway road-bed, the combination with concrete cross ties reinforced by longitudinally disposed rods and metal fibers, the top surfaces of which ties are longitudinally grooved, of removable intermediate members filling the spaces between said cross ties, which intermediate members are reinforced by metal fibers, and the top surfaces of said members being grooved longitudinally.

14. In a railway tie, bed-plates having laterally extending lugs, and rotatively adjustable rail clamping means having eccentric clamping surfaces engaging said lugs.

15. In a railway tie, bed plates, lugs extending therefrom cushions on said bed plates between the lugs and eccentrically surfaced rail clamping means engaging said lugs.

16. In a railway tie, bed plates, lugs extending therefrom cushions on said bed plates between the lugs, means having eccentric rail clamping surfaces cooperating with said lugs.

17. In a railway tie, separate recessed bed-plates, and cushions interlocking therewith, and a pair of independently adjustable eccentric rail-engaging members arranged on each bed plate on opposite sides of the cushion thereon.

18. In a railway road-bed, cross tie members having longitudinally grooved upper surfaces and filler members intermediate said cross tie members having longitudinally grooved upper surfaces, and the sides

of which intermediate members rest on the sides of the cross tie members.

19. A concrete railway tie having longitudinally extending depending legs, reinforcing rods therein, bed plates at or near each end, reinforced means depending from said bed plates and engaging said rods, and a pair of independently adjustable rail-engaging members arranged on each bed plate.

20. A concrete railway tie reinforced by longitudinally extending rods and metal fibers, the top surface of which tie is grooved longitudinally, and there being longitudinally disposed recesses formed in the under side of said tie.

21. A concrete railway tie reinforced by longitudinally extending rods and metal fibers, the top surface of which tie is grooved longitudinally, longitudinally disposed recesses formed in the under side of said tie, and shoulders formed on the sides of said tie for supporting intermediate filling members.

22. A railway tie comprising an elongated body of concrete in the under side of which is formed a recess, metal fibers distributed throughout the entire body of the tie, reinforcing rods longitudinally disposed within the body of the tie, bed plates located on the tie adjacent the ends thereof, skeleton frames depending from the bed plates and engaging the reinforcing rods, a pair of adjustable rail engaging devices arranged on each bed plate, the entire top surface of which tie is grooved longitudinally, and there being lateral shoulders formed on the sides of the tie, and extending the entire length thereof.

23. A railway road-bed comprising reinforced concrete ties, reinforced concrete intermediate members filling the spaces between said cross ties, and the entire top surfaces of which cross ties and intermediate members are longitudinally grooved.

24. A railway road-bed comprising reinforced concrete cross ties, adjustable means located on the ends of the ties for engaging the track rails, and removable reinforced concrete intermediate members filling the entire spaces between said cross ties, the top surfaces of which ties and intermediate members occupy the same horizontal plane, and said top surfaces being grooved longitudinally.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this tenth day of December 1908.

RICHARD MOBLEY.

Witnesses:

F. R. CORNWALL,  
GEORGE BAKEWELL.