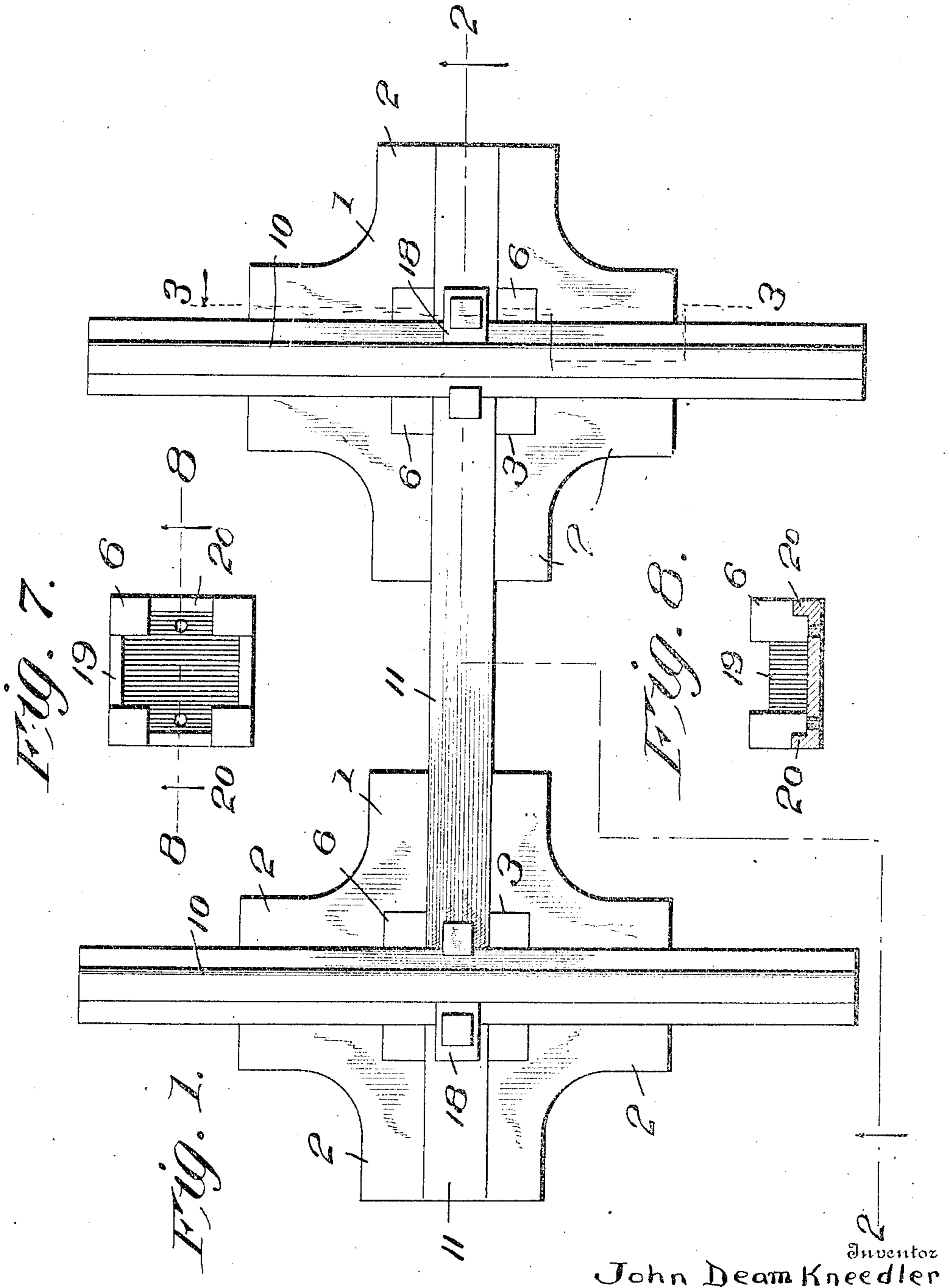


No. 843,216

PATENTED FEB. 5, 1907.

J. D. KNEEDLER.
ROAD BED EQUIPMENT.
APPLICATION FILED AUG. 20, 1906.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

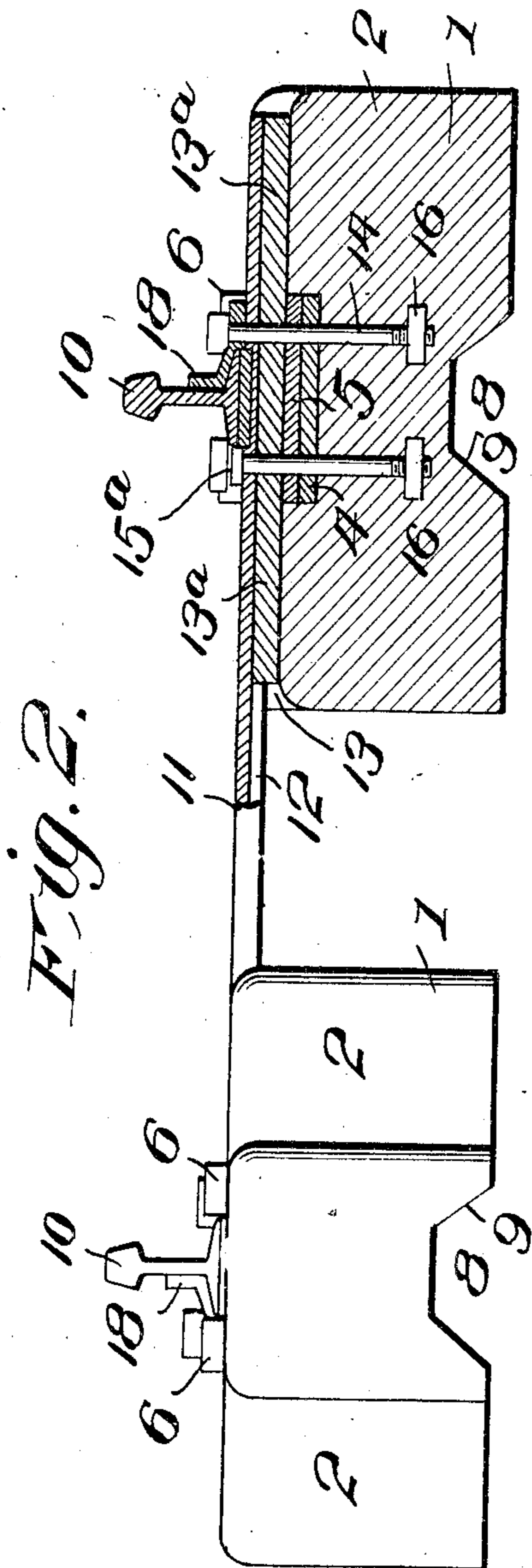
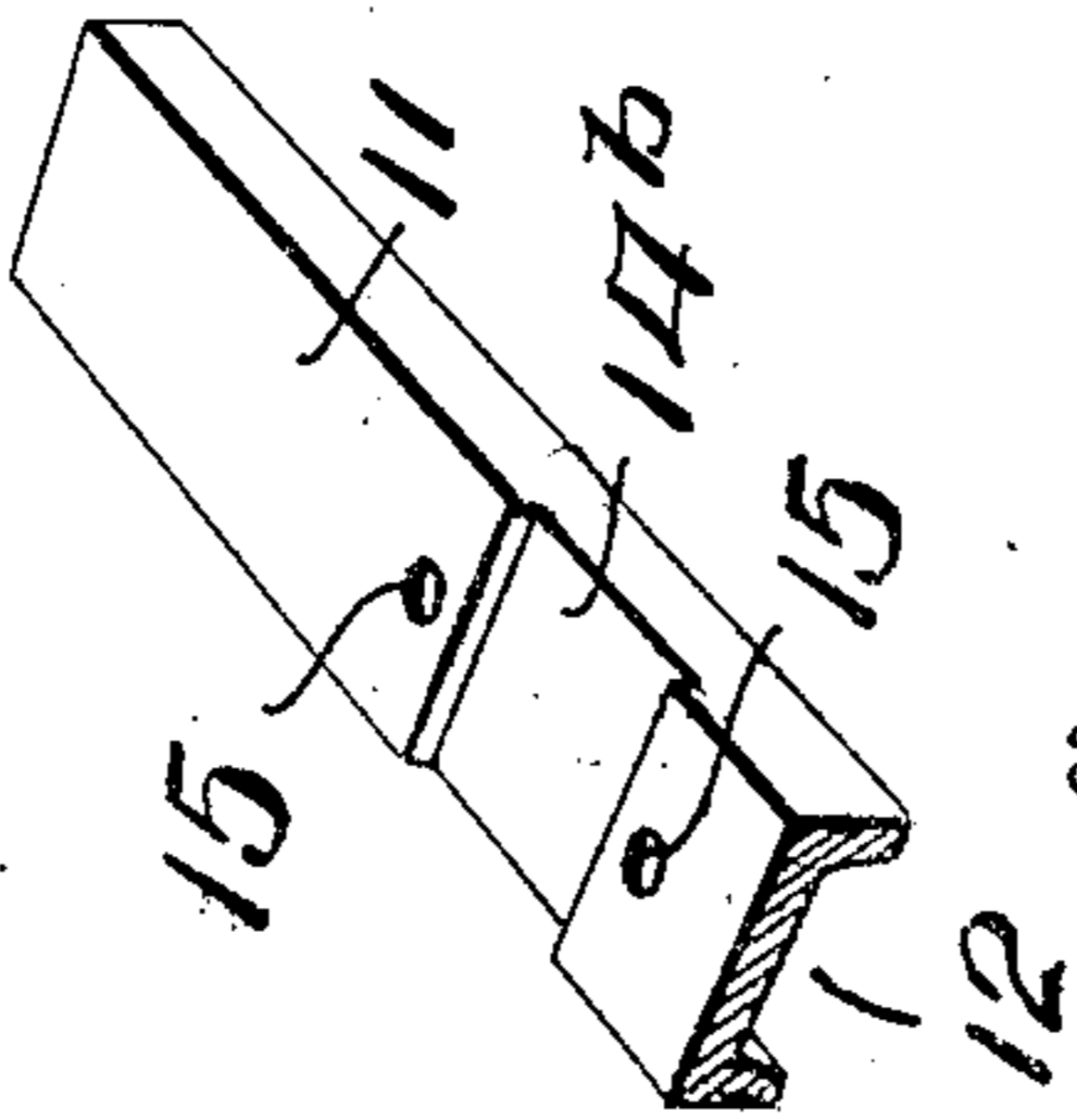
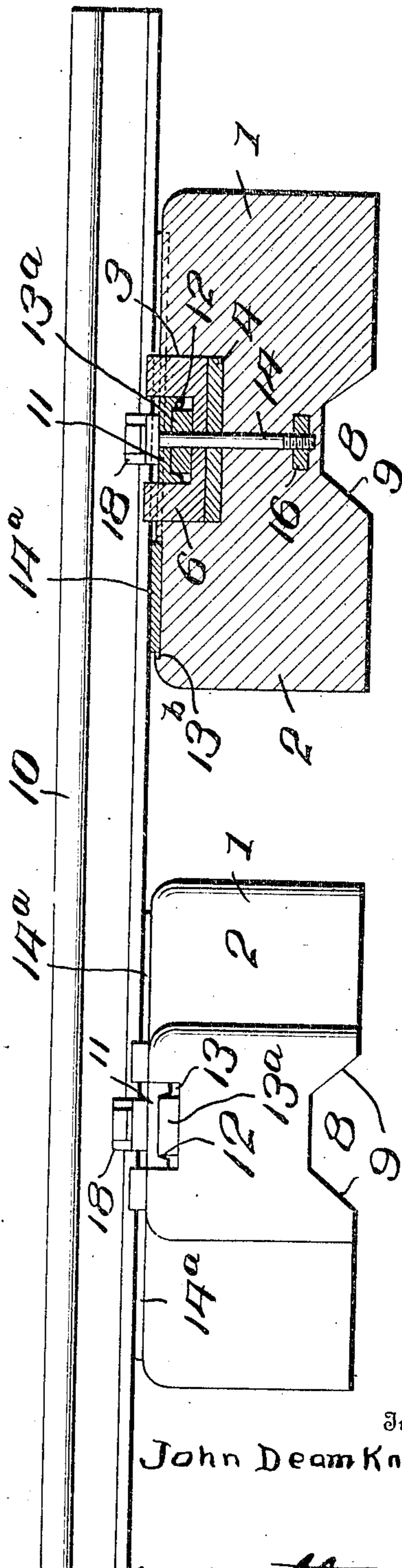


Fig. 3.



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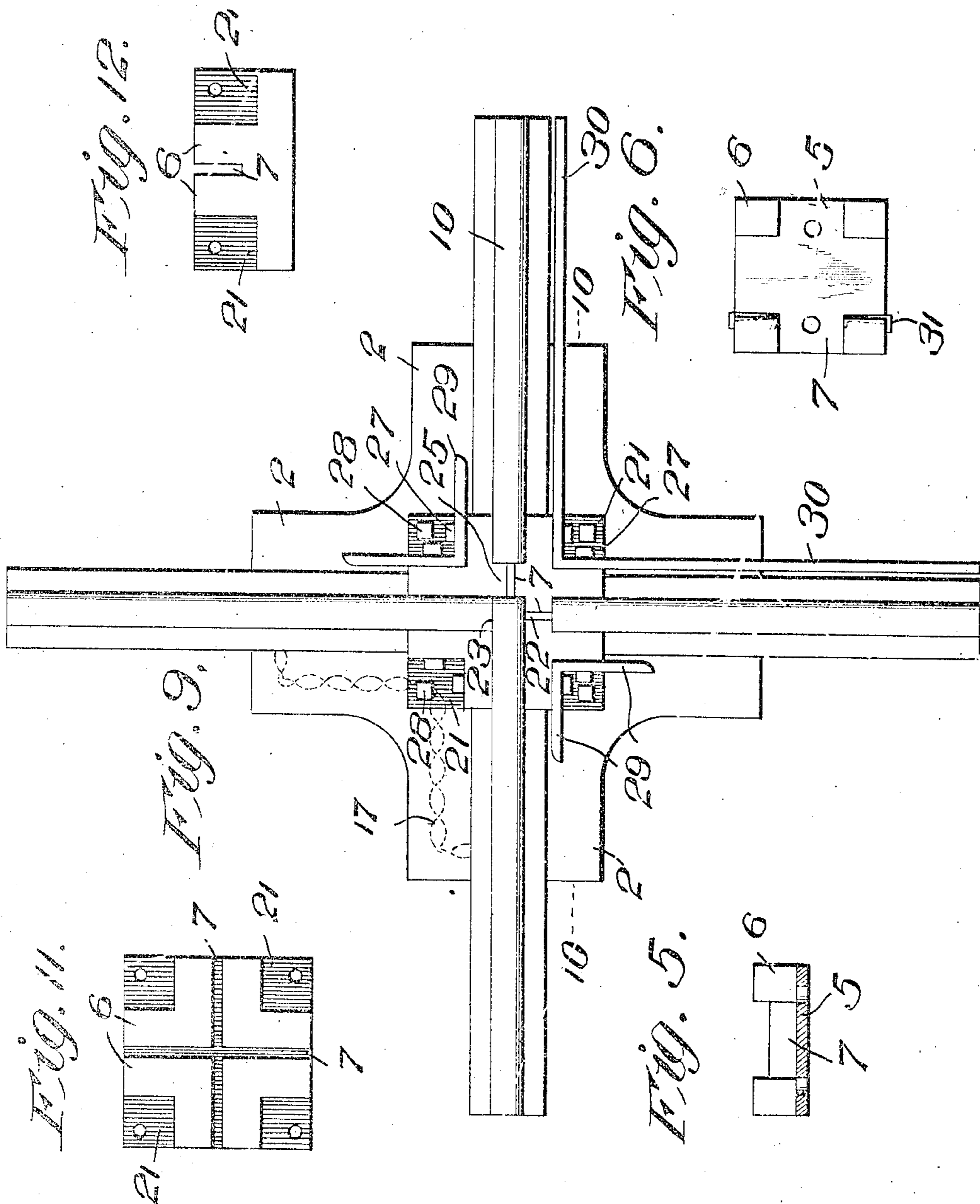
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4 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN DEAM KNEEDLER, OF SIOUX CITY, IOWA

ROAD-BED EQUIPMENT.

No. 843,216.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed August 20, 1906. Serial No. 331,340.

To all whom it may concern:

Be it known that I, JOHN DEAM KNEEDLER, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Road-Bed Equipment; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to new and useful improvements in road-bed equipments; and more particularly for use in connection with steam-railways, and is designed as an improvement over my former patents, No. 795,622, granted July 25, 1905, and No. 806,151, granted December 5, 1905.

My object is to provide a suitable support or tie for the rails formed of plastic material and metal, the supporting-bases being preferably formed of plastic material, while the connecting portion or tie is formed of metal.

A further object is to reinforce the plastic material, whereby undue cracking of the same will be prevented.

A further object is to provide means for securing the tie to the plastic blocks.

A further object is to provide suitable means for connecting the rails together and securing them to the blocks and ties where one set of the rails cross another set at right angles and also to provide suitable guards for retaining the wheels in place upon the tracks at the crossing.

Other objects and advantages will be hereinafter referred to, and more particularly pointed out in the claims.

In the accompanying drawings, which are made a part of this application, Figure 1 is a top plan view of a section of railway-track, showing the rails secured to my improved tie. Fig. 2 is a sectional view thereof as seen from line 2 2 of Fig. 1. Fig. 3 is a side elevation of a section of railway-track, showing one of the ties and its supporting-block in section, the section being taken on line 3 3 of Fig. 1. Fig. 4 is a perspective view of one end of the tie proper. Fig. 5 is a sectional view through one of the anchor-blocks. Fig. 6 is a top plan view thereof, showing a wedging means for securing the rail therein. Figs. 7 and 8 are plan and sectional views, respectively, of a slightly-modified form of anchor-block. Fig. 9 is a top plan view of that form of anchor-block and means employed for securing

the rails to the tie at a crossing. Fig. 10 is a sectional view thereof as seen from line 10 10 of Fig. 9. Figs. 11 and 12 are a plan and side elevation, respectively, of that form of anchor-block used at the crossing; and Figs. 13 and 14 are side elevations of those forms of rails used in connection with the anchor-blocks shown in Figs. 9, 10, 11, and 12.

Referring to the drawings, in which similar reference-numerals designate corresponding parts throughout the several views, 1 indicates my improved bed-block, which is preferably formed of plastic material, such as cement or the like, and is provided at each edge with extensions 2. The central portion of the bed-block 1 is provided with a cavity or depression 3, upon the bottom of which is disposed a cushion-plate 4, and upon the cushion-plate is disposed an anchor-block 5, which is entirely surrounded by the cavity 3, each corner of the anchor-block being provided with an upwardly-extending lug 6, said lugs being so arranged as to form channels 7 therebetween. The bottom face of the bed-block 1 is provided with crossed channels or ways 8, the walls 9 of which diverge outwardly, so that when the bed-plate is firmly seated below the track the channels or ways 8 will become packed with earth and prevent the bed-blocks from slipping or working out of position.

The bed-blocks are disposed in pairs below the rails 10 and are connected together by means of a tie 11, which is preferably of metal and has a channel 12 on its lower side, the tie being seated in grooves 13 in the upper surface of the bed-blocks and is likewise disposed through one of the channels 7 on the anchor-blocks 5, the lugs on the anchor-blocks engaging and extending above the tie. A cushion-plate 13^a is disposed between the grooves 13 and tie 11, said plate being directed into the channel 12, and thereby adding resiliency to the device and protecting the bed-block from the jar of a passing train. The bed-block is also provided with a groove 13^b, which extends at right angles to the groove 13, in which is seated a cushion-plate 14^a, said plate extending slightly above the edge of the bed-block, the rails paralleling and resting upon said plate. At the point where the plate 14^a crosses the tie 11 said tie is provided with a depression 14^b, in which the plate is seated.

The rails 10 are securely held in place upon the ties by directing bolts 14 through bores

15 in the tie and other similar openings in the anchor-blocks and cushion-plates, the lower ends of said bolts being threaded to engage threaded openings in plates 16, embedded in the bed-blocks 1, and when the bolts have been disposed into engagement with the plates 16 and turned home therein the heads of the bolts 14 will engage the base of the rails and hold the same rigidly in place. The plates 16 also serve to reinforce the bed-blocks, and the bed-block is further reinforced by means of reinforcing-strips 17, which are disposed within the bed-block and around the contour thereof, and these strips may be twisted, as best shown by dotted lines in Fig. 9 of the drawings, or the same may be formed in any preferred way, the object of providing the reinforcing-strip being to prevent undue cranking of the bed-block. When undue strain is exerted upon the rails, as when a curve is encountered, the rail is reinforced and braced by means of angle-plates 18, said plates being disposed around one of the bolts 14, so that when the bolt is in engagement with the plate 15 the angle-plate will be clamped between the head of the bolt and the tie and the angular extension thereof into engagement with the web and base of the rail. To more securely seat the rails between the bolts 14, said bolts are disposed a distance from the edge of the rail-base and a collar 15^a placed on the bolts 14 immediately below the head thereof, which is adapted to engage the edge of the rail-base, and thereby prevent lateral movement of the same. To prevent undue chipping of the base-block, the corners thereof are preferably rounded, thereby preventing undue breaking or chipping of the same.

In Figs. 7 and 8 I have shown a slightly-modified form of anchor-block, in which a web 19 is disposed between the lugs, upon which is adapted to rest the cushion-plate 14^a, while similar webs 20, of less height than the webs 19, are provided between the opposite portions of the lugs 6, upon which is adapted to rest the cushion-plate 13^a.

In Figs. 9, 10, 11, and 12 I have shown a form of anchor-block adapted to be used where one railroad-track crosses another, and in this instance the lugs 6 are increased in size, thereby reducing the width of the channels 7, while the outer corners of the lugs 6 are cut away to form pockets 21. In constructing the rails to fit the form of anchor-blocks shown in Figs. 11 and 12 a portion of the base of each rail is cut away a distance corresponding to the width of the anchor-block and the webs 22 of the rails disposed into the reduced channels 7, said channels being of sufficient width to snugly receive the webs of the rails, and, as shown in Figs. 13 and 14, the rails are specially prepared, so that they can be disposed to cross each other and still leave a continuous rail,

and to this end the web of one of the rails is first disposed into one of the channels 7, this rail having a considerable portion of its head cut away, as shown at 23 in Fig. 14, and the upper exposed edge of the web provided with a notch 24, while the rail disposed in the opposite direction or at right angles with the first-mentioned rail has a portion of its head cut away, as shown at 25 in Fig. 13, and is provided with a notch 26 in the lower edge of the web, and when the second-mentioned rail is disposed into position in the oppositely-disposed channel 7 in the anchor-block the notches 24 and 26, respectively, in the two rails will telescope with each other and the ends of the base of the rails will engage the outer edges of the lugs 6. The cut-away portion 23 is of sufficient extent to receive the head of the oppositely-disposed rail and also to leave a space at one side of said head to accommodate the flanges upon the car-wheels, while the cut-away portion 25 of the oppositely-disposed rail is of sufficient width to compensate for the flanges of the wheels passing on the opposite track. After the rails have been properly disposed in the channels 7 they are rigidly secured therein by means of bolts 27, which are disposed through the lugs 6 and the webs 22 of the rails, while the anchor-block is secured in position upon the bed-block by disposing bolts 28 through the corners of the anchor-block, the lower ends of said bolts being threaded and disposed into engagement with threaded openings in the plates 16. As is usual in railroad-crossings I have provided safety-braces 29, said braces being preferably angular and are disposed into engagement with the angular faces of the lugs 6, formed by the pockets 21, and are held rigidly in place by means of the bolts 27, said braces having their outer ends curved, and I have likewise provided guide-rails 30, which are also preferably angular in general outline and are secured to the anchor-blocks similarly to the safety-braces 29, the bolts 27 serving to hold said guide-rails in position, the guide-rails being extended a distance along the main rails 10.

As best shown in Fig. 9 of the drawings, the reinforcing-strips 17 are so disposed in the bed-block 1 that the bolts 28 will extend on the outside of the strips, thereby adding strength to the bed-block and rendering the same much more rigid.

In Fig. 6 of the drawings I have shown two of the lugs 6 provided with wedges 31, so that by directing said wedges inwardly the rails 10 will be held clamped between the lugs.

It has been found in practice that the stroke of the wheels of fast traveling trains destroys the compactness of ties formed of plastic material, causing the same to crumble and fall to pieces in time, and to this end

I provide the cushion-plates, and it has been found that by employing plates of this kind and disposing the same in the center of the bed-block and below the rails, as shown, that the jar caused by the train is compensated for and the destruction of the plastic portion of the tie obviated, and it has also been found that by employing a tie of this construction the noise caused by the train is practically eliminated.

By this construction it will be seen that I have provided a cheap and durable form of tie and one that can be readily assembled and disposed into position to receive the rails, and it will also be seen that I have provided means for removing the jar caused by the stroke of the wheels from the tie.

I claim—

1. In a road-bed equipment of the class described, the combination with a bed-block of plastic material, having grooves in its upper face and channels in its lower face, extensions on said bed-block and means to reinforce said bed-block; of a metallic tie having a channel, said tie adapted to be seated in one of the grooves, an anchor-block disposed in a cavity in said bed-block, means on said anchor-block to engage the tie, cushion-plates for said bed-block, and means to secure rails to said tie and blocks.

2. A road-bed equipment of the class described, comprising a bed-block of plastic material, having a cavity in its upper face, a cushion-plate in and entirely surrounded by said cavity, an anchor-block in said cavity and above said cushion-plate and having lugs, means to secure said blocks in pairs, and additional means to secure rails in channels formed by said lugs and to said anchor-blocks and bed-blocks.

3. In a road-bed equipment of the class described, the combination with a bed-block having a cavity in its upper surface; of a cushion-plate disposed in said cavity, an anchor-plate on said cushion-plate, lugs on the upper surface of said anchor-plate, said

lugs forming channels, means to secure said anchor-plate and cushion-plate to the bed-block and additional means to dispose said bed-blocks in pairs.

4. In a road-bed equipment, the combination with a bed-block having grooves, and a cavity in the upper surface thereof; of a cushion-plate in said cavity, an anchor-block disposed over said cushion-plate and in said cavity, means to secure said anchor-block to the bed-block, upwardly-extending lugs on said anchor-block and means to secure rails to the anchor-block and in channels formed by said lugs.

5. In a road-bed equipment, the combination with a bed-block having a cavity in its upper surface; of an anchor-block adapted to be seated in said cavity, means to secure said anchor-block to the bed-block, upwardly-extending lugs on said anchor-block, said lugs being arranged to form channels therebetween.

6. In a road-bed equipment of the class described, comprising the combination with a bed-block having a cavity in its upper surface, a cushion-plate in said cavity, an anchor-block on said cushion-plate, lugs on said anchor-block, means to secure and interlock rails between said lugs, and additional means to secure the anchor-block to the bed-block.

7. In a road-bed equipment of the class specified comprising the combination with bed-blocks having cavities in their upper faces; cushion-plates in said cavities, anchor-blocks on said cushion-plates; of a metallic cross-tie having a channel, and cushion-plates in said channel.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN DEAM KNEEDLER.

Witnesses:

NELSON T. HANSON,
CARL R. L. SORENSON.