

No. 625,675.

Patented May 23, 1899.

P. HEVNER, Dec'd.

A. V. HEVNER, Executrix.

PERMANENT WAY FOR RAILWAYS.

(Application filed Mar. 22, 1897.)

2 Sheets—Sheet 1.

(No Model.)

Fig. 4.

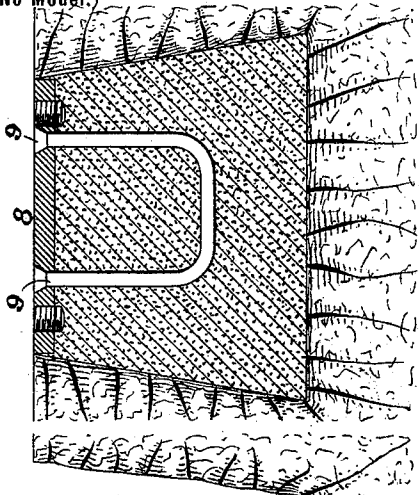


Fig. 3.

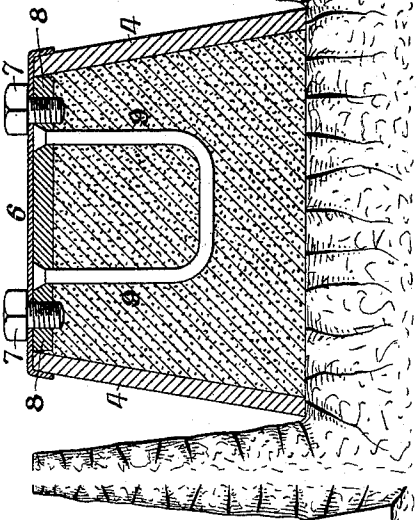
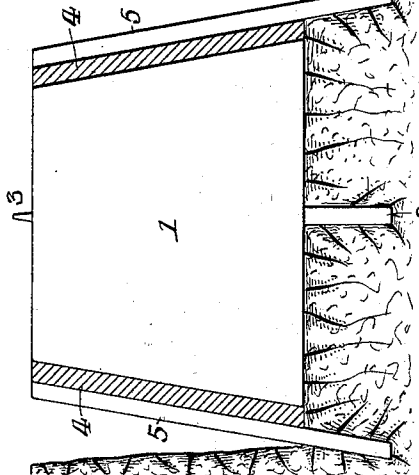


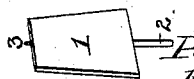
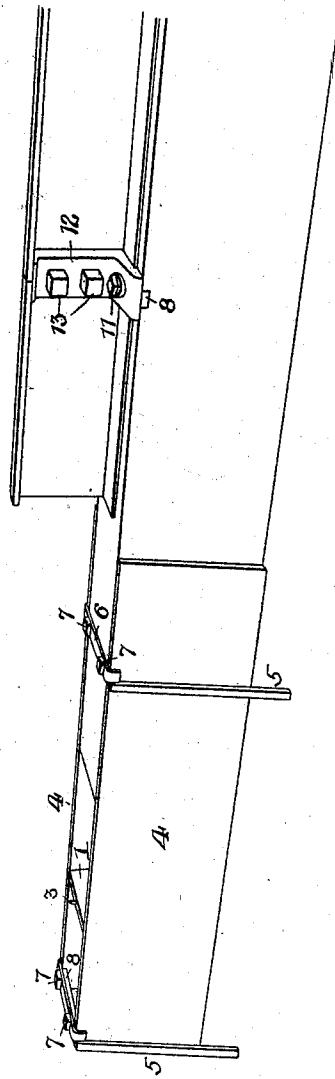
Fig. 2.



Witnesses:

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Fig. 1.



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Fig. 5.

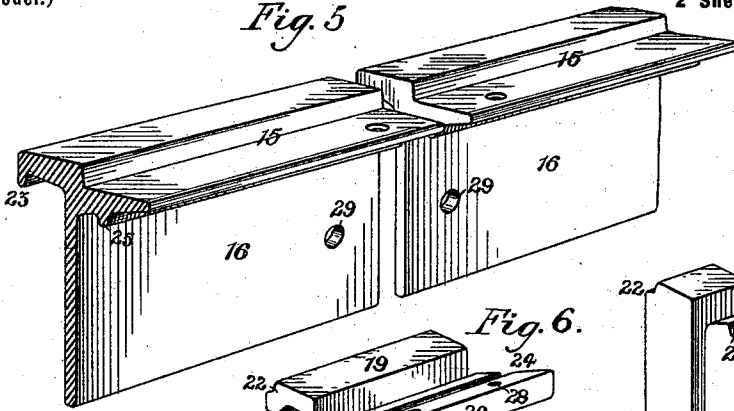


Fig. 8.

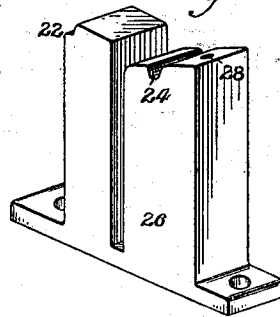


Fig. 6.

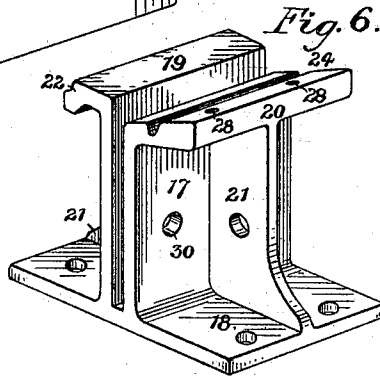


Fig. 7.

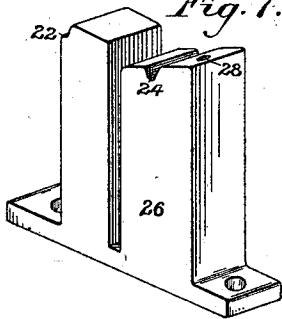


Fig. 9.

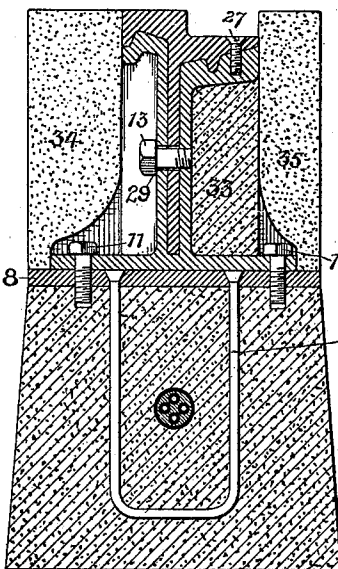


Fig. 10.

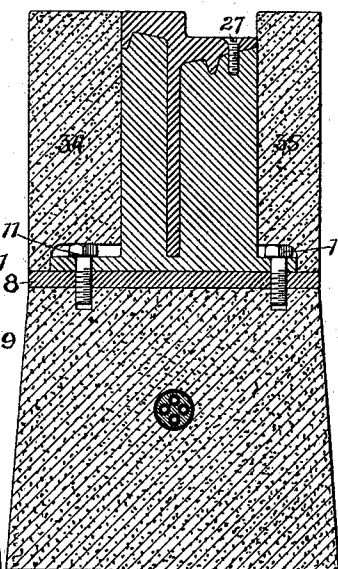
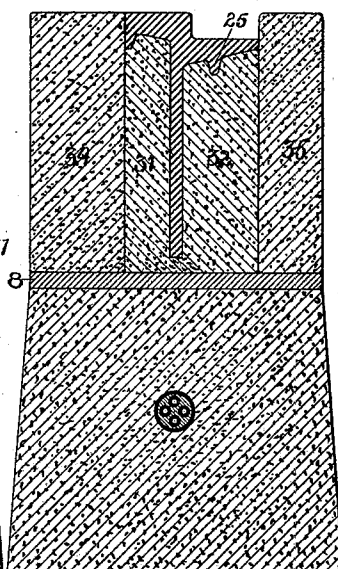


Fig. 11.



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UNITED STATES PATENT OFFICE.

PETER HEVNER, OF PHILADELPHIA, PENNSYLVANIA; ANN VIRGINIA HEVNER EXECUTRIX OF SAID PETER HEVNER, DECEASED.

PERMANENT WAY FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 625,675, dated May 23, 1899.

Application filed March 22, 1897. Serial No. 628,714. (No model.)

To all whom it may concern:

Be it known that I, PETER HEVNER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain

Improvements in Permanent Ways for Railways, of which the following is a specification.

One object of my invention is to facilitate the formation of a longitudinal girder or bed of concrete for the support of the rails of a railway-track, a further object being to securely confine said rails together and to the concrete girder or bed by the use of bolts without nuts, and a still further object being to provide for the detachability of the rails from their supports when desired without disturbing the paving when the rails are those of street-railways. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the method of laying track in accordance with my invention. Figs. 2, 3, and 4 are transverse sections illustrating successive steps in the formation of the concrete girder or bed for the rail. Figs. 5, 6, 7, and 8 are perspective views illustrating a detachable rail and supports therefor constituting one of the features of my invention and especially adapted for use in laying tracks for street-railways. Figs. 9, 10, and 11 are sectional views of the track laid with said detachable rail and supports and showing certain special paving-blocks used in connection therewith.

In forming the concrete girder or bed for the rails of the track I first dig a longitudinal trench of the proper depth and set therein at suitable intervals templets 1, as shown in Fig. 1, these templets having downwardly-projecting pins or studs 2, intended to be driven into the ground at the bottom of the trench in order to hold the templets properly in position. Projecting from the top of each templet is a pin 3, to which may be attached a cord running longitudinally from templet to templet and serving as a means whereby the surveyor in laying out the track may properly adjust the templets so as to bring the upper edges of all of the same to a proper horizontal level. When a number of templets have been set in this way, side boards 4 are applied to the templets, these side boards having projecting spuds 5, which are driven down into the

ground at the bottom of the trench, so as to retain the side boards snugly in contact with the sides of the templets 1, the latter being of any shape which is desired for the cross-section of the concrete girder or bed which is to constitute the rail-support. The side boards are driven down until their upper edges are flush with the tops of the templets 1, and they are prevented from spreading at the top by means of tie-bars 6, which have bent ends overlapping the opposite side boards, said tie-bars resting upon the top edges of said side boards. Secured to the under side of each of the tie-bars by means of bolts 7 is a plate 8, which has a depending yoke 9, extending downwardly therefrom to any desired extent. Into the longitudinal trough thus prepared cement or concrete in plastic form is introduced, rammed in tight and leveled off flush with the tops of the side boards and templets, said templets being removed successively as the formation of the concrete proceeds. As soon as the concrete has become sufficiently set the screws 7 are withdrawn from the plates 8 and the tie-bars 6 removed preparatory to the removal of the side boards 4, which are carried forward for use in forming an advanced section of the girder, the plates 8, with their anchoring-yokes 9, being left embedded in the cement girder, as shown in Fig. 4.

The rails are laid directly upon the top of the cement girder and its embedded plates 8, or, if desired, some cushioning or sound-deadening material may be interposed between the base of the rails and the girder.

In laying street-railway track in accordance with my invention I find it advisable in many cases to provide a rail which can be readily detached without disturbing the street-paving. The rail for this purpose consists of a head 15 of any desired character and a depending web 16, preferably in the form of a flat depending bar. For the support of this rail I use joint-blocks, such as shown in Fig. 6, and between-joint blocks, such as shown in Figs. 7 and 8. The joint-block consists of a hollow or longitudinally-slotted web 17, having a suitable base 18 and laterally-extending flanges 19 and 20 at the top, the structure being stiffened and strengthened by means of lateral webs 21, extending from the base to the top of the block. The top flange

19 of the joint-block has a groove 22 for the reception of a rib 23, projecting downwardly from the corresponding flange of the head of the rail, and in the flange 20 of the joint-block is a longitudinal groove 24 for the reception of a downwardly-projecting rib 25, depending from the corresponding flange of the head of the rail, these ribs and tongues serving to aid in resisting lateral strain upon the head of the rail and preventing lateral deflection thereof.

The between-joint blocks 26 are slotted for the reception of the web 16 of the rail and have at the top grooves 22 and 24 similar to those in the flanges of the joint-block for the reception of the ribs 23 and 25 on the under side of the head of the rail.

Both the joint-blocks and the between-joint blocks are secured to the plates 8 of the concrete girder or bed by means of bolts 11, and the rails are secured to the joint-blocks and between-joint blocks by means of bolts 27, passing through openings in one of the flanges of the rail-head and screwing into threaded openings 28, formed in the between-joint blocks 26 and in the flanges 20 of the joint-blocks. The end portions of the rails are secured to the joint-blocks by means of transverse bolts 13, which pass through openings in one side of the hollow central web 17 of the joint-block and through openings 29, formed in the webs of the rails near each end of the same, as shown in Fig. 5, the threaded portions of the bolts being adapted to threaded openings 30, formed in the opposite side of the hollow web of the joint-block, as shown in Fig. 6.

Properly-molded paving-blocks 31 and 32 flank the central web of the rail between the supporting-blocks of the same, these paving-blocks extending from the flange of the rail-head to the concrete girder or bed flush with the outer edges of the rail-head flanges, as shown in Fig. 11, and a block 33 is fitted between the base 18 and flange 20 of each joint-block on each side of the central web 21 of the latter, as shown in Fig. 9. Beside these inner flanking-blocks there are outer flanking-blocks 34 and 35, which extend from the outer edges of the rail-head or supporting-blocks to lines flush with the outer edges of the concrete girder or bed, thus forming on top of said girder a rectangular structure to which the blocks of the street-paving can be snugly fitted or to which asphaltum or composition pavements can be snugly joined.

When it is desired to remove the rail, this can be readily effected by removing the bolts 27 and 13, the flanking-block 34, adjacent to each joint-plate, being removed in order to permit access to said bolts 13, but no other disturbance of the pavement being necessary, and even the removal of these blocks may be avoided if it is not considered necessary to use the lateral bolts 13 at the joints of the rails.

In the case of roads operated by electric power the concrete girder or bed constitutes a conduit for the reception of the feed-wires, as shown in Figs. 9, 10, and 11, said wires being thus absolutely protected from injury and forming a permanent part of the structure of the road.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the templets adapted to be supported in upright position on the ground and side boards constituting a trough for the formation of a rail-supporting girder or bed of concrete, substantially as specified.

2. The trough-forming templets adapted to be supported in upright position on the ground and side boards having spuds whereby they are supported in position in the trench, substantially as specified.

3. The combination of the transverse templets adapted to be supported in upright position on the ground and side boards with tie-bars for laterally confining the upper portions of the side boards to the templets, substantially as specified.

4. The combination of the templets, the side boards and the transverse tie-bars for laterally confining the upper portions of the side boards to the templets, with plates suspended from said tie-bars and adapted to be embedded in the cement filled in between the side boards, substantially as specified.

5. The combination of the rail comprising a flanged head and deep depending web, rail-supporting blocks slotted for the reception of said deep depending web of the rail, vertical bolts passing through openings in a flange of the rail-head and adapted to threaded vertical openings in the supporting-blocks so that they can be removed from above the rail, and other bolts passing laterally through the deep webs of the rails and the supporting-blocks at the joints of the rails, substantially as specified.

6. The combination of the rail comprising a flanged head and a depending web, supporting-blocks for said rail, a girder upon which said supporting-blocks are mounted, paving-blocks flanking the web of the rail beneath the flanges of the same and extending from the web of the rail to the outer line of the flanges, and other paving-blocks flanking the rail outside of said flanges and resting on and extending to the outer edges of the girder, the lower portions of said latter blocks being recessed to receive the bases of the rail-supporting blocks, substantially as specified.

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

PETER HEVNER.

Witnesses:

F. E. BECHTOLD,
JOS. H. KLEIN.