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TRACK PEDESTAL BLOCKS

3,107,053

Filed March 14, 1961

2 Sheets-Sheet 1

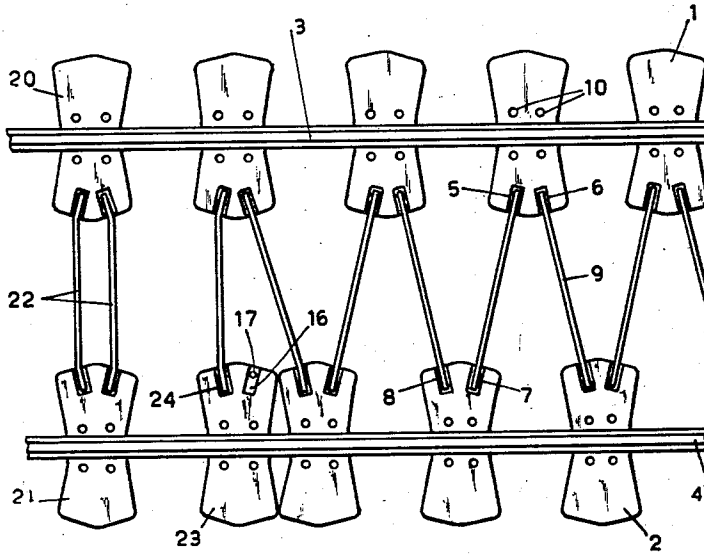


FIG. 1

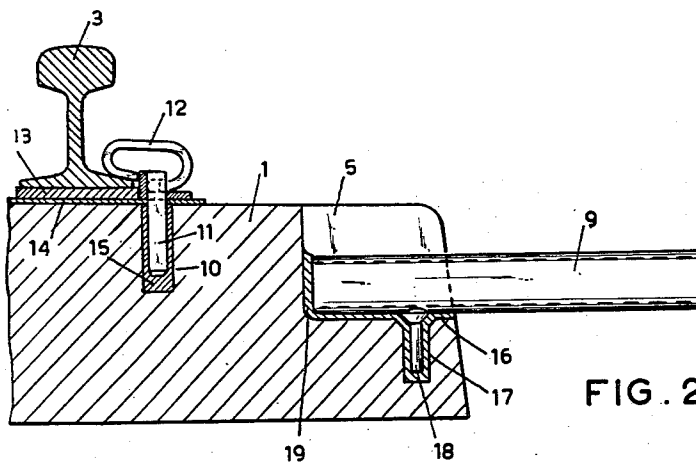


FIG. 2

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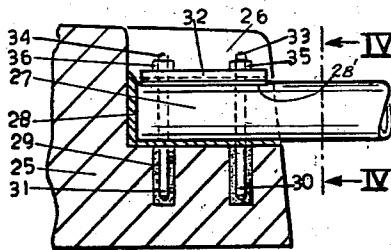


FIG. 3

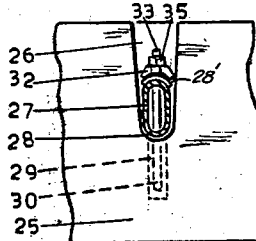


FIG. 4

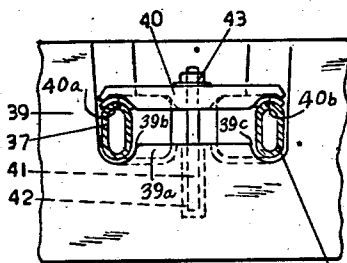


FIG. 5

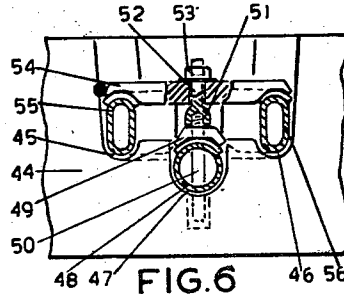


FIG. 6

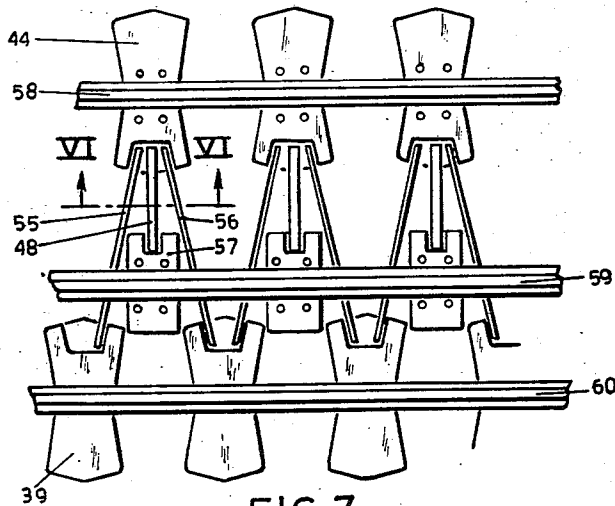


FIG. 7

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TRACK PEDESTAL BLOCKS

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2 Claims. (Cl. 238—50)

The present invention relates to a railroad track consisting of two rows of pedestal blocks on which the rails rest, each block of one row being connected, by means of coupling rods, to one or more blocks of the other row.

The object of the invention is to provide such a track wherein the rails are entirely insulated from each other, so that circuits can be completed therethrough for the actuation of signals, switches, grade-crossing protections etc.

According to the invention the fastening of the rails on the blocks and of the coupling rods to the blocks is for this purpose exclusively accomplished by means of an electrically insulating layer of adhesive. In this way a complete electrical insulation of the rails is achieved.

According to the invention the ends of the connecting rods can be glued in slots which form sockets open on the side turned towards the other row of blocks and on their upper side. In this manner the fixing of rods can take place in a simple way as the blocks can be placed beforehand already in the correct position.

Furthermore, according to the invention, the bottom of the slots can be provided with one or more holes for the insertion of a pin or pins extending transversely to the connecting rod to which they are attached. Owing to this measure, a complete fixation of the mutual distance of the blocks lying opposite each other is obtained so that the blocks can easily be adjusted in the correct position.

According to the invention the bottom of the slots can show one or more holes, pins being fixed in said holes, said pins extending through one or more holes in the corresponding connecting rod. It is possible to cement these pins in the holes before the blocks are mounted in the track; this has the advantage that the rods need not be initially formed with protruding parts.

In accordance with another feature of the invention, each block may have two slots whose center lines intersect in a point substantially under the center line of the rail resting on that block. In this embodiment the blocks can be used to form a zig-zag track as well as a track whose blocks are supported in pairs on transverse sleepers. In this case the two types of track may be joined together by means of the same elements. This advantageously entails a slanting of at least the ends of the rods in their slots which results in an extra strengthening of the structure against transverse forces tending to subject the concrete blocks to shear stresses.

The upper surfaces of the blocks can be formed with bores or recesses to receive the rail-fastening means cemented in place by an insulating adhesive. The rails may be supported on the blocks by pads which are glued to the blocks.

In an advantageous embodiment the pins securing the rods to the slots are provided at their upper end with a screw thread, a cover being mounted over the end of the corresponding rod and pressed thereagainst by means of nuts co-operating with the screw thread to clamp the rod extremity in position within a recess of a block. In this way it is possible to connect the blocks with the rods by means of the covers without applying glue. Such a section of the track can be prepared in a very short time and the traffic can then pass over this section at once. Thereafter the rods can be glued in the slots one by one

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after removal of the cover. The cover is later replaced after a layer of adhesive has been applied.

If at least two rods are to be connected with a block having the corresponding number of slots to receive them, these rods may be pressed into their slots by means of bolts fixed in holes provided in the block centrally between the slots, the bolts pressing a bridge piece against the ends of the rods. Then a machining of the rods is not necessary and the traffic may pass over the track immediately after the fixation of the bridge pieces, whereas subsequently the distance between the rails can be adjusted and the adhesive can be applied as in the case of a simple cover for one rod.

Finally, according to a further feature of the invention, the bolts for the fixation of such bridge piece can consist of studs carried on box nuts that are screwed onto bolts fixed in holes in the bottom of a third slot lying centrally between two outer slots at a level lower than that of the latter slots, the box nuts serving to press the end of a central rod in the lower slot whereas the studs carried on the box nuts serve as fixing bolts for pressing the bridge piece against the ends of the outer rods in the outer slots while the bridge piece remains clear of the central rod.

With this arrangement of the blocks it is possible, by making use of the central slot, to construct a narrow-gauge railway track, whereas with utilization of the outer slots a broad-gauge railway can be constructed instead of the narrow-gauge track or in conjunction therewith.

The invention will be further elucidated by the following description of certain embodiments given with reference to the accompanying drawing.

In the drawing:

FIG. 1 shows in top view a track according to the invention;

FIG. 2 is an enlarged cross-sectional view of a block forming part of the track of FIG. 1;

FIG. 3 is a cross-sectional view similar to FIG. 2, showing a modification;

FIG. 4 is a sectional view taken on the line IV—IV of FIG. 3;

FIG. 5 is a sectional view similar to FIG. 4 but representing still another embodiment;

FIG. 6 shows a further embodiment in a view similar to FIGS. 4 and 5, taken on the line VI—VI of FIG. 7; and

FIG. 7 is a top view of a track constituting the last-mentioned embodiment.

On two rows of pedestal blocks 1 and 2 the rails 3 and 4 of FIGS. 1 and 2 are supported. Blocks 1 are each provided with a pair of slots 5 and 6 which are open on their upper side and on the side turned towards the blocks 2. The axis of the grooves 5 and 6 intersect about under the center line of the rail 3. The blocks 2 have correspondingly executed slots 7 and 8. The blocks 1 and 2 are interconnected by means of coupling or tie rods 9. The coupling rods are glued at one end in the slots 5, 6 of the blocks 1 and at the other end in the slots 7, 8 of blocks 2.

The blocks 1 and 2 are provided at the top, on both sides of the rails 3 and 4, with recesses or bores 10. As shown in FIG. 2, connecting elements 11 are glued in these holes for fixing the rails 3 by means of, for instance, clamps 12 on the block 1. Under the rails a pad 13 is laid which is fastened to the block by means of an adhesive bond 14 while the fastening elements 11 are similarly bonded at 15.

Furthermore, FIG. 2 shows that in the bottom 16 of the slot 5 a hole 17 is made which accommodates a pin 18 forming a transverse projection on the coupling rod 9.

The glue by means of which the rod 9 is fastened in the slot 5 is indicated at 19.

As FIG. 1 shows, the blocks 1 and 2 are staggered with respect to one another in one section of the track while in an adjoining section two blocks 20 and 21 lie opposite each other and are connected to each other by means of coupling rods 22 the ends of which are obliquely bent, as shown at 24, in accordance with the direction of the slots in the blocks. In the block 23 only one slot is used. From this it appears that by means of the same blocks 1 and 2 and coupling rods 9 a zig-zag track and a track with blocks supported on transverse sleepers can be constructed. In the second case only the ends of the coupling rods must be bent obliquely.

In the embodiment according to FIGS. 3 and 4 the end of a tie rod 27 is received with positive fit in a socket-forming slot 26 of a block 25 to which it is fixed by means of a layer 28 of glue. Cemented in holes 29 of the blocks are pins 30 and 31 extending through holes in the end of the rod 27. A cover 32 is pressed on the end of the rod 27 by means of nuts 35 and 36 co-operating with screw threads 33 and 34 provided on the pins 30 and 31. Between the cover 32 and the end of the rod 27 there also lies an insulating adhesive layer 28'.

FIG. 5 shows how two rods 37 and 38 of flattened cylindrical shape have been fixed in a block 39 by means of a bridge piece 40 and an extension 39a of block 39 which has two horizontally spaced depressions 39b, 39c substantially conforming to the lower surfaces of the end portions of rods 37 which they embrace to provide again a positive fit. The bridge piece 40 is fixed by means of pins 41 which have been glued in holes 42 in the block 39. By means of nuts 43 screwed on the pins 41, which are provided with a screw thread, the bridge piece is pressed onto the ends of the rods 37 and 38. This bridge piece has arms provided with bottom recesses 40a, 40b, which face the depressions 39b, 39c and conformingly bear upon the upper surfaces of the flattened rod ends to hold the rods 37, 38 against rotation in their socket.

FIGS. 6 and 7 show blocks 44 with two outer slots 45 and 46 and a central slot 47 which lies lower than the outer slots. The end of a rod 48 is pressed into the slot 47 by means of a cover 49 and pins 50 in the way described for FIGS. 3 and 4. The nuts 35 and 36 are replaced by box nuts 51 which at their upper ends are provided with extension studs 52. By means of these studs 52 and nuts 53 the bridge piece 54 is pressed onto the ends of the rods 55 and 56 lying in the slots 45 and 46 in the way shown in FIG. 5.

FIG. 7 shows that by means of rods 48, blocks 44 and 57, the latter being each provided with one slot and lying straight opposite respective blocks 44, it is possible to construct a narrow-gauge railway track consisting of rails 58 and 59. By using blocks 39 according to FIG. 5 it is also possible, by means of rods 56 and 55, to construct a broad-gauge railway track consisting of rails 58 and 60. So by means of the block 44 it is possible to construct in a simple way first a narrow-gauge track 58, 59 which subsequently can be supplemented or replaced by a broad-gauge track 58, 60. This addition can take place while the track 58, 59 is in use.

What we claim is:

1. In a railroad track, in combination, two rail-supporting parallel rows of pedestal blocks, each of said blocks being formed with a socket open at the top and toward the blocks of the other row, a plurality of horizontal tie rods extending generally transversely across said rows and interconnecting respective blocks thereof, each of said rods having end portions of flattened cylindrical shape received in the sockets of the blocks interconnected by it, each socket having two horizontally spaced-apart depressions each substantially conforming to the lower surface of the end portion of a rod, two of said rods having their end portions lodged in respective depressions of one socket, an upstanding fastener element rising within said socket of a block between said depressions thereof at a location accessible from above, and a bridge piece releasably engaged by said element for clamping said two rods in position within the socket, said bridge piece having two arms with bottom recesses facing said depressions while substantially conforming to the top surfaces of said end portions and embracing same from above under pressure, thereby holding them against rotation in said socket.

2. In a railroad track, in combination, two rail-supporting parallel rows of pedestal blocks, each of said blocks being formed with a socket open at the top and toward the blocks of the other row, a plurality of horizontal tie rods extending generally transversely across said rows and interconnecting respective blocks thereof, each of said rods having end portions of flattened cylindrical shape received in the sockets of the blocks interconnected by it, each socket having two horizontally spaced-apart depressions each substantially conforming to the lower surface of the end portion of a rod, two of said rods having their end portions lodged in respective depressions of one socket, an upstanding fastener element rising within said socket of a block between said depressions thereof at a location accessible from above, a first adhesive layer of electrically insulating material disposed in each of said depressions below said end portions, a second adhesive layer of electrically insulating material overlying each of said end portions, and a bridge piece releasably engaged by said element for clamping said two rods in position within the socket, said bridge piece having two arms with bottom recesses facing said depressions while substantially conforming to the top surfaces of said end portions and embracing same through said second adhesive layer from above under pressure, thereby holding the rods against rotation in said socket.

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