

UNITED STATES PATENT OFFICE.

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RAILWAY-TRACK.

SPECIFICATION forming part of Letters Patent No. 790,912, dated May 30, 1905.

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To all whom it may concern:

Be it known that I, JAMES R. McFALL, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Railway-Tracks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in railway-tracks; and it consists in the novel construction of track more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a top plan of a section of the track. Fig. 2 is a combined vertical section and elevation on the line 2 2 of Fig. 1. Fig. 3 is an enlarged top plan of one end of the tie. Fig. 4 is a vertical transverse section on the line 4 4 of Fig. 3. Fig. 5 is a vertical cross-sectional detail of the rail and locking-bolt therefor. Fig. 6 is a horizontal section on line 6 6 of Fig. 5. Fig. 7 is a section on line 7 7 of Fig. 1, and Fig. 8 is a top plan of the clamping-block shown in Fig. 7.

The object of my invention is to construct a track comprising a composite tie of metal and cement or concrete and a sectional rail carried thereby, the combination thus effected resulting in a track having maximum durability, elasticity, a long life, one requiring a minimum amount of repair after once being laid, one which is cheap to construct, one embodying simplicity of construction, one insuring stability, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, 1 1' represent a series of straps or brackets set up in vertical parallel planes, the tops of the brackets serving to support a longitudinally-disposed stringer-plate 2, to which the rail is directly secured. The brackets 1 are of equal dimensions; but the inner brackets 1' 1' are considerably reduced in height for a purpose presently to appear. The bases of the several brackets are connected by a base-plate 3, spreading of the brackets being prevented by a series of transverse tie-rods 4, hooked over the outer edges of the connecting-plates 3.

The tie-frame thus formed is then embedded into a body of concrete or cement C, the respective halves or sections of said cement being beveled off as they approach the center of the tie between the brackets 1', Fig. 2. The bottom of the concrete is slightly cambered or arched, so as to better lie on the road-bed and prevent longitudinal creeping of the tie, said arch also serving to allow for the drainage of water or moisture beneath the tie.

Supported by the stringers 2 are the rails, which in the present case are made of two sections R R', the latter constituting the male portion and comprising the usual basal flange and web 5, said web constituting a tongue which is received in the space formed between the depending webs 5' 5' of the female section or tread R', Fig. 5, the parts being locked together by a transverse bolt 6, having an elongated slot 7 for the reception of a locking bevel-key 8, said key bearing against a resilient washer 9, which at the proper moment drives the notch 10, formed along the inclined edge of the key, into positive and locking engagement with the terminal wall of said slot 7, Fig. 6.

The flange of the male section of the rail is secured to the stringer 2 by the following fastening devices: Formed in the inclined walls of the concrete adjacent to the opposite edges of the stringer are pockets $p p'$ for the insertion of a bolt 11, whose stem is subsequently passed through an opening of the stringer, the stem being likewise passed through the center of a clamping-block 12. Like the stem of the bolt 6, that of the bolt 11 is also provided with an elongated slot for the reception of a similar locking-key 13, which is forced into locking engagement by a resilient washer 14, Fig. 7. The clamping-block 12 is reversible, the shoulders $a a' a'' a^3$ being at different distances from the center of the block, the purpose of this construction being to accommodate the block to different size flanges corresponding to different weights and sizes of rail. Thus the shoulder a is at a different distance from the edge of the clamping-jaw 12' than is the shoulder a^3 from the edge of the adjacent jaw 12'. A flange which would be too long to allow the jaw 12' to overlap the

same would accommodate the shoulder a^3 , since that is farther removed from the edge of the jaw 12', the block being reversed for the purpose. Where it is desirable to widen the gage of the rails on a curve, the latter are shifted slightly toward the ends of the stringer 2, in which event the pockets p' are availed of for the insertion of the locking-bolts 11. Preferably the sections R of the rails are bevel-jointed at their ends, while the joints between the male portions R' are square, Fig. 1.

By terminating the concrete section on either side of the center of the tie as shown, it imparts an elasticity and yielding quality to the ties and to the track resulting therefrom, which would be impossible for a tie having a single concrete or cement body. Under the present arrangement the male section of the rail may remain as a permanent part of the equipment of the track, the female section being removed from time to time as circumstances require.

I may of course depart from the details of construction here shown without in any wise affecting the spirit or nature of my invention.

The terms "cement" and "concrete" are herein used as equivalent or convertible terms—that is to say, cement or concrete is intended to designate any artificial-stone composition, of which there are a great variety known to the art.

Having described my invention, what I claim is—

1. A railway-track comprising a tie com-

posed of a metallic frame having a longitudinal stringer surmounting the same, a cement body portion comprising two sections meeting at the center of the tie, the stringer serving to support the rails, substantially as set forth.

2. A railway-track comprising a tie composed of a series of vertical brackets, a stringer surmounting the same and supporting the rails, a base-plate connecting the lower ends of the brackets on each side, transverse tie-rods coupling the brackets together, a cement body portion comprising two sections having adjacent terminal inclined walls meeting at the center of the tie, substantially as set forth.

3. In combination with a tie and rail mounted on the same, of a slotted bolt passed through the tie, a clamping-block having jaws for overlapping the flanges of the rail, the stem of the bolt passing through the block, a resilient washer on the block, a key having a notch adapted to be forced into engagement with the terminal wall of the slot, the block having shoulders disposed at different distances from the center thereof, and disposed in planes on either side of the center thereof, and being reversible, substantially as, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES R. McFALL.

Witnesses:

EMIL STAREK,

MARY D. WHITCOMB.