

Description of Major Douglass' Pattern Rail-way Track.

The Peculiarities of this Construction consist of following

1st In the use of a Pedestal or Chair (adapted to the reception of a plane iron Edge-Rail) with a Base and dup as to make it adequate to a complete support – resting directly upon soil, sand, gravel, Ballast, Coal-Ash, or the like – without any other sub-foundation whatever.

This chair is composed either of Iron Entirely, or of Iron attached firmly to a Base of Kyanized wood, Flag-stone, Tile slate, or any other similar material – the average size of the base being in either case about 300 square inches which has been found, by the experience of the Brooklyn and Jamaica Road, abundantly sufficient.

2nd In the mode in which the Rail is set or suspended in the Chair, The Rail made use of (unlike that of the [Boston] + Providence pattern) is without flanches at the Base, [--- ---] by... the bearing of the upper Flanches (those which constitutes its working fillet)... upon the jaws of the Chair – without touching at the Bottom at all. By arraying the whole material of the Rail in this simple form, a greater amount of vertical shingle is obtained while it is found to cost less – by at least half a guinea per ton – to manufacture it: The mode of suspension, then, ... produces a smoother + more permanent joint at the joining of the Bars, and as it brings the bearing within 3/4ths of an inch of the working surface, the tendency to play is also wholly taken away, + the keys do not work loose. The latting are driven in a Key seat formed by a beveled

groove rolled in one side of the Rail and corresponding cavity, (reversed), in one side of the Chair + the Key being split transversely the lower portion is bent after driving so as to make its withdrawal, (accidentally), impossible.

3rd In the manner in which the Transom--which may be either of Iron or Kyanized wood – are interlocked with + fastened to the Rail. This is done by causing the aperture... of the Pedestal through which the Transom passes, to intersect, and slightly to interfere with, the Cavity which receives the rail, and the former being notched at the proper distance, to receive the lower part of the latter, it is at once fastened by the adjustment of the Rail in its place + the keying of the latter secures the whole firmly together.

The advantages which this Construction offers are as follows

1st Its great simplicity – all its parts being prepared in shops so as to admit of its being laid down on the prepared surface, without any mechanics work of refitting on the ground and with a degree of facility + celerity unattainable by any other mode of construction hitherto used – It is estimated for example that a gang of 100 men properly disciplined may lay down complete one mile per diem without using any other Cartage than that furnished by Rail Car on the Track itself.

2nd The subsoil being made generally homogenous under + around the Chairs,

the road is less affected by the Frost – the Frost may [heave] it for a time, but no serious evil results from this circumstance as no void spaces are opened thereby into which sand or gravel could be forced unequally to alter the level or Dislocate the track where it settles back to its place – This has been fully verified by the facts of the Brooklyn + Jamaica Road which is constructed on a similar principle.

3rd The Road is more elastic resting essentially on the subsoil, than any other road equally permanent can be – and

4th It is less expensive. The Cost of Stone Blocks, Rubble Trenches, or great quantities of prepared Ballast being generally dispersed with.

5th The wood – when that material is used, being in small pieces can very easily be subjected to the Kyanizing or Bitumenizing Process as an expense [of the train] one cent per super. foot when wood is used in long lengths + large scantling the attribution of durability therefore is more completely secured than in other constructions in which wood is a component material.

5th It may be remarked by way of illustrating the Roads generally in this country of substantial and durable machines – have generally been estimated at an expense of from 15 to 20.000 dollars per mile of track even when wood – even subjected to any indurating process – has been used as a principal material –

The Road of which the pattern is now shown is estimated as follows.

[Inserted list of materials and estimated cost resulting in \$11881]

A. When the soil on the Road is sandy or gravelly the Ped track is constructed by placing the pedestals at once upon the graded surface without any other material to rest upon – but when clay is the predominating material an even coat of common gravel – six or 8 inches thick, should be spread upon the Road Bed for the pedestals to rest upon or when this is not to be had broken stone may be laid in longitudinal [---] rows under the lines or Pedestals respectively – and in either case the interstices of the road may be filled up at a trifling expense after the [Iron? Track?]