"Street Rails"

Grooved Rail

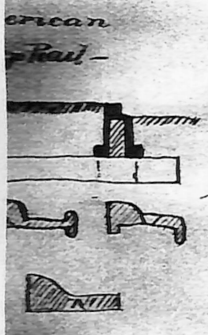
The grooved Rail is not the most desirable Rail for Street Tramways. It collects the dust & mud, & with the further disadvantage that both sides of the flanges of the wheels will be abraded, rendering them useless before they are worn out because of their almost constant infringement against one side or other of the groove, thereby requiring a much greater tractive power to move the Cars.

Another trouble will probably be caused by the canting of the rail, when the Longitudinial — timbers become worn, the Motor bearing — constantly on one edge of the Rail, will depress that side, and will wear it down in — conformity with the line of wheel-tread, this would cause the flanges to run on the bottom of the groove, causing still an additional — resistance to the Motor, and would in course of time deepen the groove, until the Rail is split in two (this has already been the case in many instances on the Wellington City Tramways N. Z.).

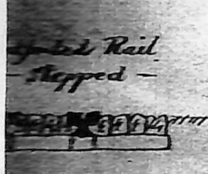
All practical experience has shown that the bearing of the wheel on the Rail should

be central to the Rail base, & that the flanges should have freedom, so as to contract on one side only.

Another great difficulty has been experienced in not being able to fasten securely the Rails to the Longitudinial Timbers, & no system or method has yet been devised to overcome this trouble, the spikes, bolts or pins becoming loose from the gradual enlargement of the holes, occasioned by the constant vibration, & rolling tendency of the Motor in passing over the road. This difficulty is experienced in all Longitudenial systems, be the Rails grooved or slipped.



In America, the Step Rail is principally used on the Longitudenial system being about 1 inch deep & using wheel flanges about $\frac{1}{8}$" it is free from the objections to the grooved Rail, but the difficulty of fastening remains the same.



I am of opinion therefore, that a stepped Rail with chair fastenings, or a flat footed one, simply dogged or fanged to a transverse sleeper, will be found to be the cheapest & best form that can be adopted for City Street Tramways.

Jas. R. Davies.

Sydney.
6th Sept. 1880.

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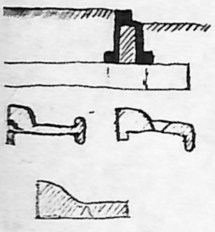
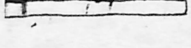
American Step Rail –



In America, the Step Rail is principally used on the Longitudenial system being about 1 inch deep & using wheel flanges about 1/2" it is free from the objections to the grooved Rail, but the difficulty of fastening remains the same.

I am of opinion therefore, that a stepped Rail with chair fastenings, or a flat footed one, simply dogged or pinged to a hard wood sleeper, will be found to be the cheapest & best form that can be adopted for City Street Tramways.

Stepped Rail – Stepped –



Chair Rail – Stepped –

Jas. R. Harris.

Sydney.
6th July 1880.