

4th. PERMANENT WAY.

The permanent way or track consists of the ordinary **T** rail, $4\frac{1}{2}$ inches high, weighing 56 lbs. per lineal yard, spiked to cross ties of the usual size and number, with the rail spike in common use. The track is being well ballasted at five or six different points, as rapidly as circumstances will allow, the depth being not less than 12 inches under the cross ties where it is finished, and the quality of the gravel being the best afforded by the country through which the line passes.

The rails, I understand, were made under inspection in Wales, and ought to be good; but I need not inform you how frequently it has happened of late years, that rails sent out from England have proved very inferior in quality, notwithstanding that every possible precaution had been taken to secure iron of the best description. I merely allude to this fact here because, although I see no ground to fear that your rails will turn out of defective quality, at the same time I should not be at all surprised to learn that a moderate proportion of them began to laminate long before they had reached the proper term of their existence. Should they not do so, they will form an exception to all the rails imported into Canada during the past six or seven years.

But the important feature of your permanent way is your steel scabbard for the fastening of the joints. This consists of a sleeve or clip, which grips tightly around the bottom flange and centre stem of the rail, terminating on both sides immediately under the rail head. It is made of spring steel of $\frac{1}{4}$ inch thickness; and I find you have employed these scabbards in lengths ranging from 12 to 20 inches, but those of 14 inches in length, suspending the rail joints, seem to afford all the requisite strength and support. This scabbard is driven on the rail without difficulty, the elasticity of the steel allowing it to recover its form, and to retain a very tight grip of the rails. No bolts or other fastenings are required, and its extreme simplicity is undoubtedly of itself a very great recommendation. This form of joint is quite new on this side of the Atlantic, and we have no experience to guide us in arriving at any decided opinion as to its merits; but knowing the properties of steel plates, and judging from what I saw of the behaviour of your rail joints under heavy loads at pretty high speeds, I have no doubt in my