1793, Ontrain, from whom the trainway takes its name, laid down a number of tramways in Derbyshire, and introduced the stone blocks under the ends of the tramplates, which for a time displaced the former wooden sleepers, and were used by the Stephensons and others in all the early railways. The first edge railway, which is the parent of our present railway, was laid in 1801, for the conveyance of slate from Lord Penrhyn's quarries in North Wales, and within a few years all the Northumberland and Durham collieries adopted this improvement, and the railway superseded the tramway for ever. In 1789, Mr. Jessup constructed the public railway at Loughborough with cast iron rails of much the same pattern as those now used, and put flanged east iron wheels on the carriages. The normal difference between a tramway and a railway, as then understood, was that on the latter the flange that guided the waggon on the track was cast upon the tramplate, whilst on the edge railway, as it was then called, the flange was upon the wheel. The advantage that the tramway undoubtedly possessed was that the plain faced wheel could be used off the plates, might run over planks or hard ground, or into a quarry, where there would be no necessity for laying down a plate. Sectionmen on the English railways, especially in the old mining districts, are still called "plate layers," a memento of their original employment. In 1805 a great improvement was made when the Walbottle Colliery introduced mallcable iron rails, although these were expensive and were only made in two feet lengths. In 1808 Mr. Thompson put down wrought iron rails of an improved section at Tindale Fell near Carlisle, and from that date this class of road became common round the Newcastle collieries. The next important improvement was made in 1820, when the Bedlington Iron Works took up Birkenshaw's patent, and produced a wrought iron rail 15 feet long, with a deepened flange between each sleeper to strengthen the unsupported portion of the rail. These fish-bellied rails were common till long after the Liverpool and Manchester, on which they were exclusively used, was in successful operation. This was the most important improvement yet introduced, and linked the old waggon way to the modern railway. The roads, therefore, upon which Blackett and Blenkinsopp and Stephenson first introduced locomotives were not widely different from those to which we are now accustomed.

The first practical locomotive was undoubtedly 'Trevithick's, which was placed upon the Merthyr tramway in 1803. There was nothing in this engine to prevent its being as great a success as Blenken. sopp's or Stephenson's a few years later, but it failed, from the road being too weak to carry it, and from want of adhesion. The wheels slipped round without propelling the machine, precisely as in the same district two of Sharpe's finest engines afterwards failed, and for the same reason the old shape of the tramplates held the mud and water, and were always excessively dirty. Had Trevithick's engine been tried on a railway instead of a tramway, we should never have heard of that bug-bear, want of adhesion that frightened all the early engineers. To obviate this supposed difficulty, Mr. Blenkinsopp of the Middleton Collicry, near Leeds in 1811, took up one side of his railway, and substituted for the rails that had been formerly used others with large cogs cast upon the outward edge. These cogs were six inches from centre to centre, so that there were six of them upon each three feet length of rail. His engines were modelled after Trevithick's, and in August, 1812, commenced regular working, and the fact that they did all the work on the railway for five or six years, and long after Stephenson's engines had settled the