

Robert Stephenson, M. P.*

The two new Engines constructed by Mr. Stephenson—the “Phoenix” and the “Arrow”—had a more extended flue surface than the “Rocket,” and were subjected to a series of experiments resulting in further improvements; increasing the steam generating capacities of the boilers, simplifying the working parts of the engine, and materially increasing their power and speed. The twenty miles per hour of the “Rocket” was soon increased to fifty, and even to sixty miles per hour in some of its successors; and the Stephenson’s Manufactory at Newcastle became the largest and most celebrated in existence, sending its products to the United States, and to all parts of the world where Railways were introduced.

Previous to the opening of the Liverpool and Manchester Railway in 1830, Robert Stephenson undertook the survey of the first line projected from London to Birmingham. This survey was commenced in October of that year, but so many important points for consideration presented themselves to him, that though the plans required by the then standing orders of Parliament were prepared and deposited by the end of November, yet by his advice the Bill was not then brought forward, in order that he might be afforded time for a more mature consideration of them. In pursuance of this determination, he devoted the greater part of the ensuing year to a minute examination of the country between London and Birmingham, and in the November of 1832 completed and deposited plans of the line in every important particular the same as it now stands.

In consequence, however, of the strenuous opposition made by the Grand Junction Canal Company and the land owners on the line, the Bill was thrown out by the Committee of the House of Lords. In the ensuing session, however, the same plans, with slight modifications, were again deposited, and after a hard Parliamentary struggle, the Bill received the Royal Assent in July, 1833.

The immense cost entailed upon the Railway Companies of the United Kingdom by the opposition to their charters offered by ignorant and interested parties both in and out of Parliament has, fortunately, no parallel in this or any other country. It is painful to reflect on, as it would be humiliating to record, the ignorant prejudices and cunning artifices by which the promoters and engineers of the great “Iron Ways” of Great Britain were thwarted in the commencement of their enterprises; instead of receiving with gratitude the great invention by which the public has been enabled at half fares to travel at four times the speed they had formerly attained, and whereby millions of tons of merchandise have similar advantages, the engineers engaged in locating the lines had every possible impediment placed in the way by the community they so much benefitted. In most cases these obstructions recoiled with disastrous effects on those who offered them, and in many instances the opposition offered by the inhabitants of country towns has prevented new life and vigour being infused into their dull and stagnant population by the facility afforded by Railway communication—nor is this all; the immense increase of cost per mile, which these Parliamentary struggles have caused, demand a corresponding increase in the tariff levied on the goods and passengers carried, and hence it follows that with an infinitely less amount of traffic on American lines, they yield a better profit with fares at two cents per mile, than English Roads with fares at double that rate. Much of this result is due to the enormous law costs of the English Roads; and it has been estimated that in the three years 1845, 1846 and 1847, upwards of ten millions sterling were wasted in Parliamentary enquiries and contests,—a sum sufficient to construct a complete system of railways in these Provinces—and it has also been

asserted that previous to 1850, more than fifteen millions had been similarly wasted.

The proprietors having fought the bill through Parliament, the construction of the London and Birmingham line was commenced in June, 1834, and Mr. Stephenson having made arrangements with the directors to devote his time exclusively to the execution of the works on their line, he removed from the superintendence of the engine manufactory at Newcastle, and resided in London, where he applied himself assiduously to the accomplishment of his great undertaking—a portion of which, from London to Boxmoor, a distance of twenty four miles, was first opened; that from Boxmoor to Denbigh-Hall, twenty-one miles, was opened in the autumn of 1837; and from Birmingham to Rugby, twenty-one miles, was opened in 1838,—finally, the whole line was opened for public traffic on the 17th September in the same year.

Among the many difficult works on this line, the most prominent are the Blisworth cutting, the Tring cutting, and the Kilsby tunnel—all between Rugby and Denbigh Hall.

The Blisworth cutting, though not the longest on the line, was from the character of the material the most expensive. The Tring cutting contained the greatest quantity, but being of chalk, less difficulty was experienced than in the Blisworth, which consisted chiefly of hard, blue limestone, yielding at all seasons large quantities of water, which it was necessary to drain by pumping. The working of the rock in this cutting was rendered more difficult than it would have been, by the rock being interstratified by beds of blue shale, impervious to water, rendering every means of drawing it off except that of pumping, unavailable. The Blisworth cutting contained 1,200,000 cubic yards, and averaged 50 feet in depth for a distance of two miles. About 400,000 yards of the material was removed from each end to form adjoining embankments, which reached the height of 45 feet, and the remaining 400,000 yards were raised up the steep sides of the excavation, and deposited on the adjoining land in spoil banks. The cost of the excavation exceeded £200,000 sterling.

The Kilsby Hill was a still more formidable work than the last, for its execution was not only impeded by bad material and an immense flow of water; but the means for overcoming them were confined within the narrow limits of a tunnel. After the trial shafts had been sunk, the works were let by competition for the sum of £99,000 sterling, and were in busy progress when it was ascertained that at about 200 yards from the south end, there existed a thick quicksand, which the trial shafts on each side had just passed without touching. In view of this unforeseen difficulty, it became apparent that additional means beyond those already contemplated were necessary, and the contractor was in consequence relieved from his responsibility, the contemplation of which is said to have caused his death. So great indeed was the difficulty, that it became a question whether the execution of the Kilsby Tunnel should be abandoned or continued. Mr. Robert Stephenson, however, after mature reflection, offered to undertake the responsibility of continuing it, and he was authorized to do so. Extra shafts were sunk, and four powerful pumping engines were erected, which continued to pump from the quicksand for six months, with scarcely a day’s intermission, at the rate of 1800 gallons of water per minute. By these means the difficulty of tunnelling was reduced, but still the operation was one of great difficulty and danger. On one occasion, those who were nearest the quicksand, in driving into the roof were almost overwhelmed by a deluge of water. A gang of workmen were sent to their assistance, with the requisite material on a raft in order if possible, while the utmost power of the engines were exerted, to close up a short length of the arch; the water rose,

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