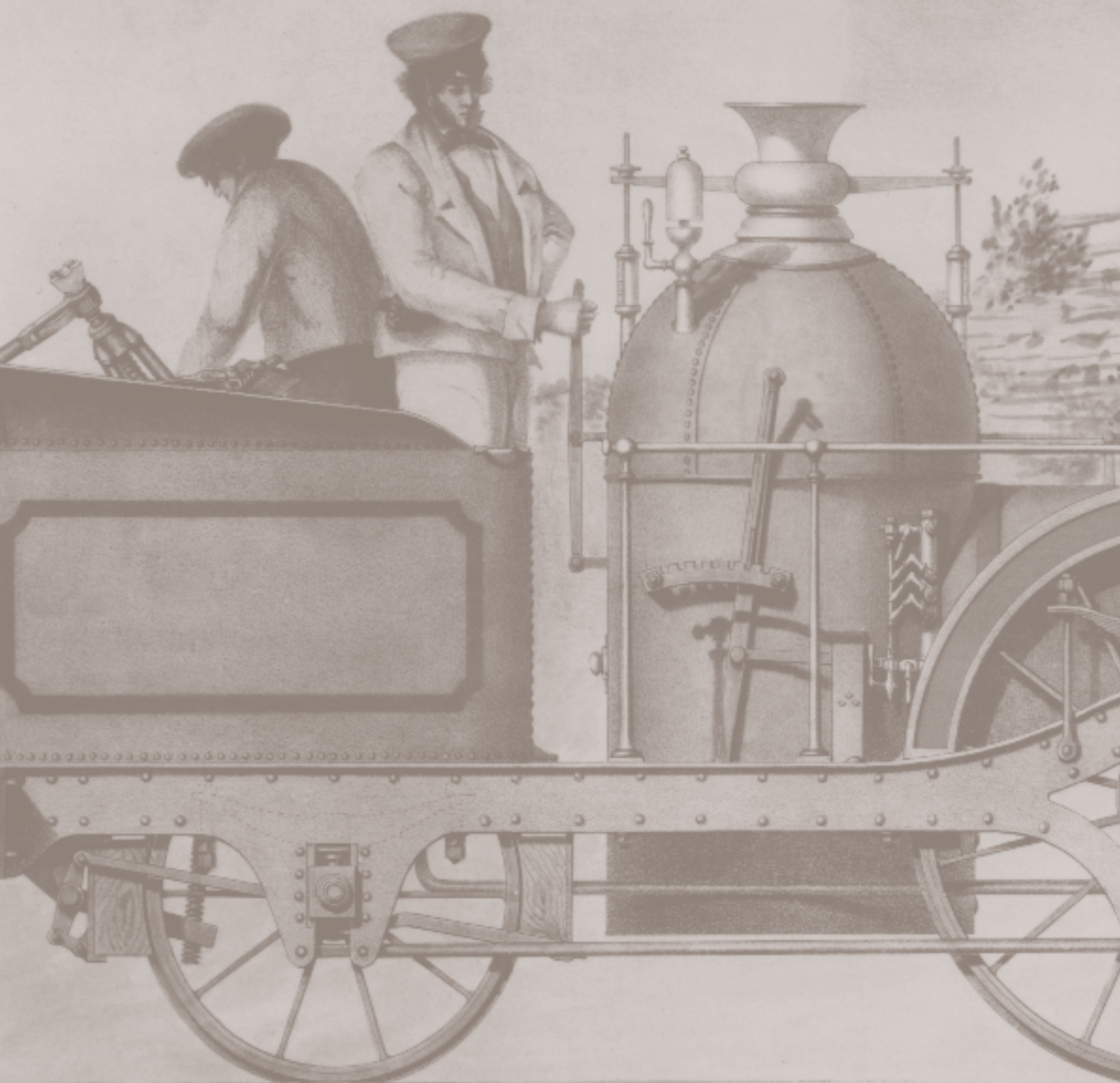


**George England,
Robert Fairlie
and
The Hatcham Iron Works**





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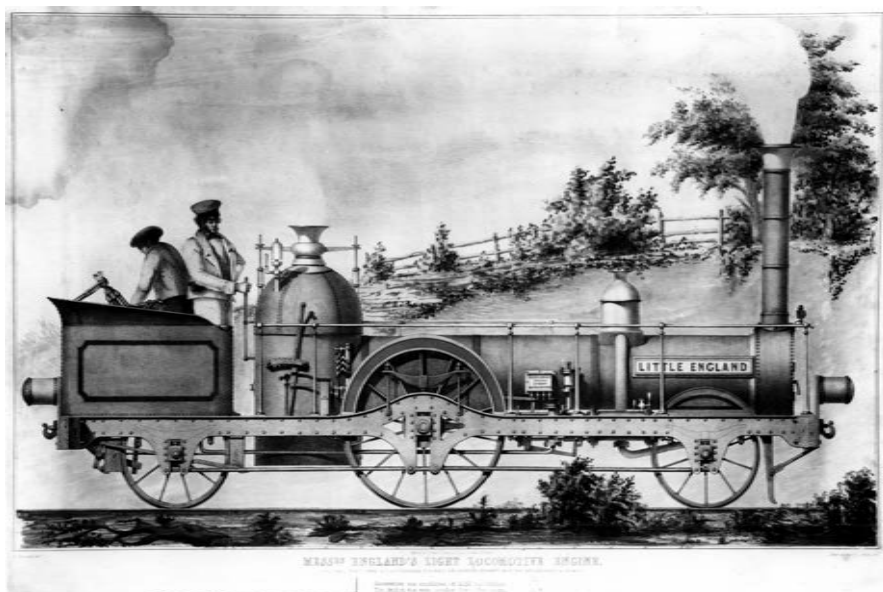
The Early Years



George England was born in 1811 in Newcastle-Upon-Tyne, and by the age of 14 had moved down to London to begin an engineering apprenticeship with the prestigious John Penn Boiler Works and Shipyards in Deptford who were noted at the time as manufacturers of marine steam engines. It is known that he later married a lady considerably older than himself, but the marriage was not a success and he left her to live with a lady called Sarah, with whom he went on to have three children. By 1839, England had begun renting a vacant factory building on a piece of land between Pomeroy Street and Kender Street, just off the Old Kent Road, in the then semi-rural district of Hatcham, now better known as New Cross. The premises consisted of a house and manufactory and had initially been used by one Henry Duxbury, who was involved in the leather trade. George owned patents for a design of screw jack and a machine for weaving woollens. These inventions made him successful enough to be able to purchase the factory, which he renamed The Hatcham Iron Works. He lived with his family in the house attached to the premises. Though records show that he first paid rates on the property in July 1840, it is not until the 1846 edition of the Post Office Directories that he is listed as 'England, George & Co. Engineers and patent screw jack manufacturers, Hatcham Iron Works, Old Kent Road'. He was already interested in railway engineering, and in 1843 had tried out his 'manumotive railway carriage' on the London & Croydon Railway between New Cross and Dartmouth Arms (now renamed New Cross Gate and Forest Hill). This was a man-powered inspection trolley, which could carry 7 or 8 persons at a rate of 18mph. The railway engineer, Mr Gregory, was very impressed; "It will, in our opinion, be found particularly useful for this purpose and more especially so

in connection with those works upon the line which it is necessary to carry on during the night.”

England found himself becoming more interested in building railway locomotives at a time when new lines were being opened all over the UK and in Europe and there were constant advances in steam locomotive design and performance. In the summer of 1849 he sold his first locomotive to the Dundee, Perth and Aberdeen Railway. It was a 2-2-2 tank engine with 4ft 6in driving wheels and 9in x 12in cylinders. This basic design was used for the next six or so locomotives he built. A visitor to the works in June 1850 spoke of seeing “no less than four locomotive engines in the progress of construction”, and going on to praise the design, which “for elegance, lightness and speed, is not to be surpassed”. One of the four he saw was probably *England* (possibly named *Little England*) which was sold to the Edinburgh and Glasgow Railway in 1850 for the sum of £1200. On trial it pulled five coaches with a consumption of 5lbs of coke per mile. With seven coaches it covered the 47 miles between the two cities in an hour and a half with three stops, and a coke consumption of 8lbs per mile. It is worth mentioning that the E&G showed a certain sense of humour in naming a similar locomotive (though built by the Glasgow firm of Neilson & Co.) *Wee Scotland* in 1862, by which time the England engine had been scrapped. One railway historian speculates that *Little England* was in itself a pun inspired by the Great Western Railway naming one of its engines *Greater Britain*.



The ‘Great Exhibition of the Works of Industry of all Nations’ took place in 1851 in a specially made building erected in Hyde Park, which soon became popularly known as The Crystal Palace. Open from May to October, there were 100,000 exhibits from all over Britain, Europe, Russia and America. Juries awarded medals for the best exhibits, prizes being given to manufacturers showing the most novelty, ingenuity, economy in cost and maintenance, durability, excellence of finish and fitness for purpose. The Hatcham Iron Works had two items on display. Exhibit No 484 was a Patent Traversing Screw Jack ‘for raising and moving heavy bodies, both vertically and laterally’ particularly suited to railway purposes for re-railing engines. ‘Two men with this simple machine can re-instate the engine upon the rails in less than half the time that 50 men could do without it.’

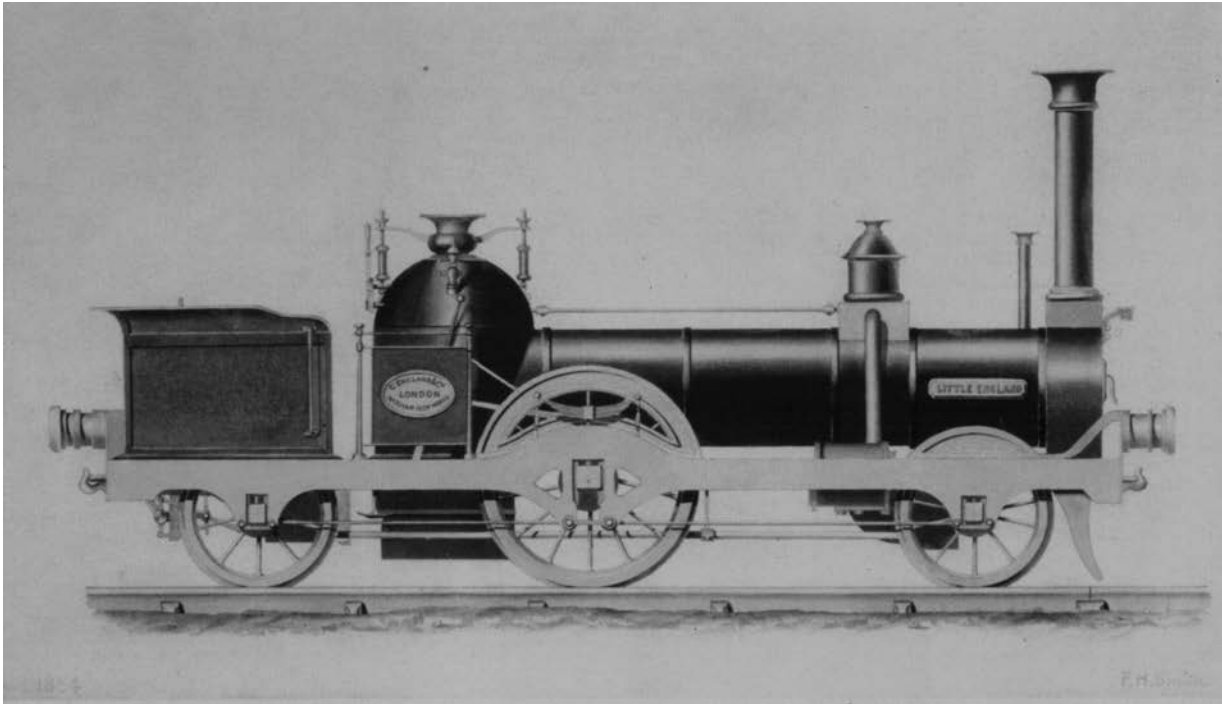


Exhibit No 509 was one of George's standard 2-2-2 tank locomotives, also named *Little England*, 'intended to reduce locomotive expenses in proportion to the amount of traffic. It has been proved that this engine is capable of working express trains of six first class carriages at a speed of 60 miles per hour consuming only 8lbs of coke per mile'. A blue flag bearing the legend 'Speed, Safety and Economy' in gilt letters was suspended over the engine. The jury were impressed, and awarded a Gold Medal, praising the engine's 'ingenious arrangement and good workmanship'. The locomotive was handsomely painted in Royal Blue livery, a finish that became something of an England trademark, being used for all engines out-shopped by the works unless the purchaser specified otherwise. The firm also exhibited in Paris in 1855 and at the second International Exhibition in London in 1862, which was even larger than the 1851 event, though it seemed not to capture the public's imagination in the same way. After the Great Exhibition closed in October, the Crystal Palace was dismantled and a new company formed to move it to a new site in Upper Norwood, South London. The building was very much larger than the original and stood in its own grounds which were formerly the property of one Leo Schuster, who was a director of the London, Brighton and South Coast Railway, whose main line ran along the southern boundary of the park and who expected to make a great deal of money from excursionists. The building was designed by Paxton (who was later knighted) and Brunel designed the two tall water towers which provided the water for the many fountains in the grounds. England undertook a large quantity of the ironwork for the new building. The new Crystal Palace was opened by Queen Victoria on 10th of June 1854.

One noteworthy aspect of the Hatcham site was that it had no direct access to the main railway system, which meant that finished engines had to be taken by road to the nearest railhead, either at New Cross or at Bricklayers Arms. Locomotives built for the Great Western Railway in 1862 were apparently taken by dray horses all the way across London to Paddington to be put on the rails there. Finished locomotives were carried away on a specially built vehicle fitted with four wheels of very broad tread. Rails of the required gauge were laid from the works to the lorry and a team of eight horses was

used to pull the engine out for further shipping. Pomeroy Street had to be strengthened to take the weight of this regular traffic. The original factory building was behind some cottages in Pomeroy Street, entry to the works being through a covered passageway. By 1853 the increase in the volume of work made it necessary to build an extension adjoining the original factory building to the south, and facing out on to Pomeroy Street. The new building had a central doorway surmounted by a coat of arms, a flagpole, and the proud legend 'Hatcham Iron Works'.

In the same year George was elected as a member of the Institute of Mechanical Engineers. During the next few years the works turned out locomotives for service on railways in Britain, Belgium, India and Australia, the latter order requiring an engineer from the works to travel with the engines to supervise their assembly and use on arrival.

In 1858 England built a large house for his family in an acre of land at the bottom of Kender Street, which he named 'Hatcham Lodge'. Featuring a conservatory, it employed three domestic staff. Also around this time he built a row of eighteen houses for the use of his employees on Kender Street, to the north of Hatcham Lodge. The row of houses was named Georgina Terrace. The Terrace shared the same sewage system as the new works and was connected to it by a brick lined barrel drain, probably the source of the folk myth that England had a mistress installed in one of the Terrace houses and had a secret tunnel built from the works so he could visit her unseen! Also in 1858, at the age of 14, his son George Junior was artiled to the firm, which at that time had a workforce of 43, who were treated to a dinner and dance at the company's expense to celebrate the occasion.



Ordinary apprentices were not so extravagantly treated. They were articulated to the firm for seven years, for the first three of which they received no pay at all, other than the shilling a week awarded conditional on their 'good conduct'. Being the boss's son has never been easy, and it led to George Senior finding himself in court charged with 'unlawfully assaulting and beating his apprentice, George Effingham Pattie on the 2nd inst.' Pattie had allegedly removed or stolen some of George Junior's tools. England claimed that this was not the first incident of this sort, at which Pattie commented that it was not the first time he had been beaten either! The magistrate fined England 5 shillings plus costs with the alternative of 7 days' imprisonment, adding that he thought George had been "rather too free with his correction". England paid the fine, but remarked as he left the court that the magistrate might soon have to adjudicate again!

In 1861/2 a further, larger, extension was added to the buildings in Pomeroy Street, this time on the north side of the original works, and The Hatcham Iron Works had reached its zenith. This led to another court appearance for Mr England, this time for a breach of building regulations, being charged with 'erecting a building upon his premises containing a greater cubic area than 216,000 feet, the same not being provided with party walls'.

At the rear of the new works was a piece of land nicknamed 'the cabbage patch', on which was laid an oval of standard gauge track, like a large toy train set, with straights of 100ft length and curves of 50ft radius. There was a rail connection into the main building and the circle was used to test locomotives in steam, a task often performed in front of an eager audience of local schoolboys.



Francis Fairlie



By 1861, a frequent visitor to Hatcham Lodge was Robert Francis Fairlie, an engineer who had been born in Glasgow in 1831, the son of an engineer. He trained at Crewe and Swindon, the works of the London & North Western Railway and of the Great Western Railway respectively, both of whom regarded themselves as among the finest railways in Britain. He had begun his professional career in 1853 as the locomotive superintendent to the Londonderry and Coleraine Railway, later working in India for the Bombay and Baroda Railway (for whom England had built six locomotives in 1859, though four of them were lost at sea during transit). Fairlie had returned to London by the end of the decade and was working as a consultant engineer.

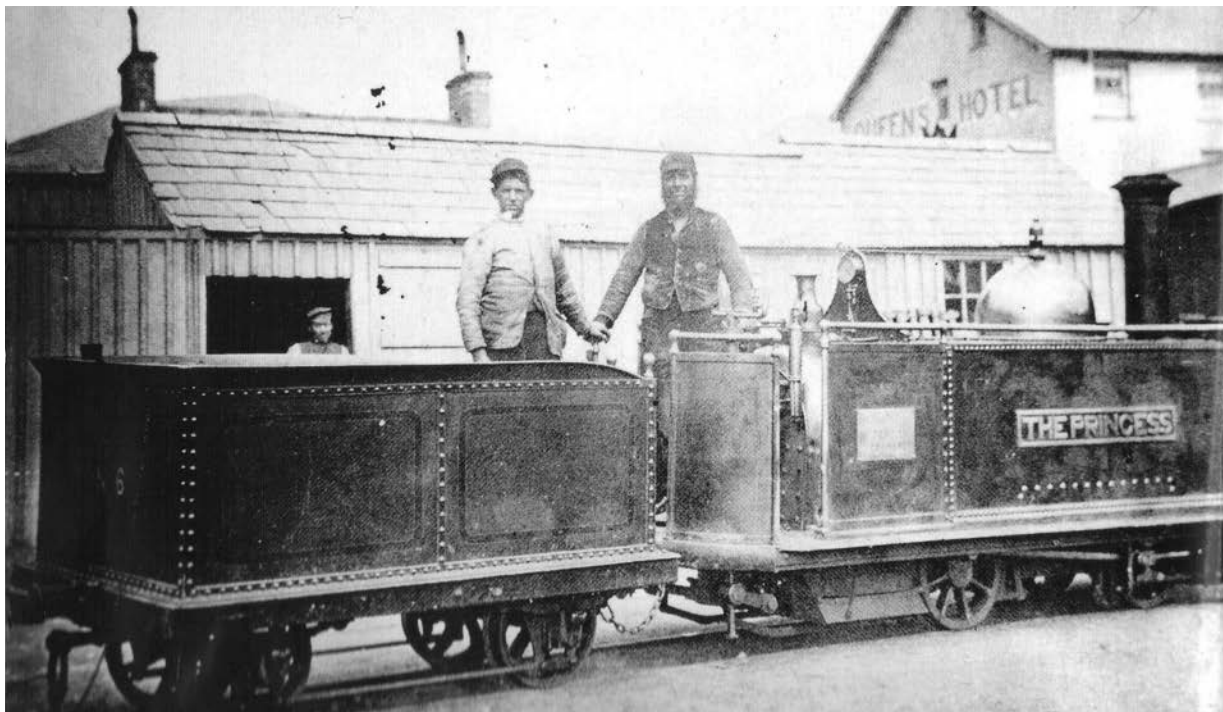
Though no doubt much of the talk between England and Fairlie was of engineering matters, Robert also paid a great deal of attention to Miss Eliza Anne England, affectionately known as Lizzie. At seventeen, George thought Lizzie a little young to be seriously courting, and he asked Fairlie to wait for a couple of years before pursuing her. He agreed to do this, but in January 1862 Lizzie and her sister went to the Crystal Palace for the day. Only Georgina returned and by the time George and Sarah found out that the couple had eloped, having gained a licence to marry after Fairlie signed an affidavit to say he had her father's permission, they were well on their way on the Boat Train. When the couple returned from their honeymoon in Spain, George took Fairlie to court for perjury. Fairlie won the case on a legal technicality; it was revealed in court that England's children had been born out of wedlock, though he had married Sarah when his first wife died. This meant that legally, Lizzie was 'nobody's child' and

George Snr had no rights over her. She would not have needed his permission to marry. England was furious, though the family was quickly reconciled, and Fairlie gradually became involved in England's work. The case was widely reported in the press, and George's reputation and social standing were undoubtedly damaged by the revelations.

Since 1857, England had been one of the ten directors of the Crystal Palace Company. There had been a certain degree of incompetence and corruption involved in the project, particularly involving one William Robson, who defrauded the company of £28000 by maintaining a false record of shareholders. He was the registrar and used the money to 'satisfy his strong desires and vitiated tastes including gambling and women'. He supported a wife and two mistresses with money he claimed to have made on the stock market. He was sentenced to 20 years transportation. George had made many enemies with his plain speaking on such matters who doubtless took great pleasure in his humiliation. He chose to resign despite a vote taken at an ordinary general meeting of the shareholders, begging him to stay in office.

Hatcham Ironworks

Probably the locomotives most associated with George England are those he built for the Festiniog Railway in Wales. The railway opened in 1836 to link slate quarries at Blaenau Festiniog with the harbour at Portmadoc. Originally operated by horses, the traffic had increased tenfold by 1860 and the directors and the company's engineer, C.E. Spooner, began to consider the possibility of using steam locomotives, even though the line was laid to the narrow gauge of 1ft 11 and a half inches. Another possible reason was that rival railway companies were considering building lines into the area and the Festiniog feared losing its monopoly of the quarry traffic. The line's best customer was the quarry owner Samuel Holland, who suggested that his nephew, Charles Holland, might be given the job of designing a suitable engine. Charles had trained at Swindon with the Great Western Railway, and was a friend of Fairlie's. An advertisement was placed in *The Engineer* for companies to tender to build locomotives to Holland's design and no less than 29 replies were received. England initially expressed no interest in tendering for the contract, but Holland persuaded him to consider building the engines. He was working in London at the time, and as The Hatcham Iron Works were the only private firm building locomotives in the capital at the time he would be able to keep a close eye on progress. After some financial wrangling and a few agreed detail changes to the design, England agreed to build two locomotives for £1000 each, with a third (and later a fourth) to be built for £800. The latter two were to incorporate any modifications required after the first two had been tested. The Festiniog were required to pay one-third of the first £2000 up front, and a receipt for £666.13.4, dated 23rd March 1863 and signed by George England Junior, exists to this day.



The first two engines, named *Mountaineer* and *The Princess*, were 0-4-0 tanks with 2ft diameter driving wheels and 8in x 12in cylinders. On arrival (shipped to Caernarvon then on by horse and cart) they were fitted with small tenders which were built by the Festiniog using the same standard chassis they used for their slate wagons. Initially, the locos did not work well and modifications had to be made, which were also carried out on the pair still under construction at Hatcham. The second pair, named *The Prince* and *Palmerston* made their way to Wales and all four were in service by October 1864.

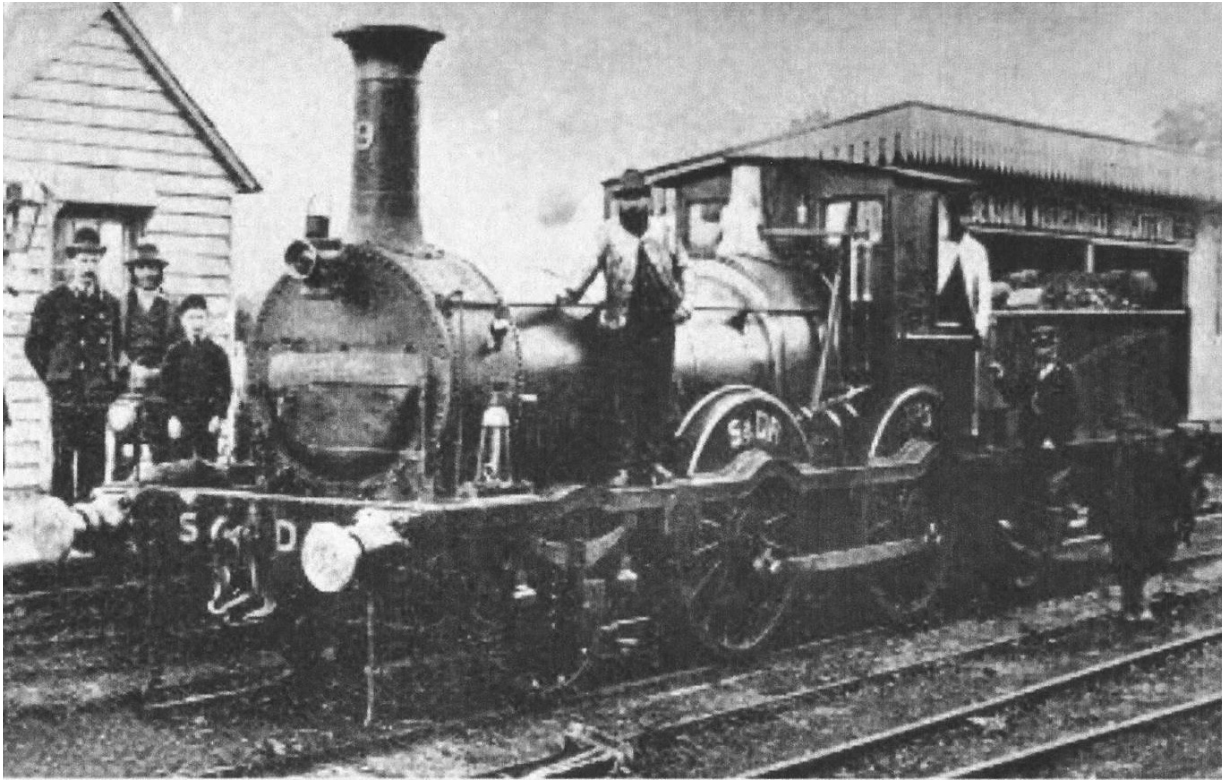
Passenger services were started in 1865, and in 1867 two more engines were ordered, though with slightly larger wheels and cylinders. They were named *Welsh Pony* and *Little Giant*. They also had saddle tanks, which improved their performance, and the surviving earlier three engines were eventually rebuilt in the same fashion. Four of these engines are still intact. *Mountaineer* was broken up for spares from 1879 and never rebuilt and *Little Giant* shared its fate from the mid-1930s onwards.

The success of England's little engines cannot be underestimated. They showed that the use of steam locomotion on the narrow gauge was practical and the line was soon visited by engineers from all over the world, leading to the adoption of the narrow gauge in many countries that might otherwise, due to difficult terrain or limited traffic potential, never have had railways at all.



In 1863, one of the work's travelling cranes was lifting a new locomotive, weighing between 24 and 26 tons, when some of the pillars supporting the beams on which it ran gave way, causing severe injuries to a painter named Feltham. The case took until 1865 to come to court, where the plaintiff was awarded £200 compensation. England could also show kindness. A newspaper report tells of a foreman sawyer called James Fox who was sacked for drunkenness. George met him in the street and was so struck by his reduced circumstances that he re-instated him. However Fox soon slipped into his old ways and when there was an accident with a circular saw, which fortunately caused no injury, England took him to court for breach of contract, which led to a sentence of 14 days hard labour. His family were supported by England during this time and though it is not recorded whether he took Fox back after his 'salutary lesson', I suspect he did.

In 1865 the entire workforce, by then numbering 250, went on strike following a dispute over the application of the company rules, which England argued had held good for the previous 25 years. Among their complaints were that a workman could be discharged for losing more than an hour and a half's work. Another irksome practice was that, after negotiating a 4.30pm finish on Fridays (they still worked from 6am to 12.30 on Saturdays) they still had to wait until the old time of 5pm to be paid. A delegation from the workforce were treated to sherry and returned so meekly that the remaining men accused them of having accepted bribes. They decided to strike.



Though the workers were eventually persuaded back, the strike cost the company dear; an order for 20 locomotives for the South Eastern Railway was cancelled. This consisted of 14 of the 'Cudworth' 2-4-0 type plus 6 'express' engines on which work had probably not started at the time. The SER accepted only four of the first 14. Of the remaining ten, two were sold to the Somerset & Dorset Railway for £7000 each, arriving on the line in full SER livery. The remaining eight were eventually sold to the Belgian West Flanders Railway, though possibly not until as late as 1868. A. R. Bennet wrote in 1907; "Owing to a strike at the works, which disorganised matters for many weeks, delivery could not be affected in the time agreed upon, besides which the company (the SER) found fault with the workmanship of some of the engines which had actually been delivered, with the result that they refused to accept those still on hand. This was a heavy blow for the firm, and one from which they never really recovered. They ultimately succeeded in disposing of all the engines, but at such a sacrifice that, after struggling on for a time, the firm was forced to discontinue business and to close the works. The men, many of whom belonged to Lancashire, and especially to St Helens, and were settled with their families in the neighbourhood of the works, had then bitter cause to regret the strike which had brought about the catastrophe, as very few of them could find employment in London. The locomotive industry in London laboured under sufficient disadvantage without having a trouble of this nature to contend against, especially when, in addition to paying higher wages and higher rates, coal, materials and finished goods all had to be carted. Thus the locomotive – like the shipbuilding industry, was driven out of London by the short-sighted policy of those to whom it spelt bread and butter".

Though records are incomplete and often contradictory, it is reckoned that George England built around 250 railway locomotives between 1849 and 1865. He was latterly seriously considering moving into building marine boilers, but this never came to pass. The strike and its aftermath took a great toll on his health, and he began to consider retiring in favour of his son.

Fairlie takes over

Meanwhile, Robert Fairlie was making a name for himself in the world of locomotive design. He had published a pamphlet in 1864 entitled; *Locomotive Engines- what they are and what they ought to be*. He had patented a design for a locomotive which had two boilers back-to-back on one rigid frame, with two four-wheeled bogies connected to the boiler by flexible steam-pipes. The result was a powerful unit (an 0-4-4-0) with great adhesion and the ability to pass round the tightest of curves. It could also be driven equally well in either direction and did not need to use a turntable. The first engine built to his design was in 1865 for use on the Neath and Brecon Railway and named *Progress*. A sister engine *Mountaineer* was built the following year for the Anglesey Central, though it too later moved to the Neath and Brecon. Both of these engines were built by James Cross & Co of St. Helens.

In 1868 the Festiniog decided to try the Fairlie design on the narrow gauge and England was given the order to build the locomotive to be known as *Little Wonder*. He stated: "We will undertake to make you a Fairlie double boiler duplex locomotive, of the very best material and workmanship, equal in power to any two of the engines you now have working on your line."



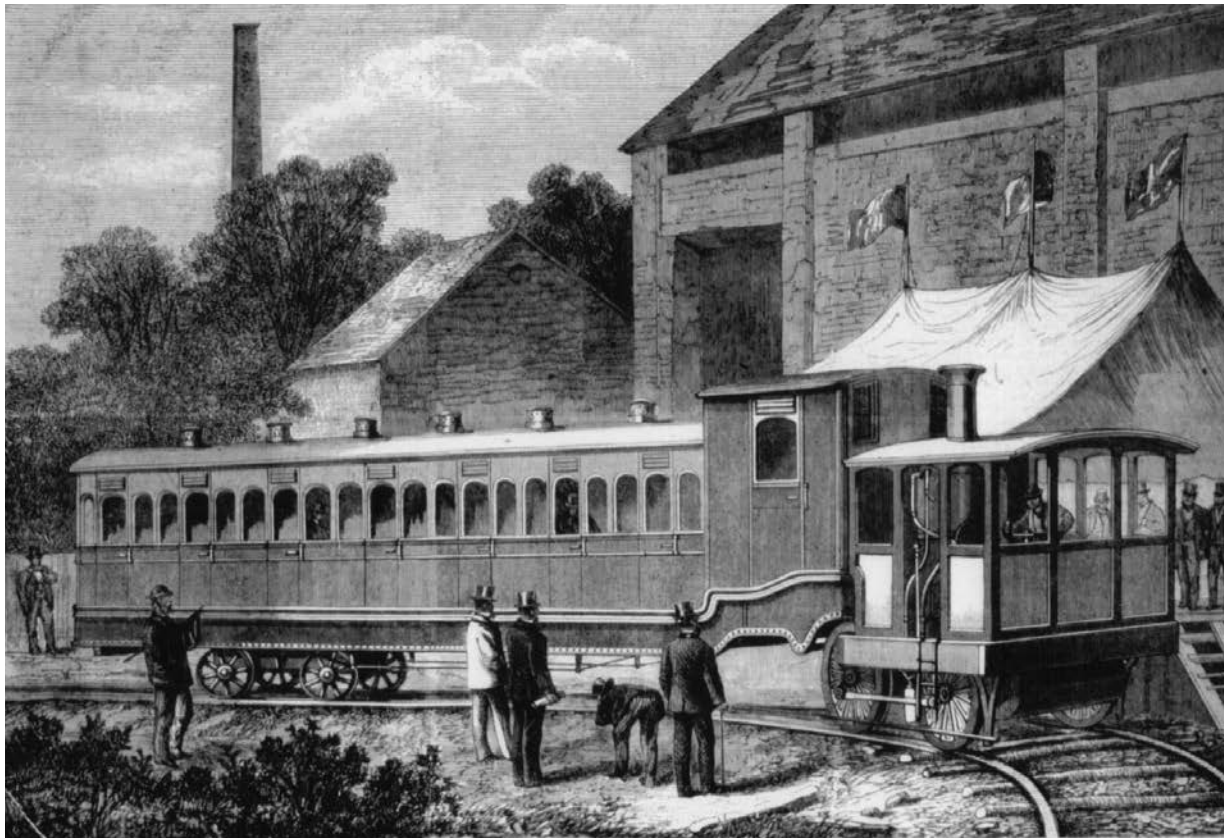
In 1869 *The Engineer* reported that George England was retiring due to ill-health, and that the Hatcham Iron Works had been taken on a 50-year lease by a new company to be called 'The Fairlie Engine and Steam Carriage Co.' whose directors were Robert Fairlie, George England Junior and John Simpson Fraser, late of the Great Western Railway, and Fairlie's brother-in-law, being married to his older sister Mary.

The early days of the new company were hampered by lack of orders. A letter exists from Fairlie begging for £200 on account for *Little Wonder*. "I am at my wits end to try and keep things going smoothly until I get a few more orders in."

Costing £2000, the Fairlie engine was ready for testing by September 1869, taking a train of 111 slate wagons, 6 four-wheeled coaches with 10 passengers each and 12 goods wagons. Tested against the original engines *Little Wonder* was found to be faster, more

powerful and more economical on fuel. A public demonstration in February 1870 was attended by the Duke of Sutherland and engineers from all over the world; Prussia, France, Sweden, Russia, Poland, UK, Turkey, Mexico and India among them. The Russian Commission were so impressed that they awarded Charles Spooner a “massive gold medal” complete with thanks from Tsar Alexander II.

The Festiniog eventually owned four Fairlies, one built by Avonside in 1872, and two by their own Boston Lodge works, in 1879 and 1885.



Fairlie had patented his ‘Steam Carriage’ in 1868, basically a single carriage with a small built-in locomotive unit, which only needed to be powerful enough to move itself and perhaps one extra vehicle if required. A similar patent had been taken out around the same time by James Samuel, who had already carried out several experiments in this field during his time as engineer to the Eastern Counties Railway (later part of the Great Eastern). In 1869 Samuel, Fairlie and England built a version of the steam carriage at Hatcham, its trials on the ‘cabbage patch’ being the subject of an engraving in *The Illustrated London News* of 14th August. In January 1870, Fairlie wrote to the Duke of Sutherland, who at that time was involved in the Sutherland and Caithness Railway, as well as being the brother-in-law of the Duke of Argyll, then Secretary of State for India.

The notepaper used featured illustrations and descriptions of both *Little Wonder* and the Steam Carriage, claiming of the latter that the cost per train-mile was half that of an ordinary passenger train and that the unit’s lower weight would greatly reduce wear on the track. “The double bogies can pass round curves of the smallest radius now in use (as proved on the cabbage patch!)... Its first cost will be a little over one-third of an ordinary train of the same capacity...”

The illustration on the notepaper has many discrepancies from the one published in the ILN and seems to feature a clerestory roof, which in Fairlie's original patent was to house a duct leading from the chimney to the rear of the coach, the idea being both to heat the coach and to discharge the smoke and fumes out behind the passengers. Though AR Bennet states that the carriage was built for use on the "Sevenoaks branch of the London Chatham and Dover railway" this is unconfirmed and it is not known what became of it, though there is also a rumour that the locomotive part of it ended its days shunting in Belgium. One unfortunate aspect of the design was that it had to be turned ("slowly on a semi-circle of 30ft radius") at each end of its journey. The concept had a revival around 30 years later when many British railway companies built their own version of the Railmotor (as it was known then), though they could all be driven from either end to avoid turning. The Sentinel steam railcars of the 1930s were another version of the same concept and used by both the LNER and LMS. Though some lingered on until the late 1940s, their lack of flexibility and inability to pull extra vehicles when required told against them. Many railway companies preferred the 'push-pull' concept where a specially adapted engine and coach(es) worked together, the driver driving from the coach and the fireman remaining on the footplate when working in reverse.

In July 1870, George Junior died. He was only 26, and his death, and the lack of orders, made Fairlie decide to close the works. Apart from the steam carriage and *Little Wonder*, only four locomotives were produced under the new company name; all standard gauge 0-4-4-0s to Fairlie's design.

The machinery and plant were sold at auction in May 1872, as were (in a separate auction) all the garden plants from Hatcham Lodge. George Senior and his wife were by then living in Cannes, in the south of France. Fairlie renamed his company 'The Fairlie Engine & Rolling Stock Co.' and continued to work as a consulting engineer from his office in Westminster and granted licences for locomotives to be built under his patent by other makers.

Between 1869 and 1911 more than 330 patent locomotives were built and exported to 21 countries in every continent with railways. In 1873 Fairlie went to Venezuela to survey a new line. He contracted sunstroke, a fever and blood poisoning there and never fully recovered, though he continued to work, travel and carry out his business, being named Engineer-in-chief of The Barbados Railway as late as 1881. Robert died on 31st July 1885 and is buried in West Norwood cemetery. His headstone shows that his wife, who died in 1907 at the age of 83, his brother-in-law John Simpson Fraser and elder sister Mary were also interred in the same plot. (Oddly enough Mrs Fairlie is called 'Lily' on the stone, though the record of her paying for the plot in 1885 is in the name of Elizabeth Fairlie)

Aftermath

George England died in France on 2nd March 1878, leaving £3000 in his will. Sarah returned to London and went to live with Lizzie and Francis. A census of 1881 shows their address as 13, Church Buildings, Clapham. As well as Sarah and her four grandchildren, there was a cook, 4 domestic servants and a Swiss governess. Hatcham Lodge, which had been let, was sold to the Church Trustees in 1895 on Sarah's death, and became the vicarage of All Saints Church, Hatcham Park. Numbered 56 Kender Street, a small two-storey building was erected in the grounds as a mission hall and club room (later being used as a light engineering shop) and more houses were built on the former gardens south of the Lodge on Kender Street.

After 1872, parts of the works were taken over by other firms. The 1853 building was occupied by the General Engine & Boiler Company from 1873. The original part was not let until 1882 to a firm called Delta Metal Co. who lasted there until 1905, when they moved to Blackwall Lane due to lack of space. Later it became the Pomeroy Paper Mills who made cardboard advertising signs for shops and then an automotive engineering shop. The 1862 portion was taken over in 1877 by J.C. Eno, to manufacture their famous Fruit Salts. They lasted until 1940 when the factory was destroyed in an air raid. After the war it was rebuilt by the pharmaceutical firm of Robert Blackie & Co who were there until 1969, after which the building was pulled down to make space for housing.

By the mid-1960s the General Engine & Boiler Co. had been taken over by Reliance Foundry. They moved out in 1981 and the building was demolished the following year. The Reliance Foundry Ltd still exists and is now based in Belvedere, Kent.

Legacy

Incredibly, one of the locoves turned out by the company in 1857 is still intact and in working order. *Shannon* was originally built for the Sandy and Potton Railway to the order of Captain Peel RN, and named after his last command. The Sandy and Potton became part of the London and North Western Railway, and the engine, an 0-4-0 well-tank, spent the next fifteen years shunting at Crewe, before being sold on to the Wantage Tramway, a roadside line that linked the town of Wantage with the Great Western main line at Wantage Road. In an article of 1907, the railway historian A.R. Bennett wrote; 'It is... one of the oldest locomotives in use in this country, and, beyond being provided with a new boiler in 1897, has been modified but little'. It was still in use when the tramway closed in 1945. The Great Western restored the engine and put it on display under an awning at Wantage Road, where it remained until that station was closed in 1964. Restored to working order, it can now be seen at the Great Western Society's working museum at Didcot.

Though much rebuilt, four of the original England tanks; *The Prince*, *Welsh Pony*, *The Princess* and *Palmerston* are still intact and working on the Festiniog Railway. *Palmerston* was the last to be returned to traffic and is seen here after complete restoration to working condition in 2000.



Some of England's products led interesting lives. As mentioned, Fairlie had ordered six England engines for the Bombay & Baroda railway. Two were sent on the *Indian Ocean* and the following four sent later on the *Jessica* which was abandoned off the coast of South Africa in late October 1859 and sank. Its location is known and the engines could still be recovered! The two that made it to India became No's 3&4 on the 5ft 3in B&B joining 1&2 built by EB Wilson. Several years later 1 and 3 were sold to the Indian Government and took part in the Abyssinia campaign of 1868 when the Indian Army set out to rescue hostages taken by King Theodore of Ethiopia who had taken grave offence at a letter he had sent to Queen Victoria requesting military assistance being ignored. A 20 mile long railway was built from the port of Zula into the interior to supply the army sent to besiege Theodore's fortress at Magdala. Theodore died in battle and the hostages were rescued. This campaign was the subject of George Fraser MacDonald's last 'Flashman' novel; *Flashman on the March*. The locomotives later returned to India.

Hatcham Lodge is still intact and divided into flats. The line where the roof of the conservatory met the south wall is clearly visible. All of the houses in Georgina Terrace are still in use as dwellings though there is now no sign of their original name.



George England, Robert Fairlie and the Hatcham Iron Works

Locomotives produced by George England

1849-1870

Works number	Built	Type	Cylinders inches	D.W. Fit in	Gauge	Customer	Number/Name
	1849	2-2-2WT	IC 9 x 12	4 6	Std	D.P. and A.R	Eclipse (a)
	1849	2-2-2WT	IC 9 x 12	4 6	Std	London and Blackwall	Dwarf
	1850	2-2-2WT	IC 9 x 12	4 6	Std	London and Blackwall	England
	1850	2-2-2WT	IC 9 x 12	4 6	Std	Edinburgh and Glasgow	England
	1850	2-2-2WT	IC 9 x 12	4 6	Std	L.C. and S.R.	England (a)
	1850	2-2-2WT	IC 9 x 12	4 6	Std	Exhibition Loco	Little England
	1850	2-2-2WT	IC 9 x 12	4 6	Std	London and Blackwall	8.Samson
	1850	2-2-2WT	IC 9 x 12	4 6	Std	London and Blackwall	9.Hercules
	1852		OC 15 x 18	5 6	Std	London&Blackwall	
	1852		OC 15 x 18	5 6	Std	London&Blackwall	
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	144 (b)
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	145
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	146
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	147
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	148
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	149
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	150
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	182
	1852/3	2-4-0	OC 16 x 20	5 0	Std	Caledonian Rly	183
	1852/3	2-4-0	16 x 22	4 9	Std	D.P. and A.R.	13 Scorpion
	1852/3	2-4-0	16 x 22	4 9	Std	D.P. and A.R.	14 Spitfire
	1852/3	2-4-0	16 x 22	4 9	Std	D.P. and A.R.	15 Sprite (c)
	1854/5				Std	West Flanders Rly	
	1854/5				Std	West Flanders Rly	
	1855				Std	Sambre and Meuse Rly	
139	1856	2-2-2WT	IC 14 x 19	4 6	Std	MS and LR	123 Carlisle
	1856	2-4-0	OC 15.5 x 20	5 0	Std	South Yorkshire Rly	13
	1857	2-4-0	OC 15.5 x 18	5 0	Std	L and SWR Eng Dept	Hawkshaw
	1857	2-2-2	14 x 22	6 6	5 3	Geelong and S. Suburban	1
	1857	0-6-0	16 x 22	5 0	5 3	Geelong and S. Suburban	2
	1857	0-6-0	16 x 22	5 0	5 3	Geelong and S. Suburban	3
	1857	0-6-0	16 x 22	5 0	5 3	Geelong and S. Suburban	4
	1857	0-6-0	16 x 22	5 0	5 3	Geelong and S. Suburban	5
	1857	0-4-0WT	9 x 12	3 0	Std	Sandy and Potton Rly	Shannon
	1858	2-4-0	OC 15 x 18	5 0	Std	L and SWR Eng Dept	Brunel
	1859	2-2-2	14 x 22	6 6	5 3	Victorian Govt Rlys	12
142	1859	0-6-0	14 x 22	6 6	5 3	Victorian Govt Rlys	13
	1859	0-6-0	14 x 22	6 6	5 3	Victorian Govt Rlys	15
145	1859	0-6-0	14 x 22	6 6	5 3	Victorian Govt Rlys	17
	1859	2-4-0WT	11 x 17	4 0	5 6	BB and Central India	3
	1859	2-4-0WT	11 x 17	4 0	5 6	BB and Central India	4
	1859	2-4-0WT	11 x 17	4 0	5 6		(d)
	1859	2-4-0WT	11 x 17	4 0	5 6		(d)
	1859	2-4-0WT	11 x 17	4 0	5 6		(d)
	1859	2-4-0WT	11 x 17	4 0	5 6		(d)
	1859	2-4-0	OC 15 x 18	5 0	Std	LWR and SWR Eng Dept	Hesketh
160	1860	2-4-0T	15 x 20		5 3	Melbourne and Suburban	Hawthorn
161	1860	2-4-0T	15 x 20		5 3	Melbourne and Suburban	Richmond
	1860	2-4-0T	15 x 22	4 0	Std	London and Blackwall	10
	1860	2-4-0T	15 x 22	4 0	Std	London and Blackwall	11
156	1861	2-4-0ST	16 x 22	5 0	5 3	Victorian Govt, Rly	14
157	1861	2-4-0ST	16 x 22	5 0	5 3	Victorian Govt, Rly	16
158	1861	2-4-0ST	16 x 22	5 0	5 3	Victorian Govt, Rly	18
159	1861	2-4-0ST	16 x 22	5 0	5 3	Victorian Govt, Rly	20
164	1861	2-4-0ST	16 x 22	5 0	5 3	Victorian Govt, Rly	22
165	1861	2-4-0ST	16 x 22	5 0	5 3	Victorian Govt, Rly	24
166	1861	2-4-0ST	16 x 22	5 0	5 3	Victorian Govt, Rly	26
	1861	2-4-0	OC14 x 18	5 0	Std	L and SWR Eng. Dept	Locke
	1861	2-4-0	OC14 x 18	5 0	Std	L and SWR Eng. Dept	Stephenson
	1861	2-4-0	OC16 x 18	5 0	Std	L and SWR Eng. Dept	Smeaton
	1861	2-4-0	OC16 x 18	5 0	Std	L and SWR Eng. Dept	Telford
	1861	2-4-0T	OC11 x 16	3 10	Std	L and SWR Eng. Dept	Scott

Works number	Built	Type	Cylinders inches	D.W. Fit in	Gauge	Customer	Number/Name
	1861	2-4-0	IC 15 x 18	5 0	Std	Somerset Central Rly	1
	1861	2-4-0	IC 15 x 18	5 0	Std	Somerset Central Rly	2
	1861	2-4-0	IC 15 x 18	5 0	Std	Somerset Central Rly	3
	1861	2-4-0	IC 15 x 18	5 0	Std	Somerset Central Rly	4
	1861	2-4-0	IC 15 x 18	5 0	Std	Somerset Central Rly	5
	1861	2-4-0	IC 15 x 18	5 0	Std	Somerset Central Rly	6
	1861	2-4-0	IC 15 x 18	5 0	Std	Somerset Central Rly	7
	1861	2-4-0T	IC 15 x 18	5 0	Std	Somerset Central Rly	8
	1862	2-4-0T	OC 11 x 17	4 0	Std	Somerset Central Dorset Rly	11(e)
185	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	149
186	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	150
187	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	151
188	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	152
189	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	153
190	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	154 Chancellor
191	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	155
192	1862	2-4-0	IC 16 x 24	6 6	Std	Great Western Rly	156
199	1863	0-4-0T & T	OC 8 x 12	2 0	1 11½	Festiniog Rly	Mountaineer (g)
200	1863	0-4-0T & T	OC 8 x 12	2 0	1 11½	Festiniog Rly	The Princess (g)
	1863	2-4-0T	11 x 16		Std	Colne Val. and Halstead	Cam (g)
	1863	2-4-0T	11 x 16		Std	Colne Val. and Halstead	Colne (g)
	1863	2-0-0	IC 16 x 18	5 0	Std	Somerset and Dorset Rly	9
	1863	2-0-0	IC 16 x 18	5 0	Std	Somerset and Dorset Rly	10
	1864	0-4-0T & T	OC 8 x 12	2 0	1 11½	Festiniog Rly	The Prince (g)
	1864	0-4-0T & T	OC 8 x 12	2 0	1 11½	Festiniog Rly	Palmerston (g)
	1864	2-4-0	IC 16 x 18	5 0	Std	Somerset and Dorset Rly	12
	1864	2-4-0	IC 16 x 18	5 0	Std	Somerset and Dorset Rly	13
	1864	2-4-0	IC 16 x 18	5 0	Std	Somerset and Dorset Rly	14
	1863	2-4-0	IC 16 x 18	5 0	Std	Somerset and Dorset Rly	15
	1865	2-4-0	OC 16 x 18	5 0	Std	L and SW Rly	201 (later 9)
	1865	2-4-0	OC 16 x 18	5 0	Std	L and SW Rly	202 (later 10)
	1865	2-4-0	IC 16 x 24	6 0	Std	Somerset and Dorset Rly	17
	1865	2-4-0	IC 16 x 24	6 0	Std	Somerset and Dorset Rly	18
	1865	2-4-0	IC 16 x 24	6 0	Std	South Eastern Rly	215
	1865	2-4-0	IC 16 x 24	6 0	Std	South Eastern Rly	216
	1865	2-4-0	IC 16 x 24	6 0	Std	South Eastern Rly	217
	1865	2-4-0	IC 16 x 24	6 0	Std	South Eastern Rly	218
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale (i)	
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale	
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale	
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale	
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale	
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale	
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale	
	1865	2-4-0	40 X 61	6 0	Std	Flandres Orientale	
		0-4-OST				2nd Hand to I.W. Boulton	Phospho
234	1867	0-4-OST	OC 8.5 x 12	2 2	1 11½	Festiniog Rly	5 Welsh Pony (h)
235	1867	0-4-OST	OC 8.5 x 12	2 2	1 11½	Festiniog Rly	6 Little Giant (h)
	1867	2-4-0				Neath and Brecon Rly	1 Neath
	1867	2-4-0				Neath and Brecon Rly	2 Brecon

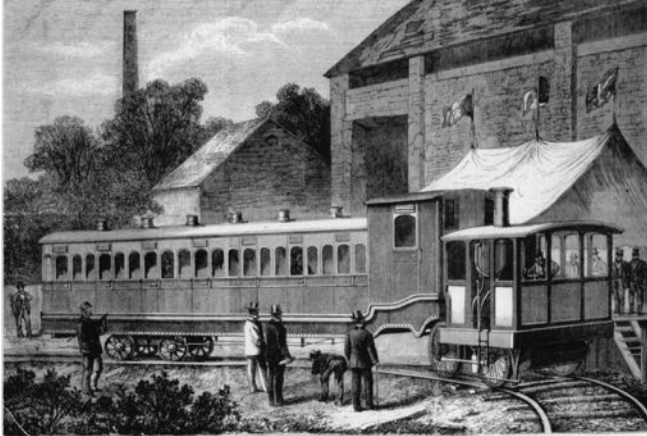
Locomotives produced by Fairlie Engine and Steam Carriage Company

Works number	Built	Type	Cylinders inches	D.W. Fit in	Gauge	Customer	Number/Name
	1869	0-4-4-0T	4/8¼ x 13	2 4	1 11½	Festiniog Rly	7 Little Wonder (j)
	1869	0-4-4-0T	4/10 x 13	3 6	Std	Nassjo Oscarshamn Rly	Pioneer (j) (k)
	1870c	0-4-4-0T	4/10 x 13	3 6	Std	Nassjo Oscarshamn Rly	Morton (j) (l)
	1870c	0-4-4-0T	4/10 x13	3 6	Std	C. de F. de la Vendée	Angleterra (j)
	1870	0-4-4-0T	4/10 x 18	3 6	Std	Iquique Rly	Tarapaca (j)
	1870	steam car			Std	LC & D Rly	unknown

a	May have been same locomotive	h	Side and Saddle Tanks	DP & AR	Dundee, Perth & Aberdeen Junc. Rly
b	Ordered by C.Dunlop and Co	i	Later became Etat Biege Nos. 433-440	LC & SR	Liverpool, Crosby & Southport Rly
c	Bought 1855	j	Delivered to Burry Port and Gwendraeth Valley	MS & LR	Manchester, Sheffield & Lincolnshire Rly
d	Lost at Sea		Rly Mountaineer	L & SWR	London & South Western Rly
e	At 1862 exhibition, sold 1863	k	Renamed Clark, later	LC & DR	London, Chatham & Dover Rly
f	Side tank and tender		Huttenheim		
g	Built for contractor and returned				

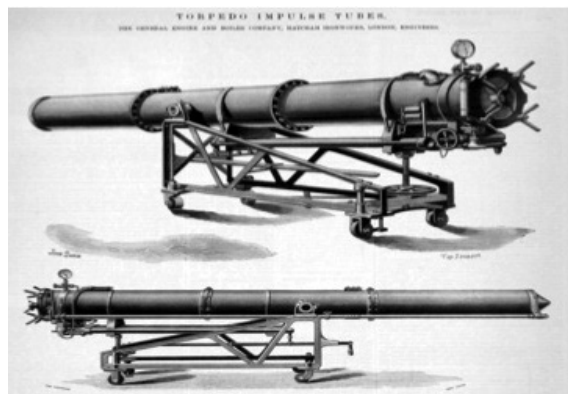
The company as it is today

Maybrey Reliance London can track its lineage back to the Hatchem Iron Works in 1839. The company today casts, the full range of Aluminium Alloys and high specification iron and bronzes. We supply a broad range of industries, aerospace, defence, petrochemical, construction and others. We still enjoy manufacturing castings for some of the UK's historic railways.



Always at the cutting edge

The company has always been at the forefront of manufacturing, from steam engines, to producing torpedo tubes for submarines and in the 1930's we were accredited for aircraft part production.



Investing in the future

We have a modern laboratory with spectrographs that monitor and control the metals we cast. We have invested in the latest type of sand reclamation and energy efficient furnaces that keeps us both competitive and kind to the planet. The castings we produce are regularly checked on our cmm facility.



Concept to Reality

With over 500 years in house experience coupled with our investment in new technologies we offer a service where our engineers advise customers about casting design therefore reducing costs from the onset. We are capable of supplying first prototype to production components.

For more information about our services please contact Maybrey Reliance.

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