Cyrus West Field – the inspiration for Cyrus Smith in Jules Verne’s *The Mysterious Island* (1873)

But the name, and the idea of the omnipotent engineer must come from Cyrus West Field (1819-92) the American merchant and financier who installed the Atlantic cable (1858 and 1865-66). Field and Verne crossed the Atlantic together on the Great Eastern in 1867 and exchanged correspondence afterwards.

William Butcher – Notes on the character of Cyrus Smith *The Mysterious Island* Translated by Sidney Kravitz (2001)

In the novel *Mysterious Island* Cyrus West Field would inspire the character of the engineer Cyrus Smith.

Cyrus Smith would manufacture his own homemade electrical batteries and construct a telegraphic cable on *Lincoln Island*.

The cable would run from Granite House to the corral near Mount Franklin and then be secretly extended by Captain Nemo to Dakkar’s Grotto and the Nautilus.

Cyrus Harding makes electrical batteries for his telegraph.

The *Mysterious Island* by Jules Verne (1873)

Cyrus West Field (1819-92)

–THE MAN WHO UNITED TWO CONTINENTS–

–BUSINESS PARTNER OF THOMAS BRASSEY OF BIRKENHEAD–

–GAINED INVESTMENT FOR FIRST ATLANTIC CABLE IN BIRKENHEAD–

–GAINED INVESTMENT FOR SECOND ATLANTIC CABLE IN BIRKENHEAD–

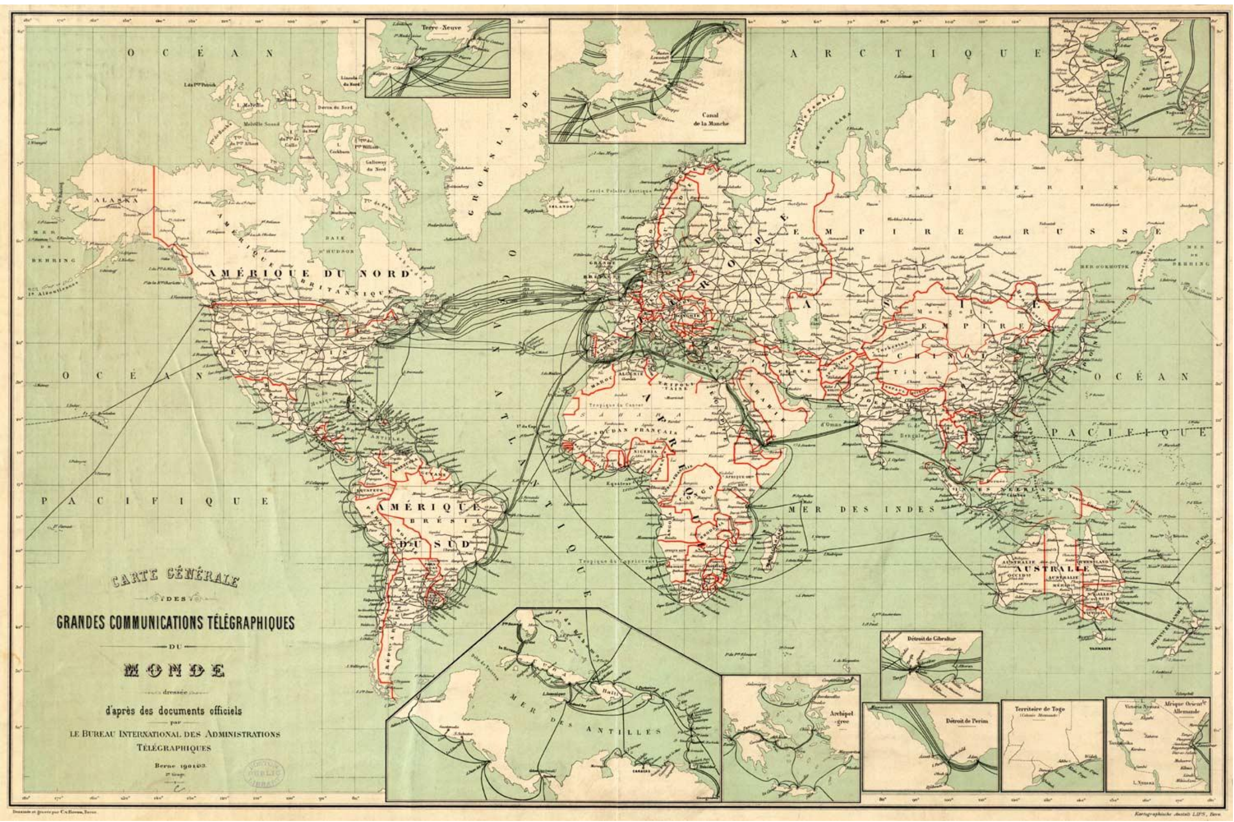
–WORKED WITH MATHEW FONTAINE MAURY AND SAMUEL MORSE—

–WORKED WITH FLEEMING JENKIN AND LORD KELVIN–

–SAILED WITH JULES VERNE FROM BIRKENHEAD TO NEW YORK–

-CORRESPONDED WITH JULES VERNE–

The 'Victorian Internet'



The World Network of Submarine and Terrestrial Cables at the End of the Victorian Era (1901)

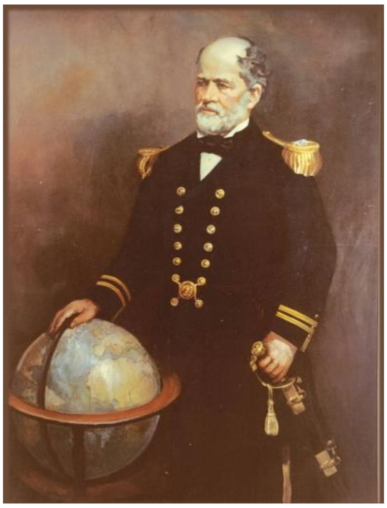
The Greatest Technological Achievement of the Nineteenth Century -

The 'Victorian Internet'.

In 1853 the American Mathew Fontaine Maury, the 'Father of Modern Oceanography' conducted the first deep sea survey of the Atlantic Sea floor and established the existence of a 'telegraphic plateau' at a depth of some 10,000 feet.

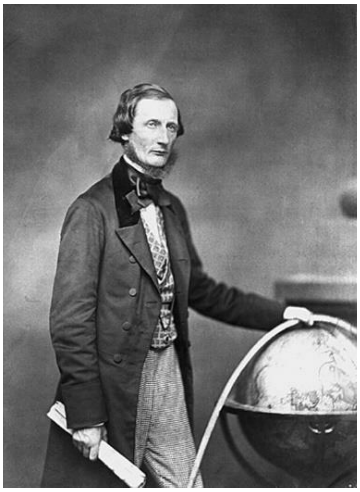
Maury was a great friend of the Birkenhead shipbuilder John Laird, and for a time Maury's wife and children lived in Birkenhead.

John Laird, the fictional builder of Captain Nemo's *Nautilus* was a member of the Royal Mersey Yacht Club at Tranmere, Birkenhead.



Mathew Fontaine Maury (1806-73)

Maury's work raised interest in the idea of laying a submarine telegraphic cable across the Atlantic Ocean to unite both the American and European continents.



In 1857 the American entrepreneur Cyrus West Field (1818-92) came to Birkenhead to pursue his great dream of laying the first submarine telegraphic cable across the Atlantic.

In 1856 Field's first attempt to raise money had failed as both the American and British governments had refused financial aid. Despite his best efforts Cyrus Field could not find an alternative private investor confident enough to finance his new cable project.

Cyrus West Field (1818-92)

Field was preparing to sail home when he was invited to dinner at the home of Charles William Harrison Pickering at Montebello, St Georges Mount, New Brighton Wirral.

Charles William Harrison Pickering was a partner in the private bank of Pickering and Schroder in Liverpool.

***Montebellow*, St Georges Mount, New Brighton**

"In 1857 Cyrus Field made his third trip to England to raise money for laying a cable across the Atlantic. As before both the American and British governments turned a deaf ear to him. The evening before he was to have sailed back to America he dined at our house near Birkenhead. At that dinner my father said 'If I can induce you to stay another week here we will go to London and raise the money to carry out this project.' This, they did.

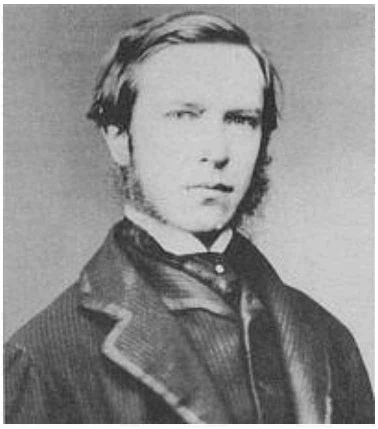
Charles William Harrison Pickering was instrumental in attracting the wire rope company RS Newall of Gateshead to set up a cable making manufactory at Birkenhead – Pickering was appointed as the Managing Director of the new company.

Pickering was also a member of the Royal Mersey Yacht Club at Tranmere, Birkenhead.

R.S. Newall and Co.

The premises in Cathcart Street Birkenhead was set up to manufacture half the length (1,400 miles) of the Atlantic cable, the other half of the cable was manufactured by Glass Elliot and company of Greenwich.

The Birkenhead factory remained open until at least 1861 as further cable contracts followed.



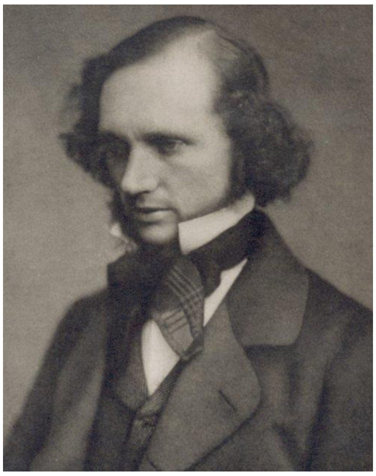
The cable works were situated in a warehouse next to the Great Float (Wallasey Pool) where the cable was produced at a rate of over one hundred miles a week.

The Birkenhead factory was also at the forefront of telegraphic research into the electrical resistance of telegraphic cables under their gifted research engineer Fleeming Jenkin (1833-85).

Fleeming Jenkin (1833-85)

Newall and Company were so impressed with the work of the 24-year-old Fleeming Jenkin that Jenkin was introduced to fellow scientist William Thomson 'as a young man of remarkable ability' engaged at their Birkenhead works. Thompson and Jenkin would become lifelong friends and business partners.

Together, Fleeming Jenkin and William Thompson would become two of the great pioneers of submarine telegraphic cables, the first medium of intercontinental communication. William Thompson is better known today by his later title – Lord Kelvin. Jenkin is now known as the inventor of the cable car; he was also the engineering tutor and lifelong friend of the author Robert Louis Stevenson. Stevenson later wrote Jenkin's memoirs (1888).



Throughout the 1870's Lord Kelvin would take his annual Christmas break with Lord Derby at Knowsley Hall near Liverpool.

Lord Derby was the Commodore of the Royal Mersey Yacht Club at Tranmere, Birkenhead.

Lord Kelvin (1824 – 1907) – friend and lifelong business partner of Fleeming Jenkin.

Lord Kelvin had one other major link with Birkenhead.

In 1872 Kelvin devised a mechanical tide prediction machine (an early version of an analogue computer) and some time after this date the device was installed at Bidston Observatory on Bidston Hill, Birkenhead.

Lord Kelvin's Tide Predicting Machine and Arthur Doodson (1890-1968) of Bidston Observatory.

This apparatus was one of the two machines used by the oceanographer Arthur Doodson to calculate the optimum tides for the D-Day landings in Normandy as falling on the 5th, 6th and 7th of June 1944.

The historic date of the 6th June 1944 - the day that gave the modern world its freedom - was thus decided at Bidston Observatory on Bidston Hill, Birkenhead, England.

Low tide on the D-Day Landings - June 6th, 1944

Bidston Lighthouse (built 1873) and observatory (built 1866)

At Birkenhead, Fleeming Jenkin began conducting experiments in tandem with the Edinburgh based Thompson. They measured the resistance of both copper and gutta percha used in submarine cables. Gutta Percha is a natural rubber latex like substance applied to the outside of the cable as an electrical insulator before being further encased in steel rope.

A cross section of the 1858 cable.

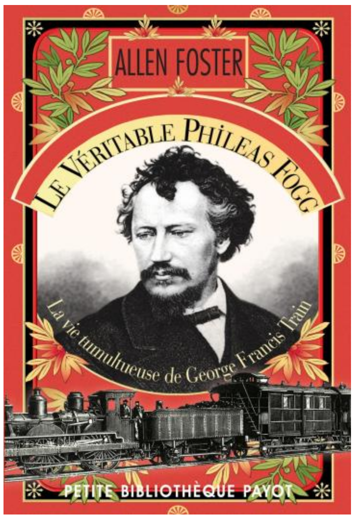
Jenkin, Thompson and others would also eventually agree the international standard unit for electrical resistance now known as the ‘ohm’ – by early 1858 the revolutionary new cable was ready.

The American Government duly converted the then largest ship in the world, the ‘*Niagara*’ into a cable layer, and in the spring of 1858 the *Niagara* arrived at Birkenhead Docks to load the American half of the cable.

An eyewitness wrote;

I was in Liverpool at the time the Niagara arrived there for the purpose of laying the Atlantic cable, and suggested giving a banquet to Captain Hudson and Commander Pennock, who was my cousin, and to the other officers, at Lynn's Waterloo Hotel.

The eyewitness who wrote these words and subsequently gave a banquet for the Captain of the *Niagara* was George Francis Train – the first man to ever travel around the world in eighty days.

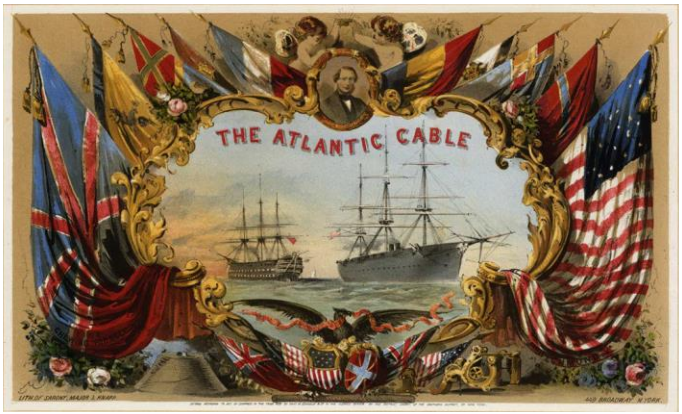


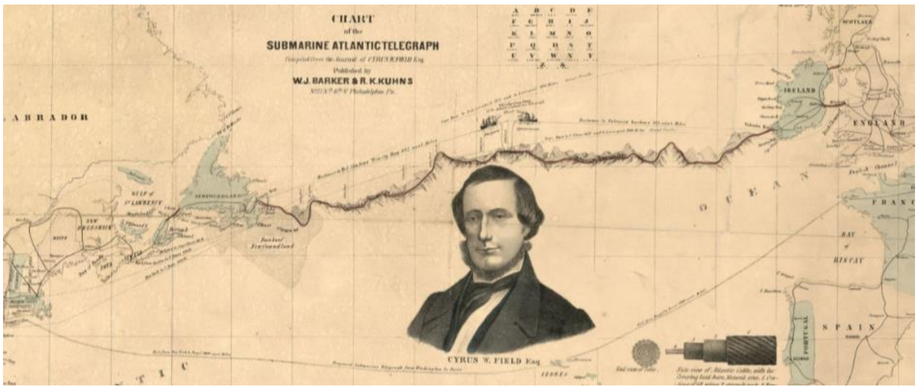
Le Veritable Phileas Fogg

In August 1858 the *Niagara* commenced laying the Birkenhead half of the cable from the settlement of Hearts Content, Newfoundland to the middle of the Atlantic. The British Government used the ship '*Agamemnon*' starting at Valentia, Ireland.

The two ships met in mid ocean and after overcoming the initial shock of realising the two cables twisted in different directions, they were joined together and lowered to the bottom of the Atlantic on August 5th, 1858.

Souvenir commemorating Cyrus Field and the laying of the world's first Atlantic Cable (1858)



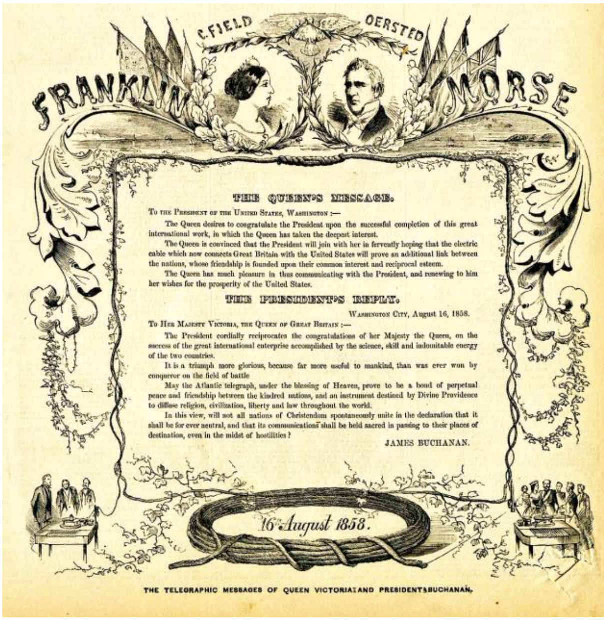


The Route of the 1858 Atlantic Cable across Maury's 'Telegraphic Plateau'

The cable was seen as a great sign of friendship between the United States and Britain, two countries who just 43 years earlier had been in a state of war.

On the 16th August Queen Victoria sent a 93-word congratulatory telegram to President Buchanan. It took sixteen and a half hours to transmit. Buchanan's reply took a little over ten hours. Nevertheless, a new era in global communication had been established.

Queen Victoria's first transatlantic Telegram to President Buchanan and Buchanan's reply.



Queen Victoria was the Patron of the Royal Mersey Yacht Club at Tranmere, Birkenhead.

There were great celebrations on both sides of the Atlantic, none more so than in the United States where every major city held ‘Cable Carnival Processions’ – the largest was in New York with up to a million spectators lining the streets.

The Atlantic Telegraph Procession on Broadway, New York September 1st 1858.

And then disaster struck….

it stopped working after transmitting about 400 telegrams.

Jules Verne *Twenty Thousand Leagues Under the Sea* (1869).

The mystery explained – Father Neptune had sabotaged the 1858 Cable.

The blame was perhaps unfairly placed on the Liverpool engineer, the aptly named Wildman Whitehouse (1816-90). Whitehouse was the appointed electrician to the Atlantic Telegraph Company and his insistence on using higher voltages was said to have resulted in the failure of the cable and he was promptly sacked.

Cyrus Field’s first attempt had thus ended in failure and the start of the American Civil War (1861-65) put paid to any more thoughts of a great cable across the Atlantic. Field would not give up and again he looked towards another man from Birkenhead.

Thomas Brassey of Birkenhead (1805-70).

–THE GREATEST CIVIL ENGINEER OF THE NINETEENTH CENTURY–

–BUILDER OF THREE QUARTERS OF FRANCE'S RAILWAYS–

–CONSTRUCTED A RAILWAY TO SUPPLY THE SIEGE OF SEBASTOPOL–

–AWARDED LEGION D'HONNEUR BY NAPOLEON III–

–FINANCED THE COMPLETION OF BRUNEL'S SS GREAT EASTERN–

–RAISED FINANCE FOR THE 1866 TRANSATLANTIC CABLE–

–FINANCED CONVERSION OF THE SS *GREAT EASTERN* TO A CABLE LAYER–

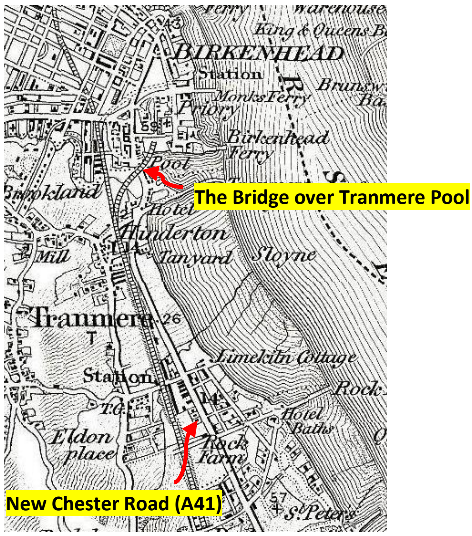
–BUSINESS PARTNER OF CYRUS FIELD–

Thomas Brassey (1805-1870) was the greatest civil engineer and railway builder of the Victorian Age. He was born in Buerton, Cheshire and came to live in Birkenhead in 1826. In the 1830's Brassey built a brickworks and lime kilns at an inlet of the Mersey known as Wallasey Pool.

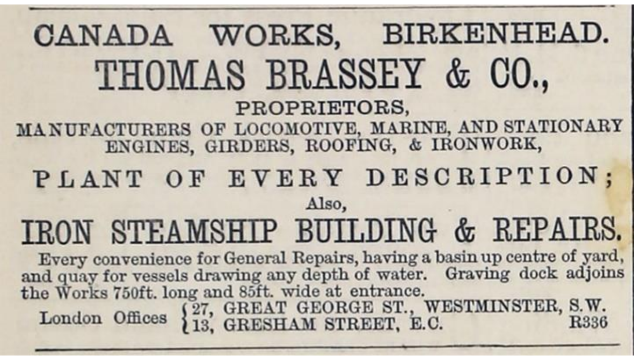
Thomas Brassey (1805-1870)

After training as a surveyor, Brassey's first major engineering scheme was the construction in 1833 of a four mile stretch of the 'New Chester Road' (A41) from Birkenhead to Bromborough Pool, the scheme included building a new road bridge over Tranmere Pool (a tidal inlet to the south of Birkenhead).

Brassey's modern methods of surveying and construction allowed the road to be built in a dead straight line (right).



Brassey's 'New Chester Road' running south of Birkenhead.



In 1853 Thomas Brassey opened up his much larger Canada Works at Wallasey Pool, to the north of Birkenhead. He built a massive factory to construct materials for the Grand Trunk Railway in Canada including the Victoria Bridge over the St. Lawrence River. Brassey's company also built 55 steam locomotives for this railway.

Thomas Brassey became a hero in France when in 1854 he came to the rescue of the British and French forces in the Crimean War. In 1854 the Black Sea Port of Sebastopol was being besieged by an Anglo-French army in danger of perishing in the harsh Russian Winter. Brassey and his partners, Peto and Betts suggested a prefabricated railway line to keep troops supplied with armaments, buildings, tents and provisions.

Brassey oversaw the shipping out of equipment to the Crimea Peninsula. Despite freezing temperatures, the 56km long line was completed in just seven weeks. The siege was maintained, and Sebastopol finally fell in September 1855 – within months Russia sued for peace.

Unloading the railway at Balaclava by Peto, Brassey and Betts (P.B&B) 1855.

Jules Verne would pay a backhanded tribute to Brassey in his book '*Backwards to Britain*' (1859), it would not be Verne's last tribute to the great engineer.

'The British are, with the Americans, the world's leading mechanics. They shrink from no hurdle and when a new idea occurs to them, think up the machine to carry it out. In short, where engineering is concerned, they can achieve anything. It is not surprising that during the Crimean War a serious company was set up, with substantial capital, to tender for the siege of Sebastopol, offering to take the town within an agreed period of time, past which it would pay millions in compensation for every day that elapsed. New machines would have been built to carry out this project, which would certainly have achieved a speedier result, with less loss of life than traditional warfare. But could there be any glory in a war reduced to a company transaction?

Jules Verne *Backwards to Britain* (1859)

On January 12th, 1856, Thomas Brassey dined with the emperor Napoleon III and was invested in the Legion d'honneur for his services to French railways and to the nation in the Crimean War.

Napoleon III was also member of the Royal Mersey Yacht Club of Tranmere Birkenhead.

Napoleon III (1808-73)

In 1857 Thomas Brassey gave financial help to Isambard Kingdom Brunel to complete the largest ship in the world – The *Leviathan* or SS *The Great Eastern,* a ship that will be forever linked with both Jules Verne and the town of Birkenhead.

The Construction of the *Leviathan, later known as the Great Eastern* at Millwall in 1857.

Thomas Brassey built one third of all Britain's Victorian railways, three quarters of all railways in France, one twentieth of the world's Victorian railways including: Barcelona and Mataro Railway, Central Italian Railway, Central Argentine Railway, Queensland Railway, Delhi Railway and the Mauritius Railway.

Other projects included the Hausenstein Tunnel Switzerland, the Rio de Janeiro drainage works, the Calcutta Water Works and the construction of the Victoria Docks and Victoria Embankment in London.

The work of Thomas Brassey – the Victoria Embankment, London.

Having lived in France while supervising the construction of the country's railways, Brassey was in many ways a Francophile and greatly appreciated the country, its culture and its art. By 1865 he had started construction on a huge French chateau mansion on a ridge at Catsfield in Sussex.

The partnership of Thomas Brassey and Cyrus Field was instrumental in the eventual success of laying a second submarine telegraphic cable across the Atlantic.

When Cyrus Field failed in his first attempt, Brassey was eager to renew the work despite the public having lost confidence in the scheme. In 1864 Brassey stepped in to raise the necessary capital to purchase the SS '*Great Eastern*', he formed the 'Telegraph Construction and Maintenance Company' (TELCON) with two other partners, Messrs Gooch and Barber.

Brassey's philanthropy encouraged Cyrus Field to give an 'Inauguration Banquet' at the Palace Hotel in London to commemorate the 'Renewal of the Atlantic Telegraph Company' on 15th April 1864 (right).

Brassey and Charles Francis Adams who was Abraham Lincoln's American Ambassador in London were both invited to give speeches.

EUROPE AND AMERICA.

REPORT

OF THE PROCEEDINGS AT AN

INAUGURATION BANQUET,

GIVEN BY

Mr. CYRUS W. FIELD,

OF NEW YORK,

AT THE PALACE HOTEL, BUCKINGHAM GATE,

ON FRIDAY, THE 15th APRIL,

1864.

IN COMMEMORATION OF THE RENEWAL BY THE

ATLANTIC TELEGRAPH COMPANY,

(After a lapse of Six Years,)

OF THEIR EFFORTS TO UNITE IRELAND & NEWFOUNDLAND,

BY MEANS OF

A SUBMARINE ELECTRIC TELEGRAPH CABLE.

Printed for Private Circulation only.

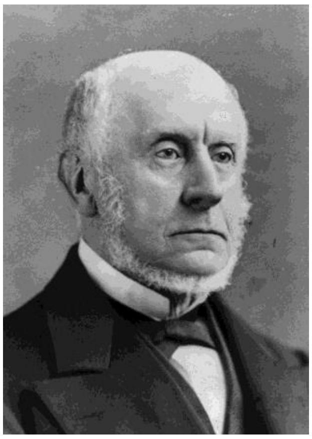
LONDON:

PRINTED BY WILLIAM BROWN & CO., 40 & 41, OLD BROAD STREET.

1864.

Inauguration Banquet for the Atlantic Telegraph Company 15th April 1864.

By April 1864 the American Civil War was still raging and the Birkenhead built Confederate cruiser CSS *Alabama* was still busy capturing and burning its 51st and 52nd United States merchant ships, so Charles Francis Adams speech was surprisingly conciliatory.



I may have made in the course of my mission here, towards keeping in harmony two nations of the same race, when there was a good deal of danger that they might differ; but, after all, I believe that the best and most permanent plan for uniting them is to establish this Atlantic Telegraph, for that and every other thing which tends to bring those two nations closer together will have the effect, I am sure, of increasing their knowledge of each other, and thereby perpetuating a good understanding between them.

Charles Francis Adams (1807-86)

In the same banquet Cyrus Field would say of Thomas Brassey of Birkenhead;

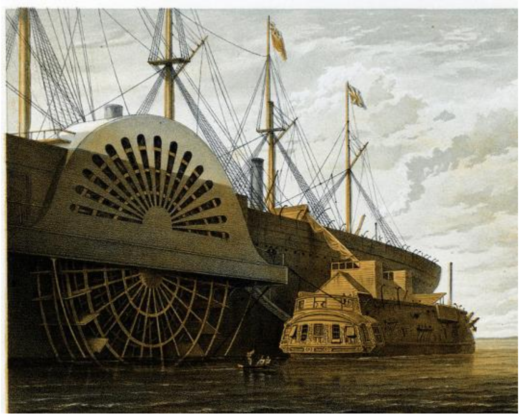
The words spoken by Mr. Brassey in the latter part of January, "Let the Electric Telegraph be laid between England and America" encouraged us all and made us believe we should *succeed in raising the necessary capital, and I then went to work to find nine other Thomas Brasseys ….*

Cyrus Field 15th April 1864.

Cyrus Field would also praise Brassey's purchase of Isambard Kingdom Brunel's *Leviathan* the SS *Great Eastern* for a knock down £25,000.

From this day to the 31st of December 1865, we are to have the use of that magnificent vessel; and, if the cable be not successfully laid, we shall not have to pay a single shilling for the use of her.

The SS *Great Eastern* had many of her salons and rooms ripped out and replaced with large tanks to hold the new cable and in May 1865 she steamed to Sheerness, Kent to take on board over 2,500 miles length of telegraphic cable.



The converted frigate *Iris*, loading cable on to the *Great Eastern* at Sheerness, Kent.

The *Great Eastern* left Sheerness on 24 June and in July 1865 began laying the undersea cable near Valentia Island off the coast of southern Ireland and gradually working its way westwards at a speed of 6 knots. Both Cyrus Field and Thomas Brassey of Birkenhead were on board the great ship to oversee proceedings.

The effort went relatively smoothly for several weeks, but then, yet again disaster struck, and the cable end was lost overboard in mid-Atlantic, forcing the ship to return to Britain and try again the following year.

The Great Eastern Laying the First Atlantic Cable in 1865.

Jules Verne takes up the story.

On 25th May the Nautilus was at 3,836 metres' depth, and at the precise spot where the first break happened that haltered the enterprise. It occurred 638 miles from the coast of Ireland.

It was realized at two o'clock one afternoon that communication with Europe had been interrupted. The electricians on board decided to cut the cable before bringing it up again, and by eleven o'clock they had brought up the damaged parts. A join and splice were made; and then the cable was let down again. But a few days later it broke once more and could not be retrieved from the depths.

The Americans were not discouraged. The audacious Cyrus Field, the promoter of the enterprise, who was risking his entire fortune, launched a new subscription. It was immediately snapped up. Another cable was installed taking greater precautions. The cluster of conducting wires was insulated in an envelope of gutta percha, but also protected by a covering of textile matter, in turn contained in metal casing. The Great Eastern sailed off again on 13th July 1866.

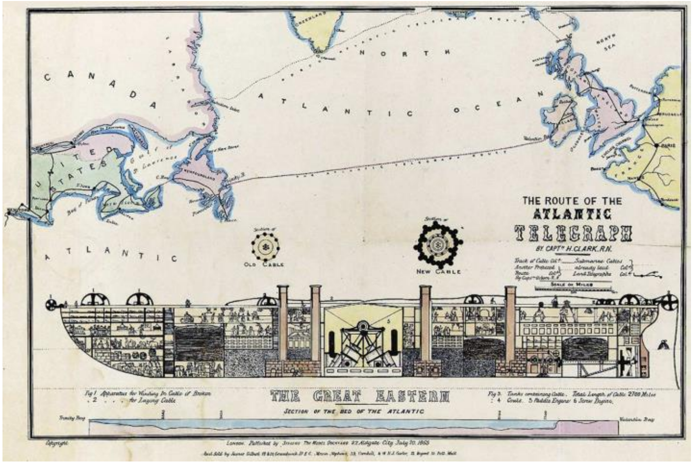
On 23rd July the Great Eastern was only 800 kilometres off Newfoundland, when the news of the armistice between Prussia and Austria after Sadowa was telegraphed to it from Ireland. On the 27th it sighted Heart's Content through the fog. The enterprise had succeeded, and in its first telegram, young America sent old Europe wise words which are so rarely understood: Glory to God in the highest, and on earth peace, good will towards men.

Jules Verne *Twenty Thousand Leagues Under the Sea* (1869)

The successful laying of the Atlantic cable by the SS *Great Eastern* did much to heal the rift between the United States and Great Britain after the bitterness and division of the American Civil War, most of that bitterness and division had been due to the clandestine building of Confederate warships in Birkenhead such as the CSS *Alabama*.

The 1866 Atlantic Cable marked the symbolic start of the 'Special Relationship' between Great Britain and the United States – a relationship that endures to this day.

The Eighth Wonder of The World (1866)



The Route of the 1866 Transatlantic Cable.

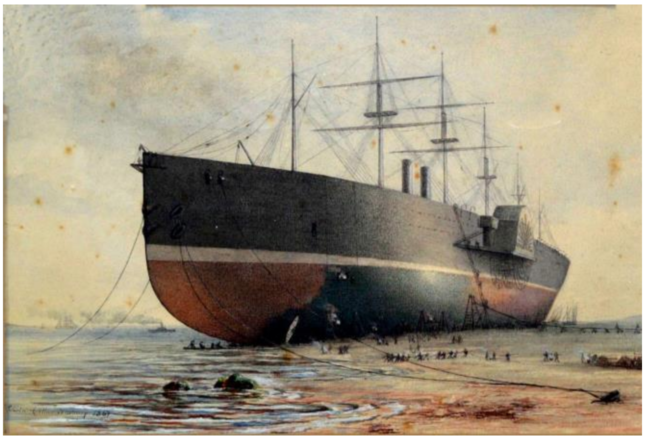
It is Thomas Brassey's historical contribution to the development of the transatlantic cable, his historical contribution to the development of Birkenhead, and indeed his historical contribution to the French nation that will come to the attention of Jules Verne.

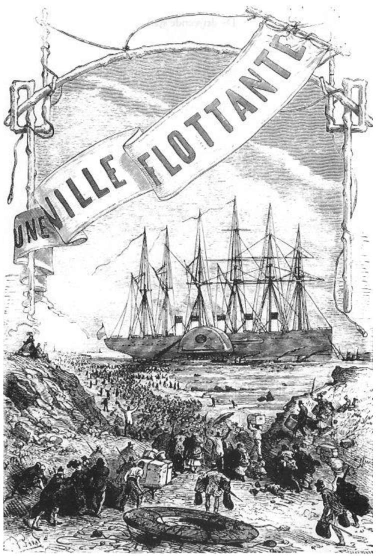
Thomas Brassey was also a member of the Royal Mersey Yacht Club of Tranmere, Birkenhead.

In 1867 the *Great Eastern* was converted back into a passenger liner at New Ferry Beach, Birkenhead.

The work was carried out by Lairds shipyard for the French Government of Napoleon III in order to bring American delegates to the Great Paris Exposition of 1867.

The Great Eastern Beached at New Ferry, Birkenhead (1867)





There would be one special guest joining the engineer Cyrus Field on board the ship at Tranmere Sloyne, Birkenhead on the way to America and that would be the great French author, Jules Verne.

Verne would write about his experiences in his novel *The Floating City* (1871) and maintain correspondence with Cyrus Field for several years.

The SS *Great Eastern* as depicted at New Ferry Birkenhead. *Une Ville Flotante* (*The Floating City*) by Jules Verne (1871).

The joint venture with the French Government turned out to be a commercial disaster and the *Great Eastern* was once again converted into a submarine cable ship. The *Great Eastern* successfully laid new submarine cables between France and Canada (1869), Aden and Bombay (1870), and after a three-year layoff at Birkenhead, she laid two more cables across the Atlantic (1873 and 1874).

In 1889 the *Great Eastern* was eventually scrapped at Birkenhead, where, to this day, the remains of her keel still lie entombed in the mud of the Mersey.

Birkenhead - The last resting place of the *Leviathan*.

The end of the Great Eastern (1889)

..... and lead me in sight of the venerable Abbey of Birkenhead..

.... There Leviathan,
Hugest of living creatures in the deep
Stretch'd like a promontory sleeps or swims,
And seems a moving land; and at his gills
Draws in, and at its breadth spouts out the sea....

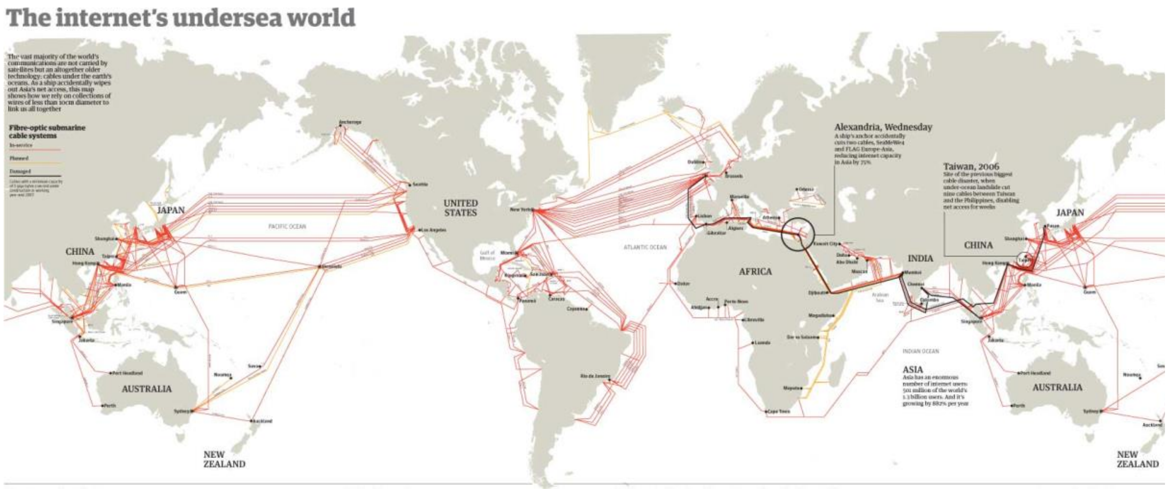
Herman Melville *Redburn* (1849) and *Moby Dick* (1851).

The *Great Eastern* Exhibit at the Jules Verne Museum in Amiens, France.

Today some 95% of internet traffic is carried by fibre optic submarine cables – a tribute to the perseverance of Cyrus Field and other pioneers of the first Atlantic Cable, many of them associated with the town of Birkenhead, England.

Illustrated cross section of a modern-day fibre optic submarine Cable.

The novel *Floating Island* is also a testimony to the genius of Jules Verne, who not only predicted one of the ultimate benefits of submarine cables – that of shopping on the modern-day Internet, but also anticipated its very real future effects on our local high streets.

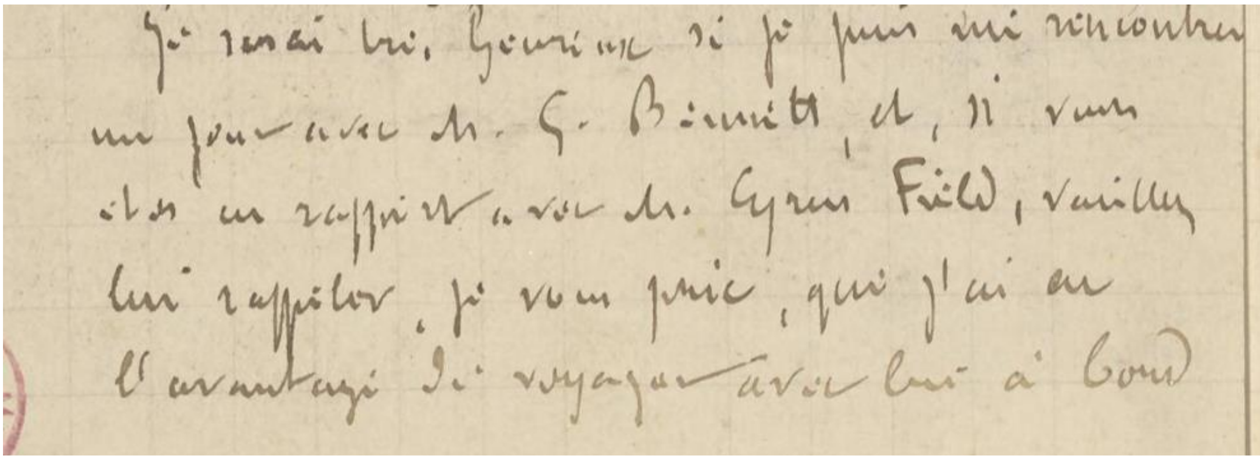


The Internet's Undersea World - The World Network of Undersea Fibre Optic Cables.

Jules Verne would write to Henri Pène du Bois in 1887.

I shall be very glad if I may one day meet with Mr. G. Bennett, and if you are in touch with Mr. Cyrus Field, please remind him that I had the advantage of traveling with him on the Great Eastern on her crossing from Liverpool to New York in 1867.

Jules Verne letter to Henri Pène du Bois 17th July 1887.


Je serai bien heureux si je puis me rencontrer un jour avec Mr. G. Bennett, et, si vous êtes en rapport avec Mr. Cyrus Field, veuillez lui rappeler, je vous prie, que j'ai eu l'avantage de voyager avec lui à bord

Gordon Bennett, editor of the New York Herald will inspire the character of Gideon Spillett of the *New York Herald* in Jules Verne’s *Mysterious Island*. Bennett had two obsessions in life – sailing and laying his own undersea cables across the Atlantic, and he will be the subject of the second mini biography of the three real life people who inspired the characters on Jules Verne’s *Mysterious Island*.