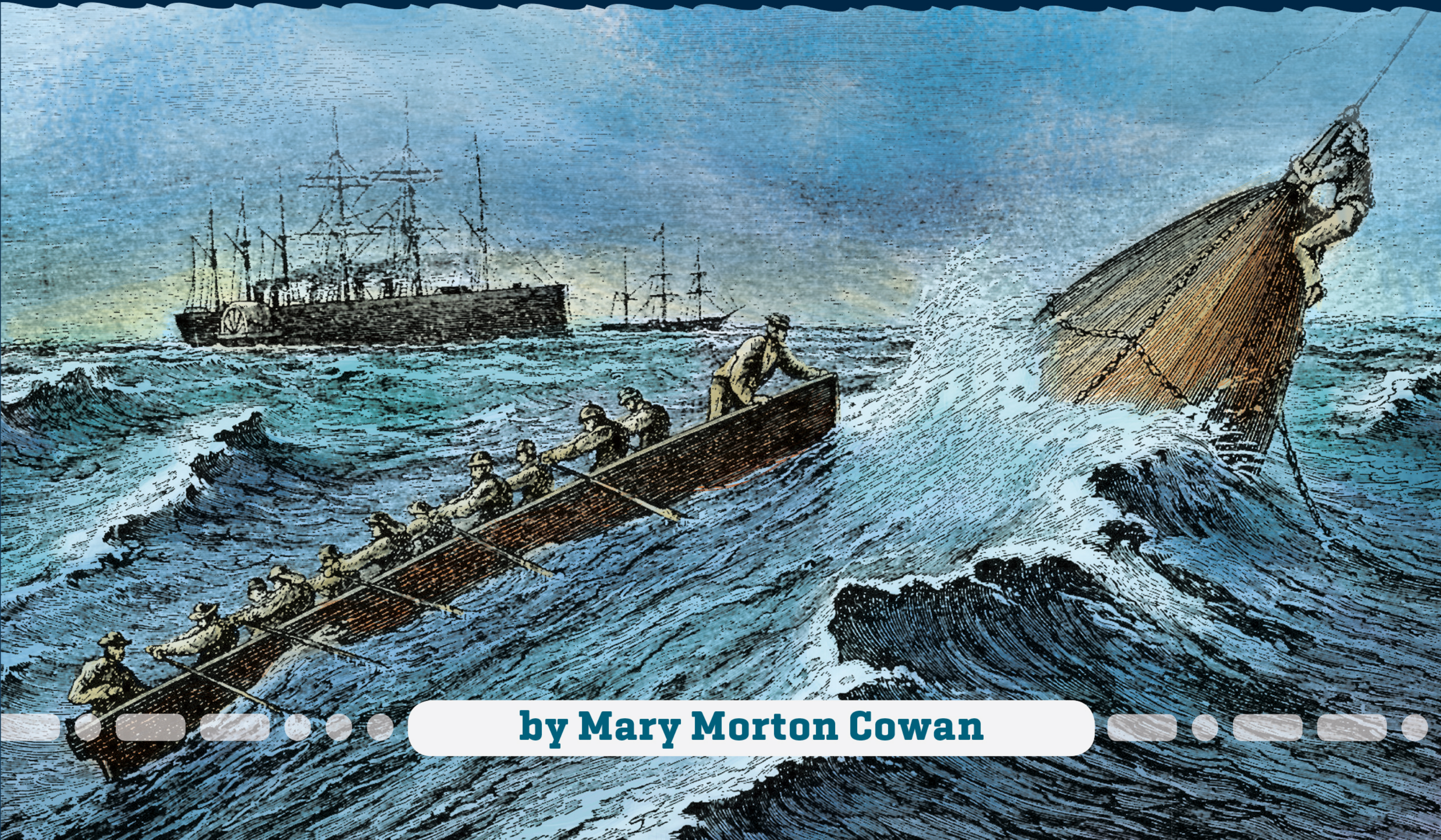
Cyrus Field's Big Dream

The Daring Effort to Lay the First Transatlantic Telegraph Cable

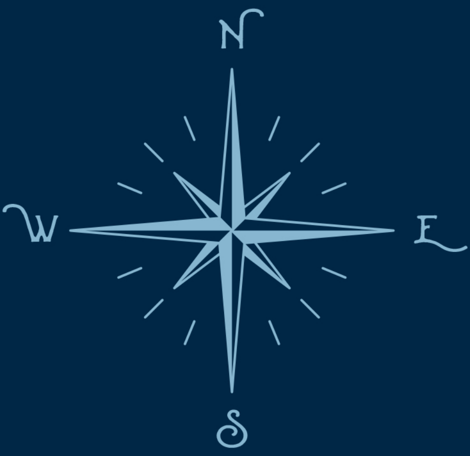


by Mary Morton Cowan

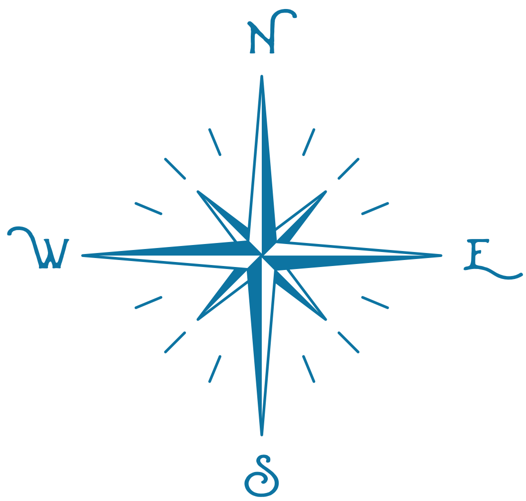
$19.95 U.S. / $25.95 CAN

Cyrus Field had a dream. A BIG dream. To lay a telegraph cable across the Atlantic Ocean, linking North America and Europe with instant communication. But in the early 1850s, many believed this was impossible. No one knew what the ocean floor looked like. No one knew if electric current could even travel that far through a submerged cable. Undaunted, Cyrus Field forged ahead, determined to make his dream a reality. But would years of delays and failed attempts, suspected sabotage, and technological problems prove his dream unattainable?

Award-winning author Mary Morton Cowan brilliantly captures the riveting adventure and drama of Cyrus Field's endeavor to lay the first transatlantic telegraph cable, creating an unforgettable story of determination and courage.



CYRUS FIELD'S BIG DREAM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FOR CATHERINE, DAVID, TIMOTHY, AND MARIANNE, WHO MAINTAIN A WONDERFUL CONNECTION WITH ME, USING TODAY'S METHODS OF "INSTANT" COMMUNICATION

CYRUS WEST FIELD

CONTENTS

"Bold Cyrus Field he said, says he,
I have a pretty notion
That I can run a telegraph
Across the Atlantic Ocean."

FROM THE POEM "HOW CYRUS LAID THE CABLE"
BY JOHN GODFREY SAXE

1

A WILD IDEA

(1854)

One cold winter night in 1854, two men climbed the steps to Cyrus Field's house in New York City. One was Cyrus's older brother Matthew, the other an Englishman named Frederic Gisborne. A servant ushered them in to Cyrus's library. Fire crackled in the fireplace.

Matthew had met Mr. Gisborne in the lobby of the Astor House hotel in January. Gisborne had a dilemma with a telegraph project in Newfoundland, and Matthew thought Cyrus could help. At age thirty-four, Cyrus had recently retired, after making a fortune as a paper merchant. Now he was searching for new ways to invest his time and money. He wasn't particularly interested in Newfoundland, but he gave in to his brother's pestering and agreed to talk with Mr. Gisborne.

Cyrus didn't know how telegraphs worked. He knew only that wires were strung on poles, and messages traveled through them instantly—and he clearly understood the value of instant communication. Many companies were conducting business by telegraph over North America's expanding network of wires. Lines already connected Nova Scotia and New Brunswick in the Province of Canada to Maine, south to New York City, and farther down the Atlantic coast.

Matthew Field brought Frederic Gisborne here to Cyrus's home in New York City's wealthy Gramercy Park neighborhood to talk about a telegraph project.

Mr. Gisborne told Cyrus he wanted to connect the island of Newfoundland with the mainland by telegraph.

Cyrus wondered why.

Gisborne explained that messages from Europe could reach the United States faster if ships could drop letters off at St. John's, the island's easternmost port, and send them as telegrams to New York and other cities. Messages would whiz through wires and arrive in New York two or three days before ships could deliver them.

Gisborne unrolled a map and spread it out on the library table. He explained to Cyrus that the Newfoundland legislature had granted his company permission to build and operate a telegraph line across the island—all the way from the east coast to the southwest corner. An underwater cable to the mainland would complete the connection.

But Gisborne had a problem.

Crews had strung only forty miles of line when he ran out of money. He couldn't pay his workers. His New York financiers backed out, and he was arrested for not paying his debts.

Cyrus knew Gisborne had come to him in search of money. He wanted to know how much Gisborne needed.

Fifty thousand dollars to pay his debts, Gisborne said, plus money for his company to finish stringing the line.

Cyrus stood by the table, calculating dollars in his head. *Why pay a man's debt and invest in a bankrupt company to lay a telegraph line across the Newfoundland wilderness? All to save two or three days' travel time to communicate with Europe*? No. Cyrus was a shrewd businessman, and this sounded like a waste of his money. He made no promises to Gisborne.

After their meeting, Cyrus couldn't stop thinking. About telegraphs. About instant communication. And about trade. London was the center of world trade. Cyrus knew how frustrating it was to wait weeks when trading with British companies. It took ten or more days for ships to deliver mail, and ten more for a reply—*if* the ships didn't go down at sea.

Restless, Cyrus spun his library globe. That's when he noticed Newfoundland was much closer to England than he had thought. Why not lay a telegraph cable all the way across the ocean? Messages would arrive in minutes. People could be in touch every day instead of waiting nearly a month for letters to be shipped back and forth.

What a wild idea! With the persistence Cyrus had shown since boyhood, he latched onto his idea, determined to make it work. And that changed everything.

"CYRUS WAS THE 'SQUIRMIEST' CHILD THEY HAD EVER SEEN."

SAMUEL CARTER III

"I AM CONFIDENT THAT THE TIME WILL COME WHEN THIS PROJECT WILL BE REALIZED."

SAMUEL F. B. MORSE

8

CROSSING THE ATLANTIC

(1856–1857)

In July of 1856, right after the Cabot Strait cable was laid, Cyrus sailed to England. This time, he took Mary and his widowed sister, Mary Elizabeth, with him. They planned to tour while Cyrus held meetings. He met with John Brett and a telegraph engineer named Charles Bright, who had laid many miles of telegraph wire underground in England and a cable across the Irish Sea. The men decided to create a separate British company to raise money in Britain and to work together with the New York, Newfoundland and London Telegraph Company.

At least two large ships were required to carry enough cable to cross the ocean. Cyrus scheduled an appointment with Britain's foreign secretary, Lord Clarendon. Samuel Morse happened to be in London and accompanied him while he presented his plan. When Lord Clarendon asked him what he would do if the mission failed, Cyrus instantly replied, "Charge it to profit and loss, and go to work to lay another." Lord Clarendon smiled and asked him to write a proposal, which Cyrus did immediately.

While waiting for a response, Cyrus took Mary and his sister to Paris for a short vacation. He hoped it would lift his sister's spirits, but soon after they arrived, Mary Elizabeth died unexpectedly. Cyrus and Mary were shocked. It was the third death in their family within two years. Cyrus could not concentrate on his work. He and Mary spent a few quiet days in the English countryside, then he put Mary on a ship to New York so she could be with their children.

Together with John Brett, Charles Bright, and a fourth member, Dr. Edward Whitehouse, Cyrus officially organized the Atlantic Telegraph Company. Whitehouse was a surgeon who had experimented in electromagnetism as it applied to telegraphy, and he became the chief electrician for the company. A few weeks later, they selected directors. One was William Thomson, a brilliant young physicist from Scotland. Scientists didn't fully understand electricity, but Thomson was known for developing theories to solve electrical problems.

In November, Cyrus received a letter from the secretary of the Lords Commissioners of Her Majesty's Treasury. Great news! Britain agreed to provide ships and pay for using the cable once it was operating—*if* the United States would do likewise.

The British government's approval gave Cyrus an extra selling point. He needed to raise money quickly in order to lay a cable the following summer, in 1857. Racing around Britain, he and John Brett introduced the plan to bankers and merchants. Cyrus promoted the cable by hosting elaborate parties for wealthy people and speaking to chambers of commerce in England's industrial cities.

The new company sold stock at £1,000 per share to raise £350,000. Cyrus wanted his countrymen to be part of the project, so he bought one-quarter of the shares to sell in the United States. The rest of the shares were offered for sale at the Liverpool exchange and other stock exchanges in Britain. People were so excited about the idea of a cable that all the shares sold in less than two weeks.

Cyrus was a terrific salesman, but he was no scientist. The company consulted a number of leading experts in England. One was Michael

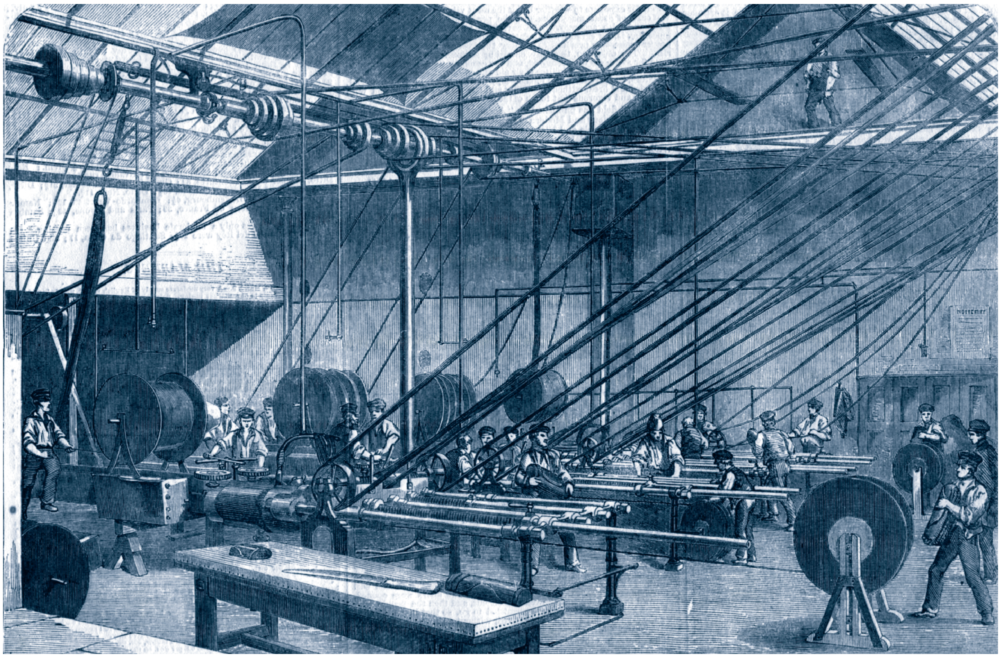
Faraday, a famous English physicist and a pioneer in electricity and magnetism who had invented an electric motor and a generator. He had analyzed problems in early underwater cables. William Thomson had done so as well. The longest successful cable to date was not much more than 100 miles. A cable crossing the Atlantic would have to be 2,000 miles long. Dr. Whitehouse said a long cable would transmit strong signals if a high voltage was used. Samuel Morse, with Whitehouse and Bright, ran an experiment and proved signals could be sent through 2,000 miles of underground cable. They thought if it worked in the ground, it would work in the water. Their experiment satisfied Cyrus.

Some experts, however, doubted that a cable—submerged in water more than two miles deep—could function over such a long distance. Britain's Astronomer Royal declared it mathematically impossible. He believed that the pressure at such a depth would squeeze out all the electric fluid!

Confident that the cable would succeed, Cyrus pushed ahead. On the train, returning to London from a company meeting in Ireland, he met Isambard Brunel, a well-known inventor, railroad owner, and shipbuilder. Brunel seemed interested in Cyrus's cable project and offered suggestions. Later, on the bank of the Thames River, he showed Cyrus the enormous luxury liner he was building, almost seven hundred feet long. "Here's the ship to lay your cable, Mr. Field," he said jokingly. It wouldn't be launched in time for Cyrus anyway.

Cyrus was determined to lay the transatlantic cable the next summer. He and Peter Cooper and other U.S. investors had each spent hundreds of thousands of dollars on the project. The sooner the cable was operating, the sooner they would start getting their money back.

Thomson, Bright, and Whitehouse wanted to do more experiments to pick the best design for the cable. There were two problems: a long cable meant signals would be weak, and blurring of electric pulses had been noticed in earlier underwater cables. That made it difficult to tell the difference between a dot and a dash of the Morse code. People had a hard time reading messages. Thomson and Faraday believed the blurring hap-



Gutta percha insulation is applied to strands of copper wire.

pened because seawater conducted electricity. But Cyrus said there wasn't time to conduct more tests.

He headed for the Gutta Percha Company, a cable manufacturer in London. There, he watched copper wires being wound together, and he sniffed a foul-smelling raw material boiling in huge vats. The gum, called gutta percha, came from a tropical tree discovered near Singapore, which was under British rule. Scientists had learned that when they heated gutta percha, it softened and they could mold it into any shape they wanted. When it cooled, it kept that shape. Best of all, it made an excellent insulator for underwater cables.

Cyrus ordered 2,500 nautical miles of cable, which included enough for slack, to cover the irregular ocean bottom. He pushed for completion by the end of June, because summer was the best time to sail across the Atlantic Ocean. Then, worn out, he sailed home, hoping to spend a quiet Christmas with Mary, who was expecting another child, and their family.

Cyrus had just unpacked his bags when he learned that the Cabot Strait cable had broken. Not only that, the landline in Newfoundland was in a shambles. Without the Newfoundland connection, his dream plan was dead. He had intended to go to Washington, D.C., right after New Year's Day to seek U.S. support to match Britain's agreement. That would have to wait. He left for Newfoundland immediately. Quickly, he recruited a new superintendent to repair and manage the system. While in St. John's, he arranged for the legislature to grant the new British company the same privileges his brother David had arranged in 1854. But keeping such a relentless pace took its toll. Cyrus collapsed from fatigue and became so ill a doctor ordered him to bed. Refusing to stay, he caught the next ship for New York.

Before hardly taking a breath at home, he set off for Washington, D.C. The British navy had agreed to supply one ship to lay a cable, but only if the United States would supply the other. It was essential that he borrow a Navy ship, and the U.S. Congress had to approve the loan. Peter Cooper had already written a letter to President Franklin Pierce, making the request. When Cyrus arrived, he found that Cooper's letter had convinced the president and New York senator William Seward to support the plan. In January 1857, Seward wrote a bill and presented it to the Senate and the House of Representatives to grant the requests Cooper had made.

Despite the enthusiasm of a few, Cyrus faced tough opposition in both houses of Congress. The United States was not on friendly terms with Great Britain. In the previous eighty years, the two countries had fought the Revolutionary War and the War of 1812, both on U.S. soil, and some congressmen worried about another war. Many thought Britain should pay the entire bill. After all, both Ireland and Newfoundland were in British territory. Others argued that if Britain controlled a transatlantic cable entirely, the United States would be left out.

Senator Seward agreed with Cyrus's desire for peace. Seward spoke to the other senators. "My own hope is, that after the telegraphic wire is once laid, there will be no more war between the United States and Great Britain. I believe that whenever such a connection as this shall be made, we diminish the chances of war."

The USS *Niagara* left the Brooklyn Navy Yard for England in April 1857. Launched just two years earlier, the 328-foot-long wooden warship had an iron frame.

Senator Stephen Douglas of Illinois spoke in favor of loaning ships. “England tenders one of her national vessels,” he said, “and why should we not tender one also?”

But most congressmen were opposed. Cyrus wore himself out speaking individually with almost every member of Congress, trying desperately to convince each one about the importance of the cable and the need for government support. Debate dragged on for weeks.

“Those few weeks in Washington were worse than being among the icebergs off the coast of Newfoundland,” Cyrus’s brother Henry wrote. The cable was never “entangled in such a hopeless twist as when it got among the politicians.”

Finally, the bill passed the House of Representatives by nineteen votes. Two weeks later, Cyrus sighed in relief when the bill passed the Senate—

by a single vote. The United States would furnish two of its best Navy ships, the USS *Niagara* to lay half the cable and the USS *Susquehanna* as a support ship. Cyrus stood by President Pierce when he signed the bill on March 4, 1857, just hours before leaving office.

Cyrus tried to sell his shares in the British company to Americans, but he discovered that most people were skeptical of his plan. Many thought he and Cooper and the other promoters were crazy fools, wasting vast amounts of money on a ridiculous idea. They didn't believe it could work, and only a few were willing to invest in the project. Cyrus had to keep the remaining shares himself, which amounted to more than $300,000. That, plus the money he had already put into the project, was most of his assets. But the disgruntled opinions didn't stop him. Cyrus stayed home for a few days after Mary gave birth to Cyrus William in March to be sure she and the baby were healthy. Then he hurried back to England.

Cable production had already begun in February 1857. It was being made in two parts, the inner core and an outer protective layer.

This cable was better than the Cabot Strait cable. The conducting part of the inner core was a strand of seven copper wires instead of three. Six wires were twisted around a center wire. The wires were coated with the smelly gutta percha, then wrapped in hemp soaked in a mixture of tar, pitch, linseed oil, and beeswax. The design disturbed William Thomson. He wanted a purer grade of copper, but it was too late to change the cable specifications.

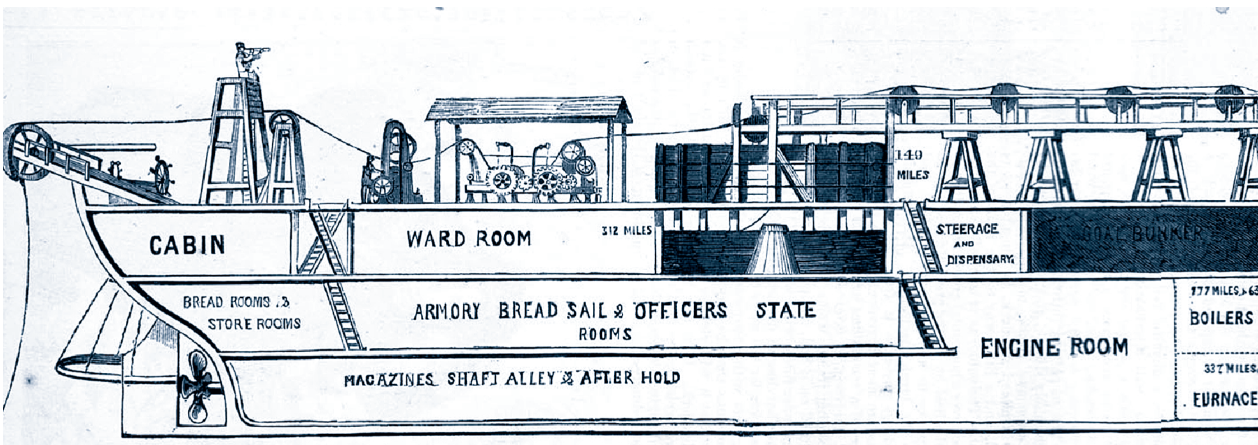
The cable was manufactured in sections and joined into one-hundred-mile lengths. As fast as they were made, Dr. Whitehouse tested them to see if they conducted current. The lengths were then wound onto reels for shipment to another factory to have the protective layer applied.

To be certain the cable would be ready to lay that summer, two factories applied the protective layer. Half of the reels were shipped to a factory near London, the other half near Liverpool. Both companies wrapped the insulated copper core with 18 strands of iron wire, each strand made of 7 wires, twisted together. They coated the whole thing with a thick tar mixture. Cyrus figured 7 wires times 18 strands meant 126 wires would be protecting the cable. He was frustrated when he learned that the two factories wound the wires in opposite directions. One spiraled to the right, the other to the left, which meant the cable would untwist when the ends were spliced together. Workers quickly designed a special device to make sure the splice would hold.

The cable was heavy. Every nautical mile of cable weighed a ton, and there were 2,500 miles of it. And an even heavier shore-end cable weighed more than nine tons per mile. The shore ends were stronger so they wouldn't become snagged by ships' anchors or fishermen's trawlers, or be shifted by powerful tides. A ten-mile length was required for the coast of Ireland, fifteen for Newfoundland.

The *Niagara* left New York for England on April 24, 1857. It was the largest steam frigate in the world and the finest ship in the U.S. Navy. Because this was a peaceful mission, the space where its big cannons would have been was cleared, and a few bulkheads, or walls, had been removed to make room for the cable. The only guns on deck were four small cannons to signal messages to other ships. The side-wheel steamer *Susquehanna* was pulled from duty in the Mediterranean Sea.

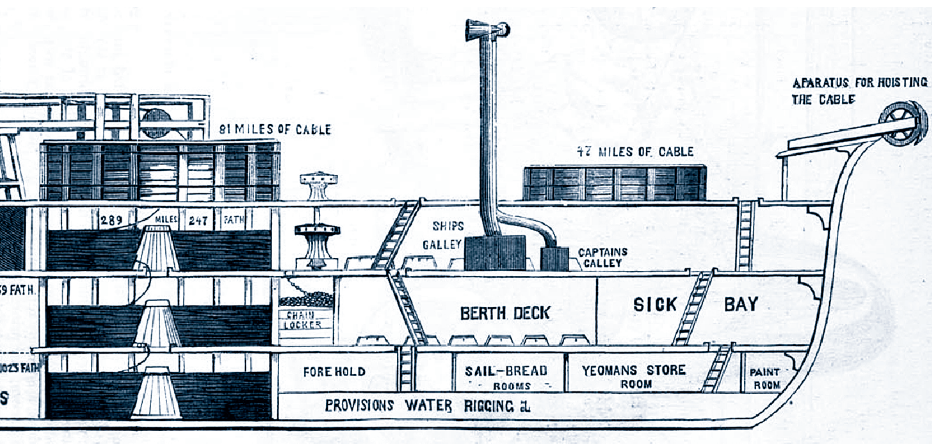
Britain provided three ships: the HMS *Agamemnon* to lay half the cable, HMS *Leopard* to assist, and HMS *Cyclops* to lead the fleet and take ocean soundings. Previous soundings had located a steep drop-off about two hundred miles off the coast of Ireland. Cyrus and the other company direc-



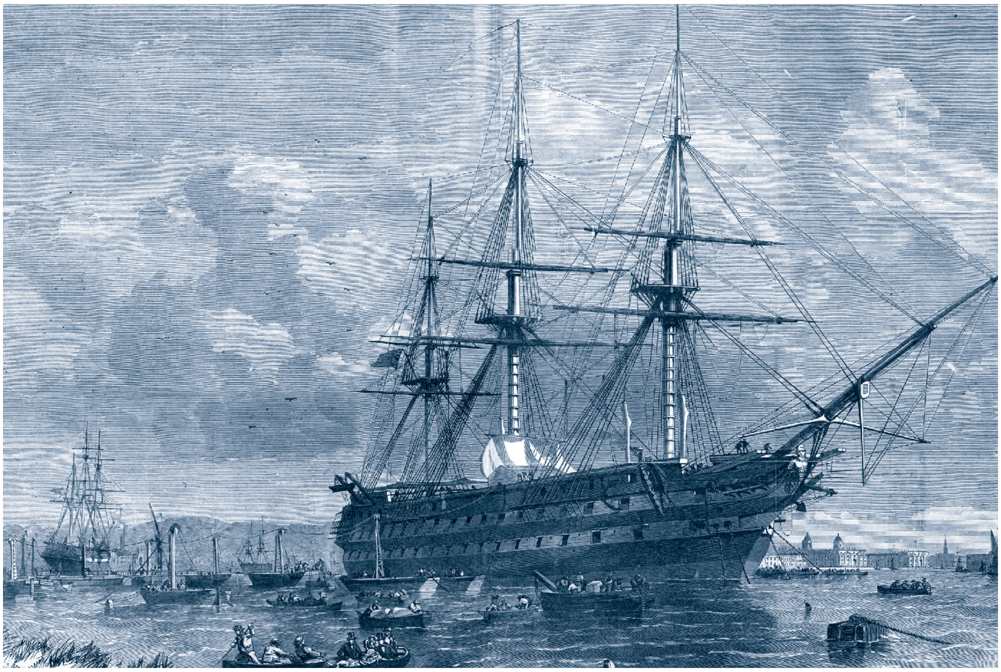
tors wanted more details. Sudden depth changes would affect how the cable should be reeled out, and Cyrus didn't want anything to go wrong. Earlier sounding crews had collected samples of soil from the ocean floor. They scooped up soft ooze, made of microscopic shells, and Cyrus was assured it would make an ideal bed for a cable.

Shipyard workers made room for giant tanks to hold the cable on both the *Niagara* and the *Agamemnon*. More open space was needed on the *Niagara*, and sections of the crew's quarters were removed. A huge area in *Agamemnon*'s midships would hold most of her half of the cable. To keep the cable from getting caught, a propeller cage was attached at the stern of each ship. And both ships were outfitted with bulky paying-out machinery to lay the cable, including a brake to control the speed. Cyrus saw where the cable would wind around four wheels, each one with grooves to keep the cable from slipping. The cable would run out to a fifth wheel just over the stern of the ship, before dropping into the ocean.

Niagara's half of the cable was loaded in Liverpool, the *Agamemnon*'s in London. It took 120 volunteers three weeks to load it onto the ships. They took turns, 30 men at a time, coiling the cable into the circular tanks. One man walked round and round in the tank, handing the cable to coilers stationed at the edges, piling layer upon layer. By the third week of July, the cable was loaded. The ships sailed for Ireland.



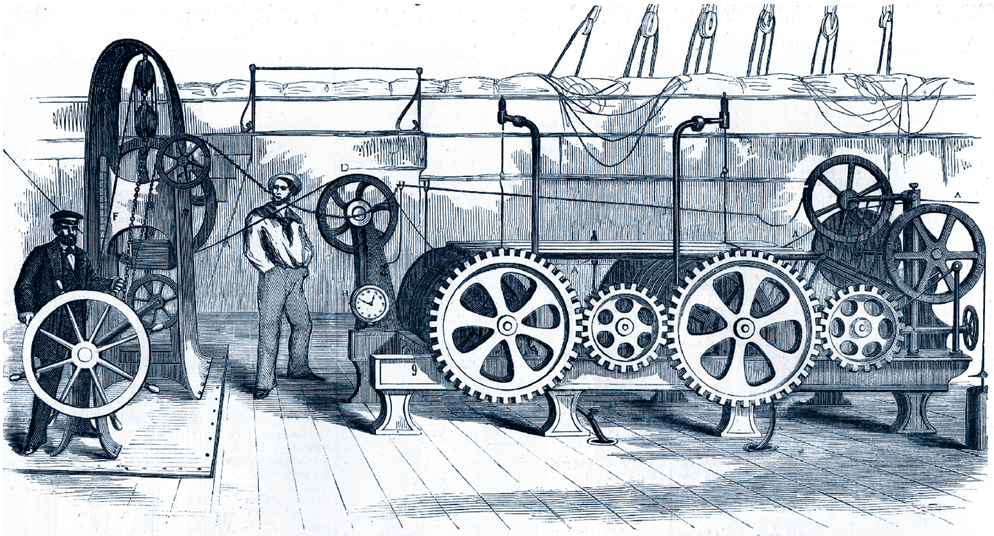
Seven large tanks were built on several decks of the *Niagara* to hold the cable. The four tanks on the lower decks are shown with white cones in the center. A cage was built at the stern to keep the cable from becoming caught in the propeller.



The propeller-driven, three-masted British warship HMS *Agamemnon* carried one-half of the cable.

Dr. Whitehouse said he wasn't well enough to sail on the cable-laying expedition but would stay at the telegraph station in Ireland. William Thomson could take his place. Cyrus was in good hands. Joining him on the *Niagara* were Charles Bright, chief engineer; William Everett of the U.S. Navy, engineer of the *Niagara* and assistant to Bright; and Samuel Canning. John Mullaly, the *New York Herald* correspondent who had sailed across Cabot Strait with Cyrus, was on board also. Samuel Morse joined the group, but he became sick and couldn't help.

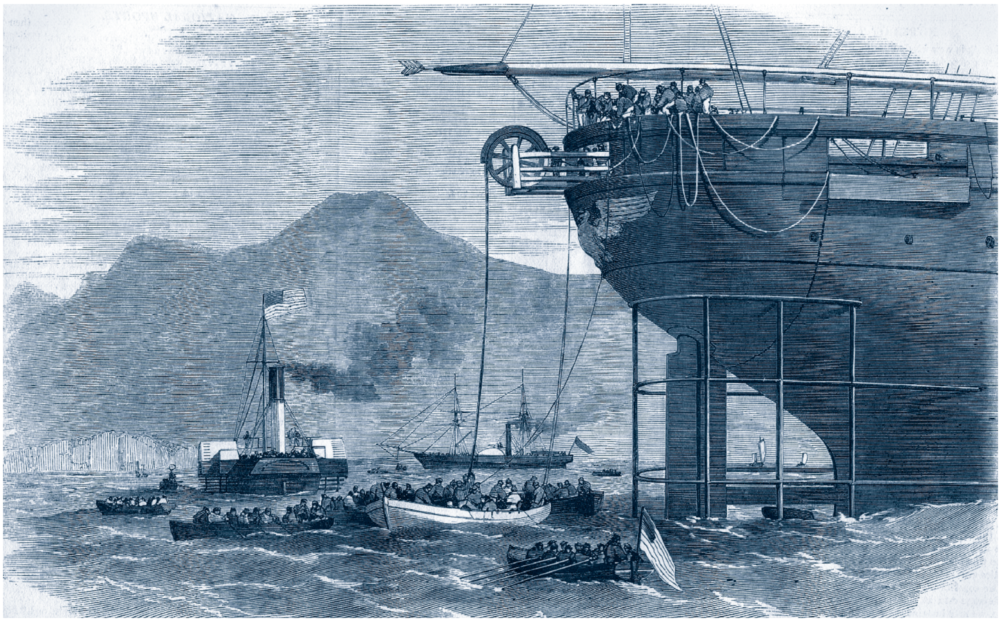
The fleet met at Queenstown, on the south coast of Ireland, on July 30. The *Niagara* and *Agamemnon* were moored three-quarters of a mile apart, and their cables were spliced together temporarily so Whitehouse could test the entire length. The electric current ran perfectly! Early the next morning, Cyrus sent a message to the Associated Press in Liverpool: "The Submarine Cable on board the Niagara and Agamemnon, over twenty-five



This drawing shows the cable machinery used on both the *Niagara* and *Agamemnon.* The cable wound around the wheels, passed through the dynamometer and brake, and out over a stern wheel, where it dropped into the ocean. Here, the brakeman turns a wheel to adjust the brake and control tension.

hundred miles long, was joined together last evening, and messages were sent through its entire length in less than a second. Everything works beautifully, and we are all in high spirits."

At the last minute, Dr. Whitehouse decided to change the plans, causing a frustrating delay. Cyrus and Bright intended for the two cable ships to meet in mid-ocean, splice their cables together, then start reeling them out. They would steam in opposite directions, *Agamemnon* toward Ireland, *Niagara* toward Newfoundland. Once the cable was connected, the ships would be able to keep in contact with each other, but not with Ireland. Whitehouse, who was staying at the telegraph station, insisted on keeping in constant contact with the ship that was laying the cable. After much opposition, Cyrus and Bright gave in to Whitehouse. *Niagara*'s half would be laid first. In mid-ocean, the crews would splice the end of *Niagara*'s cable to *Agamemnon*'s half and *Agamemnon* would lay the rest of it. Whitehouse could receive progress reports all the way across the ocean.



Crews in small boats grab the tip of the shore-end cable from the *Niagara*, ready to row it to steamships, which will lay it into a cove at Valentia.

The ships then sailed to Valentia Island on Ireland's west coast. Charles Bright had earlier surveyed that shoreline for a landing site. He chose Valentia because it was sheltered from heavy seas. On August 5, two small steamships brought the heavy shore-end cable into a little cove. Smaller boats then towed one end closer to shore. In the shallow water, sailors carried it through the surf and pulled it to a temporary cable house. Hundreds of excited well-wishers grabbed hold and pulled with them, tar smearing all over their hands.

The next day, the fleet finally set sail for Newfoundland. Cyrus spoke to the crowd: "Ladies and gentlemen, Words cannot express to you the feelings within this heart." He extended an American welcome to the crowd, many of whom had relatives who had emigrated to the United States during the potato famine a few years earlier. He ended his short speech with, "What God has joined together, let no man put asunder." The crowd roared with cheers. His Excellency, the Lord Lieutenant of Ireland, Earl of

Carlisle, extended good wishes, and the vicar of the parish offered prayer. Two thousand people waved good-bye.

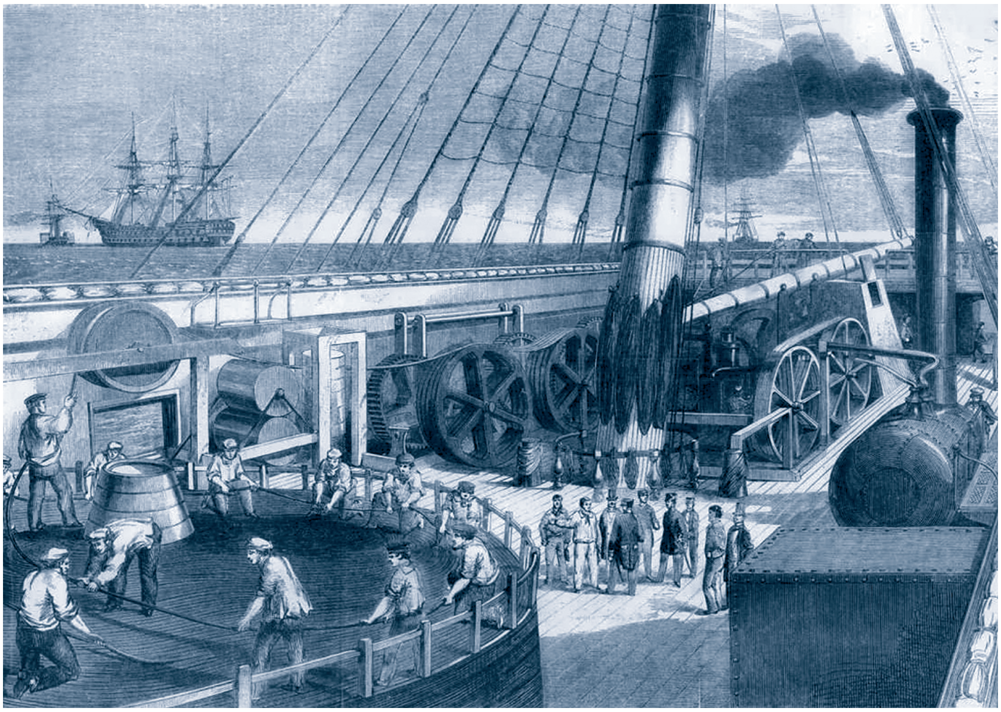
The *Niagara*'s crew was split into two watches, each four hours long. Men were stationed on deck to make sure the cable stayed in line. Still, after five miles, the shore-end line caught in the machinery and broke. The *Niagara* had to go back. Cyrus paced the deck while ships retrieved the cable. They spliced it and started again, very slowly, to avoid another accident.

Eight miles out, they spliced the shore end to the main cable. The *Niagara* now sped up to five knots, and the electricians began sending messages back to shore. They sent electrical signals to the telegraph station at Valentia at scheduled times to make sure the line was working. Cyrus and the officers could also send messages.

Lifeboats and life buoys were lined up along the deck. Men stationed on the poop deck at the stern kept careful watch. If anyone fell overboard, they would release a life buoy at once. Sometimes Cyrus stood there and watched the cable drop steadily into the sea.

Crew's quarters were crowded, now that the *Niagara* had been refitted to make room for tons of telegraph cable. Cyrus, the engineers, electricians, and the ship's officers bunked in tiny bedrooms. Sailors slung hammocks to sleep in when they were off watch. The officers ate in a mess hall, but the sailors ate on a lower deck, in groups of fifteen. They spread canvas tarps on the floor for tablecloths and sat cross-legged around them. A few fiddlers among the crew scratched out tunes. The minute the cook set a big pot of dinner down in the center of the tarp, the hungry sailors grabbed their spoons and scooped food onto their plates, scarfing down whatever was served, mostly stew and bread, pork, beef, and potatoes. One concoction, called "dunderfunk," was meat and beans, mixed with hard bread, molasses, and a little vinegar.

Up on the top deck, the paying-out machinery grumbled like a coffee grinder, making a constant racket. Yet its rhythm was a strange comfort. Whenever the "old coffee-mill" stopped, everyone ran on deck to see what went wrong. Tar could harden in the grooves, which sometimes threw



Men on the *Niagara* reel out cable from a tank on the top deck, careful to keep it from kinking. *Agamemnon* and support ships are visible in the background.

the cable off the wheels. The ship would have to be stopped, the cable clamped, and the tar softened with oil. Or the cable could kink and have to be straightened. Or it could snap with no warning. No matter what caused the machinery to stop, Cyrus and everyone else became alarmed. The fear of losing the cable "haunted us like a nightmare," reporter Mullaly wrote. "Not a word was spoken except by those in command."

On Sunday, the captain held a divine service for all who were not on duty. At noon on Monday, the fifth day out, they were 214 miles from shore, and had reeled out 255 miles of cable. Bright wrote: "At 4 o'clock in the morning of the 10th the depth of water began to increase rapidly from 550 fathoms to 1,750 in a distance of eight miles." That's when things became tricky. The brakeman had to carefully watch how fast the cable was reeling out. As the ocean deepened, the weight of more cable hanging off the ship made it pull harder and the crew didn't want it to get out of control. But applying the brakes too quickly or too strongly would snap the cable. Fortunately, the brakes worked well.

The water kept getting deeper. "At this time we were in 2,150 fathoms water, and the cable was going out in magnificent style," Mullaly wrote. Cyrus knew a fathom was six feet. That meant the water was now almost 2½ miles deep. And the electric current was still flowing!

Dr. Whitehouse, at the Valentia station, forwarded a message from the ship to newspapers: "All well on board. Moderate westerly wind. All more and more trustful of complete success."

Suddenly, at 9:00 p.m., the electrical current stopped. The electricians worked frantically for more than two hours to fix it. But they couldn't. They had just decided to cut the cable and reel back in what had been laid when the signal mysteriously returned. "You could see the tears standing in the eyes of some as they almost cried for joy," Mullaly wrote.

But no one could explain why it happened, and unexplainable problems made Cyrus nervous. The ship became strangely silent. Cyrus went to bed, exhausted, but he couldn't sleep. Shortly before daybreak, he heard commotion on deck.

Charles Bright came to Cyrus's door, trembling. "The cable's gone," he said.

Cyrus stood up, numb.

The cable sank more than two miles to the bottom of the sea.

Bright told Cyrus he had stepped away from the machine for only a few minutes. He left a mechanic in charge, who either didn't adjust the brake wheel at all or turned it the wrong way when the ship rolled on a wave. The strain on the cable made it snap.

Cyrus ran on deck and gazed out over the water. The broken end of the cable hung over the stern wheel, swinging loosely. One-half a million dollars' worth of cable was lost in a fraction of a second. And Cyrus's dream was sinking.

In less than five minutes, the entire crew was on deck, stunned. The machinery had stopped grinding, and an eerie silence hovered over the ship. Men stared at each other in disbelief.

Cyrus remained calm. He wasn't going to quit now. Having suffered defeat plenty of times, he was all the more determined to succeed. *Surely a cable would work!* They had laid nearly four hundred miles of cable before it broke. And electric current had flowed well when the cable was in deep water. "Losing no time in vain regrets, he called a meeting at once on board the Niagara," Mullaly wrote.

The captain signaled the other ships in the fleet, and their captains came aboard. Cyrus told them he refused to give up. As soon as possible, he intended to try again. He asked the two cable ships to stay in mid-ocean for a few days to try splicing *Niagara*'s remaining cable with the cable on the *Agamemnon* and check for current. And he requested more ocean soundings.

The ships lowered their flags to half-mast. Cyrus boarded the HMS *Leopard* and headed for London to call a meeting of the directors of the Atlantic Telegraph Company. On board the *Leopard*, Cyrus wrote a letter to his family to tell them the sad news. But he assured them, "My confidence was never so strong as at the present time, and I feel sure, that with God's blessing, we shall connect Europe and America with the electric cord." He added, "Do not think that I feel discouraged, or am in low spirits, for I am not."

Newfoundland eagerly awaited the fleet's arrival. A new telegraph station was ready in Bull's Arm, at the head of Trinity Bay. St. John's planned a celebration. The company's paddle steamer, *Victoria*, was ready to welcome the fleet. Everyone waited. Day after day, people scanned the horizon, searching for the *Niagara*. St. John's finally sent out a news item, which appeared in New York's *Evening Post* on August 25: "There are no signs at Trinity Bay of the Atlantic telegraph fleet." Eventually, newspapers reported that the cable had broken and the fleet had returned to England.

Two days later, the *New York Herald* published a message from Cyrus. "Although the unfortunate accident will postpone the completion of this great undertaking for a short time," he reported, "there appears to be no great difficulty in laying down the cable; and it has been clearly proved that you can telegraph successfully through twenty-five hundred miles of cable."

The company directors decided they couldn't make a second attempt that year. Almost four hundred miles of cable had been lost. There was not enough to finish the work and there wasn't time to manufacture more and lay it before autumn storms swept across the North Atlantic. They also needed to redesign the paying-out machinery and put safety mechanisms in place. And the crew must be better trained.

The two cable ships returned to Plymouth, England, unloaded the cable into tanks on shore, and returned to duty in their respective navies. A few months later, Bright recovered fifty miles of cable in a small paddle steamer to reuse the next year.

Cyrus focused on next year's plans. The company had lost cable, time, and an enormous amount of money. And the public on both sides of the Atlantic no longer had faith in the project. A writer for the Brooklyn *Eagle* wrote, "We cannot see how any hope of the success of the enterprise can be entertained. On the contrary, we must look upon it as one of those things which cannot be done."

When Cyrus arrived home in December 1857, he was surprised to find his paper company nearly bankrupt. The United States was in another financial panic. If Cyrus hadn't been spending so much time and energy on the cable project, he might have seen clues. In the past few years, jobs had been plentiful, and buying and selling had increased, particularly in the West, where population was growing rapidly. Railroads and real estate boomed. But when expansion slowed down, companies couldn't make loan payments to banks, and the banks struggled with insufficient money to operate. To make matters worse, in September, a steamship sank off Cape Hatteras, North Carolina, in a hurricane. It was filled with a huge shipment of gold from California. New York banks were depending on that delivery and, as a result, many failed. This slowed the entire economy and the stock market crashed. Cyrus W. Field & Company couldn't pay its bills because companies who owed it money couldn't pay. Cyrus took some goods off his shelves and returned them to suppliers. He wrote legal notes to his other suppliers, promising payment with interest as soon as possible.

Cyrus needed his paper company to be healthy to support his family, and he was in a hurry to gather financial support for the next cable expedition. He feared economic recovery would be slow, making both goals difficult. Cyrus held on to his dream, but he wondered how he could make it happen.