able, became unusually boisterous, so that the fleet were not ready to commence operations until late on the 25th of June.

The first splice was made between the Niagara and Agamemnon on the morning of Saturday, the 26th of June; and after each ship had payed out about three miles, the cable broke on board the Niagara, owing to its over-riding and getting off the pulley leading on to the machine. Both vessels put about and returned, a fresh splice was made, and again lowered over at half-past seven o'clock. The paying out proceeded beautifully until early on Sunday morning, when the signals suddenly ceased. The cable was cut, and the Niagara repaired to the rendezvous. The cause of the rupture was equally mysterious to those on board the Agamemnon, and no satisfactory conjecture has since been made.

The cable was again spliced on the 28th, and the steamers parted. Everything worked beautifully during that night, and the next day. But at nine o'clock P. M. on the 29th, the announcement of "No signals" was made on board the Niagara. At the time 142 miles of cable had been payed out. It was subsequently ascertained that the cable parted, for some reason unknown, about six fathoms from the stern of the Agamemnon. About 400 miles of cable were lost during these trials, the effect of which upon the public confidence in the final success of the undertaking was most depressing.

But the managers continued indefatigable. The fleet sailed a second time from Queenstown on the 17th of July, joined the cable on the 29th, and on the 5th of August the world had news of success."

The cost of the telegraph cable has been put down as follows :—

Price deep sea wire per mile,	$200
Price spun yarn and iron wire per mile,	265
Price outside tar per mile,	20
Total per mile,	$485
For 2,500 miles,	$1,212,500
For 10 miles deep sea cable, at $1,450 per mile,	14,500
For 25 miles shore ends, at $1,250 per mile	32,250
Total cost,	$1,259,250

As soon as it was known that the cable was laid some amusing incidents occurred. One poor lady, whose husband had been detained in jail on account of his inability to pay a fine imposed upon him for "indulgin' in his wakeness," (as she termed it,) begged a telegraph operator "to tell her aunt in Derehigney, Ireland, to sind her the loan of tin dollars." When informed that a New York merchant had just paid fifty-seven dollars for a despatch of as many words to London, and that it would cost her about ten dollars to get a message to Ireland, she exclaimed:—"Musha, what's the good ov a blissin' that's so dear?"

Mr. Field telegraphed Lieut. Maury the moment the success was certain, and the gallant lieutenant forwarded this communication to the *National Intelligencer*, of Washington, with some remarks, in which he shows that his prediction of the proper time to lay the cable proved to be correct. He says the following extracts, italics and all, are taken from a letter written at the Observatory on the 28th March, 1857, to the Company, upon the best time for laying the cable, and which have happily proved to be correct :—

"Nevertheless, the enterprise upon which you are engaged is an important one. Good weather for it is very desirable, nay, almost indispensable; and these barometric anomalies are suggestive. Perhaps it would be wise for the steamers not to join cables until after the 20th of July. I think between that time and the 10th of August the state of both sea and air is usually in the most favorable condition possible; *and that it is the time which my investigations* indicate as the most favorable for laying down the wire. I recommend it, and wish you good luck."

The landing place of the eastern end of the cable, Valentia, or Valencia, is a town or village at the southest extremity of the island of Valentia, Ireland, and is beautifully enclosed among brown mountain slopes. The harbor is deep, capacious, and deeply land-locked, and being the most western port of Europe, has lately attracted considerable attention, in consequence of a proposal to make it the western terminus of railway communication, and a principal station for Atlantic steamers.

Trinity Bay and Bull's Arm Bay, the western landing place, as our readers are doubtless aware, are on the eastern coast of the island of Newfoundland, about Latitude 47 N., and Longitude 52 W.

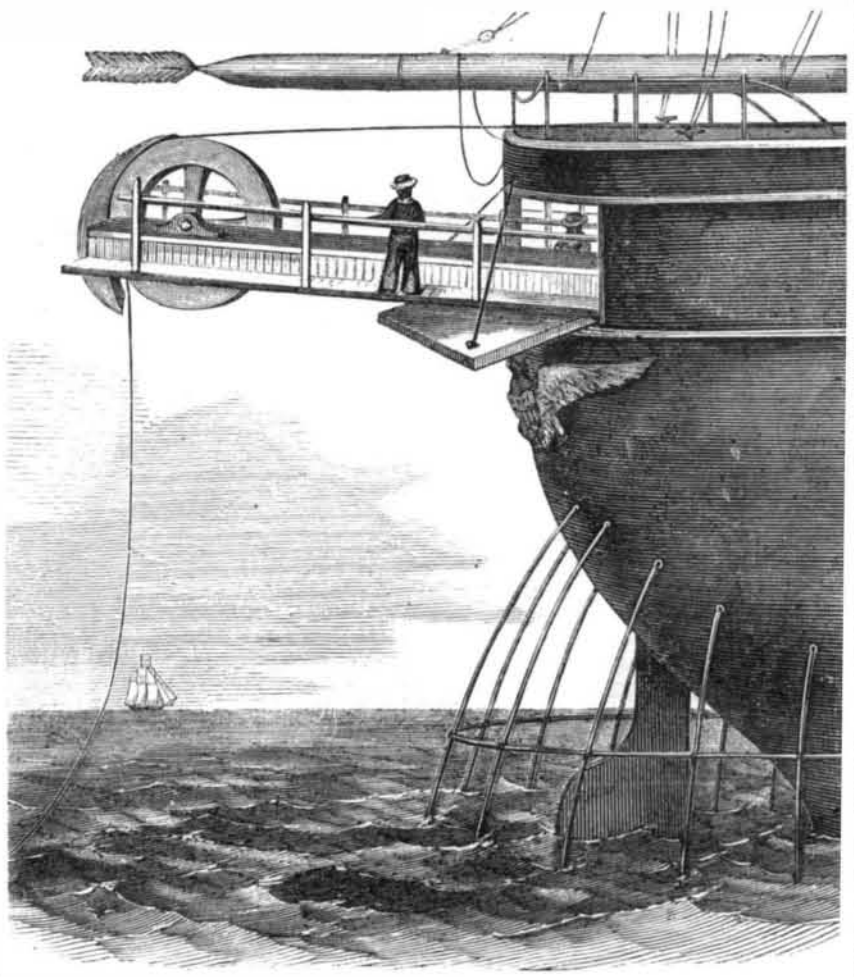
The leading spirit of this great undertaking has unquestionably been Cyrus W. Field, of this city, and consequently he is receiving compliments and praise on all hands in paragraphs like the following:—

"So much the more, therefore, do we honor the courage and coolness which impelled Mr. Field and his backers to persevere in the attempt to lay the cable this season, in the face of discouragements more formidable than attended the sailing and voyage of Columbus in his memorable quest of a New World."

The country rings with the praises of Mr. Field; shall their echoes die away and leave no mark of their existence? Richard Cobden received from the British people a free gift of $500,000 for his agency in effecting the repeal of the Corn Laws; shall no effort be made to attest, in some substantial manner, the pride and gratitude with which the American people regard Mr. Field's heroic achievement?

We present a view of the stern of our

STERN OF THE STEAMSHIP NIAGARA.



beautiful steamship, the *Niagara*, with the projecting machinery by which she laid the Atlantic Cable. It differs from that first used in many particulars, and more especially in the addition of the gallery or platform along the sides, for the purpose of affording the engineers entire control of the cable as it "run out." The iron network was to prevent the cable getting foul of the propeller and rudder. On examination of the engraving it will be seen that the telegraphic wire, as it was payed out, passed over the poop and through the grooved wheel, the outer edge of which is covered by a shell, which kept the cable from slipping out of the groove.

The value of such a quick means of communication across the Atlantic may be better estimated when we recollect that the Battle of New Orleans was fought on the 8th of January, 1815, and the treaty of peace had been signed at Ghent, after six months negotiation, on the 24th of December, 1814. Had the telegraph then existed, how many valuable lives would have been saved to adorn their country and be an honor to their age, for brave men are always the strength of a community.

In the construction of a submarine telegraph, there are certain conditions to be observed and certain points to be attained. The first is that the conducting wire shall be perfect, and of the best conducting power, so that it may be made thin and light. Then this wire must be protected and perfectly insulated by some non-conducting material, such as india-rubber and gutta percha. This must be protected from the action of the waves, and the abrasion of the pebbles and rocks on the bed of the ocean or sea, and iron wire best serves this purpose. Many cables have been constructed on these principles, and the following are at present laid :—

SUBMARINE CABLES.

	Date.	Miles.
Dover and Calais,	1850	24
Dover and Ostend,	1852	76
Holyhead and Howth,	1852	65
England and Holland,	1853	115
Portpatrick and Donaghadee (2 cables)	1853	26
Italy and Corsica,	1854	65
Corsica and Sardinia,	1854	10
Denmark—Great Belt,	1854	15
Denmark—Little Belt,	1854	5
Denmark—Sound,	1855	12
Scotland—Frith of Forth,	1855	4
Black Sea,	1855	400
Solent, Isle of Wight,	1855	3
Straits of Messina,	1856	5
Gulf of St. Lawrence,	1856	74
Straits of Northumberland,	1856	10½
Bosphorus,	1856	1
Gut of Canso, Nova Scotia,	1856	2
St. Petersburg to Cronstadt,	1856	10
Atlantic Cable—Valentia Bay to Trinity Bay,	1858	1950
Total,		2,872½

It has also been found necessary to diminish the weight per mile with the length, and the weight of the Atlantic cable is little over a tun a mile.

There is some curiosity felt about the species of electrical instruments to be used in the transmission of messages across the ocean. The apparatus first employed will be that of Messrs. Whitehouse & Bright, the English electricians in the service of the Company. By their recording machines a powerful current of electricity is demanded of such power, perhaps, as to make it necessary that some more delicate instrumentality should be put in requisition. Hughes' telegraph can be set in motion by the smallset amount of the electric fluid. It discards altogether atmospheric air as an agent in propelling the machinery, and wastes no time in going over the whole range of the alphabet, as is the case with some other printing telegraphs. One wave of electricity suffices for a letter, and sometimes for a whole word; whereas, by Morse's system, it takes five waves to perform the same labor, and by House's, ten. Still, the friends of the last named telegraphs contend that their favorite method of telegraphing has some advantages not possessed by the Hughes plan.

Many find it difficult to realize the events of the last few days, and even yet some can scarcely believe that the cable is laid, and that Europe is joined to America. But there is no room for doubt. That which thousands said was impossible has been accomplished, and each one should feel a spirit of devout thanksgiving within them, a hearty wish that Cyrus W. Field and his coadjutors may be properly rewarded for their great energy and perseverance, and a hope that the Flag of the Atlantic Telegraph Company—on which the "stars and stripes" and "union jack" are combined—may ever float as an angel of peace between the two nations.