

CYRUS W. FIELD.

The successful laying of the Atlantic cable marked a great step in modern progress, and with that event is indissolubly linked the name of Cyrus W. Field, who died at his summer home, Ardsley, near Dobbs Ferry, N. Y., on July 12, in his seventy-third year. He had been lying in a critical condition for ten days, subject to violent delirious spells, each one of which threatened to end his life, and through which he was carried only by a wonderful vitality. At the time of his death there were present his three brothers, David Dudley Field, Rev. Henry M. Field, Justice Stephen J. Field, of the United States Supreme Court.

Cyrus West Field was born in Stockbridge, Mass., Nov. 30, 1819, his father, David Dudley Field, being a Congregational clergyman. Cyrus Field's elder brothers, David Dudley and Stephen Johnson, were sent to Williams College, but the father was unable to do the same for him. When he was 15 years old he came to New York, where his brother, David Dudley, already in practice as a lawyer, got for him a clerkship in A. T. Stewart's dry goods store, where he worked three years, beginning at \$1 per week, being advanced to \$2 per week the second year and \$4 the third year. At the end of his term of apprenticeship he went into business for himself as a junk dealer and paper maker.

In spite of one failure he made enough in twelve years to be able to retire from business. He was 33 years old when he did this. When he was 21 he had married Miss Mary Bryan Stone, of Guilford, Conn., who died only a few days ago, and by whom he had six children.

In 1853, a few months after he had retired from business for life, as he had supposed, he became interested in the subject of submarine telegraphy. It was brought to his attention by a telegraph operator named Gisborne, who had secured a charter from the Newfoundland Legislature for a cable between St. Johns and New York. A cable was laid across the Gulf of St. Lawrence after great difficulties. Mr. Field then induced Peter Cooper, Moses Taylor, Marshall O. Roberts, and Chandler White to join him in the enterprise. A company was formed under the title of the New York, Newfoundland and London Telegraph Company. It was thirteen years after this before any results worth speaking of were obtained. This was the most remarkable period of his life. He bore up against rebuffs of all kinds and financial disaster which would have easily subdued most men. He made fifty journeys across the Atlantic on behalf of his scheme. A few great men encouraged him. Mr. Thackeray and John Bright were among them. In this country he found the reluctance of the investing public even greater than in England. After a long series of dismal failures a cable was laid in 1858. Two ships, one coming from Newfoundland and the other from Ireland, met and spliced the ends together. Messages were sent over the cable for a few weeks, and then it became useless.

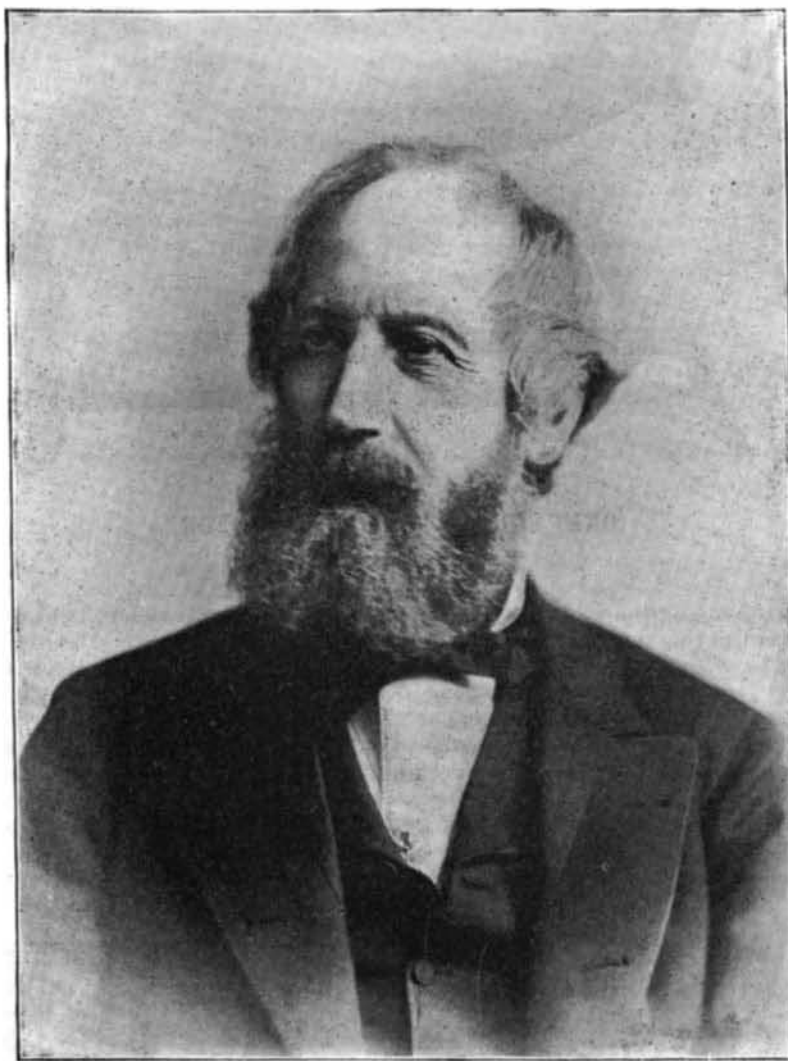
Undaunted by this failure, Mr. Field again went to England in 1859 to make preparations for another attempt to lay the cable. Mr. Field's company had a nominal capital of \$1,750,000, representing 350 shares of \$5,000 each. Mr. Field himself subscribed \$440,000. Great Britain granted an annual subsidy of \$70,000 and the United States an annual subsidy of \$70,000 for twenty-five years. Both governments granted these of ships of war in laying the cable.

In 1865 the Great Eastern started to lay the cable. When the cable had been laid 1,200 miles from Valentia, and only 600 more remained between it and Heart's Content, it was broken by a sudden lurch of the vessel and sank two miles and a half into the ocean. Repeated attempts to bring the ends of the cable to the surface failed. The enterprise was abandoned for that year, but in the summer of 1866 it was resumed. All honor was given Mr. Field after that notable July 27, 1866, when the feat was finished. Congress voted him a gold medal and the thanks of the country. John Bright, in Parliament, called him "the Columbus of modern times." The Paris Exposition in 1867 gave him the Grand Medal. Other marks of appreciation were the thanks of New York, with the freedom of the city and a gold snuff box; the thanks of the Chamber of Commerce of New York, with a gold medal; the thanks of the State of Wisconsin, with a gold medal;

the thanks of the American Chamber of Commerce of Liverpool, with a gold medal; a decoration from King Victor Emanuel, of Italy; and a silver service from George Peabody.

Mr. Field himself, after the success of the cable, thus touchingly told of his personal experiences: "It has been a long, hard struggle—nearly thirteen years of anxious watching and ceaseless toil. Often my heart has been ready to sink. Many times, when wandering in the forests of Newfoundland, in the pelting rain, or on the decks of ships, on dark nights—alone and far from home—I have almost accused myself of madness and folly to sacrifice the peace of my family and all the hopes of life for what might prove after all but a dream. I have seen my companions, one and another, falling by my side, and feared that I, too, might not live to see the end. And yet one hope has led me on, and I have prayed that I might not taste of death till this work was accomplished. That prayer is answered, and now, beyond all acknowledgments to men, is the feeling of gratitude to Almighty God."

Ten years later, in 1876, when Mr. Field was in possession of an ample fortune, and had achieved a position with which most men would have been content,



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he became interested in the plan of supplying New York City with rapid transit by means of the elevated railroad system. Dr. Gilbert had been for some time previously pushing this scheme, and to his efforts were due the construction of the first portion of the present system, in Ninth Avenue. But it was not till Mr. Field took hold of the enterprise that anybody realized that this method of rapid transit would ever amount to anything. He interested Samuel J. Tilden and other capitalists in the undertaking, and the building of the present main lines of elevated railway from the Battery to the Harlem River rapidly followed. This method of transportation has proved a great boon to New York City, and the stock which Mr. Field originally bought for \$14 a share went up to \$172 a share. Mr. Field afterward lost a considerable part of his fortune by the manipulation of prominent Wall Street operators in the elevated railway stocks, and the stratagems employed in the management of the property and combinations of different interests. He finally retired from business in the summer of 1887, although he still remained a special partner in the banking and brokerage business of his son, Edward M. Field. The disastrous failure of this house last year, and the subsequent confinement of the son in an insane asylum, where he was at the time of his father's death, undoubtedly had much to do with hastening the death of the father.

The lives of but few men afford illustrations of such

wide extremes of fortune as Cyrus W. Field passed through. From a most humble beginning his course was a constant battle, persistently and pluckily fought, with far more than the ordinary number of reverses, till he had attained the highest honors and the greatest worldly success. He was most happily married, and for half a century had an almost ideally perfect home, but the last days of his life were inexpressibly saddened by the affliction which came to him through his son's business downfall and mental aberration. He had earned and enjoyed the highest distinctions, and had experienced the severest reverses and the most cruel blows of misfortune, but he never lost his self-poise, and to the very last his spirit was brave and resolute.

End of a Long-Contested Patent Office Case.

The Commissioner of Patents has decided a long-standing controversy between Thomas A. Edison and Joseph W. Swan, in favor of the latter. The matter in contention was as to the priority of right to a patent for an electric light carbon for incandescent lamps. The dispute had been pending since 1881.

Swan laid claim to having invented the 'parchmentized paper in March, 1880. He filed his application in April following, and the patent was issued in October following. Edison did not file his application until May, 1881, but he said that he had made and used the invention as early as 1879. Edison asserted his claim under the provision of law which entitles the inventor to his product as soon as he discovers it, and not from the date of his application for a patent. In 1881 Edison filed the following issues of interference:

"1. A carbon formed from a straight strip of cardboard paper or parchment paper, and bent to the form of an arch, hoop, or loop, and carbonized by heat while in a bent condition.

"2. A carbon for an electric lamp made of the carbonized parchment paper."

On these testimony was taken on both sides, and for a time a spirited legal battle was waged. The Westinghouse people took an active hand, for at that time they thought that the parchmentized paper would continue to be of invaluable profit to them. But electrical genius was too fertile to stop short at parchmentized paper as the best material for incandescent lamps, and in a year or two there were a half dozen new patents that were considered superior to it. Since that time the case has lagged, not being considered of any material commercial value.

The Diameter of Fulgurites.

When a bolt of lightning strikes a bed of sand, says an exchange, it plunges downward into the sand for a distance, less or greater, transforming simultaneously into glass the silica in the material through which it passes. Thus, by its great heat, it forms at once a glass tube of precisely its own size. Now and then such a tube is found and dug up. Fulgurites have been followed into the sand by excavations for nearly thirty feet. They vary in interior diameter from the size of a quill to three inches or more, according to the bore of the flash. But fulgurites are not alone produced in sand; they are found also in solid rocks, though very naturally of slight depth and frequently existing merely as a thin glassy coating on the surface. Such fulgurites occur in astonishing abundance on the summit of Little Ararat, in Armenia. The rock is soft, and so porous that blocks a foot long can be obtained, perforated in all directions by little tubes filled with bottle-green glass formed from the fused rock.

The Electric-Lighted Buoy Service in the Harbor of New York.

In a recent article which appeared in these columns we commented on the Gedney's Channel buoy installation. The advantages of electrically lighted buoys are obvious. It is safe now for large steamers to enter the harbor at night, picking their way along the channel by the lighted channel buoys, and steamers frequently do so. Our allusion to the difficulties of maintaining the system referred to the troubles incident to all submarine cable work, especially where current has to be conveyed to floating objects and where absolute certainty of operation is a *sine qua non*. The system is an advanced one, and has our best wishes for its success.