DEATH OF A GREAT INVENTOR.

One of the greatest of inventors has passed away. Captain John Ericsson, whose name will ever be held in grateful remembrance, died at his residence, 36 Beach street, New York, on Friday, March 8th, at the age of eighty-six, after having spent a life of wonderful activity.

The amount of work that John Ericsson did in his life time is marvellous to contemplate, even when his robust constitution, his indomitable application, and his 86 years are considered. The list of his inventions is tremendous, and their influence on the civilization of the world and the development of science is almost incalculable. He was born in Langbonshytton, Province of Wermland, Sweden, July 31, 1803. His father, Ofer, was a mining proprietor, and his brother, Baron Nils Ericsson, was Colonel of engineers, and became chief of the Swedish railways, and with his three sons sat in the Swedish Diet. John Ericsson's mother, Sophie, was the daughter of an iron-master.

From this it will be seen that the influences of his early life tended to develop in him a taste for engineering. This was strikingly evinced at the early age of ten, when he constructed a miniature sawmill and pumping-machine that attracted the attention of Count Platen, chief of the great ship canal intersecting the Swedish peninsula. Through the influence of this official he was appointed a cadet of engineers two years later, and at the age of thirteen he was made a leveller on the canal. At seventeen he entered the army as ensign, and rapidly reached a lieutenancy in consequence of his fine military maps, which attracted the attention of King Charles John Bernadotte. Meanwhile all his spare time had been used in making drawings of every implement and machine connected with the canal. He also devised a line engraving machine, by means of which in one year he completed eighteen large copper plates, which experts pronounced to be of superior merit.

When about twenty-two years of age Lieut. Ericsson constructed a flame engine of ten horse power, and journeyed to London on leave in 1826 to introduce it. Once in the British capital he resigned his commission in the Swedish army. This was accepted, but not until he had been promoted to a captaincy. During the next few years Ericsson produced in England about forty machines of various kinds, and of which about one-third were patented. Among them were a file-cutting device, an instrument for taking soundings, which is still in use; a hydrostatic weighing machine, an apparatus for making salt from brine, a pumping engine, a rotary steam engine, and a famous system of artificial draught for steam boilers, which dispensed with huge smokestacks and economized fuel. In 1828 he applied to the steamship "Victory" the principle of condensing steam and returning the water to the boiler. In 1829, in the wonderfully short period of seven weeks, he planned and completed an engine, the "Novelty," which was the lightest, most elegant, and speediest locomotive known up to that time. It attained a speed of thirty miles an hour, which was considered amazing at that time. In the "Novelty" he introduced several novel features, the four most noted of which are retained in the railway engines of the present day. In this same year he invented a steam fire engine, which created a great sensation in London, and for which, in 1840, he received the great gold medal of the Mechanics' Institute of New York.

All this had been done in the first twenty-five years of Ericsson's existence, the undeveloped youth of the average man.

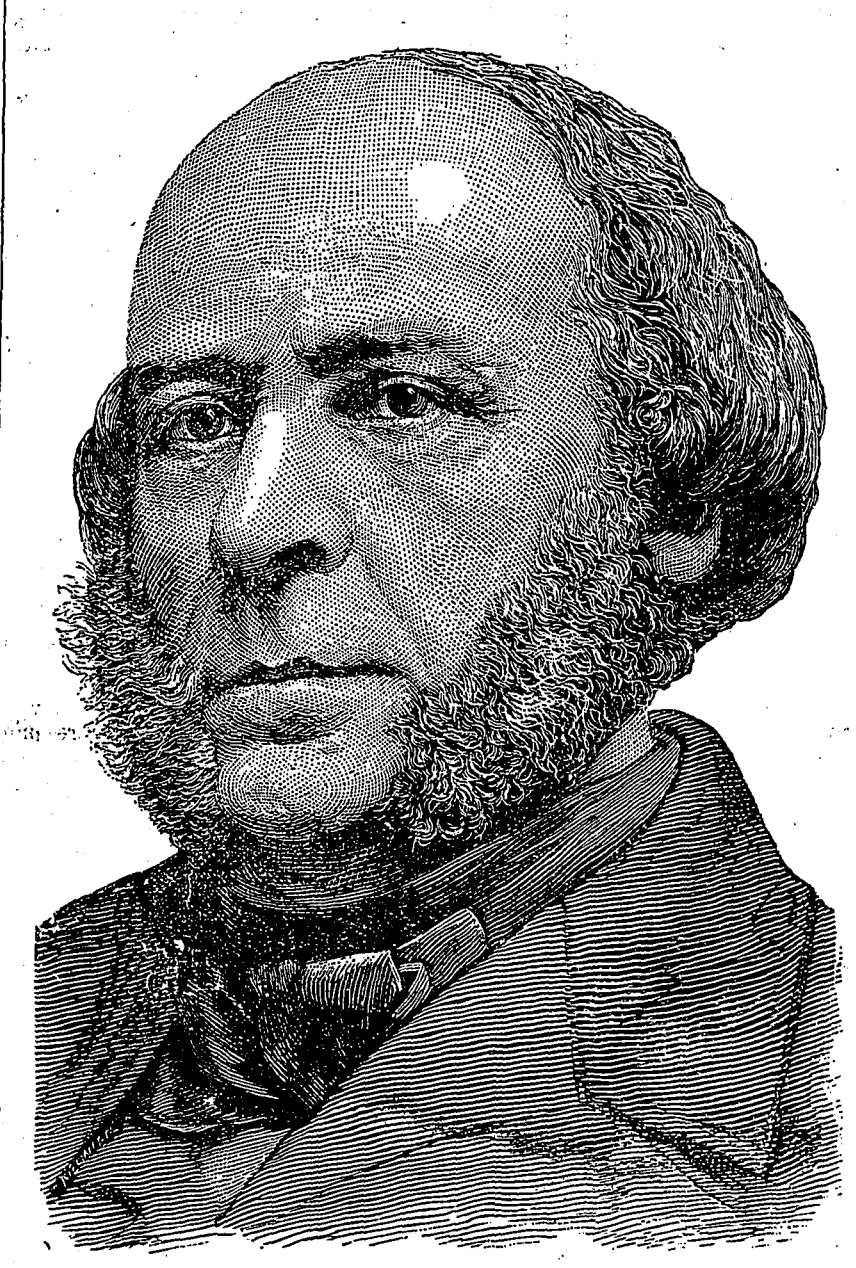
In 1830 he introduced "linked motion" for the reversing of engines, and a modification of his device is now in use on all locomotives. It was in 1833, however, that he created his first great scientific sensation by realizing his long-cherished plan of a caloric engine. The scientific world was astonished, and lectures on the invention were delivered in London by Dr. Dionysius Lardner and Michael Faraday. It was also highly approved by Dr. Andrew Ure and Sir Richard Phillips. It was unsuccessful in practice, however, on account of the high temperature necessary. Twenty years later the caloric ship "Ericsson" was propelled by a motor on the same principle. A sea trial was made from New York to Washington and back, but while it was established that fuel could be greatly economized, the speed attained was too slow for competition with steam. It was beneficial, however, in directing the attention of the inventor to the improvement of the stationary caloric engine and its application to light mechanical purposes. The result is that thousands of these engines have been built, hundreds of which are now in use in this city for pumping water in private dwellings. In 1862 the American Academy of Arts and Sciences awarded the gold and silver Rumford medals to Ericsson "for his improvements in the management of heat, particularly as shown in his caloric engine of 1858."

But long prior to this recognition of his genius and his labors, Ericsson had made a far more important discovery. In 1836 he invented and patented the screw propeller, which revolutionized navigation. Although the usefulness of this invention was practically demonstrated, its adoption was refused by the British Admiralty on the ground that a vessel could not be steered with the motive power applied at the stern. This refusal was indirectly the cause of Ericsson's coming to the United States. In 1838 he constructed the iron screw steamer "Robert F. Stockton," which crossed the Atlantic under canvas in 1839, and was afterward used as a tugboat on the Delaware River for a quarter of a century. In November, 1839, the inventor came to America, after having resigned his office in London, at the solicitation of Commodore Robert F. Stockton, United States Navy.

The United States Government readily recognized the genius of Ericsson, and under an order from the Navy Department in 1841 he furnished designs for the screw war-ship "Princeton," the first vessel having the propelling machinery below the water line and out of reach of hostile shot. This vessel dictated the reconstruction of the navies of the world. Besides her screw propeller the "Princeton" carried other inventions by Ericsson: A direct-acting steam-engine of unusual compactness, a telescope smokestack in place of the ordinary tall pipe, a centrifugal blower in the hold, a gun carriage with machinery for taking up the recoil, and the self-acting lock allowing the gun to be fired.

To an intellect like Ericsson's the success of this invention and its recognition and adoption by the natives of the world was only a spur to further effort. As early as 1836 Ericsson had conceived an idea that was put in practical shape in 1854, when he presented to Emperor Napoleon III. plans of a partially submerged armored vessel with guns on a revolving shot proof cupola placed centrally on the deck. This was really the germ, so to speak, of the "Monitor."

The story of the "Monitor" and the "Merrimac" is old, but that of the building of the former, "a cheese-box on a raft," is not so familiar. When Ericsson's plan of this strange craft was submitted to the authorities at Washington it was refused as being impracticable, and it was only after the intervention of Mr. C. S. Bushnell, of New Haven, Conn., and other influential citizens, as well as the appearance in person of Ericsson before the authorities, that an order could be obtained for the construction of the "Monitor." But when the order was once obtained the work was pushed forward so rapidly that the ship was launched complete in 100 days from the laying of the keel plate. And just in time, too, for the Confederate iron-clad "Merrimac" had destroyed the "Cumberland" and "Congress," and practically had the rest of the Government's wooden fleet at her mercy. Had it not been for the "Monitor" the whole course of the war might have been changed. But after the victory at Hampton Roads a fleet of monitors was quickly built, and the Confederate Navy was destroyed. Russia, Sweden, Norway and Turkey adopted the American turret system, and when the "Miantonomoh" crossed the ocean even the British construction yielded, and that nation carried out the principle on a far larger scale.



THE LATE JOHN ERICSSON.

In 1869 Ericsson constructed for the Spanish Government a fleet of thirty steam gunboats, and in 1881 he devised his latest war-vessel, the "Destroyer." This was intended for defensive war, and to destroy the tremendous naval structures his Monitor system had caused to be built up. This vessel is of iron, 130 feet long. It carries a submarine 16 inch gun, thirty feet long, which discharges a projectile weighing 1,500 pounds and containing 300 pounds of gun-cotton against an iron-clad's hull beneath the customary water-line armor belt, with such effect that water-tight compartments will be of no avail.

Ericsson's later years have been devoted to the development of his "sun-motor," which was erected in 1883, and which develops a steady power obtained from the supply of mechanical energy stored up in the sun. It is the result of experiments conducted for a quarter of a century, and was designed by the inventor as a contribution to applied science. Another instrument invented by Capt. Ericsson is the pyrheliometer, designed to show the intensity of the sun's rays. He also investigated the surface and temperature of the moon, and demonstrated that the "ring mountains" cannot be composed of volcanic matter, but are inert glaciers, made permanent as granite by perpetual, intense cold. One of his conclusions was that the water on the moon bears the same proportion to its mass as the water of our oceans to the terrestrial mass.

The variety of Capt. Ericsson's work is only less remarkable than its intrinsic importance, and proves the wonderful intellect and marvellous application of the man. In 1851, at the London World's Fair, he exhibited an instrument for measuring distances at sea—a hydrostatic gauge for fluids under pressure, a guage for the volume of water passing through pipes, the alarm barometer, a pyrometer, a measure for fluids by the velocity with which they pass through definite apertures, and a sea lead for use without rounding the vessel to the wind. Among his scientific investigations are remarkable computations of the influences tending to retard the earth's rotary motion, including the weight of material taken from below the earth's crust and piled above it by the hand of men.

In 1876 Capt. Ericsson published a volume of 600 quarto pages descriptive of his inventions. In his introduction to this volume he says: "The Commissioners of the Centennial Exhibition having omitted to invite me to exhibit the results of my labors connected with mechanics and physics, a gap in their record of material progress exceeding one-third of a century has been occasioned. I have therefore deemed it proper to publish a statement of my principal labors during the last third of a century, the achievements of which the promoters of the Centennial Exhibition have called upon the civilized world to recognize." Besides all this, he contributed numerous papers on scientific, naval, and mechanical subjects to various journals in America and Europe.

Many honors were bestowed upon him. Among his titles were honorary Doctor of Philosophy of Royal University of Lund; member of the Royal Academy of Sciences, Stockholm; member of the Royal Academy of Military Sciences, Sweden; honorary member of the Royal Scientific Society of Upsala; Knight Commander with the Grand Cross, of the Order of Nordstjernan; Knight Commander of Danneborg, First Class; Knight Commander of Isabel la Catholica; Knight Commander of Sanct Olaf, and Knight Commander of the Order of Vasa. He was also a member of various scientific institutions in Europe and America, and in 1862 had the degree of LL.D., conferred upon him by the Wesleyan University. He was likewise the recipient of the grand cross of naval merit from King Alfonso of Spain and a gold medal from the Emperor of Austria.

Ericsson never returned to his native land after leaving it for England, but in 1867 a great granite monument, quarried by the unpaid labor of the miners, some of whom had worked for his father, was set up with gala festivities in front of his mansions and inscribed with the words: "John Ericsson was born here in 1803."—*New York Witness.*