



John Philip Holland, father of the modern submarine, who designed and built the first underwater vessel accepted by the U.S. Navy. Educated at Limerick, Holland taught school until 1872 in Ireland and in 1873 emigrated to the United States. Settling in Paterson, N.J., he taught there until 1879, when, with financial support from the Irish Fenian Society (who hoped to use submarines against England), he built the Fenian Ram, a small sub that proved a limited success in a test run. In 1895 his J.P. Holland Torpedo Boat Company received a contract from the U.S. Navy to build a submarine, and in 1898 a successful Holland, the first truly practical submarine, was launched. The U.S. government ordered six more; similar orders came from England, Japan, and Russia. Holland's final years were marked by litigation with his financial backers. One of his last inventions was an apparatus designed to enable sailors to escape from damaged submarines.



John Holland in Submarine prototype, c. 1890s.

*Battery Turrent Braces, USS Monitor, 1861.* MacCord, Charles William (Creator), Stevens Institute of Technology, S.C. Williams Library. New Jersey Digital Highway.

The USS Monitor was the first ironclad warship built for the US Navy, most famous for her role in the world's first naval battle between two ironclad warships during the US Civil War. October 4, 1861, the Federal Government contracted with John Ericsson for an ironclad Monitor. The Monitor, as Ericsson himself named his creation, was laid down at the Continental Iron Works, October 25, 1861. She was launched exactly one hundred days later, January 30, 1862, and commissioned a month after that. Charles William MacCord joined DeLamater Iron Works, NYC and became Chief draughtsman with John Ericsson from 1859 to 1868. During this time MacCord drew at least 34 of the "Monitor" drawings. MacCord was also the first chairman of the Mechanical Drawing Department at the Stevens Institute of Technology in 1871, when the school first opened in Hoboken, New Jersey.

