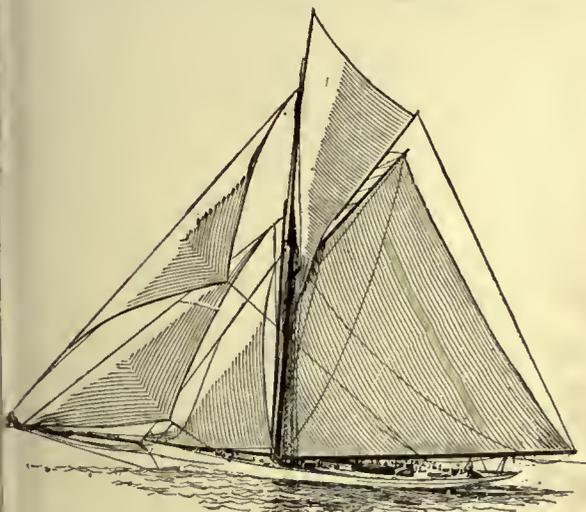


cream of tartar. In 1862, he invented a novel oil press, and with it began the manufacture of fish oil and fertilizers, in association with his father. In 1873, he produced his coil-boiler, a pattern now very popular; and this was soon followed by the invention of the fin-keel for sailing yachts, and the mercurial antifouling paint. These three inventions have enabled the Herreshoff Manufacturing Co. to construct the fastest steam and sailing yachts of the world. In 1879, he invented a steam engine to run by superheater steam up to 800 degrees Fahrenheit, the cylinder of which he

ing sailing vessels, and a number of remarkably fast boats, like the *Qui Vive* and the *Sadie*, were constructed. But about 1870, the company began building steam vessels, and after 1875, also steel yachts, torpedo boats, and war vessels. In 1879 the corporation the Herreshoff Manufacturing Co. was formed, with Mr. Herreshoff, who became known as the "blind boatbuilder," as its president. By the aid of his father's eyes he planned outlines and details with astonishing accuracy, and with his brother Nathaniel G. he improved the "coil-boiler" invented by his brother James B. Herreshoff, and brought it to its present state of perfection. The company under his management acquired a reputation for constructing the fastest vessels in the world, and has done work for the government of the United States as well as for many other American and European states. Mr. Herreshoff was married, Oct. 6, 1870, to Sarah Lucas Kilton, of Boston, Mass.



HERRESHOFF, Nathaniel Greene, boat-

builder and designer, was born in Bristol, R. I., Mar. 18, 1848, son of Charles Frederick and Julia Ann (Lewis) Herreshoff, and a younger brother of John Brown Herreshoff, the blind boatbuilder, who is president of the Herreshoff Manufacturing Co. The family comes of a long line of sailors and boatbuilders. Their ancestor, John Brown, was the builder of the first ship to carry the stars and stripes to China. After a course at the public schools, Nathaniel G. Herreshoff studied at the Massachusetts Institute of Technology, and at twenty-one years of age became a draftsman at the Corliss Engine works in Providence, R. I. He reinforced this training with a course of long study among the best engineering shops and yards abroad, and four years association with a corps of government experts stationed at Bristol by the navy department for the purpose of experimenting with the Herreshoffs in compound and triple expansion engines. He first made a reputation with his speedy sailing craft, the *Riviera*, built at Nice, France, in 1874; in 1875, he patented a jointed boat, or catamaran, which soon won a record as the speediest vessel under sail, and the next year he designed for the United States Naval School,



constructed of hardened "stub" steel; and by this means a saving of one-half the coal consumption was effected. His other inventions include the Herreshoff crossplank boat (1858); the sliding seats for rowboats, now used in all racing shells (1860); an improved apparatus for making nitric and muriatic acids (1864); the "ankle-brace" or "Blondin" skate (1865); a thread-tension regulator for sewing machines (1866); an apparatus for measuring the specific heat of gases (1872); hot air driven bicycle (1872); and a sounding apparatus (1874). During 1887-89, Mr. Herreshoff was engaged in Bristol harbor, R. I., in extensive experiments toward the improvement of the fin-keel form of construction, and succeeded in materially increasing the speed of yachts thereby. For many years he made his home in Europe, and afterward removed to Coronado, Cal. In 1875, he was married to Jane, daughter of William and Margaret I. (Morrow) Brown, of Ireland, and had two daughters and three sons. The eldest, James Brown, graduated at the University of California, and is a practical chemist with the Nichols Co. of New York. The second son, Charles Frederick, was educated in California, and at the Naval University of Glasgow, Scotland, and is a designer of steam and sailing yachts.

HERRESHOFF, John Brown, shipbuilder, was born in Bristol, R. I., Apr. 24, 1841, third son of Charles Frederick and Julia Ann (Lewis) Herreshoff. He had a common-school education, and at the age of fifteen lost his eyesight. In 1864, he began the business of yacht-building at Bristol, being associated first with his father, and subsequently with Dexter S. Stone, with whom he formed the firm of Herreshoff & Stone. For many years the business was confined to build-

the *Lightning*, a 60-foot torpedo boat capable of twenty miles an hour. The *Stiletto*, which was built in 1885, and was purchased by the government, brought its designer an order which resulted in the torpedo boat *Cushing*, capable of a 30-mile speed. After that followed the yachts *One Hundred* (1883), *Now Then* (1887), *Say When* (1888), and the *Vamoose* (1891), the last named, when built, one of the fastest yachts in the world. No other firm in the country at that time had made a specialty of fast steam crafts and for this reason the government placed a staff of experts in the Herreshoff yards to experiment with them. For the centennial exhibition at Philadelphia in 1876, he assisted in designing, building, and setting up the Corliss engine that moved all the machinery; three years later he joined the Herreshoff Manufacturing Co. at Bristol, where he acted as designer of yachts and engines, subsequently also becoming superintendent of the