

CONTENTS.

Engines—The Second Steamer—The <i>Charlotte Dundas</i> —American Enterprise—James Rumsey's Oar-boats worked by Steam—Poor Fitch—Before his Age—Robert Fulton—His Torpedo Experiments—Wonderful Submarine Boat—Experiments at Brest and Deal—His first Steam-boat—Breaks in Pieces—Trip of the <i>Clermont</i> , the first American Steamer—Opposition to his Vessels—A Pendulum Boat—The first Steam War-ship—Henry Bell's <i>Comet</i>	PAGE 77
---	------------

CHAPTER VI.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (continued).

The Clyde and its Ship-building Interests—From Henry Bell to Modern Ship-builders—The First Royal Naval Steamer—The First regular Sea-going Steamer—The Revolution in Ship-building—The Iron Age—"Will Iron Float?"—The Invention of the Screw-propeller—Ericsson, Smith, and Woodcroft—American "Cuteness"—Captain Stockton and his Boat—The First Steamer to Cross the Atlantic—Voyages of the *Sirius* and *Great Western*—The International Struggle—The Collins and Cunard Lines—Fate of the Arctic—The Pacific never heard of more—Why the Cunard Company has been Successful—Splendid Discipline on board their Vessels—The Fleets that leave the Mersey

97

CHAPTER VII.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (continued).

A Contrast—Floating Palaces and "Coffin-ships"—Mr. Plimsoll's Appeal—His Philanthropic Efforts—Use of Old Charts—Baily-constructed Ships—A Doomed Ship—Owner's Gains by her Loss—A Sensible Deserter—Over-loading—The Widows and Fatherless—Other Risks of the Sailor's Life—Scurvy—Improper Cargoes—"Unclassed Vessels"—"Lloyd's" and its History

112

CHAPTER VIII.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (continued.)

The Largest Ship in the World—History of the *Great Eastern*—Why she was Built—Brunel and Scott Russell—Story of the Launch—Powerful Machinery Employed—Christened by Miss Hope—Failure to move her more than a few feet—A Sad Accident—Launching by Inches—Afloat at last—Dimensions—Accommodations—The Grand Saloon—The Paddle-wheel and Screw Engines—First Sea Trip—Speed—In her first Gale—Serious Explosion on Board off Hastings—Proves a fine Sea-boat—Drowning of her Captain and others—First Transatlantic Voyage—Defects in Boilers and Machinery—Behaves splendidly in mid-ocean—Grand Reception in New York—Subsequent Trips—Used as a Troop-ship to Canada—Carried out 2,600 Soldiers—An eventful Passenger Trip—Caught in a Cyclone Hurricane—Her Paddles almost wrenched away—Rudder Disabled—Boats carried away—Shifting of Heavy Cargo—The Leviathan a Gigantic Waif on the Ocean—Return to Cork

129

CHAPTER IX.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (continued).

The Ironclad Question—One of the Topics of the Day—What is to be their Value in Warfare?—Story of the Dummy Ironclad—Two real Ironclads vanquished by it—Experience on board an American Monitor—Visit of the *Miantonomo* to St. John's—Her Tour round the World—Her Turrets and interior Arrangements—Firing of the Big Guns—Inside the Turret—"Prepare!"—Effects of the Firing—A Boatswain's-mate's Opinion—The *Monitor* goes round the World safely—Few of the Original American Ironclads left—English Ironclads—The *Warrior*—Various Types—Iron-built—Wood-built—Wood-covered—The Greatest Result yet attained, the *Inflexible*—Circular Ironclads—The "Garde Côtes"—Cost of Ironclads—The Torpedo Question—The Marquis of Worcester's Inventions—Bishop Wilkins' Subaqueous Ark—Fulton's Experiments—A Frightened Audience—A Hulk Blown Up—Government Aid to Fulton—The *Argus* and her "Crinoline"—Torpedoes successfully foiled—Their use during the American War—Brave Lieut. Cushing—The *Abemarie* Destroyed—Modern Torpedoes: the "Lay;" the "Whitehead"—Probable Manner of using in an Engagement—The Ram and its Power

133

CHAPTER X.

THE LIGHTHOUSE AND ITS HISTORY.

The Lighthouse—Our most noted one in Danger—The Eddystone Undermined—The Ancient History of Lighthouses—The Pharos of Alexandria—Roman Light Towers at Boulogne and Dover—Fire-beacons and Pitch-pots—The Tower of Cordouan—The First Eddystone Lighthouse—Winstanley and his Eccentricities—Difficulties of Building his Wooden Structure—Resembles a Pagoda—The Structure Swept away with its Inventor—Another Silk Mercer in the Field—Rudyard's Lighthouse—Built of Wood—Stood for Fifty Years—Creditable Action of Louis XIV.—Lighthouse Keeper alone with a Corpse—The Horrors of a Month—Rudyard's Tower destroyed by Fire—Smeaton's Early History—Employed to Build the present Eddystone—Resolves on a Stone Tower—Employment of "Dove-tailing" in Masonry—Difficulties of Landing on the Rock—Peril incurred by the Workmen—The First Season's Work—Smeaton always in the Post of Danger—Watching the Rock from Plymouth Hoe—The Last Season—Vibrations of the Tower in a Storm—Has stood for 120 years—Joy of the Mariner when "The Eddystone's in Sight!"—Lights in the English Channel

156