

*****DRAFT*****

**Guide to the National Archives and
Records Administration USS *Monitor* Collection
Catalog Number MS341**

The Library at The Mariners' Museum

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DESCRIPTIVE SUMMARY

Repository: The Library at The Mariners' Museum

Title: National Archives and Records Administration USS *Monitor* Collection

Catalog number: MS341

Accession number: None

Physical Characteristics: 62 items (Photocopies)

Language(s): English

Creator(s): Cornelius Bushnell, John Ericsson, Gustavus Fox, John Griswold, Alban Stimers, and Henry Wise (bulk)

SCOPE AND CONTENT

This collection consists of 62 photocopies of items documenting the design, construction and testing of USS *Monitor* and her armament. The majority of the material in this collection is correspondence. However, there are also contracts, drawings, specifications and other material-types. The dates of these materials range from 1854 through 1913; the bulk though is from 1861 and 1862.

Among the correspondents are Cornelius Bushnell, Admiral John Dahlgren, John Ericsson, Assistant Secretary of the Navy Gustavus Fox, John Griswold, Alban Stimers, Secretary of the Navy Gideon Welles, John Winslow, and Henry Wise. These individuals represent three groups associated with *Monitor* which are represented in this collection: those associated with her design, those associated with her construction; and the U.S. Navy.

Archivists from The Mariners' Museum selected and photocopied these materials from Record Group 45 (Naval Records Collection of the Office of Naval Records and Library) at the National Archives and Records Administration. These materials were selected based on their potential usefulness to researchers and staff conducting *Monitor*-related research at The Mariners' Museum.

ADMINISTRATIVE INFORMATION

Accession number

None

Accession date

None

Restrictions

Collection is open to all researchers.

Publication Rights

Procurement of rights to publish materials from this collection must be made through the United States National Archives and Records Administration.

Preferred Citation

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Note to Users

When using these materials, please preserve the arrangement of the collection. This collection is comprised entirely of photocopies from Record Group 45 (RG 45) at the National Archives and Records Administration.

BIOGRAPHICAL/HISTORICAL SKETCH

Desperate to break the Federal blockade, Confederate engineers and workers labored throughout the summer of 1861 to convert the Federal frigate USS *Merrimac* into the ironclad CSS *Virginia*. Progress of the conversion was reported in Southern newspapers and picked up by the press in the North. As work progressed on the *Virginia*, it became evident to Secretary of the United States Navy Gideon Welles that if the conversion of the *Merrimac* were successful, no Federal ship could stop her. The need to offset this threat spurred the Navy Department to create an Ironclad Board. Consisting of navy officers, the Board was charged with seeking and evaluating plans for the construction of ironclad vessels for Federal service.

On August 3, 1861, Secretary Welles published an announcement calling for the submission of designs and plans of ironclads to the Navy Ironclad Board. Many designs were presented to the board. This included a proposal by Cornelius Bushnell and Samuel Pook for an ironclad steamer that eventually became the USS *Galena*. In creating the plans for his steamer, Bushnell sought the advice of renowned engineer John Ericsson. Ericsson showed Bushnell his plans and model of an "impregnable iron battery" designed for Napoleon III of France in 1854. Bushnell was so impressed with Ericsson's radical designs that he presented them to Secretary Welles. Secretary Welles agreed that the design had "extraordinary and valuable features" and that it should be submitted to the Ironclad Board for consideration. Bushnell presented Ericsson's designs to the Board. However, Ericsson's ironclad designs were rejected as too outlandish for consideration. Undaunted, Bushnell persuaded Ericsson to appear before the Board to defend the design.

When the Ironclad Board submitted its final report to Secretary Welles, Ericsson's design was one of three recommended for approval. On October 4, 1861, the Department of the Navy signed a contract with John Ericsson, Cornelius Bushnell, John F. Winslow, and John A. Griswold for the construction of an "iron clad battery". The contract stipulated that total compensation for the ship would be \$275,000 spread over equal payments of \$50,000 each based on progress of construction of the ship. From each payment, the Navy Department would retain 25% until the *Monitor* was proven to be successful in every way or payment would be withheld. According to the contract, construction of the "battery" must be completed within 100 days.

To meet the deadline set by the government, Ericsson subcontracted the construction and fabrication of his ironclad to eight foundries. In a particularly ambitious plan, each subcontractor supplied various components of the ship at separate locations, shipping the

completed parts to a central location for assembly. John A. Griswold, principal partner in Rensselaer Iron Works and owner of Bessemer steel patents, was selected to oversee the financial management of the project. His associates, John F. Winslow, co-owner of Albany Iron Works, oversaw the procurement of the necessary iron and armor plate for the “Battery” and Thomas Rowland, of the Continental Iron Works at Green Point, New York, was contracted for the final construction of the *Monitor*.

Delamater Iron Works of New York City constructed the engines and boilers, Novelty Iron Works of New York City rolled the iron plates for the turret and oversaw its assembly, and Clute Brothers and Company of Schenectady produced the donkey engine to power the turret. Holdane and Company of New York City, Albany Iron Works of Troy, and H. Abbot and Son of Baltimore rolled additional iron plate for the turret, as well as bars and rivets. The Niagara Steam Forge of Buffalo, New York, furnished two iron port stoppers. As these parts were produced, they were shipped to Continental Iron Works in Green Point, New York, where the hull was laid and the final assembly was performed.

The assembly of the *Monitor* was in itself an amazing engineering feat. Eight foundries, working independently and perhaps with no clear idea of what the final product would look like, successfully produced Ericsson’s Iron Clad Battery. When the ship was launched on January 30, 1861, Ericsson and his associates had missed his one hundred-day deadline by 18 days, but no one seemed to notice. The United States Navy had its *Monitor* to check the South’s *Virginia*.

SERIES DESCRIPTION

This collection is divided into six (6) series

- I. Subject Files
- II. Contracts
- III. Correspondence
- IV. Drawings
- V. Reports
- VI. Specifications

The arrangement of these six series is based on two factors: arrangement within RG 45 and material-types. Series I is arranged as it is within RG 45, which is by volume number and thereunder by page number. Series II through VI are arranged according to material-type and thereunder chronologically, which was imposed at the time of processing. The documents in series II through VI were each selected from a variety of RG 45’s series and the arrangement of these series does not correspond with that of RG 45.

Series I: Subject Files

Features selected documents concerning the design, construction and performance of USS *Monitor*. This series is arranged by volume number and thereunder by page number and is comprised of correspondence, a certificate, a communiqué, drawings, and a fact sheet. Material ranges in dates from 1854 through 1862 with the bulk being from September through December 1861 when *Monitor* was being designed and constructed. Correspondents include Cornelius Bushnell, John Ericsson, Assistant Secretary of the Navy Gustavus Fox, John Griswold, Commodore Joseph Smith, Alban Stimers and John Winslow. These documents are from the volumes 555, 2599, 2600 and 2601 of the 1775-1910 Subject File in RG 45.

Series II: Contracts

Features three contracts—two handwritten documents and a subsequent transcription of one—from October of 1861 concerning the construction of *Monitor*. Arranged chronologically. Parties mentioned include Cornelius Bushnell, Continental Iron Works, John Ericsson, John Griswold, Thomas Rowland, Secretary of the Navy Gideon Welles, and John Winslow.

Series III: Correspondence:

Features twelve documents concerning the design, specifications, and armaments of *Monitor*. Arranged chronologically. Material ranges in dates from August 17, 1862, through November 25, 1913, with the bulk of it being from 1861 and 1862. Correspondents include Cornelius Bushnell, John Dahlgren, John Ericsson, and Assistant Secretary of the Navy Gustavus Fox.

Series IV: Drawings

Features one sketch and one page of drawings of *Monitor* from an unidentified publication.

Series V: Reports

Features one March 29, 1862, report given to the Confederate States House of Representatives concerning the construction of CSS *Virginia*.

Series VI: Specifications

Features two documents—one undated; the other from October 1861—concerning the instructions and description of structural material and methods of an ironclad steam battery and *Monitor*.

FILE/FOLDER LISTING:

Folder 1 Finding Aid

Folder 2 Background Information

Series I: Subject Files Series

Folder 3 Volume 555

Page 166

Correspondence, June 28, 1862: John Ericsson to Secretary of the Navy Gideon Welles,

Two-page letter noting that he invented the impregnable battery and revolving cupola, citing a communiqué he sent to Emperor Napoleon III in 1854 as evidence. He contests the claims of the British Government that Captain Cowper Coles, a Briton, invented the revolving cupola that would evolve into the revolving turret.

Page 166a

Communiqué (extract from), September 26, 1854 (enclosure from previous item): John Ericsson to Emperor Napoleon III

Three-page communiqué describing the form and function of the impregnable battery and revolving cupola. He forecasts the effect that this type of vessel will have on naval warfare.

Page 166b

Drawing, 1854: *Plan of Ericsson's Impregnable Battery and Revolving Cupola*

Concept vessel designed by John Ericsson for Emperor Napoleon III. Features side elevation and transverse section through the cupola.

Page 167

Correspondence, June 28, 1862: John Ericsson to Assistant Secretary of the Navy Gustavus Fox

Two-page letter following up on the Department of Navy's decision to proceed with the construction of additional Monitor class vessels. Notes his thoughts on the effects of plunging shot from elevated batteries on *Monitor*.

Page 167a

Drawing, June 28, 1862: John Ericsson to Assistant Secretary of the Navy Gustavus Fox

One-page drawing of trajectory of fire from Fort Darling on *Monitor* in the James River. Concerns Ericsson's thoughts on the effects of plunging shot on *Monitor*.

Folder 4 **Volume 2599**

Page 130

Fact sheet, September 15, 1861: John Ericsson

Three-page description of his impregnable battery focusing on its speed, displacement, stability, functionality, and ventilation.

Folder 5 **Volume 2600**

Page 23

Correspondence, September 27, 1861: John Ericsson to Commodore Joseph Smith

Two-page letter concerning the effects on the turret of *Monitor*'s guns being fired. Notes the ventilation system in the turret and addresses vibrations resulting from the guns being fired.

Page 23

Correspondence, September 23, 1861 (enclosure from previous item): John Ericsson to Cornelius Bushnell

One-page letter giving permission to Bushnell to alter plans as needed while Ericsson is away meeting with manufacturers concerning construction contracts for *Monitor*.

Page 29

Correspondence, September 30, 1861: John Ericsson to Commodore Joseph Smith

Two-page letter noting prices of ironclad vessels built for the Royal Navy by John Laird, Sons & Company of Birkenhead, England.

Page 36

Correspondence, October 2, 1861: John Ericsson to Commodore Joseph Smith

One-page letter supporting Smith's proposal to test the turret under fire before proceeding with further construction. Also briefly mentions Ericsson's association with John Flack Winslow.

Page 41

Correspondence, October 4, 1861: John Ericsson to Commodore Joseph Smith

One-page letter indicating Winslow's support of Smith's proposal to test the turret under fire, but asking that the schedule be accelerated. Notes progress on the machinery and recommends Alban Stimers as an engineer.

Page 42

Correspondence, October 4, 1861: John Ericsson to Commodore Joseph Smith

Two-page letter detailing amended specifications of the *Monitor*. Concerns the length of the vessel; the wood-type of the beams; turret's watertight joint; material-type of the gun carriage; material-type of the deck; and size of the engine.

Page 43

Correspondence, October 4, 1861: Cornelius Bushnell to Commodore Joseph Smith

One-page letter approving the contract for the construction of *Monitor*, but asking for one amendment: that the testing period be reduced from three-months.

Page 50

Correspondence, October 8, 1861: John Ericsson to Commodore Joseph Smith

One-page letter requesting authority to select the *Monitor's* plating. Also comments on manufacturers' estimated production schedules for steel plates.

Page 63

Correspondence, October 13, 1861: John Ericsson to Commodore Joseph Smith

One-page letter requesting a diagram of the Dahlgren gun so that work on the turret can continue.

Page 65

Correspondence, October 14, 1861: John Ericsson to Commodore Joseph Smith

Three-page letter refuting critical observations concerning *Monitor's* displacement and stability. Features an illustration and numerous calculations.

Page 70

Correspondence, October 16, 1861: John Ericsson to Commodore Joseph Smith

Two-page letter concerning *Monitor's* stability. Features numerous calculations.

Page 72

Correspondence, October 17, 1861: John Ericsson to Commodore Joseph Smith

Three-page letter listing the size and displacement of *Monitor* and noting that too much work has been done to implement Smith's suggestions.

Discusses the size and placement of the deck plating. Also estimates the *Monitor*'s speed. Features an illustration

Page 73

Correspondence, October 18, 1861: John Ericsson to Commodore Joseph Smith

Three-page letter responding to a set of calculations forwarded by Smith calling into question *Monitor*'s projected displacement. Also notes various changes made during construction

Page 74

Correspondence, October 18, 1861: John Ericsson to Commodore Joseph Smith

Two-page letter detailing the turret's ventilation system.

Page 76

Correspondence, October 19, 1861: John Ericsson to Commodore Joseph Smith

One-page letter concerning the size and weight of *Monitor*'s plating as well as the progress of its production.

Page 87

Correspondence, October 24, 1861: John Ericsson to Commodore Joseph Smith

Two-page letter responding to questions Smith had concerning the pilothouse's dimensions, the size of the plating, and material-types used in *Monitor*'s construction.

Page 91

Correspondence, October 25, 1861: John Ericsson to Commodore Joseph Smith

Three-page letter concerning methods of attaching the plating and other iron components. Ericsson also asks that *Monitor*'s engineer be carefully selected.

Folder 6

Volume 2601

Page 16

Correspondence, November 7, 1861: Cornelius Bushnell to Commodore Joseph Smith

One-page letter indicating that, with protection from stray shot and torpedoes, no more ports are being cut until Commodore Smith's approval is given.

Page 19

Correspondence, November 9, 1861: Cornelius Bushnell to Commodore Joseph Smith and subsequent endorsement from Smith to Bushnell
Three-page letter discussing difficulties with design, focusing on the copper sheathing and rubber and how they will work with iron plating and other iron parts (stern post, propeller shaft, etc.).

In the endorsement Smith insists that the hull be sheathed with copper and instructs Bushnell to have work cease on the iron rudder and stern post until further analysis.

Page 32

Correspondence, November 13, 1861: John Griswold and John Winslow to Commodore Joseph Smith
One-page letter concerning the thickness of the iron plating.

Page 37

Correspondence, November 15, 1861: Alban Stimers to Secretary of the Navy Gideon Welles.
One-page letter suggesting modifications to the 11” Dahlgren gun used *Monitor*; Stimers notes that shortening it by 18” will ease reloading.

Page 39

Correspondence, November 16, 1861: Cornelius Bushnell to Commodore Joseph Smith
Two-page letter concerning the proposed modifications to the thickness of the iron plating.

Page 40

Correspondence, November 16, 1861: John Ericsson to Commodore Joseph Smith
One-page letter giving an update on the progress of *Monitor*, commenting on the engines, turret machinery, and the irregular arrival of the iron plating.

Page 40

Certificate, November 15, 1861 (enclosure from previous item): issued by Alban Stimers
Certification that \$50,000 worth of work has been done on *Monitor*, as was specified in the contract

Page 45

Correspondence, November 18, 1861: Alban Stimers to Commodore Joseph Smith
One-page letter requesting that Smith direct Ericsson to shorten the 11” Dahlgren gun by 18” at his own expense.

Page 51

Correspondence, November 20, 1861: John Ericsson to Commodore Joseph Smith

Two-page letter concerning *Monitor's* guns, in particular their recoil and how they will be run out. Ericsson also notes that he has no objection to Stimers's suggestion to shorten the guns.

Page 52

Correspondence, November 20, 1861: Daniel B. Martin to Commodore Joseph Smith

One-page letter proposing use of 7/5" thicker iron plating to both improve resistance to fire and ease installation.

Page 55

Correspondence, November 21, 1861: Cornelius Bushnell to Commodore Joseph Smith

One-page letter noting that he recommends using iron for the construction of the propeller, after-stern post, and rudder instead of brass.

Page 59

Correspondence, November 23, 1861: Alban Stimers to Commodore Joseph Smith and subsequent endorsement from Smith to Stimers

Three-page letter in which addresses the difference between the published and actual dimensions, the fact that fastenings were changed after range tests, and that the guns' recoil distance of 6 feet. Stimers also requests an assistant for engineering work on the engine.

In the endorsement Smith notes that the assistant has been assigned and notes that the guns' recoil distance is acceptable.

Page 81

Correspondence, December 7, 1861: Alban Stimers to Commodore Joseph Smith

One-page letter announcing the arrival of Isaac Newton as first assistant engineer and requesting to order the manufacture of fifty pieces of wrought iron shot for use against an enemy ironclad.

Page 82

Correspondence, December 10, 1861: Cornelius Bushnell to Commodore Joseph Smith and subsequent endorsement from Smith to Bushnell

One-page letter noting that 3"-thick planks were used instead of 2 1/2" to better adhere to the oakum. Also requests to add tarred felt beneath the iron deck plates to protect the deck.

In the endorsement Smith asks that Bushnell send a copy of the plating plan.

Page 92

Correspondence, December 17, 1861: John Ericsson to Commodore Joseph Smith

One-page letter giving a progress report on *Monitor*'s construction and noting that the distribution of the turret's weight does not strain the beams. Also states that he, instead of Captain Cowper Coles, should be credited as the inventor of the revolving turret as his 1854 designs predate all others.

Page 99

Correspondence, December 22, 1861: W.L. Heist to Commodore Joseph Smith

Two-page letter concerning *Monitor*'s propeller. Provides a progress report and speculates that because of the size of her propeller, *Monitor* could not be towed to the Chesapeake Bay and would have to be towed to sea.

Page 101

Correspondence, December 22, 1861: Alban Stimers to Commodore Joseph Smith

Two-page letter concerning the procurement of wrought iron shot for 11" guns. Notes the cost and that it will be used only for short ranges and must be solid.

Page 108

Correspondence, December 28, 1861: Samuel Pook to Commodore Joseph Smith

One-page letter concerning the bow plating.

Page 109

Correspondence, December 28, 1861: Alban Stimers to Commodore Joseph Smith

One-page document featuring a note sent to Mr. Horatio Allen, president of Novelty Iron Works, in regard to the order for 10 of the wrought iron shot ordered for *Monitor*.

Page 110

Correspondence, December 28, 1861: Alban Stimers to Commodore Joseph Smith

Two-page letter discussing work on iron shot and battery of *Monitor*. Also notes that Charles B. Dahlgren (son of John Dahlgren) passed 3rd Engineer Exam and that Stimers would like to have him onboard *Monitor*.

Series II: Contracts

- Folder 7** **October 4, 1861**
Nine-page, handwritten copy of the contract detailing the arrangement between Secretary of the Navy Gideon Welles and John Ericsson, John Winslow and John Griswold for the construction of the “Shot Proof Steam Battery.”
- October 4, 1861**
Four-page, typescript copy of the above document.
- October 25, 1862**
Three-page, handwritten copy of the contract between Thomas Rowland, the owner of Continental Iron Works, and John Ericsson, John Winslow, John Griswold, and Cornelius Bushnell for the construction of *Monitor*.

Series III: Correspondence

- Folder 8** **August 17, 1861:** John Ericsson to Cornelius Bushnell
Three-page letter from John Ericsson to Cornelius Bushnell responding to Bushnell’s observations on the construction if *Monitor*.
- September 11, 1861:** John Ericsson to Cornelius Bushnell
Two-page letter regarding the armor weight as well as the stability and dimensions of *Monitor*.
- January 30, 1862:** John Ericsson to Assistant Secretary of the Navy Gustavus Fox
One-page telegram concerning the draft of *Monitor* after construction is completed.
- May 1, 1862:** Assistant Secretary of the Navy Gustavus Fox to John Dahlgren
One-page letter regarding changing the turret’s dimensions to accommodate 15-inch guns.
- May 5, 1862:** Henry Wise to John Dahlgren
One-page telegram on behalf of John Ericsson requesting the weight of the 13-inch gun.
- May 5, 1862:** Henry Wise to John Ericsson
One-page telegram advising a 13 inch gun will weight 700 pounds than a 15 inch gun.
- May 6, 1862:** Henry Wise to John Dahlgren
One-page telegram asking whether the interior of the turret can

accommodate a gun with a barrel diameter of 20 inches.

May 7, 1862: John Dahlgren to Assistant Secretary of the Navy Gustavus Fox

One-page note indicating that he will respond to an unidentified inquiry by letter.

June 15, 1862: Assistant Secretary of the Navy Gustavus Fox to John Ericsson

One-page note suggesting that both iron and wood beams be factored into the design of *Monitor* and the Department of the Navy have the final decision as to which is used.

July 10, 1862: G.B. Davids to Rear Admiral Louis Goldsborough

One-page letter concerning the ordering and arrival of sheets of iron for *Monitor*.

February 23, 1863: Assistant Secretary of the Navy Gustavus Fox to John Ericsson

One-page letter indicating that the plans and specifications for *Monitor* are at 413 Broadway in New York City and that they should be picked up and reviewed as bids for work open on February 25th.

November 25, 1913: Secretary of the Navy Josephus Daniels to Eli Atwood

Two-page letter describing the construction of *Monitor* and CSS *Virginia* and who supplied the anchor chain for the *Monitor*.

Series IV: Drawings

Folder 9 Drawings of *Monitor* sections, undated

1. *Transverse section through turret of original Monitor*
2. *Longitudinal Section Aft*
3. [Longitudinal Section Forward]

Sketch of midship section of turret of *Monitor*, undated

Series V: Reports

Folder 10 March 29, 1862: William Williamson, John Brooke, and John Porter to the Thomas Bocock, Speaker of the House of Representatives, Confederate States of America.

Two-page report concerning construction of the CSS *Virginia* from the recovered hulk of the USS *Merrimack*.

Series VI: Specifications

Folder 11 *Extract copied from specifications of the Monitor, October 1861*
Two-page typescript document noting the dimensions and specifications of the turret of *Monitor*.

Specification of an Impregnable Floating Battery, October 1861
Ten-page handwritten document indicating the dimensions of *Monitor*, specifications, and instructions concerning construction. Also features information concerning the engine.

J. Ericsson's Armor Vessel, circa 1861
One-page handwritten document listing weights of particular components of *Monitor*—iron; wood; armor; cannon and carriages; ammunition; stores; engines; coal; windlass; officers, crew and their effects and provisions; masts, spars, and rigging; lifeboats and davits; furniture; and cooking apparatus and utensils.

Building instructions for an iron-clad steam battery, circa 1865
Seven-page printed document indicating the dimensions of *Monitor*, specifications, and instructions concerning construction.

The Monitor, undated
Four-page handwritten document noting the dimensions and specifications of *Monitor* as well as information concerning the engine.

MATERIALS REMOVED

None

SUBJECTS

Bushnell, Cornelius S. (Cornelius Scranton), 1826-1896

Contracts

Correspondence

Dahlgren, John Adolphus Bernard, 1809-1870

Drawings

Ericsson, John, 1803-1889

Fox, Gustavus Vasa, 1821-1883

Griswold, John A. (John Augustus), 1818-1872

Monitor (Ironclad : 1862)

Specifications

Stimers, Alban

Telegrams

United States – History – Civil War, 1861- 1865

Virginia (Ironclad : 1861)

Welles, Gideon, 1802-1878

Winslow, John