



Smithsonian  
*National Museum of American History*  
*Kenneth E. Behring Center*

Waldemar A. Ayres Collection

NMAH.AC.0077

David A. Stevens

1986

Archives Center, National Museum of American History  
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## Collection Overview

<b>Repository:</b>	Archives Center, National Museum of American History
<b>Title:</b>	Waldemar A. Ayres Collection
<b>Identifier:</b>	NMAH.AC.0077
<b>Date:</b>	1954-1974
<b>Extent:</b>	3.3 Cubic feet (10 boxes)
<b>Creator:</b>	Naval History, Div. of, NMAH, SI Ayres, Waldemar A., 1909- ((inventor))
<b>Language:</b>	English
<b>Digital Content:</b>	<a href="#">Image(s): Waldemar A. Ayres Collection: 1954-1974.</a>

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## Administrative Information

### Ownership and Custodial History

Transferred from the Division of Naval History, 11/23/83.

### Processing Information

Collection processed by David A. Stevens, 1986

### Preferred Citation

Waldemar A. Ayres Collection, 1954-1974, Archives Center, National Museum of American History.

### Restrictions

Collection is open for research.

### Conditions Governing Use

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## Biographical Note

Ayres was an inventor who worked independently and for a number of companies. Among his varied research interests were radar, stereo photography, and aircraft navigation systems. In the 1950s-1960s he developed gill-type underwater breathing equipment.

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## Scope and Contents

Collection deals primarily with Ayres' artificial gill underwater breathing equipment project. Includes correspondence (1956-1971), personal papers, three boxes of research notes, documentation of the success of the invention, and subsequent patents and patent litigation; also publicity for the artificial gill, items from Ayres' other projects, and related periodicals, brochures, articles, etc.

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## Arrangement

Divided into eight series.

Series 1: Correspondence, 1956-1971

Series 2: Personal Papers

Series 3: Research Notes On Artificial Gills

Series 4: Documentation of Success of Gill

Series 5: Patents and Patent Litigation

Series 6: Publicity For Gill

Series 7: Ayres's Other Projects

Series 8: Related Journals, Magazines, Articles, Brochures, and Catalogs

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## Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

- Gill-type underwater breathing equipment
- Inventors -- 1940-1990
- Naval history
- Periodicals
- Underwater breathing equipment
- Underwater exploration

Types of Materials:

- Correspondence -- 1930-1950
- Patents
- Personal papers
- Research (document genres)

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## Container Listing

### Series 1: Correspondence, 1956-1971

Box 1, Folder 1	Philip V.W. Peck, Patent Attorney, 1957-1965
Box 1, Folder 2	Philip V.W. Peck, Patent Attorney, 1966-1971
Box 1, Folder 3	Miscellaneous Correspondence, 7/1956-9/1959
Box 1, Folder 4	Miscellaneous Correspondence, 1/1961-12/1965
Box 1, Folder 5	Miscellaneous Correspondence, 1/1966-5/1966
Box 1, Folder 6	Miscellaneous Correspondence, 6/1966-12/1969
Box 1, Folder 7	Miscellaneous Correspondence, 1/1970-3-1971
Box 1, Folder 8	Correspondence with Smithsonian Institution, 1966-1967

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## Series 2: Personal Papers

- |                 |   |
|-----------------|---|
| Box 2, Folder 1 | Biographical Materials                            |
| Box 2, Folder 2 | List of Awards of Ayers' Inventions               |
| Box 2, Folder 3 | Lecture "Unsolved Problems of Science", 1954-1955 |

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## Series 3: Research Notes on Artificial Gill

Box 2, Folder 4	Bubble Type Gills <a href="#">Image(s)</a>
Box 2, Folder folder 4	[Artificial gills and bubble filter, sketch and notes.], April 9, 1966 <i>1 Item (Pencil and ink on paper.; 5.5" x 4.2")</i> <a href="#">Image(s)</a> Ayres, Waldemar A., 1909- ((inventor)), Author On lined paper.  Local Numbers AC0077-0000001 (AC scan number)  Topic: Gill-type underwater breathing equipment Inventions -- 1960-1970 Inventors Underwater breathing equipment
Box 2, Folder 5	Bubbling
Box 2, Folder 6	Development Program Estimates
Box 2, Folder 7	Published Articles on Artificial Gills
Box 2, Folder 8	Expenses
Box 2, Folder 9	Dow, Corning, & Co.
Box 2, Folder 10	Marine Technology Society
Box 2, Folder 11	Medical
Box 2, Folder 12	Lung Function, Construction, Etc.
Box 2, Folder 13	Helium
Box 2, Folder 14	General Electric-Hamster Silicone
Box 2, Folder 15	Related Published Articles
Box 2, Folder 16	Feasibility
Box 2, Folder 17	Dr. B.R. Bodell
Box 2, Folder 18	"Gills for People" article by Norman Carlisle
Box 2, Folder 19	Miscellaaneous Notes (including magazine and journal articles)
Box 2, Folder 20-25	Membranes

Box 4, Folder 26	Nitrogen Transfer Rate
Box 4, Folder 27-28	Potential In Oceanography (newspaper, magazine clippings)
Box 4, Folder 29	Oxygen Indicator
Box 4, Folder 30	Plaston Respiration, Underwater Insects
Box 4, Folder 31	U.S. Banknote Corp. (U.S. Tech. Dev. Co.)
Box 4, Folder 33-34	Miscellaneous Notes (magazine and journal articles)
Box 5, Folder 35-36	Miscellaneous Notes (magazine and journal articles)
Box 5, Folder 37	Speeches, Lectures by Ayers
Box 5, Folder 38	Miscellaneous, 1965-05-11

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## Series 4: Documentation of Success of Gill

Box 6, Folder 1          Documentation Albums

Box 6, Folder 3          Successful Test, 1962-08-07  
[Image\(s\)](#)

Box 6, Folder folder 3          Successful Test - Aug. 7, 1962, [sic] - Page 2. [black-and-white photoprints on typescript page], August 7, 1962  
*1 Item (Ink on paper.; 5.5" x 4.2")*  
[Image\(s\): Successful Test - Aug. 7, 1962, \[sic\] - Page 2. \[black-and-white photoprints on typescript page\].](#)  
 Ayres, Waldemar A., 1909- ((inventor)), Author  
 Creelman, George, Photographer  
 Two photographs by George Creelman stapled to page with typed captions, documenting test of underwater breathing device. Notarized in New York state, seal at bottom left.

## Local Numbers

AC0077-0000002 (AC scan number)

Topic:                    Gill-type underwater breathing equipment  
                               Inventions -- 1960-1970  
                               Inventors  
                               Notaries  
                               Underwater breathing equipment

Genre/  
 Form:                    Notar  
                               Photographs -- 1960-1970 -- Black-and-white photoprints  
                               -- Silver gelatin  
                               Typescripts

Box 6, Folder 4          Photoprints

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## Series 5: Patent Ligation

Box 7, Folder 1	Application (Actions/Correspondence), 1956-03-09
Box 7, Folder 2	Continuation in part of Application, 1956-03-09
Box 7, Folder 3	Patent Drawings and Application Foreign Countries
Box 7, Folder 4	Foreign Patents
Box 7, Folder 5	Patent Drawing
Box 7, Folder 6	Gill-Type Diving Equipment, Specification
Box 7, Folder 7	Legal Ownership of Gill-Type Underwater Breathing Equipment
Box 7, Folder 8	Patent t for Artificial Gill
Box 7, Folder 9	Patent Interference Litigation-Vind vs. Ayers, Preliminary Statements
Box 7, Folder 10	Patent Interference Litigation, Preliminary Statement; Exhibitions-Originals and Copies
Box 7, Folder 11	Patent Interference Litigation, Ayers', 1969-12-24
Box 7, Folder 11	Letter to President Nixon
Box 7, Folder 12	Patent Interference Litigation, Miscellaneous
Box 7, Folder 13	Patent Claims Amended
Box 7, Folder 14	Miscellaneous Patent Materials
Box 7, Folder 15	Miscellaneous Patent Materials

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## Series 6: Publicity for Gill

Box 8, Folder 1           (Includes correspondence in response to publicity)

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## Series 7: Ayers Other Projects

Box 8, Folder 1          The "Navy Bat"

Box 8, Folder 2          Synthetic Emeralds

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## Series 8: Related Journals, Magazines, Articles, Brochures, and Catalogs

Box 9                      Related Journals, Magazines, Articles, Brochures, and Catalogs

Box 10                     Related Journals, Magazines, Articles, Brochures, and Catalogs

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