

WOOD LIBRARY-MUSEUM OF ANESTHESIOLOGY

THE RALPH M. WATERS COLLECTION

Preliminary Finding Aid

Prepared by J. Robins, Collections Supervisor



Draft Revised December 12, 2011 (JR)

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INTRODUCTION

Title: The Ralph M. Waters Collection

Accessions: 1964.8.24.1
1967.5.31.2
1990.7.30.2
1995.9.25.1
1998.6.10.1
2001.7.17.1
2002.6.6.1
2002.11.4.2

Donors: Torsten Gordh, M. D.
Robert A. Strickland, M. D.
Ralph M. Waters, M. D.
Darwin Waters, M. D.
Bernard Wetchler, M. D.

Date Range: 1920s—1970s

Bulk Dates: 1940s

See Also: IL 1983.03.4

University of Wisconsin, Madison, University Archives, Series 12/4/3

Dates Processed: August 1999, November 2001, November 2002

Processed By: Judith A. Robins, C. A., Collections Supervisor

BIOGRAPHICAL SKETCH

Family

Ralph Milton Waters was born on October 9, 1883, in North Bloomfield, Trumbull County, Ohio. His parents were Darwin Whiting Waters and Janette Martha Waters (nee Scott.) His family moved to Ashtabula County, Ohio, in 1890 (RMW).

In 1912 he married Louise Diehl, of Cleveland, Ohio. They had four children: Elva Jane, born 1914, Barbara, born 1916, Darwin Diehl, born 1920, and John Calvin, born 1922.

Education

After graduating from Grand River Institute (a preparatory school) in 1901, Waters moved to Cleveland. He entered Adelbert College of Western Reserve University in 1903, and earned his BA in 1907. Shortly thereafter he entered the University's medical school, earning his MD in 1912. [various jobs during schooling] (RMW)

He was a member of Phi Rho Sigma fraternity, Sigma Xi fraternity, Alpha Omega Alpha (society?), and a Mason (Scottish Rite.)

Practice

He began general practice "early in 1913" in Sioux City, Iowa. In the early years of his career, he was encouraged "by J. W. Shuman and others" to publish "a few medical papers" (RMW.) (Which was first?) He went on to publish over 100 articles in his lifetime, many of them co-written with his colleagues (RMW, WSJ.)

He attended his first anesthesia meeting in 1915 (IAA? AAA?) After this meeting, he spent "a profitable several weeks visit with Ira McKesson in Toledo, Ohio". Dr. McKesson founded what was then the Toledo Technical Appliance Company, later the McKesson Appliance Company, and taught classes in the techniques of nitrous oxide-oxygen anesthesia using McKesson machines.

WWI [mule skinner? RMW]

He remained in general practice until 1916. Thereafter, he limited his practice to anesthesia. He maintained a "downtown anesthesia clinic" in addition to his practice until 1923. In that year, he moved to Kansas City, Missouri, to take over a similar clinic there, originated by Dr. Morris Clark (RMW.)

University of Wisconsin

In the summer of 1926, Waters spent "three fruitful months" studying regional anesthesia at the Mayo Clinic, on the invitation of Dr. John S. Lundy. Then, in February 1927, he joined the medical faculty of the University of Wisconsin. His original charge was to direct "clinical administration of anesthetics at the University Hospital (then 250 beds.)" (RMW.) His work soon grew to include joint research projects, and clinical teaching (date?) of graduate students.

The first class that he taught to medical students was originally proposed as “one hour in the third year curriculum”, on artificial respiration. He expanded this to three hours, most of which was devoted to inhalation anesthesia. This gradually developed into “a full half-year course of 16 two-hour periods of lecture-demonstrations in the third year.... together with the opportunity of utilizing the dogs in the second year ‘surgical technic’ course.” (RMW) (NB: For related information about this animal experimentation laboratory, see the Mina Notebooks in the University of Wisconsin Archives.)

While at the University of Wisconsin, Waters conducted studies of depressant drugs. His collection of reprints on the subject of barbiturates and other agents is extensive.

In 1932, Waters introduced the clinical use of the new inhalation agent, cyclopropane. This had been discovered by Freund in 1882, and its use as an anesthetic was investigated by Lucas and Henderson in 1929. Waters continued to study and write about cyclopropane throughout his career.

In large part, the development of academic anesthesia training in the United States is directly due to the work of Dr. Waters. He was revered by many of his residents, who referred to him as “the Master” and “the Chief” throughout his lifetime. A group of them began to call themselves “The Aqualumni” (Date first used?) Dr. and Mrs. Waters hosted annual reunions of this group at their home, from 1937 through 1947.

Aqualumni Newsletter

Many of the Aqualumni became eminent in this field, becoming founders and Presidents of professional associations. Several of them founded new academic departments in other medical schools, as did many of their own trainees. An ink drawing of “The Aqualumni Family Tree”, created by Dr. and Mrs. Lucien Morris in (Date?), traces the lineage of these departments back to Dr. Waters. Among the most notable Aqualumni are F. A. Duncan Alexander, Virginia Apgar, Stuart C. Cullen, Robert D. Dripps, Merel Harmel, Austin Lamont, O. Sidney Orth, Perry P. Volpitto, and Emory A. Rovenstine.

Association of University Anesthesiologists was founded in 1953 by Lamont

Inventions

During his years in Sioux City, he experimented with carbon dioxide filtration, and developed the Waters To-and-Fro Carbon Dioxide Absorption Canister. He read a paper summarizing this work before the National Anesthesia Research Society in October, 1923. This paper was published in the February, 1924 issue of the journal “Anesthesia and Analgesia”. The exact date of the invention of the Canister is uncertain. In his 1923 paper, Waters stated that he had then spent “two and a half years of effort” on the project (A&A.) In another paper on the same subject, read before the Eastern Society of Anesthetists in October, 1925, he stated that he had then “an experience of over four years with carbon dioxide filtration....” (EAS).

The Waters Canister was commercially produced by The Foregger Company. It appeared in Foregger's 1930 catalog, but may have been introduced before that date. (NB: The only earlier catalog in the WLM collection is dated 1926; it does not include the Canister.) Waters corresponded frequently with the company's founder, Dr. Richard von Foregger, about carbon dioxide filtration and other matters (UW.) (NB: The WLM collection includes carbon dioxide filters made by The Foregger Company in several different designs; some of these may be prototypes.) Waters' interest in carbon dioxide was to continue throughout his career.

Waters Airway 1930

Guedel & Waters Cuff 1928

Waters Catheter 1931

Gale & Waters Tube 1932

History of endotracheal tubes 1933

Associates

The collection contains relatively little of Dr. Water's correspondence. This is most regrettable, as his relationships with friends, colleagues and manufacturers was an important part of his influence over the profession as a whole. He corresponded frequently and at length with a great many people, and infrequently with a great many more. Much of this voluminous and rich correspondence is preserved in the University of Wisconsin Archives, in Madison, Wisconsin.

He maintained an ongoing correspondence was Dr. Richard von Foregger, head of the Foregger Company. They discussed the mechanics of Dr. Waters' own inventions, as well as those of others. The WLM has photocopies of most of this correspondence.

Some of the most personally revealing letters are those he exchanged with his colleague and fellow inventor, Dr. Arthur E. Guedel. In these letters Waters expresses opinions freely, and engages in banter with his friend, who called him "Dogfish". Dr. Guedel's original correspondence is preserved at the Arthur E. Guedel Memorial Anesthesia Center, in San Francisco. Thanks to the generosity of the Center, the WLM also has photocopies of Dr. Guedel's correspondence.

The collection contains a group of photocopied letters (sent by?) Dr. Waters (to) members of his immediate family. These letters were lent to the WLM for copying by his son, Dr. Darwin Waters. The collection also contains a small group of letters that Waters received from his former students. More correspondence with his trainees can be found in the University of Wisconsin Archives.

Organizations

Dr. Waters was a leader in several important medical societies. But the collection contains virtually nothing about his involvement in professional organizations. This is another regrettable lack.

In 1929, Dr. John Lundy founded the Anesthetists Travel Club (ATC), and Waters became a charter member. This was a small group of leaders whose aim was to promote continuing education for practitioners in cities around the country. As the American Society of Anesthesiologists evolved into a national association, it took on the task of providing continuing education courses to all of its members. Therefore, in 1952, the ATC changed its focus, and became the Academy of Anesthesiology.

Waters served as President of the American Society of Anesthesiologists in 1945. He was immediately followed in this office by Dr. Lundy. In his memoirs, Lundy stated that he pressed Waters to accept the first chairmanship of the new A. M. A. Section on Anesthesia in 1941. (Lundy)

A large collection of Dr. Lundy's papers is preserved in the Mayo Clinic Archives, in Rochester, Minnesota. In addition to the collection at the Mayo Clinic, the WLM owns another portion of Lundy's papers. The WLM also owns the Archives of the Anesthetists Travel Club. But neither of the latter two collections contains materials relating to Waters.

Honors

Dr. Waters received numerous honors, both during and after his years at the University of Wisconsin.

He received the Henry Hill Hickman medal 1944 from the Associated Anaesthetists of Great Britain and Ireland. That medal is part of this collection.

In 1946 he received the highest honor bestowed by the ASA, the Distinguished Service Award, given "for meritorious service and achievement" (ASA.) It is regrettable that the collection contains no materials relating to his membership in the ASA.

Order of Vasa 1947

Northwestern University 1951

Western Reserve University 1957

The University of Wisconsin Department of Anesthesiology held the first Waters Symposium June X-X, 2003.

WWII

Retirement

Waters retired on December 31, 1948, at the age of 65. He retained an active interest in the field, and in its professional organizations.

WHO

Publications

Florida

visits

WFSA 1964 (Box FF)

Mrs. Waters died in 1975.

Dr. Ralph Waters died at the age of 96 on December 19, 1979.

SCOPE AND CONTENT NOTE

The bulk of this collection consists of reprints and other ephemera, such as news clippings and product literature. There are also a few typescripts of reports, articles and presentations; some if not all of these were copied from publications. There is a small amount of correspondence and other personal papers.

In addition, there is one box of photocopies made from papers owned by Waters' descendants, a scrapbook, and several items of memorabilia, including an early model of the Waters To-and-Fro Canister, and the Henry Hill Hickman Medal awarded to Dr. Waters in 1944 by the Royal Society of Medicine.

Researchers should note that there are numerous important lacunae in this collection. It contains no primary materials relating to Dr. Waters' research on any subject. It contains no mention of the Waters Airway, and virtually nothing on the subject of cyclopropane. There is nothing at all about his military service in WWI, nor his work for the Research Council (dates?) There are several letters from his colleagues and former students during the years 1945 and 1946, but very little other correspondence (an exception to this is the series of family letters dating (?— ?) The collection contains no primary materials relating to his participation in the American Society of Anesthesiologists or other professional societies.

An important, related collection is the archival records of the Department of Anesthesiology in the University Archives of the University of Wisconsin, Madison, WI. In that collection, the records of Dr. Waters' tenure constitute Series # 12/4/3. The WLM collection contains photocopies made from a few, selected files in that Series.

The entire Reprints Group in this collection was transferred from the UW Department of Anesthesiology to WLM (date??) by Dr. Betty Bamforth (title??). And a scrapbook of the Aqualumni reunions was transferred on permanent loan from the UW Department of Anesthesiology to the WLM; this item is accession number IL 1983.03.4.

GROUPS AND SERIES

Personal Papers Group

Biographical Series

Honors Subseries

University of Wisconsin Series (See also: Reprints on teaching)

Aqualumni Subseries (See also: Correspondence Series, and IL 1983.03.4)

Correspondence Series

Family Correspondence Subseries

Photographs Series

Writings Series

Lecture Notes Subseries

Reprints Subseries

The Writings Series includes numerous index cards on which Dr. Waters wrote or typed his notes for various lectures. Several of these are identified (ex: "Talk to Sigma Sigma. Tuesday, April 13, 1943".) Many of the card sets are incomplete; others may have become mingled.

Note that the Reprints *Subseries* in this Group consists of articles authored or co-authored by Dr. Waters. In contrast, the Reprints *Group* contains reprints and other ephemera by numerous authors, which he collected.

Memorabilia Group

See Container List.

Artifacts

Canisters

Masks

Hickman Medal

Snow Diploma

Collected Reprints Group

The Collected Reprints Group consists of reprints and other ephemera collected by Dr. Waters for his own use. Many were signed or inscribed to him by the authors. In contrast, the Reprints *Subseries* in the Personal Papers Group consists only of items authored or co-authored by him.

Reprints predominate in this Group, but it includes many cuttings and much product literature. A few folders also contain typed and/or holograph items. When received, these materials were organized in folders, arranged alphabetically by subject. With only a few exceptions, this group is arranged in the same order in which it was found, and uses the original folder titles. (Please note that these are not in accordance with MESH.)

Dr. Waters often wrote, on the cover or first page of these items, the name of the subject under which the item should be filed. Many were directed to a file on a tangential subject (for example, an item about blood transfusion might be filed under shock.) But some items were found to be clearly out of place; these have been filed under the most logical subject. Approximately one linear foot of material was found filed under the heading "Miscellaneous"; during processing, these items were re-filed under the most logical subject. Those reprints currently filed under "Miscellaneous" are such as defy a single classification.

Some topics are addressed under multiple subject headings. Researchers seeking information about specific anesthetic agents should look both under the name of the agent, and under the various topics relevant to the use of that agent.

Some important topics were not originally represented by individual folders. For example, there were no folders found for the topic: cyclopropane. But a few items about cyclopropane were found in the collection, and a new folder was created for this subject. There were no original folders for topics beginning with the letters F, J, U, V, X, Y or Z. Folder titles in [brackets] were assigned by the processor.

CONTAINER LIST

Personal Papers Group

BOX 1

FF 1 Finding aid

Biographical Series

FF 2 Biographical materials

FF Sioux City, Iowa (Various receipts, tax records, dated 1919—1926)
(See also: FF Legal size)

FF Kansas City, Missouri (Various receipts, tax records, dated 1925—1926)

FF Certificates

FF Application to the Board of Medical Examiners of the State of Florida (1939)

FF Professional meetings (See also: BOX FF Legal Size and BOX FF Miscellaneous)

FF Miscellaneous

Honors Series (See also: Box FF Legal, and Memorabilia)

FF Henry Hill Hickman Medal (1944)

FF Testimonial (1944)

FF Order of Vasa (1947)

FF Northwestern University (1951)

FF Western Reserve University (1957)

FF Western Reserve University, presentation copy of "Selected Papers" (1957)

[The copy presented to Dr. Waters included many letters of congratulation, which were attached to blank leaves at the back of the volume by means of rubber cement. The adhesive has dried, and most of these letters have fallen loose. All of them are badly stained by the adhesive. The volume was subsequently immersed in water, and became moldy. This has been treated. Due to its poor condition, the volume was disbound. Only the cover and the letters have been saved. Other copies in good condition are available in the Library.]

BOX 1, Continued

FF Academy of Anesthesia (1976)

University of Wisconsin Series

FF Miscellaneous

FF ?

FF Dunked Dog Experiment

FF Clinical Records (1947) (See also: Box FF legal)

FF Medical course lectures (1930)

FF Medical course lectures (1931)

FF Medical course lectures (1933—1934)

FF Medical course lectures (1935)

FF Medical course lectures (1936)

FF "Postoperative Nausea and Vomiting: A Review of Recent Literature", by George Harry Hess, A Thesis Submitted for the Degree of Doctor of Medicine, University of Wisconsin, 1936. [Carbon copy of typescript.]

FF Medical course lectures (1937)

FF Medical course lectures (1938)

FF Medical course lectures (1939)

FF Medical course lectures (1940)

FF "The Effect of Vinethene, Cyclopropane and Ether on the Kidney As Measured by the Urea Clearance Test", by Richard Earl Marcus, A Thesis Submitted for the Degree of Doctor of Medicine, University of Wisconsin, 1940. [2 copies, typescript]

FF "Anesthesia in England 1847—1850", by John Twohig, A Thesis Submitted for the Degree of Doctor of Medicine, University of Wisconsin, 1940. [Typescript]

FF Medical course handouts (1941)

FF Medical course lecture, handout, final exam (1942)

FF Medical course lectures (1943)

FF	Medical course handouts	(1943)
FF	Medical course handouts	(1944)
FF	Medical course lectures	(1945)
FF	Medical course handouts	(1945)
FF	Medical course handouts	(1946)
FF	Medical course lectures	(1948)
FF	Medical course handouts	(1948)
FF	Medical course handouts	(1949, copy 1)
FF	Medical course handouts	(1949, copy 2)
FF	Medical course handouts	(1949, copy 3)
FF	Nursing course lectures	(1935) (See also: BOX FF Lecture notes)
FF	Nursing course lectures	(1936)
FF	Nursing course lectures	(1937)
FF	Nursing course lectures	(1938)
FF	Nursing course lectures	(1940)
FF	Nursing course lectures	(1941)
FF	Nursing course lectures	(1942)
FF	Nursing course lectures	(1943)
FF	Nursing course lectures	(1944)
FF	Nursing course lectures	(1945)
FF	Nursing course lectures	(1947)
FF	Nursing course lectures	(1948)
FF	Nursing course lectures	(1949)
FF	Nursing course lectures	(ND)
FF	Nursing course lectures	(ND)

Aqualumni Series

(See also: Correspondence)

- FF List of residents (ND)
- FF Aqualumni Newsletter (Volume 3, No. 2 and No. 3, August and December, 1939)
- FF Aqualumni Reunions (See also: IL 1983.03.4)
- FF F. A. D. Alexander
- FF Virginia Apgar
- FF Howard Auscherman
- FF Simpson S. Burke (See also: Box FF)
- FF William H. Cassels (“Staff Meeting Material”)
- FF Ervin N. Chapman
- FF Stuart C. Cullen
- FF George H. Finer
- FF Albert E. Flagg
- FF Noel Gillespie
- FF Torsten Gordh
- FF Merel Harmel
- FF Malcolm Hawk
- FF Robert Hingson
- FF Lucien E. Morris
- FF William B. Neff
- FF Bryce Ozanne
- FF M. H. Seevers
- FF Karl Siebecker
- FF Virgil K. Stoelting

Aqualumni Series, Continued

FF Ivan Taylor

FF Clayton P. Wangeman (Statistical Reports of Barnes General Hospital, 1941—1944)

FF Paul Yordy (See also: Box FF)

Correspondence Series

FF Wartime correspondence (1944—1946)

FF Postgraduate Course in Anesthesia (1945—1946)

FF Miscellaneous correspondence

FF Correspondence with Dennis E. Jackson

FF Correspondence with Chauncey Leake

FF Correspondence with Francis McMechan

(**See also:** Aqualumni Series in Box #, Family Correspondence in Box #, and Copies of correspondence in other collections in Box #.)

Writings Series (See also: Box FF)

FF Notebook

FF Notes on the history of anesthesia (Contains some letters)

FF Miscellaneous notes

FF Outline

(19 holograph cards. Appears to be the outline for a publication, ca. 1933.)

FF Lecture notes 1935

“O₂ Therapy in P. O. Cases & Surg. Emergencies. N. S. Chicago Med. Soc. Jan. '35.”
(6 typed cards)

“Nov. '35.” (2 holograph cards)

FF Lecture notes 1938

“Am. Soc. of Anes. Philadelphia, Pa. 12/12/38.” (2 typed cards)

FF Lecture notes 1939

“Carbon Dioxide. Read: Milwaukee 5-24-39.” (3 typed cards)

“Explosion notes written May '39 but not delivered as discussion of Woodbridge et. al. St. Louis.” (5 typed cards and cover sheet)

“Relation of Pain Relief to Pulmonary Mortality. Canton – December 14, 1939.”
(5 typed cards)

FF Lecture notes 1940

“Clinical Problems in Anesthesia. (Generalities to introduce talks by Meek and SeEVERS at meeting of Sigma Xi, Monday evening, Jan. 15, 1940.)” (11 typed cards)

“Dr. Rovenstine's Staff. 2/12/40. What Is An Anesthetist and Why.” (6 typed cards)

“N. Y. Obstet. Soc. Feb 13, 1940. 45 min.” (4 typed and holograph cards)

“Milwaukee Soc. of Clin. Surgery. Milwaukee, Wis. 5-28-40.” (4 typed cards)

“Cambridge, Mass. Nov. 13, 1940. 4:15 P. M. Treatment Resp. Depress.”
(6 typed cards)

- “Relation of Anesthesia to Infant Morbidity. Cambridge 11/14/40. 9:30 A.M.”
(6 typed cards)
- FF Lecture notes 1941
- “Racine, Wis. Jan. 15, 1941 (Dr. Kurten).” (7 typed cards)
- “Dr. Cole’s Class in Sociology. Dec. 18, 1941.” (2 typed cards)
- “The Service of Anesthesiology in the Modern Hospital. (Detroit, 5/12/41).”
(1 typed card)
- “9-2-41. Service of Anes. in Modern Hosp. in O.R.”. (12 typed cards)
- “Sept. 2, 1941. Service of Anesthesiology in the Modern Hospital In O. R.”
(6 typed sheets)
- “Sept. 3, 1941. Service of Anesthesiology in a Modern Hospital Outside the O. R.”
(10 typed sheets)
- “Sept. 3, 1941. Service of Anesthesiology in a Modern Hospital Outside the O. R.”
(4 typed pages)
- FF Lecture notes 1942
- “What I used for Wis. Obs. & Gyn. Society. May 15, 1942.”
(2 holograph cards and 1 sheet)
- FF Lecture notes 1943
- “Choice of Drug, Dosage & Technic in Attempts to Relieve Pain. Tues. Jan. 19, 1943,
Great Lakes.” (5 typed and holograph cards)
- “3rd Dist. Nurses. ‘Nursing Care of Patients After Op.’ 1/19/43.” (1 holograph card)
- “Madison, Wis. West End Club. 3/16/43. Sleep – Natural and Artificial.”
(4 typed and holograph cards.)
- “Talk to Sigma Sigma. Tuesday, April 13, 1943.” (4 typed cards)
- FF Lecture notes 1945
- “Lecture to 3rd yr. stud. May 1945.” (2 typed and holograph cards)
- FF Lecture notes ND

“Lecture Entitled ‘Pain Relief’ By Doctor Fantus of Chicago. An excellent lecture for a mixed group.” (3 typed cards)

“Inhalation Anesthetic Agents. Phila.” (3 typed cards)

“Conn. Congress.” (10 typed and holograph cards)

First line: “Pleasure & honor to visit this U. town & meet Connecticut Doctors.”

[Untitled lecture to nurses or nursing students.] (5 typed cards)

First line: “During this little jaunt into the past....”

“Barbour’s Seminar. CO₂-O₂ Anesthesia.” (7 typed and holograph cards)

[Untitled after-dinner speech.] (7 typed cards)

First line: “Preceptors put on party for us.”

FF Lecture notes ND

“Oklahoma City, Nov. 4. Oxygen Therapy.” (4 typed cards)

First line: “Anaximenes of Miletus, born....”

“Nov. 4. evening. Progress in Anesthesia.” (2 typed cards)

“Staff. Jan. [27? 37?]”. (7 typed and holograph cards)

First line: “Old Anaxamenes, the Egyptian....”

[Untitled lecture.] (8 typed cards)

First line: “Anaximenes 6th Century B.C.”

“O₂ Therapy Technic.” (4 holograph cards)

FF Lecture notes ND

[Untitled lecture.] (6 holograph cards)

First line: “Gen. 2, 21 ‘And the L. G. caused....”

“Local.” (2 typed cards)

“Oct. 17. Strewler. (AOA Dinner). Specialism & Specialists.” (8 holograph cards)

“Specialism. The Watchword of the Time.” (6 typed and holograph cards)

[Untitled lecture.] (3 typed and holograph cards)

First line: “Cinema.”

“Properties Anes. Drugs.” (3 holograph cards)

- FF Lecture notes ND
- “Physical State.” (13 typed cards.)
- “Problem of Relief of Pain.” (4 typed cards)
- “Morbidity Accompanying the Therapy of Pain. The Cost of Comfort.” (15 typed and holograph cards)
- “Notes on Spinal Anesthesia. By Ralph M. Waters.” (5 typed cards)
- [Untitled lecture.] (7 typed cards)
First line: “Apt to forget that ordinary....”
- “Pain Relieving Drugs.” (2 typed cards)
- FF Incomplete lecture notes (5 sleeves) ND
- FF Incomplete lecture notes (5 sleeves) ND
- FF Incomplete lecture notes (5 sleeves) ND
- FF Incomplete lecture notes (5 sleeves) ND
- FF “Absorption of Carbon Dioxide from Anesthetic Atmospheres.” (Typescript, ND)
- FF “Chloroform: A Study After 100 Years.”
(Typed MS of the book of this title, published in 1951. Found in an envelope sent by Dr. Gillespie to Dr. Waters, postmarked Feb. 8, 1950.)
- FF “Cyclopropane Anesthesia.” By Ralph M. Waters and Erwin R. Schmidt.
(Typescript, ND)
- FF “A Discussion of One Hundred Years of Chloroform. By Ralph M. Waters, Paul M. Wood.” (Typescript and holograph, ND)
- FF “Dr. Philip Fox.”
- FF “The Historical Development of the Specialty of Anesthesia.”
(Notes and typescripts, ND)
- FF “One Hundred Years of Chloroform.” (Typescript, ND)
- FF “Shades of Our Predecessors” (See also BOX FF)
- (35-page holograph MS. This may be the MS of Waters’ keynote speech given at the 3rd World Congress of Anaesthesiologists, Sao Paulo, Brazil, 1964.)

BOX

Writings Series: Reprints Subseries

- FF Processor's list of Waters' reprints in this collection
- FF Reprints of Waters' articles, A—B
- FF Reprints of Waters' articles, C
- FF Reprints of Waters' articles, D—J
- FF Reprints of Waters' articles, M—O
- FF Reprints of Waters' articles, P—S
- FF Reprints of Waters' articles, T—W

Photographs Series

BOX

Family correspondence

This series consists of photocopies, made with the permission of Dr. Darwin Waters.

(See also: Aqualumni in Box #, Correspondence in Box #, and Copies of correspondence in other collections in Box #.)

BOX

Copies of Correspondence in other Collections

(See also: Correspondence in Box #, and Family Correspondence in Box #)

Copied from the Mayo Clinic Archives

FF Correspondence with John Lundy (1924—1928)

Copied from the University of Wisconsin Archives

FF Correspondence with Donald Brace

FF Correspondence to Karl Connell (1932—1940)

FF Correspondence from Karl Connell (1932—1940)

FF Correspondence with Foregger (1927)

FF Correspondence with Foregger (1928)

FF Correspondence with Foregger (1929)

FF Correspondence with Foregger (1930)

FF Correspondence with Foregger (1931)

FF Correspondence to Foregger (1932—1934)

FF Correspondence from Foregger (1932—1934)

FF Correspondence to Foregger (1935—1936)

FF Correspondence from Foregger (1935—1936)

FF Correspondence to Foregger (1937—1939)

FF Correspondence from Foregger (1937—1939)

FF Correspondence to Foregger (1939—1943)

FF Correspondence with W. L. Garth (1939—1940)

FF Correspondence with Arthur E. Guedel (1933)

FF Correspondence with James T. Gwathmey (1927—1940)

- | | | |
|----|--|-------------|
| FF | Correspondence with Vilyein Henderson | (1930—1941) |
| FF | Correspondence with Kansas City Oxygen | (1927) |
| FF | Correspondence with Ivan Taylor | (1935—1942) |
| FF | Correspondence with Perry Volpitto | (1928—1948) |

Collected Reprints Group

BOX

Reprints: A

FF [A – Miscellaneous]

FF Accidents (See also: Explosions)

FF Acid Base Balance

FF Adrenals

FF Air Conditioning (See also: Refrigeration and BOX FF Legal)

FF Airways

FF Alcohol (See also: Legal size box)

FF Alkaform

FF [American Society for Regional Anesthesia] (Formerly filed under “Block”)

FF Analeptics

FF Analgesia

BOX

Reprints: Anesthesia, Charts

- FF Anesthesia, Charts (See also: Statistics)
- FF [Anesthesia, Charts – Mayo Clinic]
- FF Anesthesia, Chemistry of
- FF Anesthesia, Costs
- FF Anesthesia, Effects of
- FF Anesthesia, Effects of
- FF Anesthesia, Electrical (See also: Explosions)

BOX

Reprints: Anesthesia, General 1

FF Anesthesia, Experiments
FF Anesthesia, General
FF Anesthesia, General
FF Anesthesia, General
FF Anesthesia, General
FF Anesthesia, General

BOX

Reprints: Anesthesia, General 2

FF Anesthesia, General
FF Anesthesia, General
FF [Anesthesia, General: Paper by Wesley Bourne]
"Interdependence of Function in Anesthesia" Typescript (N.D.)
"Interdependence of Function in Anesthesia" Reprint (1942)

FF Anesthesia, Miscellaneous
FF Anesthesia, Organization (Contains letters)
FF Anesthesia, Organization
FF Anesthesia, Organization

(Note: The files on "Organization" relate to the organization of the specialty, and to the organizing of anesthesia departments, not to individual professional societies.)

FF Anesthesia, Pharmacology of (Contains letter) (See also: Pharmacology)
FF Anesthesia, Reactions

BOX

Reprints: Anesthesia, Theories

- FF Anesthesia, Theories
- FF Anesthetist
- FF Antidotes (See also: Poisoning)
- FF Apnea
- FF Apparatus, Blood Pressure (See also: Blood Pressure ; Respiration)
- FF Apparatus, Ether (See also: Ether)
- FF Apparatus, Gas Machines (See also Legal size box)
- FF Apparatus, General (Contains letter)
- FF Apparatus, Head Rest
- FF [Apparatus, Inhalation]
- FF Apparatus, Intravenous
- FF Apparatus, Laboratory (Contains letter)
- FF Apparatus, Rubber
- FF Architecture, Operating Room
- FF Arrhythmia
- FF Asthma
- FF Atmospheric Conditions (See also: Humidity)

BOX

Reprints: Aviation

- FF Aviation (See also Legal size box)
- FF Barbiturates (See also: Box FF legal)
- FF Barbiturates
- FF Barbiturates (Contains letter)
- FF Barbiturates
- FF Barbiturates
- FF [Barbiturates, Specific – Miscellaneous]
- FF [Barbiturates – Evipal]
- FF [Barbiturates – Evipan]

BOX

Reprints: Barbiturates

- FF [Barbiturates – Pentothal Sodium]
- FF [Barbiturates – Pernocton] (Contains letter)
- FF [Barbiturates – Sodium Amytal]
- FF Barbiturates – Addiction
- FF Barbiturates, Poisoning (See also: Antidotes ; Poisoning)
(Includes accidental and deliberate overdoses)
- FF [Bile Duct]
- FF [Bladder]
- FF Block, Anesthetic and Therapeutic
- FF Block, Anesthetic and Therapeutic

BOX

Reprints: Block

- FF Block, Anesthetic and Therapeutic
- FF Block, Anesthetic and Therapeutic
- FF Block, Anesthetic and Therapeutic
- FF Blood, Chemistry of
- FF Blood, Coagulation of
- FF Blood, General
- FF Blood, General
- FF Blood, Oxygen
- FF Blood Pressure (German language reprints)

BOX

Reprints: Blood Pressure

- FF Blood Pressure
- FF Blood Pressure
- FF Blood Transfusion
- FF [Bone]
- FF Book Reviews
- FF Brain
- FF Burns
- FF [C – Miscellaneous]
- FF Calcium
- FF [Cancer]

BOX

Reprints: Carbon Dioxide

- FF Carbon Dioxide
- FF Carbon Dioxide, Absorption
- FF Carbon Monoxide Poisoning
- FF Carotid
- FF Catecholamines
- FF Chest
- FF Chloroform
- FF Choice of Anesthetics
- FF [Choice of Anesthetics: Paper by Arthur Guedel]
"Evaluation of Common Anesthetic Methods" (N. D.)
- FF Ciliary

BOX

Reprints: Circulatory

- FF Circulatory, General (Contains letter)
- FF Circulatory, Depression
- FF Circulatory, Physiology
- FF Circulatory, Stimulants
- FF Cobra Venom
- FF Complications, Cerebral
- FF Complications, Cardiorespiratory
- FF Complications, Gastrointestinal
- FF Complications, G. U.
- FF Complications, Larynx and Cord Injury (See also: Larynx)
- FF Complications, Muscle
- FF Complications, Nerve
- FF Complications, Post-Operative – Circulatory
- FF Complications, Post-Operative – Ileus
- FF Complications, Post-Operative – Respiratory
- FF Complications, Post-Operative – Miscellaneous (See also: Legal size box)
- FF [Complications, Post-Operative – Miscellaneous: Photos]
"Pepke, Mrs. Lillian -- No. s763a / Skin lesion on face from anes. mask")
- FF Complications, Renal
- FF Complications, Treatment of
- FF Compral
- FF Convulsions

BOX

Reprints: Coramine

FF Coramine

FF [Cyclopropane]

BOX

Reprints: D

FF [D – Miscellaneous]

FF Deaths

FF Deaths

FF [Deaths: Study by J. H. Bennett]

"A Study of Anesthetic Deaths in Texas" Typescript (N. D.)

FF Demerol

FF Dental

FF Diabetes

FF Diagnosis

FF Dilaudid

FF Distention

FF Drowning

FF Divinyl Oxide (Photostatic copies)

BOX

Reprints: Divinyl Oxide

FF Divinyl Oxide (Photostatic copies)

FF Divinyl Oxide (Contains typed and manuscript material)

FF Divinyl Oxide

(Note: Filed under this heading are items about Divinyl oxide, Divinyl ether, Vinyl ether, Vinethene and Vinesthene.)

FF Drugs

FF Drugs, Absorption of

FF Drugs, Addiction to

FF Drugs, Allergy of

FF Drugs, Dosage

FF Drugs, New

FF Drugs, Toxicity (See also: Poisoning)

(Note: See also more specific categories, such as Barbiturates and Local Anesthetics.)

FF Electrocardiography

BOX

Reprints: Embolism

- FF Embolism (See also: Thrombosis)
- FF Emergencies
- FF Endobronchial
- FF Endocrine
- FF Endotracheal and Esophagus
- FF Endotracheal and Esophagus (Contains letter)
- FF Energy Index
- FF Enzymes
- FF Ephedrin
- FF [Essays]
- FF Ether Anesthesia

BOX

Reprints: Ether

FF Ether Anesthesia

FF Ether, Complications

FF Ether, Experiments

FF Ether, Impurities

FF Ether, Rectal

FF Ethyl Chloride

FF Ethylene

FF Explosions, Precautions (See also: Anesthesia, Electrical)

Includes Circular 53/44; see Oversize Box for enclosure

FF Explosions, Precautions

FF [Explosions, Precautions -- Slocum & Finvold] (1944)

"Ionization of the Air: A Method for the Dispersion of Charges of Static Electricity",
by H. C. Slocum and R. Finvold. (Typescript, reprint, and correspondence.)

FF [Explosions, Precautions – IMC Committee] (1940)

Report and correspondence of the Committee on Explosion Hazards in Hospitals of the
Institute of Medicine of Chicago.

FF [Explosions, Precautions -- Inspection Summary] (1931)

"Summary of the Inspection Made by Mr. Stephens of the Architect's Office and Mr.
Puerker, Electrical Engineer from one of the Other State Departments Who He Brought
Along With Him"

[Note: This is a report on conditions in the operating room and cast room of the
Orthopedic Hospital.]

BOX

Reprints: Explosions

- FF Explosions, Reports
- FF Explosions, Reports
- FF [Explosions, Reports – ASA Meeting, April 1939]
- FF [Explosions, Reports – Correspondence] (1934—1935)
- FF [Explosions, Reports – Paper by E. R. Rushton] (1934)
 - "Explosions of Anesthetics" (With correspondence)
- FF [F and G – Miscellaneous]
- FF Gases
- FF Gases, Analysis
- FF Gases, Diffusion
- FF Gases, Rare
- FF Geriatric Cases
- FF Government and Medicine (See also: BOX FF Legal)
- FF [H – Miscellaneous]
- FF Heart, Effects of Anesthesia

BOX

Reprints: Heart

FF Heart, General

FF Heart, General

FF Heart, General

FF Heart, General

FF Heart Surgery

FF Helium

FF Hibernation

BOX

Reprints: Historical

- FF Historical, Doctors
- FF Historical, Doctors
- FF Historical, Miscellaneous
- FF Humidity (See also: Atmospheric Conditions)
- FF Hydrocarbons
- FF Hyperbaric Oxygen (See also: Oxygen)
- FF Hypnosis
- FF [Hypnotics and Sedatives]
- FF Hypothermia (See also: Temperature)
- FF Infection
- FF Inhalation (i.e.: Inhalation Therapy)
- FF Intensive Care
- FF Intermittent Positive Pressure Breathing
- FF Intestine

BOX

Reprints: Intocostrin

- FF Intocostrin and Curare
- FF Intocostrin and Curare
- FF [Intocostrin and Curare: MS by L. Garcia Herreros]
“Curare Action on the Bronchiolar Muscles.”
- FF Intra-Arterial
- FF Intravenous
- FF Ionization
- FF Isotopes
- FF [Jaundice]
- FF Kidney
- FF Larynx (See also: Complications)
- FF Legal
- FF [Libraries]
- FF Liver

BOX

Reprints: Local

- FF Local Anesthesia
- FF Local Anesthesia (Contains typed and manuscript material.)
- FF Local Anesthetics – Cocaine
- FF Local Anesthetics – Diothane
- FF Local Anesthetics – Intracaine
- FF Local Anesthetics – Lidocaine
- FF Local Anesthetics – Metycaine
- FF Local Anesthetics – Monocaine
- FF Local Anesthetics – Nupercaine
- FF Local Anesthetics – Pantocain (See also: Spinal – Complications)
- FF Local Anesthetics – Procaine
- FF Lung, Abscess
- FF Lung, Anatomy

BOX

Reprints: Lung

- FF Lung, Atelectasis
- FF Lung, Atelectasis
- FF Lung, Emphysema
- FF Lung, Gas absorption
- FF Lung, General
- FF Lung, Pneumonia
- FF Lung, Surgery
- FF Lung, Surgery
- FF Lung, Tuberculosis
- FF Lung, Vital Capacity

BOX

Reprints: M

FF [M – Miscellaneous]

FF Magnesium Sulfate

FF Manuscripts, Preparation of (See also: Speech Making)

FF Medication, Preanesthetic

FF Medication, Preoperative

FF Metabolism

FF Metabolism

FF [Metabolism – Typescript by Arthur Guedel]

“Metabolism and Reflex in Anesthesia” (4-page typescript)

FF [Metabolism – Typescript by Severinghaus]

“Historical Development of Basal Metabolism Study” (6-page typescript)

FF Methods

FF Methoxyflurane

FF Morphine

FF Moving Pictures

BOX

Reprints: Mu

FF Muscle Relaxants

FF Muscle Tonus

FF Narcosis

FF Narcotics

FF Neostigmine

FF Neuritis (Includes neuralgia)

FF Neuropsychiatry

FF Neuropsychiatry (See also: Box Legal size)

FF Neuropsychiatry (Contains typed and manuscript material, correspondence)

BOX

Reprints: Nervous System

FF Nervous System, Autonomic

FF Nervous System, Central

FF Nervous System, Peripheral

FF Nervous System, Sympathetic

FF Nervous System, Vago-Sympathetic

FF Nitrous Oxide

FF Nitrous Oxide

FF [Nitrous Oxide: Correspondence with D. E. Fletcher] 1943

(Note: Includes reprint by Fletcher: "Personality Disintegration Incident to Anoxia....")

BOX

Reprints: Nitrous Oxide

- FF Nitrous Oxide
- FF Nomenclature
- FF Obstetrics, Anesthesia & Analgesia
- FF Obstetrics, Anesthesia & Analgesia
- FF Obstetrics, Block Anesthesia
- FF Obstetrics, Cesarean section
- FF Obstetrics, Effects on fetus
- FF Obstetrics, General aspects
- FF Obstetrics, Special problems
- FF Obstetrics, General Principles
- FF Obstetrics, Inhalational
- FF Obstetrics, Labor Process

BOX

Reprints: Octozone

FF Octozone (Contains letter)

FF Opium Derivatives

FF Oxygen Want

FF Oxygen Want

FF Oxygen Want

FF Oxygen Want

FF Ozone

BOX

Reprints: P

- FF [P & Q – Miscellaneous]
- FF Pain
- FF Paraldehyde
- FF Paralysis
- FF Patient Post-Operative Care
- FF [Pediatric] (See also: Spinal, In Children)
- FF Pharmacology (Contains letter) (See also: Anesthetics)
- FF Plastics
- FF Pleura
- FF Poisoning (See also: Antidotes , Barbiturates , Drugs)
- FF Posture
- FF Radioactive Recording
- FF Rectal
- FF Refrigeration (See also: Air Conditioning , Carbon Dioxide, Shock and Temperature)
- FF Research (Note: Does not relate to research done by Dr. Waters)
- FF Respiration, Artificial (Typed and manuscript materials)

BOX

Reprints: Respiration 1

- FF Respiration, Artificial
- FF Respiration, Artificial
- FF Respiration, Regulation of (Reprint series from *American Journal of Physiology*)
- FF Respiration, Regulation of (Reprint series from *American Journal of Physiology*)
- FF Respiration, Regulation of (Reprint series from *American Journal of Physiology*)

BOX

Reprints: Respiration 2

- FF Respiration, Regulation of (Reprints by Robert Gessell)
- FF Respiration, Regulation of
- FF Respiratory, Apparatus (See also: Apparatus, Inhalation)
- FF Respiratory, Centre
- FF [Witzemann typescript]
 "The Old and New Chemistry of Oxygen and the Chemistry of Respiration by E. J.
 Witzemann, January '35." (2 copies)
- FF Respiratory, Depression

BOX

Reprints: Respiratory

- FF Respiratory, Obstruction
- FF Respiratory, Paralysis
- FF Respiratory, Difficulty in Poliomyelitis
- FF Respiratory Stimulants
- FF Resuscitation
- FF Resuscitation
- FF Risk
- FF [S – Miscellaneous]
- FF Scopolamine
- FF Sensitivity (See also: Drugs, Allergy to)

BOX

Reprints: Shock

FF Shock

FF Shock

FF Shock [Experimental]

FF Shock [Hemorrhagic]

FF Shock [Obstetrical]

FF Shock [Surgical]

FF Shock [and Temperature] (See also: Refrigeration , Temperature)

FF Shock [Traumatic]

FF Shock [Treatment of]

FF Signs, Eye (i.e.: Signs of Anesthesia)

FF Skin

FF [Sleep]

FF Soda Lime

FF Speech Making (See also: Manuscripts)

BOX

Reprints: Spinal 1

FF Spinal

FF Spinal

FF Spinal

FF Spinal

FF Spinal

FF [Lecture by Hugh S. Mathewson] Typescript (N. D.)

"The Pharmacology of Agents Introduced into the Subarachnoid Space"

FF [Speech by Philip D. Woodbridge] Typescript (N. D.)

"Metycaine and Nupercaine Spinal Anesthesia"

BOX

Reprints: Spinal 2

- FF Spinal, Apparatus
- FF Spinal, Complications
- FF Spinal, Complications (Contains letters)
- FF [Paper by Caldwell B. Esselstyn]
"Pantocain and Spinal Anesthesia" Typescript (N. D.)
- FF [Paper by Sidney C. Wiggin]
"Pantocaine and Novocaine in Spinal Anesthesia" Typescript (N. D.)
- FF Spinal, Experimental
- FF [Spinal, Experimental -- Paper by Stanley J. G. Nowak]
"Studies in the Circulation, Respiration, and the Central Nervous System
Under Spinal Anesthesia" Typescript (N. D.)
- FF Spinal, In Children (See also: Pediatric)
(See also: Legal size box, and Oversize Box Medium)
- FF Spinal, Therapeutic
- FF Statistics [Keeping and Recording] (See also: Anesthesia, Charts)
- FF Statistics [Reports]
- FF Stimulants
- FF Sulfanilamide
- FF Sympathectomy
- FF Sympathomimetic Drugs

BOX

Reprints: T

FF [T – Miscellaneous]

FF Teaching (i.e.: Medical education) (See also: BOX FF Legal size)

FF Teaching

FF Teaching

FF Teaching, Post-Graduate

FF Temperature (See also: Refrigeration ; Shock)

FF Tetanus

FF Textbooks

FF Therapeutic Use of Anesthesia

FF Thrombosis

FF Thymus

FF Thyroid

BOX

Reprints: Tribromethanol

- FF Tribromethanol
- FF Tribromethanol
- FF Tribromethanol, Complications and death
- FF Tribromethanol, Pharmacology of
- FF Tribromethanol, Therapeutic use of
- FF Thrombosis (See also: Embolism)
- FF [Ulcer]
- FF [Urology]
- FF [Vitamins]
- FF [War] (See also: Shock, Traumatic)
- FF Water Balance

BOX Miscellaneous

- FF Reprints on multiple topics
- FF Reprints in the German language (To be translated)
- FF Proceedings of conferences

LEGAL SIZE BOX

Personal Papers Group

- FF "Teaching Outline of Psychiatry for Students and Nurses by G. Wilse Robinson, Jr., M. D., Neurological Hospital, Kansas City, Missouri." (N. D.)
- FF Sioux City, Iowa (Tax records, 1917—1918)
(See also: Box FF)
- FF Letter to RMW from L. D. Cheney Jan. 15, 1915 (See also: Box Rectal)
- FF R. M. Waters. "Advantages and Technic of Carbon Dioxide Filtration with Inhalation Anesthesia. Read October 30, 1925 before Eastern Society of Anesthetists."
(Carbon copy)
- FF Australian Society of Anaesthetists
- Proposed outline of textbook by Geoffrey Kay. ND
- "University of Melbourne. Anesthesia. Synopsis of Lectures I – VIII. Compliments of the Lecturer in Anaesthesia." (2 copies) ND
[Note: "the Lecturer" was Geoffrey Kay.]
- "Ether Convulsions." (Report of results of A. S. A. questionnaire, dated 1937.)
- "Royal Adelaide Hospital Honorary Staff Sub-Committee on Anaesthetic Fatalities."
(Report dated 1940.)
- FF Correspondence concerning the Henry Hill Hickman Medal, May 17 and 23, 1944.
(See also: Memorabilia, BOX FF)
- FF Letter from Simpson Burke, dated 25 May, 1945. (See also: Box FF)
- FF Letter from Paul Yordy, dated 18 July '45. (See also: Box FF)
- FF Certificate of participation in the Health Education Program of the American Medical Association (1947)
- FF World Federation of Societies of Anesthesiologists, 3rd World Congress, Sao Paulo, Brazil, 1964. (See also: BOX FF "Shades of Our Predecessors.")

LEGAL SIZE

Reprints Group

- FF Anesthesia, Alcohol (See also: Box)
- FF Apparatus, Gas Machines (See also Box)
- FF Aviation (See also Box)
- FF Barbiturates (See also Box Barbiturates 1 and 2)
- FF Complications, Post-Operative – Miscellaneous (See also Box #)
- FF Deaths (See also Box #)
- FF Explosions, Precautions (See also Box #)
- FF Spinal (See also Box #)
- FF Spinal, In Children (See also Box #)
- FF Teaching

OVERSIZE BOX

- FF Two copies of advertising flier for Labat spinal anesthesia outfit.
- FF Enclosure to Circular 53/44 from the Ministry of Health, London (1944)
(See also: Box Explosions)
- FF Clinical records, dated May 2, 1946. (See also: Box FF)
- FF Scrapbook

REMOVALS

Xerographic copy of Apgar's "Notes on Anesthesia. Prepared for the Medical Students, College of Physicians and Surgeons, Columbia University", removed from the folder headed "Doctors" to the Virginia Apgar Collection.

Memorabilia Group

Waters To & Fro Canisters

Connell Airway engraved “Waters”

Laryngoscope

Henry Hill Hickman Medal of the Royal Society of Medicine.

University of Wisconsin Alpha Omega Alpha lavalier.

Irving S. Cutter Medal of the Phi Rho Sigma fraternity. Presented to Dr. Waters “for his outstanding contributions to the arts and science of medicine”, September, 1946.

Medallion: World Federation of Societies of Anesthesiologists, 3rd World Conference, Sao Paulo, Brazil, 1964.

Tube-sizing ruler stamped “R. M. Waters, Oct. 2, 1933”. Given by Dr. Waters to Dr. Kay Russell Lundberg (1939—1982). Given by William Lundberg to WLM in 1984.

Glass slides ?

Mask collection ?

BIBLIOGRAPHY

Books

- xx. American Society of Anesthesiologists. "2001 Directory of Members", p. 45.
- xx. Bacon, Douglas R., and Richard Ament. "Ralph Waters and the Beginnings of Academic Anesthesiology in the United States: The Wisconsin Template." *Journal of Clinical Anesthesia*, Vol. 7, No.6, September, 1995.
- "Dr. Ralph Waters' Visit to London." *British Journal of Anaesthesia*, Vol. 14, No. 1, pp. 35-36, October, 1936.
- Gillespie, Noel A. "Ralph Milton Waters: A Brief Biography." *British Journal of Anaesthesia*, Vol.21, No. 4, pp. 35-36, October, 1949.
- xx Sands, Robert P., Jr., and Douglas R. Bacon. "Ralph Waters as a Regional Anesthesiologist." *Regional Anesthesia and Pain Medicine*. Vol. 24, No. 3, pp. 252-254, May-June, 1999.
- xx. Waters, Ralph M. "Biographical Details Re: Ralph Waters requested by Dr. Sidney Wiggin, April, 1952." (Typescript.)
- xx. Waters, R. M. "Clinical Scope and Utility of Carbon Dioxide Filtration in Inhalation Anesthesia." *Anesthesia and Analgesia*, Vol. 3, No. 1, February, 1924, pp. 20—26.
- xx. Waters, R. M. "Advantages and Technic of Carbon Dioxide Filtration with Inhalation Anesthesia." Read October 30, 1925 before Eastern Society of Anesthetists. (Carbon copy.)
- xx. University of Wisconsin, University Archives, Series 12/4/3.
- xx. "Wisconsin State Journal", Friday, December 21, 1979. Obituary.
- xx. Bunker, John P. The Anesthesiologist and the Surgeon. Boston: Little, Brown and Company, 1972.
[WLM call number: WO 208 B942 1972]
- xx. Woodbridge, Philip D. "Better Gas Anaesthesia at less Cost: The Carbon Dioxide Absorption Method." *Anesthesia and Analgesia*, 12:XX, 161, XX, 1933.