



Smithsonian

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

## Guide to the Jacob Rabinow Papers

NMAH.AC.0403

Don Darroch

1993

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## Table of Contents

Collection Overview .....	
Administrative Information .....	1
Biographical / Historical .....	2
Scope and Contents .....	2
Arrangement .....	2
Names and Subjects .....	
Container Listing .....	
Series 1: Straight Line Phonograph Arm, 1947 - 1988, 1910 - 1917 .....	4
Series 2: Reading Machine, 1956 -1990 .....	7
Series 3: Automatic Regulation of Watches and Clocks, 1948- 1981 .....	8

## Collection Overview

<b>Repository:</b>	Archives Center, National Museum of American History
<b>Title:</b>	Jacob Rabinow Papers
<b>Date:</b>	1947-1990
<b>Identifier:</b>	NMAH.AC.0403
<b>Creator:</b>	Rabinow, Jacob, 1910- (Author)
<b>Source:</b>	National Museum of American History (U.S.). Division of Engineering and Industry (Collector)
<b>Extent:</b>	5.5 Cubic feet (14 boxes, 1 map folder)
<b>Language:</b>	Collection is in English. Some materials in French, German, and Japanese.
<b>Summary:</b>	The collection documents three major areas of Jacob Rabinow's work in improvement of electronic and other devices: phonograph record players, optical character recognition (reading machines) and automatic self regulation of watches and clocks.

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## Administrative Information

### Acquisition Information

Collection donated by Jacob Rabinow, 1990, December 17.

### Provenance

Transferred to the Archives Center from the Division of Work and Industry on February 12, 1991.

### Related Materials

The Division Medicine and Science holds the Rabinow Scanned Comparison Reading Machine (Accession #: 1982.0393.01).

### Processing Information

This collection was processed by Don Darroch, Archives Center volunteer.

### Preferred Citation

Jacob Rabinow Papers, 1947-1990, Archives Center, National Museum of American History.

### Restrictions

Collection is open for research.

### Conditions Governing Use

Collection items available for reproduction, but the Archives Center makes no guarantees concerning copyright restrictions. Other intellectual property rights may apply. Archives Center cost-recovery and use fees may apply when requesting reproductions.

## Biographical / Historical

Jacob Rabinow was born Jacob Rabinovich in the Kharkov, Ukraine in 1910 and moved with his family to Siberia in 1917 during the Bolshevik Revolution. In 1919, the Rabinow Family moved to China, where his father died. With his mother and brother, Rabinow then immigrated to the United States in 1921, where his mother established a corset shop in New York City. Rabinow graduated from the City College of New York with a Bachelor's Degree in Engineering (1933) and a Master's Degree in Electrical Engineering (1934). After graduation in 1934, he worked at diverse jobs until he was hired by the National Bureau of Standards (NBS) and now known as National Institute of Standards and Technology or NIST in 1938. At NBS Rabinow calibrated flow meters and then, with the outbreak of World War II, designed proximity fuses for Army bombs and rockets. To calculate the velocity of the falling fuses, he devised an acceleration integrator. He also worked on bombing techniques. Rabinow eventually became Chief of the Electro-Mechanical Ordnance Division at NBS before leaving in 1954 to form his own company, Rabinow Engineering.

At Rabinow Engineering, projects included the development of automatic winding equipment and test equipment for Sprague Electric; design of a letter sorter later built by Burroughs; a digital computer for the U.S. Post Office; and the construction of reading machines for RCA, UNIVAC, and others. When servicing machines began to require too much staff and travel, Rabinow sold his company and became a consultant. In 1964, Rabinow Engineering eventually became part of Control Data Corporation (CDC) where Rabinow was head of the Rabinow Advanced Development Laboratory. In 1968, Rabinow formed RABCO Company to manufacture his straight-line phonographs. RABCO was later acquired by the Harmon-Kardon Corporation. In 1972, Rabinow rejoined NBS where he was Chief Research Engineer. In 1975, he retired, but acted as a consultant.

Rabinow held 230 United States Patents on a wide variety of mechanical, optical and electrical devices. Of note is his magnetic particle clutch (1956) used in tape and disk drives; first automobile clutch to work by magnetic and not electrostatic charge (1956); first phonograph whose cartridge moved along a straight track rather than at the end of a swinging arm (1959); first self-regulating clock (1960); and his best known invention, a Reading Machine (1960). Rabinow was honored for his scientific work with the Naval Ordnance Development Award (1945); the President's Certificate of Merit (1948); the IEEE's Harry Diamond Award (1977); and the Lemelson-MIT Lifetime Achievement Award (1998) Rabinow died September 11, 1999.

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## Scope and Contents

This collection comprises material from three major areas of Jacob Rabinow's work in improvement of electronic and other devices: phonograph record players, optical character recognition (reading machines) and automatic self regulation of watches and clocks. Included are technical descriptions, engineering drawings and sketches, numerous patent applications, patents, photographs of devices and voluminous correspondence, often related to patents and financial claims arising from them. The papers are grouped into the three areas of product innovation in approximate chronological order. In addition to many U.S. patents, Rabinow was granted numerous foreign patents, including British, French, German, Canadian and Japanese which are part of the collection. The patents as early as 1910 1917 were collected and assembled by Rabinow in his search of previous inventors' work.

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## Arrangement

The papers are arranged into three series.

### **Series 1, Straight Line Photograph Arm, 1910-1917; 1947-1988**

Subseries 1.1, Patents, 1910-1917; 1947-1988

Subseries 1.2, Litigation and Royalties, 1954-1980

Subseries 1.3, Brochures, Publicity, Photo Prints, and Advertisements, 1954-1980

Subseries 1.4, General Correspondence, 1954-1978

**Series 2, Reading Machine, 1956-1990**

Subseries 2.1, Patents, 1957-1958

Subseries 2.2, Brochures, Publicity, and Photo Prints, 1954-1970

Subseries 2.3, Correspondence, 1956-1960

Subseries 2.4, General Correspondence, 1954-1978

**Series 3, Automatic Regulation of Watches and Clocks, 1948-1981**

Subseries 3.1, Patents, 1948-1975

Subseries 3.2, Patent Right Litigation and Royalties, 1948-1976

Subseries 3.3, Brochures, Publicity, and Photo prints, 1953-1964

Subseries 3.4, General Correspondence, 1948-1981

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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:

- Computers
- Electrical engineering
- Electrical engineers

Types of Materials:

- Correspondence -- 1930-1950
- Engineering drawings
- Patents
- Photographs -- 20th century

Names:

- Census Bureau
- Control Data Corporation
- National Museum of American History (U.S.). Division of Engineering and Industry
- RABCO
- United States. National Bureau of Standards

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## Container Listing

### Series 1: Straight Line Phonograph Arm, 1947 - 1988, 1910 - 1917

#### Subseries 1.1: Patents, 1910 -1917; 1947- 1988

Box 1, Folder 1	U.S. patents (originals),, 1959 -1967
Box 1, Folder 2	U.S. patents (originals),, 1968-1974
Box 1, Folder 3	U.S. patents (copies),, 1947-1964
Box 1, Folder 4	Patent: Method of manufacturing phonograph records,, 1965
Box 1, Folder 5	Patent: Method of manufacturing phonograph records,, 1966
Box 1, Folder 6	Patent: Servo arm for phonograph pick up,, 1954 -1959
Box 1, Folder 7	Patent: Servo arm for phonograph pick up,, 1959
Box 1, Folder 8-9	Patent: Free tracking phonograph pick up,, 1967 -1968
Box 1, Folder 10	Patent: Record flattening turntable,, 1969 -1971
Box 1, Folder 11	Patent: String supported phonograph cartridge,, 1970 -1973
Box 1, Folder 12	Patent: Rumble tester for photographs,, 1970-1972
Box 1, Folder 13	Patent: Electric lowering and lifting mechanism,, 1970 -1972
Box 1, Folder 14	Dynamically balanced phonograph arm,, 1971-1974
Box 2, Folder 1	Patent: Vertical stabilizer for phonograph arms,, 1971 -1974
Box 2, Folder 2	Patent: Phonograph stylus,, 1971 -1975
Box 2, Folder 3	Patent: Stereo record player,, 1963
Box 2, Folder 4	Patent: Servo tone arm,, 1966
Box 2, Folder 5	Patent: Tone arm with carriage servo,, 1966
Box 2, Folder 6	Patent: New specs. (draft) tone arm,, 1970 -1971

Box 2, Folder 7-8	U.S. patents, circa 1940 -1988
Box 2, Folder 9	U.S. patents, circa 1959 -1988
Box 2, Folder 10	Patent correspondence, circa 1947
Box 2, Folder 11	Patent applications, correspondence, circa 1963-1979
Box 3, Folder 1-2	Patent applications, correspondence, circa 1963-1979
Box 3, Folder 3-4	Patents, 1925 -1980
Box 3, Folder 5	Patent: Servo driver phonograph arm, 1966- 1970
Box 3, Folder 6	Early patent, 1910-1964
Box 3, Folder 7	Early patents, 1917-1970
Box 4, Folder 1	Foreign patents, 1968 -1972
Box 4, Folder 2-4	Foreign patents applications, 1968 -1975
Box 4, Folder 5	Phonograph pick up: foreign patent applications, 1968 -1972

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### Subseries 1.2: Litigation and Royalties, 1954- 1980

Box 4, Folder 6	Jervis financial,, 1962- 1980
Box 4, Folder 7	Jervis patents,, 1972 -1977
Box 4, Folder 8	Jervis legal,, 1954 -1975
Box 5, Folder 1-2	Jervis-legal,, 1954-1975
Box 5, Folder 3	Harman Kardon legal- servo arm history,, 1954 -1975

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### Subseries 1.3: Brochures, Publicity, Photo Prints, and Advertisements, 1954 -1980

Box 5, Folder 4	Jervis technical,, 1973- 1977
Box 5, Folder 5-6	Servo driven phonograph arm promotional,, circa 1963-1982
Box 5, Folder 7	Photographs,, undated
Box 6, Folder 1	Photographs,, undated

Box 6, Folder 2-3	Phonograph arm clippings, correspondence,, 1954- 1971
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Box 6, Folder 4	Notes for draftsman,, circa 1954
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#### Subseries 1.4: General Correspondence, 1954-1978

Box 6, Folder 5	Jervis miscellanerous correspondence,, 1972 -1978
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Box 6, Folder 6	Correspondence,, 1954 -1976
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[Return to Table of Contents](#)



## Series 2: Reading Machine, 1956 -1990

### Subseries 2.1: Patents, 1957 -1958

Box 6, Folder 7            Optical character recognition patent, 1957 -1958

Box 6, Folder 8-10        OCR patents (copies), 1957 -1958

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### Brochures, Publicity, and Photo Prints, 1954-1990

Box 7, Folder 1            Diamond Ordnance Fuze Labs Dept. of Army,, 1954-1964

Box 7, Folder 2-3         OCR reports, 1954 -1969

Box 7, Folder 4            OCR articles, 1956 -1968

Box 7, Folder 5-6         OCR publications, 1961-1982

Box 7, Folder 7            OCR articles, 1961- 1990

Box 8, Folder 1            5 x 9 fonts report, 1962

Box 8, Folder 2            OCR special, 1962 -1972

Box 8, Folder 3            Reading machine: technical articles and clippings, 1962 -1971

Box 8, Folder 4-5         Point of sale optical reader (POSOR), 1965 -1970

Box 8, Folder 6            Sense and Nonsense (originals), 1969

Box 8, Folder 7            Proposal to Post Office, 1970

Box 8, Folder 8            Font photographs, undated

Box 9, Folder 1-2         Machine photographs, circa 1960, 1963, 1964, undated

### Subseries 2.3: Correspondence, 1956 -1960

Box 9, Folder 3            Reading Machine: Airborne Instruments Laboratory supplement #1,, 1956 -1960

[Return to Table of Contents](#)

## Series 3: Automatic Regulation of Watches and Clocks, 1948- 1981

### Subseries 3.1: Patents, 1948 -1975

Box 9, Folder 4	Rabinow Patent #2542430,, 1948 -1951
Box 9, Folder 5	Watch regulator patents,, 1948 -1962
Box 9, Folder 6	Watch regulator patents and agreements,, 1948-1962
Box 10, Folder 1-2	Watch regulator patents and agreements,, 1948 -1962
Box 10, Folder 3	Rabinow patents,, 1951 -1962
Box 10, Folder 4	Patents,, 1951 -1966
Box 10, Folder 5	Watch regulator patents,, 951 -1974
Box 10, Folder 6	Self actuated automated regulation of time pieces (#2),, 1954 -1956
Box 10, Folder 7	Boyles patent,, 1955
Box 10, Folder 8	Dolby patent,, 1955
Box 11, Folder 1-2	Lux Dicke patents,, 1955 -1956
Box 11, Folder 3	Automatic rate regulation for timepieces (regulator #3),, circa 1954-1956
Box 11, Folder 4	Rabinow self-actuated automatic regulation of timepieces,, 1956 -1958
Box 11, Folder 5	Rabinow self actuated automatic regulation of timepieces,, 1956 -1961
Box 11, Folder 6	Patent interference #88725 Dicke v. Rabinow,, 1957 -1959
Box 11, Folder 7	Latch out automatic rate regulator patent,, 1959 -1960
Box 11, Folder 8	Watch regulator patents,, 1959 -1960
Box 11, Folder 9	Rabinow self actuated automatic regulator of timepieces,, 1959 -1960?
Box 11, Folder 10	Clock regulator German patent applications,, 1959 -1964
Box 11, Folder 11	Timepiece regulator patents,, 1960 -1968
Box 11, Folder 12	Timepiece regulation patent,, 1961

Box 12, Folder 1      Safety automatic regulator for timepieces,, 1961

Box 12, Folder 2      Rabinow Stern latched regulator,, 1975

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### Subseries 3.2: Patent Right Litigation and Royalties, 1948 -1976

Box 12, Folder 3      Rabinow notes, 1948 -1954

Box 12, Folder 4-5      Watch regulator correspondence, 1948 -1956

Box 12, Folder 6      Benrus contract, 1953 -1959

Box 12, Folder 7      Clock regulator cross licensing agreements, 1953- 1976

Box 12, Folder 8      General Time records, 1955 -1964

Box 13, Folder 1      Interference agreement, 1956 -1959

Box 13, Folder 2      Clock regulator infringement, 1957 -1959

Box 13, Folder 3      Watch regulator correspondence, 1957 -1959

Box 13, Folder 4      General Time correspondence, 1957 -1974

Box 13, Folder 5      Borg new clock regulator, 1959- 1962

Box 13, Folder 6      Watch regulator correspondence, 1960 -1962

Box 13, Folder 7      General Time v. Borg suit, 1960- 1967

Box 13, Folder 8      Benrus agreement, 1962

Box 14, Folder 1      Watch regulator correspondence, 1963

Box 14, Folder 2      Correspondence, 1965-1973

Box 14, Folder 3      Rabinow-Libman, General Time and Bunker Rama agreement, 1975-1976

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### Subseries 3.3: Brochures, Publicity, and Photographs, 1953-1964

Box 14, Folder 4      Watch regulator technical and photos, 1953 -1964

Box 14, Folder 5      Watch regulator photographs, undated

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### Subseries 3.4: General Correspondence, 1948 -1981

Box 14, Folder 6      Watch regulators: notes and correspondence, 1948- 1957

Box 14, Folder 7      Correspondence, 1953-1981

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[Return to Table of Contents](#)

Map-folder 1      Servo Phono Arm II, 1962-1970  
Notes:      Pencil drawings of the Servo Phono Arm, and related notes.