



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

## Halacsy and Von Fuchs Documentation for the Transformer History

NMAH.AC.0052

Robert Harding

1983

Archives Center, National Museum of American History  
P.O. Box 37012  
Suite 1100, MRC 601  
Washington, D.C. 20013-7012  
archivescenter@si.edu  
<http://americanhistory.si.edu/archives>

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## Collection Overview

<b>Repository:</b>	Archives Center, National Museum of American History
<b>Title:</b>	Halacsy and Von Fuchs Documentation for Transformer History
<b>Identifier:</b>	NMAH.AC.0052
<b>Date:</b>	1884-1885
<b>Extent:</b>	0.66 Cubic feet (2 boxes)
<b>Creator:</b>	Von Fuchs, George, Dr. Halacsy, Andrew, Dr. (electrical engineer)
<b>Language:</b>	English .
<b>Summary:</b>	Contains information directly relevant to the transformer's 1884-1885 evolution and secondary references and articles which von Fuchs and Halacsy referred to in their research.

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## Administrative Information

### Provenance

Collection transferred to the Archives Center from the Division of Electricity (now Division of Work and Industry) May 27, 1983.

### Processing Information

Collection processed by Robert Harding, 1983

### Preferred Citation

Halacsy and Von Fuchs Documentation for Transformer History, 1884-1885, Archives Center, National Museum of American History.

### Restrictions

Collection is open for research.

### Conditions Governing Use

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## Biographical / Historical

Dr. Andrew Halacsy and Dr. George von Fuchs concentrate on the 1884 and 1885 development of the transformer and have written several papers together on the transformer's creation. They brought this documentation together in 1960, when both were members of the American Institute of Electrical Engineers.

When Michael Faraday discovered the induction principle in 1831, he found that if a conductor were put into an alternating current path, then a voltage would be induced in the conductor. Until 1884 this discovery was not followed up, but as the means of production for AC power expanded, inventors began searching for ways to control this energy form. The final product of two years of patent competition based on Faraday's induction work was the modern transformer.

If a voltage were induced in the core of the transformer by the input AC source, then an output AC source could be started from the induction begun by the magnetic flux in the core. Essentially, energy can be transferred from a primary AC source to a secondary AC source by purely electromagnetic means. Induction replaces an electrical connection. If the primary leg contains more wire coils than the secondary, then the transformer drops voltage over the core and is called a step-down transformer. If the secondary coil is built with more wire coil than the primary, voltage is increased over the coil, and the device becomes a step-up transformer. Several transformer models were produced in the U.S. and foreign countries in 1884, but the Hungarian three man team of Deri, Blathy, and Zipernowsky are credited with the first industrially useful construction. In 1885, at a Budapest exhibition, first utilized a closed iron core and first connected the primary and secondary in parallel.

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## Scope and Contents

The collection is divided into two boxes- the first containing information directly relevant to the transformer's 1884-85 evolution and the second containing secondary references and articles which von Fuchs and Halacsy referred to in their research. The original material box contains the following: eight figures of inventors and their developments; patents submitted between 84 and 85 and divided into the four categories of parallel, series, open iron core, and closed iron core; a paper by the compilers on transformer history; and an assorted collection of mimeographs of research notes and correspondences. The reference box contains secondary articles on the history of the transformer which were written by both American and German authors at the time of the advances and recently.

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## Arrangement

Chronological arrangement.

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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:

Electrical engineers

Names:

American Institute of Electrical Engineers.