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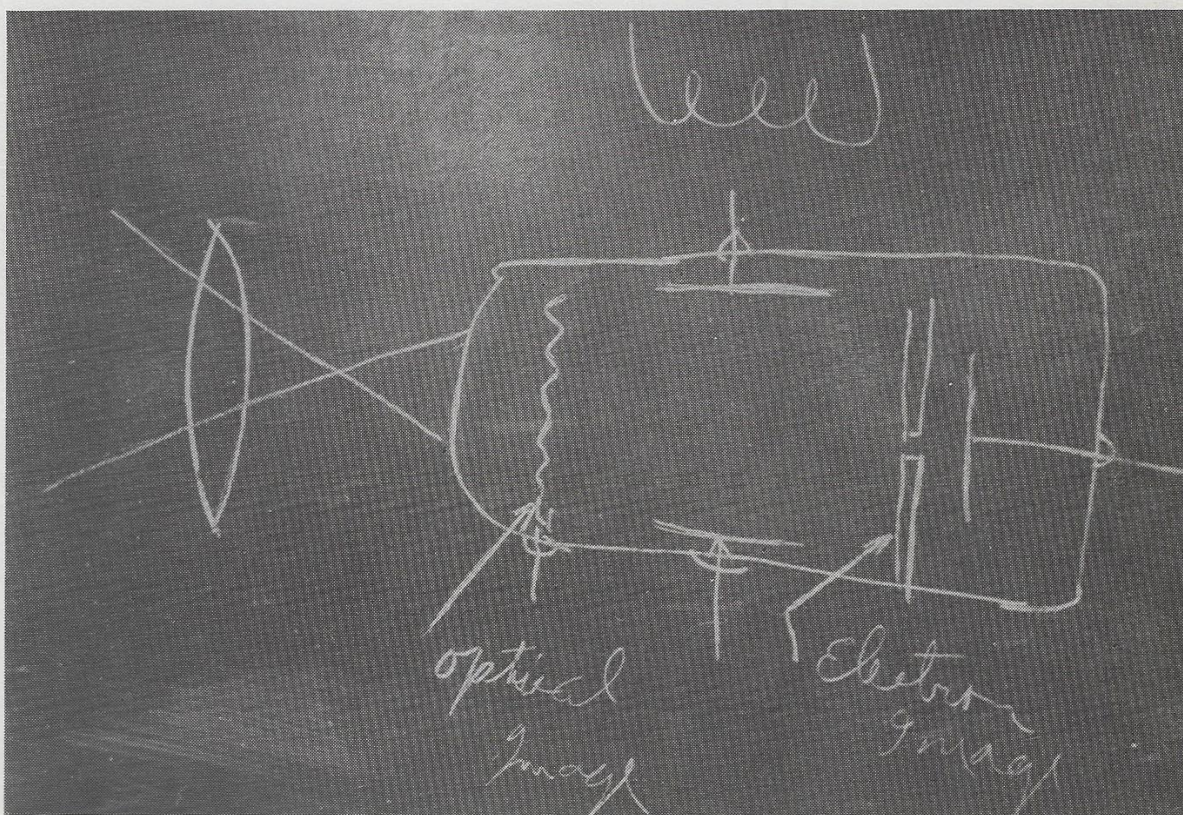
Date of Issue: September 21, 1983

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# PHILO TAYLOR FARNSWORTH

## THE ARCHETYPAL AMERICAN INVENTOR

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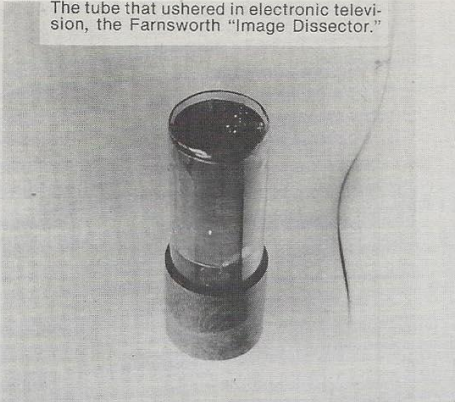


Original sketch of "image Dissector" drawn by Philo Farnsworth for Justin Tolman. 1922

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Farnsworth at age 14, in first suit bought with prize money from his first invention, "Thief-Proof Car Lock," about the time of first TV disclosure to high school chemistry teacher, Justin Tolman.



The tube that ushered in electronic television, the Farnsworth "Image Dissector."

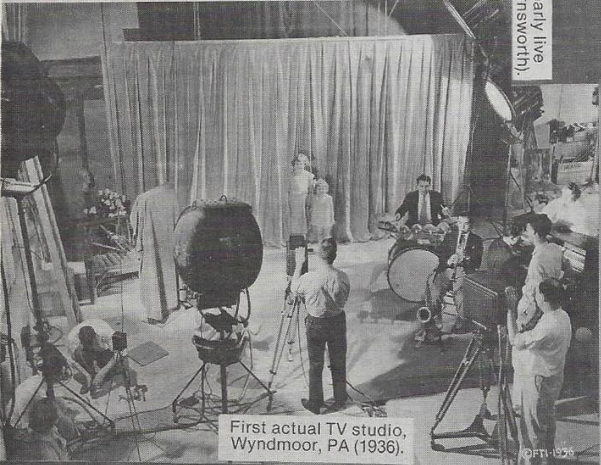


photo of an early live TV transmission (Elma Farnsworth).



Farnsworth holding 1928 "Image Dissector" by first TV camera.

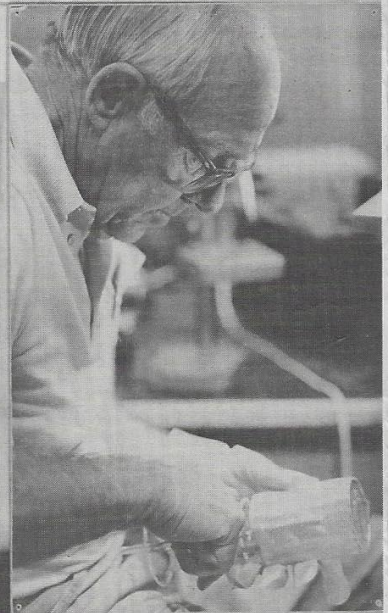
PLATE II  
ARRANGEMENT OF TRANSMITTER.  
THE FIRST ELECTRONIC TELEVISION SYSTEM OPERATED SUCCESSFULLY WITH REALIZATION OF INTER-OPERABLE IMAGES.  
DEVELOPED BY PHILIP H. FARNSWORTH  
APRIL 30, 1928  
FARNSWORTH TELEVISION SYSTEMS  
SAN FRANCISCO, CALIFORNIA



First actual TV studio, Wyndmoor, PA (1936).



"Emmy" Award from Governor's Council, San Francisco Chapter, 1978.



Cliff Gardner making identical copy of first working dissector, Berkeley, 1977, for 50th Anniversary retransmission of first picture.



Farnsworth entering daily lab notes, a lifelong habit (about 1939).



Cliff Gardner at the glass/pumping table c. 1928.

Where the new baby was born, 202 Green Street, San Francisco, CA.

# SOME FARNSWORTH MEMORABILIA...

## PHILO TAYLOR FARNSWORTH, the Archetypal American Inventor

It was springtime in the Snake River Valley, Idaho, when a 14-year-old farm-boy, Philo Farnsworth, disc harrowing rows in his father's field, was struck by a thought — a thought so far reaching as to alter the shape of modern civilization.

Looking back over rows he had made, the idea of how to create an electronic system of television struck him like a thunderbolt. The ideas which make modern television really began on that day.

Philo Taylor Farnsworth was born in a log cabin near Beaver, Utah, on August 19, 1906. His parents were of Mormon stock, and very modest circumstances. In order to find work for the father, the family made many moves over Utah and Idaho. It was in Rigby, Idaho, where, on a rented farm, the young Philo first encountered electricity, in the form of a Delco home generating system. He quickly took over maintenance of the equipment, endlessly dismantling and reassembling it until he had taught himself the rudiments of electrical gear and circuitry.

The young inventor learned about electrons at the age of 13. He had just read about mechanical television using spinning discs, and quickly decided that any system using moving parts was ultimately too limited to be of real use, due to the extreme speed and precision needed in the disc to give a quality picture. Since electrons could be manipulated in a vacuum at almost any speed, they seemed to him to be the only answer. The concepts and techniques for scanning and synchronization of the picture were to occur to him shortly thereafter.

Besides doing the farm chores and carrying a prodigious course load in his first (and last) year in Rigby high school, he drove a horse-drawn school wagon through the bitterly cold Idaho winter to earn money for badly needed books. At 15, he had invented the first camera tube, which he called the "Image Dissector," and was able to describe his basic television system to his chemistry teacher, Justin Tolman, who was able to describe the "Dissector" years later to patent attorneys taking depositions for a patent interference action.

While Farnsworth took several courses at Brigham Young University, and considered, like most inventors, education to be a life-long process, he died, like Steinmetz before him, having to be satisfied with a series of honorary degrees.

Family necessity took Farnsworth into a variety of jobs, ranging from janitor to train electrician, finally bringing him to Salt Lake City. Here, while working on a Community Chest campaign, he met George Everson, the campaign manager, and described his television ideas. An enchanted Everson and his campaign partner agreed to put up \$6,000 of savings and look for further backing. Success in this finally came in San Francisco, when an unlikely group of some of the largest investors in the Bay Area arrayed themselves in the Crocker Bank to hear a 19-year-old boy present a proposition they never dreamed they would ever hear, much less back financially.

The new laboratory was located at 202 Green Street, San Francisco, and was funded with \$25,000 to cover the first year of operation. This was in September, 1926, and on September 7, 1927, the first all-electronic picture in the world was transmitted. The *San Francisco Chronicle* carried the story a year later, on September 3, 1928, of a considerably improved picture.

cont'd over

Trade recognition and international attention now came to the little Green Street laboratory, although many in the trade still would not credit the story of the few young workers, working with so little, scooping the whole field. Several manufacturers, notably RCA, started to examine the Farnsworth position, with an eye to buying this upstart outright. RCA sent an emissary, V.K. Zworykin, the author of an unworkable camera tube in 1923, out to the laboratory in 1930, affording him his first look at a working camera tube (and system), and occasioning a full-scale patent interference. The patent office found for Farnsworth, while denying Zworykin's early claims. Subsequent patent interferences, always instigated by RCA, and always won by Farnsworth, refined by thorough, expert findings by senior patent examiners, spelled the dominance of Farnsworth in the basic television cases, including scanning and synchronizing used even today.

In 1931, Farnsworth sold a patent license to Philco, in Philadelphia, with the proviso that a lab force be taken east to "set up Philco in television". When this had been accomplished, a new Farnsworth

laboratory was set up in North Philadelphia, on Mermaid Lane. It was here that the bulk of the work was done on television (and related) cases. Many important workers were trained here, in what amounted to be a very special university. Farnsworth never lost a chance to encourage and nurture the talents and original thinking of his men. He was delighted when their ideas developed into patentable material and made sure their name was on the resulting patent although at times he had made substantial contributions. There was a deep bond between him and the "Lab Gang".

In 1939, the Farnsworth Television Corp. became the Farnsworth Television & Radio Corp., when the decision was made to expand into manufacturing, by buying the old Capehart Phonograph Co. in Fort Wayne, Indiana. After a year as Vice President in charge of research and engineering, he licensed the industry under his patents, helped to set television standards and went back to inventing.

He built a laboratory facility on his vacation place secluded in the Maine woods and moved there with his family and several of the original "Lab Gang", including Cliff Gardner, his first employee in San Francisco.

Pearl Harbor and World War II stopped television in its tracks, resulting in Farnsworth remaining in Maine for the war years. He was called upon for help in such a variety of projects as a substitute for rubber, advanced work in air foils for jet planes and special and secret electronic tubes for the Pentagon, and the British radar effort. To fill the need for sturdy ammunition boxes, he expanded a hobby saw-mill into a major effort involving lumbering, saw mills and a box shop. His brothers, Carl and Lincoln, came from California to manage and participate in this effort.

At the end of the war, mismanagement of the greatly expanded operations of FT&R in Fort Wayne, had, despite fat wartime contracts (earning the Company several Navy "E"s), placed the firm so near bankruptcy that forced sale to a waiting ITT was negotiated. Farnsworth ended up a vice president of a newly formed ITT-Farnsworth corporation, spending his time heading a group in defense contracts dealing with exotic space-science components as well as complete missile systems. They were given contracts on many projects such as the Bomarc missile.

The last major contribution from Farnsworth was, however, fated never to be completed in his lifetime. In 1953, he conceived an approach to atomic fusion, a method of producing almost unlimited, free, clean energy. When ITT withdrew their support in 1966, Farnsworth formed his own company, Philo T. Farnsworth Associates, bringing together those who had been on the project. The aim of this venture had been to further work on Atomic Fusion with the development and sale of various space-age, state-of-the-art components, but 1969, with massive cutbacks in defense and aerospace contracts, was the wrong year to start such an enterprise, and the company failed. Thus the immense contributions of Farnsworth proved inadequate to allow him to finish his last, and largest, project.

In failing health, Philo T. Farnsworth died in Salt Lake City on March 11, 1971.

By Philo T. Farnsworth, III  
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and Philo T. Farnsworth, III



Televised picture of Mary Pickford c. 1930



Televised picture of Elma Farnsworth c. 1930

No. 2-222

PHILADELPHIA,

August 10, 1937

# CHESTNUT HILL TITLE & TRUST COMPANY 3-170

GERMANTOWN AVENUE AT G. AVERS LANE

PAY TO THE ORDER OF

Cash

\$ 200.00

100 DOLLARS

SAFE DEPOSIT VAULTS

*Phil J. Farnsworth*

AMERICAN BANK NOTE COMPANY, PHILA.

No. 87

PHILADELPHIA, January 15, 1936

# CHESTNUT HILL TITLE & TRUST COMPANY 3-170

GERMANTOWN AVENUE AT G. AVERS LANE

PAY TO THE ORDER OF

Farnsworth Television Incorporated

\$ 800.00

100 DOLLARS

SAFE DEPOSIT VAULTS

*Phil J. Farnsworth*

AMERICAN BANK NOTE COMPANY, PHILA.



*Philo T. Farnsworth*

*Edna F. Farnsworth*

*Philo Farnsworth*

