PHILO TAYLOR FARNSWORTH
THE ARCHETYPAL AMERICAN INVENTOR

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

First actual TV studio, Wyndmoor, PA (1930).

Farnsworth entering daily lab notes, a lifelong habit (about 1930).

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

Where the first baby was born, 205 Green Street, San Francisco, CA.

Cliff Gardner making identical copy of first working dissector, Berkeley, 1927, for 50th Anniversary retransmission of first picture.

Cliff Gardner at the glass pumping table c. 1928.

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

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

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, disco
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 encoun-
tered electricity, in the form of a Delco home generating
system. He quickly took over maintenance of the equip-
ment, 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 pro-
digious 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 18, 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 Eversen,
the campaign manager, and described his television
ideas. An enchanted Eversen 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 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&I 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 as 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 1956, 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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Television picture of Mary Pickford c. 1930

Television picture of Elma Farnsworth c. 1930
From Phil Savenick