

AUGUST 2024



WHAT'S NEW IN OLD TVS

The Newsletter of the Early Television Foundation

Greetings Early Television Fans,

This is Volume 1, Number 1 of the Early Television Newsletter. We believe that it will, not only, keep members engaged and informed but also attract new members to join our group. This organization is different from many hobbyist clubs that are local groups that can get together frequently. Instead, we are spread out around the country and the world. We have the annual convention that brings many of us together at the Museum in Columbus but for many the trip is too long to make too often.

The Covid years brought Zoom Meetings to ETF and for some this has been a great opportunity to hear presentations, get the news and see other members. The work Steve McVoy has done to create the ETF website and fill it with great information is also a great resource for members and researchers. It is our hope that the ETF Newsletter will become another way to keep in touch with our group. As a member, you will receive an email with a link to the newsletter. A simple click will give you a pdf file with news and info about the ETF. We also hope to help keep the history of television alive and that members will share this enthusiasm with others.

Few people realize that it is a little over 100 years since radio broadcasting began and that first day at KDKA in Pittsburgh marked the first time in the history of mankind that a system of instantaneous mass communication was licensed to broadcast on a scheduled basis. It is amazing that we advanced from a Galena crystal, some coils of wire and a set of headphones to the HD flat panel sets we have today. More people should appreciate "how we got to here".

Now we hope that our members can help spread the story. As editors, we plan to contribute a lot of content for the first few issues but, we can only make the newsletter work over a long period with contributions from all.

Reach us at newsletter@earlytelevision.org

Editors: Mike Molnar and Robert Ring

In this issue:

Greetings from the Editors

News and Notes

Tech Tips

A TV man's Biography

ARTICLE PART 1

**When Television was
"Just Around the Corner"
and more ...**

Here are some of our plans for future issues

- Letters from members
- Tech Tips from service experiences
- My first TV (family stories?)
- My favorite TV (and why)
- Stories of working in the business.
- Articles that can be added in whole or in parts.
- Biographies of members
- Contact info from members who wish to share.
- Info about other museums that members may find interesting
- And anything else you may suggest.

NEWS and NOTES from the last Zoom Meeting

On July 27th Dave Sica hosted the zoom meeting and Steve McVoy began the meeting with some “News of the Museum”

Steve mentioned that the Museum will be receiving a Nielson Recorder, the devices used in the 1950s to track shows watched in selected viewers homes. It was acquired by Matt D’Asario, who is donating it to the Museum. Steve also mentioned that visitors to the Museum has increased to a point that it is feasible to increase the number of days the museum is open to the public, hopefully adding 3 days a week to the current 3 days a week. He believes this will require some advertising and promotion to be successful. This brought some comments from participants that additional signage on the building and possibly from the main road is needed. It was also suggested that it may be in the town of Hilliard’s interest to help with this.

Steve also remarked that ticket sales have not reached the total needed to go ahead with the raffle scheduled for October 12.

Still time to make your purchase on the website.

Also, the Saturday Swap Meet is also scheduled for October 12.

Bring your extra items to the tailgate sale. You can do a fall clean up from your collection or bring home some winter projects *or both*.

The next Zoom Meeting

AUGUST 31 at 8 PM

Details on the ETF website

A Mid-Century Marvel Could Be Yours


The nation’s most comprehensive museum devoted to Early Television receivers is offering an outstanding mid-century treasure in this year’s sweepstakes fundraiser.

Sweepstakes donations are now being collected to **win a fully-restored 1959 Philco Predicta “Pedestal” TV in Blonde finish, and with UHF tuning** (a rare extra feature.)

Early TV Museum members have worked together to restore this fully-operational Philco Predicta. Restoring these sets is no small feat, given their notorious complexity.



Sweepstakes drawing will be conducted on **October 12, 2024** at the Hilliard, Ohio Early TV Museum. No purchase necessary to enter, but donations are accepted. Sweepstakes details and rules are online.

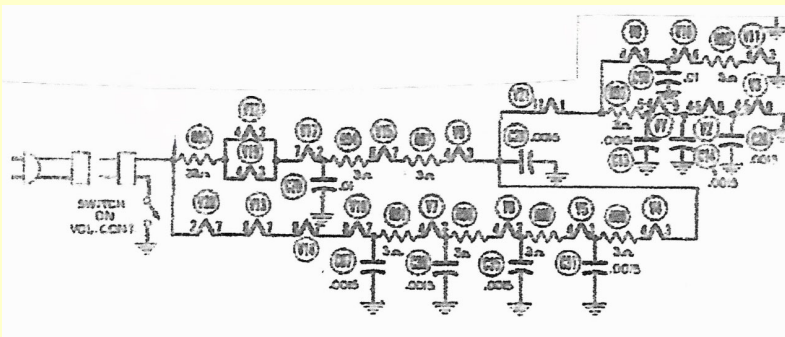


TECH TIPS

This part of the newsletter is for members who repair/restore their collectable TVs. Sharing some useful info with others can often save them hours of time that would be spent going down the same trail of clues that you or others have taken in the past. So, I'll contribute the first tip, the result of a recent experience of my own. The TV in this case was the 3-inch Pilot 37. This particular set is one that I restored several years ago. I took it off the shelf, set it up and with a little adjustment, it worked fine.



Then I committed the mortal sin. I moved the TV to another location and turned it on again. This time, no sound, no picture. Showing off a vintage is often a humbling experience. So, it is often a good idea to have a back up TV or two around to demonstrate. Later, I was determined to see what went wrong and took the cover off and removed the chassis. A quick look confirmed that power came on and the CRT filament and some tube filaments could be seen. I was confident that the problem arrived from moving the set, so I pulled up a diagram and went to work. One part of the diagram caught my eye and that was the tube filament string.



At the time a power transformer was not what a manufacturer wanted to include in a low-cost radio or TV. The filament string in an All American 5 tube radio was a simple thing but a TV is a whole other matter. The diagram shows a pretty crazy path but it also shows possible situations where only some tubes may be out. This made me examine the set more closely and sure enough it seemed like 4 or 5 tubes weren't lit. Following the diagram is a chore as each V number needs to be crossed to a tube and then to a location on the chassis. So before starting the process, giving the cold tubes a quick wiggle in their sockets brought them back on. A frustrating job avoided and the TV worked well. I'll keep it on the shelf, ready for next time.

Submitted by Mike Molnar

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Early Television Foundation Museum News

One of the purposes of the Newsletter is to keep you up to date with what is happening at the museum. In this first issue we can start with giving you some information about the history of the museum. It all began back in the last century, way back in 1999, when now ETF President, Steve McVoy sold his cable TV company. How was this man going to channel all of his energies? If you haven't guessed, he grew his interest in the history of television to a point where his personal collection of TVs that he was restoring, grew to a point that he purchased a building to place all of these treasures and to share the enjoyment with others. In 2000, papers were filed with the State of Ohio forming the Early Television Foundation as a non-profit corporation. Steve, in 2001, purchased the building at 5396 Franklin Street, Hilliard, Ohio and prepared it to house his collection and to open it to visitors. It didn't take long for early television enthusiasts to find their way to Hilliard and donations and help from volunteers began to come into the museum. Soon, the first Early Television Convention was held in 2023 and with the exception of two covid years, the conventions continue today. To those who haven't visited the area, Hilliard is a small suburb of Columbus, Ohio. In the past few years, the old town of Hilliard is being restored to be a tourist destination and the town is now beginning to appreciate the value the museum adds to the town.

Now visitors will find that both old Hilliard and the Early Television Museum getting better each year.

EARLY TELEVISION MEMBER BIOGRAPHY

Edward H. Reitan

When listening to the discussions during zoom meetings or during conversations at the conventions, it becomes obvious that many of the members have had amazing careers and experiences in television and other technologies. This part of the ETF Newsletter is intended to share their stories with the rest of the members. This first bio is unfortunately presented posthumously but is very important to me. Over the many years that I've attended the convention, I would examine the items on display and try to learn about them. Then one year, as I watched the Wizard of Oz on a CT100, Ed Reitan struck up a conversation with me. I quickly discovered how much I still had to learn. I had also made a new friend. Ed was generous with his time as I followed him around with question after question. In hindsight, I'm surprised he didn't duck away from me. His presentations were wonderful and inspired me to start making presentations of my own. Ed had an impressive career with many accomplishments. The following is an excerpt from the obituary ETF member James O'Neal prepared for the IEEE.



Edward H. Reitan (1944-2015)

Ed's History of Color TV is available on the ETF website

Edward Howard Reitan, an electrical engineer, computer scientist and SMPTE Life Member died on 5 January 2015 at the UCLA Medical Center in Los Angeles. He was 71.

Although Reitan's career track involved the development of computer-based air traffic control radar systems and display technology for these systems, he was also a television historian who focused on the development of color imaging. His work in this area ultimately led to the sharing of a Technical Emmy Award in 1989 in connection with the restoration of one of the earliest surviving color videotape recordings, the 1958 NBC presentation of "An Evening with Fred Astaire."

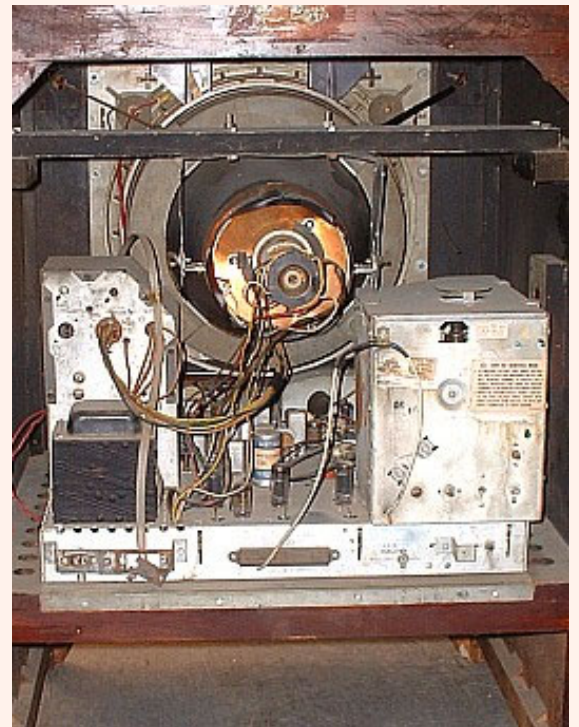
Reitan was a native of Omaha, Nebraska, and as a child witnessed RCA/NBC's first coast-to-coast demonstration of T C color television. The event was the January 1st 1954 Tournament of Roses Parade, which originated in Pasadena, CA. Omaha's BC affiliate, WOW-TY, was one of few stations carrying the broadcast in color and as part of the promotional effort for the new color system (it had received official FCC blessing less than two weeks earlier), the network had arranged for a number of pre-production color receivers to be made available for viewing the miracle of "compatible color television." Reitan's family journeyed to Omaha's Paxton Hotel where several of the 12-inch color receivers were set up alongside larger black and white sets. The impression this seminal colorcast made on young Reitan was lasting and he devoted a great deal of his life to researching and otherwise collecting information about color television's history. Reitan also collected and restored early color television artifacts, including a CBS Field-sequential color camera and receivers designed for the 405-line/144-ued color video it produced.

In addition to his work in color videotape restoration, Reitan is remembered for his involvement in computer-based based radar systems for air traffic control. He was an advocate for well-designed display systems and incorporated early plasma displays in his ATC displays. Some of the radar display systems Reitan helped engineer are still in production after more than 40 years.

- James, E. O'Neal



RCA CT100 Color TV
Front and Rear



The Perfect Gift for the Old Television Fan



A hot cup of coffee generates the color bars.



Can you caption this picture?
Let us know what you would suggest !

My Caption would read: "After the Exorcism" - Mike

"For sale, lightly used capacitors-no low-ball offers-I know what I got" – Robert

We are counting on contributions from our fellow members to make this newsletter a success.

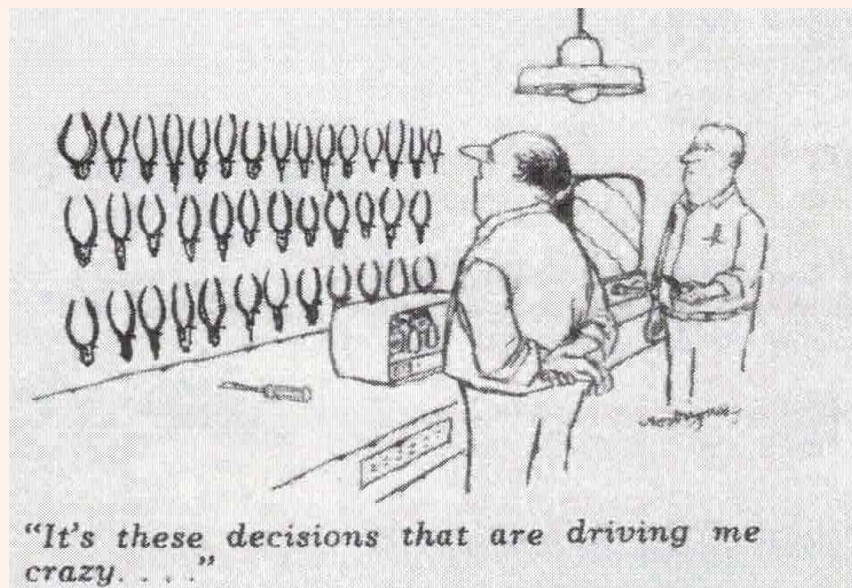
Contact us by email with your ideas, comments and contributions.

We have a lot of pixels we haven't taken out of the box yet, let's use them up

Contact us at newsletter@earlytelevision.org

We hope the link to this newsletter arriving in your email helps boost your interest in early TV

Your Editors, Mike Molnar Robert Ring



Next, please find Part One

of

"When Television was Around the Corner"

When Television was Just Around the Corner

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Broadcast radio, from its beginning, caught the public's attention. From the first broadcasts in late 1920 through 1922, interest boomed and the industry couldn't keep up. As radio programming matured, the obvious goal was to add sight to the sounds coming through the ether. As experimenters began working with the available technology, every demonstration of their efforts would catch the public attention. The statements describing even a slight improvement were often followed with the phrase, "Television is just around the corner." Soon it would become evident to all that the goal of commercial television service, using 1920s technology, was always out of reach.

Earliest Efforts

The history of many different technologies includes examples of long periods between a new understanding of science and that new knowledge resulting in a new technological innovation for the benefit of the average person. Electricity was studied for hundreds of years before Edison invented the electric light bulb and then still many more years before it was in the average home. Maxwell's equations were disclosed decades before the first radios, and Newton's laws were well known centuries before they were applied to guide astronauts to the moon. Similar events would take place before a family could gather around a box with a small glowing screen to be entertained by the image of Milton Berle in a dress or Jackie Gleason in a bus driver uniform. Mechanical television would be an important step toward making television into the broadcast and cable service we know today (Fig. 1).

In 2016, an Academy of Television Emmy Award was posthumously awarded to a mostly unknown Scottish inventor named Alexander Bain for inventing "the concept of scanning for image transmission."¹ The award was to honor his 1842 patent for a system to convert a still image into an electrical signal, send the signal some distance by wire, and reconstruct the image at that point. Although his system would be recognized as a facsimile system, it represented the first concept of what would



Fig. 1. The dream of television, circa 1900. (Author's collection)

When Television was Just Around the Corner

require nearly a century of research and experimentation before the initiation of television broadcasting.² Researchers could now begin to have an understanding of the requirements for television.

There may have been different approaches to meet the requirements but these factors were necessary:

- ‡ Divide an image into a number of image components based on position in the image.
- ‡ Convert each component into an electrical signal that varies with corresponding intensity.
- ‡ Send the signals to another location, by wire or wireless.
- ‡ Convert the electrical signals back to image components; variations in light and dark.
- ‡ Reassemble the image components into the proper positions to create a visual image.
- ‡ Repeat these steps rapidly so the human eye sees a truly moving image.

All of these factors proved to be huge problems to solve. As decades passed, improvements in each area were incremental. Research from the earliest dates took place in Europe. As inventors worked on these issues, the first progress came with the transmission of still images by wire. It would take over 80 years before the first crude moving images could be transmitted and about another 15 years before an image of commercial value could be sent regularly. During the late 1930s, radio historian Archer Gleason wrote a summary of the television situation. He

noted that the 1939 beginning of commercial broadcasting marked another step in the most intensive and expensive campaign of scientific research in the history of mankind.³ He also noted that one of the most intriguing problems affecting radio sales in the 1930s was caused by "television-that elusive sprite that for a full decade has been *just around the corner*."⁴

Incremental Improvements

Selenium

The chemical element selenium was first discovered in 1817 by Berzelius, a Swedish chemist, when it was extracted from metal ore. Some 20 years later, as more of selenium's properties were discovered, it found use in telegraphic equipment, due to its property of high resistance to an electrical current. Soon a technician named May, working at the Atlantic cable station in Valentia on the west coast of Ireland, noticed a change in the electrical characteristics of the device. After several occurrences, he came to realize that when exposed to light, the electrical resistance of the selenium was reduced.

This information was passed on for scientific investigation, and Willoughby Smith conducted experiments to quantify the behavior of selenium.⁵ This sensitivity to light answered the problem confronted by researchers looking for ways to convert the light reflected off an object into an electrical signal. The selenium detector, when placed in a circuit as a photoresistor, in series with an electrical source, acted as a valve allowing more current to pass when struck by more intense light.

Although this invention came decades

before the carbon button microphone, the performance is similar. As more pressure from sound waves strike a carbon button, its resistance drops allowing more current from the local battery to pass. The light hitting the selenium cell in circuit with a local battery can be understood as a microphone for light.

Although this discovery would seem like the perfect solution for a television system, it was not.

Investigation would soon reveal that the time required for selenium to respond to light and to recover from the exposure to light were not linear or symmetrical (Fig. 2). For the number of pictures per second to create a television picture with acceptable flicker, selenium's response time was too slow. The recovery time, as shown on the graph, is notably slower than the light response time. The selenium cell did find use in converting a still image into an electrical signal. By passing the cell over a segment of the light reflected off of an image, the electrical signal that was produced could be sent

by wire to a location where the image was reproduced, one segment at a time. This was done by a number of inventors, often with remarkably good results.

Nineteenth-Century Progress

Nineteenth-century devices to produce an electric image of an object often included a cylinder to hold the photographic image. A light source was focused on a small part of the picture and the light, either reflected or passed through the photograph, was reflected to a selenium cell detector. The cylinder moved the photograph in much the same method as an Edison cylinder phonograph moved the audio recording. As the cylinder with the photograph is rotated, it is scanned vertically. The cylinder is mounted to a spring motor or other drive that moves the cylinder by turning a screw that horizontally scans the photograph in a spiral (Fig. 3). This action slowly scans the entire photograph and the output of the selenium cell is sent to a receiver with a modulated light source

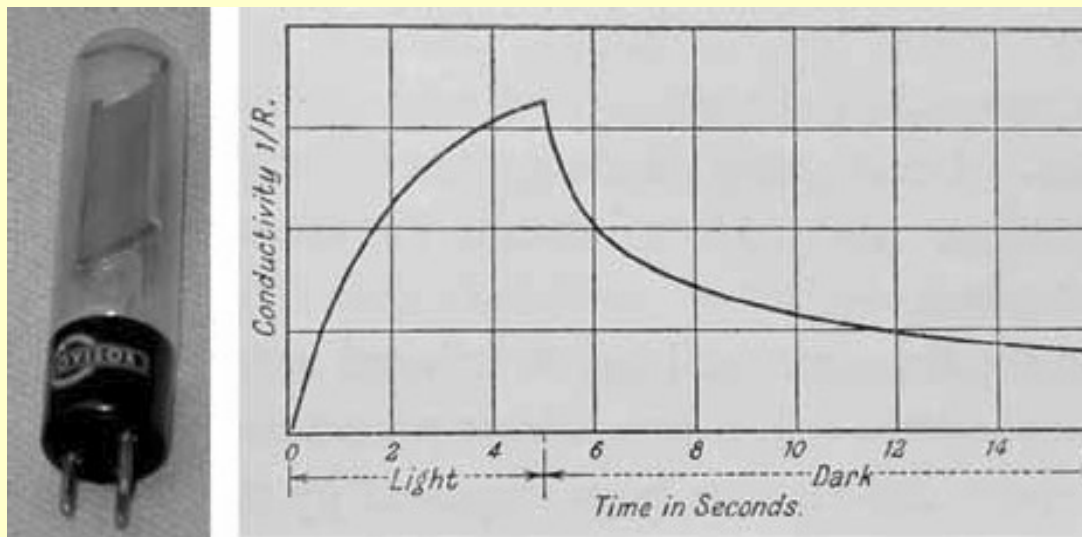


Fig. 2. Selenium cell and response curve. (E.T. Larnar, *Practical Television*, p. 71)

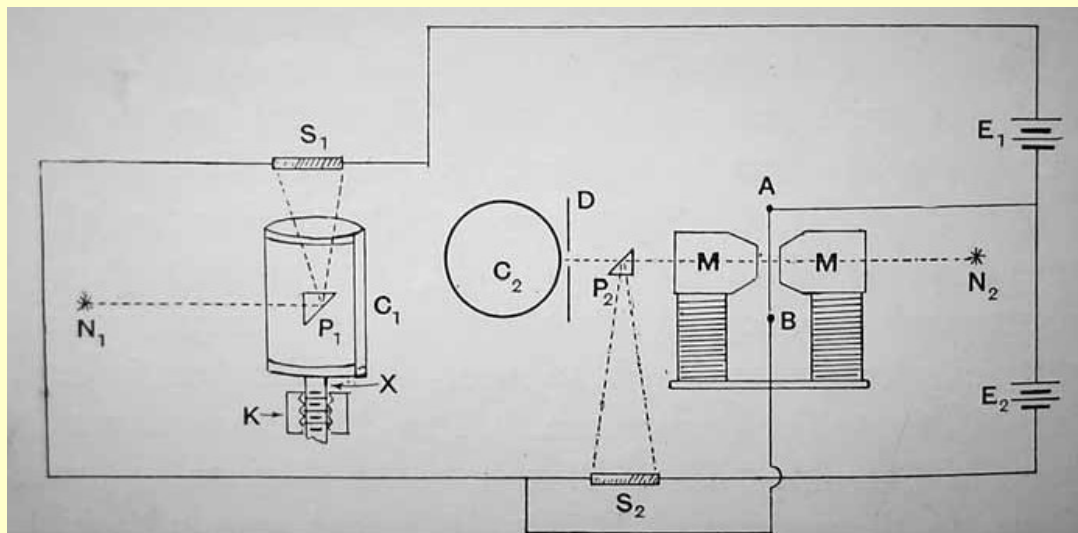


Fig. 3. Professor Korn's compensated selenium system. A photograph placed on cylinder C_1 is scanned by light from N_1 and the signal it generates is used to deflect wire A-B. This controls the amount of light from N_2 passing through M to expose the photographic film on cylinder C_2 . (T. Thorne Baker, *Wireless Pictures and Television*, p. 72)

that exposes photographic film mounted to a similar cylinder assembly synchronized with the transmitting cylinder.⁶

Creating a modulated light source to expose the film was a difficult task. One method was to use either a mirror or string galvanometer. The galvanometer was constructed in a manner that light could be passed between the coils and be blocked by a string that when deflected by the feeble current from the transmitter would move the string to allow a proportional amount of light through to expose the photographic film. Similar arrangements could be made with a mirror assembly to be shifted by the current allowing light to pass through an opening.

Different inventors made different advances. A professor, Arthur Korn, devised a system with two specially prepared selenium cells in a bridge circuit arranged so that the non-linear effects

in one cell could be compensated for by different response characteristics of the second cell. That gave improved results that allowed Korn to use his compensated selenium circuit to provide a commercial service using telephone circuits. As can be seen in the image (Fig. 4), the transmitter and receiver were synchronized by voice command on another telephone line.

Other inventors including Belin, Thorne, Baker, and later Francis Jenkins and Ranger in the United States, would produce still image systems. There was commercial demand for the transmission of pictures of important people and events as well as documents and fingerprints that could now be accomplished in minutes. As radio development progressed, sending still images by radio became an important feature for companies like RCA to add radio pictures to their Radiogram service. Another result

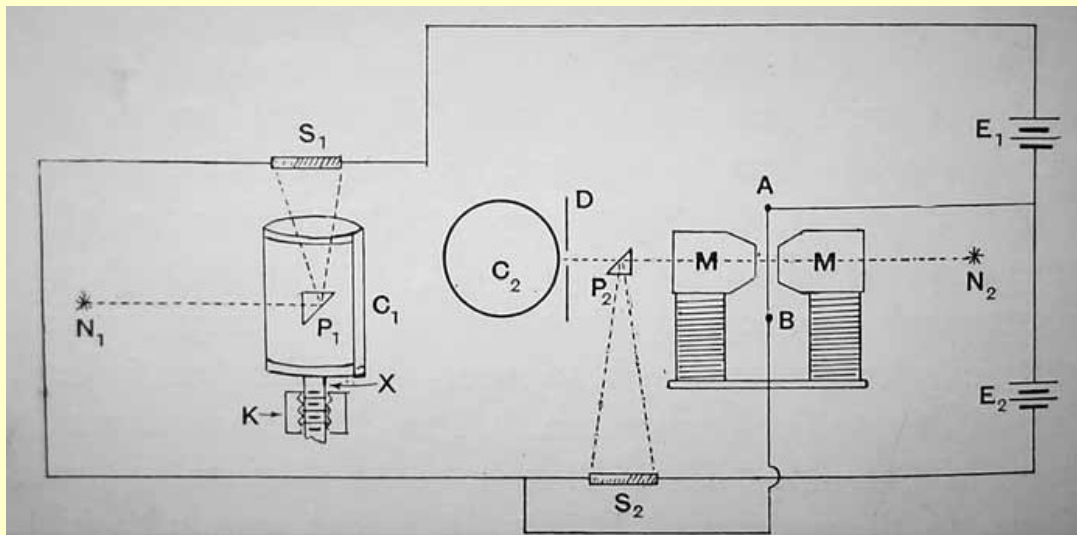


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devicesynchronized with another disc at the same starting point and a light source that varies in the same proportion gives the viewer the ability to see an image of a moving object from a distance... television.⁷

In an interview late in his life (Fig. 6), Nipkow, now 72 years old, spoke about Christmas Eve 1883, when a poor and hungry inventor was working on ideasfor whathe calledhis favorite problem, the "Televisor." Then the moment came when he realized this invention could work. "I jumped up" he said, "and danced around the room like one possessed, so that my landlady came into my room full of terror, fearing that something had happened to me. Actually, something had happened to me, but something delightful, something that made the hitherto so gloomy Christmas a brilliant festival, the most beautiful Christmas festival I can remember. Suddenly my stomach no longer called for food, I was gay, rich, and happy."⁸

When he was asked why he didn't pursue his experiments and produce a working model, Nipkow had a simple answer, "I was so poor I had to let my

patent lapse after a year. I did not even have the money to continue my study, to say nothing of the money for making experiments." Nipkow did go on to finish his education and became an engineer for the Signalbau Company, retiring after 33 years as the chief engineer.⁹ Not forgetting his old invention, he did continue work on his disc and filed two patents in his later years.¹⁰

Many others did take up his invention in both the original and improved forms. There were typically two ways to transmit the image using a Nipkow disc. The first was to simply use a lens to focus the light from an image onto the scanning area of the disc. The number of holes spaced over one revolution determines the number of lines in the image. As the disc makes each revolution, each passing hole sends the light from a corresponding line of light from the object to some device to convert the varying intensity of light into a similarly varying electrical signal. The process is repeated for each passing hole, scanning the light from the object one line at a time until a full revolution of the disc is accomplished, thus completing a frame.

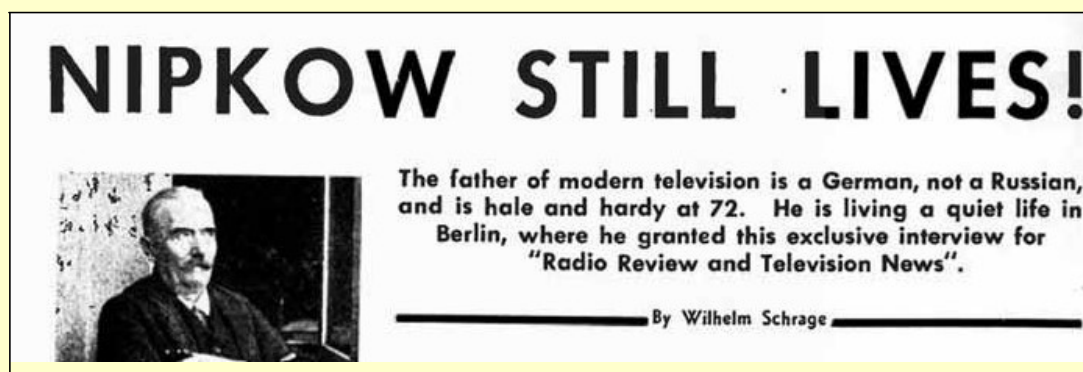


Fig . 6. Paul Nipkow interviewed at age 72. (Wilhelm Schrage, "Nipkow Lives," *Radio Review and Television News*, Jan-Feb 1933, p. 290)