THE MYSTERIOUS CASE OF THE DISAPPEARING INVENTOR

by: Navarre Bartz

7 Comments

August 19, 2023

Above: George Cove's third solar panel. Source: "Harnessing sunlight", René Homer, Modern Electrics, Vol. II, No.6, September 1909.

When combing through the history of technological innovation, we often find that pinning down a given inventor of something can be tricky. [Foeke Postma] at Bellingcat shows us that even the Smithsonian can get it wrong when given faulty information.

The mystery in question is the disappearance of inventor [George Cove] from a photograph of his solar panel system from 1909 and its reuse as evidence of the first photovoltaic solar panel by another inventor, [Charles Fritts], around 1884. Questions first arose about this image in 2021, but whether this was an example of photo manipulation was merely speculation at the time.

[Postma] walks us through his forensic process to deduce the answer via image and records analysis. Evidence points to this being another photo taken shortly after the first, where the inventor had stepped out-of-frame. The photo was later misattributed in the writing on its reverse, and that error propagated all the way to the Smithsonian. We recommend heading over to the article if you want some tips for doing image analysis of your own.

If you want to dig further into the past, how about some primitive materials science? Sometimes the time is just right for something, and it crops up in many different places.

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7 THOUGHTS ON “THE MYSTERIOUS CASE OF THE DISAPPEARING INVENTOR”

Giovanni says:

August 19, 2023 at 5:50 pm

The article is very technical, so it is fairly easy to miss some of the subtle things I have inferred.

As was customary in the early 1900s, many photographers waiting on a long exposure would most likely photograph equipment first, then appear in the trickier second photo which required still pose, to avoid blurs.

“The cameras of the day were very heavy and required a tripod. Anyone working on solar panels in 1884 was likely also a photographer and so this is likely a self portrait.

The natural approach to taking the photos would be to first photograph just the equipment. Attempting a self portrait would be an error prone business. Cameras didn’t necessarily have

shutters back then.

The flag rather suggests a shorter exposure than was likely possible in 1884.

So this suggests these are two genuine photos but taken after 1884."

2nd, an antiquarian provided this information to John Perlin, who stated in the Bellingcat correspondence, ""The Cove device offered nothing new. It had no relationship to photovoltaics, as it depended on the heat of the sun while solar cells produce their electricity from solar light", explained Perlin."

This implies Cove developed his own device unrelated to Fritts' selenium sheets. Whether or not Cove's was able to operate in a way that could be marketed is a separate issue, one that certainly involves more research- the use of antimony is a rare earth, and is toxic, thus would not be a great candidate to replace silicon. However, the fact is that Cove did substantial independent research.

The amount of covering up of the photos to remove traces from its original appearance in the Modern Electric, and the suggestion that Cove "acquired" Fritts equipment, is not just speculation, but potentially deliberately misleading in that they are trying to suggest that's what happened while being given the benefit of plausible deniability. In other words, if they used the photo without Cove, they might not have photoshopped him out, but they still tried to remove the trace that it was tied to the Modern Electric publication.

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Giovanni says:

August 19, 2023 at 5:51 pm

the quoted sections above were from https://twitter.com/hallam/status/1691840357229633619
10:52 AM · Aug 16, 2023

Reply Report comment

I Alone Possess The Truth says:

August 20, 2023 at 5:15 am

Antimony is not a rare earth so wrong. It's no more toxic than many other elements and some of its compounds are used as medicines.

The Photographer's Dilemma as you lay it out depends on forgetting that there is more than one person in the world and the inventor could have someone else press the button while he stands still.

Disappointing. But the time travel angle in the first paragraph is interesting.

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Anonymous says:
August 20, 2023 at 10:28 am

People are weirdly scared of antimony for some reason. Not sure where that meme comes from, it's oddly specific. I've always just thought of it as a hardener for lead, and in that case the lead is worse.

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rasz_pl says:
August 20, 2023 at 2:07 am

TLDR: solar panel was a scam with hidden wires pumping electricity into it from the grid. "Cove and Burlingame were arrested"

When I was a kid I used to love reading stories about scam inventions with mechanisms/wires hidden in walls/floor. Free energy, perpetual motion machines like John Keelys one with "In the basement there was a three-ton sphere of compressed air that ran the machines through hidden high pressure tubes and switches". Might have been "An Encyclopedia of Claims, Frauds, and Hoaxes of the Occult and Supernatural" by James Randi.

Just looking at video compression we have a classic 1995 Madison and Linda Priest Zekko Corp (from Florida) with magic box sending video over telephone cable, except "Hidden inside the power cords for the two "unconnected" computers – coax cable". Was able to scam "Blockbuster, Intel, General Dynamics, US West, former U.S. Sen. Paula Hawkins, the son of Atlanta media czar Ted Turner, and many more". Aussies had homegrown version of this very scam done by Adam Clark/Adams Platform in 1998 :], "After collecting approximately $35million from investors between 2000 and 2004 Media World announced that the technology did not work even as well as already existing commercially available technology and went into administration". This MFer was still at it scamming people with his magic video codecs all the way in 2015 ("Unknown Tveon claims video-compression breakthrough delivering 4K/UHD at under 2Mbps, 1080p at sub-200Kbps" "The company's senior development team comprises: Adam Clarke"). Similar scams described at compressionscams.blogspot.com

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irox says:
August 20, 2023 at 11:18 am

You might https://keelynet.wordpress.com/ (used to be keelynet.com). Years and years pseudo science material, it's always good for a chuckle.

Reply Report comment

Giovanni says:

August 20, 2023 at 3:18 pm

The article is a little more complex than it seems. While one can draw a few conclusions from the Bellingcat article, the fact is that single articles is not the entire picture. According to the original 2021 Low-tech magazine article linked in the Bellingcat one, the physicist Philip Pesavento says Cove inadvertently built a Schottky junction, which has a bandgap of 1.2eV, instead of Silicon's 1.1eV. While it is true that he was using wires to demonstrate functionality of the solar panels to lure investors, what a lot of people miss is that one dishonest fact ruins/overshadows real and unoptimized discoveries. Since he was not able to create a net production of power, he was not able to demonstrate to investors that it was producing power. But that doesn't mean he didn't produce power in the panel nor discover anything. Today, the phrase is called "fake it til you make it." It is a fact that many startups market their services without actually having a product ready- sometimes vaporware is the only goal- other times it is a sincere effort, if only the funds are ready, and there is a real plan. An article by DC Palter, at The Entrepreneurs Handbook dot co website- "Is this Really the End of Faking It in Silicon Valley?" (4/28/2023) details numerous examples.

According to the American Nuclear Society (9/17/2013), "According to the newspaper account, Rutherford dismissed any possibility that the process of bombarding atomic nuclei would result in a net energy output, even if each individual reaction produced densely concentrated energy. The total amount of energy required to get the protons up to the required velocity would be substantially more than the amount of energy released when the nucleus broke apart. According to Rutherford, anyone who believed that nuclear reactions would be a potent source of useful energy was talking "moonshine".

Not only did Szilard have a natural tendency to regard such assertions as a challenge, but Szilard had many motivations for thinking about ways to liberate atomic energy. He had been engaged for some time in thoughts about releasing the energy stored in atomic nuclei as a means of producing the power required to travel into space."

What Calvin Fuller and Gerald Pearson at Bell Labs did in 1954 was, debatably, an optimization of a prior discovery-the development of the silicon photovoltaic. Cove developed the first solar panel, one without wires, but one that produced an insignificant amount of power. In the same sense of lithium atoms colliding with nuclei and producing a net, but "insignificant" amount of fission power. What separates net production and net loss in Leo Szilard's efforts, along with the discovery of fission in 1938, is the role of plutonium's enrichment (and replacing the lithium in Rutherford's concept) that led to nuclear weapons and atomic power plant production in 1940s.

In a similar way, net fusion power has for decades stalled in laboratories because of scandals. LENR (Low energy nuclear reactions) are a similar concept. While not cold fusion, it represents a field where an unknown mechanism is capable of producing a net surplus of energy without knowing its mechanism. The mechanism does not need to be fully understood in order to

demonstrate a net production of energy. The radioactivity and safety of such a device, is another story.

The Lawrence Livermore Laboratory in December 2022 announced a net production of power from fusion for the first time. In 1989, Stanley Pons and Martin Fleischmann were excoriated and tarnished the field for decades because they could not replicate the excess heat produced. Thus the phrase “cold fusion” became synonymous with a joke, or fraud. The longer history of science shows, now, that it isn’t that simple. Even though Pons and Fleischmann were wrong, or used a different technique- they alone did not disprove the existence of cold-fusion- they had a poorly designed experiment that could not be reproduced.

The same could be said of the recent case of LK-99 room temperature superconductor. It very likely there was an error, if not manipulation in the data, but that doesn’t disprove the existence of other room-temperature superconductors that are economically feasible (which was the purpose of the research, rather than proving any type of superconductivity, which has already been established.)

I don’t want to give too much credit to Cove- if one is purely interested in the facts, any charlatan acts do not negate the fact that the person who used the photo of Cove did so intentionally to obscure the original source, removing the “M E” initials from the original photo (for Modern Electrics magazine). And that could reveal a different dynamic- perhaps it was a descendant of Fritts who did not want his fame to be diminished? Also, it is very curious to what extent Thomas Edison and Standard Oil felt their vested interests were at stake with the fundraising that Cove was able to pull off. I consider Cove like any other startup today that has had a landing page with a 2024 launch date- waiting for fundraising to hire engineers to actually make it work. He may have been aware of the Schottky junction production, but may not have had enough capability to refine it. If one views all scam artists in one dimension, then it removes the ability for history to see the full context of the story. Thomas Edison’s practices were would be considered cruel today. According to the New York Daily News, he was known to electrocute dogs and horses to demonstrate the “effects” of electricity.

“To win that battle, Edison began giving boys who lived around his Orange, N.J., lab 25 cents for every stray dog they brought him.

By subjecting dozens of the creatures to electricity from AC dynamos, he felt he was proving his rival’s system was “beyond all doubt more fatal than the continuous current.”

He was so dedicated to discrediting Westinghouse and Tesla that he took a sheet of tin, poured water on it then attached it to an AC power source. In front of reporters he had invited to his lab, he had a dog try and drink the water, the animal falling over dead as soon at its mouth came in contact with the electrified metal.”

That was the 1890s. Thus by 1909, putting a competitor out of business, potentially even by introducing Burlingame to Cove as investor who took the fall intentionally and framed him, perhaps, would not appear to sound so implausible in an ultra-competitive environment. The War of the Currents was not just about transmission, but energy supply generation and supply. The “means of production” in different political economic terms.

“There are many historical examples of suppression of technological innovations by large US corporations. George Cove was active in the same period as the Edison Electric Illuminating Company of New York, whose unscrupulous practices against competitors are well-documented. If Cove’s solar electric generator worked, it could have reduced the growing demand for Edison’s coal and oil-fired power stations. 32 Earlier, in the 1880s, Edison had bought the company that produced the best thermoelectric generator at the time – Clamonds’s Improved Thermopile – and subsequently stopped the development of the machines. 33”

If Edison simply owned transmission lines, and was in the business of selling AC transformers, he would not have cared where the power came from, and might have even considered Cove a business partner. Furthermore, Sherman anti-trust laws may have prohibited him from owning more than one sector (although probably not in the 1900s, as the Sherman Antitrust Act was only passed in 1890, and was vague enough at the time to probably be unenforceable towards electric companies, which were not widespread in the same way railroads spanned the interstates). Because he owned coal-and oil powered plants, he could frame the supply issue by stating the power needed to come through him(for those who could not imagine or build up a sizeable solar panel infrastructure), and could set back solar energy research decades.

Thus, what history can now examine is what extent this competition was between a scarcity (non-renewable fuel, supplied by pipeline and truck, or a renewable source that anyone could access, once they owned the solar panel?) The article points out that he was kidnapped by capitalists. Thus it is not unreasonable to think that during the first Red Scare, which began in 1917 (although could have occurred sooner), there was a major push to discredit any technology that might have been considered less than monopolistic, which still was a common feature of the Gilded age (and corruption didn’t suddenly get rooted out during the presidency of Teddy Roosevelt, although he began a few). I would say that didn’t happen until the New Deal. And what’s remarkable, someone could still develop the Schottky junction panels today:

“During the 1980s, researchers made important advances in silicon p-n junctions, and interest in alternative configurations waned. However, there has been renewed interest in recent years. For example, research into graphene/silicon Schottky solar cells concludes that “simple and cost-effective device fabrication that does not require high temperatures is one of the advantages.” [26] In other recent studies, scientists conclude that Schottky-type “selenium devices are… extremely simple and cheap to fabricate”. [27-30]”

From a Slate article:

“For example, on the mailing list of the American Dialect Society, quote researcher Ken Hirsch has pointed to instances in French from 1842 (“[L]’histoire est juste peut-être, mais qu’on ne l’oublie pas, elle a été écrite par les vainqueurs” or “[T]he history is right perhaps, but let us not forget, it was written by the victors”) and Italian from 1852 (“La storia di questi avvenimenti fu scritta dai vincitori”—or, as Hirsch translates it, “The history of these events was written by the winners”). And by 1844, as Hirsch noted, at least one of these narrower statements had made it into English. A description of defeated Maximilien Robespierre, the Jacobin hero during the French Revolution, described the state of his reputation like so: “Vanquished—his history written by the victors—Robespierre has left a memory accursed.”

Two years later, the saying was in use in United States. In 1891, Missouri Sen. George Graham Vest, a former congressman for the Confederacy who was still at that late date an advocate for the rights of states to secede, used the phrase in a speech, reprinted by the Kansas City Gazette and other papers on the next day, Aug. 21, 1891. “In all revolutions the vanquished are the ones who are guilty of treason, even by the historians,” Vest said, “for history is written by the victors and framed according to the prejudices and bias existing on their side.” In other words, the world has rewritten history to credit the saying to one of the 20th century’s greatest victors, but it’s always been very popular with history’s biggest losers.”

It’s not common knowledge that Edison was involved in dog electrocutions, but if he lost the War of Currents, that is all that might have been written about him.

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