That time Benjamin Franklin tried (and failed) to electrocute a turkey



Enlarge / In December 1750, Benjamin Franklin theorized that electricity could be used to tenderize meat, and tried to electrocute a turkey to prove it.

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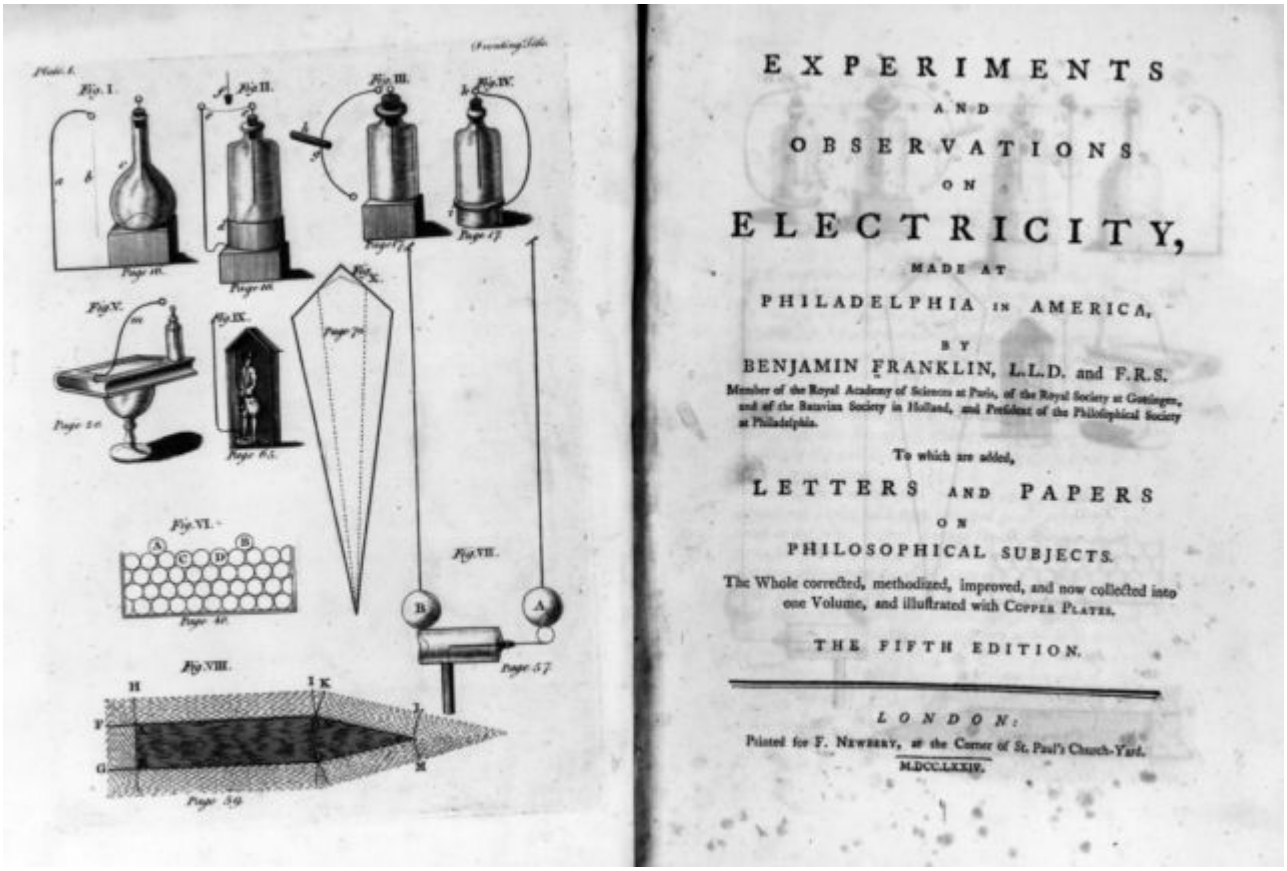
In households across the U.S. today, people are busily preparing the traditional turkey for their Thanksgiving feast—usually in an oven, although more adventurous souls might risk personal injury and opt for a deep-frying method. But when it comes to risky cooking methods, Benjamin

Franklin has them beat. The Founding Father once infamously electrocuted himself while trying to kill a turkey with electricity.

Franklin's explorations into electricity began as he was approaching 40, after he'd already had a thriving career as an entrepreneur in the printing business. His scientific interest was piqued in 1743, when he saw a demonstration by scientist/showman Archibald Spencer, known for performing a variety of amusing parlor tricks involving electricity. He soon struck up a correspondence with a British botanist named Peter Collinson, and began reproducing some of Spencer's impressive parlor tricks in his own home. "I was never before engaged in any study that so totally engrossed my attention and my time," he confessed to Collinson in one letter.

Guests at Franklin's home were frequently recruited for his experiments and practical jokes. For instance, he would have guests rub a tube to create static and then had them kiss, producing an electrical shock. He designed a fake spider suspended by two electrified wires, so that it seemed to swing back and forth of its own accord. And he devised a game dubbed "Treason," whereby he wired up a portrait of King George so that anyone who touched the monarch's crown would receive a shock. ("If a ring of persons take a shock among them the experiment is called the Conspiracy," he wrote.)

Through his experiments, Franklin was able to demonstrate that electricity consisted of a common element he called "electric fire," arguing that it flowed like a liquid, passing from one body to another. He studied how sparks jumped between charged objects, correctly concluding that lightning was merely a massive electric spark. And he coined several electricity-related terms we still use today: "charging," "discharging," "conductor," and "battery," for instance.



EXPERIMENTS
AND
OBSERVATIONS
ON
ELECTRICITY,
MADE AT
PHILADELPHIA IN AMERICA,
BY
BENJAMIN FRANKLIN, L.L.D. and F.R.S.
Member of the Royal Academy of Sciences at Paris, of the Royal Society at Gottingen, and of the Batavian Society in Holland, and President of the Philosophical Society at Philadelphia.
To which are added,
LETTERS AND PAPERS
ON
PHILOSOPHICAL SUBJECTS.
The Whole corrected, methodized, improved, and now collected into one Volume, and illustrated with COPPER PLATES.
THE FIFTH EDITION.
LONDON:
Printed for F. NEWBERY, at the Corner of St. Paul's Church-Yard.
M.DCC.LXXIV.

Enlarge / Circa 1750: The title page from the 5th edition of Benjamin Franklin's scientific book *Experiments and Observations on Electricity.*
MPI/Getty Images

But Franklin had yet to find a practical application for this exciting new phenomenon, which irked him greatly. To that end, he conceived of throwing an electricity-themed dinner party. "A turkey is to be killed for our dinner by the electric shock, and roasted by the electrical jack, before a fire kindled by the electrified bottle," Franklin wrote to Collinson. Guests would drink their wine from electrically charged glasses so they would receive a subtle shock with every sip.

It's not clear if Franklin ever hosted such an elaborate dinner party, but we do know that he experimented with electrocuting various fowl using six-gallon Leyden jars. A Leyden jar is basically a glass jar partially filled with water, with a conducting wire sticking out of its cork. The jar was charged by exposing the end of the wire to an electric spark generated by friction—created by, say, rotating a glass

plate so that it rubbed against leather pads. There were no standard units of electricity back then, but modern estimates indicate that a pint-sized Leyden jar would have had the energy of about 1 joule.

The electric shock he initially produced was sufficient to kill chickens, but Franklin was chagrined to find that the turkeys would recover from the shock after several minutes. Finally, he combined several Leyden jars to successfully kill a ten-pound turkey, writing to Collinson that “the birds killed in this matter eat uncommonly tender.”

But in December 1750, Franklin learned a hard lesson on the importance of grounding in his electrical experiments. In a letter dated December 25, presumably to his brother, he described yet another attempt to electrocute a turkey to entertain his guests. “I inadvertently took the whole through my own arms and body, by receiving the fire from the united top wires with one hand, while the other held a chain connected with the outsides of both jars,” he wrote.



Enlarge / A Currier & Ives lithograph of Benjamin Franklin and his son William using a kite and key during a storm to prove

that lightning was electricity, June 1752.
Hulton Archive/Getty Images
Guests reported seeing a flash and hearing a loud crack like a pistol firing, and Franklin was momentarily knocked senseless, although apparently he remained on his feet. (“I did not fall, but suppose I should have been knocked down if I had received the stroke in my head,” he wrote.) He found his body shook for several minutes, and described a numbness in his arms and the back of his neck, which wore off by the next morning. There was a telltale swelling on one hand from the shock, and he was sore for several days after. While he gave his brother permission to share his experience with a colleague, James Bowdoin, who also experimented with electricity—primarily as a cautionary tale—Franklin admitted to being ashamed “to have been guilty of so notorious a blunder.”

That didn’t keep Franklin from continuing his electrical investigations. He performed his famous kite-and-key experiment in June 1752, on the outskirts of Philadelphia. He constructed his kite frame out of two strips of cedar nailed together in the shape of an “X,” and stretched a large silk handkerchief across the frame. He attached the key to a long silk string dangling from the kite, attaching the other end to a Leyden jar with a thin metal wire. Then he took the kite into a field during a thunderstorm, standing under a small shed to keep dry. When he saw loose filaments of twine “stand erect,” indicating electrification, he pressed his knuckle to the key and received a small shock, thereby proving that lightning was indeed static electricity. He went on to invent the lightning rod, among other ingenious devices.

As for using electricity to kill and tenderize a turkey, eventually Franklin had done sufficient experiments to provide very specific instructions to two French colleagues, Jacques Barbeu-Dubourg and Thomas-Francois Dalibard, who were quite keen to test his method. His instructions called for six large Leyden jars to kill a ten-pound turkey. He ended his letter

with his hard-earned wisdom about the dangers involved: “The one who does the operation must be very aware lest it happen to him, accidentally or inadvertently, to mortify his own flesh instead of that of his hen.”

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