

## Biography

**Josephine Garis Cochran**, inventor of the first commercially successful automatic washing machine, was born on March 8th, 1839 in Ashtabula County, Ohio.<sup>[1]</sup> As a daughter and granddaughter coming from generations of engineers and inventors, Josephine was destined to be great.<sup>[1]</sup> Her great grandfather, John Fitch, invented the first patented steamboat in the United States while and her father, John Garis, was a hydraulic engineer<sup>[2]</sup> who supervised a tons of wool, saw and grit mills along the river.<sup>[1]</sup> Just like her preceding generations, Josephine too had this natural technical knack for engineering and inventing solutions, despite the fact that opportunities for women to innovate in the 19th centuries were far and inbetween.

Josephine was raised in Ohio, attending a nearby private high school until it burned down. Following the fire, she moved to Shelbyville, Illinois to live with her aunt.<sup>[2]</sup> A few years late, after her high school graduation, she married 27-year-old William Cochran at age 19.<sup>[2]</sup> Her marriage was around the time her dishwashing woes began.<sup>[3]</sup> Josephine and William were avid socialites, often hosting socials and dinner parties. Big meals were served on fancy heirloom china, resulting in heaps of dirty dishes. Josephine found the task to be extremely tedious and time-consuming to her herself, but despised letting the servants take over the job because they would often damage the plates when washing them. As a result, she decided to build a machine that could handle the task, faster and more efficiently,<sup>[3]</sup> proclaiming that “If nobody else is going to invent a dishwashing machine, I’ll do it myself.”<sup>[1]</sup>

She began sketching her design, and created the first prototype of her dishwasher in a shed behind her house. The design consisted of wire compartments for dishes that laid flat on a wheel inside a copper boiler. Hot, soapy water from below the boiler was poured over the dishes via a motor.<sup>[1]</sup> While Josephine was busy making her automated dishwasher design, William was out collected mounds of debt and the Cochran’s began to struggle with financial instability. It became clear that Josephine’s dishwashing invention was no longer a fun project for convenience; It was a survival method.<sup>[2]</sup>

Josephine attempted to get help for the construction of her prototype from several different engineers. However, they all turned her away, discounting her abilities and undermining her invention because she was a woman. Finally, she received help from mechanic George

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<sup>1</sup> Ram, J., & Atkisson, E. (2021, April 14). *"I'll do it myself"*. United States Patent and Trademark Office - An Agency of the Department of Commerce. Retrieved December 6, 2021, from <https://www.uspto.gov/learning-and-resources/journeys-innovation/historical-stories/ill-do-it-myself>.

<sup>2</sup> Foulkes, D. (2010, April 20). *Josephine Cochrane (1839-1913) invented the Dishwasher*. Forgotten Newsmakers. Retrieved December 6, 2021, from <https://forgottennewsmakers.com/2010/04/20/josephine-cochrane-1839-1913-invented-the-dishwasher/>.

<sup>3</sup> Goodrich, J. (2021, July 28). *This Socialite Hated Washing Dishes so Much That She Invented the Automated Dishwasher*. IEEE Spectrum. Retrieved December 6, 2021, from <https://spectrum.ieee.org/this-socialite-hated-washing-dishes-so-much-that-she-invented-the-automated-dishwasher>.

Butters and received her first patent on the Garis-Cochran Dish Washing Machine on December 28th, 1886.

The dishwasher was shown off at the World's Colombian Exposition of 1893 and even won first place for "best mechanical construction." She suddenly found streams of customers, mostly from big restaurants and hotels, who were interested in purchasing her machine.<sup>[4]</sup> She eventually created a company out of her invention, called the Garis-Cochran Manufacturing Company (renamed Cochran's Crescent Washing Machien Company in 1897), selling hand and power operated dishwashers. After her death in 1913, her company became part of KitchenAid and the Whirlpool company. By 1949, the first KitchenAid dishwasher based on Cochran's design was introduced to the public.<sup>[5]</sup> During the 1950's, the increased availability of hot water in households, the invention of dishwasher detergent and a shifting attitude towards the homeowners' personal completion housework, created a booming market and an exponential demand for dishwashers.<sup>[5]</sup>

In 2006, Cochran was inducted into the National Inventors Hall of Fame for her patent and invention of the modern automated dishwasher.

### **Death and Recognition**

On August 13th, 1913, aged 74, Josephine died at home in Chicago. Most accounts claim her cause of death to be stroke or nervous exhaustion.<sup>[1]</sup> In recognition of her outstanding lifetime achievements, Cochran was inducted into the National Inventors Hall of Fame in 2006 for her patent and invention of the modern automated dishwasher.

### **Cochrane's Dishwasher**

There were previous attempts to create a commercially viable dishwasher. In 1850, Joel Houghton designed a hand-cranked dishwasher. It was a wooden box with scrubbers that used a hand-crank to splash water on the dishes.<sup>[3]</sup> In 1860, L.A Alexander tweaked the device, adding a geared mechanism.<sup>[3]</sup> Although created with positive intentions, neither device was effective.

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<sup>4</sup> Rosenberg, S. (2018, January 3). *December 28, 1886: Josephine Cochrane secured a patent for the Dishwasher and saved us all from "Dishpan hands"*. Lifetime. Retrieved December 6, 2021, from <https://www.mylifetime.com/she-did-that/december-28-1886-josephine-cochrane-secured-a-patent-for-the-dishwasher-and-saved-us-all-from-dishpan-hands>.

<sup>5</sup> Magazine, S. (2017, December 28). *This time-saving patent paved the way for the modern dishwasher*. Smithsonian.com. Retrieved December 6, 2021, from <https://www.smithsonianmag.com/smart-news/time-saving-patent-paved-way-modern-dishwasher-180967656/>.

Cochrane designed her first model behind her house in Shelbyville, Illinois.<sup>[6]</sup> George Butters, a mechanic and employee at the first dishwasher factory, assisted in the construction. To build her machine, Josephine started by measuring the dishes and building wire compartments corresponding to her measurements. Each section was specifically designed to fit either plates, cups or saucers. The compartments were inside a wheel that laid flat in a copper boiler. A motor turned the wheel, causing hot, soapy water to squirt up from the bottom of the boiler onto the dishes. Her dishwasher was the first to use water pressure, rather than scrubbers.<sup>[7]</sup> The Garis-Cochran Manufacturing Company became part of Kitchen Aid, and in 1949, the first KitchenAid dishwasher based on Cochran's design was introduced. It was in the 1950s that dishwashers became a common household item after new suburban homes were built with the plumbing required to handle the extra hot water.<sup>[8]</sup>

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<sup>6</sup> Blattman, E. (2013, August 1). *Three every-day items invented by women*. National Women's History Museum. Retrieved December 6, 2021, from <https://www.womenshistory.org/articles/three-every-day-items-invented-women>.

<sup>7</sup> Brennen, J. (2018, May 8). *Portland's Walk of the Heroines*. Josephine Cochrane | Walk of Heroines. Retrieved December 6, 2021, from <https://web.archive.org/web/20150508232050/http://woh.pdx.edu/heroine/2725>.

<sup>8</sup> Massachusetts Institution of Technology. (n.d.). *Josephine Cochrane*. Lemelson - MIT Program. Retrieved December 6, 2021, from <https://lemelson.mit.edu/resources/josephine-cochrane>.

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