Prototype
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Hunting and Gathering for the Museum's Collections

by Paula Johnson

When it comes to food-related collections at the National Museum of American History, it's a veritable feast. From tableware to kitchen tools, farm machinery to ice cream molds, wine presses to vitamin packages, the Museum's collections include a wealth of material reflecting the deliciously complex traditions and innovations in American food history. As a curator in the Division of Work and Industry, I have worked closely with colleagues to bring several food-related collections into the Museum, notably Julia Child's kitchen and objects and archival materials from Stag's Leap Wine Cellars in Napa, California. And one particularly memorable collecting trip was a visit to the Minneapolis headquarters of Nordic Ware, following up on the company's offer to donate an original Bundt cake pan—its most famous product—to the Museum.

Read more . . .

Image: The original Bundt pan, now in the collections of the National Museum of American History, Smithsonian Institution.

Notes from the Director

Who hasn't heard the phrase "the best thing since sliced bread"? This month's food theme leads me to think about the technology behind one of man's oldest and most basic sources of nourishment—bread, the staff of life and ancient symbol of human sustenance. And it also brings back some vivid childhood memories of visiting my cousins, the Di Rienzos, at their bakery in Binghamton, New York. I looked forward to the times I could ride with them on their truck as they delivered loaves of Italian bread and rolls to shops and schools in their area. The pre-dawn aroma of fresh baked bread remains with me to this day. (Not ones to forget where they came from, my cousins lovingly maintained their original truck, now grandly displayed in the parking lot in front of the bakery. How did they get it to balance like that?)

We must have delivered hundreds of loaves each day, and I always wondered how a middling-sized bakery could turn out so much bread. The answer of course lies in mechanization.

The making of bread is one of the oldest food technologies, going as far back as the Neolithic era, coeval and linked with the brewing of beer. It was also one of the first food products to succumb to automatic machinery, from the mass production and bleaching of flour to kneading the dough, baking in continuous ovens, and finally slicing and wrapping the bread. Much of the mechanization derived from Europe in the 19th century but peaked in the American Midwest during the 1920s and 1930s.

Bread-making technology spawned many inventions and patents, the bread-slicer being one of the later, but important, lines of innovation. While the earliest bread-cutting devices using parallel blades appeared in America in the 1860s, they sat on the shelf for decades, awaiting the introduction of other machines capable of producing loaves of uniform shape, size, and consistency—one of the main challenges to automated food production is the need to impose a

fairly rigid, machine-friendly form on basically shapeless organic material. (The mass marketing of meat involved surmounting the same sort of obstacles, as former Lemelson Fellow Roger Horowitz illustrates in his book *Putting Meat on the American Table: Taste, Technology, Transformation*.)

The first effective bread-slicing machine was invented by Iowa-born Otto Frederick Rohwedder and put into service in 1928 by the Chillicothe (Missouri) Baking Company (the local paper ran a front page story on it). By the 1930s, pre-sliced bread was fully commercialized, and standardization was reinforced by other inventions that required uniform slices, such as toasters. Use of the common phrase "the best thing since sliced bread" as a way of hyping a new product or invention may have come into use based on an advertising slogan for Wonder Bread, the first commercial manufacturer of pre-wrapped, pre-sliced bread. With such products rapidly penetrating the American home, automated bread-making was not only an invention benchmark, but also a key indicator of the mechanization of daily life from the 1930s on.

The mechanization of food is a highly complex and delicate process with limited tolerances, because the product eventually has to be assimilated by human beings. Or so you would think. Like so many modern food products, machine-made bread eventually became almost wholly artificial, bearing little resemblance to the look, feel, and taste of the handmade variety—so much so that manufacturers felt compelled to inject it with artificial vitamins to restore food value. Bread became soft, sponge-like, and very white; when poked and pressed, the loaf popped strangely back into shape. Endowed with such perhaps unexpected qualities, it found other applications. For instance, while bread had been used since the 17th century to clean the frescoes on the ceiling of the Sistine Chapel, Wonder Bread proved to be an especially effective sponge in the most recent restoration of Michelangelo's masterpiece.

With things going so far, it is no surprise that the back-to-nature whole foods movement of recent decades chose to celebrate bread made in the way of earlier generations. People reverted to making their own bread at home, initially kneading and baking by hand, producing loaves of hearty consistency. By the late 1970s, however, bread-making machines gradually began to appear in American homes, becoming popular with health-conscious families. With the most advanced home bread-making machines, all you had to do was toss in the ingredients in the morning, and within a few hours out would pop a perfect loaf, barely touched by human hands. Though I confess I've never tried bread from one of those home machines, I'm sure it tastes good. It also helped ease the craving for something "homemade" for people with increasingly busy lives. Even as we seek a new balance in our foodways, mechanized food, I am sure, will always be with us.

Best regards till next month,
Arthur Molella
Jerome and Dorothy Lemelson Director

Have You Seen?

In 1945 engineer Percy Spencer was researching radar at Raytheon. As he stood in front of a magnetron, an electronic vacuum tube that generates high-frequency radio waves, he felt a strange sensation; the candy bar in his pocket was melting. Intrigued, Spencer placed popcorn kernels near the magnetron; soon popcorn was popping out over the lab floor. Spencer then put a raw egg in a pot in front of the magnetron. The egg exploded, confirming that microwaves could cook food quickly and unconventionally. Spencer and other Raytheon engineers went on to develop the first microwave oven. Learn more on our *Invention at Play* website!

Image: Percy Spencer in front of early microwave equipment. Photo courtesy of Spencer Family

Archive.

Trivia Challenge

In each edition of *Prototype,* we offer a question about an invention or inventor that you and your friends and family can try to answer. Sometimes the answer can be found on the Lemelson Center's website, where you can also learn a little more about the subject. Email your answer to us at prototype@si.edu along with your name and mailing address. Each month we'll select winners randomly to receive a small prize from the Center.

Thank you to everyone who entered the October challenge and congratulations to Zoe J. of Louisville, Kentucky, and April G. of Upland, California, who, among others, knew that Sally Fox developed the first commercially spinnable, naturally colored cotton. "When I started my work," Fox recalled, "I was an entomologist and I hadn't read all the plant books saying you couldn't raise spinnable, naturally colored cottons. So I was blessed with ignorance, and thus went on." Read more about Sally Fox in the *Invention at Play* and Innovative Lives sections of our website.

This month's question: Who invented the Eskimo Pie, America's first chocolate-covered ice cream bar?

Image: Innovator Sally Fox. Photo by Cary Wolinsky, courtesy of Vreseis Ltd. and Foxfibre®

From the Archives

Is it from scratch or a box mix? This question is raised in my home every time I bake. The debate of whether it's from a box or scratch seems to run deep for many bakers, myself included. I tend to fall into the "make it from scratch" camp, but I've been known to use a box mix here and there, albeit "doctored." But where did all the box mixes available in the supermarket today originate?

A leading contributor to this food technology revolution was independent inventor Charlotte Cramer Sachs (1907–2004). Lesser known than the Pillsbury Company and some of the other leading cake-mix companies of the 1940s, Sachs was a pioneering founder and manufacturer of "Joy," one of the first successful instant baking mixes on the U.S. market. Manufactured under the name Cramer Products Company and operating in a Manhattan factory at 76 Varick Street, a variety of instant mixes were created for cakes, muffins, cookies, puddings, popovers, and frostings. All of the Joy mixes were packaged in colorful boxes for easy recognition by the consumer and were emblazoned with the slogan "A Joy to Make . . . A Joy to Eat." There is even evidence of a Joy salad dressing in 1949, but this didn't make it to market.

Sachs recognized that women had less time in the home during World War II, since many were working in industry. And she acknowledged that rationing of sugar and shortening had consequences for bakers. So she designed her mixes to be convenient, time-saving, and easy solutions for the homemaker facing the demands of working and baking from scratch. Sachs noted that "Joy products save time and work for the homemaker or business woman. They are convenient to keep on the shelf to be used on any occasion. Try them when you want a real treat for your family or friends." The Joy mixes were available throughout Manhattan at several of the better department stores, including B. Altman and Company, Gimbel Brothers, and John Wanamaker.

Sachs also invented other food-related products. Sold by Hammacher Schlemmer, the "miracle knee tray" was a sturdy paperboard tray that fit comfortably on the lap. It eliminated food

juggling with punched holes to support plates, cups, or bottles securely. Another product, the decorated party platter, was used to "dress up" standard platters.

Like food, wine was also one of Sachs's passions. She was an innovative creator of vibration-free wine-storage coolers and worked diligently to establish the Wine Museum of New York (this latter effort failed). An early interest in wine stemmed from Sachs's family villa in Germany, "Haus Cramer." Built in 1912 to the family's specifications by German architect Hermann Muthesius, the villa contained a state-of-the-art wine cellar.

The most successful of Sachs's ventures were her wine-storage units. She sought to create the perfect wine environment. One of the most popular was the Cramana Wine Safe, a noiseless, vibration-free, climate-controlled storage cabinet (also known as the "Well Tempered Cabinet") for up to 288 bottles of wine. Designed specifically for small Manhattan apartments, they also afforded a separate storage area for cigars. She introduced other units under the names wine cage, wine condo, and wine wheel. Other inventions included a wine library kit; the 1975 "Bottle Bib," which fit around the neck of the bottle and prevented stains; an early American chocolate wine that was to be enjoyed over puddings or "on the rocks"; and a 1962 Christmas drink called the "Caviodka" that she created for her husband, Alexander Sachs.

Sachs's passion for food did not go unnoticed. According to a 1945 article in the Herald Tribune, she was known as the "Manhattan housewife that hit it big in the food field." Even though I like to bake from scratch, I'm grateful to Charlotte's contributions to the box mix, and I think of her and her inventive life whenever I pull out my cake pans.

The Charlotte Cramer Sachs Papers, 1905–2002, contain correspondence, photographs, business papers, awards, patents, printed materials, notes, and miscellany relating to Sachs's life and career as an inventor of food and household-related products. The collection primarily consists of invention-related marketing materials, including invention samples and prototypes, notes, clippings, business correspondence, and customer account records.

For more information about the Charlotte Cramer Sachs Papers, visit our website.

Alison Oswald, Lemelson Center Archivist

Image: Packaging for a Joy corn muffin mix. From the Charlotte Cramer Sachs Papers, Archives Center, National Museum of American History.

Inventive Ideas for Schools and Families

Popcorn is a snack that people have enjoyed for a very long time. So how long is a long time? Popcorn kernels found in archaeological sites suggest popcorn has been eaten for at least 5,000 years. Native Americans were the first to cultivate and "pop" popcorn.

Popcorn became even more "pop"ular when Charles Cretors invented the first commercial popcorn machine in Chicago in 1893, just in time for the Chicago World's Fair. Today, the United States produces nearly all of the world's popcorn, just over 500,000 tons each year. Imagine the most delicious popcorn in the world. How would it taste? Download this experiment and find out!

Steve Madewell, Lemelson Center Spark!Lab Resident Eccentric

Image: Popcorn vendor in Paris, Illinois, 1912. Photo courtesy of USDA Division of Cereal Crops and Diseases Photograph Collection.

Our Podcast—Prototype Online: Inventive Voices

TV pitchman Ron Popeil is an inventor and entrepreneur best known for his late night infomercials. In this podcast, Popeil describes how he went from selling his father's inventions in Chicago in the 1950s to inventing his own products . . . and he lets us in on the history of television home shopping. *Tune in!*

Image: Ron Popeil with his rotisserie oven. Photo courtesy of Ronald M. Popeil.

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Contact us at prototype@si.edu.
General Smithsonian Visitor Information: 202-633-1000

There's more online:
Lemelson Center website
National Museum of American History Frequently Asked Questions