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July 1, 1910: Give Us This Day Our Automated Bread

By [John C Abell](#)  June 30, 2010 | 11:59 pm | Categories: [20th century](#), [Business and Industry](#), [Food and Drink](#)



1910: Ward Baking Company puts a fully automated bread factory into operation. The mechanized factory in Chicago churns out hundreds of perfect loaves a day, untouched by human hands.

Is this century-old achievement the greatest thing since sliced bread? Not quite. Read on.

Perhaps nothing is a more basic food staple in Western culture than bread, entwined with our history since the beginning. Cavemen made it. The unleavened variety is of biblical significance. San Francisco's Boudin Bakery has been making sourdough loaves from the same "mother dough" since the [Gold Rush](#). A Depression-era sliced bread named "Wonder" is still found in lunch boxes nationwide.

Making bread by hand at home is enjoying something of a renaissance these days, a back-to-our-roots pursuit of the Boomer generation with time on its hands. But as with so many modern-day pursuits — hunting, knitting, growing your own food — making your own bread was a tedious, daily chore for the lady of the house (or hut, or cave), only occasionally lifted to an art form by a handful of artisans.

Store-bought bread, even at 3 cents a loaf, [the going rate at the turn of the last century](#) (about 70 cents in today's money), was not exactly a luxury, even though the average new college grad made less than \$15 a week back then. But the ingredients cost only a fraction of those three pennies, and the typical adult woman worked in the house, even though it didn't count as "work."

As anyone who has tried can tell you, making your own bread can be tricky. You must coax the yeast, knead the dough just right and time things so you didn't have to get up in the middle of the night. It can all be for naught if the yeast doesn't rise, or if you don't monitor the temperature of the hearth, or if the humidity is a lot different than it was yesterday.

But buying it in those days meant you were subjecting your family to whatever sanitary conditions existed at the bakery. All those kneading hands — who knew where they had been?!

Enter master baker R.B. Ward. The son of a baker, Ward was an eclectic figure who, besides being a out-of-the-bread-box (sorry) thinker lost a lot of bread (sorry again) on baseball's ill-fated Federal League — about \$1.5 million. That would be about \$32 million today.

But his automated, sanitary bread factory was an unqualified success. It spewed out hundreds of loaves of bread untouched by human hands. All the mixing and moving and wrapping was done in a production line that [predated the one made famous by Henry Ford](#) — and did him one better by not using humans, a feature Detroit would take decades to duplicate.

So devoted was Ward to the idea that germs and bread didn't mix that he followed this innovation a year later by becoming the first baker to abandon horse-drawn delivery trucks. Equines were often next to or even right inside some rival bakeries.

Ward wasn't able to bask in his glory for long; he died in 1915 of a heart attack at age 63. But an [obituary in *Bakers Review*](#) did not exaggerate Ward's paradigmatic contribution to the industry:

It was not until quite recently that the public in general became acquainted with his product. Then they suddenly learned that there was a great big factory of white tiling inside and out from which they were receiving bread, rolls, etc., that had never been handled excepting by machinery until they broke the seal of the package in which they were contained.

It was Mr. Ward's idea to impress the public with cleanliness first of all, then to give them an ideal product. His idea has proven a success to such an extent that there are no bounds to its forward movement.

What he lacked in baseball business acumen Ward more than made up for in foresight as an entrepreneur. His bread factory had free bowling alleys and billiards rooms for employees — sound a bit like your average Silicon Valley campus?

He also funded chemistry scholarships. And wouldn't you know it? Those students often specialized in the chemistry of flour and yeast, and often went to work for Ward. Almost like raiding the graduating class at Stanford.

So, how did this work? Start with a thousand pounds of yeast. A day. And tons of flour. There are no

YouTube videos of the process, but a 1915 profile of [Ward's bakery in New York City](#) (.pdf) describes it from start to finish with such reverentially colorful prose it's well worth a read:

As [flour] is needed it is hoisted to the top floor, where it is run through a gigantic apparatus, which winnows it free from dust and lint and all impurity. A steady river of the powdery dust flows through pipes to the floor beneath, and it is amazing the amount of refuse which this whirring mechanism extracts from even the purest of flour.

Once the ingredients are gathered on the top floor the attraction of gravitation is geared to the colossal business and the very weight of the flour and the dough assists in its preparation as it descends through stage after stage of its development from floor to floor.

Following the white river of flour in its unseen channel to the floor beneath, we see it emerge into huge tanks holding near a ton. These tanks are filled automatically and when they have received their proper amount they are automatically closed. To these tanks is added a proper amount of distilled water, the yeast and sugar, and the whole mixture allowed to stand for a time in gigantic troughs.

When this mixture is "ripe," in the bread language, it is shot through openings in the floor to mixers beneath, where it is kneaded by machinery. These machines, not unlike the cement mixers of the streets in size and method of operation, turn round and round in never ceasing revolution, exerting the resistless strength of hundreds of horsepower on the plastic dough.

When of the proper consistency the whole contents of a mixer is precipitated into an enormous trough like a gigantic bread pan, where the single huge loaf of near a ton in weight is allowed to rise. This huge trough is suspended from the ceiling on rollers, and, when ready, is rolled to a certain position, where an opening in the floor communicates with the room beneath.

A single attendant propels the gigantic loaf on its aerial railway, and, touching a spring, releases the bottom, the whole mass falling through the opening to the floor beneath. Here eager machinery seizes the huge lump of dough. It fairly tears the groaning mass to pieces, slicing it up with the precision of clock work into individual loaves of the proper weight. These loaves pause never an instant, but are hurried away through restless machinery, which molds and forms them and covers them with the necessary coating of flour.

With never rest, the machinery bears them at length to where a moving platform carries them one after another in an endless row, then precipitates them to another moving platform immediately beneath. Here another endless row of bread tins are coming to bear them to the enormous oven which looms up just beyond.

One after another, automatically, the loaves fall from their moving platform, each into its respective pan on the moving platform beneath, and travel at the same slow pace to the fiery mouth of the oven. Here long iron arms reach down like the claws of a gigantic beetle and lift the loaves sixteen at a time into the mouth of the vast oven.

The floor of that oven is unique. It is itself a moving platform. Upon this platform the loaves move in monotonous regularity to the farther end. In the sides of the oven are ranged windows where the attendant bakers may glance ever and anon to see that the loaves are baking properly

and the heat is suitably regulated.

It takes about twenty minutes to complete the journey. When they have reached the farther end they are done, crisp, well browned, glistening loaves of bread.

From the end of the oven the loaves emerge in serried ranks. There is a sudden movement. They are precipitated from their steaming tins, and at a solemn, steady gait, as if instinct with life, they crawl, one after the other, in endless procession down a winding trough to the floor beneath. Here they emerge on another travelling platform, which conveys them to a waiting machine.

This intricate mass of wheels and rods and glittering steel fixtures seizes the loaves as they approach, whirls them rapidly through a maze of evolutions, from which they emerge properly clothed, sober, sedate, each wrapped in a covering of waxed paper, stamped and sealed.

Thence, safe from contact, literally baked from start to finish untouched by the human hand, they are borne away in gigantic crates to a neighboring platform, where a long row of waiting trucks are to bear them to the customers. One hundred and thirty-five of these automobile trucks leave this one establishment twice daily.

Commercial sliced bread became common in the 1930s, first mass-marketed by none other than Wonder, [whose achievement inspired the phrase](#) “The greatest thing since sliced bread.”

But, arguably, the greatest achievement in bread are arguably the winches, pulleys and chutes that [took bread out of the hands of unclean humans](#) and into the modern age.

Photo: Courtesy Library of Congress

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