

## Reaping the Benefits of the Reaper

Cyrus McCormick may not have invented the reaper, but he was the entrepreneur who made it successful

BY KARL RHODES

Cyrus McCormick spied his archival for the first time in the April 1834 issue of *Mechanics' Magazine*, which published a drawing and description of a mechanized reaping machine patented by Obed Hussey. McCormick immediately wrote a letter to the editor claiming that he had invented a reaper in 1831 based on the same principle as Hussey's machine.

"I would warn all persons against the use of the aforesaid principle," McCormick wrote, "as I regard and treat the use of it, in any way, as an infringement of my right."

McCormick was staking his claim to one of the most important breakthroughs in the mechanization of agriculture.

"Of all the inventions during the first half of the nineteenth century which revolutionized agriculture, the reaper was probably the most important," wrote University of Chicago historian William Hutchinson in his two-volume biography of McCormick in the 1930s. The reaper broke the harvest-labor bottleneck by allowing the farmer "to reap as much as he could sow." This big step toward automation allowed farms to become larger and more productive. In turn, the mechanization of agriculture accelerated industrialization and urbanization as displaced workers migrated more rapidly from farms to factories.

The traditional story of the McCormick reaper begins with Cyrus' father, Robert McCormick, who had been trying to develop a workable reaper for several years at Walnut Grove, the family's plantation in Rockbridge County, Va. After Robert abandoned the project in 1831, young Cyrus started building a reaper based on a different principle. Within six weeks, he successfully demonstrated his machine by harvesting oats at nearby Steele's Tavern.

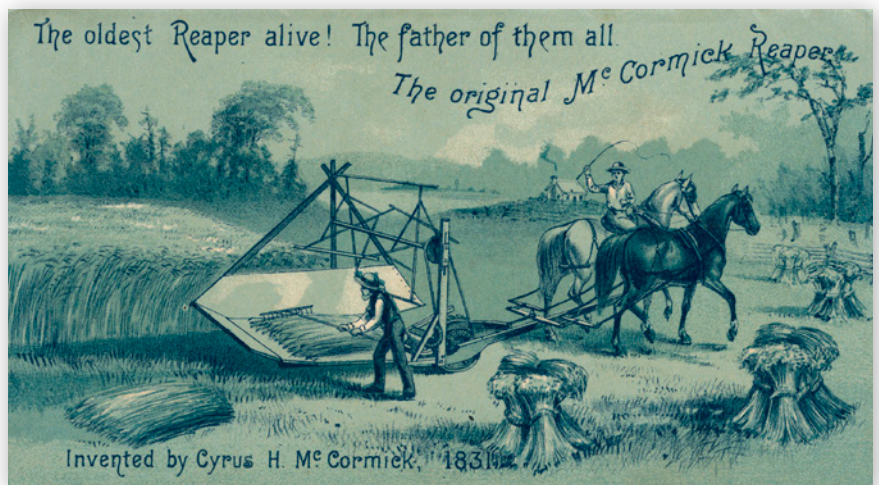
For many years, Cyrus was acclaimed nationally and internationally as the singular inventor of the reaper. But some historians have said that Hussey's contributions may have been just as important — perhaps more important — to the technological evolution of the machine. And as far back as the 1870s, some members of the McCormick family have argued that most of the credit for inventing the reaper should go to Robert McCormick.

But the long-standing debate over who invented the reaper obscures a more important

question, says David Hounshell, professor of technology and social change at Carnegie Mellon University. "From a Schumpeterian perspective, who was the successful entrepreneur who was innovating mechanized reaping in the United States and Europe?"

Joseph Schumpeter, a Harvard University economist who was born one year before Cyrus died, famously highlighted the key role that entrepreneurs play in driving economic development. In his 1912 book, *The Theory of Economic Development*, Schumpeter wrote: "Innovation is the market introduction of a technical or organizational novelty, not just its invention." In this context, the Schumpeterian entrepreneur is the innovator who replaces old ways of doing things with better ways of doing things, a process that Schumpeter would describe later as "creative destruction."

So regardless of who invented the reaper, Hounshell contends that Cyrus was the Schumpeterian entrepreneur whose insights and efforts led to its widespread adoption. As early as the 1840s, Cyrus promoted the reaper with sophisticated use of advertising and publicity. He moved to Chicago in 1847 to better serve the emerging Midwestern market. Then he assembled a large and effective sales network and equipped it with slick catalogs, posters, and other promotional items. He capitalized on international marketing opportunities, and he eventually helped bring state-of-the-art manufacturing to the Midwest.



This illustration from 1887 is typical of McCormick Harvesting Machine Co. advertising that claimed Cyrus invented a reaper that worked well in 1831.

## Slow Adoption?

Given Cyrus' entrepreneurial prowess and the obvious utility of the reaper, economists and historians have wondered why farmers were slow to adopt the machine. Hussey patented his reaper in 1833, and McCormick followed in 1834, but farmers didn't start purchasing the machines in large numbers until the mid-1850s.

The traditional explanation for this surge in sales was the rapid rise of global wheat prices during the Crimean War, which limited grain exports from Russia and other nations in the Black Sea region. But in the 1960s, Stanford University economist Paul David offered another primary explanation: He argued that before the mid-1850s, most American farms were simply too small to make reapers practical.

The average farm size was growing, however, as grain production shifted from the East to the Midwest, where arable land was fresh, fertile, and relatively flat. More importantly, the farm-size threshold for the reaper to be practical was declining as the price of labor — relative to the price of reaping machines — increased in the Midwest due to higher demand for workers to build railroads and other infrastructure throughout the fast-growing region, David wrote.

In the 1970s, Alan Olmstead, an economist at the University of California, Davis, agreed that factor prices and farm sizes were important, but he argued that the break-even analysis for purchasing a reaper should be based on the total acreage of grain to be cut by that machine — not just by the grain acreage on the farm of the reaper's prospective owner. Farmers often cooperated to use reapers on multiple farms, a possibility that David had excluded from his model.

Olmstead also faulted David for assuming that there were no significant advances in reaper technology between 1833 and the 1870s. This assumption that the reaper was born fully developed grew into a "historical fact," Olmstead wrote, even though it ignored "extremely knowledgeable historians who emphasized how a host of technological changes transformed an experimentally crude, heavy, unwieldy, and unreliable prototype of the 1830s into the relatively finely engineered machinery of the 1860s."

The idea that the reaper was born fully developed was promoted aggressively by the McCormick Harvesting Machine Co. as part of a long-term branding strategy based on the sole-inventor legend of Cyrus. Over the years, many of the company's distortions and exaggerations came to be accepted as historical facts, according to Daniel Ott, a visiting professor of history at the University of Wisconsin, Eau Claire. In particular, the company claimed that Cyrus' invention "signaled a monumental jump forward in the progress of civilization and the circumstances of farmers everywhere," Ott wrote. But in reality, the McCormick reaper of 1831 was not a monumental jump; it was only Cyrus' first step as the reaper's Schumpeterian entrepreneur.

## McCormick vs. Hussey

While the McCormicks were improving their machine at Walnut Grove, Hussey was inventing his mechanized reaper

in Baltimore. He demonstrated his machine during the harvest of 1833 and patented it in December of that year.

He sold at least one reaper in 1834, and by the end of the decade, he was producing as many as 10 per year. In sharp contrast, the McCormicks sold no reapers in the 1830s — except one machine they had to take back from a dissatisfied customer.

Cyrus finally sold two reapers in 1840, but he later admitted that they were not very useful. By then, Hussey's machines were operating in at least eight states, according to Hutchinson. But Hussey's reapers encountered problems, too. "Some farmers complained that Hussey's machine left too long a stubble and others that the cutter clogged in damp grain and would not reap when the stalks were bent away from the knife," Hutchinson wrote. Hussey's sales plummeted in 1840 after his attempts to improve the machine made it worse.

The McCormicks sold two more reapers in 1841, seven in 1842, and 29 in 1843. In June of that year, Cyrus and Hussey demonstrated their reapers in a head-to-head competition on the plantation of Ambrose Hutcheson near Richmond, Va. The judges of the contest wrote that "both [reapers] performed most admirably." They expressed "great reluctance in deciding between them," but they generally preferred the McCormick.

Cyrus sold more reapers than Hussey that year, but the quality of the McCormick reaper declined after Cyrus increased production by selling manufacturing rights. Some of his licensees performed poorly, and the quality of the reapers made at Walnut Grove fell dramatically in 1846 and 1847, probably due to the illness and death of Robert McCormick.

By then, Cyrus was spending most of his time in the Midwest, where demand for reapers was growing quickly. For the rest of the decade, Cyrus focused on the Midwest, while Hussey concentrated on the East. But their rivalry shifted to the U.S. Patent Office in 1848, Hutchinson wrote, as both inventors tried to extend their rights. "The expiration of their monopolies invited new competitors to enter the arena, and the duel of the years 1839 to 1847 rapidly became thereafter a general melee."

True to his word in his 1834 letter to *Mechanics' Magazine*, Cyrus sued many of those new competitors for infringing on his various patents. He didn't win all of those lawsuits, but he seemed to thrive on head-to-head competition — in courtrooms, in wheat fields, and at international exhibitions. In sharp contrast, these contests seemed to wear Hussey down.

"I never experienced half the fatigue in Rowing after a whale in the Pacific Ocean (which I have often done) as I experienced year after year for eighteen years in the harvest field," Hussey wrote in an 1854 letter. "No man knows how much I have suffered in body and mind since 1833, on account of this thing."

A train ran over Hussey in 1860, one year before his patent rights were extended posthumously. Cyrus' rights were not extended, although the reasons for this ruling may have had more to do with politics than the merits of the case, according to Hounshell.

## McCormick vs. McCormick

Cyrus lost some legal and political battles, but he won consistently in the marketplace. By all accounts, he was tenacious, innovative, and farsighted as an entrepreneur. Perhaps his best strategic decision was moving to Chicago in 1847. His youngest brother, Leander, joined him there in 1848, and another younger brother, William, followed about one year later.

The brothers manufactured and sold more than 5,000 reapers in 1859, the year when Leander and William became minority partners in Cyrus' company. Hutchinson notes that Cyrus "customarily found harmony impossible with his partners," and his brothers were no exceptions.

After William's death in 1865, Leander and Cyrus quarreled more frequently. Each year, they argued about how many reapers to produce for the upcoming harvest. Cyrus, the risk-taking marketing maven, wanted to expand as quickly as possible in the United States and abroad. Leander, the risk-averse factory superintendent, wanted to grow slowly in the United States. As the company's majority partner, Cyrus always opted for aggressive growth with little regard for Leander's objections. The younger brother also became increasingly frustrated that Cyrus was getting all the credit for the company's success and all the glory for inventing the reaper. Leander started to assert — privately at first — that their father, Robert McCormick, was the true inventor of the machine.

Hutchinson and Hounshell attribute Leander's reaper reversal to jealousy, but Ott believes Leander really was trying to set the record straight. According to Ott, Leander probably tolerated the singular-invention legend for many years because he viewed the story as nothing more than harmless advertising fluff. But Leander's tolerance waned when he realized the company was transforming the legend into "the concrete narrative of the invention of the reaper." In the 1870s, Leander started gathering statements from old friends and relatives back in Virginia to support his claim that Robert had invented the reaper.

Meanwhile, adulation rained upon Cyrus, particularly in France, where he was made an officer of the Legion of Honor and a member of the French Academy of Sciences for having "done more than any other living man for the cause of agriculture in the world."

Back at the factory, Leander was struggling to keep up with Cyrus' aggressive expansion plans and his promises to customize reapers for smaller European markets. Hounshell argues that Leander could not keep up because he had failed to adopt modern manufacturing techniques, including the use of jigs, fixtures, gauges, and single-purpose machines to make interchangeable parts for standardized models. "Leander, whose only experience had been as a country blacksmith from Rockbridge County, Virginia, operated the reaper works as though it were a large country blacksmith shop," Hounshell wrote in his 1984 book, *From the American System to Mass Production, 1800-1932*.

Finally, Cyrus fired Leander and hired Lewis Wilkinson, an experienced mechanic who was well-versed in modern

manufacturing techniques. After training under Wilkinson for one year, Cyrus McCormick Jr. took over as superintendent of the factory and implemented ambitious plans to modernize. Capacity quickly increased to 54,000 machines in 1884 and more than 100,000 machines in 1889.

"Had Leander and Cyrus not had an irreparable fight in 1879-80, the reaper works might not have undergone any notable changes until Cyrus' or Leander's death," Hounshell wrote. Cyrus died in 1884, and Leander died in 1900, but the family feud over who invented the reaper was passed down from generation to generation.

## Manufacturing History

True or not, the singular-invention legend was valuable to the McCormick Harvesting Machine Co. — not for patent purposes by the 1880s, but to bolster the company's standing with populist farmers (reaper customers) who tended to hate big business.

To justify its higher prices, the company began to portray Cyrus Sr. as a heroic farmer whose mechanical genius had made him a great benefactor of mankind in general and farmers in particular. According to the ever-expanding legend, Cyrus Sr. fed the hungry around the world (by making bread cheaper) and elevated farmers from simple sodbusters to sophisticated managers of employees and capital.

Ott documented these exaggerations in his 2015 dissertation, *Producing a Past: Cyrus McCormick's Reaper from Heritage to History*. Ott argued that the company used the sole-invention legend to draw parallels between the populist "labor theory of value" and the company's "technological surplus value ideology." The propaganda reached a crescendo at the 1893 World's Columbian Exposition in Chicago, where a large banner over the company's exhibit proclaimed that "all harvesters of to-day are based upon the features C.H. McCormick invented and built in 1831." McCormick's competitors quickly complained that this claim was patently false, and the Inventors' Congress, an international group that was acting as the exhibition's jury, "forced the McCormick Harvesting Machine Company to take down all of its placards claiming inventive priority," Ott wrote.

Undaunted, Cyrus Jr. lobbied the U.S. Treasury Department to get his father's image printed on the \$10 silver certificate. Treasury Secretary John Carlisle embraced the idea and unveiled an engraving of the proposed new currency in 1896. But he pulled the plug on "McCormick money" after the company's competitors vigorously challenged the story that Cyrus alone had invented the reaper.

This time, the challenge to the singular-invention legend was more public and more damaging to the company's reputation, according to Ott. This embarrassing loss of prestige came at a difficult time. Grain prices were falling, farmers were struggling, and the company's farm machinery sales were dwindling. After waging a five-year price war, the company merged with its four largest competitors in 1902 to form International Harvester.

The merger agreement called for J.P. Morgan and Co. to manage International Harvester for 10 years, but when the McCormick family wrested control of the company away from the other partners in 1912, Cyrus Jr. reasserted the legend to help fend off federal antitrust charges. The company never got Cyrus Sr.'s image printed on currency, but a depiction of a mid-19th century reaper graced the back of the Federal Reserve's first \$10 note in 1914.

### Entrepreneurial Power

Separating fact from fiction in the Cyrus McCormick legend is difficult — if not impossible — because there are no contemporary accounts of what happened at Walnut Grove during the harvest of 1831. Most of that early history is based on the recollections of Cyrus himself and other highly partisan participants and observers — many of them taking sides (sometimes switching sides) in patent disputes

and the McCormick family feud.

But based on overlapping information from sources cited by both sides of the family, it seems likely that Cyrus and Robert both contributed to the McCormick reaper of 1831. And so did their slave, Jo Anderson, and so did a local blacksmith, John McCown. It also seems possible that Cyrus and Robert obtained knowledge of previous attempts to develop a practical reaper.

“One thing we know about the evolution of technology in general is that almost never does an important technology come out of the blue,” Hounshell says. “There are always precedents. There are always theories that lead up to a breakthrough invention.”

The more important question, according to Hounshell, is who supplied the entrepreneurial power that brought the reaper into common use? And the answer is clearly Cyrus McCormick. **EF**

---

### READINGS

Hounshell, David. *From the American System to Mass Production, 1800–1932*. Baltimore: Johns Hopkins University Press, 1984.

Hutchinson, William. *Cyrus Hall McCormick: Seed-Time, 1809–1856*. New York: Century Company, 1930.

Hutchinson, William. *Cyrus Hall McCormick: Harvest, 1856–1884*. New York: D. Appleton-Century Company, 1935.

Lyons, Norbert. *The McCormick Reaper Legend: The True Story of a Great Invention*. New York: Exposition Press, 1955.

Ott, Daniel. *Producing a Past: Cyrus McCormick's Reaper from Heritage to History*. Dissertation, Loyola University Chicago, 2015.