

A Fruitful Combination

The modern harvester-thresher, or combine, dramatically changed the face of farming

BY LISA DE NIKE

We denizens of the modern age often bemoan the “backbreaking” labor required when we have to shovel snow from our sidewalks and driveways, or rid our yards of piles of autumn leaves.

But that toil is nothing compared with the manual labor that was done by farmworkers at harvest time for tens of thousands of years—from the advent of organized farming until the early 1830s, when the first modern “harvester-thresher” (also known as a “combine harvester”) was introduced on a farm in Virginia.

So called because it brings together three operations (reaping, binding and threshing) into one machine, the modern “combine” rapidly harvests oats, barley, wheat, rye, corn, flax and soybeans, leaving behind the stems and leaves of the crop as waste straw, which often is chopped and baled for use as livestock bedding.

Today’s combines, outfitted with everything from onboard stereo systems and air-conditioning units, to electronics to measure threshing efficiency, to removable heads designed to harvest specific crops, are a far cry from the first machines, which appeared in the United Kingdom and United States in the late 18th and early 19th centuries.

In 1799, an Englishman named Joseph Boyce took out a patent for a “reaping machine,” but few details seem to be known about it. However, in

the early 1820s, Patrick Bell, a Church of Scotland minister who worked on his father’s farm, designed a two-wheeled mechanical “reaper.” It comprised a revolving 12-vane reel that pulled the plants over a cutting knife fashioned from triangular revolving blades over fixed triangular blades. Horses or oxen pushed this device, for which Bell never sought a patent because, as a man of God, he wanted to freely share his discovery with the world.

On this side of the proverbial pond was Cyrus Hall McCormick, of Virginia, who at the age of 22 experimented with his self-designed reaper on a neighbor’s farm in 1831. Unfortunately, the McCormick reaper was so noisy that it frightened the horses that had to pull it, requiring one worker to walk beside the animals to calm them. Not discouraged, McCormick continued to tinker with his design, improving it to the point that, by 1841, the machines became very popular in the Midwest. (In the 1840s, McCormick moved to Chicago to go into the farm machinery business.)

Historians say that the McCormick reaper drastically reduced the cost of labor needed to harvest crops, allowing



ever-wider swaths of land to be cultivated. By the mid-1860s, 4,000 McCormick reapers were being sold every year and, seeing money to be made, business mogul J. P. Morgan bought the McCormick Harvesting Co. He merged it with other, smaller companies to form International Harvester Co in 1902.

Though some late 19th-century harvesters were steam powered, most continued to rely on farm animals. But by 1905, a gasoline-driven combustion engine began to appear on some models. Still, even in the 1930s, it wasn't unusual to see teams of horses still pulling reaping machines, while others were pulled by tractors.

From the 1950s on, advances in engineering and technology rapidly improved the combine harvester's design. Modern combine harvesters can cut crops in swaths of 30 feet in width as they harvest up to 40 tons of grain per hour—generations removed from McCormick's simple machine. ■