

Shenandoah Valley Agricultural Research & Extension Center

Grain Harvesting History



Reaping Hook

"Reaping Hook" or Sickle

With the sickle or reaping hook one man could cut from one-half to one acre in a hard day's work. The cut grain was later bound by hand.



The Cradle

Cradle

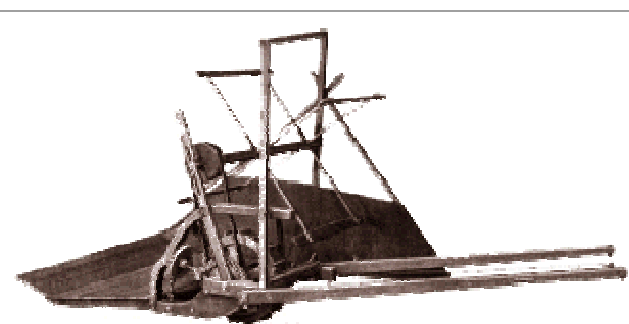
The cradle was the most efficient means of cutting grain before McCormick's invention of the reaper. The cradle consisted of a broad scythe with a light frame of four wood fingers attached to it. The advantage of the cradle was that by a turn to the left the operator could throw the grain into a swath, ready to be raked and bound into sheaves. This improvement was introduced in America about 1776, according to Professor Brewer of Yale, and was the common instrument of grain harvesting as late as 1840. For cradling grain, two acres was considered a day's work.



The Scythe

Scythe

The scythe was the companion tool to the reaping hook or sickle. It was always used for mowing grass but sometimes oats and barley were cut with it. It was not generally used for cutting wheat. With the scythe a man could cut up to three acres a day.



The first reaper included these essential elements:

1. Reciprocal knife
2. Fingers or gaurds
3. Revolving reel
4. Platform
5. Master wheel
6. Forward draft

The World's First Reaper

7. Divider

This McCormick reaper of 1831 shows the wide master wheel which carried most of the weight of the machine and, through ground transaction, supplied power to operate the reel and the reciprocal knife. The world's first reaper incorporated seven basic principles (listed above) which have ever since been found essential in virtually all grain-cutting machines.

While this first machine required only 2 people for operation (a person to ride the horse and a man to rake the cut grain from the platform), it cut as much grain in one day as 4-5 men with cradles or 12-16 men with reaping hooks.



McCormick's Patent Reaping Machine

The McCormick Patent Reaping Machine of 1857 combined machinery for reaping and mowing, and was built from 1852-1865. Its chief improvements over the 1831 reaper were seats for driver and raker, a cutting knife fabricated in sections rather than one piece, and an all-metal main wheel. This machine also cut a wider swath than the first reaper and was pulled by two horses.



McCormick's Patent Reaping and Mowing Machine

The McCormick Patent Reaping and Mowing Machine was manufactured from 1852-1865, with various improvements being incorporated from time to time. This specific machine includes seats for raker and driver and cut a wider swath than McCormick's reaper of 1831.



The Automatic Self-Rake Reaper

The McCormick Automatic Self-Rake Reaper was originally patented in 1858 and was manufactured and sold in large numbers from 1862 until about 1875 (when it was replaced by a more efficient machine bought out by McCormick). The harvester, known as McCormick's "Old Reliable," was a one-man machine which released yet another person to aid in other harvest jobs. Its automatic rake swept cut grain off the platform, depositing the grain in neat gavels on the ground, ready to be bound into bundles by the hand binders.

Here an "Old Reliable" of 1864 deposits neat gavels of



grain on the ground to be bound by a crew of 4-5 men.

An "Old Reliable" of 1867 with its automatic sweep arm removed cut grain from the reaper platform. This arm released one more man for other farm jobs.



McCormick Combination Reaper and Mower

The McCormick "Advance" Combination Reaper and Mower. This machine was manufactured and sold by McCormick from 1869-1879. The "Advance," a combined mower and reaper, had an automatic rake as part of the reel. Platform and reel were removable so that the machine could be used as a straight hay mower. This illustration shows the machine for use as a reaper.



The Marsh Type Harvester

The McCormick Marsh Type Harvester, built from 1875-1883, consisted of the same cutting mechanism as McCormick's earlier reapers, with an elevator and binding platform added. Two men rode on the platform, binding grain by hand as it was delivered to the by the elevator. This machine was patented as early as 1858 but was not put into general use until 1875. With the Marsh type harvester, 2 men bound the grain while earlier harvesters had required 4-5 men for binding.



McCormick Harvester and Binder

McCormick Harvester and Binder of 1876 at work in the field. This was the first practical self-binder ever built. People traveled miles to see the first machine controlled by one man, which cut and bound grain in a single operation. McCormick built and sold 50,000 of these binders between 1877 and 1885.



McCormick Harvester and Binder

McCormick Harvester and Twine Binder manufactured in 1881. This was McCormick's first binder which tied the bundles with twine. After the development of this machine, only minor improvements, tending to give greater durability and lighter draft were added.



McCormick Harvester and Binder

The McCormick Light Steel Binder built in 1888. This was an improvement over the first steel binder of 1885. The knotter was improved for the first time since the binder came into existence. Improvements in the reel construction were made and an adjustable canvas grain shield was added on the rear of the platform.



McCormick-Deering Tractor Binder

The McCormick-Deering Tractor Binder is operated from the Farmall tractor through the shaft running out of the rear, thus making the binder independent of ground conditions. This power take-off, as it is called, is regularly supplied with all Farmall tractors. The binder, being independent of ground conditions, can operate when a horse-drawn binder would find it difficult, if not impossible, to cut grain.



McCormick-Deering Harvester-Thresher

McCormick-Deering Harvester-Thresher is the most modern type of grain-harvesting machine. It cuts 40-50 acres per day and threshes the grain, delivering it after a thorough cleaning, into a grain tank. From the tank, the grain can be drawn off into a motor truck or wagon and hauled to the grainary.



The Windrow-Harvester

This Windrow-Harvester cuts grain and leaves it in a windrow on top of the stubble. After the grain cures on the stubble it is picked up by an attachment on the platform and threshed. The windrow-harvester makes it possible to cut grain earlier (avoiding natural hazards such as winds and hails) and to better harvest woody grain (because the weeds dry out with the crops before threshing).