riding culitvator having an arched axle to pass over the rows of growing crops and culitvate on both sides of a row at the same time.

Scythes.

Joseph Jenks was the first founder who worked in brass and iron on the American continent, and has been called the Tubal Cain of New England. On May 6, 1646, he was granted by the Legislature of Massachusetts a patent for fourteen years for the "making of scythes and other edged tools with a new invented saw mill that things may be afforded cheaper than formerly." In 1655 he was accorded another patent for the improvement in the manufacture of scythes "for the more speedy cutting of grass for seven years." His improvement consisted in greater length and thinness to the blade, and in welding a bar of iron on the back to strengthen it, as in the modern scythe. This was regarded as a marked improvement upon the old form of English scythe, a clumsy instrument, short and thick. No radical change, say authorities, has since been made in the form of this implement.

The grain cradle, too, owed its invention to the genius of the early colonists; but the cradle, like the scythe, was destined to almost entire extinction by the advent of mechancial means of harvesting, which came about in the course of time.

Mowing and Reaping Machines

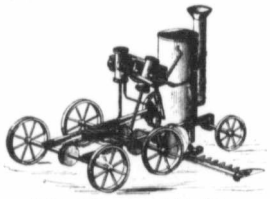
Machinery for mowing and reaping was originally of the same class; that is, the early reapers were generally of the sort known as combined—they both reaped and mowed. There has probably been no more bitter and more acrimonious controversy over any kind of invention than that which for fifty years filled columns published both in England and America on the subject of the reaping machine. Not only have English authorities flatly charged that American inventions were stolen bodily from an English machine, but fierce quarrels ensued among several American claimants to this invention, which, indeed have proceeded almost up to the present day, at least in the form of a good deal of ill feeling or until the combination of several of the principal manufacturers of this class of machines into one great company. To the unbiased student there seems to have been little enough basis for any charges that have been bandied back and forth.

The idea of reaping grain by a machine to be drawn or pushed by a horse is an ancient one and appears in the writing of Pliny the Elder, who was born, A.D. 23. In 1785 an Englishman proposed a mechanical reaper. In 1790 a book published in England described another machine of this class, and in the same year the first English patent was granted. Another British patent was issued in 1800, others in 1803, 1806 and 1807. All of these machines were complicated; but in 1882 Henry Ogle, a schoolmaster of England, invented a machine of comparative simplicity and first used a reciprocating cutter. This machine was successfuly tried, but its inventor wrote of it; "Some working people treid to kill Brown (the maker of the machine) if he perservered any further in it, and it has never been more tried." However, it is to Rev. Patrick Bell, of Scotland, that English authorities give credit for the invention of the modern reaping machine. It is undoubtedly true that this machine marked the advent of successful reaping by machinery. Bell's machine was invented in 1826, and two years later was in successful operation, receiving a premium of 50 pounds awarded by the Highland Agricultural Society. For one reason or another this reaper, after considerable numbers had been made, was gradually lost sight of, and seems to have been entirely forgotten by the agriculturists of Great Britian until 1851, when the advent of certain Americans at the Great Exposition at the Crystal Palace stirred the British authorities to remember that they too had a reaping machine, as will soon appear.

The Original Hay Tedder

A Seeder Patented in 1878

The American invention of the reaper is contested by two claimants. Apparatus for cutting grain and grass was patented in the United States in 1803—the first mention in our records of mowing or reaping machinery—but it was not until many years later that successful machinery was made and marketed. Obed Hussey of Ohio, obtained a patent December 31, 1833, on a machine for cutting grain. In July of that year a public trial had been held before local agricultural societies, and in the following year machines were introduced into neighboring states and factories established at Baltimore. Some authorities claim that it was this machine which formed the model on which mowers and reapers based nearly all their subsequent designs of inventions for improvements and modifications. On the other hand, the friends of Cyrus Hall McCormick, of Virginia, claim that his reaper, although not patented until June 21, 1834, had actually been in use as early as 1831. In any advent, both machines survived and worked a revolution in the harvesting of grain throughout the world. A letter is in existence from the then Commissioner of Patents which virtually acknowledge that the granting of a patent to Mr. McCormick was a mistake, and it is a fact that, although the type of the McCormick machine was considerably changed by the time that his next United States patent in 1854 was issued, the courts held that suits brought against competitors were not well founded, and many new factories sprang up throughout the country.



A Steam Mower Patented in 1868

The McCormick plant, meanwhile, was removed to Chicago, and through superior business ability, or for some other reason, rapidly developed into the most important in the world. At that time there were more than fifteen patented rivals in the field, and in 1857 no less than forty different machines were on the market in the United States. The fact that

A Harvester Patented in 1831

to-day there are less than fifteen manufacturers of similar machines in the United States is largely due to the financial schrewdness and business acumen of this great company.

It would appear that there was a general awakening to the importance of harvesting machinery on the part of inventors in various parts of the world at about this same period. A reaping machine was invented in Odessa in 1831; one in Vienna in 1839; one in Australia in 1845.

But the revolutionary character of the invention only came prominently to the attention of the public at the great Exhibition of Industries of All Nations in 1851, when both the McCormick and Hussy machines were exhibited and demonstrated. At this exhibition the McCormick machine received the medal, but Mr. Hussy turning up in person a few days after the first trial was given an opportuntiy to work his machines, and under his successful guidance they received the practically unanimous indorsement of the judges. A great deal of excitement naturally ensued, and, as one writer expresses it, "caused the forgotten experiments of half a century to be withdrawn from their limboes and exhibited to the enthusiasm of these foreigners." Anyone who wishes a demonstration of the length of which insular narrowness and jealousy can go is referred to the pages of the Encyclopedia Britannica, article "Agriculture," where one may read in connection the account of the Bell reaping machine.

Considerable numbers were made and partially used, but from various causes the invention was lost sight of until by the arrival of these American and Canadian machines and the notoriety given them by the Great Exhibition an intense interest was again excited regarding reaping machinery. * * Four specimens of it (Bell's machine) had been carried to America, and from the identity in principle between them and those now brought thence there is little doubt that the so-called American inventions are after all modifications of this Scottish machine."

To the American this seems