

Throughout human history, people harvested food by hand. Cutting and gathering was hard, time-consuming work. In the early 1800s, Robert McCormick began to work on a **reaper** that could be mass-produced. It was an automatic, horse-drawn machine used to cut and gather wheat. His son, Cyrus (1809–1884), continued his father's work by inventing the first mechanical harvester in 1831 when he was twenty-two years old. His invention was the first useful reaper.

The reaper had a revolving reel that pressed the stalks against a blade, which cut off the stalks. (It was like a saw dragged across a field of grain to cut the crop.) When the stalk was cut, the grain fell onto a platform at the back of the reaper. The reaper was pulled by horses and could do the work of five people. Cyrus McCormick formed a company that later became International Harvester.

Robert Fulton (1765–1815) invented the first successful **steamship**. Other steamboats had been invented, but all of them had problems. With steam power, the boat did not rely on wind or human power or currents to move, so the steamboat was

an important invention. Fulton's steamship, built in 1807, was full-sized. He called it the *Clermont*. It traveled up and down the Hudson River. Fulton also invented the first steam warship, but because the paddle that propelled the warship (or any steamship) was exposed and open to enemy damage, his steam warship was not successful.

Benjamin Bradley (b. 1830) invented a powerful **steam engine** for a warship, but because he was a slave and therefore not a citizen, he could not patent his work. He sold his idea and bought his freedom with the money. Benjamin Montgomery (b. 1819), also a slave, developed a propeller that went into the water at angles, which made it different from Fulton's propeller. This was important because rivers have different depths, and some places are shallow enough for steamboats to run aground. The goods on board the boat would be delayed for weeks or more while the boat was grounded. Like Bradley, Montgomery could not patent his idea, but because he was a slave of Jefferson Davis's brother, after Jefferson Davis became president of the Confederacy, Davis signed a bill into law that said slaves could have patents.

Exercise:

1. The reaping machine made harvesting faster and easier, which is an advantage.

What might be a disadvantage about the reaper? (Hint: It did the work of five people.)

2. What were the benefits of a steamboat? _____

3. What were some of the drawbacks of Fulton's steam warship? How were those fixed? _____
