

Chapter 16: The North

1. Industrial Revolution

Britain Industrializes

The Industrial Revolution began in the mid-1700s in Britain. It represented a shift from handmade goods to machine made goods. This allowed businesses to make more goods cheaply.

The **textile** industry used machines on a large scale first. Machines could spin raw cotton into thread and from thread into cloth and from cloth into clothes. Production of goods increased while the cost of making goods decreased. This allowed consumers to purchase ready made clothing at cheap prices and freed up time to do other things.

New England

Samuel Slater memorized the designs of British textile machines and then went to America to go into business. With business partners, he opened a textile mill in Rhode Island in 1790.

Francis Cabot Lowell started his own textile mill in Massachusetts in 1814. To increase efficiency, he had most of the work done inside one building. To keep costs down, he needed cheap **labor**. He decided to employ young, single women. They worked for about \$2-4 a week. Women took these jobs to get away from the farm, learn skills, pay off debts, or earn extra money.

Unions

Competition for work lowered wages in the factories. Laborers worked long hours for little pay. Also, conditions in factories could be bad. Thirteen hour workdays wore women out, poor air quality

inflamed the lungs, machines cut workers, children as young as seven years old were exploited, and fires injured many.

After several failed attempts at work **reform**, in 1845, Sarah G. Bagley left the mills and formed the Female Labor Reform Association. They were successful in getting a 10 hour workday in some states, but management frequently worked people longer anyhow. Improving **wages** and working conditions would take decades to achieve.

2. Transportation Improves

Steamboats

John Fitch built the first American steamboat in 1787. However, Robert Fulton and Robert Livingston built the first practical steamboat, the *Clermont*, in 1807 showing the world that steamboats could be used to move people and goods faster and cheaper than traditional wind powered ships. A steamboat could travel on water regardless of the direction of the current or the wind.

Moving goods like sugar, tobacco, and cotton helped the economy grow in the coastal areas of the United States. Towns and cities sprang up on the waterways to transfer goods and people.

Railroads

Railroads changed America in no small order. They introduced a way to move people and goods faster and cheaper than ever before in human history.

In 1830, Peter Cooper built the first American steam locomotive the Tom Thumb to operate on the nation's first railway, the 13 mile long Baltimore and

Ohio Railroad. By 1860, the United States had 30,000 miles of track.

Railroads would connect all the major cities. Crops and manufactured goods quickly and inexpensively traveled great distances to markets. Consumers could purchase goods never available to them before at prices they could afford.

The profits from moving people and goods made the railroads the largest companies in America. However, some railroads used their power to control politicians, destroy rival businesses, and get unfair business advantages.

3. Inventions

Mass Production

Throughout human history, skilled craftsmen created goods by hand. Everything made was unique. If a part broke, another craftsman had to repair it. This took time and cost a lot of money. With interchangeable parts, it was easy to replace broken parts. While several people began to see the advantages of using identical, interchangeable parts, Eli Whitney made it popular.

In 1798, the United States government hired Whitney to make 10,000 muskets. Whitney set up a factory to make weapons made up of interchangeable parts. That is, every part of the gun was mass produced to be identical. If a part broke, it could be replaced with another identical part. This reduced the time and cost of building everything. Mass production became a way to make quality goods, in large quantities, at low prices.

Farming

Europeans and Americans relied on wheat for a lot of its food supply. Blacksmith or metal worker Cyrus McCormick sought to make the process of wheat harvesting more efficient. In 1834, after over a year of work, he had a working model of a machine drawn by horses that sliced up wheat. The mechanical reaper did the work of a dozen laborers. This invention increased the food supply and inspired others to invent labor saving machines.

Farmers used plows to turn the soil to plant crops. In the Midwest, the thick, sticky soil got caught on the traditional iron plows forcing farmers to frequently stop to clean the blade. In 1838, blacksmith John Deere saw the problem and fashioned a steel plow with a new design that could easily cut through the soil. This invention helped turn the Midwest into one of the best farming regions in the world.

Communication

In most cases, information traveled only as fast as a boat or horse. In 1844, new electrical technology allowed Samuel Morse to create one of the first telegraph systems. By pressing a key, an electrical signal was sent across a wire to another key that duplicated the clicks. Morse then assigned a different number of clicks to each letter of the alphabet. Using this Morse code, operators could send and receive messages instantaneously over great distances. Now, information could spread quickly from one side of the country to the other.

