Chapter 13

The Expansion of American Industry
(1850–1900)
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Section 1: A Technological Revolution

Section 2: The Growth of Big Business

Section 3: Industrialization and Workers

Section 4: The Great Strikes
A Technological Revolution

Chapter 13, Section 1

• Why did people’s daily lives change in the decades following the Civil War?
• How did advances in electric power and communication affect life for people and businesses?
• What effects did the development of railroads have on industrial growth?
• What was the impact of the Bessemer process on American culture?
Life in the 1860s
• No indoor electric lights
• No refrigeration
• In 1860, most mail from the East Coast took ten days to reach the Midwest and three weeks to get to the West Coast. A letter from Europe to a person on the frontier could take several months to reach its destination.

Life in the 1900s
• Between 1860 and 1890 the government issued almost 500,000 patents—licenses that gave an inventor the exclusive right to make, use, or sell an invention. Patents were issued for inventions such as the typewriter and the telephone. These inventions increased productivity—the amount of goods and services created in a given period of time.
• Power stations across the country provided electricity for lamps, fans, printing presses, and many other appliances.
• By 1900, there were 1.5 million telephones in use all over the country, and Western Union Telegraph was sending roughly 63 million messages.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Edwin L. Drake</td>
<td>Struck oil in Pennsylvania in 1859. New uses for oil grew rapidly. Oil refineries sprang up around the country as oil became a big business.</td>
</tr>
<tr>
<td>Thomas A. Edison</td>
<td>An inventor from New Jersey who experimented with electric light. Developed a workable filament for the light bulb and the idea of a central power station to make electric power widely available.</td>
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<tr>
<td>Lewis Latimer</td>
<td>Worked in Edison’s lab and patented an improved method for producing the filament in light bulbs</td>
</tr>
<tr>
<td>George Westinghouse</td>
<td>Experimented with a form of electricity called alternating current, which was less expensive and more practical than direct current, which Edison had used. By using a transformer, he improved the capabilities of power stations to make home use of electricity more practical.</td>
</tr>
</tbody>
</table>
• On May 10, 1869, the transcontinental railroad, extending from coast to coast, was finished with the hammering of a golden spike at Promontory Point, Utah.

• The growth of railroads led to the development of many towns throughout the western part of the United States.

• In 1883, the railroads adopted a national system of time zones to improve scheduling. As a result, the clocks in broad regions of the country showed the same time, a system we still use today.
Railroads played a key role in revolutionizing business and industry in the United States in several key ways.

- They provided a faster, more practical means of transporting goods.
- They lowered the costs of production.
- They created national markets.
- They provided a model for big business.
- They encouraged innovation in other industries.
• In 1856, Henry Bessemer received the first patent for the Bessemer process, which made steel production easier and less expensive.

• The Bessemer process made possible the mass production, or production in great amounts, of steel.

• As a result, a new age of building began. The Brooklyn Bridge, designed with steel cables suspended from high towers, was one important project that was made possible by the mass production of steel.
How did railroads play a key role in revolutionizing business and industry?

(A) They lowered the cost of production.
(B) They provided a model for big business.
(C) They were a faster and more practical means of transporting goods over long distances.
(D) All of the above

What innovations did the Bessemer process encourage?

(A) Faster communication across long distances
(B) The creation of national markets
(C) A new age of building
(D) The growth of railroads

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The Growth of Big Business

Chapter 13, Section 2

• Why were American industrialists of the late 1800s called both “robber barons” and “captains of industry”?

• How did Social Darwinism affect Americans’ views on big business?

• In what ways did big businesses differ from smaller businesses?

• How did industrialists gain a competitive edge over their rivals?
“Robber Barons”
- Business leaders built their fortunes by stealing from the public.
- They drained the country of its natural resources.
- They persuaded public officials to interpret laws in their favor.
- They ruthlessly drove their competitors to ruin.
- They paid their workers meager wages and forced them to toil under dangerous and unhealthful conditions.

“Captains of Industry”
- The business leaders served their nation in a positive way.
- They increased the supply of goods by building factories.
- They raised productivity and expanded markets.
- They created jobs that enabled many Americans to buy new goods and raise their standard of living.
- They also created museums, libraries, and universities, many of which still serve the public today.
Social Darwinism

- According to Charles Darwin all animal life had evolved by “natural selection,” a process in which only the fittest survived to reproduce.

- **Social Darwinism** applied Darwin’s theory to society as a whole. It held that society and government should not interfere with relations between workers and employers and should stay out of affairs of business.

- Those who were most “fit” in business would succeed and become rich.

- Society as a whole would benefit from the success of the fit and the weeding out of the unfit.

- Most Americans believed that government should not interfere with private businesses. As a result, the government neither taxed profits nor regulated their relations with workers.
Many factors combined to make a new kind of business in the United States.

- Larger pools of capital — Entrepreneurs had to invest massive amounts of capital or borrow from investors.
- Wider geographic span — Railroads and the telegraph aided in the geographic expansion of businesses.
- Broader range of operations — Big businesses often combined multiple operations and were responsible for all stages of production.
- Revised role of ownership — Owners had less connection to all aspects of their businesses because the businesses were too large. “Professional managers” were hired to run their business.
- New methods of management — Innovations were also necessary for controlling resources. Big businesses developed new systems of formal, written rules and created specialized departments.
New Market Structures

- An **oligopoly** is an industry that is dominated by only a few large, profitable firms.
- Some companies set out to gain a **monopoly**, or complete control of a product or service.
- Some industrialists prospered by taking steps to limit competition with other firms. One way was to form a **cartel** — a loose association of businesses that make the same product.
- Companies such as Carnegie Steel were able to maintain very low production costs. One reason Carnegie Steel could charge less for its product was a phenomenon known as **economies of scale**. That is, as production increases, the cost of each item produced is lower. As Carnegie Steel expanded, its cost per item went down.
Chapter 13, Section 2

Horizontal and Vertical Consolidation

Coke fields purchased by Carnegie
Iron ore deposits purchased by Carnegie
Steel mills purchased by Carnegie
Ships purchased by Carnegie
Railroads purchased by Carnegie

Carnegie Steel Company
Owns all phases of production

Independent oil refineries purchased by Rockefeller
Standard Oil Company
Many Americans who were skeptical of trusts and other large corporations began to demand government action to break up the industrial giants.

Despite questions about the practices of the “robber barons” many government officials did not want to interfere with the “captains of industry” and their contribution to the country’s rising levels of wealth.

However, in 1890, Congress passed a law to limit the amount of control a business could have over an industry.

The Sherman Antitrust Act outlawed any combination of companies that restrained interstate trade or commerce.

This law was vague in its wording and was often used in the courts to aid big business when applied against labor unions.
How did the theory of Social Darwinism affect the relationship between the government and big businesses?

(A) Social Darwinism allowed for much government intervention.
(B) The concept of Social Darwinism benefited workers’ rights.
(C) Social Darwinists believed that government should not interfere with private business.
(D) Social Darwinists encouraged Congress to pass the Sherman Antitrust Act.

A loose association of businesses that make the same product is a(n):

(A) cartel.
(B) oligopoly.
(C) monopoly.
(D) horizontal consolidation.
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Industrialization and Workers

Chapter 13, Section 3

• What factors led to a growing American work force between 1860 and 1900?
• What was factory work like at the turn of the century?
• Why was it necessary for entire families to work?
Shifts in Population and Employment, 1860-1900

Chapter 13, Section 3

**Rural and Urban Population in the U.S.**

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<thead>
<tr>
<th>Year</th>
<th>Urban</th>
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<tr>
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<tr>
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<td>20%</td>
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</tr>
<tr>
<td>1900</td>
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**Shifts in U.S. Labor Force**

<table>
<thead>
<tr>
<th>Year</th>
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<th>Industrial</th>
<th>Agricultural</th>
</tr>
</thead>
<tbody>
<tr>
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<td>10%</td>
<td>20%</td>
<td>70%</td>
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<tr>
<td>1870</td>
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<tr>
<td>1890</td>
<td>1%</td>
<td>50%</td>
<td>49%</td>
</tr>
<tr>
<td>1900</td>
<td>0%</td>
<td>60%</td>
<td>40%</td>
</tr>
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</table>

* No figure available

SOURCE: Historical Statistics of the United States, Colonial Times to 1970
• In many industries, workers received a fixed amount for each finished piece — a few cents for a garment or a number of cigars. This type of work is called piecework.

• Most piecework was performed in a sweatshop — a shop where employees worked long hours at low wages and under poor working conditions.

• These and other methods, such as Taylor’s system of scientific management, increased worker productivity and changed the relationship between the worker and the product created.

• Factory workers performed one small part of production repeatedly and often never saw the finished product. This division of labor into separate tasks was more efficient but took the pride and joy out of work.
The Work Environment

• Factory workers worked by the clock.
• Workers could be fired for being late, talking, or refusing to do a task.
• Workplaces were not always safe.
• Children often performed unsafe work and worked in dangerously unhealthy conditions.
• In the 1890s and early 1900s states began legislating child labor.

The Division of Labor

• Some owners viewed workers as parts of the machinery.
• Unlike smaller and older businesses, most owners never interacted with workers.
Working Families

Chapter 13, Section 3

- In the 1880s, children made up more than 5 percent of the industrial labor force.
- Children often left school at the age of 12 or 13 to work.
- Girls sometimes took factory jobs so that their brothers could stay in school.
- If an adult became too ill to work, children as young as 6 or 7 had to work.
- Rarely did the government provide public assistance, and unemployment insurance didn’t exist.
- The theory of Social Darwinism held that poverty resulted from personal weakness. Many thought that offering relief to the unemployed would encourage idleness.
How did the division of labor into separate tasks change the nature of factory work?

(A) Women were able to work at home while caring for their families.
(B) Factory owners could have an accurate account of production.
(C) It was more time consuming than old methods of production.
(D) Workers performed one small part of production repeatedly and rarely saw the finished product.

What was the shift in labor from the 1860s to the 1900s?

(A) Agricultural work decreased and industrial work increased.
(B) Professional workers outnumbered agricultural workers.
(C) Machines took a significant number of jobs away from industrial laborers.
(D) More child laborers were staying in school longer.

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Industrialization and Workers-Assessment

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The Great Strikes

Chapter 13, Section 4

- What impact did industrialization have on the gulf between rich and poor?
- What were the goals of the early labor unions in the United States?
- Why did Eugene V. Debs organize the American Railway Union?
- What were the causes and outcomes of the major strikes in the late 1800s?
The Gulf Between the Rich and the Poor

In 1890, the richest 9 percent of Americans had nearly 75 percent of the national wealth.

The average worker earned only a few hundred dollars a year.

Many workers resented the extravagant lifestyles of many factory owners.

Some workers became politically active. A few were drawn to the idea of socialism — an economic and political philosophy that favors public instead of private control of property and income.

Socialists believe that society at large, not just private individuals, should control a nation’s wealth. That wealth, they say, should be distributed equally to everyone.
# The Rise of Labor Unions

**Early Labor Unions**
- Became strong after the Civil War
- Provided assistance to members in bad times
- Later expressed workers’ demands to employers

**The Knights of Labor**
- A national union
- Recruited skilled and unskilled workers, women, and African Americans
- Emphasized education and social reform

**The American Federation of Labor (AFL)**
- Led by Samuel Gompers
- Was a **craft union** of skilled workers
- A bread and butter union
- Used **collective bargaining** as a strategy

**Industrial Workers of the World (IWW)**
- Known as “The Wobblies”
- Organized unskilled workers
- Had radical socialist leaders
- Many violent strikes.
Many employers disliked and feared unions. Some took steps to stop unions, such as:

- forbidding union meetings
- firing union organizers
- forcing new employees to sign “yellow dog” contracts, making them promise never to join a union or participate in a strike
- refusing to bargain collectively when strikes did occur
- refusing to recognize unions as their workers’ legitimate representatives
Railroad Workers Organize

• The Great Railroad Strike of 1877
  – Railway workers protested unfair wage cuts and unsafe working conditions.
  – The strike was violent and unorganized.
  – President Hayes sent federal troops to put down the strikes.
  – From then on, employers relied on federal and state troops to repress labor unrest.

• Debs and the American Railway Union
  – At the time of the 1877 strike, railroad workers mainly organized into various “brotherhoods,” which were basically craft unions.
  – Eugene V. Debs proposed a new industrial union for all railway workers called the American Railway Union (A.R.U.).
  – The A.R.U. would replace all of the brotherhoods and unite all railroad workers, skilled and unskilled.
Haymarket, 1886

• On May 1, groups of workers mounted a national demonstration for an eight-hour workday.
• On May 3, police broke up a fight between strikers and scabs. (A scab is a negative term for a worker called in by an employer to replace striking laborers.)
• Union leaders called a protest rally on the evening of May 4 in Chicago’s Haymarket Square.
• A group of anarchists, radicals who oppose all government, joined the strikers.
• At the event, someone threw a bomb that killed a police officer.
• The riot that followed killed dozens on both sides.
• Investigators never found the bomb thrower, yet eight anarchists were tried for conspiracy to commit murder. Four were hanged.
Strikes Rock the Nation

Chapter 13, Section 4

• Homestead 1892
  – In 1892, Andrew Carnegie’s partner, Henry Frick, tried to cut workers’ wages at Carnegie Steel.
  – The union called a strike and Frick called in the Pinkertons.
  – The union called off the Homestead Strike after an anarchist tried to assassinate Frick. Even though the anarchist was not connected to the strike, the public associated his act with rising labor violence.

• Pullman, 1894
  – Eugene Debs instructed strikers not to interfere with the nation’s mail.
  – Railway owners turned to the government for help. The judge cited the Sherman Antitrust Act and won a court order forbidding all union activity that halted railroad traffic.
  – Court orders against unions continued, limiting union gains for the next 30 years.
The Great Strikes-Assessment

Which union focused on organizing unskilled workers?

(A) The Knights of Labor
(B) The International Workers of the World
(C) The American Railway Union
(D) The American Federation of Labor

What is the main distinction between a craft union and an industrial union?

(A) A craft union only organized unskilled labor.
(B) An industrial union is organized into “brotherhoods.”
(C) A craft union has more socialist leaders.
(D) An industrial union organizes workers from all crafts in a given industry.

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