

Chapter Five:

Industrialization & the Gilded Age



*"If you want to succeed you should strike out on new paths,
rather than travel the worn paths of accepted success."*

-John D. Rockefeller

Chapter Objective, Essential Questions, & TEKS

- Objective:
 - Identify and analyze the major characteristics of the Gilded Age such as social issues, industrialization, scientific discoveries, and the contributions of significant political and social leaders.
- Essential Questions:
 - What factors encouraged American economic growth in the decades after the Civil War?
 - How did workers fare in the new industrial America?
 - Could workers have improved their working conditions without organizing labor unions?
 - How did industrialization bring both positive and negative changes?
- TEKS:
 - History: 2 (A), 2 (B), 2 (C), 3 (B), 3 (C)
 - Economics: 15 (B)
 - Citizenship: 24 (B)
 - Culture: 26 (A)
 - Science, Technology, & Society: 27 (A)

Chapter Vocabulary

- Bessemer Process
- Transcontinental Railroad
- Alexander Graham Bell
- Telephone
- Thomas Edison
- Free Enterprise System
- National Market
- Corporation
- Entrepreneur
- Gilded Age
- Captain of Industry
- Robber Baron
- Andrew Carnegie
- Philanthropy
- John D. Rockefeller
- Monopoly
- Interstate Commerce Act
- Sherman Anti-trust Act
- Child Labor
- Laissez-faire
- Union
- Knights of Labor
- AFL
- Samuel Gompers

Important Ideas

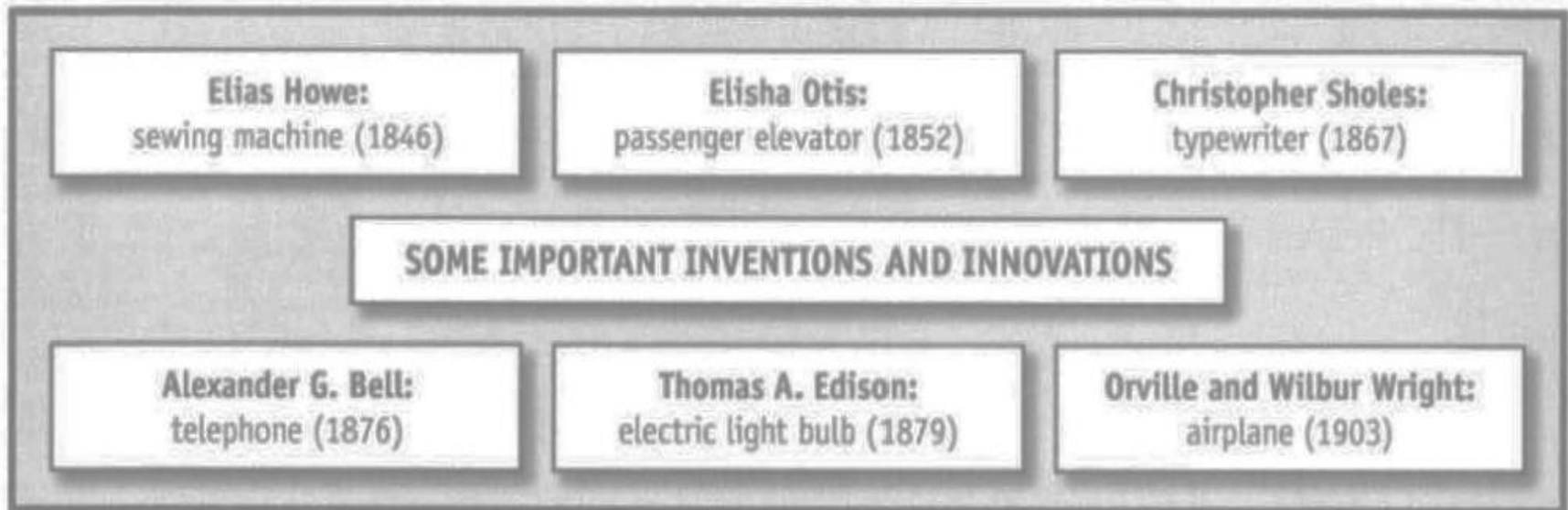
- American industrialization proceeded at a rapid pace in the decades after the Civil War.
- New inventions - such as the Bessemer Process for making steel. Sewing machine, typewriter, telegraph, telephone, oil well, and electricity - all contributed to America's economic progress.
- The Transcontinental Railroad was first completed in 1869. It made it possible to travel to California. Additional railroad construction created a demand for steel and tied the country together, creating a truly national market from coast to coast.
- The free enterprise system encouraged entrepreneurs to develop new industries and expand them. Population growth, the rise of the corporate form of business, and the skills of entrepreneurs also contributed to America's economic growth.
- Andrew Carnegie, John D. Rockefeller, and other successful entrepreneurs helped organize and increase production.
- Andrew Carnegie bought iron ore fields, coal mines and ships to have complete control over the production of steel. He kept wages low and spent millions on philanthropy.

Important Ideas

- John D. Rockefeller made his fortune refining oil. He obtained secret, beneficial rates from train companies, giving him a competitive advantage.
- Under the system of *laissez-faire*, government took a "hands-off" policy towards business. Nevertheless, the government promoted economic growth by providing a system of laws to protect property and enforce contract, regulating currency and interstate trade. and imposing tariff duties on foreign goods.
- Workers faced difficult conditions in industrial America. Most were unskilled and spent long day., at boring, repetitive tasks for low wages. They also lacked any job security. Working conditions were often unhealthy or hazardous.
- Workers tried to bargain collectively by forming unions, which occasionally went out on strike temporarily refusing to work.
- The Knights of Labor tried to unite all American workers. both skilled and unskilled, into one national labor union, but this was not successful.
- The American Federation of Labor (A.F. of L.) led by Samuel Gompers, was a national federation of different craft unions of skilled workers.

Technological Innovations

- American industrialization proceeded at a rapid pace in the decades after the Civil War. Some historians consider this period America's "Second Industrial Revolution."
- New inventions and technologies helped fuel the great economic expansion of the late nineteenth century. In the decades after the Civil War, steam and electricity replaced human and animal strength. Iron replaced wood, and steel replaced iron. The Bessemer process made the production of steel more economical. Before the Bessemer process, it took an entire day to produce 5 tons of steel; afterwards, the same quantity of steel could be made in a mere 15 minutes.



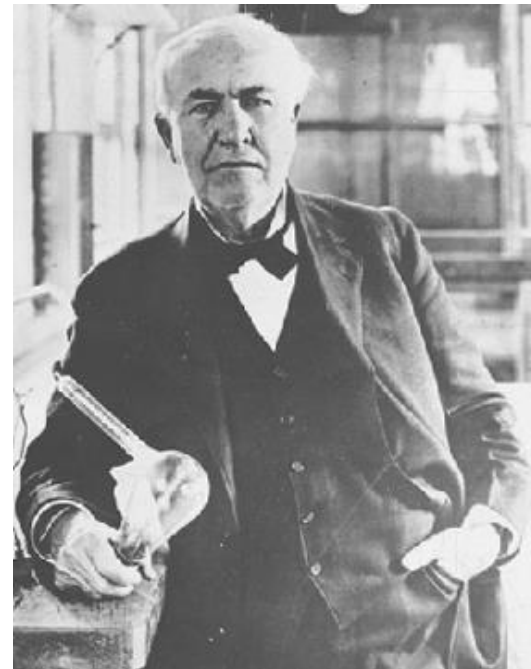
Technological Innovations

- The power of steam now drove textile mill spindles, sewing machines and other equipment. This steam generally came from the burning of coal to heat water. New pneumatic drills were able to cut deeper into the Earth than ever before to mine this resource. In 1860, 14 million tons of coal were mined in the United States; by 1884, the amount was 100 million tons. The center of the coal mining industry was western Pennsylvania. The first oil well was also drilled in Pennsylvania in 1859. Improvements in refining allowed petroleum products to be used in lighting and machine lubrication. The internal combustion engine, developed at the end of the nineteenth century, used gasoline from oil to run cars and the first airplanes.



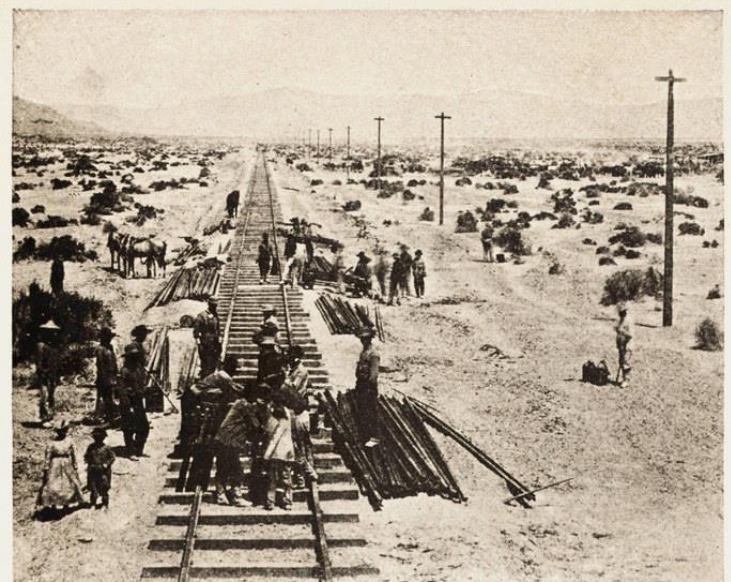
Commercial Use of Electricity

- The application of electricity was another of the period's most significant developments. For its first commercial use, electricity was used as a means of communication along telegraph wires. In 1876, Alexander Graham Bell, (1847-1922) an educator of the deaf, invented the telephone. The telephone and telegraph allowed people to communicate across great distances.
- In 1879, Thomas Edison combined the right kind of inert gas and glowing metal filament to produce the first effective electric light bulb. Electricity also ran motors, which started to be used to drive the machinery in factories. By 1900, electricity was also being used to power an increasing number of other types of machines, including electric streetcars and subway trains. Electrical refrigerators were introduced in the 1920s. Each new technological innovation had a dramatic effect on raising people's standard of living as well as on the nation's economy.



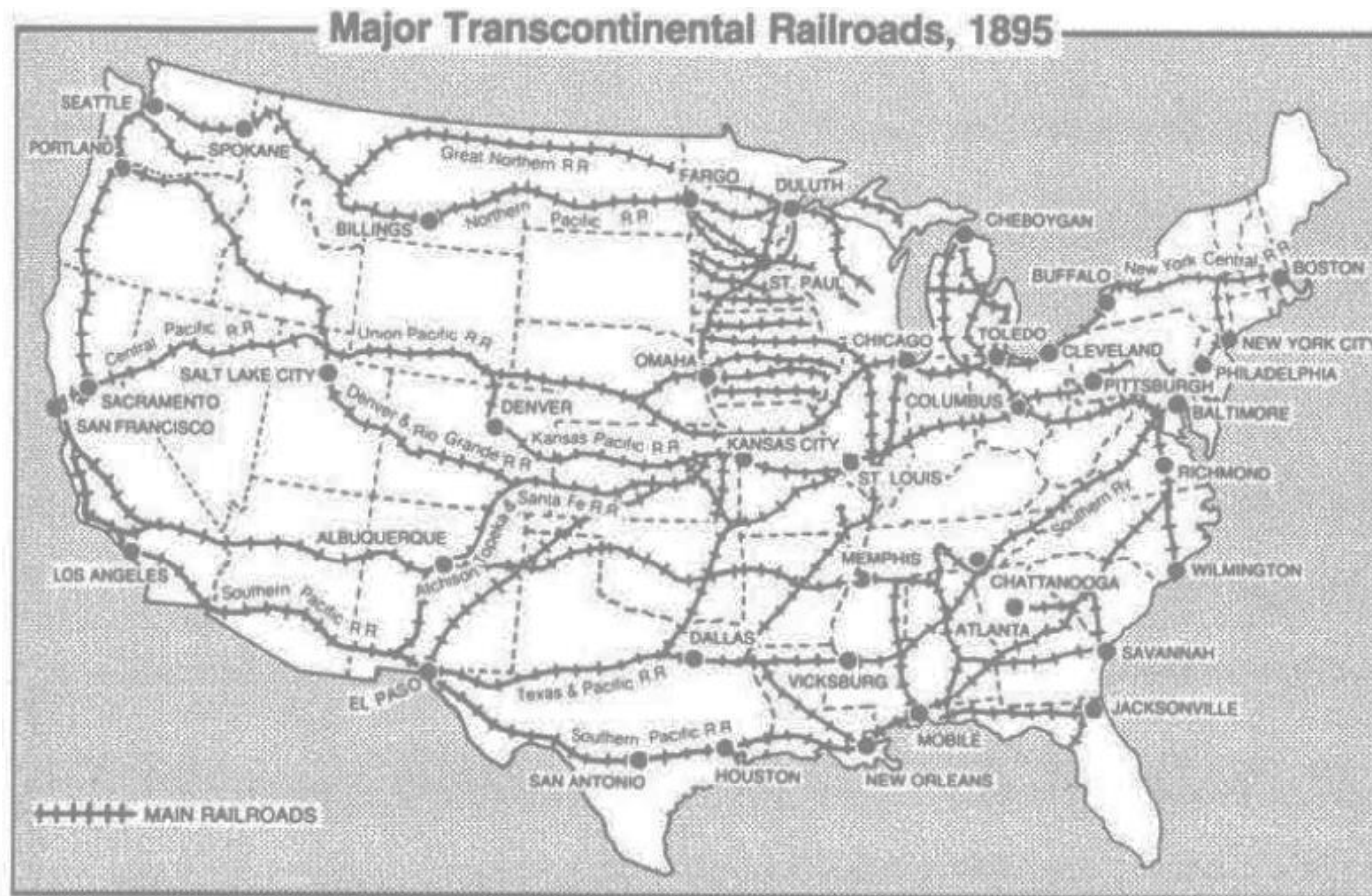
Growth of the Railroads

- Before the Civil War, Northerners and Southerners had been unable to agree on a route for a Transcontinental Railroad. After the South seceded, it was clear that the route would run through the North.
- After the war, separate crews of engineers and laborers worked from California eastward and from the middle of the country westward. To lay the track, they had to cut through the high mountains of the Sierra Nevada. Many of the laborers working on the Transcontinental Railroad on the California side were Chinese immigrants. These immigrants received just \$26 to \$35 a month for a 12-hour day, 6-day work week, and they even had to provide their own food and tents.



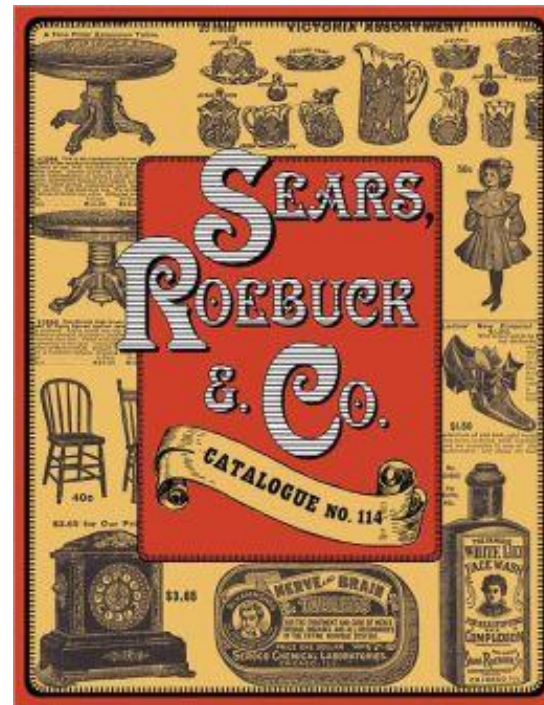
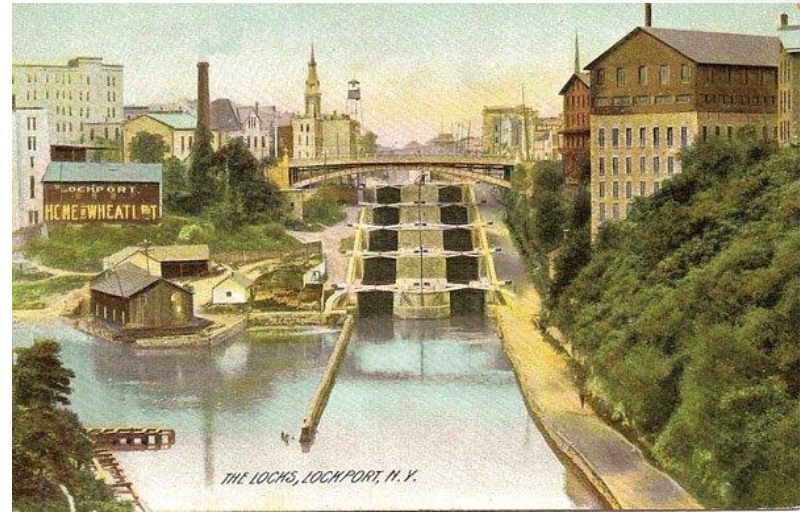
Growth of the Railroads

- The two halves of the first Transcontinental Railroad were finally connected in 1869 at Promontory Point, Utah. The journey from coast to coast was instantly reduced from several months to a few weeks. Trunk lines were soon built, connected to the main transcontinental line. New railroad tracks were also laid in the Northeast, Midwest, and South, bringing Americans closer together than ever before.



Development of a National Market

- In the late nineteenth century, a truly national market emerged for the first time. Railroads, canals, telegraphs and telephones linked together different parts of the country. Shipping raw materials and finished goods became less expensive. National producers could make and ship goods more cheaply than local producers, since they could take advantage of more machinery and greater economies of scale. The high investment costs of mass-production manufacturing required a large market to be profitable. New methods of selling were developed, such as department stores, chain stores, and mail-order houses, including Sears and Roebuck. Manufacturers could advertise in magazines and newspapers, and sell the same goods throughout the country.



The Impact of Population Growth

- In the late nineteenth century, the United States experienced continuous population growth in nearly every part of the nation. Between 1850 and 1900, the population more than tripled. In 1850, there were 23 million Americans; by 1900, there were 76 million. This large population increase was fueled by a high birthrate and a constant stream of European immigrants. Population growth created favorable conditions for business expansion. There was a steadily rising demand for goods, and a plentiful supply of cheap labor to make them. But the growing population also made increasing demands on the natural environment, using up resources.

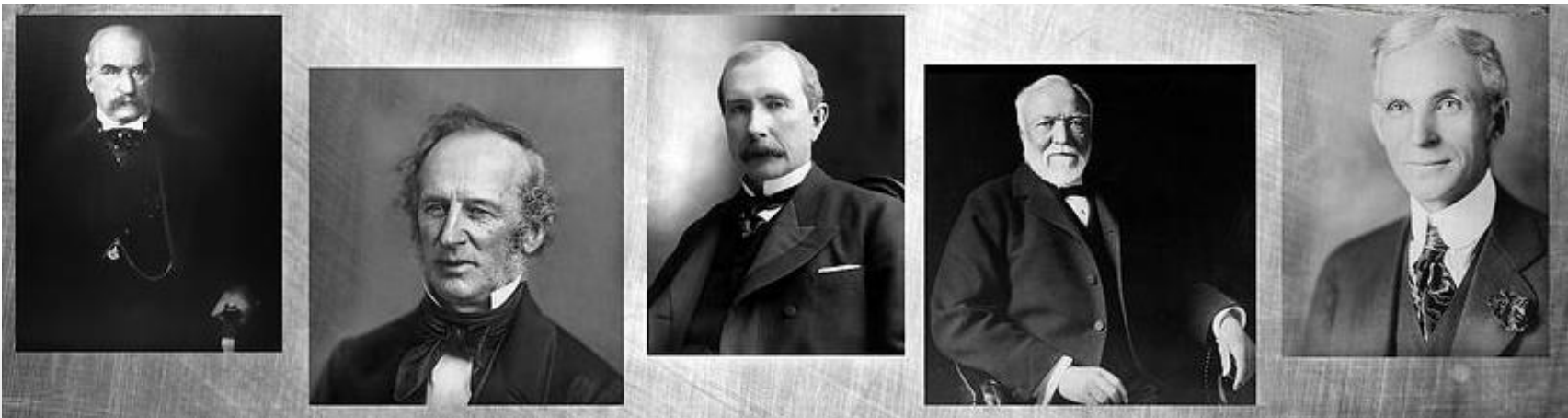


New Types of Business Organization

- Before the Civil War, most American businesses were owned by individuals or by a group of partners. After the war, the corporate form of business became much more common. A corporation is a company chartered by a state and recognized in law as a separate "person."
- A corporation issues shares to investors, also known as "stocks," making each shareholder a partial owner. The more stock a person owns, the larger is that person's share of the corporation. Owners of stock share in the corporation's profits in the form of dividends. They can also sell their stocks to other buyers. The shareholder is only responsible for the shares he or she owns in the company. The investor cannot otherwise be sued or be held responsible for company losses.
- The corporate form of enterprise made it possible for many people to pool their money together. This made it possible for companies to raise the vast sums of money required to build railroad lines, coal and iron mines, steel mills, and large mass-production factories. Corporations made modern industrial production possible.

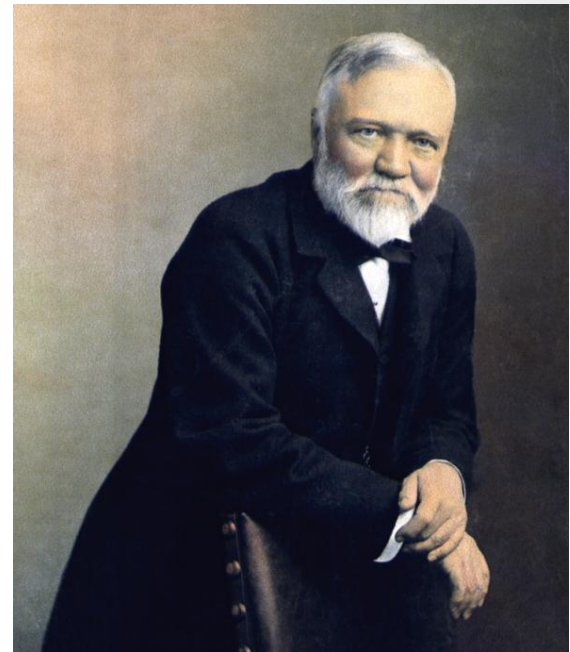
Entrepreneurship & Philanthropy

- An **entrepreneur** is a person (or *small group*) who starts a business in the hope of making a profit. In the 1870s, entrepreneurs began to exercise a dominant influence on American economic life. Through the efficiencies of large-scale production, these industrial entrepreneurs lowered the prices of goods, making them more affordable, while also improving their quality. These entrepreneurs were also able to reap huge profits for themselves, creating immense wealth. Because of their lavish lifestyles, the period from 1865 to 1900 became known as the "**Gilded Age**."
- Some observers considered these entrepreneurs "**Captains of Industry**" because they forged the modern industrial economy. Their critics called them "**robber barons**" because of the ruthless tactics they used to destroy competition and to keep their workers' wages low. Two of the most successful entrepreneurs in this era were Andrew Carnegie and John D. Rockefeller.



Andrew Carnegie

- **Andrew Carnegie** worked his way up from a penniless Scottish immigrant to one of America's richest and most powerful men. He first worked as a boy in a cotton mill. Later, he was a telegraph operator for a railroad. Carnegie became friends with the president of the railroad, who promoted him and advised him on investments.
- After the Civil War, Carnegie invested in ironworks and built a steel mill in Pittsburgh, selling iron and steel to railroad companies for tracks. With his profits, he bought other steel mills and founded the Carnegie Steel Corporation in 1892. His steel mills undercut the competition. He bought iron ore fields, coal mines and ships so he could mine his own iron ore and ship it to his steel mills in Pennsylvania. Carnegie paid his workers low wages and forced them to work 12-hour long shifts, while he crushed attempts by his workers to form labor unions. Carnegie spent his later life in acts of **philanthropy**, giving away \$350 million to build libraries and endow universities.



John D. Rockefeller

- John D. Rockefeller made his fortune in the oil industry. In school, he had studied bookkeeping. Later, he started a successful company selling produce (*fresh fruits and vegetables*) and used his profits to build an early oil refinery in Cleveland, Ohio. Refining turns the crude oil taken from the ground into useful products. Oil in these days was mainly used to make kerosene to burn in lamps in place of whale oil. Rockefeller formed the Standard Oil Company in 1870. By 1879, his company controlled 90% of the oil refining in the United State. By 1882, his company became a "trust" in which he controlled the largest proportion of shares.



John D. Rockefeller

- Rockefeller's company continued to grow, becoming a virtual monopoly (*a company having complete control over the supply of a product or service*). He forced railroad companies to give him special, secret rates for shipping his oil, while they charged his competitors higher prices.
- In 1911, the government forced Rockefeller to dissolve Standard Oil, which was divided into twenty smaller companies. Despite the break-up, the leaders of Standard Oil remained the main shareholders of the new companies. Like Carnegie, Rockefeller gave millions of his fortune away to education and science. For example, he helped to found the University of Chicago and the Rockefeller Foundation.



Big Business Consolidation

- In 1873, America experienced a depression (*an economic downturn in business*). Large producers like Carnegie and Rockefeller began driving smaller companies out of business or purchasing them. In some cases, rival companies reached agreements to consolidate (*join together*). Many producers hoped to eliminate competition by establishing a monopoly. Monopoly power allowed a manufacturer to dictate prices to consumers.

THE PROS AND CONS OF BIG BUSINESS

PROS

- Large business are more efficient, leading to lower prices.
- They can hire large numbers of workers.
- They can produce goods in large quantities.
- They have the resources to support expensive research and invent new items.

CONS

- They have an unfair competitive advantage against smaller businesses.
- They sometimes exploit workers.
- They are less concerned with where they do business and pollute the area.
- They have an unfair influence over government policies affecting them.

Laws Against Anti-Competitive Practices

- At first, the government did little to regulate big business. Government leaders believed in *laissez-faire* - the theory that the government should not interfere in the operation of the free market. Of course, even under a *laissez-faire* system, government had a role in the economy: it provides laws to protect property and enforce contracts. It establishes a system of patents to promote inventions, and enacts tariffs to help manufacturers. Many believed that the economy worked best when it was not burdened by government regulations. Government leaders also doubted that the Constitution gave them the right to regulate business. However, some of the anti-competitive practices of business were so glaring that reformers called for legislation to remedy them, giving government an even greater role.



Laws Against Anti-Competitive Practices

- Interstate Commerce Act (1887):
 - Railroads sometimes charged local farmers more to haul their crops over short distances than they charged for large companies to ship goods longer distances on more competitive national routes. Some states passed laws prohibiting this practice, but the U.S. Supreme Court held these laws to be unconstitutional. The Court ruled that only Congress had the power to regulate interstate commerce. In response, Congress passed the Interstate Commerce Act. This federal law prohibited unfair practices by railroads, such as charging higher rates for shorter routes. A special regulatory commission, the Interstate Commerce Commission, was established to enforce the act. This was a landmark measure, since it was the first time that Congress stepped in to regulate business in America.
- Sherman Anti-Trust Act (1890):
 - The purpose of this federal law was to stop monopolies engaging in unfair practices that prevented fair competition. The act marked a significant change in the attitude of Congress toward the abuses of big business.

Conditions of Labor

- Long Hours & Low Wages:
 - The average workday and work week were long by today's standards: 10 to 14 hours a day for six days a week. Employers hired the least expensive laborers. Pay averaged from \$3 to \$12 weekly, but immigrants were often willing to work for far less. Women and children were also frequently employed as low-paid workers.
- Poor Conditions, Boring & Repetitive Tasks:
 - As factories and work places grew larger, workers lost all personal contact with their employers. Jobs were offered on a "take-it or leave-it" basis. As industrialists sought to achieve greater speed and efficiency, each worker became nothing more than a human cog in a vast machine. Work became less skilled, more repetitive, monotonous and boring. Industrial working conditions in the late nineteenth century were also often extremely hazardous. Safeguards around machinery were inadequate. Thousands of workers were injured or killed in industrial accidents each year.



Conditions of Labor

- Child Labor:
 - Textile mills and coal mines made use of child labor to perform special tasks. Machinery was rarely fenced off and children were often exposed to the moving parts of machines while they worked.
 - Children might be used to move, clean or fix large machines since they were small enough to fit between the parts. Injuries to children were high in many factories. About one-fifth of all American children under the age of fifteen worked outside the home in 1910. These children missed sunshine, fresh air, play, and the chance to improve their lives by attending school.
- Lack of Security:
 - Workers could be fired at any time for any reason. In bad economic times, manufacturers simply halted production and fired their employees. Workers lacked the benefits enjoyed by workers today, such as unemployment insurance, worker's compensation for injuries on the job, and paid sick days.



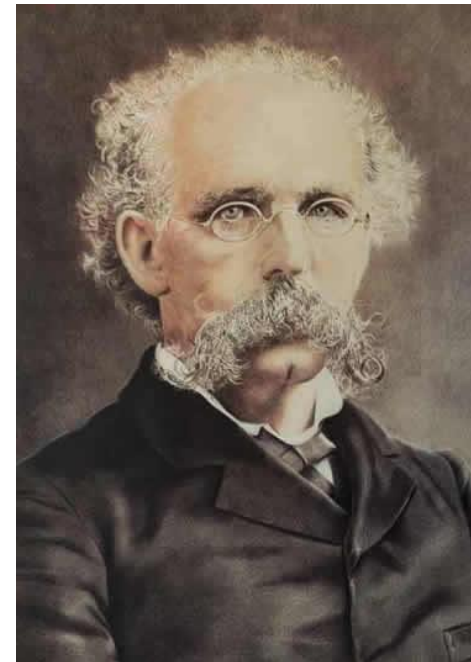
The Rise of Unions

- With the rise of big business, individual workers lost all bargaining power with their employers. Since most work was unskilled, workers could easily be replaced. Employers dictated pay and working conditions. Some workers formed **unions** in order to act as a group instead of as individuals. Unions organized **strikes** and other forms of protest to obtain better working conditions. Industrialists like Carnegie used immigrant workers or closed down factories rather than negotiate with unions. In 1892, striking union members and hired security forces fought each other at Carnegie's Homestead plant.



Workers Seek A National Voice

- The **Knights of Labor**, formed in 1869, hoped to create a single national union by joining together all skilled and unskilled workers. The Knights demanded an 8-hour work day, higher wages, and safety codes in factories. They opposed child labor and supported equal pay for women. They also supported restrictions on immigration, since they saw immigrants as competitors for their jobs. Under the leadership of **Terrence Powderly**, the Knights grew rapidly in the 1880s. But the Knights proved to be too loosely organized. Skilled workers resented being in the same union as unskilled laborers. After losing a series of major strikes, the Knights of Labor fell apart.



Workers Seek A National Voice

- The **American Federation of Labor (AFL)** was founded in 1881 by **Samuel Gompers**. Gompers hoped to create a powerful union by uniting workers with similar economic interests. Unlike the Knights of Labor, the AFL consisted of separate unions of skilled workers which had joined together into a federation. The participating craft unions limited their memberships to skilled workers such as carpenters and cigar makers.
- Gompers limited his goals to winning economic improvements for workers, higher pay, an 8-hour work day, and better working conditions. Gompers fought hard to improve members' job security by seeking **closed shops** (*places where only union members could be hired*). The AFL quickly emerged as the principal voice of organized labor. However, the AFL was weakened by its continuing exclusion of unskilled workers, who made up the bulk of the labor force. As late as 1910, less than 5% of American workers were unionized.



Government's Attitude Toward Unions

- Government leaders were critical of the early labor movement. In the late nineteenth century, most government leaders favored business and opposed unions for a number of reasons:
- The Greater Influence of Business:
 - Business leaders often contributed heavily to political campaign funds. Moreover, many politicians shared the same outlook as business leaders. They believed that successful businesses were responsible for American prosperity, and saw worker demands as greedy.
- Protector of the Economy:
 - More than 20,000 strikes involving more than 6 million workers took place between 1880 and 1900. Government leaders feared the disruptive effect of these strikes on the American economy. In 1895, the U.S. Supreme Court even applied the **Sherman Anti-Trust Act (1890)** against unions. The Court ruled that unions were illegal combinations in restraint of trade. This ruling encouraged government leaders to use troops to put down strikes and to restore order.

Government's Attitude Toward Unions

- Public Opinion:
 - Public opinion also supported *laissez-faire* policies. Many Americans believed that businesses should have the right to hire and fire employees as they pleased. Many were hostile to unions because they feared workers' wage demands would lead to higher prices. Union activities were often associated with violence and radical ideas. In the **Haymarket Affair of 1886**, labor leaders were blamed when a bomb exploded during a demonstration of striking workers at Haymarket Square in Chicago. Seven policemen were killed and 67 others were severely wounded.

