

2nd Industrial Revolution



The Age of Oil and Steel

Oil

- In the mid-1800s people began to refine oil found on coastal waters and lakes for kerosene lamps.
- In 1859 Edwin L. Drake drilled for oil in Pennsylvania, starting the first commercial oil well.
- Wildcatters, or oil prospectors, struck oil near Beaumont, Texas, which began the Texas oil boom.
- It lasted less than 20 years, but oil remains big business in Texas to this day.

The Age of Oil and Steel

Steel

- In the 1850s a new method made steel-making faster and cheaper and by 1910 the U.S. was the world's top steel producer- Bessemer Process
- Steel helped transform the U.S. into a modern industrial economy.
- It was used to make bridges, locomotives, and taller buildings.
- Factories used steel machinery to make goods faster.

Railroads Expand

- Between 1865 and 1890 the number of track miles increased by five times.
- The federal government helped by giving land to railroad companies, and cheap steel enabled the railroad to expand.
 - Congress authorized two companies to build railroads to the West Coast: the Union Pacific and the Central Pacific.
 - Workers raced for six and a half years to complete the first transcontinental railroad, or a track that crossed the country.
 - In May 1869 the two rail lines met in the Utah Territory, linking east and west. Throughout the country railroads expanded into a vast network.
- The railroads promoted trade, created jobs, and helped western settlement.
- Railroads also led to the adoption of standard time, because rail schedules could not accurately depend on the sun's position, as most people did.

The Rise of Big Business

- Big business grew in the late 1800s when **entrepreneurs**, or business risk-takers, started businesses within an economic system called **capitalism**, in which most businesses are privately owned.
- Under **laissez-faire** capitalism, which is French for “leave alone,” companies operated without government interference.
- There were inequalities under capitalism, but many believed that Charles Darwin’s theory of **social Darwinism**, or survival of the fittest, explained how business was like nature: only the strongest survived.
- A new type of business organization developed called the **corporation**, which was owned by people who bought stock, or shares, in a company, was led by a board of directors and run by corporate officers.
- Corporations raised money by selling stock and could exist after their founders left. Stockholders could lose only what they invested.
- To gain dominance, some competing corporations formed **trusts** that led several companies to form as one corporation and dominate an industry.

Industrial Tycoons Made Huge Fortunes

John D. Rockefeller

- Started Standard Oil as a refinery
- Used vertical integration, buying companies that handled other aspects of oil business
- Used horizontal integration by buying other refineries
- Refined half of the U.S. oil by 1875

Industrial Tycoons Made Huge Fortunes

Andrew Carnegie

- Grew up poor in Scotland and, at 12, came to the U.S. to work on railroads
- Began to invest and started Carnegie Steel Company, which dominated the steel industry
- In 1901, sold the company to the banker J.P. Morgan for \$480 million and retired as a philanthropist

Industrial Tycoons Made Huge Fortunes

Cornelius Vanderbilt

- Began investing in railroads during the Civil War
- Soon his holdings stretched west to Michigan and north to Canada.
- Vanderbilt gave money to education for the public

Industrial Tycoons Made Huge Fortunes

George Pullman

- Made his fortune when he designed and built sleeper cars to make long distance train travel more comfortable
- Built an entire town near Chicago for his employees that was comfortable, but controlled many aspects of their daily lives.

Workers Organize

- Government did not care about workers. Many workers scraped by on less than \$500 per year while tycoons got very, very rich.
- The government grew worried about the power of corporations, and in 1890 Congress passed the **Sherman Antitrust Act**, which made it illegal to form trusts that interfered with free trade, though they only enforced the law with a few companies.
- Factory workers were mostly Europeans immigrants, children, and rural Americans who came to the city for work.
- Workers often worked 12-to-16-hour days, six days a week, in unhealthy conditions without paid vacation, sick leave or compensation for common workplace injuries.
- By the late 1800s working conditions were so bad that more workers began to organize, trying to band together to pressure employers into giving better pay and safer workplaces.
- The first effective group was the Knights of Labor, which campaigned for eight-hour work days, the end of child labor, and equal pay for equal work in Philadelphia.

Strikes and Setbacks for Workers

- At first, the union preferred boycotts to strikes, but strikes soon became a common tactic.
- Some famous strikes include:
 - The **Great Railroad Strike** was the first major rail strike, which stopped freight trains for almost a week, caused violence, and was put down by the army.
 - The **Haymarket Riot** in Chicago was a result of a protest against police actions toward strikers. It killed 11 people and injured over 100

Strikes and Setbacks for Workers

- Employers struck back by forcing employees to sign documents saying they wouldn't join unions and blacklisting troublemakers.
- Samuel Gompers founded the American Federation of Labor (AFL) in 1886, winning wage increases and shorter workweeks.
- Unions suffered setbacks when Carnegie employees seized control of a plant and 16 people were killed and when federal troops crushed the American Railway Union strike

City Growth Spurs Transportation Advances

Streetcars

- Horse-drawn passenger vehicles were the earliest mass transit.
- By the 1830s horsecars, or streetcars, rolled along street rails.
- Cable cars were built in cities with steep hills such as San Francisco.
- By 1900 most cities had electric streetcars, or trolleys.

City Growth Spurs Transportation Advances

Subways

- As cities grew, traffic became a serious problem, especially in urban centers such as Boston and New York.
- The city of Boston opened the first U.S. subway line in 1897.
- The New York subway line opened in 1904.

City Growth Spurs Transportation Advances

Automobiles

- A German engineer invented the internal combustion engine, and soon inventors tried to use it for a new “horseless carriage.”
- In 1893 Charles and Frank Duryea built the first practical American motorcar.

City Growth Spurs Transportation Advances

Airplanes

- Human beings had dreamt of flying for centuries.
- Two American brothers were the first to build a successful airplane.
- On December 17, 1903, Orville and Wilbur Wright flew their tiny airplane at Kitty Hawk, North Carolina.

Inventors Revolutionize Communication

➤ *Telegraph*

- Samuel F. B. Morse invented the telegraph in 1837, which sent messages instantly over wires using electricity.
- Operators tapped out patterns of long and short signals that stood for letters of the alphabet, called Morse Code.
- The telegraph grew with the railroads, because train stations had telegraph offices

Inventors Revolutionize Communication

➤ *Telephone*

- Two inventors devised ways to transmit voices by using electricity.
- Alexander Graham Bell patented his design first, in 1876.
- By 1900 there were more than a million telephones in offices and households across the country.

Inventors Revolutionize Communication

➤ *Typewriter*

- Many inventors tried to create a writing machine.
- Christopher Latham Sholes, a Milwaukee printer, developed the first practical typewriter in 1867.
- He later improved it by designing the keyboard that is still standard for computers today.
- Businesses began to hire woman as typists.

Thomas Edison

- Thomas Alva Edison was one of America's most famous inventors.
 - In 1876 Edison opened his own research laboratory in Menlo Park, New Jersey
 - invented the first phonograph and a telephone transmitter.
 - First to come up with a safe electric light bulb that could light homes and street lamps.
 - He then undertook a venture to bring an electricity network to New York City, and in 1882 he installed a lighting system powered by his own electric power plants similar to ones that were later built all over the U.S.
 - Later invented a motion picture camera and projector. In all, he held over 1,000 U.S. patents.

Immigration



The New Immigrants

- Old immigrants came from northern and western Europe and China.
- New immigrants from southern and eastern Europe and Asia- Greece, Italy, Poland, and Russia
- Smaller numbers came from East Asia

Reasons for Coming to the US

- All came for a better life
 - Jews- to escape religious persecution.
 - Southern and eastern Europeans fled from severe poverty.
- In 1892 the government opened an immigration station at Ellis Island in New York Harbor.
- After 1910, Asians passed through Angel Island in San Francisco Bay, but many were held like prisoners for weeks.

Realities of Coming to the US

- Immigrants faced crowding and low pay, settled near others from their country, started communities and organizations
- Native-born Americans, nativists, saw immigrants as a threat to their jobs and safe communities.
- On the West Coast, prejudice was directed against Asians; Chinese immigrants were restricted from jobs and neighborhoods, and immigration was halted by Congress through the Chinese Exclusion Act.
- Nativists wanted immigrants to pass a literacy test, and Congress approved

Urban Life in America

- Architects used steel frames and elevators to build tall buildings in cities. New urban planning specialists redesigned cities and built parks.
- **Settlement houses** helped immigrants overcome poverty. Reformers who believed in **social gospel**, or expressing faith through good works, volunteered in the settlement houses.

Social Status

➤ Lifestyles varied dramatically for those of varied social status

- **Wealthy**

- ⑩ Made their money in industry and business

- ⑩ Showed off their wealth

- ⑩ Built castle-like homes in places such as New York's stylish Fifth Avenue

Social Status

- **Middle Class**

- ⑩ Made up of corporate employees and professionals
- ⑩ 1870s and 1880s: professional organizations begin to set standards for some occupations

Social Status

- **Working Class**

- ⑩ Poor, paid low wages, faced housing shortages, lived in filthy, crowded **tenements**.
- ⑩ Many women held jobs outside the home.

Local Political Corruption

- Urban problems such as crime and poor sanitation led people to give control of local governments to political machines, or organizations of professional politicians.
 - Machine bosses were often corrupt, asking for votes in exchange for jobs and housing, taking bribes, and using fraud to win elections.
 - William Marcy Tweed, or Boss Tweed, led a political machine called Tammany Hall in New York City and made himself and his friends very rich.
 - Eight years later his corruption was made public, when he was sent to prison for fraud.

National Political Corruption

- Attempts at reform split the republican party.
 - In 1880 the party chose a reformer, James A. Garfield, who was assassinated shortly after his inauguration
 - His successor, Chester A. Arthur, supported reforms, and helped pass the Pendleton Civil Service Act, which required that promotions be based on merit, not politics.

Farmers Reform Movement

- ⑩ In the late 1800s crop prices were falling and farmers began to organize into groups to protect themselves financially.

Farmers Reform Movement

- The Order of Patrons of Husbandry, or the National Grange, wanted the state to regulate railroad rates.
 - The Supreme Court ruled that only the federal government could regulate.
 - Congress then passed the Interstate Commerce Act in 1887, marking the first time federal government regulated industry.

Farmers Reform Movement

- The Farmer's Alliance wanted government to print more paper money, thinking they could charge more for farm goods if more money were circulating.
- In 1873 paper money was placed on the gold standard, reducing the amount of money in circulation. Farmers wanted money to be backed by silver

Farmers Reform Movement

- The Farmer's Alliance started the **Populist Party**, calling for bank regulation, government-owned railroads and free coinage of silver.
 - Their stand against powerful interests influenced later politicians

The 1896 Election

- After the election of 1892, a major railroad company failed, triggering the Panic of 1893.
 - Stock prices fell and millions lost their jobs. President Cleveland blamed the Sherman Silver Purchase Act, which required the government to buy silver with paper money redeemable in either gold or silver.
 - Silver was still an issue in the 1896 election, when Republicans nominated William McKinley, who favored the gold standard and Democrats chose William Jennings Bryan, who defended silver.
 - Bryan made a dramatic speech saying using the gold standard was like crucifying mankind on a “cross of gold.”
 - This speech won Bryan Populist support, but terrified business leaders gave money to the Republicans, and McKinley won the election.

Segregation and Discrimination

- Some white southerners tried to restrict African Americans' right to vote by requiring voters to pay a poll tax and pass a literacy test.
- Southern legislatures passed the **Jim Crow Laws** to create and enforce segregation in public places.
- One law requiring separate railway cars for African Americans and whites was tested by Homer Plessy, an African American. His case went to the Supreme Court in *Plessy v. Ferguson*. They upheld segregation, saying “separate but equal” facilities didn’t violate the Fourteenth Amendment.
- In addition to legalized discrimination, strict rules governed social and business interactions between black and white Americans.
- The worst outcome of discrimination was **lynching**, or murder by a mob. Nearly 900 African Americans were murdered between 1882 and 1892 by lynch mobs.

Opposing Discrimination

- ⑩ Two approaches to fighting racism emerged. Some advocated accepting segregation and learning skills to rise up, others believed African American should strive for full rights immediately

Two Leaders who were against Discrimination

Booker T. Washington

- Born into slavery
- Believed African Americans had to accept segregation for the moment
- Believed they could improve their condition by learning farming and vocational skills
- Founded the Tuskegee Institute to teach African Americans practical skills

W.E.B. Du Bois

- Believed that African Americans should strive for full rights immediately
- Helped found the Niagara Movement in 1905 to fight for equal rights
- Members of the Niagara Movement later founded the National Association for the Advancement of Colored People (NAACP)

Other Groups Face Discrimination

➤ *Hispanic Americans*

- Most Mexican immigrants were farmers, but there weren't enough farm jobs to go around.
- Spanish-speaking people often had to take menial jobs for low pay.
- Many were trapped by debt peonage, in which they couldn't leave jobs until they paid debts to their employers.

Other Groups Face Discrimination

➤ *Asian Americans*

- In some areas, Asian immigrants lived in segregated neighborhoods.
- Many landlords wouldn't rent to them.
- A law passed in 1900 prohibited marriages between whites and Asian Americans.
- Some laws limited Chinese immigration.

Other Groups Face Discrimination

➤ *Native Americans*

- Native Americans had to endure the government's Americanization policy, which tried to stamp out their culture.
- Living on reservations gave Native Americans few opportunities.
- Many Native Americans did not have citizenship until the Indian Citizenship Act of 1924.