

The Industrial Age

Section 1



MAIN IDEAS

1. Breakthroughs in steel processing led to a boom in railroad construction.
2. Advances in the use of oil and electricity improved communications and transportation.
3. A rush of inventions changed Americans' lives.

Key Terms and People

Second Industrial Revolution a period of rapid growth in U.S. manufacturing in the late 1800s

Bessemer process Henry Bessemer's invention that made steel production faster and cheaper

Thomas Edison inventor who created the electric lightbulb

patent an exclusive right to make or sell an invention

Alexander Graham Bell inventor of the telephone

Henry Ford inventor of the first affordable car and the moving assembly line

Wilbur and Orville Wright brothers who made the first piloted flight in a gas-powered airplane

Academic Vocabulary

implement to put in place

Section Summary

BREAKTHROUGHS IN STEEL PROCESSING

America's **Second Industrial Revolution** started in the late 1800s. The new **Bessemer process** reduced the amount of time it took to make steel. The price of steel dropped because of this innovation. This made the steel industry an important part of the revolution.

Cheaper, more available steel led to more railroad building. Other changes made train travel safer and smoother for passengers. Trains helped strengthen the economy by moving people and goods to their destinations quickly and inexpensively.

What effect did inexpensive, readily available steel have on the railroad industry?

Section 1, continued**USE OF OIL AND ELECTRICITY**

In the 1850s scientists figured out how to turn crude oil into kerosene. Kerosene was used for both heat and light. As a result, the demand for oil exploded. In 1859 Edwin L. Drake's Titusville, Pennsylvania, oil well started producing 20 barrels of oil a day. Oil quickly became big business in Pennsylvania. Oil was also important in Ohio and West Virginia.

In addition to oil, electricity became a source of light and power. **Thomas Edison** was an inventor interested in uses of electricity. In 1879 Edison and his assistant created the electric lightbulb. To create a market for his product, Edison built a power plant to supply industries with electricity. George Westinghouse developed a power plant that could send electricity over long distances. Thanks to Edison and Westinghouse the use of electricity in homes and business boomed.

What made the demand for oil rise in the 1850s?

How did Edison and Westinghouse help spread the use of electricity?

RUSH OF INVENTIONS

Technology also changed the way people communicated. First, telegraphs made long-distance communication possible. Then in 1876 **Alexander Graham Bell** was given a **patent** for the telephone. By 1900 almost 1.5 million telephones were in operation.

Changes in transportation also occurred. The invention of the gasoline-powered engine made automobiles possible. **Henry Ford** began producing the first affordable automobile in 1908. He also **implemented** the moving assembly line in manufacturing. The gas-powered engine allowed **Wilbur and Orville Wright** to invent the airplane.

What made the technological advances of the late nineteenth century possible?

CHALLENGE ACTIVITY

Critical Thinking: Write to Make Judgments Review all of the inventions about which you just read. In your opinion, which was the most life-changing? Why?