

## **Ch 14 A New Industrial Age**

### **Section 1 The Expansion of Industry**

#### **Natural Resources Fuel Industrialization**

##### **The Growth of Industry**

- By 1920s, U.S. is world's leading industrial power, due to:
  - wealth of natural resources
  - government support for business
  - growing urban population

##### **Black Gold**

- Pre-European arrival, Native Americans make fuel, medicine from oil
- 1859, **Edwin L. Drake** successfully uses steam engine to drill for oil
- Petroleum-refining industry first makes kerosene, then gasoline

##### **Bessemer Steel Process**

- Abundant deposits of coal, iron spur industry
- Henry Bessemer comes up with a cheap and effective manufacturing process for making steel
- **Bessemer process** puts air into iron to remove carbon to make steel
- Later open-hearth process makes steel from scrap or raw materials

##### **New Uses for Steel**

- Steel used in railroads, barbed wire, farm machines
- Changes construction: Brooklyn Bridge; steel-framed skyscrapers can be made

##### **Inventions Promote Change**

##### **An Age of Inventions**

- Numerous new inventions change the landscape, life, work

##### **The Power of Electricity**

- 1876, **Thomas Alva Edison** establishes first research laboratory
  - 1880, patents incandescent light bulb
  - creates system for electrical production, distribution
- Electricity changes business; by 1890, runs numerous machines
- Becomes available in homes; encourages invention of appliances
- Allows manufacturers to locate plants anywhere including away from water; industry grows

##### **Inventions Change Lifestyles**

- **Christopher Sholes** invents typewriter in 1867
- 1876, **Alexander Graham Bell**, Thomas Watson introduce telephone
- Office work changes; by 1910, women are 40% of clerical workers
- Inventions impact factory work, lead to industrialization
  - clothing factories hire many women
- Industrialization makes jobs easier; improves standard of living
  - by 1890, average workweek 10 hours shorter
  - as consumers, workers regain power in market
- Some laborers think mechanization reduces value of human worker