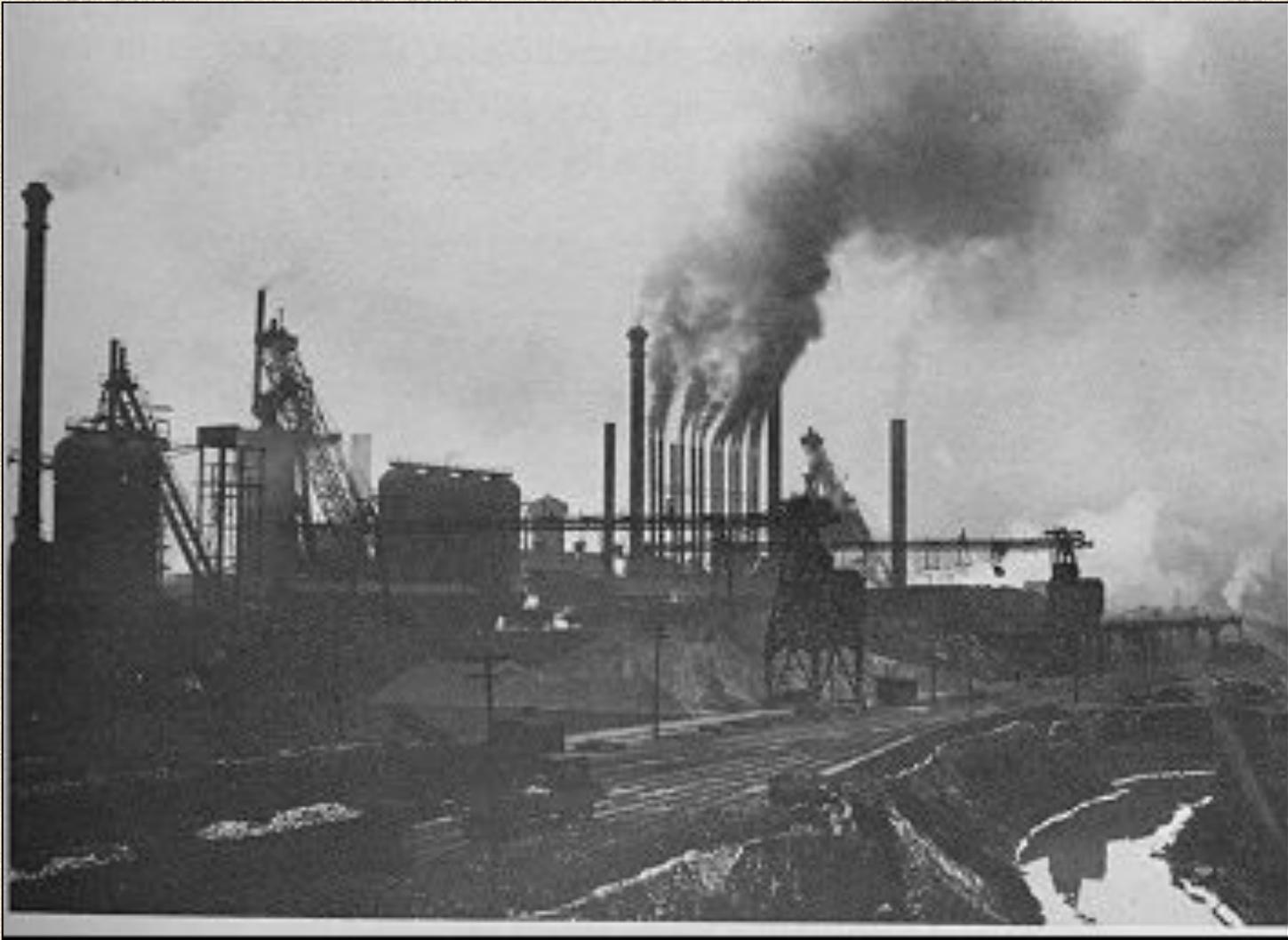


Intro to Industrialization



From Agriculture to Industry

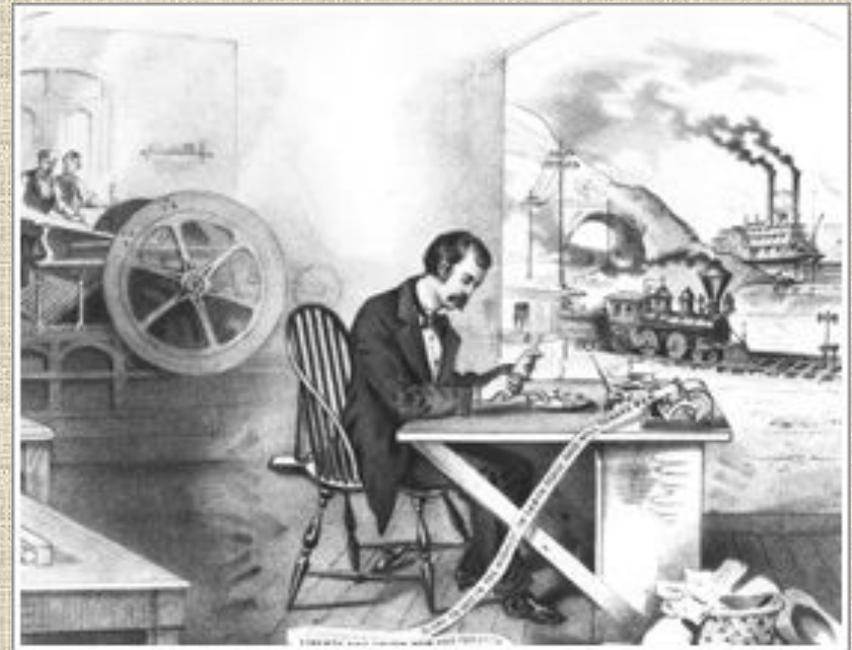
- At the time of the Civil War, the main source of economic growth was agriculture.
- Forty years later, manufacturing had taken its place and by 1873, the U.S. had more industrial workers than farmers.



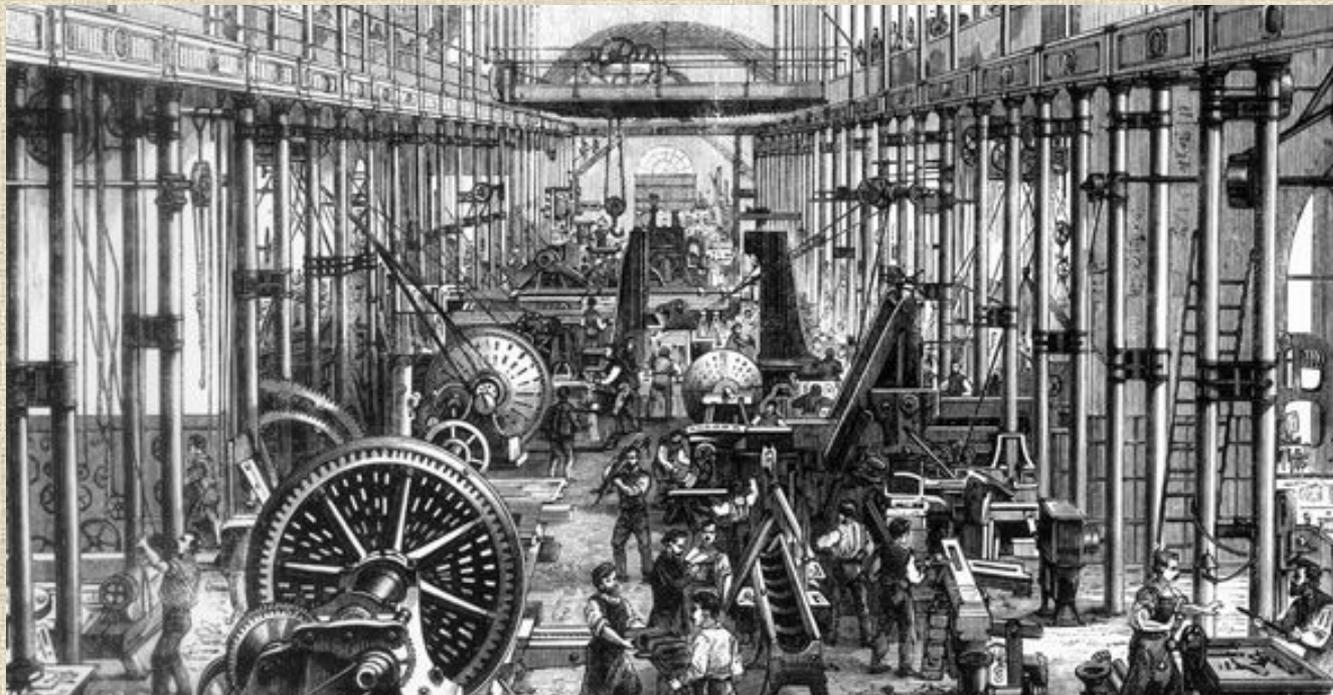
Why? What had changed?

The Industrial Revolution

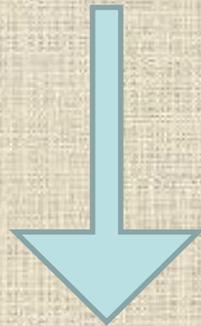
- WHAT? The Industrial Revolution took place in the late 19th century.
 - Manufacturing of goods shifted from hand to machine production.
 - Manufacturing process moved from the home to the factory.
- WHEN? The rapid expansion of industry began after the Civil War.



- The Civil War impacted the economy by creating a need to clothe, arm, and supply soldiers during the war. This stimulated the growth of industry.
- Because of the war, the government was more willing to use their power to support economic development. This created a close relationship between corporations and politicians that has lasted until today.

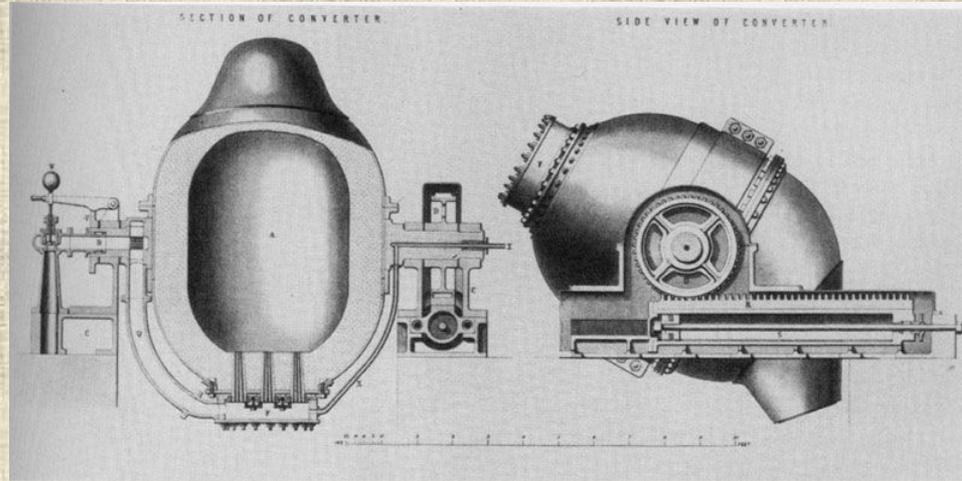


In the last half of the 19th century, a number of developments occurred to bring the necessary ingredients together...



This contributed to the rapid industrial growth of the late 1800s.

Inventions That Made a Difference



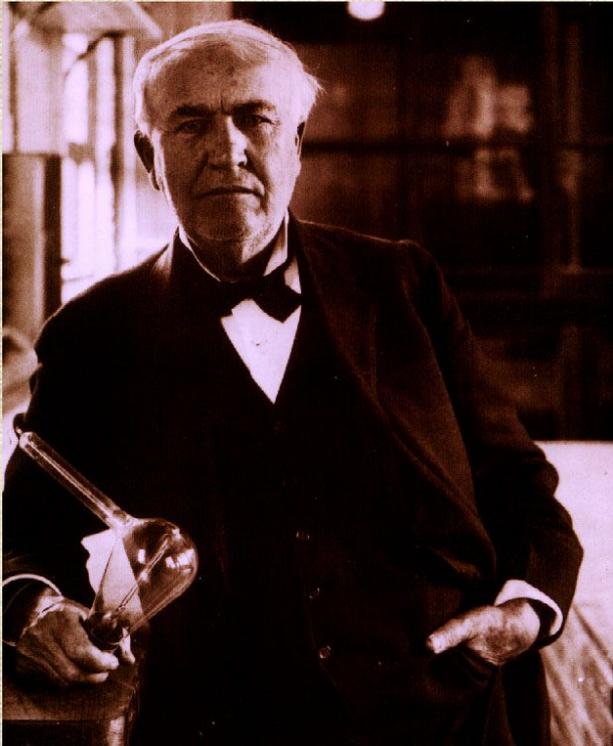
- **The Bessemer Converter!**

- Before the Civil War, making iron was slow & expensive.
- The need for a stronger form of iron led to research that produced the Bessemer Converter, which made steel by forcing air through the liquid iron.
- This process contributed to the rapid expansion of the steel industry, which in turn helped to expand other industries.

Another Invention That Made a Difference

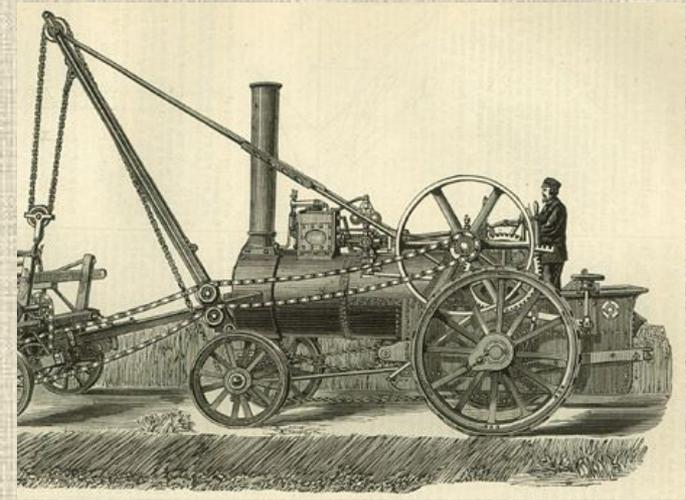
- **The Light Bulb!**

- Before electricity became widely available thanks to Thomas Edison, the work day was limited by the hours of daylight.
- The need for electricity generators ultimately led to the development of the electric machine.
- These two factors combined led to more production (longer working possibilities plus stronger machines).

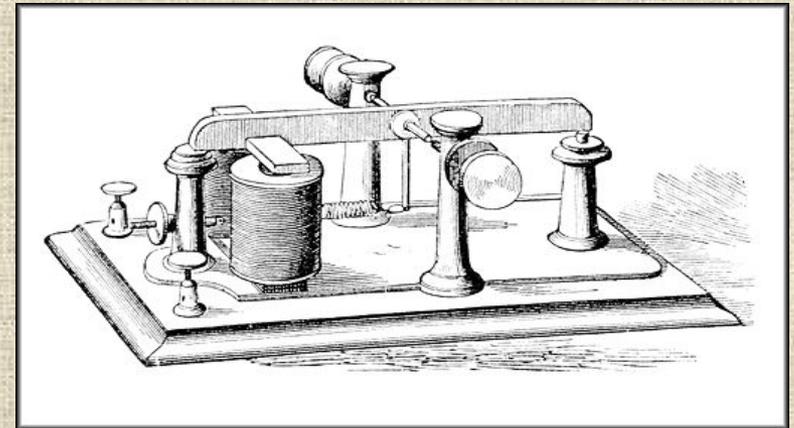
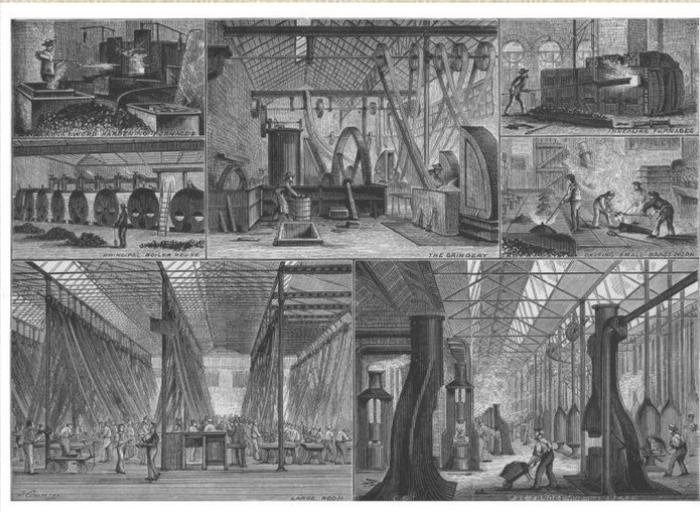


Other inventions that made a difference:

Adding machine



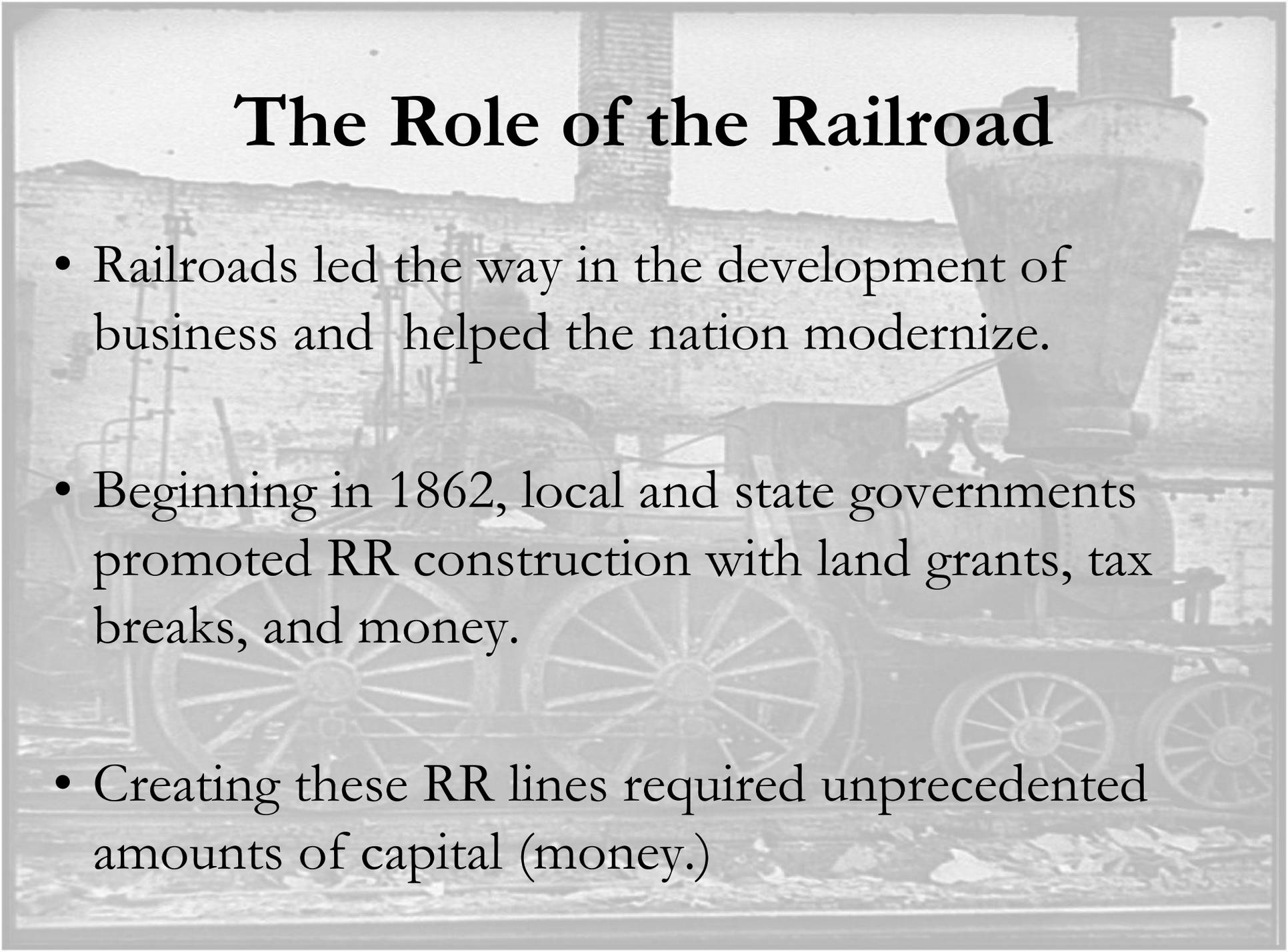
Steam and



Steel replaced wood

Telephone & telegraph

The Role of the Railroad



- Railroads led the way in the development of business and helped the nation modernize.
- Beginning in 1862, local and state governments promoted RR construction with land grants, tax breaks, and money.
- Creating these RR lines required unprecedented amounts of capital (money.)

- The high cost of RRs encouraged aggressive business practices.
 - For example, some RRs would offer cheaper fares in exchange for all of a company's business.
- Bribes and corruption were common and usually got corporations what they wanted.
 - For example, Central Pacific spent \$200,000 in bribes in Washington to get 9 million acres of land and \$24 million in bonds.
 - Between 1862-1872 the U.S. govt granted over 100 million acres of federal land and millions of dollars to corporations.

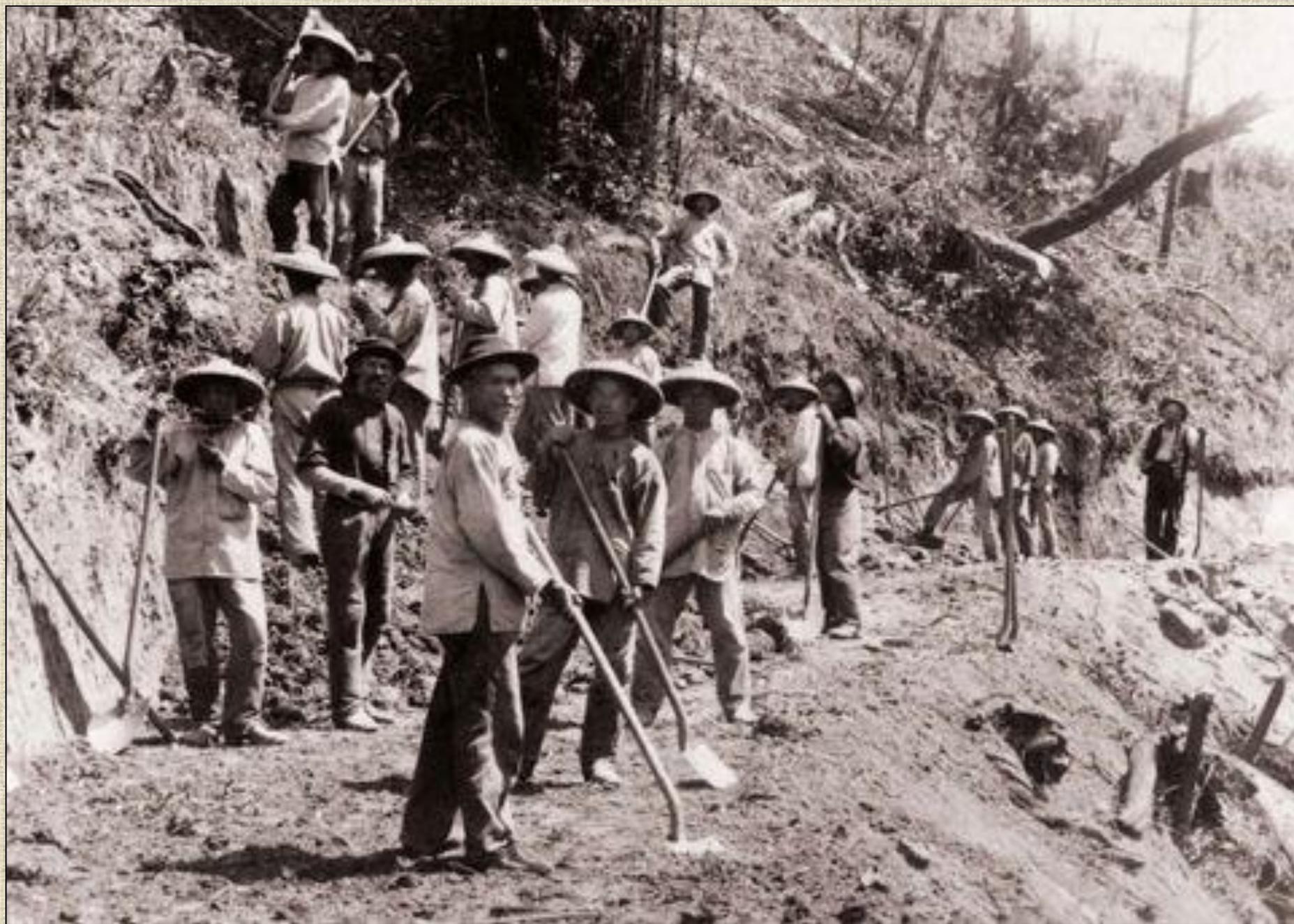


What Else Made the Railroads Grow?

- Tens of thousands of Chinese immigrants worked (west to east) to lay the Central Pacific line for four years.
 - Occupational Hazards=getting killed!!
- The Irish worked for Union Pacific (east from NE to west). They laid approximately 5 miles of track per day.
- They died by the thousands in heat, cold, and battles with American Indians.

Chinese workmen on the CPR, 1880's. (Provincial Archives of B.C. #41770)





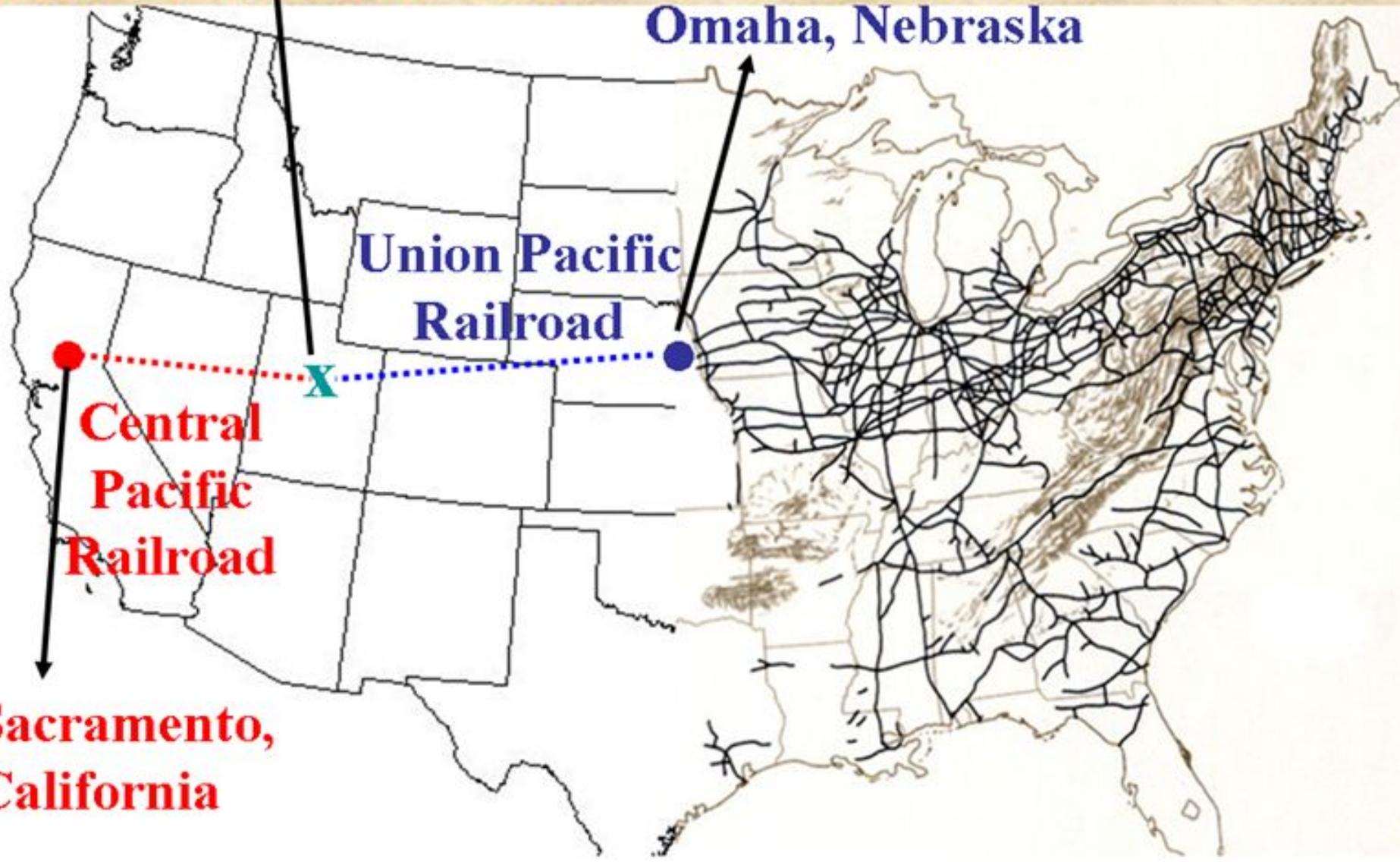
Promontory Point, Utah

Omaha, Nebraska

Union Pacific
Railroad

Central
Pacific
Railroad

Sacramento,
California



Promontory Point, Utah - 1869



What impact did the completion of the transcontinental railroad have on the U.S.?

- ◆ Linked the nation
 - In 1865, there were 35,000 miles of track laid. By 1900, 200,000 miles had been laid.
- ◆ Improved travel
- ◆ Huge boom for cities
- ◆ Made mail delivery easier and faster
- ◆ Helped businesses bring goods to markets & farmers bring raw materials to factories



There were other factors, besides the War and railroad development, that contributed to America's industrial growth.

- **NEW MARKETS**

- The fact that there were no interstate taxes combined with the rapid growth of cities and transportation meant that there was constant demand for goods from all parts of the country.



- **RAW MATERIALS**

- The American countryside was rich with land and minerals, all of which were needed to send to the industrial factories.
- The harvest of these raw materials was made possible only by dangerous and heavy back-breaking labor.
- Speaking of which...

- **A READILY AVAILABLE WORK FORCE**

- Hundreds of thousands of people from other countries immigrated to America during the 19th and 20th centuries.
- A large pool of cheap labor was created by these immigrants, most of whom did not speak English very well or have a lot of \$\$.

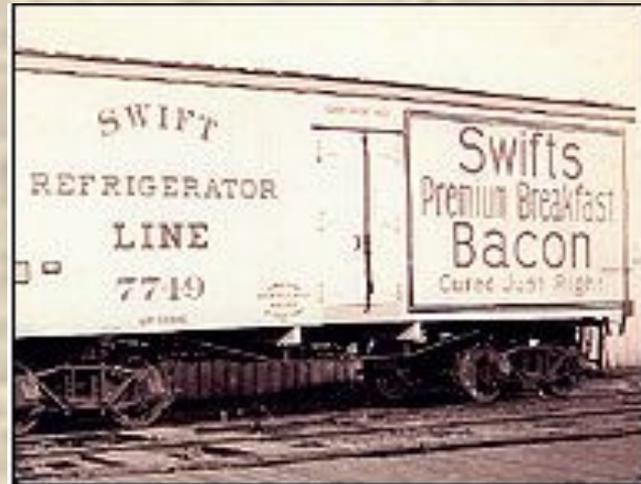


- **MANAGEMENT AND LEADERSHIP**

- Essentially, what industry needed to grow was innovative people with great ideas (like Thomas Edison and Gustavas Swift, who invented the first RR ice cooler car) and rich people with lots of money to invest



CHICAGO HISTORICAL SOCIETY



- These wealthy businessmen included notable characters like John D. Rockefeller, Andrew Carnegie, and J.P. Morgan.

Industrialization

Railroads

Steel

Oil

Banking

Technology

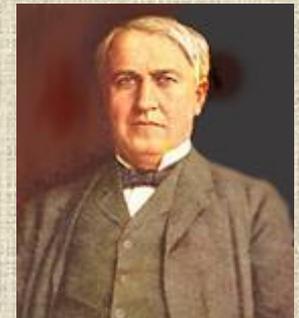
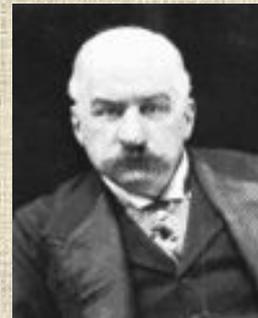
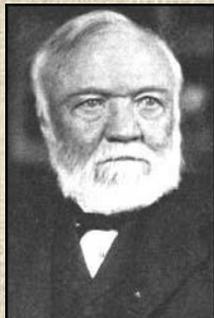
Vanderbilt

Carnegie

Rockefeller

Morgan

Edison



**Cornelius
Vanderbilt**

**Andrew
Carnegie**

**John D.
Rockefeller**

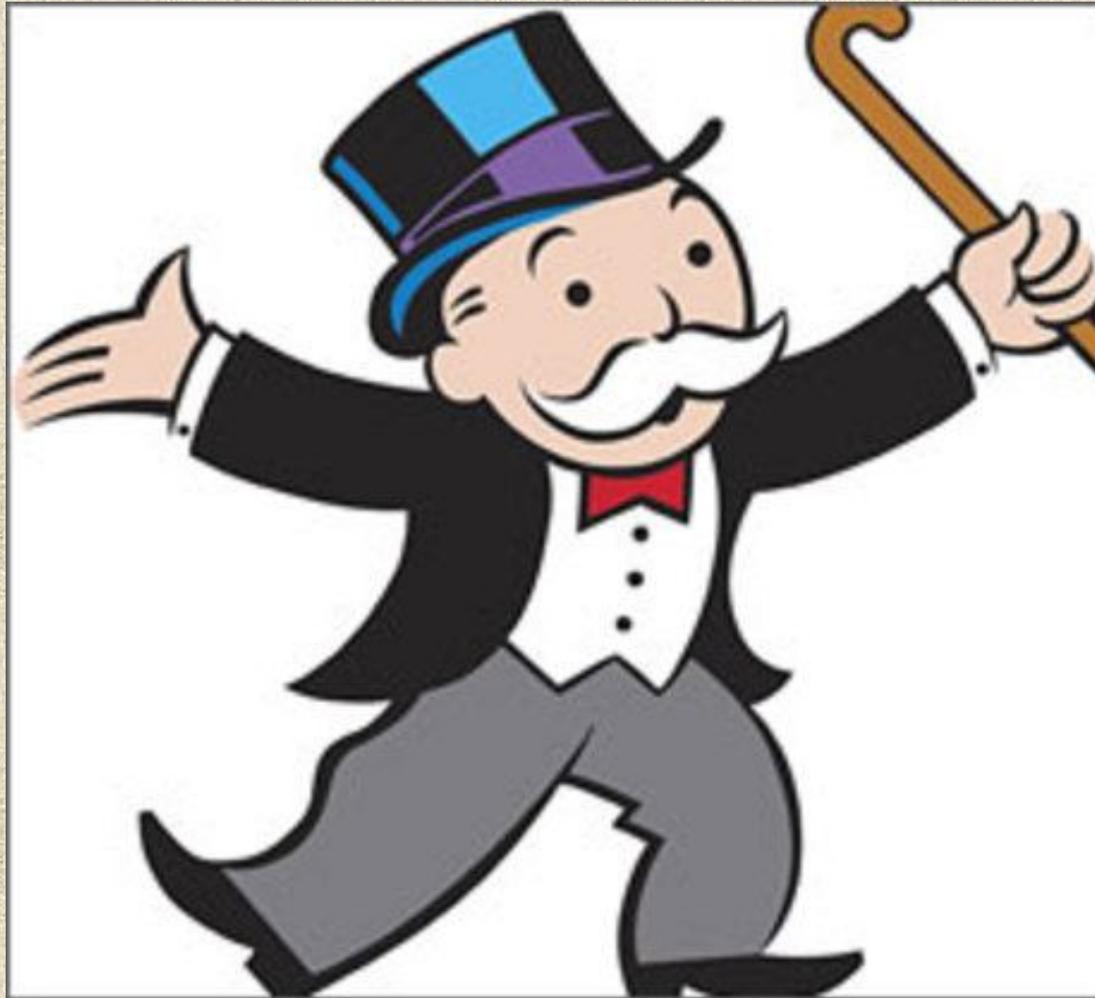
**J. P.
Morgan**

**Thomas
Edison**



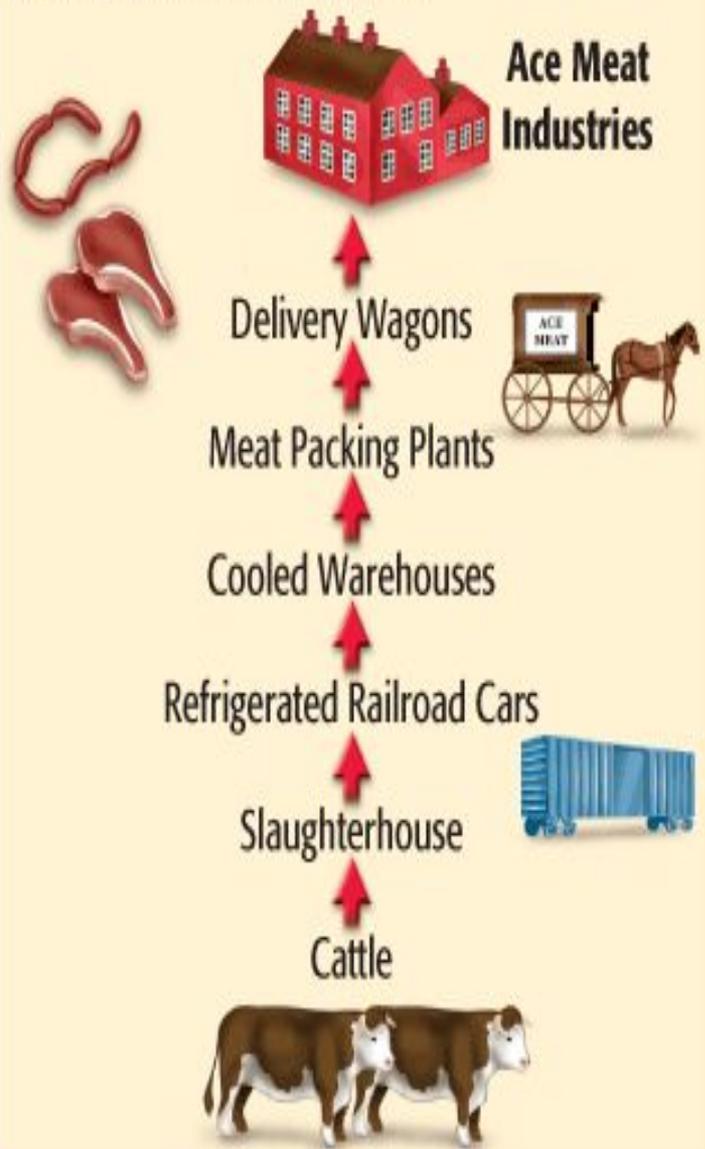
THE TRUST GIANT'S POINT OF VIEW.
"WHAT A FUNNY LITTLE GOVERNMENT!"

What were some of the new business practices that emerged during this time?



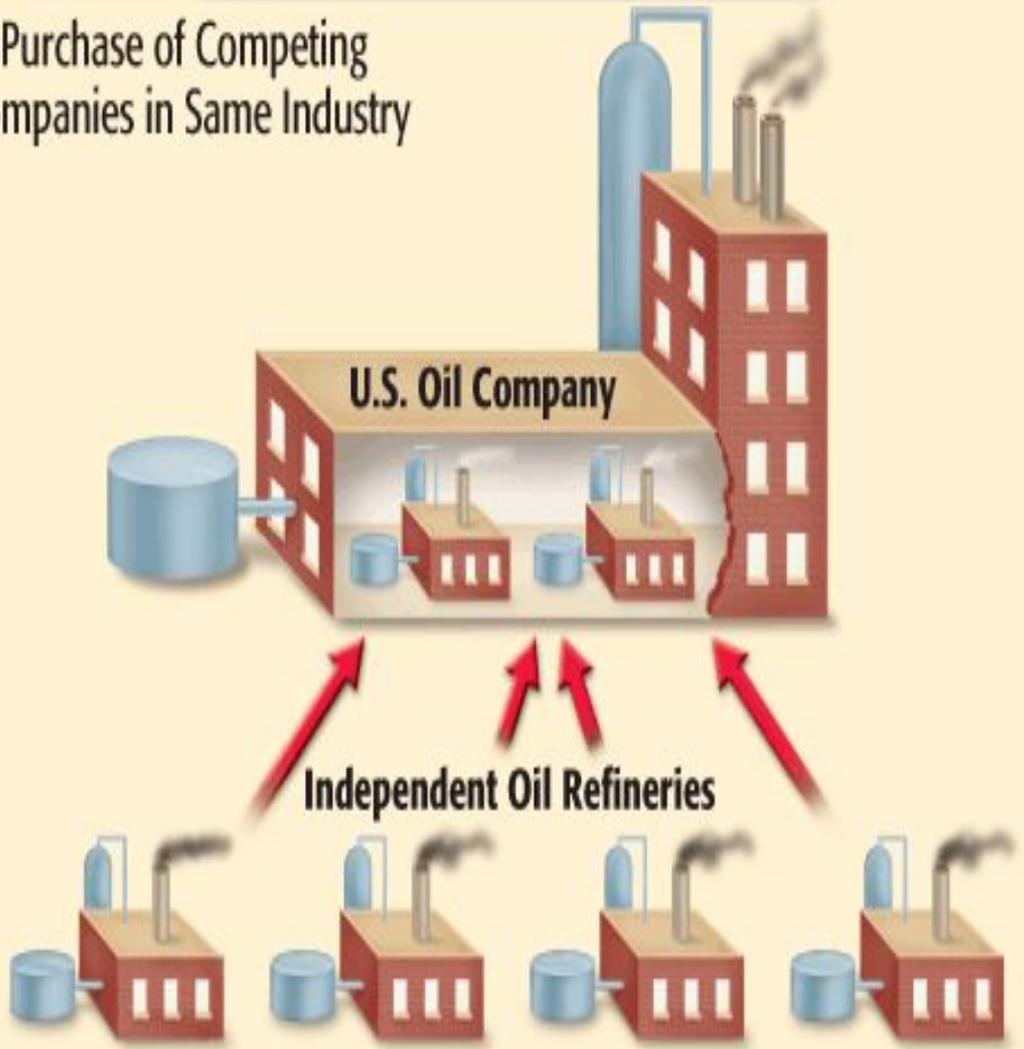
Vertical Integration

Purchase of Companies at All Levels of Production



Horizontal Integration

Purchase of Competing Companies in Same Industry

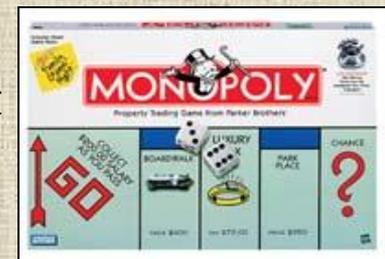


Common Business Practices



■ Monopoly

- Single company achieves control of an entire market
- Many states begin outlawing



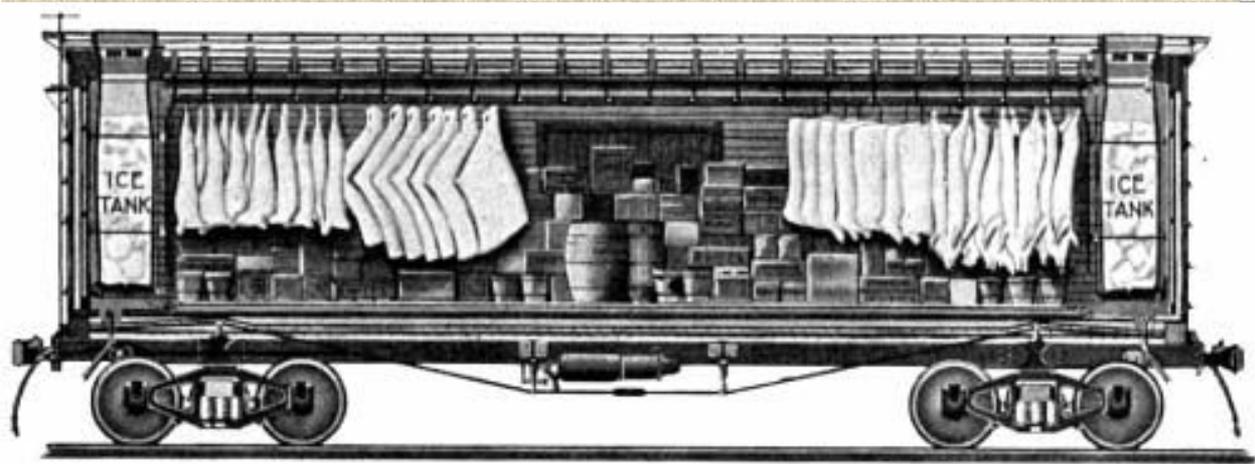
Impact of Industrialization

- **Farming**

- Made more efficient

- Before the Civil War, it took 61 hours of labor to produce 1 acre of wheat. After the Civil War, it took 3 hours and 19 minutes to produce 1 acre of wheat.

- Manufacturing of ice enabled people to transport food over long distances (i.e. meat!)



- **Daily Life**

- Now that electricity was available, people could see better at night.
- People could also go places faster (i.e. by train or by electric streetcars).



- **The Nature of Work**

- People who worked in factories were now expected work longer—even into the wee hours of the night.
- Everything was bigger, better, and faster.
- Industrial accidents...



Statistics on Industrial Growth

Year	GNP (per capita)	Employed children under 15 years of age (in millions)	% of US population		Infant mortality rate (deaths under 1 year of age per 1000)	High school graduates (% of 17- year olds who have a diploma)	Telephone usage (numbers of phones for every 1000 people)
			Rural	Urban			
1870	\$531	0.7	74%	26%	170	2%	0
1880	\$744	1.1	72%	28%	161	2.5%	1
1890	\$836	1.5	65%	35%	163	3.5%	4
1900	\$1011	1.75	60%	40%	141	6.5%	18
1910	\$1299	1.63	54%	46%	117	9%	82

So, let's review! Questions You Should Now Be Able to Answer

1. What combination of factors led to the rapid expansion of industry around the turn of the 20th century?
2. What was beneficial, and what was problematic, about this rapid expansion of industry? (in your opinion)