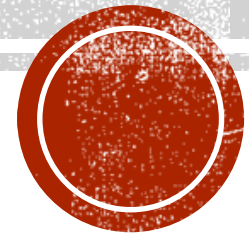


Part I

THE INDUSTRIAL AGE



THE SECOND INDUSTRIAL REVOLUTION

Definition: a period of rapid growth in US manufacturing in the late 1800s.



1ST INDUSTRIAL REVOLUTION VS. 2ND INDUSTRIAL REVOLUTION

1st Industrial Revolution

- Pre-Civil War (1750-1850)
- Water powered machines
- Created early factories
- Mechanized textile production

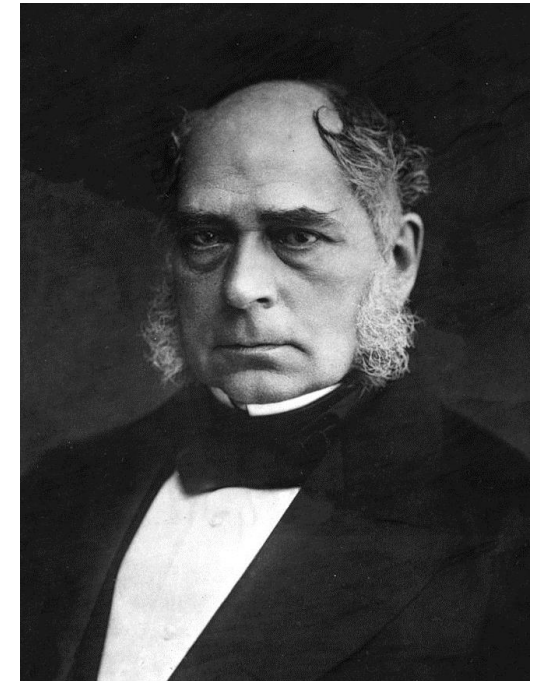
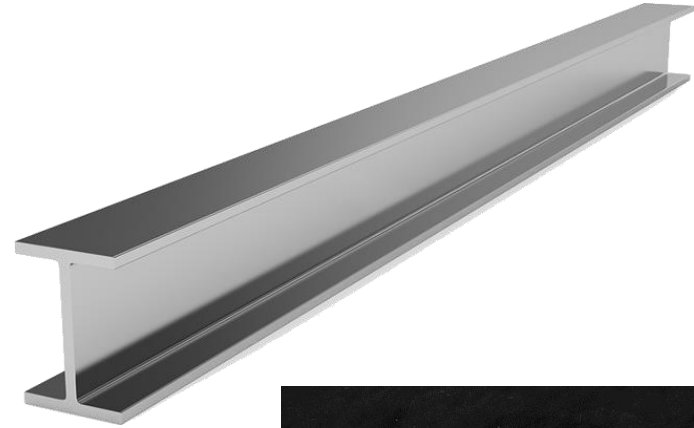
2nd Industrial Revolution

- Post-Civil War (1850s-1914)
- Coal and oil powered (fossil fuels) and electricity
- Expanded and further mechanized factories
- Focused on creating steel and steel related products
- Advanced technology including electricity and cars



THE SECOND INDUSTRIAL REVOLUTION: STEEL INDUSTRY

- During this time, many industries would flourish in the United States
- Some of the most important advances in technology happened in the **Steel Industry**
 - Steel is iron that has been made stronger by heat and the addition of other metals
 - Steel is used for:
 - Railroads
 - Bridges
 - Skyscrapers
 - Heavy machinery
- The process for making steel was invented in the mid-1850s by a man named **Henry Bessemer**



THE BESSEMER PROCESS

- **The Bessemer Process:** a way to manufacture steel quickly and cheaply by blasting hot air through melted iron to quickly remove impurities.
 - The Bessemer Process took steel manufacturing from being a day-long process to a process that took just 20 minutes at most.
 - The process also reduced the price of steel from \$100 a ton to just \$12 a ton.
 - Why would this be so beneficial?
 - <https://www.youtube.com/watch?v=dypdoLm4Rn8>
 - Anyone else find it ironic that Mr. Weasley is fascinated by a muggle invention??

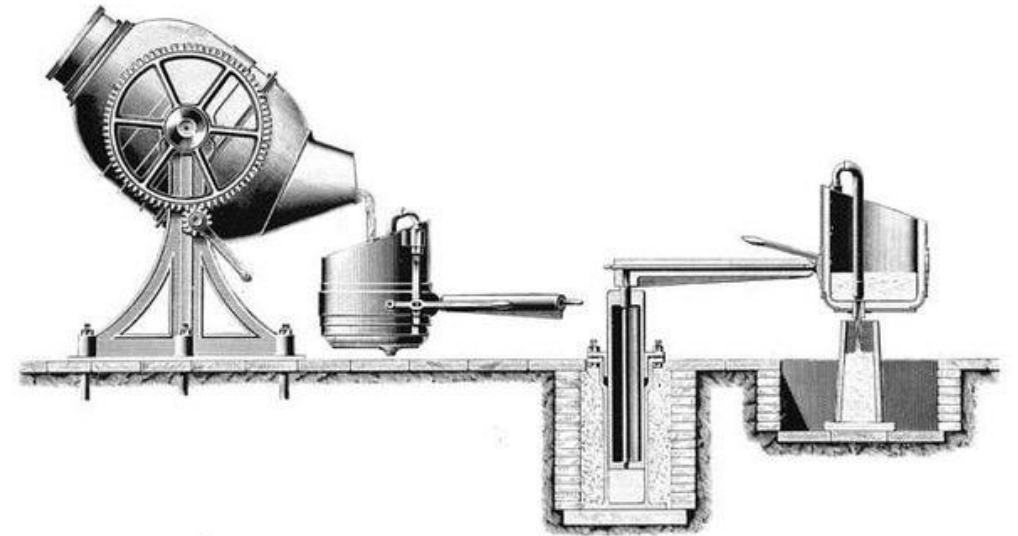
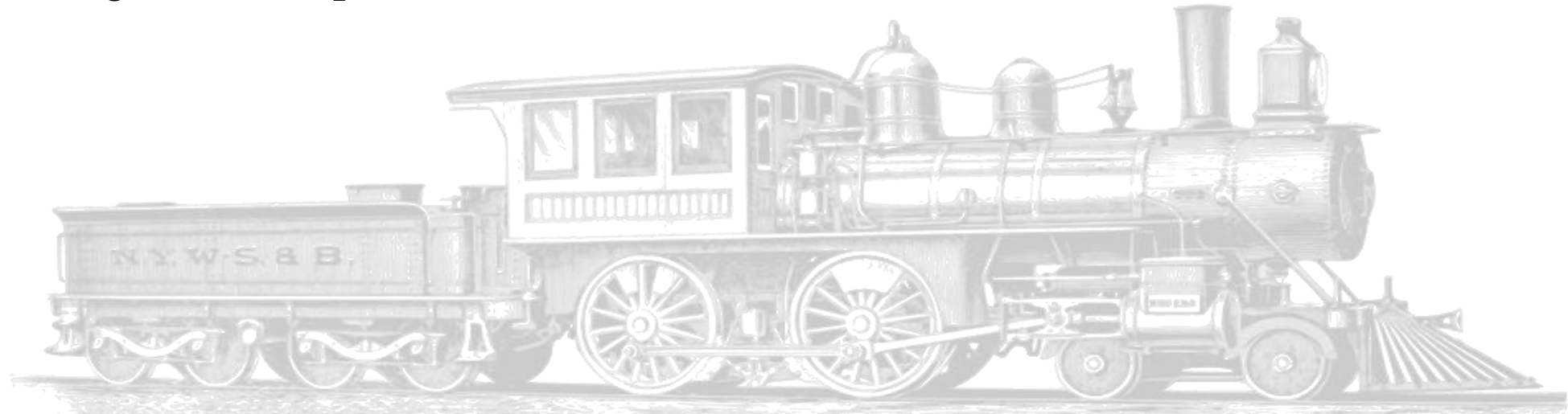


FIG. 44. EARLY FORM OF BESSEMER CONVERTING PLANT AT SHEFFIELD

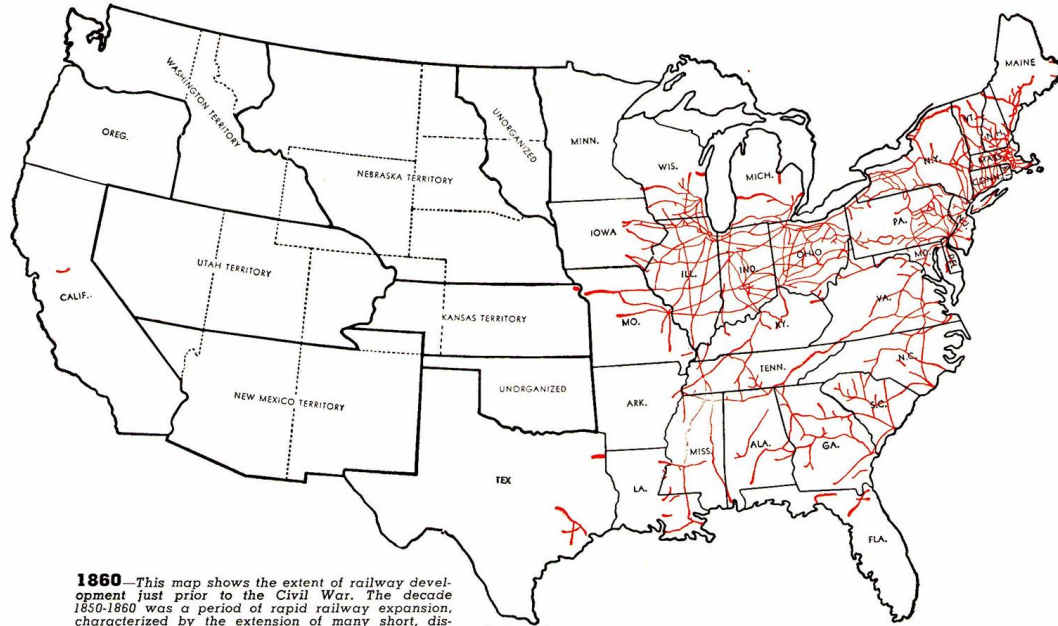


RAILROADS

- As more steel was being produced as a result of the Bessemer Process, the cheaper it was to buy.
 - This also lowered the price of Railroad construction, because Railroads are created by laying steel tracks.
- With Steel prices low, more railroads began to spread across the country.
 - This allowed manufacturers and farmers to send their products across the country faster than ever on newly invented shipping cars and refrigerated shipping containers.
- Additionally, many people were offered the chance to ride on railroad trains, allowing for significant expansion across the US. This also increased tourism revenue.

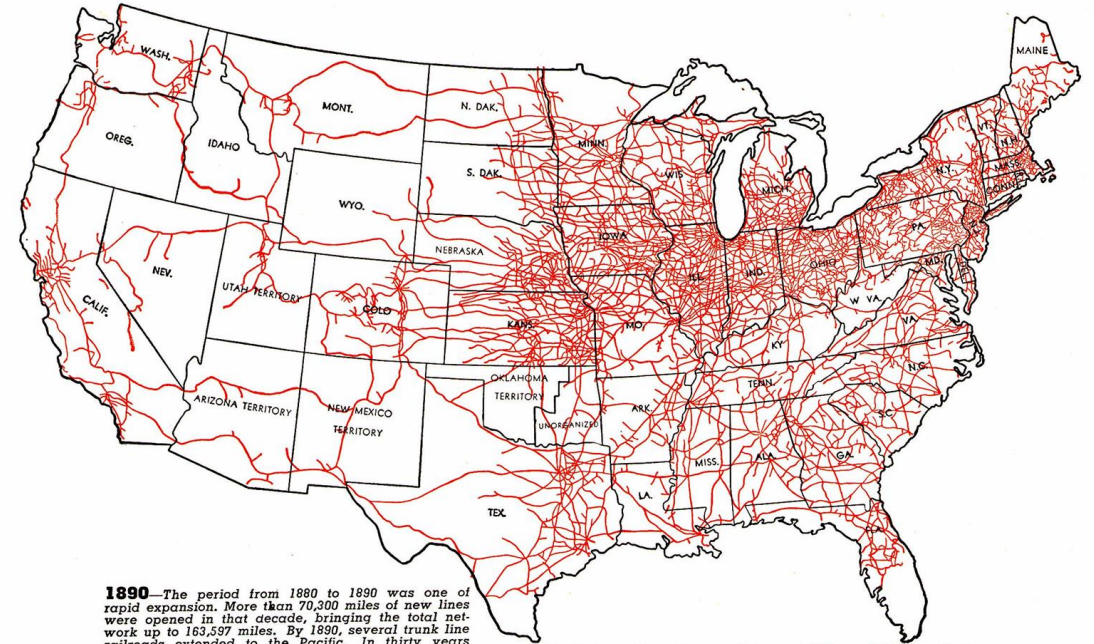


Railroads lines before the Civil War



1860—This map shows the extent of railway development just prior to the Civil War. The decade 1850-1860 was a period of rapid railway expansion, characterized by the extension of many short, disjointed lines into important rail routes. This decade marked the beginning of railway development in the region west of the Mississippi River. By 1860, the "Iron Horse" had penetrated westward to the Missouri River and was beginning to make itself felt in Iowa, Arkansas, Texas, and California.

Railroads lines in 1890



1890—The period from 1880 to 1890 was one of rapid expansion. More than 70,300 miles of new lines were opened in that decade, bringing the total network up to 163,587 miles. By 1890, several trunk line railroads extended to the Pacific. In thirty years from 1860 to 1890, the total mileage of the region west of the Mississippi River increased from 2,175 to 72,389, and the population of that area increased fourfold.

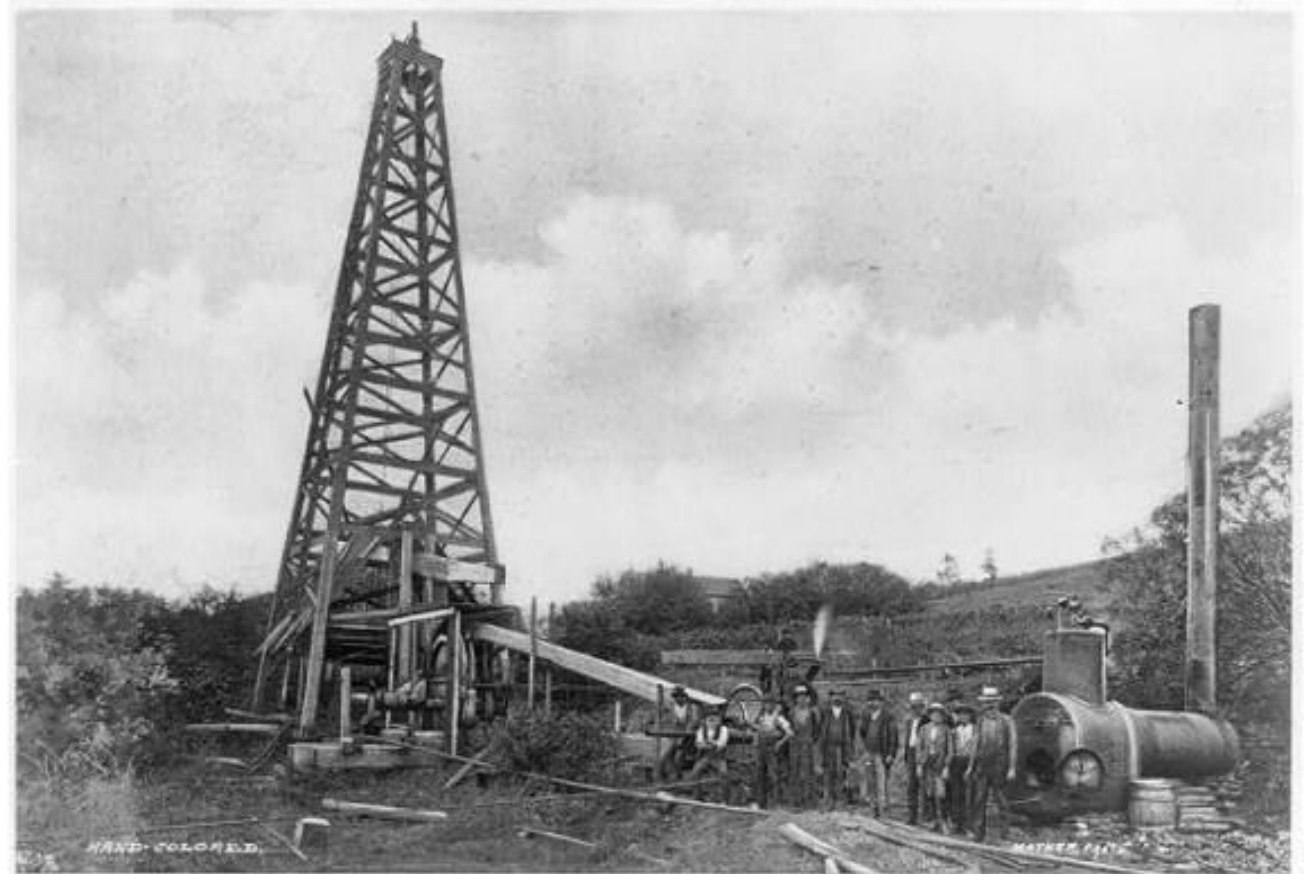
OIL INDUSTRY

- Oil would become a very useful discovery at the end of the 19th century.
 - People, of course, knew about oil (or petroleum) before this time period, but their uses of it were not even close to what they would become.
- Chemists in the 1850s would invent a new way to convert crude oil (unprocessed oil) into kerosene.
 - Kerosene would be useful for cooking, heating, and lighting
 - For the first time in human history, humans had the ability to fully light their homes, the streets, and buildings at night.
- Can you imagine the dangers that came with kerosene lamps?



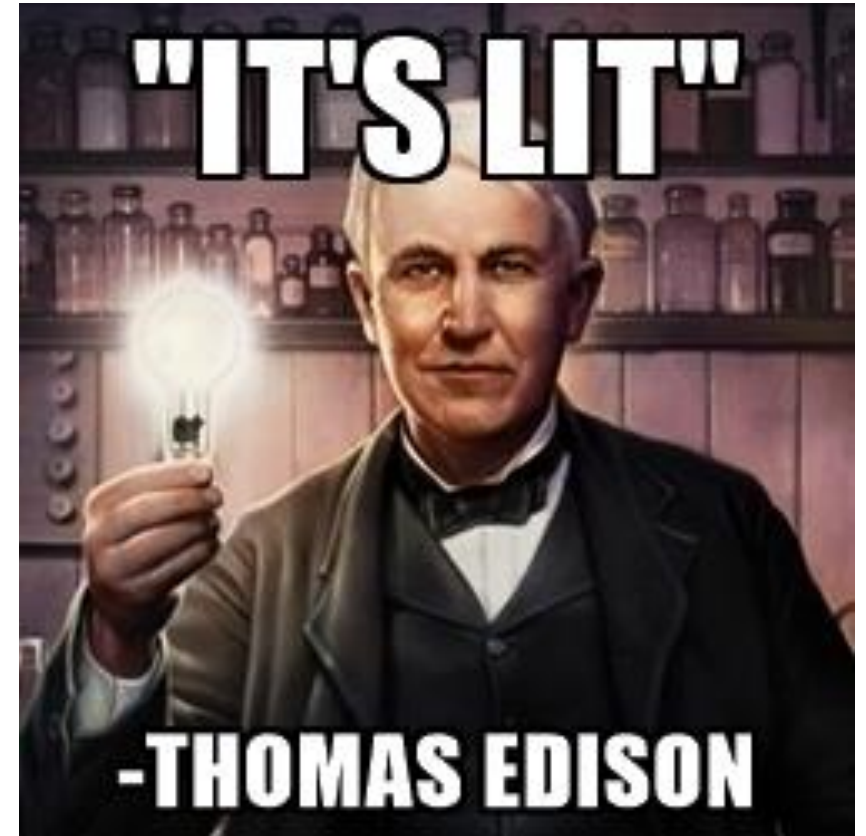
DEMAND FOR OIL

- Inventor **Edwin L. Drake** would create a process that would allow for the supply of oil to keep up with the demand.
 - He would create a pump that pulled crude oil from the ground.
 - As Drake's invention would spread across the country, more and more oil refineries would be set up to harvest and process the oil.
 - The refineries would process the oil into the product of Kerosene, which in many ways would light up the world.



ELECTRICITY

- What would eventually take the country by storm would be the use of electricity.
- Thomas Edison would become very interested in the uses of electricity.
- It would take Edison over 1,000 attempts to perfect the incandescent lightbulb, which at the time of its invention burned best with the use of carbonized paper and burned for 1,200 hours.
- <https://www.youtube.com/watch?v=b1lKwZTtzIY>
 - Edison also had over 1,000 **patents**, which were the exclusive rights to produce/sell an invention.
 - Some of these inventions included:
 - Phonograph
 - Motion picture camera



COMMUNICATION



- Prior to the second industrial revolution, the Telegraph was the major communication device.
- The Telegraph was great for sending messages if people knew how to read Morse code – however, average people weren't able to understand those messages.



MORSE CODE

Using the Morse Code alphabet, translate the message below. The first table to translate this message correctly, wins tickets!!


A ● -
B - ● ● ●
C - ● - ●
D - ● ●
E ●
F ● ● - ●
G - - ●
H ● ● ● ●
I ● ●

J ● - - -
K - ● -
L ● - ● ●
M - -
N - ●
O - - -
P ● - - ●
Q - - ● -
R ● - ●

S ● ● ●
T -
U ● ● -
V ● ● ● -
W ● - -
X - ● ● -
Y - ● - -
Z - - ● ●

SERVICE REQUIRED	MARK HERE
NIGHT LETTER	
DAY LETTER	
FAST MESSAGE	

TELEGRAM

GREAT NORTHERN 

TIME FILED

Your message:

--- /

FORM 1153 9-67

PRINTED IN U.S.A.



COMMUNICATION

- When **Alexander Graham Bell** patented the telephone, communication as we knew it was revolutionized.
 - By 1880, telephone companies raced to lay telephone lines across the country to allow for mass communication. At that point there would be about 55,000 telephones in the US
 - By 1900, there would be 1.5 million telephones in the US.



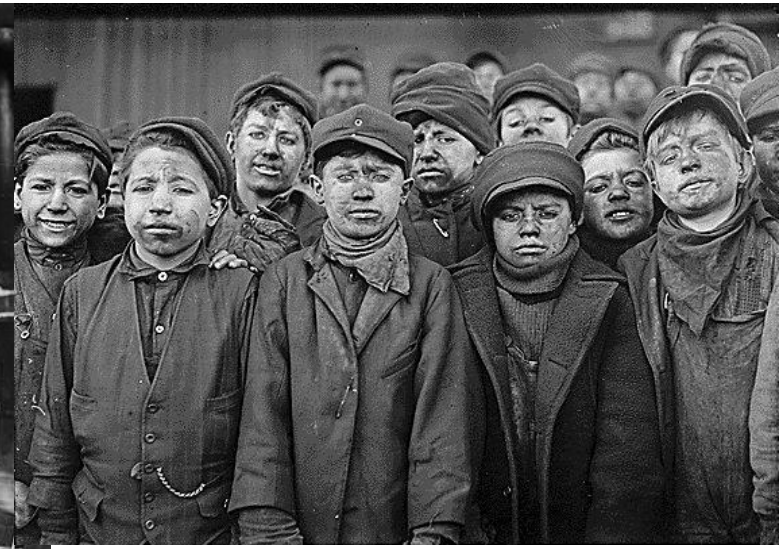
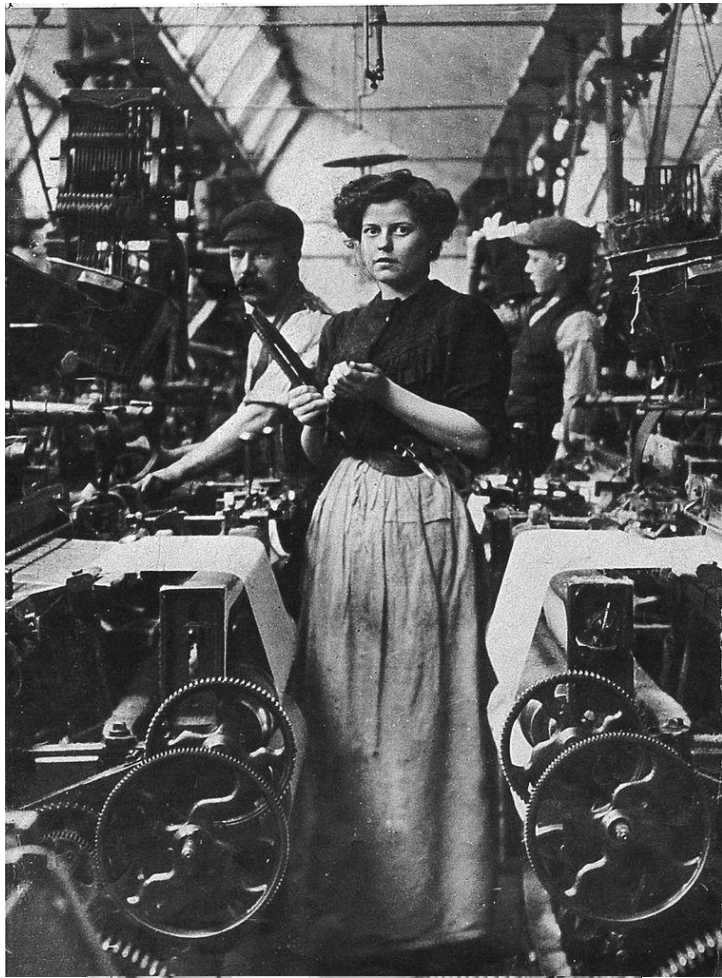
PART II: FACTORY LIFE



WORKING CONDITIONS:

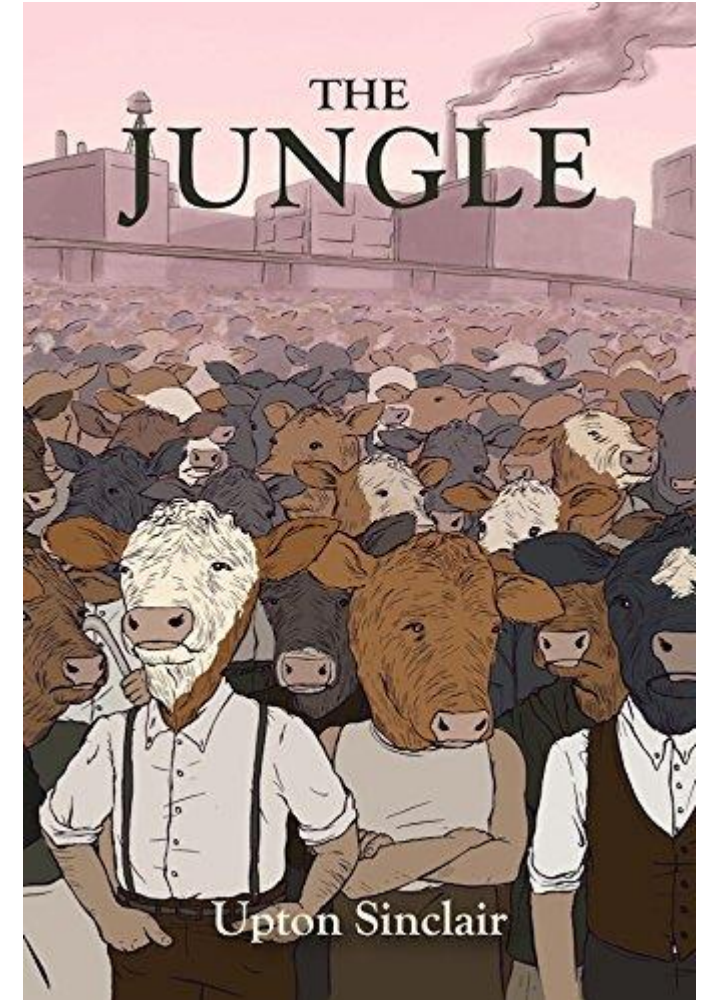
- Due to a high unemployment rate, workers were very easily replaceable and had no bargaining power with employers.
- Wages were very low, women and children received less than half the wages of men and had to work the same amount of time.
- Factories were dusty, dirty and dark – the only light source was sunlight that came in through a few windows. Because the machines ran on steam from fires, there was smoke everywhere. Many people ended up with eye problems and lung diseases.
- Most people worked between 12 and 16 hours per day, six days a week, without any paid holidays or vacation.
- Children did not get any sunlight, physical activity (apart from work) or education, which led to deformities and a shorter than average length and often were involved in workplace accidents.





REFORM

- The Jungle – Investigative Journalism
 - Journalist Upton Sinclair, discouraged by working conditions of factories, decided to infiltrate the meat industry in Chicago.
 - What sorts of things do you think he discovered in the meat industry of 1900 Chicago? Discuss with your table and be prepared to share.



- Sinclair's allegations were significant.
 - He said that the meat industry was filthy, unsanitary, and shocking. His book was written as a story, but the reality of his findings changed the way America viewed the production of our food.
 - Examples of his findings were:
 - Rats falling into meat grinders and being ground into meat.
 - Workers falling into rendering tanks and being ground into the meat.
 - Workers with tuberculosis working closely with food.
 - Meat was being "shoveled from filthy wooden floors, piled on tables rarely washed, pushed from room to room in rotten box carts, in all of which processes it was in the way of gathering dirt, splinters, floor filth."
- You will be reading some excerpts from the *Jungle* and other modern sources later this week.



■ Triangle Shirtwaist Factory Fire:

- On March 25, 1911 was the deadliest industrial disaster in the history of the city, and one of the deadliest in U.S. history. The fire caused the deaths of 146 garment workers – 123 women and 23 men – who died from the fire, smoke inhalation, or falling or jumping to their deaths.
- Because the doors to the stairwells and exits were locked (to reduce theft and unauthorized breaks), many of the workers who could not escape from the burning building jumped from the high windows.
- The fire led to laws requiring improved factory safety standards and helped the growth of the International unions which fought for better working conditions.



ARKANSAS AND THE INDUSTRIAL AGE



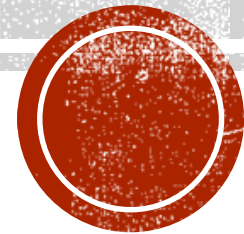
Faulkner County Poor Farm.

- Poorhouses/farms were very common during the Second Industrial Revolution, as people sometimes were unable to find work due to illnesses, disabilities, age, or gender.
 - A poorhouse was meant to be a place to which people could be sent if they were not able to support themselves financially.
 - Often, families that went to poorhouses for help were separated from each other. Sometimes families were never reunited.
- **Poorfarms** were common in Benton, Pope, and Cleburn counties.
 - Poorfarms were farms that people could go and work on to work off their debts. They were allowed to live there, but it was a very sad situation.
- What is your view on poorhouses?





PART III: MAJOR PLAYERS OF INDUSTRY



HISTORY IS ALL ABOUT PERSPECTIVE

Captain of Industry?

- a business leader whose means of getting a personal fortune contributed positively to the country in some way.
- This may have been through increased **productivity**, providing more **jobs**, or acts of **philanthropy***
- *philanthropy: helping others, usually by donating money.

Robber Baron?

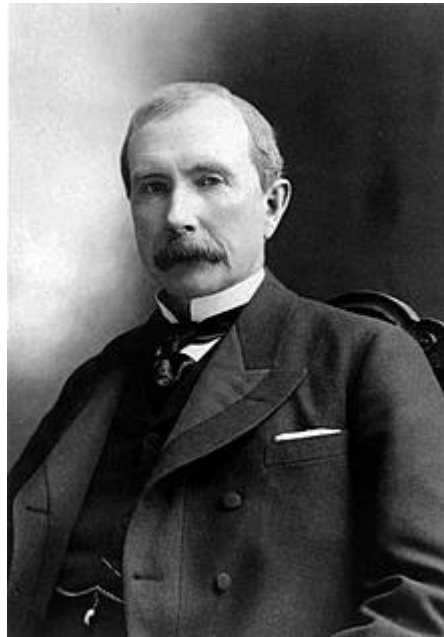
- a person who has become rich through ruthless and questionable business practices
- A person who might take advantage of situations if it benefits their success.

AS WE MOVE FORWARD, YOU DECIDE IF INDUSTRY LEADERS ARE CAPTAINS OF INDUSTRY OR ROBBER BARONS.

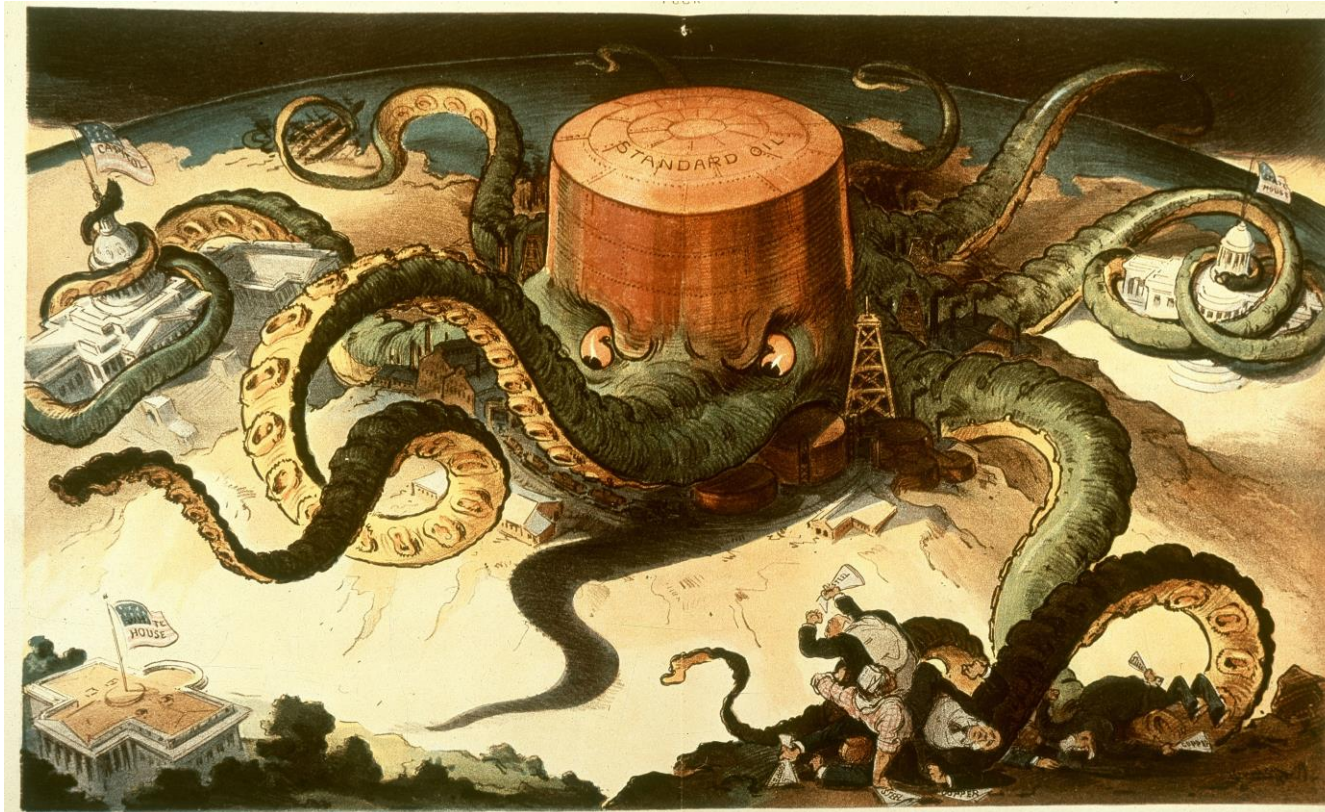


John D. Rockefeller

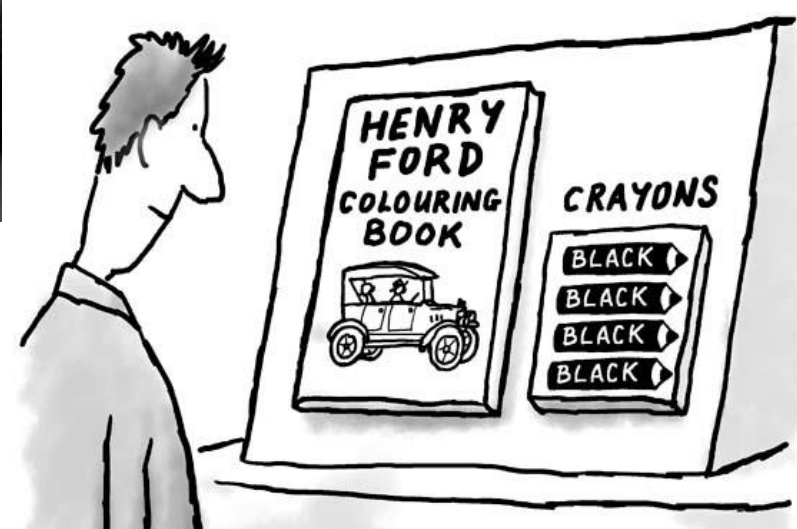
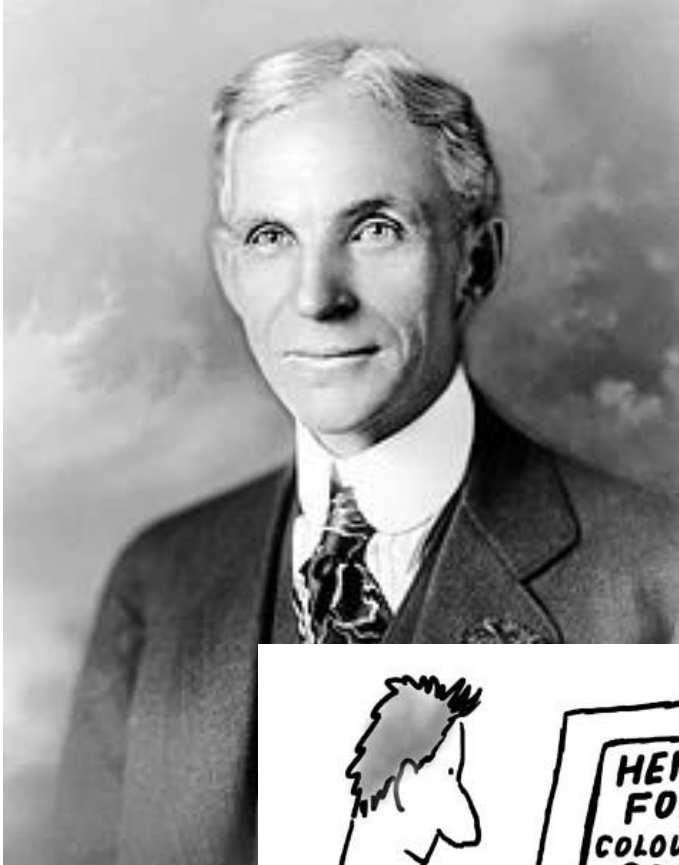
- American industrialist John D. Rockefeller built his first oil refinery near Cleveland and in 1870 incorporated the **Standard Oil Company**.
- By 1882 he had a near-**monopoly** of the oil business in the U.S., but his business practices led to the passing of antitrust laws that prevented monopolies.
- What is a **monopoly**?



- Standard began buying out its competitors.
- Standard's moves were so quick and sweeping that it controlled the majority of refineries in the Cleveland area within two years.
- Late in life, Rockefeller devoted himself to philanthropy. He died in 1937.



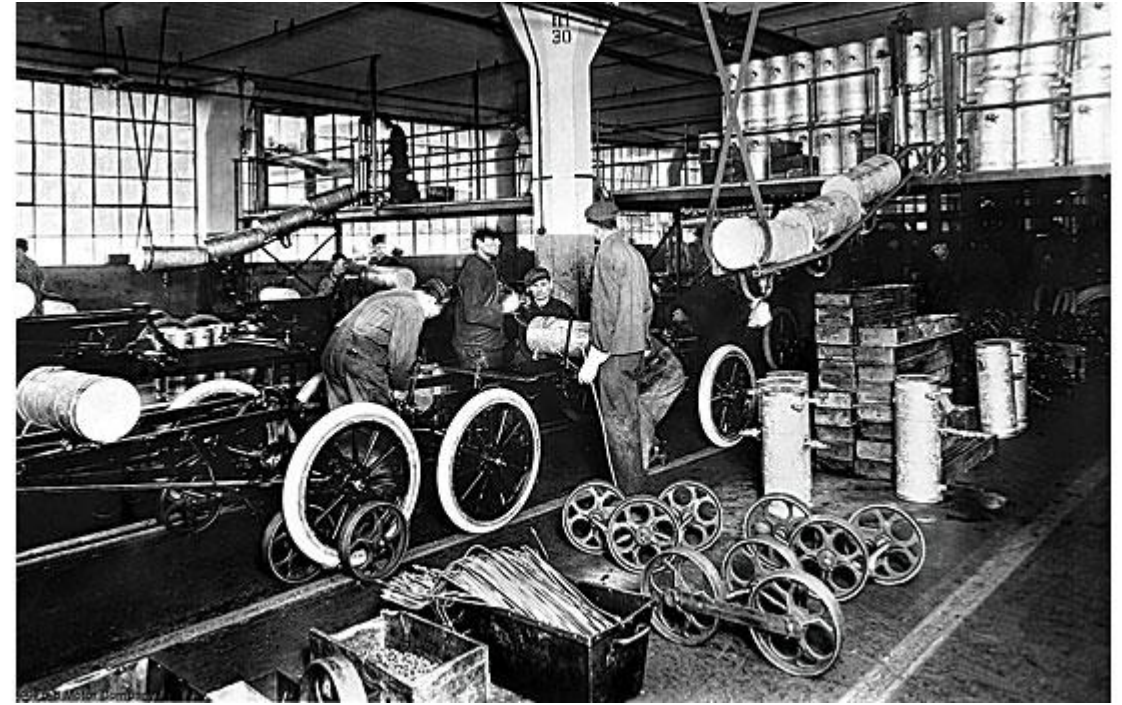
Henry Ford



- Henry Ford was NOT the inventor of the motor vehicle.
 - Two men named **Charles and J. Frank Duryea** were the first to create a gasoline powered engine, that would be placed in the first practical motor vehicle.
- However, Henry Ford was the first to create the *affordable* vehicle
 - He would introduce the **Model T** in 1908, a car that came in your favorite color (as long as it was black); a car that everyone could afford at only \$800.

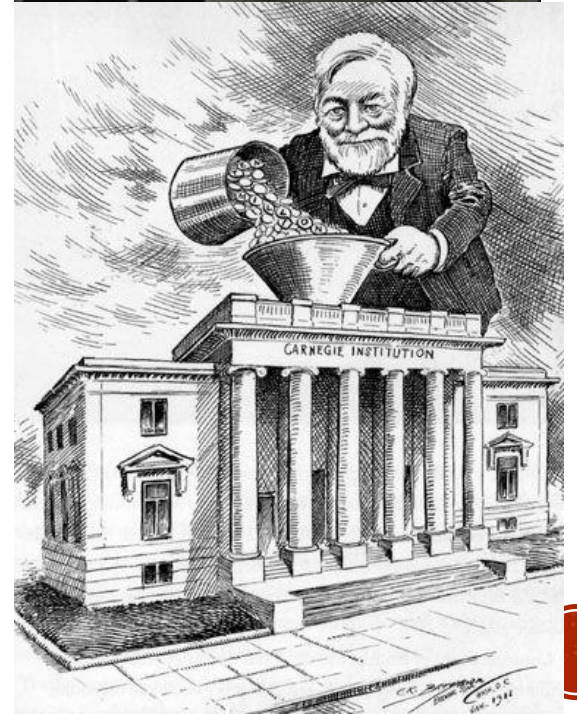
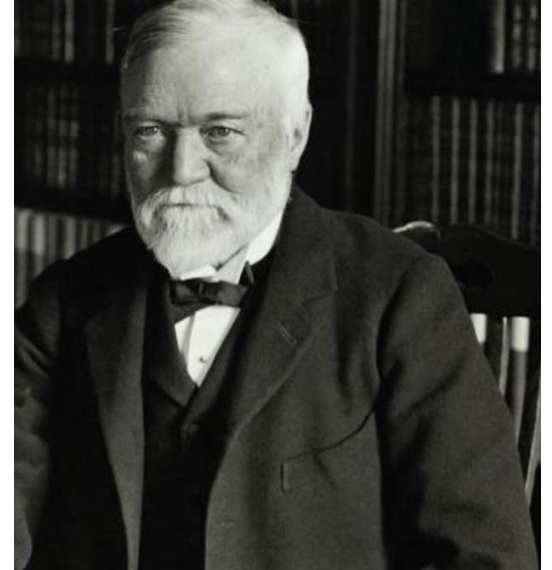


- Ford would also be the first to implement, or put in process, the assembly line.
 - An assembly line is a process that reduces the cost of a product because it rapidly allows for the construction and speed of delivery.
 - It reduced the cost of production, so it allowed for the product itself to be sold cheaper.
- He also would be known for his **8-8-8**, which would become the standard US workday.
 - Workdays would be 8 hours, then there would be 8 hours of leisure, and 8 hours of sleep – for a balanced 24 hour day, and weekends off.

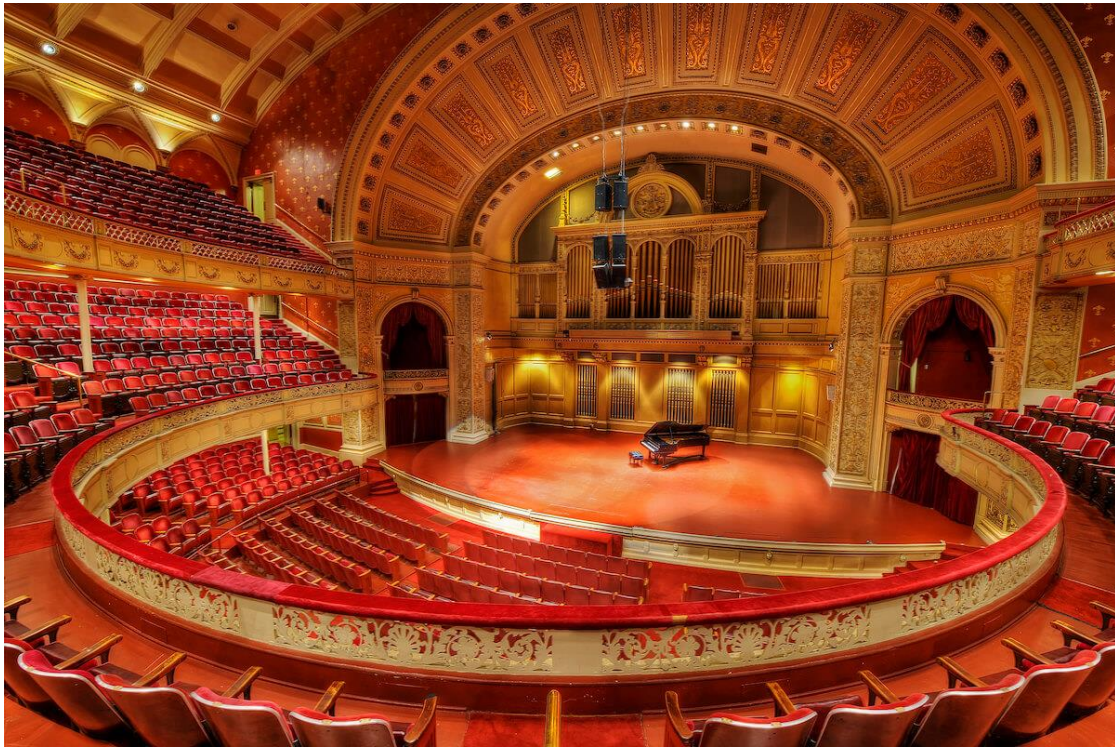


ANDREW CARNEGIE

- Andrew Carnegie was born in Dunfermline, Scotland. After moving to the United States, he worked a series of railroad jobs.
 - By 1889 he owned Carnegie Steel Corporation, the largest of its kind in the world.
 - Most of Carnegie's time was dedicated to the steel industry. His business, which became known as the Carnegie Steel Company, revolutionized steel production in the United States. Carnegie built plants around the country, using technology and methods that made manufacturing steel easier, faster and more productive.
 - Carnegie is a great example of The American Dream.
 - How?



- Always in constant competition with John D. Rockefeller to be the wealthiest American, in their later years the competition continued to see who could be the most generous with donations.
- By 1911, Carnegie had given away a huge amount of money -- 90 percent of his fortune and helped build over 2,000 libraries.



MODERN CONNECTION: SAM WALTON

- Walton opened the first Wal-Mart in 1962, after years in the retail management business. The discount chain expanded internationally over the next 30 years, growing into the world's largest company by 2010. Walton stepped down as CEO in 1988, at the age of 70, but remained active in the company until his death in 1992.
- There are 11,695 Walmart stores around the world.
- As of 2018, for the sixth year in a row and the 14th time total, Walmart has secured the No. 1 spot on the Fortune 500 list.
- With revenue of \$500.3 billion, the retailer tops the annual list of America's largest companies



NOT-SO-GOOD PRACTICES

- Walmart has been criticized for using sweatshops and prison labor in production of goods.
 - Why is this a concern? Does this challenge the laws the US has made about child labor/working conditions?
- Walmart has also faced issues with its employees involving **low** wages, **poor** working conditions and **inadequate** health care.
- Does this fall back on Sam Walton? Do you think these things were occurring when he was alive?

