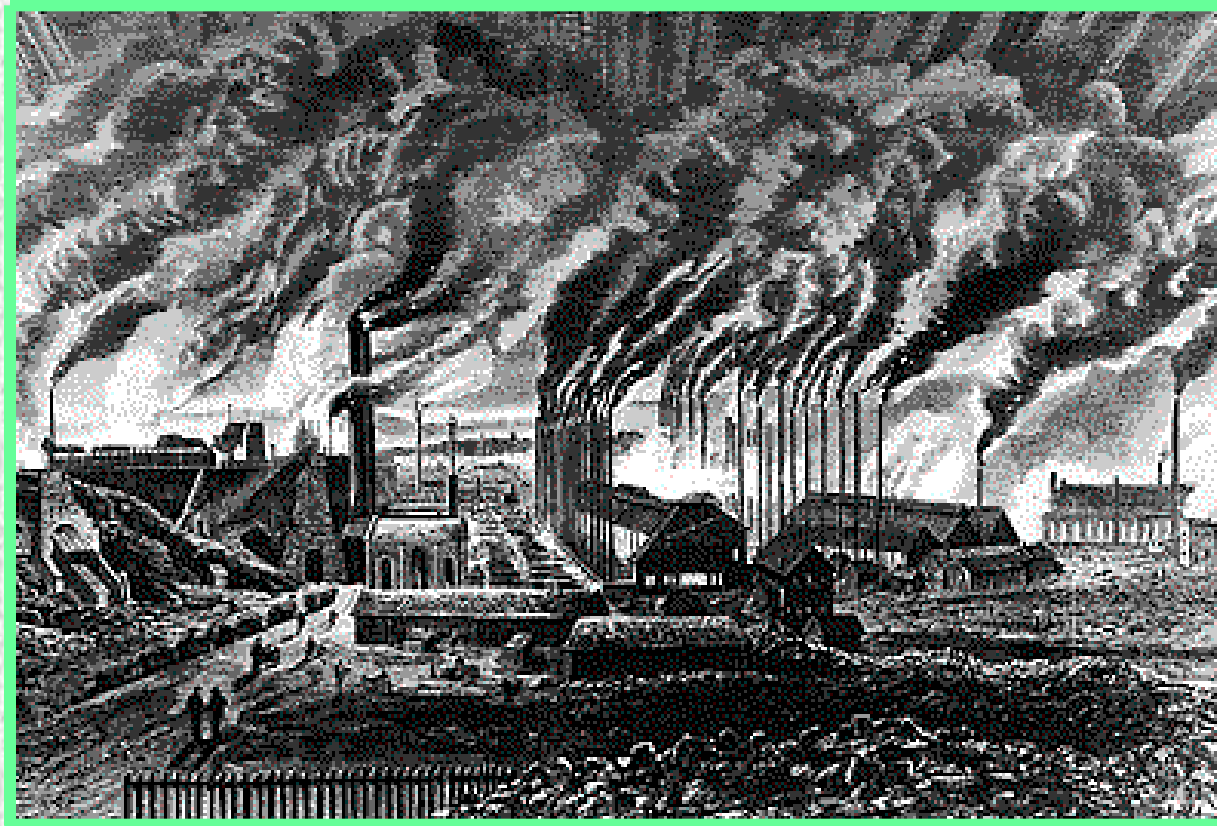


# The Triumph of Industry 1865-1914



## SECTION 1:

## TECHNOLOGY AND INDUSTRIAL GROWTH

# Why It Matters...

The end of the Civil War marked the beginning of a major transformation in American society. Americans enthusiastically embraced innovation and technology with the expanding business and improving people's daily lives.

American industrialization grew out of the English Industrial Revolution. Backed by business leaders and shaped by a huge number of creative inventors and scientists, this "second industrial revolution" turned the U.S. into an industrial powerhouse.

# Encouraging Industrial Growth

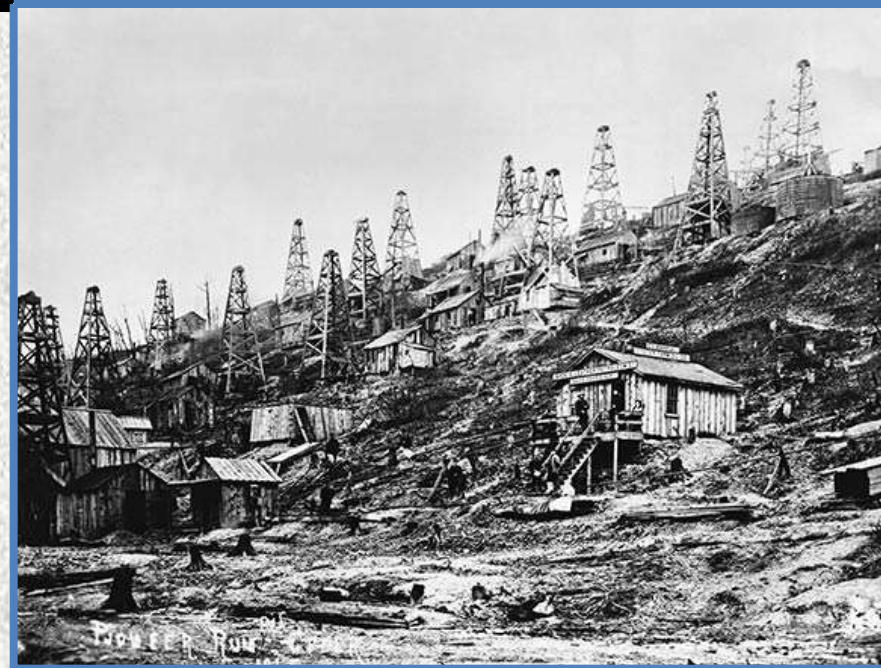


- Civil War challenged industries to make products more quickly and efficiently.
- **Factories** stepped up production by using new tools and methods to produce guns, ammunition, medical supplies, and uniforms in large numbers.
- **Food** industry transformed.
- Government **encouraged immigration** to meet the increasing demand for labor in the nation's factories.



# Natural Resources

- **Coal** mines along the eastern coast provided fuel for steam **locomotives** and factories.
- Thick forests across the country were cut into lumber for construction.
- 1859, Edwin Drake drilled what became the first oil well in Titusville, **Pennsylvania**.
  - Before this, oil was only used for light and fuel and obtained from whale blubber.
  - **Whale** hunting was too time consuming and they were becoming scarce.
  - Drilled oil was relatively cheap to produce and easier to transport.
  - The oil industry grew quickly after 1859 and this led to the growth of the **kerosene** and **gasoline** industries.

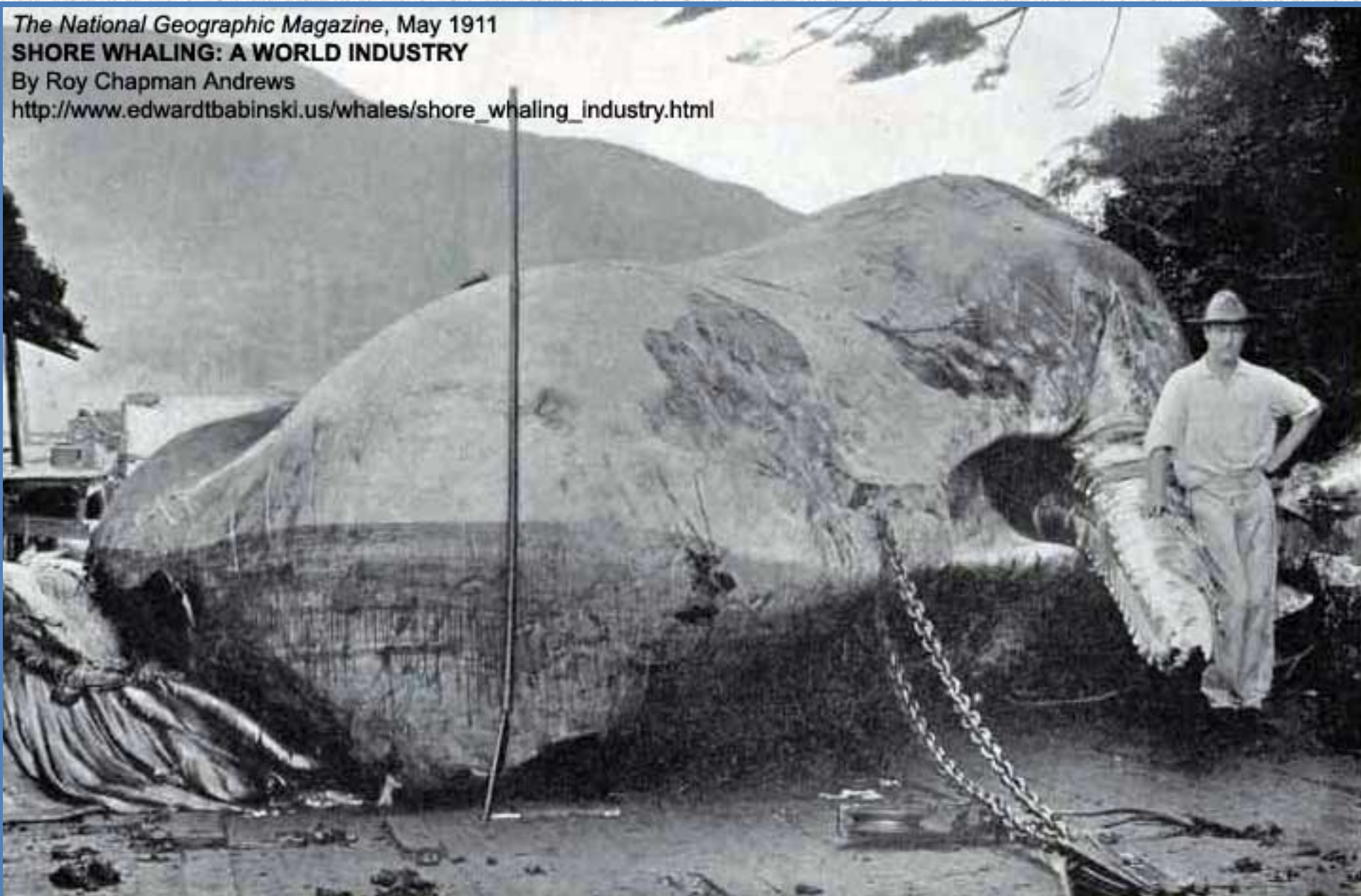


*The National Geographic Magazine*, May 1911

**SHORE WHALING: A WORLD INDUSTRY**

By Roy Chapman Andrews

[http://www.edwardtbabinski.us/whales/shore\\_whaling\\_industry.html](http://www.edwardtbabinski.us/whales/shore_whaling_industry.html)





# The Workforce Grows

- A large number of Europeans and some Asians immigrated after the Civil War.
  - They were pushed from their homelands by political unrest, religious discrimination, and crop failures.
  - 1881, 750,000 immigrants
  - Nearly 1 million immigrants per year until 1905.
- They were willing to work for lower wages which meant that industries had a huge, and willing work force to fuel growth.



# Urban Growth: 1870 - 1900

<i>City</i>	<i>1870 Population</i>	<i>1900 Population</i>	<i>Percent Increase</i>
Boston	250,525	560,892	123.88
Chicago	298,977	1,698,575	468.12
Cincinnati	216,239	325,902	50.71
Los Angeles	5,728	102,479	1,689.08
Milwaukee	74,440	285,315	299.37
New Orleans	191,418	287,104	49.98
New York	1,478,103	3,437,202	132.54
Philadelphia	1,293,697	647,022	99.94
Pittsburgh	321,616	86,075	273.64
Portland	90,426	8,293	990.38
Richmond	51,038	85,050	66.64
San Francisco	149,473	342,782	129.32
Seattle	1,107	237,194	21,326.73



# Capitalism

- “Rags to Riches” idea depends on the system of capitalism, aka free enterprise.

– Free enterprise = individuals own most businesses.

- Entrepreneurs = people who invest money in a product or business in order to make a profit.

– Entrepreneurs fueled industrialization.

– Factories, railroads, and mines they established created jobs and also attracted foreign investment.



# Gov't Policies Encourage Free Enterprise

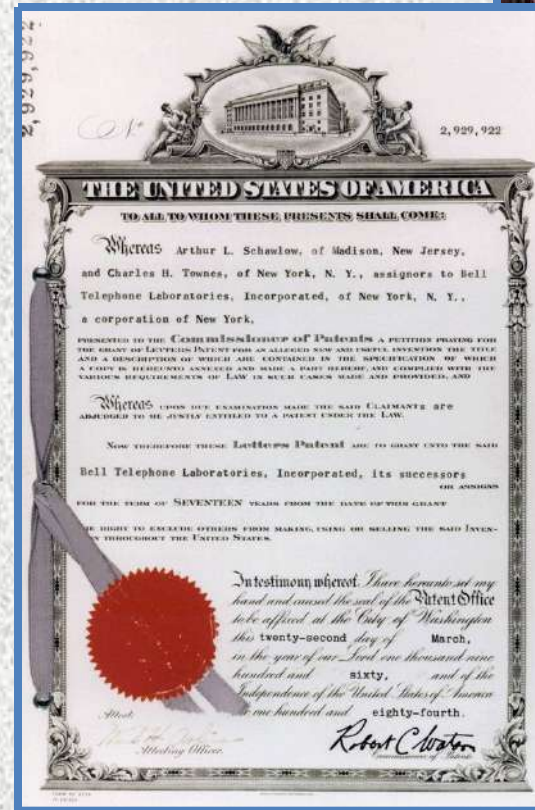
- Gov't gave railroad builders millions of acres of land in return for their promise to link the East and West coasts.
- Protective Tariffs = taxes that would make imported goods cost more than those made locally.
  - Encouraged people to buy American goods only.
- Laissez-faire = policies which allowed businesses to operate under minimal gov't. regulation.



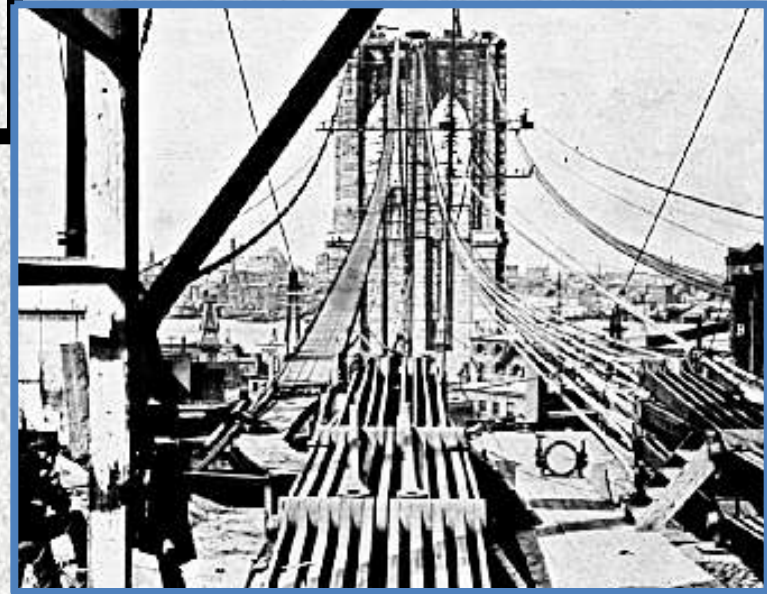
# Innovation



- Patent = a grant by the federal government giving an inventor the exclusive right to develop, use, and sell an invention for a set period of time.
- 1876- Thomas Edison received more than 1,000 patents.
  - Supported by wealthy investors such as J.P. Morgan
  - Invented the light bulb
- Henry Bessemer developed a process for purifying iron resulting in steel.
  - Led to skyscrapers, elevators, suspension bridges



# John A. Roebling: The Brooklyn Bridge, 1883

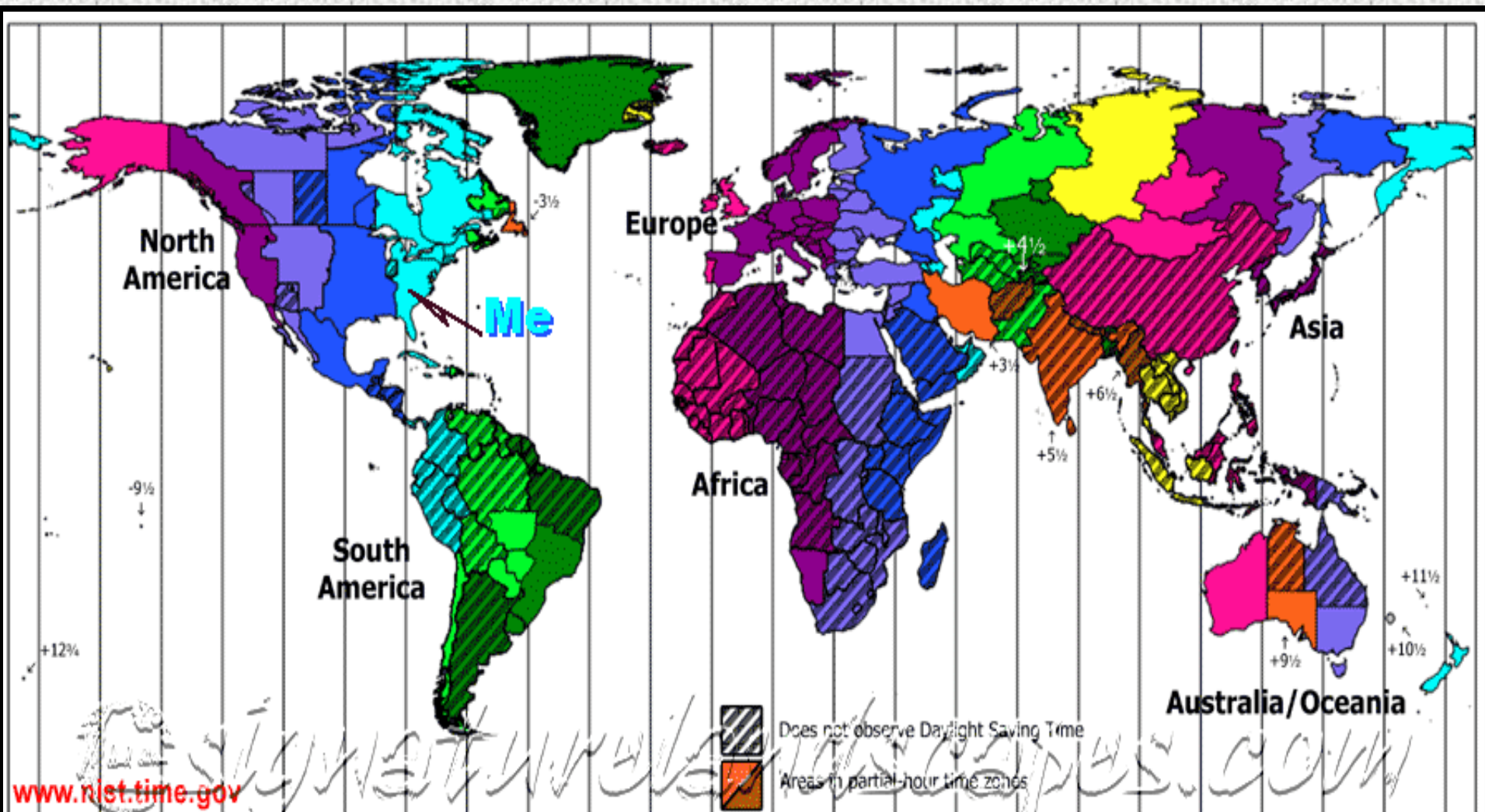


# Transportation



- 1884, delegates from 27 countries divided the globe into 24 time zones.
  - Made setting times for trains much easier. Towns were no longer setting their own times.
- Electric streetcars, commuter trains, and subways appeared in major cities.
- 1902- production of automobiles with gas-powered engines.
- 1903- first successful airplane flight by the Wright brothers.
- Mass production = systems dependent upon machinery to carry out tasks that were once done with hand tools.





[www.nist.time.gov](http://www.nist.time.gov)

-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	-0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12
Y	X	W	V	U	T	S	R	Q	P	O	N	Z	A	B	C	D	E	F	G	H	I	K	L	M

INVENTOR/DEVELOPER	INVENTION OR DEVELOPMENT
Henry Bessemer	Process to purify iron ore and produce steel
Alfred Nobel	Dynamite
Alessandro Volta	Battery
Thomas Edison	Electric light bulb
Nikolaus Otto	Internal combustion engine
Gottlieb Daimler	Automobile
Henry Ford	Mass-produced automobile
Orville and Wilbur Wright	Airplane
Samuel Morse	Telegraph
Alexander Graham Bell	Telephone
Guglielmo Marconi	Radio
Louis Pasteur	Rabies vaccine; pasteurization
William Morton	Anesthesia



# Changing American Society

- Farms became mechanized which meant that fewer farm laborers were needed.
  - Out of work farmers and their families moved to urban areas to find work, especially in the increasingly industrial North.
  - They faced a higher cost of living, were dependent upon cash wages, and performed repetitive work in factories.





# What about the Environment?

- By the late 1800's...
  - Industrial waste had risen dramatically
  - **Mining** had begun to destroy the land
  - In the Midwest, increasing agricultural production had led to **soil erosion** and **dust** storms.
  - People began to speak up about protecting natural resources.
- Congress responded by setting aside protected lands that would eventually become part of the National Park Service.
  - Congress declared **Yellowstone** National Park in 1872 a federally protected area.

