

- AMH 2010 & AMH 2020: AMERICAN HISTORY
- DR. ANDREW GOTTLIEB

3-American Industrialization

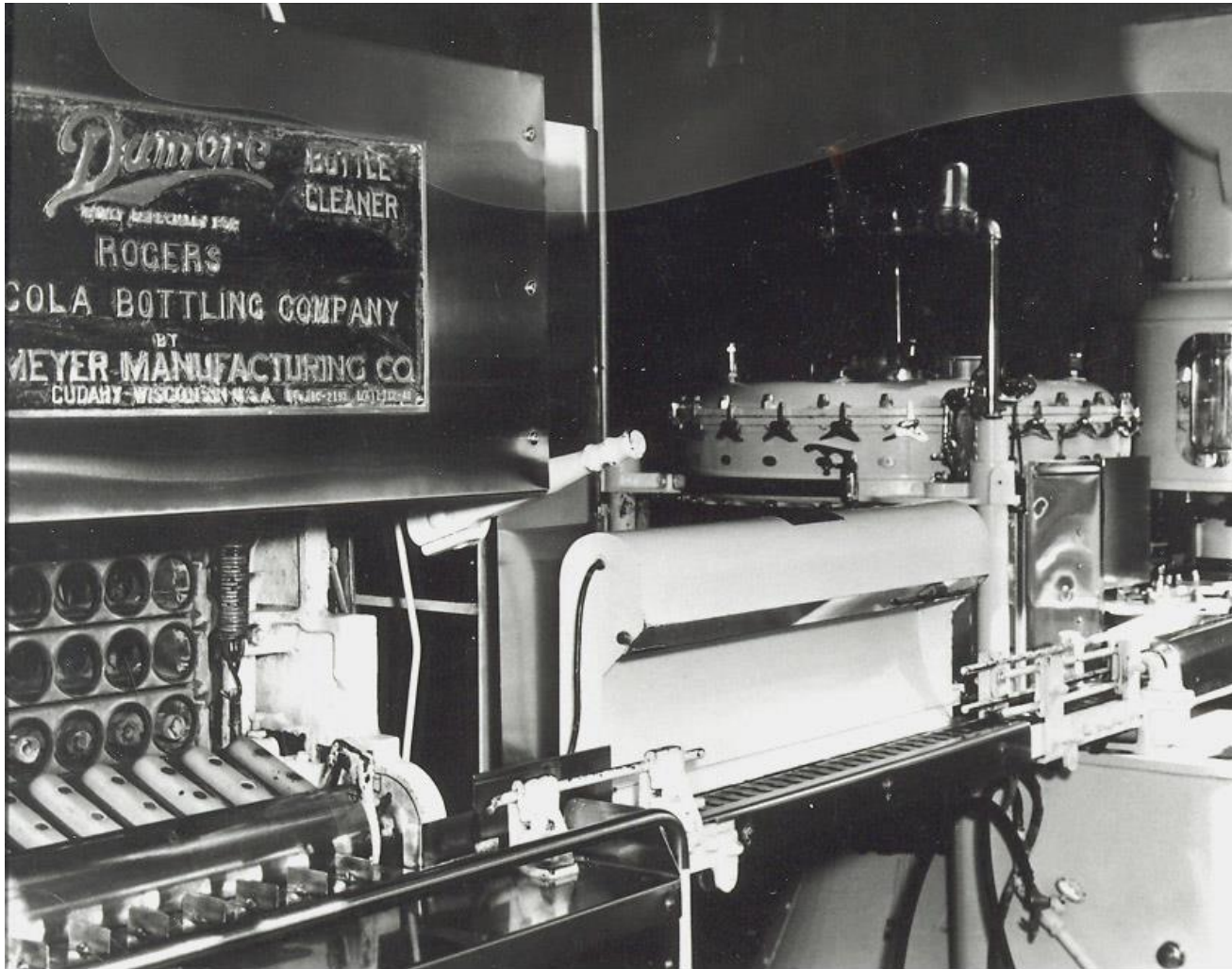


Miami Dade
College

West Campus



Lecture: American Industrialization



Bottle Cleaning Machine, Rogers Coca Cola Bottling Company
Neg. # 010770

I. The Machine Age (1865-1900)

A. The Big 9: Primary characteristics of American Industrialization

(Norton, *People & a Nation*, 1982)



1. Production by machine rather than by hand

This is a late 19th c. "Improved Eldridge Rotary" treadle sewing machine. It was electrified soon after production. some point.



2. Involvement of an increasing proportion of the work force in manufacturing



<http://www.upstategirls.org/inhistory.html>

Historians have argued that the City of Troy, New York was “The Prototype for the Industrialization of America. In the 19th century, The Cluett and Peabody shirt factory, shown here, was the largest of Troy’s textile manufacturers. In 1864, Kate Mullany led Troy’s collar laundresses to form the first successful female labor union in The United states. After a six -day strike in February of that year, the laundry owners raised workers wages by 25%.

3. Production concentrated in large, intricately organized factories



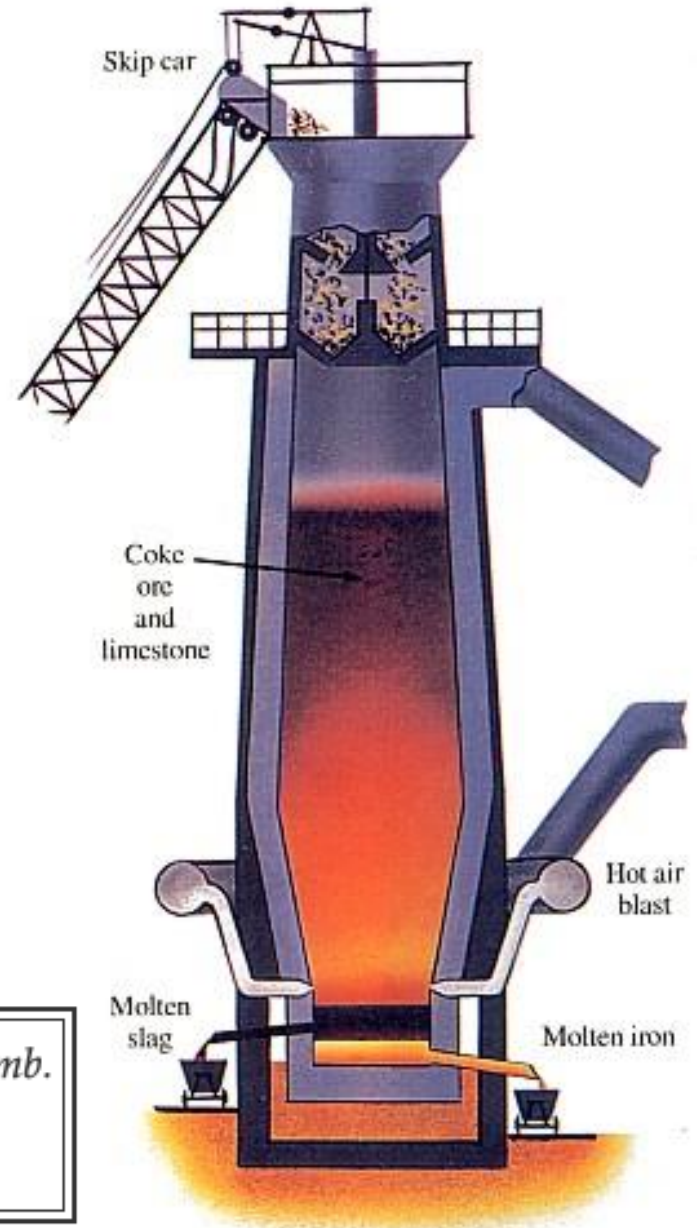
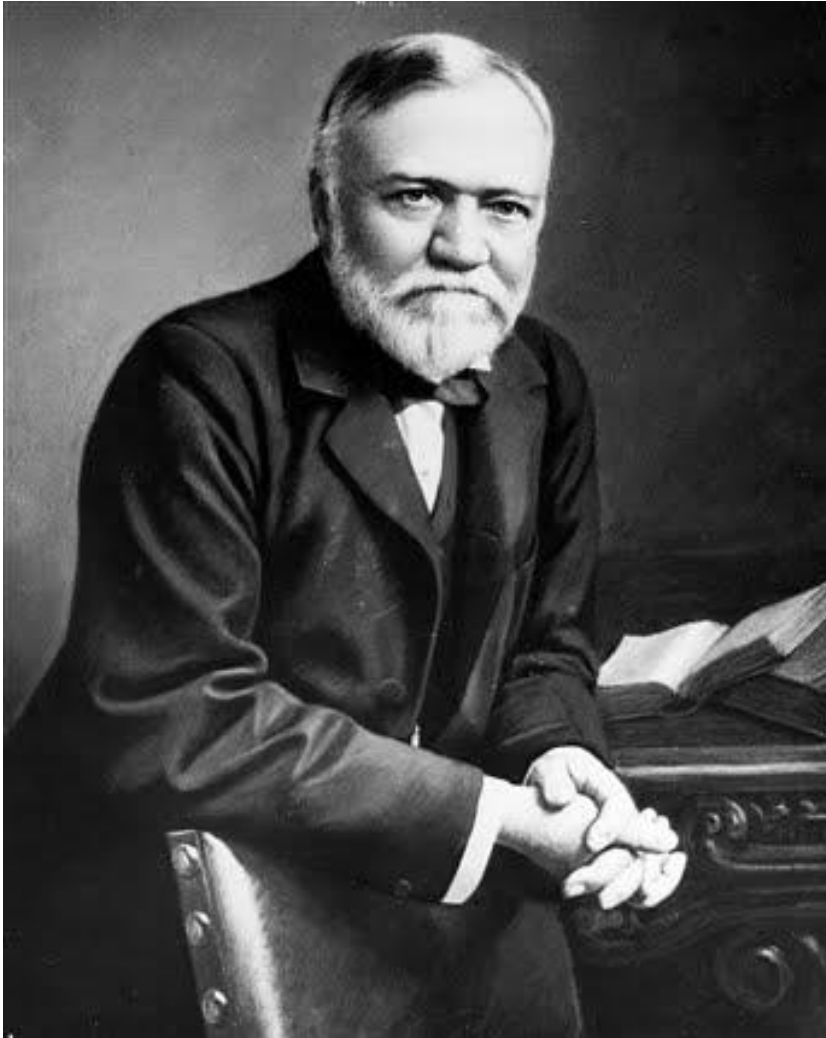
<http://www.ogs.on.ca/ogsblog/?m=201209>

Hand loom weavers towards the end of the 19th century, producing Chenille carpets

4. Accelerated technological innovation, emphasizing new inventions & applied science

CARNEGIE'S STEEL BLAST FURNACE

jeffersonrebels.blogspot.com



Jurisdenges-do.de

"Place within reach the ladders upon which the aspiring can climb. Assist but seldom ~ or never ~ do it all."

~Andrew Carnegie

5. Expanded markets, no longer local in scope. This is very much related to the concept of *Comparative Advantage*.



6. Growth of a nationwide transportation network based on the railroad, along with communication networks based on the telegraph & telephone



INTERNATIONAL MORSE CODE
 TIME OF DASH EQUALS THREE DOTS

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

WILSON
 PATENT PENDING

BUREAU OF NAVAL PERSONNEL — TRAINING AID NAV. PERM. 40,034
 PATENT PENDING



7. Increased capital accumulation for investment in expansion of production



John D. Rockefeller

Cornelius Vanderbilt

Andrew Carnegie

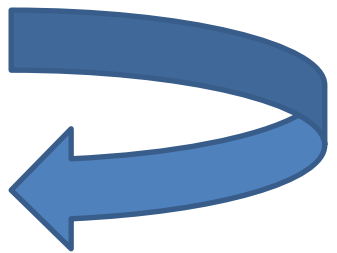
J Pierpont Morgan

Oil

Rail

Steel

Banking



8. Growth of large enterprises & specialization in all economic activities



FORD

FACTORY

https://www.youtube.com/watch?v=PZnGWJ_GBwU

DISCUSS: Eli Whitney (interchangeable parts, Frederick Turner (scientific management of labor) and Ford (specialization, the assembly line)

9.

**Steady increase in the size and predominance of cities
(see Lecture 44: The Rise of the American City)**

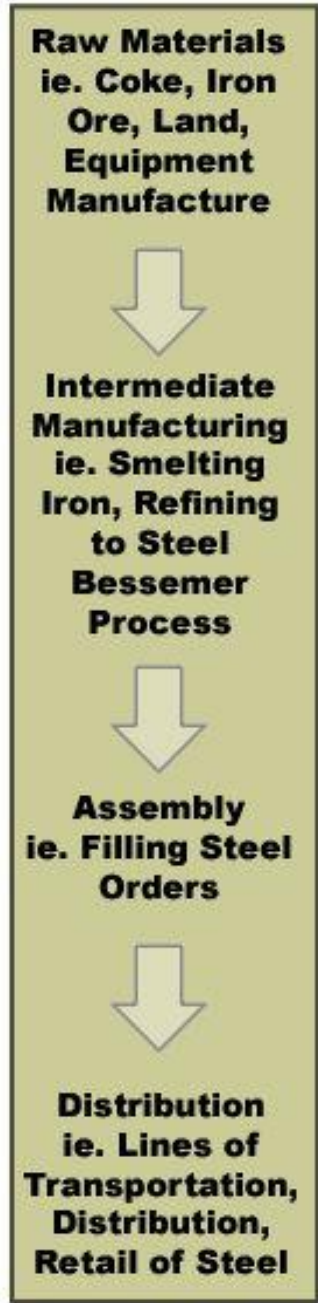
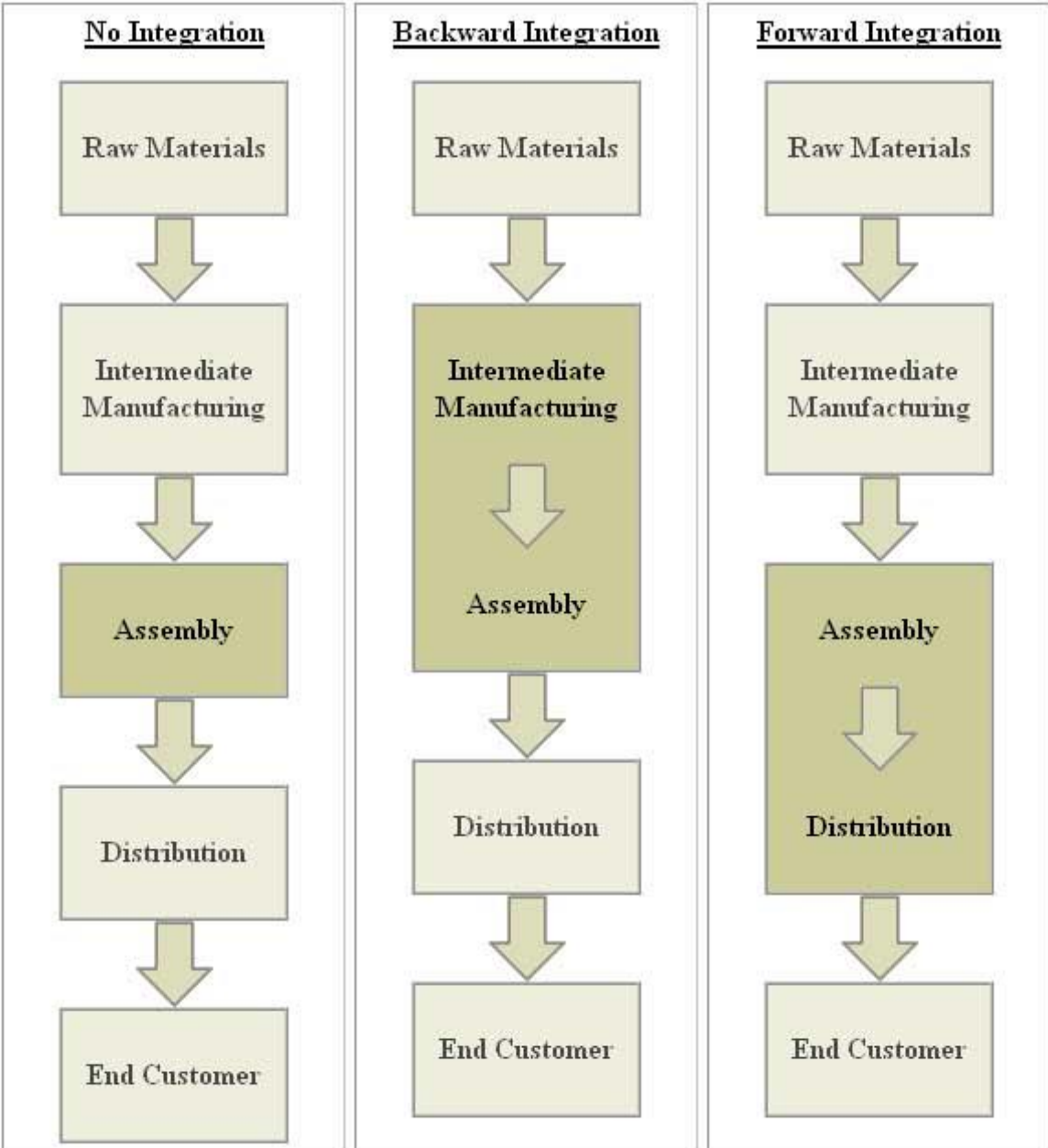
**B. Iron & Steel—
central to development
of American Industry.**



ANDREW CARNEGIE-Built the steel industry with a mill that integrated all stages of the refinement process, from ore to finished rail.

Carnegie Steel

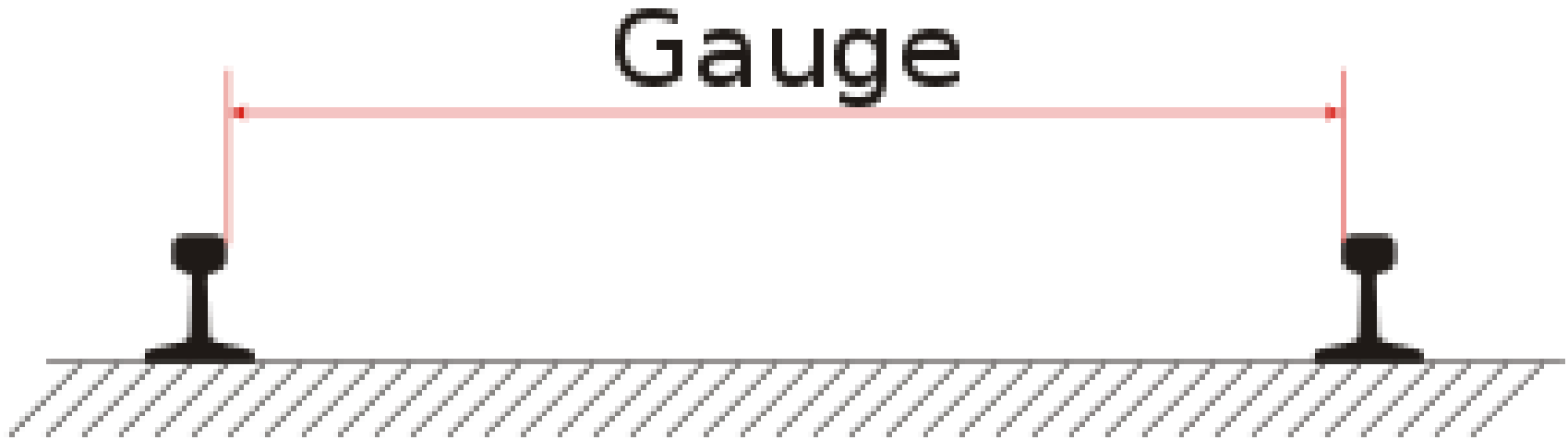
mweconomics.pbworks.com



Rail growth fueled industrial development: Over 100,000 miles of track were laid between 1877 and 1893, DOUBLING the U.S. network.

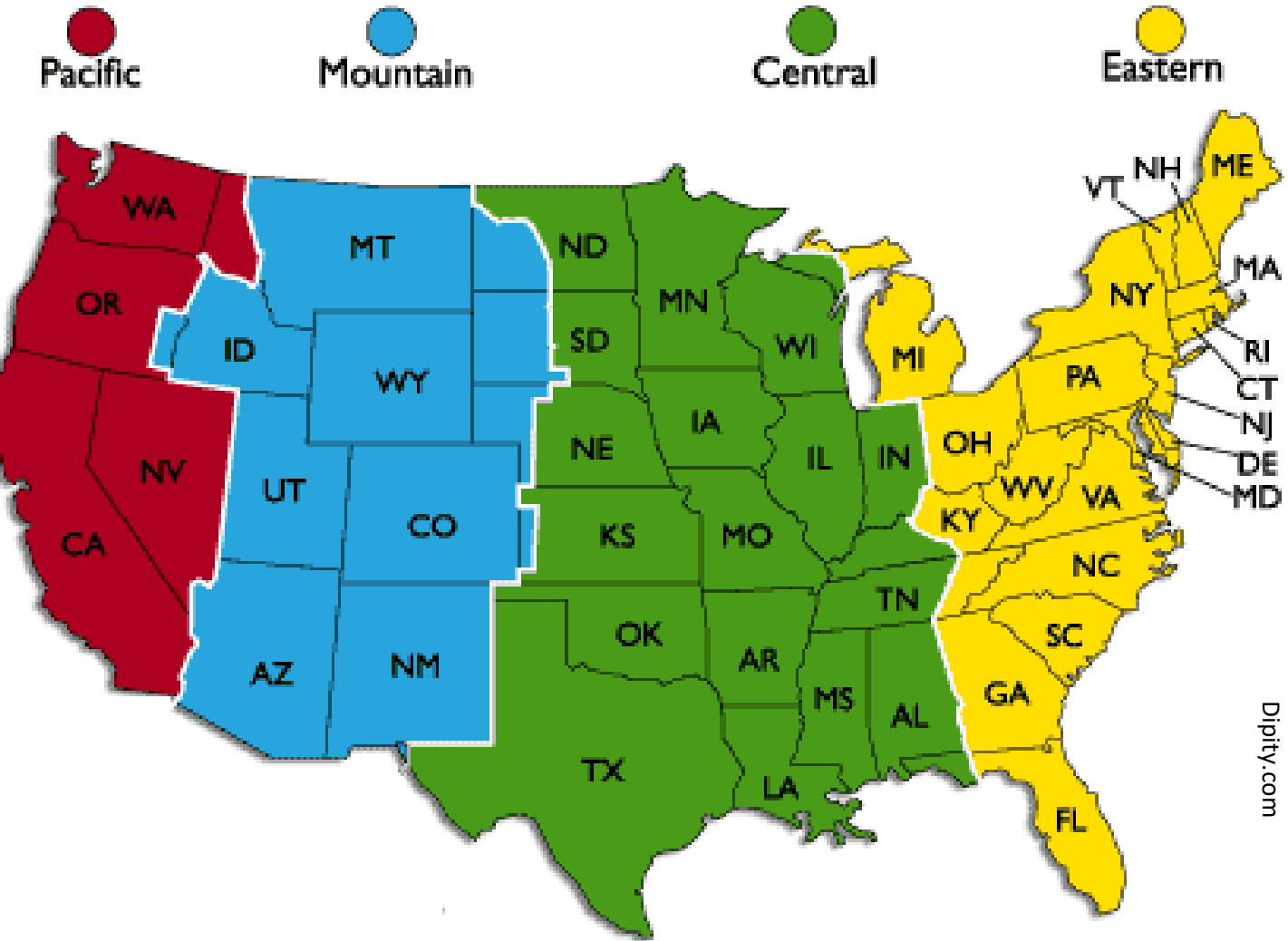


Standardization of gauge



Rail gauge is the distance from the inside of one rail on a railroad track to the inside of the other. Most countries use a standard gauge of 4 ft, 8 1/2 in. (1,435mm). Wider gauges are called broad gauge, smaller gauges are called narrow gauge. Broad gauge is usually used where the track needs to have heavy things moving on it. Narrow gauge is used to build railroads for less money, because the smaller track costs less. Places where different gauges meet are called break of gauge.

Time zone (4) adoption allowed coordination of systems



BALL WATCHES
OFFICIAL RAILROAD STANDARD




Trade In Your Old 18 Size Watch

You've probably forgotten about the old wood burners—they're gone—out of date. You wouldn't work on a railroad that used them today.

But now just stop and think a minute about something much closer to you than a wood burner. It runs there in your pocket. It weighs more than a quarter of a pound. It's nearly an inch thick. It's your old 18 size watch and although there's no denying the fact that it has a good timepiece, it's big, unhandy and clumsy. You can just as well own a Twentieth Century Metal Ball Watch.

Easy Payments Too

Your home jeweler will let you turn in the old 18 size as part payment on a new time model 18 size Ball Watch, and the balance can be paid under special monthly arrangements.

You don't want your friends to ask—"Well, what's the time by your old 'wood burner'?"—for your Ball Watch jeweler about that trade-in today.

Drop us a card for further information regarding time payments and trade-ins.

The Webb C. Ball Watch Co.
Cleveland, Ohio

CHICAGO SAN FRANCISCO WASHINGTON
Cleveland, Ohio Toledo, Ohio



Dipity.com

The rise of railroading during the last half of the 19th century led to the widespread use of pocket watches. A famous train wreck on the Lake Shore & Michigan Southern Railway in Ohio on April 19, 1891 occurred because one of the engineers' watches had stopped for 4 minutes. The railroad officials commissioned Webb C. Ball as Chief Time Inspector, in order to establish precision standards and a reliable timepiece inspection system for Railroad chronometers.

Land Grants to RR

131 million acres (Fed. Gov't.) 49 million from states



C. Oil & John D. Rockefeller

1. **First oil derrick drilled in Titusville, Pennsylvania in 1859**
2. **Rockefeller organized Standard Oil Co. and bought out smaller refiners**
3. **Organized trusts to combine companies, reduce competition, increase profits (horizontal integration, *vide Sherman Anti-trust Act of 1890*)**

Soshable.com



II. Organization of American Labor

Unions became legal in the US with the court Case of Commonwealth v. Hunt (1842).

BOYCOTT!

TO ALL FRIENDS OF ORGANIZED LABOR THE BUTTE TAILORS UNION

Has placed a Boycott on all Agents taking orders for Eastern "Scab" and Unfair Houses.

Also All "Scab" and Unfair Houses as Follows:

George Palmer, 50 East Broadway, Employs scab labor.
James W. Bell, 48 East Broadway, Represents Eastern ready-made garments for custom tailors' make.
Goldman and Rheinbeck, 60 East Broadway, agents for East Bros., a Chicago scab firm.
A. J. Beckman, 4 South Wyoming, agent for Eastern scab and unfair houses.
Lease Bros., 8 E. Broadway, scab tailors.
Aiken, 119 N. Main, same as Beckman.
McConville, Agent for Eastern scab made garments.
P. J. Maloney, Agents for Eastern Scab and Unfair houses.
Lou Wise and Wm. Fitzgerald,
Abraham, Cor. Wyoming and Broadway.
Lichtenstein, 256 East Park and Dolling, East Park, agents and inducers of the sweatshop system.
And Last But Not Least
All Chinese Tailor Shops.

WE BELIEVE THAT

The Public Will Take an Interest

In this Boycott and help us to enforce it, as it is to their interest as well as ours that they should not be deceived into buying a ready-made garment for a custom tailor's make.

See That This



Label is Attached

and you may rest assured that your clothing has been made under fair sanitary conditions, that you have the genuine article and at the same time promote home industry. This is the only label used by Custom Tailors in America.

BY ORDER OF BUTTE TAILORS' UNION

Endorsed by Silver Bow Trades & Labor Assembly

B. Labor strife arose in the 1870s with frequent strikes

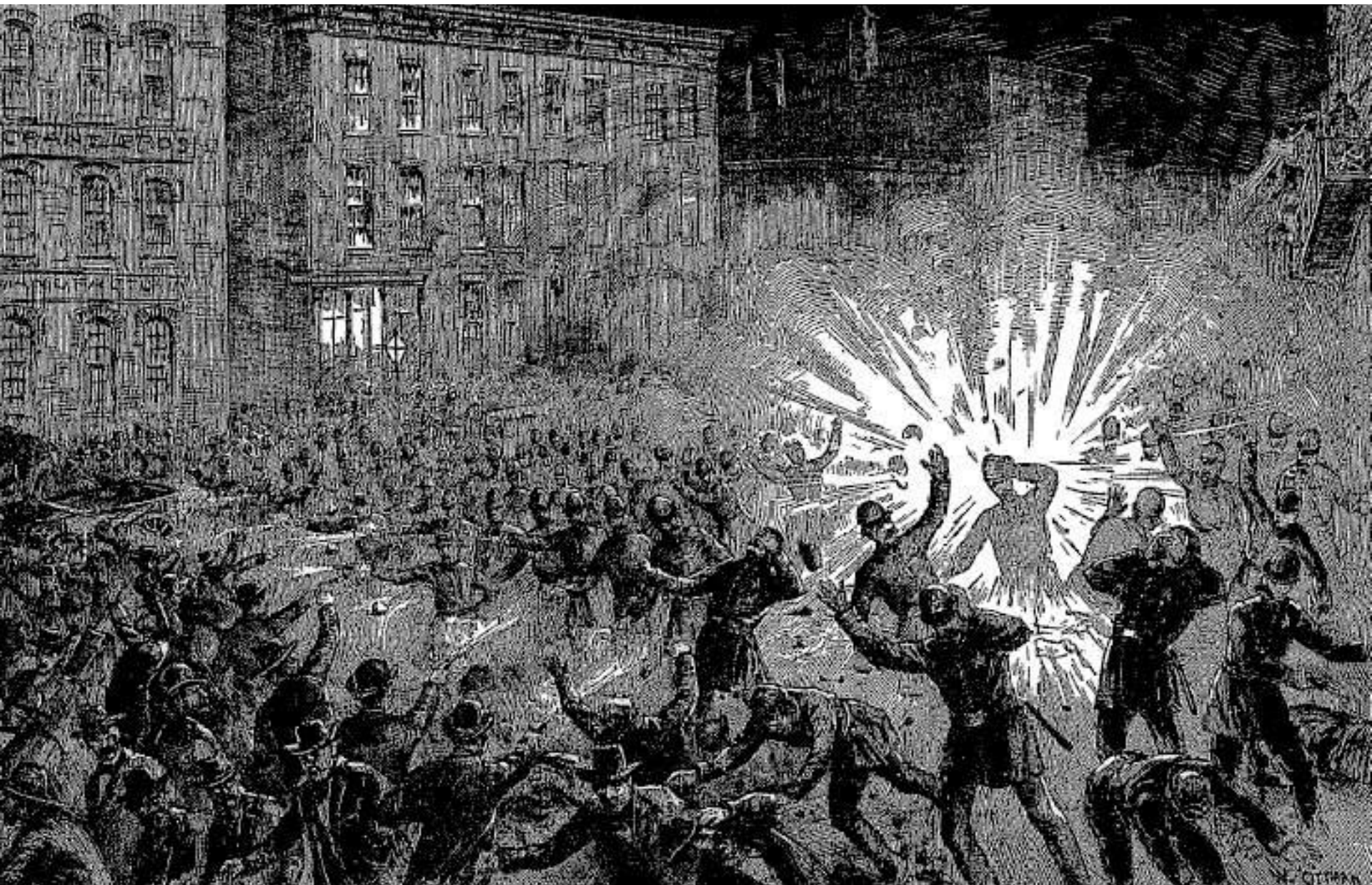
In 1877 United States was entering its fourth year of depression. Since the United States was entering into this depression. However, at this time the RR industry was still doing reasonable well, transporting iron, steel, coal and, of course, industry manufactures. Prior to 1877, management still wanted to reduce wages and the work force. The resulting railroad strike of 1877 led to



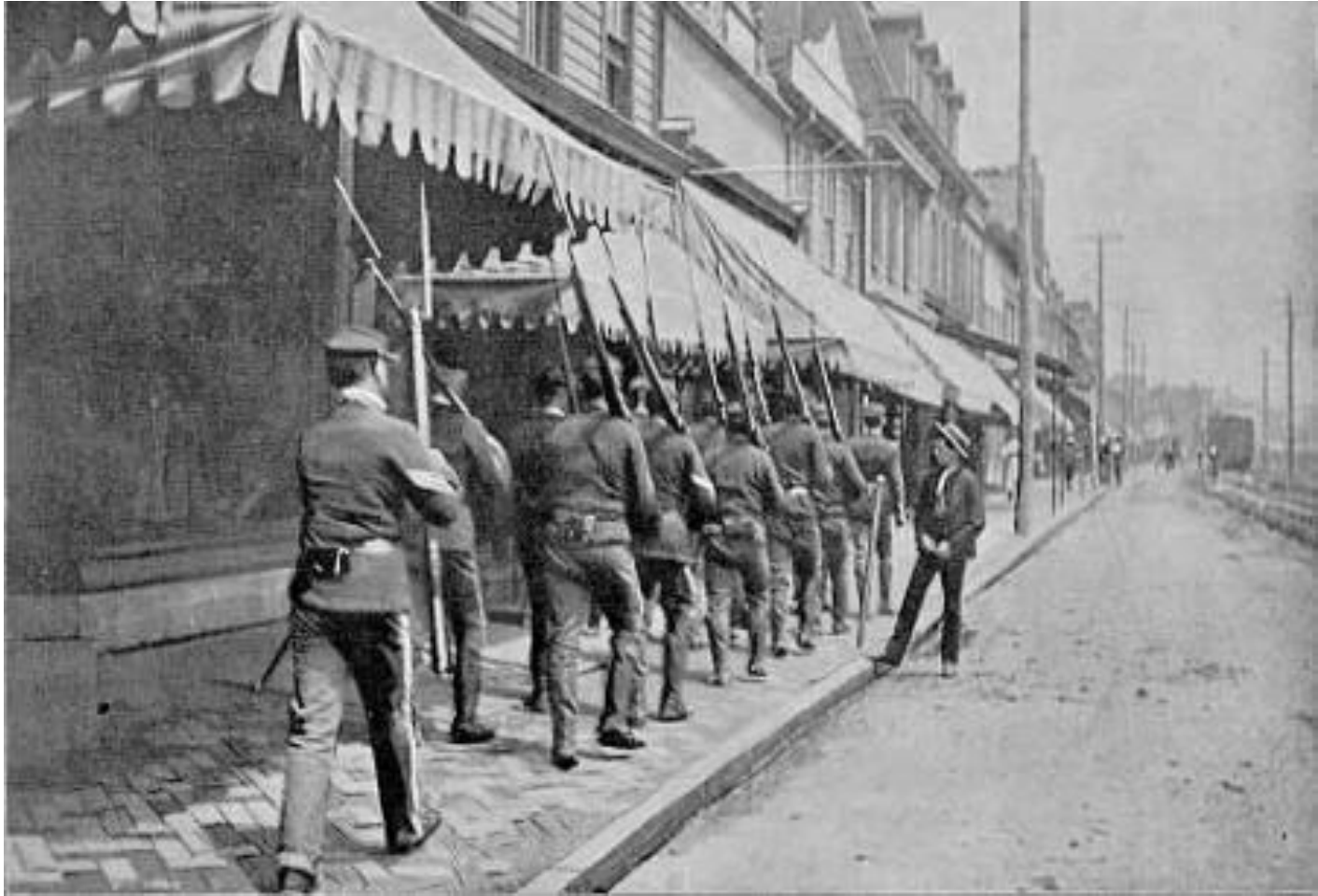
<http://www.stfrancis.edu/content/ba/ghkickul/stuwebs/btopics/works/railroadstrike.htm>

another ten percent reduction in the worker's pay and also the requirement that railroad employees would be required to use company hotels when away from home, which meant a further reduction in real wages. The related strikes, like others that followed in the 1880s, involved a great deal of violence between the state militias (later to be called the National Guard), and the workers. Although workers and their families suffered the most violence, national sentiment was AGAINST the workers. Future, successful unions would employ more peaceful protests.

1. Haymarket Massacre, Chicago, 1886 occurred when a bomb killed 7 and wounded 70



2. Homestead Strike in Pennsylvania, 1892 resulted in seven deaths



<http://libcom.org/history/1892-the-homestead-strike>

The Robber Baron Andrew Carnegie precipitated the Homestead Strike of 1892 with his attack against the standard of living of the workers and his bid to break the union representing the highest skilled workers. Carnegie announced his intention to impose an 18 percent pay cut and issued a statement saying that the real issue was whether the Homestead steel workers would be union or non-union.

3. Pullman Strike, 1894 in Chicago temporarily stopped railroad traffic and required federal intervention.



THE CONDITION OF THE LABORING MAN AT PULLMAN.

C. Labor organizations



1. Knights of Labor (1869)

The KOL sought to create one large union for all workers: skilled and unskilled.

They were opposed to strikes, bad press, and violence.

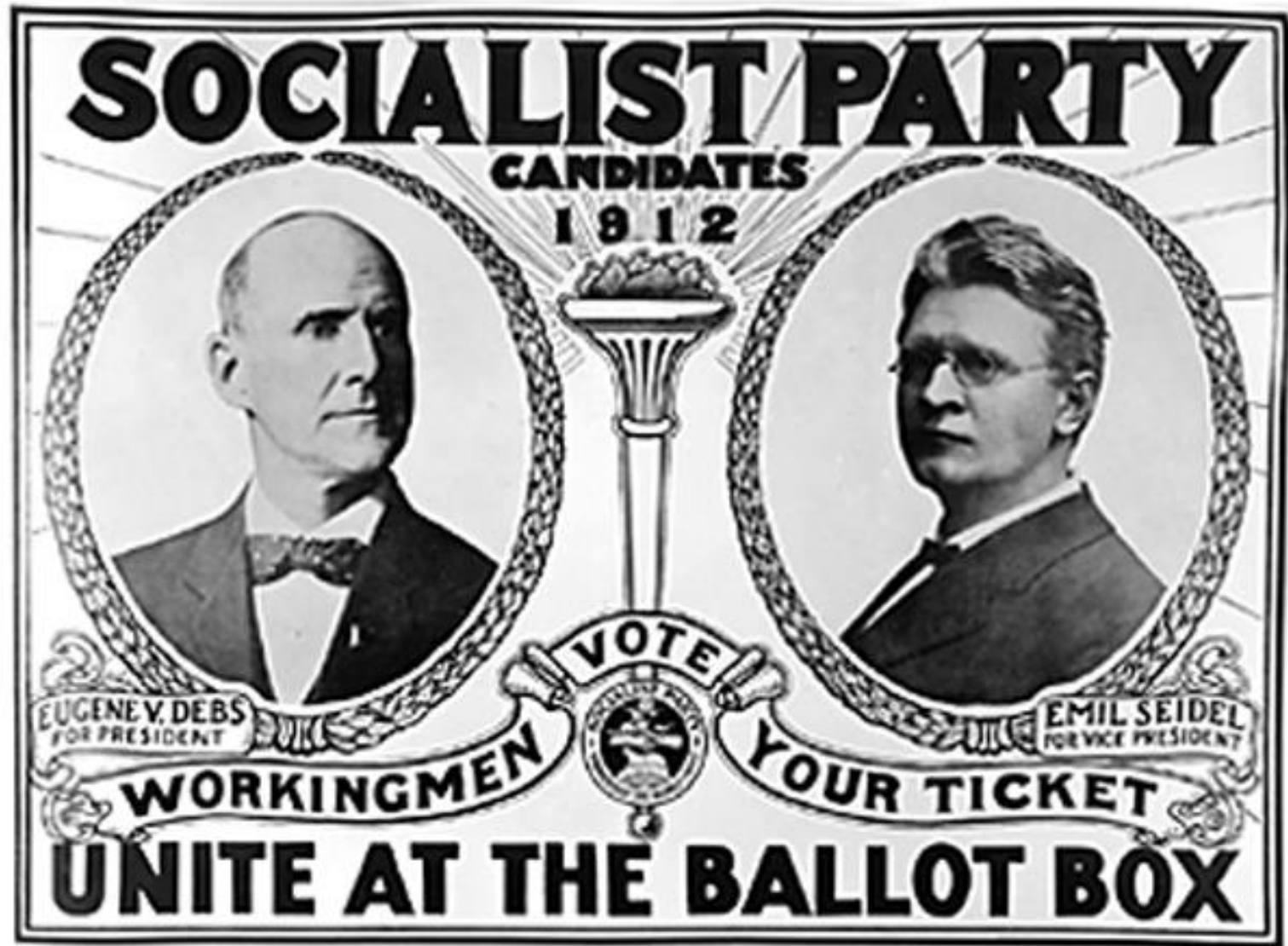


2. American Federation of Labor (1886)

Organized by Samuel Gompers. Focused on higher wages, shorter hours, and safety at work.



3. Eugene Debs and American Railway Union (1892)



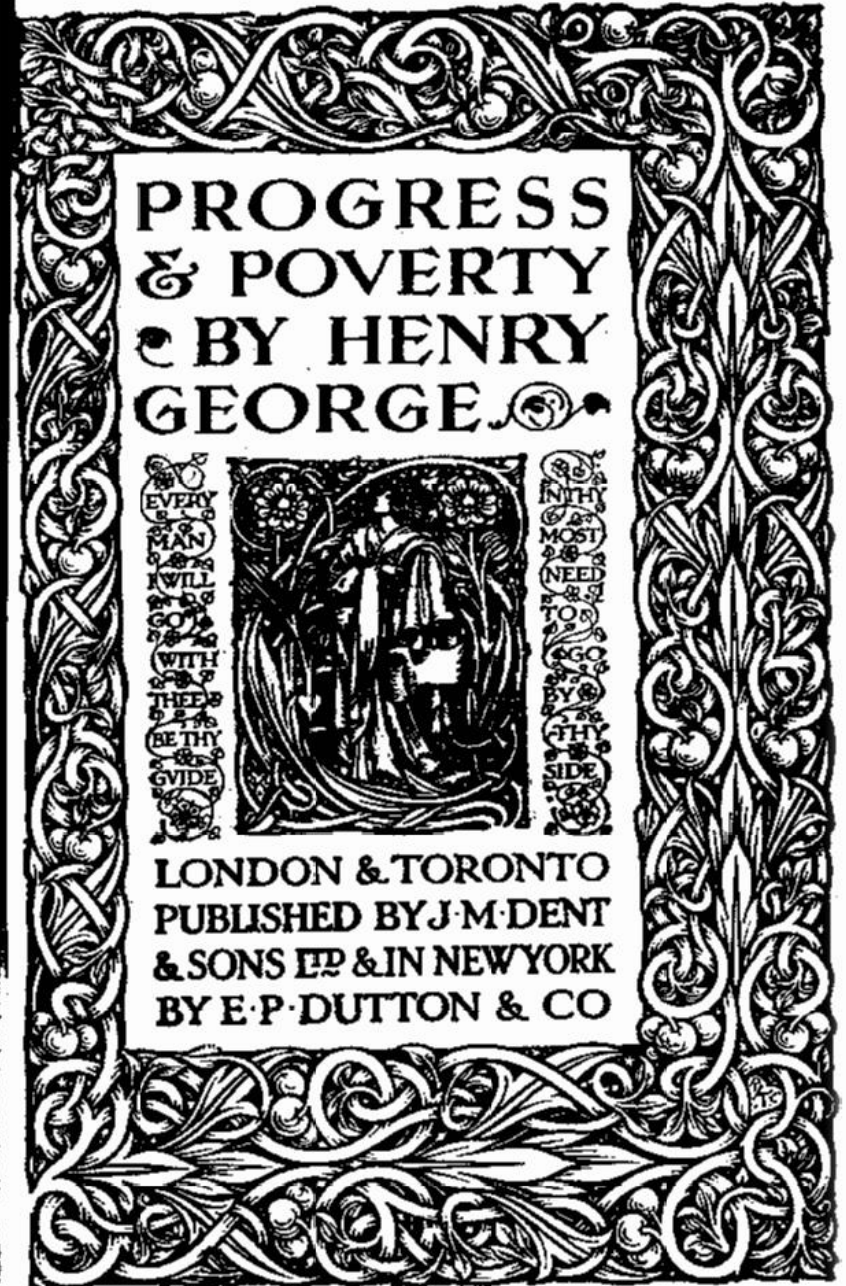
Eugene V. Debs, who would eventually run for president as a socialist, was also deeply involved with the American Railway Union. They viewed gov't. and owners as enemies.

III. Utopian Economic Plans



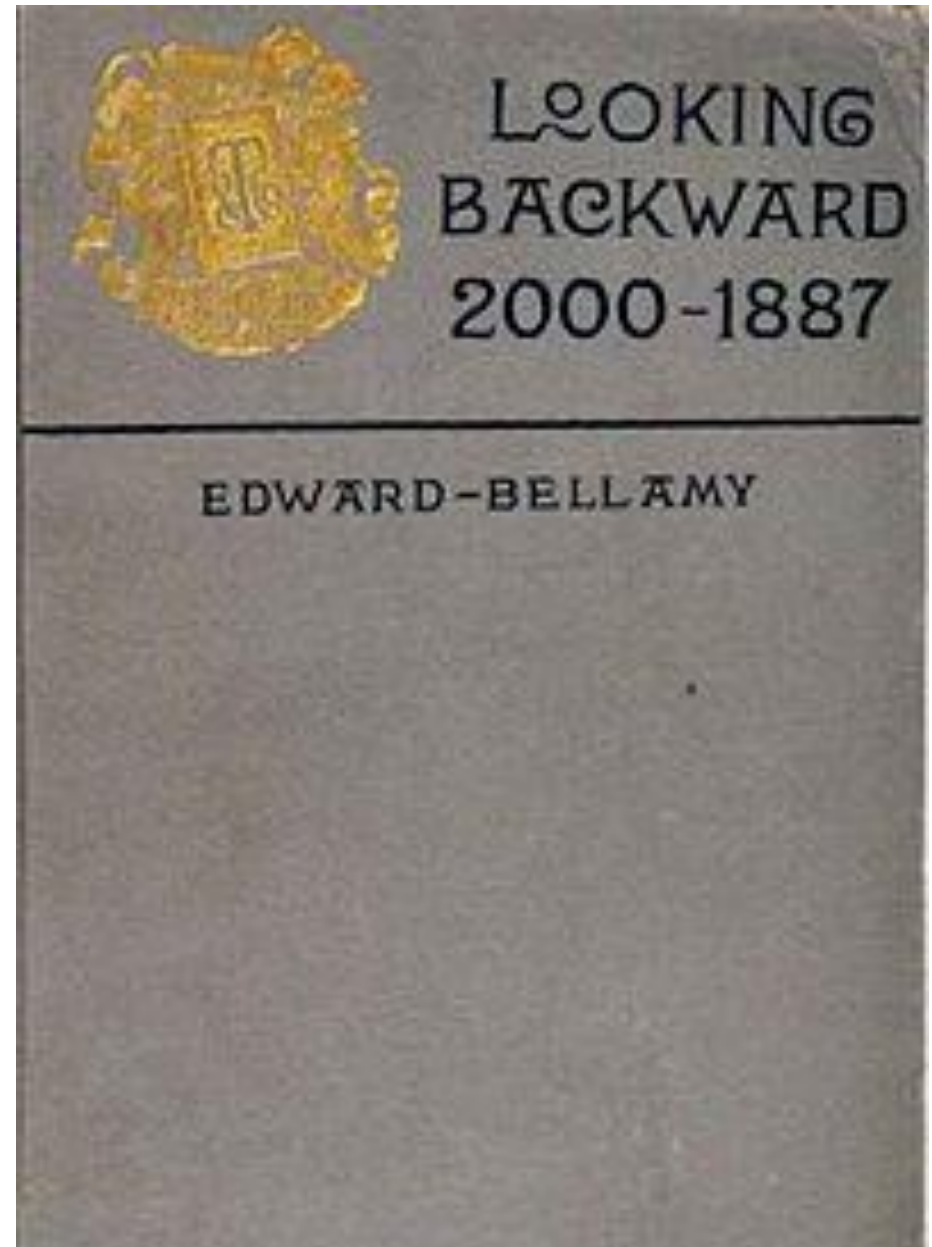
A. Henry George *Progress and Poverty* (1879)

Argued that the source of inequality was rising land prices. They wanted a single land tax and proposed to end monopolies.



B. Edward Bellamy *Looking Backward* (1888)

--extremes of wealth and poverty need to be countered with socialist state free of vicious competition.

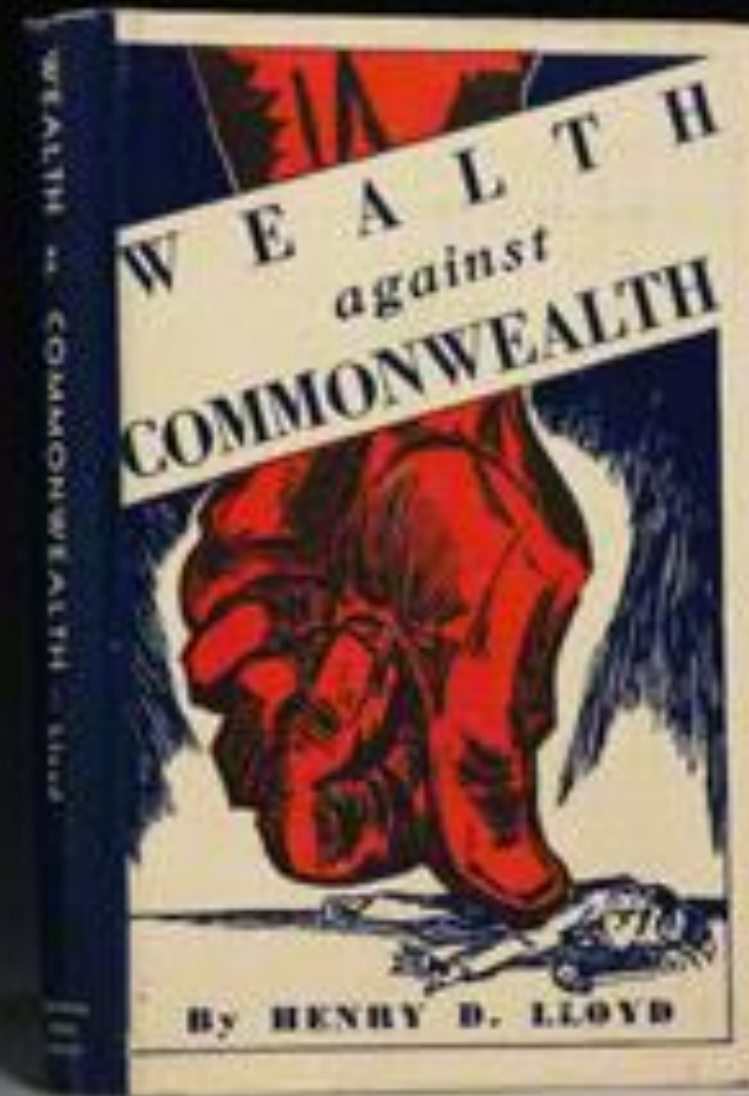


C. Henry Demarest Lloyd

Wealth Against Commonwealth (1894)

--aggression of trusts, particularly Rockefeller's, would lead to economic slavery.

Cooperation with a government owning and operating the means of production would produce equality



IV. New Issues for Labor

A. As machines and new procedures (including assembly line) reduced demand for labor, employers cut costs further by hiring large numbers of women and children

1. **By 1900, 20% of all manufacturing workers were women (up from 11% in 1870)**



By 1900, 13% of all textile workers were younger than 16

B. Working conditions resulted in 25,000 deaths in industrial accidents per year

1. Triangle Shirtwaist Fire (NYC) in 1913 resulted in 146 deaths



<http://law2.umkc.edu/faculty/projects/trials/triangle/trianglefire.html>

The bodies of seamstresses, who jumped from the factory floors of the Triangle Shirtwaist Company to avoid being burned alive, lie outside the building.

2. 72,000 railroad workers killed between 1900 and 1917



C. Court cases

1. In *Lochner v. New York* (1905), Supreme Court ruled that 60-hour work week limit was unconstitutional. If both parties, employer and employee, agreed to longer than 60, then their contract was inviolable

2. In *Muller v. Oregon* (1908), Court reversed *Lochner*, at least regarding women, and limited women's working hours to 10 per day.

41. Consider the growth of rail lines as a metaphor for the Industrial Revolution. At the end of the Civil War, the US had 35,000 miles of rail. By 1900, the US had 193,000 miles. Use example of Lincoln getting 200k bullets to Sherman in Georgia.

