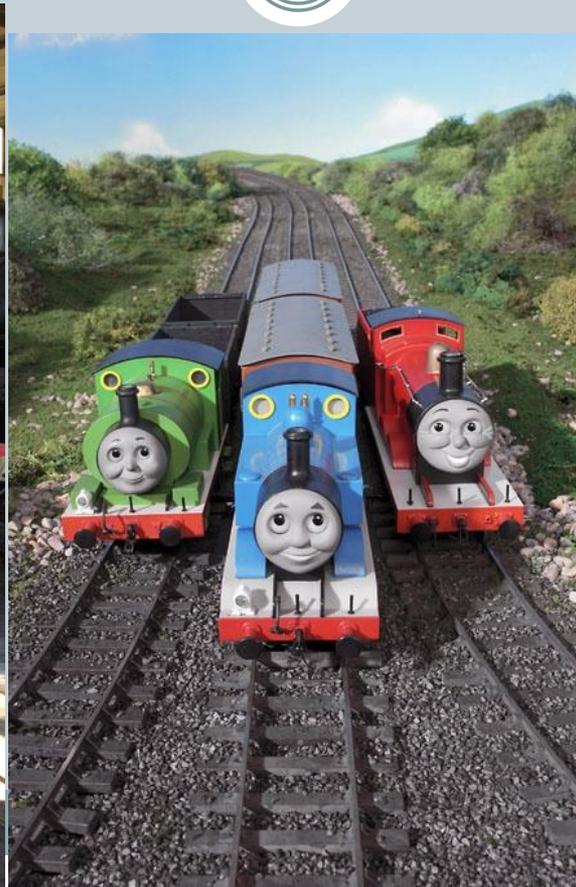


# Railways and Entrepreneurs

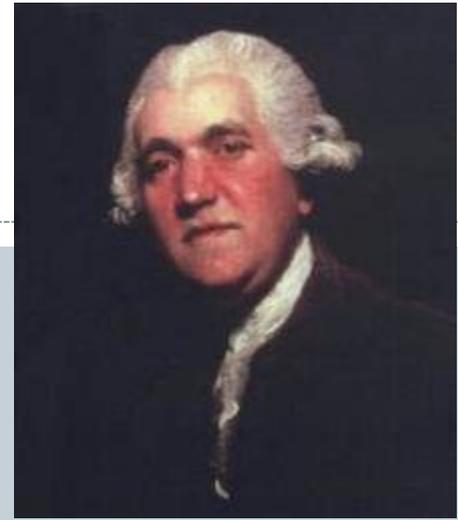


# Trains & Railways



- Railways were around long before trains
- George Stephenson, “father of the modern railroad”
  - Grooved wheels
  - Modern train chimney
    - ✦ “The Rocket”
- The Liverpool and Manchester Railway (1830)
- By early 1850s = over 7000 miles of railway in Britain
- Encouraged urbanization
- Changed people’s perceptions of time and space
  - Trains had to be made affordable – Third Class seating

# Great Entrepreneurs



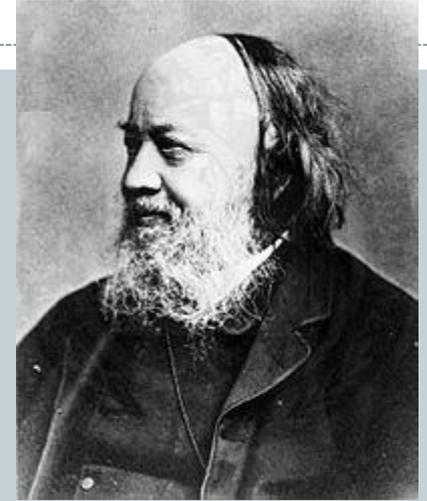
- Efficient management of industry
- Josiah Wedgwood (1730-1795)
  - Born poor and deformed as a child by smallpox
  - Created assembly line for pottery production
  - Created the Wedgwood company
- Robert Owen (1771-1858)
  - Born middle class
  - At 19, was managing over 500 employees
  - Social reformer

# Labor & Social Reform



- **Factory Act (1833)**
  - Children under 9 were not allowed to work
  - Set work-hour limits on child labor
  - Children 9-13 had to be educated for two hours a day
- **Factory Act (1847) = women/children can only work 10 hours a day or less**
- **Mines Act (1842) = no children under 10 or women can work underground**
- **New interest in public health**

# Public Health & Sanitation



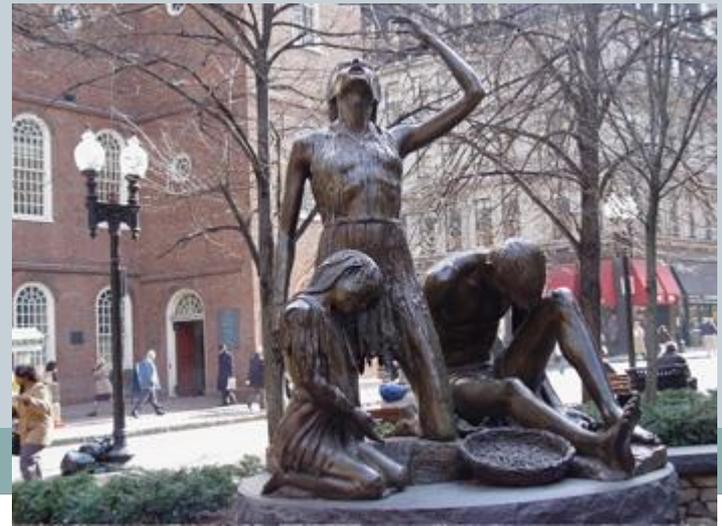
- **Public Health Act of 1848**
  - Creation of local health boards
- **Vaccination Act (1853)**
  - Vaccination was made compulsory in Britain
- **Contagious Diseases Act (1864)**
  - Required VD checks of prostitutes
- **Importance of sewers**
  - Especially in preventing cholera and other disease



# Benefits?



- Progress made in infrastructure and transportation
- 1801-1851 = English population doubled
- Average English resident is making 75% more income
- BUT, what about the differences between agrarian and urban life?
  - The tyranny of the clock?
  - Great Hunger of the 1840s?



# The New Urban Masses



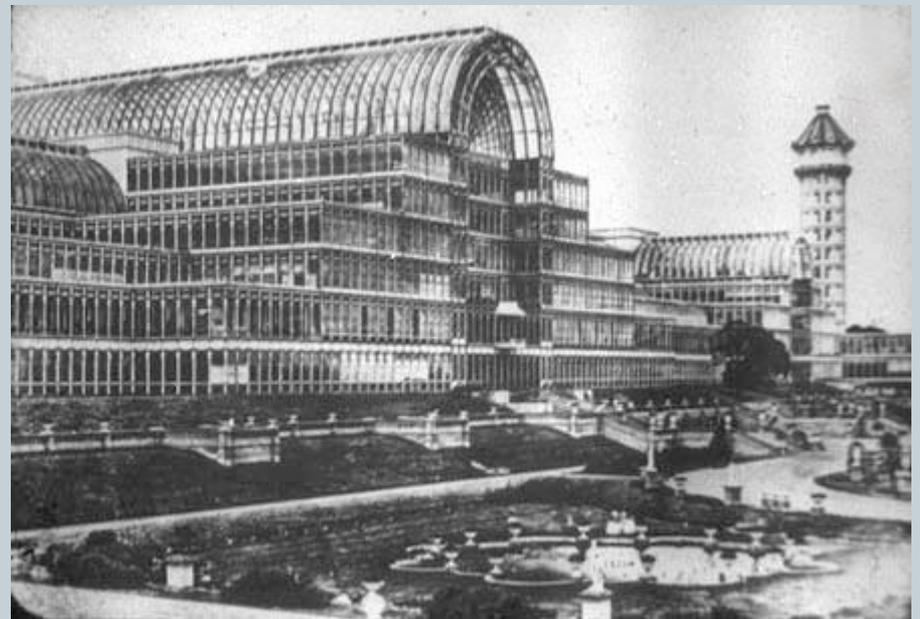
- Decline of the laboring family
- Higher and higher male unemployment
- Normalization of a cash economy
  - Importance of budgeting
- New ways to hurt one's self on the job
- Feudalism is officially dead – capitalism killed it



# Britain First, but Europe Close Behind



- The Crystal Palace Exhibition (May – October 1851)
- Uniqueness of Britain's Industrialization
  - Not really spurred on by the government
  - A long and volatile process



# Case Study: France



- Slow and steady, rather than fast and explosive
- French culture
  - Valued high quality and good taste; love of fashion
- Very slow urbanization
  - 1860s = over 50% of French workers were still employed on farms
  - Less incentive for peasants to give up their land
- Mid-19<sup>th</sup> century = industrialization takes off
  - Largely due to the government funding of a railway network
- Slow population growth

# Case Study: Germany



- German hyper-localism
  - Made railways initially difficult to build
  - Domestic trade heavily favored
- Intra-German Agricultural Problems
  - Prussian Junkers
  - Lack of mobility
- Late to adopt technological change
- The Zollverein (1834) = German customs union
- Late bloomer, but a huge economy . . .



# The Rest of Europe: Economic Problems



- **Lack of Resources**
  - Poland & Naples
- **Geographic Obstacles**
  - Austria & Spain
- **Perpetual Poverty**
  - Russia, Italian States, Spain, and Hungary
- **Illiteracy & Lack of Education**
  - The exceptions of Sweden, Britain, France, and Prussia
  - Problems in Spain, the Italian States, and Russia

