

**STATE-SPONSORED ENTERPRISE:**

**THE DEVELOPMENT OF INTERCHANGEABLE MANUFACTURING  
IN THE FIREARMS INDUSTRY, 1815-1851**

- A. Introduction: the four leading sectors of American industrialization, c. 1790-1850: textiles, steamboats, firearms, and high speed printing/communications**
- B. Challenging the “textile paradigm”**
- C. The London Crystal Palace Exhibition (1851)**
- D. The British Parliamentary “Committee on the Machinery of the United States of America” (1854-55)**
  - 1. Where the committee visited**
  - 2. What it had to say about the textile and steam engine industries**
  - 3. What it had to say about the Springfield Armory, Robbins & Lawrence, and the American firearms/machine tool industry**
  - 4. Origins of the term “American system of manufactures” (1854)**
- E. How did the “American system” come into being?**
  - 1. Thomas Jefferson and the “French connection”**
  - 2. Maj. Louis Tousard and other French engineers in America, 1790s-1800s**
  - 3. The legend of Eli Whitney and interchangeable parts, 1798-1809**
  - 4. The true origins of interchangeable manufacturing in America**
    - a. Simeon North, Middletown, CT: horseman’s pistols (1816)**
    - b. John H. Hall, Harpers Ferry Armory, VA: Hall rifles**
    - c. Hall and North produce interchangeable Hall rifles, 1832**
    - d. Springfield Armory and the U.S. Model 1842 musket, 1844-54**
    - e. Harpers Ferry Armory and the U.S. Model 1841 rifle, 1841-54**
    - f. the Model 1851 Colt revolver**
    - g. the Sharps rifle, c. 1851-1856**

*All the above firearms were made with functionally interchangeable parts – something which greatly appealed to the British committee in 1854*
- F. What were the larger implications of the ‘American system’?**
  - 1. Arms industry morphs into commercial machine tool industry**

**Example: Robbins & Lawrence to Jones & Lamson, Springfield, VT**  
**Robbins & Lawrence to Brown & Sharpe, Providence, R.I.**  
**Colt to Pratt & Whitney, Hartford, CT**

**2. Arms making technology (“armory practice”) applied to other technically-related products:**

**Examples: sewing machines**

**--Wheeler & Wilson (Bridgeport, CT)//Colt & Springfield Armory connections, 1857+**

**--Willcox & Gibbs (Providence, RI)//Brown & Sharpe, Robbins & Lawrence, Springfield Armory, Colt connections, 1858+**

**Example: The Sharps Rifle/Weed Sewing Machine/Columbia Bicycle, Motorcycle, and auto connections (Hartford, CT. 1855-1890s)**

**CONCLUSIONS:**

- 1. “Armory practice” and technological convergence**
- 2. “Armory practice” and the origins of the machine tool industry**
- 3. The army’s patent policy: Springfield’s ‘open door’ policy and technological convergence**
- 4. Connection between the “American system” and Fordist mass production**
- 5. Military enterprise and the role of the state in developing the “American system”**