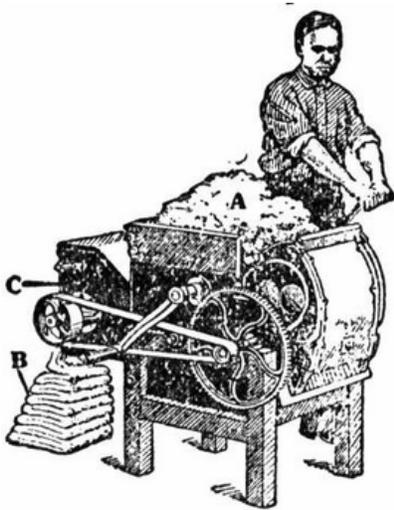


Eli Whitney

Eli Whitney is most remembered for his creation of the Cotton Gin and his development of interchangeable parts. Eli was born on the 8th of December in 1765 in Westborough, Massachusetts. He was the oldest son of a prosperous farming family. Eli operated a nail manufacturing business during the American Revolutionary War. While the business was quite profitable his real desire was to become a lawyer. In order to acquire the necessary funds for school Eli worked as a school teacher and a laborer on farms. Finally the young Whitney entered Yale in the class of 1792 at the age of 27 but he did not have enough money to finish law school.



Eli was offered a position as a tutor in South Carolina. While he was on his way he met the widow of the famous Revolutionary war hero Nathaniel Greene. At her invitation, Eli changed his destination and went to work at her farm in Georgia. While he was there Eli joined forces with Phineas Miller, Mrs. Greene's plantation manager, and developed the cotton gin. The name cotton gin is short for cotton engine. This machine removed the seeds from the cotton boll fifty times faster than hand labor. (See the picture for cotton bolls still on the cotton plant.) Cotton bolls were picked by hand and then needed to be cleaned of seeds. The cotton gin actually saved the cotton industry of the southern United States from failing. Eli obtained a patent for their work but many others violated the patent and created their own versions. At this time in American history patent law was very weak and easily avoided.

Whitney managed to obtain a contract to build thousands of muskets for the United States War Department but he had never built even one firearm. Eli received a small but very important advance payment on the contract. Even though Eli Whitney may be credited with inventing the idea of interchangeable parts for firearms, he did not. That had long since been previously invented by a French Artillery man, Jean B.V. de Gribenauval. Before interchangeable parts, everything was custom made and a part from one firearm, like a trigger, would not necessarily fit in another gun from the same maker.

What Eli did invent became to be known as the American Manufacturing Process System. This system was composed of: 1) the division of labor among workers with a small task for each worker; 2) the use of powered machines; and 3) true interchangeable parts. The result of using these three concepts in a factory was to speed the rate of manufacture and reduce the number of skilled workers needed for each step in production.

Another very important but less well known development by Whitney was the accounting concept known as cost accounting. Cost accounting looks at all the costs associated with making an item. This aided companies to determine their actual costs of manufacturing each product they made so they could set prices properly.

Name: _____

Date: _____

Eli Whitney

Who

What

When



Where

Why

How

Name: _____

Date: _____

Eli Whitney

Multiple Choice Questions

Circle the correct answer.

1. What was the purpose of the Cotton Gin?
 - a. To pick cotton in the fields
 - b. To remove seeds from the cotton boll
 - c. To make cotton strands
 - d. To weave cotton cloth

2. What items did Eli Whitney manufacture as a businessman?
 - a. Nails
 - b. Muskets
 - c. Both a. and b. above
 - d. None of the above

3. Eli Whitney's technique for manufacturing is known as
 - a. The American Manufacturing System
 - b. Interchangeable Parts
 - c. The American Manufacturing Process System
 - d. Division of Labor

4. Eli Whitney did not make much money from his invention of the Cotton Gin because
 - a. He could not mass produce them
 - b. The equipment did not work well enough
 - c. He did not use proper cost accounting
 - d. Other people copied his ideas in violation of his patent

5. You pass the same pencil around the class to be used by each student for a sign-up sheet. This is an example of
 - a. An interchangeable part
 - b. Cost accounting because it saves money
 - c. Division of labor
 - d. None of the above

Name: _____

Date: _____

Eli Whitney

Short Answer Questions

1. Explain what the function of the cotton gin was
2. Why do you think the cotton gin saved the cotton industry?
3. What is a patent? Where does an inventor get a patent? What is a patent supposed to do? If you don't already know, look up what a patent is.
4. Define the three components of the American Manufacturing Process System.
5. Before the American Manufacturing Process System one worker or a team of 3 or 4 workers would build an item like clock or firearm from start to finish. How does the American Manufacturing Process System reduce the number of skilled workers needed?
6. Eli Whitney was a famous inventor yet he worked at a variety of jobs like teacher and laborer. What does this fact say about his persistence?
7. What do admire most about Eli Whitney's life story?

Eli Whitney

Answer Key

Multiple Choice

1. d.
2. c.
3. a.
4. b.
5. c.
6. d.

Short Answer Questions

1. This machine removed the seeds from the cotton boll fifty times faster than hand labor.
2. Individual response. Students may not home in on the fact that the machine cleaned cotton 50 times faster than by hand.
3. A patent is issued by the U.S. Patent Office. It says that an invention is new and protects the inventor from other people copying the idea.
4. This system was composed of: 1) the division of labor among workers to be more efficient; 2) the use of powered machines; and 3) true interchangeable parts.
5. Division of labor means each worker focuses on part of the entire job which reduces the number of skilled workers needed.
6. Individual response
7. Individual response