

Eli Whitney – Cotton Gin

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WHO IS ELI WHITNEY

- Born: December 8, 1765 in Massachusetts
- “Father of American Technology”
- Graduated from Yale College in 1792
- Invented the cotton gin
 - Though his cotton gin was patented in 1794, replicas of his device widespread
 - Didn't profit from his revolutionary machine
- Pioneered “interchangeable parts” system of production





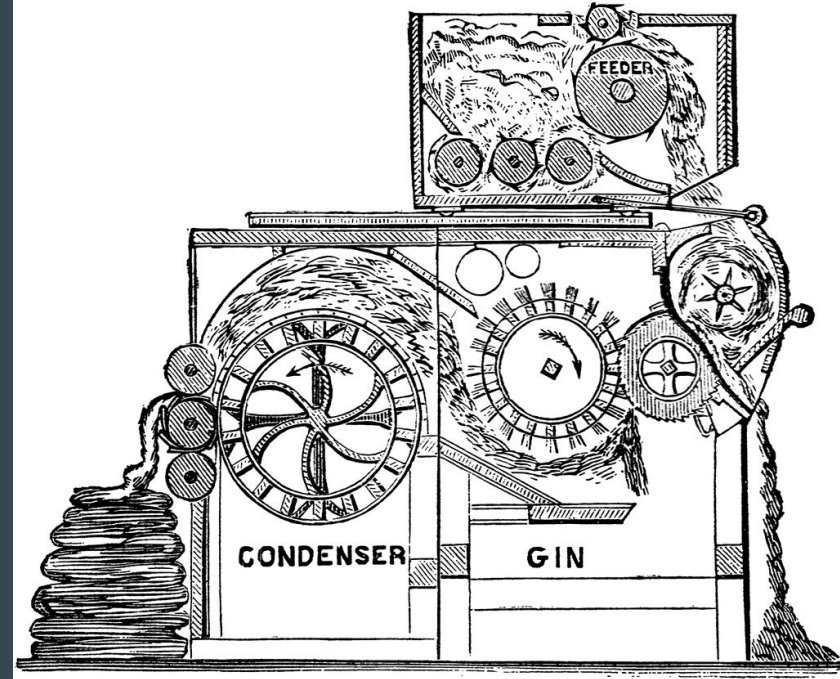
COTTON GIN

- Invented in 1793
- Purpose: separates cotton seeds from cotton fiber
- Made cotton a profitable crop in Southern United States
- Revolutionized the cotton industry in America

HOW IT WORKS

- Machine consists of a cylinder that has small “teeth” attached
- The “teeth” pull the fiber through a grid
- Machine combs out the seeds, leaving the lint fiber

<http://www.eliwhitney.org/sites/default/files/minisites/cotton/patent.html>





POSITIVE IMPACTS

- Farmers were able to plant more cotton.
- Allowed for very quick production.
- Made cotton prices decrease in a tremendous rate.
- Interchangeable parts: made repair and replacement much easier.

NEGATIVE IMPACTS

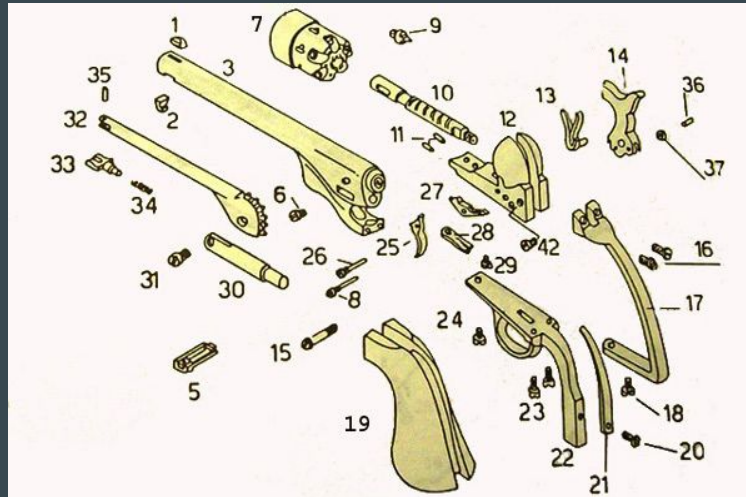
- Slave population grew throughout the country.
 - Mostly in the south.
- The south began to rely on the cotton plant.
- Soil began to lose nutrients.
 - Farmers begin to move west in order to have healthy soil.
 - Native tribes are pushed west.



INTERCHANGEABLE PARTS

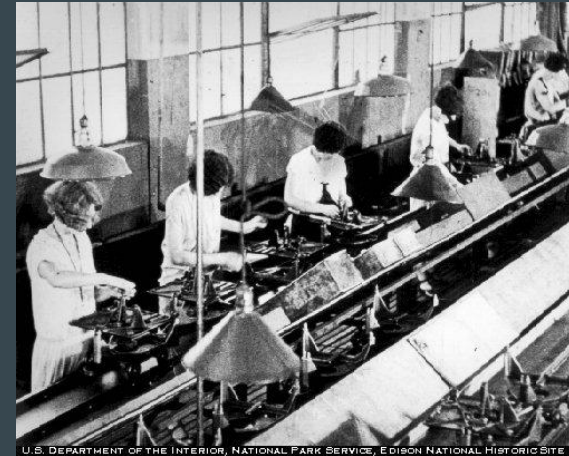
WHAT IS IT?

- Concept: create identical parts that can be easily mass produced and replaced
- Parts can easily be assembled to create various products
- Large numbers of identical parts: low costs and small workforce
- Repair is simple and inexpensive
- Assembly lines



POSITIVE IMPACTS

- Made repair and replacement for parts easier
- Specialization (division of labor): made production quicker and at a relatively lower cost
 - Allowed unskilled laborers to make previously intricate, complicated items (such as muskets)
- Profound effect on development of industrial revolution in the US
 - Led to introduction of assembly lines and mass production
- With mass production, prices of products reduced
- Created new job opportunities for unskilled population



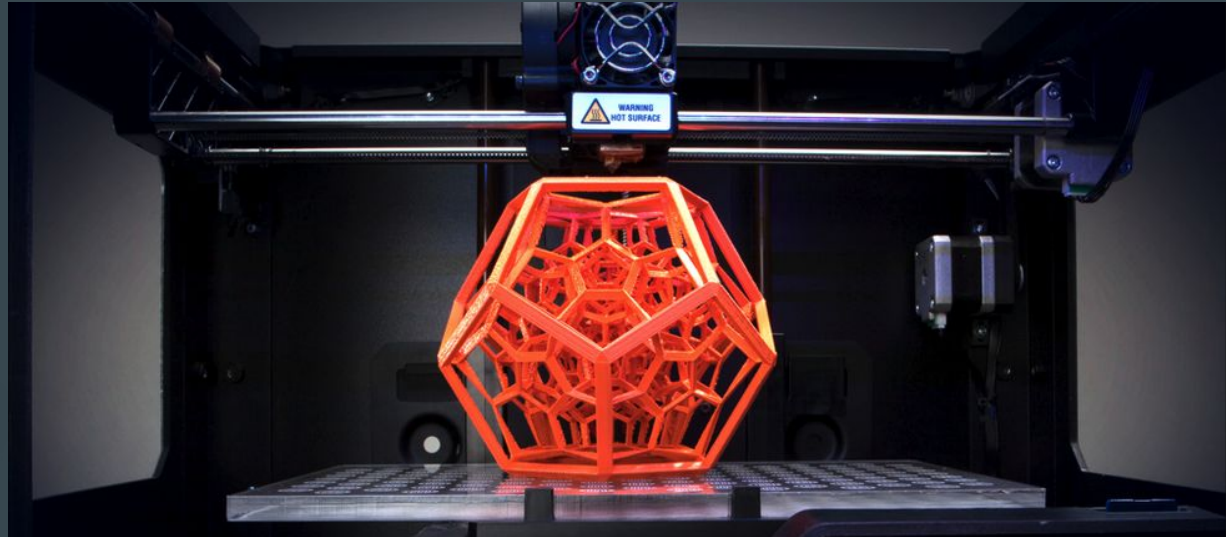
U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE, EDISON NATIONAL HISTORIC SITE

NEGATIVE IMPACTS

- Doesn't have strict rules for workers
 - Many suffered from dangerous and harmful work environment
 - Others suffered long work hours
- With mass production, factories were built
 - Polluted the environment

NEW INVENTION: 3D PRINTING

- “Prints out” 3-D digital models in layers.
- First invented in the 1980s.
- Can be used with a variety of materials.



PRESENT AND FUTURE IMPACTS

- Faulty goods.
- May be used to build future buildings.
- Replacement organs.
- Becoming more accessible to people.



SOURCES

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