

ELI WHITNEY'S COTTON GIN

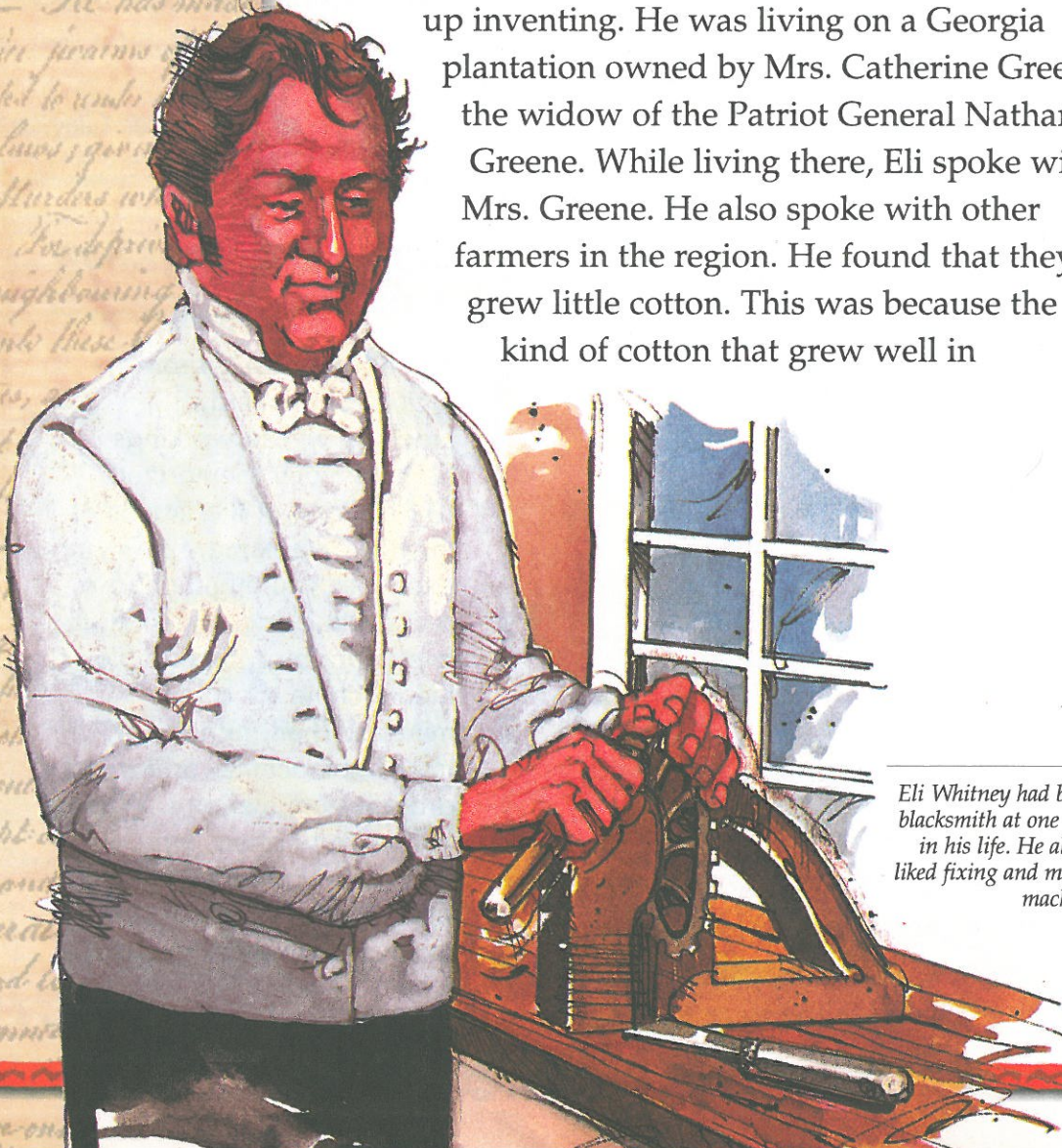
The Importance of Cotton

About three-fourths of all the cotton the South produced was exported, or sent to other countries. Britain received most of the exported cotton. For many years, the money made from exporting cotton was greater than the money made from all other goods exported by the United States!

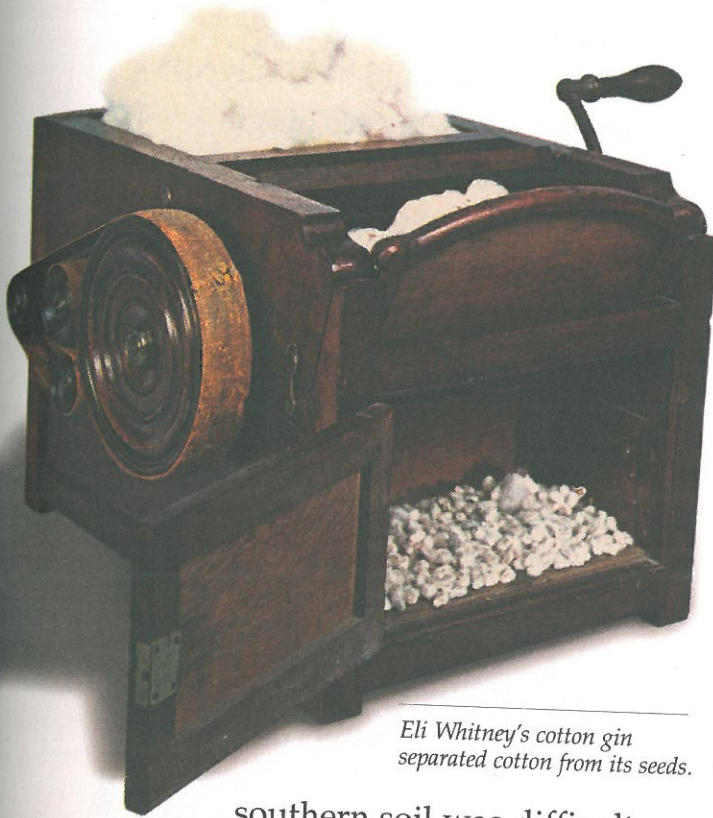
Eli Whitney had always understood machines. When he was just 12 years old, he made his own violin. When he was a teenager, he began to sell nails that he made with a machine he had invented.

A Problem With Cotton

In 1792, when he was about 27 years old, Eli Whitney went South to teach. Instead, he ended up inventing. He was living on a Georgia plantation owned by Mrs. Catherine Greene, the widow of the Patriot General Nathaniel Greene. While living there, Eli spoke with Mrs. Greene. He also spoke with other farmers in the region. He found that they grew little cotton. This was because the kind of cotton that grew well in



Eli Whitney had been a blacksmith at one point in his life. He always liked fixing and making machines.



Eli Whitney's cotton gin separated cotton from its seeds.

southern soil was difficult to clean. It had small, tough seeds that were very hard to separate from the cotton itself. In fact, it took a slave a whole day to separate one pound of cotton from its seeds. For southern farmers, the cost of growing cotton was just too high.

Eli Solves the Cotton Problem

All the people with whom Eli spoke wished there were a machine that could do the tedious, time-consuming task of separating cotton and seeds. Eli wrote to his father about what he had heard. "There were a number of very respectable Gentlemen at Mrs. Greene's," he wrote, "who all agreed that if a machine could be invented . . .

it would be a great thing both to the Country and the inventor."

Eli knew he could invent such a machine. So he set to work. First, he studied how slaves moved their hands as they cleaned the cotton. Then, he began to build a machine that made the same motions as the slaves' hands.

It took Eli only ten days to create his cotton gin. Eli's first cotton gin was cranked by hand. Even so, it separated cotton and seeds 50 times faster than could the hands of a slave!

Now, Eli Whitney's gins could supply Samuel Slater with all the cleaned cotton Samuel's mills could spin. Soon, cotton was no longer a luxury. Instead, with machines doing most of the work, its price dropped, and it became a common cloth.

When Eli first showed Mrs. Greene his cotton gin, they invited many people to come and see the new invention. They realized their mistake when the gin was easily copied, and some people went away and made their own. Someone even broke in and stole Eli's gin one night. As a result, Eli made very little money on his invention.

Eli's Gin Encourages Slavery

With Eli's gin, the demand for cotton exploded. To meet the demand, many southern farmers began to devote their whole plantations to cotton growing. Land that was thought useless was planted with this easy-to-grow, easy-to-harvest, and—now—easy-to-clean cotton.

Until the 1790s, slavery was slowly fading away in the South. That is because southern farmers had no crops that made enough money to pay to keep slaves. Then, Eli invented his gin. Southern farmers realized they had found their cash crop. It was cotton. Soon, great plantations filled up with fields of cotton. These fields depended on slave labor. More and more slaves were bought. Within ten years, the price of a slave doubled! Slavery became entrenched in the South.

Eli Builds 10,000 Guns

Eli Whitney could have stayed angry when others stole his gin invention. Instead, he decided to invent something else. He heard that the government needed guns made. Eli had never made a gun. Still, he wrote a letter to the government. In the letter, Eli said, "I have a number of workmen & apprentices. . . I should like to undertake to Manufacture Ten or Fifteen Thousand Stand of Arms."

The government asked 27 companies to make guns. Most got a contract for about 1,000 weapons. But Eli's contract was different. The government knew about Eli's mechanical skills. So, his contract called for him to make 10,000 guns.

Other gunmakers made their guns by hand. Eli had a different idea. For each part of a gun, he made a metal mold. He also made the machines to make the molds. The metal molds then turned out exactly the same parts—trigger, barrel, and so on—for gun after gun after gun. This meant that the parts were interchangeable—that is, each part of one gun was exactly the same as each

Slaves work in a cotton field.



part of any other Whitney-made gun. Regular workers—not skilled gunsmiths—made many parts, then assembled them into many guns. This method was much faster than making guns by hand. It also was much less expensive.

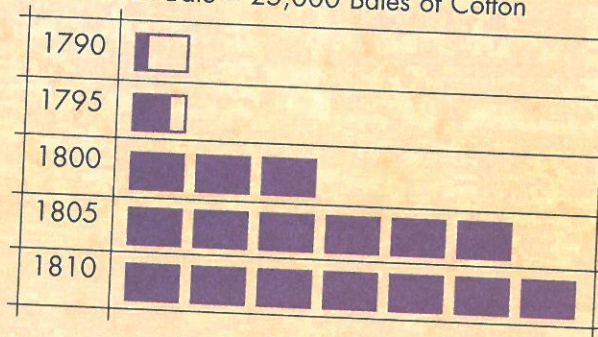
Eli Whitney was not the first to think of using interchangeable parts. However, he is the one who made using them famous. Later, Eli used these same skills to make clocks from interchangeable parts. After that, more people could afford to have a clock in the house.

Show What You Know

This is a pictograph about cotton-growing in the United States. A pictograph is a graph that uses a picture of something to represent something else. In this pictograph, each purple rectangle represents 25,000 bales of cotton.

COTTON GROWN IN THE UNITED STATES

Each Bale = 25,000 Bales of Cotton



Study the pictograph. Then, use it to answer these questions. Circle the correct answer for the first two questions. Write your answer on the lines for number 3.

- In what year did the United States first produce over 25,000 bales of cotton?
 - 1790
 - 1795
 - 1800
- What do you think happened to cotton-growing by the year 1815?
 - More cotton was grown.
 - Less cotton was grown.
 - The same amount of cotton was grown.
- What effect did Eli Whitney have on cotton-growing in the United States?
