

The Cotton Gin: A Seed of Change in the United States

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According to the National Cotton Council, about 16,057,100 bales of cotton were ginned in the United States in 2005 (National Cotton Council). How did cotton become such a big part of the American economy, as well as of American history? Cotton rose to power in 1793, with help from Eli Whitney (see Figure 1 p.8) and his invention, a small, simple machine called the cotton gin (see Figure 2 p. 8) (Yafa 80-2). The cotton gin was important to United States history because of its effects on the economy and its impact on slavery. Whitney's invention caused people of the nineteenth century to proclaim that "Cotton is King" (Yafa 145-6).

The cotton empire began with Eli Whitney, an inventive young man from Massachusetts (Meltzer, Cotton 30). At the age of twelve, he was taking apart his father's watch, and by fourteen he had set up his own nail factory (Yafa 80). After graduating from Yale in 1793, he traveled to South Carolina. Whitney was going to be a tutor as a means of paying off his college education (Yafa 80). This is where he first encountered Catherine Greene, who introduced him to a group of farmers who all had the same thing on their minds – cotton (81). They met to discuss the problem of the sticky green seeds inside the cotton bolls, which were an obstacle the farmers needed to overcome if they wished to profit off of cotton (81). Greene, knowing of Whitney's inventiveness, suggested that he might be able to come up with a solution to this problem. "Gentlemen, apply to my young friend, Mr. Whitney. He can fix anything!" (82). Even though he had never seen cotton in its unprocessed form, Whitney set out to complete this task (Green 45). Ten days after the meeting, he returned and presented the farmers with a rough yet functional model of a machine he called the cotton gin (Yafa 82). How did he come up with such a clever contraption so quickly?

There are several stories which may explain the origins of the gin. One explanation claims that Whitney was inspired by a hearth brush which Catherine Greene picked up while he puzzled over how to build the machine (Green 48). Another account states that Whitney's inspiration came from a cat he saw on a plantation as he walked its grounds (Yafa 82). The cat tried to pounce on a chicken, but its claws only caught feathers, and the chicken got away (82). This supposedly caused Whitney to look at the problem from an entirely different perspective (82). Instead of separating the seeds from the cotton fibers, he thought about removing the fibers from the seeds, like the cat's

claws removed the feathers (82). While both stories are plausible, no one knows which explanation, if either, is correct (Green 48). Whitney never said what inspired him to design the cotton gin as he did (48). Either way, he still managed to produce an incredible machine that would write his name in history books across the country.

The mechanics of Eli Whitney's cotton gin allow it to stand out in history as a remarkable device. The gin itself can be broken down into three stages. First, cotton is put into a mesh sieve called a "hopper" (Yafa 82). Narrow openings going lengthwise make up the mesh (82). These openings allow the cotton fibers to pass through, but not the annoying green seeds which plagued the farmers. Next, the raw cotton is pulled through the mesh by a drum with wire "claws". As the fibers are pulled away by the claws, the seeds are left behind in the hopper (82). Finally, a cylindrical brush combs through the lint that has been separated from its seeds, leaving a fluffy final product (82). The entire device is powered by a hand crank on its side. Although it may seem simple, to this day the cotton gin has never been reinvented, but it has been modified slightly since its invention (82). However, the gin's simplicity had a negative effect on its creator, Eli Whitney.

Whitney patented the cotton gin in 1794, and was greeted with almost immediate popularity (Yafa 70). Unfortunately, his popularity did not grant him wealth. Originally, Whitney did not want to parade his gin around before he received his patent, because he knew how easy it was to copy (Green 49). His fears were justified, as many southern cotton farmers were making their own gins, forgetting about the royalties owed to Eli Whitney under the cotton gin patent (Yafa 71). He attempted to fight back, filing lawsuits left and right, but he was not successful. Whitney summarized his financial failure with the words, "It is better not to live than to live as I have for three years past" (Yafa 71). While Whitney may have not gained wealth from the cotton gin, the economy as a whole did. The cotton gin was exactly what the cotton farmers of the South needed in order to prosper.

Before the invention of the cotton gin, the southern economy was lagging. Many of the crops of the south did not generate money (Yafa 82). Indigo, a blue dye, was not selling as well because of foreign competition from countries such as Britain, which was expanding its indigo

plantations and weakening the American hold on the market (82). Tobacco, another cash crop, was exhausting the farmers' lands (Rothman 46). Cotton was a promising crop, but it could take a slave sixteen months to remove the sticky green seeds from one quarter-ton of cotton (Yafa 82). Those seeds were the only obstacle standing in the way of the farmers, and Eli Whitney was able to overcome it with his cotton gin (Rothman 47). The cotton boom had begun.

Cotton rose to economic prominence rapidly following the invention of the cotton gin. In 1793, the year the gin was invented, the South had produced 487,000 pounds of cotton (Yafa 86). A year later, in 1794, that figure had nearly quadrupled to about 1.6 million pounds (86). Twelve years following the gin's invention, in 1805, the South had produced an eye-popping forty million pounds of cotton, almost eighty-three times the amount that had been exported in 1783 (86). All of those numbers add up to the prominence of the South in supplying cotton to the rest of the world.

Where did the South send all of that cotton? After the cotton was ginned, some of it made its way to the northern manufacturers (Yafa 93). Devices used for spinning and weaving cotton into cloth had been invented in the late eighteenth century, but it wasn't until the invention of the cotton gin that these devices became important manufacturing tools (Meltzer, Slavery 157). The blueprints for many of these machines came from Britain by means of Samuel Slater (Yafa 77). In 1789, Slater, disguised as a farmer, had memorized the blueprints for Arkwright's water frame, a device used in Britain for making textiles (77). He then re-created this machine in the United States, setting the scene for cotton to take the center-stage in American economy (77). However, cotton did not remain solely in the United States.

Not only was the South the only supplier of cotton to American textile mills, but it was also the primary supplier of cotton to Britain (Yafa 86). In 1825, the year of Eli Whitney's death, 171,000,000 pounds of cotton were exported to Britain alone (Green 93). Cotton textiles also took prominence in Europe. When the gin was invented, only four percent of clothing was made of cotton in the United States and Europe (Yafa 78). The other ninety-six percent of clothing was made of other fabrics such as wool, flax, and silk (Green 92). However, one decade later, in 1893, seventy-three percent of clothing in these two areas was cotton (Yafa 78). By that time, cotton was

being manufactured more than any of the other fabrics, and generating a lot of money (Green 92). The economic boom and even the change in uses of fabric can both be attributed to one simple machine, the cotton gin. The economic effects of the cotton gin did not stop at trade, though.

As cotton became more and more profitable, so did the land that cotton was farmed on. In 1808, land that suited cotton was worth three times as much as it was before the invention of the gin (Green 93). As land in the South where cotton could be grown was bought up, farmers began to expand in order to grow cotton (93). Many cotton fields and new plantations sprung up in South Carolina and Georgia as farmers devoted more and more of their land to grow and gin cotton (93). As time progressed, farmers expanded their farming into present-day Texas, Louisiana, Oklahoma, and Missouri (Yafa 122). As more and more land was being used, more people were needed to work the land, which led to the unfortunate expansion of another trade, the slave trade (Green 93).

Prior to the cotton gin's invention, slavery in the United States had become more and more costly. Farmers were not making money off of their crops, and the cost of feeding slaves had begun to cut into their profits (Yafa 82). Slaves were unable to pick enough cotton to provide the money that the farmers needed, making owning slaves a very costly endeavor (Varhola 168). In fact, it is entirely possible that without the cotton gin kick starting the economy, slavery may have died out entirely on its own (Varhola 168). However, after the gin's invention, slaves became a hot item, as they were key in making cotton profitable. Slaves could cultivate, pick, and gin the cotton, providing a noticeable sum for their masters (Berlin xxxi). One farmer in that era, John Palfrey, stated, "My crop on my plantation has a very promising appearance & should Cotton continue at its present price my income from it will be very handsome the ensuing year" (Rothman 177). According to the estimate of another farmer during this time, forty slaves working two hundred acres of land could generate \$10,000 per year (Rothman 50). That is a considerable amount of money, especially in the 1800's. Cotton farming proved to be very profitable. Wanting to earn such amounts, farmers began to buy up slaves, breathing new life into the slave trade.

As cotton was booming because of the cotton gin, the slave trade picked up speed. Slave prices increased with the demand for slave labor (Kolcin 96). Farmers in slaveholding states that

could not produce cotton were quick to sell their slaves to cotton-farming states, boosting the entire southern economy (96). Between 1790 and 1860, around one million slaves were moved from the coastal areas of the United States to the Deep South where cotton was grown (96). That figure does not include the slaves brought across the Atlantic into America. By 1820, there were about 1,533,100 slaves living in the South, and by the 1860's three-eighths of Southerners were slaves (Yafa 129). As the slave population grew, so did the divide between the North and the South over the issue of slavery.

Since the invention of the cotton gin, slavery had been on the rise, which once again brought up the issue of slavery in Congress. While the North and the South were splitting further and further apart each day, they still depended on each other (Yafa 135). The Northerners needed Southern cotton for textile manufacturing, and the Southerners had to get their imports from Northern ports (136). Still, divisions formed quickly, especially in the government. The cotton industry, powered by the cotton gin, was dependent on slavery, and Southern legislators were less likely to compromise on the issue because of the Southern need for slaves (Rothman 49). Two factions rose within the Whig party, the Cotton Whigs and the Conscience Whigs (Yafa 123). The former consisted mainly of Northerners with interests in textile manufacturing and therefore accepted slavery, while the latter was comprised of those who felt that slavery was morally wrong (123). Eventually, this tension over slavery combined with the South's unwillingness to compromise exploded into the Civil War in 1861 (Kolcin 201). Even though there were other factors that fueled the fire of the Civil War, in the end it all came down to the issue of slavery, which came up as a result of one invention, the cotton gin (201).

When Eli Whitney invented the cotton gin in 1793, he did not just help out a group of farmers who needed a way to remove the seeds from cotton (Yafa 81). With one invention, Whitney revolutionized American economy, revitalized slavery, and sparked a civil war. The cotton gin's effects on the history of the United States are unbelievable. As the English historian Thomas Macaulay put it, "What Peter the Great did to make Russia dominant, Eli Whitney's invention of the gin has more than equaled in its relation to the power and progress of the United States" (Yafa

77). Macaulay could not have been more accurate with his statement. The cotton gin tremendously impacted American history, and without it, history books today might be very different. Would slavery have died out on its own (Varhola 168)? Would there have even been a Civil War? It is impossible to ever truly know how history would have progressed if Americans had never struck “white gold” with the cotton gin (Yafa 88).



Figure 1 – Eli Whitney (Encarta)



Figure 2 – Cotton Gin (Encarta)



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