

## A Revolution in England

In the 1700s, England was a powerful nation. It had colonies around the world. The production of cloth—the textile industry—was part of what made England rich.

At that time, most cloth was wool or linen. Cotton cloth was rare. But in the mid-1700s, cotton cloth became very popular. Suddenly, the **demand** was greater than the **supply**. Many people wanted cotton cloth. Home spinners and weavers couldn't make enough.

The need to produce more cloth in less time inspired some inventors. James Hargreaves made the first big breakthrough in the 1760s. He invented a machine called the spinning jenny. As an operator turned a hand crank, the machine pulled long rolls of cotton into thread. The first spinning jenny allowed a spinner to spin several threads at one time. Now, one spinner could make a lot more thread which could then be woven into a lot more cloth.

A few years later, another Englishman, Richard Arkwright, changed cotton manufacturing forever. He invented a spinning machine operated by moving water. Arkwright called the new machine a water frame. Now, spinners could spin even faster.

Then, in 1785, a power loom was invented for weaving cotton cloth. The loom operated on water power, too. Weavers could now weave more cloth much faster.

These new machines were too large to use at home. They had to be powered by the great waterwheels that ran mills. Soon, spinning mills and weaving mills were built along England's waterways.

People who had once worked at home went to work in mills. Many of these workers were women and children. No longer could they set their own schedules. No longer could they work at their own pace. Mill owners were in charge.

Mill workers print colored patterns on cotton cloth.





## The American Dilemma

The American Revolution ended in 1783 with the signing of a peace treaty between Britain and its former colonies. The 13 new states were free from British control. Many people in America wanted the country to grow quickly. They thought that the way to do this was to develop manufacturing.

How was this to be done? The United States had no mills like the ones in England. It did not have the English machines. How could American business leaders get the machines they needed? How could they learn the new ways of making textiles?

The British government did not want any **competition** from the United States. So, it passed laws making it illegal to send textile machinery or plans for the machinery out of Britain.

How would Americans bring the needed **technology** to the United States? The answer lay in the memory of one man.

## Samuel Slater's Incredible Memory

Samuel Slater spent his boyhood in the English countryside. It was here that Richard Arkwright had built the world's first water-powered textile mills. At the age of 14, Samuel signed on as an **apprentice**, or person learning a trade, to the owner of a local textile mill. He worked there for almost seven years.

Young Slater quickly understood the mechanics of the new machines. Mill owners then had to make all of their own machinery. Slater learned how to design, build, and operate all of the machines.

Soon after his apprenticeship ended, Slater decided to go to America. He had learned that Americans were paying good salaries to Englishmen who could run the new textile machines. He knew that he could build and run the Arkwright machines. He had the information in his head. Disguised as a farmer, Samuel Slater set out by ship for America in 1789.

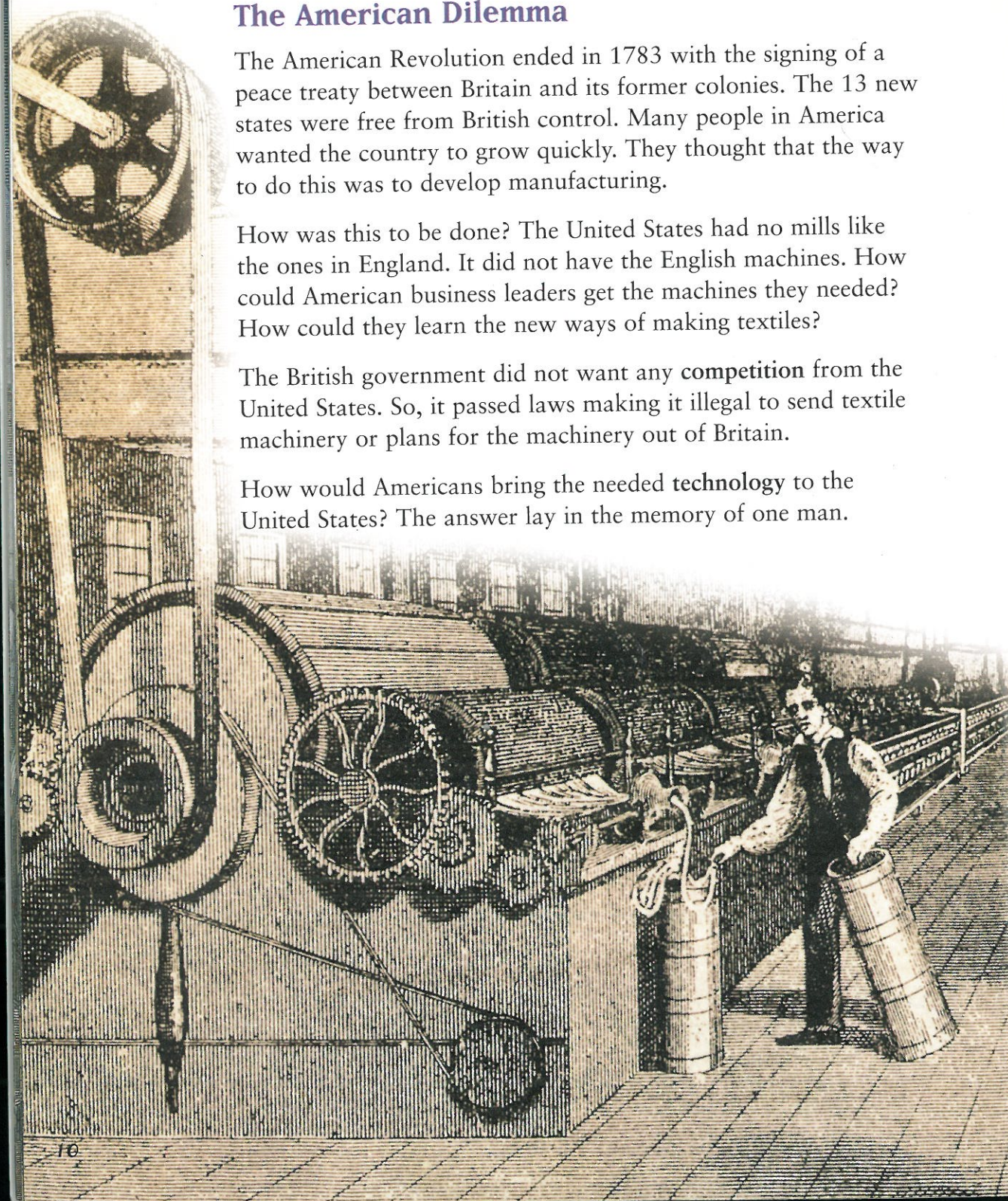
▼ Samuel Slater



### Voices from America

"I understand you taught us how to spin, so as to rival Great Britain in her manufactures; you set all those thousands of spindles to work."

—President Andrew Jackson to Samuel Slater





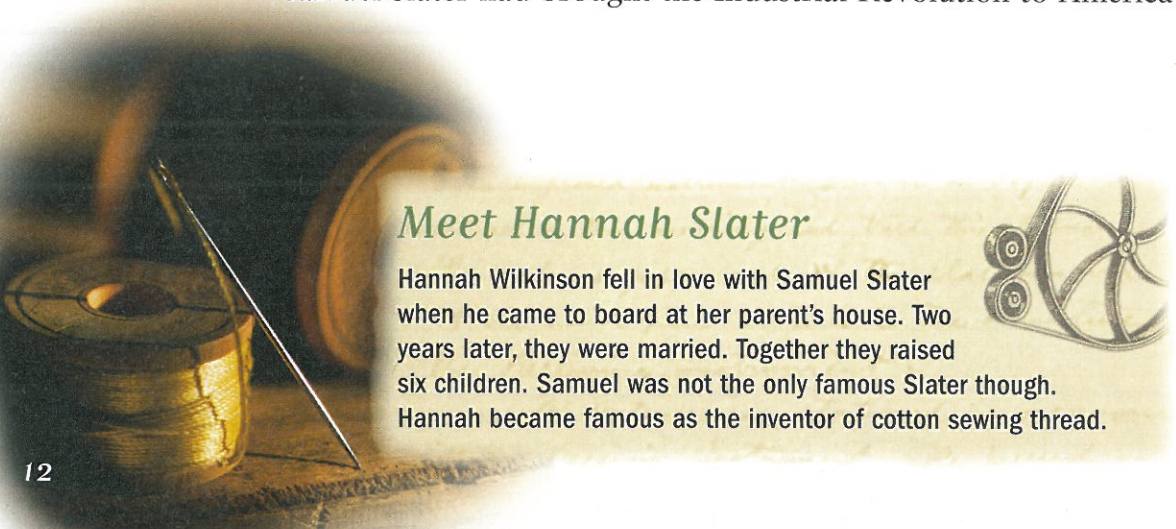


Soon after his arrival, the young Englishman wrote to Moses Brown. Brown was a textile manufacturer in Rhode Island. Like others in the Northeast, Moses Brown wanted to copy the English ways. Slater told Brown that he could build the machinery necessary to set up an Arkwright mill.

In January 1790, Samuel Slater reached Pawtucket, Rhode Island. It was along the banks of the Blackstone River. The river would provide water power. Slater set to work.

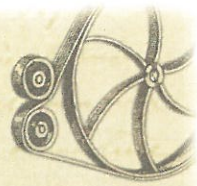
It took a year of hard work and 16-hour days. Skilled woodworkers and ironworkers helped Slater. He was able to re-create two Arkwright water frames. Within a month, Slater had nine employees at work in the mill. Most of them were children. They made the first cotton thread ever spun automatically in the United States.

Samuel Slater had brought the Industrial Revolution to America.



### Meet Hannah Slater

Hannah Wilkinson fell in love with Samuel Slater when he came to board at her parent's house. Two years later, they were married. Together they raised six children. Samuel was not the only famous Slater though. Hannah became famous as the inventor of cotton sewing thread.



## The Lowell Experiment

Francis Cabot Lowell was very excited. Visiting England in 1810, he saw the new power looms turning out cotton cloth by the mile. Francis Lowell was a practical man with a good imagination. Why not put *all* of the steps in making cotton cloth in one place—from cleaning raw cotton to finishing the cotton cloth?

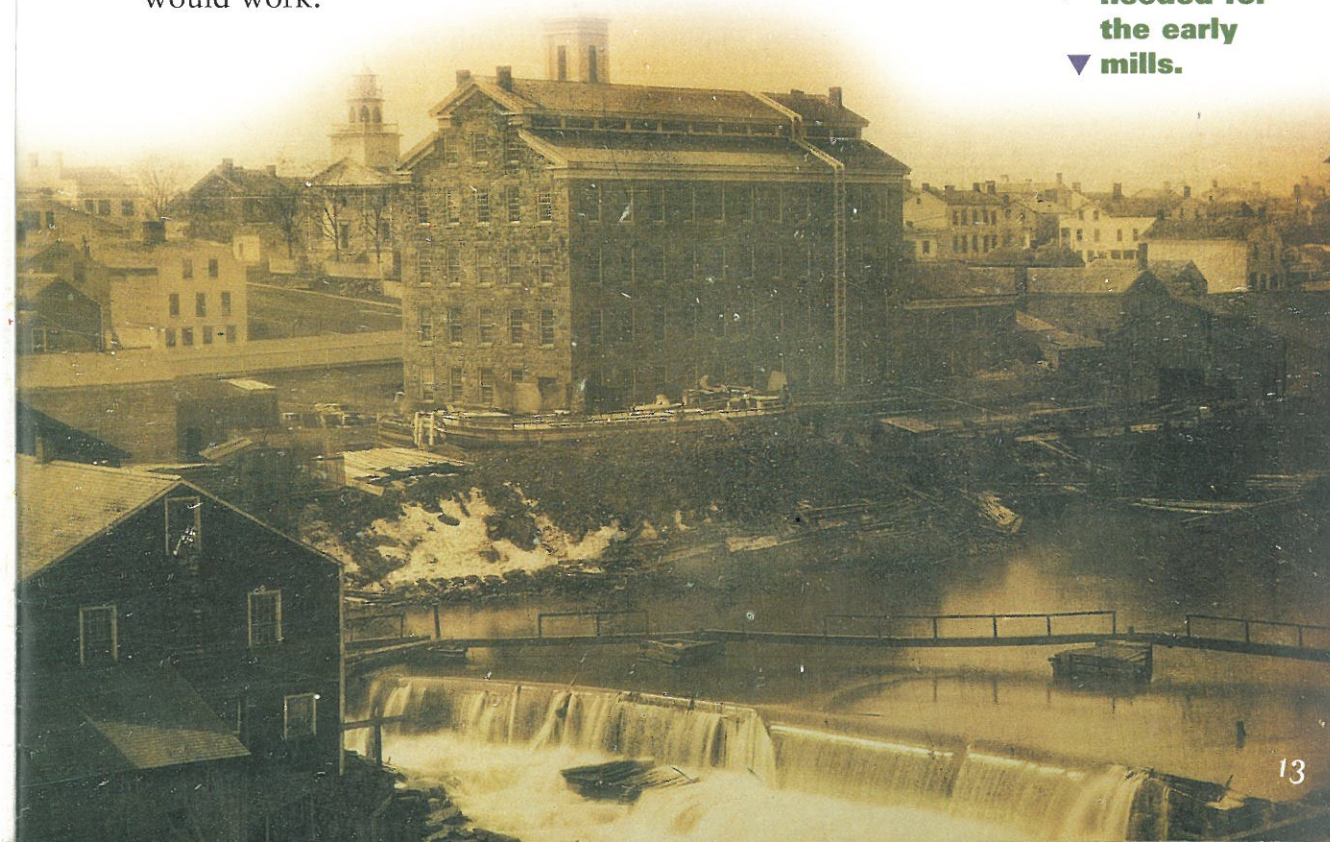
This was a revolutionary idea. Up to now, spinners and spinning mills had to send their thread to weavers. Often, the weavers worked at home on hand looms. If Lowell could control all of the steps in making cloth, he would be very successful.

America had plenty of raw cotton. Its growing population wanted more and more cotton cloth. New England had water power. It had spinning mills. Francis Lowell knew that his idea would work.



### Chapter 2

**Waterfalls provided the power needed for the early mills.**





## Mill Towns

Francis Lowell put his plan into action. He raised money from his family and other **investors**. Then, he built a small mill along the Charles River in Waltham, Massachusetts. A 10-foot waterfall provided the power to run the mill's machines. The Waltham mill was the first mill where all the steps in producing cloth—from raw cotton to finished material—were done under one roof using machines.

By 1815, the Waltham mill was a success. Lowell and his partners wanted to build their business. The company found just the right spot in a tiny Massachusetts town, where two rivers met. However, before the new mill could be built, Francis Lowell died. His partners completed the mill. They renamed the new mill town Lowell, in his honor.

In no time at all, Lowell grew from a sleepy little town into a busy industrial city. Mill after mill was opened along or near the rivers that powered the mills. By the 1840s, Lowell mills produced almost one million yards of cloth every week.

## Mill Girls

Lowell was booming. In mills along the rivers, people and machines were turning cotton into cloth. When the factory bells rang at 5 A.M., workers poured into the mills. Ten-year-old Harriet Hanson was among them.

Like the city of Lowell, Harriet's life was changed forever by the cotton mills. When she turned ten, Harriet pleaded with her mother to be allowed to work at the Tremont Mill. She wanted to earn money like the other girls. So, Harriet left school and went to work at the mill. Like everyone else, she worked a 14-hour day, from 5 A.M. to 7 P.M. Workers had only a half-hour break for breakfast and another half hour for supper.

Harriet Hanson was a mill girl for 13 years. Later, she wrote about her experiences in a book called *Loom and Spindle, or Life Among the Early Mill Girls*.

**"The Bobbin Girl,"** an engraving by Winslow Homer





## Lowell Life

Children like Harriet worked in the mills. But most of the workers were single women between 15 and 30 years old. The women and girls usually stayed in the mill towns for about three years. Then they left to marry, return home, or travel to the West.

### Voices from America

"I can see myself now, racing down the alley, between the spinning-frames, carrying in front of me a bobbin-box bigger than I was.... We were paid two dollars a week; and how proud I was when my turn came to... write my name in the paymaster's book."

—Harriet Hanson

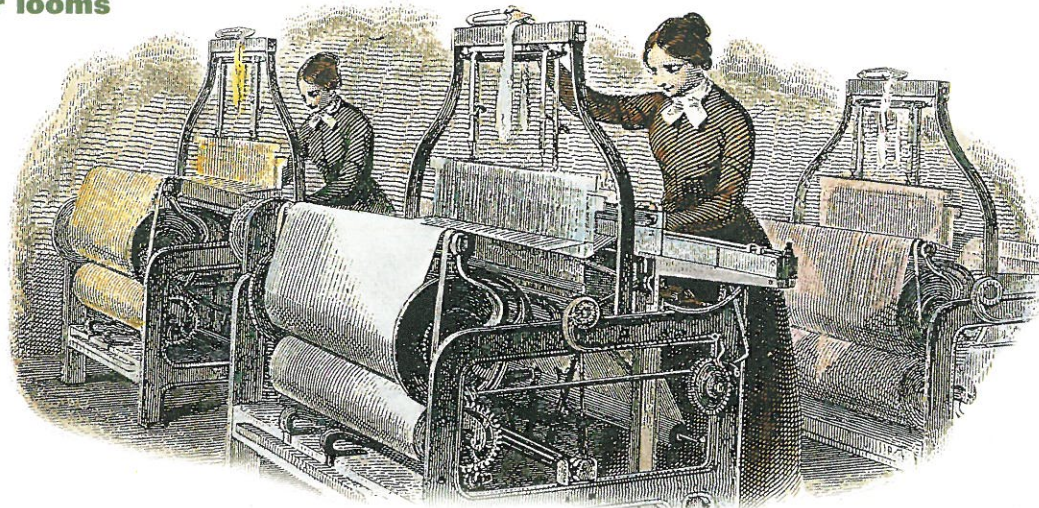
Before this time, most girls worked for their families without pay. Now, they had jobs that paid wages. For the first time, women and girls could earn money for their work.

Mill towns offered young women new opportunities. The days were long and the pay was low, but for many of the women, mill work was a good experience.

Life for the mill girls was not all work. After their long days, they went home to special boardinghouses. There, widows like Harriet Hanson's mother, watched over them. They made sure the girls obeyed the strict rules:

- home by 10 P.M.
- church attendance every Sunday
- chaperones, usually the widow running the boardinghouse or an older girl, present whenever a gentleman came to call.

### Mill girls operating power looms



In spite of the hard work and the rules, the mill girls found time for friendships and for fun. Each boardinghouse was like a village. The girls talked. They watched out for one another. They helped each other.

For girls from small towns or farms, Lowell was an exciting place. They met other young women from all over New England. They went to lectures, poetry readings, and political meetings. There was even a magazine, *Lowell Offering*, that published their poems and stories. For the mill girls, working in Lowell seemed like a new world.

