National Park Service
U.S. Department of the Interior

Rock Creek Park
Washington, DC

Peirce Mill

Peirce Mill is a witness to a bygone era. It is the last of its kind, the sole survivor of at least eight mills that once lined the banks of Rock Creek in the area that became Washington, D.C. Built when the nation was largely rural, it represents a time when American technology was focused on improving the production, processing, and transportation of agricultural goods. The best technological innovations of the early 1800s were put to work here. With the power of water and the labor of free and enslaved people, Peirce Mill turned grain of nearby farms into flour and feed that was shipped throughout the nation.

Origins

Peirce Mill was built by Isaac Peirce and his stonemason son, Abner. Isaac Peirce was a Quaker who left Pennsylvania in the 1780s to seek his fortune in Maryland. He gained experience building and repairing mill machinery for Abner Cloud, who operated a nearby mill on the Potomac River. In time, Peirce married Cloud's daughter, Betsy, and bought a 150-acre tract of land along Rock Creek that included a mill. In the 1820s, using blue granite stone quarried in the nearby Broad Branch area, Isaac and Abner Peirce built the mill known today as Peirce Mill. As the property passed to Abner Peirce and then to his nephew Pierce Shoemaker, the family's commercial enterprise grew. Eventually, it included a sawmill, distillery, nursery, and other agricultural enterprises, operating on land that stretched from today's National Zoo north toward the Maryland border. The operation also reflected the society of the time. Just before the Civil War, the Peirce and Shoemaker family held 32 people in slavery, who farmed and performed other tasks on the estate.

However, by the 1870s, changes taking place in the milling industry had begun to affect Peirce Mill. Washington was also experiencing competition from other cities, such as Baltimore and Richmond, which had better transportation networks.

By 1880, "new process" milling–in which a single grinding was replaced by a two-step process–had become popular, as it produced a white flour that was in great demand. Larger, more efficient mills equipped with steel rollers instead of millstones were being constructed, and steam began to replace waterpower. By 1890, the entire milling industry was beginning to concentrate in the American Midwest. It was closer to where grain was being intensively cultivated, and the location allowed the industry to operate on a very large scale with lower costs. Water mills in many areas of the country were no longer commercially viable.

In 1890, Congress established Rock Creek Park, and two years later the Federal Government condemned the Peirce Mill property.

But that wasn't the end of the story. Peirce Mill continued to operate commercially until 1897, when it suffered a major breakdown. A few years later, the government began leasing the building to private operators for use as a teahouse and restaurant, and the machinery and waterwheel were removed. In 1933, Rock Creek Park was incorporated into the National Park Service. The next year, Secretary of the Interior Harold Ickes suggested that Peirce Mill be restored for visitors as part of depression-era improvements in Rock Creek Park. During this restoration–which was one of the earliest historic preservation efforts undertaken by the National Park Service–the waterwheel and interior machinery were rebuilt, and the old millrace was cleaned out and repaired. Two years later the mill resumed operation, and during World War II, it produced flour for use in government cafeterias. But in 1958, the National Park Service officially suspended operations because of continued machinery breakdowns, the inability to find trained millwrights to maintain the machinery, and unreliable water supply to the wheel. National Park Service planning for the second restoration began in 1967, and Peirce Mill was opened to the public three years later.

In 1993, the mill's main shaft broke and the machinery lay idle for seven years. In 2011, the National Park Service and the Friends of Peirce Mill completed a project that rehabilitated the mill and returned the surrounding landscape to its historic appearance.

Information

Peirce Mill is in Rock Creek Park near the intersection of Beach Drive and Tilden Street, NW. Peirce Barn has exhibits about mills of the Rock Creek Valley and the Peirce Estate. For visiting times, and for special programs and group reservations, call or visit the park website (see information below).

Rock Creek Park is a unit of the National Park System. Visit www.nps.gov to learn more about national parks and National Park Service programs in America's communities.

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Technological Innovation

For centuries mills had relied on the miller's strength and that of his helpers. A major change in the industry occurred in 1795, when a young miller from Delaware, Oliver Evans, wrote a book—The Young Mill-Wright And Miller's Guide—that revolutionized milling. Evans patented numerous labor-saving devices, including bucket elevators and a "hopper boy," which greatly increased productivity. From the time the grain was poured into the receiving hopper until dry, clean flour dropped into the holding bins, machinery did all the work. In the 1820s, the Peirce family built the existing mill on this property and utilized Evans machinery. It is not known with certainty how many of these devices were actually incorporated into Peirce Mill during its time of commercial operation, as the majority of the mill machinery today dates back to the 1930s reconstruction. But it is clear that Peirce Mill represented the height of technology during the mid-1800s, a testament to Oliver Evans' innovations.

Business was usually brisk at Peirce Mill, especially during the 1860s. Often as many as 12 wagons a day loaded with wheat arrived for grinding. A miller with a helper or two could grind more than 70 bushels a day on each set of buhrs, or millstones.

Today there are three pairs of millstones at Peirce Mill. All the millstones here measure about 4 ½ feet across and weigh about 2,400 pounds. A miller could not properly operate his mill without the help of the stone dresser. About every three weeks, a stone dresser with his pick-like millbill sharpened the furrows and raised areas of the running and bed stones. Without a skilled stone dresser, a miller was unable to produce the finest ground flour, which was prized for its baking qualities.

Adjusting the distance between the stones was the most critical operation the miller performed. The runner stone, balanced on a spindle, revolved at about 125 revolutions per minute a fraction of an inch above the bed stone. An experienced miller could tell by rubbing some flour between his fingers if the stones were properly positioned and thereby producing the highest grade of flour possible. If adjustments were needed, they could be made easily.

Following the Grain

1. Grain, usually wheat or corn, goes into the receiving hopper and drops down a chute to the elevator in the basement.

2. An elevator lifts the grain from the basement to the top floor.

3. The elevator dumps the grain into the rolling screen where it is cleaned. A double mesh screen separates dirt and other foreign objects from the grain.

4. After it has been cleaned, grain falls into storage bins directly above the millstones.

5. From the storage bins grain falls into a hopper that sits above the millstones. The shoe beneath the hopper regulates the flow of grain onto the bedstone.

6. The grain that falls onto the bedstone is cut – not ground or crushed – by the rotating (top) running stone.

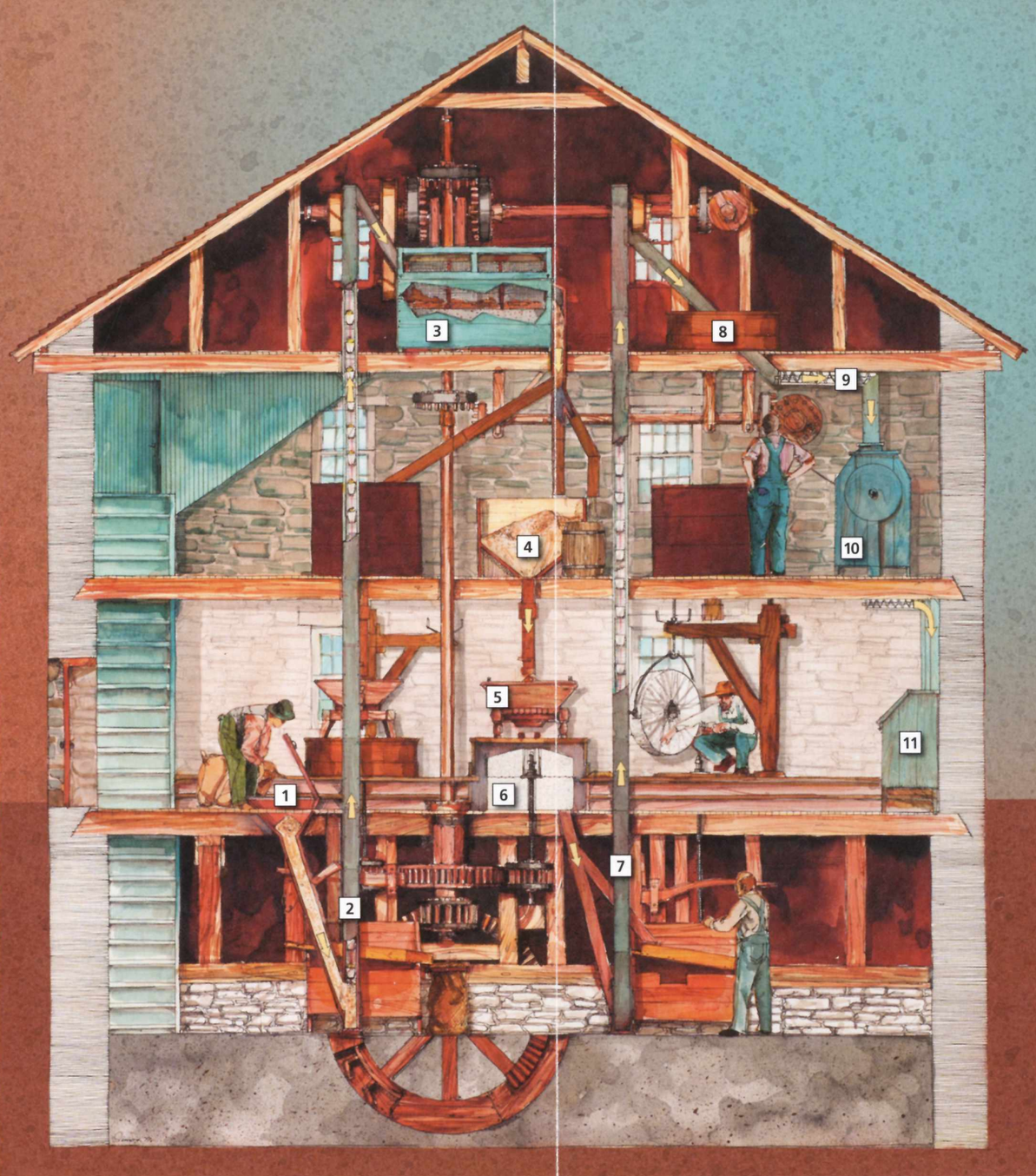
7. The grain is now a warm and moist meal. The meal falls through a chute into the basement where a different elevator picks it up and carries it to the top floor.

8. The elevator brings the meal to the hopper boy where the meal is cooled and dried.

9. Cooler drier meal drops into an auger which continues to dry the meal while moving it to the head of the bolter.

10. The revolving bolter's screen has fine and medium mesh. Flour falls through the finest mesh. Middlings, bran flakes with some flour particles, pass through the medium screen. Bran falls out the end.

11. The flour, depending on its fineness drops into different holding bins and is later loaded into barrels.



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