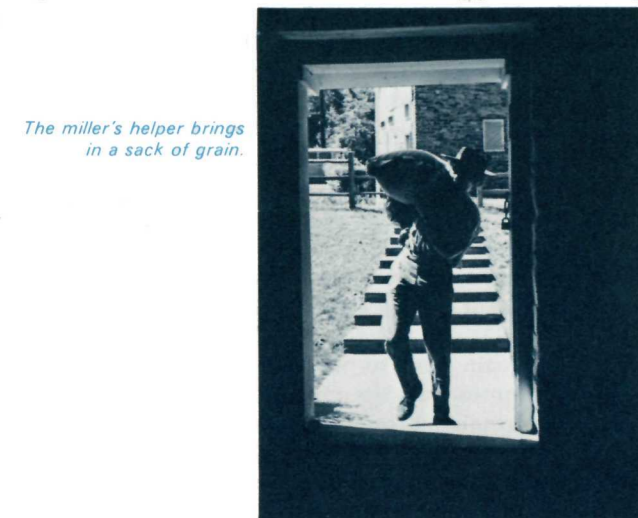


Making sure the millstones are properly dressed is an important part of the miller's job.

There are three pairs of millstones at Peirce Mill today, as in the past. Two pairs are original, and they are probably the oldest parts of the present machinery. They came from Europe, perhaps from France. These stones were so valuable that they were often used only for the grinding surface, the rest of the millstone being built up of plaster for added weight. All the millstones here measure about 4½ feet across, the standard size for this type of mill.

A miller could not properly operate his mill without the help of the stone dresser. Oliver Evans suggested dressing



The miller's helper brings in a sack of grain.

the millstones as often as twice a week, since sharp stones would cut and grind the grain with little pressure. Because finely ground flour was prized for its baking qualities, a stone dresser often came to Peirce Mill. With his pick-like "millbill," he chipped away at the runner and bed stones, deepening their furrows and roughening the raised areas.

The distance between the running stones was probably the most critical adjustment in the entire machinery. The

runner stone, balanced on a spindle, revolved at about 100 revolutions a minute a fraction of an inch above the bed stone. The miller could adjust this space with a lever. As the grain dropped into the eye in the center of the runner stone, it was cut rather than crushed and gradually pushed to the outside edge of the stones. Emerging damp and warm, the meal fell into an elevator and was carried to the hopper-boy on the third floor for cooling and drying.

After grinding, the product was bagged (or barreled) and weighed. Millers never enjoyed a good reputation, for a clever operator could easily scrape off more than law and custom allowed. In the District of Columbia, millers worked under laws originally enacted in colonial Maryland in 1704 "for the prevention of the abuse frequently committed by persons keeping water mills, by taking excessive toll . . ." Millers could keep no more than one-sixth of every bushel of corn ground, regardless of the quantity, and no more than one-eighth of every bushel of wheat. A miller found guilty of exceeding these limits was fined 1,000 pounds of tobacco, half of which went to the informer. Later the amount that the miller could keep was changed to one-eighth of every bushel and the penalty to \$50 for each offense, with the informer still receiving half.

Business was usually brisk at Peirce Mill, especially during the 1860's, and a one-eighth share of the meal probably kept the millers satisfied. Often as many as 12 wagons a



Filling the hopper with corn to be ground.

day came with corn, wheat, buckwheat, and rye for grinding. A miller with a helper or two could grind more than 70 bushels a day on each set of buhrs. There were other flour mills along Rock Creek and in Georgetown, some bigger and some smaller than Peirce Mill. Washington's fast growth assured ample business for both local farmers and millers alike.

In 1890, Congress authorized the establishment of Rock Creek Park, and 2 years later the Federal Government condemned the Peirce Mill property. After the mill ceased functioning in 1897, it served as a public teahouse until the 1930's. During this time the structure underwent several modifications.

In 1934, Secretary of the Interior Harold Ickes suggested that Peirce Mill be restored for visitors as part of a general program of depression-era improvements in Rock Creek Park. The water wheel and interior machinery were rebuilt, the more recent improvements removed, and the old millrace cleaned out and repaired. Two years later the mill resumed operation, and visitors could buy sacks of cornmeal and whole wheat flour, ground as they watched. It was a romantic state that lasted several years, until the machinery broke down again.

Today visitors can once more see a largely complete water mill in operation. National Park Service planning for the second restoration began in 1967, and Peirce Mill was opened to the public 3 years later. Sacks of cornmeal and whole wheat flour ground at the mill are on sale as Peirce Mill again comes alive with the sights, sounds, and smells of the 19th century.

Peirce Mill today represents the rural society and economy of America in the 1820's when man supplemented his own strength with that of domestic animals and with the natural forces of wind and flowing water. Time and technology have taken a heavy toll of the old water mills.

Newer mills and more efficient methods, using steam to power the machinery, could produce fine, white flour faster and cheaper. Better able to meet the demands of a growing capital city, they gradually drove Peirce Mill and others like it out of business. Peirce Mill is truly a benchmark to gauge the changes that have taken place in Washington and to measure the distance between yesterday and today.

For Your Safety

Do not allow your visit to be spoiled by an accident. While every effort has been made to provide for your safety, there are still hazards which require your alertness and vigilance. Exercise common sense and caution.

Administration

Peirce Mill, administered by the National Park Service, U.S. Department of the Interior, is in Rock Creek Park near the intersection of Beach Drive and Park Road. A park manager, whose address is Rock Creek Headquarters, 5000 Glover Road NW, Washington, DC 20015, is in charge.

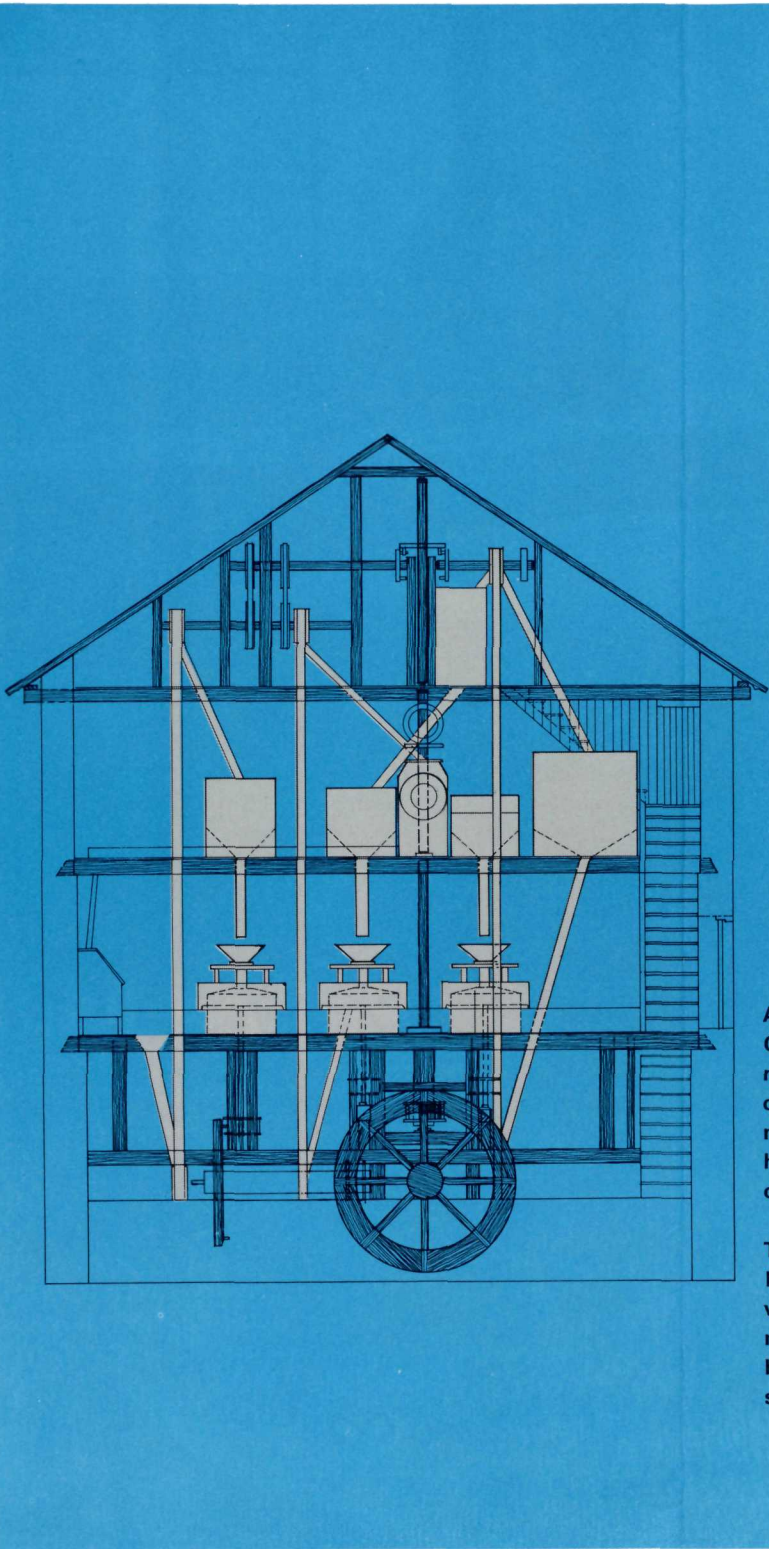
As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

National Park Service
U.S. DEPARTMENT OF THE INTERIOR



Peirce Mill

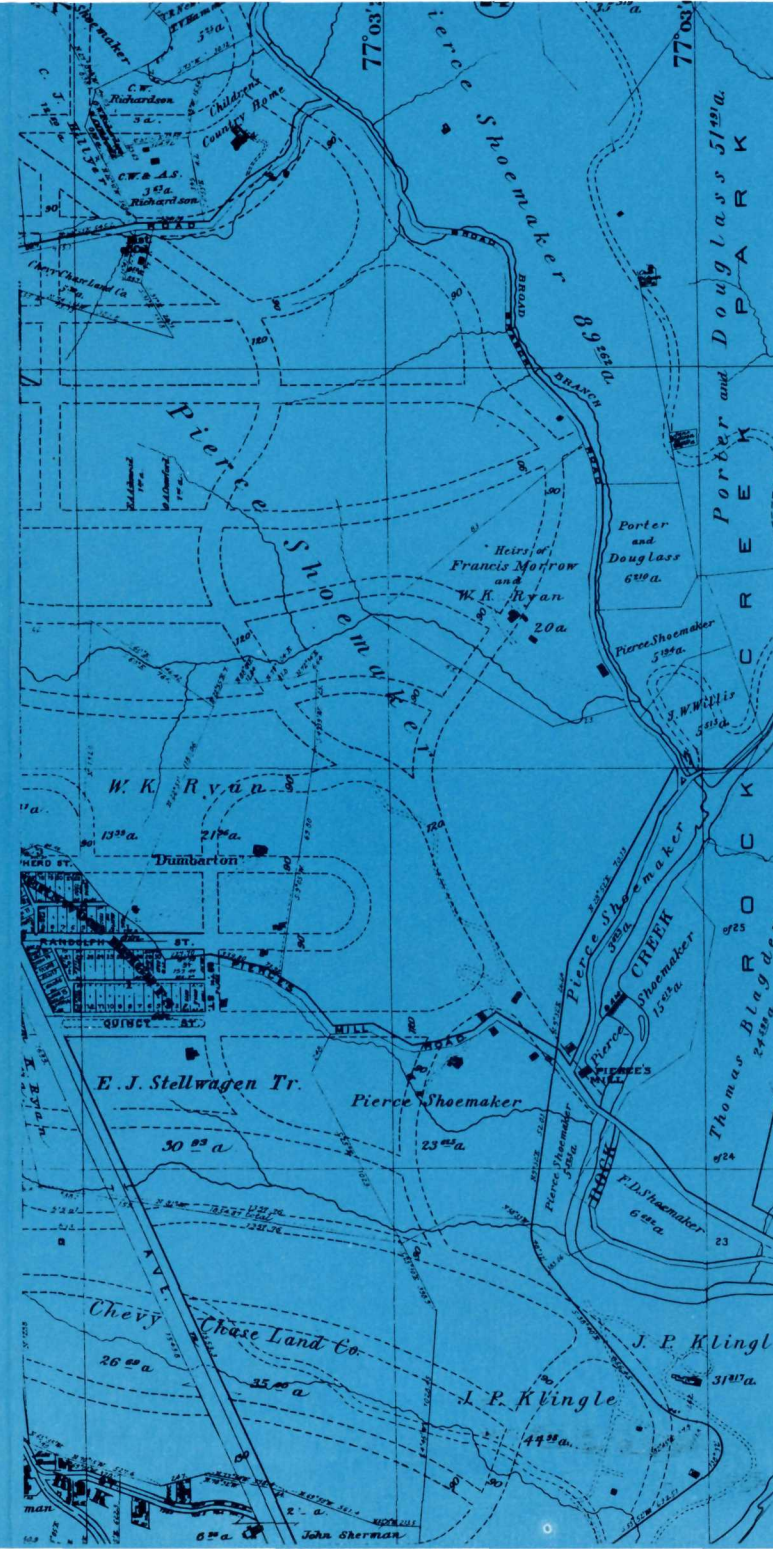
ROCK CREEK PARK,
Washington, D. C.



The Last of the Nineteenth-Century Flour Mills Along Rock Creek

Alcibiades P. White saw an era come to a close along Rock Creek one day in 1897. "I was grinding a load of rye for a neighbor when the main shaft of the mill broke," he recalled. "I was about half through with the work, and the neighbor had to haul his unground rye away, and I guess he never got it ground. That was the last time the mill operated."

That accident ended many decades of milling at Peirce Mill. Alcibiades and Charles White were the last millers to work for the Shoemaker family, owners of the mill. The mill was now commercially useless (5 years earlier it had become part of Rock Creek Park), but the White brothers stayed on until 1917.



This 1903 real estate map shows Peirce Mill (lower right) standing in rural solitude.

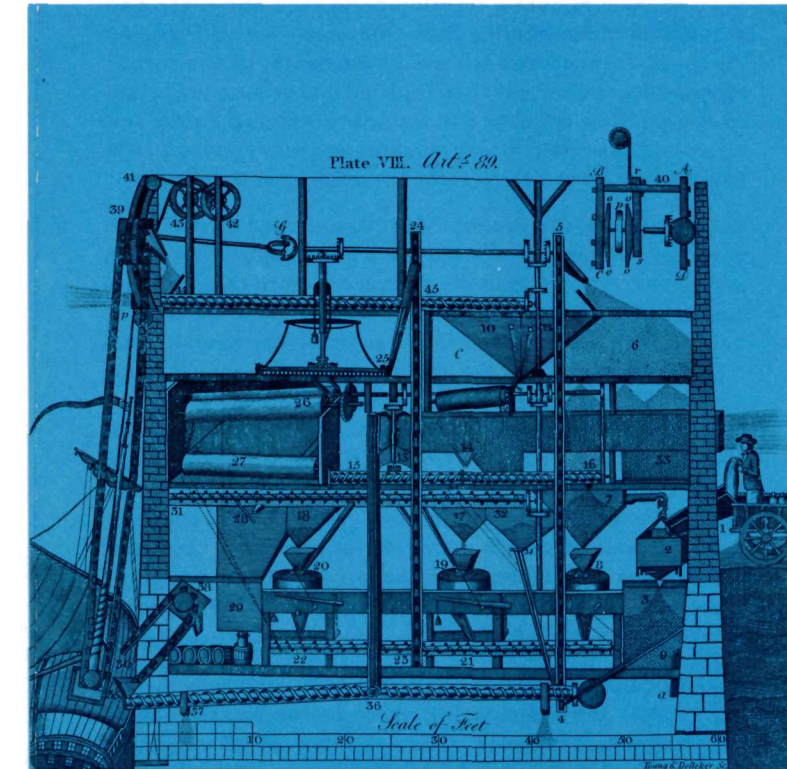
Flour milling began here about 1820 in part of the present mill. The millwright was Isaac Peirce of Pennsylvania, who had settled north of Washington some two decades earlier. By 1800 he had acquired a vast tract of ground stretching from present Chevy Chase to the National Zoo. The next year he built a springhouse near where he would later erect the mill. Over the years he added a sawmill, a house, and some barns, one of which is older than the mill and still stands across the street. Isaac left the mill property to his son Abner. When Abner died in 1851, the mill and other buildings passed into the hands of his nephew, Peirce Shoemaker.

Neither the Peirces nor Shoemakers were millers. Isaac was a millwright, Abner a stone mason, and Shoemaker a jeweler. They hired experienced millers to operate the mill, usually for \$1200 to \$1500 a year. We know little of the early millers other than their names: Donald, Tennyson, Gaskins, and Fleckker.

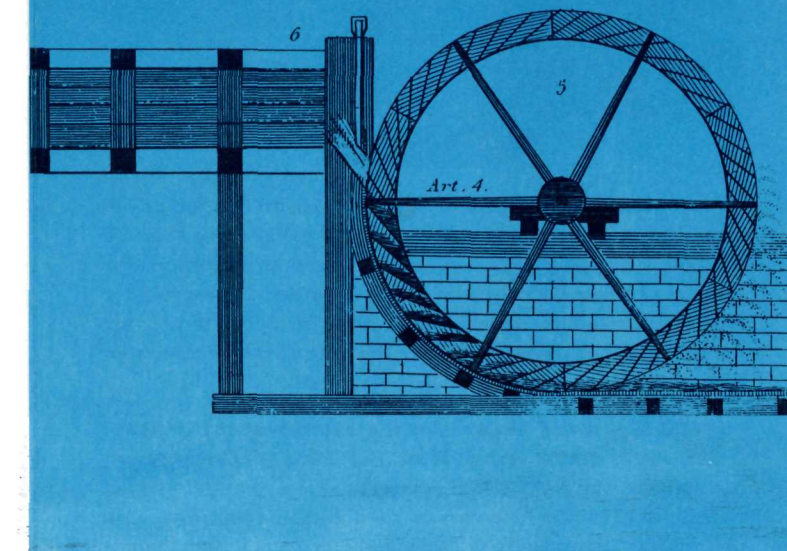
The Shoemakers tried to keep progress with improving mill technology. In 1876 the wooden water wheel was replaced with a more efficient iron "Loeffel turbine" wheel, 40 inches across, which lasted until the main shaft broke 21 years later.

Peirce Mill still closely resembles a typical flour mill of about a century ago. Most of the machinery here owes its design to another millwright, Oliver Evans of Delaware. Peirce had probably read Evan's book, *The Young Millwright's and Miller's Guide*, which first appeared in 1795. The book, repeatedly printed, contributed a great deal to making a science out of what was traditionally a craft. This reconstructed mill contains a number of Evans' inventions.

The gradual revolution in the American milling industry was touched off by the work of Evans. Knowing that millers were slow to accept change, he wrote, "The reader whose mind is free and unbiased by the opinion of others will be most likely to attain the truth." Before Evans, millworkers had to move the grain from the farm wagon to the hoppers above the buhrs (millstones), haul freshly ground meal to the top floor and spread it out to dry, then



Oliver Evans' reputation grew steadily even after his death, as others built on his beginnings. This cross section of a mill using Evans' inventions is from the eighth edition of *The Young Millwright's and Miller's Guide*, with Additions and Corrections by Thomas P. Jones, published in 1834. The breastwheel below, from the same edition, closely resembles the original water wheel at Peirce Mill.



scoop up the meal and carry it to the sifters. Finally, someone had to bag the flour or pour it into barrels. Evans' contribution was to replan and mechanize the mill so that it could be operated by half as many men, a significant improvement in a country with a perennial shortage of labor.

Consider how Peirce Mill illustrates some of Evans' solutions. Throughout the mill, elevators—small buckets on a continuous belt—carried grain from a receiving bin to the hoppers over the buhrs. Before grinding, the wheat moved by elevator to a rotating cylinder and fan, where it was cleaned. Cornmeal, wholewheat flour, and buckwheat or rye flour passed from the buhrs directly to storage hoppers for bagging. To produce unbleached flour, cereal, and cracked wheat from ground wheat, a longer process was necessary. Before wheat meal would pass through the bolters (sifters), it had to be cooled and dried. Workers accomplished this by spreading the meal on a table or the floor (where it often got dirty), then scooping it up by hand and pouring it into the hopper of the bolter. Evans eliminated this step with his mechanical hopper-boy, which spread the meal out to dry and gathered it back into a hopper. He was proudest of this device.

Isaac Peirce tapped Rock Creek for his power. The original log dam, located above the site of the present concrete one, diverted creek water along the mill race to a breastwheel, so called from the height at which the water struck the wheel. As Evans had indicated, such a wheel was preferable in a situation where a stream's momentum counted for less than the weight of water in the wheel buckets. High water washed away this dam in 1876; successive wooden dams also succumbed to the intermittent destructive forces of Rock Creek until 1904, when the present concrete structure was erected.

The wheel's main shaft turned wooden gears that translated rotary motion into the power that did the many tasks in the mill—grinding, lifting, cleaning, drying, and grading the grain and its grist. That nearly all of this machinery is wood suggests the ancient origin of milling techniques. This combination of labor-saving, mass-production methods and wooden machinery marks a transitional stage in the milling industry.