

bits of hull, was the last usable grade and generally was fed to livestock.

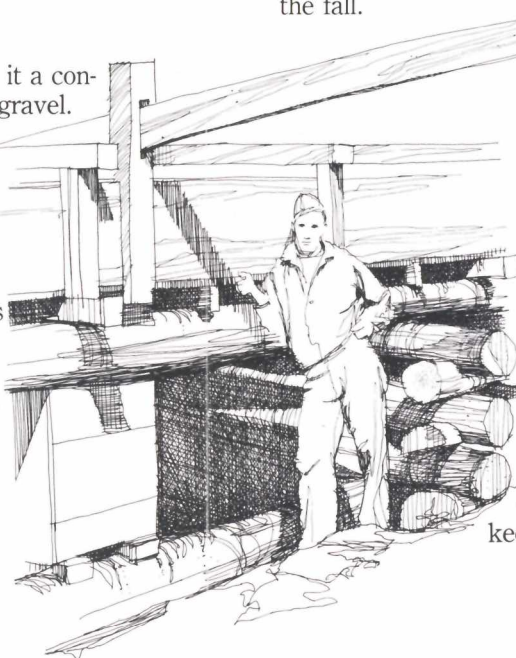
The third floor of the mill was used for bulk storage of wheat. Since there was an occasional surplus on hand, it sometimes was piled a foot or more deep on the floor. Being subject to mold, the grain had to be turned periodically with a wooden scoop to retard spoilage.

5 penstock and watergate

The tall square structure standing beside the mill building is the penstock. It stands full of water and provides the 22-foot head of pressure needed to operate the turbine. Flow from the flume to the penstock is controlled by the watergate, whose operating lever is accessible from inside the building. The miller can look out the second story window and adjust his flow without having to go outside.

6 sandtrap

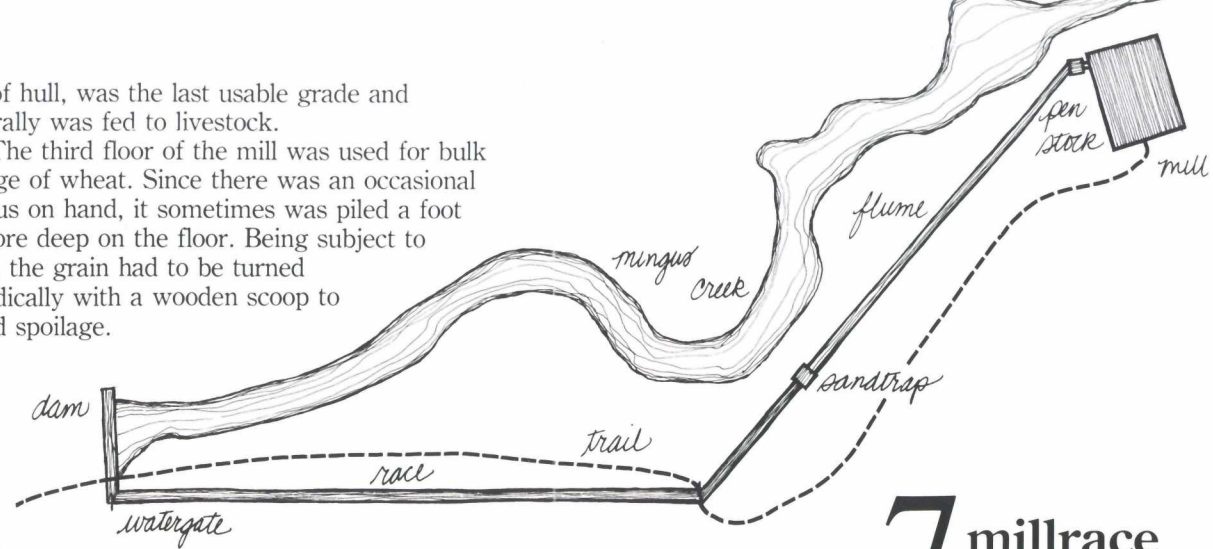
The flow of water brings with it a considerable amount of sand and gravel. Mills powered by a waterwheel do not need a sandtrap because foreign matter simply flows off the waterwheel without doing any harm. A turbine, however, is a precision machine that would be damaged by sand and grit. Abrasive material gets to this point, settles through the slot in the floor of the flume and collects in the sandbox below. When full, the miller would flush the box. Please do not attempt to operate it yourself, as you may damage the mechanism.



8 watergate and dam

Water from the creek is diverted into the race by a small log dam, and controlled initially by the first watergate. Mingus Creek is a typical mountain stream with a mind of its own. Several times it has decided to wash away the dam. Given the difficulty the Park has in keeping the dam in place, it

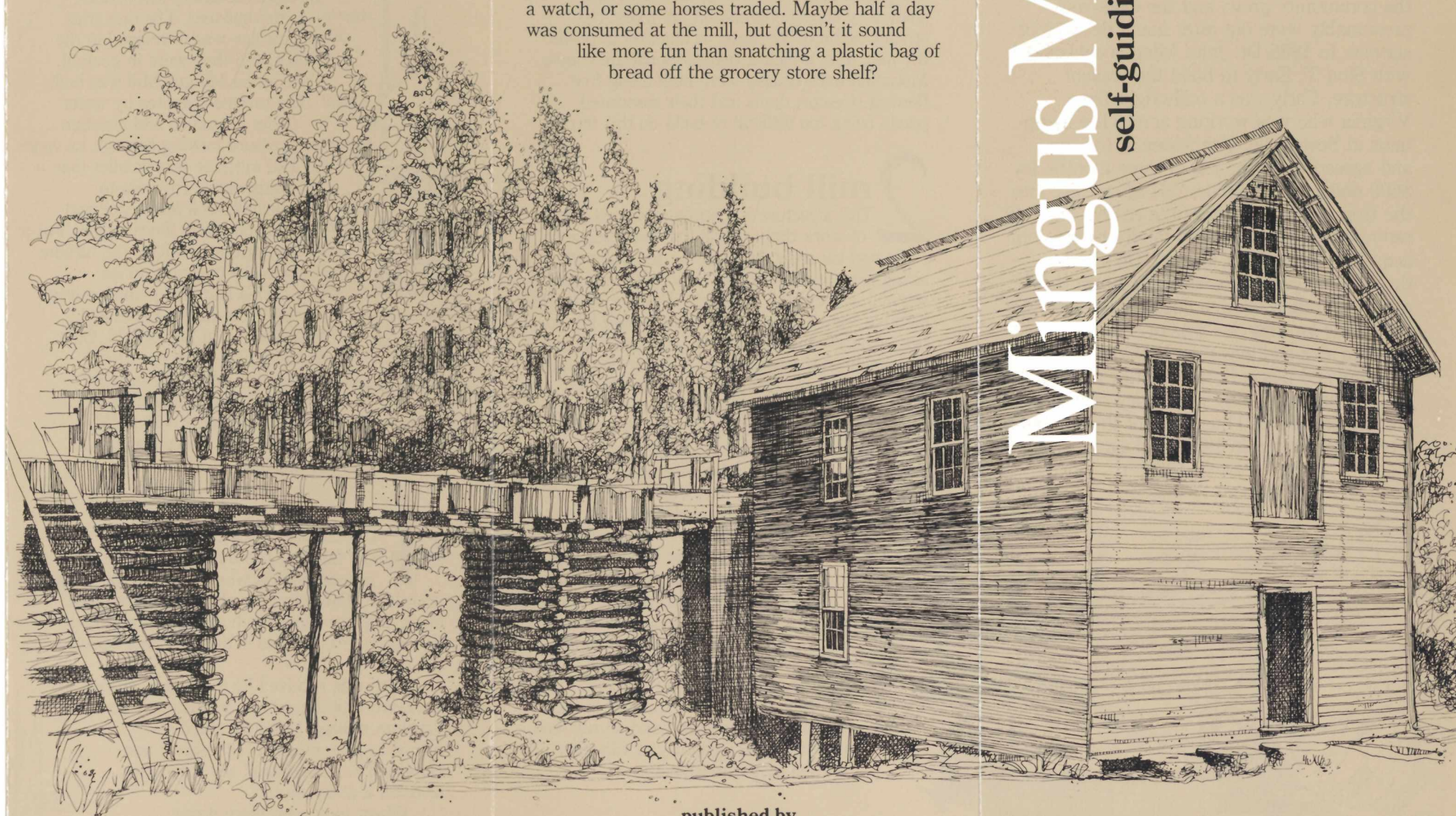
7 millrace
The task of the wooden flume is to carry the water on a level plane across the sloping ground below. From here on upstream the ground is fairly level so a simple ditch, or race, is sufficient to carry the water. The walls of the race are lined with boards to keep them from eroding away. We invite you to walk the path along the race, a distance of roughly 200 yards, to the main channel of Mingus Creek. It is a pleasant stroll, accompanied by the babbling water, cool and shady in warm seasons, and doused with color in the fall.



must have been a constant chore for the miller in times past.

As you walk back down the race and past the mill, consider the significance of Mingus Mill to the community it served. Customers grew their own grain, took it to the mill to be ground to

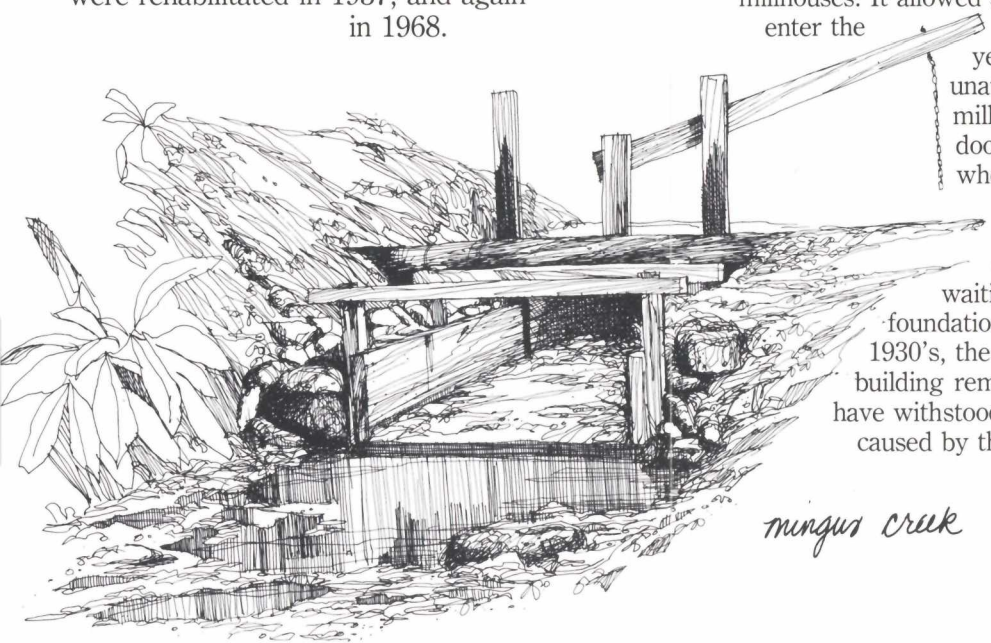
their particular taste, and returned home to enjoy a favored recipe for cornbread or biscuits. Not only did they know the miller personally, they usually passed the time of day with friends who were waiting their turn. During this sociable process, perhaps a pocket knife was swapped for a watch, or some horses traded. Maybe half a day was consumed at the mill, but doesn't it sound like more fun than snatching a plastic bag of bread off the grocery store shelf?



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Mingus Mill
self-guiding trail

This was not the first mill on Mingus Creek. The Mingus family of German stock, moved into the Oconaluftee valley in the 1790's, and built an earlier mill powered by an overshot waterwheel. The family grew, the community grew, and the older mill presumably wore out after many decades of service. In 1886 Dr. John Mingus contracted with Sion T. Early to build the present structure. Early was a millwright from Virginia who was working across the mountains in Sevierville, Tennessee at the time, and agreed to do the job in three months for \$600 dollars. His initials, "STE," are cut into the front gable just under the eaves. The mill remained in Mingus-Floyd family hands until acquired by the Park in the 1930's. All through the years this was a "custom mill," one that ground to each customer's taste. As such mills go, this one was of small-to-medium size and average sophistication for the time and place. Some exterior portions of the mill are constantly in wet/dry cycles and are subject to rot. Thus parts of the complex were rehabilitated in 1937, and again in 1968.

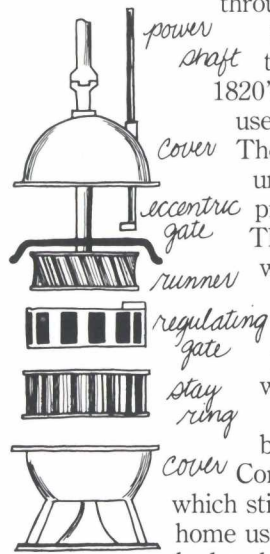


1 **mingus creek**
Named for the family that settled on it, Mingus Creek is a typical mountain stream whose water flows clear and fast over a rock and gravel bed. For most of its length it is shaded by rhododendron and tall trees. Upstream, some of the water is diverted to power the mill, after which it rejoins its natural course. Mountain mills usually were built along free flowing streams, dams and their associated ponds being too difficult to build on this terrain.

2 **mill building**
This structure is a straightforward piece of work that reflects the competence of Early and his crew. Most of the framing and siding are of yellow-poplar, reportedly cut on a sawmill that existed on nearby Bradley Fork. Decorative features are found in the beaded lumber, chamfered posts and neatly trimmed latches and moldings throughout the building. Such little niceties were structurally unnecessary, but do show that Early cared about his work.

The dutch door was a common feature in millhouses. It allowed sunlight and fresh air to enter the otherwise dusty interior, yet kept dogs, children and unauthorized adults out of the miller's way. The second floor door was the outlet for the wholesale side of the operation. Bulk sacks of grain and flour were skidded out this door onto a plank, to wagons waiting below. Although several foundation posts were replaced in the 1930's, the sills and framing of the building remain sound and sturdy, and have withstood a century of vibration caused by the machinery.

3 **turbine**
Don't be puzzled by the absence of a traditional waterwheel. This mill is powered by the cast iron turbine which is visible through the safety slats under the building. The first true turbine was developed in the 1820's; and they were in general use when Mingus Mill was built. The turbine operates by water under contained and constant pressure moving through its vanes. The machine was smaller than a waterwheel, cost less to install, took less space and lasted many times longer. For a progressive miller, the turbine was the only way to go.

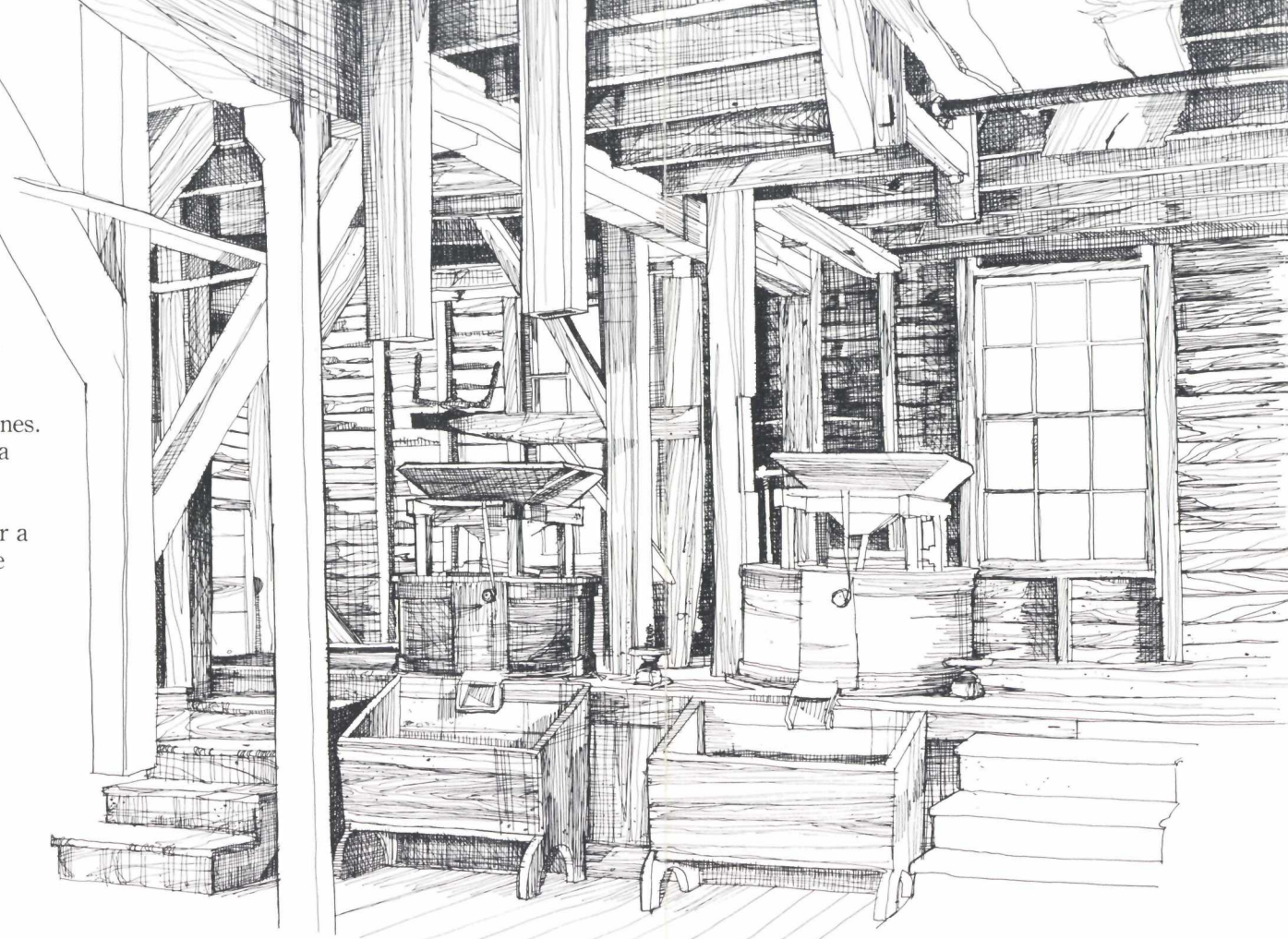


This unit was manufactured by "The James Leffel and Company" of Springfield, Ohio, which still builds small ones for home use, and enormous ones for hydro-electric generating plants. It develops eleven horsepower at 400 RPM. Rotation of the vertical shaft powers all of the machinery in the building.

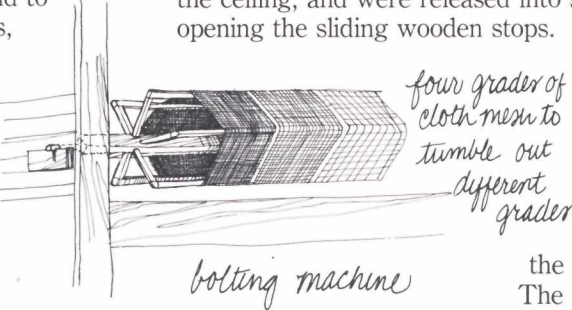
4 **inside the mill**
The building has three floors. The ground floor is where most of the work was done. The corn and wheat mills are there, along with the receiving hoppers and toll box. For safety reasons this is the only floor open to the public.

Corn was received by the miller, ground to the texture preferred by the customer (thus, "custom milling"), and the meal returned to him, minus a toll (usually one-eighth). The miller could sell it for cash or trade it at the store.

Wheat took a bit more doing because the structure of the grain is much more complex. It was dumped into a hopper which once stood where the lefthand stairs are now. A bucket



belt carried the grain upstairs for further processing. Afterwards, it returned downstairs by conveyor to the mill. After being ground the flour went upstairs for final processing. When finished, the various grades of flour and bran stacked up in the wooden chutes hanging from the ceiling, and were released into sacks by opening the sliding wooden stops.



The second floor holds two key pieces of machinery: the smut machine and the bolting chest. The former consists

of a squirrel cage fan mounted in a wooden box. As grain was fed through it, the fan blew dust and leaves and other trash away through a duct to the outside of the building. Then it was ready to be ground. The other machine, the bolting chest, separated the ground wheat into different grades: fine white flour, middlings, shorts and bran. A grain of wheat is covered on the outside by a hard indigestible shell, which is unavoidably ground into small bits by the mill. The long horizontal bolting reel was covered by "bolts" of cloth of progressively coarser grades. It amounted to a giant sifter about ten feet long. Fine flour sifted out of the rotating reel first, and into its chute below the machine. Other grades did the same in their respective turns along the reel. Bran, the brown