

The Putney Mill

The Putney Turning Mill(Roger Putney and Son) is the last existing and operating mill on the Lawrence Brook in Royalston, Mass. Until 1985, when it was destroyed by fire, it may have been one of only two turning shops in the U.S. powered entirely by overhead shafting and belts, the other shop being the John Grass Wood Turning Company of Philadelphia, Pa.

The Lawrence Brook runs north and south through the entire length of Royalston. Many of the mills of Royalston were established on the Lawrence. At one of their early meetings the proprietors of Royalshire, as it was first named, made provision for the mills, and their committee came to Royalshire and selected the spot on the Lawrence now known as Doane's Falls. Here Benjamin Marsh built a grist and saw mill and received a title to the "mill lot" south and adjoining the falls with other encouragement, and gave his bond to build and maintain suitable mill accommodations. This probably occurred in the 1760's.

Bartlett's history of Royalston mentions that Jonas Lewis built the first saw mill at the site that is now Putney's Mill. No date is mentioned but it was probably between 1762 and 1795. In 1795 there were 7 saw mills, 3 grist mills and 1 fulling mill in Royalston. In 1830 there were 6 saw mills and 3 grist mills, and in 1864 there were 13 saw mills in Royalston. Their production in 1864 was: 1,440,000 ft. lumber, 280 cords of staves, 50,000 shingles, 32,000 chairs, 36,000 pails, 6,000 bushels of shoe pegs, 1,585 cords of fire wood, \$5,650 of chair stock, \$10,866 of brush woods and \$12,000 of other wooden ware. The other wooden products produced in

Royalston included doors, sash, blinds, wooden bowls and wooden measures.

The population of Royalston in 1865 was 1441. Many of the citizens of Royalston must have been involved in the mill industries to produce the amount of goods listed in the 1864 inventory. Many farmers operated saw mills in the winter months.

Bartlett's Reflections of Royalston describes the history of some of the larger mills of Royalston. From these descriptions we can get an idea of the evolution of saw mills in Royalston. Bartlett mentions that one mill added steam power in 1876. One of the saw mills in South Royalston replaced their up and down saw mill with a circular saw mill in 1871, but the Newton & Davis mill near Royalston Center did not replace their up and down saw with a circular saw mill until 1900. Bartlett mentions 17 saw mills and 5 grist mills that he knew existed in Royalston.

In describing the Joseph Sawyer saw mill just north of the common Bartlett gives a description of the water wheel used in that mill as he remembers it in 1854:

"That water wheel...was probably something like 25 feet in diameter. The top of it extended fully to the level of the attic floor...so that the diameter of the wheel was equal to the height of the two stories of the shop and several feet in the pit below the level of the basement floor. In construction, the wheel consisted of a hub, from which iron rods or spokes extended to the rim, to which were attached wooden buckets or troughs.... Those buckets might have been 5 or 6 feet long across the face of the wheel and of capacity to hold several cubic feet of water each. ...the side of the wheel going down might have taken on tons of water to pull on that leverage from the center of the wheel.

...the wheel, when I knew it, was very much out of balance, due in part to the fact that when it was not in motion the part that was down in the pit was holding a large amount of moisture while the upper parts were drying out....a large amount of water had to be spilled into the buckets on the upper side to overcome this extra weight and bring the heavy part up over the top."

Horace Pierce(b.1804-d.1883) bought the Putney Mill from John Bowker in 1846. Horace Pierce was a blacksmith in his early life and manufactured pails and buckets at the mill. His son Milo worked with him at the mill and in 1869 it was known as Horace Pierce & Son. None of the town histories mention John Bowker. The 1831 map of Royalston shows a John Frye at the saw mill site. He was born in 1796 and died in 1866, living nearly all his life in Royalston. Virginia Frye, now living in Royalston does not think any Fries ever operated the mill. He may have owned it but not worked there.

Horace Pierce sold the mill to Leonard Wheeler who sold it to Warren Wheeler. Seth M. Holman and Stephen Hayward bought the mill on September 3, 1869 from Leonard Wheeler. The 1870 map of Royalston from the Worcester Atlas, shows the operator of the mill as A.H. Perkins, and in a business directory on the map lists his business as a saw mill and turning mill.

The deed abstracts show that Holman and Hayward owned the mill until March 30, 1904. On that date they sold it to Charles E. Perry.

Charles E. Perry operated the mill and owned the house near the mill known as the Heywood House. He did not live in the house near the mill but at a small cottage about a mile north of the mill. Dave Putney believes Perry may have thought

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the Heywood^{house} was haunted.

The mill burned in 1924 also destroying the Heywood house. Charles Perry was awakened by one of the steam boiler's relief valves blowing. He was at the cottage a mile up the road and came to the mill but could not save the mill or house. Perry rebuilt the mill and worked there with Gordon Martin. Perry died and left the mill to Martin.

Roger Putney purchased the mill and land from the estate of Charles E. Perry on October 3, 1930. At that time Martin was operating the mill with little success and was persuaded by Putney to sell.

The Putney Mill is located on the east bank of the Lawrence Brook about $\frac{1}{2}$ mile south of the Massachusetts- New Hampshire boarder. There are two old house sites each about 100 yards from the mill. Both house sites were cellar holes when Roger Putney bought the mill in 1930. Roger built his house on the foundation south of the mill and his son David built his house on the site of the Heywood house just north of the mill.

When Roger Putney bought the mill it was producing bale woods(handles). All of the machinery was operated by overhead shafts turning belts and pulleys. Power for the shafts was provided by a 36 inch Chase Turbine Waterwheel. This turbine had a maximum output of 144.28 horse power. At the Putney Mill the output was probably in the 10-30 horse power range. The Chase Manufacturing Company in a catalog from about 1900 lists this turbine for \$375.00

Additional power was provided by one large and one small steam engine. Roger's first winter(1930-31) at the mill

was a difficult one. The weather was severe, which caused the turbine to freeze up. Roger and his wife could not operate the machines in the mill and feed the boilers to keep pressure in the steam engines, and the heavy snow falls forced them to have to ski part of the way to the mill from their home in Winchendon. Roger converted the mill to a powerplant made from an automobile engine. He built a small cabin onto the mill and heated it and the mill with steam and enclosed the turbine with a wooden structure to reduce the chance of it freezing.

There is a dam adjacent to the mill to create a pond for water storage. There was also another dam several thousand feet upstream that could flood a meadow to reserve more water during dry spells. The flooding of the meadow caused problems with farmers who wanted to cut the hay growing there.

In 1933 Roger Putney bought a circular saw mill from H.O. Smith of Royalston. It was a waterpowered mill. Before moving the mill Roger cut the wood he needed as a foundation and enclosure for the saw mill. About that time he also purchased a planer from the Brown Package Co. of Winchendon, a bucket manufacturing company. He traded bucket handles for the planer. Putney set up these two mills to operate from the shafting of the turning mill. In 1936 he sawed wood to build his house and in 1937 he built the house .

The dam and penstock at the mill were damaged in a flood in 1938. Roger decided to abandon the use of the water turbine because the state had too many regulations governing the restoration of the dam. His main source of power became a diesel powerplant in the mill that ran the overhead shafts and belts for the turning mill and saw mill.

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Putney made many improvements and modifications to the machinery he bought with the mill. The most significant improvement was a mechanism that automatically fed turnings from the boring lathe to the turning lathe. This allowed one person to operate two lathes.

In 1946 Putney began producing pipe stems for corn cob pipes. Reeds were originally used for the pipe stems but because of World War II there was a lack of labor to cut reeds.

In 1961 the gas/kerosine powerplant was replaced with an International 50 HP diesel powerplant. That powerplant was still operating when the mill burned on February 17, 1985. The mill and almost all the contents were destroyed. Several machines were salvaged and rebuilt.

Because the old stone foundation would be too costly to rebuild, a new site northeast of the old mill site was chosen. A 42 x 60 timber frame building on a concrete slab was erected on September 22, 1985 with the help of friends and neighbors. The timber frame was designed and cut by Tom Musco of Royalston Oak Timber Frames.

The new mill began producing turnings on September 22, 1986. The machinery from the old mill was either replaced or rebuilt. Roger Putney did much of the machinery restoration. The machines are now operated by individual 3PH electric motors which are powered by a Catapillar 75-100KW generator located in the mill. 3PH power is not available in Royalston from the local power company.

All the turnings produced at the mill are made from either birch or beech. The Putneys have logging equipment to harvest logs themselves.

The logs are cut into bolts in the mill and these are then cut into slabs. The slabs are cut on a gang saw into strips and then cut to length for turning squares. The turning squares are fed into an automatic lathe that drills a hole through the center and sends the turning to another lathe that turns the final shape. The turnings are put into a large drum where they are tumbled smooth and dried at the same time.

In the old mill the turnings were dried by heat from a wood fired furnace. In the new mill heat comes from a wood furnace as well as from the diesel generator.

In the old mill sawdust and shavings were gravity fed to the lower level of the mill and loaded onto a truck. In the new mill all the wood waste is taken by ductwork to a trailer box which is picked up when the box is full.

The mill is now operated by Roger Putney, his son David and his grandson Jim. Shirley Putney, David's wife and Margaret Putney, Roger's wife, also work in the mill.

The maximum output of the Putney's mill is about 100,000 turnings per week. The mill uses about 40-50,000 board feet of logs per year.

There is now only one saw mill in Royalston producing lumber. The Hubbard Saw Mill, owned by Walter Hubbard is on Rt. 32 in West Royalston. About 1984 Hubbard installed a completely new Bandsaw Mill. The bandsaw uses a two sided blade and cuts logs in both directions. At maximum capacity

this mill, operating with 8 employees in an 8 hour shift can produce 25-30,000 board feet of lumber.

For comparison the daily output(probably more than an 8 hour day) of an up and down saw mill was 500-1500 board feet per day. The "Yankee gang" up and down saw could produce up to 5000 board feet per day. Circular saw mills , depending on their size can produce from 20,000 to 60,000 board feet of lumber per day.

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Caswell, Lilley B. The History of the Town of Royalston Massachusetts. Royalston, Mass.: 1917.

Other Sources of Information

Map of Royalston 1831

Map of Royalston 1870

Royalston Tax Assessors Deed Abstracts

Interview with Roger Putney

Interview with David Putney

Interview with Bill Martin

Illustrated Catalogue of the Chase Turbine Manufacturing Co.

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