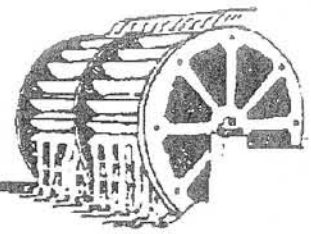


# MILLWORK



Fall, 2003

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Vol. 17 - No. 2

## What's News?

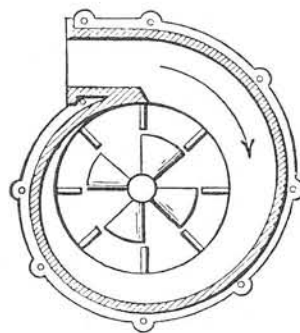
**New Computers for the Office** ~ This summer we have been working to upgrade and network the computers in our office. After much research, we decided to purchase three new desktops and a laptop, all connected with a wireless network. The desktops are replacing those used by the assistant director, bookkeeper, and the educator. The laptop, replacing the director's computer, is capable of showing DVDs and Powerpoint presentations and will be used off-site to promote the museum. We would like to thank the A. Lindsay and Olive B. O'Connor Foundation for the generous grant that made this project possible. We would also like to thank Lee Tietje, a professional network technician, for volunteering his time and coming from Boston, Massachusetts to assist with the installation of the network. We have also upgraded our internet connection from a 28.8Kb dial-up to Road Runner. The new computers, network, and upgraded internet connection will greatly increase the efficiency and ease of work in our office.

By Amy Bishop, Intern



## Turbine on the Mend ~

This June, Hanford Mills Museum received a \$10,000 grant from the Robinson-Broadhurst Foundation of Stamford, NY. These funds will be used to restore a scroll-type water turbine that the museum purchased from Ramon Oralls. The turbine came from Howland gristmill in Walton, NY. The turbine is



*Cut-away top view of a scroll-type turbine. Water follows the arrow's path and exits the center.*

now in the workshop of James Kricker in Saugerties, NY. Mr. Kricker is nationally known for his mill restoration work. In the past, he has been responsible for much of the water power system restoration work (including the water wheel and forebay) in our own mill. We will be installing the turbine in the location of the Hanford's original turbine. Before installation can proceed, an archaeologist will excavate the site to expose and document any existing evidence of the original turbine which may help us in the reinstallation. When archaeological work is done, the turbine will be installed under the gristmill to provide power for that machinery. The funding for the archaeologist (\$5,000) was awarded to the museum by the O'Connor Foundation of Hobart, NY.



## In Memoriam

Hanford Mills Museum is sad to report the deaths of three men who were great friends of the museum. Each contributed to the museum, helping to make it what it is today - two as board members and the third as a very active volunteer and member.

John I. Smith, Jr. of Delhi, NY passed away on May 2<sup>nd</sup> of this year at the age of 80. Jack Smith was a lifelong resident of Delhi and operated a jewelry store in that town, even after semi-retiring. He was active on the Hanford Mills Museum Board during the early 1990s and once off the board, remained a dedicated museum member.

Howard James Nichols of Bloomville, NY passed away on June 19<sup>th</sup> of this year at the age of 70. Howard Nichols was the sixth generation living on the Lamb Homestead, first settled in 1796. Not only was he a farmer, but

*Con't. on page 4*

## In This Issue:

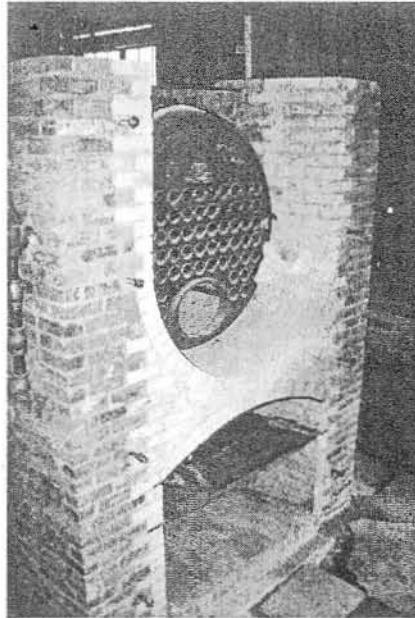
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## Director's Notes

Plan, plan, plan... do, do, do... plan-do-plan-do... strategic planning... steam power... improving exhibits & programs... restoration... archaeology. You name it, Hanford Mills is working on it. Much of this important work is hard to see, but all of it is very important as we mature and grow... after all, the Museum discretely celebrated its 30<sup>th</sup> year in operation in 2003. (And the mill doesn't look a day

over 150!)

If you have been to the



*The boiler now sits in its firebox, an impressive framework of brick and firebrick, waiting for its front, doors & stack. Photo by John de Marrais.*

Museum in the past few months you may have seen the most visible example of our progress. The brick fire box surrounding the new boiler is finished, and by late October a 50 foot smoke stack will rise above the boiler room. Soon the distinctive sound of a steam whistle will mark the return of live steam power to Hanford Mills Museum. Countless hours have gone into making the steam project a reality. As the completion of the project nears we are now looking toward new goals.

This spring the Strategic

*Con't. on page 10*

## Work in the Collections

Suzanne Soden recently joined the staff at Hanford Mills as a curatorial assistant. Suzanne, originally from Albany NY, earned a Masters in History Museum Studies from the Cooperstown Graduate Program this past May. Suzanne was hired to impliment a grant from the New York State Council on the Arts to catalogue the OD Greene Collection. She will also stay through the rest of the year, assisting the museum while curator and assistant director, Caroline de Marrais, is on maternity leave.

Throughout the summer, Suzanne has spent much of her time in the collection storage facilities assessing and cataloging the OD Greene Collection. This collection came to Hanford Mills in 1982 from the Greene Lumber

Company of Adams, NY. The museum purchased the collection because the last owner of Hanford Mills auctioned off most the original equipment that were in the mill. Although the museum was able to recover some of the mill's original objects, there were still many gaps in its interpretation. Since the Greene Lumber Company operated a similar type of business during the same time period as the Hanfords, they had identical types of machinery and equipment.

The OD Greene Collection contains approximately 1,500 artifacts. The objects in the collection range from large woodworking machines and machine parts, such as belts and pulleys, to other mill related objects, such as oil cans. So far, about half of the

objects have been identified, cataloged, numbered, and entered into a collections database. Suzanne will finish processing the remaining objects during the next few months. The mill interpreters and mill foreman have been an invaluable asset in extensive knowledge of mills has not only helped to speed up the process, but also helped to identify objects that would have otherwise been labeled "part unknown."

Cataloging the OD Green Lumber Company Collection will help to access the condition of the collection, its research value, and current and future needs of the storage facilities. Also, this process will allow the staff at Hanford Mills to use this collection to create new interpretation and new exhibitions.



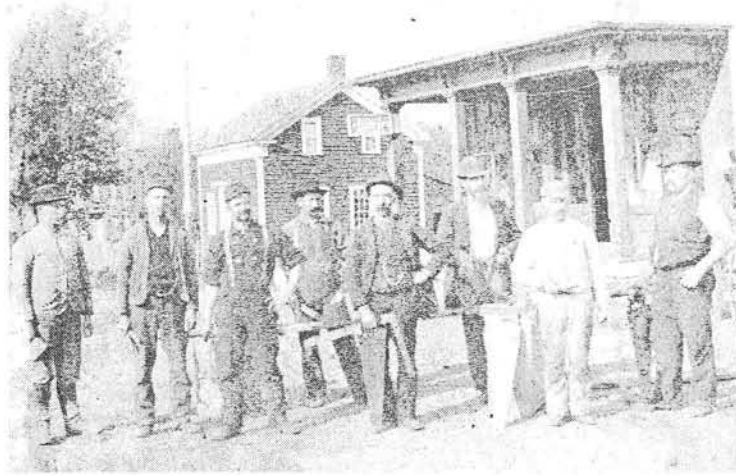
# Do You Know What a Mechanic Is?

by Kate Weller

This fall, Hanford Mills Museum is planning a new program dedicated to the mechanics of East Meredith. Aptly named the "Mechanics' Harvest Festival," the event was inspired by the 1889 photograph entitled "Mechanics of East Meredith." The photograph shows eight men who lived and worked in East Meredith. At the time of this picture, all of these men considered themselves mechanics.

A modern definition of the word "mechanic" from *The American Heritage Dictionary* is "a worker skilled in making, using, or repairing machines." It seems unlikely that eight men in East Meredith would have considered themselves mechanics of this sort. This creates the dilemma of what exactly was a "mechanic" over one-hundred years ago? Finding the answer requires looking through primary resources of the period and delving deeper into the individual lives of each of the men pictured in the photograph.

The first place to look for an earlier definition of a mechanic is a dictionary of the time period. As early as 1860, *Webster's Dictionary* defined a mechanic as "a person whose occupation is to construct... goods, wares, instruments, and the like." This definition is extremely broad and opens the door to many interpretations of what was considered the work of a



*The "Mechanics of East Meredith", c. 1889 - l. to r.: Horace Hanford, Charles Strong, Mack Tobey, William Flower, Charlie Hanford, Alexander Palmer, George Dudley & Norm Parris.*

mechanic. The modern *Webster's Dictionary* continues the ambiguity. Their modern definition is "a manual worker," but one closely connected to "artisan." "One who works with machines" is actually defined as a machinist. So even in our time, there is a discrepancy about what a mechanic is.

Because of this, it is best to see who the "Mechanics of East Meredith" were and what they considered to be the work of a mechanic.

The first gentleman is Horace Hanford, well known as one of the owners of Hanford Mills. In fact, Horace's father, D.J. Hanford called himself a mechanic almost thirty years earlier when he first purchased Hanford Mills. Before the purchase of the mill, he called himself both a farmer and a carpenter in U.S. censuses. Charlie Strong owned the local hardware store but he was also a tinsmith. Mack C. Tobey was one of the village's blacksmiths. William Flower, described as "a hustler," was

the town undertaker and not surprisingly the cabinet maker. Charles O. Hanford like D.J. earlier, was a carpenter. Alexander Palmer was a cooper. George Dudley when not busy escorting an intoxicated "invader" out of town as the town constable, was a house painter. Norman C. Parris, who also worked for Hanford Mills between 1900 and 1909, was a butcher.

The men pictured were not the only "mechanics" in East Meredith's history. Also featured in the program is Adaline Barnes and George P. Hill. Barnes was a female cooper who had dealings with Hanford Mills. Unfortunately, her transactions were not always satisfactory to her. She even wrote about the butter tub covers sent to her, saying "... don't think for one moment that because you are dealing with a woman that we don't know good covers..."

George P. Hill, the local eccentric and inventor will add a colorful twist to the event. His inventions were

*Con't. on page 12*



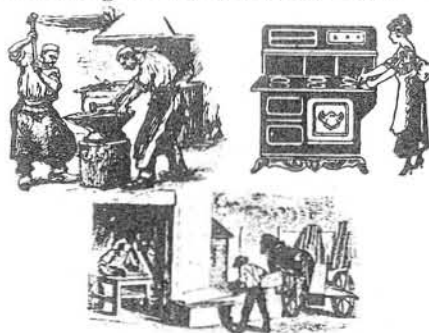
## Summer Intern

This summer, Hanford Mills Museum welcomed Kathryn Weller, an intern from the Cooperstown Graduate Program (CGP) for History museum Studies. CGP classes range in topics from curatorial skills to museum administration to education, and the program provides a well rounded approach to museum studies. As part of her degree requirements, Kathryn worked as an intern in the education department. As her major project for the summer, she is planning and implementing the new event, the Mechanics' Harvest Festival.

The Mechanics' Harvest Festival is a day long event on October 11<sup>th</sup> of this year. It will celebrate the mechanics of East Meredith throughout history. With this as the theme, Kathryn is coordinating craftspeople to demonstrate historic skills that were practiced during the most productive years of Hanford Mills. Alongside traditional craftspeople, history of the different "mechanics" will be included. Each one of the men and

women who worked in East Meredith at the turn of the century had an interesting story and some of these will be included. One example is George P. Hill, a local inventor and somewhat of an eccentric. He will be highlighted with actor Bob Gafney's first person portrayal. Hands-on activities are also available for children and adults alike.

Besides planning for the Mechanics' Harvest Festival, Kathryn was busy planning other programs. In July, Hanford Mills had another successful Summer Apprentice Workshop week. For four days children, between the ages of 8 and 13, descended upon Hanford Mills to experience aspects of life 100 years ago. Along with some old favorites like baking with Mrs. Charles Hanford, or building boxes with the mill



*Memoriam - con't. from page 1*  
a town supervisor for 20 years. Howard was a Hanford Mills Museum board member in the late 1990s, chairing the finance committee. He was also descended from Andrew Brown, the man who taught D.J. Hanford to be a carpenter in the 1850s.

Then on July 28<sup>th</sup> of this year, Raymond Groves of Otego, NY passed away at the

age of 86. Ray Groves was born in Wisconsin, but moved with his family when he was ten to the Pony Farm in Oneonta, NY where his family was known for their excellent sweet corn and other produce. Ray worked in the post office and was known as a poet, writing the book *Poems Purely for Pleasure* which the museum gift shop sold when it was published. While Ray

interpreters, Kathryn added some new activities. With a generous donation of glass and mirrors from Tri-County Glass in Oneonta, New York students were able to try their hands at reverse-glass paintings. They then made picture frames with mirrors for their masterpieces.

In August, Kathryn organized and created different crafts for the Delaware County Fair. Hanford Mills Museum and Delaware County Historical Association shared a tent where kids could make traditional crafts and learn about the two museums.

Although Kathryn finished working full time on August 25<sup>th</sup> to go back to finish her masters program, you will see her on weekends and special events, especially the Mechanics' Harvest Festival. She has met many new friends and has enjoyed her time here at Hanford Mills Museum. Most importantly, she has learned things about the museum field. It is an experience she could not have acquired from classroom work alone.

was not a board member, he was an active museum volunteer, always doing the hardest outdoor work or leading a sing-along for the members' holiday party. You will find the poem Ray wrote for Hanford Mills on page 12 of the *Millwork*.

Each one of these men will be missed by the museum, its staff and members. We are sorry to see them go.

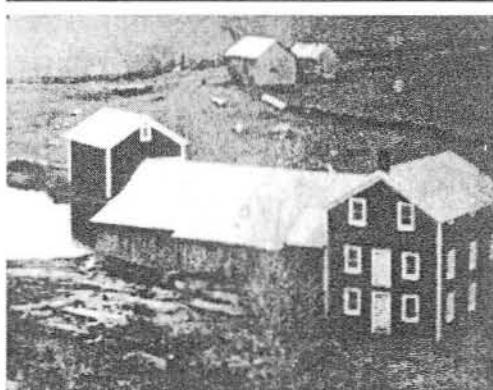
# Hanford Business - More Than Just a Mill

by Caroline de Marrais

Take the word "mill"...  
 What do you think of?  
 Perhaps you see a sawmill turning logs into raw lumber. Probably more people see grain pouring between a pair of rotating stones and coming out as cornmeal or even pancake mix. Your mental picture might include local people coming to buy the lumber or ground grain. But the word "mill" does not adequately describe all the business that took place on the site of what we know today as "Hanford Mills." It was more than just a sawmill or gristmill, or even a woodworking factory. Hanford Mills was an industrial and agricultural department or catalog store.

Today you can't find a store that does all that Hanford Mills did for its customers. There are all sorts of tractor and farm equipment suppliers, but Hanford Mills did more than that. There is Agway or the Tractor Supply Company where you can purchase supplies for the farm, but the Hanford business was more than that. There are hardware stores and 84 Lumber where you can buy building supplies and lumber, but the Hanford business was even more than that. Today if you wanted to buy a plow, get some animal feed, then buy a new door for your house, you have to make three stops. In the past in East Meredith, the Hanfords' business provided one stop shopping for all these items.

When D.J. Hanford bought the sawmill in 1860 it is likely he was not planning the multiple "product lines" his business would eventually come to sell. He was a farmer looking for the extra income a seasonal sawmill business could bring him. Having learned a bit about the sawmill business probably from relatives and his mentor, Andrew Brown, D.J. saw the advantage of adding a planer to the mill so he could ask for more money for planed wood.



*This early photo, c. 1874, shows the newly added gristmill addition.*

He also decided to expand into animal feeds with the addition of his gristmill. These first additions to his business were common. Many mills took these steps, but why did he and eventually his son, Horace, decide to create their rural department store?

We might never know the answer to this question. It has been said in the East Meredith area that you "had to do four or five things to make a living." Perhaps this drive to make a decent living, pushed the Hanfords to look at multiple sources of income. Maybe it started with the

items the Hanford received in payment for their lumber and feeds. Customers did not always pay with a percentage of the logs or grain they brought to process. Customers didn't always have cash either. Some items the Hanfords took in trade were most likely used in their own homes - especially food products like tea, apples, cider, beef, and pork. The Hanfords did sell some of the items they received - potatoes, a cask, kid gloves, tobacco, pork, cigars, and fish.

The Hanfords may have also become a dealer in speciality items that they at first ordered for their own business' use. Even though D.J. Hanford would have had the training to produce doors and windows for his mill, he often ordered these items from other factories in the area. In 1871, the mill sold window sills and casings to one

customer and several doors to another. Did they make these items or order them special for the customer? We can't tell from the records at this early date, but certainly in later years, the Hanfords were ordering these items rather than making them. Also at the same time that the Hanfords were ordering railroad carloads of grains to grind or sell, they were also ordering flour and specialty mixed feeds to sell directly to their customers.

Whatever way the Hanfords worked toward

*Con't. on page 6*

*Business - con't. from page 5*  
turning their mill into a rural department store business, they were beginning to expand their product line in the 1870s and by the 1880s and 90s their expanded business was in full swing. Their first new product lines were related to their mill business. These items included building supplies such as lath, shingles, battens, fence pickets and boards, joists, studs, eave moldings, and axe helves; as well as various mixed feeds and flours. They soon added hardware items like nails, hand tools, oil, and even paint (mostly red and gray).



*An early 1900s nail catalog from the Hanford Mills business records.*

By the 1880s, much of the Hanfords' side businesses appear to have been based on various catalog sales. A number of these catalogs were for ordering supplies for their mill business, but others were obviously obtained so the Hanfords could order items for their customers. Some catalogs covered woodworking and construction related items. While the Hanfords had the machinery for producing the fancy gingerbread trim of the era, it took quite some time or specialized machinery to produce these

intricate pieces accurately over and over again. Instead, the Hanfords often ordered this millwork from other companies. Windows and doors were also ordered from other local mills or companies further away. They had catalogs for cement, hardwood flooring, metal roofing, siding, asphalt shingles, and hand tools. The Hanfords even gave up their shingle cutting business in favor of factory produced cedar shingles from the Northwest.

One aspect of their catalog collection became a full-time side business for the Hanfords, as they branched out into farm equipment sales in the 1890s. The Hanfords dealt with many of the small agricultural equipment companies of the time - Adriance, Empire, Eureka, Le Roy Plow, Ontario, Standard, Syracuse Chilled Plow, and Vermont Farm Machine.

They also dealt with the bigger companies (some still in business today) - John Deere, Case, Deering-McCormick, DeLaval, International

Harvester, Massey-Ferguson, Massey-Harris, and Oliver. The Hanfords ordered machinery for local farmers and may have kept common



*A late 1800s catalog for butter processing from the Hanford Mills business records*

equipment on hand. When a farmer ordered a machine, the Hanfords even assembled it when it arrived. When the machine broke down or needed new parts, they could also be ordered through the Hanfords. Not only could a farmer get planting machinery, but also milking machines, cream separators, butter churns, and butter workers for their dairy farms, plus veterinary supplies for cattle and poultry. With the advent of the railroad coming to the local area, the Hanfords were also able to offer bulk seed, fertilizer and lime for farmers' fields.

One business led to another. As farmers purchased machinery to operate their farms they often needed a power source to run their

machinery. Early farm catalogs offered steam engines for machinery operation. At least one local



*The Hanfords sold many different types of gasoline engines. This Fairbanks-Morse & Co. catalog is even marked with a Hanford Bros. stamp.*

farmer installed such an engine to run his creamery. A side business of these sorts of sales was the sale of coal,

*Con't. on page 7*



*Business - con't. from page 6*

which was necessary for running steam engines and home heating plants.

In the early 1900s, the Hanfords began to offer single cylinder gasoline engines for sale. At first they sold Gray engines, later offering Hercules, Fairbanks-Morse, and United engines. Hercules was a popular seller for the Hanfords. Even their brother John Hanford purchased one and if you visit the museum's boxcar you'll see a Hercules once sold to Joe Roberts (a local farmer) and recently donated back to the museum by the farm's present owner, Marvin Glass.

A natural outgrowth of engine sales plus the Hanfords' own interest in electricity was the sale of home electric lighting plants and the supplies necessary to electrify a home or business. Delco and Fairbanks-Morse gasoline powered lighting plants were popular with local farmers who were not put on the power grid until after World War II. The other natural outgrowth of the engine business and Hanford personal interest was the sales the Hanfords did in automobile supplies. There is even a 1911 catalog for Harley-Davidson motorcycles in the museum's collections!

The Hanfords did not forget the home in their business sales. Quite a few local farmers purchased gasoline pow-

ered washing machines. Existing catalogs in the museum archives also suggest other sales - parts for radios, firearms and their accessories, sewing machines, supplies for musical instruments and photographic supplies. Many of these items grew out of specific Hanford interests, but it is likely other local people were able to take advantage of the Hanfords' business buying power.

In the end these side businesses helped Hanford Mills survive as a business for many years. A business had to do "four or five things" to make it well into the twentieth century. The feed business was relatively steady for the Hanfords, but much of their woodworking business changed over time - from tub covers to tool handles to milk crates. The construction and agricultural sidelines they explored helped to buffer these other changes.

But as the mill made its way

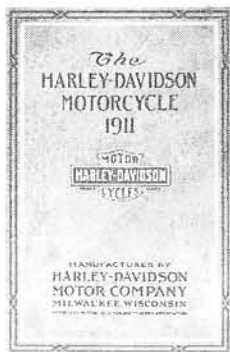


*This c. 1905 catalog from the Hanford collections suggests they also were interested in selling for the home.*

coming centralized in larger business centers like Delhi and Oneonta. Local farmers and families had automobiles that carried them to these centers, where a larger sales volume allowed businesses to charge less for the products they sold. As stores began to

specialize they had a higher volume of sales in their specific area such as farm equipment or building supplies. These stores could afford to keep a larger stock on hand - customers became used to going to a store and coming home with their purchase choice right away. Many agricultural companies demanded that a store deal exclusively in one company's products so that John Deere was only sold by a John Deere dealer, who did not sell International Harvester or Case. In the end, the Hanfords and later the Pizza family could not compete, and the mill business was no longer viable.

Ironically, the last part of the Hanford business that was still in operation in 1967 was not the feedmill business or the woodworking business. It was the hardware store. After Ken Kelso purchased the mill site to operate as a museum, he was still making sales from the hardware store. People will always need that last minute, unanticipated nail or hinge.



*There is no record that the Hanfords sold a Harley, but we do know their nephew, Merritt Barnes, bought an Indian motorcycle*

through the twentieth century, these side businesses provided less and less support. Purchasing was be-



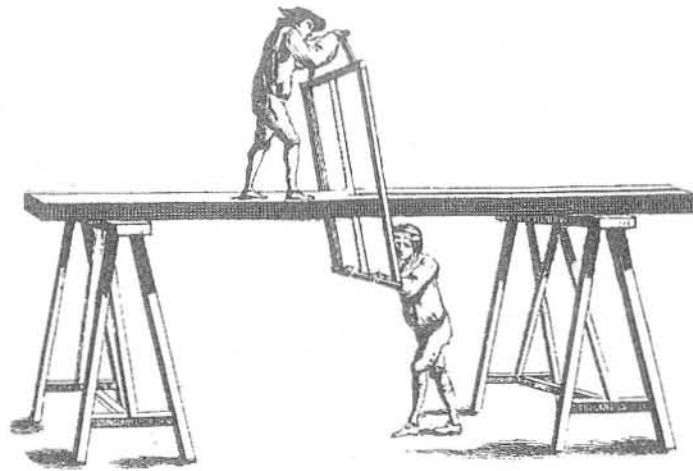
# The Hanford's Sawmill Operation

by Robert Grassi

The establishment of the Hanford Mills' sawmill was fairly typical to the region. During early settlement in the first quarter of the nineteenth century, many communities were founded around potential water powered sites. Sawmills and gristmills were the first mills to be established providing lumber for building construction, flour for bread and livestock feed. The nearest saw and gristmill in operation to serve the earliest East Meredith residents before the 1840s, was located three miles away in Davenport Center

Jonathon Parris, owner of the mill site, had the sawmill constructed in 1846. Many of these early sawmills, including Parris's, were seasonal part time businesses. Much of the actual sawing took place late fall through early spring when water was plentiful in the creek. During the summer many of these small waterways nearly dried up for lack of water. These small sawmills, with very limited production, served only the surrounding community. Many were operated on a custom basis, sawing what people brought to the mill for a small fee per board foot sawn. This was the typical operation of many of the local sawmills of the time period. As the community grew, so did the need for lumber. At

the mill, lumber production increased and a second saw was added in the 1850s by then owner Nathaniel Barber.



*Pitsawing, often done on large saw horses rather than over a pit, used man power to saw boards.*

D.J. Hanford, a former employee at the mill, purchased the sawmill in 1860. Included with the mill and surrounding property was the mill house. D.J. Hanford used the property to establish his farm. Eight years later in 1868 he constructed his gristmill. This was attached to the sawmill but built as a separate building with it's own independent power source, a water turbine.

For at least the first thirty years of operation, the sawmill at Hanford Mills was an up and down or sash saw. Before the establishment of water powered sawmills, the sawing of logs into boards was achieved with a pitsaw. Pit sawing required two people to operate and was laborious. A reasonable day's work for two men was only several hundred linear feet of boards.

The water and wind powered up and down sash saw was developed in Europe and adopted by the first settlers.

These water powered saws were efficient cutting machines. At 150 to 200 strokes per minute they could saw around 3000 board feet (one board foot = 12 inches x 12 inches x 1 inch thickness) in a single day. A single sash saw could cut 3/4 of an inch in hardwoods and up to 1 inch in softwoods with each downward stroke.

That is the equivalent (operated at average speed of 175 strokes per minute) of cutting over 10 feet in hardwoods and 14 feet in softwoods in one minute's time. This was unobtainable for two men by hand with a pit saw.

Nearly every part of a sash saw, with the exclusion of the blade itself, was fabricated on site from local materials by local craftspeople. It is of interest to note that the timber frame of the building itself was an integral part of the saw mechanism and carried the fender posts (or guides) for the sash saw. This was quite common in early sawmill construction. Evidence of the location of the Hanford Mills fender posts are still evident from mortises cut into the original frame of the sawmill. Much of

*Con't. on page 9*



*Sawmill - con't. from page 8*  
the working saw mechanism, including the carriage, was made of wood and had few iron parts. These iron parts could easily be fabricated by local blacksmiths. The drive from the waterwheel to the saw was direct without use of gearing or belting. The only gearing used was to drive and return the carriage. The mechanisms were simple and strong with few, if any, down time due to breakage. Any broken or worn parts were easily repaired or replaced by local craftspeople.

Mill saw blades were purchased from specialty saw manufacturers. D.J. Hanford purchased a 6 ½ foot mill saw blade from the Albany Saw Works in 1871 for the price of \$8.43. These saw blades were expensive when you consider

\$1.00 was a good day's wages in 1871.

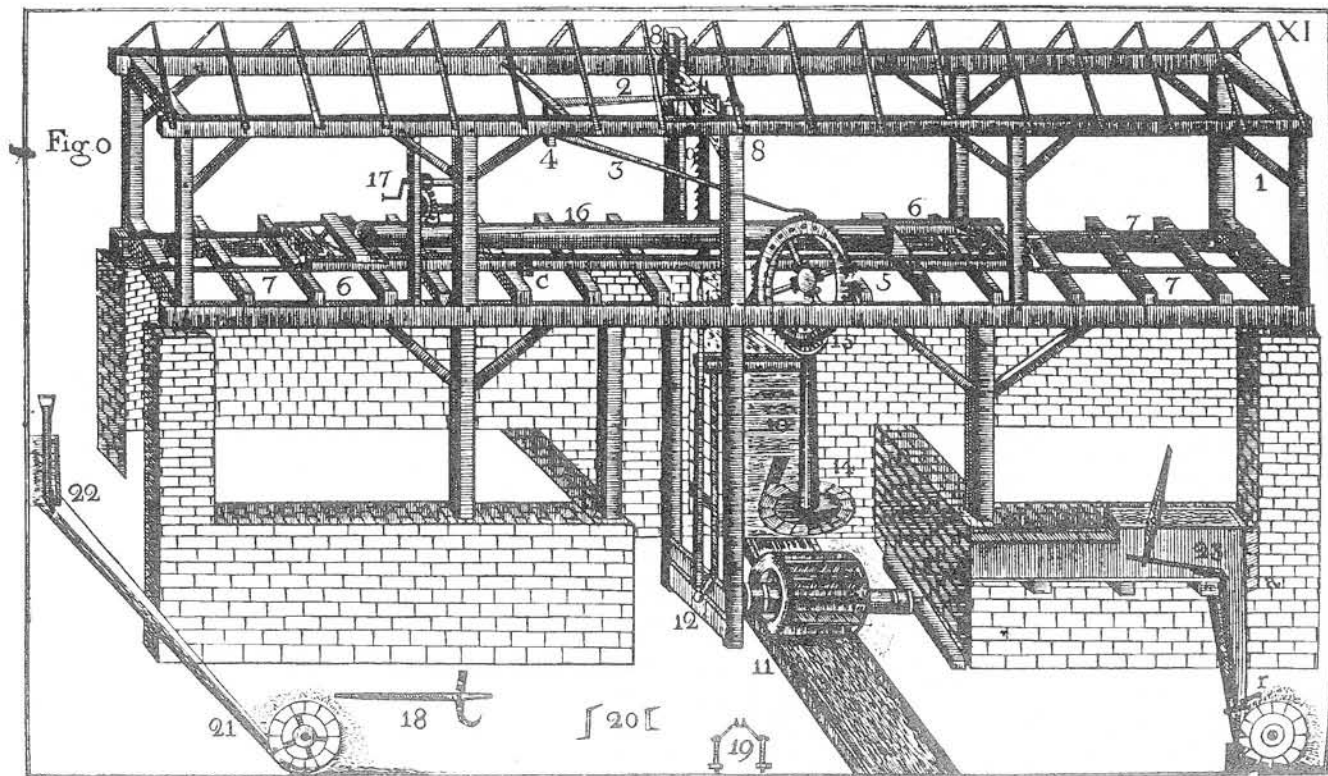
These saws required frequent sharpening to maintain an efficient cutting edge. A mill saw blade dulls quickly sawing logs with grit and stone imbedded in the bark. This commonly occurred while logging when the logs were dragged or skidded out of the woods after they were cut. A sharp saw blade will cut faster and more efficiently with less stress and wear on the saw mechanism itself. Besides the loss of efficiency, a dull blade requires considerably more power to operate.

It was not unusual to devote a part of each working day to saw sharpening and keeping the saw in good order. A good quality mill (saw) file, a saw set (used to bend teeth laterally to pro-

vide clearance between the saw and wood to decrease friction) and a skilled hand was all that was required to sharpen them. Most sawyers sharpened them in working position without removing them from the frame. As any saw blade is filed, a small amount of material is lost in the filing process. In time a saw blade would eventually be filed out of practical use and have to be replaced.

Much of the gearing, cogs and shafting were made of wood. The journals (a wooden shaft's bearing surface) in these early sawmills were iron. These iron gudgeons were mortised into the ends of the wooden shafting rested on/in wooden bearings. All sawmills required maintenance, much of it daily, to

*Con't. on page 10*



*In 1795, Oliver Evans published this classic drawing of an up and down sawmill in The Young Mill-Wright & Miller's Guide. Some of the important parts are: #6 the carriage the log rides on, #7 the ways the carriage rides on, #8 the fender posts, #9 the saw, #10 the forebay, #11 & 14 the water wheels to power the saw and carriage, and #12 the pitman to move the saw.*

*Sawmill - con't. from page 9*  
keep them up and running smoothly.

Daily lubrication of all gearing and bearings was an important task. Lubricants of the time were limited. Tallow (animal fats) mixed with beeswax was an early and often used lubricant. The beeswax was softened to a paste with turpentine (derived from pine trees) and was typically mixed 50% tallow to 50% beeswax. Oils such as sperm whale oil were available, but were expensive and not often used in mill bearings. Petroleum products were rare and expensive, but became more available and affordable by the second half of the nineteenth century.

There was a price to pay for the use of these up and down saws, in the loss of lumber production. Mill saw blades were made thick, averaging 5 (7/32") to 9 (5/32")

gauge, to stay true and stand straight, tensioned in the sash (or frame). They were made to hold up to, and to withstand, the daily abuse of heavy sawing. The teeth in these saws were heavily set to assist in efficient cutting so consequently they made a heavy kerf of nearly 5/16 of an inch. The kerf is the groove in the wood made by the saw while at work. Saw blade set gives clearance in the kerf by providing easy sawdust removal and not allowing the saw to bind or drag while cutting. This type of saw blade removed 5/16 inch of material with each board cut and made it into sawdust.

The advent and use of the circular saw with its 1/4 inch (or less) kerf would lessen this loss of material. With every 1/16 inch saved in the width of a saw kerf saves 1000 board feet of lumber in every 16,000 board foot sawn. This

was quite a substantial savings, meaning more profit for the mill.

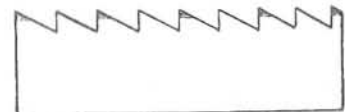
*Look for Part II in the next Millwork. Robert Grassi will continue the article talking about the Hanfords' circular sawmills.*



*A mill or saw file like this was used to sharpen the teeth of an up and down sawmill.*



*A simple saw set like this was used to bend teeth laterally to provide clearance between the saw and wood to decrease friction.*



*This illustration of a rip saw blade (essentially what an up and down saw is) shows the blade from above, illustrating how the teeth are bent to provide set.*

*Director - con't. from page 2*  
Planning Committee, and other committees of the Board of Trustees, began to evaluate and revise the Museum's Strategic Plan. The introspective and energizing process has resulted in goals and objectives which include: evaluating what visitors value about their Hanford Mills experience; improving the Museum's exhibits, programs and outreach activities; continuing to restore aspects of the mill's history - including turbine power; and expanding our resource development activities.

Grant and in-kind resources are essential to the Museum's progress. In 2004 we will redesign the orienta-

tion exhibit in the feed mill with the support of the Exhibit Alliance's Small Museum Assistance Cooperative Exhibition Planning and Design Program. Hanford Mills is one of only three small museums in New York to be chosen for this highly competitive in-kind design assistance. We have also applied for grants to stabilize and restore the feed mill, fabricate and install the redesigned orientation exhibit, and to evaluate how visitors experience the Museum's programs and tours. The Museum's ongoing operation can be attributed to the generosity of the O'Connor Foundation, and our successful projects and ongoing research is under-

taken with grants from the O'Connor Foundation, the Robinson-Broadhurst Foundation, the New York State Council on the Arts, the Dewar Foundation, and donations from the employees of Meade-Westvaco.

Each grant and donation - no matter how large or how small - is a piece of our funding puzzle. The donations of members and friends are also a significant piece of this puzzle. Please remember that your past and future gifts will support our plans to continue to preserve and operate the very unique history that Hanford Mills Museum represents.

Liz Callahan  
Executive Director

# Up-Coming Events

Applique Quilt Workshop - October 4 ↓

Historic Textiles & Quilt Show - Oct. 4 to 13

Visit the John Hanford Farmhouse to view antique and contemporary quilts plus historic textiles, clothing and shoes.

Mechanics' Harvest Festival - October 11 ⇨

"Even the Hemlocks" Exhibit - Oct. 4 to 31

Explore man's use & alteration of the local environment through this unique artistic exhibit by Bertha Rogers.

Harvest Cookstove Workshop - Oct. 25 ↓

Blacksmith Workshop - Oct. 25 to 26 ↓

Members' Holiday Party - December 6

Visit the John Hanford Farmhouse for holiday cheer. Look for your invitation in the mail with information on times.

Hanford Mills Museum presents the:

## MECHANICS' HARVEST FESTIVAL

Special Event! Admission \$5 per car!



Saturday, October 11, 2003  
10:00 am to 5:00 pm

- Watch craftspeople at work (blacksmiths, woodworkers, linsmiths, etc.)
- Learn about the museum's new steam boiler
- Children's crafts
- Horse-drawn wagon rides

**EXPLORE THE INDUSTRIAL SKILLS OF THE PAST!**



Meet George Paradox Hill - East Meredith's own 1890s inventor!




Hanford Mills Museum  
County Routes 10 & 12  
East Meredith, NY 13757

1-800-295-4992 or hanford1@hanfordmills.org or visit www.hanfordmills.org



Hanford Mills Museum presents **3 Different:**  
**Fall Workshops ~ ~ October, 2003**



**Applique Quilt ~ Oct. 4 ~** Learn about the fine art of applique quilting by hand. Visit the museum's quilt show for inspiration & sew a piece to bring home. Some sewing experience necessary.  
**10 am - 3 pm, includes lunch. Fee: \$35.**



**Beginner's Blacksmithing ~ Oct. 25-26 ~** Learn the basics of blacksmithing (how to set up a shop, starting a fire, & metalworking techniques. You will go home with a finished product.  
**9 am - 5 pm, includes lunch. Fee: \$90.**

**1920s Harvest Cookstove ~ Oct. 25 ~** Learn about 1920s harvest and preservation food preparation, and try your hand at cooking on the museum's cookstove. Create a fall dinner to eat in the house's dining room.  
**9 am through lunch and clean-up. Fee: \$20.**

**Return registration & fee to:**  
Hanford Mills Museum, P.O. Box 99,  
East Meredith, NY 13757  
**For more info.**  
**or late registration:**  
Call 1-800-295-4992 or E-Mail  
hanford2@hanfordmills.org



**Fall Workshop Registrations**



Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ My fee is enclosed

Members take 10% discount

Applique Quilt Oct. 4

Cookstove Oct. 25

Blacksmithing Oct. 25-26



*Mechanics - con't. from page 3*  
the talk of the community and prompted a number of articles in the local paper about his activities. He also added his two cents with his own editorials, not all published, and once explained the "P" in his name as standing for Paradox!

Although these people all varied in their skills and status in life, they all considered themselves mechanics. To them, a mechanic was anyone skilled enough to create something with their hands. Although very broad, it was an honorable distinction that Hanford Mills Museum wants to honor on October 11<sup>th</sup>. We hope you will join us for a day of demonstrations by modern traditional "mechanics" along with hands-on-demonstrations, tours of the Hanfords' mill, and first person encounters with George Paradox Hill. 

*Hanford Mills*  
No fossil fuels, no gasoline  
No oil or coal, no methane  
No power nuclear, or steam  
None of the above, we need.  
For sawing lumber or grinding feed  
Let us have a faithful stream  
A willing wheel completes the team.  
A water wheel - hence no pollution  
- What a sensible solution  
to power mod machinery  
Just as throughout history.  
May wheels and belts and pulleys go  
As long as waters love to flow !!

*Raymond W. Groves*  
at East Meredith, N.Y.  
Dec 2, 1989

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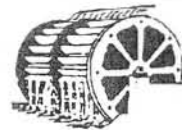
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Maintenance/Gift Shop: Fawn Houghton  
Intern: Amy Bishop    Kate Weller  
Interpreters: Bill Brindle    Cyndi Kurdziolek  
Bob Sheppard  
Gift Shop: Betty Brindle    Kara Chambers

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## MILLWORK



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### Hanford Mills Museum

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