

MILL MUSINGS

A Publication of the Museum of Power and Industry, Inc.

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1830 WOOL CARDING MACHINE BROUGHT BACK TO LIFE

After a five-month restoration effort, the museum can now boast an operating 1830 vintage wool carding machine. On the second Saturday in October, John and museum member Kyle Dugger operated the machine for the first time in almost 90 years, running several pounds of wool through the combing cylinders and producing 2-foot long wool slivers (pronounced SLY-vers) for spinning.

This machine was donated as a part of the dissolution of the American Textile History Museum (ATHM) in Massachusetts, following a proposal submitted by our museum to acquire several of their artifacts. The machine is believed to have first been used in a small woolen factory in Summersville, West Virginia, where it ran on and off for 100 years. It then spent over 35 years in a barn before ATHM acquired it in the mid-1960's. It was never restored and languished in a warehouse until we acquired it last year. John had to repair several broken castings and fabricate some parts. He had to visit the old carding machine in Ketner's Mill near Whitwell, Tennessee, to replicate a crucial part missing on our machine. The wooden cylinders had to be trued in Walter Clement's large lathe, and new carding cloth was applied with the help of Arthur Corey and Bill McEvily. After adjusting the cylinder clearances, the old machine ran beautifully.



Carding Machine



John at the Slubbing Billy

WORK DAY AT THE MILL – MARCH 2, 2019

We are looking for volunteers to help get the mill and grounds ready for the upcoming tourist season. Mark your calendars for **Saturday, March 2nd** and make plans to lend a hand. Wear warm clothes that you don't mind getting dirty. Bring work gloves, rakes, heavy shoes or boots. We will be working on the grounds, weather permitting, as well as cleaning inside the mill. A lot of dust can accumulate during the 3 months we are closed. R.S.V.P. by email to fallsmill@gmail.com or by calling the mill number directly (931) 469-7161. Lunch will be provided so let us know if you have any special dietary requirements. We look forward to seeing you in March.

SLUBBING BILLY, THE NEXT MACHINE IN THE PROCESS

The early carding machines produced wool slivers in short lengths. These could be spun into yarn directly on a home spinning wheel, but this process was too slow for the factories of that period. The spinning jenny was introduced in England about 1760 and could spin multiple strands of yarn simultaneously, but it required continuous (or condensed) rovings of wool to function. Shortly after its invention, a companion machine was developed to take the short slivers from the carding machine and twist them together enough to form continuous rovings, or slubbings, for the jenny. This machine came to be called a slubbing billy in England, and some appeared in America in the earliest woolen factories prior to about 1830. However, by that time a mechanical condenser that attached directly to the rear of the carding machine was invented, so the billy was no longer needed. Since it faded into history so early, it was thought by the mid-twentieth century that none had survived intact. However, in the early 1960's the staff of Old Sturbridge Village living history museum in Massachusetts learned of an existing billy and a part of another in the attic of a 1710 house in Connecticut. The intact machine was in a deteriorated state, but the moving carriage section from a second machine was in good restorable condition. After a long and interesting period of shuffling among museums, the carriage section finally came to us from ATHM, and John began plans to construct the missing frame and other parts necessary to make the machine operable. This restoration and reconstruction effort is almost complete as we write this newsletter, so we hope to be able to demonstrate the slubbing billy when we reopen in the spring. As far as is known, this will be the only such machine in the world that is operable. The twisted rovings it is expected to produce can then be spun into yarn on our replica spinning jenny.

FLY SHUTTLE LOOMS

The next step after yarn production was weaving into cloth. On hand looms, the weavers had to pass a shuttle containing a wooden bobbin wrapped with yarn or thread back and forth among the warp threads passing through the loom to produce woven cloth. This procedure became more difficult as the width of the fabric increased, such as in weaving blankets or coverlets. In 1738 an English inventor named John Kay introduced what came to be known as a flying, or fly shuttle attachment for the hand looms of the period, which enabled the weaver to propel the shuttle back and forth by jerking a cord from the center of the loom. This in many cases increased productivity, and later versions of the fly shuttle loom continued to be manufactured even into the twentieth century. One such example was recently donated to our museum by the Greenbank Mills museum in Delaware, and mentioned in our last newsletter. This is a Eureka loom made in the 1890's, and operates mechanically with the weaver only required to move the "beater" in and out as all other motions are activated. Shortly after the loom arrived at Falls Mill, museum member Kyle Dugger found a similar one for sale on eBay in Mobile, Alabama. After successful negotiations with the owner to reduce the price, John traveled to Mobile and brought back the loom and accessories. This is a Newcomb loom in very good condition. Newcomb was a competitor with Eureka, and far outlasted them in the manufacture of various types of hand operated looms. We believe this loom was made circa 1900.

WATER WHEEL GEARING REPLACEMENT

It is time once again to replace worn gearing on the 1906 water wheel at Falls Mill. This is one of the oldest and largest Fitz water wheels still operating in the U.S. The wheel uses 16 cast iron segment gears around the perimeter, and they drive a cast iron pinion gear that transfers power inside the mill. We approached Cattail Foundry, an Amish owned foundry in Pennsylvania, and they were able to make the new castings. The challenge now is to attach the gear segments to the wheel. Local machinist and master mechanic Frank Turpin has agreed to help with this, which we hope to accomplish before we reopen in March. Finney Machine Company is boring the pinion gear and attaching it to the shaft. The process of replacing gears is very heavy and tedious work, with the segment gears requiring several bolt holes to be drilled while they are in position at the bottom of the wheel.



Newly cast gears from Cattail Foundry



Kyle Dugger and the Flour Packer

COTTON GIN RESTORATION

In the past we have written about continuing restoration efforts on our 1887 Pratt cotton gin. John had to build a new brush shaft for the gin, and had been waiting until recently to check the balance on the shaft before replacing it in the machine. He was finally able to travel to South Carolina where friends Alan Warner and Kevin Harbin helped to balance the shaft with a talented associate and some sophisticated balancing equipment. With the new shaft in place, the gin is almost complete and can be run with our old Witte one cylinder engine or tractor.

ANTIQUATE TELEPHONE REPAIR

John and museum member Stephen Moss restored five antique crank telephones for the museum and have two connected and operable inside the mill. A friend near Franklin, North Carolina, Greg Mullins, brought them six more early phones to restore for his own system on his farm. They were able to get five of the phones working again, and Greg picked them up shortly before Christmas.

FLOUR PACKER

The last Falls Mill flour milling machine to go to Henry Horton State Park in Tennessee was an old flour packer taken out recently. Kyle Dugger helped John remove it and prepare it for loading. The disposal of this machinery has allowed us to open more exhibit space that is focused on the original textile history of the mill. We are keeping three sets of stone buhr mills that are still functional if we ever want to use them for demonstration purposes.

DONATIONS

Several donations of items were received since our summer newsletter was mailed. Woodworker Robert Woolfolk, who has built several spinning wheels, made a “shuttle filling machine,” also known as a pony, to accompany the Eureka fly shuttle loom. This was a small device that the weaver sat on and cranked to pull the cloth strips up and into the shuttle cans that were then loaded into the loom for weaving rugs. Another woodworking friend, Chuck Taylor, made 36 new wooden spools for the warping frame of the same loom.

Longtime museum member and friend Walter Clement donated an 1870's vintage foot powered wood mortising machine, which John repaired and used to cut the mortises in the frame of the slubbing billy. Milton Stover donated an unusual diesel fueled outdoor heater and a small forge. Museum member and benefactor Bernie Schroer donated a small coal stove and accessories, and continues to build wooden toys, birdhouses, and carpenter bee traps that we sell in the country store. One of the most recent donations is an early Dazey butter churn given by Kim and Jane Caulfield of Lincoln County, Tennessee. They are longtime benefactors of our museum and consultants on anything textile related.

A most unusual item we received was a 1950's era sliver tester, donated by Julian Hankinson of Spartanburg, South Carolina. Julian used this device in his textile consulting business. It tested for irregularities in the fiber slivers produced by carding machines.

For twenty years the Camp Younts Foundation of Raleigh, North Carolina, has generously awarded our museum an annual grant for restoration and exhibit development. This grant has been made possible through the efforts of our longtime friends Laurie Atkinson and his nephew Hal Atkinson. This recent grant of \$2,000 will be used to help fund repair of our water wheel. We again thank the Camp Younts Foundation for their continued support of our museum goals and projects.

PLANS CONTINUE FOR LOG SCHOOLHOUSE REPLICA

We are still in the process of acquiring logs and artifacts for construction of a replica one-room schoolhouse on the mill property. The latest load of logs was acquired from museum member Randy Chambers in Lawrence County, Tennessee. John and Mervin Mast loaded the logs on two trailers and brought them to the mill, where they are currently stored in the barn on the farm. As soon as the ground dries out, we plan to move some more old hewn logs from Winchester, Tennessee. This should provide most, if not all, of the logs needed to complete the construction. If anyone also knows of any old style school desks (with cast iron legs and seat on one side and desk on the back), please let us know, as we would like to acquire a few more for use in the schoolhouse.

OLD MILL CONFERENCE IN DALTON, GEORGIA

This year the Society for the Preservation of Old Mills (SPOOM) will hold its annual conference in Dalton, Georgia, hosted by the Prater's Mill Foundation. The conference is scheduled for June 5 – 8, 2019, and will include a one-day Miller Training session as well as local mill tours, the banquet, and the SPOOM board meeting. John has served on the board for more than 25 years, and we have been members of the society since 1981, the year of formation of our museum.

IN MEMORIUM

It is with sadness that we acknowledge the death of Fred Glazner, the husband and father of museum members Jenny and Robyn Glazner. Robyn has been a devoted museum volunteer, helping on Saturdays, and Jenny has enjoyed helping with the mill grounds, especially with the flowers. We extend our heartfelt sympathy to the Glazner family.

SECOND SATURDAYS AND VOLUNTEERS

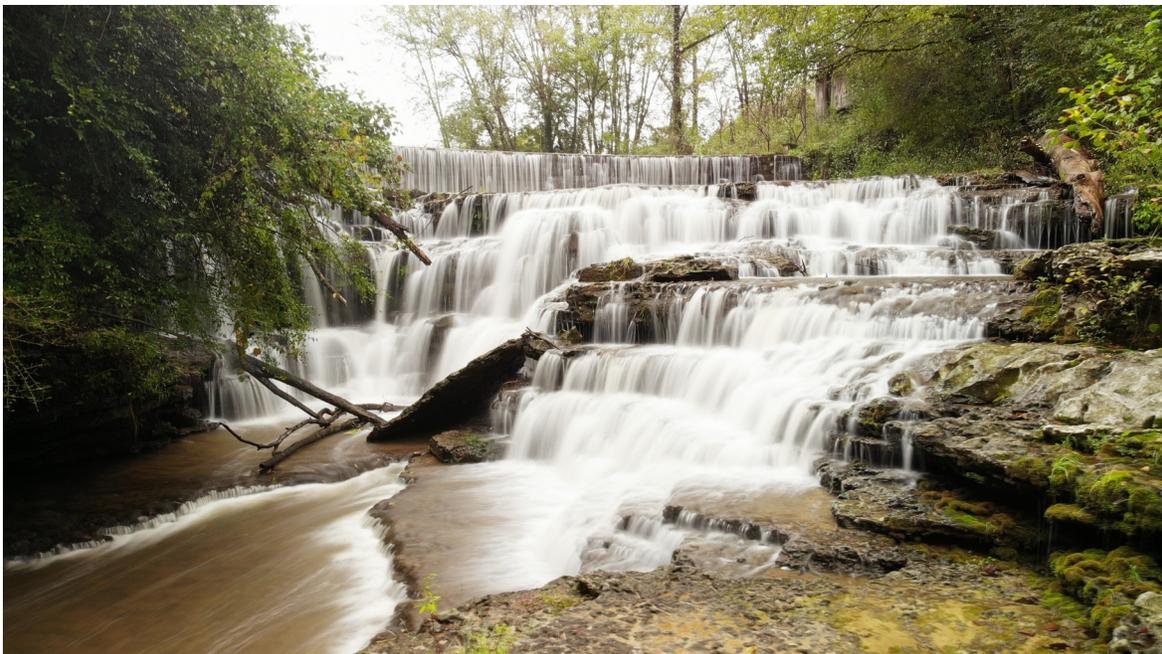
We appreciate the help of all those who have made our Second Saturday Demonstration Days a success. These event days have proved very popular and will begin again in May and continue through October 2019. Thanks are offered to blacksmith Gary Runyon, Carole Runyon and the area fiber guild for their spinning demonstrations, Candy Albright for her weaving demonstrations, Steve Walker for his very popular cowboy campground presentation, Kyle and Betsy Dugger for their help with textile arts and machinery demonstrations, and the Flat Creek Dancers. Also thanks to Kyle for his help in procuring the fly shuttle looms, tweaking the old carding machine, and helping remove the flour packer. And finally, many thanks to Lillian Holloway and Robyn Glazner for their help on Saturdays!

BLACKSMITH SHOP

The Falls Mill Forge continued to see use this past year. Several young people have become interested in blacksmithing as a result of visiting the mill, and we want to especially thank Gary Runyon for his demonstrations on our second Saturday events that have helped attract the interest of more “heat and beat” recruits. John and Russell Sells recently traveled to McDonald, Tennessee, to pick up some more coal for the local forges. John was also able to use the forge not only to make items for sale at the mill, but to make parts for some of the restoration projects.

DRONE PHOTOGRAPHY

Museum member and software architect Stacy Story from Winchester, TN has been taking digital images of the mill each week since late summer 2018. His drone flies over the mill and waterfall and the collective images are being compiled into a video chronicling the seasons and water levels for a full year. Stacy has offered for us to use the images in our press releases and brochures. A large shot of the dam and upper falls, taken from the water level at the bottom of the dam, is hanging in the log cabin bed and breakfast.



Drone Photography by Stacy Story

MEMBERS, OUR MOST IMPORTANT ASSET

The goal of the Museum of Power and Industry, Inc. is to interpret the history of Falls Mill as it relates to the various industries that took place here. These include cotton and woolen processing, cotton ginning, woodworking, and grain milling, all driven by water power. Your membership in the Museum allows us to continue this mission and expand our goals and accomplishments. Many folks join for the first time when visiting the mill with family or friends. Others are so enraptured by our beautiful setting and passionate desire to preserve this important part of Tennessee history that they have become donors, docents, and volunteers on special projects. All help is greatly appreciated. Thank you for your continuing support of our restoration efforts, which we couldn't do without you!

Check your membership card and see if it is time to renew for another year. Your membership fee and any donation you care to make are so important to us in continuing the work we have undertaken these past 34 years.

MEMBERSHIP _____ \$25 PER YEAR TAX DEDUCTIBLE DONATION \$ _____

PLEASE CONTACT ME TO BECOME A VOLUNTEER AT FALLS MILL

NAME: _____

PHONE: _____

EMAIL ADDRESS: _____

The Museum of Power and Industry, Inc.

Falls Mill

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