
GROTON HISTORICAL SOCIETY

Newsletter

Volume 27 Issue 1

Groton, Vermont 05046

Winter 2014

ASSEMBLY LINE is 100 YEARS Old

(From story by Douglas Elbinger in the Metropolitan dEtroit, October 2013)



2014 OFFICERS

President	Richard Brooks
Vice President	Deane Page
Secretary	Josephine French
Treasurer	Alissa Smith

Web Site Editor Donald L. Smith
Newsletter Editor J. Willard Benzie

CONTENTS

	Page
Assembly line 100 yrs. old...1	
Civil War...S.N. Eastman ...4	
Pictures8	
Families in 1820 census....11	
In Memoriam12	
GHS News14	

One hundred years ago development of the moving assembly line produced a huge resurgence of the industrial revolution. Henry Ford is credited with putting together the first moving assembly line to produce the world-famous Model T, which was created a few years earlier in 1908. Prior to 1913, Ford and virtually all automakers assembled whole cars at a station with employees working together to complete a single vehicle, usually from start to finish. Like other companies, Ford had made numerous refinements to the process, achieving impressive production totals of the Model T.

Henry Ford and his staff soon realized the need for a larger facility that could handle increasing output and take advantage of lessons learned from experiments to increase efficiency. Unlike other factories

(Continued on page 2)

at the time, this new facility had a main assembly building with no interior dividing walls, was well ventilated, and had 50,000 square feet of glass that allowed plenty of sunlight. When the plant officially opened on January 1, 1910 it was the largest auto plant in the world.

Led by Ford manager Charles Sorensen, the creation of the moving assembly line for mass production was the result of several years of experiments in assembly and production techniques at the earlier plants. Ford and his managers knew of developments in line production techniques and time motion studies. The company had first practiced stationary assembly techniques. The unit sat in one place, while skilled mechanics built the car with parts brought to them by helpers and stock runners. Under this system the company could only produce fifteen cars in a single day. This process required many hours of skilled labor, which kept production costs high. Consequently, these expenses had to be passed on to the consumer. In 1905, the price of Ford's Model C was \$850, far beyond the reach of the average citizen whose annual earnings were only half that amount.

At the new plant the managers spent many hours rearranging the workspace so that men, machine and materials were better placed in the sequence of operations. This led to the development of moveable benches to take the chassis from one workstation to another. The new plant afforded greater opportunities to manipulate conditions and better enhance the successful application of the principles of mass production.

The flywheel magneto assembly, a component of the ignition system, became the first department to test the new system. Under the old practice one skilled worker could assemble 35 to 40 magnetos in a nine-hour day. Managers and engineers subdivided the task into 29 separate operations so that no one person would perform more than one or two tasks in making the part. Components for the magneto were placed on elevated ways or rails that carried them past successive groups of workers who affixed various parts to the moving unit. Through trial and error, timing of the component feed was adjusted for the most efficient

results. Productivity not only quadrupled, but the system resulted in greater consistency in the product.

After tinkering with the line rate and other factors, the managers achieved results that were probably startling even to them. Starting with 29 workers performing 29 different tasks, the experiment reduced assembly time by about seven minutes per unit. And with more refinements, they were able to reduce the magneto-line workforce to 14 and cut assembly time to five minutes.

The system was next applied to assembly of the motor, transmission and other units with great success. As a result, the output of the sub-assembly lines was so great it overwhelmed operation at the final assembly line where it still took 12 hours to complete one car. By the summer of 1914, the time to complete a new car had been reduced from 12 hours to 93 minutes.

My father, who had spent some time working at the Ford plant after his graduation from Albany Business College in 1912, bought his first Model T in 1915 from Moses Frost, the Ford dealer in Groton, for \$515. Henry Ford sold his millionth car that year and kept good on his promise to refund each purchaser \$100, so the cost was less than half that of cars a few years earlier. The Model T, known for its durability and easy maintenance became the most popular motor vehicle in the world and made major changes in people's lives early in the twentieth century.

1915 Ford Touring Car being admired by my Grandfather John Benzie.



Excerpts from
THE CIVIL WAR
(As Recollected by an Ordinary Soldier)
By
Seth N. Eastman M.D. (1843-1913)

In observance of the sesquicentennial of the Civil War another excerpt from Dr. S. N. Eastman's story is given here. The first seven excerpts about his experiences in the Civil War were in previous newsletters and covered his enlistment at St. Johnsbury, basic training at Montpelier, deployment to Washington, D. C., involvement in the battle at Lee's Mills, their advance on Richmond, his capture by the rebel forces, time as a POW, parole back to the Union Army, reuniting with his old company, death of his closest friend, the infamous "Mud March" attempting to capture the rebel capital of Richmond.

All the time we were waiting for the order to attack, hundreds of guns on the hills around us were shooting into us and it seemed to me that all of us would be killed before the order to attack ever came. I saw some of our men go into the air like old bags at times when they were hit by shells fired into our ranks. The air seemed full of old iron. At last, the situation was relieved by the order to advance on the guns that were pounding the life out of us. This was a relief, as anything was better than to just stand there and get killed without doing anything about it, so we bolted forward at the order. This merciless cannonading and sniping became worse as we waded across the river and began the ascent of the hill. By this time we were in range of grape and canister, but we were on the move and they could not aim as well as before, so our losses were not as severe as before the advance began. Most of the shells went over our heads, although many men were also killed. If their aim had been better, the whole army would have been wiped out. These men we were attacking were General Jabel Early's army, composed of the very best fighting men in the southern confederacy, and they did not run or leave their guns, but stood up to their

work until we came full upon them. Some of the men climbed over the parapets and jumped down among the rebels. As for myself, I climbed up and got through an opening out of which one of the murderous guns protruded. This gun was fired just as I entered the opening. Our men piled in very fast, and the rebels, seeing the day was lost, then fled, leaving their guns. They hung on to the last possible moment, however, and were as brave men as I ever saw. Some of the cannons had the horses attached to them, evidently so they could be saved if the battle was lost. As the rebels fled, we shouted to them to halt, but they ran all the faster and were soon safe. In the excitement, I stabbed a horse in the side with a bayonet as the driver was trying to get him to run away with the gun, and I did not want to lose it. Someone attended to the driver, however, before he could stir the horse up, so there was no escape of that particular gun. We captured a few of the men and all of the guns and horses. They got away with their bodies and that is about all. This was by far the most exciting time I was ever in, and I was drunk with excitement. I had no fear at this time at all. We had hardly had time to breathe when a battery on another hill turned loose on us and began to put the shells right into us in the captured redoubt, so we were again under fire and in a very dangerous position. But, another part of the army saw the situation we were in and attacked the hill, and in fifteen minutes, that was in our hands also, so that danger was over. The battle was not yet over, however, as General Early was forming his men in line of battle in Plain sight, to retake his lost redoubts, but we quickly formed in line of battle and attacked him and he was put into complete rout, and we remained masters of the situation. As we advanced to this attack in line of battle, I saw distinctly in front of me, a moccasin snake, the most deadly poisonous reptile found on this continent. His head was elevated about two feet from the ground and resting on a low bush. He was prepared to strike and directly in my path as the line moved forward with a man at each elbow and at such a time I could not turn back, or fall back. I did not know what to do for a second, but finally gave him a tremendous kick ahead. I did not see him again, and don't know whether he crawled in the bushes or was

(Continued on page 6)

(Continued from page 5) civil war

killed. Anyway, I know that no one was bitten. The only bad effect I got from the kick was a stream of fecal matter that was forced out of the snake by my kick and got on my pants and boots. This had a very offensive odor and it was several days before I got rid of this.

After Early fled this second time, it was probably about 5 pm, so we marched back for our knapsacks, etc. that we had piled at about 11 am. We found them as we had left them and, as we were very hungry, we sat down and made coffee and had our first meal for the day. We were very tired, but felt that the battle was over and that we had won a very glorious victory, but we were very much mistaken. We only had time to drink our coffee and eat a hasty meal of hardtack, when we were ordered to fall in and we were marched directly through Fredericksburg and along the Salem Plank Road. We went out about five miles to a place called Salem Church, and here met the whole rebel army on its way to crush and capture us. They sailed into us before dusk, but they met such determined fighters that they did not continue battle more than half an hour and then they let us alone. We fell back then to the scene of our victory in the afternoon, the redoubts on the hills back of Fredericksburg. (The main armies at this time had been fighting at Chancellorsville, and the rebels had defeated Hooker, therefore they were very confident when they met us.)

By the time we fell back to the fortifications, it was dark and they did not follow us as they did not appear to like our style of doing business. We were sure we had whipped them so lay down to sleep in the yard of some rich man's summer home, near Fredericksburg. We slept the sleep of the brave, knowing that we had done our whole duty, and showed the country that we could fight if necessary. Also, General Sedgewick complimented us on what we had done, and said that we had defeated the enemy twice in one day and that we were the best fighting men on earth. This helped our brave feeling and we felt that no amount of men or guns could ever defeat us, but if we had only known what was going to happen the next day, we would have been weeping instead of bragging.

The next morning, May 5th, I woke up at about daylight. Our army was all asleep as they lay under arms in battle array, and as I

looked around, all was very peaceable and, in the fresh springtime, it seemed too bad that we were in the storm center of a cruel, bloody war. The memory of yesterday's sights was still in my mind, and the memory of my fallen comrades, and there were a lot of them, too. Many a young man my own age lay cold and as yet unburied, looking proudly toward heaven from the death-bed of fame. As I lay there, thinking and looking around, I noticed a battery of field artillery about 1/4 of a mile away and pointed in our direction. I wondered whose it was and, as I was looking, a puff of smoke issued from one of the guns and a second later, a shell struck about a rod in our rear. In a moment after that, all was confusion, as the sleeping army came on its feet, and a hurried movement was begun towards the rear or to some place of safety, we didn't care where. This battery that had opened on us had come in the night and had almost completely surrounded the part of the army that I was in. In a few moments a line of rebel skirmishers was advancing from Fredericksburg, which was almost directly in our rear and which we thought was safely in our hands. But the rear was left unguarded and the scouts of Early and Jackson had found this out and had secretly re-occupied the city, so that all the forts and artillery that we had captured the day before, were again in the hands of the rebels. The most important thing we had captured was forty pieces of brass canon, and all at the heavy expense of men, and the rebels had taken it all back without firing a gun or losing a man. It was no wonder we were a little discouraged at this time. Besides that, we were almost surrounded and trying desperately to fight our way back to the main body of our soldiers.

At about this time also, we heard of the defeat of our comrades at Chancellorsville, and we thought we were definitely whipped. Really, I guess all we were thinking about was retreat. The day was Sunday, and to make sure of making us prisoners, they spent most of the day moving men into our rear and around each flank, thus putting off the main attack on us until they were ready to scoop us all in, as they knew we could expect no help from Hooker, as he had been badly beaten the day before and was in full retreat. About 5 pm, they got ready to capture us or drive us into the Rappa-

(Continued on page 10)

SOME PICTURES OF GROTON IN YESTER-YEARS



Main Street



East End where Sewell Page manufactured the Page Chain in the 1930's



Upper Main Street



Lower Main Street

(Continued from page 7) **CIVIL WAR**

hannock River. General John Sedgewick had command of our little surrounded army, and he had no idea of surrendering, and put his little army, composed of the 6th Army Corps and one division of the 2nd Army Corps into a position of defense. He had about twenty thousand men and thirty or forty guns to fight with. They had about three men to our one in the ensuing battle.

All day long we could see the glint of bayonets as they moved along our left flank. That was Jackson's way of fighting, to attack from the flank. When all was ready, there was a single cannon shot from the enemy and that was a signal, and the movement began that was planned to destroy us. Our regiment was placed to support Snow's 1st Maryland Battery, and in plain sight of the enemy. At the signal, they began their advance, keeping their alignment as they were trained veterans. As they came in range of the guns, we were to defend. They opened fire with solid shot. We could see the effects of these shots very plainly as they landed all around us. As they came through some woods, driving deer and rabbits ahead of them, our batteries began exploding shells among their ranks. They paid no attention to this, but closed up the gaps and steadily swept forwards toward us. As they came nearer, our guns threw grape and canister among them, which killed them by hundreds, but still they came on regardless of all danger. At last our cannons pounded them with double and treble charges of grape and canister, all to no purpose, as on they came until they were among our guns and taking the swab sticks away from our gunners. At this time we were given orders to "Charge bayonets." We had been lying down to avoid their musket fire, but at this command, we jumped to our feet and, in an instant, all the bayonets were on a level, and forward we went on the run. We followed, shouting and swearing. We struck another line of rebel infantry that melted just as the first. We were shouting as though crazy, and I don't believe anything could have stopped us except death. We went through their lines of battle and put them to rout, and captured more men than were in our regiment. After giving them this set-back they left us alone and it was now dark and this battle was over.

FAMILIES IN 1820 GROTON CENSUS

Forty three of the 73 families in the 1810 census were still here in 1820 and 58 new families were listed in the census of Groton. All but six of the new families were sons, daughters, or other relatives of earlier Groton settlers. Sons of earlier families were Darling (4), Emery (2), Hatch (1), Heath (3), Hodgdon (1), Lund (1), Morrison (2), Page (3), Renfrew (2), Rhodes (1), Taisey (2), and Welch (3). The 15 new heads of families, who married daughters from earlier families, were Daniel Coffrin, Nathaniel Cunningham, Nathan Downs, Isaiah Frost, Moses Frost, Samuel Glover, Hosea Lowe, Norris Marshall, Andrew McClary, Moses Plummer, Samuel Plummer, Job Welton, Ossa Wilmot, William Vance, and Joseph Wormwood. Twelve family heads who were other relatives of earlier family members were Foxwell, Hiram and Joseph Whitcher, Ira Lowe, Benjamin Goodwin, Daniel Wilson, Lydia (Ricker) Roberts, Joseph Ricker, Ezekiel Gile, Moses Emery, Nancy (Fisk) Darling, and Joseph Hill. The six new families were: Chase, Higgins, Huggins, Lyle, Richardson, and Sargent.

Altogether 20 new family names appear for the first time in the Groton census of 1820 .

CHASE, Moses listed in the 1820 census of Groton with 3 males and 2 females in the family. There are 11 Moses Chase families listed in the Groton Historical Society records, but the one living in Groton in 1820 has not been identified.

COFFRIN, Daniel married Margaret E. "Peggy" Hooper, daughter of James Hooper and Mary "Polly" Emery. The family is listed with 2 males and one female in the family in 1820. The female is not listed in the GHS family records, but two boys, James and Daniel Jr. are and there are 50 descendants of Daniel and Margaret.

CUNNINGHAM, Nathaniel married Iza Welch, daughter of Edmund and Hannah (Annis) Welch. They had two daughters listed in the 1820 census and two sons were born later. Nathaniel and Iza have 321 descendants in the GHS family records.

(Continued on page 12)

(Continued from page 11)

DOWNES, Nathan, son of Moses and Abigail (Ricker) Downs, married Betsy Morse, daughter of Edmund and Sarah (Wesson) Morse and they are listed with two sons and a daughter in 1820 census. They have 13 descendants in the GHS family records.

GILE, Ezekial, first cousin of Judith Gile wife of Robards Darling, married Polly Phillips and they have 5 children in the 1820 census. The family moved west later, only 13 descendants are in the GHS family records.

GLOVER. Samuel, great grandfather of Waldo Glover, married Rebecca Lane in 1797 and Deziah Welton in 1819. He has 694 descendants listed in GHS family records.

GOODWIN, Benjamin married Phoebe Wilson and came to Groton in 1816 with his family of 5 children. There are 1,226 descendants in the Goodwin family records.

HIGGINS, Luke married Betsey Stewart in Ryegate about 1810 and they had two daughters under 10 years old in 1820. No additional information about the family is in GHS records.

HUGGINS, John A. is listed with 2 males and 3 females in the family, but they are not listed in the GHS records.

LYLE, William came to Groton in 1816 with his wife and 4 sons. He died in Groton in 1834 and his widow and family went to Wethersfield, IL in 1837. There are 81 descendants in GHS records.

MARSHALL, Norris married Judith Darling, widow of William Taisey. There are 11 descendants in GHS family records.

McCLARY, Andrew married Abigail Ricker, daughter of Joseph and Mary Heath, in 1814. There are 47 descendants in GHS records.

PLUMMER, Moses came to Groton with his family in 1801 and was Town Clerk in 1803, but returned to Sanford, ME the next year because his wife was homesick. Their two sons, Moses and Samuel returned to Groton and are in the 1820 census. There are 1,418 descendants of Moses in GHS family records.

RICHARDSON, Joseph was living with another male 16-18 and a female 45+ years old, possibly his brother and their mother. The family has not been identified in the GHS family records.

RICKER, Joseph was the head of a family of 10 in the 1820 census. He married Mary Heath in 1793 at Newbury and the family moved to Groton before the 1820 census. There are 1,329 names in the Ricker family in the GHS records.

SARGENT, William married Dollie Rouse and they had one daughter in 1820. There are 8 names in GHS record of the Sargent family. The family moved to Ohio.

WELTON, Job married first Betsy Darling in 1799 at Bradford and she died in childbirth in 1800, then he married Phoebe Darling in 1802 and the family of 10 are in the 1820 Groton census. There are 52 names in the Welton family records at GHS.

WILMOT, Ossa "Oze" married Lydia Morse, daughter of Edmund and Sarah (Wesson) Morse. The family is listed in the 1820 census with 4 people and in 1830 with 9 in the family. They apparently left town before the 1840 census. Names of the children are not in the GHS family records.

WILSON, Daniel was reported coming to Groton in 1795 with his sister Mary, who married Timothy Emery, but was apparently overlooked in earlier censuses as they lived near Levi pond (named for their son, Levi). Daniel married Lucy Abbott and the family has 8 people in 1820, but only Levi is listed in the GHS records. The Wilson family has 1,742 names in the GHS records.

WORMWOOD, Joseph married Sally Page, daughter of Enoch and Isabel (Straw) Page, and they had 6 daughters and one son in the 1820 census. There are 1,703 names in the Wormwood family records at GHS.

IN MEMORIAM

Member Russell Page age 94 passed away 21 January 2014 at the Grafton County Nursing Home in North Haverhill, NH. The story of his service during World War II as told to Dale Brown was in the Summer 2010 issue of this newsletter (v23-issue3).

GROTON HISTORICAL SOCIETY NEWS

Visit GHS Web page at Historical Society on <http://www.grotonvt.com/>

One purpose of the Groton Historical Society is to preserve the history of families in Groton and beyond by collecting and archiving family records, photographs, heirlooms and artifacts. If you have such items you would like to donate, please submit them, or copies, to the Society at P. O. Box 89, Groton, VT 05046, bring them to a meeting, or e-mail to jwbenzie@mchsi.com

The All-Class Reunion held in June was a huge success with 120 alumni (graduates, students and teachers) and 48 guests participating. Most of the alumni, and some of the guests had their pictures taken for a Reunion yearbook. Booklets are still available and can be mailed to you for \$3.00 while supplies last.

The Preservation Trust of Vermont is now accepting nominations for its 2014 Preservation Awards. The Trust has recognized outstanding contributions in the field of historic preservation since 1982. Awards are presented to individuals and organizations who have made special contributions in preserving Vermont's historic architecture. Award nominations for 2014 are due on March 4, 2014. Winners will be notified by March 11th. All awards will be presented at the 2014 Historic Preservation Conference on May 2 in Island Pond. Nomination forms can be downloaded from their website, www.ptvermont.org. All awards will be presented with a short video telling the recipient's story. To see a few inspiring stories from recent Honor Awards go to: http://www.ptvermont.org/preservation_awards/preservation_awards.php.

Middlebury College recently hosted a program presented by Jeanne Brink on the native people of Vermont and how they lived entitled "The Western Abenaki: History and Culture".

Norwich University's Sullivan Museum and History Center has a new exhibition in the Civil War series, 1864: Some Suffer So Much.

This exhibition, which opened Monday, January 13, is the fourth in a series on the University's contributions to the conflict. It presents the stories of Norwich alumni during the bloody year of 1864. Through objects, photos and ephemera, it shows the role of military surgeons who treated wounded soldiers on the battlefields and in the three Vermont Civil War hospitals at Brattleboro, Burlington and Montpelier. Norwich alumni played a significant role in the United States Colored Troops, African American combat units that fought in 1864. Vermont's connections to the Civil War include the October 1864 Raid on St. Albans. In response to this Confederate attack from Canada, the Norwich University Corps of Cadets was mobilized to defend Vermont's northern border. The exhibition runs through December 2014.

One hundred seventy-five years ago, in January 1839, members of the Academy of Sciences in Paris were shown a unique photographic process that literally changed the world as we see it. The inventor, Louis-Jacques-Mandé Daguerre, called his discovery the "daguerreotype". It was the first commercially successful form of photography. Later that year, a British inventor, William Henry Fox Talbot, announced his calotype process, making 1839 the year photography was popularized. Some controversies regarding who was first ensued. Daguerre did not claim a patent in France but gave the French government the rights to the process as a gift "free to the world", although an agent later filed a patent in England on Daguerre's behalf. As can be imagined, the early history of photography was rife with similar designs, claims to fame and compensation, and many other related intrigues that go hand-in-hand with an invention of such universal significance. Today, most of us recognize daguerreotypes and may be fortunate to own such historic likenesses of our ancestors. As early as the 1840s, there were daguerreotype studios in the United States.

R. H. Wilmot, of Groton, advertised in the *North Star* on 7 Oct. 1843 that he takes daguerreotypes, probably the first photographs taken in the area (from *Ryegate History* by Miller and Wells, 1913).

Groton Historical Society Newsletter
Editor jwbenzie@mchsi.com
P. O. Box 89
Groton, VT 05046-0089

