

View Made By Smart Hardwick Vt
Woodbury Granite Co

David S. Berger

The NEW ENGLAND STATES



Limited

V.1 #3 WINTER 1977-78

\$2.50



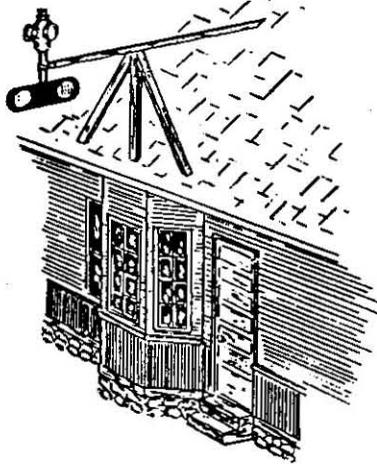
The Danbury Branch

Hardwick & Woodbury

THE NEW ENGLAND STATES *Limited*

Vol. 1 No. 3

Winter 1977-78



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REGULAR COLUMNS

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Notes of interest to modelers of New England railroads

Front Cover: The late afternoon of May 20, 1961 was unusually busy in Danbury, Conn. The Northeastern Region of the N.M.R.A. was having its annual Spring Convention in nearby Stamford and included a fan trip from that point to Devon, thence over the Naugatuck and Maybrook lines to Danbury before returning to Stamford. At Danbury the passenger extra was held for Train #143 to clear on its trip from Pittsfield, Mass. to Grand Central. Thus our cover shows FL-9 #2017 on Train No. 143 at Danbury with some of the "fan trippers" to the left complete with camera bags. The unanswered question is what attracts the attention of both the engineer and fireman off to their left?

Donald S. Robinson Photo

Rear Cover: The northern extension of the Danbury Branch is formed by the old Housatonic R.R. and the Berkshire R.R. These two entities extended rail service from Danbury, Conn. to Pittsfield, Mass. with a branch from Van Deusenville, Mass. to the B&A at State Line, N.Y. for freight interchange. Our photo shows three New Haven RS-3's drifting by the well kept depot at Stockbridge, Mass. on June 9, 1957. The units had taken cars up to the B&A interchange in Pittsfield and are returning light to go up the branch to State Line, N.Y. to pick up cars being received there.

Jim Shaughnessy Photo



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COMING ATTRACTIONS

The History of the Boston & Maine's
Manchester & Lawrence Branch

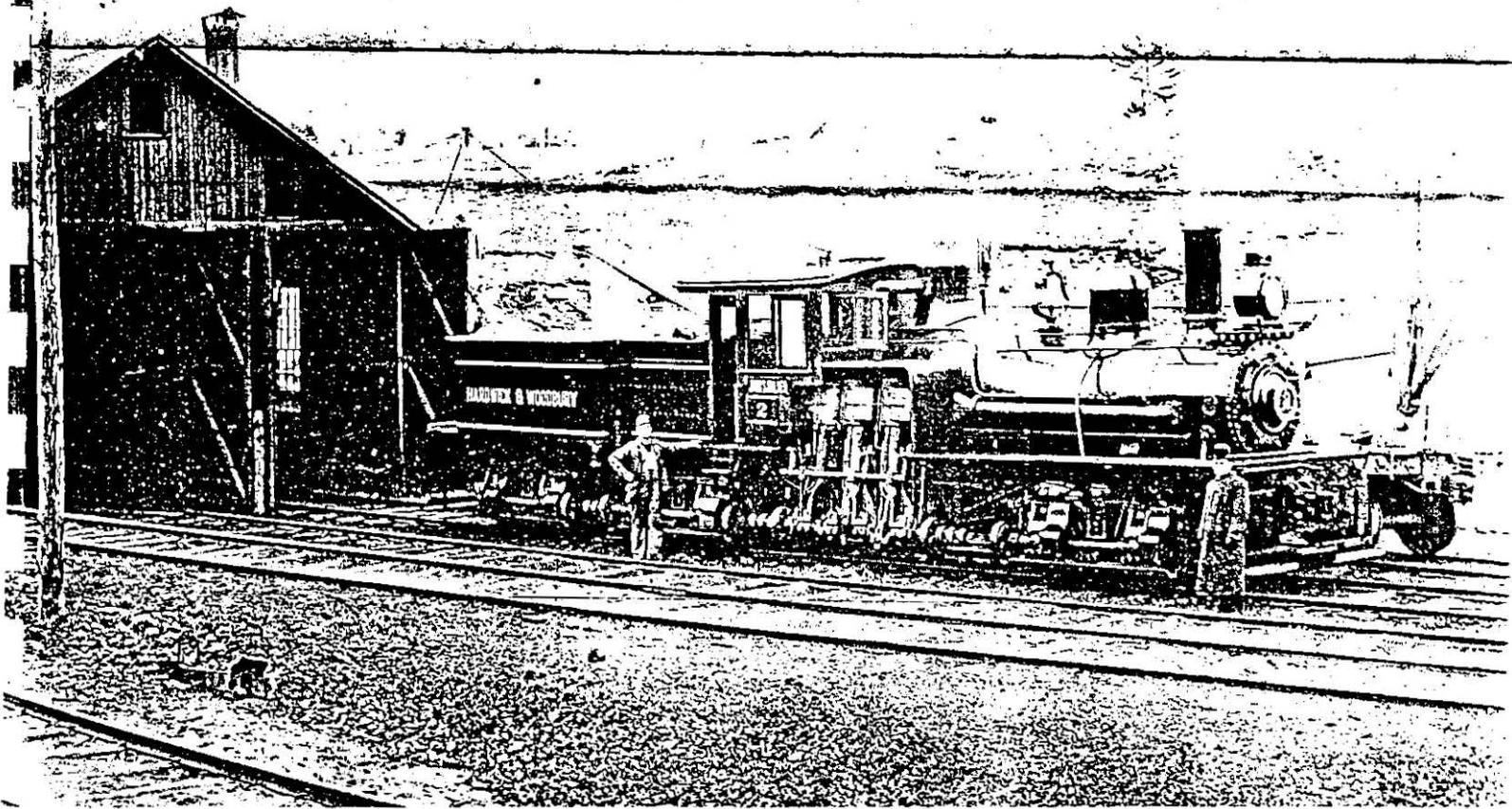
Change Cars at Myricks; The Story of a
N.Y.N.H.&H. Junction

The History of the Connecticut &
Passumpsic Rivers R.R.

Histories of several N.Y.N.H.&H.
Predecessor Railroads

and other fine articles

Ed. note: Anyone with material and/or photos that might be used with any of the above articles - please let us know. We are always looking for more information and new sources for pictures.



Hardwick & Woodbury #2, a three trucker completed by Lima on 2-20-01 as Construction No. 627, poses in front of the combined engine-house and shop in Hardwick shortly after her arrival on the line, at the beginning of the era of rapid growth of the Hardwick granite industry. Spaulding Photo; M.R. Kendall Collection

Rough Granite, Tough Shays

A History of the Hardwick & Woodbury R.R. and the Woodbury Granite Company

by *Marvin R. Kendall*
& *Donald B. Valentine, Jr.*

The Hardwick & Woodbury Railroad came into being in the mid 1890's as a direct result of the rapid expansion of the granite finishing industry in the Hardwick, Vt. area during that era. The quarrying and finishing of stone for building and monumental purposes had been carried on in Hardwick since the mid 1800's when some small marble quarries were opened in the area. The firm of H.R. Mack began finishing marble in 1868 and later finished both marble and granite, principally for monumental work and curbing posts. As the granite quarries developed, most work with marble from the area ceased. It appears at this late date that the quality of the local marble was not as good as that found in southwestern Vermont and elsewhere. In any event, by the mid 1870's granite was the

predominant stone product of Hardwick. The completion of the Lamoille Valley Railroad as far as Hardwick on January 1, 1872 enabled the finished stone to be shipped much more easily and at a considerably lower cost. The Lamoille Valley R.R. was one of the companies used by the Portland & Ogdensburg R.R. as a vehicle to complete the Vermont Div. of the P & O. As most readers will recall the Vermont Div. was in financial difficulty by the time it was completed in 1877 and emerged as the St. Johnsbury & Lake Champlain R.R. in 1880. Financially troubled or not, the railroad brought the beginnings of the real expansion of the stone finishing industry in the Hardwick area, to the benefit of all parties. To further the utility and ease of rail transport, the St. J.&L.C. built

a branch in 1892 to better accommodate its increasing granite traffic. This branch ran from Granite Jct., on the western edge of Hardwick Village, to the finishing sheds of H.R. Mack and others; a distance of some one and 7/10ths miles.

With the railroad providing efficient and economical transport to distant markets and a boom in the use of granite in the building construction industry, partly as a result of the ease of rail transport nationwide, it was not long before larger sources of granite were sought near Hardwick. During the previous twenty years or so several small quarries had been opened extending in a rough line from Hardwick to Robeson Mountain in the town of Woodbury, approximately eight miles to the south. Indeed, Town & Voodry's Woodbury Granite Quarry

was in operation upon the north shoulder of Robeson Mountain prior to 1885. It was this firm which later merged with another to form the largest granite business in the area, and for many years the world, the Woodbury Granite Company. E.R. Fletcher, owner-operator of the Fletcher Granite Co. was also quarrying granite on Robeson Mountain by the late 1880's. The problem was in getting the rough granite from the quarries where it was cut to the finishing sheds in Hardwick. No unpaved highway of the period, no matter how well constructed, could handle the continued passage of heavily laden wagons of granite drawn by six horse teams without an inordinate amount of maintenance. Even then it was a slow trip down off the mountain to Hardwick. It is reported that it once took an eighteen horse team three days to move a large column of rough granite from a quarry in Woodbury to Hardwick, after which twenty culverts had to be rebuilt along the road. One wonders if things were any better in the winter when the ground was frozen and large sleds were used. This problem, combined with the obviously limited capacity of the wooden wagons utilized to carry the rough granite, created a transportation crisis for the quarry operators.

Prior to the advent of rail transport, it will be recalled that most serious quarrying for the building trade in North America, and the greatest use of stone for buildings of other than very limited proportions, was near water where waterborne transport could be used between the quarry and the final building site. The first major change in this pattern brought about the first railroad in North America, The Granite Railway Company, in Quincy, Mass. in 1826. The sole purpose for which the Granite Railway was built was to ease the task of carrying the stone for the Bunker Hill Monument from its quarry to the Neponset River, just under three miles. Further changes in this pattern were usually brought about by an increase in the mileage of the nation's rail network. A few years previous to the serious opening of quarries on Robeson Mountain the finishing plant operators found that the completion of the St. J. & L.C.R.R. greatly eased their transportation troubles and expanded their market as well. The firm of H.R. Mack, in particular, had seen a great increase in business since the railroad had been completed to Hardwick and had built

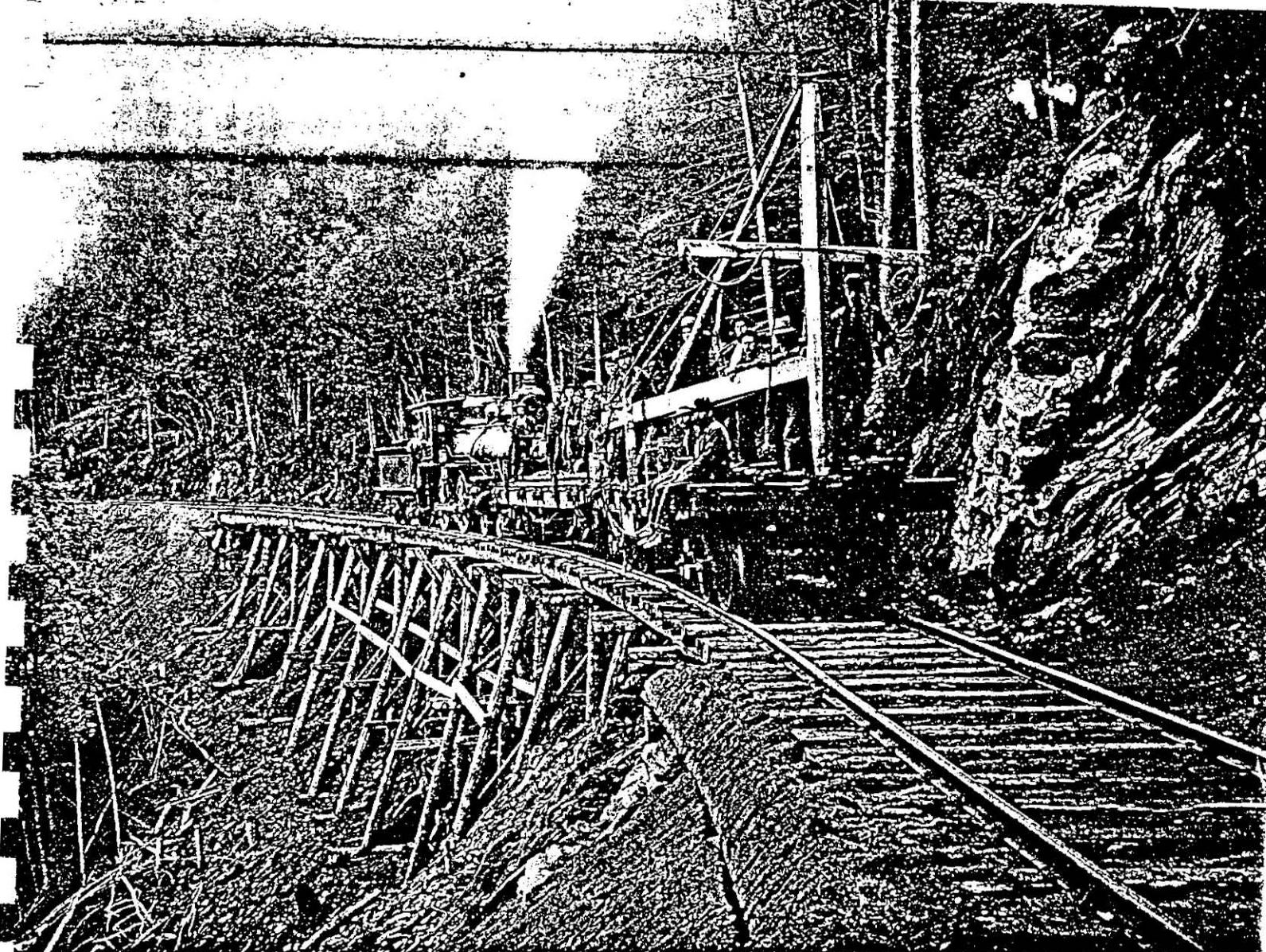
the branch from Granite Jct. If rail transport could solve the problems of the finishing firms and bring thriving prosperity to them, the quarry operators reasoned, it could do the same for them. The Woodbury quarrymen were also well aware of the increased competition they faced from quarries on Millstone Hill near Barre, not too far distant. Quarries there had had rail service since the opening of the Barre R.R. early in 1889. The difficulty and expense of building a line from Hardwick to Woodbury was too much for the financially weak St. J. & L.C.R.R. Those interested in such a line had discussed it with the railroads' officials who responded that they were not in a position to extend the spur built earlier to the finishing sheds. Thus it was that on November 23, 1894 a group of quarry operators; granite finishers, who couldn't exist without a steady supply of rough stone at a reasonable cost, and influential citizens obtained a charter for the Hardwick & Woodbury Railroad Company with the right to build "from some point on the St. J. & L.C.R.R. in the town of Hardwick to the mountain quarry of the Woodbury Granite Company in the town of Woodbury". It is interesting to note that the act of incorporation allowed the railroad to suspend operations from November to April unless it chose otherwise. While the ensuing winter prevented much physical progress from being made, it is probable that most financial arrangements were made in that period under the careful guidance of John S. Holden, of whom we shall hear more later. The first regular meeting of the newly incorporated line took place late in the winter on March 16, 1895 at which time officers were chosen and construction authorized. Representatives of the St. J. & L.C. and the Boston & Maine, which controlled the local line by then, were invited to the meeting which convened in Hardwick. Officers elected at that meeting were George M. Powers, from nearby Morrisville who was the areas' Congressional Representative, as President; Charles A. Watson, of Woodbury and believed to be involved with one of the quarries, as Vice President; E. H. Blossom, Asst. Supt. of the St. J. & L.C. of St. Johnsbury, as General Manager; J.H. McLeod as Treasurer and Charles L. Sanford as Clerk. Directors elected included George M. Powers, E.H. Blossom and C.A. Watson, all of whom have already been mentioned; plus E.R. Fletcher, of St. Albans and owner of

the previously mentioned Fletcher Granite Co., J.V. Dutton of Hardwick, W.H. Fullerton, of Manchester and a pioneer Woodbury granite man, and A.B. Thomas of Hardwick, thought to have been connected with the Thomas Quarry in Woodbury.

While the Town of Woodbury refused at a special Town Meeting to purchase any stock in the new line, as was allowed by the charter, the Town of Hardwick, at a special Town Meeting of its own on July 6, 1895, voted to purchase 400 shares of stock at a par value of \$25.00 each. The balance was taken up primarily by the granite quarrying and finishing firms, and their officers as individuals. Some stock was used in payment for land taken for the right-of-way and the remainder was sold by private subscription.

During the summer of 1895 the line was surveyed from the end of the St. J. & L.C. spur to the quarries on Robeson Mountain by one Frank Brown with Chief Engineer Williams, of the Boston & Maine, assisting in the location. Grading of the line, which was to be done with local labor, commenced that summer but ceased as soon as winter set in to stay. Even with the late start and using only what local labor could be found the first five miles, to Burnham Hill were graded in 1895 though no rail was laid. In the summer of 1896 the remainder of the line was graded. This section included the steepest grades and sharpest curves, up to seven per cent and twenty one degrees, respectively, necessary to reach the various quarries. The last two miles of "main line" to the quarries had a steady five percent grade and still required two switchbacks to reach the level of the various quarries being worked at that time.

If one were to drive south from Hardwick Village today along State Route #14, particularly in the winter when the leaves are off the trees and snow outlines the contours of the ground, one can gain an appreciation of the work confronting the builders of the H&W in the mid 1890's. Were it not for the fact that this region is more wooded and the hills less jagged than those in Colorado, one would think he was viewing some abandoned roadbed of a Colorado narrow gauge line. From where the hills begin to close in on the highway from both sides the old roadbed can be seen high above on the easterly side where a shelf was cut out, often blasted, or built up for it. Its many twisting curves were dictated by



To begin laying rails on the H&W a rail leader was constructed upon a flat car to form the head end of the construction train and B&M 4-4-0 #250, an 1888 Rhode Island product, was leased to power the train. Fortunately for us, Mr. Spaulding, the photographer-in-residence in Hardwick during the early years of the H&W, was on hand to photograph the construction train on one of the temporary trestles believed to be near Burnham Hill.

Spaulding Photo; Courtesy of F.L. Donlin

the contour of the land as the line wound its way south, fighting for elevation all the way, to reach the quarries on Robeson Mountain. Here was Vermont's answer to Colorado's Crystal River R.R. The highest quarry was that of the Fletcher concern which was about 1000 feet higher than the cutting sheds in Hardwick which were at an elevation slightly in excess of 1800 feet. The Fletcher Quarry is reputed to have been the highest point reached by a standard traction railroad in Vermont. The authors feel it probably was unless exceeded by the Rich Lumber Co.'s Lye Brook R.R. which operated out of Manchester Depot, Vt. just after the turn of the century and used Shays for power as we shall see the H&W did. Even today the roadbeds of the various tracks on Robeson Mountain are very much in evidence, some parts being

used as access roads to the quarries and others being used as woods roads by loggers.

Track laying actually began in the late spring of 1896. While the St. J. & L.C. was not able to build the new line itself, it could and did furnish 56 lb. rail, fishplates, spikes and ties for the H&W at a reasonable cost. Since it was unlikely that the H&W would have any other rail connection in the foreseeable future the St. J. had nothing to lose and a considerable amount of traffic to gain! Through the auspices of the St. J. & L.C. the H&W was also able to lease a B&M 4-4-0 and any cars needed for actual construction work. Upon a flat car furnished by the B&M, the Hardwick & Woodbury construction gang fashioned a wooden derrick and rail leader to assist in laying rail. As in the past, the construction crew was

largely comprised of local farm people and others who could spare time away from their regular work on occasion for cash wages. With the usual cut and fill construction so typical of railroads, particularly in a mountainous terrain, there were several smaller timber trestles and one large one built enroute with the timber for them usually cut close at hand. The six longest trestles totalled 800 feet in length, with the individual trestles varying from 60 to 200 feet in length. During the latter part of the lines construction the firm of Varnum & Gilfillan was awarded a contract to fill many of the trestles and do other "special work", probably stone mason work for culverts to replace the smaller trestles. This firm brought Italian day laborers in from Boston to have an adequate work force. Some of these men remained in the area and found

jobs in the quarries and finishing sheds. Not many years thereafter most stone finishers in the Vermont granite districts were primarily of Italian extraction as the Scotch-Irish who had originally done the work refused it when the industry converted to air operated cutting tools creating a dusty atmosphere in the sheds far worse than that which previously existed.

Construction continued through the summer of 1896. Track was laid on the section graded the previous year from the end of the St. J. & L. C. branch to Burnham Hill. Grading had continued on to the quarries from that point but a serious obstacle arose while laying the rail. Upon reaching Foster's Summit, some two and one half miles from Burnham Hill, it was found that the little 4-4-0, #250, leased from the B&M could not move itself and the rail car any further due to the severity of the grade. Thus only minor grading work continued until approximately August 1897 when a Shay Patent locomotive was acquired secondhand from the Barre R.R. which was put into service very quickly after it arrived in Hardwick and was overhauled. Things progressed rapidly after the Shay entered service. By October 1, 1897 track had been completed to the Woodbury Granite Company's "Gray Quarry", shortly after which the Fletcher Quarry was reached at the highest elevation on the railroad. The line at this time was nine miles long, not including spurs and sidetracks, and required two switchbacks to reach the Woodbury Granite Co.'s quarry and a third to reach the Fletcher Quarry.

It is probable that some of the Hardwick & Woodbury's Directors were acquainted with locomotives of the Shay type and were specifically looking for one after the problems encountered with the leased 4-4-0 at Foster's Summit. Certainly a heavier rod locomotive could have been used, and may have been tried, for all we know now. The Barre R.R. used heavy tank locomotives and managed quite well as long as the trains were kept short. In both cases the majority of the loads were going downgrade, but supplies still had to be brought up and a good deal of this material was heavy machinery shipped in carload quantities. While heavy tank locomotives served well on the Barre R.R. the maximum gradient there was 5% while it will be recalled that the Hardwick & Woodbury's maximum was 7%. That last 2% made all the difference in the world for rod

locomotives whose tractive effort declines with increasing rapidity as the gradient becomes steeper. In any event, General Manager E.H. Blossom must have been familiar with the capabilities of the Shay geared locomotive from his years of experience on the St. J. & L. C. alone. C.N. Stevens Co., of St. Johnsbury, had two Shays in use in their logging operations off the St. J.'s Victory Branch at this time. The Stevens firm had purchased the first locomotive of this type in 1889. This appears to have been the first Shay in Vermont and New England as well. A second was added in 1892, which would seem to indicate that the Stevens firm was satisfied with the performance of the first. Mr. Blossom was well acquainted with members of the Stevens firm and thus it is probable that the attributes of the Shay were discussed. The Barre R.R. had come by their Shay as a direct result of Daniel R. Sortwell's visit to the World Columbian Exposition in Chicago in 1893. Sortwell was the original president of, and a director of, the Montpelier & Wells River R.R. which controlled the Barre R.R. The Lima Locomotive & Machine Co., which held the manufacturing rights to the Shay patents, had a 40 ton two truck Shay on display at the exposition and Mr. Sortwell bought it for use on the Millstone Hill trackage of the Barre R.R. Whether it was bought by the M. & W. R. and leased to the Barre R.R. or bought by the Barre R.R. itself is unknown.

Some sources advise that the Shay was unsatisfactory on the Barre R.R. because it was too slow; others advise that its running gear was well worn because it was too slow; others advise that its running gear was well worn when it was bought by the Hardwick & Woodbury. Knowing that the maximum speed for a Shay is between 12 and 15 m.p.h., depending on gearing, and that Shays were used successfully in operations similar to the Barre R.R. and the H&W all over the world, the fact that this particular Shay was found to have its running gear well worn as received from the Barre R.R. is more indicative that no one on the Barre R.R. knew how to operate the machine properly, had sense enough to find out how to, or realized the true potential of the machine while they owned it. Once overhauled in Hardwick the Shay enabled the railroad to complete its line and get into daily operation quickly, and served the line well for a number of years until replaced by a

larger and heavier Shay.

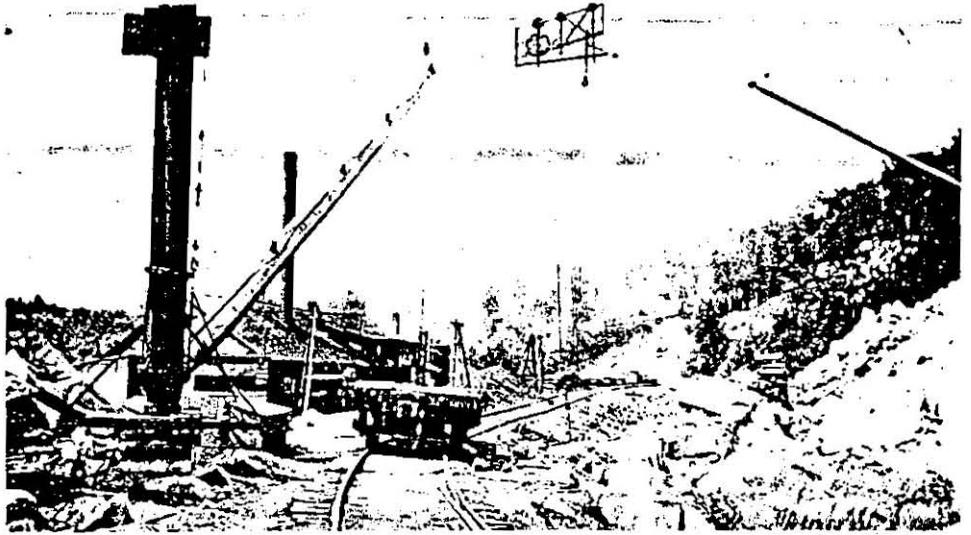
In July 1896 an event took place which was to have far reaching and long lasting effects on the little village of Hardwick. In that month the Woodbury Granite Co. was bought by John S. Holden, Charles W. Leonard and George H. Bickford. Mr. Bickford was the son-in-law of Mr. Holden and became the active partner and manager of the firm, which began an immediate process of unprecedented growth. During the winter of 1896-97, while waiting for the Hardwick & Woodbury R.R. to be completed, the firm had two new derricks erected at the quarry ledge on Robeson Mountain. Previously the company had only eleven men on the payroll and even the larger blocks of granite were quarried by hand drilling, prior to being taken to Hardwick by the old horse drawn wagon method. The quarry operations began to expand rapidly during the following summer. Rough granite, which up until the previous year had been sold primarily to local finishing firms for cutting and polishing, now began to be sold to a wider market through the use of rail transport. Feeling that an even broader market could be developed if they were to finish and market their own stone, the owners of the Woodbury Granite Company and Charles H. More formed Bickford, More & Company in 1899. A 200 foot finishing shed was erected on land acquired in Hardwick adjacent to the H&W tracks and a McDonald surfacing machine costing \$8,000.00 in 1899 currency was purchased and installed. Beginning with ornamental work and then small building jobs the firm was an immediate success. In fact the new venture was so successful that it developed a voracious appetite for using up its profits, and any other working capital that could be found, in expansion and improvements to the existing plant. A second large shed was added with more gang saws and another McDonald surfacing machine, giving the fledgling firm two of the less than one dozen then in existence.

In 1902 it became apparent that the entire operation, from quarrying to marketing the finished product, could be handled more efficiently as one enterprise. Thus Bickford, More & Company was merged into the Woodbury Granite Company which handled all operations from then on. Prior to 1896 men such as Win Voodry, one of the original partners who sold their quarry to the Woodbury Granite Company, W.H. Fullerton, Charles A. Watson and E.H. Hawley had all

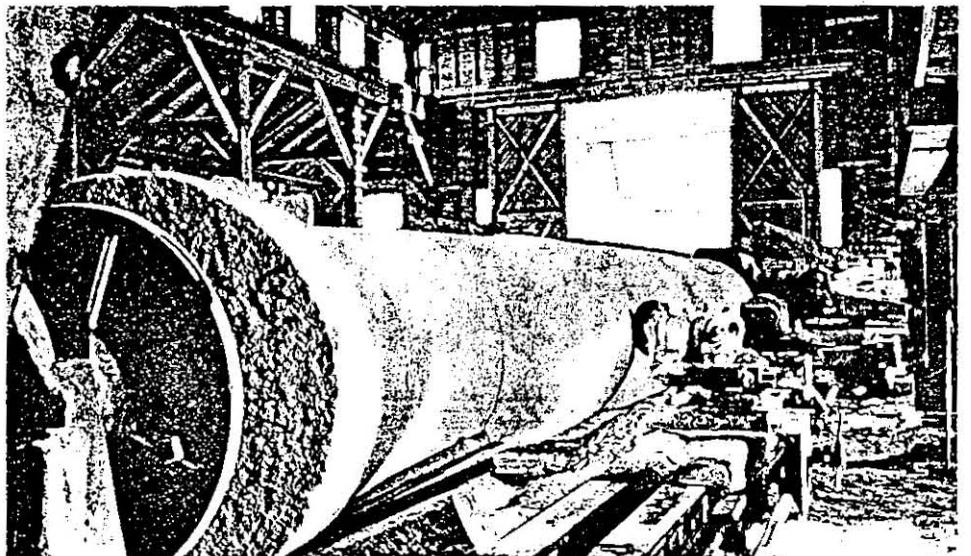
engaged themselves in the early development of the granite industry in Hardwick. All had been engaged in quarry work of one sort or another. While the old H.R. Mack firm had both quarried and finished stone, and had undergone considerable growth after the first railroad was opened to Hardwick, it was never to attain the size which the Woodbury Granite Company grew to in the next few years.

The importance of the Woodbury Granite Company in the building stone business, in addition to monument work, became established in 1905. Two years previously the firm had bid on and received a contract to supply and erect 400,000 cubic feet of stone for the new Pennsylvania State House in Harrisburg. This was one of the first major building contracts not awarded to granite firms located near waterborne transport. The contract called for the Woodbury Granite Company to complete the work in twenty four months. While other firms were surprised enough to find they had new competition, they were even more surprised, as were most people in the construction business, to see this small Vermont firm complete the work two months ahead of schedule. The firm's reputation was now well established and a new decade of unsurpassed growth, which was to see the Woodbury Granite Company become the largest granite working firm in the world, began. That this growth could not have taken place without the Hardwick & Woodbury R.R. is an undisputed fact. For the Pennsylvania State House contract alone the company had to furnish thirty monolithic columns thirty feet long. It is doubtful that the stone for any of these could have been handled by the company without the railroad.

In the first ten years after the opening of the Hardwick & Woodbury R.R., the Woodbury Granite Company grew from a small firm employing eleven men to one employing over five hundred men in the Hardwick finishing plant operations alone. This did not include those at the quarries in Woodbury, or at the operations in Bethel, Vt. which had been acquired in 1903. The cutting sheds in Hardwick had been increased in size to the point where there were now three main cutting sheds, with many smaller, ancillary ones, and a runway 870 feet long by 75 feet wide equipped with two thirty ton electric hoists. There were eighteen tracks under this runway, capable of handling two cars at a time on each. The Bethel plant was set up a

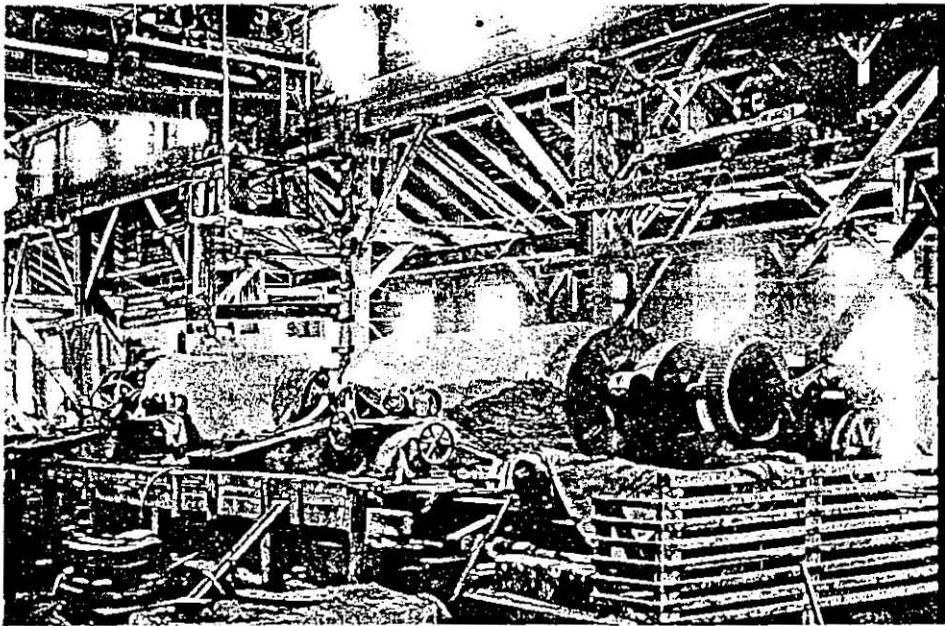


Both the photo above and that below give some idea of what a large quarry using rail transport was like just after the turn of the century. The trolley-suspended device appears to have been used to carry smaller pieces from where they were cut to the waiting flat cars
Collection of Celeste Bailey



The above photo is of one of the huge McDonald surfacing machines in the main shed of the Woodbury Granite Co. The stone being finished is better than 20 ft. long and is approximately 3 ft. in diameter, which gives one some conception of the immense size of both the machine and the final product.

Collection of Margaret Lingenfelter



The view above shows more of the machinery used in finishing and polishing the granite in the Woodbury Granite Company sheds in addition to the large overhead crane used.
Collection of Margaret Lingenfelter



The photos immediately above and below show the sheds of the Woodbury Granite Co. in Hardwick and are believed to have been taken around the peak era of 1910-15. The upper view looks toward the east with the "downtown" part of the village appearing in the center background. The company's main shed is the large one to the right of the runway. The lower view shows the H & W shop and enginehouse in the foreground and the cutting sheds beyond in a general view towards the south.

Two Photos; Courtesy of Lewis H. Shattuck



bit differently and had two runways. The main runway was 200 feet long and 75 feet wide, while the other was 250 feet long by 60 feet wide. Two more of the large McDonald surfacing machines were located here for use in finishing the hard, white granite produced in the Bethel quarry. This gave the company ownership of 25% of all the McDonald surfacing machines built at that time. The stone cutting lathes the company used were among the largest in the world with the largest owned being capable of handling a stone up to 8½ feet in diameter and 36 feet long.

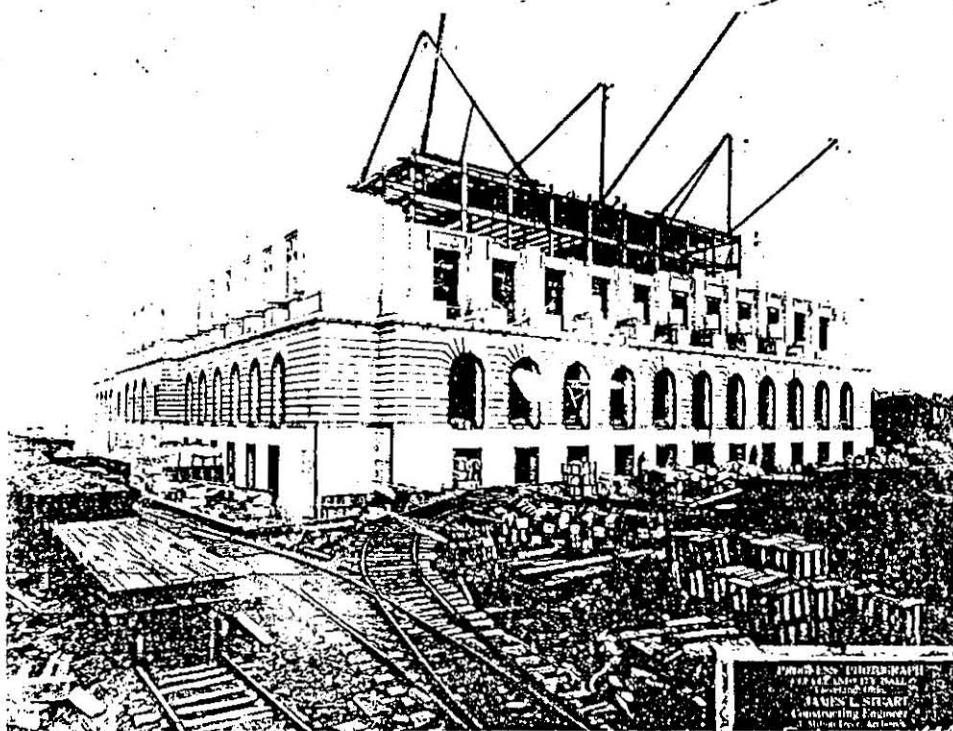
While most of the building work of the Woodbury Granite Company was done, first with their stone known as "Woodbury Gray" granite from their original quarry and later with either "Woodbury Gray" or "Hardwick White" granite, as the stone from the Bethel quarry came to be called in honor of the firm's birthplace, the company did offer other varieties in later years. In 1912 a new quarry was opened on Robeson Mountain which produced a variation of white granite which came to be known as "Vermont White". This was a monument stone, one of several which the firm offered. The others were the "Bashaw Granite", a variation of the "Woodbury Gray", and "Imperial Blue" granite, a dark gray-blue stone from another quarry on Robeson Mountain opened not too long after the white quarry. In addition to the Pennsylvania State House, stone from the company's quarries was also used to build the Chicago City Hall, probably the only thing that is pure in the building, the Cook County Court House in Chicago and the Insurance Exchange there; the Wisconsin State Capitol building in Madison; the Northwestern Mutual Life Ins. building in Milwaukee; the Museum of Fine Arts in Minneapolis, Minn.; the Fergus Reid building in Norfolk, Va.; Union Station in Memphis, Tenn.; the C.B.&Q. station in Galesburg, Ill.; the Citizens' Savings Bank in Cedar Falls, Iowa; the Western Union building in New York City and the Glen Falls Insurance Co. office in Glen Falls, N. Y. In addition to these there were city halls in Des Moines, Iowa; Cleveland, Ohio; Youngstown, Ohio and others in addition to post offices and bank buildings to numerous to count. In 1910 alone the firm supplied and erected the stone work for about fifty major buildings and a countless number of smaller ones. During that

year stone setting crews were simultaneously at work in Madison, Wis.; Kansas City, Mo.; Chicago, Ill.; Younstown, Ohio and Grand Rapids, Michigan. Little or none of this could have been accomplished without a railroad between the quarries and the finishing plants as well as between the finishing plants and the final building sites.

We have seen the effects that the completion of the Hardwick & Woodbury R.R. had on the granite industry, now let us see what effects the rapid growth of the granite industry had on the railroad. At the annual meeting in the spring of 1897 there was some minor shuffling of officers. In recognition of his achievement in ensuring that the stock was well accepted and the road properly financed, John S. Holden was elected president while the former president, George M. Powers, became vice president. George H. Bickford became treasurer and D.F. Holden became secretary; thus the Woodbury Granite Company pretty well controlled the railroad. E.H. Blossom continued as General Manager while W.H. Fullerton became the Superintendent, and the man in daily charge as Mr. Blossom still retained his regular position as Asst. Supt. of the St.J.& L.C., and J. Vernon Dutton became General Passenger & Freight Agent.

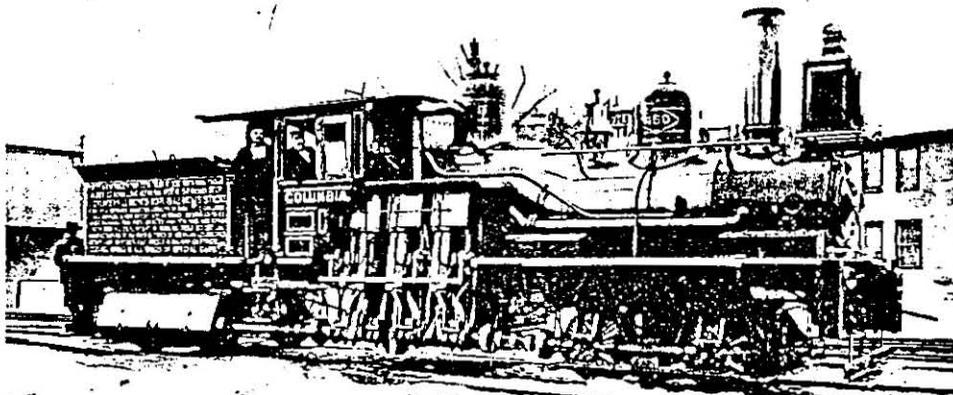
As mentioned earlier, a Shay was acquired in August 1897 which enabled the remainder of the original construction work to be completed quite rapidly. The Shay was named "E.H. Blossom" in honor of the road's Gen. Mgr. and became #1. While the original charter gave the railroad the right to suspend operation from November until April, if it chose to do so, and a notice to such effect was always carried in the freight tariff sheets, the railroad was never closed for any length of time during the winter months. It began hauling granite to the cutting sheds as fast as it was required there, the day it opened and, except during a two month strike by the quarry workers, continued to do so until all operations finally ceased.

In 1898 it was reported that the total cost of construction of the line was \$50,691.69. In 1899 E.H. Blossom designed a special well flat car, to facilitate the shipment of larger and heavier pieces of finished granite, and the car was built by the Laconia Car Co. As built, the car was similar to a regular 36 foot flat car but had a special well in the center designed to



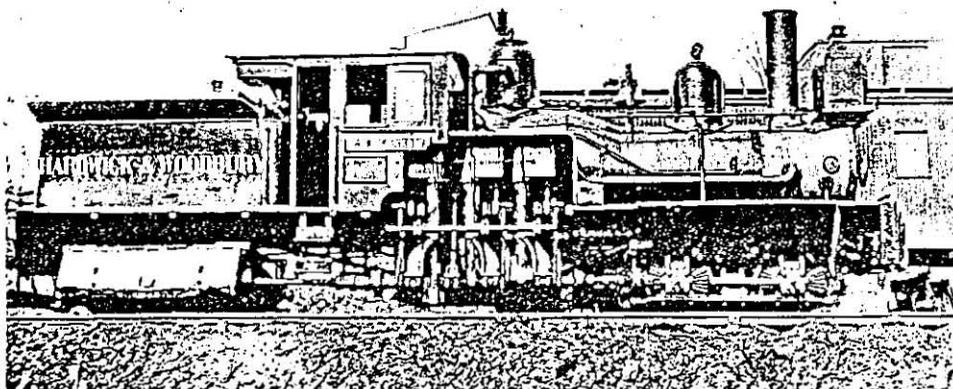
The photo above shows the Cleveland City Hall under construction as it appeared in early February 1914. Of particular interest is the way the stone was loaded onto railroad cars for shipment and the fact that the tracks were extended right to the building site to ease the entire delivery and setting process.

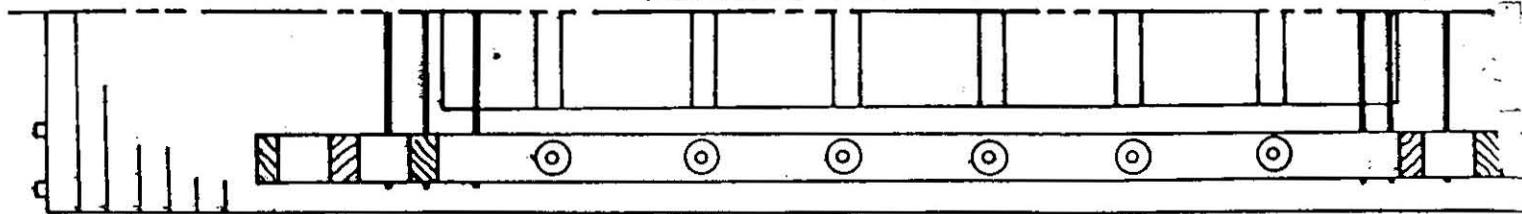
Collection of Lewis H. Shattuck



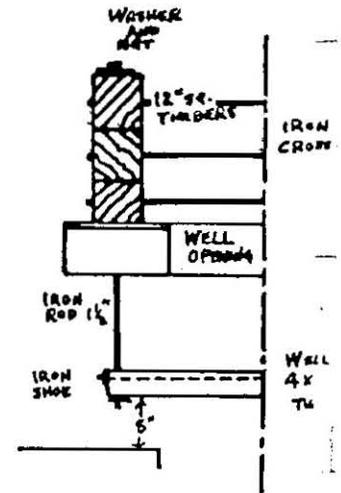
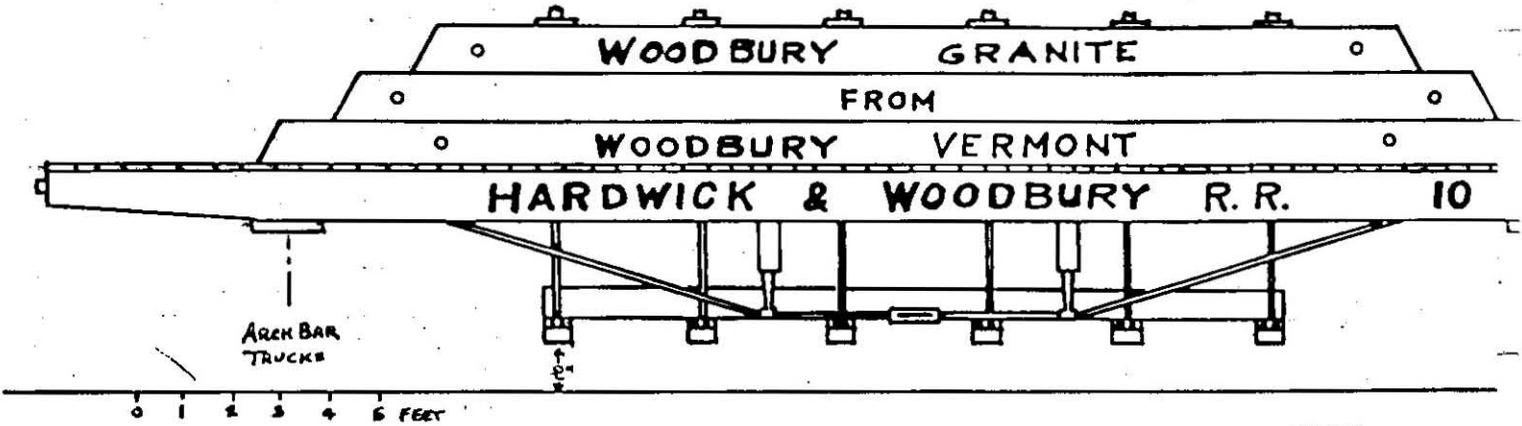
These two photos depict H&W #1, the "E.H. Blossom" as built and displayed at the Columbian Exposition, and as used by the H&W. The upper photo was taken in Barre, Vt. by E.T. Houston shortly after the Shay was delivered to the Barre R.R. in 1894. She still carries her display lettering and number, the latter being her Construction Number. The lower photo shows the same locomotive some years later as she appeared after becoming the H&W #1 and being repainted.

Two Photos; Collection of M.R. Kendall



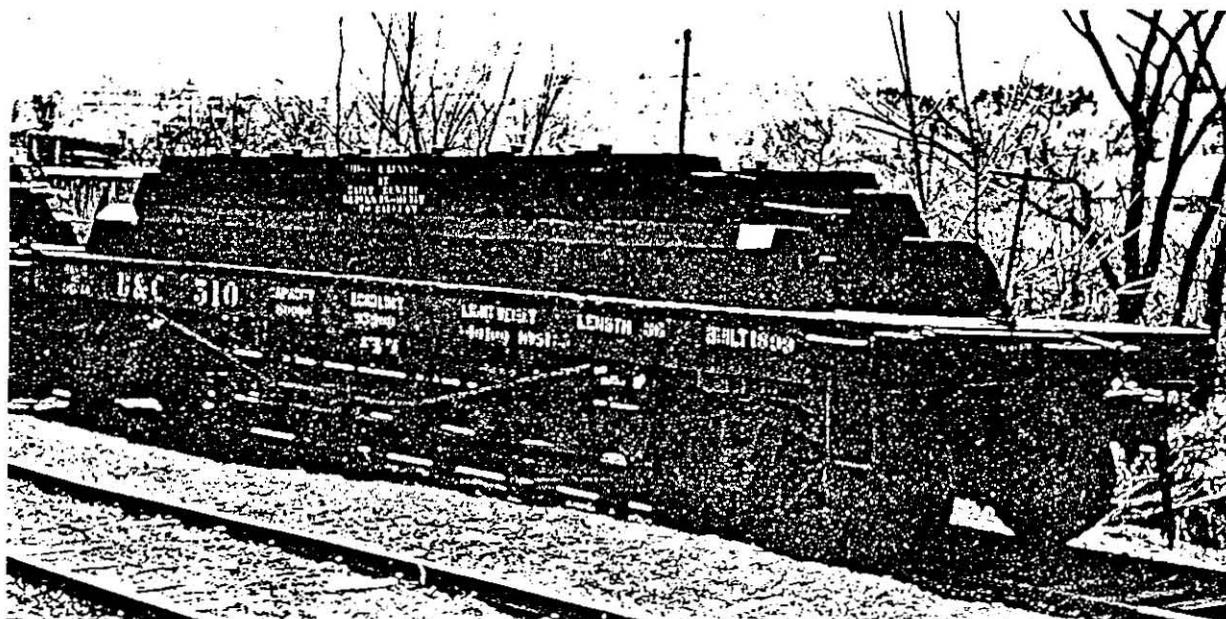
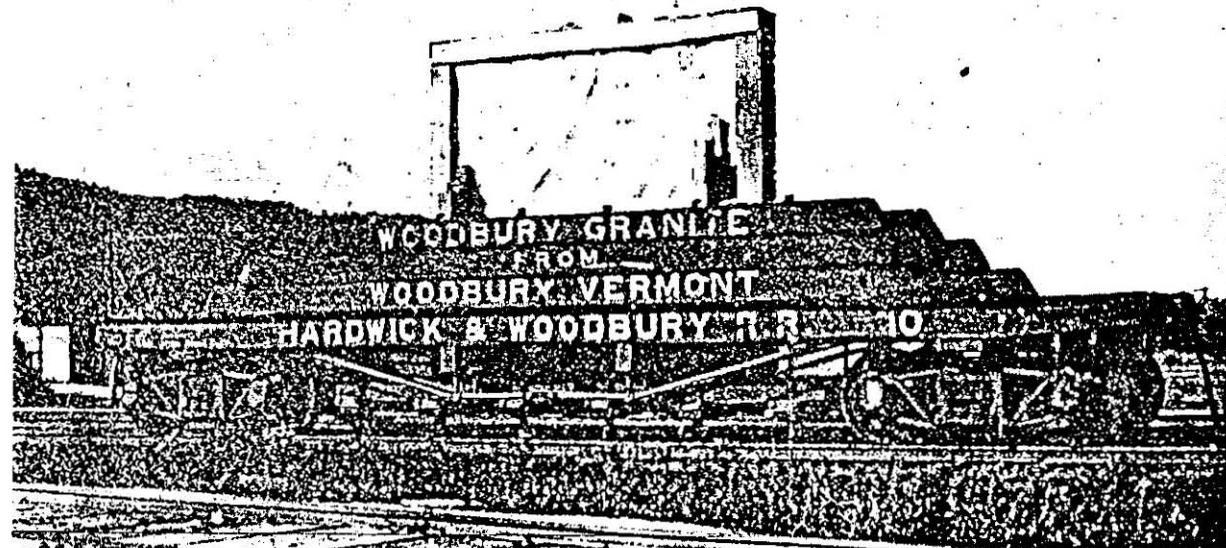


NOTE: These cars had four truss rods; two on each side, outboard of the well.



These two photos depict the type of well flat car or "pit car", as they were called in the early 1900's, patented by the H&W's Gen. Mgr., L. H. Blossom, on March 26, 1901. H&W car #10 is the original prototype of the pattern and was built in Laconia in 1899. While the photo is not the greatest, it is the only photo of the car four in over two years of searching. The #10 was sold to the Barre & Chelsea in the late 1930's, but its B&C car number is unknown. B&C car #5 illustrates the same type car in use on the B&C in April 1941 when the photo of it was taken. The presence of duplicate behind it indicates that several such cars were built.

Top photo; Collection of Celest
Bottom photo; Courtesy of Harry



E. H. BLOSSOM.
RAILWAY CAR.

Application filed Feb. 9, 1900

(No Model.)

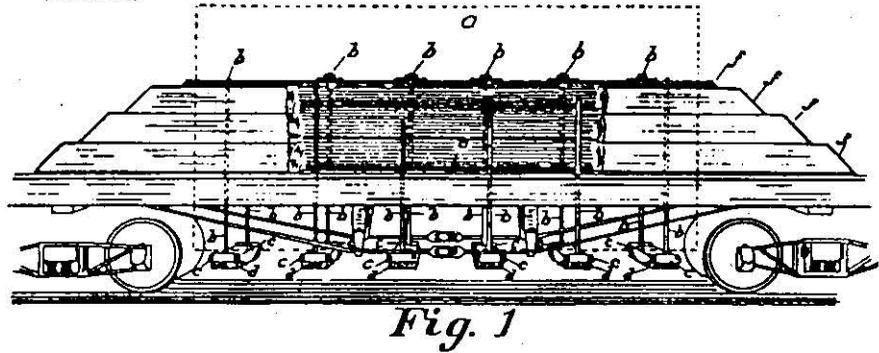


Fig. 1

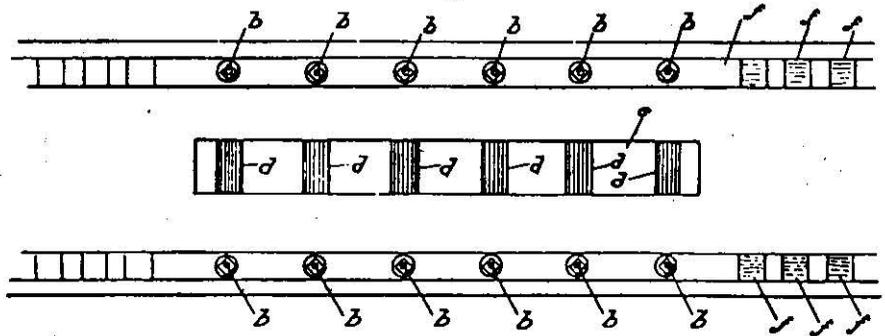


Fig. 2

WITNESSES:

E. J. Chamberlin
C. B. Stone

Edward H. Blossom
INVENTOR

BY
O. W. Orcutt
ATTORNEYS.

SPECIFICATION forming part of Letters Patent No. 670,529, dated March 26, 1901.

Application filed February 9, 1900. Serial No. 4,138. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. BLOSSOM, a citizen of the United States, residing at St. Johnsbury, in the county of Caldonia and State of Vermont, have invented a new and useful Railway-Car, of which the following is a specification.

My invention relates to improvements in railway-cars in which a suspended platform is carried very near the track; and the objects of my improvements are, first, to provide a platform running very low and near the track to carry large objects, and, second, to provide means of adjusting the platform to conform to the shape of the load. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the car, showing the supporting mechanism. Fig. 2 is a plan showing the pit or opening in the car-platform.

Similar letters refer to similar parts throughout the several views.

The car is of the ordinary platform or open-deck type, through the middle of which a longitudinal opening is made, this opening being as large as the capacity of the car will admit or the size of the load require. On top of the car platform or deck and on each side of the pit are placed the supporting-timbers or girders *ffff*, through which and the deck of the car pass the supporting-rods *b b b b*. The stirrups or trusses *ccc* are supported at both ends by the rods *b b b* and are carried cross-wise of the car and also of the pit or opening.

In Fig. 1 the load is indicated by dotted lines at *a* as resting on these stirrups. The rods *b b b* are provided with long screw-threads and nuts at the upper ends, by means of which their lengths may be adjusted to correspond, so that each truss or stirrup will

be made to carry its part of the load. It will readily be seen that by having the load thus evenly distributed on the car it will be carried much steadier than it would otherwise. The supporting-timbers *ffff* are held in place by the rods *b b b* only, this arrangement of fastening being for convenience of removal. When it becomes necessary to remove the supporting-timbers, the car-platform can be cleared by removing the supporting-rods only, leaving the supporting-timbers free to come off and the deck of the car clear, when pieces of flooring being inserted over the opening of the pit the car becomes available for the common uses to which this class of cars is put.

The stirrups or trusses *ccc* are provided with bracing-bars *d*, fastened to their under sides and extending with them across the pit.

I am aware that pit-cars have been in use prior to my invention. I therefore do not claim this combination broadly; but

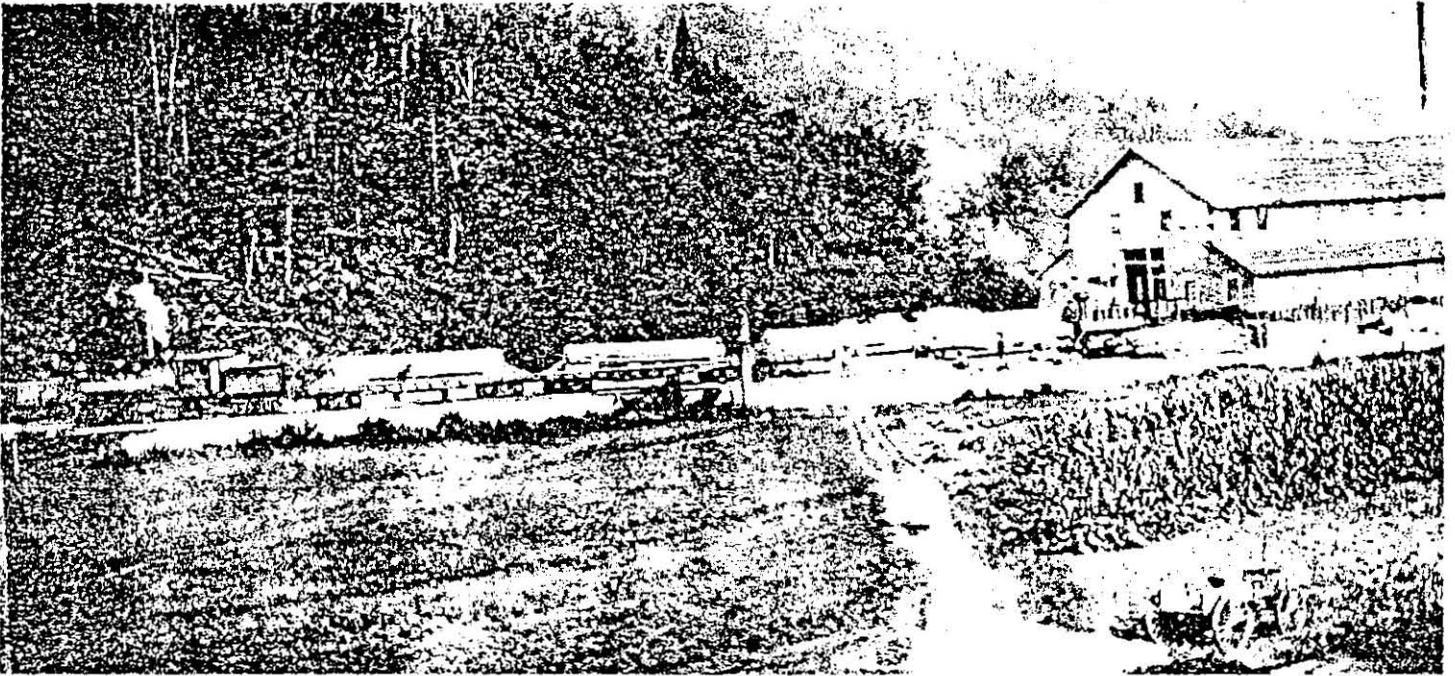
What I do claim, and desire to secure by Letters Patent, is—

1. In a railway-car, the combination of a deck or floor provided with a pit or opening for carrying large articles, with adjustable supports for the same, together with the means for adjusting the supports to the load, substantially as set forth.

2. The combination in a railway-car having a central pit or opening, of longitudinal and detachable supporting-timbers and adjustable and detachable supports for the load, carried by said longitudinal timbers, substantially as set forth and for the purpose specified.

EDWARD H. BLOSSOM.

Witnesses:
C. A. ROBINSON,
GEO. W. CREE.



H&W #1 is switching some loaded columns at Woodbury Granite's main shed in the view above. No explanation is available for the presence of the 0-4-0 just in front of the shed. It is known that the B & M supplied the St. J. & L. C. with a few locomotives of this type and description. All, however, were supposed to have been retired prior to 1897, when the H&W acquired the #1, yet here we see one present in a photo taken after 1900!

Courtesy of the Farland Studio

carry a stone up to 13 x 17 feet in size and 1½ foot thick, weighing up to 20 tons. The first stone shipped on the car was for a mausoleum in Chicago, so it is probable that the car was designed with shipments of that kind in mind as the Woodbury Granite Company's reputation for work of such an ornamental nature was excellent. It is interesting to note that the Barre R.R. disputed the Hardwick & Woodbury's claim of having the first car of the type. The authors, however, have found no evidence to support Barre R.R.'s contention. In light of the Barre R.R. claim it is perhaps ironical that the car was sold to the Barre

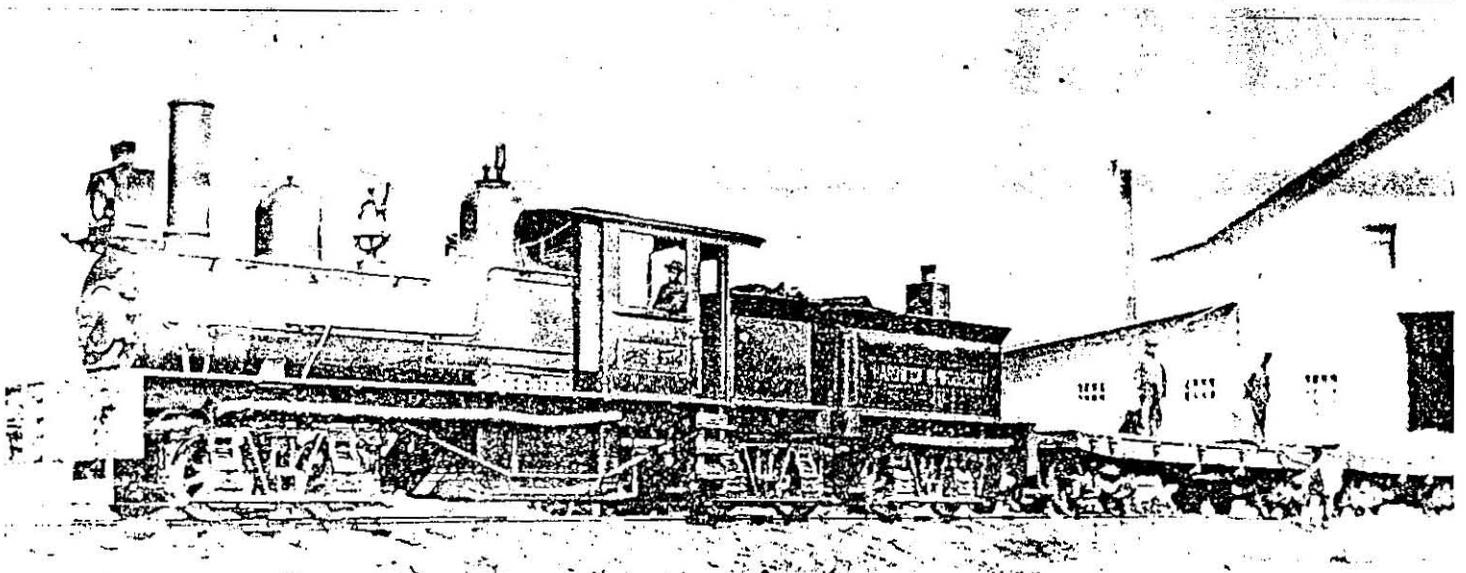
R.R.'s successor, the Barre & Chelsea R.R., when the Hardwick & Woodbury was abandoned although by this time the Barre roads had procured such cars of their own which were very similar.

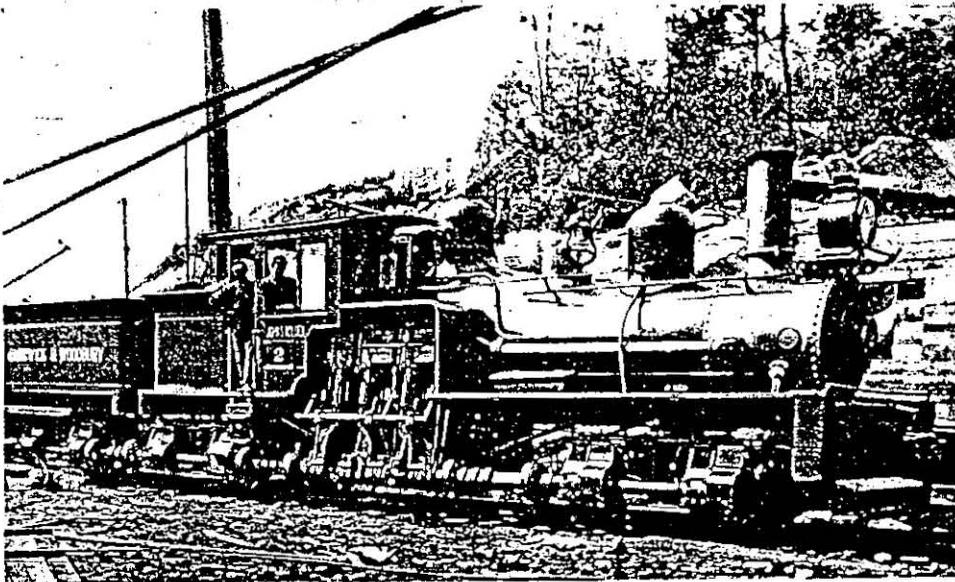
On February 20, 1902 a second Shay, the "John S. Holden", was completed for the Hardwick & Woodbury R.R. While its cylinders were only an inch larger in diameter and its drivers were actually one half inch smaller, it was still a much larger and heavier machine. The "E.H. Blossom" was a two truck Shay while the "John S. Holden" was a three-trucker. With the business of the

Woodbury Granite Company increasing each month and the Pennsylvania State House contract being signed that year it is apparent that Shay #2 arrived at the right moment. Once on the property and broken in the new, larger Shay could be used to bring longer trains of loaded cars from the mountain to the finishing shed while the smaller #1 could be used to switch the quarries, assemble the loads and spot the returning empties. A third Shay for the H&W was completed on January 23, 1909 which was even larger than the #2, having both larger cylinders and drivers and more weight. This Shay

While the exact date and location are unknown, the photo below is one of the few good views of the left side of an H&W Shay to come to light. The oil headlight and the lettering style would indicate that the photo was taken around 1910.

Courtesy of the Farland Studio





H&W #2, the "John S. Holden", is sporting a new, shorter stack, a new headlight and a larger whistle relocated on the steam dome in this circa 1920 scene at one of the quarries in Woodbury. Walter D. Jones Photo; Collection of D. B. Valentine, Jr.

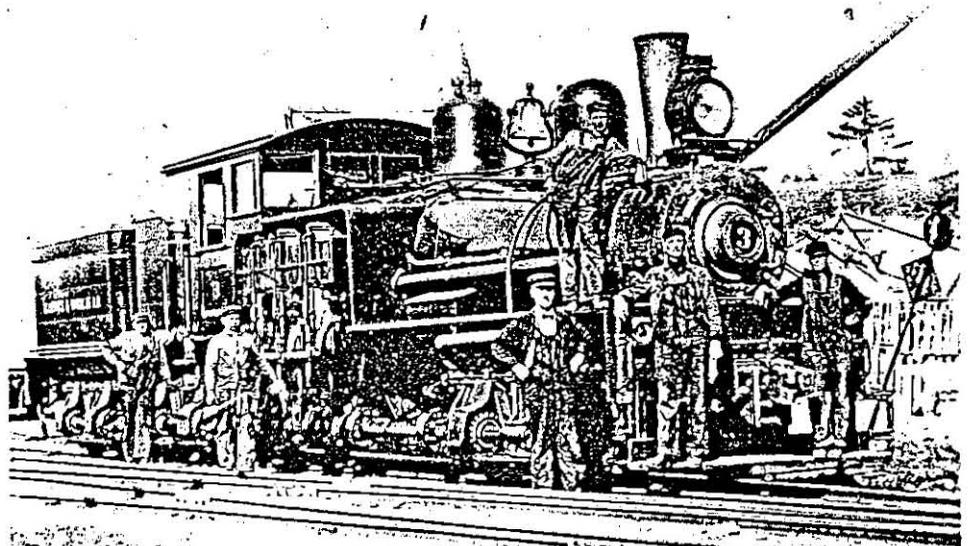
was originally named the "Charles V. Leonard" and became, obviously, #3. In the course of its life it was successively named the "George H. Bickford", the "J. Vernon Dutton" and the "Charles A. Hubbard", the latter being its engineer for many years as well as the person who was employed by the H&W the longest number of years. While it is not known whether or not all three Shays were ever used concurrently in service, it is probable that they might have been during the busy years from 1909 to 1915. When the business declined #1 was sold, probably in 1917, to a southern dealer and is believed to have ended its days hauling log trains in Alabama.

By August 1901 two of the remaining trestles had been filled, leaving only two timber trestles and two wood stringer bridges. During 1904 another of the trestles was filled and, reportedly, took 2000 carloads of waste stone, or "grout" from the quarries in the process. The longest trestle was located near the Hardwick-Woodbury town line. This was apparently the last one filled and took 6600 cars of grout for the work. At this time the railroad had seven employees in the general offices; one station agent; three section foremen, each with a crew of three men and the responsibility for 3 miles of "main line"; a machinist or master mechanic and six men employed in train service, for a total of thirty employees. This number, no doubt, increased somewhat until about 1912-14 when things began to slow down again. It is interesting to note that while there was

a station agent and thirteen "stations" there is no record of any of the locations ever actually having a station building or even a shelter! Any occasional passenger there must have been carried in the caboose as it is not believed that the Hardwick & Woodbury ever owned any passenger cars. State records for the year ending June 30, 1903 indicate that the H&W owned two passenger cars, but since they also indicate that the H&W owned no freight cars when it is known that they did, the authors doubt the accuracy of the State records in this instance. The H&W did rent or borrow

two coaches from the St. J. & L. C. from time to time as the occasion demanded for special excursions, so perhaps this is where the confusion stems from.

As it is with any such operation, the backbone of the Hardwick & Woodbury R.R. was its loyal staff of employees. Each contributed in his own way to the day to day affairs of the line and some information on the more notable ones has come down through the years to us. E.H. Blossom, the H&W's first Gen. Mgr., resigned in 1902 and was replaced by J. Vernon Dutton, who continued in his former position as Gen. Pass. & Frt. Agent in addition to his new responsibilities. He remained in the positions, later becoming the Secretary of the corporation and a director as well, until his death in 1909. He was succeeded by George H. Bickford who, like his predecessor, also remained in the position until his death in 1914. The fact that Mr. Bickford held this position in addition to being the Gen. Mgr. of the Woodbury Granite Company is indicative of how closely intertwined and dependent on one another the two firms had become. Indeed, it appears that the only other quarry remaining active and independent in the area in this period was the Fletcher Quarry from which the volume of business was never as great as from the Woodbury Granite Company's quarries. After Mr. Bickford's death William C. Clifford



Increasing business brought a third Shay to the H&W in 1909. This was Construction No. 2113, completed on 1-23-09 and delivered to the H&W as #3, the "Charles V. Leonard". The #3 is shown above in Woodbury around 1910 adorned with her crew including Carroll Hines, the second from the right, and Charles A. Hubbard, for whom #3 was named in later years, the fourth from the right.

Walter D. Jones Photo; Collection of D. B. Valentine, Jr.

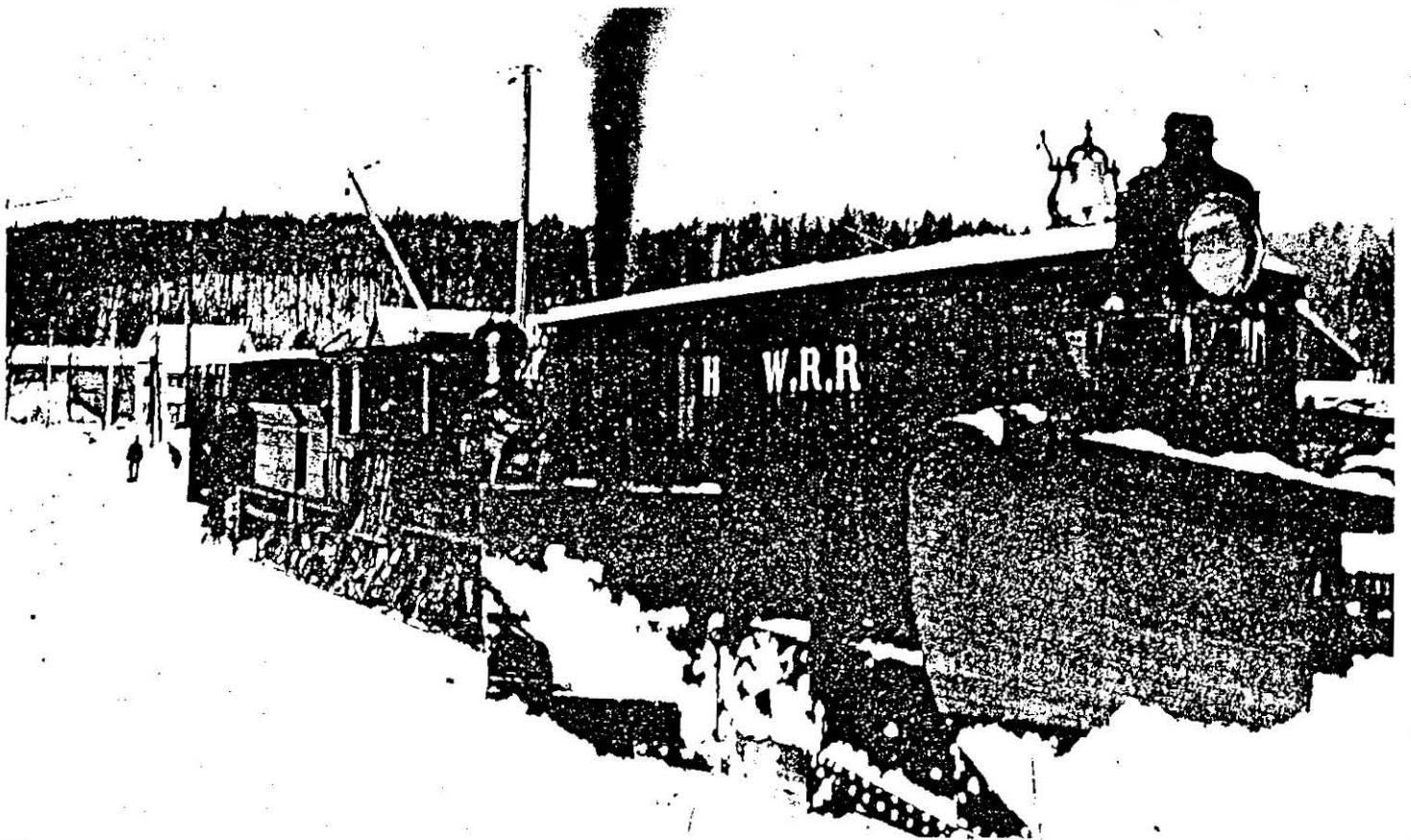


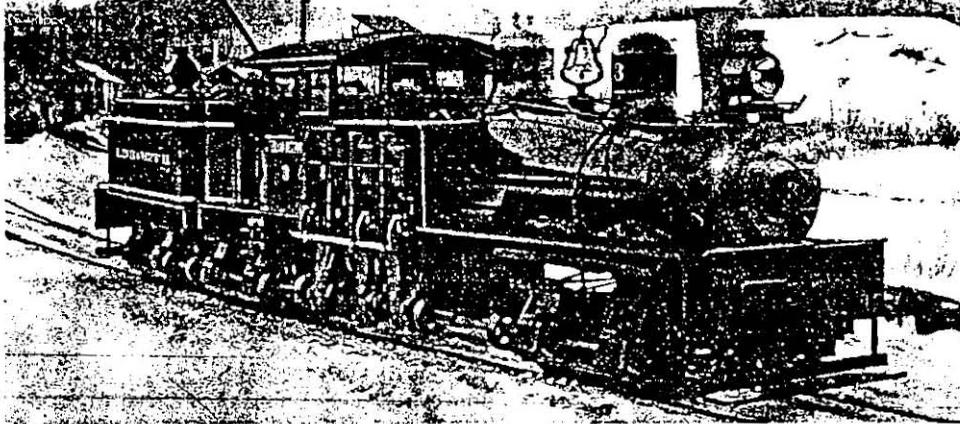
Shay #3 still bearing the name "Charles V. Leonard", poses with a large rough column on a flat car. The presence of B&M caboose #4928 would indicate that the H&W did not acquire one of their own until sometime after 1909 when #3 arrived.

Collection of M. R. Kendall

While the H&W's charter permitted the line to close each winter, it was never done. Thus the H&W had to remove snow like every other northern New England railroad. This snowplow was purchased second-hand from the St. J. & L. C. and replaced two earlier ones, which were not satisfactory, in the early years of the century. It lasted until the line was abandoned. It is powered here by Shay #2.

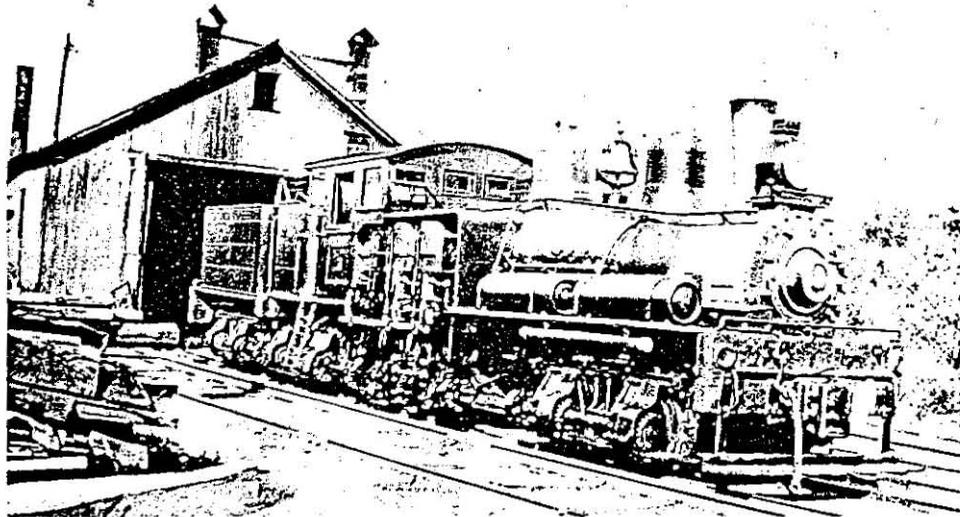
Courtesy of the Farland Studio





Sometime in the 1910 to 1920 period, Shay #3 carried the name of "J. Vernon Dutton", in honor of the road's second Gen. Mgr. She appears above in one of two known photos of her bearing that name and, below, after she became the only H&W locomotive to be equipped with train line air brakes.

Above, Courtesy of the Farland Studio; below, Harold B. Walker Photo



The H&W's four wheel bobber was a third-hand car having previously been N.Y.C. #3855, and then Boston & Albany #1108, before being acquired by the H&W.

Walter D. Jones Photo; Collection of D. B. Valentine, Jr.

became Gen. Mgr. and remained so until 1925 when the St. J.&L.C. assumed responsibility for the few remaining H&W employees and the railroads operation. It is not surprising to find that Mr. Clifford held a similar position in the Woodbury Granite Company simultaneously.

The Hardwick & Woodbury's first engineer was Alfred Stone, who is perhaps best remembered for the homemade plow he and his crew assembled. This affair bolted onto a locomotive pilot beam on whichever end was leading, but had to be removed and placed on the opposite end at each switchback. While engineer Stone began work on the line in 1894 and left in 1898, his plow got the H&W through the winters until about 1900 when another was obtained from some lumber railroad. This second plow proved unsatisfactory, however, and was replaced by a second hand plow purchased from the St. J.&L.C. when that railroad acquired a new one. This third plow lasted until the road was abandoned. Until a wye was constructed the H&W crews had to travel all the way to Morrisville over St. J.&L.C. trackage and use that railroads' turntable whenever it was necessary to turn the plow, however. History tells us that this nonsense ceased when a wye was put in at Foster's Summit. The 1916 Right-of-Way survey of the St. J.&L.C., including that part leased to the Hardwick & Woodbury, shows an additional wye adjacent to the H&W enginehouse in Hardwick. Owing to the difficulty of the terrain one wonders how useful a wye built into the switchback at Foster's Summit really was though there is ample evidence of its existence.

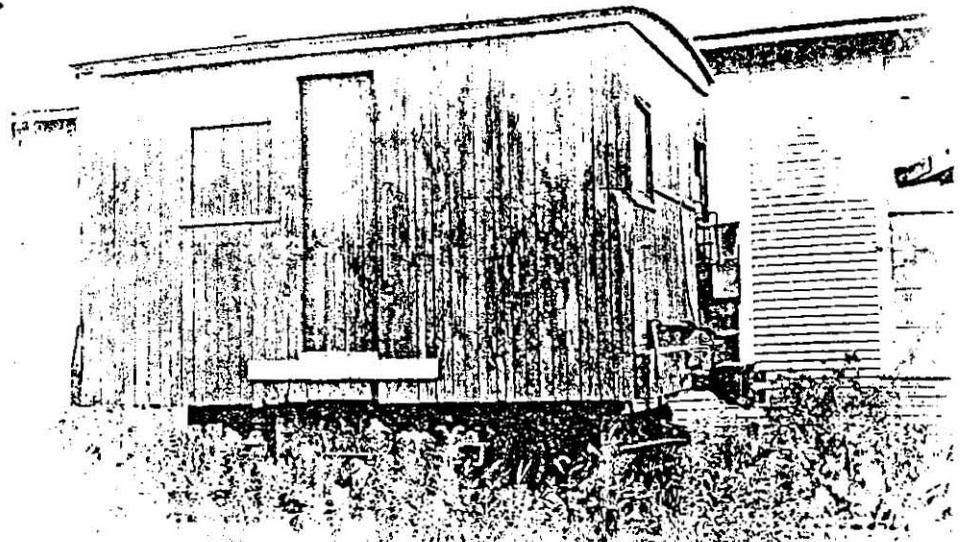
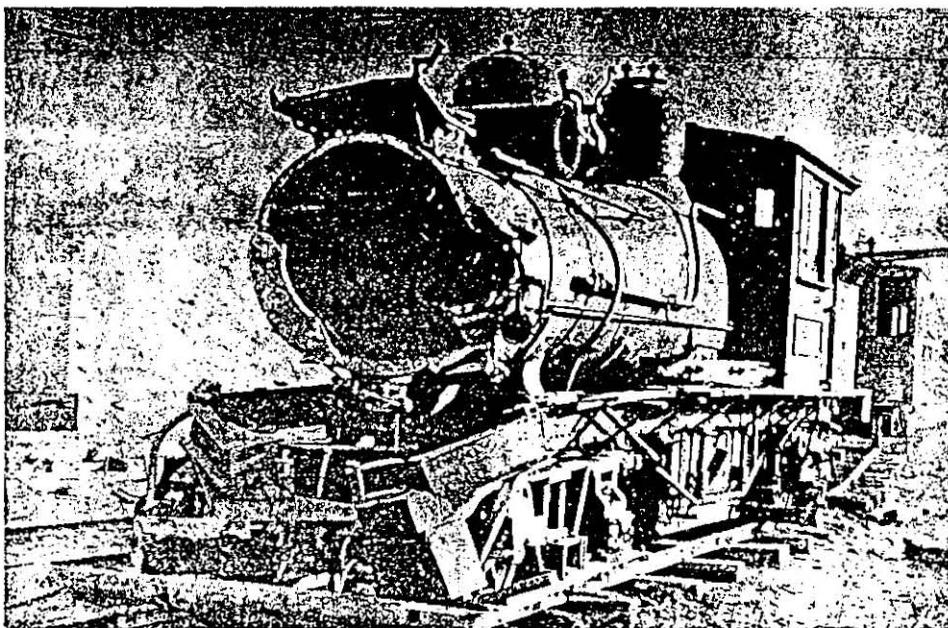
To return to the Hardwick & Woodbury's employees, Charles A. Hubbard began work for the road in 1895 when the first fireman, Samuel Norris, left. He remained a fireman until 1898 when he replaced engineer Stone upon his leaving, and became Master Mechanic as well. He retained both of these positions until the H&W was abandoned, working on the locomotives as needed and running them during the remainder of his working days. Aden T. Miller was the railroad's first conductor, entering service in 1895 and remaining until Oct. 6, 1906 when he resigned. Archie Olmstead had been a brakeman and spare conductor but was killed in May 1901 when he fell between two moving cars. Carroll Hines entered service on

Nov. 12, 1900 when but 15 years old. He worked as a brakeman until October 1906 when he became conductor upon Mr. Miller's resignation. While he left the H&W on June 20, 1927 Mr. Hines is still remembered as the man who designed the flanger for light snow removal and who saved the payroll records when the railroad was abandoned thinking they might be of use to anyone claiming a railroad pension. He is also believed to rank second in the length of service to the railroad. Wallace C. Bailey began work in 1927 as a supervisor and conductor, replacing Carrol Hines, and remained until the end. These, then, are a few of the people who operated the Hardwick & Woodbury during its infancy, the busy years from 1905 to 1916 and up to the end. The largest single load they ever handled was a 61 ton stone from the "white" quarry. While train length averaged ten to fifteen cars in the busy years, the largest is reported to have been twenty two cars; one empty coal car and twenty one loads of granite.

The fortunes of all railroads are tied to those of its shippers and receivers. The Hardwick & Woodbury was built solely for the transport of rough granite and was never fortunate enough to have any other industry of consequence locate along its tracks. Thus it came and went with the fortunes of the granite industry in Hardwick; whatever happened that affected the granite industry was

In the only serious accident on the H&W involving the Shays some carloads of grout with the brakes improperly set rolled off the mountain and smashed into the front of #2, which was sitting in the enginehouse, with the results seen above. She was shipped back to Lima, rebuilt and returned to service.

Courtesy of the Farland Studio

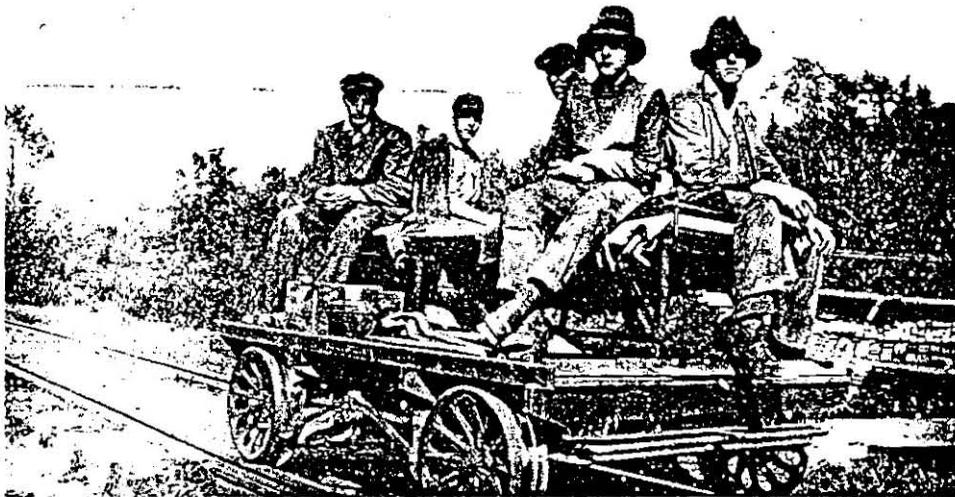


Carroll Hines is perhaps best remembered in connection with the H&W for this flanger he designed and helped build around an old, four wheel truck. It served the line until the end, though he resigned in 1927.

Walter D. Jones Photo; Collection of D. B. Valentine, Jr.

bound to be reflected on the railroad. Three things did occur, two of which are interrelated. In 1914 George H. Bickford died leaving the Woodbury Granite Company without its ablest managerial talent and planner. The firm never seemed to recover from the loss of his acute mind and the efficiency it brought to all phases of the firm's operations. As if that were not enough, the use of granite as a building material began to decline. Concrete was coming into more general use in structures and was being improved in quality and strength

all the time. Furthermore, it was found the the use of granite veneer on the face of a building gave the same effect at a lot lower dollar investment. This decline in the use of building granite and the change to the use of granite as only a veneer had a definite effect on the Hardwick & Woodbury. Any decline in the use of granite meant that there were fewer carloads of stone to be taken to the cutting sheds. Not only that, but as highways slowly began to improve as automobiles became more common; and as the size and weight of the rough stone used for finishing into veneer or monument pieces was considerably smaller than that for actual building stone, it meant that the rough stone could once again be transported over the highways, only on trucks instead of horse-drawn wagons; and at a lower cost. The effects of these changes may still be seen in the affairs of the old Barre R.R., now part of the Montpelier & Barre R.R., even today. Thus having served the purpose which its promoters and builders had intended, after several years of declining tonnage and related cut-backs, the Hardwick & Woodbury, which with its remaining employees had been taken over by the St. J. & L. C. for operational purposes in 1925, was granted permission to abandon in October 1934. The portion formerly leased from the St. J. & L. C. had been returned in 1925 and was still serviced by the St. J. as long as there was a need to ship finished granite by rail. The rails of the H&W itself, however, were removed in August 1940. While Shay #2 needed

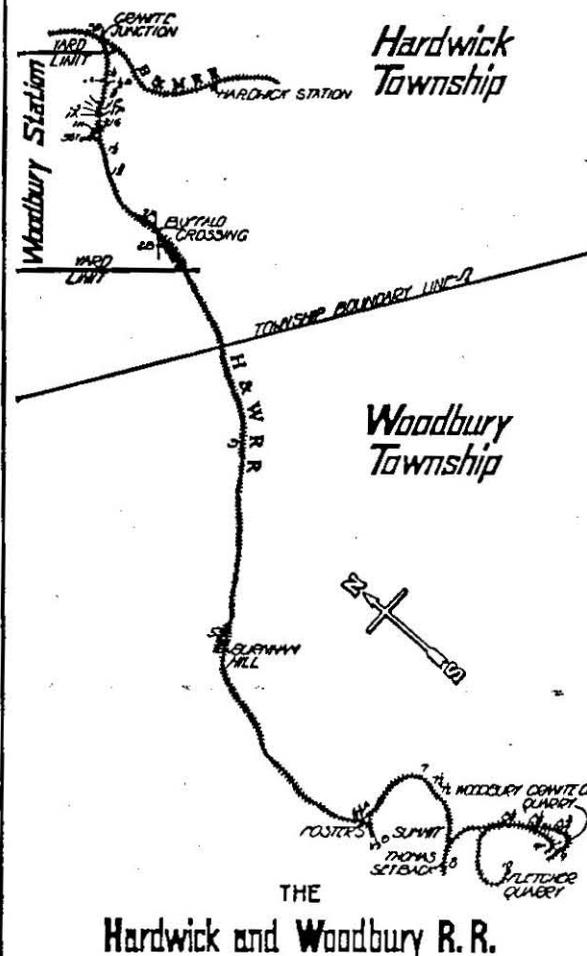


The photo above shows one of the H&W section crews ready to go to work. Carl M. Jennings, who worked on such a crew during summer school vacations relates that the section car was often tied behind the caboose with a piece of rope so that the crew and their gear could be taken up the mountain. On occasion the car would derail and bounce along the ties with the crew hanging on for dear life until one of them could cut the rope or yell loud enough to be heard above the Shay's rapid exhaust!

Courtesy of the Farland Studio

List of Stations on H. & W. R. R. To and From which Rates Apply

Map from an H&W 1922 freight tariff.



- | | |
|-----------------|---|
| 58 | Granite Junction. |
| | WOODBURY STATION, YARD LIMITS |
| 1/4 | Northern Yard Limit |
| 1-4 | American Granite Company |
| 1-2A | Crystal Brook Granite Co. |
| 1/2B | Floyd F. Fuller |
| 1/4 | M. Ambrosini & Co. |
| 1A | E. E. Brown |
| 1B | M. J. Couhig |
| 1C | W. V. Hoskins & Co. |
| 1D | Peter Good |
| 1E | George & Sones |
| 1F | C. H. Utley |
| 1G | N. J. Coburn |
| 1H ₁ | G. Y. Ralph & Co. |
| 1H ₂ | D. De Nichilo |
| 1H ₃ | A. Ahonen |
| 1J | Standard Oil Co. of N. Y. |
| 1L | F. Le Clair |
| 1M | Gravel Pit |
| 1N | F. A. Purdy |
| 1P | Roble Shed |
| 58Y | Storage Track |
| 1 1/2 | Woodbury Granite Company |
| 1 1/2 | Nunn & Fordyce |
| 2A | Coal Storage (H. & W.) |
| 2B | Columbian Shed |
| 3 | Power Plant |
| 3A | Car Repair Shop |
| 3C | Southern Yard Limit |
| 4 | All points between Yard Limit 3C and Burnham Hill |
| 5 | Burnham Hill |
| 6 1/2-A | Foster's Summit |
| 6 1/2-B | Hunnigan Station |
| | QUARRY STATIONS |
| 7 | Blue Quarry, Woodbury Granite Co. |
| 7 1/2 | Kimball Station |
| 8 | White Quarry, Woodbury Granite Co. |
| 8 1/2 | A. H. Thomas |
| 9 1/2 | Gray Quarry, Woodbury Granite Co. |
| 9A | |
| 10 | E. H. Fletcher |

NOTE

Protection of merchandise consigned to points on H. & W. R. R., and safe storage after delivery at destination guaranteed at such stations only as have authorized agent in charge.

some work at the time, Shay #3 was in good running order still. No buyer could be found for her, however, and both locomotives were scrapped along with some forty flat cars, the rails and other equipment. The boiler from #2 was sold to a chairstock factory in East Calais, Vermont which later burned. The proceeds from the scrapping were used to pay the debt built up over the years the St. J. & L. C. had operated the line without compensation. Thus ended New England's second to last large Shay operation leaving only the #5 to trundle along the East Branch & Lincoln over in New Hampshire.

The Woodbury Granite Company did not fare much better. In 1911 it employed 1200 men in the cutting and finishing operations and another 500 to 700 in the quarries and the setting crews. Shortly after Mr. Bickford's death his interest was sold, with William C. Clifford now sharing control with Charles W. Leonard, the only man of the original firm left. The company passed through three other owners, including the Barre-based Rock of Ages firm, and finally came into the hands of Lawrence Anair. In 1952 there were only about 30 employees left when on April 9 a bad fire destroyed one of the two remaining sheds. The business closed forever that day and the remaining shed was sold to the Town of Hardwick for storage.

Bibliography

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Personal notes and files of the late John S. Kendall now in the hands of his son, Marvin R. Kendall, M.D.

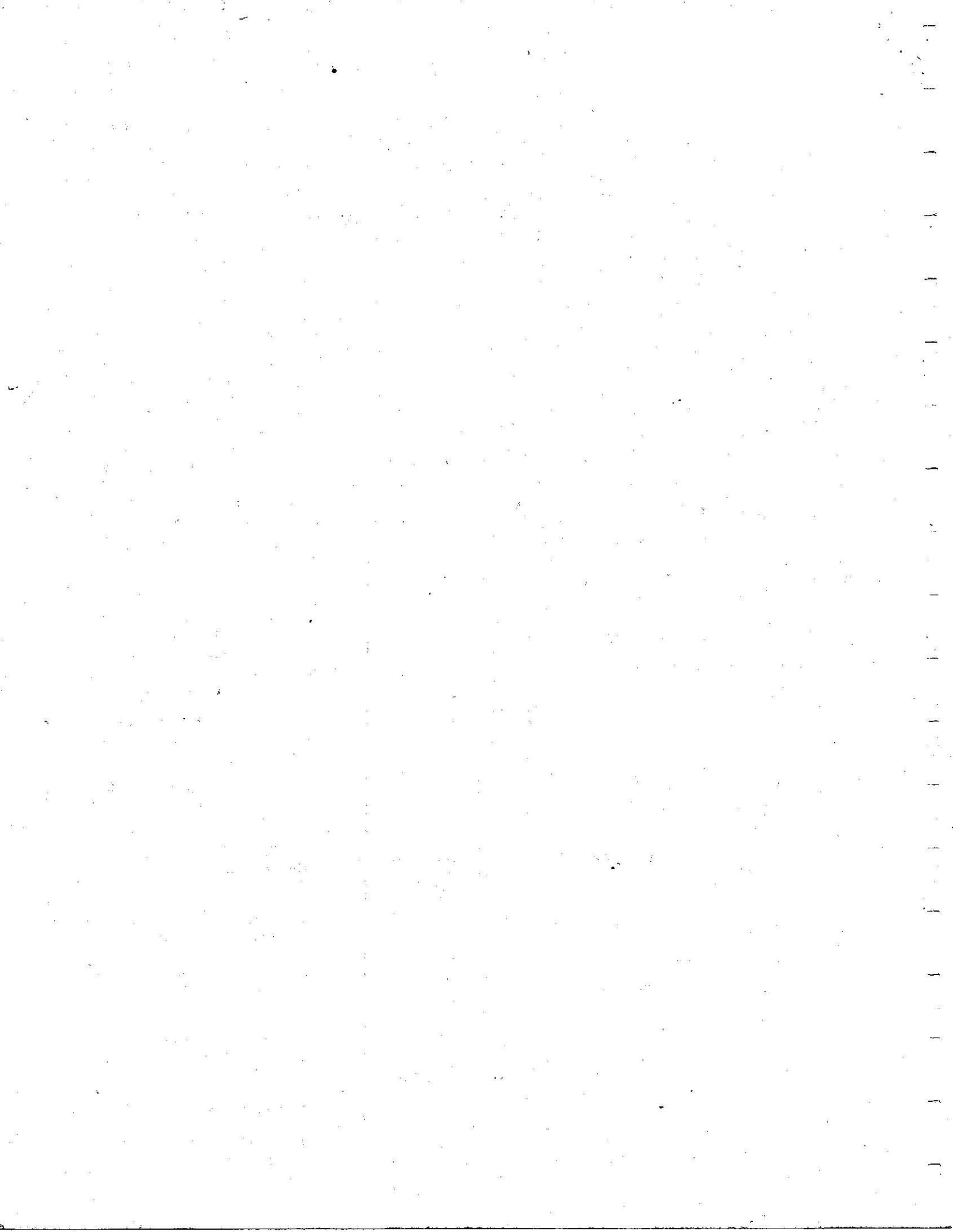
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A Study of the Hardwick, Vt. Community by Doree Lanouette, B.A. Thesis at Goddard College, 1953.

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Conversations with George F. Bickford, son of the late George Bickford, Gen. Mgr. of the Woodbury Granite Co. and Carl M. Jennings, a former H&W employee.



The Hardwick & Woodbury Railroad

By JOHN S. KENDALL

For many years the towns of Hardwick and Woodbury in northern Vermont were famous for structural and monumental granite and, before the opening of the quarries at Barre, twenty miles south and over the mountain, the little town of Hardwick was the largest granite producing center in the world.

From the quarries south of the Lamoille River at Hardwick, or from those on the slope of Robinson Mountain in Woodbury, came the granite used in the construction of such buildings as the Pennsylvania State Capitol at Harrisburg, the Cook County Courthouse and City Hall in Chicago, the Bankers' Trust Company Building in New York, the Post Office in Providence and other well known public buildings in various parts of the country. In the monument field, the Woodbury Granite Company under the direction of Mr. George Bickford was noted for its fine carving and sculpture.

In recent years, however, the use of granite for structural purposes has been replaced by concrete, and the Barre quarries with finer grades of granite have captured much of the monumental business. As a result, many of the Woodbury quarries are closed while others in Hardwick operate on a curtailed basis, and the once busy Hardwick and Woodbury Railroad has gone the way of many similar railroads built to serve a single industry.

The Hardwick and Woodbury Railroad Company had its inception in the early '90s when the rapid development of the granite industry and the opening of the quarries on Robinson Mountain in Woodbury created a serious transportation problem. The only solution to the problem was the construction of a railroad from the quarries to the cutting sheds and the main line railroad at Hardwick. Preliminary steps for the construction of such a railroad were taken by the joint action of quarry owners and public spirited citizens in 1894 and on November 23rd of that year an act of incorporation was approved by the State legislature. This act was as follows:

STATE OF VERMONT LEGISLATURE

Section 1 Such persons as shall hereafter become stockholders are hereby constituted a body corporate by the name of Hardwick & Woodbury Railroad Company for the purpose, and with the right, of building a railroad with single or double track and all necessary spurs, extensions, and side tracks, of such gauge or width as shall be deemed advisable, from some point on the St. Johnsbury & Lake Champlain R. R. in the town of Hardwick to the mountain quarry of the Woodbury Granite Company in the town of Woodbury, to transport and carry property on the same by power of steam or otherwise, and also to transport and carry passengers at its discre-

Woodbury Granite Co., Hardwick, Vt.
acquired a

Harris-Carliss Steam Engine of
18" bore x 42" stroke -

Wm. A. Harris Steam Engine Catalog

~~18" bore x 42" stroke~~

Circa 1908-1910.

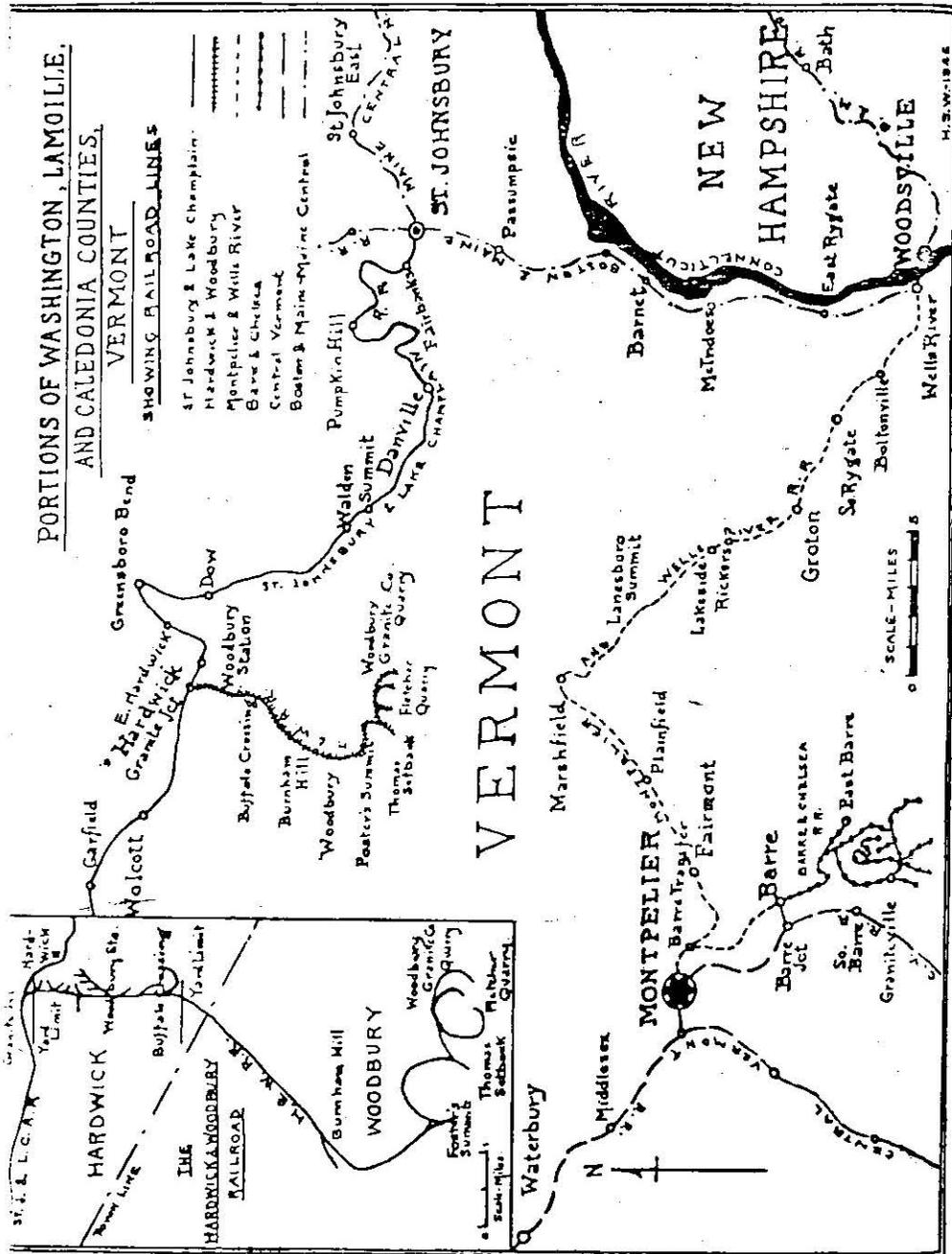
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Return to David Sawyer

RD 1 Box 107

E. Gary H. 05650

456 8836

**PORTIONS OF WASHINGTON, LAMOILLE,
AND CALEDONIA COUNTIES,
VERMONT**



tion, provided however, that said railroad company shall not be compelled to operate its line of railroad except in the months of April to November inclusive, in each year unless it shall elect otherwise to do; and by that name may sue and be sued, may have a common seal, and shall have all the rights incident to corporations.

Section 2 Capital stock \$50,000—may be increased if necessary.

Section 5 As soon as 500 shares are sold, cause notice of election of directors.

Section 9 If said company shall not within two years from the passage of this Act commence construction of the said road, and shall not within five years from the passage of this act finish the same, then this act shall be void.

Section 12 The towns of Hardwick, Cabot, Marshfield and Woodbury may aid by subscription of stock or issuing bonds to aid.

The incorporators were L. D. Hazen, H. N. Turner, E. H. Blossom, T. C. Fletcher and G. W. Cree, all of St. Johnsbury; Congressman Powers, George Powers and Governor Hendee of Morrisville; C. A. Watson of Woodbury; and Alfred Watson of Hartford, Vt.

The first meeting of the corporation was held at Hardwick on March 16, 1895, to elect directors and authorize construction of the road. The proposed road was to connect with the St. J. & L. C. R. R. (then under control of the Boston & Maine) and to extend to the several quarries in Woodbury. Representatives of the St. J. & L. C. and the B. & M. were invited to the meeting in an advisory capacity for the road would be a feeder to their line and the problems of construction "right up the mountain" required expert advice.

The following officers and directors were elected at the meeting:

- President* GEORGE M. POWERS
- Vice-President* C. A. WATSON
- Gen'l. Manager* E. H. BLOSSOM
- Treasurer* J. H. MCLEOD
- Clerk* CHARLES L. SANFORD

Directors

- E. H. Blossom (Asst. Supt. St. J. & L. C.) St. Johnsbury
- George M. Powers Morrisville
- E. R. Fletcher St. Albans
- J. V. Dutton Hardwick
- W. H. Fullerton Manchester
- A. B. Thomas Hardwick
- C. A. Watson Woodbury

The act of incorporation allowed the towns of Hardwick and Woodbury to purchase the securities of the railroad company and on July 6, 1895 the town of Hardwick voted to buy 400 shares of the capital stock at a par value of \$25 per share. The large granite companies and their

officials as individuals as well as many townspeople also bought shares. The town meeting at Woodbury, however, voted against any town aid for the enterprise. Much of the land damage was paid for in stock of the company.

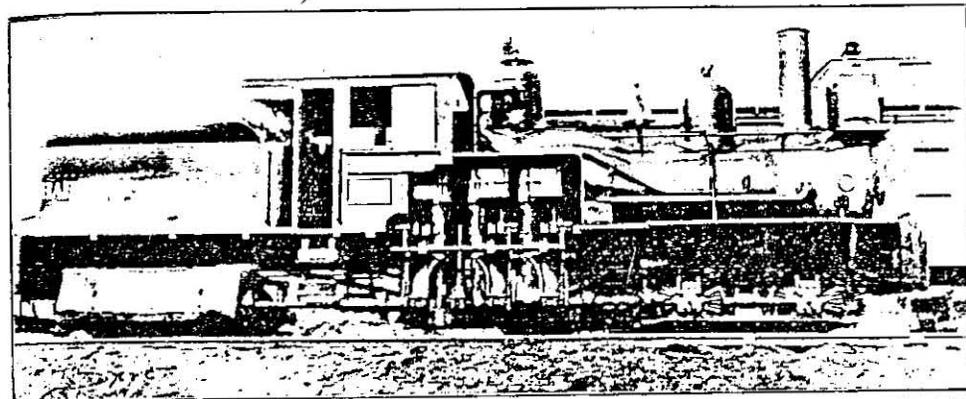
From the start, Mr. E. H. Blossom and Mr. George W. Cree were very active in the affairs of the road. Chief Engineer Williams of the Boston & Maine R. R. assisted in the location of the road. Mr. John S. Holden, an official of one of the granite companies, was a large stockholder and was very influential in floating the stock. He later became president of the road and his name was given to the road's second locomotive.

Several stone sheds were already in operation in Hardwick, and to connect these with the main line, the St. J. & L. C. had built approximately $1\frac{1}{2}$ miles of spur track from Granite Junction, a mile west of Hardwick station. The new line was to continue on up the mountain to the quarries at Woodbury. Construction was authorized to begin at once, but as local labor was to be used as much as possible, the actual work of grading was delayed until the local haying season was over. Wages for ordinary labor were about \$1.25 a day. Work was stopped as soon as the ground froze and the first rails were not laid until the Spring of 1896.

The St. Johnsbury & Lake Champlain R. R. furnished rails, spikes and ties, using 56-lb. rail. A locomotive (#250, a 4-4-0 Hinkley) and some flat cars were rented from the Boston & Maine. At first there was no formal contract let for the construction of the road. Later, Messrs. Varnum and Gilfillan were hired to fill some trestles and to do some special work. Several gangs of Italians were obtained from Boston for day labor. At that time there were not very many citizens of Italian extraction in the surrounding country so when these gangs arrived, and with them a plentiful supply of beer and wine, the local citizenry were frightened at what might happen. Nothing did happen, however, for the Italians knew how to use beer and wine and the work went on smoothly without incident. Some of them stayed and became honored and influential members of the community.

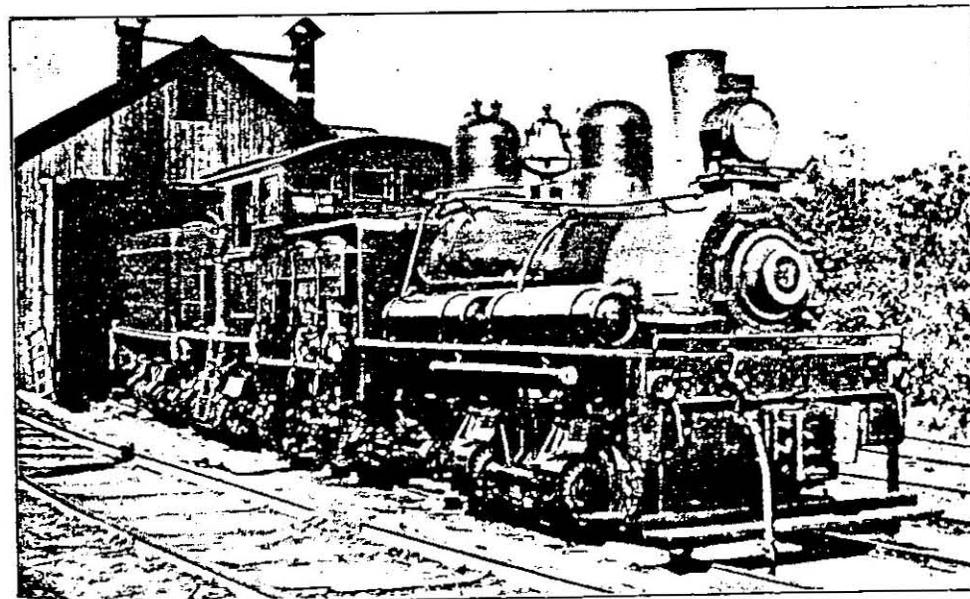
From the start, employees of the Hardwick and Woodbury were required to perform many duties not in line with their position on the payroll. All they had to work with was the simplest of tools and their hands. A home-make wooden derrick and rail leader was built on a flat car borrowed from the Boston & Maine. Fortunately there were no expensive bridges to build and maintain, only a small bridge over a brook near Hardwick and a few culverts. There were a few small trestles which were later filled by using waste material from the quarries. Much of the road was cut out of the sidehills and grading was done with wheelbarrows. At the Hardwick-Woodbury town line was a long trestle which later required 6600 cars of material to fill. Timbers for the trestles were cut right on the spot.

By January 1896 five miles had been graded to a point called Foster's Summit. At this point construction had to stop—the little B. & M. 250 could go no further. After a year's delay a Shay engine was



H. & W. #1 "E. H. Blossom."

—Courtesy of J. S. Kendall.



Hardwick & Woodbury R. R. No. 3.

—Courtesy of H. S. Walker.

See
woodcut

bought from the Barre Railroad, arriving about August, 1897. This was the engine exhibited at the 1893 Chicago World's Fair by the Lima Locomotive Works. One of the Montpelier & Wells River R. R. (which controlled the Barre road) officials had seen it at the Fair and bought it for use between Montpelier and Barre, and for the Barre Hill work.

A Shay is necessarily slow and its use at top speed by the Barre people had abused it. Nevertheless it was bought by the Hardwick and Woodbury and renamed "E. H. Blossom #1" in honor of the general manager. Its first engineer was A. M. Stone and the fireman Sam Norris. After serving some years, it was supplanted by two larger Shay engines. The "E. H. Blossom" was later used in building the electric road between Concord and Manchester, N. H., and after that was sold to some Southern company.

At the annual meeting held in the Spring of 1897 the following officers were elected.

<i>President</i>	John S. Holden
<i>Vice-President</i>	George M. Powers
<i>Treasurer</i>	George H. Bickford
<i>Secretary</i>	D. F. Holden
<i>Gen'l. Manager</i>	E. H. Blossom
<i>Superintendent</i>	W. H. Fullerton
<i>Gen'l. Passenger and Freight Agent</i>	J. V. Dutton

The road was completed to the Woodbury Granite Company quarry about October 1, 1897. It had sixteen miles of track, only nine of which could be called main line. The end of the line was the highest point reached by any railroad in the State. The grades were 9 degree maximum, more than a thousand feet in nine miles, and the curves were 21 degree maximum. The heaviest grade was 7% and the last two miles averaged 5%. There were two switchbacks, one at Foster's Summit and the other at the Thomas quarry. There was a sidetrack at Burnham Hill which was used when it was necessary to "double the hill." The number of cars taken up the hill was limited by the length of the switchbacks.

In some places the railroad had no deeded right-of-way, at others it varied from 16½ feet up. At Foster's Summit the original deed read, "all land necessary for track purposes." At first there was no way to turn an engine or a car on the entire line, so it was decided to put in a wye at Foster's Summit. Abutting land owners put in a claim for compensation but were surprised to find that the original deed entitled the road to take all necessary land without cost.

There were thirteen listed "stations" but not a single company building from one end of the line to the other. Passengers as well as all kinds of freight were carried. Tariffs were on file for various commodities. Shipments were left at any designated point, usually some quarry or the boardinghouse at Woodbury.

It was not expected that the road could operate the year round. On the front page of the local freight tariff always appeared "All rates issued by this road are subject to the right to suspend operations upon

statutory notice on any part or all of its lines during the months of December, January, February and March as provided in its charter." However, until it finally shut down, the road operated regularly summer and winter, except for two months due to a strike of granite workers at the quarries.

The biennial report of the Vermont Railroad Commissioners, dated June 30, 1898 gives the construction cost as \$50,691.69 which is remarkable considering the curves, cuts, fills and the rough nature of the country through which the road was built. It is a tribute to the rugged determination and Yankee thrift of the local management.

The earnings of the company fluctuated widely with the demand for granite but at least one year returns were large enough to justify a 12% dividend on the preferred stock and 6% on the common. This dwindled down to less than nothing when operations were finally discontinued, with the road owing the St. Johnsbury & Lake Champlain a substantial sum. The busiest years were from 1906 to 1916. During that time two train crews were frequently required, one being used in switching at Granite Junction and the other at Woodbury. At the peak of operations, the road had about 30 employees.

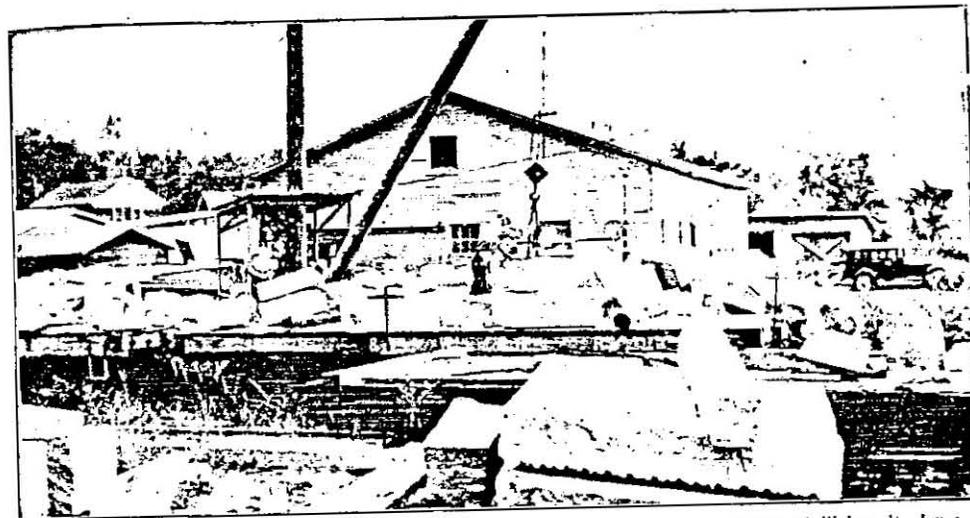
In 1901 a second Shay locomotive was received from the Lima Locomotive Works and was named the "John S. Holden." In 1906 another similar locomotive was purchased. This locomotive was first named "Charles W. Leonard," later "George H. Bickford" and finally, the "Charles A. Hubbard."

It is a mooted question just what road developed the so-called well car for carrying stone, plate glass, etc., but the "Railroad Gazette" in 1899 tells this:

"A special stone car, designed by E. H. Blossom, general manager of the Hardwick & Woodbury R. R., was built by the Laconia Car Co. for shipping granite blocks 13x17 feet by 18 inches weighing 20 tons net. It consists of a 36-foot platform car with a 20x4 foot cradle in the center. On each side of the opening are three long timbers one above the other, 12 foot square. Running through the timbers are twelve vertical rods (six on each side) 1½ diameter extending down to within eight inches of the top of the rails. Supported by these rods are six transverse oak pieces 4x6 inches trussed with iron rods to form the floor for the load. The upper part of the granite block is braced on each side by seven timbers, the lower ends of which are fastened to the outer edge of the floor."

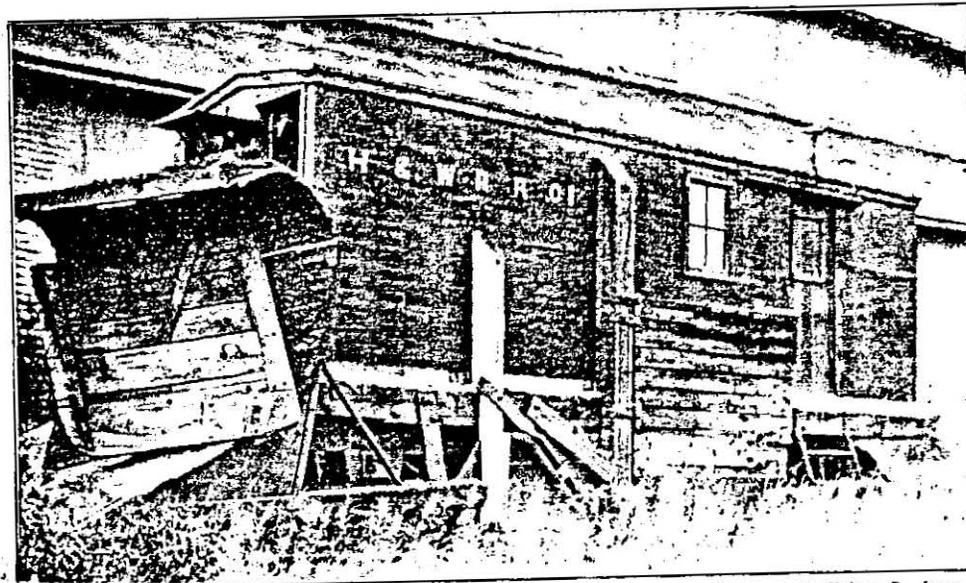
The Barre & Chelsea R. R. contested the Hardwick road's claim to being the first to have a car of this type. Anyway, the Barre road got the car when the Hardwick road was dismantled. The first shipment on this car was for a mausoleum in Chicago. It was quite an innovation and was extensively copied with some modifications by many other roads.

The flat cars used on the Hardwick & Woodbury were purchased second-hand from other roads, some of them from the Delaware, Lackawanna & Western. They were mostly small wooden ones of light ca-



The H. & W. at Hardwick.

—Courtesy of Walter D. Jones.



Snowplow on H. & W. R. R.

—Courtesy of Walter D. Jones.

capacity. Most of them were used only on the line while Boston & Maine cars were used for off system shipments. At first a small 4-wheel B. & M. caboose (#1928) was used. Later B. & A. 1108 (ex-N. Y. C. 3855) was purchased and the 4928 returned to the B. & M.

Winter operations were costly and required every employee's best efforts. There was very meagre equipment and a lot of hand shovelling. During the winter it was not unusual to have to hire forty men to shovel snow. There was no plow to start with but Engineer Stone and his helpers made a small plow without wings that bolted on in front of the engine. When they got up to the first switchback the plow had to be unbolted and put on the other end of the engine. Then at the next one the process was reversed. This plow cleared 4 inches above the rail. The track was so crooked that this was necessary.

Engineer Stone's plow got them through until about 1900. Then a sort of plow, also without wings, was bought from a lumber company. This was put on a flat car and a long lever installed. It took five or six men to lift it at crossings. This plow got them through another winter. In the meantime the St. Johnsbury road acquired a new plow and their old one was bought by the Hardwick & Woodbury. This plow was used until the road was torn up.

Before the wye was put in at Foster's Summit the crew would plow out to the switchback, then go back to Hardwick and 14 miles up the St. Johnsbury & Lake Champlain main line to Morrisville where there was a turntable on which they could turn their plow before they could finish opening up their line. No eight-hour day then. For light snow a flanger was designed by Conductor Hines and built at Lyndonville which worked very well. It was built on a single long truck and later equipped with wings.

During the more prosperous years passenger excursions were run to Woodbury. Two coaches were borrowed from the St. Johnsbury & Lake Champlain and three of the road's own flat cars were equipped with benches. The usual 26-cent one-way fare was cut to 25 cents for the round trip. As many as 450 passengers were carried in a day which included three trips. These excursions terminated with a dance at a storehouse of one of the granite companies. The train crew would wait patiently for the end of the festivities and wind up their day at two or three in the morning of the following day.

As the result of several mix-ups in schedules, a timetable was devised but it was never printed. Employees copied it and no collision ever occurred on the road. The only accident of note happened one Sunday. Mr. Hubbard, the engineer, had put in a good part of the day working on his engine. Less than half an hour after he left the Hardwick enginehouse three cars of grout came down the hill from some siding and the switch to the enginehouse being open the cars smashed into the No. 2. The engine was pushed through the rear of the house and completely wrecked. It was shipped back to the Lima Works on a flat car where it was rebuilt and returned to service.

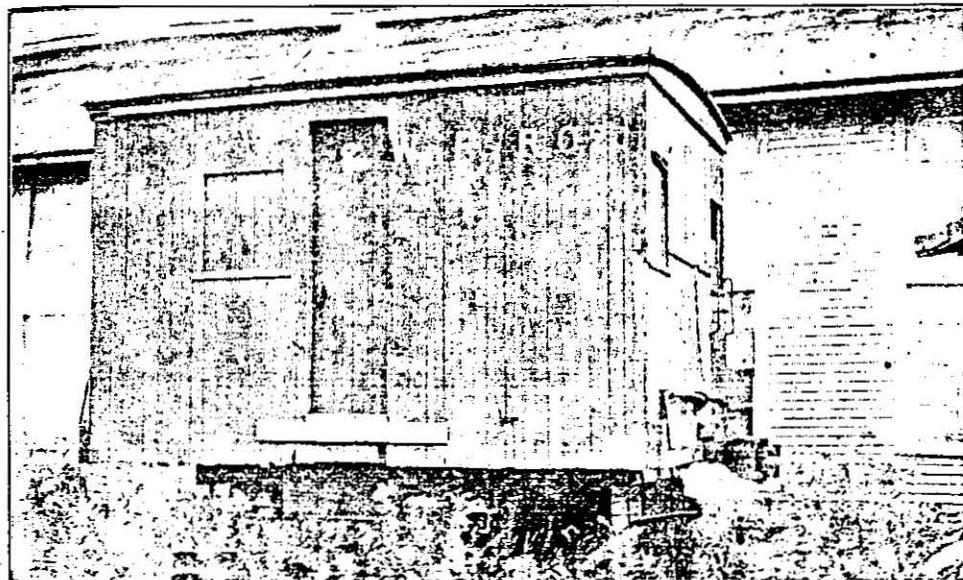
In 1925 the Hardwick and Woodbury was taken over and operated by the St. Johnsbury & Lake Champlain until its abandonment in 1934.

Only about 11 miles were operated. Equipment consisted of Engines No. 2 and 3, together with 47 freight cars, few of which were serviceable enough to be allowed off their own line. Little by little employees were dropped and the number of weekly trips was cut from six to four, then three, and finally only when called out. Crews were cut to one conductor, one brakeman, an engineer and a fireman. At the end it was a three-man road with Manager Bailey, Engineer Hubbard and Fireman Carroll Hines as a full crew.

In October 1934 the Interstate Commerce Commission granted the road's petition to abandon the line from the cutting sheds in Hardwick to the quarries in Woodbury. When operations were suspended, Engine No. 3 was in excellent condition and No. 2 was laid up for repairs. With the exception of one flat car taken over by the St. Johnsbury & Lake Champlain, all other equipment was so old and weatherbeaten that it was fit only for scrap.

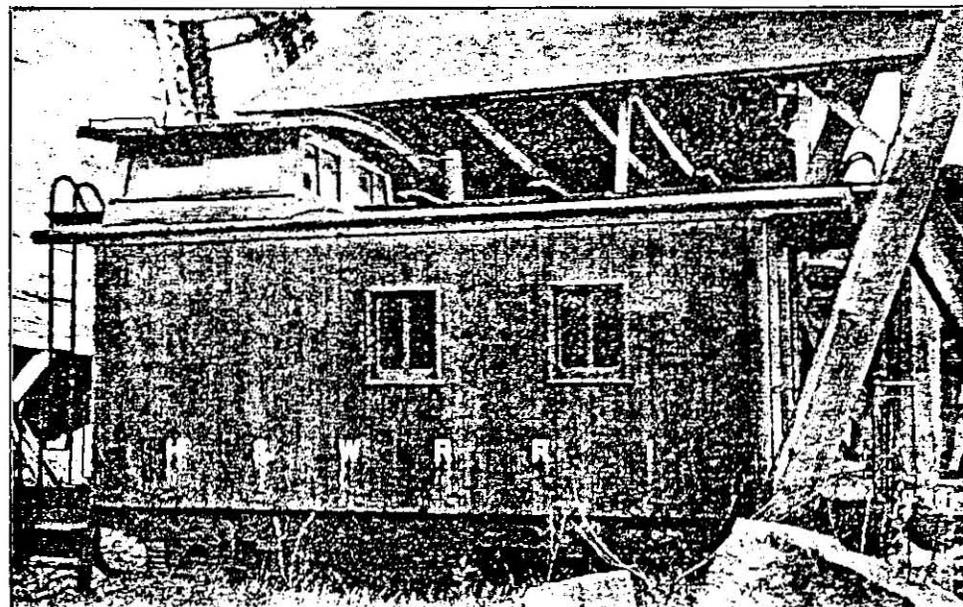
Mr. James Cannon of the St. Johnsbury and Lake Champlain tried to have the large granite concerns that owned much of the quarry property in the vicinity operate the road but his efforts were without success. The road laid idle from 1934 until August 1940 when the rails were finally taken up.

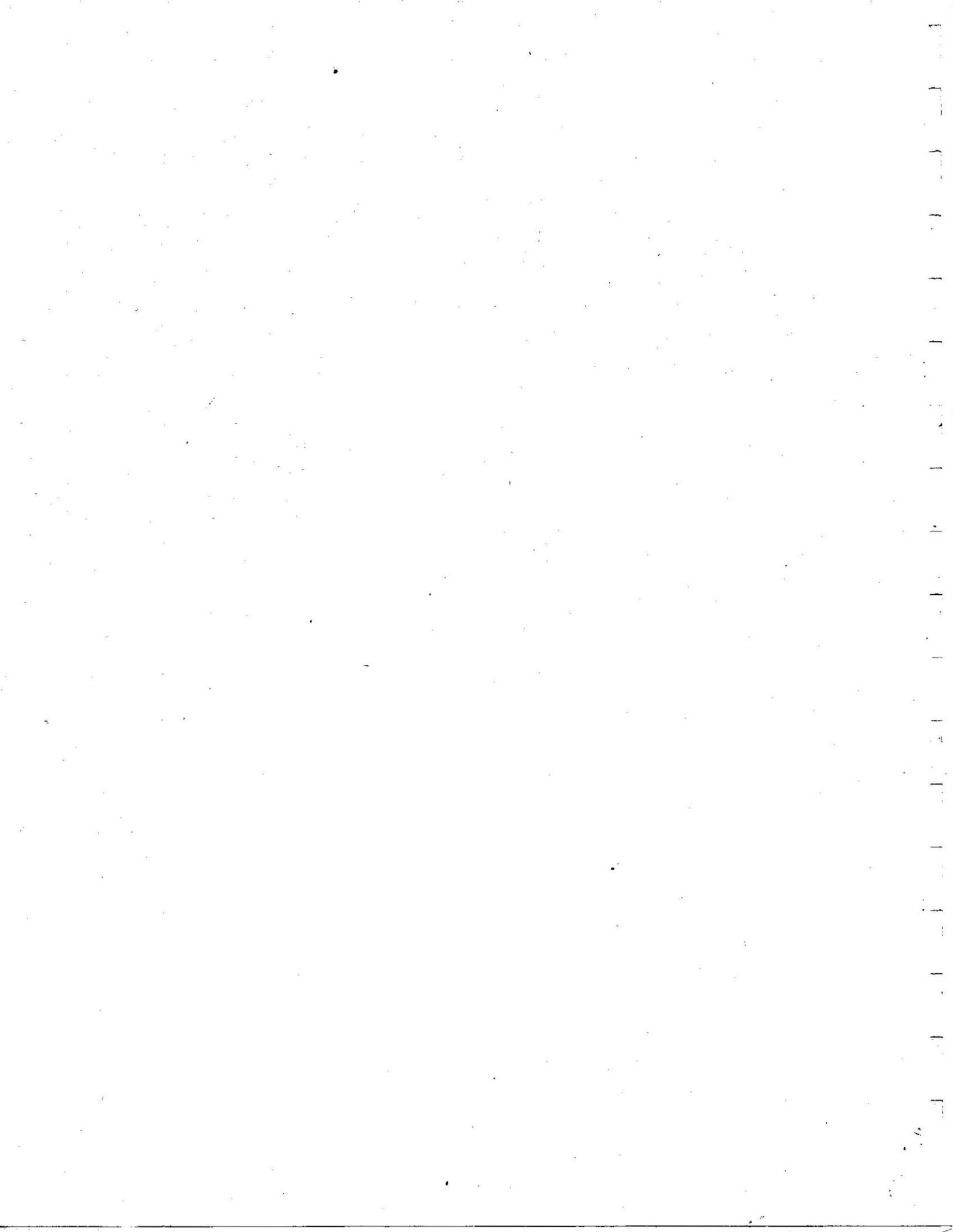
*Boxcar #2 used at char. stock mill in
 1950s
 Lamb's Mill*



4-Wheel Flanger. H. & W. R. R.

—Courtesy of Walter D. Jones.





CONNECTICUT RIVER RAILROADS AND CONNECTIONS

by R. W. Nimke

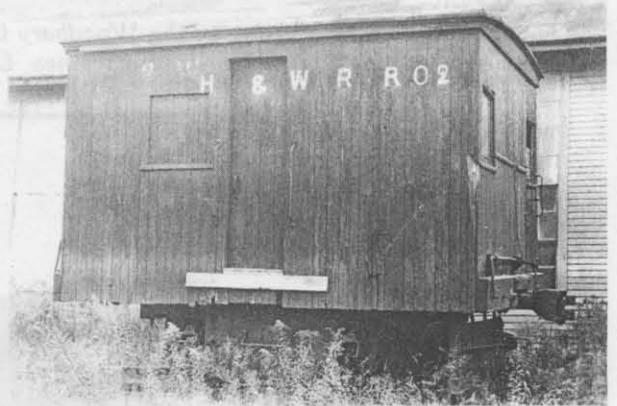
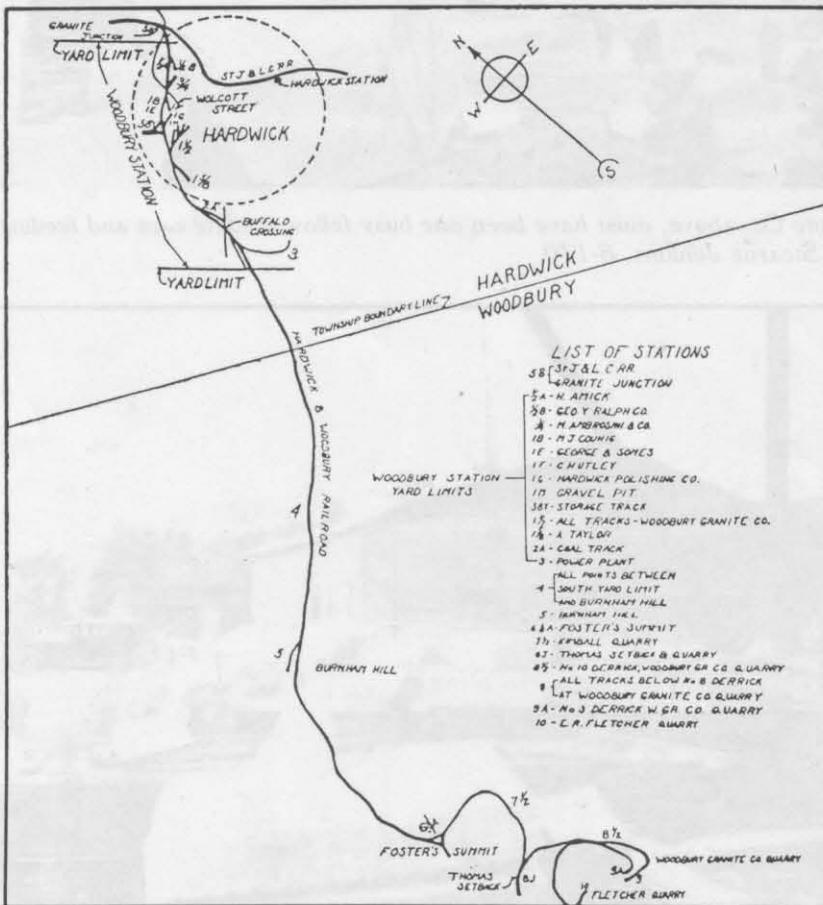
*R. W. Nimke
May 22, 1995*

**Volume VIII
St. J&LC — Part II
Springfield Terminal Ry.**

HARDWICK & WOODBURY RR

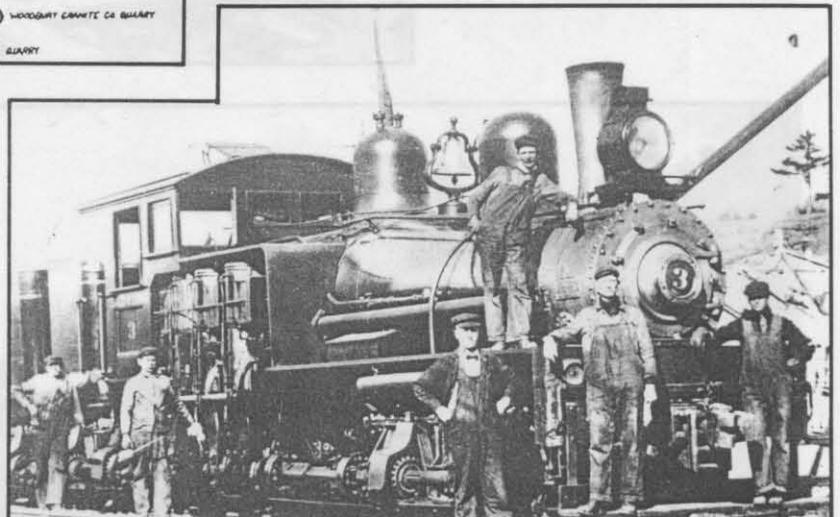


Woodbury Granite Co. from a post card of my collection. 8-166.

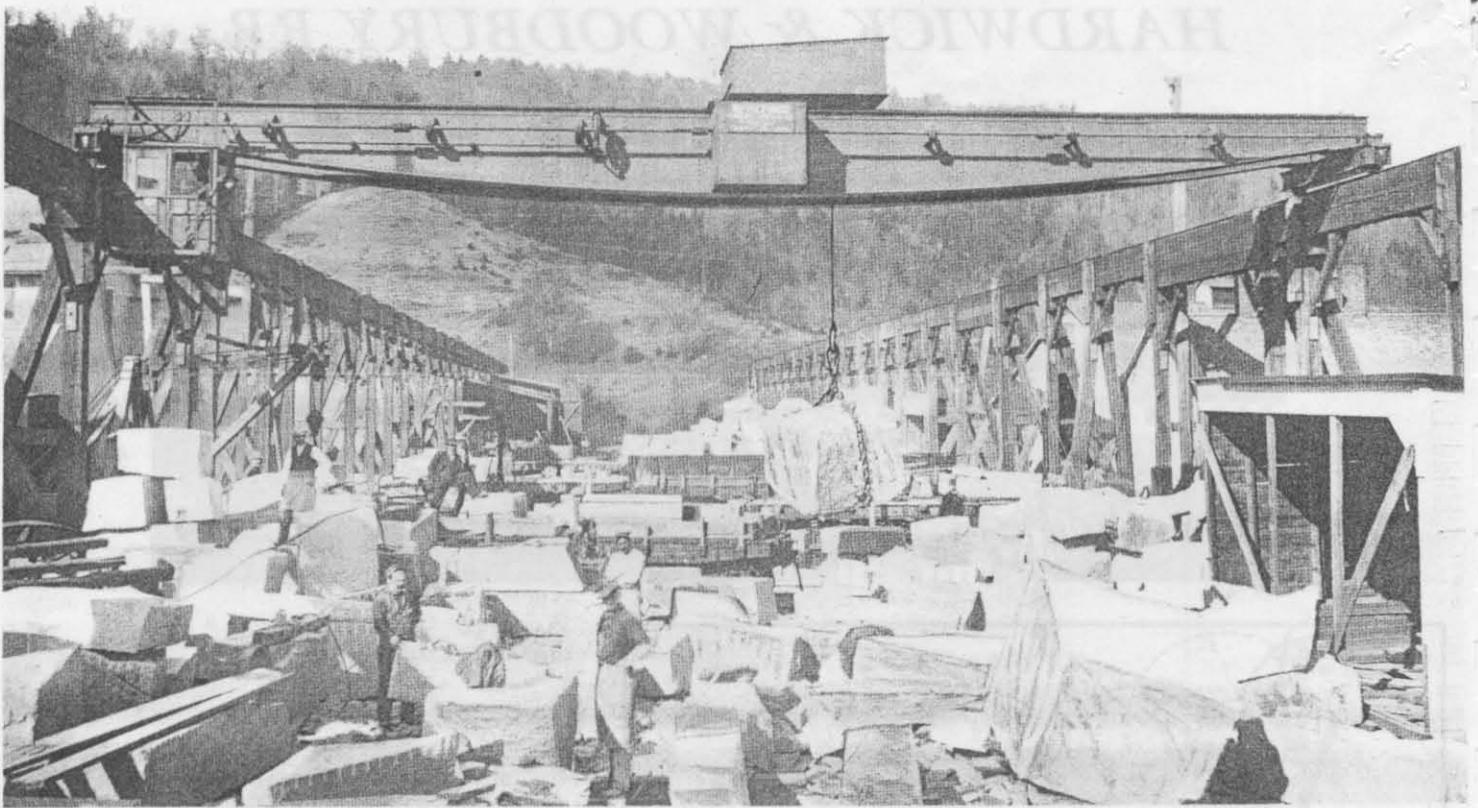


Flanger #2. Coll. Richard Hill. 8-167.

Trackage of the Hardwick & Woodbury RR abandoned 10/17/34. 8-168.

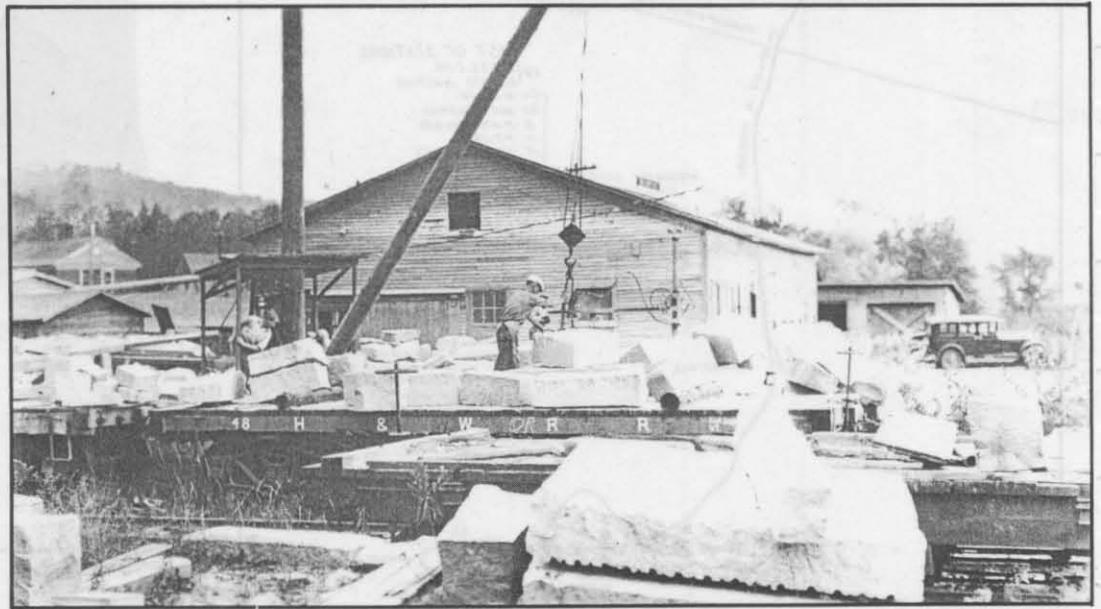


The Chas. A. Hubbard #3 at Hardwick. Coll. Steve Mumley. 8-169.



The travelling crane operator of the Woodbury Granite Co. above, must have been one busy fellow loading cars and feeding the surfacing, crusher and polishing machines. Coll. Stearns Jenkins. 8-170.

Interplant use of H&W flat #48. During its heyday, one switcher was used exclusively for plant switching. Coll. Richard Hill. 8-171.

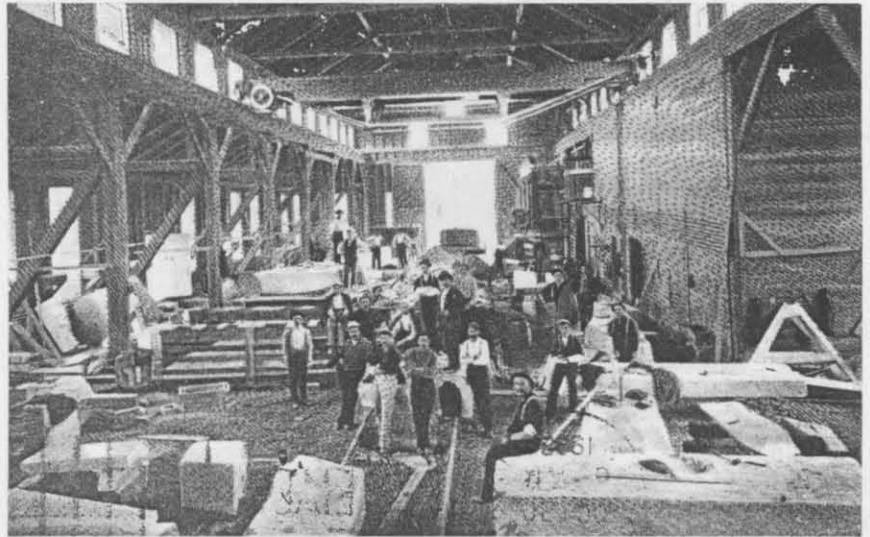


One of the two long sheds of the Woodbury Granite Co. Steve took this July 24, 1987. Appears to have a good roof and will be around for quite a spell. 8-172.

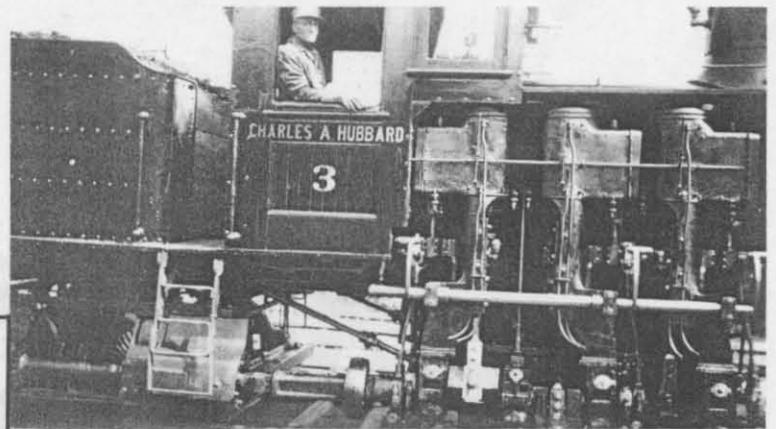


B&M flat 30666 apparently being used to bring blocks down from the quarry to the mill. This is the quarry of E. R. Fletcher. 8-173.

1908 postcard view of the inside of the Woodbury Granite Co. sheds. Top two my collection. 8-174.

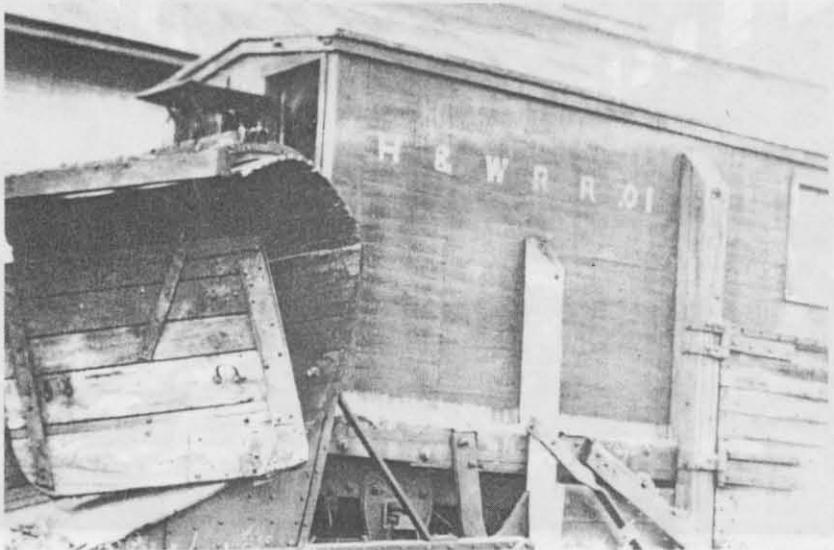
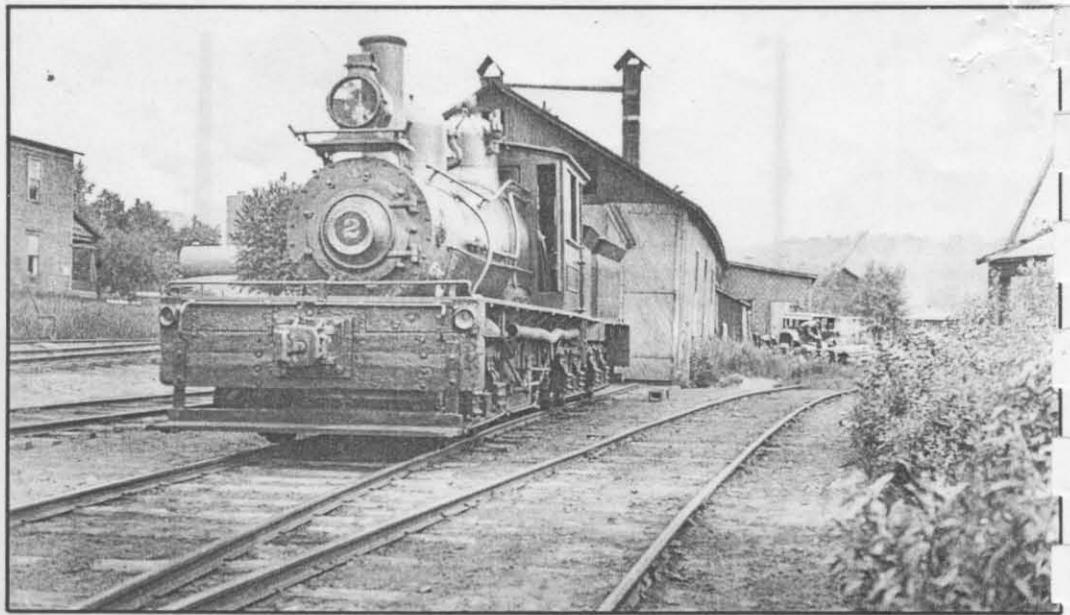


The "Charles A. Hubbard" engine #3. Coll. Richard Hill. 8-175.

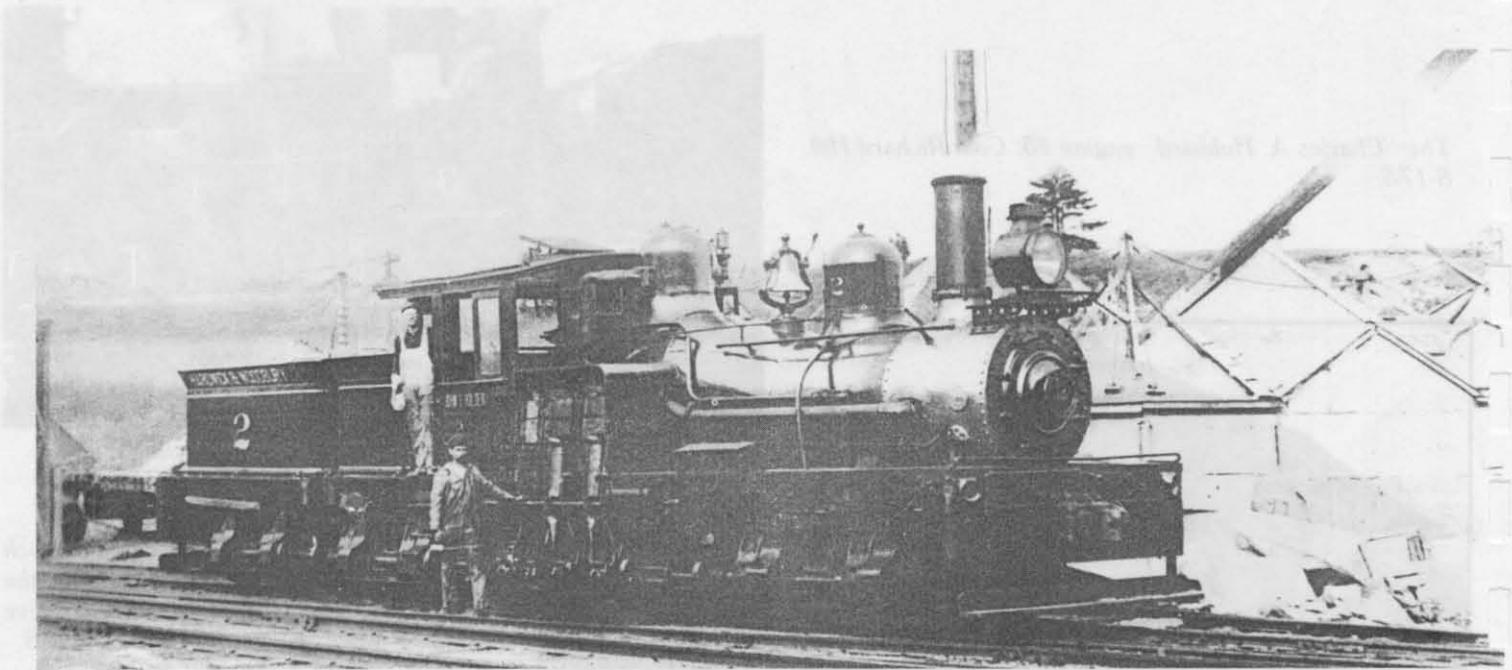


H&W building at left. This was the track side (rear) of the building. No doubt the others were a part of their complex. Steve Mumley photo August 24, 1987. 8-176.

*The John S. Holden #2 at
Hardwick June 1931. Named
after an early president of the
Woodbury Granite Co. 8-177.*



*Snowplow #1 ex St. J & L. C., at Hardwick. Top two
Steve Mumley's collection. 8-178.*



The John S. Holden again just outside the enginehouse to the left. Coll. J. E. Lancaster. 7-179.

H&W + STJ & LC RAILROADS

*Richard Hill,
Morrisville*

A brief history of the St. Johnsbury and Lake Champlain Railroad is essential in connection with a history of Hardwick. The people of the Lamoille Valley can well be proud of this small Vermont railroad that serves them, and of the men who built it. The building of this road reflects the noble inspiration of public spirited men, and reveals a valiant and successful fight against adverse circumstances.

The Lamoille Valley Railroad was chartered in 1867. At this time the greatest help to the enterprise was an act of the Legislature of Vermont pertaining to the towns along the line either to buy securities or to pledge the credit of the town to guarantee interest on railroad securities. Hardwick assumed a bonded indebtedness of \$60,000, the last payment on which was made in 1905. Contracts for the building of the road were let in the latter part of the year 1869. Work was to be done in two sections, one from St. Johnsbury to Hardwick, the other from Swanton to Cambridge. Ground was broken December 22, 1869, at St. Johnsbury by Thaddeus Fairbanks amidst an out-burst of applause from the enthusiastic crowd of on-lookers. Guns were fired followed by a blast of trumpets and lively music from the band in attendance.

An important day in Hardwick, January 1, 1872, marked the arrival of a passenger train from St. Johnsbury. The first passenger train to arrive here was greeted by a crowd of people as enthusiastic if not as large as that in St. Johnsbury when the building work was begun.

Morrisville, Hardwick, Hyde Park and Johnson have always more loyally supported the road than other towns along the line. Whenever danger threatened the road these towns have rallied to its support. For example, in the first part

of April, 1872, there was an exceptionally heavy snow fall. The snow plow was derailed and useless. It looked as if the entire line would be shut down. The railroad employees had become exhausted and could do no more. Hardwick came to the rescue with a crew of fifty-three men who worked forty-eight hours, built a temporary plow and cleared the line. All done without expense to the management of the road.

The building work progressed at each end of the proposed line; the two sections met at Cambridge Junction June 29, 1877, and on Monday, the 2nd of July, the road was officially opened. Governor Horace Fairbanks drove the silver spike handed him by Colonel Jewett, the superintendent of the road, when the last rail was laid at Fletcher, July 17. Here the two passenger trains met bringing an immense gathering of people among whom were notables from other New England states as well as prominent state officials. The celebration was colorful and impressive.

For a considerable number of years thereafter the financial affairs were ably managed and the earnings of the new road most satisfactory. With the extension of feeding lines into Essex county and immense amount of lumber was brought out. Hardwick along with other towns through the valley became shipping points for ~~the~~ varied products, lumber, dairy products, live stock, etc.. The new line greatly accelerated the manufacture of marble and granite. Henry R. Mack had for several years been engaged in monumental work in Hardwick. With the opening of the road other firms began quarrying and the number of cutting plants increased.

With the opening of granite quarries Woodbury and their development the need of more efficient means of hauling rough granite from the quarries to the cutting plants became imperative. Teams hauling granite were slow,

the larger blocks were handled with difficulty. The haul required hours over eight miles of rough road to Hardwick. The Hardwick and Woodbury railroad was built principally for hauling granite from the quarries in Woodbury operated by E. R. Fletcher and the Woodbury Granite Company. Other smaller firms engaged in quarrying also shipped granite over the line.

Hardwick branch of the St. J. and L. C. R. R. was built in 1892, one and seven-tenths miles from Granite Junction. But the quarries were seven miles farther away, the more difficult grade up the mountain. Granite men continued to agitate the necessity of extending the line to the quarries. At a special town meeting held in Hardwick July 6, 1895, the following resolution offered by William H. Taylor, was adopted: "Resolved that the town of Hardwick aid in the construction of the Hardwick and Woodbury railroad by the purchase of 400 shares of capital stock of said railroad at par value of \$ 25.00 each, agreeable to the provisions of article 235 of Acts of 1894." The stock of the road was floated partly by popular subscription, but mainly by the backing of John S. Holden and his associates.

Building work begun in 1894, now continued under the direction of Frank Brown, chief engineer. Two years were required to complete the work. The road was finished and equipped ready for operation in 1897. The rolling stock consisted of three engines and some fifty cars. An engine house and repair shop were built at Hardwick terminal. Give the railroad the quarries began to develop rapidly. Besides the granite handled, other heavy freight such as coal, iron, lumber, tools and oil used in quarrying and manufacturing made a large volume of freight. The heaviest train ever taken

down the mountain was made up of twenty-two cars all heavily loaded except one empty coal car. The heaviest single stone ever brought down weighed sixty-one tons and came from the white quarry.

Between the years 1903 and 1916 the road was operated at full capacity. During this period two train crews were employed, one did the yard work and delivered the finished granite to Granite Junction. The main line crew made two trips daily to the quarries in Woodbury and brought out twenty, thirty, forty and sometimes as many as fifty carloads of stone in a day.

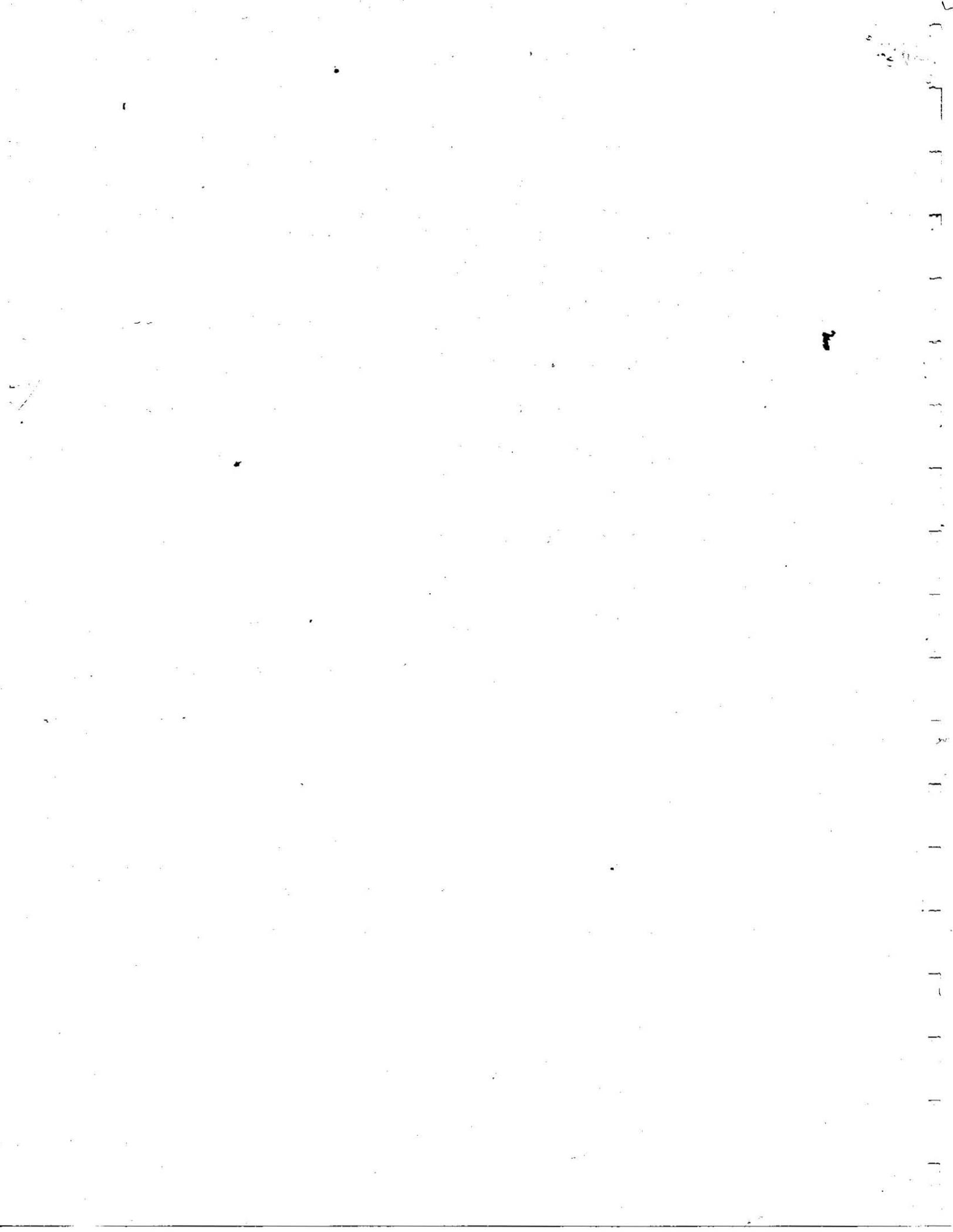
This railroad had the distinction of reaching the highest point of altitude of any railroad ever operated in the state. A trip by rail to the Woodbury quarries was considered by many as one of the most scenic trips in New England. During the summer months excursions trains were run to accommodate parties from other New England states as well as visitors from a distance. Frequently large parties were taken, once at least five hundred people were in the party. Passenger trains were run regularly between Hardwick and Woodbury for ball games at Prospect Park played by Hardwick and Woodbury teams.

The management of the road included such men as Judge Fullerton, John S. Holden, Charles W. Leonard, George H. Bickford, E. H. Blossom, J.V. Dutton, William Clifford, George James and Wallace C. Bailey.

Local men for the most part were employed on trains and in section crews, many of whom began as boys and continued years in service. Three section crews were employed to keep the nine miles of main lines and several miles of side track in perfect condition for heavy freight. Men handling the heavy trains on the steep mountain grades, operating switches, shunting loaded cars onto side tracks, during years of service are worthy of mention. Homer

H. Calkins was employed as brakeman and later as conductor for twenty-four years, leaving the road only when the road ceased operating in 1934. Clyde C. Lane became an employee of the company in June, 1908, and after eight months' service as brakeman was promoted to conductor, continuing in service until his resignation in 1922, Carroll H. Hines entered the service of the railroad in November, 1900 at the age of fifteen as brakeman, later promoted to conductor in which capacity he continued until he resigned in June, 1927. The master mechanic, Charles A. Hubbard, began work for the company when the first rails were laid and continued in service more than forty years or until the road was abandoned. He it was who did all engine repair work or supervised it, acted as chief engineer, making regular trips to and from the quarries, and served in the capacity of foreman of the engine men. All these men and their associates did their work so efficiently that during the whole period of operating the railroad no trainman was injured seriously except Archie Olmstead who was killed by falling between two moving freight cars.

After the road was abandoned in 1934 most of the old records were wantonly destroyed. The pay rolls were fortunately salvaged from the heap of refuse by Carroll Hines. From these rolls much valuable data has been gathered.



from Richard Hill, Morrisville

HARDWICK

In July, 1896, the old Woodbury Granite Company was taken over by John S. Holden, Charles W. Leonard, and George H. Bickford.

The first winter under the new management, two small derricks were erected on the granite ledge on Robeson Mountain. There were eleven men on the pay-roll. The blocks were loosened from the solid sheets by hand drilling, loaded on wagons, and ~~hailed from the solid sheets by hand drilling~~ hauled eight miles over rough roads to the St. Johnsbury & Lake Champlain Railroad station at Hardwick for shipment. That is how ~~the~~ Hardwick first came prominently into the granite field as a shipping point.

The following year the Hardwick & Woodbury Railroad was completed as a means of connecting the quarries of the Woodbury Granite Company and the Fletcher Granite Company on Robeson Mountain more directly with the outer world. The Stock of the road was floated partly by popular subscription, but mainly by the backing of John S. Holden and his associates. Nine miles of track had to be built to reach the quarries (since increased to fifteen miles) and the grades were such that no ordinary engine could be coaxed to climb them. Undaunted, a mountain-climbing engine of the Shay-g geared type was purchased and the road put into operation.

Given the railroad, the quarries began to develop rapidly. The demand for Woodbury Gray Granite increased, but it was soon realized that the market for granite sold only in the rough must be broadened, or the quarries would have to be abandoned as an unprofitable enterprise.

In 1899, the firm of Bickford, More & Company was formed., composed of George H. Bickford, Charles H. More, John S. Holden and Charles W. Leonard. Their idea was that they should manufacture the granite and sell it to the retail trade in finished form. Land was acquired in Hardwick and a two hundred foot shed erected on the line of the Hardwick and Woodbury Railroad.

As an outlet for the quarried product, the firm of Bickford, More and Company was a success from the start, and from small monumental work, the firm began to reach out for small building jobs. The growth of the business incessantly swallowed up its working capital and its profits in improvements. Number two shed was added to Number one; additional saw gangs and another huge McDonald surfacing machine were installed, and a powerhouse and boilers were housed in an annex.

The demand for more direct connection with the quarries led to a reorganization in 1902, and again the combined faith of the active members of the two companies was behind the venture. Bickford, More & Company was merged into common ownership ~~with~~ with the quarry, and the Woodbury Granite Company assumed control of the plant at Hardwick as well as the quarry ledge.

In 1903, the contract for the Pennsylvania State Capitol came into the market. Calling, as it did, for 4000000 cubic feet of stone to be furnished and set in place in the extraordinary time of twenty-four months, it was an undertaking to appall even well-established firms. The conditions of the contract were said to be impossible. Certainly no one outside of Hardwick dreamed that a company in Vermont, backed by only two sheds and partly opened quarry, would dare to bid on the work.

With a faith that seemed foolhardiness, but which proved to be genius, the management saw the vision of what might be. The members of the firm pledged their personal resources to the enterprise; the plans were figured; and to the surprise of

the coast quarrymen who were not looking for inland competition, the Woodbury Granite Company's figures landed the contract.

Continuous deliveries must be made, for the building could not be delayed. How it was done is one of the romances of Vermont business history. The details are of little importance now. Suffice it to say the requirements were met to the letter. Inside of eight months the stone was being furnished on contract time. By the end of the first year the quarry and plant were ahead. During the first eight months of the second year, thirty huge monolithic columns, 30 ft. long, were quarried, finished in the big lathe, and shipped for the job. The twenty-second month found the work shipped and set complete, with two months still remaining, unneeded. The feat was unprecedented, and the company's fame was established.

Since that time the company's motto has been equipment and efficiency. In the past five years over \$500,000 has been expended in derricks, machinery, overhead cranes, and the latest improved stone working tools. In 1907, the water rights of T.T. Daniell at Mackville, Nichols Pond, and East Long Pond were acquired, new dams built, generators installed, and cutting shops at Hardwick equipped with individual motor drives to each machine. This development is still in progress.

It is obvious that a company that started with ~~an~~ an absolutely undeveloped quarry and with no cutting plant whatever, and in fifteen years' time has built up what is admitted to be the largest granite business in the world under a single management must stand for some principle that means something to the trade.

The secret of its success lies in the efficiency of its organization; and the end and aim of that organization has always been to accomplish three things: - economy of production, speed of output, and a product satisfactory to its customers.

That it has been able to satisfy its customers is amply proven by the phenomenal growth of its business and by the fact that it has been so successful in retaining its old customers as well as in securing new ones.

So rapidly has it extended and improved its plants, and so various are the improvements now under way that it is almost impossible to give a description of the works. The company has its own timber lands and operates its ~~own~~ own saw mill for the production of its dimension timber and for boxing and crating the granite produced at its Hardwick plant. It owns its own water power plant at Hardwick, developed for 1000 H.P. with an extensive system of water storage for the development of electric power, with which it operates its cutting plant at Hardwick. On this same power it also operates two of its extensive quarries in Woodbury. Here too, alongside its water power plant, it has a complete and up-to-date steam plant equipped with Sterling boilers and Turbo-generator set good for 2,000 H.P. for auxiliary use, to avoid any possible interruption of its production for want of power.

A glance at the plant at Hardwick reveals a large and well lighted office building, in which are housed the heads of the departments, its drafting force, etc., and some of the idea of the volume of the business can be gained from the fact that it employs in its drafting department alone, twenty or more skilled draftsmen, besides its estimators, cost clerks etc.

at this plant, we find three mammoth cutting sheds besides other smaller ones, including carving sheds, blacksmith shops, job and machine shops, grinding rooms, big air compressors, etc. --in short, all the necessary equipment for the

employment at this plant alone of over five hundred men. Here too, is the company's main storehouse for supplies, which is larger and more crowded than the ordinary country store. In the main cutting area is found a greater assortment of up-to-date machinery than can be found in any other granite plant in the world. Here is one of the two big McDonald surfacing machines costing \$8,000 each, of which the company has four out of a total of less than a dozen in existence. Here too, are polishing lathes, gang saws, carbondum saws, and the largest stone turning lathes in the world, among them one just installed capable of taking a stone 36 ft. long and 6 ft. 6 in. in diameter.

That the company is on the alert for the utmost speed and efficiency of production is nowhere more apparent than under its immense runway, 370 ft. long and 75 ft. wide. This runway is equipped with two electric-driven steel cranes each good for thirty tons capacity. Under it are eighteen tracks, on each of which can be placed two or more cars simultaneously. Here one can feel the very heart throb of the whole plant,--as it is here that everything centers. Under this runway must come nearly all raw material used in the plant, and from it must be loaded nearly all of its finished product. This extraordinary provision for unlimited storage and rapid shipment of its product is without parallel in the stone trade, and it has much to do with the rapid delivery records of the company of which the management is justly proud.

Extending from this runway are soon to be built three other immense sheds all under the same roof and each equipped with steel cranes, which will practically double the possible output of the plant.

That the company is also alert to the necessity of finding an outlet for its waste materials is proven by its extensive equipment for making paving blocks on one side of the plant, where thirty to fifty paving cutters are provided under twin cableways, each of which have five tons capacity, and by its extensive crushing plant on the other side of the works with a capacity of two hundred tons a day.

But immense cutting plants and extensive equipment, however perfect they may be, are of little value unless backed up by equally extensive quarries of a quality and grade of granite that will meet the demands of the trade. A visit to the quarries at Woodbury, eight miles from Hardwick, is sufficient to convince one that here are located some of the finest granite quarries in the world, and that in the extent of the deposits and the quality of the gray granite found in the oldest of its three quarries located in Woodbury, the company has found the strongest justification for the extensive improvements at Hardwick and for the faith it has always had in the future of the business.

From this quarry is taken its regular gray granite known to the trade as "Woodbury Gray," and it is to the credit of the company that in the ten years it has been engaged in the production of this granite for building purposes it has brought it to the point where it has come to be recognized as one of the three or four granites of this country accepted as standards. There are very few of the largest building contracts let that do not have to reckon with this granite in active competition.

Here too, is produced the grade of gray granite known to the monumental trade as the "Ashaw Granite," and made famous as "the trade marked stone," the purpose of the trade mark being to concentrate upon this stone the cumulative effects of the extensive advertising campaign inaugurated by the company. The results were so apparent that it has since trademarked its other granites for monumental purposes--the "Imperial Blue," "Peerless White," (or Bethel Granite), and the "Vermont White"--each of which has some strong and distinctive characteristic of color or grain.

At the Gray Quarry of the company are located ten immense derricks, several cableways, a central power plant with its big air compressor, blacksmith shops, engine houses, offices etc.--all on the largest scale--for it is here that many a record has been broken in the time required for the production time required for the big building contracts or in the quarrying of some single stone of unusual size. From these quarries and from the cutting plants in Hardwick have been produced such monumental buildings as the Chicago City Hall, Cook County Court House, Chicago; Pennsylvania State Capitol, the Providence, Minneapolis and Grand Rapids Post Offices, and it is the proud distinction of this quarry to have produced granite for four state capitols, those of Pennsylvania, Kentucky, Iowa and Idaho.

During the single year of 1910 it produced the granite for twenty four post offices, and for 1911, twenty six post offices,--which fact alone would seem ample proof that the "Woodbury Gray Granite" has come to be recognized as a standard stone and to bear the government stamp of approval.

A description of the quarry is difficult and in fact almost impossible as it changes constantly,-- but at this quarry could be seen in one of its openings a single sheet of flawless stone five hundred feet long and twenty to thirty feet deep, and twenty to fifty feet in width. This alone of all the company's quarries and cutting plants is operated by steam.

About a mile from the Gray Quarry is located the ledge from which is quarried the "Vermont White" granite. This is a new quarry opened in 1912 and from it is being produced a remarkably white granite--the whitest, perhaps of all the granites, with the single exception of the Bethel produced by this same company in Bethel, Vt. The ledge is of unusual promise, both as to quality of stock and the extent of the ledge, and already contracts have been taken in this granite for some very large and monumental buildings. At this quarry are already in operation eight big derricks run by mammoth electric hoists, and there is every indication that it will soon develop into one of the largest quarry properties in the country.

About one third of a mile farther on is located the dark gray ledge from which is taken a beautiful monumental stone known as the "Imperial Blue," Like the "Vermont White," this newly developed ledge shows remarkable promise.

Both quarries are located on spurs of the Hardwick & Woodbury Railroad, controlled by the company. Like the "White," the Blue Quarry is operated with electric hoists. An air compressor plant, motor driven, supplies the air required for both quarries. Here too, is located an auxiliary steam plant with steam compressor for emergencies. The "Imperial Blue" granite promises to take high rank among the darker granites used for polished monumental work, being even darker in shade and finer texture than the best dark Barre.

In 1903 the company purchased quarry property at Bethel, Vermont, sixty miles south of Hardwick, and began there the erection of a cutting plant which has grown to be second only in size to that at Hardwick. The same business insight and aggressive policy which has made Hardwick the leading building granite center of the country has made itself felt at Bethel in the production of the unique white granite quarried there and it is fast making the name "Bethel" a household word in the granite industry because of the superior excellence of the stone; for Bethel granite has the proud distinction of being the whitest known granite as well as the hardest, and hence most expensive, of any of the granites used for commercial purposes.

A visit to the Bethel quarries reveals a beautiful formation of pure white

granite of a soft yellow shade that easily puts it into a class by itself. The sheets run in thickness from a few inches to eight or ten feet. The quarry is equipped with several large derricks, electric hoists, electric driven air compressors, and thoroughly modern and up to date equipment.

This granite is shipped in the rough by rail to the cutting plant, located in Bethel village. Here can be seen what may be considered the "last word" in the equipment of a granite plant. Everything is electric driven, the power being furnished by the company's own power plants, two of them, each good for 600 H. P. From these same power plants is developed the power required at night for the lighting of four towns and villages, Bethel, Randolph, Randolph Center and Gaysville. These water power plants, together with an auxiliary steam plant with an engine capacity of 1,000 H. P. and a boiler and electrical capacity of 500 H. P., are owned by the Gaysville Electric Light and Power Company a subsidiary company owned by the Woodbury Granite Company.

At the Bethel plant are four big cutting sheds, three of them under a single roof, a big steel runway, two hundred feet long, seventy five feet wide for storage of granite and for shipping, and another runway two hundred and fifty feet long and sixty feet wide. On the runway and in the sheds are in operation five big steel cranes, electric driven, ranging in capacity from ten to thirty tons. Here are big compressors, two McDonald surfacing machines, large lathes, second in size only to those in Hardwick, machine shops, and blacksmith shops, built of concrete blocks, three Pirie sharpening machines (a recent invention for sharpening cutters tools) and many other devices for reducing the cost of production and for increasing the output. For here, as at Hardwick and Woodbury, is found abundant proof of the same efficient business organization, striving always to accomplish its purpose of securing economy of production, speed of output and a product satisfactory to its customers.

If anything more were needed to prove that it has accomplished its purpose we need only to mention some of the monumental buildings it is now actually working on, making a grand total of fully \$4,000,000 of unfinished work; -- The Wisconsin State Capitol, Madison, Wis.; Pro Cathedral, Minneapolis, Minn.; Turk's Head Office Building, Providence, R. I.; Post Office, Washington, D. C.; Miners Bank Building, Wilkesbarre, Pa., and Hartford City Hall, Hartford, Conn.; and the twenty nine story Western Union Telephone Building to be erected at the corner of Broadway and Dey streets, New York City, at a cost of over 1,000,000; all the above of Bethel Granite.

Minneapolis Post Office Minneapolis, Minn.; Public Monuments at Bloomington, Ill., Princeton, Ill., and Madison, Wis; and a portion of Bankers Trust Company Building in New York City--all in the Woodbury Gray or Bashaw granite.

Home Office Building for North Western Life Insurance Company, Milwaukee, Wis., Museum of Fine Arts, Minneapolis, Minn., and Soldier's and Sailor's Monument Wichita, Kan.,--in the Vermont "White" granite.

The company is fortunate in the quality and character of its management. Behind its growth and achievement lies a keen far sighted policy. It is no small thing to have reared a business of over one and a half million dollars annually in a village that fifteen years ago was a quiet, rural community,

The astute business men who have built up this immense business are the late John S. Holden, of Bennington, Vt. Charles W. Leonard, of Boston, now President of the company, and George Bickford of Hardwick, the treasurer and

General Manager from the beginning, and only one one of the company actively engaged in the business.

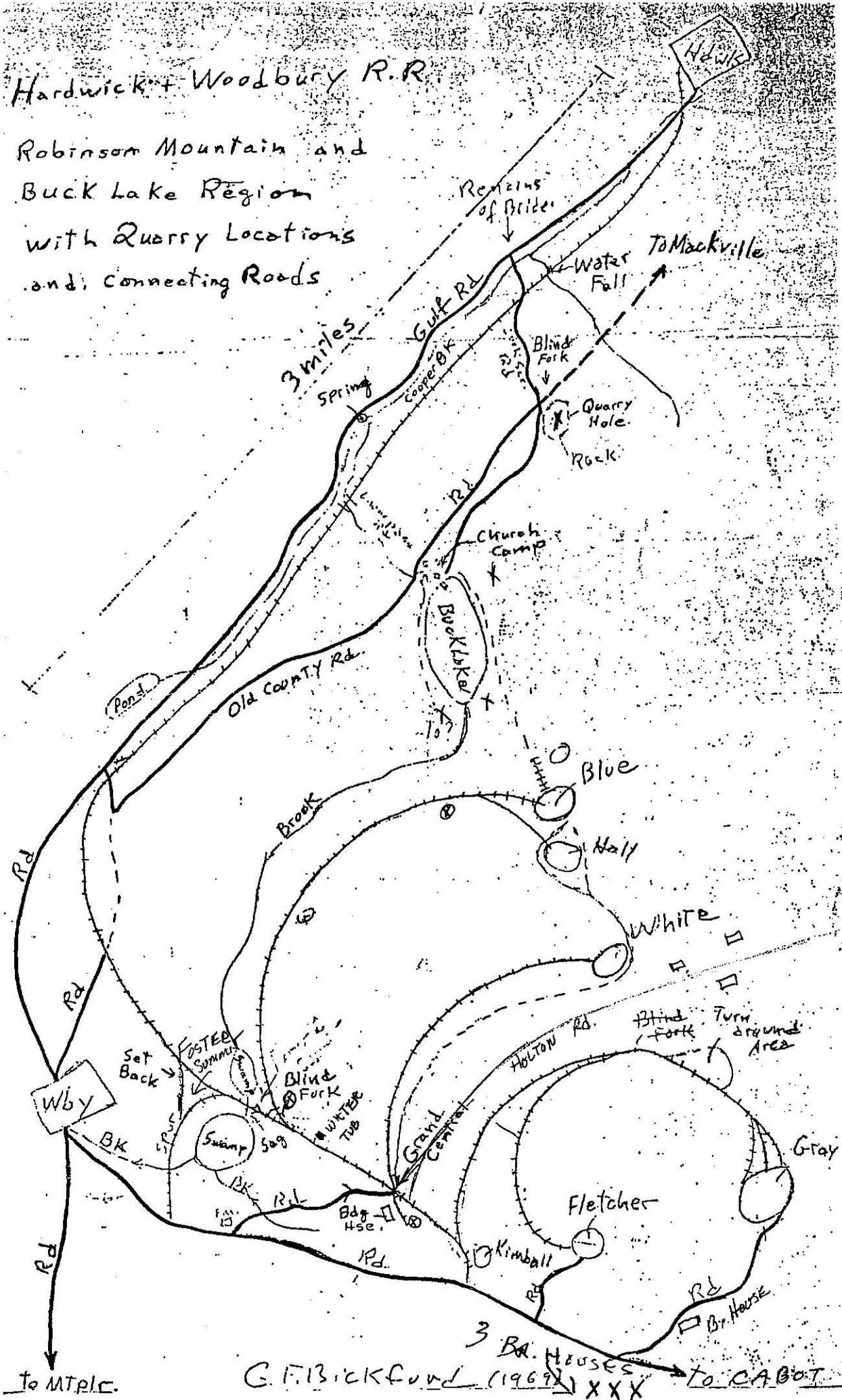
With a clearness of vision that seems almost prophetic, and with a steadfastness of purpose that has few, if any, equals in the trade, much of the credit belongs to these men for having placed the granite business, particularly in the building line, on a firmer and surer basis, and for having given it a place of honor and dignity in the commercial world such as it had never enjoyed before.

Such men are true commercial pioneers and such a company is an uplifting force in any industry. The end and aim of the Woodbury Granite Company is to broaden the demand for granite and to convince architects and builders of the fact that granite is no longer a commodity that can be had at slowly and irregular intervals.

The Woodbury Granite Company is organized and equipped to give its customers what they want when they want it. Its granites are high in grade, its organization efficient, and its complete and well maintained equipment guarantees rapid delivery and high class workmanship.

Hardwick + Woodbury R.R.

Robinson Mountain and
Buck Lake Region
with Quarry Locations
and Connecting Roads



Editor's Note: The following article concerning the geography of the granite industry in Woodbury was recently read to the Hardwick Historical Society by George F. Bickford. His father, George H. Bickford, was general manager and treasurer of the Woodbury Granite Company until his death in 1914.

Mr. Bickford, who is now 83, has refreshed his memory with some walking excursions around Woodbury, and has gotten some help from another Hardwick oldtimer, Carl Jennings. Most of this article was written two years ago.

By George F. Bickford

I have been asked to write a short history of the Woodbury quarries and to do so, I should have been born 25 years sooner, but would now be too old to attempt it.

My family came to town in '98 with me, an only son, age one and a half years.

Anything back of this would be hearsay or conjecture. Walking the Hardwick and Woodbury and connecting wood roads has aided conjecture.

The granite walls along the Lamoille, built in the Jeudevine heyday must indicate early business for which I am inclined to credit Henry R. Mack whose quarry was on the Buffalo Mountain Road. I saw it when the horse-operated sweep was the only source of power. The block on which it pivoted is still there.

Father had been sent up from Bennington by my grandfather, John S. Holden, to finish the railroad and create the Woodbury Granite Company. I remember the trestles and the filling of them with fine grout coming from the stone sheds as big blocks falling could have destroyed the structures.

The main line at least to the Gray and

to Fletcher's must have been finished by 1899. The mountain seems to have been mostly open grazing land at that time, and used by Alden Jeudevine and his brother-in-law, Adolphus Holton, for their lucrative cattle dealing business.

Apparently granite was exposed in numerous places and tempted granite prospectors to open many so-called boulder quarries.

Many of these must have antedated the Woodbury Granite Company, and the Hardwick and Woodbury Railroad and were served by the indomitable teamsters of which the most famous names were the Elder, Ross and his brother, whose son Henry, now about 90, showed me a photo of an 18-horse team wheeling an enormous block of granite from Woodbury to Hardwick, in, I think, three days, and followed by a one-horse rig piled high with axes, shovels, pevies, blocks and tackles to repair culverts broken in transit. Henry didn't say which route they followed, but two in particular must have been extremely hazardous. One serving the Buck Lake area, later to be overpassed by the railroad, came out at the drinking fountain on the Gulf Road. Sections have slipped down the mountain and cause one to wonder how it stood up under the heavy loads when in use. The other, known as the Corkscrew Road, served the Ainsworthtown area and came out near the Hardwick and Woodbury town line. From the grade crossing of the railroad down, the name perfectly describes it.

At Fletcher Flat a spur of the railroad comes down from Foster's Summit to serve, so I have been told, three cutting sheds presumably serving Barre. At the summit there is a setback to enable heavy trains to be hauled up from the "sag," one half at a time. Any opinions that a

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triangular configuration existed there for turning the engine are, I believe, unfounded. Beyond the sag, the grade increases, climbing to where the spur to the Blue doubles back. Right there was a quarry, and until recently the derrick was still lying there. On the way to the Blue is a beautiful, deep, water-filled quarry and perhaps another. Names associated with these are Ambrosini and L.S. Robie.

The Blue Quarry was a deep one as evidenced by the vast grout piles. It is now a beautiful pool. A spur from it leads toward Buck Lake but terminates at one of the small quarries I cannot name. The spur continues as a wood road to Buck Lake with at least two boulder quarries en route.

From the Blue a wood road curves up over a shoulder of the mountain past another unnamed small quarry about where the granite changes from fine-grained blue monumental to white structural and soon arrives at top of the White quarry. Its spur takes off from the bottom and rejoins the main line above the spur to the Blue previously mentioned and at a point we now term Grand Central. Here we meet not only the main line, but a wood road up from the Cabot Road and a spur to where the boarding house stood and where its foundation is very much in evidence near another quarry waiting for someone to identify it.

The main line from there continues to climb, crossing at one point what was a road to the farm of Adolphus Holton and another unnamed quarry.

At the top of the rise is the quarry originally of A. B. Thomas and later G. O. Kimball. Here the railroad setback enabled the main line to reverse itself and swing around the mountain to the Gray quarry, passing halfway the point where the spur takes off to circle the mountain counterclockwise on the way to the Fletcher quarry. Near the Gray, spurs take off to approach the quarry at different heights. As I understand it, the older part of the Gray was the source of the Bashaw granite used for Woodbury Granite Company's first major contract, the Pennsylvania State Capitol. Here they were quarrying right into the face of the mountain.

Later they were going for more depth and it is hard now to see how a dimensioned block could be quarried.

The railroad made possible bringing in heavy equipment, first steam driven and later electrical and pneumatic. High power electric lines were strung first to the Gray and later to the Blue, which had been taken over for its beautiful monumental stone, and to the White which was being opened just prior to World War I, which signaled the start of the decline of the building granite industry.

The Jack Hall quarry adjacent to the Blue was the last to close, trucking out on the roadbed after rails had gone.

Today, gasoline operated equipment has supplanted electric power lines to the quarries for hoisting and drilling, also the railroad for hauling. Flame cutting enables dimensioned stock to be cut from sheets without piling up mountains of grout such as mark the sites of the old workings.

Therefore, granite from our mountain is still obtainable when needed, but the quarries are monuments to a bygone era, giving us a look into history. In a sense, they are the scenery of a great play of which I for one, hope Woodbury records can identify more of the actors.

As of 1980, we have learned that the two quarries on the Blue spur were owned by Robie, the one nearest the main line being leased to Ambrosini.

passed the growth scene, the Blue

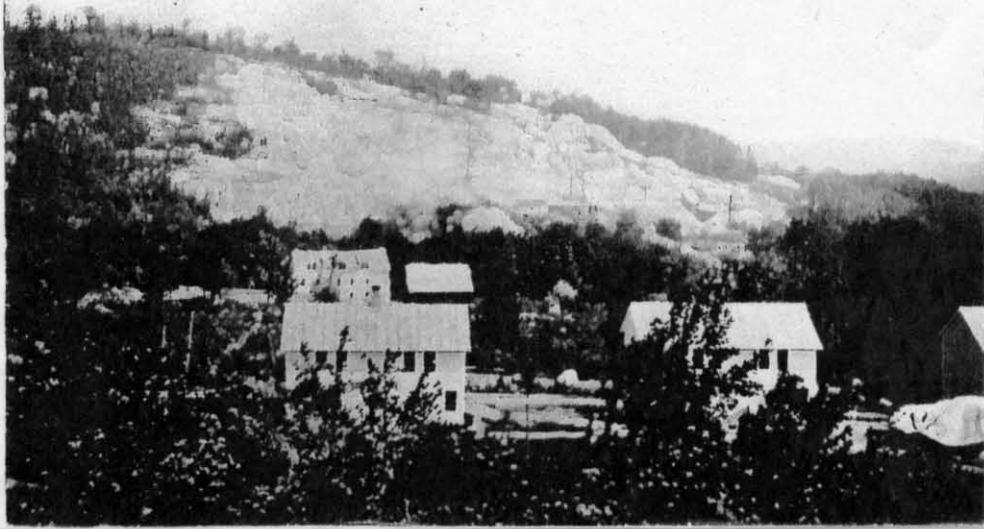
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passed unnoticed unless approached via the wood road up from the farm. The growth underbrush has so changed the scene, and for the same reason, approach the Blind Fork via main line below.

The Fletcher quarry, being worked is served by trucks and heavy equipment but a chain bars autos. You can drive the Hall quarry, walk over the rise and see the Blue, but to actually get to it is real challenge with a great swim as reward.

Wishing you Happy Exploring.

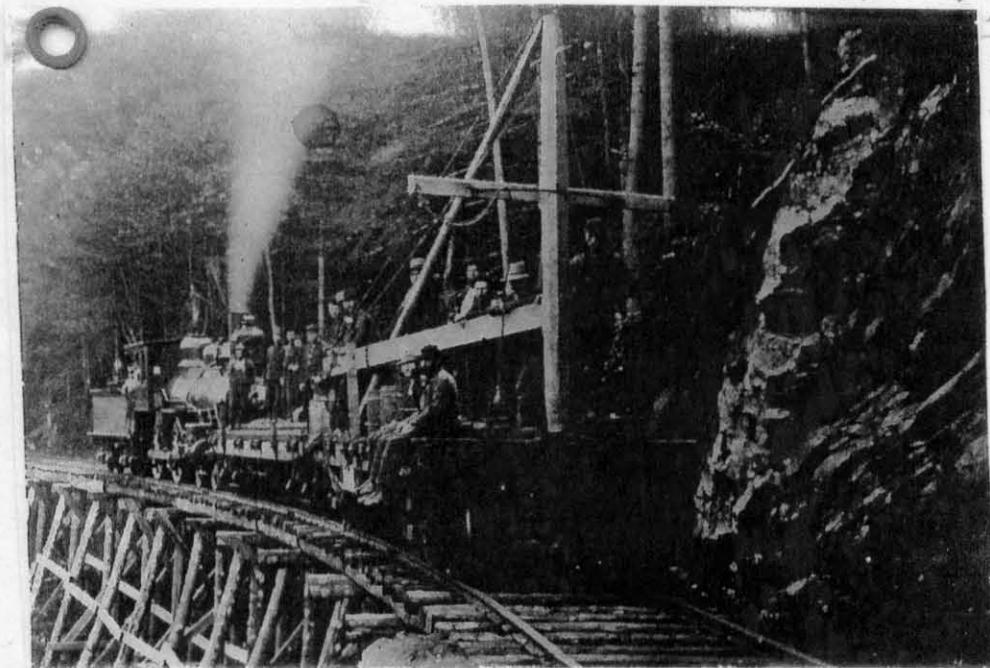


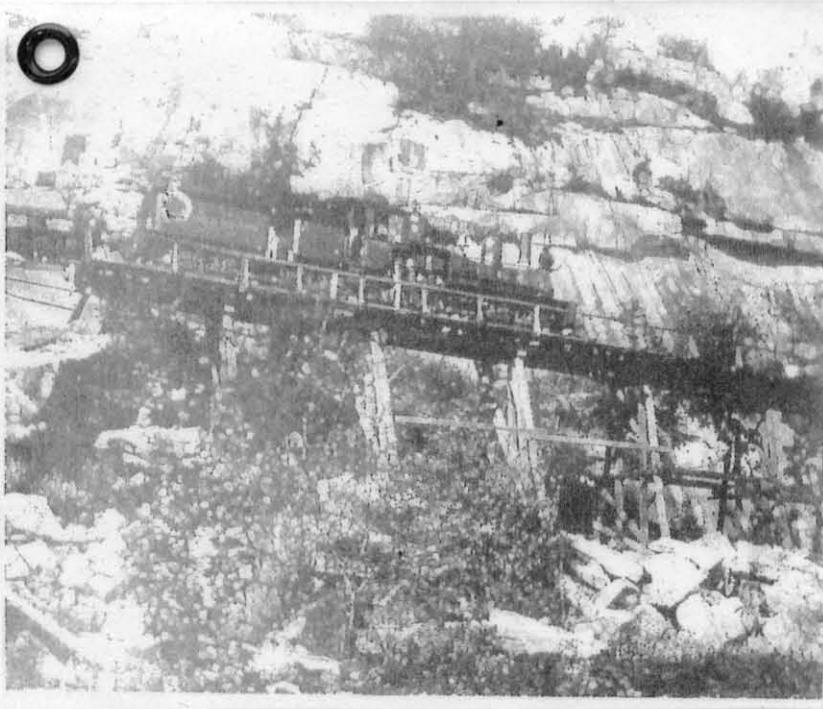
WOODBURY GRANITE
BOARDING HOUSES
ON CABOT ROAD

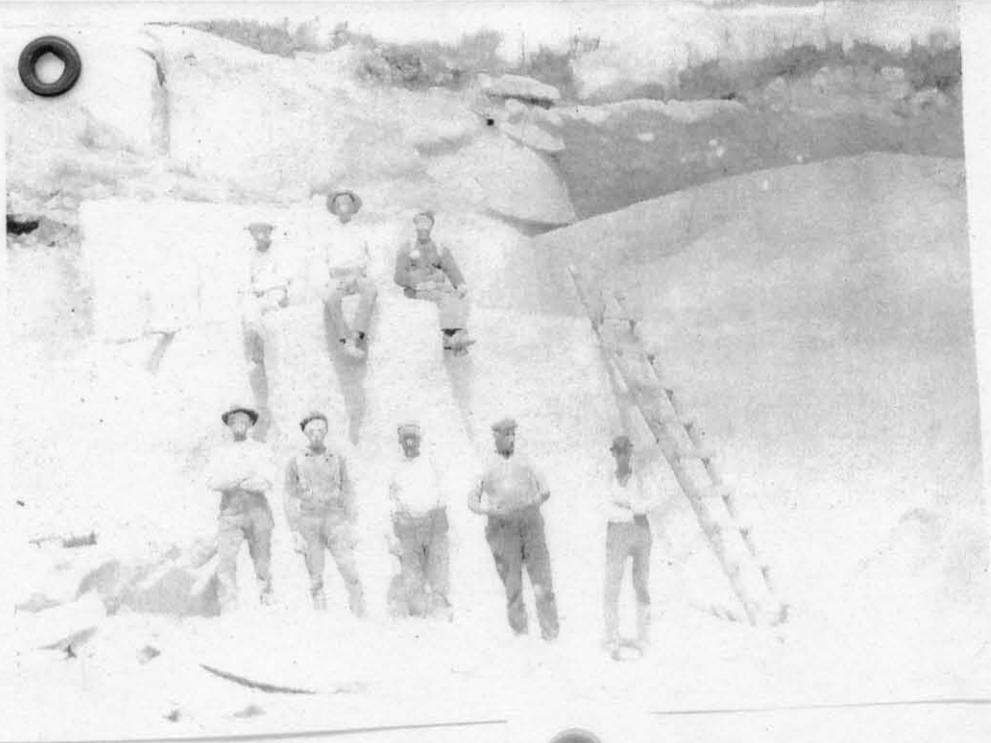


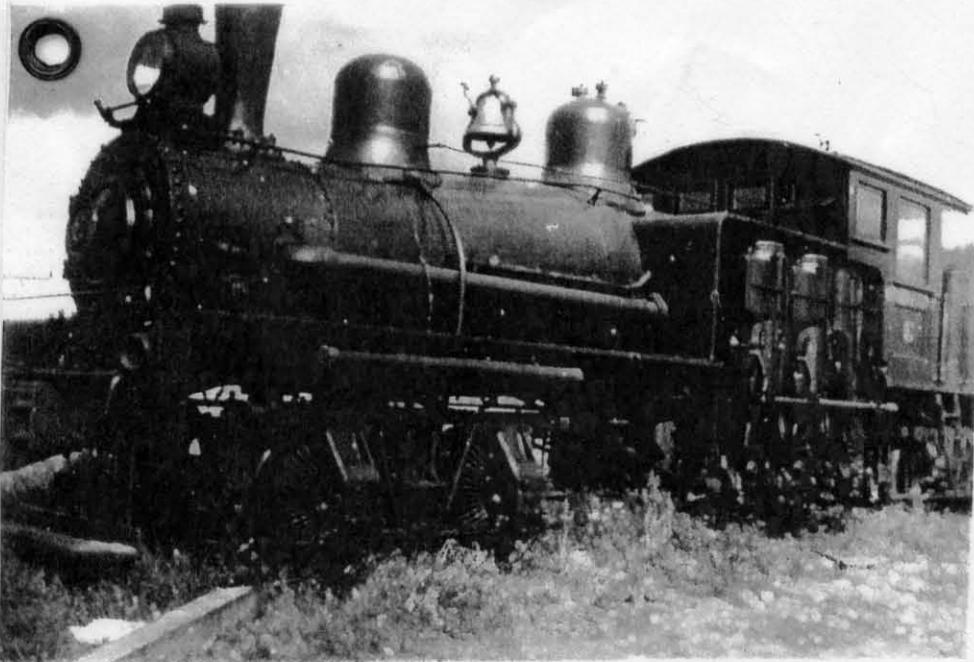
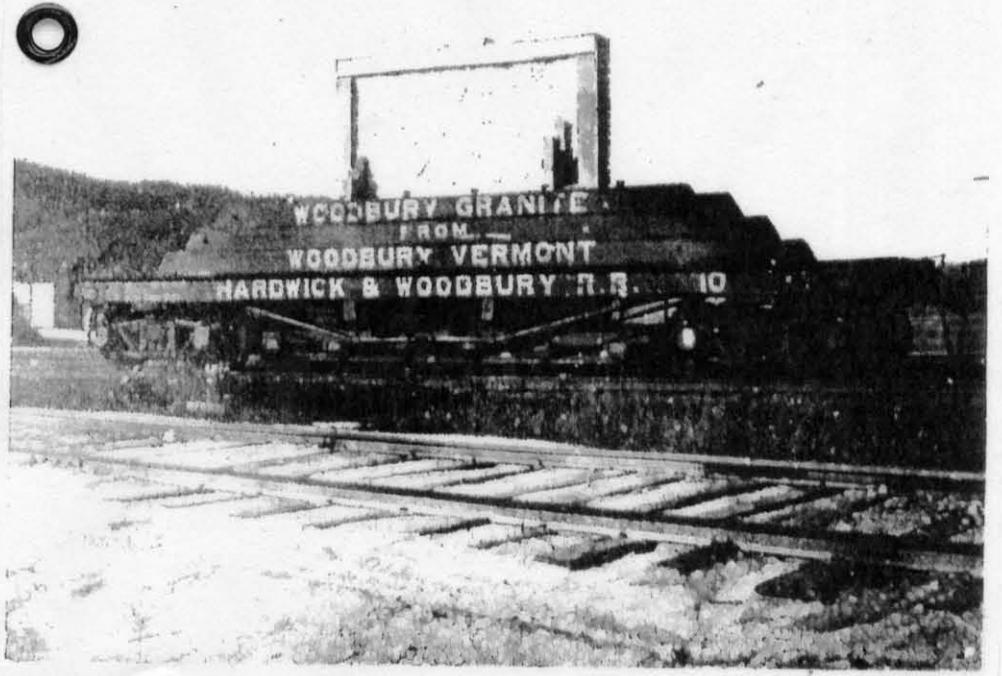
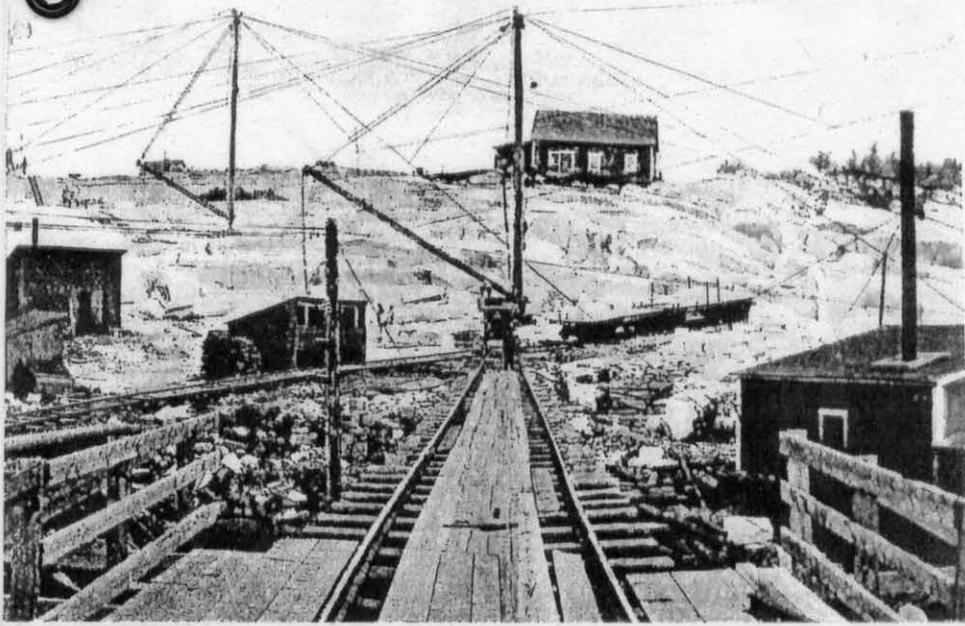
WOODBURY
GRANITE
HEADQUARTERS
OFF
CABOT
ROAD

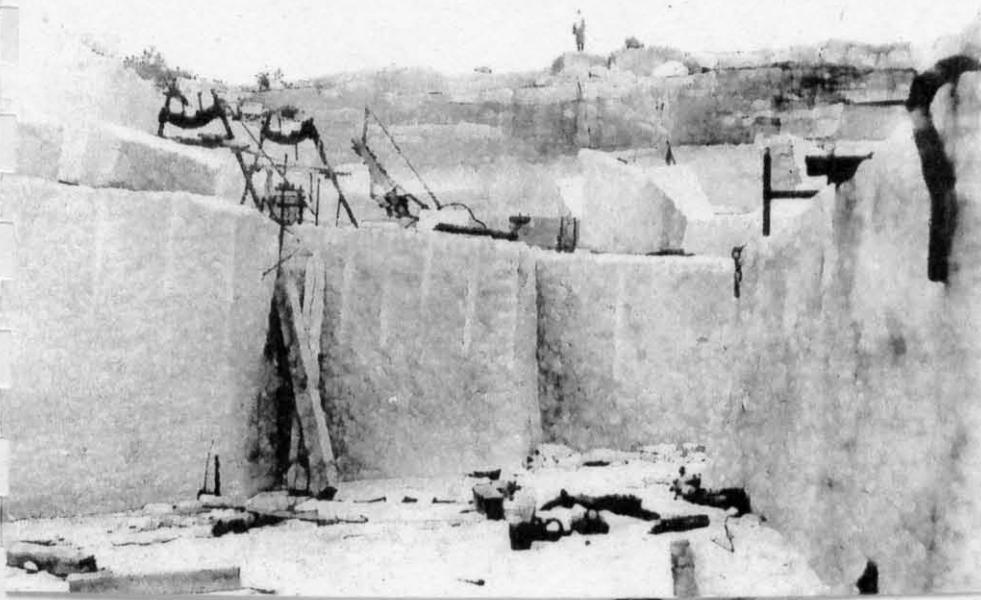


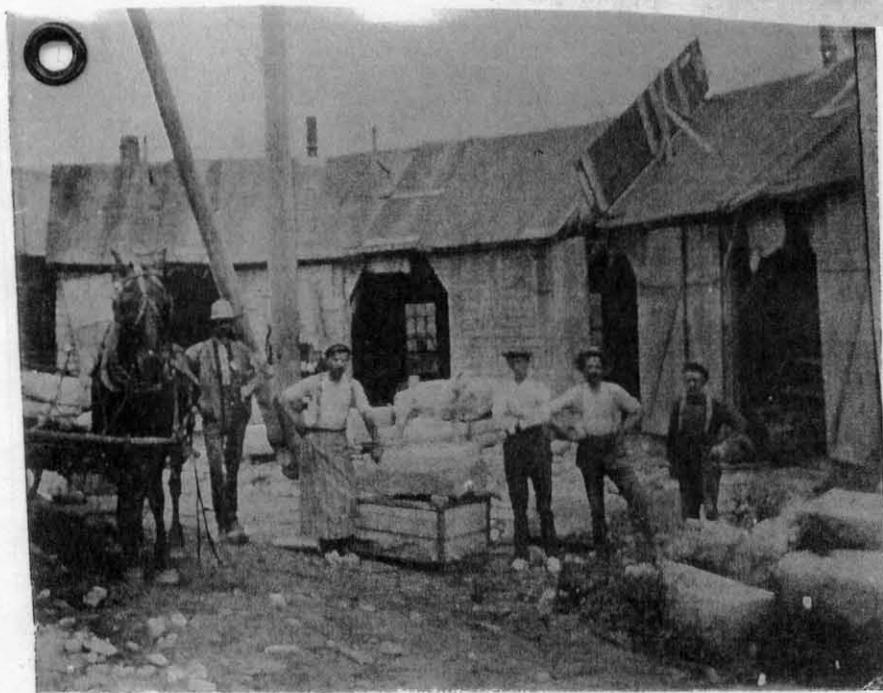
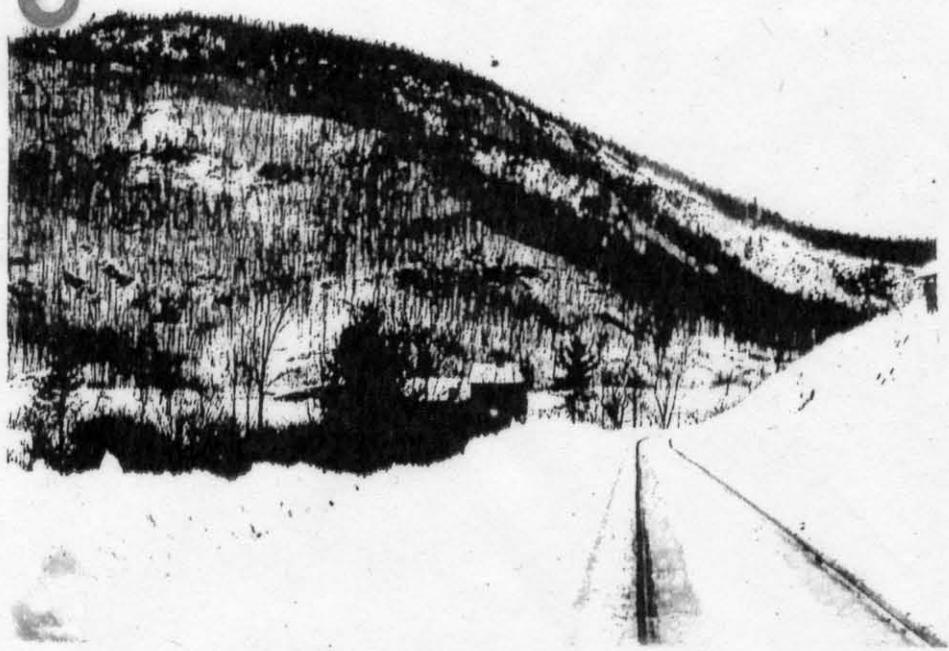








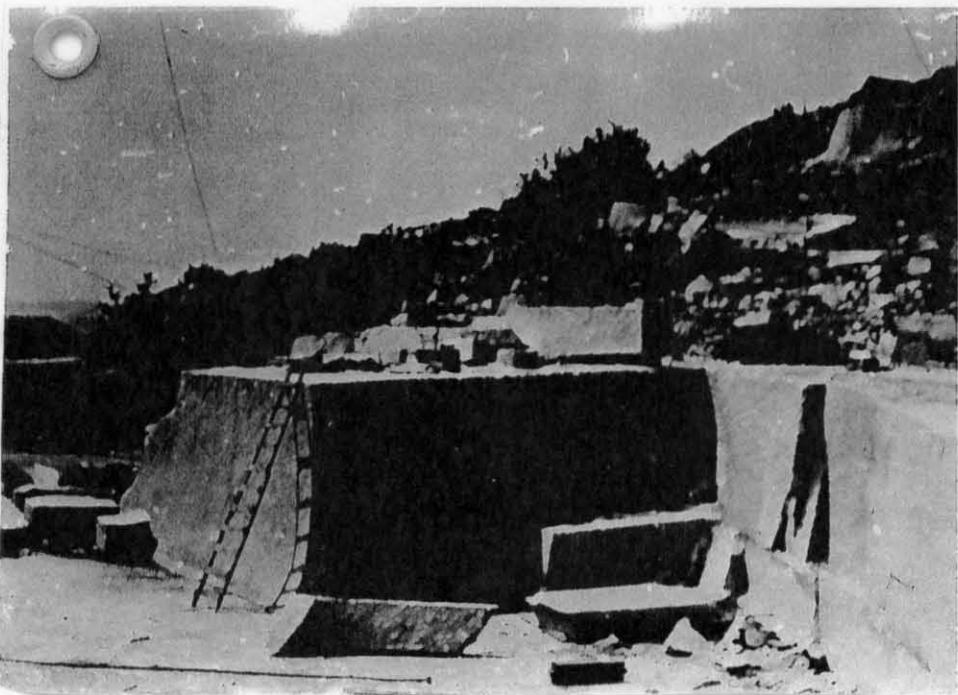
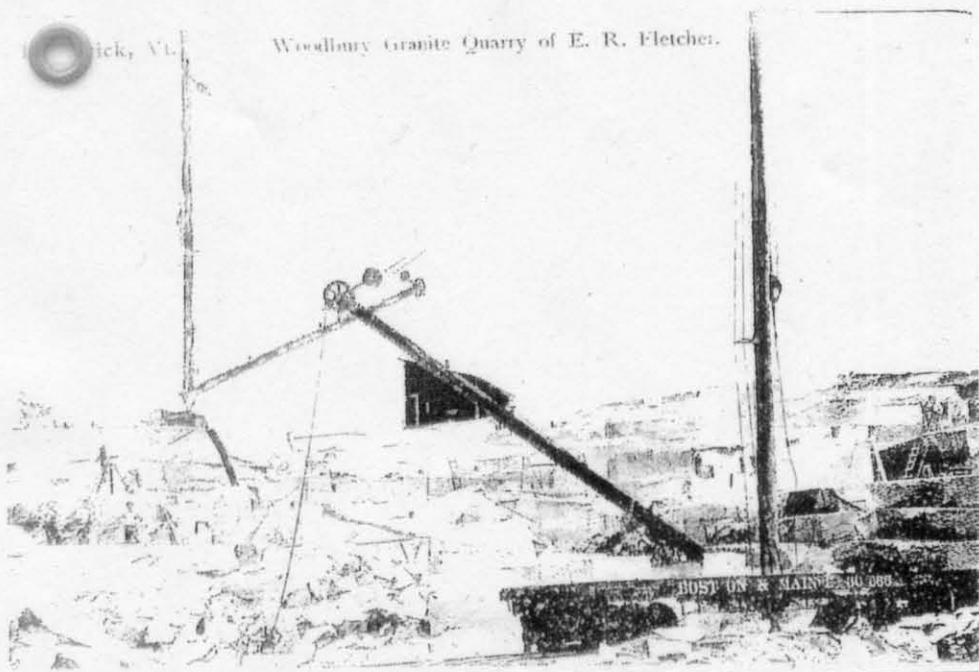


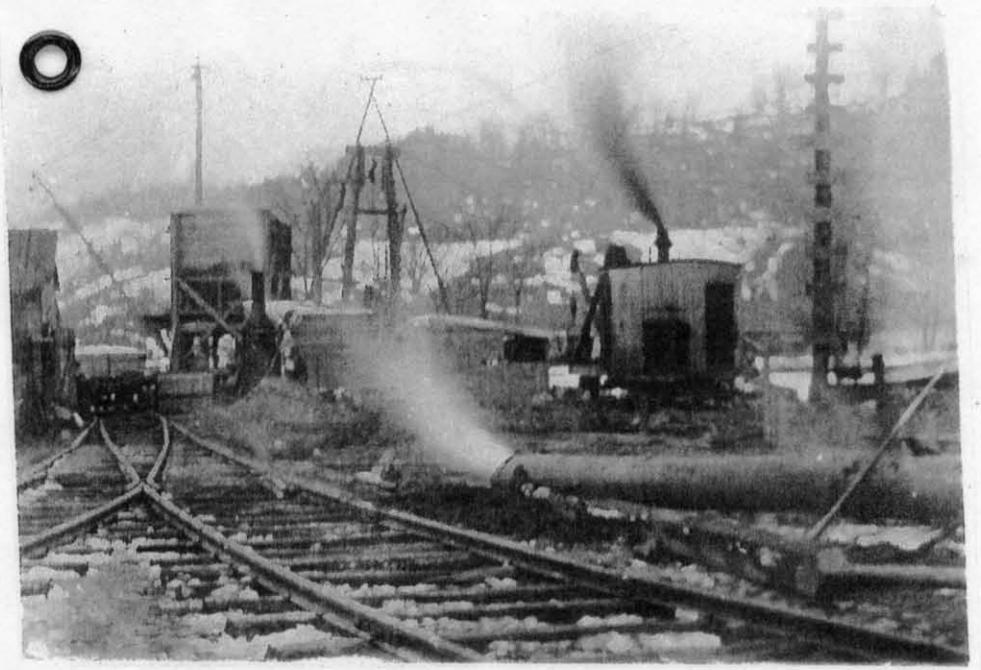
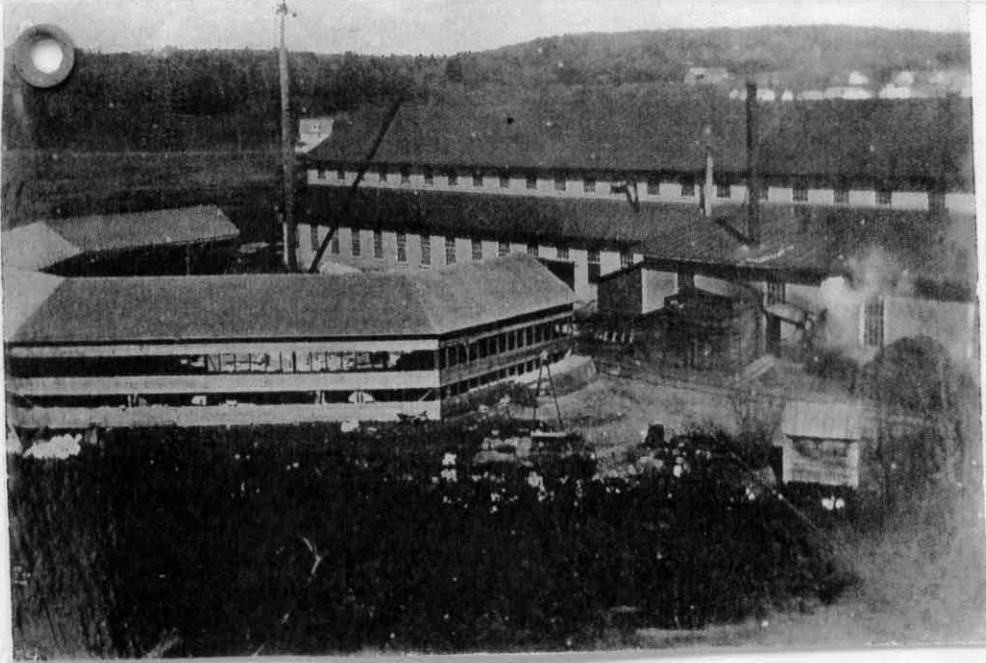


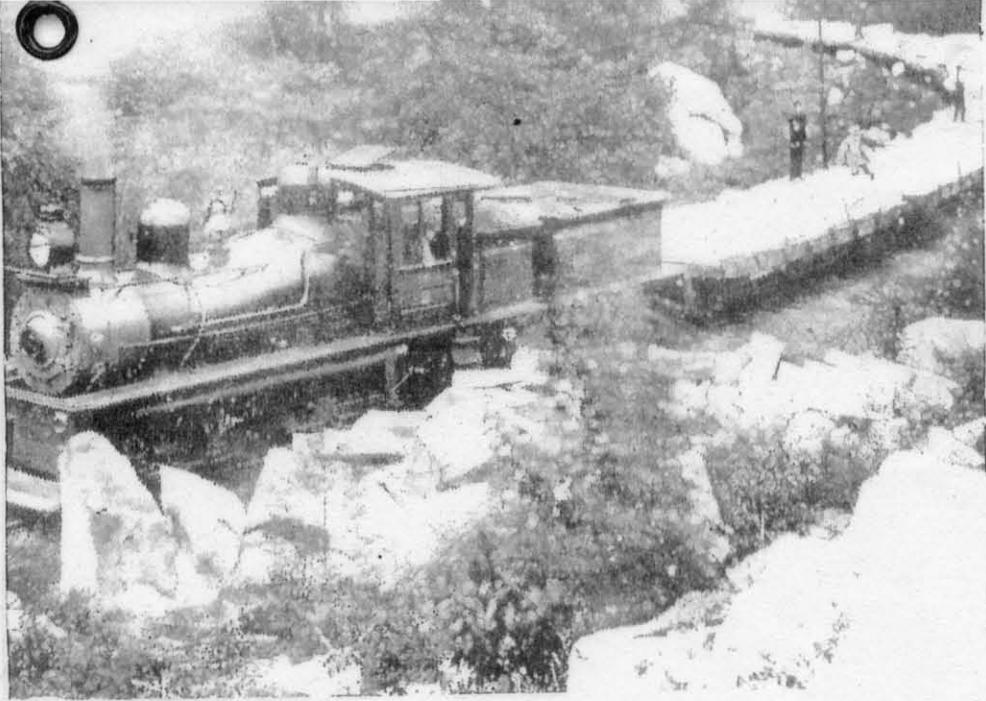


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Woodbury Granite Quarry of E. R. Fletcher.







Hardwick And Woodbury Granite Industry Timeline

Ca. 1850s - Joshua Walton (and sons) quarried granite boulders on H.R. Mack's father's farm at Mackville for house underpinnings. (Mack)

Ca. 1850s - Simon P. Fuller and Garey P. Houston quarry, cut and lay granite boulders. They also sharpen granite-working tools. (Mack)

Ca. 1850s - Samuel Hoyt quarries granite boulders near Woodbury center. (Mack)

Ca. 1862 - W.O. Clement opens a marble business in Hardwick. (Mack)

Ca. 1868 - Henry R. Mack and Samuel P. Wheeler buy W.O. Clement's marble monument business and build a polishing mill in Mackville. They cut both marble and granite. (From 1868 to 1886, H.R. Mack was dealing mostly in marble.) (Mack)

Ca. 1870s? - R.F. Carter opens a quarry on Robeson Mountain. (This later became the E.R. Fletcher quarry.)

Ca. 1870 - Samuel P. Wheeler builds the first granite shed in Hardwick village - near the Maple Street crossing. (Dow)

Ca. 1872 - St. Johnsbury & Lamoille Valley RR reaches Hardwick.

Ca. 1872 - Alonzo Porter quarry opens. (Child)

1875 - Three stone sheds are operating in Hardwick.

Ca. 1875 - Jeff W. Bailey quarried medium gray granite boulders in Mackville. (Mack)

Ca. 1875 - Otis C. Arnold opens a granite business. (Mack)

Ca. 1875 - Allen Ainsworth opens a quarry in Woodbury. (Mack)

1876 - J. Ainsworth quarry opens on Corkscrew Hill. (Child)

1880 - Voody & Town quarry opens on Robeson Mountain in Woodbury. (This later became The Woodbury Granite Co. gray quarry.)

1885 - Fletcher Granite Co. is established in St. Albans.

1886 - H.R. Mack opens a quarry on Buffalo Mountain (Child)

1886 - Carriek Bros. quarry opens.

1887 - Woodbury Granite Co. (WGC) is established by George O. Woodcock, Charles A. Watson and W.H. Fullerton.

1888 - WGC starts operation in their Woodbury quarry.

1890 - Twelve granite sheds are operating in Hardwick.

1890 - Hardwick employs 221 granite cutters. (Dow)

1890 - Hardwick Granite Co. is established by H.R. Mack, H.W. Rowe and J.E. Sullivan.

1890 - South Hardwick is incorporated as Hardwick Village.

1891 - Granite Cutters Union is organized in Hardwick.

1892 - St. Johnsbury & Lamoille Valley RR branch is completed to the Hardwick stone sheds as far as the H.R. Mack sheds at Buffalo Crossing.

1894 - Hardwick & Woodbury RR is chartered.

1895 - Twelve granite sheds are operating in Hardwick.

1895 - Hardwick employs 222 granite cutters.

1895 - Fletcher quarry opens. (Foster Mountain, Purchased from R.F. Carter.)

1896 - John S. Holden, Charles W. Leonard and George H. Bickford take over The Woodbury Granite Co. (WGC).

1896 - Fletcher Granite Co. moves from St. Albans to Woodbury.

1897 - A new 260 HP hydroelectric plant is built in Pottersville (Wolcott)

1897 - The first air compressor is installed and pneumatic tools used.

1897 - Hardwick & Woodbury RR completed to the Woodbury quarries.

1897 - H&W RR purchases its first Shay locomotive.

1897 - The first quarry outing on the H&W RR.

1897 - Both WGC and Fletcher Granite Co. have tenement houses at their Woodbury quarries.

1897 - WGC decides to locate sheds in Hardwick.

1898 - Bickford, More Co. is established to finish granite from the WGC quarry.

1898 - Fletcher Granite Co. builds two cutting sheds, a polishing mill, blacksmith shop and power plant in Woodbury. Also, Fletcher buys a traveling crane, two hoisting engines and a Sullivan channeling machine. Fletcher now employs 78.

1899 - Fletcher Granite Co. closes due to stockholder-management disagreement.

1899 - Bickford, More Co. builds a major finishing plant in Hardwick consisting of a straight shed and a horseshoe shed (Sheds Nos. 1 & 2).

1900 - Approximately 400 are employed in the granite industry — Bickford, More Co employs 132 and J.E. Sullivan employs 48.

1900-1 - Approximately 33 granite firms go out of business.

1901 - Edward H. Blossom, general manager of H&W RR, obtains a patent for the railroad well car that allows transport of very large pieces of granite — the stone rests in a well only 6 inches above the roadbed. (The Oct. 17, 1907 Hardwick Gazette attributes the design to J.V. Dutton of the H&W RR.)

1902 - Bickford, More Co. is merged with WGC.

1902 - WGC builds a second straight shed (Shed No. 3) in Hardwick.

1902 - E.R. Fletcher purchases the assets of the Fletcher Granite Co. in Woodbury.

1902 - H&W RR purchases a second Shay locomotive.

1902-3 - An additional 23 granite firms go out of business.

1903 - WGC opens its Bethel White quarry.

1903 - WGC wins the contract for the Pennsylvania State Capitol.

1903 - WGC builds a third straight shed (Shed No. 4) and enlarges Shed No. 1.

1903 - Hardwick drillers and lumpers go on strike for wages equal to Barre.

1903 - Housing shortage drives up rents — especially for WGC employees.

1904 - T.T. Daniel completes a 500 HP hydroelectric plant at Mackville (Buffalo Crossing).

1904 - E.R. Fletcher builds sheds in Hardwick.

1904 - J.E. Sullivan builds a new shed.

1904 - All the H&W RR trestles have been filled with grout.

1905 - WGC has 500 employees.

1905 - The T.T. Daniel electric plant is connected to town.

1905 - The new dam and electric plant upgrade at Pottersville is completed.

1905 - The Granite Manufacturers Association of Hardwick is established.

1905 - Hardwick granite cutters go on strike.

1906 - WGC wins a \$1,000,000 contract for the Cook County Courthouse.

1906 - WGC builds a horseshoe shed (Shed No. 5) for carvers only.

1906 - WGC is subcontracting work to half a dozen local firms.

1907 - WGC wins a \$2,000,000 contract for the Wisconsin State Capitol.

1907 - WGC installs a 30-ton electric traveling crane that services a 75 feet wide x 870 feet long stone yard.

1907 - WGC purchases the electric plant at Mackville from T.T. Daniel

1907 - A Central Labor Union is organized and includes cutters, lumpers, drillers, tool sharpeners and quarrymen.

1907 - Six-week labor strike in Hardwick.

1908 - WGC wins a \$1,000,000 contract for the Chicago City Hall that includes 36 columns 75 feet high and 9 feet 4 inches in diameter — they will be the largest Corinthian columns in the world.

1908 - William B. Donald and American Granite Co. build new sheds.

1909 - Murch Bros. & Mackie builds a new shed.

1909 - T.T. Daniel dies. He owned most of the granite sheds in the East End and the T.T. Daniel Polishing Co. He provided compressed air for most of the East End sheds. He built the original WGC electric plant at Mackville.

1909 - WGC upgrades the Mackville power plant and builds a dam above Mackville Pond.

1909 - H&W RR purchases a third Shay locomotive.

1910 - WGC installs a granite crusher.

1911 - Hardwick approves a dam at Jackson Bridge. WGC will construct the dam that will create Hardwick Lake.

1911 - WGC now has 800 employees. (1,200 in shed, 500-700 in quarries?) (What is the correct figure?)

1911 - WGC opens its Imperial Blue quarry in Woodbury.

1911 - Two-month strike in Hardwick

1911 - Peter Blackhall (of Blackhall & Hay) dies.

1911 - Hardwick's Memorial Building is completed.

1912 - WGC builds a steam electric plant and sawmill at Buffalo Crossing.

1912 - The largest block (65 tons) up to that time is quarried in Woodbury by the WGC for the column of the Soldier's and Sailor's Memorial at Bloomington, Ill.

1912 - WGC opens its White Quarry in Woodbury.

1912 - Granite Trust Co. is opened by George H. Bickford.

1912-3 - These two years were

the high point for WGC, Hardwick, and the Vermont building granite industry. In 1912 alone, WGC won 117 contracts including 32 banks, 19 schools, and 14 post offices.

1913 - WGC purchases the E.B. Ellis Granite Co. sheds at Northfield and quarries at Bethel.

1913 - WGC's Bethel facilities are so busy they are subcontracting work to Concord N.H., and Westerly R.I.

1913 - Hardwick approves construction of a new dam and penstock at the Pottersville electric plant and of a new auxiliary electric plant at Jackson Bridge Dam. WGC will operate these facilities. [Not sure the auxiliary plant was ever built.]

1913 - There is a severe lack of housing in Hardwick for granite workers.

1914 - WGC has 1,400 employees.

1914 - George H. Bickford dies from appendicitis and peritonitis.

1914 - Memorial Building erected by WGC with granite from John Hay's quarry.

1914 - Charles C. Stewart (Stewart Granite Works) dies.

1914 - John S. Holden Memorial Hospital opens.

1916 - Stone cutters and tool sharpeners sign a 4-year labor contract for \$4/day.

1917 - WGC supplies granite for the seventh state capitol, Kansas, the others being: Wisconsin, Pennsylvania, Michigan, Iowa, Idaho and Kentucky.

1918 - Henry R. Mack (H.R. Mack and Hardwick Granite Co.) and George W. Trow (Crystal Brook Granite Co.) die.

1919 - J.E. Sullivan (Hardwick Granite Co. and J.E. Sullivan Co.) dies of tuberculosis.

1919 - John Hay installs a dust suction device — possibly the first in Hardwick.

1919 - W.C. Clifford buys WGC.

1920 - Two-month strike is settled at \$8/day for an 8-hour day.

1920 - WGC wins a \$2,000,000 contract for the AT&T Building in New York City.

1920-2 - E.R. Fletcher is using non-union workers in his quarry.

1922 - Nine-month strike is settled by WGC at \$5/day for an 8-hour day excepting Saturday afternoons. (No gain over the 1920 labor contract?)

1923 - Frank A. Emerson (F.A. Emerson Granite Co.) dies.

1924 - WGC reopens its "Imperial Blue" quarry.

1924 - Start of passenger service decline on the St. J. & L.C. RR

1924 - William Traynor, a stonecutter and organizer of the local union, dies. (He wrote the Hardwick branch correspondence to the Granite Cutter's Journal for five years: 1907-12.)

1924 - GCIA renews labor agreement [1922?] and extends it to April 1928.

1925 - Operation of the H&W RR is taken over by the St. J & L.C. RR.

1926 - Anthony James McCormack (A.J. McCormack Co.) dies of tuberculosis.

1926 - H&W RR is reorganized with W.C. Clifford, president.

1927 - Flood devastates Mackville — destroys electric plant at Buffalo Crossing.

1927 - WGC reorganized under new ownership. W.C. Clifford, president.

1928 - F.L. Hardy becomes WGC's new president with headquarters in Bennington

1930-1 - 32 companies go out of business including 11 quarries. Some of these companies had been in business for many years.

1931 - Alex Taylor shed (formerly E.R. Fletcher) is destroyed by fire.

1933 - Granite workers go on strike at WGC.

1933 - E.R. Fletcher Co. ceases operation. (Need to verify the date)

1934 - Hardwick & Woodbury RR is abandoned.

1935 - WGC ceases operation. It is purchased by John B. Hall & Assoc.

1935 - Last major Hardwick building contract — Southwick Memorial at UVM.

1935 - E.R. Fletcher commits suicide.

1940 - Hardwick & Woodbury RR tracks are torn up.

1944 - Only two granite sheds remain operating in Hardwick — Anair Granite Co. and Hardwick Polishing Co.

1952 - WGC Shed No. 1 burns down.

1957 - Only one granite shed remains operating in Hardwick — Donald Sanborn.

1970 - There are no operating granite sheds left in Hardwick.