Gardiner's Island Windmill
Gardiner's Island
Town of East Hampton
Suffolk County
New York

HAER No. NY-125

PHOTOGRAPHS

REDUCED COPIES OF MEASURED DRAWINGS

WRITTEN HSITORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, D.C. 20240

HISTORIC AMERICAN ENGINEERING RECORD

Gardiner's Island Windmill

NY-125

Location:	Gardiner's Island, East Hampton Town, Suffolk County, New York
Date of Construction:	1795
Present Owner:	Held in trust by the United States Trust Company for: Mr. Robert D. L. Gardiner Main Street East Hampton, New York Mrs. J. Randall Creel Cleft Road Mill Neck, New York
Significance:	Of the 11 surviving 18th and early 19th century windmills on Long Island, the Gardiner's Island Windmill is one of the least altered. The mill is one of 4 extant windmills built by Nathaniel Dominy V, a prominent East Hampton craftsman. Dominy rebuilt the mill in 1815, and the work of that date is some of the most advanced millwriting technology found in a Long Island windmill.
Historian:	Robert J. Hefner, August 1977
Transmitted by:	Kevin Murphy, Historian HAER, April 1984

I. History of the Windmill

Lion Gardiner (ca. 1599-1663) became the first English settler of Long Island when he acquired and moved to Gardiner's Island, which he called Isle of Wight, in 1639. The 3,300 acre island, midway between the tips of Long Island's north and south forks, provided the economic base which sustained the Gardiner family in a position of wealth and prominence. The Island has remained in the Gardiner family to the present.

John Lyon Gardiner (1770-1816) inherited the Island at the age of 4 when his father, David Gardiner (1738-1774), died in 1774. When John Lyon reached his majority in 1791, his first task was to rebuild the Island's productivity after the devastation of the Revolutionary War. During the warrall the livestock on the Island was lost, much of the timber cut and as Gardiner noted, "buildings and fences all gone to ruin". (1) Gardiner was successful in returning the Island to its former state and in accumulating a considerable personal fortune. In 1802 John Lyon Gardiner's property was assessed by the town of East Hampton at $52,110. The next most wealthy man in the town was assessed at $8,310 and there were only 2 others above $5,000. (2) In 1789 Gardiner noted that the Island "supports 400 head of horned cattle, 100 horses, 2500 sheep...There is a Dairy from 60 or 70 Cows." (3) The Island's staple products of beef, cheese, wheat and wool were sold primarily to New York City and Connecticut.

One of John Lyon Gardiner's projects to return the Island to a productive state was to build a new wind-powered gristmill. Gardiner wrote in his Journal & Farm Book that his old gristmill which he called the "Petticoat Mill" was "crazy & gone to Decay: very little care taken of her in the war from 1775 to 1782." (4) John Lyon Gardiner engaged Nathaniel Dominy V in 1795 to construct a new windmill.

Nathaniel Dominy V (1770-1852) and his father, Nathaniel Dominy IV (1737-1812), were active craftsmen in East Hampton. (5) Their surviving account books document the broad range of skills which they practiced. Nathaniel IV made furniture, clocks, household articles, tools and did general carpentry work. Nathaniel IV was also a millwright. His account books show that he built the preceding Pantigo Windmill and frequently did repairs on a number of other East Hampton windmills.

Nathaniel Dominy V apprenticed with his father and gradually took over the major woodworking activities, allowing Nathaniel IV to devote more time to clockmaking. Among the activities Nathaniel V assumed responsibility for was millwrighting. The first entry in his father's account book to Nathaniel V's work on a mill is in 1785 when at the age of 15 he helped his father repair Abraham Mulford's post mill.(16) By 1793 Nathaniel V was working on windmills by himself or with his father's apprentices. The first windmill which he oversaw the construction of was probably the one he built for John Lyon Gardiner in 1795.

The other windmills known to have been built by Nathaniel Dominy V are the Hook Windmill (1806) and the Shelter Island Windmill (1810). A comparison of the Gardiner's Island Windmill with these two mills and with the Pantigo Windmill built by his father is found in Part II of this report.

Unfortunately the account book kept by Nathaniel Dominy V in 1795 is not extant. However John Lyon Gardiner kept lengthy notations on the affairs of his island in his Journal & Farm Book. The entries on the construction of the windmill provide the most complete documentation of the building and outfitting of an eastern Long Island windmill. (See Appendix I)

The timbers for the frame of the mill were cut and hewn on Gardiner's Island by Nathaniel Dominy V, David Baker and Jonathan Baker (7). They were assisted by their three apprentices, Lewis Baker, Daniel Edwards and Jim Terry; and also by Richard King. John Lyon Gardiner wrote in 1798 of his island that the "timber is very various mostly large white oak suitable for ship timber some of which are above 4^{ft} in diameter."(8) Gardiner's Island did provide the Sag Harbor shipbuilding industry with timber and also was the source of much of the oak, locust and mulberry used in East Hampton's windmills. The frame of Gardiner's new mill was oak with "some Mulberry". John Lyon Gardiner did not record the number of days the carpenters worked preparing the windmill's frame.

The mill was raised on 23 May 1795 on the "Mill lot" within 50 feet of the old "Petticoat mill". The "Mill lot" is an open field on a small rise between Gardiner's Bay and the manor house. (9) The six carpenters were assisted by 20 men who worked for Gardiner on the island and by 8 additional men from off the island.(10)John Lyon Gardiner noted that the 34 men "raised her well before night & no one much hurt." (11)

While some of the carpenters stayed on Gardiner's Island to shingle the mill, Nathaniel Dominy and at least one of his apprentices began to fashion the mill's machinery at his shop in East Hampton. Dominy returned to the Island on 23 August and brought with him his apprentice and Jonathan Baker's apprentice. The three carpenters worked on the mill until it was finished on 7 November, 5½ months after its frame was raised. When finished the mill was painted. The original color may have been white as the windmill was close to Gardiner's wharf and would have served as a navigational landmark.

When the windmill was completed, Gardiner accounted for its cost in his Journal & Farm Book. (12) This accounting identifies the sources for some of the apparatus and material used in the mill. Gardiner sent patterns for the mill spindles to a Mr. Hall in Norwich, Connecticut. The millstones came from Lyme, Connecticut, and the bolting cloth from New York City.

John Lyon Gardiner listed the total wages of carpenters and others working on the mill as $300. He also charged 82 weeks of boarding to the account of the windmill. Using these figures it is possible to estimate that between 500 and 600 man days were required to build the windmill. (13)

Gardiner entered the total cost of the mill as $773. This represented a considerable investment. A list of taxes on dwelling houses in 1800 indicates that of 154 East Hampton houses assessed, only 5 were worth more than $773.(14) The highest value on the list was for John Lyon Gardiner's manor house at $1,800. The average value of an East Hampton house was approximately $270. Gardiner's windmill cost almost 2½ times as much as the average East Hampton house. The Hook windmill, built in 1806, cost $1,320 and was understandably owned by a syndicate of 7 of East Hampton's wealthiest men. (15)

Once the mill was completed, John Lyon Gardiner took no note of its operation in his Journal & Farm Book nor in his day books. Gardiner was primarily concerned with selling large quantities of produce from his island. His interests are typified by this entry in his day book of a letter to his brother David Gardiner in Flushing, New York, "If any person enquires for wool, sheep or wheat, mention my name". (16) It seems that the operation of the windmill was too routine a matter for Gardiner to concern himself with.

It is not certain how many people were living on Gardiner's Island during John Lyon Gardiner's proprietorship other than his family and 3 slaves(17). He apparently had at least 20 men working for him, some of whom stayed on the Island for periods of 3 months. It is unlikely that any of these men lived full time on Gardiner's Island or brought their families over with them. A map of Gardiner's Island commissioned by John Lyon Gardiner in 1798 shows only the manor house and a few other buildings around it and scattered barns.(18) Itseems there were not a great number of people to provide flour for. Probably the mills most frequent use was grinding feed for the livestock.

The internal workings of the mill also indicate that it did not grind as much grain as other East Hampton mills. It does not have any of the "labor saving" devices found in the busier mills. Two of the other three East Hampton mills have cup elevators and the other has a sack hoist to raise the grain. In the Gardiner's Island Windmill, the miller had to carry the sacks of grain to the second floor and dump the grain into the hoppers by hand.

Apparently the mill operated smoothly for the first 20 years, there being only one reference to a repair made during that time. Then on 10 October 1815, John Lyon Gardiner noted in his day book a letter he had written to Noah Bartlett in Guilford, Connecticut: "I have lost my mill & hope you will be able to bring the timber this month or early next as I wish to get my mill up." (19) Gardiner does not refer to the reason for the mill's collapse. About 2 months later, on 16 December, Gardiner wrote to his brother David Gardiner in Flushing, New York: "Have raised my Mill this Week without accident - hope to receive some benefit from her before Winter is over. Domine is head Workman." (20)

The account books of Nathaniel Dominy V show that he worked 72 days on Gardiner's windmill after its collapse and completed the repairs by the middle of February. (21) Dominy was assisted by his apprentice, Abraham Osborn (22), who worked 80 days repairing the mill. Entries in the account book of David Sherril, who did carpentry and mill work in East Hampton, document that he also assisted in repairing John Lyon Gardiner's windmill on 48 days from November 1815 through January 1816. (23) There may have been others who helped raise the mill or did exterior carpentry work.

From the number of days' work done on the mill in 1815-1816 and from a comparison of the mill to others built by Nathaniel Dominy V, it is apparent that many of the significant features of the Gardiner's Island Windmill date from 1816, not from 1795. An analysis of the changes made is found in Part II of this report.

There is no documentation of any further repair work done on the mill until 1828. In October of that year David Johnson Gardiner, who inherited the Island in 1816, wrote to his mother from college, "I wish Mr. Dominy before he leaves the Island to put in order the gear on the perpendicular shaft of the grist mill by means of which the bolting apparatus is carried." (24) According to his account books, Nathaniel Dominy V was on the Island constructing a threshing mill at this time. He apparently did the work which David J. Gardiner requested and entered it in his accounts: "to 7 Days make trundlehead Spindle &c to grist Mill." (25) Then in 1833 Nathaniel Dominy worked 6½ days on Gardiner's Island installing a new windshaft, stocks and points in the mill. (26) This is the last documentation of repair work done on the mill.

The Gardiner family continued to farm the Island as a private estate through the nineteenth century. Apparently the people on the Island continued to rely on the windmill for their flour and livestock feed. An 1885 article on Gardiner's Island appearing in The Century mentioned "the windmill that supplies flour for the whole population." (27) An etching of the windmill, stylized in the picturesque manner, accompanied the article. This etching shows the canvas sails furled on the frames. The last indication of the operation of the windmill is an 1889 entry in Jonathan Thompson Gardiner's account book which credits John B. Lawrence with "making Mill Sails." (28)

The farming life on the Island began to decline in the last decade of the 19th century. This period also marked the last regular use of the windmill. Gardiner's Island was coming under a new use.

The large oak forest which had only been selectively cut, the open fields, and the ponds provided an excellent environment for a hunting preserve. In 1891 shooting privledges were leased for the first time. The entire island was leased in 1915 to Clarance MacKay, who ran it as an exclusive shooting preserve. This use of Gardiner's Island continued until 1962.

Apparently the windmill was well cared for during this tenancy of Gardiner's Island. A photograph of the Gardiner's Island Windmill taken before 1933 by Samuel Gottscho shows the mill in good condition. (29) The sails are intact. The cap has been covered by this time with terne plate stamped in a shingle pattern. This is still in place.

Also, the copper and lead weathercock presently on the mill was in place by 1933. The mill is painted white as it is today.

New stocks and sails were installed on the mill ca. 1965. (30) This was also when a new section was spliced on at the head of the windshaft.

Few signs of the 18th and 19th century life on the Island remain. The manor house begun in 1774 by David Gardiner, and completed by John Lyon Gardiner, burned down in 1947. Although 900 acres of fields are still mowed, many others have grown over. Two houses, a few barns and outbuildings, and the windmill are all the buildings that remain from the Island's 250 years of agrarian life.

II. Structure and Machinery

The Gardiner's Island Windmill contains examples of Nathaniel Dominy V's millwrighting practice of 1795 and of 1815. Thus some components are Dominy's earliest known work and some are his most advanced surviving work. The development in millwrighting practice in one family of craftsmen can be seen by comparing the Gardiner's Island Windmill (1795 & 1815) to the Hook Windmill (Nathaniel V, 1806) and the Shelter Island Windmill (Nathaniel V, 1810).

The windmills built by the Dominy family all display certain traditional practices and characteristics. This reflects the insular character of eastern Long Island, which allowed repetition of one practice from generation to generation. Yet while some aspects of the mills did not change, other aspects show advancements in millwrighting practice. Some of these improvements seem to be due to influence from New England, while others may be Dominy's own realizations.

INTERIOR FINISH

One of the most striking characteristics of all the Dominy's windmills is the unusual degree of finish given the interiors of these utilitarian structures. Not only are all structural and machine parts of exact dimensions, but they are also finished with a concern for appearance. The cant posts in Dominy mills are finely hewn and chamfered. The center posts in three mills are perfectly octagonal. Other posts and bracing beams are often beaded, as may be the tuns or the horses over the stones. This attention to finish is

found also in the Gardiner's Island mill in the finely hewn frame and in the machinery; especially the octagonal main vertical shaft with its sharp transition to a square to accomodate the clasp arm spur wheel.

The Dominy windmills stand in strong contrast to most other surviving mills in their degree of finish. Most other millwrights were concerned only with the structure and machinery as functioning parts. But it is not surprising that a family with a strong cabinetmaking tradition, like the Dominys, would also show an unusual attention to the finish and appearance of their windmills.

INTERNAL CAPSTAN LUFFING MECHANISM

The most consistent component of the Dominy windmills is the internal capstan luffing mechanism. A capstan at the first floor is turned by handspekes. A lantern pinion mounted on the shaft at the ceiling of the first floor engages a spur gear which is mounted on another shaft extending to the cap circle. The shaft is topped by a trundle wheel which engages with the cog ring to turn the cap.

The derivation of this system in East Hampton is not known. No other New England mills were known to employ this system. Some English smock mills in the 17th century had an internal luffing mechanism which used a cog ring at the cap circle. Then in the early 18th century a wheel-and-chain gear appeared which used a pulley-rimmed wheel geared to a cog ring around the exterior of the curb. The wheel was turned by an endless chain from the ground. This method superseded the internal capstan winders in England. Today only one English windmill with an internal capstan luffing mechanism survives.

The practice of installing the internal capstan winder may have been brought to Long Island from England in the 17th century. The insular condition of eastern Long Island through the 18th century would have allowed a practice, that had been abandoned in England and New England, to continue on Long Island.

Internal luffing mechanisms were more common in Holland than England. Perhaps Dutch windmills built in western Long Island used this system, and Dominy may have taken the idea from those mills.

Nathaniel Dominy IV was most noted as a skilled clockmaker. The internal capstan winder does seem to be an appropriate solution for a clockmaker to devise. It is possible that Dominy invented the system himself. If not, his clockmaking activity at least explains why the internal capstan winder would appeal to him if he saw it elsewhere.

The system must have continued to have great appeal since the Dominys used it exclusively over at least a 45 year span. The time required to fashion the 100 or so cogs and to place them correctly in the cog circle, as well as fashioning the capstan, gearing and shafts, made the internal capstan winder a very time consuming and expensive system to install. It is no surprise that other local millwrights did not adopt it. But the extra effort and attention to detail that it required seem characteristic of the Dominy craft tradition.

BOAT-SHAPED CAP

The three windmills known to have been built by Nathaniel Dominy V have boat-shaped caps. This was a change in the millwrighting practice of Nathaniel V from that of his father, Nathaniel IV. The first instance of a boat-shaped cap among surviving Long Island mills is the Hook Windmill built in 1806. Nathaniel Dominy V also used this cap on the Shelter Island Windmill (1810) and the Gardiner's Island Windmill when it was rebuilt in 1815.

This cap is considered an improvement over the conical cap used on Long Island previous to this time. Seven of the ten surviving Long Island mills have conical caps. The boat-shaped cap was more shear to the wind; it allowed more wind to pass by the sails. This form of cap is associated with Massachusetts windmills. The boat-shaped cap is found on 6 Cape Cod windmills and 5 Nantucket windmills. It is probable that the form came to Long Island from Massachusetts.

The framing of the cap of the Hook Windmill shows the transition from the conical to the boat-shaped form. Three pairs of rafters are mortised into a boss at the center of the cap, forming an umbrella truss. This is flanked by two sets of parallel rafters at either end to form the gables. The umbrella truss is a remnant from the frame of a conical cap. The boat-shaped cap on the Shelter Island Windmill, built 4 years after Hook, is framed entirely with parallel rafters. The cap on the Gardiner's Island windmill is framed in the same manner.

It is doubtful that the Gardiner's Island Mill originally had a boat-shaped cap. By 1795 Nathaniel V had been working on windmills without the supervision of his father for only 5 years.(31) He would not likely have broken with his father's practice so early. Also, if the 1795 cap had been boat-shaped, Dominy would have used an umbrella truss in the center. It is doubtful that he would repeat the same transitional framing 10 years later when he built the Hook Windmill cap.

CENTER POST TO BRIDGE BEAM

The Gardiner's Island Windmill contains another development in the millwrighting practice of Nathaniel Dominy V. All previous Long Island mills (except possibly the Gardiner Mill in East Hampton) used a massive center post (a remnant of the post mill) to receive the foot bearing of the main shaft. When Dominy rebuilt the Gardiner's Island Mill he did not reinstall the center post, but had the main shaft bear on a bridge beam at the second floor.

The Hook Windmill (Nathaniel V, 1806) and the Shelter Island Windmill (Nathaniel V, 1810) both have massive center posts. This post is framed into the transverse beams at the base of the mill and rises to just above the stones on the second floor, where it receives the gudgeon of the main shaft. Two posts on each side of the center post support the bridgetrees by means of a cross brace and also lend support to the two beams carrying the bed stones. The use of the center post is undoubtedly a carry-over from the building of post mills. Nathaniel Dominy IV and Nathaniel V did repair work on post mills in East Hampton and Nathaniel IV may have constructed some post mills.

Nathaniel Dominy V continued this practice at least until 1810 when he built the Shelter Island Windmill. But five years later when rebuilding John Lyon Gardiner's mill, he did away with the massive center post. He allowed four posts in the center of the mill to support the bridgetree, the beams carrying the bed stone and a bridge beam on which the main shaft bears. This lighter frame, easier to construct and allowing more room inside the mill, is an advancement in millwrighting practice on Long Island. The use of a bridge beam to support the main shaft was the common practice in English smock and tower mills. The only other overdrift Long Island windmill with a bridge beam instead of a center post is the Beebe Windmill built in 1820.

CLASP ARM CONSTRUCTION

Nathaniel Dominy installed a new clasp arm great spur wheel in Gardiner's Island Windmill in 1815. This is the first instance of a clasp arm gear in a Long Island windmill. Previously all spur wheels and brake wheels were of compass arm construction; with radiating arms mortised through the shaft. Clasp arm construction has two pairs of parallel arms enclosing the shaft. This produces a stronger gear and a gear that is easier to install and remove.

The first documentation of a clasp arm gear is in a Dutch pattern book of 1728. (32) Clasp arm construction was quickly adopted in England. In existing English windmills, with wooden gears, a compass arm gear is a rare survivor. The prevalence of compass arm construction in Long Island mills is another instance of a continuation of 17th century practice int. the 19th century on isolated eastern Long Island.

Like Dominy's introduction of the boat-shaped cap and the bridge beam for supporting the main shaft, his use of the clasp arm gear demonstrates an exposure to millwrighting practice elsewhere. The only other instances of clasp arm gears in surviving Long Island windmills are the brake wheel of the Beebe Mill (1820), the brake wheel of the Pantigo Mill (date unknown, but not original) and the spur gear running the cob crusher in the Hook Mill (installed in 1850) (33).

SPUR PINION

Another feature of the Gardiner's Island Mill, which Dominy must have installed in 1815, is the spur pinion stone nut. The stone nuts of all other surviving Long Island mills, except the Beebe Mill and Gardiner Mill, are lantern pinions. The spur pinion was considered an improvement over the lantern pinion in England, and most English mills have spur pinions for their stone nuts.

MILLSTONES

The one pair of burr stones now in the windmill are probably not original. John Lyon Gardiner purchased his millstones from Lyme, Connecticut in 1795. These stones were likely of Connecticut granite. Burr stones would have come from New York at that time. One of the original granite stones may be the millstone now used as a doorstep.

A majority of mills had one run of rock stones for corn and animal feed and one run of burr stones for grinding flour. There was probably not enough grinding to be done on Gardiner's Island to warrant two run of stones. Both the original granite stones and the later burr stones could be used for all types of grist work. (34)

BOLTERS

The mill originally had a bolting machine, as John Lyon Gardiner acquired bolting cloth for the mill in 1795. On 16 January 1817, David J. Gardiner noted payment to Nathaniel Dominy for "putting in Bolting Mill Island." (35) This may have been a replacement for the original bolter, possibly destroyed when the mill collapsed in October 1815. The two bolting machines which are presently in the windmill were probably installed in the late 19th century.

(1) John Lyon Gardiner Journal & Farm Book, 1793-1807, manuscript, East Hampton Free Library (hereafter EHFL),p. 193.

(2) "Assessment Roll of the Town of East Hampton," 1802, manuscript, EHFL.

(3) "Notes & Memorandum Concerning Gardiner's Island written May 1798 by John Lyon Gardiner the present proprietor of that Island at the request of the Rev^{d} Samuel Miller of NY," New York Historical Society Collections, 1869, p. 270.

(4) John Lyon Gardiner Journal & Farm Book, 1793-1807, p. 31.

(5) Hummel, Charles F., With Hammer in Hand: The Dominy Craftsmen of East Hampton, New York(Charlottesville, Va.: The University Press of Virginia, 1968).

(6) Nathaniel Dominy IV and Nathaniel Dominy V Account Book, 1762-1844, manuscript photocopy, EHFL, p. 35.

(7) The Bakers were a family of accomplished woodworking craftsmen in East Hampton. See Dean F. Failey, Long Island is My Nation (Setauket, N.Y.: Society for the Preservation of Long Island Antiquities, 1976).

(8) John Lyon Gardiner Journal & Farm Book, 1793-1807, manuscript, EHFL, p. 193.

(9) Ibid., p. 21.

(10) Ibid.

(11) Ibid.

(12) Ibid.

(13) This figure was deduced by estimating the numbers of days each carpenter worked, multiplying that times his known or estimated daily wage and dividing that into the total wages listed by John Lyon Gardiner.

(14) "List of Tax upon Dwelling Houses in the 1st Collection District of New York," manuscript, Suffolk County Historical Society.

(15) John Lyon Gardiner Ledger, 1801-1807, manuscript, EHFL, 1 January, 1805.

(16) John Lyon Gardiner Day Book, 1814-1816, manuscript, private collection, 8 May 1816.

(17) "List of Tax upon Dwelling Houses in the 1st Collection District of New York," manuscript, Suffolk County Historical Society.

(18) "A Map of the Isle of Wight or Gardiner's Island made May 20th 1798 by M.B. Green of Massachusetts from a Survey taken Nov 1797 by Nat[1] Sherrill of East Hampton for John Lyon Gardiner Esquire," manuscript, EHFL.

(19) John Lyon Gardiner Day Book, 1814-1816, manuscript, private collection, 10 October 1815.

(20) Letter, John Lyon Gardiner to David Gardiner, 16 December 1815, manuscript, New York Historical Society.

(21) Felix Dominy, Nathaniel Dominy V and Nathaniel Dominy VII Account Book, 1809-1862, manuscript, EHFL.

(22) Abraham Osborn was the brother of Septimus Osborn, a carpenter and cabinetmaker in East Hampton. See Dean F. Failey, Long Island is My Nation (Setauket, N.Y.: Society for the Preservation of Long Island Antiquities, 1976).

(23) David Sherril Account Book, 1799-1827, manuscript, EHFL, p. 63.

(24) Letter, David Johnson Gardiner to Sarah Gardiner, 1 October 1828, manuscript, private collection.

(25) Felix Dominy, Nathaniel Dominy V and Nathaniel Dominy VII Account Book, 1809-1862, manuscript, EHFL, p. 94.

(26) Ibid., p. 98.

(27) Lathrup, George Parsons, "An American Lordship," The Century, December 1885, p. 217,218.

(28) Receipt, John B. Lawrence to Jonathan Thompson Gardiner, 4 May 1889, manuscript, private collection.

(29) Gottscho, Samuel, photograph, ca. 1933, Queensboro Public Library.

(30) HAER oral interview with Frank Dayton, 1 August 1977.

(31) Nathaniel Dominy IV and Nathaniel Dominy V Account Book, 1762-1844, manuscript photocopy, EHFL.

(32) Freese, p. 41.

(33) Dominy, Nathaniel VII, "Register of Wind, Weather & Doings," manuscript, EHFL, 1 November 1850.

(34) Freese, p. 14.

(35) Sarah Gardiner Account Book, 1817- , manuscript, EHFL, 16 January 1817.

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APPENDIX I

Accounts of Building the Windmill from
John Lyon Gardiner's Journal & Farm Book

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May 23 Monday 1795

In the morning began
to raise my new mill with about 20 of my own & car
penters & 8 more that came on raised her well before
night & no one much hurt - she came together tight
but needed no cutting & her frame is good - She has
some Mulberry & her trunnells are locust & mulberry.
Nat Domine Junr David & Jonan Baker & their 3 prentisses
Lewis Baker, Daniel Edwards & Jim Terry & old Richard
King framed her - her frame is entirely new & she
stands about 3 or 4 Rod N:W: of the old Petticoat mill.-

July 5th the carpenters went off - they had two thirds
coverd the mill & nearly finished Cog wheel

Ausust 23d Domine & his prentiss & Jon Bakers prentiss began
The Mill cost after compleat 307£

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August 25, 1795 Carpenters to work on Mill pain
ting her. Last week sent the patterns for Mill spindle
t o Lyme for Hall to make

Sept 2 painting mill

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September 26 1795 Joe Havens Returned
From NLondon & brought my Mill Spindle

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Oct 15 working on the Mill stones put up the new Arms -

Novr 7 Carpenters went off finished Mill

John Lyon Gardiner's Journal & Farm Book

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New wind Mill - was raised monday May
23 1795. Nat Domine Junr Master workman
Jona Shellenger &c from Amagansett came to assist
& old Mr. N Domine. - the old Petticoat mill
built by Mr. R Homan for Mr. David Gardiner
in the year was crazy & gone to Decay: very
little care taken of her in the war from 1775 to 1782.
Mem^{d} of Cost of the New Mill as nigh as I can
assartain - finished all off Novr 8 1795 -

	Doll:	40:	Cents
Stones of D^{o} Beckit of Lyme.-		3:	
freight D^{o} Joe Havens		34:	36
Spindles from Norwich		6:	
time getting them & freight		15:	
1500 ftt Oak boards. S: Harbour		12:	50
1000 pine D^{o} D^{o}		16:	88
Bolting cloth NYork		45:	
Shingles all sorts - S: Harbour		25:	
200 lb Iron Say @ 12 Cts per lb		12:	50
4 Sticks of black Spruce. Machias		20:	
Nails 7$:50 - Sails old - 12$50		62:	50
25 tons timber Say & Drawing 2½		10:	
500 ftt planks - S.H.		12:	50
Paint & Oyl 7½ Ropes & lines 5$		3:	12
Lock $1.25 Cart wheel			
timber for cog wheel & getting it two years before needed		10:	
Carpenters wages Say ND &c		250:	
Ric King Senr		12:	50
Boarding Say 52 Weeks 1$50		52:	50
Work (framing?) &c 2 men 200 Days		50:	
Boarding D^{o} 30 weeks 1$50		50:	
	$773:	36	Cts

£ 309:7:0

APPENDIX II

Work on Gardiner's Island Windmill after 1795

6 April 1803 — Robert Parsons came Wedy worked on Mill till friday night
John Lyon Gardiner Day Book, 1802-1807, EHFL

10 October 1815 — (to Noah Bartlett, Guilford, Connecticut) Since then I have lost my mill & hope you will be able to bring the timber this month or early next as I wish to get my mill up.
John Lyon Gardiner Day Book, 1814-1816, private collection

16 December 1815 — Have raised my Mill this Week without accident - hope to recieve some benefit from her before Winter is over. Domine is head Workman.
Letter, John Lyon Gardiner to David Gardiner, New York Historical Society

20 December 1815 — Jeremiah Miller Contra
By rollers for Mill
½ bolting cloth
John Lyon Gardiner Account Book, 1806-1816, private collection

13 January 1816 — (John Lyon Gardiner debtor to Nathaniel Dominy V)
to work on Mill ten weeks
or 60 Days @ 8 — 24/00/0
to Abraham Osborn 60 Days @ 5 — 15/00/00

20 February 1816 — to 12 Days on Mill
& Abraham 20 D° at 8/ & 5/ — 9/16/0
to turning small Coggs at home — 0/02/6
Felix Dominy, Nathaniel Dominy V and Nathaniel Dominy VII Account Book, 1809-1862, EHFL

November 1815 — (John Lyon Gardiner Debtor to David Sherril)
19 days on the Mill — 6/13/0
to 6 days on the Mill — 2/02/0

January 1816 — to 11 days on the Mill — 3/17/0
to 12 days on the Mill — 4/04/0
David Sherril Account Book, 1799-1827, EHFL, uncataloged

16 January 1817 — (David J. Gardiner debtor to Sarah Gardiner)
to Cash paid Nathaniel Dominy putting in
Bolting Mill Island 2/00
Sarah Gardiner Account Book, 1817- , EHFL

1 October 1828 — If you have an opportunity write me now
they get along with the mill...I wish Mr
Dominy before he leaves the Island to put
in order the gear on the perpendicular shaft
of the grist mill by means of which the
bolting apparatus is carried.
Letter, David Johnson Gardiner to
Sarah Gardiner, Gardiners Island, private collection

7 September 1829 — (David J. Gardiner debtor to Nathaniel Dominy V)
to 7 Days make trundlehead Spindle &c to
grist Mill 2/16/0

2 May 1832 — (Sarah Gardiner debtor to Nathaniel Dominy V)
to 1 Day on Island repairing Mill 0/8/0

4 September 1832
16 September 1833 — to 1½ Days on Island repairing Mills 0/12/0
to 6½ Days on Island put in Mill shaft
& Stock 2/12/0
Felix Dominy, Nathaniel Dominy V and
Nathaniel Dominy VII Account Book, 1809-1862,
EHFL

6 December 1852 — (Samuel B. Gardiner debtor to A. Dayton)
to work on mill 37½
Receipt, A. Dayton to Samuel Gardiner,
private collection

4 May 1889 — (John B. Lawrence credit to Jonathan T.
Gardiner)
By making Mill Sails $8.00

APPENDIX III

Gardiner's Island as a Source for Mill Timber

A large tract of mature forest on Gardiner's Island had always been reserved for selective harvesting of large timbers, primarily for shipbuilding. In his Journal & Farm Book, John Lyon Gardiner noted of his Island: "The timber is very various mostly large white oak suitable for ship timber some of which are above 4ft in diameter."(1)

The Island also supplied the large white oak timbers needed to construct windmills. All the timbers for framing the Gardiner's Island Windmill, the Hook Windmill and William Johnson Rysam's Windmill of 1798 were cut on Gardiner's Island. John Lyon Gardiner also kept seasoned timber on hand for mill gearing. In 1798 Gardiner noted that he had sticks for a "crowner" and a "cog wheel" cut and "put in smoke house to season these sticks & 4 now there for facing it."(2) In 1804 Gardiner sold "3 large sticks for Cog Wheel & 4 for facing been seasoning 7 years" to the owners of the new Hook Mill. The seasoned oak was used primarily for the brake wheel, which Gardiner called the cog wheel. This gear had the greatest diameter of any in a windmill and required the most precaution to prevent its warping. Most East Hampton windmills also had locust windshafts which had been cut on Gardiner's Island.

The following is a listing of the sales of mill timber from Gardiner's Island.

NOTES

(1) John Lyon Gardiner Journal & Farm Book, 1793-1807, manuscript, EHFL, p. 193.

(2) John Lyon Gardiner Day Book, 1797-1801, EHFL, 1 December 1798.

(3) John Lyon Gardiner Day Book, 1802-1807, EHFL, 25 April 1804.

Gardiner's Island as a source for mill timber

David Gardiner and John Lyon Gardiner Account Book, 1774 - , EHFL

20 December 1779 (Account of guardians of John Lyon Gardiner)
By shaft for mr Barnes Mill 0/16/0

John Lyon Gardiner Day Book, 1797-1801, EHFL

10 October 1798 Sawmill Co in EH Dr
Post cut for WJR
Crowner
Shaft
Wallower

1 December 1798 T Baker sawed a log (?) a stick Jere Huntting &c got for crowner to Saw Mill in EH into timber for cog wheel & put it in smoke house to season these sticks & 4 now there for facing it. Seasond well will be worth 35 Doll

Journal & Farm Book of John Lyon Gardiner, EHFL

1798 Sold some timber to Wm Rtsam for a Sawmill for £ 30

John Lyon Gardiner Day Book 1797-1801, EHFL

March 1800 Dr Mathew Barns 1 Mill shaft 1/8/0

John Lyon Gardiner Ledger C, 1801-1807, EHFL

24 November 1801 Captain David Hedges Dr
to 1 stick for Cog Wheel 8 ftt long 20 Inches square
to 1 D° for facing 7 ftt long
board 3 Men 1 Day 1/12/0

1802 Ezekiel Mulford Dr
to one Mill shaft & boarding people &c 1/8/0

John Lyon Gardiner Day Book, 1802-1807, EHFL

7 January 1804 Proprietors of New Mill in EH by M Dayton Dr
1 Stick for Shaft 19ftt long
9 other sticks for 11

16 April 1804 Isaac Plato rec'd the Mill Shaft &
7 other single & 2 Double = 11 sticks

25 April 1804 Dr Owners of New Mill
3 large sticks for Cog Wheel & 4 for facing
been seasoning 7 years 6/0/0

24 November 1804 Captain David Hedges Dr
1 stick for Cog wheel 8 ftt long 20 Inches square
7 1 D° for facing 7 ftt D°

24 N ovember 1804 Recd of Mr Rogers for 1 Mill Shaft &
2 crookes 2/8/0

John Lyon Gardiner Day Book, 1802-1807, cont.

29 April 1806 — Dr Owners of Mill South End
one stick Timber upright shaft 1/16/0

29 April 1806 — Dr Owners of Mill North end
1 Mill Shaft 1/11/0

John Lyon Gardiner Day Book 1807-1810, EHFL

11 May 1807 — Dr Owners of N Hedges Mill
1 stick white Oak timber for wheel

John Lyon Gardiner Account Book,1806-1816, private collection

13 June 1808 — Dr Mill South end E Hampton
to 1 Stick timber 15ftt long
22 to 24 inches squared 4$ ton 2/0/0

26 September 1808 — Dr Captain Eldredge Sag Harbour
to 1 mill shaft 1/6/0

June 1815 — to 1 stick for Post to Sawmill at 4$ per ton 2/8/0

17 May 1817 — Nathaniel Dominy Dr
to 1 Mill Shaft for the Hook Mill 1/16/0

Sarah Gardiner Day Book 1816- , private collection

16 September 1819 — Dr Fithians grist Mill
to bringing up Mill Shaft 2/0/0

28 August 1841 — Letter, (A.T. Rose?) to John G. Gardiner, private collection
We want a Mill Shaft for our Mill at Bulls Head - the length about 17 ft and to square at least 22 inches at the butt. We think we can find a suitable stick among your big white oaks on the Island.....

Nathaniel Dominy VII Account Book, 1849 - , EHFL

1867 — Samuel B. Gardiner Contra
By one stick Timber for Mill shaft $25.00