

The Committee appointed to take into Consideration the Petition of
Oliver Evans of Newcastle County, do Report, that they are of Opinion
he ought to have an exclusive Right, to make and Erect his Machines
for the Manufacturing of Flour, ^{for the Space of fifteen Years,} and that the Said Oliver Evans
have leave to Prepare and send in a Bill for that Purpose agree-
-able to the Prayer of his Petition, as far as it respects the Manufac-
-turing of Wheat into flour —

Report upon O. Evans

Pitt

April

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To the Honourable the Representatives of the Freemen
of the Delaware State in General Assembly met

Honble Sirs / You were pleas'd on the 8th
of June 1786 to give me leave to bring in a Bill for se-
curing to myself my Heirs and Assigns for the Term of
Fifteen Years the exclusive privilege of making and
Vending certain Machines of my Invention usefull in
Manufacturing flour, In consequence of which I have prevail'd
with Mr Boothe to bring in said Bill — Permit me
to observe that in my humble Opinion Fifteen Years will
elapse before the utility of S^d Machines be generally known
or they much used consequently I cannot profit much thereby —
If Providence has endowed me with a Genius capable of Invention
Probably I may render my Country greater Services in this than
any other line I can engage in — Nature if attended to will
Direct each of us to the Studies She has adapted us for —
Is it not more than Probable that Twentyfive Years will elapse
before the said Machines will appear in perfection in the World
if they be now stifled in Embryos, An old Proverb too often
verifed says, The ingenious Mechanick will never be rich
And upon taking into my serious Consideration ^{the} attending expence
and loss of Time, with other Circumstances I have concluded that
it will not prove to my advantage to proceed further in these
(hitherto) unprofitable Studies untill I obtain ^{of} different States
an exclusive right for which I need not apply (to others) without
your favour — And as no expence is likely to fall on the Community
thereby But some profits to arise to me and Greater to the Publick
perhaps for ages to come, I shall hope that your Honours will favour
my Bill with the amendment of Twentyfive years inserted instead of
fifteen, which will enable me to produce to the World the said Machines
and perhaps some others more usefull which now appears to me to
be possible And I shall ever acknowledge the great Obligation
confered on —

Honble Sirs your Most Obedt
Humb^l Serv^t *Quaker*

Redlay Creek Jan 8th 1787

*Peta
of Oliver Evans.*

Jan. 12. 1787. read.

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#169

HISTORICAL SKETCH

OF

OLIVER EVANS,

Joseph B. Walter Esq
Compliments of
G. A. L.

A SKETCH

OF THE LIFE OF

OLIVER EVANS,

A Remarkable Mechanic and Inventor,

BY

REV. GEORGE A. LATIMER,

RECTOR OF CALVARY P. E. CHURCH,

WILMINGTON, DELAWARE

JOHN C. HARKNESS,
WILMINGTON,
DELAWARE.

A SKETCH OF THE LIFE OF OLIVER EVANS,—A REMARKABLE MECHANIC AND INVENTOR.

BY REV. GEORGE A LATIMER,
Rector of Calvary Church, Wilmington, Delaware.

The following sketch was prepared in compliance with a resolution of the Historical Society of Delaware and was read at its annual meeting, on the 10th of October, 1872. It was also read on the occasion of the opening of the Wilmington and Western Railroad, on the 19th of October, 1872, and is now reprinted from "*Harkness' Magazine.*"

The opening of a new Road is not a single work, but has its manifold connections with persons, places and things. The Geographical, Historical, Biographical, Commercial, Mechanical, Scientifical, Artistical and even the Moral, are all thereby developed. Hence the inestimable value to the immediate neighborhood, the State, and the Country of any such enterprise. It brings into activity, latent power, mental, moral, social and political; which power seems to fall in, as a necessity, to meet the rapid progress of the world at large. If this be true, what an incalculable advantage to the State of Delaware is the opening of such a Road as the Wilmington and Western Rail Road within its boundaries. With a splendid terminus on the Christiana near the Delaware River, at the busy City of Wilmington, increasing wonderfully as it has for the past few years, in size, population and business—running through a magnificent and fertile portion of the State,—crossing other roads in the same State, and connecting with roads in other States—it is destined to make immense advances in all departments of our Commonwealth.

THE BIOGRAPHY

which this road has called up from the depths of forgetfulness, is that which concerns us, in this article. Biography, which would, otherwise, have scarcely been recovered from the mouldering remains of by-gone days. How strange! that the opening of the Wilmington and Western Rail Road should call forth, as it were, the spirits of those who were first and foremost in the propulsion, by steam, of carriages, over land and water, in this and other countries.

Fulton, on his farm at one end of the line—Evans, in his mill at this end. From first to last, as their names are now united by the iron rail, so were they united in their experiences, while living. In childhood, while other boys of the same age were at play, they were both engaged in planning, drawing from the very amusements of their companions the foundation stones of all their future, noble, and world-renowned designs and inventions. As they opened their secret thoughts to the public, and gave their plans to the world, each received as his reward, the ridicule of the community. And after struggling against opposition, and at times, even beggary, they departed this life, leaving a name, and not much more, to their bereaved children.

It was once observed concerning one of the smallest of the cities of Palestine, "though thou be little among the thousands of Judah, yet out of thee shall He come forth, that is to be Ruler in Israel." "And of Zion, it shall be said, this and that man was born in her." Thus have certain places been made memorable, not by their size, nor beauty, nor wealth, nor power, but by the birth of some, perhaps, poor and apparently unknown individual, within their borders, who afterward became famous in the annals of the world. Many great men, great minds, have come from little, quiet, unnoticed, out-of-the-way places. The surroundings were very unpretending and unfavorable, yet all the time, great powers of mind were being developed therein.

The little town of Newport, Delaware, is one of these places. Near its borders was born the subject of this sketch, who, though not always a resident, lived long enough thereabouts to have the saying applied to it, *This man* was born there; and thus gave to it, a name and a degree of importance. From this place, from this individual, has gone forth the development of a power which has benefited the world. Although the source of intense labor, mental and physical, to him, yet to us, what pleasure to see the gradual growth of a thought—an idea assuming shape; rude and apparently unmeaning at first, becoming the substantial, graceful, useful machine, used in nearly all the civilized portions of the globe, almost essential to the health and happiness, the progress and prosperity of mankind.

OLIVER EVANS

was born in Newport,* New Castle County, about three miles south of Wilmington, in the State of Delaware, in the year 1755. He was the son of Charles Evans, and a descendant of the Rev. Evan Evans, D. D., the first Episcopal Minister in Philadelphia, who died in 1728.

He had seven brothers, named respectively, Joseph, Thomas, Theophilus, John, Jonathan, George and Evan. His father owned the property in Newport, now in possession of John Jordan, John Evans and John Stewart, and fifty acres more or less, now owned by Franklin Fell Esq., and upon which the Faulkland Spice Mills are located, on the Faulk Road. Oliver seems to have been born with an inventive mind, which manifested itself early in life, walking with his head downward, his hands behind him, as if in a deep study.

When a mere boy, he was led to the study of the possibility of moving land carriages without animal force, which he considered a very desirable object. He had heard of various attempts having been made, by means of cranks, wheels, pinions, springs, wind, &c., all of which appeared to him, as too futile to be worthy of application, for the want of original power. When about 18 years of age, being an apprentice to a wheel-wright, on a Christmas evening, one of his brothers informed him that he had that day been in company with a neighboring blacksmith's boys, who for amusement had stopped up the touch-hole of a gun barrel, then put in about a gill of water, and rammed down a tight wad; after which

*Since the above was in type, authentic information has been received, that OLIVER EVANS was not born within the bounds of Newport, but on the property now belonging to Mr. John Jordan, in Christiana Hundred, New Castle County, Delaware, between two and three miles north-west of said village.

they put the breech of the gun in the smith's fire, when it discharged itself, with as loud a crack as if it had been loaded with gunpowder. "It immediately occurred to me," says he, "*here is the power that I want to propel my wagon*, if I knew how to apply it, and I immediately set myself to work to find out the means." From this simple amusement of the boys, he discovered that great fundamental principle in nature, the increase of the elasticity of steam, by a more rapid ratio than the heat of water may be increased, and that this principle could be applied to work very light and powerful engines, to propel land carriages and boats; which discovery finally produced his Columbian Steam Engine, which for 43 years he endeavored to introduce into public use. Here we see the development of *a thought*.

At the age of twenty-two, he discovered and invented two machines for making wool and cotton cards, to take the place of the tedious hand-tools then in use. His time was so much occupied, that it was a long while before he could find leisure to test the principles of his discovery, until he met with an accident, being dangerously wounded in the foot, by a scythe. While in this condition he took the opportunity and succeeded in making small models, with wood. His father's family becoming acquainted with his plans, united argument with ridicule to dissuade him from what they termed his *visionary* schemes. Not succeeding in their efforts, they gave him up as lost, as a "metamorphosis" from an industrious man to a whimsical projector. Indeed, such little value was attached to his model, that even the blacksmith to whom he applied, considered it a useless gim-crack, and Mr. Evans, an infatuated inventor. The blacksmith refused to work for him, on such visionary schemes, until George Latimer, Esq., (who about that time was a member of the Legislature of the State of Delaware) by his persuasive arguments, aided by the eloquence of some good old Jamaica spirits, of which no other person had any near that place, at that time of scarcity, and which he promised to place at the smith's service while on the work, prevailed on him to undertake the job; which succeeded so well, that they all changed their language, and nothing could surpass the wonderful ingenuity of Oliver. The card manufacturers of Wilmington, having learned the excellent qualities of his machinery, made offers for the secret, but so patriotic was Evans, that he could not think of selling it to individuals, to the exclusion of the public; and, as the Legislature of Pennsylvania was in session, he presented a memorial to it, stating the nature and importance of his discovery, and praying for the loan of \$500, to enable him to construct a wire-mill in the State of Pennsylvania, with a machine attached to it, for the purpose of bending and cutting the wire into card teeth, agreeable to the principles of his invention. The Legislature appointed a committee to take the memorial into consideration; who, like the parson in the fable, lavished their eulogiums, but would lend no money. After this, he showed his cards, and described his invention to a person of celebrity in the City of Philadelphia, stating to him the individual offers that had been made, but that he preferred the public loan. This person treated his patriotism with seeming ridicule, which caused him to relinquish all hope of success from that quarter, and he returned to Wilmington, where, urged by necessity, he contracted to make a machine

which should manufacture five hundred complete card-teeth per minute, and obligated himself to keep the art a secret for two years, for the trifling sum of \$200, reserving only the privilege of selling one other machine. While this machine was being constructed, the contractors suspended their manufacture for twenty days, saying, so inferior was the old workmanship, when compared with Mr. Evans' method, that it only spoiled the wire. The machine was soon completed; and, instead of five hundred, as per contract, it made three thousand per minute, and so far exceeded their expectations, that they immediately contracted for the machine which had been reserved, and both parties were penally bound to keep the art a secret. It nevertheless became known, and others obtained the use of the machine.

A plan for pricking holes in the leather for two hundred pair of card-teeth in twelve hours, and also, for cutting, bending, and setting the teeth, soon after devised by him, he is said to have abandoned, because of his failure to secure a due share of the benefits of the previous invention.

In the following year (1782) he contracted, in company with two of his brothers, to build a merchant flour-mill in New Castle County, in the State of Delaware; and in the fall of 1783 left his store in Queen Anne's County, to superintend its erection.

He now began to study how he could make this mill exceed all others; and having been successful in inventing several useful improvements, he had strong hopes of succeeding in this also. He first conceived the great design of applying the power that drives the mill-stones, to perform all those operations which were hitherto effected by manual labor, viz: for receiving the grain from the wagon or ship, until manufactured into superfine flour, ready to be packed into barrels; but being neither millwright nor miller, he had first to ascertain what operations were to be performed by manual labor, and conceived it possible to execute the whole by the power of water, and that the improvement would be extraordinarily great. Intense was his joy when he found that the principles he conceived might be applied to raise both grain and meal, and convey them in any direction, or angle, ascending or descending, or horizontal, which joy was still further increased when he put the principles in operation, and were found to work very satisfactorily. These improvements in mill-machinery for the manufacturing of flour, consisted of the *Elevator*, or endless chain, with buckets to raise the flour or grain to any required height; the *Conveyor*, to carry the grain or meal from one place to another; the *Hopper-boy*, to spread or gather the grain or meal, and thus to dry or cool it; and the *Drill*, to move the grain or meal in any direction, like the Conveyor, but by means of rakes instead of buckets; to which he added originally, the *Kiln-dryer*, to dry and cool the meal as it passed through the elevator, and hopper-boy. But these improvements, and their introduction into public use, cost an immense amount of time and labor,—a great expenditure of money which he could not well spare—much criticism and ridicule—and many law-suits. Months of the most intense thinking were spent in baffling with apparent absurdities, but hoping against hope, he worked with a zeal and dogged perseverance, peculiar only to inventors, until his ideas resulted in discoveries, inventions, and patents.

It is said, that the board on which he would lie for hours, cogitating upon his plans and improvements was only lately destroyed by fire at the burning of the old mill at Brandywine Springs, Delaware.

Some time in September, 1784, he declared to several individuals that he intended to build a flour mill that would perform what these improvements were intended to do, without the aid of manual labor in the attendance, but no one would believe it possible. He got the name of a visionary projector, about to ruin himself by attempting an impossibility. Yet his arrangements for the construction of the mill were so far completed, before he began to build, that he declared he had in his bed viewed the whole in operation with much mental anxiety.

On the 5th of September 1785, the mill was set in operation, in the old way, requiring three men, and a boy one-half of his time, to attend it, in the manufacture of 20 barrels of superfine flour, besides the middlings and stuffs every day. But on the introduction of his improved machinery, one man could always attend the mill, night and day, make the same quantity, (20 barrels of flour per day) and making about four barrels more out of every hundred bushels of wheat, than had usually been made. These improvements to the mill, though perfect in theory and in principle, met with many unforeseen difficulties on being put into practice; and besides, they were so expensive, that he was often greatly discouraged. Unwilling to proceed at his own expense in completing the whole of his improvements, he asked aid of the rich and established Brandywine millers, and others, by way of subscription. But they declined, saying, they believed no man, who had neither been bred a miller nor millwright, could ever make any improvement on the manufacture of flour *in their mills*; they believed the art to be perfect in their own establishments, and would not, therefore, subscribe a dollar; which refusal on their part, caused others to withhold any aid.

These Brandywine millers stood very much in his way, discouraging him by word and deed.

He showed his proposition to James Latimer, Esq., one of the millers, describing his invention and improvements. With a significant tone, he exclaimed, "Ah! Oliver, you can not make water run up hill, nor can you make wooden millers." But when he saw the hopper-boy doing its duty incessantly, day and night, better than man could do the same labor, he expressed great astonishment; and his son, the above mentioned George Latimer, Esq., coming in at that moment, advised him to petition the different State Legislatures for an exclusive right to use his inventions.

Evans now thought that every millwright and miller, as soon as they saw the mill in operation, would be anxious to adopt the improvements, yet these were the last to be convinced, and, generally speaking, the most violent opposers. One day in 1789, when superintending the mill, having left it to attend itself whilst he made the hay of a clover lot, he observed two of the Brandywine millers coming to view it. He pretended not to see them, preferring their going into the mill, and not finding any person there; so that on seeing every operation performed by machinery alone more perfectly than it was possible by the hand of man, they would be

fully convinced of its utility. They stayed in the mill about half an hour, then came and requested him to go in and explain, which he did; and after parting, went back to the hay. He supposed they were perfectly satisfied, but soon after heard that on their return, they reported the whole to be a *set of rattle-traps*, unworthy the notice of any man of sense; which fixed, more firmly, the opposition of all the rest.

A year or two after, he exhibited the model of a mill (which he had made to send to England) in the streets of Wilmington, Delaware, when a number of respectable men gathered around, and were admiring it. They espied a Brandywine miller on the opposite side, whom they called to see it, and so completely shamed him, that he said with apparent reluctance, "Oliver, thee must come tomorrow morning, and prepare to set it up in my mill." When the whole was set in motion, in the completest order, in the mill, all the millers round the hopper-boy remained in silent astonishment, until one of them exclaimed, "It will not do! It cannot do!! It is impossible it should do!!!"—it doing perfectly well at the same time.

In accordance with the advice of his friends, the Latimers, he petitioned the Legislatures early in the year 1786; and acts were passed early in 1787, in Pennsylvania and Delaware, in favor of his improvements in the manufacture of flour; and in Maryland and New Hampshire for the same, including carriages to be propelled by the powerful Steam Engine which he had invented. During this year, while waiting on the Legislature of Maryland, he was introduced to an old sea captain, named Masters, at Annapolis, who had obtained the name of a projector, by having contrived a machine to draw trees up by the roots. At the Captain's request, Evans explained his Columbian Steam Engine, that he might explain it to the engineers and people of England.

Soon after the establishment of the present Federal Government, the first Patent Laws were passed, and Evans applied and obtained a Patent for his mill improvements, dated January 7th, 1791, thereby relinquishing his State Patents. These inventions were one of the three objects for which patents were granted during the first year that the present Patent Office was in existence. His price to those who wished to avail themselves of his improvements, was so small, that the term of his Patent right expired without sufficient money in hand to compensate himself and his agents for their time and expenses; besides, leaving by supposition some \$10,000 in the hands of infringers of his rights, who neglected or refused to pay.

About this time he removed to Philadelphia and kept a Flour store at the corner of Ninth and Market Streets. Nearly the same time, he met with a description of the curious toy called the pulse-glass; and at once he conceived that the principles and operations therein, might be applied to mechanical purposes, for raising water, or turning mills. He set his mind immediately to discover the means of application. After being engaged in this study, at leisure hours, for nine years, and having formed a great variety of plans, of which none appeared sufficiently simple to be worthy of experiment, he at last brought forth what he considered, "the simplest and perhaps most philosophical steam engine ever con-

ceived." Specifications and drawings thereof, described, were filed by him in the Patent Office, that they might not be lost. He also sent drawings and descriptions to England, by Joseph Stacey Sampson, of Boston, for the purpose of seeking some one to take out a Patent there, on shares with him; but Sampson wrote from London, that he could find no one to believe the scheme would prove useful; they could not understand the project, and had no faith in it. "Thus, at the age of forty" Evans says of himself, "I was reduced to such abject poverty that my wife sold the tow cloth which she had spun with her own hands, for clothing for her children to get bread for them; my head was covered with many gray hairs, and I required spectacles." This was brought about especially by his intense study in the preparation (for three years previous) of his *Millwright's and Miller's Guide*; the first practical work, it is believed, on the subject of mill construction, published by an American author. But when finished and ready for publication, he had not the means, and it would probably have been lost, had not John Nicholson, Esq. been informed of the case, and his circumstances, who assumed the expense to the amount of a thousand dollars. The first edition of his work appeared in 1795, and amongst the names of the subscribers thereto, were George Washington, Thomas Jefferson, Edmund Randolph and Robert Morris. Evans thought it would sell rapidly, but in that he was sadly disappointed. Many had subscribed to encourage the work, who did not really want it. 2000 copies were published, some few of which sold at three dollars. "My agents," says he, "carried them to show the millers and millwrights, and gave away a great proportion of the edition to them, by orders from me, for the purpose of getting my improvements introduced. One of my agents traveled for *thirteen years*, to instruct millwrights and millers to make and use the improvements, and to sell licenses; he often declared his belief that he rode about 100,000 miles on that business." Evans having prepared a plate and printed descriptions of his improvements in the manufacture of flour, distributed them in different parts of the United States, to be set up in public places. One of his brothers traveling to disseminate the improvements, put up at a tavern where one of these plates was placed. He observed a number of Germans looking at it, and heard one of them exclaim, "now dis mus peen sum tampt lazy fellow do mak dem gondrivers; quite too lazy to work," which was confirmed by a hearty laugh. At another time, a German falling into conversation with Evans himself, at a public place, and not knowing him, informed him amongst other things, "that a grazy man comes py our millers, he tinks he gut mak wooten millers."

In 1801, he commenced, and at a cost of \$2000, besides his own time and labor, which he valued at \$1000 more, at last, produced a steam engine, realizing in practice, the whole of his theory; and in the winter of the following year had it in full operation, its performance exciting considerable attention and curiosity.

During the next year, he became the first regular steam engine builder, in the City of Philadelphia, at the Mar's works, on the corner of Ninth and Vine Streets.

About this time he entered into a solemn contract with a Mr. Edwards, Engineer, from England, and spent two months in furnishing him with complete

drawings and specifications and descriptions of his Columbian, Inexhaustible, and Volcanic steam engines; all of which he could execute, and set up with his own hands. Edwards sailed from Philadelphia, but Evans never heard a word from him.

When Evans petitioned the Legislature of Pennsylvania for the exclusive right to his improvements in making wool and cotton cards, steam carriages, &c. the committee to whom his petition was referred, conceived him to be crazy, because he said he could make steam-wagons, and would have nothing to do with it, notwithstanding the utmost efforts of the above named George Latimer, Esq. to convince them that all his inventions were worthy of their attention. While Evans was exhibiting his little steam engine in Philadelphia, during this year (1803) driving 12 saws, cutting stone at the rate of 120 feet in 12 hours, he discovered the Chairman of the said committee in the crowd of spectators, viewing the powerful operations with evident marks of astonishment. Saluting him, he said, "Sir, this steam engine goes on the principles with which I had intended to propel my steam carriages when I petitioned the Legislature in 1786, or '7, and which I endeavoured to explain to the committee. If you had granted me then, the exclusive right for 25 years, it might have been driving wagons, boats and mills many years ago." His reply was, "to tell the truth, Mr. Evans, we thought you were deranged when you spoke of making steam wagons."

On the 26th of September 1804, he laid before the Managers of the Philadelphia and Lancaster Turnpike Company, a comparative statement, in detail, of the superiority of his steam engine to transport merchandise from Philadelphia to Columbia, and from thence to Philadelphia, over the tedious and expensive method by horse wagons, asking an appropriation, by them, of the sum necessary to put it in operation. The Company, however, declined to accept his proposition, having no confidence in it.

In the month of December, following, Evans petitioned Congress to extend the term of his patent for an exclusive right to his improvements on flour-mills; in which petition he gives an insight to the ups and downs of an inventor's life. It was referred to the Committee of Commerce and Manufactures, to whom he gave a more comprehensive statement of the various objects he had in view. The Committee reported favorably, and obtained leave to bring in a bill. By the principles of this bill, every patentee who survived the first term of his patent, had the privilege of extending it for another term of seven years, provided he had complied with the requisites necessary for taking out the original patent. The bill was well received in Congress. Evans was highly pleased at the prospect which now opened, of his becoming instrumental in rescuing his fellow laborers, when engaged in new and useful discoveries and improvements, from the oppression, perhaps injustice, and privations, under which they generally labor, and placing them on equal ground with the rest of mankind. During these flattering appearances, he issued proposals for publishing by subscription a new work, to be entitled "The Young Steam-Engineer's Guide," that he might be collecting subscribers while waiting the passage of the bill. But on the third reading, a most energetic opposition arose on grounds unexpected; the friends of the bill were not prepared to meet

the arguments used, and it was consequently lost. He says of this, "his plans have thus proved abortive, all his fair prospects are blasted, and he must suppress a strong propensity for making new and useful inventions and improvements; although, as he believes, they might soon have been worth the labor of one hundred thousand men."

Notwithstanding all these trials, during this same year he constructed for the Board of Health of Philadelphia, at the corner of 9th and Market streets, a machine for cleaning docks, which he called, the Orukter Amphibolos or the Amphibious Digger. There were other dredging machines in existence, but this was the first, moved by the application of steam. It consisted of a heavy flat-bottomed boat, 30 feet long, and 12 feet broad, with a chain of buckets to bring up the mud, and hooks to clear away sticks, stones, and other obstacles. These buckets were worked by a small steam engine of five horse power, set in the boat, the cylinder of which was five inches in diameter, the length of stroke, nineteen inches; and the weight of the whole machine, was equal to two hundred barrels of flour. "To shew," says he, "that both steam carriages and steam-boats were practicable (with my steam-engine) I first put wheels to it, and propelled it by the engine a mile and a half up Market street, and around Centre Square, to the river Schuylkill. I then fixed a paddle-wheel at the stern, and propelled it by the engine, down the Schuylkill, and up the Delaware, 16 miles, leaving all the vessels that were under sail full half way behind me, (the wind being ahead,) although the application was so temporary as to produce great friction, and the flat most illy-formed for sailing; all of which was performed in the presence of thousands." There are those now living, amongst whom I may name, the venerable John McAllister, father of the well known, present, Opticians, on Chestnut street, Philadelphia, and Dr. Elder, of the same City, who were eye-witnesses of the performance of this singular craft. While the experiment was being made, some wags exultingly ridiculed it, saying, "it went quite too slow ever to be of any use for carriages," to which Evans replied, "if you will, amongst your jockeys, make up a purse of \$3000, I will make a steam carriage that shall outrun the swiftest horse you can produce, on a smooth, level, hard bottom."

This successful attempt to move a locomotive carriage in the streets of Philadelphia, and a boat on the Schuylkill, with the same apparatus, by means of paddle-wheels, in the opinion of the British Engineer, Mr. Galloway, fully establishes his claim to the first contrivance of a practical steamboat "

In a work published by Evans some time after this experiment, after giving an account of its success, he adds by way of a foot-note, "Mr. Evans makes no pretensions to exclusive right to steamboats, although he believes that he was the first in the United States who conceived the practicability of propelling both carriages and boats by steam. Yet Fitch, Rumsey, and others were engaged in making steamboats as early as 1784, 5, 6, or 7, and succeeded to make them run perhaps as fast as Fulton has yet done. But at that time (1814) the profits did not so well support the expense, where they were tried, so they were abandoned. Rumsey went to England to introduce them there, and died. Fitch went to introduce them on the Western waters, and died also, before he succeeded. Mr. Evans only

claims the right to apply his own steam-engine and other improvements which he invented for the purpose of being applied to his boats and carriages, and which he endeavored to induce Fitch to adopt, as early as in 1784-'5, or '6, but could not prevail on him."

During the years 1804 and '5, quite a sharp written controversy was carried on between Evans and one John Stevens, of Hoboken, New Jersey, the latter intimating that Evans had "stolen his powder," whereas, it seems, the reverse was the fact. A part of this controversy was based upon a printed Circular Letter, which Evans laid before the members of Congress, individually, in the month of January 1805, giving a concise description of the principles of Steam-Engines and especially of his inexhaustible and volcanic steam engines, and his perpetual Still. His letter was sent by Dr. Mitchell, a Senator from the State of New York, to his friend, Dr. Miller, one of the editors of a periodical work called, "The Medical Repository," for publication. Stevens having read it, thought proper to publish an answer in the very same number of the work.

About this time Evans published his "Steam Engineer's Guide," to explain the principles of his inventions, which he considered "as abstruse and difficult a work as ever was published." In this year, also, he entered suit in the United States Circuit Court, against Benjamin Chambers, for infringement, &c., which resulted in his (Evans') favor.

On the 5th of October, 1805, he published another work, entitled, "The Abortion of the Young Steam Engineer's Guide," to meet the arguments of his opponents, which caused the failure of Congress to pass the Act for his relief, as hereinbefore mentioned. The book contains "An investigation of the principles, construction and powers of Steam-Engines; a description of a Steam Engine on new principles, rendering it much more powerful, more simple, less expensive, and requiring much less fuel than an engine on the old construction. A description of a machine, and its principles, for making ice and cooling water in large quantities in hot countries, to make it palatable and wholesome for drinking, by the power of steam; invented by the author; and a description of four other patented inventions," with an appendix containing a concise account of the invention and improvements of Steam-Engines, and also, the controversy between himself and Stevens.

A short time afterward, reflecting upon these trials and discouragements, he says, "I was left in poverty at the age of 50, with a large family of children and an amiable wife to support, for I had expended my last dollar in putting my Columbian Steam Engine into operation, and in publishing the Steam Engineer's Guide, a work still more difficult and abstruse than the Millwright's Guide, to explain my principles, and those improvements. It had brought on grey hairs again, and the use of spectacles, and greatly injured my constitution and health a second time, but which I soon regained upon quitting intense study, and resuming active bodily exercise—but the grey hairs and the use of spectacles I could never get rid of."

A year after, an opinion by a Judge of the United States Circuit Court was communicated to him, that a patent right for a useful invention was an infringe-

ment of the public right. To infringe the public right he despised; and on account of this decision, in a fit of vexation and despair, at the request of all his family in heart-rending tears (because they had reduced them to abject poverty) he committed the drawings and specifications of eighty inventions and discoveries to the flames, wishing to rid himself of their burden, that he might pursue the means of procuring an honest livelihood without infringing the public rights.

On the 23d of October, 1807, in the Circuit Court of the United States for the District of Pennsylvania, before Judges Washington and Peters, he was non-sued, on account of a deficiency in the description of an invention; its butts and bounds were not described, infringements could not be ascertained. The Judges, therefore, declared the patent invalid, null and void. Whereupon, on the 21st of January, 1808, he presented to Congress a petition stating the facts; and, on the day following, an Act for his relief was passed and Letters Patent granted, securing to him exclusive right, and extension for fourteen years. This Act stimulated his inventive genius considerably, so that, against the current of prejudice and opposition he was enabled to push forward his improvements on Steam Engines to such an extent, that in a few years he had constructed and put in operation no less than twenty-five Engines, in Pittsburg, Natchez, Cincinnati, Louisville, Frankfort, Lexington, Middletown, (Connecticut), Providence, (Rhode Island,) and other places throughout the States. Now he strove to retrieve from their ashes some of his most important inventions, specifying them over again, with great labor, leaving them to await their time when, as he himself states, "Congress shall make it possible for any of my posterity to put them into operation." But he was not to enjoy the advances he had made, without opposition. A memorial was presented to Congress by John Worthington and others, complaining of the injurious effects of these Letters Patent, on account of certain innovations of Evans, between the expiration and renewal of his patent, and the high prices at which he rated his licenses. Evans also presented a memorial. They were both committed to a committee of the Senate, who, on the 22d of February, 1813, reported through Mr. Bayard, "That the subject of the memorials is of considerable interest and importance to the community, and involves difficulties which would require more time and patient investigation fully to understand than can be bestowed upon it during the remnant of the present session," and asked to be discharged.

Previous to this time, the Brandywine millers were his studied opponents, now the Baltimore millers beset his way, with considerable opposition. Evans instituted suits against them as infringers of his rights, which were tried before the Circuit Court of the United States for the District of Maryland, Judges Duval and Huston being on the bench. Upon a few days sifting of the whole matter, verdicts were obtained in favor of Evans, upon all the suits instituted. Considering that these verdicts were rendered in a Maryland Court, by a Maryland jury, against a stranger, surely is an evidence of the lawfulness and justice of the verdicts. Yet the defendants were not at all satisfied, nor did they allow the matter to pass without further effort. On the 28th of December, 1813, they presented a memorial to Congress, "praying relief from the oppressive operation of Oliver Evans' Patents" * * * "with evidence to show that the said Evans was neither the original in-

ventor nor first applier of said machinery, and consequently not entitled to the reward," &c. But the committee of the Senate, to whom it was referred, deemed it improper to interfere with a decision which properly belonged to the Judiciary, and upon which they had passed their verdict; and hence, they reported adversely to the petition of the memorialists. A letter from Thomas Jefferson, presented with other documents in the above mentioned petition for relief, contains some very unsound views in regard to the Patent Right System. According to his theory, Archimedes should have been the patentee and not Oliver Evans, for his Steam Engine and Mill Machinery. The inventor alone should be entitled to a Patent and not the applier. On the 7th of January, 1814, Evans answered this memorial of the Baltimore millers, and the letter of Jefferson, fully and satisfactorily, which was published in "Niles' Weekly Register," as an addenda to volume V, under the sarcastic title of "A Trip made by a small man in a wrestle with a very great man."

In this answer, he says, "The mind of the inventor was entirely too fertile for his means. When he applied to the millers of his vicinity to contribute to the expense of constructing and maturing his improvements in flour mills, and to share in the use of them when completed, they refused, and no one could be found to pay anything. Of this he complained to influential gentlemen, who advised him to petition the legislature for exclusive rights—and thus originated his first application to government, before the patent laws or federal government existed. He observed at that time, 'that if government would purchase all his inventions (meaning all that have been named) and sell licenses to the people, it would be sufficient to pay the public debt and free the country from taxes.' These were his expanded conceptions at that early period, and these are but a part of what he has conceived. At that time he had but feint conceptions of the opposition to the introduction of his improvements, and the insult, abuse and robbery, he had to meet as soon as the value of his inventions would appear, of the great labor and expense of maturing his improvements, of the tedious law-suits he should have to sustain, to defend his rights, to wear away his patent term before he could begin to realize any profits. Now the great thirst many would have to be thought the inventor, after the utility of his discoveries should be known—the numerous and false pretensions they would set up, the intrigues and corruptions that would be practiced to support their claims and defraud him of his rights; the powerful combinations that would be formed by the unjust and hypocritical to calumniate him, the glaring falsehoods that would be propagated to excite the indignation, even of the best and most just, most eminent men against him, until they could be undeceived. Little did he think that 29 years should pass away, instead of 14, before half of his improvements could be commenced, or that they should die with him."

He also alluded particularly to the immense sum, annually, which his inventions would produce in the hands of the government, which he desired would purchase, or take in charge. "The writer forbears to calculate the vast amount, for the reader would say the man is deranged. The whole truth would not bear to be told in this case; for the Indian who had seen Fitch's steam-boat, when he returned to his country, and was relating the many wonders he had seen, was listened to un-

til he said he had seen a great canoe run up stream by fire and smoke, was knocked down by one of his hearers, who exclaimed, 'I knew that you were lying all the while, but this is too great a lie to be borne with!'"

In another place he says concerning his mill improvements, "I may suppose that those who have refused to use my invention for thirty years since they might have had it, have hired and paid at least 3000 millers, at the expense of 300 dollars each for wages and boarding per year for thirty years, amounting to the enormous sum of 27,000,000 dollars, which my improvements might have saved them in labor. But as there is ten times as much gained by the improvement of the manufacture, as there is in labor, that saving or gain would amount to 270,000,000 more, making a total of 297,000,000 of dollars—enough to pay the National debt. If the figures have erred in making the sum too large, I am not the inventor of them; all will allow that the labor is saved." And again, he says, "if they," (the United States) "had purchased or had taken control of all his improvements, and sold licenses at their own price, they would have defrayed the entire debt of the Nation, paid the current expenses of the same, and freed the people from the payment of any Tax whatsoever."

During this year, he published, in the form of a satire, under the assumed name of "Patrick N. I. Elisha, Esq., Poet Lauerate," his celebrated "Patent Right Oppression Exposed," dedicated "to the Right, the Honest millers throughout the United States." It is a sharp, stinging rebuke of those who so persistently and unreasonably attempted to interfere in his dearly purchased rights, in the use of his many inventions. In this work, we find the celebrated "Prophecy by the Poet," that "the time will come when people will travel in stages moved by steam engines, from one city to another, almost as fast as birds fly, fifteen or twenty miles in an hour. Passing through the air with such velocity, changing the scene in such rapid succession, will be the most exhilarating delightful exercise. A carriage will set out from Washington in the morning, the passengers will breakfast at Baltimore, dine at Philadelphia, and sup at New York, the same day. To accomplish this, two sets of rail-ways will be laid so nearly level as not in any place to deviate more than two degrees from a horizontal line; made of wood or iron, or smooth paths of broken stone or gravel, with a rail to guide the carriages, so that they may pass each other in different directions, and travel by night as well as by day; and the passengers will sleep in these stages as comfortably as they now do in steam stage-boats."

Two years before his death, in reviewing the past, he says, "if I could receive the value of the flour that my improvements save from waste, or one dollar out of one hundred that the millers gain by their use, or one-sixth part of the interest for one year only, of the sum they may gain by their use in fourteen years, more than they can gain without them; or if I could receive one dollar out of a thousand that my country may gain by the use of my Columbian steam engine, more than by that of Watts and Bolton, for fourteen years only, I would be quite independent and satisfied."

If patents had been granted me at first for twenty-eight years instead of fourteen, I believe I could have found aid to put into operation for steam mills, boats and carriages twenty years sooner than they have been or will be, ten times as

many of my useful discoveries as I have been able to get into use; and my patents would now have expired, and the public been in full possession of them—but they lay dormant or are lost; I have abandoned them in disgust, deeming my talent lost, for I am sixty-two years of age, and my time is wholly engrossed in law-suits, having fifteen of the most eminent counsel engaged, to recover the small sums I demand, and to defend my rights. And I believe there are hundreds if not thousands of useful discoveries of others, dormant also, for want of the patronage which would not cost the public a cent, nor monopolize or deprive any person of a single right.”

On Sunday morning, April 11th 1819, the extensive buildings, occupied by Evans, as a foundry and factory, on the Ridge Road, Philadelphia, were set on fire, in a wanton, unprovoked and mischievous spirit, by a lad of about 20 years of age. The loss, in mouldings alone, was estimated at \$15,000. Doubtless, this had something to do in hastening his death, for in one of the newspapers of the day, published on the Saturday following the fire, we read, under the head of “Deaths,”—“at New York, on Thursday, the 15th inst, at the house of Elijah Ward, Oliver Evans, Esq., of Philadelphia, in the 64th year of his age. His remains were interred yesterday afternoon.” He died, neglected and poor; adding another witness to the words of Franklin,—“A man’s useful inventions, subject him to insult, robbery and abuse.” And, as a greater than Franklin has said, “and herein is that saying true, one soweth, and another reapeth” * * * “other men labored, and ye are entered into their labors.”—John 4: 37, 38.

Oliver Evans, was about 5 feet 8 inches in height, rather portly, but very active. He was the first man that took possession of property at “Bush Hill,” in the northwestern part of the City of Philadelphia. From his foundry at Ridge Road and Vine streets, were sent forth, a goodly number of prominent mechanics.

Few, if any, capital improvements have been introduced into the machinery of Flour mills since his time, although numerous minor changes in the manufacture and running of the stones, and in the bolting apparatus, have been patented and adopted. His machinery is now in almost universal use in the extensive merchant-mills of this country, and has been very generally adopted in Europe, and particularly in Great Britain.

So great has been the influence of the high-pressure Steam Engine, and other contrivances of Evans, so admirably adapted to the use of all kinds of factories as to justify the eulogium of a talented writer, in an address before the American Institute, in New York, in 1850 (S. G. Arnold, Esq.) who says, respecting their inventor, “Wherever the steam mill resounds with the hum of industry, whether grinding flour on his native Schuylkill, or cutting logs in Oregon” (and the same might be said of the Steam Engine) “there do you find a monument to the memory of

OLIVER EVANS.”



THE PUBLIC

This Work proposed by the Author, about two years ago, to be published by Subscription, was long as the Subscription was kept open. But, reflecting on the expense of the Paper, and the small number of Subscribers, he has thought it better to publish it in a single Volume, and to sell it at a moderate Price. The Work, being now done, he has thought it better to publish it in a single Volume, and to sell it at a moderate Price. The Work, being now done, he has thought it better to publish it in a single Volume, and to sell it at a moderate Price.

THE DESIGN OF THE WORK

- 28. TO give a regular System of Mechanics, and Hydraulics, adapted to common capacities and education, enabling Mill-wrights, and Millers, to understand with ease the principles and powers of Water in its various applications upon Wheels, in various modes of application.
- And here it will be attempted to show, the several defects and mistakes, of some established Theories, which besides leading to error in Practice, produce useless Expense, and to substitute some new principles better agreeing with experiment and practice.
- 29. To simplify the rules for applying the Theories to practice, in determining the power of water on all the improved constructions of Wheels, according to the given quantity, and fall from one foot to thirty-six, in proportion to the Mill-stone, to the power of the Mill-leat, and in proportioning the Gears in the motion of the Water-wheel, communicating the proper motion to the Mill-stone, or other parts of the Mill-system.
- 30. From these again, to form a set of Tables, wherein those not much used to calculation, will readily be

the relative, proportions of the Mill-stone, to the power of the Mill-leat, and in proportioning the Gears in the motion of the Water-wheel, communicating the proper motion to the Mill-stone, or other parts of the Mill-system.

PRINCIPAL ARTICLES OF THE CONTENTS.

PART I.—MECHANICS.

- 1. MOTION considered as the Foundation of Mechanics.
- 2. Gravity and Elasticity the first moving Principles of all Mechanics.
- 3. The Power of Elasticity unknown.
- 4. Of Motion and its Properties.
- 5. General Laws of Motion.
- 6. Of the Momentum or Force of Bodies in Motion, and the Difference between the Force of Elastic and non-elastic Bodies—Demonstration that their Effects produced, are as the Squares of (and not as the Simple) Velocities.
- 7. Laws of the Motion and Force of falling Bodies—A Table of their Motion.
- 8. Laws of the Motion of Bodies descending inclined Plains and curved Surfaces.
- 9. Motion of Projectiles.
- 10. Laws of circular Motion and central Forces.
- 11. General Laws of Mechanical Powers.
- 12. General Rule for computing the Powers of any Engine.
- 13. Rule for computing the Power of a Compound of Levers, applicable to Mill-wheels.
- 14. Power and Velocity, in inverse Proportion to each other—Therefore,
- 15. Demonstration, that no real Power can be gained by large Wheels in Mills.
- 16. Ditto, that no Power can be gained by double Gears to turn Mill-stones.
- 17. Of the Pulleys.
- 18. Wheel and Axle.
- 19. Inclined Plain.
- 20. Wedge and Screw, their great Powers compared.
- 21. Of Friction, the Loss of Power shown to be to overcome Inertia, and not Friction.
- 22. Of Flies-huels, their Principles, and where useful.
- 23. Laws of Friction, means for reducing it—Rollers applied to reduce it.
- 24. Of the Maximum Velocity and load for Engines, by the old Theories.
- 25. The old established Theory investigated by a Scale, and its Error shown.
- 26. Scale and Experiments made for discovering true Theories.
- 27. A Scale on a new Plan, by which a true Theory is discovered, that is, and Load of Engines, so as to produce the greatest Effect.
- 28. A Scale of the Proper Velocity, of the Circumferences of Overhaul, to produce the best Effect, with a steady Motion, and of the proper Distances.

PART II.—HYDRAULICS.

- 29. A Scale of the Force of Bodies in Motion, to produce Effects, as in Fluids and Solids, demonstrated.
- 30. The Hydraulic Paradox explained.
- 31. Theorem or Rule for finding the Velocity of Water flowing under a Gate.
- 32. Rule for calculating the Effect of any Gate of Water, under any Head.
- 33. Demonstration that the Effects of Water acting on Wheels by Gravity, directly.
- 34. Demonstration that Water acts with its whole Power, in the whole of its periphery.
- 35. Overhaul Wheel, without Loss, on account of its not being on the End of the Lever, as some have supposed.
- 36. Laws of the Friction of Water issuing through an Aperture.
- 37. Pressure of the Atmosphere, the cause of Water rising in Pumps, &c. Ditto, the Principles by which it rises in Water-spouts at Sea.
- 38. Common kind of Pumps for raising Water, explained.
- 39. Of conveying Water over Hills, under Valleys, &c. or under Ground, in Mill-wheels.
- 40. A Paradoxical Mill, that will not move empty, explained, the Principles of which often take place in a great many of a Mill.
- 41. A Breast or Pitch-back wheel does not run before the Gravity of the Water, after the Stroke, if there be too much Head, as does the overhaul—Theory of the Motion of Breast-wheels, Rule for finding it.
- 42. A new and simple Rule for measuring the Power of Water acting by Gravity—Power of 16 cubic Feet of Water per Second, acting by Five different Applications, on a Wheel, calculated, and their Difference shown—A Table of Powers per Second, of different Quantities of Water, under different Falls.
- 43. Rule for finding the Circumference and Area of a Spout, from its Diameter, and the Number of superficial Feet of water in a given Time—Table of the Falls of Water, Head above the Gate, and Diameter and Motion of the Wheel, number of Cogs and Rounds in the Gears, and Size and Motion of the Stone (and Power it required to turn several of them) of 18 good Mills in Practice—And Observations on a laid Table, that confirms the Theories in this Work established.
- 44. Rule for finding the Size of the Mill-stone to suit the Power of the Seat—Table of the Area of different sized Stones, and Power required to drive them, and the Quantity they will grind.
- 45. Directions for digging Canals through rocky Ground, in the cheapest Manner, to convey the Water to the Mill.
- 46. Theorem for determining their Size, to suit the Size or Number of the Mill-stones they are to drive.
- 47. Of Air-pipes, to prevent long tight Trunks from burling.

A P P E N D I X

AN attempt to show the Rules or regular Steps that are necessary, and have been taken, in the Discovery of several useful Improvements—intended to excite others to take the like Steps, and make further Improvements.

E X E M P L I F I E D,

- 1. In improving the Art of Threshing Grain.
- 2. ————— Clearing ditto.

C E R T I F I C A T E

WE have for perused the manuscript copy, of a work, proposed to be published by Oliver Evans, entitled, "The Young Mill-wright and Miller's Guide," and are satisfied that it will be useful to Mill-wrights and Millers in particular. And therefore we think it merits, to be published to the Public.

DAVID R. PATTERSON,
J. B. BORDLEY,
GEO. CLYME,
ANDERSON, FLACK, TOWN, Millwrights.

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Vol. 1.

No. 3.

HARKNESS' MAGAZINE

SCIENCE
LITERATURE

CONTENTS.

- | | |
|--|-----------------------|
| Finding the Mississippi, <i>(Illustrated)</i> . | Rev. Charles D. Shaw. |
| The Minstrel's Curse, <i>(Translation)</i> . | James McCabe. |
| The Birth of Odd-Fellowship. | Henry Eckel. |
| Reveries of an Old Man. | Prof. G. K. Godfrey. |
| Hospitals—Now and Then. | Emma Worrell. |
| "Voice of Masonry." | William Rounseville. |
| The New Bridge at Brandywine, <i>(Illustrated)</i> . | M. T. C. |
| (The One Hundred Dollar Prize Story). | George McDonald. |
| Wilfrid Cumberland, <i>(Illustrated)</i> . | |
| Old Houses of Worship, <i>(Illustrated)</i> . | |
| History of Wilmington, <i>(Chapter III)</i> . | Francis Vincent. |
| Stories about Parrots. | |

EDUCATIONAL DEPARTMENT:—Our Debating Society; Education in Delaware. Educational Institutions; Normal Schools.

CHILDREN'S DEPARTMENT:—The Story of a Pine Chip—An Object Lesson; Marion Gray, *(Illustrated)*, by M. T. C.; Mrs. Sigourney's Girlhood; Compulsory Education, by Geo. S. Burleigh.

EDITORIAL DEPARTMENT:—A Reply to an Attack upon our Contributors; What the American Press says in Acknowledgment of the Talent of our Contributors; Report on the Award of Premiums; Credit Moblier; Lying Congressmen Doomed; General U. S. Grant, *(Illustrated)*; Kindness to Animals; More Prizes.

MANUFACTURERS' AND MECHANICS' DEPARTMENT:—A Sketch of the Life of Oliver Evans, by Rev. Geo. A. Lattimer; The Mechanical Science and Art Developed in Making Carriages; The Requisites of—*and* How to Build—a First Class Carriage.

JOHN C. HARKNESS
WILMINGTON, DELAWARE.



MARCH, 1873

dead. And while living please do not forget that your interest in the concern gives you editorial influence. Hence a hint to the wise, get the best friend you have in the world, outside of your family, to pay you one dollar for a year's subscription to HARKNESS' MAGAZINE, to which send it, at *Wilmington, Delaware*, and believe you have sown seed in good soil, and that seldom in your lifetime have you done a wiser act.

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Therefore let no Delawarean forget the value of that dollar, or fail to send it to us immediately. Thousands of the friends of Delaware in other States, are helping her also to get what the most of them heartily rejoice in,—AN ORGAN WITH A NATIONAL CIRCULATION. LET DELAWARE BE TRUE TO HERSELF.

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MANUFACTURERS' AND MECHANICS' DEPARTMENT.

A SKETCH OF THE LIFE OF OLIVER EVANS,—A REMARKABLE MECHANIC AND INVENTOR.

BY REV. GEORGE A LATIMER,

Rector of Calvary Church, Wilmington, Delaware.

The following sketch was prepared in compliance with a resolution of the Historical Society of Delaware, and was read at its annual meeting, on the 10th of October, 1872. It was also read on the occasion of the opening of the Wilmington and Western Railroad, on the 19th of October, 1872.

The opening of a new Road is not a single work, but has its manifold connections with persons, places and things. The Geographical, Historical, Biographical, Commercial, Mechanical, Scientific, Artistical and even the Moral, are all thereby developed. Hence the inestimable value to the immediate neighborhood, the State, and the Country of any such enterprise. It brings into activity, latent power, mental, moral, social and political; which power seems to fall in, as a necessity, to meet the rapid progress of the world at large. If this be true, what an incalculable advantage to the State of Delaware is the opening of such a Road as the Wilmington and Western Rail Road within its boundaries. With a splendid terminus on the Christiana near the Delaware River, at the busy City of Wilmington, increasing wonderfully as it has for the past few years, in size, population and business—running through a magnificent and fertile portion of the State,—crossing other roads in the same State, and connecting with roads in other States—it is destined to make immense advances in all departments of our Commonwealth.

THE BIOGRAPHY

which this road has called up from the depths of forgetfulness, is that which concerns us, in this article. Biography, which would, otherwise, have scarcely been recovered from the mouldering remains of by-gone days. How strange! that the opening of the Wilmington and Western Rail Road should call forth, as it were, the spirits of those who were first and foremost in the propulsion, by steam, of carriages, over land and water, in this and other countries.

Fulton, on his farm at one end of the line—Evans, in his mill at this end. From first to last, as their names are now united by the iron rail, so were they united in their experiences, while living. In childhood, while other boys of the same age were at play, they were both engaged in planning, drawing from the very amusements of their companions the foundation stones of all their future, noble, and world-renowned designs and inventions. As they opened their secret thoughts to the public, and gave their plans to the world, each received as his reward, the ridicule of the community. And after struggling against opposition, and at times, even beggary, they departed this life, leaving a name, and not much more, to their bereaved children.

It was once observed concerning one of the smallest of the cities of Palestine, "though thou be little among the thousands of Judah, yet out of thee shall He come forth, that is to be Ruler in Israel." "And of Zion, it shall be said, this and that man was born in her." Thus have certain places been made memorable, not by their size, nor beauty, nor wealth, nor power, but by the birth of some, perhaps, poor and apparently unknown individual, within their borders, who afterward became famous in the annals of the world. Many great men, great minds, have come from little, quiet, unnoticed, out-of-the-way places. The surroundings were very unpretending and unfavorable, yet all the time, great powers of mind were being developed therein.

The little town of Newport, Delaware, is one of these places. Near its borders was born the subject of this sketch, who, though not always a resident, lived long enough thereabouts to have the saying applied to it, *This man* was born there; and thus gave to it, a name and a degree of importance. From this place, from this individual, has gone forth the development of a power which has benefited the world. Although the source of intense labor, mental and physical, to him, yet to us, what pleasure to see the gradual growth of a thought—an idea assuming shape; rude and apparently unmeaning at first, becoming the substantial, graceful, useful machine, used in nearly all the civilized portions of the globe, almost essential to the health and happiness, the progress and prosperity of mankind.

OLIVER EVANS

was born in Newport,* New Castle County, about three miles south of Wilmington, in the State of Delaware, in the year 1755. He was the son of Charles Evans, and a descendant of the Rev. Evan Evans, D. D., the first Episcopal Minister in Philadelphia, who died in 1728.

He had seven brothers, named respectively, Joseph, Thomas, Theophilus, John, Jonathan, George and Evan. His father owned the property in Newport, now in possession of John Jordan, John Evans and John Stewart, and fifty acres more or less, now owned by Franklin Fell Esq., and upon which the Faulkland Spice Mills are located, on the Faulk Road. Oliver seems to have been born with an inventive mind, which manifested itself early in life, walking with his head downward, his hands behind him, as if in a deep study.

When a mere boy, he was led to the study of the possibility of moving land carriages without animal force, which he considered a very desirable object. He had heard of various attempts having been made, by means of cranks, wheels, pinions, springs, wind, &c., all of which appeared to him, as too futile to be worthy of application, for the want of original power. When about 18 years of age, being an apprentice to a wheel-wright, on a Christmas evening, one of his brothers informed him that he had that day been in company with a neighboring blacksmith's boy, who for amusement had stopped up the touch-hole of a gun barrel, then put in about a gill of water, and rammed down a tight wad; after which they put the breech of the gun in the smith's fire, when it discharged itself, with as loud a crack as if it had been loaded with gunpowder. "It immediately occurred to me," says he, "*here is the power that I want to propel my wagon*, if I knew how to apply it, and I immediately set myself to work to find out the means." From this simple amusement of the boys, he discovered that great fundamental principle in nature, the increase of the elasticity of steam, by a more rapid ratio than the heat of water may be increased, and that this principle could be applied to work very light and powerful engines, to propel land carriages and boats; which discovery finally produced his Columbian Steam Engine, which for 43 years he endeavored to introduce into public use. Here we see the development of a thought.

At the age of twenty-two, he discovered and invented two machines for making wool and cotton cards, to take the place of the tedious hand-tools then in use. His time was so much occupied, that it was a long while before he could find leisure to test the principles of his discovery, until he met with an accident, being dangerously wounded in the foot, by a scythe. While in this condition he took the opportunity and succeeded in making small models, with wood. His father's family becoming acquainted with his plans, united argument with ridicule to dissuade him from what they termed his *visionary* schemes. Not succeeding in their efforts, they gave him up as lost, as a "metamorphosis" from an industrious man to a whimsical projector. Indeed, such little value was attached to his model, that even the blacksmith to whom he

*Since the above was in type, authentic information has been received, that OLIVER EVANS was not born within the bounds of Newport, but on the property now belonging to Mr. John Jordan, in Christiana Hundred, New Castle County, Delaware, between two and three miles north-west of said village.

applied, considered it a useless gim-crack, and Mr. Evans, an infatuated inventor. The blacksmith refused to work for him, on such visionary schemes, until George Latimer, Esq., (who about that time was a member of the Legislature of the State of Delaware) by his persuasive arguments, aided by the eloquence of some good old Jamaica spirits, of which no other person had any near that place, at that time of scarcity, and which he promised to place at the smith's service while on the work, prevailed on him to undertake the job; which succeeded so well, that they all changed their language, and nothing could surpass the wonderful ingenuity of Oliver. The card manufacturers of Wilmington, having learned the excellent qualities of his machinery, made offers for the secret, but so patriotic was Evans, that he could not think of selling it to individuals, to the exclusion of the public; and, as the Legislature of Pennsylvania was in session, he presented a memorial to it, stating the nature and importance of his discovery, and praying for the loan of \$500, to enable him to construct a wire-mill in the State of Pennsylvania, with a machine attached to it, for the purpose of bending and cutting the wire into card teeth, agreeable to the principles of his invention. The Legislature appointed a committee to take the memorial into consideration; who, like the parson in the fable, lavished their eulogiums, but would lend no money. After this, he showed his cards, and described his invention to a person of celebrity in the City of Philadelphia, stating to him the individual offers that had been made, but that he preferred the public loan. This person treated his patriotism with seeming ridicule, which caused him to relinquish all hope of success from that quarter, and he returned to Wilmington, where, urged by necessity, he contracted to make a machine which should manufacture five hundred complete card-teeth per minute, and obligated himself to keep the art a secret for two years, for the trifling sum of \$200, reserving only the privilege of selling one other machine. While this machine was being constructed, the contractors suspended their manufacture for twenty days, saying, so inferior was the old workmanship, when compared with Mr. Evans' method, that it only spoiled the wire. The machine was soon completed; and, instead of five hundred, as per contract, it made three thousand per minute, and so far exceeded their expectations, that they immediately contracted for the machine which had been reserved, and both parties were penally bound to keep the art a secret. It nevertheless became known, and others obtained the use of the machine.

A plan for pricking holes in the leather for two hundred pair of card-teeth in twelve hours, and also, for cutting, bending, and setting the teeth, soon after devised by him, he is said to have abandoned, because of his failure to secure a due share of the benefits of the previous invention.

In the following year (1782) he contracted, in company with two of his brothers, to build a merchant flour-mill in New Castle County, in the State of Delaware; and in the fall of 1783 left his store in Queen Anne's County, to superintend its erection.

He now began to study how he could make this mill exceed all others; and having been successful in inventing several useful improvements, he had strong hopes of succeeding in this also. He first conceived the great design of applying the power that drives the mill-stones, to perform all those operations which were hitherto effected by manual labor, viz: for receiving the grain from the wagon or ship, until manufactured into superfine flour, ready to be packed into barrels; but being neither millwright nor miller, he had first to ascertain what operations were to be performed by manual labor, and conceived it possible to execute the whole by the power of water, and that the improvement would be extraordinarily great. Intense was his joy when he found that the principles he conceived might be applied to raise both grain and meal, and convey them in any direction, or angle, ascending or descending, or horizontal, which joy was still further increased when he put the principles in operation, and were found to work very satisfactorily. These improvements in mill-machinery for the manufacturing of flour, consisted of the *Elevator*, or endless chain, with buckets to raise the flour or grain to any required

height; the *Conveyor*, to carry the grain or meal from one place to another; the *Hopper-boy*, to spread or gather the grain or meal, and thus to dry or cool it; and the *Drill*, to move the grain or meal in any direction, like the *Conveyor*, but by means of rakes instead of buckets; to which he added originally, the *Kiln-dryer*, to dry and cool the meal as it passed through the elevator, and hopper-boy. But these improvements, and their introduction into public use, cost an immense amount of time and labor,—a great expenditure of money which he could not well spare—much criticism and ridicule—and many law-suits. Months of the most intense thinking were spent in baffling with apparent absurdities, but hoping against hope, he worked with a zeal and dogged perseverance, peculiar only to inventors, until his ideas resulted in discoveries, inventions, and patents.

It is said, that the board on which he would lie for hours, cogitating upon his plans and improvements was only lately destroyed by fire at the burning of the old mill at Brandywine Springs, Delaware.

Some time in September, 1784, he declared to several individuals that he intended to build a flour mill that would perform what these improvements were intended to do, without the aid of manual labor in the attendance, but no one would believe it possible. He got the name of a visionary projector, about to ruin himself by attempting an impossibility. Yet his arrangements for the construction of the mill were so far completed, before he began to build, that he declared he had in his bed viewed the whole in operation with much mental anxiety.

On the 5th of September 1785, the mill was set in operation, in the old way, requiring three men, and a boy one-half of his time, to attend it, in the manufacture of 20 barrels of superfine flour, besides the middlings and stuffs every day. But on the introduction of his improved machinery, one man could always attend the mill, night and day, make the same quantity, (20 barrels of flour per day) and making about four barrels more out of every hundred bushels of wheat, than had usually been made. These improvements to the mill, though perfect in theory and in principle, met with many unforeseen difficulties on being put into practice; and besides, they were so expensive, that he was often greatly discouraged. Unwilling to proceed at his own expense in completing the whole of his improvements, he asked aid of the rich and established Brandywine millers, and others, by way of subscription. But they declined, saying, they believed no man, who had neither been bred a miller nor millwright, could ever make any improvement on the manufacture of flour *in their mills*; they believed the art to be perfect in their own establishments, and would not, therefore, subscribe a dollar; which refusal on their part, caused others to withhold any aid.

These Brandywine millers stood very much in his way, discouraging him by word and deed.

He showed his proposition to James Latimer, Esq., one of the millers, describing his invention and improvements. With a significant tone, he exclaimed, "Ah! Oliver, you can not make water run up hill, nor can you make wooden millers." But when he saw the hopper-boy doing its duty incessantly, day and night, better than man could do the same labor, he expressed great astonishment; and his son, the above mentioned George Latimer, Esq., coming in at that moment, advised him to petition the different State Legislatures for an exclusive right to use his inventions.

Evans now thought that every millwright and miller, as soon as they saw the mill in operation, would be anxious to adopt the improvements, yet these were the last to be convinced, and, generally speaking, the most violent opposers. One day in 1789, when superintending the mill, having left it to attend itself whilst he made the hay of a clover lot, he observed two of the Brandywine millers coming to view it. He pretended not to see them, preferring their going into the mill, and not finding any person there; so that on seeing every operation performed by machinery alone more perfectly than it was possible by the hand of man, they would be fully convinced of its utility. They stayed in the mill about half an hour, then

came and requested him to go in and explain, which he did; and after parting, went back to the hay. He supposed they were perfectly satisfied, but soon after heard that on their return, they reported the whole to be a *set of rattle-traps*, unworthy the notice of any man of sense; which fixed, more firmly, the opposition of all the rest.

A year or two after, he exhibited the model of a mill (which he had made to send to England) in the streets of Wilmington, Delaware, when a number of respectable men gathered around, and were admiring it. They espied a Brandywine miller on the opposite side, whom they called to see it, and so completely shamed him, that he said with apparent reluctance, "Oliver, thee must come tomorrow morning, and prepare to set it up in my mill." When the whole was set in motion, in the completest order, in the mill, all the millers round the hopper-boy remained in silent astonishment, until one of them exclaimed, "It will not do! It cannot do!! It is impossible it should do!!!"—it doing perfectly well at the same time.

In accordance with the advice of his friends, the Latimers, he petitioned the Legislatures early in the year 1786; and acts were passed early in 1787, in Pennsylvania and Delaware, in favor of his improvements in the manufacture of flour; and in Maryland, and New Hampshire for the same, including carriages to be propelled by the powerful Steam Engine which he had invented. During this year, while waiting on the Legislature of Maryland, he was introduced to an old sea captain, named Masters, at Annapolis, who had obtained the name of a projector, by having contrived a machine to draw trees up by the roots. At the Captain's request, Evans explained his Columbian Steam Engine, that he might explain it to the engineers and people of England.

Soon after the establishment of the present Federal Government, the first Patent Laws were passed, and Evans applied and obtained a Patent for his mill improvements, dated January 7th, 1791, thereby relinquishing his State Patents. These inventions were one of the three objects for which patents were granted during the first year that the present Patent Office was in existence. His price to those who wished to avail themselves of his improvements, was so small, that the term of his Patent right expired without sufficient money in hand to compensate himself and his agents for their time and expenses; besides, leaving by supposition some \$10,000 in the hands of infringers of his rights, who neglected or refused to pay.

About this time he removed to Philadelphia and kept a Flour store at the corner of Ninth and Market Streets. Nearly the same time, he met with a description of the curious toy called the pulse-glass; and at once he conceived that the principles and operations therein, might be applied to mechanical purposes, for raising water, or turning mills. He set his mind immediately to discover the means of application. After being engaged in this study, at leisure hours, for nine years, and having formed a great variety of plans, of which none appeared sufficiently simple to be worthy of experiment, he at last brought forth what he considered, "the simplest and perhaps most philosophical steam engine ever conceived." Specifications and drawings thereof, described, were filed by him in the Patent Office, that they might not be lost. He also sent drawings and descriptions to England, by Joseph Stacey Sampson, of Boston, for the purpose of seeking some one to take out a Patent there, on shares with him; but Sampson wrote from London, that he could find no one to believe the scheme would prove useful; they could not understand the project, and had no faith in it. "Thus, at the age of forty" Evans says of himself, "I was reduced to such abject poverty that my wife sold the tow cloth which she had spun with her own hands for clothing for her children to get bread for them; my head was covered with many gray hairs, and I required spectacles." This was brought about especially by his intense study in the preparation (for three years previous) of his *Millwright's and Miller's Guide*; the first practical work, it is believed, on the subject of mill construction, published by an American author. But when finished and ready for

publication, he had not the means, and it would probably have been lost, had not John Nicholson, Esq. been informed of the case, and his circumstances, who assumed the expense to the amount of a thousand dollars. The first edition of his work appeared in 1795, and amongst the names of the subscribers thereto, were George Washington, Thomas Jefferson, Edmund Randolph and Robert Morris. Evans thought it would sell rapidly, but in that he was sadly disappointed. Many had subscribed to encourage the work, who did not really want it. 2000 copies were published, some few of which sold at three dollars. "My agents," says he, "carried them to show the millers and millwrights, and gave away a great proportion of the edition to them, by orders from me, for the purpose of getting my improvements introduced. One of my agents traveled for *thirteen years*, to instruct millwrights and millers to make and use the improvements, and to sell licenses; he often declared his belief that he rode about 100,000 miles on that business." Evans having prepared a plate and printed descriptions of his improvements in the manufacture of flour, distributed them in different parts of the United States, to be set up in public places. One of his brothers traveling to disseminate the improvements, put up at a tavern where one of these plates was placed. He observed a number of Germans looking at it, and heard one of them exclaim, "now dis mus peen sum tampt lazy fellow do mak dem gondrivers; quite too lazy to work," which was confirmed by a hearty laugh. At another time, a German falling into conversation with Evans himself, at a public place, and not knowing him, informed him amongst other things, "that a grazy man comes py our millers, he tinks he gut mak wooten millers."

In 1801, he commenced, and at a cost of \$2000, besides his own time and labor, which he valued at \$1000 more, at last, produced a steam engine, realizing in practice, the whole of his theory; and in the winter of the following year had it in full operation, its performance exciting considerable attention and curiosity.

During the next year, he became the first regular steam engine builder, in the City of Philadelphia, at the Mar's works, on the corner of Ninth and Vine Streets.

About this time he entered into a solemn contract with a Mr. Edwards, Engineer, from England, and spent two months in furnishing him with complete drawings and specifications and descriptions of his Columbian, Inexhaustible, and Volcanic steam engines; all of which he could execute, and set up with his own hands. Edwards sailed from Philadelphia, but Evans never heard a word from him.

When Evans petitioned the Legislature of Pennsylvania for the exclusive right to his improvements in making wool and cotton cards, steam carriages, &c. the committee to whom his petition was referred, conceived him to be crazy, because he said he could make steam-wagons, and would have nothing to do with it, notwithstanding the utmost efforts of the above named George Latimer, Esq. to convince them that all his inventions were worthy of their attention. While Evans was exhibiting his little steam engine in Philadelphia, during this year (1803) driving 12 saws, cutting stone at the rate of 120 feet in 12 hours, he discovered the Chairman of the said committee in the crowd of spectators, viewing the powerful operations with evident marks of astonishment. Saluting him, he said, "Sir, this steam engine goes on the principles with which I had intended to propel my steam carriages when I petitioned the Legislature in 1786, or '7, and which I endeavoured to explain to the committee. If you had granted me then, the exclusive right for 25 years, it might have been driving wagons, boats and mills many years ago." His reply was, "to tell the truth, Mr. Evans, we thought you were deranged when you spoke of making steam wagons."

On the 26th of September 1804, he laid before the Managers of the Philadelphia and Lancaster Turnpike Company, a comparative statement, in detail, of the superiority of his steam engine to transport merchandise from Philadelphia to Columbia, and from thence to Philadelphia, over the tedious and expensive method by horse wagons, asking an appropriation, by them, of the sum necessary to put

it in operation. The Company, however, declined to accept his proposition, having no confidence in it.

In the month of December, following, Evans petitioned Congress to extend the term of his patent for an exclusive right to his improvements on flour-mills; in which petition he gives an insight to the ups and downs of an inventor's life. It was referred to the Committee of Commerce and Manufactures, to whom he gave a more comprehensive statement of the various objects he had in view. The Committee reported favorably, and obtained leave to bring in a bill. By the principles of this bill, every patentee who survived the first term of his patent, had the privilege of extending it for another term of seven years, provided he had complied with the requisites necessary for taking out the original patent. The bill was well received in Congress. Evans was highly pleased at the prospect which now opened, of his becoming instrumental in rescuing his fellow laborers, when engaged in new and useful discoveries and improvements, from the oppression, perhaps injustice, and privations, under which they generally labor, and placing them on equal ground with the rest of mankind. During these flattering appearances, he issued proposals for publishing by subscription a new work, to be entitled "The Young Steam-Engineer's Guide," that he might be collecting subscribers while waiting the passage of the bill. But on the third reading, a most energetic opposition arose on grounds unexpected; the friends of the bill were not prepared to meet the arguments used, and it was consequently lost. He says of this, "his plans have thus proved abortive, all his fair prospects are blasted, and he must suppress a strong propensity for making new and useful inventions and improvements; although, as he believes, they might soon have been worth the labor of one hundred thousand men."

Notwithstanding all these trials, during this same year he constructed for the Board of Health of Philadelphia, at the corner of 9th and Market streets, a machine for cleaning docks, which he called, the Orukter Amphibolos or the Amphibious Digger. There were other dredging machines in existence, but this was the first, moved by the application of steam. It consisted of a heavy flat-bottomed boat, 30 feet long, and 12 feet broad, with a chain of buckets to bring up the mud, and hooks to clear away sticks, stones, and other obstacles. These buckets were worked by a small steam engine of five horse power, set in the boat, the cylinder of which was five inches in diameter, the length of stroke, nineteen inches; and the weight of the whole machine, was equal to two hundred barrels of flour. "To shew," says he, "that both steam carriages and steam-boats were practicable (with my steam-engine) I first put wheels to it, and propelled it by the engine a mile and a half up Market street, and around Centre Square, to the river Schuylkill. I then fixed a paddle-wheel at the stern, and propelled it by the engine, down the Schuylkill, and up the Delaware, 16 miles, leaving all the vessels that were under sail full half way behind me, (the wind being ahead,) although the application was so temporary as to produce great friction, and the flat most illy-formed for sailing; all of which was performed in the presence of thousands." There are those now living, amongst whom I may name, the venerable John McAllister, father of the well known, present, Opticians, on Chestnut street, Philadelphia, and Dr. Elder, of the same City, who were eye-witnesses of the performance of this singular craft. While the experiment was being made, some wags exultingly ridiculed it, saying, "it went quite too slow ever to be of any use for carriages," to which Evans replied, "if you will, amongst your jockeys, make up a purse of \$3000, I will make a steam carriage that shall outrun the swiftest horse you can produce, on a smooth, level, hard bottom."

This successful attempt to move a locomotive carriage in the streets of Philadelphia, and a boat on the Schuylkill, with the same apparatus, by means of paddle-wheels, in the opinion of the British Engineer, Mr. Galloway, fully establishes his claim to the first contrivance of a practical steamboat.

In a work published by Evans some time after this experiment, after giving an account of its success, he adds by way of a foot-note, "Mr. Evans makes no

pretensions to exclusive right to steamboats, although he believes that he was the first in the United States who conceived the practicability of propelling both carriages and boats by steam. Yet Fitch, Rumsey, and others were engaged in making steamboats as early as 1784, 5, 6, or 7, and succeeded to make them run perhaps as fast as Fulton has yet done. But at that time (1814) the profits did not so well support the expense, where they were tried, so they were abandoned. Rumsey went to England to introduce them there, and died. Fitch went to introduce them on the Western waters, and died also, before he succeeded. Mr. Evans only claims the right to apply his own steam-engine and other improvements which he invented for the purpose of being applied to his boats and carriages, and which he endeavored to induce Fitch to adopt, as early as in 1784-'5, or '6, but could not prevail on him."

During the years 1804 and '5, quite a sharp written controversy was carried on between Evans and one John Stevens, of Hoboken, New Jersey, the latter intimating that Evans had "stolen his powder," whereas, it seems, the reverse was the fact. A part of this controversy was based upon a printed Circular Letter, which Evans laid before the members of Congress, individually, in the month of January 1805, giving a concise description of the principles of Steam-Engines and especially of his inexhaustible and volcanic steam engines, and his perpetual Still. His letter was sent by Dr. Mitchell, a Senator from the State of New York, to his friend, Dr. Miller, one of the editors of a periodical work called, "The Medical Repository," for publication. Stevens having read it, thought proper to publish an answer in the very same number of the work.

About this time Evans published his "Steam Engineer's Guide," to explain the principles of his inventions, which he considered "as abstruse and difficult a work as ever was published." In this year, also, he entered suit in the United States Circuit Court, against Benjamin Chambers, for infringement, &c., which resulted in his (Evans') favor.

On the 5th of October, 1805, he published another work, entitled, "The Abortion of the Young Steam Engineer's Guide," to meet the arguments of his opponents, which caused the failure of Congress to pass the Act for his relief, as hereinbefore mentioned. The book contains "An investigation of the principles, construction and powers of Steam-Engines; a description of a Steam Engine on new principles, rendering it much more powerful, more simple, less expensive, and requiring much less fuel than an engine on the old construction. A description of a machine, and its principles, for making ice and cooling water in large quantities in hot countries, to make it palatable and wholesome for drinking, by the power of steam; invented by the author; and a description of four other patented inventions," with an appendix containing a concise account of the invention and improvements of Steam-Engines, and also, the controversy between himself and Stevens.

A short time afterward, reflecting upon these trials and discouragements, he says, "I was left in poverty at the age of 50, with a large family of children and an amiable wife to support, for I had expended my last dollar in putting my Columbian Steam Engine into operation, and in publishing the 'Steam Engineer's Guide,' a work still more difficult and abstruse than the Millwright's Guide, to explain my principles, and those improvements. It had brought on grey hairs again, and the use of spectacles, and greatly injured my constitution and health a second time, but which I soon regained upon quitting intense study, and resuming active bodily exercise—but the grey hairs and the use of spectacles I could never get rid of."

A year after, an opinion by a Judge of the United States Circuit Court was communicated to him, that a patent right for a useful invention was an infringement of the public right. To infringe the public right he despised; and on account of this decision, in a fit of vexation and despair, at the request of all his family in heart-rending tears (because they had reduced them to abject poverty) he committed the drawings and specifications of eighty inventions and discoveries to the

flames, wishing to rid himself of their burden, that he might pursue the means of procuring an honest livelihood without infringing the public rights.

On the 23d of October, 1807, in the Circuit Court of the United States for the District of Pennsylvania, before Judges Washington and Peters, he was non-suit-ed, on account of a deficiency in the description of an invention; its butts and bounds were not described, infringements could not be ascertained. The Judges, therefore, declared the patent invalid, null and void. Whereupon, on the 21st of January, 1808, he presented to Congress a petition stating the facts; and, on the day following, an Act for his relief was passed and Letters Patent granted, securing to him exclusive right, and extension for fourteen years. This Act stimulated his inventive genius considerably, so that, against the current of prejudice and opposition he was enabled to push forward his improvements on Steam Engines to such an extent, that in a few years he had constructed and put in operation no less than twenty-five Engines, in Pittsburg, Natchez, Cincinnati, Louisville, Frankfort, Lexington, Middletown, (Connecticut), Providence, (Rhode Island,) and other places throughout the States. Now he strove to retrieve from their ashes some of his most important inventions, specifying them over again, with great labor, leaving them to await their time when, as he himself states, "Congress shall make it possible for any of my posterity to put them into operation." But he was not to enjoy the advances he had made, without opposition. A memorial was presented to Congress by John Worthington and others, complaining of the injurious effects of these Letters Patent, on account of certain innovations of Evans, between the expiration and renewal of his patent, and the high prices at which he rated his licenses. Evans also presented a memorial. They were both committed to a committee of the Senate, who, on the 22d of February, 1813, reported through Mr. Bayard, "That the subject of the memorials is of considerable interest and importance to the community, and involves difficulties which would require more time and patient investigation fully to understand than can be bestowed upon it during the remnant of the present session," and asked to be discharged.

Previous to this time, the Brandywine millers were his studied opponents, now the Baltimore millers beset his way, with considerable opposition. Evans instituted suits against them as infringers of his rights, which were tried before the Circuit Court of the United States for the District of Maryland, Judges Duval and Huston being on the bench. Upon a few days sifting of the whole matter, verdicts were obtained in favor of Evans, upon all the suits instituted. Considering that these verdicts were rendered in a Maryland Court, by a Maryland jury, against a stranger, surely is an evidence of the lawfulness and justice of the verdicts. Yet the defendants were not at all satisfied, nor did they allow the matter to pass without further effort. On the 28th of December, 1813, they presented a memorial to Congress, "praying relief from the oppressive operation of Oliver Evans' Patents" * * * "with evidence to show that the said Evans was neither the original inventor nor first applier of said machinery, and consequently not entitled to the reward," &c. But the committee of the Senate, to whom it was referred, deemed it improper to interfere with a decision which properly belonged to the Judiciary, and upon which they had passed their verdict; and hence, they reported adversely to the petition of the memorialists. A letter from Thomas Jefferson, presented with other documents in the above mentioned petition for relief, contains some very sound views in regard to the Patent Right System. According to his theory, Archimedes should have been the patentee and not Oliver Evans, for his Steam Engine and Mill Machinery. The inventor alone should be entitled to a Patent and not the applier. On the 7th of January, 1814, Evans answered this memorial of the Baltimore millers, and the letter of Jefferson, fully and satisfactorily, which was published in "Niles' Weekly Register," as an addenda to volume V, under the sarcastic title of "A Trip made by a small man in a wrestle with a very great man."

In this answer, he says, "The mind of the inventor was entirely too fertile for his means. When he applied to the millers of his vicinity to contribute to the

expense of constructing and maturing his improvements in flour mills, and to share in the use of them when completed, they refused, and no one could be found to pay anything. Of this he complained to influential gentlemen, who advised him to petition the legislature for exclusive rights—and thus originated his first application to government, before the patent laws or federal government existed. He observed at that time, 'that if government would purchase all his inventions (meaning all that have been named) and sell licenses to the people, it would be sufficient to pay the public debt and free the country from taxes.' These were his expanded conceptions at that early period, and these are but a part of what he has conceived. At that time he had but faint conceptions of the opposition to the introduction of his improvements, and the insult, abuse and robbery, he had to meet as soon as the value of his inventions would appear, of the great labor and expense of maturing his improvements, of the tedious law-suits he should have to sustain, to defend his rights, to wear away his patent term before he could begin to realize any profits. Now the great thirst many would have to be thought the inventor, after the utility of his discoveries should be known—the numerous and false pretensions they would set up, the intrigues and corruptions that would be practiced to support their claims and defraud him of his rights; the powerful combinations that would be formed by the unjust and hypocritical to calumniate him, the glaring falsehoods that would be propagated to excite the indignation, even of the best and most just, most eminent men against him, until they could be undeceived. Little did he think that 29 years should pass away, instead of 14, before half of his improvements could be commenced, or that they should die with him."

He also alluded particularly to the immense sum, annually, which his inventions would produce in the hands of the government, which he desired would purchase, or take in charge. "The writer forbears to calculate the vast amount, for the reader would say the man is deranged. The whole truth would not bear to be told in this case; for the Indian who had seen Fitch's steam-boat, when he returned to his country, and was relating the many wonders he had seen, was listened to until he said he had seen a great canoe run up stream by fire and smoke, was knocked down by one of his hearers, who exclaimed, 'I knew that you were lying all the while, but this is too great a lie to be borne with!'"

In another place he says concerning his mill improvements, "I may suppose that those who have refused to use my invention for thirty years since they might have had it, have hired and paid at least 3000 millers, at the expense of 300 dollars each for wages and boarding per year for thirty years, amounting to the enormous sum of 27,000,000 dollars, which my improvements might have saved them in labor. But as there is ten times as much gained by the improvement of the manufacture, as there is in labor, that saving or gain would amount to 270,000,000 more, making a total of 297,000,000 of dollars—enough to pay the National debt. If the figures have erred in making the sum too large, I am not the inventor of them; all will allow that the labor is saved." And again, he says, "if they," (the United States) "had purchased or had taken control of all his improvements, and sold licenses at their own price, they would have defrayed the entire debt of the Nation, paid the current expenses of the same, and freed the people from the payment of any Tax whatsoever."

During this year, he published, in the form of a satire, under the assumed name of "Patrick N. I. Elisha, Esq., Poet Laureate," his celebrated "Patent Right Oppression Exposed," dedicated "to the Right, the Honest millers throughout the United States." It is a sharp, stinging rebuke of those who so persistently and unreasonably attempted to interfere in his dearly purchased rights, in the use of his many inventions. In this work, we find the celebrated "Prophecy by the Poet," that "the time will come when people will travel in stages moved by steam engines, from one city to another, almost as fast as birds fly, fifteen or twenty miles in an hour. Passing through the air with such velocity, changing the scene in such rapid succession, will be the most exhilarating delightful exercise. A carriage will set out from Washington in the morning, the passengers will breakfast

at Baltimore, dine at Philadelphia, and sup at New York, the same day. To accomplish this, two sets of rail-ways will be laid so nearly level as not in any place to deviate more than two degrees from a horizontal line; made of wood or iron, or smooth paths of broken stone or gravel, with a rail to guide the carriages, so that they may pass each other in different directions, and travel by night as well as by day; and the passengers will sleep in these stages as comfortably as they now do in steam stage-boats."

Two years before his death, in reviewing the past, he says, "if I could receive the value of the flour that my improvements save from waste, or one dollar out of one hundred that the millers gain by their use, or one sixth part of the interest for one year only, of the sum they may gain by their use in fourteen years, more than they can gain without them; or if I could receive one dollar out of a thousand that my country may gain by the use of my Columbian steam engine, more than by that of Watts and Bolton, for fourteen years only, I would be quite independent and satisfied."

If patents had been granted me at first for twenty eight years instead of fourteen, I believe I could have found aid to put into operation for steam mills, boats and carriages twenty years sooner than they have been or will be, ten times as many of my useful discoveries as I have been able to get into use; and my patents would now have expired, and the public been in full possession of them—but they lay dormant or are lost; I have abandoned them in disgust, deeming my talent lost, for I am sixty-two years of age, and my time is wholly engrossed in law-suits, having fifteen of the most eminent counsel engaged, to recover the small sums I demand, and to defend my rights. And I believe there are hundreds if not thousands of useful discoveries of others, dormant also, for want of the patronage which would not cost the public a cent, nor monopolize or deprive any person of a single right."

On Sunday morning, April 11th 1819, the extensive buildings, occupied by Evans, as a foundry and factory, on the Ridge Road, Philadelphia, were set on fire, in a wanton, unprovoked and mischievous spirit, by a lad of about 20 years of age. The loss, in mouldings alone, was estimated at \$15000. Doubtless, this had something to do in hastening his death, for in one of the newspapers of the day, published on the Saturday following the fire, we read, under the head of "Deaths,"—"at New York, on Thursday, the 15th inst, at the house of Elijah Ward, Oliver Evans, Esq. of Philadelphia, in the 64th year of his age. His remains were interred yesterday afternoon." He died, neglected and poor; adding another witness to the words of Franklin,—“A man's useful inventions, subject him to insult, robbery and abuse.” And, as a greater than Franklin has said, “and herein is that saying true, one soweth, and another reapeth” * * *

“other men labored, and ye are entered into their labors.”—John 4: 37, 38.

Oliver Evans, was about 5 feet 8 inches in height, rather portly, but very active. He was the first man that took possession of property at "Bush Hill," in the northwestern part of the City of Philadelphia. From his foundry at Ridge Road and Vine streets, were sent forth, a goodly number of prominent mechanics. Few, if any, capital improvements have been introduced into the machinery of Flour mills since his time, although numerous minor changes in the manufacture and running of the stones, and in the bolting apparatus, have been patented and adopted. His machinery is now in almost universal use in the extensive merchant mills of this country, and has been very generally adopted in Europe, and particularly in Great Britain.

So great has been the influence of the high-pressure Steam Engine, and other contrivances of Evans, so admirably adapted to the use of all kinds of factories as to justify the eulogium of a talented writer, in an address before the American Institute, in New York, in 1850 (S. G. Arnold, Esq.) who says, respecting their inventor. "Wherever the steam mill resounds with the hum of industry, whether grinding flour on his native Schuylkill, or cutting logs in Oregon" (and the same might be said of the Steam Engine) "there do you find a monument to the memory of

OLIVER EVANS."

DELAWARE STATE ARCHIVES

TWO MILLS ON RED CLAY CREEK IN THE 19th CENTURY

THE FAULKLAND SPICE MILL
AND THE
GREENBANK MILL
New Castle County, Delaware

By
CARROLL W. PURSELL, JR.

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THE FAULKLAND SPICE MILL

FOR the better part of a century, the millseat at Faulkland, Delaware, on the Red Clay Creek, was the scene of one or another important manufactory. In 1785 Oliver Evans, the "American Watt," made it the site of his first automatic flour mill—an innovation which soon became standard over the United States and remained so for 100 years. Then, in 1828, Evans' mill was converted into one for the manufacture of spices from all around the world. This manufactory was the only one of its kind in the State of Delaware and, for many years, the leading spice mill in the nation.

The interested traveller may view the site of the Fell spice mill by turning north on Faulkland Road between the Lancaster Pike and Price's Corner. The road descends into the Red Clay valley, crossing the stream over a modern bridge considerably less handsome than the one built in 1813 which is replaced. After passing the millsite, the road then climbs again to the high land at Brandywine Springs.

Little is known about the early life of Oliver Evans. The years between his birth on September 13, 1755, and his majority, are filled only with those peculiar myths which cluster about the biographies of famous men. Stories of little Oliver studying late into the night by the light of flickering wood chips tells us more about Victorian virtue than an actual life. That he received a good education we may be sure, and about 1771, when he was 16, he became apprenticed to a wheelwright, no doubt in his native village of Newport, Delaware.¹

Instead of pursuing the trade for which he was trained, Oliver Evans, with his younger brother Joseph, moved to Nine Bridge, on the Eastern Shore of Maryland, and opened a general store. His prospects were such that in 1783 he could marry Sarah Tomlinson, the daughter of a local farmer, but already his real expectations lay in the direction of invention rather than commerce. He was thinking seriously of several improvements in the manufacture of flour and had purchased in 1782, with his brothers John and Theophilus, about 400 acres of land along Red Clay Creek from their father Charles Evans.

Oliver Evans' five separate inventions for the improved operation of flour mills—the hopper boy, elevator, descender, conveyer, and drill—taken together, revolutionized the conduct of this ancient manufacture. The common practice at that time was to carry a bag of grain to the second floor of a mill. Here it was emptied into a hopper from which it fell through a chute into the mill-stone hopper on the first floor. The freshly ground flour fell through another chute into the cellar where it was collected in open tubs and hoisted

¹ Unless otherwise attributed, the following information on Oliver Evans is taken from Greville and Dorothy Bathe, *Oliver Evans: A Chronicle of Early American Engineering* (Philadelphia, 1935), passim.

up into the third floor loft. On this level the flour was dumped out onto the floor, raked about until it was dry and cool, then pushed through a hole in the floor through which it fell, by way of another chute, into the boulder on the floor below. The revolving silk cylinder of the boulder separated the bran and dirt from the various grades of flour, each of which was then barreled for transport. Although this was the best available process of flour manufacture, it suffered from three major drawbacks: (1) the large amount of manual labor involved was grueling and expensive; (2) a considerable amount of material was wasted at each step in the operation; and (3) the quality of the flour was never what it should have been since, as Evans put it, "people did not even then like to eat dirt, if they could see it."²

Under Evans' plan, these three drawbacks were greatly lessened by mechanical contrivances designed and arranged in such a way that the power of the water wheel, heretofore used primarily to turn the stones, provided an automatic and uniform drive to the entire process. In Evans' mill, an elevator (buckets moving on an endless belt inside a closed chute) carried the grain to the second floor and dumped it into the hopper above the millstones. Gravity carried the grain down to the stones on the first floor and the moist, warm flour from the stones to the cellar. Another elevator carried the flour to the third floor where it emptied into the hopper boy. This simple device consisted of two long arms set with teeth which, when it slowly revolved, stirred the flour within an area of the floor enclosed for that purpose. The flour then fell to the boulder below and thence into waiting barrels. Thus the miller had only to empty the grain sacks and cover the barrels: the rest was automatic. (See Figure 1)

The elevator and hopper boy were the most commonly adopted and, indeed, indispensable, parts of Evans' improvements, but the other three were sometimes used as well. These consisted of: the descender, an endless belt set at a slope upon which material could ride downward; the conveyor, a screw made of sheet iron on a wooden core shaft; and the drill, which was essentially an elevator for moving materials horizontally rather than vertically.

In order to demonstrate the usefulness of his new processes, Oliver Evans, with his brothers, began to build a new flour mill incorporating his principles along the Red Clay.³ David Nivin, of Newark, was taken in to operate the store at Nine Bridge, and Oliver moved either to the Red Clay mill itself or to a house in Wilmington. The new mill was in operation by 1785 and Evans busied himself with grinding grain for local farmers at 18 shillings a wagon load. The smooth operation of business was interrupted only on occasion, as when Evans had to advertise for the return of an apprentice boy who, though he "did Obtain of me a written permission to visit his Mother," had been gone more than 40 days and was presumed to have run away.⁴

The prime object of the mill however, that of serving as a showcase for Evans' improvements, was being accomplished only in part. Although five local millers testified publicly in 1787 to the usefulness of his inventions, and

² Quoted in *ibid.*, p. 12.

³ There may have been a small mill on the property as early as 1742. *Ibid.*, p. 13.

⁴ *Delaware Gazette* (Wilmington), April 12, 1785.

at least one of them had installed the equipment in his own mill, acceptance was slow. The Brandywine millers, in particular, were reluctant to convert their mills and their conservatism, tied as it was to a national reputation for excellence, tended to put a brake on adoptions.

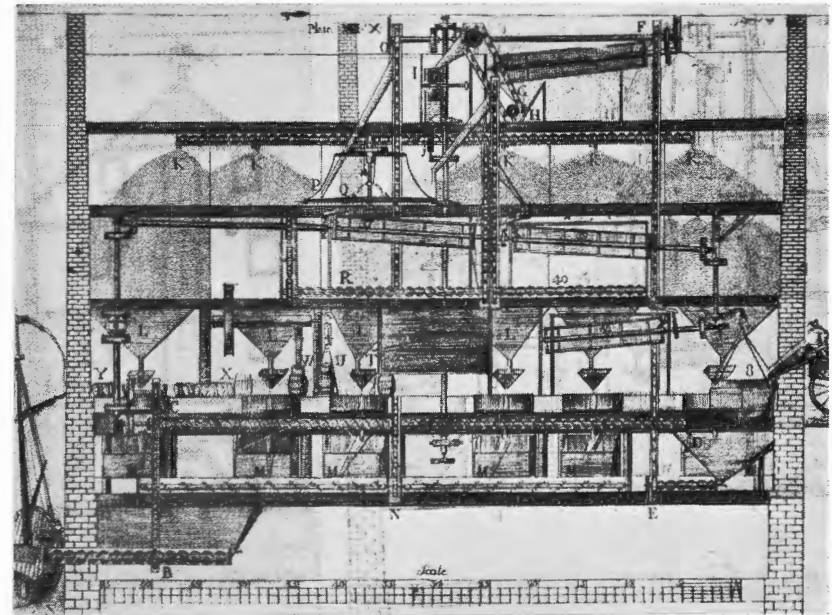


FIGURE 1

Oliver Evans' automatic flour-milling machinery, similar to that installed in his Red Clay Creek mill. (From Oliver Evans, *The Young Millwright's & Miller's Guide* (Octoraro, 1807), plate X.)

Evans sent agents and went himself about the country, but to little advantage. Millers either denied the practicability of the scheme or adopted it while contending that it was no new invention and Evans deserved no fee. In 1790 he had a model built of his new mill and put it on display at his Wilmington home, but again to little avail.⁵ Two years later, partly no doubt to enjoy the more philosophical atmosphere of America's first city, he moved to Philadelphia.⁶ At 37 he was ready to stake his small capital and growing mechanical talents on a career of invention and manufacture.⁷

For reasons either personal or financial, the Evans' brothers Red Clay enterprise had come to grief a short time before Oliver Evans moved to Philadelphia. The Sheriff of New Castle County exposed the mill to public sale and it was purchased by David Nivin on May 26, 1792.⁸ It is possible

⁵ *Ibid.*, October 2, 1790.

⁶ Cf. Bathe, p. 28.

⁷ His subsequent career, spent largely in the new field of steam technology, is minutely described in Bathe.

⁸ J. Thomas Scharf et al., *History of Delaware*, (Philadelphia, 1888), II, 925.

that Nivin acted with Evans as a silent partner in this purchase, although of this we cannot be certain. Within a short time Nivin divided his responsibility by selling a third of the mill to Charles Anderson; a practice that was common enough before incorporation laws were liberalized.

In 1795 Anderson sold his third of the mill to William Foulk. Three years later, on February 24, 1798, the latter purchased the remaining two-thirds interest in the mill from David Nivin, and the enterprise entered several decades of relative stability.⁹ By the beginning of the 19th century Oliver Evans' equipment was becoming standard in the United States and was even receiving some notice abroad. The original mill on the Red Clay lost its unique technological advantage and became indistinguishable from any other mill of its type.

But fame was not yet to desert the mill completely. William Foulk died intestate, leaving seven children to share his estate. On May 29, 1824, they sold their father's mill to John Foulk, one of the sons. Within two years the younger Foulk saw the mill once again seized by the Sheriff. It was exposed to public sale and advertised as being "well worth the attention of Manufacturers, either of wool or cotton, as the buildings are substantial and it has the whole water right of Red Clay Creek, which is a never failing stream, and is within five miles of Wilmington, three of New Port, (whence there is a water navigation to Philadelphia,) and about fourteen miles from Elkton, so that a communication either to Philadelphia, or Baltimore can be effected with very little expense."¹⁰

On May 20, 1828, however, before the Sheriff could effect a sale, Foulk himself sold the mill to Jonathan Fell, of Philadelphia, who had first seen and admired the property while on a vacation taking the chalybeate waters at nearby Brandywine Springs.¹¹ The fame which Philadelphia had stolen from the Red Clay mill it now returned. Although Foulk's name was perpetuated (though transposed) on the map as Faulkland, it was the Fell family which made the old Evans mill famous throughout the nation.

About 1766 John Dixon, an English-born Quaker, established a mustard manufactory in Philadelphia.¹² The modest enterprise prospered at its Front Street location and, when Dixon died in 1810, he was succeeded by Jonathan Fell, Jr., who "purchased the entire stock and utensils belonging to that concern," and promised that "every reasonable exertion will be used to merit a continuance of . . . confidence and custom."¹³ The following year, when Fell added the manufacture of chocolate to that of mustard, the enterprise gave every indication of growing even larger.¹⁴

The technology involved in grinding mustard, chocolate, or any of the other condiments later produced by the Fell mills, was basically like that of

⁹ Deed Book E-4, 344-347 (New Castle County Court House, Wilmington, Delaware).

¹⁰ *Delaware Gazette*, January 22, 1828.

¹¹ Deed Book G-4, 305-308. The connection between the Fell family and Brandywine Springs is admirably traced in C. A. Weslager, *Brandywine Springs* (Wilmington, 1949).

¹² Abraham Ritter, *Philadelphia and Her Merchants* . . . (Philadelphia, 1860), p. 174.

¹³ *Aurora* (Philadelphia), August 15, 1810.

¹⁴ *Ibid.*, October 3, 1811.

grinding wheat or any other type of hard seed. In 1787, one mill near Philadelphia was described as grinding, by water, "chocolate, flour, snuff, hair-powder, and mustard."^{14a} While the quality and purity of the products may well be questioned, it is clear that there was no great difference in the way they were processed. Horizontal or vertical wheels, turning on a stationary bed, could and did grind everything from cassia seed to gunpowder in early American mills. As specialized production became economically feasible, this basic mechanism was usually modified in detail to fit the processing needs of a particular raw material.

By the early 19th century, for example, it was discovered that the taste of chocolate was improved if it was processed in the following manner. The cacao beans were first cleaned, then roasted in an iron cylinder over a slow

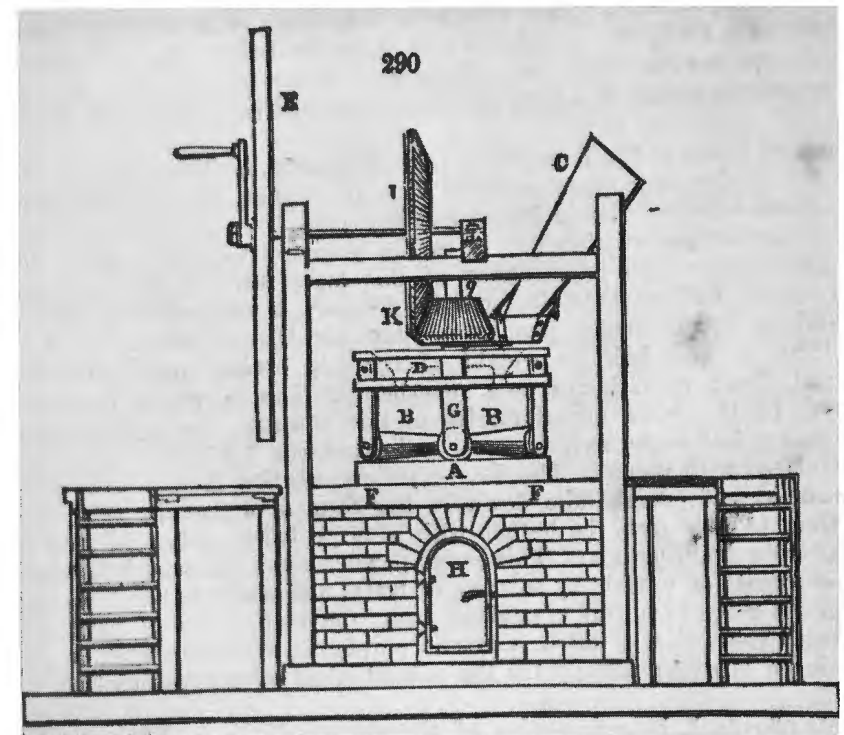


FIGURE 2

The machinery for a chocolate mill, 1845. Six conical rollers (BB) crushed the beans on a bed of marble (A). (From Andrew Ure, *A Dictionary of Arts, Manufactures, and Mines* . . . (New York, 1845), I, 299.)

fire. When the aroma indicated that this step was completed, the beans were removed, cooled, and freed from their husks by fanning and sifting. The roasted beans were then ground in a special mill (see Figure 2) in which a

^{14a} Tench Coxe, *A View of the United States; A Series of Papers Written at Various Times Between the Years 1787 and 1794* (Philadelphia, 1795), p. 39.

marble bed stone replaced the more familiar burr stone used in gristmills, and the upper stone was replaced by six conical rollers. The marble bed stone was then heated to about 130° F. so that the beans could be reduced to a viscous paste. When the beans were sufficiently ground, sugar and vanilla were added and incorporated to sweeten and flavor the chocolate. After grinding, and while still thin enough to run, the chocolate was poured into molds and allowed to harden.^{14b} The recipe and type of machinery used by Fell to make chocolate are not recorded, but were no doubt quite similar to that just described.

As his spice business flourished, Jonathan Fell broadened his interests to include a wide range of philanthropic and commercial activities. At one time or another, for example, he was president of both the Philadelphia Society for the Establishment and Support of Charity Schools and the Lehigh Coal and Navigation Company.¹⁵ Fell is sometimes credited with being the first to burn anthracite coal in a parlor grate.¹⁶ This honor, however, is more usually given to Jesse Fell, a nail maker of Wilkes-Barre who developed such a device in 1808.¹⁷ Even without this particular discovery to his credit, the death of Jonathan Fell on July 15, 1829, closed a career of unusual public and private service.¹⁸

With the death of the father, the spice business, including both the Philadelphia establishment and the newly acquired mill on the Red Clay, was taken over by the sons of Jonathan. Courtland J. Fell, being the oldest, gave his name to the firm which until its dissolution late in the century was known as C. J. Fell & Brother. The firm was operated as a partnership and ground spices were sent, by 1832, to "most of the sea-ports of the United States." The water-powered mill on the Red Clay, valued that year at \$12,000, employed three men, two girls, and "one child," who worked by the hundred weight.¹⁹

The amount and variety of spices produced was quite large, being refined, in 1832, from 100,000 pounds of cocoa, 800 bushels of mustard seed, 200,000 pounds of race ginger, 50,000 pounds of black pepper, 5,000 pounds of cassia, and 1,000 pounds of other spices.²⁰ A large part of these raw materials, of course, were necessarily imported, but the mill also advertised locally for barley, indicating that this grain was also among its products.²¹

Another American product consistently encouraged by the Fells was mustard seed. From the time he first took over Dixon's business, Jonathan

Fell had advertised that "farmers desirous of growing Mustard, can be furnished with seed of a superior kind by applying as above, and also find a ready market for any they may have to sell."²² By 1844, most mustard seed was still imported from England, but C. J. Fell & Brother were sanguine in their hope for a larger domestic supply.

On receiving a delivery of 382 bushels of brown mustard seed from J. H. Parmelee of Zanesville, Ohio, the Fells referred to the notorious English Corn Laws then under attack in Parliament, predicting that "the time is not far distant, if not already at hand, when the interests of the American farmers will be best promoted by devoting a portion of their time and land to the raising of many crops which are now imported from countries refusing (except when their own crops fail) the surplus of the American farms, and thus not only raise the prices of their grain crops by diminishing their quantity, but secure to themselves a large amount of money which is annually sent out of the country to purchase these crops."²³

In answer to charges that the market for mustard seed could be easily glutted, the Fells admitted that "if its culture is gone into with a 'multicaulis' energy, the demand for the manufacture at the present 'infant state' will not be equal to the supply; but if," they added, "on the contrary, the farmers move with their usual caution and prudence, and sow each but a few acres, we think there is no fear of overstocking the market." A growing market was assured, they claimed, because "the manufacture of mustard in this country is yet in its infancy, and has only been undertaken on a large scale since the passage of the tariff [in August 1842], giving a protection of 30 per cent. In these two years, such improvements have been made in machinery, and such knowledge obtained, as has enabled the manufacturers to produce an article which commands a preference over any heretofore imported . . ."²⁴

The death of Courtland J. Fell in 1848 left the family spice business in the hands of Franklin Fell, his younger brother. The latter was born on May 25, 1814, in a house on Front Street in Philadelphia just a few doors away from his father's new business. He received a liberal education and at 17, two years after the death of his father, he began his commercial career as the youngest boy in the store of Shober, Bunting & Co., dealers in fish and oils.²⁵ Within 18 months, in recognition of his "faithful labors," he rose to be chief bookkeeper and confidential clerk. The death of Thomas Jenks Fell, junior partner in C. J. Fell & Brother, in 1836, made it desirable that Franklin enter the family business to help his brother Courtland, who then moved to the Red Clay to give personal supervision to the spice manufactory.

Franklin Fell, now in full charge of the Philadelphia store and warehouse, seems to have inherited his father's desire for wider business and philanthropic

²² *Aurora*, August 15, 1810.

²³ Letter of September 28, 1844, from C. J. Fell & Bro., in *Report of the Commissioner of Patents, For the year 1844* (28th Cong., 2d sess.), House Doc. No. 75, p. 327. The Corn Laws, which severely restricted the export of grain to England, were repealed in 1846.

²⁴ Letter of October 21, 1844, from C. J. Fell & Bro., in *ibid.*, pp. 327-328.

²⁵ This sketch of Franklin Fell's early years is taken from an extensive obituary notice appearing in the *Philadelphia Commercial List and Price Current* (supplement edition), October 2, 1875.

^{14b} Andrew Ure, *A Dictionary of Arts, Manufactures, and Mines* . . . (New York, 1845), I, 299-300.

¹⁵ *National Gazette* (Philadelphia), July 16, 1829; *United States Gazette* (Philadelphia), January 2, 1826.

¹⁶ Ritter, p. 174.

¹⁷ Frederick M. Binder, "Anthracite Enters the American Home," *Pennsylvania Magazine of History and Biography*, LXXXII (1958), 86. Binder suggests that Jesse Fell may have been anticipated by Oliver Evans.

¹⁸ *Philadelphia Gazette*, July 16, 1829.

¹⁹ *Documents Relative to the Manufactures in the United States* [McLane Report] . . . (Washington, D.C., 1833), II, 715-716.

²⁰ *Ibid.*

²¹ *Delaware State Journal* (Wilmington), March 20, 1835.

interests. Besides serving as president of the Seaman's Saving Fund Society, of Philadelphia, he was president for several years of the Buck Mountain Coal Co.²⁶ Stock in this company, along with some "wild lands in the anthracite region," came to the spice firm when a debtor failed, and Franklin Fell became an expert, as had his father, in "every branch of the mining and selling of coal." In another venture Fell, with a group of associates, engaged in real estate development in the city of Philadelphia, cutting up an old estate on the west side of town into handsome residential units.²⁷

When Courtland J. Fell died in 1848, Franklin became the sole partner in the spice business. Dividing his time between Faulkland and Philadelphia, he continued his varied interests in both places and, at the battle of Gettysburg, travelled to that tragic battlefield to volunteer his services to the wounded and dying. He was deeply involved in the affairs of the Episcopal church in Delaware, founding and teaching a Sunday School in his Faulkland home. After his retirement, Fell suspended these many interests long enough to travel extensively throughout the West Indies, the British Isles, and Europe.²⁸

Under the direction of Franklin Fell from 1848 to 1867, the spice business grew even farther from its origin as a combination shop and single-horse mill on Front Street. A steam engine appears to have replaced the faithful horse at the Philadelphia mill, and by 1857 the Red Clay mill was running nine pairs of stones to grind the various products of the company. By this date also the firm was making hominy, said to be "so prepared by a new process, that it resists the effects of any climate and keeps sweet and good for years."²⁹ They also appear to have begun the roasting of coffee at about this same time.³⁰

An 1864 price list of the firm states the availability of coffee, chocolate, cocoa, ginger, pepper, cassia, allspice, cloves, brown and yellow mustard, rice flour, barley, hominy, cream tartar, bicarb. soda, sal-AEratus, indigo, split peas, caraway seeds, and mustard seeds. "The manufactured goods," the list asserted, "in packages [are] unsurpassed in beauty and variety of style."³¹ The packaging was aided, as early as 1857, by a remarkable machine "propelled by steam, which weighs accurately, and packs the Spices neatly in bundles. Its ingenuity and speed," an observer marveled, "are remarkable."³²

²⁶ *Delaware Gazette*, July 21, 1857.

²⁷ *Philadelphia Commercial List* (supp.), October 2, 1875.

²⁸ *Ibid.* Courtland J. Fell likewise had a wide range of interests, serving at one time as president of the Irving Literary Society of Delaware. *Delaware State Journal*, January 3, 1862.

²⁹ Edwin L. Freedley, *Philadelphia and its Manufactures . . . in 1857* (Philadelphia, 1858), p. 269. A new kiln for drying the corn for hominy was erected in 1858. *Delaware Gazette*, September 21, 1858. The "single-horse" mill referred to would be one in which a horse, harnessed to the axle of the mill, walked slowly in circles turning the machinery. Such horse mills, being severely limited in the amount of power they could produce, were used instead of water power only in situations where the latter was not available. Until the advent of steam engines, horse and hand power were the only types available in cities.

³⁰ *Boyd's Delaware State Directory 1859-60*, p. 210.

³¹ Among C. J. Fell & Bro. papers in possession of Mrs. Eldred B. Hoiriis, of Faulkland, Delaware.

³² Freedley, pp. 269-270.

A reporter for the *American Grocer* visited the Fell warehouse in Philadelphia late in 1872 and gained some information on the way in which the firm did business. "Introducing himself, the reporter modestly asked to be shown the *modus operandi* of preparing spices for the trade. This was, in part, impossible, as the reporter found that the mills where the spices are ground were located at Brandywine Springs, near Wilmington, Delaware. Also part of the packing in cans and labelling is done there. The balance is brought in casks to the Philadelphia house, where it undergoes the same operation and is ready for sale. The speciality of this house is pure spices.

"Whatever goes out with their trade-mark under their name is guaranteed to be in all respects pure and unadulterated. To meet a demand of the trade for lower-priced goods, different grades are made, but in no case are they ever allowed to bear the name of the firm, that being a guarantee of the purity of the contents of any package of spices upon which it is found. To those knowing the house, nothing need be said about their way of doing business. Others, if such there be, may be interested. A stranger steps in and asks the price, say of pure pepper? Do you want pure pepper? is asked, and a price list is handed him. Why, I never paid more than — mentioning a sum less than the cost of pepper before it is ground. The matter is explained to him and the best pepper is offered him that can be had for the price he is willing to pay. Upon this principle the business is conducted. If a merchant wants pure goods and is willing to pay a fair price for them, he can get them. If lower-priced goods are wanted they will be furnished him, the best that can be had for the money, but they will not be put up under the name of C. J. Fell and Brother over their trade-mark.

"Packages of their goods are all full net weight, except glass, which are of standard sizes. For hot climates and long voyages, glass packages are always recommended. Space will not permit the telling of half that was seen; the quantities of crude goods; the immense casks of ground spices of all kinds; ginger root imported from Borneo by themselves and of which they have the monopoly; nutmegs eighty to the pound; and much that was new and interesting to the reporter and would be to the trade if space would permit it all to be told. As an instance of what this house turns out, one order, seen by the reporter upon their books, called for 7,500 pounds of ground cassia, 3,000 lbs. ground cloves, 2,100 pounds ground nutmegs, and 1,500 pounds ground allspice; 14,100 pounds ground spices in one order.

"The firm are also sole agents for Fox's Philadelphia starch, of which large quantities are handled, and also are sole agents for the United States for Nelson's gelatine, an article claimed to be superior to any other, either imported or domestic, for the purpose for which it is used."³³

Franklin Fell retired from mercantile life in 1867, turning the direction of the firm over to his son, William Jenkes Fell, and nephew Joseph E. Taylor.³⁴ That same year the first of a series of disasters struck at the very heart of the enterprise, the grinding mill on Red Clay creek. About 5 o'clock on a Monday evening, September 9, 1867, a small fire was discovered near one of the sets of French burr stones, probably caused by a nail having

³³ *Every Evening* (Wilmington), October 25, 1872.

³⁴ *Philadelphia Commercial List* (supp.), October 2, 1875.

gotten between the stones. The fire was quickly extinguished and after dark the foreman made a special check for light. None being found, the mill was closed for the night.

About 4 o'clock the next morning flames were discovered bursting through the roof of the mill and the aroused workmen and neighbors, seeing that the mill was lost, concentrated their efforts on trying to save the out buildings. The foreman's house and box mill, although near the main structure, were protected by a row of linden trees, and with great exertion saved. The fire in the main mill, which started early in the morning of the 10th, was still burning late the 11th. A mill race was diverted to flow through the mill and pipes were laid to throw a stream of water from the creek on the burning wreckage.

The loss was estimated at \$26,000, divided between building (\$6,000), machinery (\$10,000), and merchandise (\$10,000), of which there was a large stock in anticipation of the Fall trade. Only \$16,000 of the loss was covered by insurance. It was reported that "Messrs. Fell and Brother propose to commence immediately rebuilding the burned mill, and meantime they have rented another mill which they will temporarily fit up for continuing their business. . . . The loss of this mill does not at all effect their business as they have another large one in Philadelphia. . . ."⁸⁵

The fire worked a double disaster. Not only did it weaken the financial position of C. J. Fell & Brother, perhaps fatally, but it also destroyed the mill which had been the scene of Oliver Evans' first experiments. There is no evidence of its exact size and construction when Evans sold it, but a detailed survey made two years before the fire shows it to have been, at that time, three stories high, with an attic and built of stone, 90 by 35 feet.

Attached to the west wall of the mill, and no doubt burned as well, was a two-story stone kiln 15½ feet by 12½ feet, probably added in 1858. The floors of this kiln were of brick, the furnace being located under the first floor and the heat circulated through terra cotta pipes.

Against the north wall of the mill had been a brick building with wrought iron rafters and corrugated, galvanized-iron roof. This building contained a revolving sheet-iron cylinder in which corn was dried and coffee roasted. Adjoining this building, also on the north side, was a small barley and hominy mill.⁸⁶ The main mill, and perhaps the smaller attachments, were driven by two large water wheels, each 18 feet in diameter and 16 feet wide.⁸⁷

It was two years before the old spice mill was replaced by a new one "much larger and more commodious."⁸⁸ (See Figure 3) The spice firm had apparently weathered the storm and could look forward with justifiable optimism to even larger and more efficient operations. The transportation problems gave promise of solution when the long-debated Wilmington and

Western Railroad was finally projected to run up the Red Clay from Wilmington to Landenberg. In September, 1869, Franklin Fell was elected a vice president of the line at a festive Harvest Home and Railroad Meeting at Hockessin.⁸⁹



FIGURE 3

The Fell Spice Mill at Faulkland, 1873. (From a woodcut by Van Ingen, in "Wilmington and Its Industries," *Lippincott's Magazine*, XI (April, 1873), 369-388.)

Fell was an ardent supporter of the new line, but his enthusiasm did not handicap him in bargaining with the railroad company. He was able to extract a promise on their part to build a "neat and substantial depot building" at Faulkland, at which no alcoholic beverages were to be sold or used. Furthermore, all trains were to stop at the station.⁴⁰ Ground was formally broken for the road on July 8, 1871, the ceremony being held at Faulkland.⁴¹ The railroad was opened officially on October 19, 1872, and the Rev. George A. Latimer took the occasion to read to the assembled crowd an "interesting

⁸⁵ *Wilmington Daily Commercial*, September 11, 1867. The rented mill may have been the old Reynolds mill (built 1799) located at Milltown on Mill Creek. Scharf, II, 923.

⁸⁶ "Survey of a Stone Mill House & additions thereto . . .," memorandum written by Franklin Fell, Feb. 21, 1865, transcript owned by C. A. Weslager.

⁸⁷ *Wilmington Daily Commercial*, September 11, 1867.

⁸⁸ *Ibid.*, September 13, 1869.

⁸⁹ *Ibid.*, September 11, 1869. See also Arthur G. Volkman, *The Story of the Wilmington and Western Railroad*, (Wilmington, 1963).

⁴⁰ Weslager, pp. 63-64.

⁴¹ *Proceedings of the Third Annual Meeting of the Stockholders of the Wilmington and Western Railroad Company, Held . . . January 8th, 1872* (Wilmington, 1872), p. 6.

biographical sketch” of Oliver Evans.⁴² The opening of a post office at Faulkland a month later, on November 22, 1872, further improved the business facilities of the spice mill.⁴³ The Faulkland mill had less than two years to enjoy these new advantages before another disaster struck, this one fatal to the whole enterprise.

At one o'clock in the morning of March 17, 1874, fire was again discovered in the main spice mill. As before, it spread with such rapidity that efforts were concentrated on saving the out buildings. Speculation attributed the fire to either spontaneous combustion or an overturned stove in the mill office, but the point was never settled with certainty.⁴⁴ By late afternoon the mill was still burning and the Fells sent into Wilmington for a steam-powered fire wagon. A Delaware steamer was sent out at about 5:30 in the afternoon but, when only a mile and a half from the mill, became bogged down in mud. It took until nearly midnight to dig the engine out, so it returned to town along with several fire hoses lent by the Water Witch Company.⁴⁵

The loss from this second fire was figured at \$33,000, of which all but \$5,000 was covered by insurance.⁴⁶ By the beginning of April the rubbish was removed from the burnt mill, and the turbine wheels removed to “the adjoining building” where “the spices and mustard mill will be running by the 10th of May.”⁴⁷ It was announced in August that the large mill was to be rebuilt, but notice was taken of the fact that “the matter of paying the insurance money is yet to be settled.”⁴⁸

The crowning calamity was only a year away. On July 10, 1875, Franklin Fell died. His only son, William Jenks Fell, inherited not only his father's fortune, estimated initially at \$100,000, but also a firm that had little chance of survival.⁴⁹ Early the following year Fell offered for sale or rent a “large stone building in the village of Newport, with steam engine, boiler, shafting and large lot. . . . The property,” he promised, “is well suited for a large manufacturing enterprise.”⁵⁰ This building, known as the Franklin Mills, had been used for years by C. J. Fell & Brother to grind their own brand of self-raising flour.⁵¹ At the same time he advertised, for rent only, “a second power grist and merchant flour mill; machinery all new and of most approved description” at Faulkland.⁵² This was no doubt the same secondary mill pressed into service after the fire of 1874.

There can be no doubt that the fires of 1867 and 1874 severely under-

⁴² *Every Evening*, October 21, 1872.

⁴³ Harvey Cochran Bounds, *A Postal History of Delaware* (Newark, 1938), p. 95.

⁴⁴ *Every Evening*, March 17, 1874.

⁴⁵ *Ibid.*, March 18, 1874.

⁴⁶ *Ibid.*, March 21, 1874.

⁴⁷ *Ibid.*, April 2, 1874.

⁴⁸ *Ibid.*, August 31, 1874.

⁴⁹ *Ibid.*, August 25, 1875.

⁵⁰ *Ibid.*, January 15, 1876.

⁵¹ *Wilmington Daily Commercial*, December 23, 1869. Using this flour, bread could be made without yeast, thus preserving “the nutritious qualities of the grain” and allowing dyspeptics to use it when freshly baked.

⁵² *Every Evening*, January 15, 1876.

mined the position of C. J. Fell & Brother. The estate of Franklin Fell became a source of both bitter contention and considerable confusion between William Jenks Fell, the original trustee, and a Philadelphia trust company. The combination of situations conspired, early in 1878, to force C. J. Fell & Brother to suspend. Fell and Taylor explained to a meeting of creditors that the total liabilities of the firm amounted to only \$173,112, while its assets came to \$228,096. A committee of creditors took these figures under advisement but one of their number, with a claim of \$600, “sued out a warrant before Magistrate Smith,” charging Fell and Taylor with “conspiring to cheat and defraud.” Constable Trefts was waiting after the creditors' meeting and both members of the firm suffered the humiliation of arrest upon adjournment.⁵³ The creditors met again the following month and decided to dissolve the firm.⁵⁴

The spice mill on the Red Clay was leased to J. M. Purvis & Co., of Philadelphia, who soon had reason to regret their action. On October 30, 1878, the mill was for the third time utterly destroyed by fire. The flames, it was reported, had “every advantage” and the site of the mill presented “nothing but a mass of ruins.” The mill had cost \$50,000 four years before and, perhaps indicating that its periodic burnings were becoming notorious, insurance had been written in small amounts by 12 different companies located in France, Scotland, England, and Canada, as well as in Delaware, Pennsylvania, Connecticut, and New Jersey. The press suggested that the fire might have been “the work of an incendiary,” but it was also charged that the Purvis company had been negligent in attending to a small fire discovered the previous afternoon in a set of stones grinding cassia.⁵⁵

This fiery end to the history of spice milling on the Red Clay did not lift the incubus of failure from the shoulders of William Jenks Fell. The Pennsylvania Supreme Court ruled in 1882 that he must pay rent to the assignees of C. J. Fell & Brother for the three pieces of commercial property that remained to him from the old firm: a store at 120 South Fourth Street in Philadelphia, the Franklin Mills at Newport, and the small gristmill at Faulkland. Rent on all three was in arrears.⁵⁶ In 1884 an attempt was made to “RENT. — THE GRIST MILL WITH ALL the water power at Faulkland, with quite a large custom: also the house and stabling for two horses, also two houses and yards, one with garden and stable.”⁵⁷

As late as 1894, however, the *Delaware State Directory* carried the listing: “Faulkland: Fell, W. J., flour mill.”⁵⁸ Thus after more than a century of continuous use the Faulkland millsite was once again what it had

⁵³ *Ibid.*, February 11, 1878. The two were released on bond and ordered to stand trial. The facts of the case, as reported in the press, make it clear that Taylor was alleged to have cashed a check which he knew to be worthless, on the account of the firm. Fell, as an associate in the firm, was also held accountable. *Ibid.*, February 12, 1878.

⁵⁴ *Ibid.*, March 4, 1878.

⁵⁵ *Ibid.*, October 30, 1878; memo dated February 13, 1879, in C. J. Fell & Bro. waste book no. 18, pp. 26-27, in possession of Mrs. Hoiriis.

⁵⁶ *Every Evening*, May 9, 1882.

⁵⁷ *Ibid.*, February 15, 1884.

⁵⁸ *Delaware State Directory for 1894-95*, p. 116.

been when Oliver Evans came to the Red Clay—the scene of gristmilling for local custom.

The demise of the Fell spice manufactory antedated by only a few years a remarkable rise in the consumption of spices in the United States. Previous to 1883 there had been some modest tariff on unground spices entering the country, but it amounted to only about five cents a pound on such staples as pepper and cloves. When unground spices were added to the free list in that year, however, domestic consumption (assumed from import figures) began to rise sharply. Pepper for example went from 6,973,000 pounds in 1883 to 12,712,000 just five years later.⁵⁹

With this growing market for spices, it is not difficult to imagine that the fate of C. J. Fell & Brother might have been different. The firm's downfall was brought about by a number of circumstances among which the three fires were no doubt the most damaging. Another factor must surely have been the relative isolation of the Red Clay Creek from the main arteries of commerce. Philadelphia had always been the real home of the enterprise as well as of many of the personal and other business interests of the family. And one cannot but notice that, although C. J. Fell & Brothers Company was incorporated by the State of Delaware in 1871, it remained to the end a family business.⁶⁰ Jonathan Fell had given four sons to the enterprise while Franklin Fell had only one. It is no discredit to William Jenks Fell that the burden proved too great.

⁵⁹ David A. Wells, *Recent Economic Changes* (New York, 1896), pp. 384-385.

⁶⁰ *Laws of Delaware*, XIV, 299.

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National Park Service

National Register of Historic Places
Inventory—Nomination Form

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See instructions in How to Complete National Register Forms
Type all entries—complete applicable sections

1. Name

historic Fall Historic District

and/or common

2. Location

street & number Faulkland Road, and New Fall's Lane -JJA not for publication

city, town Wilmington *mic* -X vicinity of ~~Congressional District~~

state Delaware code 10 county New Castle code 002

3. Classification

Category	Ownership	Status	Present Use	
<input checked="" type="checkbox"/> district	<input type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input type="checkbox"/> MUSEUM
<input type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input checked="" type="checkbox"/> private residence
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input type="checkbox"/> transportation
		<input type="checkbox"/> no	<input type="checkbox"/> military	<input type="checkbox"/> other:

4. Owner of Property

name Mirtiple (See Owners List)

street & number

city, town _____ vicinity of _____ state _____

5. Location of Legal Description

courthouse, registry of deeds, etc. New Castle County Recorder of Deeds

street & number City/County Building, 800 French Street

city, town Wilmington state Delaware

6. Representation in Existing Surveys

title Delaware Cultural Resource Survey (N-6760) has this property been determined eligible? yes no

date 1982 federal state county local

depository for survey records Bureau of Archaeology and Historic Preservation
Old State House, The Green

city, town Dover state Delaware

7. Description

Condition

excellent
 good
 fair

deteriorated
 ruins
 unexposed

Check one

unaltered
 altered

Check one

original site
 moved date _____

Describe the present and original (if known) physical appearance

Describe the present and original (if known) physical appearance

The Fell Historic District is located in Mill Creek Hundred at Faulkland, Delaware. It is nestled into the steeply sloping west bank of Red Clay Creek, and straddles the north and south sides of Faulkland Road, which cuts through the district. The original tract as purchased by Jonathan Fell in 1828 included 93 acres of land along Red Clay Creek in both Mill Creek and Christiana Hundreds, on which there was already standing a merchant mill, a barn, and a miller's residence. Fell converted the mill into a spice manufacturing facility and over the next half-century additional structures were added. Today, the nominated district contains 67 acres, and within its boundaries are eight architecturally and historically significant buildings that were built and/or owned by the Fell family from the early nineteenth through the early twentieth centuries. This group of buildings includes the circa 1830-1840 stuccoed fieldstone Greek Revival Fell Mansion; an 1894 Romanesque Revival stone carriage house; a circa 1860 Carpenter Gothic frame gatehouse; two circa 1860 frame tenant houses, one of which was built in a "Swiss Chalet" style; a circa 1800 stone barn and a stuccoed stone miller's residence of the same period; and lastly, a stone Georgian Revival dwelling dating from 1925. The Fell Mansion, the carriage house, the "Swiss Chalet" and the Georgian Revival dwelling are individually eligible for the National Register for their architectural significance. The four remaining buildings substantially contribute to the significance of the district in that they provide the links that illustrate the development of this manufacturing/business family and their interest in varied contemporary architectural styles over nearly a century.

Set in a landscape of steeply sloping hills ascending from the banks of Red Clay Creek, the terrain has dictated the arrangement of the structures in the district. The mansion is situated at the top of the hill overlooking the barn and the site of the mill which both lie along Faulkland Road. Between the mansion and the creek are the tenant houses. All vestiges of the spice manufacturing facility have disappeared and the farming activities have ceased; however, the domestic architectural fabric of the Fell country estate remains intact. It is this domestic core within the boundaries of the original estate that defines the district. All eight of the buildings being nominated were owned or built by the Fell family. There are no non-contributing structures within the district.

The principal change in the visual aspect of the district, aside from the loss of the spice mill, is the screen of trees that has grown up in the original farmland, meadow, and open spaces. These trees, however, do shield the district from the modern development outside of its boundaries. Faulkland Road, which cuts through the district, retains its original contours and configurations, and the tenant houses and the mansion retain their original nineteenth century appearance. The barn and carriage house, converted into private residences during the twentieth century, retain their exterior design and fabric without loss of integrity. The miller's residence, which the Fells converted into a two-family residence, has been returned to its original early nineteenth century function as a single family dwelling with minimal loss of integrity.

United States Department of the Interior
National Park Service

National Register of Historic Places
Inventory—Nomination Form

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Continuation sheet

Item number 4

Page 1

FELL HISTORIC DISTRICT: PROPERTY OWNERS LIST

1. ~~The Fell Mansion~~

Leigh Horris
Leigh Horris
2323 Fell's Lane
Faulkland
Wilmington, Delaware 19808

2. ~~The Carriage House~~

Ernest J. & Mary Joy Breton
Ernest J. & Mary Joy Breton
2321 Fell's Lane
Faulkland
Wilmington, Delaware 19808

3. ~~Gatekeeper's Cottage~~

Parker T. Fernald
Parker T. Fernald
Manager
Corporate Real Estate
Corporate Real Estate
Hercules, Inc.
Hercules, Inc.
910 Market Street
Wilmington, Delaware 19809

4. ~~The Swiss Chalet~~

Peter & Margaret DeMasi
Peter & Margaret DeMasi
802 McKean's Church Road
Wilmington, Delaware 19808

5. ~~Tenant House (3010 Faulkland Road)~~

Mr. Donald Burawski
Mr. Donald Burawski
New Castle County
Department of Parks and Recreation
Department of Parks and Recreation
102 Middleshore Road
Wilmington, Delaware 19804

6. ~~The Stone Barn~~

Roger & Kaye Murray
Roger & Kaye Murray
3007 Faulkland Road
Faulkland
Wilmington, Delaware 19808

7. ~~The Miller's Residence~~

Mrs. Barbara Stoltenbert
Mrs. Barbara Stoltenbert
1705 Hillcrest Road
1705 Hillcrest Road
Marshalltown, Iowa 50158

8. ~~Twentieth Century Georgian Revival House~~

Parker T. Fernald
Parker T. Fernald
Manager
Manager
Corporate Real Estate
Corporate Real Estate
Hercules, Inc.
Hercules, Inc.
910 Market Street
910 Market Street
Wilmington, Delaware 19809

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National Register of Historic Places
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received

date entered

Continuation sheet

Item number 7

Page 1

FELL HISTORIC DISTRICT DESCRIPTION: JUSTIFICATION OF BOUNDARIES
FELL HISTORIC DISTRICT DESCRIPTION: JUSTIFICATION OF BOUNDARIES

The boundaries of the Fell Historic District were drawn to include the structures built and owned by four generations of the Fell family; New Fell's Lane, which leads to the Mansion from Faulkland Road; and the area that encompasses the location of the now defunct "Old" Fell's Lane, the original access route to the Mansion. The narrow strip of vacant land between these two lanes, overgrown with trees and bushes and acting as a natural buffer between the Mansion and the Barn, is also included within the boundaries of the District. Under single ownership until the 1940's, the District today is still a cohesive unit, but with seven different landowners. As much as possible, the boundaries follow existing property lines. The few modern dwellings that lie in the immediate vicinity of the District are visually unobtrusive due to the screen of trees within and adjacent to the District. Originally part of the Fell Estate, the land surrounding the District has been developed as suburban housing units to the east and west, as a golf course to the north, and as state parkland to the south.

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National Park Service
National Register of Historic Places
Inventory—Nomination Form

For NPS use only

date entered

Continuation sheet

Item number 7

Page 2

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

1. The Fell Mansion (2323 Fell's Lane)

Although a definite date cannot be assigned to this Greek Revival structure, a handwritten survey of the Mansion was found among the Fell correspondence, dated August 29, 1840, and approved by Courtland J. Fell (owner from 1829 to 1848), which gives an accurate description of the exterior as well as the interior arrangement of the rooms. Today the house is almost identical to the survey of 1840, with some additions. The Mansion is a two and one-half story, double-pile, five-bay symmetrical structure built of field stone with a rough cast, pebble-dashed stucco veneer. In dimension it is roughly 50 x 40 with a gable roof that was originally covered with cedar shingles (now asphalt) and is pierced by three segmental domers. There is a molded box cornice and at each end of the roof is a double-linked chimney.

At the front entrance is a projecting one-bay Doric portico reached by seven wooden steps. Two fluted Doric columns support a Doric entablature, and single Doric pilasters flank each side of a deep-set doorway with an "Adamesque" fanlight. The interior has a 10-foot wide entry hallway flanked by two rooms on each side, and an open cherry wood stairway leading to the two upper floors which contain five rooms each.

Appended to Courtland J. Fell's survey is a paragraph written by Franklin Fell (owner from 1848 to 1867), dated November 28, 1857, stating that he adopted the same survey and that he had added to the Mansion a one-story stone kitchen, frame out-kitchen and adjoining woodshed. The one-story kitchen wing, attached to the southwest end of the Mansion, is identical to the Mansion in stucco and window sizes, but deviates from the classical motif in the use of a crenelated roof line. This section is still used as the kitchen.

William Jenks Fell (owner from 1867 to 1903) modified the northeast end of the Mansion by adding a full-length porch and replacing the original windows on this side with two full-length, French-type doors which lead directly onto the porch. Intricate wrought iron decoration completely surrounds the porch. The Fell's family relates that William Jenks Fell had many southern friends, and this porch is the result of his trying to impart a southern character to the Mansion.

When indoor plumbing became the fashion, during the lifetime of William Jenks Fell, a small, two-story addition, approximately two bays wide was attached to the back of the Mansion. This addition was succeeded to match the rest of the Mansion, and the classical motif was retained and used here as well.

United States Department of the Interior
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Inventory—Nomination Form

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Continuation sheet

Item number 7

Page 3

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS
FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

2. The Carriage House (2321 Fells Lane)

Southwest of the mansion, William Jenks Fell built a carriage house in 1894. T-shaped in plan and constructed of uncoursed, roughly-finished granite, this two-story Romanesque Revival structure housed not only carriages but the attendant and his family as well. Meticulous in detail, the carriage house boasts such elements as a square cupola with corner pilasters and molded round-arched louvered panels situated at the roof crossing, round-arched windows with rock-faced ashlar voussoirs, trefoil mullions, and some of the original stained glass. Gable aprons with a large circular motif adorn the three end walls.

Stories are told of how William Jenks Fell, every night during the construction of this building, measured each course of stone laid during the day to make certain the work was completed to his satisfaction.

During the 1950's, Mrs. Elfred B. Hoirris, granddaughter of William Jenks Fell, converted the carriage house into a private residence, and then sold the structure. Retaining the original mass and fabric, modifying the exterior only slightly through the addition of dormers and the enclosing of the carriage door with a large picture window, the essential integrity of the original carriage house has been preserved and has not been seriously compromised.

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National Park ServiceNational Register of Historic Places
Inventory—Nomination Form

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date entered

Continuation sheet

Item number 7

Page 4

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

3. The Gate House (3101 Faulkland Road)

The Gate House is so-called because it is situated at the entrance to "new" Fell's Lane which was constructed when automobiles replaced carriages. Facing Faulkland Road near the crest of the hill that leads down to Red Clay Creek, this Carpenter Gothic dwelling was built sometime prior to 1871. Its appearance today is exactly as described in an application for insurance to the Mutual Insurance Company by Franklin Fell in 1871.

Built into the hillside on a one-story stone foundation, the Gate House is a one and one-half story frame structure sheathed with weatherboard siding. Its three-bay, center door facade has a one-bay flat-roofed porch supported by Doric posts. The gable roof is pierced by two gable, wall dormers on the facade, while on the rear elevation the upper story is lit by two small eyebrow windows. Attached to the rear of the structure is a one-story board and batten shed, described in the insurance application as a kitchen and used today for the same purpose.

Used by the Fell family as a tenant house, this dwelling was rented either on a year's lease or for the summer months to visitors vacationing at the nearby Brandywine Springs.

United States Department of the Interior
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National Register of Historic Places
Inventory—Nomination Form

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Continuation sheet

Item number 7

Page 5

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS
FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

4. Double Tenant House (3012-14 Faulkland Road)

Built to resemble a Swiss chalet, this picturesque frame structure, built along and overlooking Faulkland Road as it gently descends toward Red Clay Creek, is said to have been built by William Jenks Fell upon his return from a European trip in the 1860's. The dwelling is described in an application for insurance by Franklin Fell in 1871. It, too, has not changed from its description of over one hundred years ago: This two and one-half story building is rectangular in plan and rests on a one-story stone foundation. A central cross gable balances identical right and left sides with matching verandahs, covered balconies and porches, and an outside staircase. Unique in design with a perfect balance of textures, open against closed spaces, and repetition of shapes, there is a unity within the variety.

As with the Gate House, this Swiss-style dwelling was always used by the Fell family as a tenant house.

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National Park Service

National Register of Historic Places
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Continuation sheet

Item number 7

Page 6

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS
FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

5. Tenant House (3010 Faulkland Road)

Adjacent to the Swiss-style house and descending the hill with an orientation toward Red Clay Creek, is the third tenant house. This house also appears on the 1871 application for insurance, however, the description of it differs from the appearance of the house today.

This tenant house began as a two-story frame house on a one-story stone foundation. Added to the back of the house, probably close to the turn of the century is a two-story, one-bay ell containing a sunken living room with a projecting bay window surmounted by stained glass. The one-bay, wooden front porch seems to have been added the same time as the ell. On the interior, the open staircase leading to the second floor has a most unusual wooden baluster of a trefoil cut-out design. This same motif is used on the stairway leading down into the sunken living room. During the twentieth century, a one-car garage was added to the west endwall.

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National Park Service

National Register of Historic Places
Inventory—Nomination Form

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date entered _____

Continuation sheet

Item number 7

Page 7

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

6. The Stone Barn (3007 Faulkland Road)

Situated on the opposite side of Faulkland Road from the two tenant houses is the stone barn. It is a massive, fieldstone structure with large structural quoins. This structure appears on the 1816 assessment list for Mill Creek Hundred as owned by William Faulk. Rented out to tenant farmers throughout the nineteenth and early twentieth centuries, the barn was converted into a residence by Mrs. Eldred B. Morris, granddaughter of William Jenks Fell, during the 1950's. Today, the original central entranceway to the bank-type barn has been utilized as the entrance to this private residence and three gable dormers have been added to the gable roof. The interior utilizes the original beams and flooring.

These minimal changes have not compromised the original integrity of the barn, which retains its distinctive mass and fabric.

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National Register of Historic Places
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number 7

Page 8

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS
FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

7. ~~The Miller/Farmer's Residence~~ (3001 Faulkland Road)

The miller/farmer's house is located near the site of the Faulkland Spice Mill. Built into the hillside near the banks of Red Clay Creek, this unpretentious stuccoed stone, two and one-half story dwelling is the earliest structure in the District, dating from the tenure of the Faulks. Known to the Fell family as the farm house, and utilized by the tenant farmer, this structure is listed in the 1803 assessment list for Mill Creek Hundred as an "unfinished stone dwelling" on William Faulk's property. At some point during either Courtland J. or Franklin Fell's ownership, this house was converted into a double-dwelling and given a cross-gabled roof. The structure was partially damaged by fire in 1878, and an agreement containing the plans and specifications for the rebuilding of this dwelling was found among the Fell papers.

During the 1900's, Delano Boynton, grandson of William Jenks Fell, moved into this structure and converted it back to a single dwelling.

By replacing the separate entrances with a double window and placing the new entrance on the right side, the house was returned to its original function as a one-family dwelling with minimal loss of integrity.

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Inventory—Nomination Form**

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Continuation sheet

Item number

7

Page

9

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

8. Georgian Revival, Twentieth Century House (2325 Fell's Lane)

The most recent structure in the District is this Georgian-Revival residence dating from 1925. The facade is a perfect replication of an eighteenth century Georgian plan. Constructed of rubble fieldstone, it is two and one-half stories, five bays with a gable roof that is pierced by three gable dormers in the front and two in the back. The center doorway with semi-circular fanlight has an elegant surround with broken pediment, engaged columns and pilasters of a Tuscan-Doric order.

The rear of this rectangular structure departs from the rigid symmetry of the facade due to two one-story wings that project from the east and west sides. The central entrance is reached through the small courtyard between them. Above the entrance, which has both transom and sidelights, is a Palladian window repeating the decorative elements on the door beneath.

The house was designed by Lyman D. Bothwell, husband of Harriet Fell Fulton, who is the granddaughter of William Jenks Fell. It was the home of the Bothwell's until Hercules, Inc. bought the property in the 1970's.

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/humanitarian
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input checked="" type="checkbox"/> other (specify)
		<input type="checkbox"/> invention		Local History

Specific dates 1803-1925 Builder/Architect Unknown

Statement of Significance (in one paragraph)

The Fell Historic District is significant because it preserves, virtually intact, a nineteenth century wealthy gentleman's country manufacturing/farming estate with its collection of buildings of various sizes, shapes, architectural styles and functions, which in and of itself created a self-sufficient economic unit. Historically, the district must be seen in the context of the Fell family which was responsible for the development and final dissolution of the estate. Architecturally, the district illustrates a compendium of architectural styles that reflects not only the social status of the occupants, but also the Fell family's interest in architecture through their choice of divergent yet contemporary architectural fashion. On the basis of its architectural integrity and of these illustrative qualities, the district is considered significant in terms of National Register Criterion C as it embodies the distinctive characteristics of a type, period or method of construction; and in terms of National Register criteria A and B for its association with events and persons significant to the local past.

Having its origins sometime in the eighteenth century, this district began as the site of a merchant mill. This, its first period, dates from 1780-1829, although none of the existing buildings date prior to 1803. The stuccoed, field stone residence (1803) and the stone barn (1803-1816) were built by William Faulk, a miller. When Jonathan Fell bought this nucleus of three buildings, (including the mill, which is no longer extant) in 1829, the district entered its second period which spanned the years 1829-1903. Courtenay J. Fell and Franklin Fell, sons of Jonathan Fell, and William Jenks Fell, who was the son of Franklin, were products of Philadelphia society and they brought cosmopolitan tastes and current Philadelphia fashion to Faulkland, Delaware, during their subsequent ownership. This awareness of current style can be seen in the buildings they added to the estate during their tenure: the Greek Revival Mansion (c. 1836), the Swiss-style tenant house (1860's), the Carpenter Gothic Gate House (1860), the modified tenant house (1860) and the Romanesque Revival carriage house (1894).

With the death of William Jenks Fell in 1903, the district entered its final period characterized by litigation, the division of the estate among the heirs, and the erection in 1925 of the last building in the district, the Georgian Revival residence of Harriet Bowersell, granddaughter of William Jenks Fell. During the 1950's, the stone barn and carriage house, were renovated, and the properties began to be sold off individually. Today, the only properties still held by the Fell's heirs are the mansion and the miller/farmer's residence.

9. Major Bibliographical References

Fell Family Papers (Private)
 New Castle County Recorder of Deeds
 Hagley Museum - Records of Fell Company
 Pursell, C. W., Jr. - Two Mills on Red Clay Creek in the Nineteenth Century

10. Geographical Data

Acreage of nominated property 16±

Quadrangle name Newark, DE and Kennett Square, PA-DE

Quadrangle scale 1:24,000

UMT References

A	H 18	4 K 1 5 a 0	k t 0 0 3 0
	Zone	Easting	Northing
C	1 18	4 4 5 0 9 0	3 9 9 6 1 0
E			
G			

B	ns	4 4 6 0 1 5 1 0	0 1 0 1 9 6 1 9 8
	Zone	Easting	Northing
D	1 18	h h 5 0 2 0	0 1 4 0 0 1 5 0
FLU			
HLU			

Verbal boundary description and justification

See continuation sheet

List all states and counties for properties overlapping state or county boundaries

state	NA	code	county	NA	code
state	NA	code	county	NA	code

11. Form Prepared By

name/title Gretchen Fitting, Planning Aide/Valerie Cosma, Planning Aide

organization New Castle County Dept. of Planning date March 25, 1983

street & number 2701 Capitol Trail (Kirkwood Highway) telephone 366-7780

city or town Newark state Delaware

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national state local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature

Ann R. Griffith

title

date April 27, 1983

For NPS use only

I hereby certify that this property is included in the National Register

Ketlopel date

of the National Register

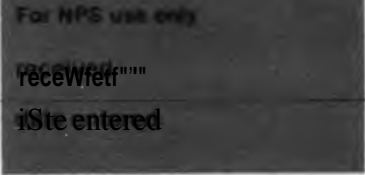
Attest: date

Chief of Registration

.1

United States Department of the Interior
National Park Service

National Register of Historic Places
Inventory—Nomination Form



Continuation sheet

Item number 8

Page 1

FELL HISTORIC DISTRICT: STATEMENT OF SIGNIFICANCE

Although the actual mill building is no longer in existence, the group of buildings that comprise this district supported the mill and represent the continuous use of this land as a mill site from circa 1780 to the 1890's. Due to its hilly terrain and numerous streams, northern New Castle County proved to be a suitable area for the erection of mills at an early date. By 1804, Mill Creek Hundred, the 43 square mile political unit in which the Fell historic district is located, contained 23 mills within its boundaries. The majority of these were saw and/or grist mills. William Faulk's grist and saw mill, the property that was purchased by Jonathan Fell in 1829, is included in this count.

Eighteenth century mill operations in New Castle County tended to be small-scale, family-run industries with the family living on the site. Some recognized examples of nearby mills contemporary with Faulk's facility are the Greenbank Mill (N-191, NR 1973), the Graves Mill historic district (N-5005, NR 1979), and the John England Mill (N-248, NR 1972). As with the Faulk Mill, these three operations were composed of a relatively small mill building, the owner's house and sometimes a barn and a tenant house. Trends in nineteenth century mill development followed two different routes. Many mills, such as the ones mentioned above, remained small in scale, but were improved by more complex mill machinery. Several mills, however, expanded into factory complexes, simultaneously developing a community around the industry in the form of workers' housing. This type of factory-scale mill can be seen in the Auburn Mills (N-5003, NR 1980) and the Garrett Smith Mill (N-4008, NR 1978), both ordered industrial communities. In the context of these neighboring mills the Fell Site Mill was one that remained relatively small-scale during the nineteenth century, functioning under the direction of a single family. The arrangement of buildings within the Fell historic district is typical of mill site arrangement in the county, as well. Partly due to the nature of the terrain and partly due to status and tradition, the mill owner's house is usually situated on a hill overlooking the mill activities and tenant houses below.

As a small-scale mill operation the Fell historic district is typical of many nineteenth century mill sites in New Castle County, however, the district is also quite unique to this area in the sophistication of its building styles and the architectural diversity of its domestic compound. Nowhere else in the county can there be found such an eclectic grouping of formal architectural styles in a rural industrial setting. In addition, one building in the group, the "Swiss Chalet" style tenant house, is unique in the state.

This deliberate choice of formal architectural styles may be the result of the Fell family being based in Philadelphia where there was a greater awareness of architectural fashion, as well as the Fells' travels both in this country and abroad. Typically, nineteenth century rural buildings in Delaware tend toward vernacular versions of Greek Revival and Italianate styles. Perhaps another reason that building styles were chosen so carefully by the Fells is that this property functioned as

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Continuation sheet

Item number 8

Page 2

FELL HISTORIC DISTRICT: STATEMENT OF SIGNIFICANCE

their estate as well as an industrial site. Since the spice mill at Faulkland was only one branch of the family's business concerns, this property in a sense, served as a country home away from Philadelphia and a showplace to greet visitors and family. It was not until late in the nineteenth century that this concept of a formal estate as part of a family's industrial concerns was picked up in neighboring mills, when the Israel Marshall House (N-5003, NR 1980) was built in 1897 at the Auburn Mills.

Attracted to the Faulkland area after a visit to the Chalybeate waters at Brandywine Springs, Jonathan Fell, founder and proprietor of a spice manufacturing facility in Philadelphia, purchased a mill site on Red Clay Creek from John Faulk in 1828. Although Faulk's name has been perpetuated by the name of both the road and the site, it was the Fell family who made the area well-known, and developed it into their family "compound."

After the death of Jonathan Fell in 1829, his son Courland J. moved from Philadelphia to Faulkland to manage the newly acquired mill and made Faulkland his permanent residence. The Greek Revival mansion that he built reflects the architectural style currently in fashion in Philadelphia. Beloved by every generation of Fells as well as their relatives and friends, the beauty and serenity of the mansion and its surroundings were often mentioned in correspondence. The death of Courland J. Fell in 1848 left the family business in the hands of Franklin, his younger brother, under whose direction (1848-1867) the spice business grew. The simple merchant mill was enlarged and improved with new machinery. It used a steam engine and water power equal to one hundred horses and was brought to world-wide prominence. The mill was used primarily for the manufacture of mustard, cocoa, the grinding of spices, and the making of hominy. Adhering to their motto, never sell an article otherwise than represented, the Fells gained the confidence of the public and earned a fortune for themselves.

Inheriting his father's desire for wider business interests, Franklin branched out into real estate development and mining and selling of coal in the anthracite region of Pennsylvania. Reflecting his interests in real estate is his building of at least two of the three tenant houses at Faulkland. Leases found among the Fell papers indicate that these rentals were on a yearly basis as well as for summer only.

Turning the direction of the firm over to his son, William Jenks Fell, in 1867, Franklin Fell retired from the mercantile life and settled permanently at Faulkland. That same year the first of a series of disasters struck--the mill was destroyed by fire. Not only did the fire weaken the financial position of the Faulkland Spice Company, but it also destroyed the original eighteenth century mill.

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Inventory—Nomination Form

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Continuation sheet

Item number 8

Page 3

FELL HISTORIC DISTRICT: STATEMENT OF SIGNIFICANCE

Within two years, the old spice mill was replaced by a new and larger one, but this too was destroyed by a second fire in 1874. The crowning calamity came a year later when on July 10, 1875, Franklin Fell died. His only son, William Jenks Fell, inherited his father's fortune (estimated at \$100,000) and a firm that had little chance of survival. After having been rebuilt and rented out, the spice mill was totally destroyed by a fire in 1878. This fire terminated the spice manufacturing business on Red Clay Creek.

William Jenks Fell continued to utilize the site for milling activities. Listed in the Delaware State Directory in 1894 was the notation: Faulkland, Fell, W. J. Flour Mill. It is ironic that after a century of continuous use the Faulkland mill site became what it had been originally, a grist mill. Residing at Faulkland with his wife's untimely death in 1881, William Jenks Fell thereafter divided his time between Philadelphia and Faulkland, building some nine years before his death (1894) the Romanesque Revival carriage house located near the mansion.

Having nearly exhausted the family fortune, William Jenks Fell at his death in 1903 left the Faulkland estate to his granddaughter, Harriet Fell Fulton. Feeling that he and the Fell family had been disgraced by his daughter, Elizabeth Fell Boynton, who had divorced her first husband to marry another man, he disinherited her and left the estate to his granddaughter. Borrowing money in order to buy the estate from her daughter, Elizabeth (Elsie) Fell Boynton made the mansion her home until her death in 1940.

Today, the Faulkland mansion and the miller/farmer's residence are still retained by descendants of the Fell family, and even though new owners have acquired the remaining six buildings that comprise the domestic core of the Fell estate, these properties as a group represent the impact of nearly a century of building activity under one family.

Level of Significance

The district is of local significance, even though the property has unusual architectural features which make it of interest to the architectural and social history of the state. Architecturally this district is totally unique to Mill Creek Hundred and New Castle County. Seen as a whole, the district embodies unusual and distinctive examples of architectural styles and survives intact as an example of a nineteenth century gentleman's estate with its collection of buildings whose functions express status.

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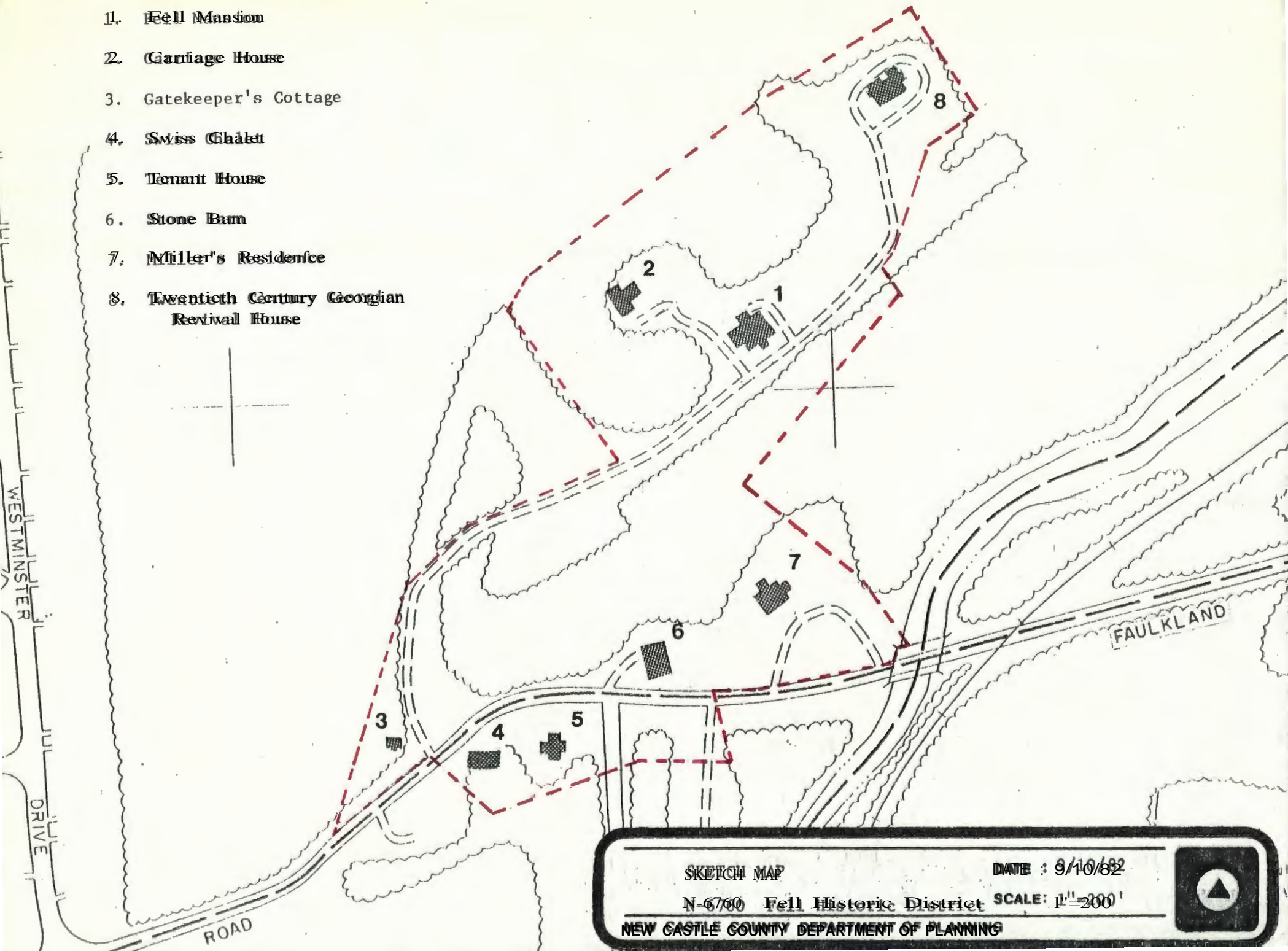
Item number 10

Page 1

FELL HISTORIC DISTRICT: VERBAL BOUNDARY DESCRIPTION
FELL HISTORIC DISTRICT: VERBAL BOUNDARY DESCRIPTION

The western boundary of the Fell Historic District begins at the western corner of the intersection of Faulkland Road and New Fell's Lane. From this point it runs 220 feet southwest along the northern edge of Faulkland Road. It then traces an imaginary straight line that runs 450 feet northeast to a point where it meets the western edge of Parcel 18. From there it continues in a northeasterly direction 430 feet along the northwestern edge of Parcel 18. The boundary then proceeds northwest 320 feet along the southwestern border of Parcel 2. It then travels northeast 70 feet along the northwest edge of Parcel 2. The remainder of the northwestern boundary of the District proceeds 223 feet northeast along the northwest edge of Parcel 11, and 201.36 feet along Parcel 2, then continues in a straight line 375.64 feet northeast into Parcel 1. The boundary line then turns 90 degrees toward the south and runs 365 feet in a southeasterly direction. From that point, the boundary travels 300 feet southwest along the tree line that defines the front yard space of the Georgian Revival House. It then runs 30 feet southeast along the northeast edge of Parcel 2 and 430 feet southwest along the southeast edge of the same parcel. The line then continues 350 feet southeast along the northeast edge of Parcel 5 and then runs 20 feet west and 25 feet south avoiding the Faulkland Road bridge that crosses Red Clay Creek. The boundary continues 310 feet west along the northern edge of Faulkland Road, then travels 130 feet south along the eastern edge of Parcel 17. It then runs 420 feet west along the southern edges of Parcel 17 and Parcel 7. The boundary line then turns and runs 155 feet northwest along the southwest edge of Parcel 7 to the point of origin. These boundaries enclose an area of approximately 16 acres. The parcels referred to in these boundaries are those that appear on the 1982 New Castle County Property Tax Maps designated by the number 08-33.00.

1. Fell Mansion
2. Carriage House
3. Gatekeeper's Cottage
4. Swiss Chalet
5. Tenant House
6. Stone Barn
7. Miller's Residence
8. Twentieth Century Georgian Revival House



SKETCH MAP

DATE : 9/10/82

N-6760 Fell Historic District

SCALE: 1"=200'

NEW CASTLE COUNTY DEPARTMENT OF PLANNING



United States Department of the Interior
National Park Service

Fee Historic District
New Castle County
DELAWARE

Working No. MAY 18 1983
Fed. Reg. Date: 2/7/84
Date Due: 6/16/83 7/2/83
Action: JIC ACCEPT 6/16/83

- resubmission
 - nomination by person or local government
 - owner objection
 - appeal
- Substantive Review: sample request appeal NR decision

Entered in the National Register RETURN REJECT
Federal Agency: _____

Reviewer's comments:

Reason/Criteria _____
Reviewer _____
Discipline _____
Date _____
 see continuation sheet

Nomination returned for: technical corrections cited below
 substantive reasons discussed below

1. Name

2. Location

3. Classification

Category	Ownership	Status	Present Use
	Public Acquisition	Accessible	

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

has this property been determined eligible? yes no

7. Description

Condition		Check one	Check one
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input type="checkbox"/> unaltered	<input type="checkbox"/> original site
<input type="checkbox"/> good	<input type="checkbox"/> ruins	<input type="checkbox"/> altered	<input type="checkbox"/> moved date _____
<input type="checkbox"/> poor	<input type="checkbox"/> nonexistent	<input type="checkbox"/> I	

Describe the present and original (if known) physical appearance

- summary paragraph
- completeness
- clarity
- alterations/integrity
- dates
- boundary selection

8. Significance

Period _____ Areas of Significance—Check and justify below

Specific dates _____ Builder/Architect _____

Statement of Significance (in one paragraph)

- _____ summary paragraph
- _____ completeness
- _____ clarity
- _____ applicable criteria
- _____ justification of areas checked
- _____ relating significance to the resource
- _____ context
- _____ relationship of integrity to significance
- _____ justification of exception
- _____ other

9. Major Bibliographical References

10. Geographical Data

Acres of nominated property _____
% of nonfederal property _____
Quadrangle name _____
UNM reference _____

Verbal boundary description and justification _____
VWM _____

11. Form Prepared By

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:
The national significance of this property is: _____
_____ national _____ state _____ local
_____ Nat. _____

State Historic Preservation Officer signature _____

Title _____ date _____

13. Other

- _____ Maps
- _____ Photographs
- _____ Other

Questions concerning this nomination may be directed to _____

Signed _____ Date _____ Phone: 202 272-3504

Comments for any item may be continued on an attached sheet



Name: *Fell Mansion*

Location: *Fell Historic District*

Photographer: *V. Cerna*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology & Historic Preservation

Description: *view from SW*

Photograph Number: *1*



Name: Carriage House

Location: Fell Historic District

Photographer: V. Ceane

Date of Photograph: 1992

Location of Negative:

Bureau of Archaeology & Historic Preservation

Description: view from SE

Photograph Number: 2



Name: Gate Keeper's Cottage

Location: Fell Historic District

Photographer: U. Ceana

Date of Photograph: 1982

Location of Negative:

Bureau of Archaeology & Historic Preservation

Description: view from SW

Photograph Number: 3



Name: *Swiss Chalet*

Location: *Fell Historic District*

Photographer: *V. Ceona*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: *view from NW*

Photograph Number: *4*



Name: *Tenant House*

Location: *Fell Historic District*

Photographer: *V. Ceana*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: *view from NW*

Photograph Number: *65*



Name: *Stone Barn*

Location: *Fell Historic District*

Photographer: *V. Ceona*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: *view from SW*

Photograph Number: *6*



Name: *Miller's Residence*

Location: *Fell Historic District*

Photographer: *V. Cesna*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: *view from SE*

Photograph Number: *7*



Name: 20th Century Georgian Revival House

Location: Fall Historic District

Photographer: V. Ceana

Date of Photograph: 1982

Location of Negative:

Bureau of Archaeology & Historic Preservation

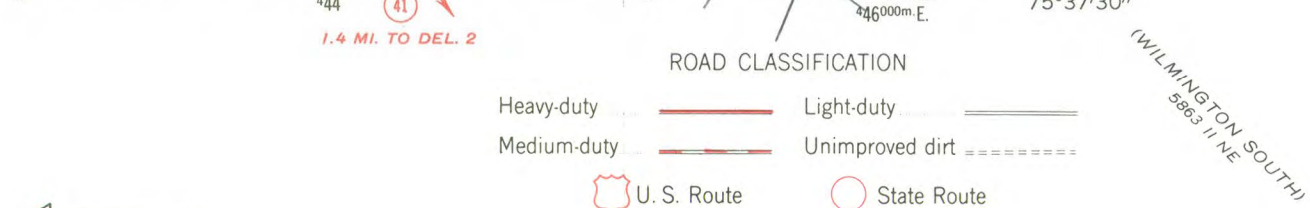
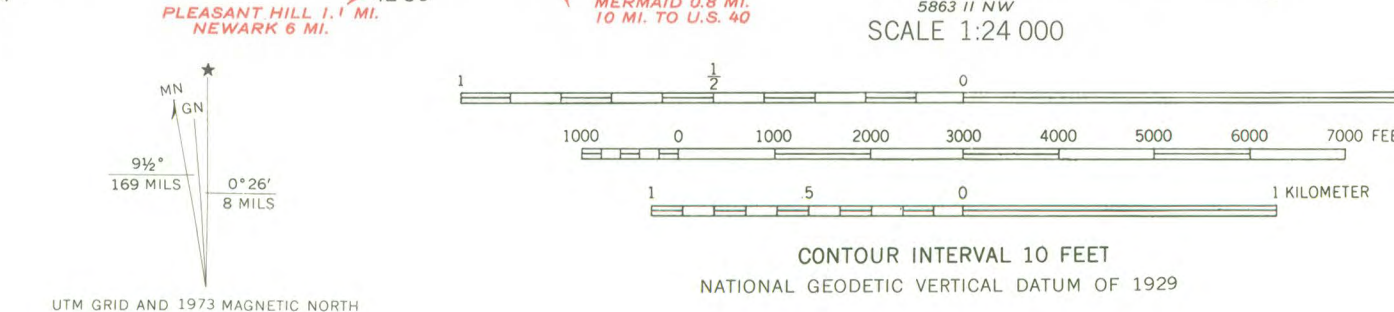
Description: view from SE

Photograph Number: 8



Fell Historic District - N-6760
Kennett Square, PA-DE Quadrangle
7.5 Minute Series
Scale - 1:24000
1954, Photo Revised 1968 and 1973
A - 18/445580/4400030
D - 18/445420/4400150

Mapped, edited, and published by the Geological Survey
Control by USGS, USCS&GS, and Pennsylvania Highway Department
Topography from aerial photographs by photogrammetric methods.
Aerial photographs taken 1950. Field check 1954
Polyconic projection. 1927 North American datum
10,000-foot grids based on Pennsylvania coordinate system,
south zone, and Delaware coordinate system
1000-meter Universal Transverse Mercator grid ticks,
zone 18, shown in blue
Revisions shown in purple compiled in cooperation with
State of Pennsylvania agencies from aerial photographs
taken 1968 and 1973. This information not field checked
Purple tint indicates extensive urban areas



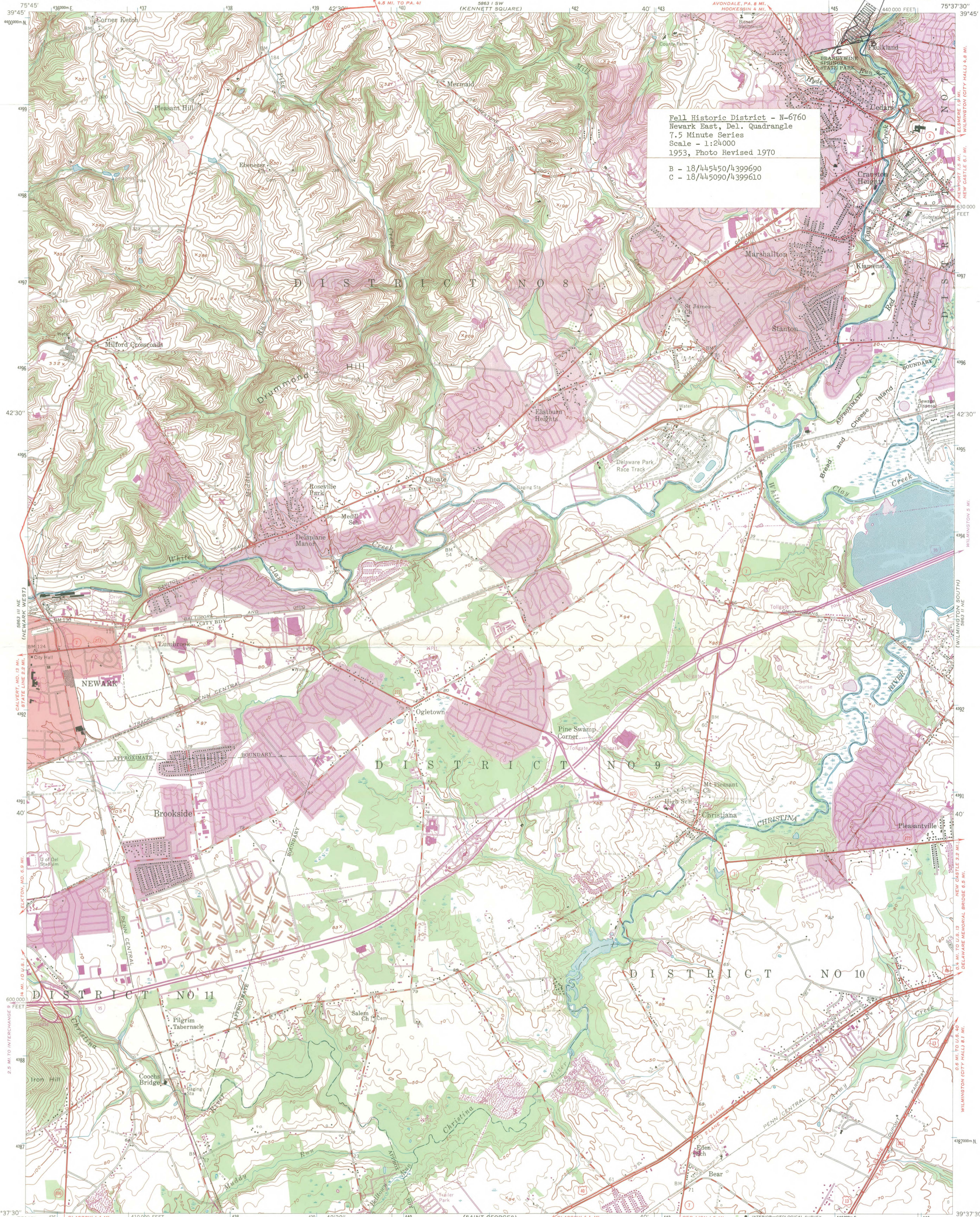
KENNETT SQUARE, PA.-DEL.

N 3945-W 7537.5/7.5
1954

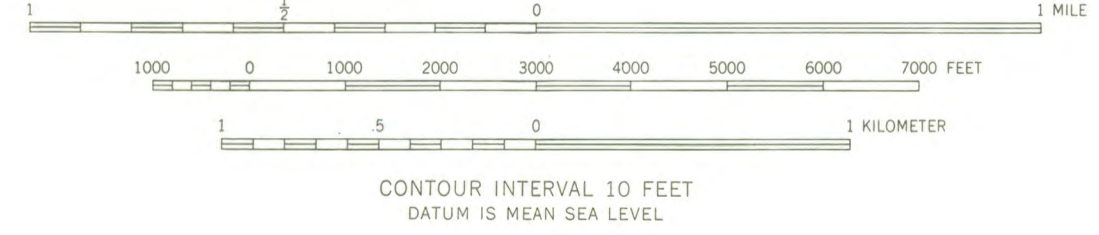
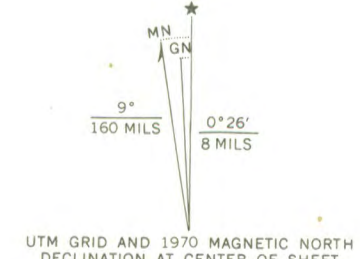
PHOTOREVISED 1968 AND 1973
AMS 5863 I SW-SERIES V831

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Fell Historic District - N-6760
Newark East, Del. Quadrangle
7.5 Minute Series
Scale - 1:24000
1953, Photo Revised 1970
B - 18/445450/4399690
C - 18/445090/4399610



Mapped, edited, and published by the Geological Survey
Control by USGS, USC&GS, and Delaware Geodetic Survey
Topography from aerial photographs by multiplex methods
Aerial photographs taken 1951. Field check 1953
Polyconic projection. 1927 North American datum
10,000-foot grid based on Delaware coordinate system
Red tint indicates area in which only
landmark buildings are shown
1000-meter Universal Transverse Mercator grid ticks,
zone 18, shown in blue
Revisions shown in purple compiled from aerial photographs
taken 1970. This information not field checked
Purple tint indicates extension of urban areas



ROAD CLASSIFICATION
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U.S. Route — State Route

NEWARK EAST, DEL.
NW/4 WILMINGTON 15' QUADRANGLE
N 3937.5—W 7537.5/7.5

1953
PHOTOREVISED 1970
AMS 5863 II NW—SERIES 8832

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



STATE OF DELAWARE
 DEPARTMENT OF STATE
DIVISION OF HISTORICAL AND CULTURAL AFFAIRS
 OLD STATE HOUSE • THE GREEN • DOVER • 19001
 (302) 736-5685

BUREAU OF ARCHAEOLOGY AND
 HISTORIC PRESERVATION

April 28, 1983

Carol Shull
 Chief of Registration
 National Register of Historic Places Branch
 Interagency Resource Management Division
 National Park Service
 Department of the Interior
 Washington, D.C. 20240

Dear Ms. Shull:

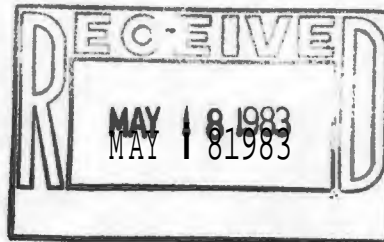
Enclosed are the forms needed to nominate the Delaware Industrial School for Girls, Fell Historic District, Kaunagrap Building, Lore School and the New Century Club of Wilmington to the National Register of Historic Places.

If you have any questions, please contact Stephen G. Del Sordo of my staff.

Sincerely yours,

Daniel R. Griffith, Deputy
 State Historic Preservation Officer

Enclosure



Proposal for Historical Marker Red Clay Creek and Faulkland Road Mill Site

Ken Shelin

September 10, 2015

Abstract

The existence of an important mill site along the Red Clay Creek at Faulkland Road is not currently identified even though it existed from the late 1700s and was the location of the first automated flour milling operation in the world invented by Oliver Evans native of Newport, Delaware. The mill was subsequently owned by William Faulk and later by the Fell Family a Quaker family from Philadelphia which converted the mill to the grinding of spices, chocolate, coffee and hominy. The mill was owned by the Fell's from 1828 until 1878 when a fire destroyed the mill. The foundation and remnants of the mill race still exist on the property. The site was typical of 18th and 19th century industrial sites with workers and owners living nearby the mill. Those houses and properties are now part of the Fell National Historic District.

Introduction

This paper is intended to provide the history and significance of the site which is proposed for a Delaware State historical marker.

Method

The historical description of the site will show that this is a very important location for early American and Delaware industrial activity where significant industrial progress and efficiency marked a major advance in industrial productivity.

Discussion

Early flour milling operations were labor intensive and resulted coarse product contaminated with foreign material. One of the earliest mills in Mill Creek Hundred was built in 1749 on Red Clay Creek near Brandywine Springs. In 1785, Oliver Evans an inventor born in Newport, DE, bought this mill which operated in the traditional way with much lifting, shoveling and carrying of product from one operation to another. Over the next two years while operating the mill, Oliver Evans invented a hopper, a boy, an elevator, a descender, a conveyor and a drill which revolutionized flour milling operations resulting in a cleaner, more consistent high quality superfine flour using only two laborers. He patented his mill design in Delaware and worked to get it patented elsewhere since there was no national patent office at the time. A working model of his invention operates today at the Hagley Museum. Local millers were slow to adopt his design and getting royalties from those who did proved difficult. Life improved for Evans after the creation of a national patent office in 1790. His design was the 3rd patent issued by the US Patent office. Below is an ad describing his mill design from 1797.

To the Millers.

THE Subscribers have a Merchant-Mill on Redclay Creek, 3 Miles above Newport, Newcastle County, Delaware, with Evans's new-invented Elevators and Hopperboys erected in her, which does the principal Part of the Work. One of the Elevators receives the Wheat at the Tail of the Waggon, and carries it up into Garners, out of which it runs through Spouts into the Screen and Fan, through which it may be turned as often as necessary, till sufficiently cleaned; thence into a Garner over the Hopper which feeds the Stones regularly.—Another Elevator receives the Meal when ground and carries it up, and it falls on the Meal-loft, where the Hopperboy receives it and spreads it abroad thin over the Floor, and turns it over and over perhaps an hundred Times and cools it compleatly, then conveys it into the Boulting-Hopper, which it attends regularly; said Elevator also carries up the Tail Flour with a Portion of Bran, and mixes it with the ground Meal to be bouted over, by which means the Boulting is done to the greatest Perfection possible, and the Cloths will be kept open by the Bran in the hottest Weather without Knockers.—All this is done without Labour, with much less Waste, and much better than is possible to be done by Hand, as the Miller has no need to trample in the Meal, nor any way to handle or move it from the Time it leaves the Waggoner's Bag, until it comes into the superfine Chest ready for Packing.—The ~~whole~~ Expence of the Materials and erecting said Machinery will not exceed from Twenty to Forty Dollars, as the Mills may differ in Construction. One Hand can now do the Work that used to employ two or three, two Hands are able to attend a Mill with two Waterwheels and two Pair of Stones steady running, with very little Assistance, if the Machinery be well applied—They are simple and durable, and not subject to get out of Repair. If Millers will think on this when they are fatigued carrying heavy Bags, or with hoisting their Wheat or Meal, spreading to cool, and attending the Boulting-Hopper, Screen and Fan, and when they see the Meal scattered over the Stairs, &c. wasting, or when they hoist their tail Flour with the Bran to bout over—and when their Flour is scraped for neglect in Boulting, and when the Superfine is let run into the Middlings by overfeeding, &c. &c. and consider that these Machines will effectually remedy all this, and save great Expence in Wages, Provisions, Brushes and Candles—~~and~~ he may conclude that it is not best to continue in the old Way, while such excellent Improvements are extant. Those who choose to adopt them, may have Permission, with full Directions for erecting them, by applying to OLIVER EVANS, the Inventor, who has an exclusive Right, or to either of the Subscribers.

JOHN THEOPHILUS, &
OLIVER EVANS.

N. B. Farmers and others may have Wheat ground during the Winter Season at said Mill (on good Burrs and all Things in the best Order) with great Care and Dispatch, at the low Rate of Thirty Shillings per 100 Bushels, or Eighteen Shillings per Load.

Redclay Creek, Dec. 19, 1787.

Poster: Printed by STEEMER, ALDRIGHT & LANN, a few doors south of the Court-House.

Said Elevators will hoist Water to any height for the purpose of watering Meadows at a very small expence (Oliver Evans)

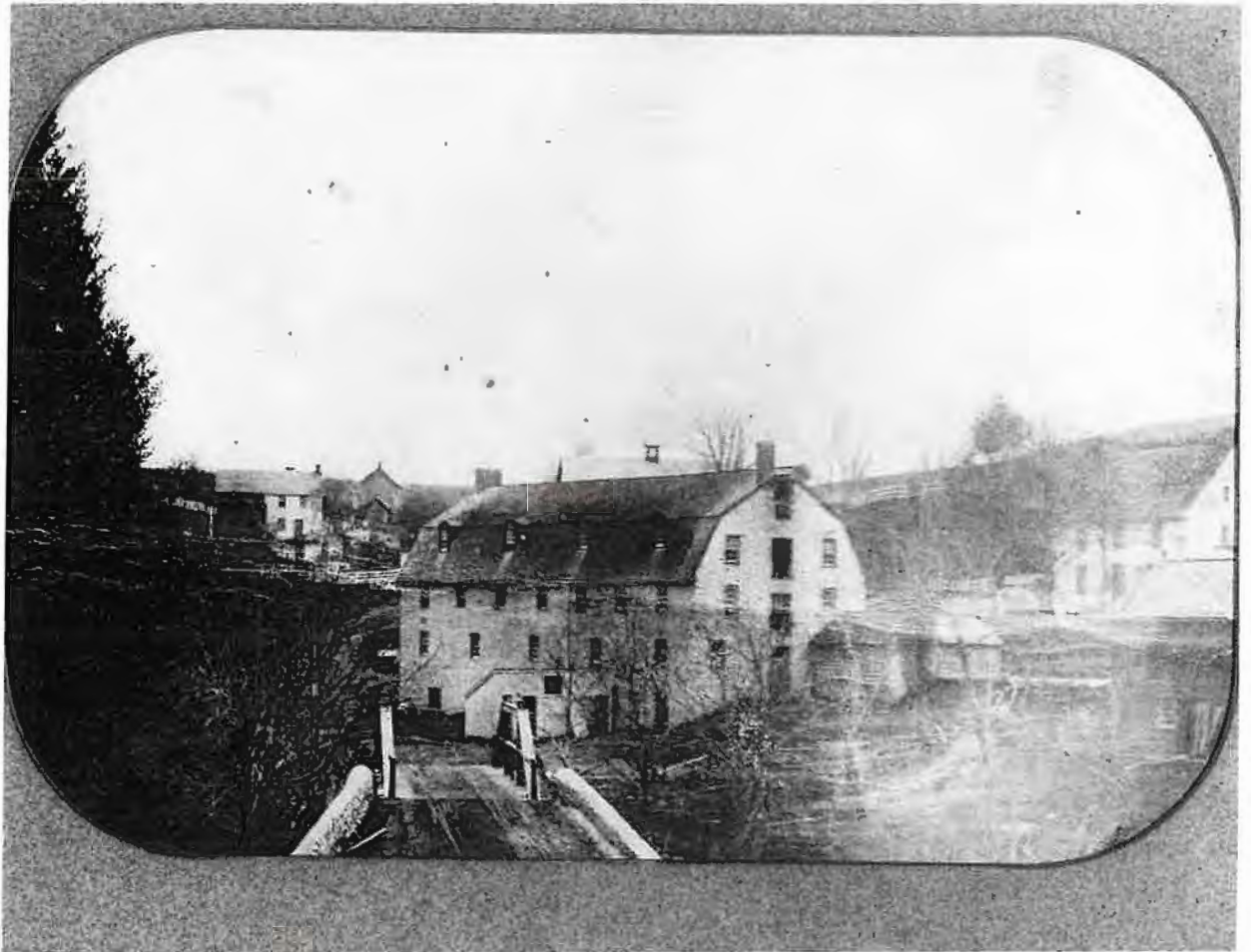
Broadside advertising the Evans flour-mill improvements, 1787.
(Courtesy of the Massachusetts Historical Society.)

Subsequently, the mill passed through several hands including members of Evans own

family. It was purchased by William Foulk in 1795. His son, John Foulk eventually came into ownership of the mill until he sold it in 1828 to Jonathan Fell of Philadelphia. Faulkland Road on which the mill site is located was named for the Foulk family.

Johnathan Fell converted the mill to a spice mill and he and various other members of his family operated it from 1828 until a fire in 1867 destroyed the mill and its equipment. It was rebuilt and operated until 1878 when another fire finally resulted in the closure of the mill. During their ownership, the Fells milled and packed spices in bulk and in retail containers including a variety of mustards, chocolate and cocoa, coffee, spices, seasonings, and hominy. The mill at one time operated 9 sets of mill stones operated by two water wheels. Steam power was also used for packing purposes. There was a kiln attached to the mill and a drying apparatus dried corn and roasted coffee. The mill was the only one of its kind in the State of Delaware and became the leading spice mill in the nation. The sales and administrative offices of the C.J. Fell & Brother business were located at 64 S. Front St. in Philadelphia, Pennsylvania. Products of the mill were shipped by packet boats from Newport on the Christina River and later from the Faulkland depot of the Wilmington and Western Railroad on the bank of Red Clay Creek opposite the mill. The Fell family encouraged the creation and location of the railroad in order to benefit their business. That railroad still exists today and operates as the Wilmington and Western Scenic Railway.

The Fell family built a mansion at the top of a hill above the mill and lived there for seven generations. The estate was broken up and sold by the Fell family in 1942.



The view above looks across the Red Clay Creek from the east. This photo may have been taken about 1849. The bridge seen here may have been the one built in 1813 and is slightly above the location of the current bridge. Today the foundation of the mill is still visible at an angle to Faulkland Road much as seen here. Photos of the Faulkland Depot of the Wilmington and Western Railroad and the remains of the mill race can be seen on the next page. The tracks remain today, but the depot is gone. At one time there was both freight and passenger service on this line.



The Fell family and workers lived in houses surrounding the mill which still exist today (2015) and have been designated as the Fell Historic District on the National Register of Historic Places as of 1984 including 8 buildings which are all currently privately owned and occupied. The former Fell family mansion is located at the top of the hill behind and to the right of the mill site and still exists there today at the end of a private lane.

Three generations of my family, Leonard Woodward, George Woodward and James Woodward, who was born in Fell's Lane, lived on site and managed and operated the mill from 1832 until the 1860s when the first fire destroyed the mill in 1867. Leonard Woodward, who managed the spice mill for many years, and his wife Elizabeth lived in the left or western half of the house which can be seen to the right and behind the mill. They lived in that house from 1832. Elizabeth continued to live in the house for a period of time after Leonard's death at the behest of the Fell family. That house exists today as a single family residence with the address of 3003 Faulkland Road (see below as the house looks today). Leonard died in 1862 and George went off to serve in the Civil War in 1861. James was 4 years old when his father George left to serve in the Union Army (Company B, 1st Regiment, Delaware Infantry) during the Civil War and apparently stayed with his Mother and siblings on site in another home for a period of time. All three generations of Woodwards are buried at St. James Church in Stanton, Delaware.

Thomas Brackin, of the well-known family from the Hockessin area, also worked at the spice mill and may have become manager after Leonard Woodward's death. Business papers of the Fell's Spice Mill can be found in the Hagley Library in Wilmington.



Leonard Woodward lived in west half of the stone Miller's dwelling at Fell's Spice Mill 1833 to 1862

Currently, there is no historical marker or other indication on site of the importance of this mill site and the adjoining structures in the Fell Historic District. This site is historically important to the Mill Creek Hundred area because it was one of the early water-powered mills built along its creeks and streams that created robust industrial activity in northern Delaware; because it was the home of Oliver Evans' revolutionary automated flour mill operation; and because it was the site of the leading spice mill in the nation for about 50 years.

The current owners of the miller's house are John Potter and Neta Pringle. I will be contacting them to see if they are willing to serve as constituent sponsors for an historical marker at this location.

References

1. Oliver Evans Inventive Genius of the American Industrial Revolution by Eugene S. Ferguson, The University of Delaware and The Hagley Museum
2. Two Mills on Red Clay Creek in the 19th Century by Carroll W. Pursell, Jr.
3. C J Fell & Brother Wholesale Price Sheet 1873
4. National Register of Historic Places Inventory –Nomination Form, Fell Historic District dated April 27, 1983
5. Fell Spice Mill business records, Hagley Library
6. Old mill and mill race remnant photos from Hagley Library

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National Register of Historic Places
Inventory—Nomination Form

See instructions in *How to Complete National Register Forms*

Type all entries—complete applicable sections

1. Name

historic Fell Historic District

and/or common

2. Location

street & number Faulkland Road, and New Fell's Lane NA not for publication

city, town Wilmington X vicinity of congressional district

state Delaware code 10 county New Castle code 002

3. Classification

Category	Ownership	Status	Present Use
<input checked="" type="checkbox"/> district	<input type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
		<input type="checkbox"/> no	<input type="checkbox"/> military
			<input type="checkbox"/> museum
			<input type="checkbox"/> park
			<input checked="" type="checkbox"/> private residence
			<input type="checkbox"/> religious
			<input type="checkbox"/> scientific
			<input type="checkbox"/> transportation
			<input type="checkbox"/> other:

4. Owner of Property

name Multiple (See Owners List)

street & number

city, town _____ vicinity of _____ state _____

5. Location of Legal Description

courthouse, registry of deeds, etc. New Castle County Recorder of Deeds

street & number City/County Building, 800 French Street

city, town Wilmington state Delaware

6. Representation in Existing Surveys

title Delaware Cultural Resource Survey has this property been determined eligible? yes no
(N-6760)

date 1982 federal state county local

depository for survey records Bureau of Archaeology and Historic Preservation
Old State House, The Green

city, town Dover state Delaware

7. Description

Condition		Check one	Check one
<input checked="" type="checkbox"/> excellent		<input checked="" type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input checked="" type="checkbox"/> good	<input checked="" type="checkbox"/> deteriorated	<input checked="" type="checkbox"/> altered	<input type="checkbox"/> moved date _____
<input type="checkbox"/> fair	<input type="checkbox"/> ruins		
	<input type="checkbox"/> unexposed		

Describe the present and original (if known) physical appearance

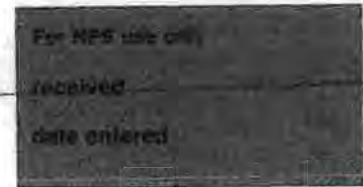
The Fell Historic District is located in Mill Creek Hundred at Faulkland, Delaware. It is nestled into the steeply sloping west bank of Red Clay Creek, and straddles the north and south sides of Faulkland Road, which cuts through the district. The original tract as purchased by Jonathan Fell in 1828 included 93 acres of land along Red Clay Creek in both Mill Creek and Christiana Hundreds, on which there was already standing a merchant mill, a barn, and a miller's residence. Fell converted the mill into a spice manufacturing facility and over the next half-century additional structures were added. Today, the nominated district contains 16+ acres, and within its boundaries are eight architecturally and historically significant buildings that were built and/or owned by the Fell family from the early nineteenth through the early twentieth centuries. This group of buildings includes the circa 1830-1840 stuccoed fieldstoned Greek Revival Fell Mansion; an 1894 Romanesque Revival stone carriage house; a circa 1860 Carpenter Gothic frame gatehouse; two circa 1860 frame tenant houses, one of which was built in a "Swiss Chalet" style; a circa 1800 stone barn and a stuccoed stone miller's residence of the same period; and lastly, a stone Georgian Revival dwelling dating from 1925. The Fell Mansion, the carriage house, the "Swiss Chalet" and the Georgian Revival dwelling are individually eligible for the National Register for their architectural significance. The four remaining buildings substantially contribute to the significance of the district in that they provide the links that illustrate the development of this manufacturing/business family and their interest in varied contemporary architectural styles over nearly a century.

Set in a landscape of steeply sloping hills ascending from the banks of Red Clay Creek, the terrain has dictated the arrangement of the structures in the district. The mansion is situated at the top of the hill overlooking the barn and the site of the mill which both lie along Faulkland Road. Between the mansion and the creek are the tenant houses. All vestiges of the spice manufacturing facility have disappeared and the farming activities have ceased, however, the domestic architectural fabric of the Fell country estate remains intact. It is this domestic core within the boundaries of the original estate that defines the district. All eight of the buildings being nominated were owned or built by the Fell family. There are no non-contributing structures within the district.

The principal change in the visual aspect of the district, aside from the loss of the spice mill, is the screen of trees that has grown up in the original farmland, meadow, and open spaces. These trees, however, do shield the district from the modern development outside of its boundaries. Faulkland Road, which cuts through the district, retains its original contours and configurations, and the tenant houses and the mansion retain their original nineteenth century appearance. The barn and carriage house, converted into private residences during the twentieth century, retain their exterior design and fabric without loss of integrity. The miller's residence, which the Fell's converted into a two-family residence, has been returned to its original early nineteenth century function as a single family dwelling with minimal loss of integrity.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**



Continuation sheet

Item number 4

Page 1

FELL HISTORIC DISTRICT: PROPERTY OWNERS LIST

1. The Fell Mansion

Leigh Hoiriis
2323 Fell's Lane
Faulkland
Wilmington, Delaware 19808

2. The Carriage House

Ernest J. & Mary Joy Breton
2321 Fell's Lane
Faulkland
Wilmington, Delaware 19808

3. Gatekeeper's Cottage

Parker T. Fernald
Manager
Corporate Real Estate
Hercules, Inc.
910 Market Street
Wilmington, Delaware 19899

4. The Swiss Chalet

Peter & Margaret DeMasi
802 McKennan's Church Road
Wilmington, Delaware 19808

5. Tenant House (3010 Faulkland Road)

Mr. Donald Burawski
New Castle County
Department of Parks and Recreation
102 Middleboro Road
Wilmington, Delaware 19804

6. The Stone Barn

Roger & Kaye Murray
3007 Faulkland Road
Faulkland
Wilmington, Delaware 19808

7. The Miller's Residence

Mrs. Barbara Stoltenbert
1705 Hillcrest Road
Marshalltown, Iowa 50158

8. Twentieth Century Georgian
Revival House

Parker T. Fernald
Manager
Corporate Real Estate
Hercules, Inc.
910 Market Street
Wilmington, Delaware 19899

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**

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Continuation sheet

Item number 7

Page 1

FELL HISTORIC DISTRICT DESCRIPTION: JUSTIFICATION OF BOUNDARIES

The boundaries of the Fell Historic District were drawn to include the structures built and owned by four generations of the Fell family; New Fell's Lane, which leads to the Mansion from Faulkland Road; and the area that encompasses the location of the now defunct "Old" Fell's Lane, the original access route to the Mansion. The narrow strip of vacant land between these two lanes, overgrown with trees and bushes and acting as a natural buffer between the Mansion and the Barn, is also included within the boundaries of the District. Under single ownership until the 1940's, the District today is still a cohesive unit, but with seven different landowners. As much as possible, the boundaries follow existing property lines. The few modern dwellings that lie in the immediate vicinity of the District are visually unobtrusive due to the screen of trees within and adjacent to the District. Originally part of the Fell Estate, the land surrounding the District has been developed as suburban housing units to the east and west, as a golf course to the north, and as State parkland to the south.

United States Department of the Interior
National Park Service

National Register of Historic Places
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number 7

Page 2

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

1. The Fell Mansion (2323 Fell's Lane)

Although a definite date cannot be assigned to this Greek Revival structure, a handwritten survey of the Mansion was found among the Fell correspondence, dated August 29, 1840, and approved by Courtland J. Fell (owner from 1829 to 1848), which gives an accurate description of the exterior as well as the interior arrangement of the rooms. Today the house is almost identical to the survey of 1840, with some additions. The Mansion is a two and one-half story, double-pile, five-bay symmetrical structure built of field stone with a rough cast, pebble-dashed stucco veneer. In dimension it is roughly 50 x 40 with a gable roof that was originally covered with cedar shingles (now asphalt) and is pierced by three segmental dormers. There is a molded box cornice and at each end of the roof is a double-linked chimney.

At the front entrance is a projecting one-bay Doric portico reached by seven wooden steps. Two fluted Doric columns support a Doric entablature, and single Doric pilasters flank each side of a deep-set doorway with an "Adamesque" fanlight. The interior has a 10-foot wide entry hallway flanked by two rooms on each side, and an open cherry wood stairway leading to the two upper floors which contain five rooms each.

Appended to Courtland J. Fell's survey is a paragraph written by Franklin Fell (owner from 1848 to 1867), dated November 28, 1857, stating that he adopted the same survey and that he had added to the Mansion a one-story stone kitchen, frame out-kitchen and adjoining woodshed. The one-story kitchen wing, attached to the southwest end of the Mansion, is identical to the Mansion in stucco and window sizes, but deviates from the classical motif in the use of a crenellated roof line. This section is still used as the kitchen.

William Jenks Fell (owner from 1867 to 1903) modified the northeast end of the Mansion by adding a full-length porch and replacing the original windows on this side with two full-length, French-type doors which lead directly onto the porch. Intricate wrought iron decoration completely surrounds the porch. The Fell's family relates that William Jenks Fell had many southern friends, and this porch is the result of his trying to impart a southern character to the Mansion.

When indoor plumbing became the fashion, during the lifetime of William Jenks Fell, a small, two-story addition, approximately two bays wide was attached to the back of the Mansion. This addition was stuccoed to match the rest of the Mansion, and the classical motif was retained and used here as well.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**



Continuation sheet

Item number 7

Page 3

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

2. The Carriage House (2321 Fell's Lane)

Southwest of the mansion, William Jenks Fell built a carriage house in 1894. T-shaped in plan and constructed of uncoursed, roughly-finished granite, this two-story Romanesque Revival structure housed not only carriages but the attendant and his family as well. Meticulous in detail, the carriage house boasts such elements as a square cupola with corner pilasters and molded round-arched louvered panels situated at the roof crossing, round-arched windows with rock-faced ashlar voussoirs, trefoil mullions, and some of the original stained glass. Gable aprons with a large circular motif adorn the three end walls.

Stories are told of how William Jenks Fell, every night during the construction of this building, measured each course of stone laid during the day to make certain the work was completed to his satisfaction.

During the 1950's, Mrs. Eldred B. Hoiriis, granddaughter of William Jenks Fell, converted the carriage house into a private residence, and then sold the structure. Retaining the original mass and fabric, modifying the exterior only slightly through the addition of dormers and the enclosing of the carriage door with a large picture window, the essential integrity of the original carriage house has been preserved and has not been seriously compromised.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**

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date entered

Continuation sheet

Item number 7

Page 4

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

3. The Gate House (3101 Faulkland Road)

The Gate House is so-called because it is situated at the entrance to "new" Fell's Lane which was constructed when automobiles replaced carriages. Facing Faulkland Road near the crest of the hill that leads down to Red Clay Creek, this Carpenter Gothic dwelling was built sometime prior to 1871. Its appearance today is exactly as described in an application for insurance to the Mutual Insurance Company by Franklin Fell in 1871.

Built into the hillside on a one-story stone foundation, the Gate House is a one and one-half story frame structure sheathed with weatherboard siding. Its three-bay, center door facade has a one-bay flat-roofed porch supported by Doric posts. The gable roof is pierced by two gable, wall dormers on the facade, while on the rear elevation the upper story is lit by two small eyebrow windows. Attached to the rear of the structure is a one-story board and batten shed, described in the insurance application as a kitchen and used today for the same purpose.

Used by the Fell family as a tenant house, this dwelling was rented either on a year's lease or for the summer months to visitors vacationing at the nearby Brandywine Springs.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**

For NPS use only
received
date entered

Continuation sheet

Item number 7

Page 5

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

4. Double Tenant House (3012-14 Faulkland Road)

Built to resemble a Swiss chalet, this picturesque frame structure, built along and overlooking Faulkland Road as it gently descends toward Red Clay Creek, is said to have been built by William Jenks Fell upon his return from a European trip in the 1860's. The dwelling is described in an application for insurance by Franklin Fell in 1871. It, too, has not changed from its description of over one hundred years ago. This two and one-half story building is rectangular in plan and rests on a one-story stone foundation. A central cross gable balances identical right and left sides with matching verandahs, covered balconies and porches, and an outside staircase. Unique in design with a perfect balance of textures, open against closed spaces, and repetition of shapes, there is a unity within the variety.

As with the Gate House, this Swiss-style dwelling was always used by the Fell family as a tenant house.

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National Park Service

National Register of Historic Places
Inventory—Nomination Form

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received

date entered

Continuation sheet

Item number 7

Page 6

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

5. Tenant House (3010 Faulkland Road)

Adjacent to the Swiss-style house and descending the hill with an orientation toward Red Clay Creek, is the third tenant house. This house also appears on the 1871 application for insurance, however, the description of it differs from the appearance of the house today.

This tenant house began as a two-story frame house on a one-story stone foundation. Added to the back of the house, probably close to the turn of the century is a two-story, one-bay ell, containing a sunken living room with a projecting bay window surmounted by stained glass. The one-bay, wooden front porch seems to have been added the same time as the ell. On the interior, the open staircase leading to the second floor has a most unusual wooden baluster of a trefoil cut-out design. This same motif is used on the stairway leading down into the sunken living room. During the twentieth century, a one-car garage was added to the west endwall.

United States Department of the Interior
National Park Service

National Register of Historic Places
Inventory—Nomination Form

For NPS use only
received
Date entered

Continuation sheet

Item number 7

Page 7

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

6. The Stone Barn (3007 Faulkland Road)

Situated on the opposite side of Faulkland Road from the two tenant houses is the stone barn. It is a massive, fieldstone structure with large structural quoins. This structure appears on the 1816 assessment list for Mill Creek Hundred as owned by William Faulk. Rented out to tenant farmers throughout the nineteenth and early twentieth centuries, the barn was converted into a residence by Mrs. Eldred B. Hoiriis, granddaughter of William Jenks Fell, during the 1950's. Today, the original central entranceway to the bank-type barn has been utilized as the entrance to this private residence and three gable dormers have been added to the gable roof. The interior utilizes the original beams and flooring.

These minimal changes have not compromised the original integrity of the barn, which retains its distinctive mass and fabric.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**

For NPS use only
received
date entered

Continuation sheet

Item number 7

Page 8

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

7. The Miller/Farmer's Residence (3001 Faulkland Road)

The miller/farmer's house is located near the site of the Faulkland Spice Mill. Built into the hillside near the banks of Red Clay Creek, this unpretentious stuccoed stone, two and one-half story dwelling is the earliest structure in the District, dating from the tenure of the Faulks. Known to the Fell family as the farm house, and utilized by the tenant farmer, this structure is listed in the 1803 assessment list for Mill Creek Hundred as an "unfinished stone dwelling" on William Faulk's property. At some point during either Courtland J. or Franklin Fell's ownership, this house was converted into a double-dwelling and given a cross-gabled roof. The structure was partially damaged by fire in 1878, and an agreement containing the plans and specifications for the rebuilding of this dwelling was found among the Fell papers.

During the 1940's, Delano Boynton, grandson of William Jenks Fell, moved into this structure and converted it back to a single dwelling.

By replacing the separate entrances with a double window and placing the new entrance on the right side, the house was returned to its original function as a one-family dwelling with minimal loss of integrity.

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**

For NPS use only

received

date entered

Continuation sheet

Item number 7

Page 9

FELL HISTORIC DISTRICT DESCRIPTION: INVENTORY OF BUILDINGS

8. Georgian Revival, Twentieth Century House (2325 Fell's Lane)

The most recent structure in the District is this Georgian-Revival residence dating from 1925. The facade is a perfect replication of an eighteenth century Georgian plan. Constructed of rubble fieldstone, it is two and one-half stories, five bays with a gable roof that is pierced by three gable dormers in the front and two in the back. The center doorway with semi-circular fanlight has an elegant surround with broken pediment, engaged columns and pilasters of a Tuscan-Doric order.

The rear of this rectangular structure departs from the rigid symmetry of the facade due to two one-story wings that project from the east and west sides. The central entrance is reached through the small courtyard between them. Above the entrance, which has both transom and sidelights, is a Palladian window repeating the decorative elements on the door beneath.

The house was designed by Lyman D. Bothwell, husband of Harriet Fell Fulton, who is the granddaughter of William Jenks Fell. It was the home of the Bothwell's until Hercules, Inc. bought the property in the 1970's.

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/ humanitarian
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input checked="" type="checkbox"/> other (specify) Local History
		<input type="checkbox"/> invention		

Specific dates 1803-1925 Builder/Architect Unknown

Statement of Significance (In one paragraph)

The Fell Historic District is significant because it preserves, virtually intact, a nineteenth century wealthy gentleman's country manufacturing/farming estate with its collection of buildings of various sizes, shapes, architectural styles and functions, which in and of itself created a self-sufficient economic unit. Historically, the district must be seen in the context of the Fell family which was responsible for the development and final dissolution of the estate. Architecturally, the district illustrates a compendium of architectural styles that reflects not only the social status of the occupants, but also the Fell family's interest in architecture through their choice of divergent yet contemporary architectural fashion. On the basis of its architectural integrity and of these illustrative qualities, the district is considered significant in terms of National Register criterion C as it embodies the distinctive characteristics of a type, period or method of construction; and in terms of National Register criteria A and B for its association with events and persons significant to the local past.

Having its origins sometime in the eighteenth century, this district began as the site of a merchant mill. This, its first period, dates from 1780-1829, although none of the existing buildings date prior to 1803. The stuccoed, field stone residence (1803) and the stone barn (1803-1816) were built by William Faulk, a miller. When Jonathan Fell bought this nucleus of three buildings (including the mill, which is no longer extant) in 1829, the district entered its second period which spanned the years 1829-1903. Courtland J. Fell and Franklin Fell, sons of Jonathan Fell, and William Jenks Fell, who was the son of Franklin, were products of Philadelphia society and they brought cosmopolitan tastes and current Philadelphia fashion to Faulkland, Delaware, during their subsequent ownership. This awareness of current style can be seen in the buildings they added to the estate during their tenure: the Greek Revival Mansion (c. 1836), the Swiss-style tenant house (1860's), the Carpenter Gothic Gate House (1860), the modified tenant house (1860) and the Romanesque Revival carriage house (1894).

With the death of William Jenks Fell in 1903, the district entered its final period characterized by litigation, the division of the estate among the heirs, and the erection in 1925 of the last building in the district, the Georgian Revival residence of Harriet Bothwell, granddaughter of William Jenks Fell. During the 1950's, the stone barn and carriage house were renovated, and the properties began to be sold off individually. Today, the only properties still held by the Fell's heirs are the mansion and the miller/farmer's residence.

9. Major Bibliographical References

Fell Family Papers (Private)
 New Castle County Recorder of Deeds
 Hagley Museum - Records of Fell Company
 Pursell, C. W., Jr. - Two Mills on Red Clay Creek in the Nineteenth Century

10. Geographical Data

Acreage of nominated property 16+

Quadrangle name Newark, DE and Kennett Square, PA-DE

Quadrangle scale 1:24,000

UMT References

A

1	8	4	4	5	8	0	4	4	0	0	0	3	0
Zone			Easting				Northing						

B

1	8	4	4	5	4	5	1	0	4	3	9	9	6	9	1	0
Zone			Easting				Northing									

C

1	8	4	4	5	0	9	0	4	3	9	9	6	1	0
Zone			Easting				Northing							

D

1	8	4	4	5	4	2	0	4	4	0	0	1	5	0
Zone			Easting				Northing							

E

Zone			Easting				Northing							

F

Zone			Easting				Northing							

G

Zone			Easting				Northing							

H

Zone			Easting				Northing							

Verbal boundary description and justification

See continuation sheet

List all states and counties for properties overlapping state or county boundaries

state	NA	code	county	NA	code
-------	----	------	--------	----	------

state	NA	code	county	NA	code
-------	----	------	--------	----	------

11. Form Prepared By

name/title Gretchen Fitting, Planning Aide/Valerie Cesna, Planning Aide

organization New Castle County Dept. of Planning date March 25, 1983

street & number 2701 Capitol Trail (Kirkwood Highway) telephone 366-7780

city or town Newark state Delaware

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national state local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

Deputy
 State Historic Preservation Officer signature *Daniel R. Shifflett*

title _____ date April 27, 1983

For NPS use only

I hereby certify that this property is included in the National Register

J. Nicholas Byrne Entered in the National Register date 6/16/83

Keeper of the National Register

Attest: _____ date _____

Chief of Registration

**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**

File #	
Received	
Date entered	

Continuation sheet

Item number 8

Page 1

FELL HISTORIC DISTRICT: STATEMENT OF SIGNIFICANCE

Although the actual mill building is no longer in existence, the group of buildings that comprise this district supported the mill and represent the continuous use of this land as a mill site from circa 1780 to the 1890's. Due to its hilly terrain and numerous streams, northern New Castle County proved to be a suitable area for the erection of mills at an early date. By 1804, Mill Creek Hundred, the 43 square mile political unit in which the Fell historic district is located, contained 23 mills within its boundaries. The majority of these were saw and/or grist mills. William Faulk's grist and saw mill, the property that was purchased by Jonathan Fell in 1829, is included in this count.

Eighteenth century mill operations in New Castle County tended to be small-scale, family-run industries with the family living on the site. Some recognized examples of nearby mills contemporary with Faulk's facility are the Greenbank Mill (N-191, NR 1973), the Graves Mill historic district (N-5005, NR 1979), and the John England Mill (N-248, NR 1972). As with the Faulk Mill, these three operations were composed of a relatively small mill building, the owner's house and sometimes a barn and a tenant house. Trends in nineteenth century mill development followed two different routes. Many mills, such as the ones mentioned above, remained small in scale, but were improved by more complex mill machinery. Several mills, however, expanded into factory complexes, simultaneously developing a community around the industry in the form of worker's housing. This type of factory-scale mill can be seen in the Auburn Mills (N-5003, NR 1980) and the Garrett Snuff Mill (N-4098, NR 1978), both ordered industrial communities. In the context of these neighboring mills the Fell Spice Mill was one that remained relatively small-scale during the nineteenth century, functioning under the direction of a single family. The arrangement of buildings within the Fell historic district is typical of mill site arrangement in the county, as well. Partly due to the nature of the terrain and partly due to status and tradition, the mill owner's house is usually situated on a hill overlooking the mill activities and tenant houses below.

As a small-scale mill operation the Fell historic district is typical of many nineteenth century mill sites in New Castle County, however, the district is also quite unique to this area in the sophistication of its building styles and the architectural diversity of its domestic compound. Nowhere else in the county can there be found such an eclectic grouping of formal architectural styles in a rural industrial setting. In addition, one building in the group, the "Swiss Chalet" style tenant house, is unique in the state.

This deliberate choice of formal architectural styles may be the result of the Fell family being based in Philadelphia where there was a greater awareness of architectural fashion, as well as the Fells' travels both in this country and abroad. Typically, nineteenth century rural buildings in Delaware tend toward vernacular versions of Greek Revival and Italic styles. Perhaps another reason that building styles were chosen so carefully by the Fells is that this property functioned as

United States Department of the Interior
National Park Service

National Register of Historic Places
Inventory—Nomination Form



Continuation sheet

Item number 8

Page 2

FELL HISTORIC DISTRICT: STATEMENT OF SIGNIFICANCE

their estate as well as an industrial site. Since the spice mill at Faulkland was only one branch of the family's business concerns, this property in a sense, served as a country home away from Philadelphia and a showplace to greet visitors and family. It was not until late in the nineteenth century that this concept of a formal estate as part of a family's industrial concerns was picked up in neighboring mills, when the Israel Marshall House (N-5003, NR 1980) was built in 1897 at the Auburn Mills.

Attracted to the Faulkland area after a visit to the Chalybeate waters at Brandywine Springs, Jonathan Fell, founder and proprietor of a spice manufacturing facility in Philadelphia, purchased a mill site on Red Clay Creek from John Faulk in 1828. Although Faulk's name has been perpetuated by the name of both the road and the site, it was the Fell family who made the area well-known, and developed it into their family "compound."

After the death of Jonathan Fell in 1829, his son Courtland J. moved from Philadelphia to Faulkland to manage the newly acquired mill and made Faulkland his permanent residence. The Greek Revival mansion that he built reflects the architectural style currently in fashion in Philadelphia. Beloved by every generation of Fells as well as their relatives and friends, the beauty and serenity of the mansion and its surroundings were often mentioned in correspondence. The death of Courtland J. Fell in 1848 left the family business in the hands of Franklin, his younger brother, under whose direction (1848-1867) the spice business grew. The simple merchant mill was enlarged and improved with new machinery. It used a steam engine and water power equal to one hundred horses and was brought to world-wide prominence. The mill was used primarily for the manufacture of mustard, cocoa, the grinding of spices, and the making of hominy. Adhering to their motto, never sell an article otherwise than represented, the Fells gained the confidence of the public and earned a fortune for themselves.

Inheriting his father's desire for wider business interests, Franklin branched out into real estate development and mining and selling of coal in the anthracite region of Pennsylvania. Reflecting his interests in real estate is his building of at least two of the three tenant houses at Faulkland. Leases found among the Fell papers indicate that these rentals were on a yearly basis as well as for summer only.

Turning the direction of the firm over to his son, William Jenks Fell, in 1867, Franklin Fell retired from the mercantile life and settled permanently at Faulkland. That same year the first of a series of disasters struck--the mill was destroyed by fire. Not only did the fire weaken the financial position of the Faulkland Spice Company, but it also destroyed the original eighteenth century mill.

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Inventory—Nomination Form**

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Continuation sheet

Item number 8

Page 3

FELL HISTORIC DISTRICT: STATEMENT OF SIGNIFICANCE

Within two years, the old spice mill was replaced by a new and larger one, but this too was destroyed by a second fire in 1874. The crowning calamity came a year later when on July 10, 1875, Franklin Fell died. His only son, William Jenks Fell, inherited his father's fortune (estimated at \$100,000) and a firm that had little chance of survival. After having been rebuilt and rented out, the spice mill was totally destroyed by a fire in 1878. This fire terminated the spice manufacturing business on Red Clay Creek.

William Jenks Fell continued to utilize the site for milling activities. Listed in the Delaware State Directory in 1894 was the notation: Faulkland, Fell, W. J. Flour Mill. It is ironic that after a century of continuous use the Faulkland mill site became what it had been originally, a grist mill. Residing at Faulkland until his wife's untimely death in 1881, William Jenks Fell thereafter divided his time between Philadelphia and Faulkland, building some nine years before his death (1894) the Romanesque Revival carriage house located near the mansion.

Having nearly exhausted the family fortune, William Jenks Fell at his death in 1903 left the Faulkland estate to his granddaughter, Harriet Fell Fulton. Feeling that he and the Fell family had been disgraced by his daughter, Elizebeth Fell Boynton, who had divorced her first husband to marry another man, he disinherited her and left the estate to his granddaughter. Borrowing money in order to buy the estate from her daughter, Elizabeth (Elsie) Fell Boynton made the mansion her home until her death in 1940.

Today, the Faulkland mansion and the miller/farmer's residence are still retained by descendants of the Fell family, and even though new owners have acquired the remaining six buildings that comprise the domestic core of the Fell estate, these properties as a group represent the impact of nearly a century of building activity under one family.

Level of Significance

The district is of local significance, even though the property has unusual architectural features which make it of interest to the architectural and social history of the state. Architecturally this district is totally unique to Mill Creek Hundred and New Castle County. Seen as a whole, the district embodies unusual and distinctive examples of architectural styles and survives intact as an example of a nineteenth century gentleman's estate with its collection of buildings whose functions express status.

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National Park Service**

**National Register of Historic Places
Inventory—Nomination Form**

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Resource
Date entered

Continuation sheet

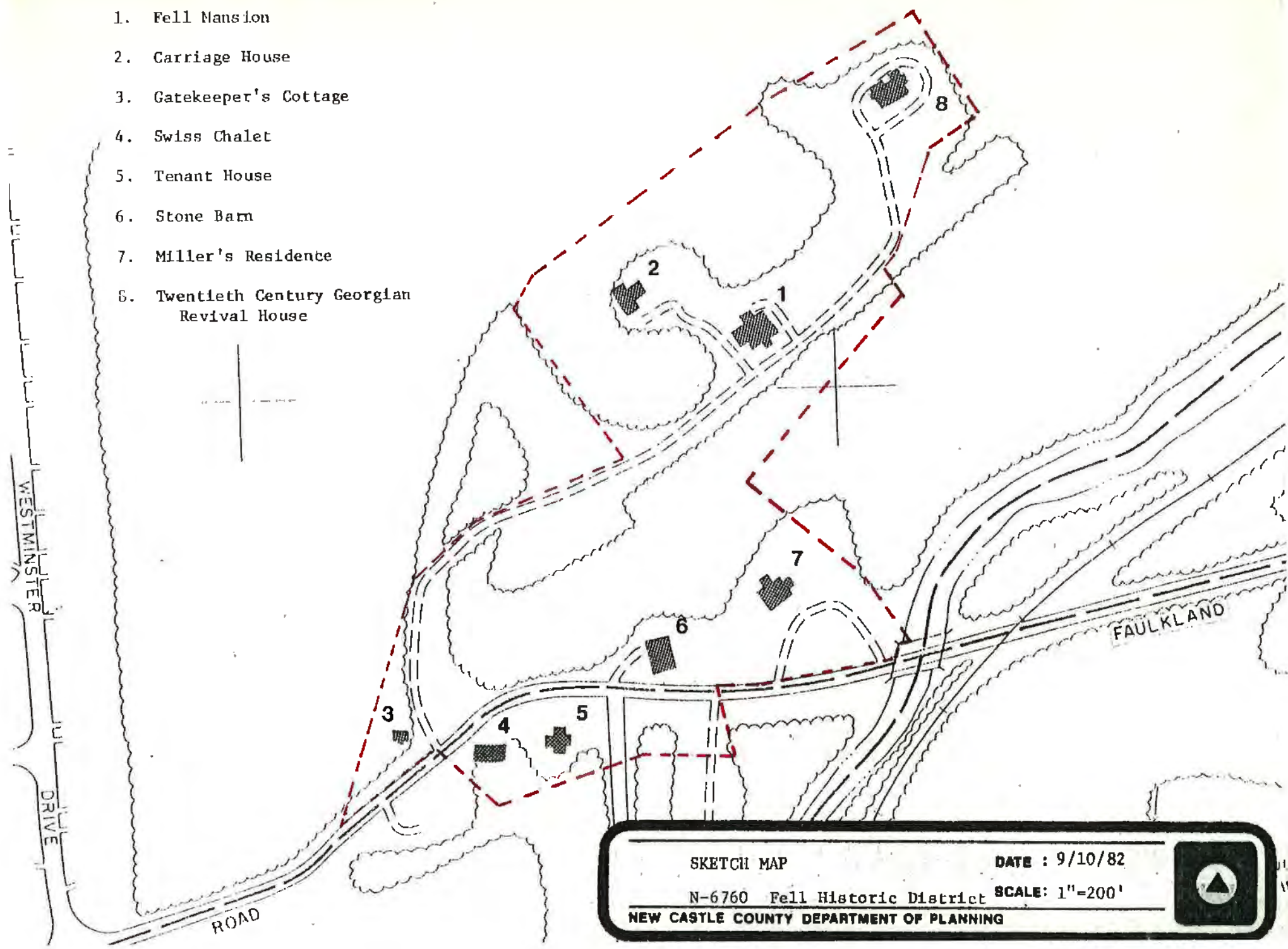
Item number 10

Page 1

FELL HISTORIC DISTRICT: VERBAL BOUNDARY DESCRIPTION

The western boundary of the Fell Historic District begins at the western corner of the intersection of Faulkland Road and New Fell's Lane. From this point it runs 220 feet southwest along the northern edge of Faulkland Road. It then traces an imaginary straight line that runs 450 feet northeast to a point where it meets the western edge of Parcel 18. From there it continues in a northeasterly direction 430 feet along the northwestern edge of Parcel 18. The boundary then proceeds northwest 320 feet along the southwestern border of Parcel 2. It then travels northeast 70 feet along the northwest edge of Parcel 2. The remainder of the northwestern boundary of the District proceeds 223 feet northeast along the northwest edge of Parcel 11, and 201.36 feet along Parcel 2, then continues in a straight line 375.64 feet northeast into Parcel 1. The boundary line then turns 90 degrees toward the south and runs 365 feet in a southeasterly direction. From that point, the boundary travels 300 feet southwest along the treeline that defines the front yard space of the Georgian Revival House. It then runs 30 feet southeast along the northeast edge of Parcel 2 and 430 feet southwest along the southeast edge of the same parcel. The line then continues 350 feet southeast along the northeast edge of Parcel 5 and then runs 20 feet west and 25 feet south avoiding the Faulkland Road bridge that crosses Red Clay Creek. The boundary continues 310 feet west along the northern edge of Faulkland Road, then travels 130 feet south along the eastern edge of Parcel 17. It then runs 420 feet west along the southern edges of Parcel 17 and Parcel 7. The boundary line then turns and runs 155 feet northwest along the southwest edge of Parcel 7 to the point of origin. These boundaries enclose an area of approximately 16 acres. The parcels referred to in these boundaries are those that appear on the 1982 New Castle County Property Tax Maps designated by the number 08-33.00.

1. Fell Mansion
2. Carriage House
3. Gatekeeper's Cottage
4. Swiss Chalet
5. Tenant House
6. Stone Barn
7. Miller's Residence
8. Twentieth Century Georgian Revival House



SKETCH MAP DATE : 9/10/82
 N-6760 Fell Historic District SCALE: 1"=200'
 NEW CASTLE COUNTY DEPARTMENT OF PLANNING



NATIONAL REGISTER OF HISTORIC PLACES

EVALUATION / RETURN SHEET

United States Department of the Interior
National Park Service

Fell Historic District
New Castle County
DELAWARE

Working No. MAY 18 1983
Fed. Reg. Date: 2/7/84
Date Due: 6/16/83 — 7/2/83
Action: ACCEPT 6/16/83
 RETURN
 REJECT
Federal Agency: _____

- resubmission
- nomination by person or local government
- owner objection
- appeal

Entered in the
National Register

Substantive Review: sample request appeal NR decision

Reviewer's comments:

Recom./Criteria _____
Reviewer _____
Discipline _____
Date _____
 see continuation sheet

Nomination returned for: technical corrections cited below
 substantive reasons discussed below

1. Name

2. Location

3. Classification

Category Ownership Status Present Use
 Public Acquisition Applicable

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

has this property been described earlier? yes no

7. Description

Condition: excellent deteriorated unrestored original site
 good ruins altered moved date _____
 fair unexpected

Describe the present and original (if known) physical appearance

- summary paragraph
- completeness
- clarity
- alterations/integrity
- dates
- boundary selection

8. Significance

Period _____ Areas of Significance—Check and justify below

Specific dates _____ Builder/Architect _____

Statement of Significance (in one paragraph)

- _____ summary paragraph
- _____ completeness
- _____ clarity
- _____ applicable criteria
- _____ justification of areas checked
- _____ relating significance to the resource
- _____ context
- _____ relationship of integrity to significance
- _____ justification of exception
- _____ other

9. Major Bibliographical References

10. Geographical Data

Address of nominated property _____

Quadrangle name _____

USDT Reference _____

Verbal boundary description and justification _____

11. Form Prepared By

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

_____ national _____ state _____ local

State Historic Preservation Officer signature _____

title _____ date _____

13. Other

- _____ Maps
- _____ Photographs
- _____ Other

Questions concerning this nomination may be directed to _____

Signed _____ Date _____ Phone: 202 272-3504

Comments for any item may be continued on an attached sheet



Name: *Fell Mansion*

Location: *Fell Historic District*

Photographer: *V. Ceana*

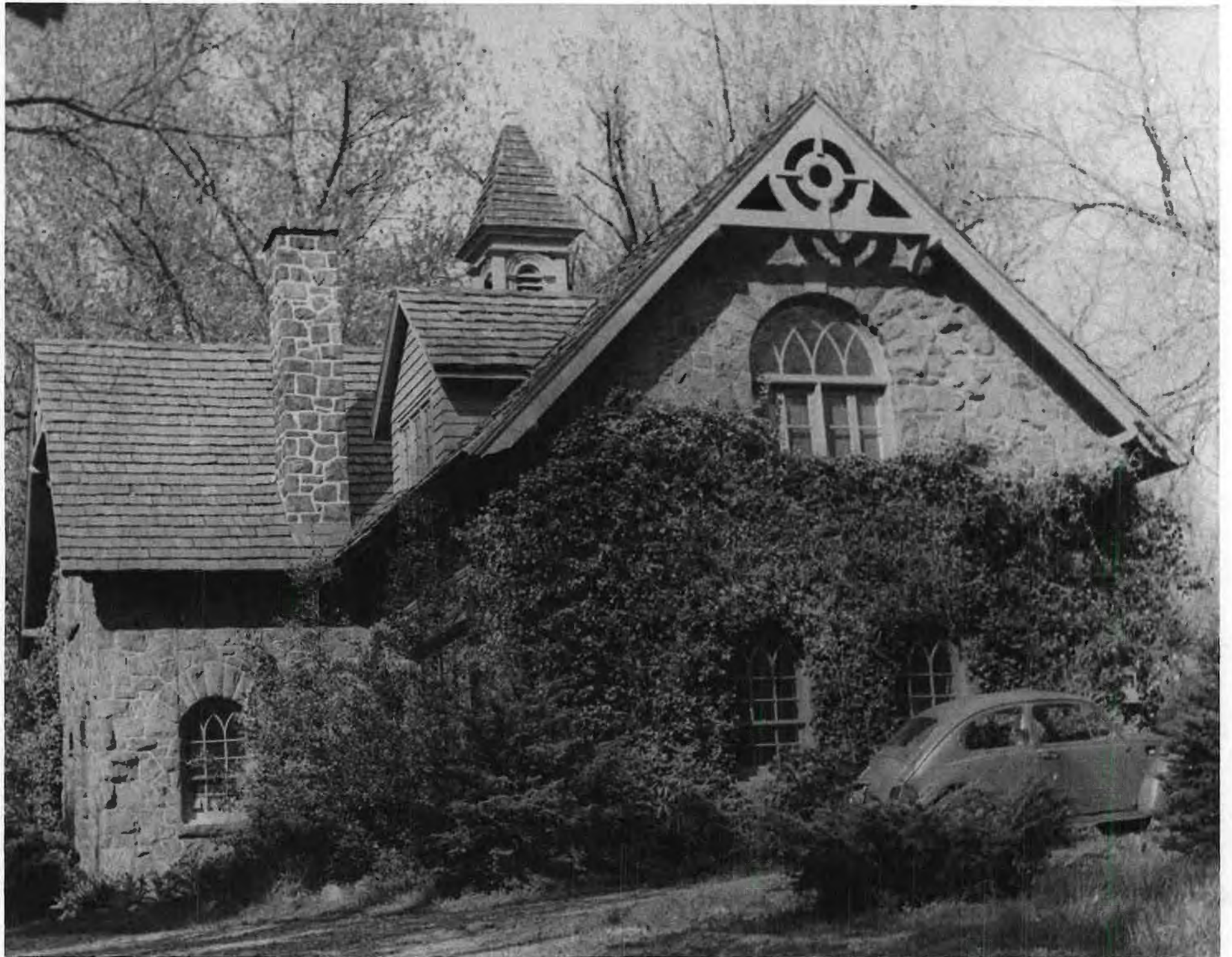
Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology & Historic Preservation

Description: *view from SW*

Photograph Number: *1*



Name: *Carriage House*

Location: *Fell Historic District*

Photographer: *V. Ceane*

Date of Photograph: *1912*

Location of Negative:

Bureau of Archeology & Historic Preservation

Description: *view from SE*

Photograph Number: *2*



Name: Gate Keeper's Cottage

Location: Fell Historic District

Photographer: U. Ceana

Date of Photograph: 1982

Location of Negative:

Bureau of Archaeology & Historic Preservation

Description: view from SW

Photograph Number: 3



Name: *Swiss Chalet*

Location: *Fell Historic District*

Photographer: *V. Ceome*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: *view from NW*

Photograph Number: *4*



Name: *Tenant House*

Location: *Fell Historic District*

Photographer: *V. Ceana*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archeology + Historic Preservation

Description: *view from NW*

Photograph Number: *5*



Name: *Stone Barn*

Location: *Fell Historic District*

Photographer: *V. Ceana*

Date of Photograph: *1982*

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: *view from SW*

Photograph Number: *6*



Name: *Miller's Residence*

Location: *Fell Historic District*

Photographer: *V. Ceona*

Date of Photograph: *1912*

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: *view from SE*

Photograph Number: *7*



Name: 20th Century Georgian Revival House

Location: Fall Historic District

Photographer: V. Ceana

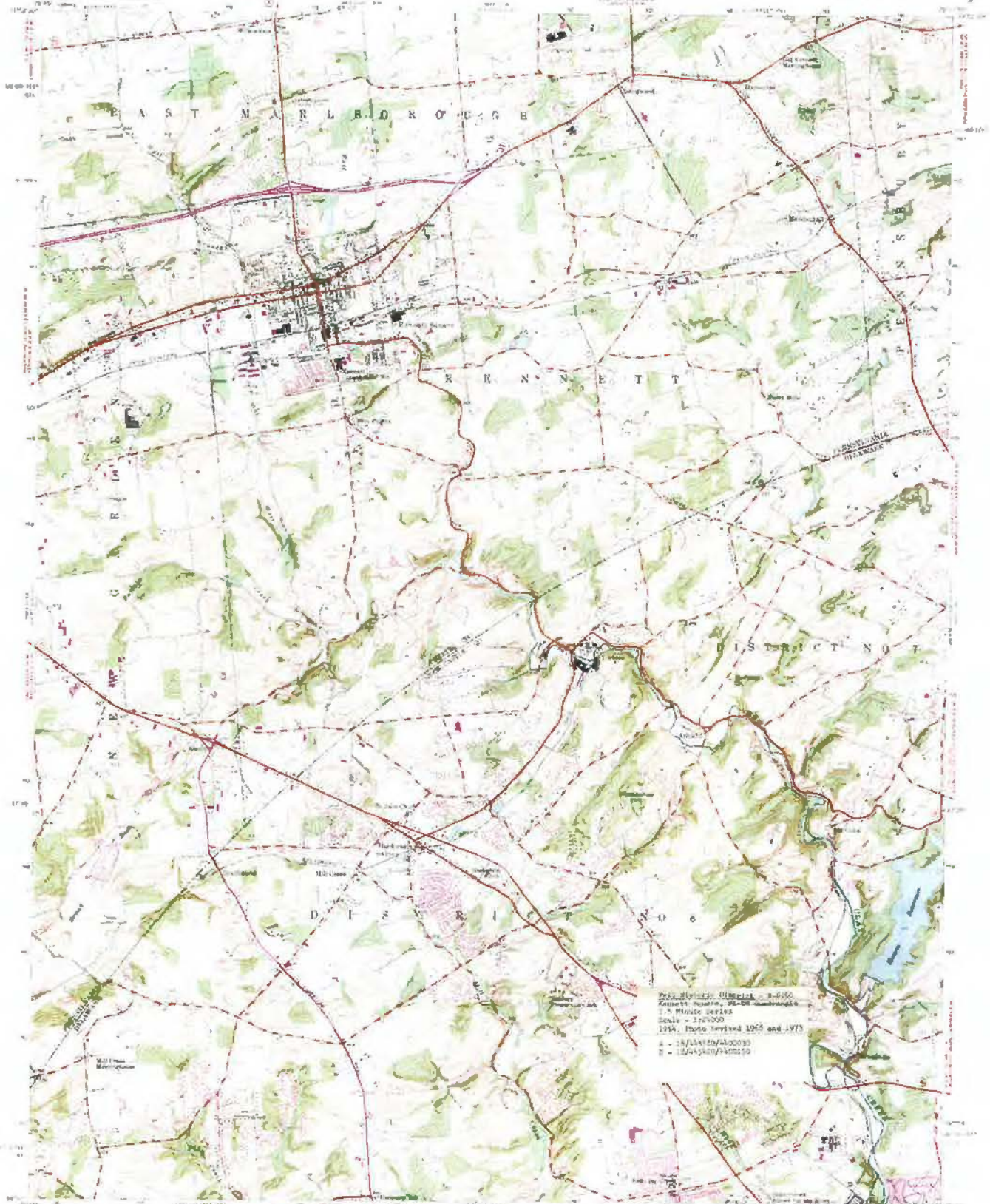
Date of Photograph: 1982

Location of Negative:

Bureau of Archaeology + Historic Preservation

Description: view from SE

Photograph Number: 8



Phot. Vertical Control - 8-6150
Control Number, 26-08
7.5 Minute Series
Scale - 1:24,000
1954, Photo Revised 1955 and 1973
A - 15/AA110/430030
B - 15/AA110/430150

Problem areas and features of the Geological Survey
Bounded by 10' intervals of latitude and longitude
Topographic features are shown in green and brown
Water features are shown in blue
Railroads are shown in dashed red lines
Roads are shown in solid red lines
The map is part of the 7.5 Minute Series (Topographic)

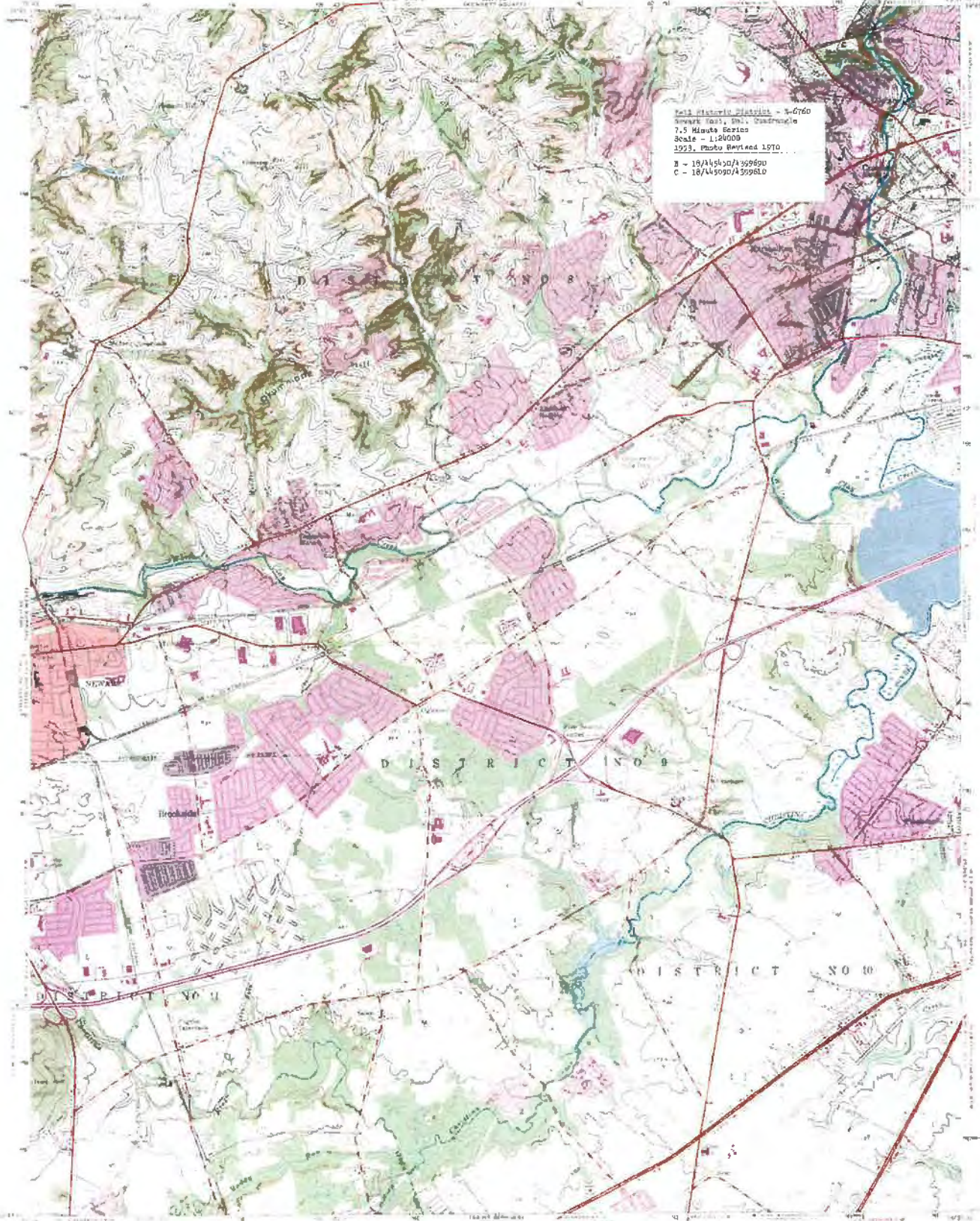


Vertical Datum - 1955
Horizontal Datum - 1955

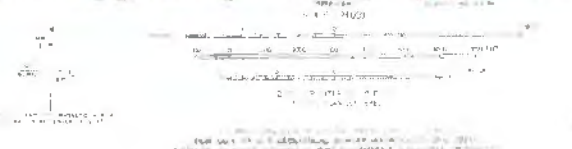
KENNETT SQUARE, PA-DEL
7.5 MINUTE SERIES
1954

UNITED STATES GEOLOGICAL SURVEY
WASHINGTON, D. C. 20508

7.5 Minute District - 4-0760
Newark East, Del. Quadrangle
7.5 Minute Series
Scale - 1:24000
1953. Photo Revised 1970
B - 19/A1p1-07/09960
C - 18/A1g0p1/A39610



Map was added and published in the District Series
under the name of the Delaware State
Geological Survey, Newark, Delaware
in 1953. The map was revised in 1970
by the U.S. Geological Survey, Reston,
Virginia. The map was published in
1970. The map was published in
1970.

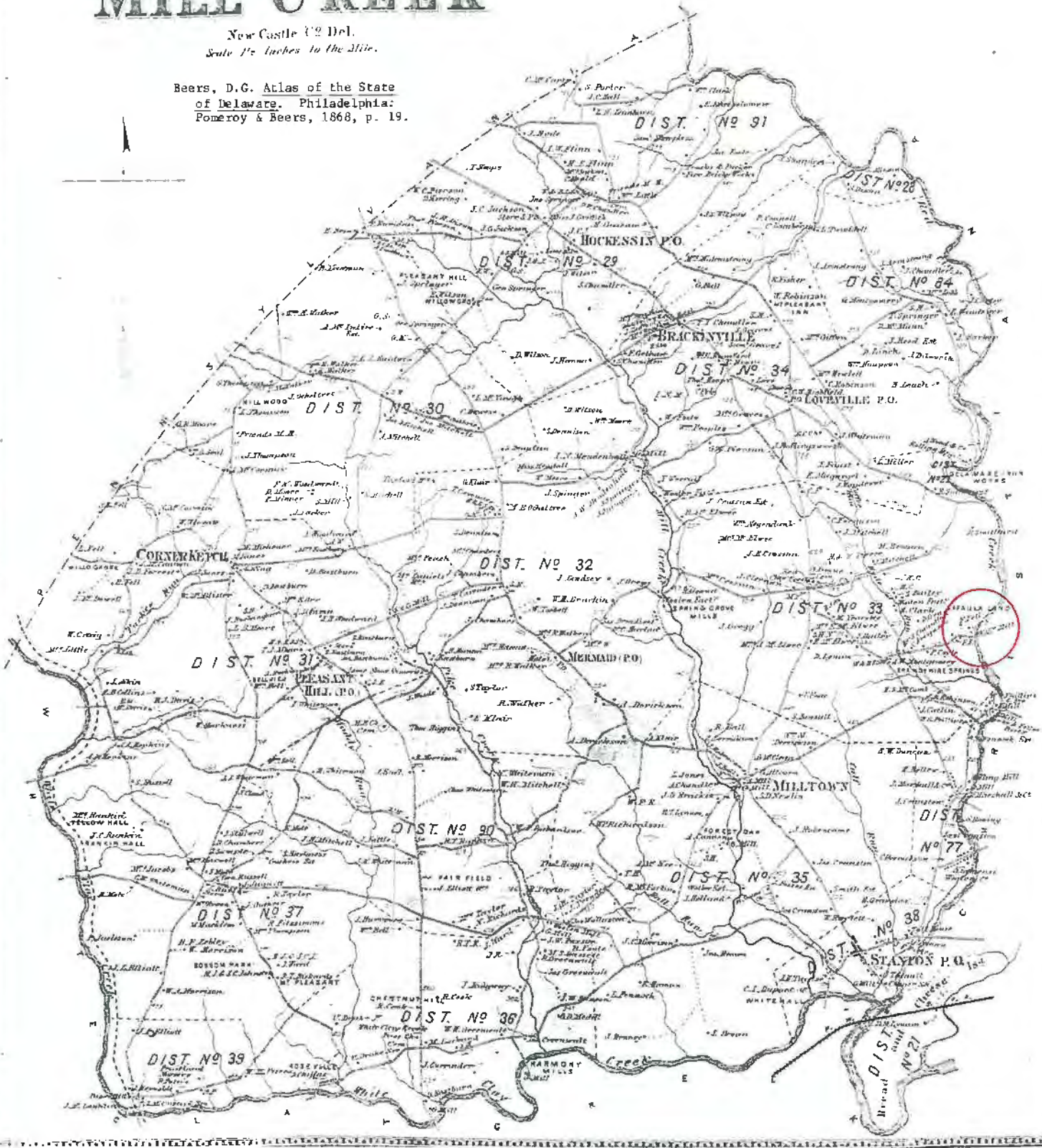


NEWARK EAST, DEL.
U.S. GEOLOGICAL SURVEY
1970
1:24,000
7.5 MINUTE SERIES

MILL CREEK

New Castle Co. Del.
Scale 1/2 inches to the Mile.

Beers, D.G. Atlas of the State
of Delaware. Philadelphia:
Pomeroy & Beers, 1868, p. 19.





STATE OF DELAWARE
DEPARTMENT OF STATE
DIVISION OF HISTORICAL AND CULTURAL AFFAIRS
OLD STATE HOUSE • THE GREEN • DOVER • 19901
(302) 736-5685

BUREAU OF ARCHAEOLOGY AND
HISTORIC PRESERVATION

April 28, 1983

Carol Shull
Chief of Registration
National Register of Historic Places Branch
Interagency Resource Management Division
National Park Service
Department of the Interior
Washington, D.C. 20240

Dear Ms. Shull:

Enclosed are the forms needed to nominate the Delaware Industrial School for Girls, Fell Historic District, Kaumagraph Building, Lore School and the New Century Club of Wilmington to the National Register of Historic Places.

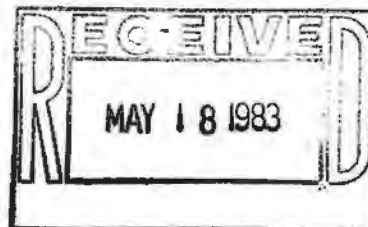
If you have any questions, please contact Stephen G. Del Sordo of my staff.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Daniel R. Griffith".

Daniel R. Griffith, Deputy
State Historic Preservation Officer

Enclosure



Delaware Historical Marker Finalization Form

<i>Marker Title</i>	Fells Mill Historic District		
<i>Dedication Date</i>	9/18/17	<i>Time</i>	10 am
<i>Legislative Sponsors</i>	Senator Anthony Delcollo		Representative n/a
<i>Agreement</i>	18-P-Prog-17	<i>Amendment</i>	n/a
<i>Address</i>	3040 Faulkland Road		
<i>Town</i>	Wilmington	<i>County</i>	New Castle
<i>Lat /Long</i>	39.746681, -75.639997		
<i>Invoices</i>	Sewah <input checked="" type="checkbox"/> <input type="checkbox"/> Yes No	Kent Signs <input checked="" type="checkbox"/> <input type="checkbox"/> Yes No	
<i>Constituent</i>	Ken Shelin	<i>Email/Tel</i>	kshelin@aol.com

Fells Mill Historic District

Constructed in 1749, the area is home to one of the earliest mill sites on the Red Clay Creek. A three-story flour mill once served as the center of activity on the site, and was the location of Oliver Evans' first automated flour mill operation. In 1790 his mill was the third invention patented by the newly created U.S. Patent Office. Jonathan Fell purchased the site in 1828 and turned the flour mill into a spice mill which served as the leading spice mill in the nation for fifty years. Eight structures comprise the district, which is bisected by Faulkland Road, including the only known example of a chalet style tenant house in the state.