NOTES AND DOCUMENTS

The Philadelphia Water Works in Relation to the Industrial Revolution in the United States

Philadelphia's industrial history has long been a matter of pride to Philadelphians. More recently, as the field of historical research broadened to include business history, the history of technological development, and kindred spheres of interest, the industrial experiments made in this city in the early years of the nineteenth century have been attracting the attention of an increasing number of economic and business historians. Business records are being mined for information about markets, systems of credit and exchange, new manufactures, or the development of new industrial processes.

The value of business papers as sources of historical information is aptly demonstrated by the letter book of Eric Bollmann. This letter book, a section of which is printed hereafter, forms a part of the large collections of business papers now in The Historical Society of Pennsylvania. These letters from Bollmann to Nicholas James Roosevelt which provide the subject of this paper have a three-fold interest: they show something of the tremendous technical difficulties involved in the practical application of steam power; the men connected with the business transactions in question played important parts in the development of the United States; and finally, the letters have a purely local interest, since they refer to the history of Philadelphia's first water works.

Eric Bollmann (1769–1821), a Hanoverian by birth, was an adventurous oculist who came to this country in 1796 after thrilling experiences during the French Revolution and an abortive attempt to liberate the imprisoned Lafayette. A year later in partnership with his brother Lewis he set up a commission business in Philadelphia.¹ His letters to Nicholas James Roosevelt (1767–1854) provide the basis for this paper.

Roosevelt was the son of a New York shopkeeper, and at an early age showed remarkable technical ability and interest. Thus in 1793, when only twenty-six years old, he became a director and the manager of a New York mining company organized to put into working order an abandoned copper mine on the Passaic in New Jersey. In this Schuyler mine the first atmospheric engine ever set up in this country had been installed and was then operating. It is not impossible that it was his experience with that engine which induced Nicholas James Roosevelt to start building engines, first in partnership with his associates in the copper mine, and later on his own. The first engines built were low pressure ones of Watt's design. Several other enterprises sprang from the first, for example, the building of a steamboat; but, since Roosevelt's business acumen was not equal to his technical abilities, by 1801 his affairs became hopelessly involved and shortly thereafter he was forced to abandon his engine works. On the technical side, however, he had been successful and among the engine orders received and executed was one for the two engines of the first Philadelphia water works, designed by Benjamin Henry Latrobe.

Latrobe (1764–1820), the third actor in the episode under investigation, is mentioned repeatedly in the letters. An Englishman of Huguenot ancestry, whose mother was an American related to the Rittenhouse family of Pennsylvania, he had received an excellent education in Germany. After his return to England in 1786, he studied architecture and engineering, with John Smeaton, the famous English engineer, as one of his teachers. Latrobe immigrated to this country in 1796 and two years later came to Philadelphia. Shortly after his arrival he devised the first water works of that city, as mentioned above. The essential feature of his plan was the raising of water from the Schuylkill River by steam-driven pumps. Although almost unknown in America the idea was, for a European engineer, well within tradition, for throughout the eighteenth century atmospheric engines, the forerunners of Watt's steam engines, had been used to pump and elevate water. The necessary engines were ordered from Nicholas James Roosevelt (who, incidentally, became Latrobe's son-in-law a few years later) and were put to work in December, 1800, and January, 1801, respectively. During the following year Latrobe was called to Washington by President Jefferson, who had
made his acquaintance as early as 1798 and who in 1803 created for him the post of surveyor of public buildings. However, Latrobe's activities as an architect in Washington and his achievement in making architecture a profession in this country do not concern us here.

In order to understand the business transactions of the three men who joined forces in 1801 or 1802 to set up a steam-driven rolling and slitting mill on the Schuylkill River near Philadelphia, the beginnings of the Philadelphia water works have to be discussed in further detail. The first water works were built between about 1799 and 1801 according to Latrobe's plan. An open canal was dug from the Schuylkill River to a point where a hill rises. Thence a tunnel was cut through the rock to what is today Twenty-Second Street, where an engine house was erected and an engine installed, called the "lower engine." This machine pumped Schuylkill water into a brick tunnel which in turn conducted it to Centre Square. In Centre Square a second engine raised the water into a reservoir whence it flowed by gravity into the water mains.

While Latrobe as the "engineer" was responsible for the plan and for its execution, receiving a fee for his services, Nicholas James Roosevelt not only built the two engines, but also contracted to maintain them and to provide the city with water. According to the terms of his contract Roosevelt was to deliver up to one million gallons of water per day at a given rate and up to an additional two millions at a lower rate. In addition to the profits which might accrue from this, he was to receive an annual consideration of $6,000 for the maintenance of the two engines. In concluding this contract the representatives of the city proved farseeing. Protecting it against

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2 Report of the Joint Committee of the Select and Common Councils on the Subject of Bringing Water to the City (Philadelphia, 1798); B. Henry Latrobe, View of the Practicability and Means of Supplying the City of Philadelphia with Wholesome Water, in a Letter to John Miller, December 29, 1798 (Philadelphia, 1799); Latrobe, Answer to the Joint Committee of the Select and Common Councils of Philadelphia on a Plan for Supplying the City with Water (Philadelphia, 1799); Remarks on a Second Publication of B. Henry Latrobe said to be printed by order of the Committee of the Councils of the City (n.p., 1799); An Ordinance providing for the raising of a Sum of Money for supplying the City of Philadelphia with Wholesome Water (Philadelphia, 1799); Report of the Committee for the Introduction of Wholesome Water into the City of Philadelphia (Philadelphia, 1801); Report of the Watering Committee upon the Present State of the Works for Supplying the City with Water . . . (Philadelphia, 1812); Frederick Graff, Notes upon the Water Works of Philadelphia, 1801–1815 (n.p., n.d.).
possible difficulties arising from the anticipated growth of the population, they ordered the "lower engine" to be a more powerful one than was needed at the time. Roosevelt, as contractor, was to lease the "extrapower" to an industrial concern and the income from this lease was to be deducted from the amount due to him from the city. To facilitate the use of the "extrapower" the contractor was leased a plot of ground near the location of the lower engine, and the consideration for this ground lease also to be deducted from the payments by the city.

Since Nicholas James Roosevelt was a very enterprising man he was not satisfied with leasing the "extrapower" of the "lower engine" but, as is indicated in one of the letters printed below, approached the brothers Bollmann with a suggestion. Eric Bollmann had been known to Roosevelt almost from the moment when the former arrived in this country. A few days after Bollmann's arrival (in January, 1796) Roosevelt had shown the newcomer through the copper mine which he was managing at that time. Presumably the acquaintance was continued, and, probably in 1801, a partnership was formed, consisting of Roosevelt, Latrobe, and the Bollmanns, for the purpose of exploiting the "extrapower" of the "lower engine," i.e., that part of its power which was not needed for pumping water for the city.

The partners set up a rolling and slitting mill contiguous to the engine house of the "lower engine," near what is today Twenty-Second Street. Rolling and slitting mills, which at the beginning of the eighteenth century had made marked technical progress, had become rather common in America during that century. Such works would roll either plates or strips, previously hammered, and cut the latter into rods to be worked up into nails by the domestic nail producers. At that time all rolling and slitting mills were driven by water power and the plant of the new associates was the first on this continent to make use of steam power. More than this, it was one of the very first steam-driven industrial plants in this country. Not

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3 See the above quoted Report of the Committee for the Introduction . . . (1801), 5, 9, 10, 11.
4 No copy of the contract between the city and N. J. Roosevelt could be located and the author has had to depend on the description by J. Thomas Scharf, and Thompson Westcott, History of Philadelphia, 1809-1884 (Philadelphia, 1884), I, 499 ff., especially 500, 501.
only the plant, but also the engines represented remarkable achievements. They belonged to the earliest built in America and the "lower engine" had a unique feature in being a double purpose machine. It served as a steam pump and also as a power engine whenever its "extrapower" was used to drive the rolling and slitting mill. Dual purpose engines were also used during the early nineteenth century in Europe. It is known, for instance, that in the 1800's one of the earliest German engine builders erected machines which acted at the same time as steam pumps and as drive hoists. But no other case is known to this author in which an engine served as a pump and also as a power engine—that is, as one driving other machines.

Eric Bollmann was the manager of the rolling and slitting mill for the associates. From a few loose leaves which represent a sort of industrial diary for the days from October 29 to November 3, 1802, and which are preserved in The Historical Society of Pennsylvania, we learn that Bollmann tried to find out by experimentation whether it was more profitable to roll strips and slit rods or to roll sheet iron. As a result he decided that the plant should produce wire rods.

According to Bollmann's letter of March 2, 1803, printed below, the articles of partnership stipulated a division of the interest in the mill into three shares of $10,000 each, to be held by N. J. Roosevelt, B. H. Latrobe, and the brothers Bollmann, respectively. The three parties were supposed to share equally in capital, current expenditures, and profits. If, however, one or two of the partners did not live up to this agreement and failed to contribute his or their shares to the capital and current expenditures, the profit was to be divided in relation to the contribution made by the various parties to the agreement. Apparently the contribution of Roosevelt and Latrobe consisted in the "extrapower" of the "lower engine" and in the rolling and slitting works, but it is not known to what extent each of

6 See this author's paper, "The Leaders of the German Steam Engine Industry During its First Hundred Years," in *Journal of Economic History*, November, 1944.

7 In the late 1790's Nicholas James Roosevelt had made a contract with the Federal government to erect a rolling mill and to supply copperplates for some men-of-war which were to be built. Roosevelt went far to complete this contract, but when the administration changed, the ships were not built. (Dictionary of American Biography, XVI, 133.) It is quite possible that the rolling apparatus on the Schuylkill River was identical with that constructed to supply the Federal government and that the existence of these machines induced Roosevelt to embark on the enterprise discussed in this paper.
them individually shared in the outlay for these items. The Bollmanns seem to have paid a part of the cost of installing the rolling and slitting apparatus and to have provided all the circulating capital. They actually invested about $30,000 in the enterprise, while the two other partners were unable to add any amount to that represented by the fixed capital. The Bollmanns in addition paid $5,000 as a loan or consideration to N. J. Roosevelt personally, who at that time was already hard pressed for money. The amounts sunk in the enterprise were not sufficient, however, to make it profitable.

The reason for the failure lay in technical difficulties. These are so well described in the letters that it is hardly necessary to comment further. The inefficiency of the engine was due to an imperfectly bored cylinder and to an unbelievably primitive boiler which is supposed to have been made of wood. It is no wonder that it could not hold the steam. Difficulties such as those described in the letters were typical of early engine industry. For years the boring of cylinders presented a technological problem and after it was solved the production of efficient boilers remained for many more years the crux of engine industry. Bollmann's letters show that in 1803 the original wooden boiler was replaced by one of cast iron, but not even such boilers were efficient; riveted as they were from numerous small plates, every rivet became a potential leak. Nevertheless the boiler of the "lower engine" installed after the bankruptcy of the Bollmanns was much better than the first one. As set up originally, because of the deficient boiler, the engine hardly produced any "extrapower" at all, that is to say, any power over and above that necessary to pump water for the city.

Technical and financial difficulties were reflected in accounting problems. It was hard to compute accurately the value of the shares of the three parties. This was especially so since not the value of the engine but that of its "extrapower" had to be put into the balance sheet. To make things worse, all the partners, but especially the technicians Latrobe and Roosevelt, had very hazy ideas of bookkeeping. Latrobe, for instance, wanted to base the book value of the engine on its power. Disregarding such personal shortcomings it was really hard to compute the value of a power which did not exist at the moment, but was supposed to come into existence in the future.

8 Graff, Notes upon the Water Works of Philadelphia, 1-3.
Bollmann rightly pointed out that the cost of putting the engine into shape, that is, of installing a new cylinder and of putting up a new boiler, was a charge against Roosevelt and Latrobe.

It seems that under the agreement the partnership as such took care of the "lower engine" and kept it running, thereby taking over a personal obligation of N. J. Roosevelt. But apparently no settlement had been made with regard to the distribution of the cost of fuel between the rolling mill and N. J. Roosevelt personally, who as the "contractor" had to provide water to the city. Obviously whatever obligation the partnership had taken over should have been capitalized and put on the balance sheet under liabilities, while Roosevelt's personal obligations could have been capitalized and charged against his capital account. Alternatively, such current personal obligations could also have been charged against his share in the profit.

The commercial enterprise of the Bollmanns broke down in 1802. The brothers became bankrupt and their share in the rolling mill was sold at public auction as will be seen from the letters published below. The letter to Corp (the last of the series) indicates that Eric Bollmann tried to find a willing buyer, and from other letters of his it is clear that in this case he hoped to remain as manager of the plant. When he wrote that letter to Corp the situation looked a little brighter, since Latrobe had orders for sheet metal for roofs in Washington which, of course, he was placing with the mill in which he had an interest. What happened to these orders is not known, but the Bollmanns' share in the mill was sold to a relative of Eric's late wife. Since he was not on good terms with her family (the Nixons of Philadelphia), especially with the purchaser, he chose to withdraw completely from the enterprise and its later fate is unknown.

There was an element of tragedy in the outcome of the venture, for after the new cast-iron boiler had been installed the "lower engine" actually provided considerable "extrapower." The so-called Watering Committee of the City of Philadelphia reported, in 1812, that the "lower engine" had "only fourteen hours employ out of

9 Bollmann to Jefferson, June 18, 1803. See the author's Essays in American Economic History, 80.

10 It is not impossible that there was some connection between the rolling and wire mill of Josiah White and Erskine Hazard on the Schuylkill River (1808) and the works discussed in this paper.
twenty-four to supply the greatest quantity of water yet required by
the City."

Once more pioneering had failed to pay the pioneer.

Belmont, Mass.

Fritz Redlich

From Eric Bollmann's Letter Book

New York. J. Roosevelt, Greenwich
Street No. 61. Jan 31.

I have duly received Your Letter of the 21st & 25th Inst. & Mr.
Speir has delivered me the other Papers, which I shall carefully
peruse. The whole I have no doubt will put me sufficiently "au fait"
but since the Presidents favorite Project has been given the go by in
the House of Representatives I have little expectation, that any
thing can be done at all. The House seemed not in a Disposition to
listen to Proposals of Expence and Improvement whilst the Louisiana
Business is pending. I shall however reflect on the Subject again to-
gether with Mr. Latrobe and with You further. The Subject of Your
last Letter shall be attended to.

The new Concern is again in an awkward Predicament and must
continue to sirch money for some time to come. The Boiler has given
way, and almost every Day springs a new Leake, the patching of [it]
occasiones great Expence, and occasions us to stand still half our time.

It also occasions a prodigious Waste of Coal. A new Cast Iron
Boiler is under way, but it will be Six Weeks before it can be finished
and it costs money. What a Pity, all the Parts of this Engine were
not perfect from the Beginning.

The Corporation is about the new Lease. I remain


March 2d 1803

I have received Your kind Letter of the 22d Febry & feel much
obliged to You for Your friendly Participation in my present mis-
fortunes. I also am fully sensible of the liberality of Your Proposition
to give me an Interest in Your & Mr. Latrobe's Share in the Rolling
Works. The more I find regret to find that Your Ideas are much to

12 The City of Philadelphia.
sanguine both as to the probable Productiveness of the Works and the amount of Your & Mr. Latrobe's Interest.

As to the first Point the new Boiler must first be completed and must prove to answer the intended Purpose before any Emoluments can be expected at all; for at present it is impossible on account of the Deficiency of the old Boiler to keep up the Steam steadily, and the Mill therefore must Stop nearly every 20 Minutes to give the Steam time to accumulate of Course, the Men stand half of their Time idle whilst the Wages run on and the Consumption of Fuel is enormous, from 70 to 80 Bushels of Coal in 24 Hours. The putting up the new Boiler, finishing additional Sets of Cutters all require likewise the keeping in our Employ of a number of Hands which regularly will not be wanted. You will therefore readily conceive that the Works under the present unfavourable Circumstances do not make, but sink money, which is actually the Case. We are more over often obliged to stand still for a Day or Two to mend and patch the old Boiler, which is always attended with great expence & loss and add to our other Distress. We are also pumping away for the City, without ever receiving a Farthing, and much is therefore to be got over still to make the Concerne productive at all.

But now after all these Difficulties shall have been conquered the Concern will not by far be as productive as You imagine. The pumping of Water always will take away a considerable Part of the night, and the requisite Slowness of Motion when pumping, on Account of the Narrowness of the Pump barrel, the State of the Valves etc., excludes rolling & slitting during that time, which diminishes the Quantity of Work, which otherwise might be turned out, & this Inconvenience may considerably increase if the City should demand a greater Supply of Water. It requires at present only 200,000 Gallons in 24 Hours, but one Million may be demanded, without any Increase of Pay. From 10 to 15,000$ p' Annum is therefore all in my opinion, that can be expected from the Works in the best times, but it will be long before they produce this. The Waste of Iron, the expense of bundling up the manufactured Articles all form practically greater deductions from the Profits than was ever contemplated in Theory.

As to Your & Mr. Latrobe's Interest in the Works I am also afraid that You deceive Yourself. It is certainly true that the articles of
Partnership stipulate a Division of Interest into 3 equal Shares of $10,000 each; but they also stipulate that in case of Deficiency in one or more of the Partners to contribute their quorum of the original or enlarged Capital the Profits are to be divided in the Ratio of the actual Investments of the respective Parties. Now as we have never been able to obtain from either of our Partners any contribution towards the Expence of completing the Works, our frequent applications for that Purpose notwithstanding, & as we have actually spent on the Works and invested about $30,000, for which they are *regular Vouchers*; it follows that You & Mr Latrobe can not possibly claim an Interest of 2/3 in the Works, unless indeed You value the Extra-power of the Steam Engine, and what You have furnished towards the Rolling Works at the enormous Sum of $60,000 which I am Sure You could not in Reason for a moment think of.

I have to regret in the present [illegible] that the value of the Extrapower, our Entreating notwithstanding, has so long remained unsettled, and even now I request You again to come over immediately, if it is any Ways in Your Power, in order to settle this Business You may still settle it with us and You will find us liberal, but in the Course of next Week Assignees will be appointed under a Petition of Bankruptcy, to whom will naturally devolve the settling of this point and who, you may depend upon it, would think themselves bound to settle it on the Rigour of the Terms of the artistry of Partnership. I therefore flatter myself you will comply with my request without loss of time.

The Power was filled up with the name of Wm. Cramond. The state of account is making out and will be ready for Computing on your arrival.

N. B. The assignees once appointed I do not know how soon they may proceed to the state of our share, subject to the several incumbrances.

New York. J. Roosevelt. March 9th 1803

I have before me Your Letter of the 5th Inst. If You have been formerly here with Mr. Standinger to settle the value of the Extrapower You have addressed You [sic] chiefly to Mr. Latrobe on the Subject, and my Brother and myself have no recollection, that such
was the Intention of Your Journey. Probably the Idea was aban-
doned because the Concerns with the Corporation were in so un-
settled a State that nothing could be done. At present we know their
demands at least and can proceed on Grounds of Probability as to
the final adjustment of Your accounts with them.

As to the Estimates of Loss I have never pretended to have an
Idea on the Subject, and if the Expence of Works has been under-
rated the Fault must lie with Mr. Latrobe, Standinger etc. with
whom consultat were then held on the Business.

I only know that if I had had the smalest Idea that the expence to
be incurred would be so large and that we should have to support
the whole of it ourselves, I should never have engaged in it. However
the first step once taken we have without complaining that we were
misled when we were induced to advance the first $5000. gone
through the Business with Spirit, and born our good Share of
Anxiety Trouble etc. to make Your Extrapower valuable, and since
I dare say You would not easily have found an other person to do
the Same, I trust You will give us Credit for it. I further observe that
of our Expences the above Sum of $5000, which went to You and not
towards the Rolling Works form Part. Further that the moneys dis-
bursed for Fuel form an other considerable part. Further that the
expenses of erecting, fixing, adjusting the Machinery makes a large
Item, and that after all these Deductions the Sum of $6000 for which
You were desired by Mr Latrobe to contract will not be much out of
the way.

I shall certainly see Mr. Latrobe and try to agree with him on
some liberal terms as to the adjustment of Interests. Be convinced
that personally towards You, You will find us always disposed to act
as friendly part, nor should You apprehend Evils which do not yet
exist. At least I think there is a Chance that we may remain [illegible]
with the Works, and that to us as well as to Yourself and Latrobe
they may prove a Source of Maintenance and comfort.

Meanwhile please to inform me with the returning mail at what
Sum You are willing to put down the Cost of both the Steam Engines
aggregately; I can then proceed with more Facility with Mr. Latrobe
toward an adjustment of our mutual interest, which shall be made
out and sent you without delay for your approbation accompanied
with the necessary statements, vouchers, etc. etc. Meanwhile I remain

Pursuant to your own Desire application has been made to Mr. Latrobe for the Purpose of ascertaining the aggregate Cost of the two Steam Engines, who, in Consequence thereof has given his opinion in Writing, of which I inclose a Copy. Mr. Ch. Galerke and G. Hays, provisional Assignees to Our Estate, have read this Opinion and think it indispensably necessary that the precise amount of the mutual Shares should be fixed without Delay, particularly as they have advertised our Interest for Sale on the 6th of April, as You will see by the inclosed Paper. They have authorised me to communicate to You their Ideas on the Subject.

They are of Opinion that the Settlement which Mr. Latrobe proposes, and by which if adopted, He has engaged himself to abide, is a more favorable one than a strict dividing of the Subject would warrant, for the following reasons.

1.) The Principle which Mr. Latrobe has adopted for the Evaluation of the Extrapower, viz that the Cost of the Engines was their respective Powers, that is as the Squares of their Diameters of their Cylinders, is hardly admissible; because a great many Parts of the two Engines—such as all the Nossels, the Air Pumps etc.—are exactly the Same in Both and can therefore not occasion a difference in the Expence; and further because the labour of Erection which forms a considerable Item of the Expence, must likewise be nearly the Same in both, as it makes hardly any difference in the Expence whether the Parts which are to be put together are a little larger or smaller. The Difference of the actual Cost of the two Engines is therefore undoubtedly considerably less than the Difference of their Powers.

2.) If Mr. Latrobe and Yourself are to have Credit for the Value of the Extrapower it should have been furnished at Your Sole Expence. But the unsuccessful attempts at Rolling have shown that in Fact there was no Extrapower, without a new Cylinder and a new Boiler. These two Items of Expence, which amount to about $3500, would therefore in Straitness form a good Charge against Mr. Latrobe and Yourself.

3.) In a Petition which You made some years ago to the Corpora-

14 Obviously the problem was to establish a separate value for each of the engines of the waterworks the combined value of which was about $30,000.
tion You have Yourself rated the Extrapower at 1/6 of the aggregate Expense of the two Engines only, which is about $10,000.\textsuperscript{15}

It has been on the other Hand represented to the Assignees that You were a considerable looser in the whole Business, and that it would be better to settle the mutual Interests in a liberal Manner without Dispute and Delay than to gain a little more by Means of tedious References or obnoxious Lawsuits.

They are therefore willing to agree to Mr. Latrobe's proposals provided you do assent to them also.

Have the goodness to communicate to me your determination on the subject with the returning mail and believe me

New York. Roosevelt April 11\textsuperscript{th} 1803.

I beg leave to refer to my L\textsuperscript{r} of this date to M\textsuperscript{r} Corp for the reason why I do not wish to set out for N York and Middletown until M\textsuperscript{r} Casey's Sentiments on the Subject generally are known. I flatter myself You will find them sufficient.

Mr. Latrobe has returned from Washington he says that his Paper in Your hands mentions what he thought You had spent towards the Extrapower, which was a different question from this, what is it worth, and what ought it to have cost, and that with regard to this Point he ought in honour and would defend his opinion last given. He brings with him confirmed orders for covering the President's House, the Capital and several private Buildings in Virginia with Sheet Iron Roofs which together may amount from 5 to 6000$. This certainly is encouraging as a vaste number of orders will be received from the Southward if those roofs get once into Vogue there. He has accepted of the appointment as Superintendent of the public Building and the City, since he found that his constant Attendance and Residence there was not required.

Please to urge and prepare the Business in question that it may be finally concluded on my arrival, and drop me a Line with the returning Mail.

\textsuperscript{15}This is a mistake. The two engines had cost $30,818.81. See Report of the Committee of 1801, 8. One gains the impression that Roosevelt and Latrobe for tactical reasons misinformed their partners with regard to certain points.
New York, Sam\(^1\) Corp. April 14\(^{th}\) 1803.

I am favour'd with Your Letter of the 12\(^{th}\) Ins\(^t\) by which I learn with Satisfact\(^n\) that Mr James Casey consideres the Propos\(^n\) made to him deserving of his serious attention.

I wish of Course to see him in order to give the Business a full discussion, but our last meeting before the Comissioners will be on the 20\(^{th}\) Ins\(^t\) and I find that my Presence can not be dispensed with without creating at least 3 Months Delay with regard to our Certific\(-c\)ate. It would be impossible to proceed to Connecticut, do the Business and be back here on the Day mentioned, I must therefore postpone my Journey untill the 21\(^{th}\) when I shall set of without fail. Meanwhile I shall adjust all Accounts etc. so that nothing may be in the Way of a final arrangem\(^t\) when I see Mr Casey—and it would be well for Mr Casey to prepare himself for the Purchase in order to be ready in Case he should determine on that Measure.

In the Intervall the Parties will not press the Sale since I have made them sensible that it will be better to wait untill the new Cast Iron Boiler is finished which will take about 10 or 12 Days, and give Completion to the Works.

Should Mr. Casey by that Time have sufficiently recovered to come to NYork and meet me there, or to come here himself in order to convince himself of the value and Perfection of the Works by ocular Inspection it would be highly agreeable to me. If not I shall meet him at Middletown.

Only one of the 3 Mortgagers wishes to become possessed of the Property, but as it would be inconvenient to him to lay out Money he rekons himself on accomadat\(^n\) from the other 2 as a matter of Course if he buys the Property in. On this Ground rests my Expectation, or rather my Conviction that Accomodation can be obtained from the whole in Favour of a third Purchaser, particularly if there is a Prospect that my own Interests will eventually be in some Degree benefitted by the arrangem\(^t\).

I shall be glad to hear from You before the 21\(^{st}\) and I have no time to write to Mr Roosevelt and You will oblige me by communicating to him the Contents of this Letter.