

THE  
FINANCIAL HISTORY  
of  
MATTHEW BOULTON  
1759 -- 1800  
by  
J. E. CULE

Thesis submitted for the Degree of Master of  
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October 1935.  
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PREFACE.  
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This account of Boulton's finances covering the period 1759 - 1809 is based almost entirely on the Boulton manuscripts in the possession of the Birmingham Assay Office. Some little use, too, has been made of the Boulton and Watt Collection in the possession of the Birmingham Central Library.

The period covered by one collection is somewhat different from that covered by the other. The Boulton and Watt Collection, as its name indicates, consists for the greater part of the records of the famous engineering partnership, whereas the Assay Office Collection, besides containing valuable information on Boulton and Watt, also embraces the records of Boulton's earlier partnership with Fothergill.

It is suggested that the main contribution of this Thesis concerns the financial aspects of the exploitation of Watt's invention of the Steam Engine, Lord and Roll, whose books (vid below) are primarily concerned with Boulton and Watt, have formed the opinion that the latter concern was based upon and supported by the financial resources of Boulton and Fothergill. Actually,



S. Smiles "Boulton and Watt" John Murray  
1904. Popular Edition.

A.O. Westworth "The Albion Steam Flour Mill"  
Economic History, January 1932.

I should like to take this opportunity of expressing my thanks to Mr A. Westwood, Master of Assay, Birmingham, for placing every facility at my disposal in gaining access to the manuscripts in his charge and for much valuable advice and assistance on the subject matter of this Thesis. I am also indebted to the Librarian and Officials of the Birmingham City Library for allowing me use of the Boulton & Watt Collection.

Finally, I should like to place on record my gratitude to those members of the Faculty of Commerce of Birmingham University who have rendered me much necessary aid.

J. E. CULE.

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Note:- Unless otherwise stated all manuscripts quoted in the text are those of the Birmingham Assay Office.

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CHAPTER 1. Introduction.

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Boulton prior to his Partnership with Fothergill  
1759 - 62.

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Comparatively little is known of Boulton's business activities prior to his partnership with John Fothergill. The information both at the Assay Office and in the Boulton and Watt Collection is singularly scanty. The little knowledge we do possess is derived almost entirely from Smiles "Boulton and Watt".

It appears, however, that his father owned a business as a Silver Stamper and Piercer in Birmingham. To this business Matthew Boulton was introduced, and by the time he was seventeen had "introduced several important improvements in the manufacture of buttons, watch chains and other trinkets; and he had invented the inlaid steel buckles which soon afterwards came into fashion".<sup>1.</sup> In time, after being made a partner by his father, the management of the business passed entirely into Boulton's hands.

On the death of his father in 1759 Boulton succeeded to the business and inherited considerable

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1. Smiles "Boulton and Watt" - Page 130.



wealth. A year later in 1760 he married Anne Robinson, a rich heiress of Lichfield, who brought a large addition to his fortune<sup>1</sup>. Boulton could, had he chose, have retired from business and lived a life of liesure. On the contrary, he regarded his increased resources as providing a favourable opportunity for increasing the scale of his operations.

At this time Boulton's Manufactory was situated on Snow Hill, Birmingham. The accommodation there having grown small he determined to seek additional space elsewhere. Happily for us, Boulton has left on record his own intentions at the time. "About January 1761 Boulton had formed a plan for manufacturing various articles of the Birmingham hardware and toyetrades in which a water mill was essentially necessary, and that as near to the town of Birmingham as possible. He applied to Mr Edward Rustom, who in 1756 had taken a hundred years lease of lands and privileges in Handsworth, one and a half miles from Birmingham, and who had made a canal one and a half miles long to convey a little brook to a place for working a mill which he had erected with a dwelling house for himself. These and other

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1. Her fortune was £ 28,000.

improvements cost £1000. As the situation suited Boulton's intended plan he agreed to purchase from Rustom his lease and improvements for £1000. As the mill was the only object of trade, and Boulton being desirous of keeping the accounts of trade as distinct and clear as possible, he opened two accounts in his books - Soho Mill and Soho House - Soho Mill £700 and Soho House £300, after which Boulton carefully distinguished the money laid out between them. He spent a large sum in finishing the House and otherwise improving it, which was an additional expense of £500, but the mill was his main object and he worked hard to perfect it. In the summer of 1761 Boulton procured bricks, timber and workmen and <sup>erected</sup> a warehouse with several shops; but dissatisfied with the mill he determined to demolish and rebuild it<sup>1</sup>. This is how Boulton was situated in 1762 when the partnership with John Fothergill commenced.

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1. Document endorsed "Case between Boulton and Fothergill".



CHAPTER 2.  

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Boulton and Fothergill 1762 - 1766.  

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For some time John Fothergill had been in the employ of a Mr Duncumb, a Birmingham Merchant; but in January 1762 these two quarrelled and Fothergill separated from his master.<sup>1</sup>

Boulton was in London when the quarrel occurred, whither Fothergill now betook himself with proposals for a partnership. At first Boulton declined, but on persuasion by Fothergill and his friends at length consented. Fothergill said he would be content with a one third share in the profits and would advance an equal capital in consideration of Boulton's superior skill and of the greater burden of the business falling upon him.<sup>2</sup> Boulton, desirous of a lasting agreement, objected to this and proposed that Fothergill should advance £1000 more capital than himself and profits should be divided equally.<sup>3</sup> The buildings and mill that Boulton had erected and was erecting, together with all his tools and materials, were to be considered as part of his capital.<sup>4</sup> Each partner was to receive interest on the money he had advanced

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1. Document endorsed "Case between Boulton & Fothergill."

2. Ibid.

3. Document endorsed "History of Facts" Boulton and Fothergill.

4. Document endorsed "Sundry Papers relating to carrying on the business of Boulton and Fothergill".



into the business. This interest on capital was to be a charge against profits, to be calculated and deducted before any profits were arrived at.<sup>1</sup> The foregoing are the general provisions of the Partnership Agreement intended to last fourteen years between Boulton and Fothergill, but strange to say, no Articles of Partnership were ever signed by either of them. The partnership was to commence on Midsummer Day 1762.

The firm of Boulton and Fothergill carried on business as Manufacturers of hardware products. They were also their own merchants so far as concerned selling these both at home and abroad. At the outset of the connection Boulton wished to abandon the mercantile activities abroad. He thought them incompatible with the interests of the manufactory and was of the opinion that many of the merchants were disgusted thereat;<sup>3</sup> but whether owing to Fothergill's hostility, or Boulton changing his mind on the matter, the foreign trade was continued.

As agreed the partnership began on Midsummer

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1. Document endorsed "Some Remarks about my Partnership in Boulton's hand."
  2. Document endorsed "Sundry papers relating to carrying on the business of Boulton & Fothergill."
  3. Document endorsed "Some Remarks about my Partnership in Boulton's hand."



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Day 1762. Boulton's initial capital stood at £6206.17. 9 while the amount standing to Fothergill's credit was £5394.16. 0.<sup>1</sup>

About a year after the partnership began Fothergill waited on Boulton one Sunday morning and informed him he thanked God he had signed no Articles of Agreement, that he never would sign them for he had determined to dissolve the partnership, that he and his wife were ~~settling~~ out for Yorkshire that day and that a lawyer was to act for him in dissolving the partnership. Having made this announcement Fothergill disappeared into Yorkshire.<sup>2</sup>

This put Boulton in a critical position. The firm had just commenced trading abroad. They had laid out a large sum in buildings and had commenced on a larger scale of business than was adapted to their capital. At the time of Fothergill's desertion many orders were received and in order to raise money to execute them Boulton sold a farm at Tamworth but at a loss. With the money he executed the orders and sustained the house.

After about ~~two~~ months Fothergill returned,

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1. Statement of Affairs 1763 - 1780.

2. Document endorsed "History of Facts" Boulton & Fothergill.

altered his mind and again entered into the business, but still no Articles of Partnership were signed and Fothergill kept the draft of them in his possession in his own house.<sup>1</sup>

For the year 1763 no Profit and Loss Account was drawn up. When, however, one was drawn up at the end of 1764 it was found that £3829.10. 0 had been lost. The loss was shared equally by the partners. As a consequence of this, Fothergill's capital was reduced to £3330. 6. 2. Boulton's capital was not reduced as he advanced more money into the concern.<sup>2</sup> Perhaps these losses can be partly explained by Fothergill's indiscretion in abandoning the business for a time.

Faced by financial difficulties Boulton and Fothergill began to consider the advisability of taking in a new partner. Fothergill writing to Boulton as early as February 1764 says "My constant wishes attend you that you may be successful in the grand point viz., a partner, as our future happiness much depends thereon, considering how our finances are exhausted<sup>and</sup> what valuable tools now lie

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1. Document endorsed "History of Facts, Boulton and Fothergill".

2. Statement of Affairs 1763 - 1780. Fothergill Papers.



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useless, and I flatter myself you will leave no stone unturned to procure one entirely suitable. Query if an advertisement in the daily paper will not be serviceable". Obviously one difficulty arising from his lack of resources was a shortage of circulating capital, which made it necessary to restrict orders.<sup>2</sup>

In this situation Fothergill entered into negotiations with one Ebbinghaus, a merchant of Iserlohn, Westphalia, with a view to making him a partner in the house of Boulton and Fothergill. The negotiations were very protracted and no definite decision was made for a number of years.<sup>3</sup>

Meanwhile fortune smiled on Boulton. In September 1764, by the death of his brother-in-law, he became possessed of estates worth over £16,000;<sup>4</sup> and in the following month Boulton mortgaged some of his landed property to a Mr Jacob Tonson for a loan of £3500.<sup>5</sup> Jacob Tonson, a noted publisher of the time, was unacquainted with Boulton, but the recommendation of Baskerville, a mutual friend, induced him to make the loan.<sup>6</sup>

In spite of the addition of so large a

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1. Fothergill to Boulton. February 8th 1764.
  2. Fothergill to Boulton. February 11th 1764.
  3. Ebbinghaus to Boulton & Fothergill. 10th Sept. 1764
  4. Fothergill to Ebbinghaus, October 24th 1764
  5. J. Baskerville to Boulton, October 24th 1764.
  6. Tonson to Boulton, November 7th 1764.

fortune Boulton and Fothergill still desired Ebbinghaus to enter the partnership. Boulton's "sentiments still continued in the pursuits of an extensive and well conducted trade". Accordingly negotiations with Ebbinghaus were still continued.

During the following year a small profit was earned, notwithstanding the great handicap, lack of circulating capital, which was due to locking up too much money in buildings, tools and plant. The amount of net profit for 1768 is given as £402.18. 2.<sup>2</sup>

One certain reason why the partnership was unprofitable was because the manufactory was divided into two parts - part was at Snow Hill, part at Soho. Chaos and inefficiency ensued from this arrangement. In many cases more than the profits of certain articles were lost for want of proper supervision. All the assistants declared that it was impossible to guard against the loss to which the concern was exposed by having patterns, goods and materials scattered about in different

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1. Fothergill to Ebbinghaus Oct. 24th 1764.
2. Statement of Affairs 1763 to 1780.



places. Nor was it possible for Boulton to supervise the workmen efficiently. For these reasons, one and all, clerks and assistants, Boulton and Fothergill cried aloud for building a warehouse and shops to contain the whole at Soho Mill.<sup>1</sup>

At length in 1765 it was determined to enlarge the manufactory at Soho and concentrate all activities in one place. A celebrated architect of the time was engaged and by the Autumn of 1765 work was in progress on the new building, which "engages the attention of all ranks of people who are filled with astonishment".<sup>2</sup>

This was a step fraught with the most momentous consequences for difficulties now arose which it took more than thirty years to overcome, which helped to bring the hardware concern to the brink of ruin and swallowed up vast proportions of the profits of the subsequently formed Steam Engine Company. The truth was, Wyatt, the architect, had made a very serious error, the cost of the building was five times larger than estimated, £10,000 not £2,000.<sup>3</sup>

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1. Document on Manufactory, Fothergill Papers.

2. Fothergill to Boulton December 14th 1765.

3. Booklet entitled "Case between Boulton & Fothergill



The consequences of this mistake soon became manifest. In November 1765 Fothergill wrote, "Money begins to be wanted, the building having already consumed as much as the whole was to have cost",<sup>1</sup> and later, "the continual expense for building materials has quite exhausted all our finances".<sup>2</sup> This expenditure, unexpected and unprovided for, brought on the fatal Bill Account which Boulton later described as "the greatest drain of all others to our profits".<sup>3</sup>

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1 Fothergill to Boulton. November 9th 1765.

2. Fothergill to Boulton December 14th 1765.

3 Boulton to Foreman July 9th 1782. Letter Book 1781 - 83.

X The Bill Account was similar to a modern banker's overdraft. Its exact nature was as follows - Reputable merchants particularly in London would accept Bills of Exchange on behalf of certain Clients in return for a commission. As the Bills fell due it was expected that the party on whose behalf the Bills had been accepted should make remittances either in Bills or Cash to the accepting merchant to enable him to meet the Bills. From origins of this kind present day Accepting Houses have sprung.

In the normal course of events Boulton must have had some merchant or banker to accept Bills on his behalf in so far as his own signature was not sufficient, but in this case there would be nothing in the nature of borrowing, as acceptances would



Looking back twenty years later Boulton says of the Bill Account that it "first originated in laying out £10,000 in buildings when we only intended to lay out £2000 and thus a circulation of Bills began to supply our wants and that was soon increased by its own expenses and some heavy losses in so much that I believe at one time it cost nearly £3000 to support".<sup>1</sup>

For nearly thirty years this Bill Account

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would always be balanced by subsequent remittances.

When this new building was made, however, £8000 had suddenly to be found. It became more difficult to make remittances to accepting merchants, while acceptances on Boulton's and Fothergill's behalf tended to increase. The more they accepted and the less Boulton and Fothergill remitted the more Boulton and Fothergill owed, and the amount owing to these merchants for bills accepted but unprovided for was known to Boulton and his Associates as the Bill Account. The merchants who accepted Bills on behalf of Boulton and Fothergill were -

John Motteause, Merchant, London. Later  
Chairman of the East India Co.,

John Baumgartner, Merchant, London.

William Mathews, Merchant, Shipowner &  
Underwriter, London.

Raymond Lowe Vere & Co., Bankers, London.

1. Boulton to Foreman July 9th 1782. Letter Book  
1781 to 82.

remained hovering over Boulton and his enterprizes like some floating charge always on the point of crystallisation.

While the new buildings were in the course of erection Boulton and Fothergill embarked upon a new business. Up to this time they were merchants only so far as concerned the marketing of their own products. They aimed at getting their wares into the hands of the home and foreign consumer without paying tribute to any middlemen. In the course of time it was found that English factors and merchants refused to give Boulton and Fothergill any orders, saying they clashed with them by dealing abroad themselves. Now obviously, the Soho Manufactory could not supply all the wants of foreign merchants who bought in England. These latter having to split up their orders in two, part supplied by Boulton & Fothergill, part elsewhere, would be loath to patronise Boulton and Fothergill at all. Besides this there would be two shipping charges when perhaps one was sufficient. For these reasons Boulton and Fothergill determined to enter into the factor business themselves. What part of an order they did not make themselves they would buy from someone else. As Boulton said " to supply the



large manufactory with orders it is necessary  
in order to obtain a part/<sup>to</sup>supply the whole, and  
as the rest furnishes a tolerable business to our  
factors why not let it offer the same advantages  
to us".<sup>1</sup>

In 1765 Boulton on his own account  
purchased shares in an undertaking for the  
construction of a canal from the Trent to the  
Mersey. He subscribed for £600 in the Company and  
paid for part of it. Later Boulton became  
frightened the venture would not pay and seeing the  
shares fall sold out at a great loss.<sup>2</sup>

Soon after this Boulton signed articles of  
partnership with three other persons to work a mine  
supposedly containing silver, but nothing came out  
of the hole in the ground and after more loss of  
money the mine was abandoned. In this case, as in  
that of the Canal, the loss was borne by Boulton alone.

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1. Statement concerning Soho Manufactory 1766 in  
Boulton's hand

2. Booklet entitled "Case between Boulton and  
Fothergill".



In neither instance was the Profit and Loss Account of the partnership affected.<sup>1</sup>

When the books were closed at the end of 1765 a satisfactory year's trading was revealed. A profit of £1906.17. 4 was available for distribution.<sup>2</sup> Too much reliance must not, however, be placed upon the books and accounts of Boulton and Fothergill. In some years they were never closed. There was no provision for doubtful debts and it was subsequently found that colossal sums had been lost through bad debts.

By June of the following year, 1766, the whole manufactory and all the workmen were concentrated at Soho. The factor business, or commission business as it was sometimes called, was by now established.<sup>3</sup> Needless to say, this expansion of business necessitated an increase of capital. From October 1765 to June 1766 Boulton had added between £6000 and £7000. His capital was now over £12,000, while that of Fothergill was over £4000.<sup>4</sup>

Boulton and Fothergill, more by accident than by plan, had embarked on a scale of <sup>manufacture</sup> so large

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1. "Abstract of Boulton's Case with Fothergill".
  2. "Statement of Profits 1763 to 1780".
  3. The commission business was carried on in a warehouse in Birmingham and not at Soho.
  4. Boulton to Ebbinghaus June 26th 1766.



as to be unheard of. They were so far involved it was too late to draw back. The buildings and plant were adapted to large scale operations. Boulton, writing about this, said, "we have now conveniences sufficient to manufacture double the quantity of goods we do at present, although we employ at present five or six hundred men, women and children".<sup>1</sup> It became necessary to obtain more and more orders to keep the manufactory going, and with this end in view Fothergill went abroad in the Spring of 1765 and journeyed as far as Russia to make new connections.<sup>2</sup>

While Fothergill was abroad Boulton took up the negotiations with Ebbinghaus in the hope of inducing him to become a partner. The terms he offered were that if Ebbinghaus chose to advance £2000, or any other sum, he should have a share of the profits of the trade in proportion as his capital was to that of Boulton and Fothergill. They were also willing to guarantee that his money would bring in ten per cent yearly, or more if the profits

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1. Boulton to Ebbinghaus June 26th 1766.

2. Ibid.



allowed. Boulton was particularly anxious that the partnership should be a secret one. He feared many disadvantages from the public knowing about it, and apprehended it would deprive them of the orders of many of their foreign correspondents, and anticipated it would raise a clamour against them in England. On the other hand many advantages accrued from a secret partnership. Ebbinghaus could sell goods on behalf of Boulton and Fothergill. He could quickly transmit to Boulton information of a valuable nature, viz., when one of his commercial acquaintances was coming to England, when any new patterns or articles appeared, when any alteration or abatement in price took place, what persons could safely be trusted with credit and so on.<sup>1</sup> Ebbinghaus accepted Boulton's offer and by the end of December 1766 had advanced his £2000 into the concern, making himself a partner with Boulton and Fothergill in the Birmingham hardware trade.<sup>2</sup>

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1. Boulton to Ebbinghaus June 26th 1766.

2. Ebbinghaus to Boulton Decr. 30th 1766

We have spoken of Boulton and Fothergill as being manufacturers of hardware. What precisely did they make? According to the Encyclopaedia Britannica - 1797 edition - the early products of Boulton and Fothergill consisted of Buttons, Buckles, Watchchains, Trinkets and such other articles as were peculiar to Birmingham. Watt, referring to the year 1767 when he visited Soho, says "The goods then manufactured there, were steel, gilt, and fancy buttons, steel watch chains and sword h<sup>h</sup>elts, plated wares in ormoulu, tortoise shell scent boxes, bath metal, and buttons inlaid with steel." Later in 1772 the ormoulu



business and tortoise shell boxes were abandoned.  
Biographical Memoirs of Boulton, by Watt.

STATEMENT OF AFFAIRS 1763 to 1766

<u>YEAR.</u>	<u>CAPITAL.</u>	<u>INTEREST.</u>	<u>PROFIT.</u>	<u>LOSS.</u>
1763				
Boulton	£6206.17.9	None	None	None
Fothergill	5394.16.0	None	None	None
1764				
Boulton	8212.16.3	£320. 4.0	-	£1914.15.0
Fothergill	3330. 6.2	269.14.9	-	1914.15.0
1765				
Boulton	9696.6. 9	430.12.10	£201.9.1	-
Fothergill	3345.9.11	166.10. 4	201.9.1	-
1766				
Boulton	10,375.10.5	571.15. 1	952.18.8	-
Fothergill	5,203. 7.1	177.12. 2	952.18.8	-

Reproduced from Statement of Affairs 1763 - 1780.

## CHAPTER 111.

Boulton, Fothergill, and Ebbinghaus 1766 -1772.

The connection between Boulton, Fothergill, and Ebbinghaus began late in 1766 and was kept a dead secret. No Capital Account for the German was opened in the books at Soho. His £2000 was recorded under the name "John Fothergill A".<sup>1</sup> This obviously was done to keep the matter from the clerks who drew up the accounts.

During the year 1766 a new arrangement was made concerning the division of the profits between Boulton and Fothergill. According to the proposed articles of partnership, Fothergill was to advance £1000 more capital than Boulton, and profits were to be divided equally. Fothergill's capital, however, in 1765 was little more than one third of that of Boulton, whereas profits were still shared equally. The result was Fothergill, gained much more on his money than did Boulton on his. From 1766 onwards, however, profits were divided between Boulton and the other partners in proportion to their capital.<sup>2</sup>

Fothergill's capital in 1765 was only £3345,

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1. Boulton to Ebbinghaus December 1st 1766.

2. Booklet entitled "Case between Boulton and Fothergill."



which was not much more than that of Ebbinghaus, whose share of the profits therefore would not fall far short of Fothergill's. Seeing this, and desirous of preserving some advantage for Fothergill, Boulton, without being requested, made a loan of £2000 to be placed to the credit of Fothergill's capital account. Fothergill was to enjoy the interest and all the profits produced by this £2000,<sup>1</sup> which was advanced while he was abroad.

By 1767 all the new buildings at Soho were completed. One consequence of this was the Bill Account. Another drawback involving additional expense soon manifested itself. There was insufficient water power in the nearby brook to drive the mills and machinery, a difficulty further increased by the making of the Birmingham Navigation. Consequently, in dry periods, as many as six to ten horses had to be employed, connected up with a horse mill<sup>2</sup>, thus adding considerably to the weekly expenses at Soho. This difficulty led Boulton to turn his attention to steam engines, or rather fire engines as they were then called, as a means for returning the water to the Mill.<sup>2</sup>

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1. Document commencing " 1762 June 24th Boulton & John Fothergill entered into partnership....." also receipt by Elizabeth Fothergill for £2000

2. Booklet entitled " Case between Boulton & Fothergill Boulton to Franklin. Feb 22<sup>nd</sup> 1766

Throughout 1767 Soho manufactory was very busy. Immense quantities of steel chains were made, large quantities of inlaid buttons ordered, and the manufacture of plated ware much increased; while for platina and plated buttons there were more orders than could be carried out. Although Boulton added another £2000, the concern was crippled for want of circulating capital, and he was contemplating the addition of another £5000 or £6000. It was common talk in Birmingham that Boulton & Fothergill were embarked on a plan of business for which a capital of £70 - 80,000 was necessary.<sup>1</sup>

The returns of the manufactory were increasing rapidly as the following figures show :-

For 1763 the returns were ~~£1000~~ £1000

" 1764 " " " 10,000

" 1765 " " " 12,500

" 1766 " " " 15,000

For 1767 Boulton assessed them at £22,000 besides £8000

1. ~~Booklet "Case between Boulton and Fothergill"~~

~~Boulton to Franklin, February 22nd 1766.~~

2. Boulton to Ebbinghaus October 28th 1767.



for the commission business, but as Boulton said, "our circulating capital is too small for so large a return". The dead stock of buildings and materials amounted to £13,000<sup>1</sup> out of a capital of just over £22,000.

As the end of the year 1767 approached, Boulton desired to collect as much money as possible to settle all accounts and balances due at Christmas, "in order to confound our envious factors and enemies"<sup>2</sup> To assist in achieving his end, Boulton sold a farm, and requested Ebbinghaus to advance another £500,<sup>3</sup> which the latter promptly did.<sup>4</sup> Boulton hoped by doing this to establish in their business an extensive and solid credit.<sup>5</sup>

Earlier in the year, Boulton, to assist in overcoming their wants, borrowed an additional £1,500 from Tonson who had already lent £3500.<sup>6</sup> Unfortunately for Boulton, Jacob Tonson died soon afterwards and in May 1767, Richard Tonson, Jacob's executor demanded repayment of the whole sum, principal and interest.<sup>7</sup> Boulton managed to ~~stave~~ off payment

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1. Boulton to Ebbinghaus. November 18th 1767

2. Ibid.

3. Ibid.

4. Ebbinghaus to Boulton, December 15th 1767.

5. Boulton to Ebbinghaus November 18th 1767

6. John Hardy (on behalf of J. Tonson) to Boulton Feb. 21st 1767.

7. John Norton (on behalf of R. Tonson) to Boulton May 14th 1767

till the new year when he remitted £2,500 and promised another £500 at Lady Day.<sup>1</sup>

Notwithstanding the shortage of current capital, 1767 is revealed as a very prosperous year. Boulton obtained £1450.12. 4 profit and Fothergill £725. 6. 2; this of course in addition to interest on capital.<sup>2</sup>

The new year, 1768, opened inauspiciously enough. Boulton according to his wish paid off many heavy balances at Christmas but was disappointed in his expectation of receiving payments from his own debtors. This put him in a rather inconvenient position.<sup>3</sup> Nevertheless it did not prevent him from adding to the list of Soho products. He now commenced the manufacture of toothpicks and instrument cases of tortoise shell, and also purchased the business of a man named Gimblett who made gilt boxes, gilt chains, and instrument cases.<sup>4</sup>

Boulton's optimism notwithstanding, the old difficulty viz., want of circulating capital could

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1. Boulton to Tonson January 2nd 1768

2. Statement of Affairs 1763 to 1780.

3. Boulton to Ebbinghaus. February 6th 1768

4. Ibid.



not be got rid of. This was due to the following causes which operated during 1767 -

There was an increase in dead stock	£1500
Expenditure on buildings	1500
Expenditure on Timber, lead & glazing	1500
	<hr/>
	£ 4500
	<hr/>

This sum was locked away and not available for use as circulating capital.<sup>1</sup> True, all expenses on buildings were now at an end and Boulton hoped that in 1768 there would be an opportunity to accumulate some circulating capital, provided the returns reached the same figures as for the previous year, viz - £30,000, £22,000 for the manufactory, £8,000 for the commission business; but there seemed little likelihood of this being the case, for in the previous spring and summer

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1. Boulton to Ebbinghaus, March 2nd 1768.

It may be wondered why Boulton and Fothergill needed so large a circulating capital. Firstly, every Saturday night £260 had to be found for workpeoples' wages, & secondly, goods bought for the Commission or Factor business had to be paid for at once, and thirdly in respect of their own purchases of gold, silver, brass and iron, they were allowed only six weeks credit. (Boulton to Ebbinghaus, March 2nd 1768). On the other hand Boulton and Fothergill allowed their customers six months credit, after which they drew bills upon them in favour of Mathews, their London Agent. (Boulton to Wilkinson October 25th 1768). As an inducement to immediate payment, Boulton and Fothergill allowed a discount of 5% to those who paid immediately and did not avail themselves of the possible six months credit (Boulton to Ebbinghaus Sept. 1768).

Boulton and Fothergill had very large orders, which Fothergill had procured, for ready money; for without the latter it would have been impossible for the returns to have reached £30,000, as orders on credit for anything like that figure could never have been executed for want of circulating capital. By March 1768, however, scarcely any ready money orders at all had been received and remittances from debtors came in but slowly.<sup>1</sup>

Boulton, faced with this problem, thought an additional £1<sup>000</sup> or £2000 necessary to conduct the trade with ease and advantage. He was confident that the profits of the current year, 1768, would be sufficient to render their finances for ever easy. "It is only the present time we shall ever be in difficulty and as we have orders enough, tools enough, and workmen enough, it is a pity to contract or lessen our trade as a large business is carried on with more advantage than a small one."<sup>2</sup> Though there was no want of orders at Soho during the Summer of 1768, there still remained the disadvantage of scantiness of circulating

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1. Boulton to Ebbinghaus March 2nd 1768.

2. Ibid.



capital. Boulton considered he had done his share towards overcoming this evil; he now wished to see the other partners do something, and recommended it to Ebbinghaus to advance another £1000.<sup>1</sup>

Ebbinghaus, however, failed to respond, declined to advance any more money, and limited his assistance to advising that it was better to sell a smaller quantity of goods for ready money than a great deal on credit.<sup>2</sup> Boulton was very uneasy and disappointed at this attitude in Ebbinghaus, and so far as the advice was concerned replied, "If we were to deal with ready money customers only (there being very few) we should do so little business that it would be better to do none. We already give encouragement and enough to such as can pay ready money to do it, as we allow them 5% in lieu of 6 months, which is 10% per annum. Your advice to do less business may be very easy for people who only buy and sell to suddenly contract and lessen their dealings, but that cannot so conveniently be done in a manufactory like ours without loss of money and danger of credit. I cannot say to the workmen - Go your

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1. Boulton and Fothergill to Ebbinghaus August 10. 1768

2. Ebbinghaus to Boulton and Fothergill Aug. 26. 1768.

way and come again twelve months hence - I assure you it hath been no small trouble and expense to collect such a set of workpeople as we have now employed in our manufactory, which is now established on a solid advantageous and reputable footing.<sup>1</sup>

With no help forthcoming from Germany, Boulton was thrown back on his own resources. A sum of £4000 was raised by mortgaging some of Mrs Boulton's property to a Thomas Fisher of Hampton, Warwick.<sup>2</sup>

Boulton's optimism concerning a turn for the better in the fortunes of the concern in 1768 was not justified, for in that year a loss of £531. 1. 0 was sustained. From the end of 1768 to the end of 1772 the accounts were not closed and no Profit and Loss Account was drawn up for any of the intervening years. When finally closed in 1772 it was shown that a good sum of money had been lost.<sup>3</sup>

In the same period, too, the Bill Account, brought into being through expenditure on buildings,

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1. Boulton and Fothergill to Ebbinghaus Sept. 1768
2. Mrs Boulton's bond to Thomas Fisher Sept. 14. 1768
3. Statement of Affairs 1763 - 1780.



increased rapidly. Even as early as 1767, Baumgartner, one of Boulton's accepting merchants, was complaining of the size of his advance to the hardware partnership, and Boulton only quieted him by promising to reduce it at once. The only excuse he could make was that the business was increasing so fast that he did not know what money it would require until experience had taught him.<sup>1</sup>

The loan of £4000, obtained on a Mortgage of Mrs Boulton's property in September 1768, did not go far, and in April 1769 further borrowings took place. This time the money was raised in Amsterdam.<sup>2</sup> A banking house of the name Christian Van Orsoy & Sons acted as intermediaries in raising a loan of 80,000 Florins - £8,000 - <sup>3</sup> to be secured by a mortgage deed and Bill of Sale on Boulton and Fothergill's premises, buildings, machinery, tools, and implements.<sup>4</sup> Van Orsoy themselves did not lend the £8000 but placed the loan with certain of their clients.<sup>5</sup> As soon as the money was secured in 1769 a remittance of £1500 was made to Motteaux, to

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1. Boulton to Baumgartner August 3rd 1767.

2. Boulton to Watt. November 1st 1781.

3. Van Orsoy to Boulton April 24th 1772.

4. Sales Statement on Oath of Valuation of Soho Manufactory. May 1772.

5. Van Orsoy to Boulton, April 24th 1772.

enable him to meet Boulton and Fothergill's drafts as they fell due.<sup>1</sup> The loan was to last for three years, repayment had therefore to be made in May 1772.<sup>2</sup>

The loan obtained was £8000, £4000 to be placed to the credit of each partner's capital account. Fothergill, without ill intent, ordered Walker, the firm's accountant, not to divide the money in this way, but first of all to transfer £2000 out of the £8000 to Boulton's credit by way of repayment of the loan made at the commencement of the partnership with Ebbinghaus, and then to divide the remainder - £6000, between Boulton and himself. This was accordingly done. Boulton's share of the new money was therefore £5,000, that of Fothergill £3,000. Whereas had Walker done what he ought to have done, viz., placed £4000 to the credit of each capital account and then transferred £2000 to Boulton's credit from that of Fothergill, their shares would have been £6000 and £2000 respectively. Under the actual arrangement, however, Boulton lost and Fothergill gained £1000. The error was not discovered till 1781 when all the books and accounts were

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1. Boulton to Motteaux April 22nd 1769.

2. Van Orsoy to Boulton April 24th 1769.



thoroughly overhauled by Wm. Matthews, Boulton & Fothergill's Agent in London.<sup>1</sup>

This incident is merely one of many which betrays the laxity and inefficiency of the general management at Soho. In addition there were lengthy delays in the execution of orders, so much so, that Matthews refused to visit shops in quest of orders, as he could not face constant reproaches on that account. Moreover, the workmanship of many of the articles turned out at Soho left something to be desired.<sup>2</sup>

The button making trade was the most important trade conducted at Soho at this time. It was in fact, an important Birmingham industry in the eighteenth century. In 1770 a price maintenance agreement was made between the Birmingham button manufacturers, and to this agreement Boulton became a subscriber. The movement was, however, pervaded by a spirit of distrust which militated against its success, and Boulton himself was not a very firm adherent. Consider his attitude - "the above prices are such as are agreed among the Birmingham button makers. If Captain George can buy them cheaper by anyone's receding from the agreement

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1. Boulton to Watt. November 1st 1781.

2. Boulton to Fothergill, February 25th 1770.

he will please let us know and we will conform to such".<sup>1</sup>

Detailed information concerning the day to day fortunes of Boulton and Fothergill from 1769 to 1772 are not available, but there is no mistaking the general fortunes of the firm in that period. Money was being lost and lost rapidly, and the Bill Account was constantly mounting.

Fothergill was full of despondency and thought the only solution lay in taking in some new partner,<sup>2</sup> and was of the opinion that the concern had too many irons in the fire.<sup>3</sup> By January 1772 the situation was such that Fothergill wrote - "we were never so hard drove on the score of money as at present".<sup>4</sup> Added to this were the demands for the repayment by those who had lent money to the hardware firm. There was still a debt of £2500 to Richard Tonson. Boulton had promised to pay him £500 at Lady Day 1768, but had not done so. At length in December 1771, Tonson again requested repayment of the £500.<sup>5</sup> Boulton felt obliged to remit £700, £200 by way of interest, £500 by way of

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1. Boulton to Matthews 23rd January 1771.

2. Fothergill to Boulton March 23rd 1771.

3. Fothergill to Boulton March 30th 1771.

"What will become of us soon I cant be answerable".

4. Fothergill to Boulton. January 20th 1772.

5. Richard Tonson to Boulton December 15th 1771.



repayment of principal.<sup>1</sup>

Another difficulty daily crept nearer - Van Orsoy's loan of £8000 was due for repayment in May 1772, and Boulton and Fothergill could not possibly find the money to do so. They therefore opened up negotiations to have the loan prolonged. Luckily, Van Orsoy made no difficulties on this score. They insisted, however, that a valuation and inventory of the manufactory be taken and certified by some public person, such as a Judge or Notary, and entered on the appropriate documents. Also Boulton and Fothergill were to bear the expense of getting coupons printed which were to be presented when interest was due.<sup>2</sup>

It was in the summer of 1772 that Boulton made up his mind to support James Watt in the exploitation of the latter's newly invented steam engine. More detail of this will be given later. The immediate question Boulton had to face was where to find the money to finance the new project. Contrary to generally accepted opinion, Boulton and

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1. Boulton to Tonson, December 23rd 1771.

2. Christian Van Orsoy to Boulton. May. 12th 1772.

Fothergill did not, and most possibly could not have financed the engine company. "In the year 1772 Boulton and Fothergill was in an unprosperous condition, they had not money for the business they were engaged in and consequently could not spare any for any new concerns".<sup>1</sup>

To provide himself with the necessary money, Boulton sold his Parkington Estate to Lord Douregal for £15000 and furnished himself with more than double enough for the engine concern.<sup>2</sup> Out of the £15000, Boulton reserved sufficient to meet all expenses consequent upon the new venture and put some £6000 into the hands of Boulton and Fothergill, who then stood in urgent need of money; whereupon they deposited £4 - 5000 of this with a well known London Bank - Neale, James, Fordyce & Down.<sup>3</sup>

A few days after the money had been deposited, the bank stopped payment in June 1772.<sup>4</sup> Boulton, on receipt of the news, dashed up to London and with the able assistance of Matthews managed

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1. Booklet entitled "Case between Boulton & Fothergill.

2. Ibid.

3. Ibid.

4. Ibid.



managed to seize £1700 in the Bank; but there still remained about £2500.<sup>1</sup>

The bankruptcy of Neale, James, Fordyce & Co., caused by Fordyce's heavy speculations in East Indian Stocks, had fatal consequences, resulting in the fall of four or five eminent banking houses, and nearly every banker in London had difficulty in pulling through. According to Boulton, the Bank of England endeavoured to increase the difficulty in order to put an end to private banking. In Scotland the crisis was worse than in England; trade was ruined and nearly all the great mercantile and banking houses were bankrupt.<sup>2</sup> So far as Boulton and Fothergill was concerned the vigilance of William Matthews and the assistance of friends enabled them to weather the storm without difficulty.<sup>3</sup>

A few months after this, Roebuck and Gascoigne stopped payment. These two were associated in the Carron Iron Works and on their behalf, as a special favour, Boulton had accepted bills to the extent of £1000<sup>4</sup>. Boulton had now to meet the bills

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1. Boulton to Ebbinghaus October 24th 1772.

2. Ibid. also Matthews to Boulton July 25th 1772.

3. Booklet entitled "Case between Boulton & Fothergill".

4. Booklet entitled "Case between Boulton & Fothergill".

Boulton to Ebbinghaus October 24th 1772.

himself without receiving the expected provision from Roebuck and Gascoigne. This transaction will be examined in more detail later as it is materially concerned with Boulton's connection with Watt in the steam engine business.

There was, in addition, a few hundreds of Boulton and Fothergill's money in other hands, which they could not obtain. In all this there was £4000 which was inaccessible to them in the summer of 1772.<sup>1</sup>

At this moment, unfortunately, two further difficulties presented themselves. In the first place repayment was demanded of the £2000 remaining due to Tonson. Richard Tonson had died and his effects had passed into the hands of a William Baker, who, in order to meet the demands of Richard's estate, felt constrained to ask Boulton to repay the balance due.<sup>2</sup> Boulton, in answer, recited all his misfortunes - the Fordyce failure, Roebuck stopping and other mishaps, and pleaded for time.<sup>3</sup> Baker did not press harshly and Boulton was able to defer payment till a later

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*Boulton to Ebbinghaus. Oct 24th 1772.*

1. ~~Booklet~~ Booklet entitled "Case between Boulton & Fothergill."
2. Wm. Baker to Boulton  
Dec. 19th 1772.
3. Boulton to Baker. Dec. 26th 1772.



date.

The other difficulty came from Ebbinghaus, who, at the close of 1772, was desirous of severing his connection with Boulton and Fothergill. The two senior partners had grown somewhat indifferent to him. In November 1771 he wrote complaining that it was two years since he had received the annual Balance Sheet, which, according to the agreement, he should have received every year.<sup>1</sup> He waited three months, received no reply, and wrote again demanding the accounts.<sup>2</sup> The only excuse Boulton could make in his answer to Ebbinghaus was there had been no time to close the books and accounts. This answer both surprised and annoyed Ebbinghaus, who said that the death of his father now necessitated his capital invested in Boulton and Fothergill being withdrawn at the following Christmas. Boulton pleased that the time was most inopportune for him to do this and said Ebbinghaus must conform to the articles of partnership which stipulated for twelve months notice before Ebbinghaus could withdraw

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1. Ebbinghaus to Boulton and Fothergill. Nov. 15th 1771
2. Ebbinghaus to Boulton and Fothergill. Feb. 16th 1772.

his money. The balance due to Ebbinghaus on October 24th 1772 was £2791. 6. 4. Boulton consented to allow him to withdraw £500 at once if necessary, but preferred him to wait till the following February.<sup>1</sup> How long it actually took Ebbinghaus to get his capital out of Boulton and Fothergill cannot be ascertained as no correspondence exists later than October 1772.

At long last in December 1772 the accounts were balanced and closed, which had not been done since 1768 when a loss of £531 was revealed. The position as shown at the end of December 1772 points to a loss of £6946. 7. 5 for the previous four years. The loss was shared between the partners as follows - £4216.16. 6 to Boulton, £2729.10.11 to Fothergill.<sup>2</sup> Seale, the manager of the hardware firm, estimated the loss at nearer £10,000 than the figure given above.<sup>3</sup>

The amazing thing is that Boulton and Fothergill were both unable to explain this unfortunate state of affairs. Fothergill was convinced that the commission<sup>business</sup> gained £600 per annum

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1. Boulton to Ebbinghaus October 24th 1772.

2. Statement of Affairs 1763 - 1780.

3. Seales "Proposals to Boulton and Fothergill. Feb. 1773



which was also lost by the trade at Soho, but how and why money was being lost neither Boulton nor Fothergill could offer any solution.<sup>1</sup>

The only explanation Fothergill could offer is not a very pleasant one. John Scale, manager at Soho, was building himself a house, and Fothergill did not hesitate to express his doubts as to whether there might be some connection between the erection of this house and the losses of Boulton and Fothergill. Fothergill did not hesitate to noise abroad his doubts about Scale to the very people over whom Scale was expected to exercise authority, thus undermining Scale's position in relation to the workers. Faced by these accusations Scale drew up a lengthy document in which he indicates what was wrong at Soho.<sup>2</sup>

One cause of loss was Boulton's continued absence from Soho. In 1772 he made many journeys up to London and in his absence the responsibility for the proper running of the manufactory fell upon the overburdened Scale.<sup>3</sup>

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1. John Scale's proposals to Boulton and Fothergill.  
Feb. 1773.

2. Ibid.

The accusations against Scale were quite groundless; for not only was he retained in the firm's service but subsequently became a partner with Boulton and Fothergill in the Button trade.

3. John Scale's proposals to Boulton and Fothergill  
Feb. 1773.

Seale had for a long time entertained doubts concerning the profits of the manufactory. He could not reconcile continual additions of money and a growing Bill Account with any great degree of prosperity. There was a very unsatisfactory method of fixing the selling price of the products of the manufactory. Seale wanted to price everything according to what it did actually cost to manufacture. Boulton, however, was content to fix a price in a more or less guess or haphazard sort of manner, "charging it according to what it might be got up for".<sup>1</sup> The disputes between Boulton and Seale on this point were numerous and frequent, and Seale, who could see no effective measures being taken to prevent a continuance of loss, had a plan of his own to remedy a bad state of affairs.

The first point in the proposals concerns the accounts. It was a mistake on Boulton's part not to settle the accounts every year. Seale contents himself, so far as concerns the accounts, with pointing out this error.<sup>2</sup>

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1. John Seale's Proposals to Boulton and Fothergill.  
February 1773.

2. Ibid.



A good deal more space is devoted to the relations between the Birmingham warehouse and the manufactory at Soho. The two activities of merchandising and manufacturing were not kept distinct and apart so far as concerned records, books, and accounts. This tended to cause more muddle and confusion. Seale recommended that the Birmingham warehouse - where the factor or commission business was carried on - should be regarded as having no connection at all with the Soho manufactory and that from the point of view of expenses and accounts the two should be quite distinct.<sup>1</sup>

It is evident from Seale's account that the execution of orders was lacking in method and punctuality. Promises were made regardless of ability to carry out, thus causing great confusion and uneasiness to the managers who were tossed about from one order to another still at a loss to know what should be done first. A certain preference was given to foreign orders, this being due to their falling under Fothergill's jurisdiction. Seale's

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1. John Seale's Proposals to Boulton & Fothergill  
February 1773.

remedy was, "it should be an absolute rule with each manager when he receives an order to look into his book and say whether he can or cannot execute it in the time limited, if not he should immediately consult Boulton or Fothergill and consult whether more time could be obtained, if not the order should be rejected".<sup>1</sup> Indiscriminating promising about completing orders seems to have been a particular fault of Boulton. "The consequence is Boulton is obliged to forfeit his word and is then angry with the manager for not doing what was not in his power to do."<sup>2</sup>

The greatest abuses, however, in Seale's judgement lay in the manufactory. "The first and greatest impropriety is too many people by the day (paid by day work instead <sup>of</sup> piece) in such an overgrown manufactory".<sup>3</sup> Seale urged that everyone in the manufactory be put on piece work. Each one should provide his or her own materials and tools, except stamps lathes and presses. For the use of these,

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1. John Seale's Proposals to Boulton and Fothergill  
Feb. 1773.

2. Ibid.

3. Ibid.



however, they should pay interest and also rent for the shops in which they worked. It would then be an easy task to fix the price of any article when the absolute prime cost always came into the warehouse along with it (obviously, because in fixing his charges for each article the journeyman would include all the above mentioned expenses).<sup>1</sup>

Another defect was that dead stock was increasing continually, and too great a proportion of the increase consisted either in models or tools, which daily decreased in value. Seale pointed out what a great difference there would be if the workmen provided their own tools and materials. The chain making department carried a stock of £1000, whereas a stock of £50 would have been ample. One workman, on his own account, ordered for his own use ~~files~~ <sup>files</sup> worth £30, which Boulton and Fothergill had to pay for. Whereas, according to Seale, under his scheme neither of these abuses could have arisen.<sup>2</sup>

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1. John Seale's Proposals to Boulton and Fothergill  
February 1773.

2. Ibid.

According to a calculation Seale made, the partnership lost £1320 during the previous four years in payments to people for a good day's work when in fact they had done nothing at all.<sup>1</sup>

In the light of Seale's account it is small wonder money was being lost. But what of the remedies? Seale offered to put his remedies into operation at once. The clear cut distinction between the manufacturing and mercantile activities which Seale had recommended was subsequently made, and the piece work or rather journeyman system was partially introduced into the manufactory, but no sudden improvement in fortune took place.

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#### 1. John Seale's Proposals to Boulton and Fothergill February 1773.

A study of the Boulton partnerships in their later years is apt to cause wonder on account of their general efficiency, their peculiarly modern organisation, their systems of costings and checks. This was probably the outcome of better and dearly learned experience in the hardware trade. Boulton and Fothergill was a pioneer firm; a large scale concern in the days of the factory system; they were groping in the dark, conducting a huge undertaking on more or less haphazard lines. In the course of time, methods of organisation, having a peculiarly modern aspect were evolved. Nevertheless, the subsequent efficiency of Boulton, Watt & Sons is in large part explained by the earlier inefficiency of Boulton and Fothergill.



The losses of the previous four years caused the Bill Account to increase. What the figure was at the end of December 1772 <sup>not</sup> can <sup>^</sup> be discovered; but some idea of its size is indicated by the fact that in the following May the advance stood at over £10,000.<sup>1</sup>

One aspect of the financial affairs of Boulton has not yet received attention; that is the part played by Bills of Exchange in making and receiving payments. These documents played an important part in the monetary system of the country at the time. Their popularity, as means of effecting payments was not confined to commercial classes, nor were their uses restricted to large sums.<sup>2</sup> But the use of Bills of Exchange can be best understood, in the case of Boulton and Fothergill, by first of all examining the position of William Mathews, the firm's banker and agent in London.

Now when goods were despatched from Soho, if destined for a trader, Boulton and Fothergill allowed six months credit or 5% discount for immediate payment. At the end of six months they would

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1. Fothergill to Boulton. May 19th 1773.

2. Thus in December 1771 Boulton and Fothergill drew on such people as the Duchess of Portland and Lord Molineaux (Boulton to Mathews 6th Nov. 1771) In the following month Boulton & Fothergill sent to their Banker and Agent, Mathews, Bills on some fourteen people, totalling £385, many of which were for no more than £7 and the drawees were nearly all private individuals and not traders of any description.



draw on such trader in favour of Matthews,<sup>1</sup> who, receiving the Bill, would on payment thereof, pass the amount to the credit of Boulton and Fothergill's Bill Account. Where the customer was not a trader, however, no credit was allowed, Boulton and Fothergill<sup>2</sup> drew for the amount at once.

In those cases where the customer was a person unknown to Boulton & Fothergill, and they were supplying him through their agent Matthews, the latter was debited with the value of the goods so forwarded to him.<sup>3</sup> In his own books, Mathews credited Soho for the amounts in question in what was called the "Goods Account" which was also debited with Mathews' commission, insurance and shipping charges. The resultant credit balance on "Goods Account" was periodically transferred to the Bill Account which enabled Bills to be drawn against it.<sup>4</sup>

Important as the use of Bills of Exchange might have been the use of cash could not entirely

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1. Boulton to Thomas Wilkinson 25th October 1771

2. Boulton to Mathews 10th November 1771.

In one or two cases Bills were drawn on customers in favour of ~~Mathews~~ *Mottouse*

Boulton to Mathews 7th March 1772.

3. Boulton to Mathews. May 1772.

4. Fothergill to Boulton. May 23rd 1772.



be dispensed with. Every week £250 - £300 in cash had to be found, chiefly in order to pay workmen's wages. To procure this, Bills were drawn on Motteaux, Matthews, or Baumgartner and these were then discounted with local bankers.<sup>1</sup> Considerable care had to be exercised in these drawings for cash discounts. Boulton and Fothergill preferred drawing on Wm. Matthews; the relations between Boulton and Mathews were personal and friendly, rather than those of principal and agent, banker and customer; but it would have been manifestly unwise to have drawn all the Bills on one House. Fothergill, writing in March 1772, warns Boulton against this. "I do not think it prudent to have all our Bills to Barker drawn on W. Mathews, but part on John Motteaux and J. L. Baumgartner to prevent reflections"<sup>2</sup> Sometimes when Bills were drawn on Motteaux for cash purposes a counterdraft on Matthews was sent to him.<sup>3</sup>

Somehow, knowledge of Boulton and Fothergill's Bill Account had become current in Birmingham and the local Bankers were on occasions

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1. The names of these local bankers were Webster, Cobb, Barker and Salt.
  2. Fothergill to Boulton, March 28th 1772.
  3. Fothergill to Boulton, February 1st 1772.

none to ready to oblige. The situation greatly alarmed Fothergill; "indeed our Bill Account gets so large and our applications in Birmingham for cash so frequent as I am apprehensive will endanger our credit unless we find some remedy soon"<sup>1</sup>. A later letter reads - "There appeared lately in the Birmingham paper a passage that a certain manufacturer would become a bankrupt, some people here thought it was hinted at Soho not knowing of Cox's affairs".<sup>2</sup>

There is reproduced at the end of this chapter the relevant sections of the Statement of Affairs 1763 - 1780. The most noteworthy feature of which is the increase in partners' capital; Boulton's stood at over £18,000 in 1771 and notwithstanding a loss of £4216 was only reduced to £16,185.16. 2 which clearly indicates the addition of more money. Fothergill's capital also increased from £6495 in 1769 to over £13,000 by the end of December 1772.

The money which Fothergill was advancing was not, however, his own. It belonged to a Mrs Swellingrebel, a woman of Dutch Indian parentage,

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1. Fothergill to Boulton, February 1st 1771.
2. Fothergill to Boulton, May 22nd 1772.



who, with her husband Sergino Swellingrebel, a Dutchman, had become very friendly with Fothergill; so much so that they came to live with the Fothergills at Handsworth, at which place Swellingrebel died in August 1770.<sup>1</sup> After the death of Swellingrebel, Fothergill administered the widow's property and by early 1773 had advanced over £6,000 of her money into the hardware concern.<sup>2</sup> Fothergill's intentions were doubtlessly honourable and above board as the following extract from one of his letters shows - "I have already assisted the business with upwards of £6000 of Mrs Swellingrebel's money without giving her the least security for it, the remainder of her fortune may be about £4000 after the legacies and other deductions are made, and would it not be a cruel and unjust proceeding to deprive a woman of the whole of her fortune who so innocently is prevailed upon to place her concerns entirely in my hands without giving her some sort of security in case of misfortune?"<sup>3</sup>

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1. Document "Endorsed G. Harris' opinion on case of Mr Swellingrebel's Will Sept. 1770.

2. Fothergill to Boulton February 1773.

3. Ibid.

Fothergill later did give Mrs Swellingrebel proper security; for in September 1773 he signed a bond for the repayment of £8900 (evidently he had borrowed an extra £2900 between February and September 1773) Repayment was to be made at the end of twelve years and every year £445 was payable in interest. Should Fothergill die before the expiration of the twelve years repayment was to be made within one year of his decease.<sup>1</sup>

This chapter carries the account of Boulton's finances up to the end of 1772, a convenient stopping place. It marks the termination of the partnership with Ebbinghaus and carries the story to the threshold of the career of the Steam Engine Company upon which enterprise Boulton decided to embark in 1772.

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1. Document endorsed " Case with Madocks opinion". Although this thesis is concerned with Boulton's finances, this aspect of his partner's affairs must be dealt with because later it led to consequences which were almost disastrous to Boulton.



STATEMENT OF AFFAIRS 1767 - 1772.

<u>YEAR.</u>	<u>CAPITAL.</u>	<u>INTEREST.</u>	<u>PROFIT.</u>	<u>LOSS.</u>
1767 Boulton	14,789. 5.11	623.17. 7	1450.12. 4	
Fothergill	6,868.10. 5	309.13. 0	725. 6. 2	
1768 Boulton	15,344.17. 7	747. 0. 7	-	354. 1.0
Fothergill	6,672.13. 0	342.15. 6	-	177. 0.6
1769 Boulton	14,990.16. 7	749.10. 9	No Balance	
Fothergill	6,495.12. 7	324.15. 7	No Balance	
1770. Boulton	17,424.17.10	871. 4.10	No Balance	
Fothergill	9,453.18. 5	472.13.11	No Balance	
1771 Boulton	18,296. 2. 9	914.16.1	No Balance	
Fothergill	9,926.12. 4	496. 6.7	No Balance	
1772 Boulton	16,185.16. 2	809. 5.9½	Four Years loss	4216.16.6
Fothergill	13,435. 4. 5	671.11. 2	do. of	2729.10.11

Reproduced from Statement of Affairs 1763 - 1780.

A booklet entitled "Case between Boulton & Fothergill".  
 Dr. H. Wall (1739-75) was a native of Carrigish, County  
 Antrim, and became Professor of mathematics and Natural  
 Philosophy in the College of Williamburg, Virginia.  
 The climate did not suit him and he came to England in  
 1763. He visited Boulton because he had a letter of  
 introduction from Benjamin Franklin and he finally  
 settled down in Birmingham.

CHAPTER FOUR.

Boulton and Fothergill again. The Coming of the  
Steam Engine.

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Boulton's motives in becoming interested in the steam engine trade were two fold. A shortage of water at Soho Mill led him to speculate on the possibilities of using a fire engine to return the water to the mill, and so avoid the enormous expense of horses in dry weather; and there was also the hope of gain from the connection.<sup>1</sup>

An account, by Boulton himself, of the origins of his partnership with James Watt still survives. From this we learn that Boulton became acquainted with Watt, then associated with Roebuck of the Carron Ironworks, for the first time in 1769. Watt made overtures for a partnership between Boulton, Roebuck, Dr. Small,<sup>2</sup> and himself, but Boulton and Small declined. Soon after this Roebuck incurred the expense of patenting Watt's engine and of erecting an experimental engine in Scotland. Having done this, Roebuck came to

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1. Booklet entitled "Case between Boulton & Fothergill".

2. Dr. Small (1735 -75) was a native of Carmyllie, County Angus, and became Professor of mathematics and Natural Philosophy in the College of Williamsburg, Virginia. The climate did not suit him and he came to England in 1765. He visited Boulton to whom he had a letter of introduction from Benjamin Franklin and he finally settled down in Birmingham.



Birmingham and proposed a partnership between the same people. This time Boulton and Small agreed. Small was to have half of whatever share Boulton obtained. This took place in 1772 and as already mentioned, Boulton provided himself with funds for the new venture by selling his Parkington Estate to Lord Donegall for £15,000.<sup>1</sup>

Soon after this agreement, Roebuck applied to Boulton for temporary accomodation in money, requesting to be allowed to draw a Bill for £500 on Boulton, assuring him provision would be made for payment when due and that in any case Boulton was safe and covered by the agreement for a part share in the steam engine. Boulton complied, though not liking the idea. Roebuck accordingly drew, provided for payment, and again drew £500, which he repeated always upon Boulton and not upon Boulton and Fothergill. Later, Gascoigne who was associated with Roebuck in the Carron Iron Works requested extension of the indulgence from £500 to

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1. Booklet entitled - Case between Boulton and Fothergill.

£1,000. Now as this Gascoigne's father-in-law, a Mr Garbett, a metal merchant, allowed Boulton and Fothergill credit to the extent of several thousands, both Boulton and Fothergill thought refusal improper, and complied with Gascoigne's request.<sup>1</sup>

A little while after the Fordyce failure in June 1772, Roebuck and Gascoigne stopped payment and the Bills which Boulton had accepted on their behalf had of course to be met without any provision coming from Carron.<sup>2</sup>

Boulton held that as £500 had been accepted by himself, on the credit of his agreement with Roebuck, it should be charged to his account alone; but as the other £500 was a request of Gascoigne's and mutually consented to by Boulton & Fothergill in consideration of the indulgence allowed them by Garbett, Gascoigne's father-in-law, Boulton thought that sum should go to the Profit and Loss Account of Boulton & Fothergill.<sup>3</sup> But Fothergill insisted on the whole £1000 being charged to

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1. Booklet entitled "Case between Boulton & Fothergill".



the account of Boulton, saying such loss arose through his engagement in the engine trade; and to this demand Boulton had to submit.<sup>1</sup>

In March 1772 Roebuck met his creditors and Watt was empowered to act on Boulton's behalf. The outcome of the negotiations was that Boulton secured Roebuck's two thirds share in the engine patent against a discharge of all debts.<sup>2</sup> The debts consisted of the £1000 due from Roebuck to Boulton on the Bill transactions and a further sum of £670 owing to Boulton and Fothergill.<sup>3</sup> If, however, the engine was a success Roebuck was to receive such extra consideration as might be awarded by Dr. Small & Watt.<sup>4</sup>

Watt took up residence in Birmingham in May 1774 and brought with him the experimental engine which he had erected at Roebuck's property at Kinneil in Scotland.

Roebuck now ceased to have any interest in the invention. The only people concerned with the Steam Engine were Boulton, Watt, and Small. Small died, however, just

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1. Booklet entitled Boulton's case with Fothergill.

2. Roll "An Early Experiment in Industrial Organisation."  
Page 17.

3. Boulton's Indemnification to Fothergill. March 1st 1776.

4. Statement by Matthews. May 1775.

before the passing of the Act of Parliament in May 1775 which extended the term of Watt's patent for another twenty five years.

In June of the same year the famous engineering partnership commenced for a period coterminus with the act. The main provisions of the partnership agreement were that Watt was to assign to Boulton two thirds of his property in the invention, that profits he shared in the same ratio, and that Boulton pay all expenses incidental to the successful development of the engine. <sup>1</sup>

Let us for a moment look back at the hardware firm's fortunes, which throughout 1773 were black in the extreme. In the early part of the year, Boulton spent a great deal of time in London, endeavouring to persuade the Government to grant an Assay Office to ~~Birmingham~~. Fothergill did not approve of his partner's zeal in this cause and thought the supervision of the

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hardware concern more than a full time job. Writing to Boulton in March 1773, Fothergill states that notwithstanding all efforts to collect debts it was impossible to support their credit much longer without the assistance of a loan, "which I cannot help thinking is of far greater consequence than obtaining a victory over the Goldsmiths".<sup>1</sup> So serious did the situation become in 1773 that Fothergill went so far as to declare "if no resources further can be obtained in London I think it far preferable to make an immediate stop; we have now a sufficiency to pay everyone."<sup>2</sup>

What were the causes of this unhappy state of affairs? Lack of remittances, especially from abroad, was probably the chief.<sup>3</sup> On April 1773 money due from customers amounted to £7744.15. 3 and of this £5054. 3. 4 was due from abroad.<sup>4</sup> Unfortunately, the foreign money was particularly slow in coming in. Another cause was the Bill Account which, standing at over

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1. Fothergill to Boulton. March 1st 1773.
2. Fothergill to Boulton. March 14th 1773.
3. Fothergill to Boulton, April 24th 1773.
4. Fothergill to Boulton. April 1st 1773.

£10,000, swallowed up in commission and interest large proportions of the concern's income. Estimating the interest and commission at no more than 5% on the total account, the annual expense would stand at £500. Another cause was the ~~swills~~ to which Seale drew attention. These continued to be a great lack of expedition and punctuality in dealing with orders. Boulton, writing from London in March 1773, complains of the abuse he receives from customers on account of neglect of orders.<sup>1</sup>

With no remittances coming in and having heavy weekly expenses to meet the Bill Account showed signs of considerable swelling. Fothergill, describing their situation, says, "our Bill Account having become so very enormous that without some connection is adopted it will be attended with the utmost difficulty to wade through".<sup>2</sup> It was impossible to prevent the Bill Account increasing, as creditors could not be put off indefinitely. Many had been put off since Christmas 1772 by constant promises;

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1. March 19th 1773. Boulton to Fothergill.

2. Fothergill to Boulton. April 21st 1773.



some desired to have no further connection with Boulton and Fothergill; while others sought Fothergill out at his house in Handsworth and would only<sup>1</sup> go away when given an absolute promise of payment.

The increase in the Bill Account soon got Motteaux and Matthews into ill humour with Boulton and Fothergill. Early in April 1773, Motteaux~~x~~ was strenuously urging reductions in his advance on Bill Account.<sup>2</sup> Matthews, too, who did not object to an advance of £3000 demanded an immediate reduction to that figure.<sup>3</sup>

At the end of 1772, Boulton and Fothergill established a new banking connection. The new house was called Raymond, Lowe, Vere,<sup>4</sup> & Co., Vere was a very close friend of Fothergill's and also knew Boulton well. In October 1772 Boulton and Fothergill commenced dealing with this house, no doubt thinking the connection might prove advantageous as one of the banking partners was a friend of theirs. When Boulton made application

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1. Fothergill to Boulton, April 28th 1773.

2. Fothergill to Boulton, April 7th 1773.

3. Fothergill to Boulton, April 24th also April 28th

4. The partners were Sir Charles Raymond, Lowe, Vere, Williams and Fletcher. Matthews to Boulton 3rd Dec. 1770.

there for money, Vere offered to guarantee Boulton and Fothergill to his own house and also to Webster, a country banker who supplied them with cash.<sup>1</sup> What assistance Boulton obtained from Raymond, Lowe, Vere & Co., at this time cannot be stated as no record has survived, but at a later date this house advanced vast sums to Boulton and Fothergill.

Boulton and Fothergill were not only incurring the displeasure of their accepting houses, Motteaux and Matthews, but also finding difficulty in handling the local bankers who provided them with cash. These latter knew of Boulton and Fothergill's difficulties and took every advantage of them. Cobb and Webster were particularly offensive, furnishing the most wretched coins and small guineas, saying those must be taken or none. Fothergill writing to Boulton on this point says - "you would have been unhappy to have <sup>1</sup>been witness of the clamour at your house and mine last Saturday night

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1. Matthews to Boulton October 1st 1772.



and Sunday morning; poor people brought guineas which they could not dispose of under 3/- or 4/- loss and seemed in the utmost want and several hands will be obliged to go to Taylors on that account.<sup>1</sup> At the same time Cobb provided his other customers with good money.<sup>2</sup> The country bankers did not care for Bills on Matthews, preferring them on Motteaux or better still on Raymond, Lowe, Vere & Co.,<sup>3</sup> Their attitude is well portrayed by the following incident; Fothergill sent Seale to Cobb with a draft on Matthews, Cobb took it but reluctantly, saying he "did not like being troubled with them sort of Bills."<sup>4</sup>

It was a tremendously difficult task to manage this Bill Account as Fothergill realised. Writing to his partner he complains, "you tell me not to exceed a certain sum with Motteaux and it is with difficulty we can procure Cobb to take our drafts on W. Matthews, and you know Mr Matthews has positively declared he will not suffer any longer our Bill Account to increase with him,

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1. Fothergill to Boulton April 27th 1773.  
Taylor - Birmingham Button maker.
2. Fothergill to Boulton, April 27th 1773.
3. Fothergill to Boulton, April 27th 1773.
3. Fothergill to Boulton, March 3rd 1773.
4. Fothergill to Boulton, May 15th 1773.

pray what was I to do ? - I find our payments at Soho still continue to the amount of £200 per week, he (Scale) says if our orders are to be executed in any reasonable time at all he cannot do with a less sum!

Fothergill could see more difficulties in the offing. His partner, who for the first five months of 1773 had been engaged in an agitation to persuade the Government to grant Birmingham an Assay Office, at length succeeded in his mission, a Marking Hall being granted to Birmingham in May.<sup>2</sup> Boulton now decided to embark upon the manufacture of Plate on a large scale. This caused Fothergill great anxiety who saw additional difficulties as a consequence of thereof. With insufficient capital to carry on the button business the time was hardly opportune, in his judgement, to make further innovations.<sup>3</sup>

With the concern in such a difficult financial position, Fothergill, on a full understanding that Boulton would take effective measures to reduce the Bill Account, once more trespassed upon the

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1. Fothergill to Boulton, May 13th 1773.
  2. Fothergill to Boulton, May 15th 1773.
  3. Fothergill to Boulton, April 28th 1773.
- Fothergill to Boulton, May 19th 1773.



effects of Mrs Swellesgrebel to the extent of £1000 which sum was at once sent to Matthews.<sup>1</sup> This brought the sum borrowed from Mrs Swellesgrebel to over £7000.<sup>2</sup> Further borrowings must have taken place, for in September 1773 Fothergill gave a bond to Mrs Swellesgrebel for £8900.<sup>3</sup>

With part of the money borrowed from Mrs Swellesgrebel, Fothergill proposed renewing and extending their foreign trade. Muller, one of the firm's employees, was sent to Poland and Russia. His travelling expenses alone amounted to £1200, but this was not the greatest evil; he sent Boulton and Fothergill orders for several thousands of pounds worth of goods which were never paid for and so this sum was totally lost.<sup>4</sup> This foreign trade on the whole was a costly and unprofitable business. All along, year after year, it's the same old story - lack of remittances from abroad.

Unfortunately, our knowledge of what variations took place in the fortunes of Boulton and Fothergill from the middle of 1773 to 1777 is very limited.

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1. Fothergill to Boulton, February 1773.

2. See Pages 44-49

3. Document endorsed "Case with Mr Madocks opinion."

4. Booklet entitled "Case between Boulton & Fothergill".

There is almost no correspondence surviving either <sup>the</sup> in Fothergill, Seale, or Matthews papers which throws much light on this period.

There remains, it is true, the Statement of Affairs, the relevant sections of which are appended at the end of this chapter. For reasons already given, however, too much reliance must not be placed on this document.<sup>1</sup> According to the Statement, a loss of £2316. 6. 9 was incurred in 1773, which is consistent with the dismal account already given for that year.

By the end of 1777 the position had worsened a great deal. The Bill Account stood at over £20,000,<sup>3</sup> which amount it will be remembered was shared among several houses.<sup>2</sup> So heavy was Matthew's share that it was sometimes necessary for him to obtain aid from Raymond, Lowe, Vere, & Co., wherewith to meet the Bills he had accepted for Boulton & Fothergill. Unfortunately, too Raymond, Lowe, Vere & Co., were dissolving partnership in Dec. 1777

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1. See page 15

2. Walker to Boulton,

The houses were Motteaux, Matthews, Baumgartner, & Raymond, Lowe, Vere & Co.

3. Walker to Boulton, January 18th 1779.



and Matthews feared complications in Boulton and Fothergill's already difficult position on account of that banking house recalling their advance of £3000 to them.<sup>1</sup>

Some account has been given of the fortunes of the hardware partnership up to 1777, and also of the beginnings of the more famous steam engine company. It remains to examine the relationship in which these stood one to another. It cannot be too strongly emphasised that Boulton and Watt and Boulton and Fothergill were separate concerns, that Boulton and Fothergill was never intended to support, did not support, and could not have supported Boulton and Watt in its early days. In fact, as will be seen later, the infant concern saved Boulton and Fothergill in a period of crisis when ruin seemed imminent.

At the very outset of the partnership with Watt, Boulton was bent on preserving a clear cut

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1. Matthews to Boulton, December 4th 1777.

distinction between the two concerns. In March 1776 he drew up a lengthy document entitled "Matthew Boulton's indemnification to John Fothergill against all risk and losses arising from M. Boulton's connection with the Engine concerns." As this document throws a good deal of light on the relations between the two companies it is here reproduced in full.

"As I have not been instrumental in bringing upon Boulton & Fothergill's house any risk of loss by the carrying into execution of Mr Watt's<sup>2</sup> invention of fire engines I have originally agreed with Mr Watt and Dr. Roebuck for two thirds of the patent right, the term of which I have extended by obtaining an Act of Parliament, and although I agreed with Watt and Dr Roebuck for two thirds yet at the same time I agreed with Dr Small that he should take one half of my purchase, and that he, Dr. Small, James Watt and Matthew Boulton, and no other partner whatsoever should carry on the said business of engine <sup>building</sup> ~~building~~, all which Mr Fothergill was informed; and I likewise told Mr Fothergill that every expense

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incurred on account of the engine should be charged to me, and that if the engines we had begun to erect at Soho proved good and useful things to Boulton and Fothergill they should have them made at an easy price, without paying the engine company any sum for licence; and I also told him that if the engine business proved an advantageous one I would pay all the debts due from Dr. Roebuck to Boulton and Fothergill, although at that time the whole debt from Dr. Roebuck was upwards of £670 (and not worth a farthing). Hence, Matthew Boulton procured, without expense to Boulton and Fothergill, the advantage of a chance of paying them two desperate debts and also the convenience, without any risk in the project, of supplying their mill in all scarcities of water - two good things. When Matthew Boulton permitted Dr. Roebuck to draw upon him it was under the idea that if Dr. Roebuck failed Matthew Boulton could set off the money by his agreement with Dr. Roebuck for the fire engine in the purchase of his share.<sup>1</sup> Sometime after Dr. Roebuck

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1. See pages 52. 53.

did fail and his debt by means of his drawing Bills was £1000, which Mr Fothergill ordered to be placed to the debit of my account in the year 1772. So that I have expended and not Boulton and Fothergill on engine account :-

1. Debts due from Roebuck and  
Garbett (Gascoigne's Guarantor) £1000
2. I have paid Dr. Roebuck and his assigns £600, part of £1000 which I agreed to pay him and have also given him my personal security for £400 more, which together is<sup>2</sup>.. £1000

2. When after Roebuck's failure Boulton acquired his share in Watt's patent by abandoning all claims against him, it was further agreed that in the event of the enterprise proving profitable Boulton should pay to Roebuck such further consideration as Watt and Dr. Small should award. Small died just before the Act of Parliament was obtained. It was therefore decided to refer the matter to W. Matthews who, in May 1775, awarded the payment of another £1000. Boulton acquiesced in this decision and speedily discharged his obligation to Roebuck.  
(Statement by ~~Mr~~ Matthews. Matthews to Boulton  
30th May 1775.



3. I am willing to pay the debts to Boulton  
and Fothergill, suppose about £670
4. I am willing to pay all the expenses  
that have or may arise on account of  
the engine, both as to Act of  
Parliament, travelling expenses,  
building experiments and wages. Mr Watt 700

Thus £ 3370

All these sums ought to be paid before any profits can properly be said to arise from the engine, and as Mr Fothergill hath not yet run any risk in the engine and as the success of it is as much unknown to every person in the world besides the inventor, I take this opportunity, before any trial hath been made of either of the engines now nearly erected, to declare that as I have run all the risk of that profit and as Mr Fothergill hath contributed no invention or improvement or anything towards it, I am resolved to take all hazards upon myself and do hereby declare

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that although upon trial of the Bloomfield Engine<sup>1</sup> and that of Mr Wilkinson<sup>2</sup> it shall be found that to be neither a useful or a profitable invention I will take upon myself all the expenses that have arose in consequence of it from the beginning and free both Mr Watt and Mr Fothergill from all losses and expenses relative thereto, and this I give under my hand this day of March 1776.

( Signed ) Matthew Boulton.

This paper was read by Mr Boulton to Mr Fothergill in the presence of John Scale and it was also read to Mr John Banner by Mr Boulton before the engine at Bloomfield ( in which Mr Banner is interested ) was tried or set to work.<sup>3</sup>

By the agreement between Roebuck and Watt, the experimental engine at Kinneil became the latter's possession. It was soon transferred to Birmingham.

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1. A pumping engine with a 50 inch diameter cylinder for Bloomfield Colliery, near Tipton.
2. An engine for blowing a blast furnace belonging to John Wilkinson, the Ironmaster ( vid Dickinson & Rhys Jenkins )
3. Boulton's indemnification to Fothergill.



and employed in pumping water back to the Water Mill, thus saving much money in dry seasons when it had hitherto been necessary to employ horses. The engine itself was worth £1000 but Boulton and Fothergill paid nothing for it or for its use, nor did they pay for coal, repairs, or the engine man's wages.<sup>1</sup>

For the purposes of obtaining cash to meet the expenses of Boulton and Watt, Boulton drew it out of Boulton and Fothergill. "Boulton now regarded himself as an engineer connected with Mr Watt in a separate undertaking from Boulton and Fothergill, and ordered all expenses of workmen (which were trifling and few) to be kept a distinct account of, and considered Boulton and Fothergill as a sort of banker for him on the engine business,"<sup>2</sup> Boulton having recently just put into their hands considerable sums of his own property and felt constrained to add more.<sup>3</sup> This arrangement whereby money was advanced into and then drawn out of Boulton and Fothergill

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1. Booklet entitled "Case between Boulton & Fothergill" Summary of 26 points in the history of the partnership. "Rough sketches of facts for my narrative of Boulton and Fothergill" by Boulton.
2. Booklet entitled "Case between Boulton and Fothergill"
3. Ibid.

to meet the expenses of Boulton and Watt was continued even till after the death of Fothergill in 1782. It arose from the unhappy position of the older concern which leaned heavily for support on the newer but more prosperous engine company. Throughout the early years of Boulton and Watt all that firm's profits were devoted to meeting the wants of Boulton and Fothergill. Boulton's own words, written in 1782, put the position very clearly":- Boulton hath to this hour thrown all the money that has resulted from the engine into the house of Boulton and Fothergill, and neither he nor his partner Watt has yet pocketed one farthing from the trade."<sup>1</sup> With all the profits arising from engine construction disappearing into the ever ~~empty~~ empty coffers of Boulton and Fothergill, Boulton and Watt could look to noother source but the hardware firm for money to meet expenses and pay Watt's salary.

Two items of expenditure were incurred by Boulton on behalf of the hardware and the steam engine concerns, but which he did not charge to either.

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1. Document commencing "1762 June 24th Mathew Boulton and John Fothergill entered into partnership."  
Booklet entitled "Case between Boulton & Fothergill".



They were expenses in connection both with travel and with visitors to Soho. Boulton estimated that for many years the cost of entertaining nobles and merchants at Soho was not less than £600 or £700 a year.<sup>1</sup>

During the early days of Boulton and Watt Boulton saw, or rather thought he saw, the chance of large and sudden gain by the manufacture of spelter, the price of which had risen to great heights. He and a man named Keir<sup>2</sup> determined to engage in its manufacture. They built a furnace in Birmingham, sent to Cornwall for certain ores and to Derbyshire for certain materials. On account of the dearness of Spelter, Fothergill wished to have a share in the venture, saying it was more ~~than~~ in his line than engines. Boulton urged him to wait and see how the scheme turned out, after which he would be in a position to give advice on the matter. Boulton and Keir, however, were not able to make the stuff properly and after losing several hundreds abandoned the scheme. This loss it should be noted had no effect on Boulton and Fothergill's position as it was borne

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1. Booklet entitled "Case between Boulton & Fothergill".

2. Keir a chemist and glass manufacturer of Stourbridge who in 1778 abandoned his own business to take charge of the engineering works at Soho while Boulton and Watt were in Cornwall. He was offered a partnership but declined because of Boulton's financial difficulties.

(73).

by Boulton alone. <sup>1</sup>

1. Booklet entitled "Case between Boulton & Fothergill".

STATEMENT OF AFFAIRS 1773 to 1777

<u>YEAR.</u>	<u>CAPITAL.</u>	<u>INTEREST.</u>	<u>PROFIT</u>	<u>LOSS</u>
1773				
Boulton	£17478.14. 4	£873.18. 9	-	£1380. 4. 0
Fothergill	10186.17.10	509. 6.10	-	936. 2. 9
1774				
Boulton	14596. 8. 3	729.16. 5	1525.1.0	-
Fothergill	12377.1.4	618.17. 5	13652.2.2.	-
1775				
Boulton	18449.13.8	922.9.8	No Balance.	
Fothergill	13031.9.10	651.11.6	No Balance	
1776				
Boulton	16520.3.7	826. 0.0	283.6.7	
Fothergill	12418.11.2	620.18.2	222.17. 2	
1777				
Boulton	15391.14. 7	769.11.5	No Balance	
Fothergill	12471. 2. 2	623.11. 1	No Balance.	

No Balance for period 1777 - 1780  
inclusive.



YEARS OF CRISIS 1777 to 1782.

The career of the hardware partnership up to the end of 1777 had been a very chequered one on the whole. The losses incurred during the previous ten years amounted to £11,000.<sup>1</sup> These losses, which to that extent diminished the partners' capital, increased the Bill Account enormously. In December 1777 it amounted to very little less than £25,000.<sup>2</sup> Although the advance was shared between several houses, the greatest part of the burden rested upon Matthews, whose complaints daily became louder. Nor did the difficulties end there for in December 1777 Raymond, Lowe, Vere and Co., were dissolving partnership, and Matthews feared it would not be possible to renew the loan of £3000 Boulton and Fothergill had of them.<sup>3</sup> This then was the position of the hardware firm when Boulton and Watt came to the rescue. At the very commencement of that concern's activities, Boulton's

1. Roll Page p p 98, 99

2. Walker to Boulton, January 18th 1779

3. Matthews to Boulton, December 4th 1777.

association with the engine trade helped to support the older firm's credit in a period of difficulty.<sup>1</sup> Matthews, writing to Boulton in January 1778, expressing his great annoyance at Boulton's continued silence and indifference to the Bill Account, goes on to suggest that Boulton should come to London and offer the new house of Lowe, Veve, Williams & Co., (which was replacing the former partnership of Raymond, Lowe Vere & Co.,) certain securities leased on the engine trade, together with Boulton's and Fothergill's bond, and, if Boulton should deem proper to ask him, Watts also, and in this way open a credit against which bills could be drawn to the extent of £10,000.<sup>2</sup> Nothing was done for some time, although at the end of the month Fothergill urged Boulton, then in London, to procure relief for Matthews by some means or other.<sup>3</sup>

Other difficulties began to appear, the first instalment to repay the Dutch loan

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1. Fothergill to Boulton, April 26th 1777
  2. Matthews to Boulton, January 9th 1778
  3. Fothergill to Boulton, January 31st 1778.



would soon be falling due and Fothergill urged Boulton to go to Holland and secure a prolonging of it.<sup>1</sup> This seems to have been done as Van Orsoy were not paid off till many years later. Further anxiety was caused by Mrs Swellengrebel's determination to return to Holland. She had been frightened by her brother's tales of what losses could be incurred by loans to Merchants. However, she was persuaded to remain with Fothergill and all immediate danger of a sudden demand for repayment disappeared.<sup>2</sup> Lastly, the high rates of exchange prevented remittances from foreign customers.<sup>3</sup> Fothergill, writing to Boulton, says - " I am tired of hunting for money and our letters this week to Matthews & Barton will inform you with what success. It is very unpleasant to be continually on the hunt for the same object but I am convinced your pangs sympathise with mine in this dreadful season."<sup>4</sup> The affairs of Boulton and Fothergill were at this moment in a bad enough way; but worse was to follow. Various rumours detrimental to their credit became current, and Boulton

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1. Fothergill to Boulton, February 18th 1778

2. Fothergill to Boulton, June 1st 1778

3. Fothergill to Boulton, May 4th 1778

4. Fothergill to Boulton, May 16th 1778.

fell back on the earlier idea suggested by Matthews of getting Boulton and Watt to provide security against which Boulton and Fothergill could draw. He persuaded Watt" to join in mortgaging their general powers and privileges to Lowe, Vere & Williams for £14000 for the use of Boulton and Fothergill",<sup>1</sup> thus Lowe, Vere & Co's security was to consist of premiums or annuities due from the users of the Boulton and Watt engine.<sup>2</sup> This arrangement was made on the 23rd May 1778 and Watt's personal bond for the above figure was given too.<sup>3</sup> This sudden collapse of Boulton and Fothergill's credit together with their other distresses would, in Boulton's opinion, "have been fatal had it not been for the credit and the money which arose from Boulton's connection with the engine trade".<sup>4</sup> It was contemplated giving Watt a counter security on Boulton and Fothergill

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1. Boulton to Watt, October 30th 1781.

Abstract of Boulton's case with Fothergill.

2. Till the erection of Soho Foundry in 1795 Boulton and Watt were consulting engineers. They supplied plans and supervised the erection of engines. Their profits were not derived from the manufacture of engines, but consisted of annual premiums payable by the users of the Boulton and Watt engine. The amount of the premium was calculated by comparing the full consumption of a Watt steam engine with a Newcomen atmospheric engine. Boulton and Watt's annual dues consisted of one third of whatever sum was saved.

3. Lowe Vere & Co., to Boulton, July 6th 1782.

4. Abstract of Boulton's case with Fothergill.



for the obligations he had undertaken on their behalf; on the 26th May, Fothergill " was willing to execute the bond in favour of Mr Watt".<sup>1</sup>

This ~~and~~, however, was to prove of short duration. Boulton soon found that the bills he drew on, and which were accepted by Lowe, Vere & Williams could not be discounted at the Bank of England. In a few days he learned that the suspicion was rather against the bankers than himself, and eventually discovered that Jennings, a junior partner in the house, after accepting Bills to the extent of £180,000 had absconded. Boulton anticipated, however, Lowe, Vere & Co., being restored to public confidence, as no run was made on the bank and Sir Charles Raymond was a partner when the bills had been accepted and would be liable for his share of any losses.<sup>2</sup>

Another unfortunate incident occurred at this very moment. The annual inventory, usually

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1. Fothergill to Boulton, May 26th 1778.

2. Boulton to Watt, 1st July 1778, Boulton & Watt Collection.

held at Christmas, was postponed till Whitsun, and visitors to ~~Sho~~, seeing the place in confusion, reported that the manufactory was stopped - a report which became "the pot house topic through the town". It was also asserted that Boulton and Fothergill owed a metal refiner £5000. Boulton was at pains to trace the source of these tales and at last got to one man who refused to give up the author; whereupon Boulton took an action against him. Nothing daunted by these defeats and trials, Boulton goes on to proclaim "If I can but support my health and obtain the payment of our just debts I shall trample upon envy and stand my ground!"<sup>1</sup> ~~His~~ He urged the necessity of collecting debts rather than borrowing and called on Watt, then in Cornwall, to make Tingtang Mine pay their £500 engine due. Watt was requested to explore the possibilities of borrowing a sum in Cornwall, as Lowe Vere & Co., would have ~~to~~ give up the security, not being able to provide the accomodation.<sup>2</sup> Watt, in reply, said the prospects were poor, the chief Cornish bank, Praeds, having a very poor opinion of the steam engine business. He made

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1. Boulton to Watt, July 1st 1778.

2. Ibid.

The early pumping engines of Boulton and Watt found their most important market on the tin and copper mines of Cornwall.



suggestions of his own to Boulton to the effect that they should take in John Wilkinson, the ironmaster, who made the heavy castings for their engines, as a partner,- "rather than founder at sea we had better run on shore".<sup>1</sup> But nothing came of the suggestion, although the situation remained critical and Boulton thought unless they could collect their debts they would have to stop.<sup>2</sup>

Within the next few days the position improved. Boulton and Fothergill received £1000 from Moscow, £1000 from the manufacture of plate, and another £1000 by Boulton selling his shares in the Birmingham Navigation Company. Boulton estimated that another £2 - 3000 would be sufficient and although Lowe, Vere & Co., informed him they were resolved never to accept another bill for any man more than for money due to him, and that he must allow the credit in his favour, which had been of no aid, to be extinguished at

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1. Watt to Boulton, July 8th 1778.

2. Boulton to Watt, July 9th 1778.

once, he managed to persuade them to continue it at £10,000 instead of £14,000.<sup>1</sup> By the end of July 1778 Boulton described his position as being less desperate;<sup>2</sup> but towards the end of September the position again became worse. The Bill Account with Lowe, Vere & Co., stood at £8,400 but beyond this they refused to allow him to draw.<sup>3</sup> So whereas in May 1778 Lowe, Vere & Co., created a credit of £14,000 in Boulton and Fothergill's favour the latter had by September only been allowed to draw for little more than half that amount.

Under these circumstances, and in order to make good his disappointment from Lowe, Vere & Co., Boulton approached a James Wiss, a merchant and East India Company Official, for a loan or assistance of some kind. It was proposed that he should, by paying down a lump sum, purchase annuities secured on engine premiums, which annuities were to last till the expiration of the patent.<sup>4</sup>

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1. Boulton to Watt July 11th 1778.

2. Boulton to Watt July 11th 1778

3. Boulton to Watt September 26th 1778.

4. Baumgartner to Boulton, September 17th 1778.



Meanwhile Boulton and Fothergill were becoming more desperate for money. Large sums were due from abroad, but the prevalent high exchange rates prevented their remittance. They had also difficulty in getting cash for drafts on their bankers.<sup>1</sup> Fothergill, in desperation, demanded expedition in the negotiations with Wiss in order to obtain relief for Lowe, Vere & Co., who were adopting a menacing attitude.<sup>2</sup>

Wiss, however, was cautious and only ~~will~~<sup>willing</sup> to advance £3000 or £4000 on condition Boulton and Watt gave him their joint engagement to insure him the income of the engines till the end of the patent in 1800 by making over others should those assigned to him cease working.<sup>3</sup> He also demanded that the premiums be paid to him direct from the engine users; but Boulton and Watt could not agree to this.<sup>4</sup> Boulton, moreover, considered it advisable to raise money by mortgaging rather than by selling agreements.<sup>4</sup> Because if mortgaged they could be redeemed, and so payment of the annuity

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1. Fothergill to Boulton October 15th 1778.

2. Ibid.

3. Wiss to Boulton, November 7th 1778.

4. Lord p 103.

4. Ibid.

could be terminated; but where an annuity was sold, payment would have to continue till 1800 when the patent expired.

The outcome of the negotiations was that by February 1779 Wiss had advanced Boulton £7000, which was to produce an annuity of £700 a year.<sup>1</sup> The bargain was an exceptionally good one from Wiss' standpoint, for in the absence of the redemption of any of the annuities to be assigned he would continue to enjoy £700 a year for twenty years, thus obtaining £14,000 for advancing £7000. As yet, however, no engine agreement had either been mortgaged, assigned, or sold, so Wiss was without any security at all.

This money was borrowed <sup>for the use</sup> ~~by the use~~ of Boulton and Fothergill.<sup>2</sup> As in the previous May the hardware firm was drawing on Boulton and Watt for support, and it is to Fothergill's credit that he desired this should in no way jeopardise the fortunes of Watt. He wrote to Boulton in November 1778 on this subject as follows - "I do think,

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1. Walker to Boulton, May 3rd 1780
2. Abstract of Boulton's case with Fothergill.



and Mr Keir<sup>1</sup> is of the same opinion, that every exertion should be put in practice to obtain money on the sale of engine contracts or annuities and Mr Watt should be no sufferer for the inequities of Boulton and Fothergill, who ought certainly to make good to him, agreeable to calculation, any loss of interest which the sale of such annuities might occasion to him and I am also ready at any time to join in the counter security you promised Mr Watt for the transaction in London, indeed it is only the immediate succour which the engine business may afford us that will avert the storm which threatens to burst over us, Mr Kier becomes daily more initiated to Soho and I think him a valuable assistant, but I perceive the terrors of the Bill Account render him at a loss to acknowledge to his friends his connection with us. Your accounts of the engine business in Cornwall afford the only pleasing ideas in this our melancholy situation, and I pray to God it may afford us the desirable relief.

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Vid p

Consider only if the expenses of a Bill Account could be annihilated what comfort and expense could be saved, which would enable us to recompense Mr Watt in a high degree".<sup>1</sup>

Meanwhile the balance of Bills accepted by Lowe, Vere & Co., for Boulton and Fothergill without any remittances from them amounted to £12,000; these acceptances were quite uncovered save for the assignment of engines contained in the mortgage deed of May 1778. This expansion in Boulton and Fothergill's Bill Account greatly alarmed Vere who, in February 1779, requested its reduction to £10,000.<sup>2</sup> Writing to Vere in April of that year, when the Bill Account, stood at £10,700 Boulton attributed his difficulties to "our having been too sure of receiving ~~£60,000~~ <sup>£6,000</sup> from one gentleman (Wiss), to our Mr Fothergill having been too free in paying our Christmas balances, and likewise the great scarcity of money in the country, and to the exchanges being unfavourable to foreign remittances."<sup>3</sup> Boulton was at

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1. Fothergill to Boulton, November 7th 1778.

2. Matthews to Boulton, February 24th 1779.

3. Boulton to Vere. April. 1779



pains to allay any apprehensions the Bankers might have by stressing the fact that, "the value of your security is very much increased since it was made, for besides the engines specified in the deed being now actually at work, and most of the agreements executed, we are erecting as many others (which will be at work in the summer) as will increase our annuities and consequently the value of your security. I therefore hope that neither you, nor Mr Lowe, nor Mr Williams will be so severe with us as to bring on any interruption in our affairs which will, in the course of this summer, be in a comfortable train."<sup>2</sup>

Boulton's optimism for the year 1779 failed to justify itself. The position did not improve much for money was terribly slow in coming in. Fothergill writing at the end of the year said that debts outstanding

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1. Boulton to Vere April 1779.

2. Ibid.

It might be mentioned here that for the year 1778 Boulton's advances on account of the engine concern amounted to no more than £1000 and this was met by receipts from the same quarter.

- Walker to Boulton, January 18th 1779.

amounted to £7000 and to add to their difficulties Lowe, Vere & Williams were beginning to complain once more.<sup>1</sup>

All this time Wiss, who had paid over the £7000 early in 1779, was still without any security and a long but fruitless correspondence was maintained between himself and Boulton.<sup>2</sup> At last Wiss lost all patience with Boulton. Calling on Matthews on 1st March 1780, he announced his intention of setting out for Soho at once, "having been so long amused by letters that he would not write another on the subject".<sup>3</sup> Matthews with great difficulty managed to pacify him, but only by himself entering into an obligation by which he himself became accountable to Wiss for Boulton's assigning to the latter the engine Company's contract for the premium payable by Chasewater Mine (Cornwall), or any other good security to guarantee the payment of £700 for twenty two years. In addition, Matthews had to promise to deposit with Wiss £4000

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1. Fothergill to Boulton December 17th 1779.

2. Wiss to Boulton January 1st 1780

3. Matthews to Boulton March 1st 1780.



which he was to receive from the East India Company on Boulton's behalf, and to become personally accountable for the remaining £3000 till the agreement was fulfilled.<sup>1</sup> Incidentally Wiss was not particularly keen on receiving an assignment of the Chasewater agreement as security, since he preferred several smaller engines to one large one on a precarious copper mine and acquiesced in Boulton's suggestion for several others.<sup>2</sup>

Boulton's plans for the future were :-  
on receiving the £4000 still held by Wiss he proposed paying Lowe, Vere & Williams £3000. He hoped to prevail on them to reduce the amount stated in the mortgage and bond by £7000 and to release Watt altogether from his obligations to them, Watt having on many occasions urged Boulton to achieve this. In place of Watt's bond he hoped they would take Boulton and Fothergill's security for the remainder. If

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1. Matthews to Boulton, March 1st 1780

2. Boulton to Watt, April 10th 1780. Boulton & Watt  
Collection.

agreement was reached Watt was to hand over sufficient of his one third shares in engine premium contracts to enable Boulton to meet the demands of Lowe, Vere & Co. This arrangement with Watt was necessary because without it Boulton could only pledge his two thirds share in such agreements. Watt, it was proposed, should receive a counter security for one third of £7000 or accept from Boulton an assignment of as many of the latter's two thirds shares as were equal in value to the one third shares he had handed over to Boulton.<sup>1</sup>

Boulton now found himself denied access to the £4000, possession of which was essential to his scheme, because Watt objected to a general assignment of engines to Wiss as being likely to undermine their credit. He reminded Boulton they had made large concessions to Chasewater Mine, getting the annuity liquidated into a fixed lump sum with a view to putting it into Wiss's hands. Moreover, Watt

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1. Boulton to Watt, April 10th 1780. Boulton & Watt Collection.



regarded the Wiss transaction as a very bad bargain and advised Boulton to seize the first opportunity to repay £3000 and so proportionately reduce the annuity to £400 a year.<sup>1</sup> He was willing to assign to Boulton so many engine agreements as were necessary, in return for receiving an assignment of equal value from him,<sup>2</sup> but wanted a release from Lowe, Vere, and Co., of so much of the mortgage as was equivalent to the money received from Wiss.<sup>3</sup> Boulton seems to have been impressed by Watt's suggestion concerning repayment to Wiss as soon as possible, for on May 17th 1780 he informed Watt he had just repaid Wiss £1000 and agreed to pay another £1000 in December 1781 and another in December 1782; after which the annuity would be £400 per annum (i.e. 10% of the £4000, the amount outstanding as due to Wiss)<sup>4</sup>.

Nothing had yet been arranged with Wiss who, still continuing without a security retained

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1. Watt to Boulton, April 15th 1780

2. Ibid.

3. Watt to Boulton ~~April~~ May 1780

4. Boulton to Watt, 17th May 1780.

the £4000. At length Boulton submitted the proposed mortgage of their annuity agreement with Chasewater Mine to Watt, who now refused to sign, saying it was not what he intended. "I cannot bring myself to enter into a fresh bond of mortgage," he wrote.<sup>1</sup> It was from the idea of a personal bond which usually accompanied a mortgage that Watt shrank. He was willing to assign any quantity of engine agreements provided enough were left to secure Lowe, Vere & Williams, but he would enter into no personal bond," and would rather have assigned all Cornwall".<sup>2</sup>

This attitude of Watt placed Boulton in an awkward position as he reveals in his letter to Watt on June 3rd 1780. "I think it not prudent to apply to Lowe, Vere & Williams upon the subject of our mutual wishes [release of Watt] until I had reduced their acceptances to one half of the sum we gave them security for (i.e., one half of £14,000). I could not accomplish this till Mr Wiss had paid me

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1. Watt to Boulton May 18th 1780.

2. Watt to Boulton, May 19th 1780.



the East India money. I could not demand that of him till I had given him the security so long promised. I could not give him that security without your concurrence. But your late resolution hath thrown one into a complication of disappointments and confusion and must in its consequences be injurious to our credit. As we have made excuses to Mr Wiss about Chasewater deed for one and a half years he was induced to wish for others, but you object to giving others, saying we had made concessions to Chasewater Co. with a view to getting it (the Boulton and Watt premium) liquidated into a fixed sum to put into Mr Wiss hands, thereby intimating he ought to take it, I again apply to Mr Wiss and prevail upon him to accept it. I also prevail upon him to permit me to redeem £3000, viz., £1000 now and two more in 82 & 83, so there remains only £400 per annum for the whole term instead of £700,

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which you know was our first agreement, and yet you refuse to join in the assignment of that £400. You know that a bond accompanies every mortgage, however, Mr Wiss ~~now~~ agrees to waive your personal bond and will be satisfied with mine, but it is reasonable he should have the agreed for assignment. Messrs Lowe, Vere & Williams, also agree to all I have asked and agree to exonerate you entirely and to relinquish the security they have of our three shares on condition I assign to them my own two shares in lieu thereof [i.e. shares in premiums of steam engine Co.,]".<sup>1</sup>

Roll, assuming the Wiss money to have been borrowed for the benefit of Boulton & Watt, has characterised Watt's attitude throughout these transactions as being "rather shabby in the face of such a partner as Boulton".<sup>2</sup> but Watts caution can easily be understood; the money was not for the benefit of himself or for his firm but for Boulton & Fothergill.

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1. Boulton to Watt, June 3rd., 1780. Boulton & Watt Collection.

2. Vid. p. 106 - "~~xxx~~ An Early Experiment in Industrial Organisation."



He had already given his bond once and assisted in mortgaging the engine profits to Lowe, Vere & Co., but he now recoiled from the prospect of making himself personally liable to see that Wiss got his £400 every year for twenty two years. Moreover, whereas Boulton was used to reckoning in thousands Watt was terrified by hundreds. Justifying his caution to Boulton, he wrote, "but when a bond of such magnitude is proposed to bind me for ever the love I have for life itself is scarcely sufficient to make one engage in it, therefore what I would not do for myself I consider myself as not blameable in refusing to do for another, if nature has made me timid I cannot help it".<sup>1</sup>

At last Watt agreed to join Boulton in an

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1. Watt to Boulton June 2nd 1780

~~There is~~ There is another charge levelled against Watt which has no foundation. Lord says that he made difficulties about lending his workmen to the hardware firm when they received a large order for more reels from the East India Co., "In fact the very opposite was the case. Watt, though he had to be handled with great caution, made no difficulties at all and assisted both personally and through his workmen in carrying out this order. Walker wrote to Boulton telling him of Watt's assistance. "I could easily see Mr Watt was pleased with the order and wished to see it executed in proper time" (Walker to Boulton, September 21st. 1780) *vid Lord p 122.*

assignment of Chasewater Agreement to Wiss and to bind himself in a command with Boulton to put another agreement of equal value in its place if that mine should cease working i.e., "replace the sum by some other annuity or annuities of equal value arising from Steam Engines." <sup>1</sup> But Watt was to be in no personal bonds, and Wiss was to take Boulton and Fothergill's personal security in place of his. <sup>2</sup>

Notwithstanding his success with Watt and Lowe Vere & Co., Boulton's troubles were not at an end for the bankers altered their friendly attentions. When Boulton interviewed them in London towards the end of June 1780 he learned their demands and grievances in no uncertain terms. They were, they said, on the point of severing all connections with Boulton and Fothergill. They produced several of the firm's letters containing unfulfilled promises so that Boulton could neither excuse himself nor reply. They insisted that any bills drawn on them while their advance was over £10,000

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1. Watt to Boulton, June 9th 1780. *Boulton & Watt Collection.*  
 2. Ibid.



they would refuse to accept. They refused to make any alterations in the security, so Watt was not to be released after all. The cause of their anger was the expansion of the Bill Account with them which had risen to £17,000. They refused to allow an assignment of Chasewater to Wiss till their advance was down to £10,000.<sup>1</sup> Boulton, however, with the assistance of a friend managed to induce them to consent to an advance of £10,000 plus £5000 which they accepted for William Matthews.<sup>2</sup>

The overdraft to repeat was to be reduced to £15,000 (£10,000 plus acceptances of £5000 to accomodate Matthews). It had to be perfectly clear to Lowe, Vere & Co., that this figure would not be exceeded before they would agree to allow Boulton & Watt to assign Chasewater to Wiss. Meanwhile they still retained Watt's bond.

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1. They were in a position to refuse because by the mortgage deed of May 1778 Boulton and Watt mortgaged their general powers and privileges. Thus Lowe Vere & Co. had a general charge on all the engine premium agreements.

2. Boulton to Fothergill June 20th 1780.

Boulton and Fothergill kept a Bill Account with Matthews and in order to provide him with accomodation to meet their Bills on him they kept in his possession Bills to the extent of £5000 on Lowe, Vere & Co. As a collateral for this £5000 Lowe, Vere & Co., held a counter security in the form of Bills on Matthews. Matthews held these Bills on Lowe Vere & Co., so that whenever he needed cash to meet Boulton & Fothergill's Bills on himself he could get it by discounting a Bill on Lowe, Vere & Co., (Walker to Boulton July 10th 1780).

Boulton, not improved in humour by this reception from the Bankers, made his own thoughts decidedly clear to Fothergill, to whom he wrote :- "The Bill Account hath been conducted without plan or discretion and hath often put me in a disagreeable situation, even such as a continuation of which must destroy my existence, and I am therefore determined to extricate myself from the difficulties before I am superannuated.<sup>1</sup>" He instructed Fothergill that any bill remitted to Lowe, Vere & Co., was not to be considered as cash in their hands against which Boulton and Fothergill could draw till the bankers had actually received cash for it, and this rule too was to apply even to Bank Post Bills. He further warned him that if he put Lowe, Vere & Co., under further acceptances, whilst the Bill Account was £10,000 or over, he would wilfully destroy the credit of their house. The hardware firm, he pointed out, had recently received £3000 from the manufacture of reels for the East India Company, £6000 from Wiss, £1100 from the Steam Engine concern and yet in spite of

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1. Boulton to Fothergill, June 30th 1780



all this the Bill Account was scarcely lessened at all.<sup>1</sup>

Advice like this to Fothergill, however, only increased the danger of the very disaster Boulton dreaded. Walker, the firm's accountant, did not hesitate to point this out to Boulton; "critical letters to Fothergill only dispirited him and may cause him to act in extremes in such a manner as to produce such a curse as I hope will never fall on your house, he is not given to uttering drafts or notes he can readily avoid, and if you lay a restraint upon him he may refuse in circumstances where the consequence will be disagreeable." <sup>2</sup>

Boulton's next preoccupation was Cornwall where he arrived late in August 1780. The first matter demanding attention was Wheal Chance Mine which refused to settle the amount of the annuity due on a Watt engine erected there. <sup>3</sup> They were willing to pay only two thirds of Boulton & Watt's premium. Boulton, realising that concessions on such a large scale would be seized <sup>on</sup> as a

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1. Boulton to Fothergill, June 30th 1780

2. Walker to Boulton, July 1st 1780

3. The annuity amounted to one third of the savings in coal consumption arising from the use of a Watt engine when compared with a newcomen engine. Vid. p. 77.

precedent and so set the whole county demanding reductions, stood firm, and threatened Wheal Chance with a law suit.<sup>1</sup> The trouble lay in the calculation of the annuity, which was based on the fuel savings of a Watt engine compared with one of Newcomen's type. To assist in the calculation Watt evolved complex mathematical tables which were beyond the comprehension of the Cornish, who therefore eyed them with suspicion. In fact, Boulton estimated there was only one man in Cornwall who properly understood them.<sup>2</sup> He therefore considered it advisable for payment to be reduced to a fixed sum yearly, so when a large agreement for five engines was entered with the Consolidated Mines of Wheal Virgin & Wheal Maid it was arranged they should pay a fixed annual sum of £2500.<sup>3</sup> During his stay in Cornwall Boulton had entered into various agreements for new engines which would produce an additional yearly income of £ 5,000, and he estimated that from

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1. Boulton to Captain Stephens, November 16th 1780

2. Boulton to Watt, September 14th 1780

3. Boulton to Watt, November 26th 1780

Vid also p.

4. Boulton to Watt, 1780

5. Ibid.

6. Ibid.

7. Boulton to Watt, November 26th 1780.



the following Michaelmas their engine annuities would be about £10,000 per annum.<sup>1</sup>

As a consequence of their connections in Cornwall Boulton and Watt were led to take shares in copper mines.<sup>2</sup> By December 1780 they held shares in five mines.<sup>2</sup> One reason for this was the precarious state of the mines due to the low price of ore. Cornwall was then the chief market for Boulton and Watt's engines and these investments were made to keep the copper mines on their feet.<sup>4</sup> The investments were paid for out of the monthly savings affected by the engines.<sup>5</sup> Boulton's attitude was, "in case of stopping we gain nothing, and in case of going on we stand a chance of gaining without the least risk of losing".<sup>6</sup> Another reason was, "I have found it prudent to take small shares in every mine where we have engines, by which I see all their books and gain admission into their Privy Council and thereby am better able to take care of ourselves."<sup>7</sup>

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1. Boulton to Watt, November 26th 1780

2. Vid p.p. 225 - 258

3. Lord - Capital & Steam Power p.118

4. Roll p.88

5. Ibid.

6. Ibid.

7. Boulton to Watt, November 26th 1780.

Returning to the hardware firm we find the position improved somewhat. William Matthews received £4069 for Boulton and Fothergill for an order of reels they had completed, but as his own position was then somewhat pinched, he requested Boulton not to draw it out for a little while.<sup>1</sup> In agreeing to this, Boulton expressed the hope that by the New Year, 1781, Boulton & Watt's money in Matthews' hands would amount to £3000 which would be paid over to Lowe, Vere & Co., to diminish Boulton and Fothergill's Bill Account.<sup>2</sup>

Boulton was, however, still short of resources. This was due to the stopping of two Cornish engines worth £1400 per annum, to the purchase of shares in mines and lastly to receiving £500 worth of block tin instead of cash by way of engine dues from Cornwall. This, though as good as money, was not as good as ready money.<sup>3</sup>

This shortage of funds was further aggravated in December 1780. Wiss, who was due to receive

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1. Matthews to Boulton, November 23rd 1780
2. Boulton to Matthews, November 23rd 1780, Boulton to Fothergill. September 9th 1780
3. Boulton to Matthews, November 30th 1780.



his next repayment of £1000 in December 1782, urgently requested Boulton to let him have it in December 1780, as his own financial position had become precarious.<sup>1</sup> On account of Wiss' great favours in the past, Boulton felt constrained to oblige and sent him Boulton and Fothergill's bills to the extent of £1000.<sup>2</sup>

By the end of 1780 Boulton had grown quite weary of the hardware firm. As Cornwall demanded so much of his time and was more profitable than any Birmingham business, he wished, "either to get quit of that (the hardware firm) altogether or to take in an active and businesslike partner."<sup>3</sup> He was willing to leave £10 - 15,000 in the old concern and meant to pay off the Bill Account out of the Cornish engine revenue.<sup>4</sup> Although willing to do all he could for Fothergill he spoke of Boulton & Fothergill as being a mill stone around his neck.<sup>5</sup>

Upon his return from Cornwall an attempt was made to interest Boulton in a scheme for the

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1. Wiss to Boulton, October 31st 1780.

2. Wiss to Boulton, January 29th 1780

3. Boulton to Watt, November 26th 1780

4. Ibid.

5. Boulton to Fothergill, 11th December 1780.

manufacture of brass and spelter.<sup>1</sup> A committee of the Birmingham Merchants and Manufacturers of hardware had been formed to consider the scheme on account of the high prices charged by the brass founders of ~~Bristol~~<sup>Bristol</sup> and Cheadle, on whom Birmingham depended for its supply of brass.<sup>2</sup> The committee's idea was to subscribe £60,000 to be employed in copper, brass and spelter works. Boulton persuaded them, however, to subscribe £20,000 instead for that purpose.<sup>3</sup> The concern's capital was to be divided into 200 shares of £100 each, and each shareholder was to purchase from the Company one ton of brass annually for each share held. Friction soon broke out between Boulton and the rest of the Committee. He wished to increase the shares and favoured Swansea as the most suitable site for the works, it being conveniently distanced from a "Birmingham copper company of a hundred men who have a hundred minds".<sup>4</sup> But the rest chose to erect the works

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1. Boulton to Wilson, January 17th 1781.

2. Roll p.95

3. Boulton to Wilson, January 7th 1781.

4. Boulton to Wilson, January 7th 1781.



in Birmingham and Boulton, displeased at the rejection of his advice, resigned from the committee in May 1781.<sup>1</sup>

By April 1781 Boulton's situation was easier.<sup>2</sup> Boulton and Fothergill's Bill Account with Lowe, Vere & Co., stood at £15053<sup>3</sup> to which it had been reduced from £17,000; but further reductions were imperative at the earliest possible date. There were other demands also. A payment of £932 was due to Christian Ban Orsoy for which sum they drew on Matthews. Matthews, whose own position was not too bright, requested Boulton to provide accordingly for that amount.<sup>4</sup> This, together with the necessity of reducing Lowe, Vere & Co's balance, caused Boulton some anxiety. There was £1000 due from

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1. Roll. p.96

2. It is rather difficult to estimate whether the hardware firm made a profit or loss in 1780. The Statement of Affairs 1763-1780 mentions no figure at all in either direction. According to a statement appended to a letter from Walker to Boulton, April 11th 1781, a profit of £6634 was made, but in settling their accounts Boulton and Fothergill paid no regard to the recoverability of book debts.

3. Walker to Boulton, April 11th 1781.

4. Matthews to Boulton May 18th 1781.

Cornwall, but Boulton had small hope of seeing any of this now that Watt was there. Nevertheless he hoped to be able to raise £4000, including a loan from a bank in Truro and £1000 from various engines; thereby he would enable Matthews to discharge Van Orsoy's drafts and also reduce Lowe Vere & Co's balance.<sup>1</sup>

A word must be said about this loan in Cornwall. Roll ascribes no date to the transaction but implies it took place in 1779,<sup>2</sup> while Smiles dates it as 1778.<sup>3</sup> Actually, the loan was secured in 1781. Boulton, through Wilson, his agent in Cornwall, got into communication with a Mr Jenkins, a partner in the banking house of Elliot & Praed, Bassett and Praed.<sup>4</sup> Negotiations were entered into for a loan of £2000 for one year. The bankers were prepared to make the advance on the security of Boulton and Fothergill's bill on Matthews for six months, which bill should be renewed at the end of that period for a further six

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1. Boulton to Matthews, June 28th 1781.

2. Roll p.103.

3. Smiles p.219

4. Wilson to Boulton, May 30th 1781.



months.<sup>1</sup> In addition they wanted, as a collateral security, the premium agreement for some working engine to be placed in their hands.<sup>2</sup>

Unfortunately, this aspect of the transaction did not meet with Watt's approval. He thought the mortgage to Lowe, Vere & Co., precluded them from alienating any portion of the Company's profits or agreements. His vexation was further increased when he found the Bill Account with Low, Vere & Co. was still large, notwithstanding the £7000 obtained from Wiss.<sup>3</sup> However, he gave his consent to the present transaction. Boulton received the £2000 and sent the bankers the Articles of Agreement between Boulton & Watt and Dolcoath Mine, as a collateral security to Boulton and Fothergill's Bills on Matthews:- "which deed by and with consent of Mr Watt we lodge in your hands for the purposes aforesaid and I do further promise for myself and Mr Watt (whose consent I have obtained under his hand) to assign over to you

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1. Boulton to Jenkins, June 19th 1781.  
 2. Watt to Boulton, June 28th 1781.  
 3. Ibid.

the said Articles", should it at anytime have been required todo so.<sup>1</sup> Thus, money obtained on the security of an engine agreemnt was to liquidate Boulton and Fothergill's debts to Van Orsoy and Lowe, Vere & Co.

Boulton was muchannoyed and hurt at Watt's attitude inthis transaction, and wished to get the Bill Account down to £12,000 and so secure Watt's release and free himself from ~~all~~ obligations to the engineer. He enquired of Matthéws whether there was any sum for which Lowe, Vere & Co., would give Boulton & Fothergill credit without any other than their own personal security, for if there was he would attempt to reduce their account to that sum.<sup>2</sup>

The hardware business had become to Boulton a ~~veritable~~ bugbear. Writing to Matthews he expresses himself thus, "when I reflect there is only nineteen years yet to come in our patent and perhaps not half that term of years before I am superannuated I cannot

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1. Boulton to Jenkins, July 19th 1781.

2. Boulton to Matthews, June 28th 1781.



help thinking that I am murdering my time by slaving from morning till night (14 hours per day) in the drudgery of a Birmingham manufacturer and hardware merchant".<sup>1</sup> He goes on to say that had he been free during the summer he would have gone to Cornwall and seen to it that the engines ordered there were at work before the following May, and thereby avoided a loss of £3000.<sup>2</sup>

The trouble was that Boulton, during the previous April and May, had received many summonses to go down to Cornwall to attend to engine erections, but pressure of business, further increased by Fothergill's absence from April to October, prevented his going. Watt, on the other hand, was always procrastinating, and when at last he did depart in June it was too late to get the engines to work before the following October, and as they could not be set to work during the winter a delay till May 1782 became inevitable.<sup>3</sup>

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1. Boulton to Matthews, June 28th 1781.

2. Ibid.

3. Boulton to Fothergill, June 28th 1781.

Difficulties were increased by the recurrence of a very familiar trouble, slowness of remittances from abroad, while some of Boulton and Fothergill's creditors were beginning to press for payment. Boulton, however, was of the opinion that he would not be in a position to satisfy them unless the mails were more fruitful.<sup>1</sup> His debts at this time consisted of Lowe, Vere & Co., £15,000, Van Orsoy £8,000, Mrs Baskerville £1000 and Day £1000. He had, however, repaid Keir £500, which the latter had borrowed from Day in 1778 and lent to him.<sup>2</sup>

Boulton's main concern about this time was to secure Watt's release from his bond to Lowe, Vere & Co. For this Watt was more eager than ever because the Hornblowers<sup>3</sup> were commencing their activities in Cornwall and Watt thought this

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1. Ibid.

2. Boulton to Matthews, June 28th 1781.

3. The Hornblowers were a family of Cornish engineers who had erected an engine similar in principle to that of Watt, except that the steam was used twice, which is the principle of what now is known as a compound engine. Extravagant claims were made for the Hornblower compound which it was asserted would soon supercede the Boulton and Watt engine.



would adversely affect the standing and credit of the engine firm.<sup>1</sup> Boulton intended setting out for London early in August to attempt to secure the release, but was advised by Matthews to delay because Lowe, Vere & Co., were in a difficult mood on account of the bankruptcy of a Mr Peacock, a great silk merchant and director of the East India Co., for whom they had accepted Bills.<sup>2</sup> Towards the end of August Boulton visited London but failed to raise the money to reduce the account.<sup>3</sup> The only partner in the banking house whom he interviewed was Vere; the only thing that took place in the interview was a general quarrel between them. The quarrel arose through Vere's asserting that Boulton had said that he, Vere, had better mind his own business rather than interfere so much in the affairs of Boulton and Fothergill, which assertion Boulton stoutly denied having made.<sup>4</sup> Having achieved nothing more than further annoying his bankers, Boulton returned home. He then wrote to Watt that on account of Lowe's absence and Vere's ill

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1. Watt to Boulton, July 21st. 1781.

2. Boulton to Watt, 7th August 1781.

3. Boulton to Lowe, Vere & Williams, 30th Aug. 1781.

4. Boulton to Matthews, 31st August 1781.

humour he had decided to postpone the question of the release for a few weeks.<sup>1</sup>

Lowe, Vere & Williams now demanded an explanation of his conduct from Boulton, who wrote saying that he had been disappointed in not receiving £1000 the day before he set out, that he had been inconvenienced by the detention of the Dutch mails, and had met with further disappointments when in London. These circumstances, together with the illness of Mrs Boulton and certain pressing engagements, had determined him to return home without settling with them. He hoped, however, to come up to do this late in September.<sup>2</sup>

A day later Boulton came to the conclusion that it would be more to his interest to quieten Lowe, Vere & Co., there and then. He determined to remit them £3000 in Bills at one month on Matthews. Thereafter, he would remit <sup>them no</sup> more than was necessary for the daily payments of his drafts and notes on them. All other remittances were to be directed to Matthews,

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1. Boulton to Watt, August 27th 1781.

2. Boulton to Lowe, Vere & Co., August 30th 1781.



whom Boulton felt capable of providing by the time the £3000 bills became due. By this means the Bill Account would be reduced to the required sum (i.e., from £15,000 to £12,000), and Boulton requested Matthews to take soundings to ascertain whether Lowe, Vere & Co. would now execute a new agreement and release Watt.<sup>1</sup> This Matthews was unable to do because the principals of the banking<sup>house</sup> were away; but he had an interview with Vere and allayed his hostility to Boulton.<sup>2</sup> At length the bankers' decision became known. They refused to consider any new agreement or Watt's release until the bills were actually paid in cash.<sup>3</sup> Boulton now pressed Watt to collect as much money as he could from Cornwall to be sent to Lowe, Vere & Co., and so increase the justification of the request for Watt's release.<sup>4</sup> Even then they still refused any concessions and Watt remained personally bound for a long time to come.

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1. Boulton to Matthews, September 1st 1781.

2. Matthews to Boulton, 4th September 1781.

3. Boulton to Watt, 1st September 1781.

4. Boulton to Watt, 4th September 1781.

The position of Boulton and Fothergill became easier towards the close of the summer. They received £160 from Minorca given up as lost and a larger sum from St. Petersburg which Boulton had long considered as irrecoverable.<sup>1</sup>

Throughout the remainder of that year Boulton's attention was divided between the engine company and another question which will receive attention later. He and Watt were endeavouring to contrive some device to secure rotary motion from their engines. With the annulling of Arkwright's patent Boulton proclaimed - "The Manchester folk will erect Mills enough but want engines to work them."<sup>2</sup> Rotative Motion therefore assumed a great importance to Boulton and Watt. Besides, everyday tales were heard of some one who had succeeded in making such an engine. Speedy action was therefore necessary. Almost all the letters passing between the partners throughout Autumn 1781 are filled with schemes and plans to achieve the

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1. Boulton to Watt, 4th September 1781.

2. Boulton to Watt, 7th August 1781.



desired end. At length in October 1781 a patent was secured for five different methods of procuring rotary motion, most important of which was the *Sun and Planet Gear*

At this time a family named Hornblower were causing Boulton and Watt some anxiety. They had invented what has since become known as a compound engine, whereof the principle is that the exhaust steam of one cylinder escapes into another cylinder larger in volume than the first in proportion as the pressure of the steam is reduced. Though convinced that the engine was an infringement of their patent and that the compounding idea was stolen from Watt, Boulton and Watt feared their fortunes in Cornwall might suffer. Boulton advised drawing up a rational plan for a lawsuit and thought it not unwise to retain silently three or four of the best counsel in England and summon many witnesses.<sup>1</sup> However, nothing was done for the present and Boulton and Watt

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1. Boulton to Watt, 7th August 1781.

were yet to feel the full effects of the Hornblowers' blast.

Boulton's other preoccupation at this time was a dispute with Fothergill. The cause of the trouble was Fothergill's desire to share in the profits of the engine company.<sup>1</sup> Bad feeling seems to have existed, at least on Fothergill's side, since the Spring of 1781. He, unfortunately, instead of broaching the question openly to Boulton, did a great deal of imprudent talking to others; so much so that Vere, the banker, a close personal friend of Fothergill, at length mentioned the matter to Boulton, whereupon Boulton intimated to Vere that he had made provision in his will for Fothergill.<sup>2</sup> This speaks well of Boulton's intentions towards his partner.

At length Fothergill and Vere determined to call in Matthews, the firm's London Agent and Banker, assisted by Walker, to arbitrate in the dispute.<sup>3</sup> Matthews accordingly came down, minutely examined the books and accounts, corrected certain errors therein, and came to the conclusion that Fothergill

1. Matthews to Boulton. December 5th 1781 containing a copy of Matthews to Fothergill.

2. Walker to Boulton, 24th February 1782.

3. Boulton to Watt, 23rd October 1781.



had no legal or equitable claim on the profits of the engine concern.<sup>1</sup> Knowing too that Boulton was contemplating some payment to Boulton and Fothergill from the profits of Boulton and Watt, Matthews recommended Fothergill to write to his kinsman, Foreman, a London hop merchant, one of those to whom Fothergill had made various allegations about Boulton, to the effect that his apprehensions of not sharing in the engine concern's profits were groundless, and that through the intercession of Matthews a full explanation had been arrived at. Matthews also urged Fothergill to allow Boulton himself to determine what he, Fothergill, should receive from the engine business in consideration of its having occupied some part of Boulton's attention, which otherwise would have been devoted to the hardware concern.<sup>2</sup> It speaks extremely well of Boulton's character and integrity that Were, who throughout had taken the part of Fothergill, and who had in the past quarrelled with Boulton fiercely enough, should now

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1. Walker to Boulton, 24th February 1782.

2. Walker to Boulton, 24th February 1782.

Matthews to Boulton 5th December 1781. Containing copy of Matthews to Fothergill.

give Fothergill exactly the same advice and urge him not to differ with Boulton, but to trust in his generosity.<sup>1</sup> Fothergill signed the accounts as being correct and expressed his complete satisfaction with the explanations given and the arrangements made.<sup>2</sup> It was therefore agreed by Matthews, Fothergill, and Fothergill's lawyer that he had no legal title to the engine business or its profits.<sup>3</sup> Boulton, pleased that Matthews had affected a settlement, decided to add an extra £5000 to the sum of £15000 which by his will was to be paid out of the engine profits to Boulton & Fothergill.<sup>4</sup> Unfortunately, Mrs Fothergill remained very dissatisfied with these arrangements.<sup>5</sup>

Immediately after this apparently amicable termination of the dispute between the partners, Boulton went down to Cornwall on business connected with the Steam Engine Company. He was formulating plans

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1. Matthews to Boulton, December 6th 1781.

2. Walker to Boulton, February 24th 1782.

Matthews to Boulton Dec. 5th 1781, containing copy of Matthews to Fothergill.

3. Boulton to Watt December 13th 1781.

4. Watt to Boulton, March 4th 1782.

5. Walker to Boulton, ~~Nov. 5th 1781~~ February 24th 1782.

Matthews to Boulton 5th Dec. 1781 containing copy of Matthews to Fothergill.

It was as a consequence of Matthews examination of the books and accounts of Boulton & Fothergill that Walker's mistake in dividing the money borrowed from Van Orsoy came to light - Boulton to Watt Nov. 1st 1781. See page 29.



at this time for a new partnership to conduct the hardware trade. The partners were to consist of Boulton, Fothergill, Walker, the Chief Accountant, and Cabritt, who had formerly been a clerk in Boulton and Fothergill's employ. Boulton and Fothergill were to find a capital of £30,000 (including buildings and tools) on which they were to receive 5% interest. In addition, Boulton and Fothergill were to pay the expenses of the Bill Account and any other borrowed money. Walker and Cabritt were to receive a salary of £140 a year each. Profits were to be divided as follows - Boulton one third, Fothergill one third, Cabritt & Walker jointly one third. Fothergill was of the opinion that Cabritt's and Walker's share should be reduced.<sup>1</sup> Unfortunately, however, the scheme never matured, because the quarrel between Boulton and Fothergill flared up with increased fierceness.

After Matthews had effected what looked like a satisfactory settlement Boulton went to Cornwall in November. Soon after his departure there arrived

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1. Boulton to Matthews, November 29th 1781.

at Soho from Holland a man named Sincklaar, invested with power from Mrs Swellengrebel to demand repayment of the money owed by Fothergill, or failing that, better security.<sup>1</sup> The sum in question was £8900 and Fothergill was bound by an agreement made in 1773 to repay that sum in 1785. If he died before 1785, then repayment was to be made within one year of decease.<sup>2</sup> Notwithstanding the agreement, it transpired that Fothergill could be compelled to make payment before.<sup>3</sup>

In this predicament, Fothergill referred Sincklaar to Boulton, who, he said, would join in giving better security for Mrs Swellengrebel's money.<sup>4</sup> At first, Boulton, strongly urged by Watt to keep out of the affair, was inclined not to interfere,<sup>5</sup> but later, "after laying awake many nights at Cosgarne reflecting upon the largeness of his [Fothergill's] family and the precarious state of his health, I concluded that unless some friend stepped into his relief that it must kill him, and therefore my sympathy

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1. Boulton to Matthews, 6th December 1781.

Boulton to Watt, 4th February 1782.

2. Document endorsed "Case with Mr Madocks opinion"

3. Boulton to Matthews December 6th 1781.

4. Ibid.

5. Ibid. also Walker to Boulton February 24th 1782.



for him vanquished my reason and discretion, and I in consequence wrote to Mr Mainwaring (Fothergill's lawyer) offering to be Fothergill's security upon condition they would extend the terms of payment from 1785 to 1790, which they readily agreed to. At the same time I wrote a friendly and agreeable letter to Fothergill telling him what I had offered to Mainwaring and gave him all the comfort a letter could give. Mr Mainwaring wrote an answer telling me my proposal was accepted and was ~~was~~ considered by himself, Sineklaar and his friends as a most extraordinary instance of generosity they ~~had~~ ever met with".<sup>1</sup>

At this stage Fothergill's behaviour became most extraordinary. He neither acknowledged Boulton's letter nor thanked him for his offer. On his return from Cornwall, Boulton again confirmed the offer and soon afterwards a meeting took place between Boulton, Fothergill, Walker and Cabritt for making the new security. Boulton observed that he would expect some sort

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1. Boulton to Watt, February 4th 1782.

of counter security from Fothergill, who, however, said he was not in a position to give one. Whereupon Boulton replied that he would put him in a position to be able to do so by paying to Boulton and Fothergill £20,000 out of his share of the profits of Boulton & Watt. This sum was to be shared between Boulton and Fothergill in the ratio of 12 to 8, ie., £12,000 to Boulton, £8,000 to Fothergill. Fothergill was to secure Boulton, according to Boulton's scheme, by mortgaging to him his capital in the hardware trade and his £8000 share in the future profits of the engine. Fothergill refused to agree, saying he would settle nothing without the advice and consent of his friends in London. He even denied the results of Matthews' investigation, to whom Boulton immediately wrote for his opinion and the nature of his decision.<sup>1</sup> Matthews wrote back on 1st January 1782 as follows -

I carefully examined with Mr Walker Messrs Boulton and

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1. Boulton to Watt, February 4th 1782.

Walker to Boulton, February 24th 1782.



Fothergill's Books of Account from the commencement of their connection till Christmas last, and found them to be simple, fair, and easily comprehended, and that the engine business under the firm of Boulton and Watt is not at all interwoven with the accounts of Boulton and Fothergill so as to carry any appearance of its being a part of their general concern. I, therefore, from the most minute observation in the examination of their accounts and other occurrences alleged by the parties, cannot think Mr Fothergill entitled to any claim on the engine business and which on any occasion I shall ever be ready to avow, and that it was chiefly on account of Mr Fothergill and his family, his health being precarious, that I interferred in affecting an amical adjustment, which I considered complete from Mr Fothergill's declaring himself fully satisfied. I hope you will understand me right that I would not direct Mr Boulton to make an allowance of £20,000 from the engine account's to Boulton and Fothergill, it being his voluntary offer,

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and as such considered by Mr Fothergill when he expressed himself as above."<sup>1</sup>

Mrs Fothergill seems to have been the cause of all this wrangling; for towards the end of January 1782 she was in London telling lying tales about Boulton to her friends Foreman and Vere, the latter, however, plainly told her she was flying in the face of her best friend in quarrelling with Boulton.<sup>2</sup>

Needless to say, Boulton's plan for a new partnership could not go on in face of this trouble. He stopped the printed letters being sent abroad which were to announce the new partnership.<sup>3</sup> Nor does it appear that any settlement was arrived at between the partners by the time of Fothergill's death in June 1782. Various attempts were made by outsiders to secure a settlement, most notably that by Foreman, Vere & Garbett. These men, two of whom - Foreman & Vere - were close friends of Fothergill, strongly urged him to accept Boulton's offers. They declared that in their opinion, as neither Fothergill's money nor that of the hardware partnership had been used in the

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1. Matthews to Boulton, January 1st 1782.

2. Boulton to Watt, February 4th 1782.

3. Boulton to Matthews, January 25th 1782.

Booklet entitled "Case between Boulton & Fothergill".



steam engine business, he had neither legal nor equitable title to any profit arising from that trade.<sup>1</sup>

Meanwhile, Watt, then in Cornwall, was a very uneasy spectator of this dispute between the partners at Soho. Although it was no business of his what Boulton did with his share of the engine profits he regarded his partner's offer to share those profits with Fothergill till they reached £20,00 as not only generous but imprudent. Watt even doubted whether the profits would ever reach that figure. Nor did he approve of Boulton's offer to become bound for Mrs Swellengrebel's money, and threatened to return home to see his own interest did not suffer on account of the squabbling.<sup>2</sup> To Boulton he wrote, "I cannot consent to assigning to Boulton and Fothergill so large a share of the engine profits. ....

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1. Document entitled "Opinion of Messrs Vere Foreman & Garbett."

This dissension between Boulton and Fothergill may appear to have been treated at undue length, but it furnishes evidence which shows, together with other facts already mentioned, that Watt's invention was not carried into successful execution through the financial resources of Boulton and Fothergill as Lord and Roll suggest.

Lord p p 110 - 132

Roll p p 98 - 107

2. Watt to Boulton February 11th 1782.

I cannot stand by and allow you to ruin yourself while I can help it".<sup>1</sup> A little later he complained, "I really think it hard that he [Fothergill] should be secured in so large a share of the profits of my invention greater than I can reasonably expect, I say secured because by my becoming his bondsman to Messrs Lowe, Vere, Williams he is not only secured but the money already paid, and nothing can prevent his receiving that benefit if you keep up your proposal to him, except the whole concern may never liquidate the sum assigned for (of which indeed there is some risk)".<sup>2</sup> With good wisdom enough Watt pointed out that should a lawsuit ensue between Boulton & Fothergill over the latter's claim to share in the engine profits people would conclude they had already gained some vast sum thereby, which belief would operate against Boulton and Watt in any legal action in defence of their patent;<sup>3</sup> very sound advice in face of the pretensions of the

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1. Watt to Boulton, February 20th 1782.

2. Watt to Boulton, February 13th 1782.

3. Ibid.



Hornblowers. Finally Watt urgently pressed Boulton to secure his release from his bond to Lowe, Vere & Co., at the earliest possible moment and advised him to borrow on bond sufficient money to pay off the bankers. By so doing he thought it would be out of the power of Fothergill and the clerks to increase the debt, which they could still do so long as it remained a Bill Account.<sup>1</sup>

The possibilities of Watt securing his release from Lowe, Vere & Co., were now more remote than ever. The Bill Account with this banking house had increased instead of diminished. In the previous October Boulton had reduced the balance to £12,000 and Lowe, Vere & Co., were on the point of taking a new security and releasing Watt, but during Boulton's short stay in Cornwall in the previous November and December Fothergill and the clerks in charge had allowed it to rise to £14,000 again, whereas Boulton had agreed to reduce it to £10,000 by Christmas.<sup>2</sup> Fothergill and the clerks apparently lacked Boulton's power of putting creditors off.

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1. Watt to Boulton, February 20th 1782.

2. Boulton to Watt, February 14th 1782.

Boulton's position at this time was a very unenviable one. Watt was grizzling because of his bond to Lowe, Vere & Co.,<sup>1</sup> Fothergill disputing about sharing the engine profits and at any minute Lowe, Vere & Co., were expected to complain about the increase in the Bill Account.

Lowe, Vere and Co., were out of humour because the Bill Account remained high and was increasing. Watt was out of humour for the same reason as he now saw but small hope of obtaining his long expected release. Boulton now made an effort to appease both parties at the same time. He requested Watt to write to Boulton and Fothergill that he was sorry to hear of their internal differences, and as they had not secured his release from Lowe, Vere & Co., he would now take care of that point himself. Further, he was to request Boulton & Fothergill to settle their account with Boulton and Watt and pay all the balance. Finally, Watt was to state his objections to the pretensions then being made by

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1. Walker to Fothergill. February 28th 1782.



Fothergill for a share in the engine business, which was to be carried on by Boulton & Watt alone. Boulton further advised his partner to write to Lowe, Vere & Co., saying that notwithstanding promises Boulton and Fothergill had failed to secure his release. Accordingly Watt was to ask Lowe, Vere & Co., if they would give him a receipt for every £1000 he paid them <sup>discharged</sup> from time to time and acknowledge it as so much <sup>discharged</sup> from his bond. Boulton was willing to put Watt's salvation in his own hands by resigning entirely to him all the engine profits till he was entirely discharged from all obligations.<sup>1</sup> Boulton hoped that conferring this power on Watt would quieten him and that Watt's offer to Lowe, Vere & Co., would quieten them. Watt accepted the propositions with alacrity and wrote the letters in question.

This adroit move, however, did not save Boulton from the wrath to come. The Bankers called him up to London for an interview, which turned out to be a very stormy one. Boulton describing it to Watt said -

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1. Boulton to Watt. February 14th 1782.

"I found only Mr Vere whose behaviour was consonant to the epithets above (string of abusive terms about the bankers in Boulton's letter). I said little and he much to little purpose".<sup>1</sup> The only offer Boulton could make to reduce the Bill Account was to pay £1000 at midsummer, another at Michaelmas and so on, £1000 per quarter till the £14000 was totally extinguished. No definite understanding was arrived at with the bankers who said they would write to Watt in a day or two.<sup>2</sup>

Lowe, Vere & Co., wrote the promised letter to Watt. He was requested to make a remittance, which he could not do, was told he was still bound for the whole sum and warned that no more Bills would be accepted on behalf of Boulton and Fothergill.<sup>3</sup> Watt was greatly concerned at the state of Boulton's finances and seemed to regard ruin as imminent. He thought deliverance could only lie in having recourse to one of the

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1. Boulton to Watt, March 12th 1782.

2. Ibid.

3. Watt to Boulton, March 16th 1782.



following expedients :-

1. Boulton borrowing on bond and mortgage of his property the money he owed to Lowe, Vere & Co.
2. Boulton disposing of his property in Boulton and Fothergill even at a losing price.
3. Boulton to sell as much of his engine property as would relieve him.

It would, in Watt's opinion, have been the height of imprudence for Boulton now to have bound himself for Mrs Swellengrebel's money. Moreover, he failed to see how Boulton could maintain his promise to pay Lowe, Vere & Co., £1000 per quarter. "I am sure it cannot be from the engine business unless we can reduce our general expenses to nought and live on air ourselves."<sup>1</sup> But had Boulton not promised to pay the £1000 quarterly the bankers would have stopped him without a moment's notice.<sup>2</sup>

Boulton was looking to the engine company for relief from his burden of indebtedness. He was willing enough to sell any of his interests mentioned in Watt's letter, though despaired of finding a

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1. Watt to Boulton, March 16th 1782.

2. Boulton to Watt, March 21st. 1782.

purchaser. Besides, Boulton feared that were he to attempt to sell a half of his share in the Engine Co., it would, in the face of the claims of the Hornblowers, realise not one quarter of its value. Boulton did, however, think it possible to raise £20,000 by the following means. He would dispose of one half of his two-thirds share in the engine trade to anyone who would pay down £1000 per quarter every quarter for five years. The consideration for this £20,000 was to consist of a one third share in the engine profits, which Boulton would guarantee to reach £2500 yearly. The purchaser was to share in the profits for the duration of Boulton and Watt's patent.<sup>1</sup> Boulton hoped thereby to free himself from his obligations to Watt and Lowe Vere & Co., The plan, however, came to nothing, presumably because no one could be made interested in the proposal.

Anyhow, the main problem remained untouched and the following debts had to be paid by Midsummer 1782 or worse would come of it.

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1. Boulton to Watt, 21st March 1782.  
 Boulton to Matthews, March 1782.



Jenkins of Truro. This was part of the  
£2,000 borrowed in July 1781 from

Elliott and Praed. £ 1,000

Lowe, Vere & Co., 1,000

Wiss ought to have been paid but indulged 1,000

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£ 3,000  
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Boulton hoped to meet these obligations by the  
following means :-

Ways & Means Boulton and Fothergill

can raise - £ 1,000

Boulton and Fothergill must take out of

their trade, though their trade cannot

spare it - 1,000

Hopes the Engine trade will furnish 1,000

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£ 3,000  
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Meanwhile Watt in accordance with Boulton's  
offer had assumed control of the steam engine company's  
finances and directed Pearson and Buchanan, two clerks

1. Boulton to Watt, March 21st 1782.

at Scho, to keep the accounts in strict accordance with the terms of the Articles of Partnership.<sup>1</sup> He instructed that no money be paid to master or man but what was strictly due to them, and that an account of travelling charges be given in at the close of every journey (this to keep an eye on workmen's travelling expenses). He also wanted to lodge the engine money separately in the Birmingham Bank and not pay it into Boulton and Fothergill as had hitherto been done.<sup>2</sup> On the top of all this, Watt ordered their Cornish Agent, Wilson, to pay out no money except to his orders. This annoyed Boulton very much because it was making public the domestic affairs of the concern - "there are no secrets in Wilson's family"<sup>3</sup>. He considered Watt's action as unfriendly as it implied a want of confidence in him.<sup>4</sup> Boulton was beginning to grow weary of Watt's continually harping on the same old string, viz., his release from his bond to Lowe, Vere & Co., He had some time prior to this assigned to Watt his own

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1. Watt to Pearson & Buchanan, February 20th 1783.

2. Watt to Boulton, May 9th 1782.

Boulton to Matthews, April 1st 1782.

3. Boulton to Matthews, April 1st 1782. Boulton to Watt  
2nd April 1782.

4. Ibid.



two thirds interest in the engine as a counter security for his engagement to Lowe, Vere & Co., but this failed to satisfy Watt, who was becoming still more uneasy as the time was approaching to repay the money borrowed the previous year from Elliott and Praed. There remained owing £1,000 of the £2,000 borrowed in July 1781. A repayment of £1000 had already been made and Boulton assured Watt that the hardware firm would find the other £1000 by the time it fell due on Midsummer Day 1782.<sup>1</sup>

In his resentment at Watt's attitude, Boulton wrote to Matthews that he was "determined to put an end to the stings and arrows of ingratitude" by some means or other.<sup>2</sup> He wondered if it were possible for him to remove the loan to some other banking house who for security would be content with a mortgage on Boulton's two thirds share in the engine concern. Failing this he thought it within the bounds of probability to raise £4,000 and pay it

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1. Boulton to Matthews, April 1st 1782.

Watt to Boulton, May 9th 1782.

2. Boulton to Matthews, April 1st 1782.

to Lowe, Vere & Co., upon their agreeing to discharge Watt, "by which I shall be out of the reach of his unkind attacks".<sup>1</sup>

What explains this continuation of Boulton's difficulties from the close of 1781 up to June 1782? The causes were various; no money had been received from Russia for goods sent out in 1781. The Russians refused to remit on account of the exchange being unfavourable to them. It had been anticipated that Fothergill would advance another £1,000 into Boulton and Fothergill from the sale of an estate of his at Holyoak, but some legal quibble arose in connection with the payment and Boulton was therefore denied assistance from that quarter.<sup>2</sup>

Although in Boulton's opinion the hardware business had become profitable; the profits were swallowed up by a variety of circumstances. For many years Fothergill drew more out of the business than was prudent. His annual drawings were £1200. In addition there had been a great deal of loss through

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1. Boulton to Matthews, April 1st 1782.

2. Boulton to Matthews, March 1782.

Boulton to Watt, March 26th 1782.



bad debts, especially in connection with foreign sales. More important than either of these, however, was the Bill Account which Boulton once described as "the greatest drain of all others to our profits". The annual expenditure in connection with the account, interest and commission, amounted to  $7\frac{1}{2}$  to 10% of the total sum in advance.<sup>1</sup>

Difficulties were not confined to the hardware firm. The Press Copying Company was in a poor way and had many bills to pay.<sup>2</sup> This undertaking under the title of James Watt & Co., was formed in 1780 to exploit Watt's invention of the letter copying press. The partners were Boulton, Watt and Keir.<sup>3</sup> It was quite prosperous for a time till at the close of 1781 a disastrous fire occurred at the house and premises of the firm's London Agent, Woodmason, in which his seven children and all his servants perished. Many press copying machines were kept with Woodmason and a number of these were

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1. Boulton to Foreman, July 9th 1782.

Boulton to Watt, February 4th 1782.

Mathews to Boulton, June 28th 1782.

2. Boulton to Watt, March 26th 1782.

3. The shares were. Watt a half, Boulton a quarter and Keir a quarter. Roll page 130.

destroyed or damaged. The total property at stake, including debts due from him to the Copying Company, amount<sup>ed</sup> to £1365.10. 6. It was feared that Woodmason might become a bankrupt.<sup>1</sup> But in view of the tragedy which had overtaken him Boulton and Watt were indulgent, with the result that Woodmason survived the calamity safely.

Lastly the engine concern had entered upon a lean period. In April 1782 they had only one order in hand, and received no application or enquiries respecting any.<sup>2</sup> Boulton began to think it wise to turn attention to erecting engines on coal mines. Boulton & Watt's annuities from such engines would, of course, be less than those obtained from similar engines/in Cornwall, because coal being cheap at the pit head, a Watt engine there would not effect such considerable savings, on which the premium was based, as it would in Cornwall where coal was dear. Nevertheless, an engine on a coal mine though earning less was more likely to work permanently than one on

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1. Boulton to Matthews, January 21st 1782.

2. Boulton to Watt, April 6th 1782.



a copper or tin mine.<sup>1</sup>

It was, however, in Cornwall that the engine concern suffered the greatest reverse. Boulton and Watt's income from that county diminished considerably within the first six months of 1782. Whereas had all the engines erected been at work the firm's income would have been £9,000 per annum those actually working sufficed to earn revenue only at the rate of £3700 per annum.<sup>2</sup> There were various reasons for this diminution in income. The copper mining industry had become depressed. Some of the mines were poor and the selling price of ore was low, a hardship further increased by restrictions on the export of copper. These circumstances together with the high price of coal had brought about the closing of several mines and the stopping of several engines.<sup>3</sup> The United Mines paid £1000 yearly to Boulton & Watt, who however agreed to forego their dues for six months to prevent the Mine closing. The Consolidated Mines (Wheal Virgin & Wheal Maid) on which five large engine had been erected and which had covenanted to pay £2500

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1. Boulton to Watt, April 6th 1782.

An engine rarely remained at work on the same Cornish Mine for more than five years when it was sold to another mine and Boulton and Watt had to re-erect it together with any new improvements made since first erection.

2. Boulton to Foreman, July 9th 1782.

3. Watt to Boulton, March 14th 1782.  
Boulton to Matthews, June 19th 1782.

For Boulton & Watt's fortunes in Cornwall. vid p.p. 225 - 258.

yearly were delaying their start till things improved. A similar decision was made at Poldice Mine where Boulton and Watt had erected another engine.<sup>1</sup> This was a serious thing for Boulton who was hoping to borrow, on the security of the Wheal Virgin agreement, sufficient money to pay off Lowe, Vere & Co.<sup>2</sup>

The depressed state of the Copper Mining industry was not the only explanation of the unfavourable outlook in Cornwall. Mention has already been made of the Hornblowers, who, with considerable vaunting and boast, had led the Cornish into the belief that their newly invented compound engine would soon relieve the copper industry of its tribute to Boulton and Watt. With these hopes of speedy delivery the Cornish did not respond too readily to the engine company's demands. During this time, the Spring of 1782, Watt was representing his firm in Cornwall, and his irritable nature and the rascally tactics of the

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1. Watt to Boulton, March 14th 1782.

Watt to Boulton March 16th 1782.

2. Boulton to Watt, March 21st. 1782.



adventurers<sup>1</sup> soon produced a combustible atmosphere, which at length exploded into a general quarrel between them.<sup>2</sup>

On account of the activities of the Hornblowers, Boulton decided to abandon his proposed application for a new loan in London wherewith to pay off Lowe, Vere & Williams, because any person whom he might approach for a loan would most probably make enquiries as to the real worth of Boulton & Watt's Cornish annuities, and be told by the people there that such profits would soon be extinguished by the Hornblowers. Boulton feared that this knowledge would damage his credit in London, "and what would have been worse, I should have been considered as a person capable of hanging out false colours".<sup>3</sup>

The revenue which still accrued from Cornwall was entirely devoted to repaying Elliott and Praed the balance outstanding of the £2,000 borrowed for Boulton and Fothergill during the previous year, and to paying

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1. Adventurers in mines means shareholders.

2. Boulton to Matthews. June 19th 1782.

3. Ibid.

The trouble in Cornwall seems to have developed suddenly. Early in January 1782 Boulton wrote to Matthews that he had returned from Cornwall leaving twenty one of their engines going" and producing all I ever flattered myself with". Boulton thought the tide of fortune had now turned in his favour and said " If I can keep the present Cornish battery of twenty one big guns going I have no doubt but I shall soon vanquish all my difficulties.

for Boulton and Watt's shares in Wheal Virgin & Pool Mines. Thus, notwithstanding Boulton's assurance to Watt, the hardware firm was not repaying its own debt to the Truro bankers after all. For these reasons Boulton and Watt lacked sufficient money to pay their balances outstanding since the previous Christmas, nor had they enough to pay their own workmen, but had to borrow from Boulton and Fothergill for these purposes<sup>1</sup>. During this straightened period Watt wrote to Boulton warning him against the engine company having recourse to a Bill Account. "You say Boulton and Watt are short of cash at Soho, I have formerly advised that none can be expected from here. You must therefore look to Boulton and Fothergill for a supply, and I beg that no circulating bills be negotiated in the name of Boulton and Watt, as I am convinced that no business whatsoever can support that way of borrowing money. I cannot see that it is incumbent on Boulton and Watt to do it while they are in advance for Boulton and Fothergill."<sup>2</sup>

Such then was Boulton's financial position in June 1782. The hardware firm was in difficulties for

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1. Boulton to Matthews, 19th June 1782.

2. Watt to Boulton, March 21st 1782.



want of remittances from Russia. The Steam Engine Concern was meeting heavy weather in Cornwall. The Copying Company was in a poor way and the Plated Trade losing money. To these were added further complications and a crisis by the death of Fothergill suddenly on 19th June 1782.

CHAPTER 6.

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A PERIOD OF MULTIPLE PARTNERSHIPS

1782 - 1800

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This is a period in which Boulton's interests expanded considerably. Besides his already numerous connections Boulton became one of the most active partners in the Albion Steam Flour Mill,<sup>1</sup> and in the period after 1785 the copper coinage,<sup>2</sup> which had always been of interest to him, came to engross more and more of his attention.

Broadly speaking, therefore, Boulton's interests in the period 1782 to 1800 can be classified, as

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1. The Albion Steam Flour Mill was erected at Black Friars' Bridge, London. The possibility of using a Watt Rotative engine to work a flour mill had captured the imagination of Samuel Wyatt, a celebrated Architect, who formed a company to carry out his project. Boulton and Watt were enthusiastic subscribers to the undertaking, as they saw in a scheme of such dimensions as Wyatt had planned, an excellent opportunity of demonstrating the success of their rotative engines. Vid. pp. 259 - 269.

2. Boulton had for a long time been interested in the manufacture of coins, and with the advent of the rotative engine began to consider the possibility of using steam power for that purpose. As the result of a conversation with Pitt on the deplorable state of the English copper coinage, Boulton, in the hope of securing a Government contract for the coining of copper, began in 1786 to erect the requisite plant and apparatus for the striking of coins. Vid. pp. 269



follows:-

1. The hardware firm, now divided into
  - (a) The Button Company.
  - (b) The Plated Company.
2. Boulton and Watt.
3. The interests of Boulton and Watt in Cornwall.
4. The Albion Steam Flour Mill.
5. The Copper <sup>l</sup>soilage.

The period is one marked by the great prosperity of the engine concern, and to a lesser degree that of the Button and Plated Companies. In spite of this, however, Boulton continued till 1790 to be in want of money. The Albion Mill, the taking of shares in Cornish Mines and expenditure in setting up coining apparatus contributed to keep Boulton poor. In addition, there was the legacy of indebtedness left by the late partnership with Fothergill.

In this chapter an attempt will be made to survey Boulton's general financial position in the period 1782 - 1800, while in the next, separate

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consideration will be given to each one of Boulton's numerous interests.

The death of Fothergill for a time increased Boulton's difficulties. His partner had died insolvent, he could not pay his debt to Mrs Swellengrebel.<sup>1</sup> This fact Boulton feared would damage his credit, and for a time he lived in dread that Lowe, Vere & Co., would stop him and sell up everything, engine trade<sup>2</sup> as well.

Encumbered though he was with heavy liabilities, Boulton immediately took upon himself the responsibility of providing for Mrs Fothergill and her family. Fortunately, he had signed nothing respecting the debt to Mrs Swellengrebel and he now declined to do so. Writing to Matthews, Boulton expressed his sentiments as follows:-

"This sudden shock (death of Fothergill) distressed me almost beyond the power of supporting myself, for let the conduct of any part of that family

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1. Boulton to Matthews, Friday June 1782.

2. Boulton to Matthews.



have been what it will, their present distresses turn everyone's passion into tenderest pity .... I never wished for life and health so fervently as at present, for I consider it my duty to father that family to the best of my power, and as an addition of a widow and seven children is no small one, I therefore hope for the advice and assistance of their London friends in whatever tends to the welfare of the family in general."<sup>1</sup> In addition Boulton reaffirmed his promise to make an allowance to the Fothergills from the engine profits.<sup>2</sup>

At this juncture the quarters from which trouble might emanate were Lowe, Vere & Co., and Sineklaar, acting on behalf of Mrs Swellengrebel. To forestall the Dutch party from incommoding the house of Boulton and Fothergill, Boulton determined to dissolve the partnership at once.<sup>3</sup> He also thought it wise to remove an insolvent name from the firm.<sup>4</sup> Accordingly, new books were opened and an exact inventory taken so that a distinct line might be drawn

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1. Boulton to Matthews, Friday, June 1782.  
also Boulton to Vere, June 21st 1782.

2. Ibid.

3. Ibid.

The partnership was dissolved on the twentieth anniversary of its commencement.

4. Boulton to Foreman, July 9th 1782.

between the old house and the new.<sup>1</sup> For the present, the trade was to be carried on in Boulton's own name.<sup>2</sup> At least it was to appear so to the outside world, but behind the scenes an alteration had been made. The hardware manufactory had been reduced to two branches - the making of buttons and plated ware. In the books at Soho two separate accounts had been opened, - John Seale and the Button Company, Wm. Bingley and the Plated Company. "This is a circumstance the world and our customers have no knowledge of nor have anything to do with, but in that case, if Lowe, Vere & Williams would be so made as to stop me, they could not stop those two branches of the manufactory",<sup>3</sup> - provided of course money could be found to pay wages.<sup>4</sup> It is interesting to speculate if this strategem could really have saved Boulton had Lowe, Vere & Co., determined to sell him up.

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1. Boulton to Matthews, Friday, June 1782.

also Boulton to Vere, June 21st 1782.

2. Boulton to Foreman, July 9th 1782.

3. Boulton to Matthews, June 26th 1782.

4. Ibid.



To make matters worse so far as the bankers were concerned the Bill Account had risen to £15,200, whereas Boulton had promised to reduce it to £13,000.<sup>1</sup> This he had been unable to do for a variety of reasons. No money at all had been received for the previous year's sales to Russia. The engine money had been largely used up in repaying the Truro loan.<sup>2</sup> Boulton was disappointed in his anticipation of receiving £1000 by Fothergill selling his estate at Holyoak.<sup>3</sup>

Matthews, though he did not think Lowe, Vere & Co., would foreclose, thought it prudent for Boulton to look out for a new banking connection in case of need. He also advised attempting to raise a loan of £6000, which he suggested should be done by borrowing £1000 each from John Wilkinson (the Ironmaster), Motteaux, Foreman, Wiss and himself. Boulton himself appreciated this and thought<sup>4</sup> such a loan imperative to safeguard himself against any diminution of confidence by the country bankers on

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1. Boulton to Matthews, June 28th 1782.

2. Boulton to Matthews, June 1782.

3. Boulton to Matthews, June 26th 1782.

4. Matthews to Boulton, June 25th 1782.

account of the death of Fothergill and his affairs. These he feared might refuse to discount his drafts.<sup>1</sup>

It was essential for Boulton's very existence to get the Bill Account down from £15,200 to £13,000. This meant finding £2,200 in a very short time. He could collect £500 engine money<sup>at</sup> once, and a few hundreds in Birmingham, but this was to be used for meeting the weekly payments at Soho. There was also a remittance of £600 expected from Perier Frere & Co.<sup>2</sup> Some assistance came from Matthews who permitted Boulton to draw on him £1000 in favour of Lowe, Vere & Co.<sup>3</sup>

Much more than this had to be done, however, and in accordance with Matthews' advice and his own wishes, Boulton approached friends for aid. He proposed to Foreman, Fothergill's relation, that for every £1000 Mrs Fothergill's friends would advance in the present difficulty he would pay her £100 per year, pay to such friends interest on the sum advanced, and give his bond for payment of the principal. Thus if Mrs Fothergill's friends would advance £3,000 Boulton

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1. Boulton to Matthews June 28th 1782.

2. Ibid.

Perier, who enjoyed a monopoly for supplying Paris with water, had purchased a Boulton and Watt pumping engine.

3. Boulton to Matthews June 28th 1782.



would guarantee the repayment of it with interest and also allow her £300 yearly. If by these means Boulton could raise £3000 he would obtain another £3000 from his own friends and pay the £6000 to Lowe, Vere & Co.<sup>1</sup>

Happily for Boulton, Foreman acceded to his wishes and advanced £3,000, which Boulton hoped would go a long way towards reducing Lowe, Vere & Co's balance by £6000. Whether the account was actually reduced by that sum is rather obscure but we can ascertain that at the end of September 1782 Boulton had paid Lowe, Vere & Co., £3,000. He also borrowed £1000 from Wilkinson and paid £800 of this to the same people, and was in hopes of paying more soon.<sup>2</sup>

The Bill Account had been considerably lessened, the crisis successfully overcome. There is just one other matter worthy of mention in connection with Lowe, Vere & Co's advance. The security given them by the deed of May 23rd 1778 for their acceptances on behalf of Boulton and Fothergill did not cover bills

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1. Boulton to Foreman, July 9th 1782.

2. Boulton to Matthews, September 1782.

Boulton to Foreman, July 21st. 1782.

drawn in Boulton's own name since the death of Fothergill, which bills were therefore uncovered except to the extent of any remittances made. The bankers naturally demanded some new security based on the profits of Boulton and Watt to cover all drafts since Fothergill's decease.<sup>1</sup> Fortunately Boulton was able to get Watt's consent to any new security the Bankers' solicitor might draw up for securing them against all bills drawn.<sup>2</sup>

So far as Sincklaar and Mrs Swellengrebel were concerned. Boulton advised Mrs Fothergill to tell them she could give no satisfactory answer to their claims before the expiration of the one year allowed by law and in that time she would get some one to examine the books of Boulton and Fothergill, after which she would give them a true account of her property and possessions.<sup>3</sup>

The difficulties consequent upon the death of Fothergill having subsided Boulton betook himself to Cornwall in September 1782. His mission was

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1. Lowe, Vere & Co., to Boulton. July 6th 1782.

2. Boulton to Lowe, Vere & Co., July 8th 1782.

3. Boulton to Matthews, June or July 1782.



an eminently successful one, notwithstanding the gloomy prospects in that county earlier in the year. Soon after his arrival there nine new engines were set to work, making twenty one engines actually producing income in Cornwall. Engine royalties, however, were slow in coming in from that quarter and money due two years before was just beginning to be received. This, together with taking shares in mines and certain heavy payments since Fothergill's death, helped to keep Boulton short of money.<sup>1</sup>

Boulton had still to bear the disagreeable bickerings occasioned by Watt not being exonerated from his obligations to Lowe, Vere & Co. Though Matthews thought means might be found for effecting the release, the time (January 1783) was hardly opportune. Money was scarce, and the Bank of England was refusing to discount acceptances of the best houses in London.<sup>2</sup> In the following May Boulton paid Lowe, Vere & Co., £1500 derived from Boulton and

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1. Boulton to Wiss, November 27th 1782.

2. Matthews to Boulton, January 14th 1782.

Watt. The bankers now agreed to release Watt as soon as the Bill Account was down to £8,000.<sup>1</sup>

In the July of 1783, Boulton, through causes entirely beyond his control, became involved in an affair which might easily have been attended with disastrous consequences for him. Sincklaar and Ravee, Mrs Swellengrebel's Attorney, had since the death of Fothergill, been waiting the settlement of the books of Boulton and Fothergill.<sup>2</sup> Ravee was eager to examine Boulton and Fothergill's Books but to this Boulton objected, as Ravee was in the same trade as himself. Boulton was, however, quite willing for two persons of substance and integrity in the commercial world to inspect them, one on behalf of Mrs Fothergill and one on behalf of himself.<sup>3</sup>

Mrs Fothergill had already disposed of the greater part of Fothergill's private estate and had handed over the proceeds to Ravee, who received them on Mrs Swellengrebel's behalf; but this was not

1. Boulton to Watt, May 31st. 1783. Boulton & Watt Collection, Lord, page 131, misquotes this letter in saying that Boulton paid Lowe, Vere & Co., £10,000 at this time. The actual sum mentioned in the letter is £1500.

2. Boulton to Mrs Fothergill, 2nd August 1783.

3. Documents entitled - "Case for Mr Maddocks opinion" and "My Case by Mr Bedford"



sufficient to satisfy the claim.<sup>1</sup> In order to obtain a greater hold on Mrs Fothergill, the Dutch party commenced legal proceedings against her and obtained judgement.<sup>2</sup> As a consequence of this, and under pretence of levying execution on Fothergill's property in Boulton's possession, two bailiffs, by order of the Sheriff, entered Boulton's residence on 8th July.<sup>3</sup> It was an attempt to seize the partnership effects of Boulton and Fothergill to answer a private debt of Fothergill. Boulton threatened to eject the bailiffs by force unless they departed at once, which they elected to do.<sup>4</sup> Some mischief had, however, already been done. Ravee eagerly noised abroad the story of an execution being levied on the property of Boulton and Fothergill. This caused a local banker at Stafford, who furnished Boulton with cash in return for his drafts, to refuse to supply him. Fortunately, the damage ended there, though, as Boulton realised, it might have been most fatal to his credit had it not been

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1. Document entitled "Case with Mr Maddocks opinion".

2. Ibid.

3. Thomas Hinckley to Boulton, July 9th 1783.

4. Boulton to Mrs Fothergill, August 2nd 1783.

firmly established.<sup>1</sup> He took Counsel's opinion as to whether it were possible for Fothergill's separate effects in the partnership to be seized and sold. According to Counsel it seemed they could not, the property in question having first of all to be applied in liquidating the debts of the late partnership. Further, if Boulton had paid in discharge of the partnership debts more than the value of the partnership effects he had a right to retain such property from the Sheriff, or from any vendee to whom they might have been sold.<sup>2</sup>

Throughout 1784 Boulton's attention was taken up with Cornwall and the Albion Mill. He continued anxious, however, to secure Watt's release from Lowe, Vere & Co., but this was rather difficult to secure as neither sides proposals were acceptable to the other.<sup>3</sup> The matter therefore remained in abeyance for some time.

By August 1784 the Bill Account had been reduced to some £12,000. It remained high on account of Boulton taking shares in various Cornish Mines. He

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1. Boulton to Henn, August 19th 1783.

2. Document entitled "Case for Mr Woods opinion".

3. Proposals to Messrs Lowe, Vere & Williams, March 1784  
Proposals by Messrs Lowe, Vere & Williams, March 1784.

(Boulton & Watt Collection)



had also to make remittances to the Albion Mill which was now beginning to call up its capital. Unfortunately, so far as the Bill Account was concerned, the year 1784 was an unfavourable time for Boulton to attempt to transfer the loan elsewhere to greater advantage. The price of Government Stocks was low - yielding 5 to  $5\frac{1}{4}\%$ , and this tended to keep money scarce, which tendency was further accentuated by many commercial failures.<sup>1</sup>

In December 1784 negotiations were resumed with Lowe, Vere & Williams with a view to altering the security and effecting Watt's release. The negotiations were conducted by Matthews, who threatened to remove the Bill Account elsewhere unless his proposals were accepted. The bankers were indignant at Boulton contemplating quitting them after all the assistance they had rendered him in the past.<sup>2</sup> Their opposition to the removal of the Account indicates a growth of confidence in Boulton's prospects. The terms agreed upon were that on Boulton paying down £5000, and

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1. Matthews to Boulton, August 24th 1784.

2. Matthews to Boulton, December 4th 1784.

Matthews to Boulton, December 13th 1784.

Matthews joining in guaranteeing the remainder of their advance for Boulton, the bankers would release Watt from his engagement.<sup>1</sup> So at long last the engineer was relieved from the obligations he had entered into in May 1778 to save his partner when on the brink of ruin.

Boulton, as we have seen, was short of cash and could hardly have found the £5000 for Lowe, Vere & Co. Payment, however, was made by Matthews on his behalf.<sup>2</sup> This shortness of money continued into 1785. In March of that year there was £2,300 due from two foreign correspondents alone; but none of this was forthcoming.<sup>3</sup>

At the very same time - March 1785 - Cobb, a Lichfield banker who provided Boulton with cash in return for bills, was giving trouble. He wanted bills on Lowe, Vere & Co., and not on Matthews. Walker, Boulton's Accountant, was of the opinion that Cobb for

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1. Matthews to Boulton. December 13th 1784.

Roll p.107. concludes that Lowe, Vere & Co., were paid off at this time and that Matthews took over the banking, but the only change was the release of Watt, Matthews had fulfilled with others the function of banker to Boulton for nigh 20 years.

2. Matthews to Boulton, December 13th 1784.

3. Walker to Boulton, March 2nd 1785.



some reason remitted them to the Government, who required bills sent to them to be drawn on regular banking houses. It was suggested by Walker that Bills might be drawn on Lowe, Vere & Co., for Cobb and counter drafts on Matthews sent to them; but the objection to this was it entailed paying double commission.<sup>1</sup> Boulton thought Cobb's attitude implied some reflection on both the drawer (himself) and the acceptor (Matthews) of the Bills. He therefore refused to conform to Cobb's wish unless it arose from any particular convenience to the banker and not from any diffidence in his signature. At length Cobb agreed to take bills on Matthews till the matter could be settled with Boulton.<sup>2</sup>

By May 1785 the Bill Account had increased so enormously that Matthews, now Boulton's guarantor to Lowe, Vere & Williams, wrote that it was necessary for him to know the reasons for the increase<sup>3</sup>

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1. Walker to Boulton, March 4th 1785.
- Walker to Boulton, March 11th 1785.
2. Walker to Boulton, March 11th 1785.
3. Matthews to Boulton, May 28th 1785.





The causes for this increase in the Bill Account were:-

A repayment to Van Orsoy	£1,000. 0. 0
Increase in debts outstanding comparing May 1784 and May 1785.	2,200. 0. 0
Sunk in discharge of Carless' Mortgage	210. 0. 0
Watt's expenses paid out of hardware business	330. 0. 0
Present annuity to Wiss standing to credit of Lowe, Vere & Williams, whereas in previous year it was paid by Boulton & Watt.	400. 0. 0
	<hr/>
	£4,140. 0. 0
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Taking into account these payments the apparant advance of £4555. 4. 9 in the Bill Account is reduced to £415. 4. 9. In explanation of this small advance there was to be considered the expense entailed in Boulton's engaging in the manufacture of Argand lamps.<sup>1</sup> In addition to the reasons above given, Walker was of the opinion that Boulton's debts to his

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1. A Frenchman Ami Argand had invented an improved oil lamp. Boulton, together with Argand and a man named Parker formed a partnership to manufacture these improved lamps. Vid. pp 174 - 176.

creditors were more fully discharged on May 31st 1785 than had been the case at the corresponding time in the previous year; many creditors pleading disappointment at other houses, urged the liquidation of their demands so powerfully that they were complied with. Walker concludes his analysis by stating - "I am still of the opinion that the hardware business yet supports the Bill Account, together with your annual interest, household expenses as well as those of Mrs Fothergill, or nearly so."<sup>1</sup>

Boulton himself became anxious concerning his financial affairs towards the end of 1785. He and Watt had already sunk £6000 in Cornish mines, and still more would have to be advanced to bring that sum back. The mines were badly run and Boulton feared that if they were left to the entire management of the Cornish their interests in mines and engines would suffer, for if one was given up the other would follow. Boulton and Watt's shares in North Downs and Chacewater Mines took so much money they could not send

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1. Walker to Boulton June 4th 1785.



home any engine dues.<sup>1</sup> Engine money that was not absorbed in this way was soon swallowed up in another scheme. The engine company was erecting six small engines in Cornwall on their own account. These they were to find/coal for and intended hiring them out at so much per month to small mines.<sup>2</sup> The erection of these engines consumed a great deal of Boulton and Watt's money accruing from Cornwall.<sup>3</sup> During the Autumn of 1785, Boulton was engrossed with the formation of the Cornish Metal Company,<sup>4</sup> so he could not pay the attention he desired to the management of the mines. Nevertheless, he still remained optimistic concerning the prospects in Cornwall and wrote "if it was possible for me to reside in Cornwall next year I have no doubt but I could remit home £10,000 at least."<sup>5</sup>

Whatever Boulton's visions of the

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1. Boulton to Walker, October 29th 1785.

2. Boulton to Matthews, September 5th 1785.

3. Boulton to Walker, October 29th 1785

4. The Cornish Metal Company was a selling association formed largely through the efforts of Boulton. It aimed at reforming the Cornish copper mining industry on its marketing side and freeing it from complete dependence on the smelting companies. Its nominal capital was £500,000.

5. Boulton to Walker, October 29th 1785.

promised land might have been he was still unmistakeably in the financial wilderness. Writing to Walker, his accountant and friend, he said, "I believe we shall remit home in a few days £1000 which will be all that can come from Cornwall this year, and when I consider our payments to the Albion Mill, to the Copper Company [Cornish Metal Co., in which Boulton and Watt had taken a large share], and to the Mines, as well as what is laying out at Soho, to which add £1000 to be paid to Mr Garbett and £1000 to Mrs Baskerville, renders me not so tranquil in my mind as I could wish to be. I must therefore request that you and Mr Cabritt would take effectual measures for obtaining our remittances from abroad, which I apprehend do not come in so fast as they ought to do. From the present state of commerce and the various edicts and prohibitions that have passed I am fearful that Birmingham hath passed its meridian, and that we shall have a bad winter's trade and hope the managers at Soho curtail their hands and expenses accordingly."<sup>1</sup>

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1. Boulton to Walker, 29th October 1785.



The last instalment of the loan from Van Orsoy was due for repayment in the following May. Boulton, thinking Holland would now be at peace, was considering writing to Christian Van Orsoy telling him to draw as usual for the last part of the repayment, and at the same time asking him if he would raise a new loan of £4,000, i.e., half the original sum. As an alternative to this, Boulton wondered if his solicitor, Bedford, could raise a sum of £4,000.<sup>1</sup> Walker regarded the latter method as preferable. From hints given to Cabratt when in Holland, it seemed that Van Orsoy would refuse point blank to raise a new loan. It was very probable that Ravee's malevolence had operated to Boulton's prejudice in that quarter.<sup>2</sup>

It is rather difficult to estimate what changes took place in Boulton's financial position in the year 1786. The evidence is peculiarly scanty

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1. ~~1784~~. Boulton to Walker Oct 29. 1785
2. Walker to Boulton, November 4th 1785.

for the year in question. Boulton's preoccupations continued to be the Albion Mill, Cornwall and the coinage. Some alleviation of his want of resources was secured by borrowing £1740 on bond from John Wilkinson, the ironmaster.<sup>1</sup>

Towards the end of the year 1786 buildings began to present a problem to Boulton. The lease of his warehouse in Newhall Street, Birmingham, was expiring, and he was warned to provide himself with fresh accomodation.<sup>2</sup> The provision of fresh accomodation was to put Boulton to further expense, but it was not till late in 1787 that work was commenced on a new building.<sup>3</sup> Even during 1786 there had been a large outlay of money on premises; no less than £3,000 was laid out in buildings, a new mill and repairs to the whole of the premises.<sup>4</sup>

It became Boulton's wish to pay off the Bill Account with Vere, Williams & Co., (Lowe was now dead). Addressing himself to Matthews in May 1787 he said his plans for the future were :-

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1. Cornelius Reynolds (on behalf of Wilkinson) to Boulton December 26th 1795.
  2. Walker to Boulton, December 7th 1786.
  3. Walker to Boulton, October 20th 1787
  4. Boulton to Matthews, 21st May 1787.



1. To pay off Vere, Williams & Co., with the engine money in his hands.
2. To borrow £5,000 at 5% on the security of his premises at Soho.
3. To collect about £5,000 of debts due to Boulton and Watt.

The reason animating Boulton to repay the Bill Account was his desire to place it outside Walker's power to increase the debt, which he could still do while it remained a Bill Account.<sup>1</sup>

It may seem strange that Boulton in the face of the prosperity of his enterprises at Soho should have to resort to borrowing, but it must be remembered that large parts of his profits were absorbed by the Albion Mill, shares in Cornish mines and in the Cornish Metal Company, and in erecting machinery for coining. In addition the Cornish copper mining industry was in the throes of a chronic depression and this of course considerably reduced Boulton and Watt's profits from that county.

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1. Boulton to Matthews, May 21st 1787.

In accordance with his plan, Boulton borrowed £5,000 by mortgaging his Soho premises. The loan was obtained from Wedgwood, the Potter, to whom additional security was given by Matthews acting as Boulton's guarantor. The precise date of the transaction cannot be definitely ascertained, but it seems highly probable that it occurred in 1787 or 1788.<sup>1</sup> In addition to this another £1,000 was obtained from John Wilkinson on bond in July 1787.<sup>2</sup>

Meanwhile, the engine company continued to prosper exceedingly well. Even by December 1783 the profits amounted to £17,681.<sup>3</sup> Large parts of this and subsequent profits were invested in the Albion Mill and Cornish mines. In September 1787 there

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1. We know from the correspondence.

- (a) That no mortgage on Soho could be made till Van Orsoys were repaid as the premises were mortgaged to them in 1769.
  - (b) That Boulton did borrow £5,000 at 5% from Wedgwood on a mortgage of Soho (Boulton to Wedgwood, Nov. 11th 1792)
  - (c) That this transaction had taken place by early 1789 as Matthews letter to Watt, Feb. 4th 1789 expressly mentions it.
  - (d) But it probably occurred before this as Matthews letter to Boulton May 3rd 1788 refers to a mortgage on Soho.
- Therefore it seems safe to conclude that the loan occurred in 1787 or 1788.

2. Cornelius Reynolds to Boulton, Dec. 26th 1795.

3. Roll. p. 118.



remained due to Watt from the engine trade £6017 and in the following December Matthews, with whom Boulton and Watt banked, transferred £4000 of this balance of the profits to the credit of Watt's own separate account.<sup>1</sup> The whole could have been transferred had not the Albion Mill recently made calls on Boulton & Watt.<sup>2</sup> In spite of this, however, Matthews had no doubt of being able to transfer the remainder at or soon after Christmas.<sup>3</sup>

A financial crisis of great magnitude occurred in May 1788. It commenced in Manchester and soon spread to London, and Boulton feared it would be more disastrous than that of 1772. He did not anticipate being an ultimate loser but expected much inconvenience from it unless he could raise £6 - 7000 in the ensuing one or two months.<sup>4</sup> All credit was stagnant, all confidence fled and borrowing on personal security impossible. In these circumstances, Boulton determined to collect money owing. He requested

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1. Matthews to Boulton November 30th 1787.
2. Boulton to Matthews, December 7th 1787.
3. Matthews to Boulton December 12th 1787
4. Boulton to Vivian May 4th 1788.

Vivian, Deputy Governor of the Cornish Metal Company, to repay the £500 lent in the previous March,<sup>1</sup> and urged Wilson, his agent in Cornwall, who held about £700 of Boulton and Watt's money, to remit all in his power.<sup>2</sup>

The crisis occurred at a very unfortunate time for Boulton. His partner Watt had remitted all his money to Scotland so no help could come from that source. Moreover, Boulton had a large sum of money locked up in copper. At the request of Thomas Williams, manager of the Paris and Mona copper mines, Anglesey, he had purchased a large quantity "to clip the wings of a certain person and prevent offers to the Government at a low price and thereby injure the coinage contract".<sup>3</sup> Boulton and Williams were eager to secure a copper coinage and had arrived at an understanding about their offers to the Government. Their interests would naturally suffer through any offer of copper to the Government at a low price. In addition, there were forty five tons of copper on Boulton's hands, not an

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1. Boulton to Vivian, May 4th 1788.

2. Boulton to Wilson, May 4th 1788.

3. Ibid.



ounce of which he had used; twenty tons he had bought from the Duke of Devonshire's Mine at £70 per ton, twenty tons from the Cornish Metal Co., and five elsewhere.<sup>1</sup>

Boulton's difficulties were further aggravated by troubles with his bankers. In May, the month of crisis, the Bill Account with Vere, Williams & Co., stood at £7,500, and they were beginning to complain. By the end of June it had risen to £9,814.<sup>2</sup> Besides this, Matthews advance amounted to £7,314.<sup>3</sup> The total of the Bill Account therefore stood at £17,128, which was as high as it had ever stood, even in the dark days when the hardware firm was losing much and the engine trade gaining little. Vere, Williams & Co., threatened to dishonour Boulton's bills unless he reduced the Account. This he was able to do by borrowing £1,000 from Watt.<sup>4</sup>

No doubt Vere, Williams & Co., as a banking house were affected by the commercial crisis and this made them less able to indulge Boulton who on the other

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1. Boulton to Wilson, May 14th 1788.

2. Walker to Boulton, June 23rd 1788.

3. Matthews to Boulton, August 1st 1788.

4. Boulton to Matthews, August 3rd 1788.

hand, felt increased pressure from his own creditors.

According to Boulton, Walker increased the account far beyond the limits he had laid down, without consulting him, and would have added another £4,000 had not Boulton prevented it.<sup>1</sup> Walker maintained, however, he had drawn only when absolutely necessary; "I make no payment but such as I judge would tend to your prejudice if not made."<sup>2</sup>

The real causes of the increase were various. The recent crisis had made creditors more pressing; but beyond this all that Boulton could say was that he "remained dissatisfied at the invisible cause of my distress particularly when it is certain that last year (1787) I gained :-

By Engine Business	£7210.12. 8
" Button Trade	2100. 0. 0
" Plated Trade	1197. 7. 5
" Factor Business	600. 0. 0
	<hr/>
	£16108. 0. 1 <sup>3</sup>

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1. Boulton to Matthews, August 3rd 1788.  
 2. Walker to Boulton, June 23rd 1788.  
 3. Boulton to Matthews, August 3rd 1788.



To this income must be added the rents of Boulton's lands, his houses in Birmingham, his houses and all the shops at Soho. So far as the future was concerned, he intended defraying his private expenses out of his rents, he intended withdrawing nothing out of any trade for that purpose. He was going to insist on Walker keeping a few clear accounts, so that a glance would tell what had been gained or lost in any particular trade at the end of the year. Boulton hoped to overcome his immediate embarrassments by collecting £1000 to £14000 engine money, besides that from Cornwall.<sup>1</sup>

By the middle of August 1788 Boulton had examined his position in more detail, and had ascertained the causes of his difficulties and the rise in the Bill Account, which he attributed to :-

1. The Exchange with St. Petersburg was unfavourable to remittances. The rate was as high as 31 Roubles, and all Boulton's correspondents in Russia refused to remit.

2. A part of their money from Cornwall now came
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1. Boulton to Matthews, 3rd August 1788.

in tin, for which it was difficult to find an immediate market. At this time, early August 1788, Boulton had on hand £1300 worth of tin, some of which was to be sent to London, France and Italy. Boulton hoped Matthews would be able to dispose of some of it for him.

3. The new warehouse in Livery Street, which together with Walker's house was to have cost £1300, cost instead £1750.
4. Expenditure in connection with coining equipment £2,000.
5. The dead stock of copper still on hand amounted to £2,000.

Had it not been for the above, Boulton estimated he would have been £8 or 9000 better off. He was contemplating writing to Russia to get payment in iron, flax, hemp, bristles or anything rather than<sup>1</sup> nothing but as he realised, these would take a long time to turn into money.

Writing to Matthews at this time, Boulton said -

"By good management my rents will defray the

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1. Boulton to Matthews, 3rd August 1788.  
 Boulton to Matthews, 16th August 1788.



expenses of my family. My profit in trade will pay my donations and interest and Bill Account, and all my engine profits can be applied to the sinking fund for paying off the National Debt (Bill Account). If I could but once annihilate the Bill Account I should accumulate space, and if the coinage falls to my lot I will engage to more than do it by that contract. I have no more warehouses or mills to build, but these have been very heavy articles and my expenses for the coinage have also been heavy."<sup>1</sup> Another contributory cause to Boulton's difficulties was the depression of the copper mining industry; for many engines in Cornwall were stopped and many that were not earned nothing because of the poverty of the mines.<sup>2</sup>

In August 1788 Boulton terminated a connection which had brought him neither gain nor advantage. He had entered into a partnership with Argand and one Parker for the manufacture of Argand's improved oil lamp. Against Boulton's wishes, the

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1. Boulton to Matthews, August 16th 1788.

Boulton was living in hopes of securing a Government Contract to coin copper. In anticipation of it he had laid out much money in preparations at Soho. But it was not till 1797 that he received the contract.

2. Boulton to Matthews, August 16th 1788.

other two embroiled the concern in a lawsuit, which was decided against them. That being done, Parker and Argand established a lamp shop elsewhere, without inviting Boulton to be concerned, although he was at the time £1200 out of pocket on account of the venture.<sup>1</sup> When the connection with Boulton was terminated, Argand was indebted to the Lamp Company to the extent of £950; one half of which was due to Parker and one half to Boulton, to whom there was also due another balance of £68. The total debt from Argand to Boulton therefore came to £543. By the new agreement between Argand and Parker, Argand was to have one quarter of the profits arising from the sales. Boulton feared that though there was some chance of Parker getting paid, there was none for himself; he therefore requested Matthews to take the matter up.<sup>2</sup> The best Matthews could do was to extract £200 from Argand in satisfaction of Boulton's claim, though he thought that if Argand were ever in a position to pay in full he would do so.<sup>3</sup> After this Boulton finished with the making of lamps except

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1. Boulton to Matthews, August 25th 1788.

2. Boulton to Matthews, 24th August 1788.

3. Matthews to Boulton, 3rd September 1788.



for a few plated ones.<sup>1</sup>

Between August 1788 and January 1789, Boulton transferred the larger part of the Bill Account from Vere, Williams & Co., to Matthews.<sup>2</sup> The personal ties, which, though sometimes strained had helped to keep the connection, were weakening. Lowe was dead; and Vere, though still a partner, was advised by his friends to withdraw. He had somehow got his own finances into a muddled condition and Matthews, who was engaged in straightening them out, strongly advised him to abandon the banking connection.<sup>3</sup>

As early as May 1788 Matthews had advised Boulton to transfer the account.<sup>4</sup> He offered to take it upon himself provided Boulton would persist in his resolution of lessening expenditure on new buildings, for though Walker might parry off payments more than he did that policy might have bad effects.<sup>5</sup> The one uncertainty arising from the proposed change was how would the country bankers, from whom Boulton

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1. Boulton to Matthews, 25th August 1788.

2. Thus Roll (p.107) and Lord (p.132) are wrong in stating the connection with Lowe, Vere & Co., was ended in 1784.

3. Matthews to Boulton, 7th August 1788.

4. Matthews to Boulton, 3rd May 1788.

5. Matthews to Boulton, 7th August 1788.

obtained cash, respond to receiving drafts on Matthews alone, who was not a recognised banker. Matthews, on his part, assured Boulton that he was fully competent to supply his wants without the aid of country bankers, should they shy at drafts on him, that is on Matthews.<sup>1</sup> The details of any arrangement decided upon are not revealed, but the major portion of the Bill Account was transferred to Matthews, though Boulton still retained a connection with Vere, Williams & Co.

In October 1788 a mortgage on Boulton's share in the Steam Engine Company was given to Matthews. It will be recalled that Matthews was Boulton's guarantor to Wedgewood for £5,000 and he was now taking upon himself the larger part of the Bill Account. It was therefore reasonable that he should have some security from Boulton, for whom he was under such obligations.<sup>2</sup>

Meanwhile, the Bill Account, which in the summer of 1788 stood at £17128<sup>3</sup>, was reduced to under £15,000 by January 1789, but the reduction was not

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1. Matthews to Boulton, August 30th 1788.

2. Matthews to Boulton, 18th October 1788.

3. Vid. p. 170



large enough to please Matthews, who was annoyed at the size of the Account. Matthew's advance was £9,000 and that of Vere Williams & Co., £5,000.<sup>1</sup>

As in the summer of 1787 Boulton was at a loss to explain why he was in difficulties again. He said that judging by the previous year's accounts he was gaining a great deal of money by some of his enterprises. He attributed his embarrassment largely to a burden of heavy taxes, interest on money borrowed, annuities (i.e., £4000 a year payable to Wise till 1800), and most serious of all the expense of a large Bill Account. In addition, money was still being expended in preparation for the long hoped for copper coinage contract with the British Government.<sup>2</sup>

There were, however, certain defects in his business organisation of which Boulton was quite conscious. To begin with, he had too many irons in the fire to give any detailed attention to any one of his various interests. What he needed was a periodical Statement of Affairs, drawn up by some competent

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1. Matthews to Boulton, January 10th 1789.  
2. Boulton to Matthews, 13th April 1789

Accountant, whereby all mistakes and errors of policy could be brought to light and their future occurrence prevented or guarded against; but for Boulton personal ties prevented any reform along these lines. His Chief Accountant, Walker, he regarded as a close personal friend rather than an employee; and Walker was now growing old and peevish, and Boulton was afraid to make suggestions in case Walker took offence.

All that could be done for the present to improve the situation was :-

1. Collect money due from abroad, which Boulton thought had been neglected of late.
2. Collect all money due to Boulton and Watt, which at this time came to nearly £12,000.
3. Curtail expenditure and keep clearer accounts.
4. Abandon those business activities which were unprofitable.<sup>1</sup>

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1. Boulton to Matthews, April 10th 1789.



It should be emphasised that Boulton's lack of resources at this time - the spring of 1789 - was not due to losses on current trade account, but to heavy expenditure on capital account. The following sums had recently been laid out :-

In preparation for the coinage	£ 5,000
In building and rebuilding two new Mills	3,000
In building a new warehouse	2,000
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	10,000
There was also locked up in the Albion Mill	6,000
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	£ 16,000 <sup>1</sup>
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By November 1789 another £2,000 had been/sunk in further erections of machinery needed for coining.<sup>2</sup> Through/all this expenditure Boulton was deprived of the use of some £16 - 18,000. This expenditure was obviously of an unusual nature, incurred once only, and after that Boulton would be in a position to retrench rapidly.

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1. Boulton to Wilson, April 14th, 1789.

2. Boulton to Mitchell, November 25, 1789.

In spite of these temporary difficulties, Boulton embarked on another new enterprize in conjunction with John Wilkinson, the Ironmaster, Watt, and a man named Hurd. These four decided to open a warehouse in Birmingham for the sale of metals, iron, tin, copper and brass. At the very outset of the enterprize in the Spring of 1789, the partnership entered into an agreement with Thomas Williams, the Anglesey copper magnate for the sale of his copper. Williams was to advance the stocks of copper, pay all the expenses and £300 a year warehouse rent. It was part of the bargain that, though Williams was to provide the copper to put in the warehouse, Boulton, Watt, Wilkinson and Hurd were to advance him money on it. Watt, who eyed the scheme very favourably, wrote to Matthews, "If this bargain goes on we must advance him (Williams) money on the copper put in our hands and we shall have reason to draw upon you. .... The nature of this bargain must remain a secret, you will therefore please to take no notice of it."<sup>1</sup>

Matthews, however, did take notice. He strongly

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1. Watt to Matthews, 2nd January 1789. Boulton & Watt Collection.



objected to the scheme, and urged Watt that he sooner the brake was applied to Boulton the better it would be for all concerned. He argued that Boulton could not advance his share to the new enterprise except from the engine concern, Boulton's share in which was mortgaged to him, added to which there was the obligation Matthews remained under as Boulton's guarantor to Wedgewood. He reminded Watt of Boulton's undertaking to rapidly to reduce the Bill Account, which had not been fulfilled, and warned him that nothing could be taken out of the engine company without his consent.<sup>1</sup>

This hostility on the part of Matthews did not prevent the scheme from going on; although the drawing on Matthews part of it had to be left out. The new concern soon experienced a set back. The partners had entertained hopes of being appointed agents for the sale in Birmingham of Cornish tin and copper. In this they were disappointed, however, as

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1. Matthews to Watt. February 4th 1789.

the Cornish chose two other Birmingham people to act in that capacity for them.<sup>1</sup> Watt and Wilkinson soon withdrew from the venture, which was now conducted by Boulton and Hurd. The connection subsequently became attended with certain disadvantages to Boulton; for when a little later he secured a large copper coinage contract for Messrs Monnerons, a large Paris banking house, Boulton wished to get copper as cheaply as possible, whereas Hurd wanted to sell it as dearly as possible, thus awkward complications arose.

Towards the close of 1789, Boulton's attention was distracted by civic duties, most of his time being taken up in establishing a new police system in Birmingham.<sup>2</sup> Consequently, there is less correspondence than usual from which we may learn what changes occurred in Boulton's financial circumstances. His general position seems to have remained unchanged during the next two years. One change of significance was made in 1790; Boulton

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1. Boulton to Watt, August 20th 1789.

Boulton to Wilson, August 20th 1789.

2. Boulton to James Watt., Jr., December 26th 1789.



ceased to take any part in the mercantile side of his business. He found it to be the least profitable of all his activities; and so he left the conduct of it entirely to his clerks, Cabritt, Walker and Collins.<sup>1</sup>

Throughout the period from the close of 1789 to 1791 there was little change in the size of Boulton's advance from Matthews. There was now quite a new reason for this; it was due to expenses in connection with the execution of various coinage orders.<sup>2</sup> It was necessary for Boulton to buy large quantities of copper for that purpose, and for this obviously no payment would be received till the coins were actually struck and delivered. Boulton had therefore to finance the purchases of copper himself; but the coinage was now beginning to tell in his favour. He executed a contract for £600 worth of coins for John Wilkinson, who, however refused to pay for it.<sup>3</sup> By August 1791 the East India Company owed him £7341 for various coinage orders.<sup>4</sup> Boulton was constrained to

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1. Boulton to Stieglitz, 2nd May 1790

2. Matthews to M.R. Boulton, March 11th 1791.

3. Boulton to Matthews, March 4th 1791.

4. Boulton to Mrs C. Matthews, 10th August 1791.

(185).

ask them for a remittance, as he had heavy payments to make for copper, and by the end of the month £6,000 was paid into his account with Matthews by the East India Company.<sup>1</sup> Right throughout the summer of 1791 Boulton was kept constantly busy with large orders for coins.<sup>2</sup> At last the promised land was at least in sight, and Boulton's lengthy sojourn in the financial wilderness seemed drawing to a close. The coining business was commencing to be prosperous; the steam engine concern continued to be so. The revenue from Cornwall it is true had become small,<sup>3</sup> and Boulton and Watt had often to take payment in tin, which, however, they had no difficulty in disposing of. Cornwall was now of diminishing importance to Boulton and Watt. Rotative engines, now a proved success, were in great demand as Boulton reveals - "We are now more thronged with orders for steam engines than ever we were, not only for this country but for France, Spain, Boulton, his son Matthew Robinson Boulton, to

1. Boulton to Matthews, August 28th 1791. (Walker).  
2. Ibid. James Watt and John Roebuck (Statement of Affairs)  
3. Boulton to James Watt, Jr., December 26th 1789.



Italy, Holland and the West Indies".

Boulton's great outlays of capital in new schemes and buildings were now at an end. The coining apparatus and plant was completed. No more shares were being taken in Cornish mines. The Albion Mill, which had absorbed £6,000 of Boulton's and £3,000 of Watt's money, was burnt to the ground in March 1791; fortunately, it was well insured. The next few years therefore witnessed a rapid improvement in Boulton's situation, and he was able to rid himself of a good deal of that burden of indebtedness which had hovered over him for the last thirty years.

In March 1792 William Matthews died in Watt's house, Heathfield Hall.<sup>1</sup> At the time of his decease his advance to Boulton on Bill Account

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1. Walker to Boulton, April 2nd 1792.

The death of Matthews was a great loss to Boulton, for the relationship which commenced on a purely business basis ripened into the closest friendship, how close will be seen from the provision in his will whereby Matthews bequeathed £423 each to Boulton, his son Matthew Robinson Boulton, to Boulton's daughter, to his accountant (Walker), to James Watt and John Scale (Statement of Effects of William Matthews)

amounted to £6787, to which figure it had been reduced from over £10,000 since early 1789.<sup>1</sup> Some anxiety was caused at the time as to how Matthew's death would affect Boulton. Walker feared that Boulton would be in a position of having to find sufficient money to pay off Matthew's executors the amount of the Bill Account, and urged his chief to procure the balance of £1700 due from the East India Co., on coinage account, and also to collect as much engine money as possible. Unfortunately, too at this moment the monthly manufacturing expenses at Soho were very high as Boulton was manufacturing a large quantity of coins for France.<sup>2</sup> The expected evil, however, did not mature, as Mrs Matthews decided to continue her husband's business herself.

After the Bill Account passed on to Mrs Matthews, Boulton continued to effect rapid reductions in it. By September 1792 the amount

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1. Walker to Boulton, September 13th 1792.

2. Walker to Boulton, March 26th 1792.



outstanding was no more than £1933, and, although it continued to fluctuate from time to time in accordance with Boulton's current demands, yet it never reached anything like one half the huge total at which it had once stood.<sup>1</sup> A payment of £2,000 to Vere, Williams & Co., in September 1792 reduced their advance to insignificant proportions.<sup>2</sup>

By the commencement of 1793 Boulton had unburdened himself of yet another debt. It will be recalled that in 1787 or 1788, after Van Orsoy's Mortgage on Soho had come to an end, Boulton mortgaged his premises to Wedgwood for £5,000 and that Matthews acted as his guarantor.<sup>3</sup> Upon the death of Matthews this obligation still remained, and his estate was liable for any default on Boulton's part. Wedgwood was quite willing for Matthews name to be withdrawn from the security; but was not at all eager to take repayment.<sup>4</sup> Boulton, however, persuaded him to do so and by the beginning of January 1793 Wedgwood had received bills to the value of £5133 in full.

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1. Walker to Boulton, September 13th 1792.

2. Boulton to Mrs Matthews, September 13th 1792.

3. Vid. p. 167.

4. Boulton to Mrs Matthews, November 6th 1792.

discharge of Boulton's indebtedness to him.<sup>1</sup> This imposed no great strain on Boulton, as the engine company alone had £20,000 due to them at Christmas 1792.

At this time Boulton's intentions were to repay all borrowings on personal security. He feared that in the event of such money being suddenly demanded he would not find it easy to borrow a sufficient sum elsewhere. Borrowing would have to be resorted to, as Boulton could not suddenly withdraw several thousand pounds from his concerns. If, however, money lent on mortgage were suddenly demanded, a new loan could readily be obtained on the same security. Boulton's only debts (besides the Bill Account) secured on his personal bond were those to John Wilkinson and Miss Mary Fothergill.<sup>2</sup>

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1. Wedgewood to Boulton January 1st 1793.

At first it was contemplated transferring the mortgage on Soho from Wedgewood to Mrs Matthews (Boulton to Mrs Matthews, Nov. 12th 1792); but there is no evidence at all in the correspondence of such a transaction actually taking place.

2. Miss Mary Fothergill was the daughter of Boulton's late partner, and she, together with the rest of her family had inherited a vast sum of money. When Foreman died, who had lent Boulton £3000 to enable him to provide for the then destitute Fothergill family, his executors requested Boulton to repay the loan. In these circumstances Mary Fothergill, out of gratitude to her benefactor, Boulton, offered to lend him £3000 to repay Foreman's executors; and of this offer Boulton availed himself.



Although Boulton's position was now immeasurably easier than it had ever been in the past twenty years, he had many heavy expenses to meet which brought in no return. Moreover, most of these expenses arose from the misfortunes of the past. Every year £400 had to be paid to Wiss, and this would continue till 1800.<sup>1</sup> There was an allowance of £50 a year which Mrs Swellengrebel received from Boulton.<sup>2</sup> The original distresses of Boulton and Fothergill were not yet completely wiped away either at Birchin Lane (Lowe, Vere & Williams - now Williams) or at Green Lettuce Lane (Matthew's House): there was also £5000 owing to John Wilkinson, more than half of which had been borrowed to support Boulton and Fothergill. In addition, Watt's patent was ~~being~~ attacked and ~~in~~ 1792 it cost the engine company £1500 in defending their patent rights. Boulton was of the opinion that had he

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1. Vid p. 81-83.

2. Mrs Swellengrebel recovered £2000 from Mrs Fothergill of the £8,900 which she had lent to Fothergill (vid. p. 62) - Boulton to Matthews June 30th 1782. Some how Ravee, her attorney, had become possessed of all her property. The result was she had no means of support - Walker to Boulton, November 8th 1786. In desperation she applied to Boulton who decided to make her an annual allowance of £50.

allowed the affairs of the late hardware partnership to have gone into bankruptcy in 1782 he would have been better off in the long run.<sup>1</sup>

A minor setback in the mercantile part of the business occurred in the Summer of 1793. The Empress of Russia had issued an edict restricting imports into her territory. It militated most strongly against the hardware trades of Birmingham and Sheffield. At this time Boulton had in his warehouse goods to the value of £600 manufactured to orders of a St. Petersburg house.<sup>2</sup>

So far as the available evidence shows Boulton had to bear the loss himself, as the Empress was determined to enforce her edict rigourously.<sup>3</sup> Besides this, the war with France prevented Boulton receiving several large sums which were due from France and Flanders.<sup>4</sup>

These developments were not sufficient to have an adverse effect on Boulton's general financial position, for by the end of November 1794 he had purchased all the land in the environs of Soho. Boulton was quite able to pay the purchase

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1. Boulton to Mrs Matthews, February 7th 1793.

2. Walker to Boulton, July 4th 1793.

3. Walker to Boulton, February 24th 1794.

4. Walker to Boulton, December 17th 1794.



price, £3,000, there and then, but was adverse to withdrawing so large a sum from his concerns. He therefore sought to raise £3<sup>000</sup> 4<sup>000</sup> or £5000 on mortgage.<sup>1</sup> Boulton was purchasing the land not for his own building purposes but for letting to Birmingham people to build a small town upon.<sup>2</sup> By these additions he hoped his Soho estate would in time bring in an annual rent of £1000.<sup>3</sup> So far as raising the purchase money was concerned, Boulton succeeded in his scheme for a loan. He borrowed the necessary money on mortgage from a Mr Loggen.<sup>4</sup>

Soon after the purchase of this land, Boulton and Watt found themselves involved in a dispute which had far reaching consequences. Early in 1795 they became participants in a quarrel between John Wilkinson, the ironmaster, and his younger brother William. Through this they incurred the bitter hostility<sup>5</sup> of the ironmaster; but of more immediate consequence were the financial entanglements which arose from these differences.

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1. Boulton to Mrs Matthews, November 23rd 1794.

2. Ibid.

3. Boulton to Mrs Matthews, December 15th 1794.

4. Mrs Matthews to Boulton, December 23rd 1794.

5. Roll p.p 157 - 158.

Boulton and Watt owed John Wilkinson and the Bersham Company about £1,700. He owed Boulton and Watt £4,000 engine dues in respect of twenty infringements of their patent,<sup>1</sup> and Boulton in turn, having borrowed heavily from Wilkinson in the years of distress in the past, owed him £5,000.<sup>2</sup> Wilkinson refused to pay the money he owed through his infringements. He was hoping to avoid payment altogether if the Courts declared in the actions then pending that Watt's patent was invalid;<sup>3</sup> but he now demanded that Boulton repay him £4,000 and adopted such a menacing attitude that Boulton feared that he and Watt would be arrested, unless repayment was made at once. The two partners were so impressed by Wilkinson's threats that they provided good bail in case of emergency and wrote to the local undersheriff a letter of explanation to prevent all disagreeable circumstances.<sup>4</sup>

Eager to repay Wilkinson, Boulton

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1. Boulton to Mrs Matthews, March 1st 1795.
2. Cornelius Reynolds to Boulton, December 26th 1795.
3. Boulton to Mrs Matthews, March 23rd 1795.
4. Boulton to Mrs Matthews, March 1st 1795.



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applied to the East India Co., for the payment of £4,000 to £5,000 owing to him. He requested Mrs Matthews to accept such bills as he might draw, assuring her he would make a remittance as soon as possible.<sup>1</sup> By these means, Boulton was able to repay Wilkinson £4,175. 17. 0 before the end of March 1795, so he and Watt escaped being jailed.<sup>2</sup> By the end of the year he had repaid another £1,000 and so completely cleared himself of all obligation to John Wilkinson.<sup>3</sup>

The two junior partners in the engine company, Matthew Robinson Boulton and James Watt., Jr., now determined to bring Wilkinson to book in respect of his infringements of Watt's patent. They requested him to pay up all arrears of premiums in respect of the twenty engines he had secretly erected. Although he capitulated, he nevertheless delayed paying for some time, hoping that the litigation consequent upon other infringements of the patent would be

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1. Boulton to Mrs Matthews, March 1st 1795.

2. Mrs Matthews to Boulton, March 26th 1795.

3. Cornelius Reynolds to Boulton, Dec. 26th 1795.

decided against Boulton and Watt. In the end, however, he had to give way and a final agreement was arrived at in August 1796.<sup>1</sup> "The agreement of August 5th 1796 marks, however, the final breach in the long connection between ironmaster and engineer."<sup>2</sup>

Stimulated largely by this dispute with Wilkinson, and influenced by other factors to be mentioned later, Boulton, Watt & Co., as the concern was now called with the introduction of the partners' sons, determined to erect their own foundry.<sup>3</sup> In August 1795 eighteen and a half acres of land were purchased for that purpose,<sup>4</sup> and by February of the following year the foundry was completed.<sup>5</sup> Boulton and Watt, hitherto consultants, now became manufacturing engineers.

The cost of the buildings and machinery amounted to £21,000.<sup>6</sup> The heavy payments made constituted a large drain on the resources of

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1. Roll. p.158

2. Roll. p.159

For further details of the dispute with Wilkinson vid. p.221 - 224.

3. Vid. p.221

4. Roll p.160

5. Mrs Matthews to Boulton, February 5th 1796.

6. Dickinson and Jenkins p.346.



Mrs Matthews, the firm's banker. Her difficulties were increased by Watt's desire to transfer his private resources from her house elsewhere, as he wished to have his money vested at better interest than Mrs Matthews could allow.<sup>1</sup> By September 1796 her advance to Boulton on his own account was £3,000 while in the course of the same month there were bills to pay for Boulton and Watt to the extent of £4,000. Situated thus, she urged Boulton to make remittances to ease her position,<sup>2</sup> and he in response at once remitted £1,000. He also requested Hart, a small Birmingham banker, to repay £1,000 lent a year before, so that he could send it to Mrs Matthews. Wilson, Boulton and Watt's Cornish Agent, owed them between £2,000 and £3,000 but it was inconvenient for him to pay.<sup>3</sup>

There were several thousands owing to Boulton at this time but efforts to collect them were futile, as this was a period of commercial distress (vid below). In order to secure provision for Mrs Matthews, and so prevent her from being in advance for

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1. Mrs Matthews to Boulton, June 10th 1796.

2. Mrs Matthews to Boulton, Sept. 8th 1796.

3. Boulton to Mrs Matthews, Sept. 11th 1796.

the bills which were falling due, Boulton approached William Wilkinson, brother to the ironmaster, to discount certain long dated bills, or if that were impossible to lend on his bond.<sup>1</sup> Boulton feared the hostile interference of John Wilkinson;<sup>2</sup> but the request was acceded to and a sum of £2,500 was secured for Mrs Matthews on the joint bond of Boulton and Watt.<sup>3</sup>

It must be borne in mind that this was a period of great commercial and financial distress. In the following February the Bank of England was forced to suspend cash payments. The temporary difficulties which confronted Boulton were a consequence of the prevalent bad times. He had heavy payments to meet; bills were falling due which his banker lacked resources to meet. His creditors were pressing urgently for payment, while many of his debtors were unable to pay him. The situation as he explained it to Mrs Matthews was -

"The town of Birmingham is so poor and distressed for

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1. Boulton to Mrs Matthews, October 1796
2. Boulton to Mrs Matthews, October 27th 1796
3. Mrs Matthews to Boulton, November 9th 1796.



want of trade and foreign remittances that we cannot collect our debts, and for the same causes we are dunned for every debt we owe and have paid an unusual sum since Christmas, which makes us poor and you also".<sup>1</sup>

Boulton, faced with these inconveniences, determined to press the East India Company for a debt they owed him for a coinage contract; he hoped to get £5000 on account.<sup>2</sup> His expectations were more than realised for they paid £6,000 into his banker's hands.<sup>3</sup> This sum did not fully discharge Boulton's claim and so in July 1797 another payment of £2900 was made, not in cash but in bonds of £100, each bearing interest at the rate of 5% per half year. Mrs Matthews, who held the bonds, hoped to avoid selling them till September. By the end of July, however, the whole of the £6,000 would be paid away, and in August certain heavy payments had to be provided for.<sup>4</sup> Boulton's position with Mrs Matthews

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1. Boulton to Mrs Matthews, Early 1797.

2. Ibid.

3. Mrs Matthews to Boulton, March 31st 1797.

4. Mrs Matthews to Boulton, July 12th 1797.

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at the end of July was as follows:- <sup>1</sup>	
Amount of advance on July 31st 1797	£5,452.15. 3
To pay in August	<u>17,156.12. 0</u>
	22,609. 7. 3
Against which Mrs Matthews had to receive	<u>2,600. 0. 0</u>
	<u>20,000. 7. 3</u>

Mrs Matthews anticipated being £20,000 in advance by the end of the month. This large and sudden increase in the size of the Bill Account was due to one cause only. At last Boulton had secured a contract from the Government for a copper coinage. His purchases of copper for that purpose amounted to very nearly £30,000 worth, nearly all of which had been paid for. Mrs Matthews pointed out that the sale of the East India bonds would not go far in easing the position and requested Boulton to make some remittance, at the same time urging him to see that the Government paid him in cash or bank paper

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1. Mrs Matthews to Boulton, 25th July 1797.



for carrying out the contract.<sup>1</sup> This large banker's advance was not due to any unsoundness in Boulton's financial situation, but to a large outlay in the purchase of copper which was necessary for his contract with the Government.

Securing an order to strike copper coins for the British Government meant to Boulton the achieving of a ten years ambition. As time went on, his whole attention became more and more wrapped up in his mint at Soho.<sup>2</sup>

In the Spring of 1799 Boulton's health began to fail and, although occupying himself almost entirely with his coining activities, he would, nevertheless, turn his attention to his other concerns whenever anything went wrong there. In 1801 the severing of relations between England, on the one hand, and Sweden, Norway and Russia on the other, inconvenienced Soho a great deal. Expected remittances from those countries had been earmarked for making certain payments

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1. Mrs Matthews to Boulton, July 25th 1797.

2. For further details on the coinage vid. p. 269.

in the ordinary course of trade; but no money could now come in from those countries. This misfortune seems to have affected Boulton very much, he wrote, " I cannot sleep and cannot recover my spirits .... This war upon private property is ruinous to my health, peace and happiness."<sup>1</sup>

These excursions into former realms were now rare and in February 1801 Boulton was contemplating giving over all his property to his children, retaining an annuity for himself and retiring to a cottage.<sup>2</sup> The coining business was, however, too great an attraction for him to do this, and it continued to absorb the whole of his time. Boulton's financial circumstances were now in an excellent condition and he was contemplating buying a large landed estate somewhere.<sup>3</sup>

The year 1795 may be said to mark a turning point in Boulton's interests. By that time many of the old burdens and worries had either disappeared or fallen on new shoulders. The Steam Engine

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1. Boulton to Mrs Matthews, February 3rd 1801.

2. Mrs Matthews to Boulton, February 3rd 1801

3. Mrs Matthews to Boulton, May 20th 1801



Company was now controlled by Matthew Robinson Boulton, James Watt, Jr., and Gregory Watt. The Albion Mill had ended in a smouldering ruin. Cornwall, with the advent of the rotative engine, had lost its former importance to Soho. The mercantile business was now run by the clerks, and in 1796 the button making concern of Boulton and Scale came to an end; though this branch was continued it became unimportant and not very profitable. The Plated Co., which continued the other activity of the late partnership of Boulton and Fothergill, passed into the control of Matthew Robinson Boulton, after which its profits rose in some years to over £3,000. All these concerns were, however, a closed book to Boulton for the last seven or eight years of his life. The one and only thing which engaged his attention was Soho Mint which continued to do so right up to his death in 1809.

In this chapter an attempt has been made to survey Boulton's financial position as a whole from 1782 to approximately 1800 and to indicate how his general financial position was affected by his many activities and interests.

CHAPTER 7.EACH PARTNERSHIP SEPARATELY CONSIDERED.

Separate consideration will here be given to each one of Boulton's main interests in the period 1782 - 1809. Broadly speaking these are comprised under the following heads :-

1. The hardware concern after the death of Fothergill. This was now split up into -  
     (a) Boulton & Scale - the button company.  
     (b) The Plated Company.
2. Boulton and Watt.
3. Interests of Boulton and Watt in Cornwall.
4. The Albion Steam Flour Mill.
5. The Copper Coinage.

Our knowledge of Boulton and Watt, Cornwall, and the Albion Mill is already quite extensive, as these have received attention at the hands of various Writers.<sup>1</sup>

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1. For Boulton & Watt, vid, Roll, Lord, Smiles, Dickinson & Jenkins.

For Cornwall, vid, the above and also Hamilton "The English Copper and Brass Industries to 1800" and G.C.Allen "An Eighteenth Century Combination In The Copper Mining Industry" - Economic Journal, March 1923.

For the Albion Mill, vid, Westworth, "The Albion Steam Flour Mill" Economic History, January 1932.



No account has yet been given of what happened to the hardware firm after the death of Fothergill and our knowledge of Boulton as a manufacturer of coins is rather scanty.<sup>1</sup>

THE HARDWARE CONCERN AFTER 1782.

(a) Boulton and Scale 1782 - 1796.  
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A few years before Fothergill's death, John Scale, hitherto employee, was admitted into partnership with Boulton and Fothergill in the Button making Branch. Various proposals and counterproposals were made commencing in 1778,<sup>2</sup> but there is no evidence of a partnership between Boulton, Fothergill and Scale till 1780.

By that year a partnership between these had come into existence. The total capital of the Button Company was £8924, John Scale's share being £2279 and that of Boulton and Fothergill £6644. Before arriving at any divisible profits, Boulton and Fothergill were

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1. Being confined to the Account in Smiles "Boulton & Watt"

2. Mr Scales Proposals for a Partnership in the Button Trade 1778.

Document on Scales Proposals September 1778 by Boulton.

to be allowed 10% on all goods sold during the year,  
besides sharing in the ultimate net profit.<sup>1</sup>

With the death of Fothergill in June 1783, this partnership came to an end, and on 24th June a new partnership was formed between Boulton and Scale.

The partnership was to last seven, fourteen or twenty one years, and was terminable by one year's notice on either side. Its activities were to include the manufacture of buttons, steel chains and sword hilts, in all branches that were formerly carried on by Boulton and Fothergill. Boulton and Scale were to keep their own separate accounts, provide all their own materials and pay all their own debts. In some cases goods were to be sold to Boulton in his capacity as a merchant, and when he alone bore the risk of payment for such goods, Boulton and Scale were to allow him every advantage in respect of credit, an extra allowance

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1. Scale to Boulton. April 9th 1781.  
Scale to Boulton. January 15th 1780.



called goodwill, and carriage to London, as was customary with the most eminent and respectable manufacturers. As Boulton was not to charge Boulton and Scale any commission on the goods purchased by him for resale, they agreed on that consideration to allow him a discount of 5% in lieu of that usual commission.

The capital of Boulton and Scale was fixed at £9,000 Boulton was to advance £6,000, Scale £3,000, profits and losses were divisible in like proportion. If the concern demanded more capital either party could advance such additional sum as might be wanted and receive on it interest at the rate of  $7\frac{1}{2}\%$ . If both partners wanted to make the advance they could do so in proportion to their capital, i.e., Scale one part, Boulton two parts.

The button company was to pay a rent to Boulton for the warehouses and shops they occupied at Soho. Finally, each partner agreed not to enter a manufactory whose interests might clash with

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those of Boulton and Scale.<sup>1</sup>

Although there was some initial quibbling about interest on partners' capital, the new partnership made a very good start.<sup>2</sup> From Midsummer 1782 to Christmas 1783 the net profits came to £4068, and Scale hoped the figure for 1784 would not fall far behind.<sup>3</sup> Boulton, however, warned him against embarking on too large a scale of operations - "I was once more ambitious, but am now content to be at par"<sup>4</sup>

Boulton and Scale continued to prosper till the beginning of 1785, when various restrictions and prohibitions on imports from England were issued in Denmark and Germany, and there was a general fear Russia would follow this example. Measures of this kind hit Boulton and Scale very badly, who sold a great deal abroad. So slow were orders in arriving that Scale in April wrote, "I almost tremble to look at our orders, not because we have too many but because we have scarce any. At this season we used to

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1. "Copy of Memorandum of Agreement between Boulton & Scale to date June 24th 1782". Date of Copy Aug. 16th 1782.

2. "Observations on Boulton & Scale's Accounts" in Boulton's hand.

3. Scale to Boulton, May 4th 1784.

4. Boulton to Scale, November 2nd 1782.



have three or four months work before hand, but alas tis now but about so many days".<sup>1</sup> Not only Boulton and Scale, but Birmingham manufacturers in general were badly affected by these orders.<sup>2</sup> This already serious situation was further aggravated by a French arrêt on all English manufactures. This soon spread a general alarm among all classes of manufacturers and merchants, who, in view of the Danish prohibition, the French arrêt and German edict, could not help regarding the outlook as serious.<sup>3</sup> Fortunately for Boulton and Scale, several orders came in towards the end of August, and these were sufficient to keep the button manufactory going at full capacity for a few weeks, at the end of which it was hoped further orders would come from somewhere.<sup>4</sup>

No orders, however, appeared and both the Button Company and the Plated Company were short of work. Scale suggested sending a traveller about, who could act on behalf of the two Companies and endeavour

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1. Scale to Boulton, April 9th 1785.

2. Ibid.

3. Scale to Boulton, 3rd August 1785.

Scale to Boulton, 8th August 1785.

4. Boulton to Scale, 26th August 1785.

to capture some of the home trade.<sup>1</sup> Boulton agreed with this suggestion and wrote to his partner - "Since things are gone so bad in foreign countries it may not be amiss to try to obtain a share of the consumption of our own, but it will not do to send out a rider once in two years, the thing must be well planned and steadily executed if begun, whether foreign orders do or do not come in." <sup>2</sup> Boulton was inclined to blame the English Government for not taking steps to prevent this unfortunate impasse. "Surely our ministers are bad politicians to suffer the gates of every commercial city in the world to be shut against us".<sup>3</sup>

How the Button Company fared in 1786 we cannot say, as no evidence can be traced for that year. By 1787, however, things had improved considerably, and Boulton and Scale once more enjoyed prosperity. The net profit for that year amounted to £2777.11. 0, which on a capital by now increased to £12,340 gave a return

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1. Scale to Boulton, October 10th 1785.

2. Boulton to Scale, October 24th 1785.

3. Ibid.



of about 22 $\frac{1}{2}$ %.<sup>1</sup>

The Articles of Partnership, as drawn up in 1782, stipulated that Boulton was to be allowed a discount of 5% by Boulton and Scale for his risk, trouble and expense in selling the goods abroad, besides every other customary advantage.<sup>2</sup> Experience showed that Boulton was a loser by these terms, and it was therefore agreed that the allowance should be 7 $\frac{1}{2}$ % over and above all other privileges and advantages.<sup>3</sup> This alteration was made between 1782 and 1784, at the very outset of the Button Company's career.<sup>4</sup>

Upon these terms the first seven years of the partnership passed harmoniously. The whole management of the Button Company was entrusted to Scale, whose wish it now was to change those provisions of the partnership agreement which related to the division of the profits.<sup>5</sup> According to these, Boulton was to take two thirds and Scale one third; Scale now wished for equal division.<sup>6</sup>

Three strong reasons were urged to

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1. Scale to Boulton, January 25th 1788.

2. Memorandum re Partnership Boulton and Scale.

3. Ibid.

4. Scale to Boulton, May 4th 1784.

5. Memorandum re Partnership Boulton & Scale.

6. Scale to Boulton, May 30th 1789.

justify the change. Scale was now fifty two years old. There remained but a short time in which he could be very active, and he feared that unless he could obtain a comfortable competence in the next seven or ten years he would set very little value on what he could get after that time. Secondly, Scale's<sup>1</sup> capital was now larger even than that of Boulton.<sup>1</sup> Lastly, the whole of the management and responsibility of the business fell upon him. For these reasons Scale now urged Boulton to share the profits equally with him.<sup>2</sup>

Boulton evidently saw the strength of these arguments, for at Midsummer 1789 a verbal agreement took place between the partners to the effect that profits in future should be divided equally. Boulton at the same time said he wished to make some alteration in the rent which he charged Boulton and Scale for the workshops they occupied,<sup>3</sup> to which Scale raised no objection provided the alteration was not too

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1. Scale's share was £7644. Boulton's £5326.

2. Scale to Boulton, May 30th 1789.

3. The annual rent paid by Boulton and Scale to Boulton for the use of shops and machinery amounted to a substantial sum. In 1789 the figure was £260 by 1793 the item had risen to £350.



great. It was also stipulated that Scale should give up his salary on an equal division of the profits taking place.<sup>1</sup>

No further alterations were made in the Articles of Partnership which continued in this form till the death of Scale in 1792. After this event the house continued under the name of Boulton and Scale, as the elder Scale's two sons, John and George, now stepped into their father's position.

After the death of Scale some slight hitch occurred in settling the accounts of the late partnership. The ready cash and bill transactions, which normally would have taken place between Boulton and Scale and a bank, were in fact carried on between that company and Boulton, who acted as their banker; but no account of interest and charges in respect of these transactions had been kept. It was accordingly agreed, at the settlement after Scale's death, that Boulton was to be allowed 5% interest and a commission of  $1\frac{1}{4}\%$  on all the cash he had furnished to Boulton and Scale

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1. Memorandum re Partnership Boulton and Scale.  
Scale to Boulton, April 3rd 1790.

since 1789. Boulton was to be charged with the interest on the bills placed in his hands from the date of their maturity. This being rightly regarded as interest accruing on Boulton and Scale's money deposited with their banker. It was also arranged that the late partnership should allow Boulton a further discount of  $2\frac{1}{2}\%$  on all goods sold to him during an interval of one year, during which year other people had been allowed a 10% discount but Boulton, in his capacity as a merchant buying from Boulton and Scale, had only been allowed a discount of  $7\frac{1}{2}\%$ .<sup>1</sup>

Information respecting the fortunes of the Button Company after the death of Scale, senior, is not very plentiful. It seems, however, pretty obvious that its career became rather chequered. From 1792 to 1796 the loss entailed in the manufacture of white metal buttons amount to £701. This loss did not accrue in one year only. It arose from the

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1. Settlement with James Alston. Executor of J. Scale.



accumulated losses of four years; the balance having been carried forward each year in the delusive hope that the business would retrieve itself.<sup>1</sup>

The House of Boulton and Scale dissolved partnership in December 1796.<sup>2</sup> The two Scales went to South Wales and erected an ironworks at Aberdare, known as the Aberdare Iron Company. They did not, however, lose connection with Boulton to whom they turned for aid in June 1801, when they found themselves in difficulties of a temporary nature. A London firm, Thomas, Foreman & Hornfray agreed to lend the Aberdare Company enough money to build another furnace, conditional to their agreeing to supply the London firm with the whole produce of it. The Scales, in accordance with the agreement, drew a bill at six months on Thomson, Foreman and Hornfray, which, however, on account of its long tenor, they could not get discounted. In this dilemma they requested Boulton to

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1. George & John Scale to Boulton, April 23rd 1798.

2. "Notes on Boulton and Scales dissolution" in Boulton's hand.

accomodate them with his draft at two months for £1200, for which they would give him their bill on Thomson, Homfray and Foreman.<sup>1</sup> Boulton agreed to this exchange of bills and accompanied it by a little advice which no man then alive was more qualified to give, "I should be sorry to see you enter into a bill circulation, which has a tendency to destroy your credit, your peace and your profits."<sup>2</sup>

The manufacture of buttons was not discontinued on the dissolution of the partnership of Boulton and Scale. A new house was formed in which the partners were Boulton and two others, Brown and Nelson.<sup>3</sup> Button making had, however, become a mere side line at Soho by the beginning of the nineteenth century. Attention was focussed largely on the great engineering concern of Boulton, Watt and Co., and on the important and profitable Plate Company rather than on the now insignificant Button Company, whose profits now

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1. John Scale to Boulton, June 15th 1801.

2. Boulton to Scales June 23rd 1801

3. Matthew Boulton and Button Company, Abstract of Trade Accounts.



barely exceeded in hundreds the figures they had previously reached in thousands.

MATTHEW BOULTON AND THE PLATE COMPANY.

We know very little about the Plate Company from 1782 to 1793. From passing reference here and there it seems to have been quite prosperous; but Boulton took almost no interest in it, at least his correspondence is quite barren of information on the subject.

The only statement we have refers to the period after 1793, when Boulton's chief concern was his mint at Soho. Matthew Robinson Boulton was in command of all the other activities at Soho and under his guidance the Plate Company enjoyed considerable prosperity. The profits rose progressively from £1141 in 1793 to over £2000 in 1802 and reached £3564 in 1805.<sup>1</sup>

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1. Matthew Boulton and Plate Co., Abstract of Trade Account 1807.

BOULTON AND WATT 1782 - 1800.

Boulton and Watt's career from the time of that partnership's inception to the death of Fothergill in 1782 was not from the financial standpoint particularly eventful. It has already been shown how the new company, by guaranteeing Boulton and Fothergill to Lowe, Vere Williams, Wigg and Elliott Praed & Co., enabled the hardware concern to raise £23,000, and so weather a difficult period. In the same period too all profits of the engineering trade were devoted to the use of Boulton and Fothergill.<sup>1</sup>

It must be remembered that Boulton and Watt were not manufacturing engineers, but consultants. They drew plans of engines and supervised their erection but made very few parts themselves. Most of the engine parts, the heavy castings, the pistons and cylinders, were made by John Wilkinson, the famous ironmaster, who generally looked for payment to those for whom the engine

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was being erected. Boulton and Watt obtained their reward in the form of annual payments called premiums or annuities, which/consisted of one third of the savings in fuel consumption effected by the use of a Boulton and Watt engine compared with a Newcomen aptmospheric engine. These premiums or annuities constituted Boulton and Watt's profits.

From 1782 to 1795 the prosperity of the firm increased considerably. The total income in the period from 1780 to 1791 amounted to £76,000,<sup>1</sup> while from 1781 to 1800 the tribute from Cornwall alone came to £139,400.<sup>2</sup>

The further improvements made by Watt in the Steam Engine, embracing the Sun and Planet Gear, Parallel Motion and the double acting principle enabled rotative motion to be secured from the power of steam. With the advent of rotative engines, pumping engines and consequently the Cornish copper mines lost their first rate importance for Boulton and Watt.

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1. Roll p. 84.

2. Ibid.

The first rotative engine made for a customer was erected for John Wilkinson and set to work in March 1783.<sup>1</sup> The engines for the Albion Steam Flour Mill embraced all Watts improvements described above. The engines at work in this Mill directed attention to the success of the rotative engine and so stimulated demand for them.<sup>2</sup>

Rotative engines did not yield as much profit to Boulton and Watt as did those engaged in pumping, as Watt said - "every rotative engine will cost twice the trouble of one for raising water and will in general pay only half the money."<sup>3</sup>

A change had now to be made in the price policy of the firm. The old device of a comparison of fuel consumption was inapplicable to rotative engines. "The system to which recourse was then had was payment by horse power unit. By calculations based on the load raised over a pulley by a mill horse going at a certain pace, Watt was able to establish a standard measure of power for his engine and the customer was asked to pay

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1. Roll p. 110

2. Roll p. 114

3. Dickinson and Jenkins.



on that basis".<sup>1</sup> The premium charged was fixed at the rate of £5 per horse power, and the earliest mention of this mode of charge is in the year 1786.<sup>2</sup>

Boulton and Watt continued as consulting engineers for some twenty years - from 1775 to 1795. Their profits consisted of savings premiums on pumping engines and horse power premiums on rotative engines. The only change of any significance which occurred in this period relates to the division of the profits between Boulton and Watt. By the original partnership agreement made in 1775 Watt was to have one third and Boulton two thirds of the gains. In 1789 Boulton, at Watt's request, consented to a modification of this. He agreed that so far as the profits of all rotative engines were concerned henceforward they/should be divided equally, and the same should apply to the profits of all engines erected abroad.<sup>3</sup> Beyond this no change of importance was made till 1795 when

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1. Roll p.116

2. Ibid.

3. Boulton to Matthews, April 25th 1789.

Boulton and Watt became manufacturing engineers.

In 1795 Boulton and Watt determined to build their own foundry and manufacture all the engine parts themselves. There were several reasons for this decision. In 1800 the Parliamentary Patent given to Boulton and Watt in 1775 expired and with it the firm's royalties. Competition was expected to be keen and the erection of a foundry was a preparatory measure of defence. The monetary situation presented no difficulties; neither Boulton nor the Engine Company any longer lacked capital. Besides a large annual income, a good sum had been secured from Cornwall by way of arrears of premiums.<sup>1</sup> The management of the business had largely passed out of the hands of Boulton and Watt into those of their sons, Matthew Robinson Boulton, James Watt, Jr., and Gregory Watt, and these welcomed the new move.<sup>2</sup>

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1. Roll p. 84.

2. Roll. pp. 149 - 165.



A more immediate cause for the decision was a quarrel between John Wilkinson, the ironmaster, who manufactured engine parts for Boulton and Watt, and his younger brother William Wilkinson. Boulton and Watt became entangled in the dispute because of their close relations with William Wilkinson, whose daughter Matthew Robinson Boulton later married. They attempted mediation but to no purpose. Unfortunately, William Wilkinson briefed Weston, Boulton & Watt's lawyer, as his legal adviser. Seeing this and suspicious of some plot, John became enraged at the Soho partners and broke off a friendship of twenty years standing. In the course of the trouble between the brothers, the Bersham Iron Works was closed down by order of an injunction. This was a very serious thing for Boulton, and Watt whose supplies were now cut off.<sup>1</sup>

Obviously there were good reasons enough why Boulton and Watt should erect a foundry of their own.

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1. Roll pp. 149 -165.

On the top of these came William Wilkinson's revelation that his brother had pirated their engine since 1782, having secretly erected engines for his own use as well as for outside customers. According to Boulton, Wilkinson had erected twenty such engines.<sup>1</sup>

The first step towards the erection of the foundry was taken in August 1795, when the necessary land was purchased. Early in the following year the foundry was opened amid scenes of great festivity.<sup>2</sup> The building of the foundry was an event of vast importance in the history of the firm "but together with the change in managerial personnel it involved a thorough and systematic internal reorganisation of plant, machinery, production processes, remuneration of labour and costing. The combination in one concern of ironmaster and engineer meant, moreover, the establishment of the first factory in the engineering industry of

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1. Boulton to Mrs Matthews. March 23rd 1795.

For the financial complications arising from the dispute with John Wilkinson vid. pp. 192 - 195.

2. For the financial aspect of the matter vid. 195 - 196.



the world."<sup>1</sup>

The changes in managerial personnel refers to the introduction into the business of Boulton's son, Matthew Robinson, and Watt's two sons James and Gregory. In 1794 a new company was formed consisting of Boulton, Watt and their sons. In 1799 Watt gave up the small share he had retained for himself to his sons, after which the concern became known as Boulton, Watt & Co.<sup>2</sup>

After the erection of Soho Foundry Boulton's interest in the engine company became very small; his time was fully occupied by his coinage schemes which continued to engross his attention till his death in 1809. Similarly, Watt had settled down to enjoy a peaceful and quiet retirement, and but rarely quitted his garret in Heathfield Hall to visit his former domain. The copying of sculpture now took precedence over the designing of engines.

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1. Roll p. 156.

2. Dickinson and Jenkins, page 346.

THE INTERESTS OF BOULTON AND WATT IN THE COPPER

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AND TIN MINES OF CORNWALL.

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The early pumping engines of Boulton and Watt found their most profitable market on the copper and tin mines of Cornwall. Here coal was dearer than elsewhere, and consequently it was here that the increased efficiency of the Watt Engine showed itself to greatest advantage.

The Cornish mines in 1770 were in a depressed condition. Many of the workings had become deep and difficult and although the Newcomen engine had been introduced the expenses of its working were enormous, so much fuel did it consume. Moreover, the competition of the Paris and Mona mines of Anglesey, from which copper could be extracted with far less difficulty than in Cornwall, tended to force down the price of the metal below the Cornish costs of production. Certain doom appeared to

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face Cornwall as a mining centre in 1777 when the Boulton and Watt engine was introduced, bringing with it salvation for that county.

The first Boulton and Watt engine erected in Cornwall was at Chagewater (Wheal Busy) in 1777. By 1783 there were twenty one steam engines in Cornwall and between 1784 and 1788 eighteen more were added, none were erected between 1788 and 1790, but another five were put to work by 1796.

Boulton and Watt's revenue from Cornwall was the premiums due from the engine users. These premiums consisted of one third of the fuel consumption saved by a Watt Engine when compared with an atmospheric engine. To assess the fuel savings of a Watt engine was not an easy thing to do; for these engines were intended to draw more water or draw it from a greater depth than did Newcomen's engine. There was therefore no atmospheric engine against whose performance the Watt engine could be compared. It was consequently necessary to calculate the size and coal consumption of

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a hypothetical Newcomen engine capable of doing the work~~now~~ done by a Watt Engine. To overcome this difficulty Watt evolved certain complicated mathematical tables, which together with a counter registering the number of strokes made by the engine, enabled a calculation of the premium to be arrived at.<sup>2</sup>

This method of assessing the payment did not please the adventurers in the mines,<sup>1</sup> who objected to a scheme whereby payments would be greatest (because the engine was working harder) in precisely those periods of the year when, on account of more water, the mine would be least profitable. Moreover, they could not understand the tables properly. Boulton and Watt were therefore asked to adopt a fixed payment for each engine according to its size. Rather unwillingly Watt consented and a scale of charges based on the size of the cylinder was adopted. The first fixed agreement was that with~~the~~ Consolidated Mines of

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1. Adventurers in Mines - shareholders.

2. Dickinson and Jenkins p.p. 328 - 343.



Wheal Virgin and Wheal Maid, who in November 1780 agreed to pay £2500 per annum in respect of five engines.<sup>1</sup> Two systems of payment were thus in vogue in Cornwall - payment according to a fixed rate and payment according to the tables and counter.<sup>2</sup>

Boulton and Watt had not long commenced their connection with Cornwall when demands were made for remissions of dues in view of the hard times confronting the mines, either through trade being particularly bad or the expenses of the mines very heavy. The year 1782 brought wholesale demands of this nature which, together with other causes, produced a general quarrel between Boulton and Watt and the adventurers in the mines. It might be mentioned that Watt was representing his firm in Cornwall in the early months of 1782 and ~~not~~ the tactful Boulton.

The reasons advanced in 1782 to justify abatements in Boulton and Watt's dues were the high

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1. Boulton to Watt, November 26th 1780

2. The above account is taken from Dickinson & Jenkins p.p. 328 - 343.

price of coal and the low price of copper ores.<sup>1</sup>  
 The price of ore was down for a variety of reasons.  
 The Watt engine in Cornwall had stimulated production;<sup>2</sup>  
 but the Government restriction on the export of copper  
 restricted the market.<sup>3</sup> At this time too a Cornish  
 engineer, Jonathan Hornblower, was endeavouring to  
 perfect his compound engine, for which extravagant  
 claims were being made. The Cornish began to entertain  
 hopes that this engine would soon put an end to Boulton  
 and Watt's annual tribute, and they now became more  
 audacious in their demands for abatements of dues.<sup>4</sup>

The first demands came from the United  
 Mines, where in 1780 Boulton and Watt had set up  
 two engines. They offered the engine company £50 a  
 month and if this were refused they would stop the  
 mine, the blame for which would fall upon Boulton and  
 Watt's obstinacy. They increased their offer to  
 £75 per month, but this was rejected by Wilson, Boulton

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1. Watt to Boulton, March 16th 1782.

Watt to Boulton, March 21st 1782

2. G. C. Allen "An Eighteenth Century Combination in the  
 Copper Mining Industry" (Economic Journal, March 1923)

3. Boulton to Watt, March 26th 1782.

4. Watt to Boulton, March 21st 1782.



and Watt's Cornish Agent, although Boulton thought the offer should have been accepted. Boulton and Watt now offered to remit one third of their dues but this was refused and orders were issued to stop the Mine.<sup>1</sup> In an effort to avert the dangers from the miners and to throw the odium for stopping the mine elsewhere, Watt proposed that for six months from 1st April.1782. the United Mines should be absolved from the payment of dues to Boulton and Watt, but if the engine were continued in use after that six months Boulton and Watt were to be regularly paid as before. It was intended that these arrangements should be without prejudice to the original contract with the United mines. In explaining his reason for granting these terms Watt says, "If this proposal should not meet your absolute approbation I hope you will consider the emergency to which I was reduced and the necessity there is of keeping well with the miners, and moreover that our

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1. Watt to Boulton, March 21st 1782.

Watt to Boulton, March 28th 1782.

dues from a standing still mine are nothing and that according to any information I can gain the mine will stop at any rate as it loses £700 per month, so that we could never purchase popularity cheaper." <sup>1</sup>

Boulton approved of the financial arrangement made by Watt, but soon discovered a flaw in it. "It may happen they should strike a new discovery within the next few days or have already made but concealed a discovery, then Boulton and Watt would be robbed of their profits for six months". <sup>2</sup> To avoid pitfalls of this kind Boulton evolved the following principle to be applied in future cases of ~~lopping~~ mines demanding abatements - "That where a mine gets so poor as to lose per month more than twice the amount of our savings then I think we should give up our share of the savings to enable them to make new discoveries, but so soon as the mine grows richer and yields profits these profits should one half be paid to us, and

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1. Watt to Boulton, March 26th 1782.

2. Boulton to Watt, April 2nd 1782.



so soon as the monthly profits amount to twice our claim then and from thence forward we should be entitled to our whole claim until the mine declines again."<sup>1</sup>

These difficulties in Cornwall occurred at a most unfortunate time for Boulton. He was looking to the engine company and especially his revenue from Cornwall to enable him to reduce his Bill Account and ease his position with Lowe, Vere & Co. All the engine money that came from Cornwall and elsewhere was devoted to supplying the wants of Boulton and Fothergill. The most important agreement made in Cornwall was with the Consolidated Mines (Wheal Virgin and Wheal Maid) who had contracted to pay a yearly premium of £2,500 in respect of five engines. As soon as these engines were set to work, Boulton hoped to borrow on the security of that agreement enough money to repay Lowe, Vere & Co.<sup>2</sup> It was, therefore, a serious thing for him when the Wheal Virgin Company announced their intention of

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1. Boulton to Watt, April 2nd 1782.

2. Vid. p. p. 130. 139.

delaying their start (unless there was an abatement in the premium) owing to the high price of coal and the low price of ore. A similar decision was made at Poldice Mine where Boulton and Watt had erected another engine, besides one built there in 1779.<sup>1</sup>

The outlook was serious. Watt said the whole county appeared to be against them and was informed that the Cornish were beating them down at United Mines to form a precedent for Wheal Virgin, whose proprietors adopted every excuse and artifice to delay the start.<sup>2</sup>

At this stage came the proposals from the Hornblowers. They offered to alter the engines of the Consolidated and United Mines to conform to their compound principle for £300 each. They were willing to provide such security as might be desired for the performance of their part of the contract. They wanted no premium, provided they were appointed as engineers with moderate salaries. This, together

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1. Watt to Boulton, March 16th 1782.

2. Watt to Boulton, April 5th 1782.

Watt to Boulton, April 1st 1782.



with the Hornblowers extreme boastings, produced such a torrent against Boulton and Watt that even Boulton felt daunted "I feel myself unable to stem it or support myself".<sup>1</sup>

Boulton was now fully alive to the danger from the Hornblowers' engine, which was in fact an infringement of Watt's patent. "This is now become a very serious affair to us there being only this alternative - either to protect our rights or sink in ruin."<sup>2</sup> He pressed Watt to go to London and obtain legal advice and urged that measures be taken to stop the Hornblower engine then erected at Radstock colliery near Bath.<sup>3</sup> So black did the outlook appear in Cornwall that the ever optimistic Boulton momentarily lost his nerve - "As to the Hornblowers' engine I cannot study it at present without thinking of something that is horrible to me. If we cannot support our rights I am ruined".<sup>4</sup>

Boulton and Watt offered to let Wheat

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1. Boulton to Watt September 23rd 1782.  
Boulton to Watt, September 25th 1782.
2. Boulton to Watt, Sept. 25th 1782.
3. Ibid.
4. Boulton to Watt, April 13th 1782.

Virgin go by the tables if they were dissatisfied with the £2500 agreement.<sup>1</sup> Another force was now, however, entering the arena. The working miners were getting out of hand. If Wheal/Virgin were not set to work that summer they were determined to pull down the engines. So great was the malevolence against Watt, increased in bitterness by the Hornblowers, that he walked in fear of violence.<sup>2</sup>

The impending ruin did not, however, take place. The Hornblower engine failed to go properly and the Cornish were once more delivered into the hands of Boulton and Watt. Boulton went to Cornwall in the Autumn of 1782 and by his tact and diplomacy peace and concord, or rather as much as one could possibly get of that in Cornwall, began to reign once more. By the end of November Boulton was able to write - "I have now the satisfaction of saying that all I ever expected to erect in this county are now actually/finished and actually all are now going. Nine have been actually

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1. Boulton to Watt, March 26th 1782.

2. Watt to Boulton, March 21st 1781.



set to work since my arrival."<sup>1</sup>

Boulton's interests in Cornwall continued on a good footing till May 1783, when a new cause for alarm presented itself which seriously menaced Boulton's fortunes there. A Bill was before Parliament for removing the duty on coal used in Anglesey for<sup>2</sup> smelting copper. The Anglesey Company, under the able management of Thomas Williams, were contemplating the construction of as many furnaces upon the mines as would work up all their poor ores and so much more of their good ones as would amount to 5000 or 6000 tons of fine copper annually, by which they hoped to dominate the home and foreign trade in copper.<sup>3</sup>

The prospect before Cornwall was indeed a dreary one. If this Bill went through their copper mines were finished and with them the Boulton & Watt engine in Cornwall. The danger was therefore serious for Boulton, who was looking to the engine company to wipe out the consequences of the ill fortunes <sup>of</sup> Boulton

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1. Boulton to Wiss, November 27th 1782.

These included the five engines for the Consolidated Mines.

2. Boulton to Mrs Fothergill, August 2nd 1783.

3. Boulton to Sir Francis Bassett.

and Fothergill. "This was a matter of greater moment to me than to any other man in England."<sup>1</sup>

At the request of the Cornish, Boulton got up a petition, signed by the Birmingham merchants and manufacturers, against the Bill. He attended Parliament, was examined a full hour at the Bar of the House of Commons, and in the end secured the rejection of the Bill.<sup>2</sup> The arguments Boulton advanced are those typical of advocates of Government interference. "When I consider how many persons subsist in Cornwall by the mines in all their consequences, how many in Wales in getting the coals and smelting the ores, and that this coasting trade is a small nursery for seamen, the national strength resulting from the employment of so many people, the amount of taxes that they pay on what they consume and the duties paid on the various materials used in and about the mines, I say when all these things are considered I think in lieu of Parliament giving the Anglesey Company any further advantages they ought

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1. Boulton to Mrs Fothergill, August 2nd 1783.

2. Ibid.



to tax their ores which are got with so little labour or otherwise allow a bounty on the Cornish ores".<sup>1</sup>

Soon after this certain restrictions on the exportation of brass came into operation. These were of course detrimental to the copper industry and consequently to Boulton. Boulton repeated his efforts in Parliament, secured a majority for his cause in the House of Commons, but did not attend the House of Lords and so his cause was lost. The restrictions came into operation.<sup>2</sup>

So closely were the fortunes of Boulton and Watt identified with those of the Cornish Mines that it was not long before the partners were induced to take shares in them. It was essential to Boulton and Watt to keep the mines working and to help in this direction they became shareholders. " The main reason for the eventual embarkation on this new venture

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1. Boulton to Sir Francis Bassett. May 6th 1783.

2. Boulton to Mrs Fothergill, August 2nd 1783.

was certainly his (Boulton's) apprehensions regarding the fate of the engine business in Cornwall in case of a collapse of the copper industry".<sup>1</sup> In some cases Boulton and Watt's share was paid for out of the monthly savings on the particular mine in question, i.e., the monthly premium became a share in the mine.

By the close of 1780 Boulton and Watt were shareholders in five different mines.<sup>2</sup> Their first purchase was Wheal Union Mine where a one sixteenth share was taken. This was followed by an investment in Wheal Virgin, a mine with a good reputation and expected to be profitable. Wilkinson, the ironmaster, was interested in this mine and took a one sixty-fourth share. At the invitation of Sir Francis Bassett, a wealthy landlord and mine owner, Boulton and Watt took a share in Pool Mine, and early in 1782 Boulton was a party to a movement on foot to restart Polgooth Tin Mine which had not been worked for

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1. Roll. pp 87 & 88.

2. Roll pp 88 & 89



twenty five years in consequence of a lawsuit. The mine was taken by a certain Fox family and it was agreed that Boulton should find one third of the adventurers for the scheme.<sup>1</sup> This was not difficult as many were eager for a share in the mine. Boulton & Watt, though desiring one third, were only able to obtain a quarter share. The estimated maximum outlay for getting the mine to work again was £12,800. Boulton and Watts' contribution would therefore amount to £3,200. This was to be divided as follows :-

Boulton and Watt	...	£1000
Wilkinson	...	1000
Wedgwood	...	1000
Another friend	...	1000

The adventurers signed something in the nature of Articles of Partnership, subject to the Statutory Laws, so that if the mine should become a losing concern an adventurer could withdraw and so was not likely to lose more than he had advanced, and

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1. Watt to Boulton, January 22nd 1782.

as the accounts were published every month he could from time to time discover the state of the mine.<sup>1</sup>

By the end of 1785 Boulton and Watt had increased their share holdings so as to include Chasewater, North Downs, Poldice and Scorrier, besides the mines already mentioned.<sup>2</sup>

These investments in Cornish mines amounted in October 1785 to £6000 and it was anticipated that even more would have to be sunk to bring that sum back again. At this time Boulton and Watt were taking shares in North Downs and Chasewater, and so much was absorbed by calls from these companies that no money could be remitted from Cornwall to ease Boulton's general position.<sup>3</sup>

The mines were badly managed and Boulton feared that if left to the entire management of the Cornish Boulton and Watt's interest both in engines and mines would suffer. He thought, however, that were it possible for him to reside in Cornwall in the

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1. Boulton to Capper, November 11th 1782.

2. Hamilton "The English Brass and Copper Industries" to 1800". p.167.

3. Boulton to Walker, October 29th 1785.



following year, 1786, he would be able to remit home at least £10,000.<sup>1</sup>

Certain benefits accrued from Boulton taking shares in these mines. He was able to introduce reforms in their management so that business was conducted with more despatch and efficiency.<sup>2</sup> The Steam Engine Company was now better able to take care of itself against attempts at fraud as Boulton saw at the very commencement of the Cornish investments. "I have found it prudent to take small shares in every mine where we have engines by which I see all their books and gain admission to their Privy Councils and thereby am better able to take care of ourselves."<sup>3</sup>

The Cornish copper mining industry was, however, by 1785 in a precarious and depressed condition and it needed more than reforms in individual mines to effect anything like a radical improvement in their fortunes.

The introduction of Watt's engine in 1777, though it had saved the county from extinction, had so revived the mining of copper that supplies had come to

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1. Boulton to Walker, October 29th 1785.

2. Hamilton p. 168.

3. Boulton to Watt, November 26th 1780.

be far in excess of demand. There was, moreover, the competition with the easily worked Anglesey mines from which Cornwall emerged second best. Further, the Cornish mines lacked working capital, with the result that they had to rely on quick sales of their product in order to defray their working expenses. This in turn placed them in the power of the smelters.

The smelting of the Cornish ores was carried on by eleven different smelting companies who made their purchases at monthly sales known as ticketings. Lacking working capital, the Cornish Mines were at the mercy of the smelters to whom it was essential they should dispose of their product. These smelters in turn were in fierce competition with one another which led to a more than proportionate decrease in what they offered for the ores purchased in Cornwall.

There was, therefore, a two fold problem to overcome, firstly to reform the industry on its marketing

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side and so overcome the stranglehold of the smelters, secondly to put an end to the competition with Anglesey.<sup>1</sup>

The first suggested solution came from John Vivian, an important Cornish mine owner, who advocated the creation of a company which should take all the ore produced in Cornwall, get it smelted and then finally dispose of the metal. The proposition met with universal approval and received the blessing of Boulton, who now took a leading part in carrying it into execution. Thomas Williams, manager of the Anglesey mines, also gave his support as there was little love lost between him and his fierce competitors the smelting companies.

To achieve the reforms which it was now realised were necessary and to secure

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1. The foregoing account of the difficulties confronting Cornwall is based on Hamilton "The English Brass & Copper Industries to 1800" pp 166 - 213.  
G.C. Allen "An Eighteenth Century Combination in the Copper Mining Industry. Economic Journal. March 1923.

to the Cornish mines control over the smelting and marketing of their own ores a company was formed in September 1785 along the lines indicated by Vivian. The company, known as the Cornish Metal Co., had a nominal capital of £500,000 of which £130,000 was immediately subscribed. It was to be under the direction of a Governor, Sir Francis Bassett, a Deputy Governor, John Vivian and thirty six directors, twenty four of whom were chosen by the miners and twelve by the subscribers. Boulton alone had the sole right of appointing these twelve as the voting power in his hands accounted for £74,000 of the subscribed capital of £130,000.<sup>1</sup>

Boulton was able to wield this power as he held Wilkinson's proxy for £25,000, that of a Quaker family (Foxes) for £37,000 and the votes of Boulton and Watt for their own subscription of £12,000.

Though Boulton and Watt had subscribed

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1. Boulton to Scale, September 7th 1785.  
Hamilton p.p. 170 - 172.  
G.C. Allen.



for £12,000 this was not to be retained by them, but to be split up as follows:- A Mr Hurd was to take £4,000, William Wilkinson £2,000, Josiah Wedgwood £2,000, Boulton £1000 and Watt £1000. In the agreement with these parties Boulton reserved to himself the right to redeem part of these shares for himself at the end of three or four years, and also retained the power to use their proxies in voting for directors annually.<sup>1</sup> Finding the money to meet the calls of the Cornish Metal Company, as well as those of the North Downe and Chacewater Mines, were the main reasons why Boulton continued short of resources in 1785.<sup>2</sup>

The objects of the Cornish Metal Co., were to keep up the price of copper ores at a proper standard and to contract for the smelting of all ores as should best promote the interests of the mines."<sup>3</sup> The Company agreed to purchase all the copper/ore raised in Cornwall for the next seven

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1. Boulton to Matthews, September 5th 1785.

2. Boulton to Scale, September 7th 1785.

years, and having got the ore smelted to sell the copper in a metallic state. The Cornish mines on their part agreed to sell all their ores to the Metal Co., at prices fixed periodically by the Governors and directors.<sup>1</sup>

An agreement was now made with Anglesey for the fixing of prices and the division of the market, three fifths of which was apportioned to Cornwall and two fifths to Anglesey. From March 1786 the price was to be £86 per ton. Knowledge of a certain rise in price in the future stimulated a rise in the present, and for a time everything prospered in Cornwall. The mines were working at full capacity and Boulton's engines were in full employ.<sup>2</sup>

Unfortunately this prosperity was largely illusory. The Cornish Metal Co., was merely a central selling agency. It had no control over production which, on account of the high prices

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1. Allen.

2. Ibid.



offered, had been greatly stimulated. The result was by 1787 the Cornish Metal Co., was in a very precarious position its capital was now represented by a vast stock of copper which was increasing rapidly and could not be disposed of, though Anglesey found no difficulty in expanding its sales. Further, the rise in price had stimulated the importation of foreign ores and it soon became manifest that there were large quantities of unconsumed stocks in England, of which use was now being made.<sup>1</sup>

By 1787 the outlook in Cornwall was truly desperate. The mines had broken the agreement with the Metal Company and with Anglesey, who now commenced ruthless price cutting. Once more the copper mining industry in Cornwall seemed on the brink of ruin.<sup>2</sup>

Once again then Boulton's fortunes in that county were in jeopardy. The crisis, though a serious thing for him, was not pregnant with such consequences

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1. Allen.

2. Ibid.

as had been that of 1782. Then Boulton's sole hope lay in the pumping engines on the Copper Mines. If the beams ceased to rock in Cornwall the bailiffs entered Soho. But by 1787 rotative engines were beginning to be in demand and Cornwall was of declining importance.

Boulton soon realised that salvation could only come through reduction of output. This meant the closing of various mines, the certainty of starvation among the working miners and the great probability of riots and violence. Boulton was afraid to resign his share in North Downs for this reason, as he said, "nobody follows mining to preserve their property but to preserve their lives".<sup>1</sup> In fact Boulton was none too safe as lying tales were spread abroad to the effect that he, having urged that certain mines be closed, was told this would mean starvation for the miners, to which his answer is alleged to have been - "No that can be prevented by

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1. Boulton to Garbett. October 5th 1787.



giving them arsenic".<sup>1</sup>

In a letter to Pitt, Boulton describes the miseries in Cornwall in 1788 and gives an account of the disturbances. He mentions that the miners were deserting the county and that he himself obtained work for one hundred of them in the coal and iron works of Shropshire. How serious was the situation in Cornwall may be gathered from the following extract. "The following ancient and extensive copper mines have been stopped within the last twelve months -

The Consolidated Copper Mines of North Downs which employed upwards of 1500 persons.

Dolcoath Copper Mine, belonging to Sir Francis Bassett, employing about 1000 persons; and you will see from Mr Wilson's letter that Chacewater Mine is upon the brink of stopping and it employs about 1000 persons. Poldice mine there is the greatest probability of stopping, and if that mine stops all its water will go to the mines of Wheal Virgin, Wheal Maid and Carrack

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1. Wilson to Boulton, November 3rd 1787.

and inevitably put a stop to them all. In addition there were stopped - Hallamanning, Crenver, Tresavean, Wheal Towan, Crane and Prince George Mines; all employing many hundred persons."<sup>1</sup>

To alleviate this distress Boulton urged Pitt to order the issue of a new copper coinage. Boulton was already interested in the manufacture of copper coins and he hoped to secure a contract with the Government.<sup>2</sup>

With Cornwall in the condition just described, Boulton and Watt were soon faced with demands for reductions of premiums. They consented to give up a portion of the savings due from Poldice Mine to keep it going and so prevent the flooding of Wheal Virgin and Wheal Maid. This concession was only made on condition Wheal Virgin did not cite it as a precedent to secure reductions themselves. This, however, was just what they did.<sup>3</sup> At length Boulton and Watt

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1. Boulton to Pitt.

2. Ibid.

3. Boulton to A.H. Daniels, September 2nd 1788.



gave way and reduced their annual charge from £2500 to £1667 in respect of Wheal Virgin's five engines.<sup>1</sup> Boulton, personally, was not in favour of making concessions to the mines holding the view that "anything which would enable them to get more copper would certainly decrease the value of what is already got. - - - - At present the best thing that can happen to the county is half of the mines stopping till better times, and as neither we nor anybody can dictate, the weakest must go to the wall".<sup>2</sup>

Meanwhile the Cornish Metal Company continued in a desperate condition with ever mounting stocks of copper which could not be disposed of. In October 1787 the mines broke the agreement with the Metal Company and with Anglesey. The ensuing competition disastrous to Cornwall was, however, disliked by Anglesey and so by the end of 1787 a new agreement was made putting an end to it and re-establishing the position of the Cornish Metal Co.

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1. Dickinson and Jenkins, p.335.

2. Roll p.93. Boulton to Wilson, 1787.

Until September 1792 the sales of Anglesey and Cornwall were to be in the hands of Thomas Williams, who was now well on the way towards becoming sole arbiter of the country's copper mining industry. The output was fixed at 300 tons each for Cornwall and Anglesey and the price reduced to £80 per ton.<sup>1</sup>

Boulton's wholehearted support was given to this new agreement and he now used all his influence to restrict output and so ensure success to the combination. In 1788 to assist the Cornish Metal Co., in disposing of its stocks he purchased from it a large quantity of copper.<sup>2</sup>

Boulton and Williams found difficulty in inducing the adventurers to abandon their mines, and it was not till 1789, after the closing of several large mines, that the necessary reduction in output was effected. There was one mine, however, which Boulton was determined should cease working, viz., Chacewater. This mine was losing money rapidly and showed no signs of improving. Besides being shareholders

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1. Allen.

2. Ibid.



themselves, Boulton and Watt had prevailed on four of their friends to take shares too. These were induced to do so on account of their high regard for Boulton and Watt; but as the mine continued to lose a great deal of money they began to complain. Boulton and Watt, having drawn their friends into this losing venture, were now eager for the mine to stop.<sup>1</sup>

Eventually in April 1789 Chacewater did cease working much to the relief of the partners.<sup>2</sup>

Although the Cornish Metal Company had been saved from ruin the fortunes of the individual mines remained very poor indeed. The Metal Company, heavily burdened with stocks, was not in a position to offer good prices for ores; consequently nearly all the mines in the county were losing money. Moreover, there seemed little prospect of selling the vast accumulations of ore, and among the working miners the spirit of riot and violence was rampant. It seemed

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This revival in its price was therefore not a pleasing

1. Boulton to Wilson, March 23rd, 1789.

2. Boulton to Wilson, April 14th 1789.

as if there was no hope for Cornwall.

"The next year, however, Cornwall was saved as if by a miracle. The great store of copper ore in Anglesey, which had been mined so cheaply, was by 1790 becoming exhausted".<sup>1</sup> This enabled the Cornish Metal Company to dispose of increased quantities of its vast stock. So considerable was the improvement in its position that by 1792 it had sold all its stock, paid its debts and still had its subscribed capital in tact. This was very largely due to "the reduced produce of the mines of Anglesey, in conjunction with the ruin of several Cornish mines, which raised the price of copper from £80, at which it stood in 1790, to £90, which was its price in 1791".<sup>2</sup> By 1792 the price per ton had risen to £100.<sup>3</sup>

Meanwhile Boulton's interests had undergone a change. He was now embarked on the coinage business and was, therefore, a consumer of copper. This revival in its price was therefore not a pleasing

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1. Allen.

2. Ibid.

3. Ibid.



event for him. Further, during the period 1790 to 1792 Williams was endeavouring to gain complete control of the copper trade of the country, and Boulton, as will be shown later, was several times put to great inconvenience through the doings of this would be monopolist.<sup>1</sup>

True, the revival in Cornwall was a good thing for the steam engine company, for once more engine dues began to flow in. Nevertheless, Cornwall was by now of declining importance to Boulton and Watt, for whose rotative engines there was now a great demand. From 1788 to 1796 only five new Boulton and Watt engines were erected in Cornwall, and in this period too the management of the steam engine concern was passing more and more into the hands of the two partners' sons - Matthew Robinson Boulton and James & Gregory Watt.<sup>2</sup> The first named of these, Boulton, Jr., was entrusted with the collection of engine dues from those who had been users of Hornblowers' and Maberley's engines, which finally in 1799 were held by the Courts to be infringements of Watt's patent. It is estimated that he collected

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1. Vid. p. 214.

2. Vid. p. 226.

£30,000 in Cornwall from the users of these engines and from those who had refused to pay Boulton and Watt in respect of the use of their engines.<sup>1</sup>

In the early days of Boulton and Watt, however, when the steam engine was only a pumping engine, Cornwall was by far their greatest and most important market. From 1781 to 1800 their total income from that county alone amounted to £13,900, which, says Roll, shows the heavy burden of engine premiums on mining industry.<sup>2</sup> This remark, however, is not absolutely true, for had Watt's engine not been introduced, though mining would have been conducted on a smaller scale, the money which did not find its way to Soho would to three times its extent have been used up in the extra fuel consumption of the Newcomen engine. Economic rent, the result of a differential advantage, in this case the Watt engine compared with

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1. Dickinson and Jenkins p.336.

2. Roll. p.84.



that of Newcomen, does not constitute a burden. Thus, if a mine using an atmospheric engine was selling its ores at the current market price and making a profit, the introduction of a Watt engine, though entailing the payment of an engine due, inflicted no burden on the mine; on the contrary, two thirds of the economic rent of a Watt engine was enjoyed by the mine owner. It was only when the Watt engine was adopted generally that the engine dues became a burden, as the advantage then ceased to be differential. The total output of copper from Cornwall so rose as to effect a lowering of price, which in turn obliterated the economic rent which the first users of the Watt engine had enjoyed.

THE ALBION STEAM FLOUR MILL.

In 1783 Watt completed his design of the double acting steam engine in which the steam presses alternately on each side of the piston, thus giving two impulses to each revolution of the engine. This improvement together with the centrifugal governor to maintain steadiness of speed, the sun and planet gear and parallel motion, brought into being an engine capable of a steady and regular rotative motion.

The idea of applying the double acting rotative engine to the grinding of corn first presented itself to the mind of Samuel Wyatt, a celebrated architect of the time. He succeeded in interesting several wealthy people in the scheme and choose as the sight for the future mill a spot near Black Friars' Bridge, London. Among those induced to become interested were Boulton and Watt, who seized an opportunity of having their rotative engine brought to public notice in an undertaking of uncommon magnitude. In July 1783 Boulton and Watt were ordered

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1. The following account is based almost entirely on an article by A.O. Westworth on "The Albion Steam Flour Mill," which appeared in "Economic History" in January 1932.



to construct a suitable engine for the mill, and in the following June a meeting of the proprietors was held to draw up some form of agreement. The nominal capital of the company was fixed at £60,000 divisible into five shares of £12000 each. To safeguard their private fortunes the proprietors determined to seek incorporation by the only method then possible, viz., by Royal Charter. The application failed, however, largely owing to the strong opposition of the Millers in and around London. The company had now to be organised on the usual partnership lines.

At the outset only four of the five £12,000 shares were taken up and it was not till 1786 that there was a full number of subscribers. Boulton and Watt's share was further divided to enable their friend William Matthews to have an interest in the venture.

The reasons why Boulton became a partner and prevailed on Matthews to become one were the following :-

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1. The reason already mentioned - "Holding up to public view an example of the application of our engine in so capital a way as to produce to us fame and orders for more engines".<sup>1</sup>
2. Boulton thought the plan would prove profitable.
3. As Matthews lived in London, Boulton thought he could keep an eye on the goings on at the Mill and look after their interests.<sup>2</sup>

Curiously enough, Boulton entertained hopes that the Albion Mill would be able to make money by speculating in corn.<sup>3</sup> To do this a detailed and intimate knowledge of all the corn markets was necessary but none of the partners possessed this equipment.

The Mill, the buildings of which were seven stories high, was set to work in March 1786. Some initial alterations had to be made in the machinery; but of more anxiety to Boulton was the bad management.

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1. Boulton to Matthews, April 25th 1789.

2. Ibid.

3. Boulton to Wyatt, 25th Sept. 1788.

Watt was strongly opposed to speculating in corn and did not hesitate to voice his objections to Matthews "In short for green horns like ourselves to speculate in corn is not prudent". He urged that the Mill carry as small a stock of corn as possible until the number of customers for the flour increased.

Watt to Matthews May 22nd 1786, Boulton and Watt Collection.



Those in charge of the Mill did not get on very well with each other, a state of affairs hardly conducive to efficiency. There was also trouble with the workmen, some of whom demanded increased wages. Watt wished to see these dismissed at once.<sup>1</sup>

The Mill in its early days suffered from the tactics of the other London Millers, who now carried on their hostilities in the corn markets. Whenever the Albion Mill representatives appeared there to make purchases every effort was made to run up the price, and for a few weeks the Albion Mill purchases were made at higher than current prices e.g., the current price in March 1786 was 38/- per quarter whereas the Albion Mill paid 39/6.

Meanwhile part of the capital was being called up in September 1785. This was the date of the formation of the Cornish Metal Company and Boulton and Watt were also taking shares in North Downs and Chacewater. At this time Boulton was

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1. Watt to Matthews, May 7th 1785.

investing his money as rapidly, if not more rapidly than he was receiving it. The autumn of 1785 was, therefore, a very tight period for him, so much so that in August, Matthews, who was in advance to Boulton on Bill Account and could see prospects of a yet further increase, wrote - "I dread the advance the Albion Mill will require".

The Mill had no difficulty in disposing of its flour. There was plenty of work and in May 1788 a second engine was installed. Commercially, however, the Mill was a failure. In the second quarter of 1787 a net profit of £382 was made, in the third quarter of the year expenses were barely covered, while in the last quarter there was a loss of about £300. Boulton was unable to ascribe this to any particular cause owing to his ignorance of the flour milling industry, though he was pretty certain the fault rested with the management, in which he now endeavoured to bring about certain reforms. Nevertheless the following year turned out badly and more money was lost.

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Meanwhile in 1787 further calls had been made. These occurred at an unfortunate time for Boulton, who, besides laying out a good deal in preparation for the coinage, was, as we have seen, not receiving his full tribute from Cornwall.<sup>1</sup> By April 1789 he had invested £6,000 in the Albion Mill and was beginning to wish he had it back again.<sup>2</sup>

By the end of 1788 Boulton and Watt were strongly dissatisfied with the state of the Albion Mill. They were also beginning to be desirous of severing their connection with that concern. One of the main reasons for their joining it - publicity for the rotative engine - was now bearing fruit. Orders were coming in from all quarters, including flour mills; but on account of their connection with the Albion Mill Boulton and Watt refused orders from its rivals.

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1. Vid pp.248 to 252.

2. Boulton to Matthews, April 13th 1789.

Early in the following year Boulton and Watt came to the conclusion that their best interests would be served by terminating their connection with the flour mill, as they would then be in a position to take steam engine orders from other flour mills. The Articles of Partnership, however, stipulated that no one could leave the venture till after the lapse of seven years. Boulton and Watt's connection with the mill was now rendered yet more unpleasant on account of a quarrel between their friend Matthews and the other partners, which took place in March 1789. Matthews now wanted to sever his connection with the Mill and somehow, notwithstanding the Articles of Partnership, he succeeded in making his escape, for in May 1789 we find Watt congratulating him on so doing.<sup>1</sup>

The other partners were surprised and annoyed at Boulton and Watt's desire to quit the concern, especially as their position was more comfortable than that of the others.

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1. Watt to Matthews, May 3rd 1789. Boulton and Watt Collection.



Boulton and Watt, it must be remembered, drew engine rent from the Albion Mill in respect of the two engines, and this fully compensated for their share of the losses.

After this tiff Boulton and Watt again exerted themselves on behalf of the mill and endeavoured to remedy the defects of management. In particular, Boulton remonstrated against carrying excessive stocks of wheat and flour and pointed out that carrying large stocks on a falling market had involved the company in heavy losses. Great care, he said, should be exercised in the purchasing of good quality wheat and there should now be no more speculating on the corn market.

Watt was so displeased at the want of proper management that he advocated dismissing it entirely and installing absolutely new managers, but Boulton opposed this and considered that a detailed examination of the accounts would reveal where the faults lay. Money continued to be lost:, in 1789

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there was a loss of £268. 2. 2 and in 1790 a deficit of £13,115. 9. 0. Boulton now argued that if this state of affairs continued and there remained no prospect of profits the partnership had better be brought to a close.

All problems were, however, cut short by the destruction of the Albion Mill by fire in March 1791. It seems that the Mill was covered to the extent of £60,000 by insurance.

Commercially the Mill had been a failure. This was partly due to lack of technical knowledge on the part of the management. Moreover, those who were proprietors in the concern were men whose main interests were in activities other than the flour mill. There was, therefore, an unfortunate absence of proper supervision in the conduct of the undertaking.

It is rather difficult to assess how much Boulton ultimately lost in the Albion Mill. By 1791 he had managed to dispose of part of his holding so that by the date of the fire his share amounted to one fifteenth. Judging from the tone

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of one of his letters after the fire it seems he was not the victim of a very considerable loss. "I own I was unhappy for a few hours after I had received the news, but so soon as I had considered the subject and become acquainted that the companies unburnt stock is now worth upwards of £100,000 (such as book debts, corn lodged in their country grammaries, coals, which stock is kept upon different wharfs, separate hoggeries for we have near 1000 pigs, horses all saved, cash in bankers hands, the two engines and the boilers saved but for the woodwork, to which add the insurance, which at present I know not the amount of, but its more than £40,000). I say when I reflect upon what is not burnt, and that the stock of corn and flour in the mill was not half what it was a year ago, and when I consider that I parted with a part of my share two years ago and that I have not more than one-fifteenth of the concern I now nearly know the worst of it and am

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perfectly at ease.<sup>1</sup>

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THE COINAGE.

The state of the copper coinage circulating in this country in the middle of the eighteenth century was truly deplorable. It was computed that no less than half of it was counterfeit. With the state money in such condition, local bodies, companies, firms and even private individuals issued copper coins of their own; but these in turn were again counterfeited, thus making matters even worse. Many of the private orders for coins were carried out in Birmingham where their manufacture now became a business of first importance.

This problem engaged the attention of Boulton who came to the conclusion that the only remedy was to sweep away the existing coinage and replace it by the issue of new coins of better workmanship and greater intrinsic value which would render counterfeiting

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1. Boulton to Hart, March 7th 1791.



unprofitable. Boulton himself had long been considering the practicability of using the power of steam for the striking of coins and by 1786 he had determined to embark on the business of manufacturing coins.<sup>1</sup>

Apparently the first contract Boulton executed in the coinage trade was for someone in America. The quantity was however very small, amounting to only six tons.<sup>2</sup> In the same year, according to Smiles (p.361) Boulton carried out an order for over one hundred tons of copper coins for the East India Company.

Boulton was dissatisfied with the results of this contract which had been carried out under the supervision of Scale, manager of the Button Company. The blame for there being little profit lay not with the Managers, "but in the shortness of time allowed for executing the orders. It was begun without tools, without experience, without either men or masters, but such as were engaged in other branches and could not pay

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1. Smiles Boulton & Watt p.p. 358 - 372.

2. Walker to Boulton. Sept. 23rd 1786.

their sole attention to it".<sup>1</sup> Scale thought it best for him to have nothing to do with the coining business, there being quite enough to occupy his time in the button trade.<sup>2</sup>

Although Boulton had been~~able~~ to carry out his contract with the East India Company and make satisfactory coins, he was disappointed in his coining plant and apparatus. He, therefore, determined to reorganise his mint and introduce several improvements.<sup>3</sup> It will be recalled that expenditure on coinage apparatus, together with Cornwall and the Albion Mill, helped to keep Boulton poor from 1785 to 1790.

In 1786 Boulton and Watt visited France where they saw an exceptionally fine crown piece executed by a Swiss Artist named Droz, "who had also made some other improvements on the coining press and pretended to others in the art of multiplying dies, and as to his mechanical abilities joined that of being a good die sinker".<sup>4</sup>

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1. Scale to Boulton, April 21st. 1787.

2. Ibid.

3. Smiles p.p. 362 and 363.

4. Biographical Memoir of Boulton by James Watt.



At length, in 1787 and 1788, Boulton was consulted by the Government on the coinage question. It was contemplated giving him a contract to strike five hundred ~~red~~ to a thousand tons of copper coins.<sup>1</sup> Feeling sure of the contract, Boulton put himself to a good deal of additional expense and at the request of the Lords of the Treasury he had Droz brought over from France.<sup>2</sup>

Boulton says that his "principal reason for turning coiner was to gratify Mr Pitt to put an end to the counterfeiting of coin".<sup>3</sup> However, he had been deceived. No orders to proceed with the coinage came from the Treasury. One reason for this was the bad state of the king's health. It was not expected that he would recover his senses again.<sup>4</sup>

This was a bad think for Boulton whose capital ~~expenditure~~ on coining account had by 1789 reached £7,000.<sup>5</sup>

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1. Boulton to Wilson, April 11th 1787.  
Boulton to some person unnamed, May 1787.
  2. Boulton to Count Reden, April 21st 1791.  
Boulton to Matthews, October 9th 1788
  3. Boulton to Woodmason, November 13th 1789
  4. Matthews to Boulton, Dec. 14th 1788  
Boulton to Wilkinson, Nov. 20th 1788
  5. Boulton to Mitchell, Nov. 25th 1789.

Besides, there was considerable expenditure in connection with Droz who only agreed to come over on condition he received £1700, which turned out to be far more than he was really worth. According to Boulton's account, "Droz came, trifled away two years, engraved one set of dies for striking half pence, deceived me about his pretended improved press and received of me £2000 without doing anything more than as above, except giving more trouble and vexation than any man I ever had connections with in my life".<sup>1</sup>

Notwithstanding the failure of the Government coinage to mature, Soho Mint was not absolutely idle. Several orders for provincial coinages came in. In 1789 there was one such order for Cronebane and Dundee, while in 1791 there were executed orders for Anglesey, Cornwall, Glasgow, Hornchurch and Southampton.<sup>2</sup> In the same year, too, there was another one hundred tons order for the East India Company.<sup>3</sup>

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1. Boulton to Count Reden, April 21st. 1791.

2. Smiles p. 365.

3. Boulton to Count Reden, March 1791



In 1791 a very large order was received from an important French banking house named Monnerons, who desired the execution of a vast quantity of copper tokens.<sup>1</sup>

A difficulty attendant upon a large contract of this kind was the initial outlay necessary in the buying of a large quantity of copper. Monnerons realised this, and to assist Boulton to make the purchases opened a credit of £23,596 for him with Matthews.<sup>2</sup>

The next difficulty lay in finding the copper on which to spend the money. The copper trade was now in the hands of a monopolist, Thomas Williams, who was at this time joint agent for both Cornwall and Anglesey.<sup>3</sup> Boulton it will be remembered was in a partnership with a man named Hurd in a scheme for selling copper, but Hurd, too, had fallen under the spell of Williams and so Boulton could get no copper from that source either.<sup>4</sup>

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1. Nothing has been discovered in the correspondence which gives any indication as to the tonnage of the contract but some idea of its magnitude is given by the large sums of money involved.

2. Walker to Boulton, May 5th 1792.  
Boulton to Matthews, Nov. 30th 1791  
Boulton to Wilson, Sept. 22nd 1791

3. Vid. p. 253

4. Vid. p. 181 - 183.

The contract with Monnerons had been entered into and the terms fixed on the supposition that copper could be bought at £80 per ton.<sup>1</sup> This was in the Summer of 1791 and the price at that time was £80 per ton. Boulton's efforts to secure copper without paying an exorbitant price for it were futile; between July and October he had only been able to collect thirty tons, though willing and eager to pay ready money for several hundreds of tons.<sup>2</sup>

How complete William's monopoly was is indicated by one of Boulton's letters; "All hath been swept away from Swansea and every ounce of copper in the Kingdom seems to be bought up by the Anglesey trap".<sup>3</sup> With the copper trade so completely in his grip, Williams now set about raising the price which by the beginning of October stood at £87 per ton at which figure Boulton refused to buy.<sup>4</sup>

Boulton now began to grow alarmed at the position and feared that in the end the contract would be

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1. Boulton to Wilson, September 22nd and 24th 1791

2. Boulton to Edwards, October 30th 1791

3. Ibid.

4. Boulton to Wilson, October 5th 1791



withdrawn and placed in France; but he determined to explore every avenue before admitting defeat. He appointed a man named Watson to visit the three naval ports - Bristol, Plymouth and Portsmouth, where old warships were being broken up, to purchase on his behalf as much old copper as possible up to 200 tons. Watson was allowed to pay so much for the copper that its price when delivered at Soho would not exceed £85 per ton. Further, it was essential in making the purchases that Watson did not reveal on whose behalf he was acting, otherwise Boulton feared his plan would be frustrated.<sup>1</sup>

By the end of November 1791, Boulton had managed to get hold of two hundred tons of copper. Where it was obtained and what part was secured through Watson is not clear. In any case a very high price had to be paid, viz., £86 per ton. This absorbed £17,200 of Monnerons' money in Boulton's hands, there remained

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1. Boulton to George Watson, October 7th and 21st 1791.

an unused balance of £8,600.<sup>1</sup> Having obtained this copper, though the amount was not adequate for the entire contract, Boulton was able to commence the manufacture of the coins.<sup>2</sup>

Boulton now found himself assailed from another quarter. Various lying tales and rumours detrimental to his interests became current. The "Morning Chronicle" for November 26th 1791 contained a paragraph about Boulton which read - "Mr Boulton will lose considerably by his contract for supplying Messrs Monnerons with copper medals if the copper continues at the same price it now bears in the market".<sup>3</sup> A few days later the "Morning Post" appeared with an account of the alleged failure of Messrs Monnerons.<sup>4</sup> The article made express mention of the coinage contract with Boulton. Although Boulton realised the story was false, and in any case he was covered by the Monneron's copper and money in his hands, he believed it to be part of a calculated attempt to prevent him from buying copper and to injure

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1. Boulton to Matthews, November 23rd 1791.

2. Boulton to Motteaux, December 11th 1791.

3. Boulton to Matthews, November 30th 1791.

4. Monnerons did subsequently fail but this was after Boulton had terminated his connection with them.



his contract with Monnerons and undermine his credit in general.<sup>1</sup> The general comment was, when the public read the paragraphs, "poor Boulton after so many struggles is ruined at last".<sup>2</sup>

Both Boulton and the Monnerons were anxious to discover the author of these paragraphs with a view to a prosecution. Boulton's suspicions fell upon Thomas Williams, who was his rival for the Government coinage.<sup>3</sup> Beyond suffering some annoyance from these rumours Boulton experienced no hurt therefrom.

The manufacture of the coins in fulfilment of this contract kept Soho Mint busy till well into 1792 and for a time added considerably to the monthly expenses of the manufactory. The expenses of manufacturing the coins had to be borne by Boulton. He, however, could not recoup himself from France till he had sent sufficient coins to counterbalance the remittances they had already made to him, after which

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1. Boulton to Matthews, November 30th 1791.

2. Matthews to Boulton, December 21st 1791.

3. Boulton to Wilson, December 12th 1791.

they would commence to be indebted to him.<sup>1</sup>

Meanwhile, no decision had been reached concerning the Government coinage and Thomas Williams now entered the arena as a competitor to Boulton. Williams proposed to Boulton that he was willing to withdraw his opposition on condition Boulton would purchase from him for £550 two old presses. Boulton complied, but was suspicious of Williams whom he suspected of erecting a coining mill in London on his, Boulton's, own patent principles.<sup>2</sup>

It was not till March 1797 that Boulton was given a Government coinage contract. This was followed by an Act of Parliament and Royal proclamation to legalise the new coin, and exhort all mayors and magistrates to promote the circulation of it.<sup>3</sup>

One of the difficulties already mentioned in the execution of a large copper coinage contract was the huge initial outlay in the purchase of copper. This

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1. Walker to Boulton, March 26th 1792.

2. Boulton to Wilson, December 12th 1791.

Boulton took out a patent for his coining press in 1790 to prevent others availing themselves of the invention.

Boulton to the Lord Chancellor, Aug. 3rd 1790

3. Mrs Matthews to Miss Landrell, June 1797.



difficulty had been overcome in the case of the Monnerons by that house itself providing the money for the copper. The Treasury, however, were not prepared to go as far as Monnerons; but Boulton was able to prevail on them to advance £10,000. Compared with the total outlay this assistance did not go very far; for in May 1797, before work on the coinage was commenced, Boulton had purchased over £56,000 worth of copper, £10,000 worth of this was already paid for, and another £8000 was payable shortly.<sup>1</sup> By August £26,693 had actually been disbursed for copper. This outlay reflected itself in a rise in Boulton's Bill Account with Mrs Matthews, which now rose to £20,000, thus imposing a heavy strain on Boulton and her.<sup>2</sup>

Actual work on the coinage was commenced in June 1797 and by the end of the following month large

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1. Boulton to Charles Long, May 16th 1796.

2. Mrs Matthews to Boulton, July 25th 1797.

quantities were ready for delivery.<sup>1</sup> To assist in the circulation of the money Boulton endeavoured to obtain orders from the bankers of the large towns. He thought himself able to secure its circulation in Scotland, the Eastern and Northern counties of England and also in Cornwall. He hoped the Government would take care of the South Coast as they had good opportunities for putting the money into circulation at Deptford, Greenwich, Wollwich, Chatham, Skegness, Portsmouth, Southampton, the barracks and places where soldiers were quartered and shipwrights employed.<sup>2</sup>

According to the contract, the Treasury was to take fifty tons at the outset.<sup>3</sup> This was dispatched early in August and Boulton hoped this would be paid for and so bring in £7500 for which he stood in great need, as the purchases of copper had exhausted his resources and swelled the Bill Account so much that Mrs Matthews stood in need of assistance.

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1. Boulton to Long July 27th 1797.

2. Ibid.

3. Boulton to Mrs Matthews, July 27th 1797.



Hard pressed as he was, Boulton contemplated borrowing £2 or 3,000, but, as he realised, the best thing to do was to get the money into circulation as soon as possible.<sup>1</sup>

Boulton hoped to deliver another twenty tons to the Treasury which would bring his claim on them up to £10,000, which sum he hoped to receive very soon.<sup>2</sup>

It was, therefore, a rude shock for him to learn from

Mrs Matthews that the Treasury were not inclined to make the payment and further that they desired no more be sent to them unless ordered. This meant that the burden of putting the pence into circulation was thrown upon Boulton, and Mrs Matthews feared there would not be much demand for the coin.<sup>3</sup>

This decision on the Treasury's part put Boulton in a very uncomfortable position. By the end of August bills to the amount of £10,000 were falling due, payable at Mrs Matthew's. She, in desperation, called on Boulton to do something or

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1. Boulton to Long, August 4th 1797.

Boulton to Mrs Matthews, July 27th 1797.

2. Boulton to Long, August 4th 1797.

3. Mrs Matthews to Boulton, 1st August 1797.

"God knows I shall fall sick indeed".<sup>1</sup>

The Treasury, or rather Charles Long acting on their behalf, had refused to pay for the fifty tons Boulton had delivered. Long, however, was willing that some person should be appointed to sell the coin at Somerset House, and as the coin was sold so payment should be made.<sup>2</sup> In pursuance of this plan, a man was installed at Somerset House to sell the coin. A public announcement was also made to the effect that the coin was on sale there, and also at the offices of Mrs Matthews and a Mr Chippendale.<sup>3</sup>

Contrary to Mrs Matthews fears, the public demand for the new pence was exceptionally strong. At first the banking houses were inclined to hold back, but seeing the intensity of the public demand they too joined in the clamour for the new money.<sup>4</sup> Before the end of August all the coin at Somerset House

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1. Mrs Matthews to Boulton, August 1st 1797.

2. Mrs Matthews to Boulton, 11th August 1797.

3. Mrs Matthews to Boulton, 11th August 1797.

Mrs Matthews to Boulton, 14th August 1797.

4. Mrs Matthews to Boulton, 24th August 1797.



had been disposed of and the money for it received. Throughout the remainder of the year and continuing into the new year 1798 the public demand for the new pence continued to be almost insatiable.<sup>1</sup>

This rapid disposal of the copper money, together with a transfer of £7,500 to his own separate account from the engine profits, soon enabled Boulton to overcome those temporary difficulties which had arisen through enormous outlay in the purchase of copper.<sup>2</sup>

Boulton's newly minted pence soon found their way abroad. By order of Charles Long £1000 worth were shipped to Newfoundland,<sup>3</sup> in March 1798, and in the following June there was a similar order for £5000 worth for the Cape of Good Hope.<sup>4</sup>

During the year 1798, the Treasury gave Boulton his second coinage contract for the Government, this time he was to manufacture five hundred tons of

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1. Mrs Matthews to Boulton, 10th October 1797.

Mrs Matthews to Boulton, Nov. 4th 1797.

Mrs Matthews to Boulton Feb. 3rd 1798

2. Mrs Matthews to Boulton, Sept. 1st 1797.

3. Mrs Matthews to Boulton, March 3rd 1798.

4. Mrs Matthews to Boulton, June 18th 1798.

pence. This kept the Soho Mint active down to the end of 1798 when there was a prospect of dismissal and idleness for many workpeople, which was a painful thing for Boulton to contemplate. Accordingly, he prevailed upon the Lords of the Treasury to give him an additional order for 250 tons. Boulton was able to induce them to do this only by agreeing to charge the copper at £113 per ton though obliged to pay £124 per ton himself. By July 1799 the order had been completed and the Mint was only working at half its capacity.<sup>1</sup>

The dead stock of copper in Boulton's hands was enormous - £70,000 worth. The loss of interest on this sum was of course a serious thing for him. Moreover, he still retained a large number of his workmen whom he paid for doing nothing. He was induced to lay up this vast stock of copper because he hoped to secure another coinage contract for the Government, for whom

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1. Boulton to Long, July 27th ~~1789~~<sup>1799</sup>.



he now wished to manufacture half pence and farthings. If the Government failed to engage him, Boulton's position was obviously critical, having~~g~~ such a large stock of copper on his hands.

After some delay, the Government determined to proceed with a new coinage, and~~B~~Boulton was ordered to coin as large a quantity of half pence and farthings as would consume his large holdings of copper.<sup>1</sup> The orders to this effect were issued on 1st November 1799.<sup>2</sup>

By the end of November, when the first instalments of coin were ready for delivery, another hitch occurred. There had been no Royal Proclamation legalising the new issue and Boulton was not allowed to send any of the money away till the issue of the Proclamation.<sup>3</sup> This was a most annoying thing for him, his premises were stocked with coin and the business of

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1. Boulton to Long, September 24th 1799.

2. Charles Long to Boulton, November 1st 1799

3. Long to Boulton, November 29th 1799.

the carriers whom he had engaged was utterly disorganised. Boulton describing his position said "these things, together with the painful state of my finances from my immense dead stock of copper and coin, renders my present situation very unpleasant".<sup>1</sup>

The Proclamation was not issued till the close of 1799. The delay was particularly vexatious to Boulton, firstly because the coin was not released in time for its sale to be of any assistance to himself and Mrs Matthews in making payments in the new year to the extent of £15,000 for copper, secondly, the public had become ill humoured at the delay and were inclined to blame Boulton rather than the Government.<sup>2</sup> It was rumoured that the coin were light and would be called in again.<sup>3</sup> Nevertheless they were soon in great demand by the public and Boulton endeavored, though seemingly without avail, to persuade the Government to an extension of the issue.<sup>4</sup>

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1. Boulton to Long, November 21st 1799

2. Mrs Matthews to Boulton, December 25th 1799

3. Mrs Matthews to Boulton January 1800

4. Boulton to Long, June 27th 1800.



Altogether Boulton minted 4200 tons of copper coin for the British Government between 1797 and 1806. Moreover, it must be remembered that in addition many large private contracts were executed at Soho Mint. Boulton's interest in the art of coining seems to have increased with the years. Before his death in 1809 he had been employed by the Government to erect the new Mint on Tower Hill, London, and had also supplied Mints for the Government of Russia, Spain, Denmark, Mexico and Calcutta. Boulton's interest in his mint never flagged, and although he had long since ceased to take any part in the direction of his other concerns, up to the very time of his death he continued to be engrossed by his coining business.<sup>2</sup>

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~~1. Boulton to Long, June 27th 1800.~~

2. Smiles p.p. 371 - 372.

## CHAPTER 8.

### CONCLUSION.

This narrative of Boulton's finances from 1759 - 1809 has been long and complicated. The many interests pursued, the variations in fortune and the long period involved - over half a century - have contrihted to obscure the salient features of the story. A brief recapitulation of the main points will serve to clarify and round off the whole account.

Matthew Boulton, already a Birmingham hardware manufacturer, formed a partnership with John Fothergill in 1762 which lasted for twenty years. The partnership carried on business as merchants and manufacturers of hardware. It had extensive connections both at home and abroad; but its career was unsuccessful and a great deal of money was lost. This was due to three principal causes.

1. The Bill Account which originated in laying out £10,000 in buildings when it was only intended to lay out £2000. The
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Account was soon increased by its own costs - commission and interest - and certain heavy losses. (Vid. p. p. // - 13)

2. The foreign trade was not profitable. Heavy losses were sustained through bad debts especially in trading abroad.
  3. Soho manufactory ~~was~~ inefficiently run. There was no punctuality in the execution of orders. The selling price of the products was fixed haphazardly and without system, little or no regard being paid to actual manufacturing costs. Lack of proper supervision over the workers who were paid by the day instead of by the piece led to many abuses and large sums were paid away for work that ~~was~~ never done.
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To support this losing concern Boulton advanced more and more money into it, sold and mortgaged his private property; he borrowed from merchants on Bill Account and from private individuals on mortgage; he induced a German to become a partner and even extended the field of his borrowings to Amsterdam, while Fothergill for the same reason advanced the money that belonged to Mrs Swellengrebel.

In 1772 Boulton determined to support Watt in the exploitation of the steam engine invention and sold an estate for £15,000 to meet expenses incidental to acquiring Roebuck's share in the invention. Three years later commenced the partnership with Watt, a partnership which lasted for twenty five years.

Meanwhile, the fortunes of Boulton and Fothergill had gone from bad to worse. By 1777 the Bill Account stood at near £25,000 and most of the advance was borne by Matthews. In May of the following

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year various rumours detrimental to the credit of Boulton and Fothergill became arrent. It was feared their credit would collapse and they would be inundated with demands from their creditors. Ruin seemed imminent when Boulton persuaded Watt to join in mortgaging the general powers and privilages of the engine company to a bank for a credit of £14,000 for the use of Boulton and Fothergill. A little later in 1779 another £7,000 was raised on security provided by Boulton and Watt, and £2,000 was obtained from Truro in 1781 by the same means and for the same purpose. Thus £23,000 was obtained for the benefit of the hardware concern on security provided by the engine trade. (Vid.p.p.74-42)

Roll and Lord are mistaken in asserting that Boulton and Fothergill was the mainstay of Boulton and Watt in its early days. On the contrary, Boulton and Fothergill were saved from destruction

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solely through Boulton's association with Watt in the new concern.

Things continued on a precarious footing till after the death of Fothergill in 1782. The hardware concern, now split up into two branches viz., the Button Company and the Plate Company, at last commenced to ~~enjoy~~ a more prosperous time.

From 1782 onwards Boulton's concerns were prosperous enough. The engine trade was doing well and so was the Button Company under the management of John Scale; and so far as we can gather from passing references the same applies to the Plate Company. Nevertheless, Boulton continued for a long while to be short of money. The old debt, the result of the misfortunes of the past, remained, while new enterprises absorbed accruing profits. Investments in Cornish mines, advances to the Albion Mill, expenses on apparatus and plant for coining and the erection of new buildings continued to keep the Bill

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Account high, added to which was further borrowing on bond from Wedgwood and Wilkinson.

The period 1792 - 1795, however, marks a turning point in Boulton's career. No more new buildings were needed; the Albion Mill was burnt down; the coining plant was now completed; and no more investments were being made in Cornwall, a place now of diminishing importance to Boulton and Watt. Debts were paid off rapidly. By the time of Matthews' death in 1792 the Bill Account, which in 1788 had been retransferred to him from Lowe, Vere & Co., had been reduced to £6786; and by September it had been brought down to £1933. At the end of 1792 Wedgwood was repaid £5000 borrowed in 1788 and in 1795 John Wilkinson received back a similar sum borrowed at various times.

After the erection of the Foundry in 1796, by which time the younger men were in command at Soho, Boulton withdrew himself from all his concerns

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except the coinage, in which he never lost interest.

In one respect at least Boulton was ahead of his time. The law as it stood up to 1862 placed in a very precarious position the man who launched out on many enterprises; for no matter how prosperous the others might be, the disastrous failure of one concern might well involve all the others and the individual himself in ruin. No partner could substitute another in his place or transfer his share without bringing about a dissolution of the partnership. There was no continuity. Creditors were not bound to accept the liability of an incoming partner in place of that of the retiring partner. It will be appreciated then/~~how~~ dangerous Boulton's position was in 1778; for had Boulton and Fothergill become bankrupt, Boulton's private estate and his interest in Boulton and Watt would all have been at the disposal of the

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unsatisfied creditors of the hardware partnership. Had incorporation as a limited liability company then~~been~~ possible the position would have been different. Boulton, Boulton and Watt, and Boulton and Fothergill would all have been entirely separate entities in the eyes of the law, and the misfortunes of one could not have jeopardised the prospects of the other.

It was the great misfortune of the hardware partnership that Boulton and Fothergill had embarked on a scale of manufacture demanding a greater capital than they could advance. Lacking circulating capital, burdened with~~de~~bt~~s~~ and clogged with a Bill Account the concern existed for twenty years in a state of constant financial difficulty. The picture would probably have been different had the joint stock form of enterprise with~~li~~mi~~te~~d liability been available. The appeal to a wider public thereby made possible would

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probably have enabled the above difficulties to be surmounted. Fothergill thought they could have been overcome by taking in new partners. But in those days men were loath to cultivate many interests in case the ruin of one involved the ruin of all. It is significant that the only new partner they ever obtained was a foreigner, who obviously could only lose what he had advanced, as his private fortune abroad was untouchable. With limitation of liability, however, it may well have been that appealing to the public to take shares in the undertaking would have produced sufficient resources to satisfy the want of circulating capital, prevent the Bill Account and avoid much borrowing. As it was the resources of Boulton and Fothergill were the resources of the partners plus their borrowing power.

Boulton and Watt was in a different

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position from Boulton and Fothergill. The former were consultants, who needed no great capital, and now as then ~~such~~ undertakings are often organised along ordinary partnership lines.

In Cornwall Boulton's situation was less precarious, for the position of an adventurer in mines was governed by the Statary Laws. An Adventurer, dissatisfied with ~~the~~ prospects of his particular mine, could withdraw and there his connection with the venture ended. The most he could lose was what he had already advanced. Without this protection it is pretty certain that Boulton and Watt's connections in Cornwall would not have reached such dimensions as they did.

In Boulton we have a rare example of the entrepreneur of the economics text book. He commenced his industrial and business career with much in his favour. Besides a good general education, he enjoyed

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the advantages of wealth and good connections. The text book qualities of the entrepreneur, great business ability, dexterity in managing men, judgement and foresight are characteristics with which Boulton's name has come to be invariably associated. But is this view entirely correct ? In the first place he inherited a manufactory situated in one place. He immediately proceeded to split it in two. He took in a partner but bound him by no articles of partnership. To rectify his first error he built a huge manufactory at Soho to concentrate the whole manufactory in one place. But in this, too, more errors were made. The building cost more than five times the intended sum and the water power at the mill was inadequate to drive the machinery. He and his partners locked up

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all their capital in a prepossessing building and so crippled the concern for want of circulating capital. Soho manufactory, Boulton's particular province, was inefficiently run and in Scale's opinion this was a principal cause of loss. He entered one partnership to work/a silver mine, another to make spelter and subscribed to the Grand Trunk Canal and in all these lost money.

That was Boulton's record when he hitched his wagon to a star, joined partnership with Watt and pushed a Bill through Parliament so that for twenty five years he and he alone sold what all the world wanted - power. On his own admission it was only his association with Watt in the engine trade which prevented certain ruin in 1778.

It is true that after the death of Fothergill the hardware trade began to prosper, but the credit for this lies not with Boulton. The Button Company was

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managed entirely by Scale and the Plate Company by some one else. Admittedly, Boulton and Watt made large profits and it was these which extinguished the Bill Account, repaid borrowed money and wiped out consequences of earlier misfortunes; but these were the profits of a monopoly.

In the comparatively prosperous period after 1782 Boulton's judgement was not always sound. He was a champion of the Cornish Metal Company, an association for fixing prices without controlling output, which increased the very difficulties it was formed to overcome. In the Albion Mill, though no doubt having right ideas on management, he hoped that this association of amateurs could gain large sums through lucky speculations on the corn market. In the coining business he allowed himself to be

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deceived by the Government. He laid out plant and apparatus and brought Droz over from France in the hope of securing a contract for which in fact he had to wait ten years.

The great profits which Boulton gained were those of a monopoly; but <sup>a</sup>very small ingredient therein was the reward for the risk he had undertaken in exploiting an untried patent. Nevertheless, the risks after all were not very great. The initial outlay was some £3,000 in obtaining Roebuck's share in the invention.

This is no attempt to pull Boulton off his pedestal. He had many great qualities. There is no denying his ability to ~~manage~~ men, his amazing optimism and courage, his untiring energy, his undoubted integrity of character and his generous magnanimity. Moreover, nothing less than ability to inspire the greatest confidence can explain the ease with which he borrowed money now in one quarter now in another. Nevertheless even his record seems to bear out the broad truth of Professor Clay's

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generalization :- "Copy book maxims about punctuality and early rising have a suspiciously large place in the explanations by self made men of their success; luck and lack of scruple though at least as important are never mentioned".<sup>1</sup> The last ingredient formed no part of Boulton's make up, but good fortune most certainly favoured him. To good fortune, not to sound judgement, must be ascribed his success as an engineer. When he associated himself with Watt he was in no position to estimate the prospects of the new invention. He admits himself that its real worth was unknown to all the world till 1776. The great John Smeaton doubted the practicability of the steam engine and is there any good reason to suppose that Boulton, a hardware manufacturer, was possessed of a sounder judgement than the greatest mechanical engineer in England at the time ?

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1. Clay Page 7. *"Economics For the General Reader."*



The truth more likely is that he made a gamble, his luck held and a fortune resulted.

Let Boulton pass judgement on himself. Speaking of his decision to sell his Parkington Estate to Lord Donnegal, and thereby provide money to support Watt, he said "he chose to try his fortune in another lottery with part of Lord Donnegal's money".<sup>1</sup>

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1. Booklet entitled "Boulton's case with Fothergill".