

Prosser The Engineer: A Forgotten Birmingham Genius



Richard Prosser 1804 -1854
The Discovery of his Life of Invention and Contention

The Third Story

Tubes: A Wealth of Trouble
Part 1
A Litigious Nightmare

Susan Darby

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The purpose of the free publication of this work is to gain some belated, but much deserved, recognition for its subject Richard Prosser, an inventor who was also one of the main proponents of the first major legislative reform of the patent law system in 1852. He was fiercely protective of intellectual property rights. Any concerns as to possible copyright infringement in this narrative or any images within it should be addressed to the author in the first instance please at contact@prossertheengineer.co.uk and they will be given due and proper consideration; if any infringement is established the offending material will be removed, if required by the owner, with an apology - as Prosser himself would have demanded .

The narrative of The Third Story is largely confined to the relevant events in Richard's life that occurred during the period 1840 to 1850. His silhouette on the title page probably dates to about 1843 (Darby collection); the adjacent portrait, which was painted shortly after his death, dates to 1854 (© Science Museum).

The typeface used on the "cover" of this narrative and chapter headings is "Baskerville" in deference to Richard's admiration of another Birmingham genius:
John Baskerville (1706-1775).

The Richard Prosser Stories

The First Story
Introduction & Chapters 1 to 5
Rescuing Richard: The Brothers' Feud & The "Chunk" Conundrum

The Second Story
Chapters 6 to 9
The Dust-Pressed Process: The Button Wars & The Tile Revolution

The Third Story
Tubes: A Wealth of Trouble
Part 1
Chapters 10 to 16
A Litigious Nightmare
Part 2
Chapters 17 to 21
The Weldless Tube & Second "Marriage"

The Fourth Story
Chapters 22 to 38
The Emancipation of Inventors

The Fifth/Final Story
Chapters 39 to 47
Finally: Gunnery, Death, Aftermath

The stories will remain works in progress and will be subject to revision as, hopefully, further information and corrections come to light.

Acknowledgements

Throughout my narratives I try to acknowledge all my contributors and sources as they appear and, where appropriate, provide a link to any relevant website. In the case of "Tubes: A Wealth of Trouble" especial thanks are due to the following:

The archivists at: The Library of Birmingham Archives for their friendly and efficient help in my discovery of many of the contemporary documents relating to the events narrated in this Third Story; The National Records of Scotland who (inter alia) unearthed the transcript of Richard's testimony in his Scottish suit against his erstwhile partners in the Caledonian Tube Co. venture; The National Archives at Kew - a wonderful national treasure.

The British Newspaper Archive, my main source of contemporary accounts, without which the Richard Prosser Stories would not have been discovered;

Above all, Richard Prosser's great great grandson, Richard John Darby, my husband, for his support and toleration of my obsessive pursuit of his ancestor. Known as "John" since birth, my husband was named Richard after his maternal Prosser grandfathers: the mining engineer Richard Ellis Prosser, the historian of invention Richard Bissell Prosser and Richard himself.

All errors, omissions and misconceived speculations in my narratives are entirely my responsibility. It is my hope that publication will lead to feedback, which will enable corrections to be made and will resolve some, at least, of the many questions that remain unanswered about Richard's life and inventions.

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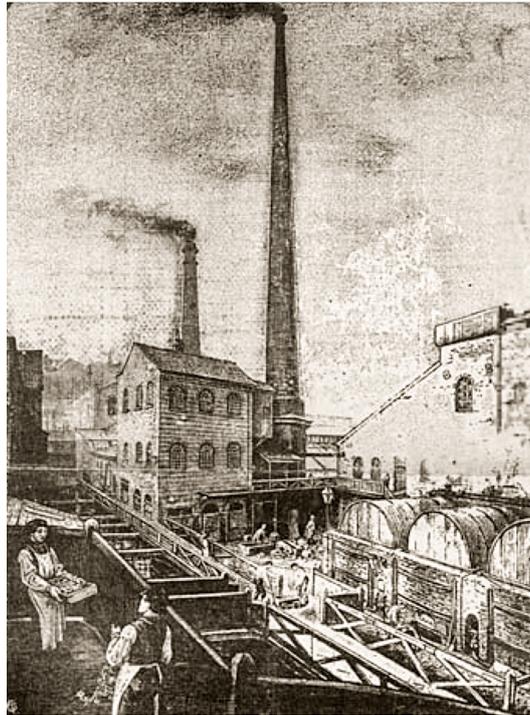
Tubes: A Wealth of Trouble

Part One: A Litigious Nightmare (1840 to 1849)

Chapter 10	The Great Suit: The Background	6
Chapter 11	The Great Suit: Its Ten Year Course	30
Chapter 12	The Great Suit: The Cause and The Cost	48
Chapter 13	The “Curious Particulars”	59
Chapter 14	An Incomplete Epilogue	124
Chapter 15	Richard’s 1840 Patent: A Success Story?	136
Chapter 16	1849: Some Personal Insights	147

Chapter 10

The Great Suit: The Background



Where it all began:

The Union Rolling Mill in Cambridge Street, Ladywood, Birmingham c.1840 viewed from the canal wharf to the rear. (*Image: Martineau & Smith's Hardware Trade Journal 31st January 1887 - reproduced with the permission of The Library of Birmingham Archives*)

"It would almost appear that in those days any one who became connected with the tube trade was certain to be involved in a tedious law suit before very long" - Richard Bissell Prosser: Birmingham Inventors and Inventions

The Son's Discrete Silence

Richard Bissell Prosser must have been very aware that parts of his topic would still be controversial to some of his readers when he was writing his four articles on the early development of metal tube manufacture for the

Birmingham Weekly Post in 1880. "Those days" referred to by him in the quote above could relate to the period of 25 years commencing in 1825, but, in fact, he was probably principally reflecting on its final 10 years: the 1840s. The growth of this new and local industry had seen fortunes gained and lost; formerly wealthy families ruined; reputations made and others destroyed - and much scurrilous business practice.

Richard's son avoided any mention of the latter in his overview of the inventive activity in Birmingham and the adjoining Black Country that led to the industrialisation of metal tube manufacture during the quarter century 1825 to 1850. He did allude to "curious particulars of the rise of the iron tube trade" revealed in the litigation that it had engendered: patent infringement cases and contractual disputes. The quote opening this chapter continued with a list identifying a few of the cases by name, including one, *Regina v. Prosser*, which the reader would reasonably and correctly assume was connected to the author's father. In fact, all the cases listed were connected to the father.

Richard Bissell Prosser had also, separately, referred to the "great suit" of *Russell v. Ledsam* - the hearings in which had occupied the judiciary for the best part of 10 years and had culminated in a judgement of the House of Lords in 1848. He explained that the case had established several legal precedents. It concerned a claim for infringement of a patent that had been granted to Cornelius Whitehouse in 1825 for a ground breaking invention, which had laid the foundations of the Black Country tube making industries.

James Russell, a Wednesbury tube manufacturer, was the assignee of Whitehouse's patent, for which he had secured a six year extension in 1839. Ledsam and his co-defendants (all Birmingham businessmen of some standing) were being sued by Russell for manufacturing iron tubes using machinery that had been patented in 1840, which Russell contended infringed the 1825 patent. The history of the dispute is outlined by Richard Bissell Prosser, but he omitted to mention that the 1840 patentee was his father (he described this successful patent elsewhere in his narrative without any reference to the "great suit").

The following account, Part 1 of "The Third Story" in Richard's life, will concentrate on the "curious particulars" of the business dealings that occurred in the hugely competitive early iron tube industry. These "particulars" were, no doubt, known to Richard's son and some of the readers of his articles. Most of the actual participants in these events were dead by 1880,

with one notable exception, but many of their immediate descendants were still living - some still involved in the metal tube trade.

The “curious particulars” took place principally: in Birmingham; in Wednesbury and Smethwick (in the adjoining Black Country); in Coatbridge, near Glasgow, in Scotland; and in the London law courts. Thomas, Richard's older brother, again has an important role in the United States. Names familiar from the first two stories will reappear together with new names, some well known to local and industrial historians.

(The little that is known of Richard's personal life up to 1840 is related in “Rescuing Richard”. The story told in “The Dust-Pressed Process” occurred over the period 1840 until his death in 1854 and, as such, is largely contemporaneous with the current narrative. Readers are referred to pages 6 to 10 and 92 to 98 of “The Dust-Pressed Process” for a necessarily short account of Richard's personal history from 1840 to 1848 - Part 1 of this Third Story will conclude with some insights into his personal life in 1849.)

The Research

My researches for and subsequent writing of the first two stories in Richard's biography, “Rescuing Richard” and “The Dust-Pressed Process”, were not completed until the end of 2015. A decision had been made to publish these online on our own website and the design and compilation of the content for this took a few months to come to fruition (we could not have achieved this without our very helpful website designers at <http://www.integrity.it>).

My first investigations into Richard's tube machinery inventions in 2012 and 2013 (when assisting in compiling material for his new entry in the online *Oxford Dictionary of National Biography*) had been hurried and cursory. Little had come to light: his earlier lap welded tube machinery had apparently met with some success but had been bedevilled by litigation; his later invention for “anti-welded” tube manufacture had been an expensive failure according to his son.

I did not commence my in depth research for the tube story until April 2016 and, as usual, my first port of call was the relevant chapters in Richard's son's *BI&I*, which I re-read - and, to be honest, found alarmingly complex. This was in part due to the number of tube machinery patents they described, more than fifty, all granted prior to October 1852 (the *BI&I* only covered inventions patented before the enactment of the Patent Law Reform Act in that year). As

for the technological aspects, these were largely beyond my comprehension notwithstanding the simple language of Richard Bissell Prosser's elegant descriptions of the various processes and machinery.

I therefore turned my attention to the litigation aspects of Richard's involvement with tube manufacture, an area more within my comfort zone as a retired lawyer. I discovered the background to cases online through newspaper reports in the *British Newspaper Archive*, law reports, contemporary legal and other treatises and, most importantly, surviving case pleadings held in *The National Archives* at Kew and in the *National Records of Scotland*.

In addition, I knew that *The Library of Birmingham Archives* held original contractual and other documents relevant to Richard's 1840 patent.

The story that emerged in the course of my analysis of these sources is, in fact, a confusing and tangled web of interconnecting business dealings and disputes. Trying to untangle and make sense of these events was my first difficulty; the second, that of transcribing my conclusions into an intelligible narrative, was a daunting prospect.

Where to start?

Our home was built in about 1825. It is a late Georgian townhouse on the Calthorpe estate in Edgbaston, an inner suburb of the city of Birmingham. Entirely by coincidence, we live within a couple of miles of locations in the then town where Richard was born, brought up, worked and lived throughout his life (he still retained a house in Birmingham after 1847, the year that he moved his young family to a home in the countryside in Kings Norton, now an outer suburb of south Birmingham).

We take for granted that our house has running water and a gas supply, but this would not have been the case when it was built and, probably, for several decades afterwards. A well in the rear courtyard would have supplied hand-drawn water. Candles and oil lamps would have supplied the lighting. A multiplicity of metal pipes now run through the house providing running water for drinking, cooking and sanitation. Metal gas pipes serve our central heating system, our kitchen oven and our one gas fire. However, when gas was first connected to the house it would probably only have been for lighting, not for heating or cooking; a gas light terminal still remains in the ceiling of one room as a reminder of this.

(Pipe v. tube? What, if anything is the difference between these two terms? Nothing for the purpose of this narrative and they will be interchangeable. Trainee engineers are taught that the difference is principally one of measurement - pipes are measured by internal diameter (capacity), tubes by external diameter. Tolerance levels (strength/thickness) are also a factor; tubes are made to higher tolerances and are usually therefore more expensive.)

One of Richard's obituarists, his friend the Birmingham businessman and historian of its metal trades *William Costen Aitken* (1817 - 1875), was an authority on early tube manufacture and contributed an article on the subject for the edition of *Ure's Dictionary of Arts, Manufacture and Mines* published in 1867 (pp. 939 to 949 - [link](#)). *Image - William Costen Aitken c.1870: Birmingham Museums Trust.*



Aitken commenced his long article by attributing the development "of what is now an important branch of national industry" to the "large demands" for tubes for "the introduction of water into public and private establishments..., the conveyance of gas..., the construction of locomotive and marine engine boilers".

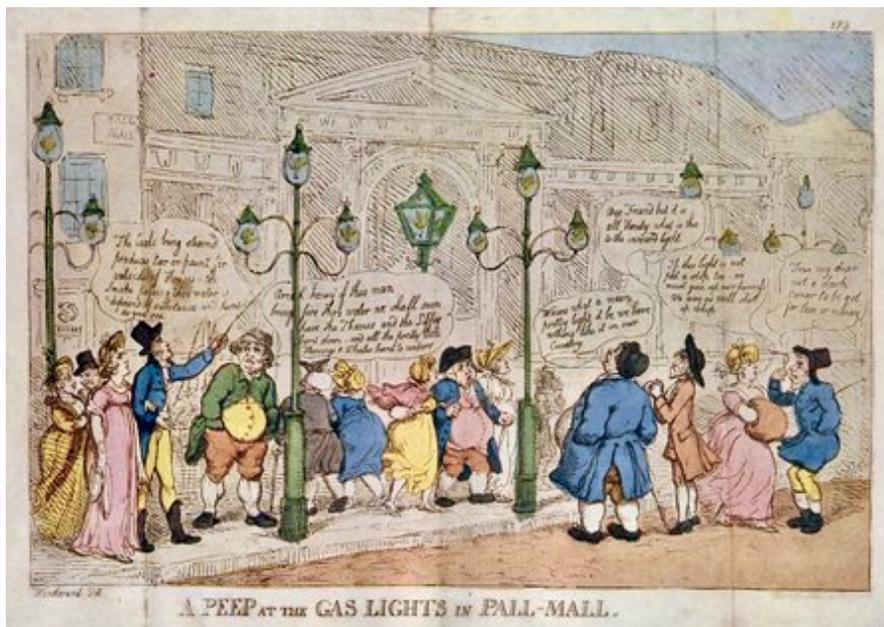
As *Aitken* went on to explain, pre-industrialisation, tubes were made in short lengths (of four feet or less) by either casting molten metal in a sand mould (in two halves) or by "turning" a flat sheet of repeatedly heated metal by hammering the sheet around a solid metal cylindrical rod called a mandrel. The tube join was then closed by either soldering or welding depending on the type of metal being used. These manual blacksmithing processes were labour intensive and time consuming.

The early post-industrialisation processes of tube manufacture differed depending on the end product and metal adopted. Iron, cheaper than brass, copper and steel, was commonly used for the manufacture of tubes for conducting water, gas and steam. (Although, in 1867 *Aitken* was to maintain that the use of "good brass tubes" was on the increase in the manufacture of steam engine boilers as it had been found that iron tubes corroded and had proved to be more expensive to replace than brass tubes (old brass tubes could be recycled, offsetting the cost of their replacement).)

Supply is driven by demand and it was, in fact, the advent of the demand for pipes for newly available coal gas that drove the initial development of the industrialisation of iron pipe and tube manufacture:

The world's first public gas works opened in Great Peter Street, London in 1813. By 1826 almost every city and large town in Britain had a gas works, primarily for lighting the streets. In these towns, public buildings, shops and larger houses generally had gas lighting but it was not until the last quarter of the nineteenth century that most working people could afford to light their homes with gas.

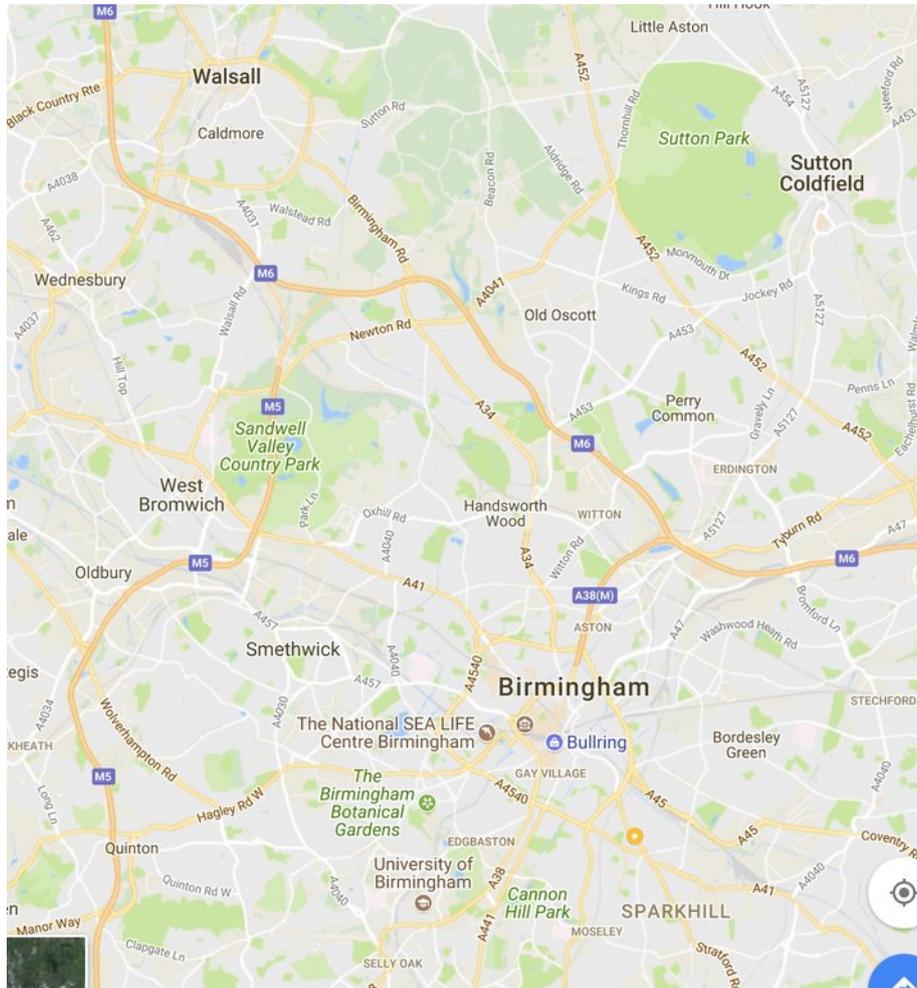
(<http://www.heritage-explorer.co.uk/file/he/content/upload/11798.pdf>)



*Passers by marvel at new gas lighting:
Thomas Rowlandson satirical cartoon 1809 - Public Domain*

According to *Aitken* much of the early demand for gas pipes was met from a surprising source: gun barrels. An enormous number of these tapered tubes had been made for the "Brown Bess" muskets used by the British army in the Napoleonic wars. Not only was there a large stockpile of surplus muskets after 1815, the year Napoleon was eventually defeated at Waterloo, but prior to that the numerous discarded faulty barrels were found to be suitable for use as gas pipes. (The main suppliers to the British army were the gun makers of Birmingham's Gun Quarter, although many of the components of their muskets were actually made in the neighbouring Black Country.) *Image below - India Pattern musket aka "Brown Bess" (1810 type) - The Field*



Mr. Whitehouse and Mr. Russell of "Tube Town"

The above Google Maps screenshot includes several of the locations mentioned in this narrative: Wednesbury is 8 miles N.W. of Birmingham.

Several patents had been granted after 1800 which were intended to improve tube manufacturing production, but no significant advances were made until 1825. That year a patent was granted to a smith employed in a Wednesbury forge for a process that was to revolutionise tube making and, as a result of the subsequent growth of this industry in Wednesbury, it became known as "Tube Town".

The smith, Cornelius Whitehouse (1795-1883), was probably illiterate and did not have the financial means to patent and exploit his process. His employer, who was not a tube maker, suggested to Whitehouse that he approach James Russell (1774-1849) of the nearby Crown Tube Works. Russell immediately realised the potential of Whitehouse's idea; he agreed to bear the cost of obtaining the patent, allegedly £125 (about £9,000 in 2016 -

measuringworth.com), and to pay an annuity of £50 to Whitehouse during its subsistence on condition that Whitehouse sold the patent when granted to him in its entirety. In relative terms, this annuity gave Whitehouse a very handsome income, but when Russell persuaded the Privy Council in 1839 that a six year extension of the patent was justified he had to agree to increase the annuity to an enormous £500 per annum as part of his submission. The Privy Council was minded to grant the extension having also heard evidence of the expenditure incurred by Russell in expanding his business to exploit the new process and in defending the patent against infringement.

In 1825 Russell's tube works were, probably, no more than a small smith's workshop; after buying Whitehouse's patent his manufactory, the Crown Tube Works, rapidly grew to dominate the country's iron tube making industry. The new process made longer and stronger tubes in almost a tenth of the time of the previous methods and reduced their price by as much as two thirds. This initial success was to be the cornerstone of a business which expanded and prospered over the remainder of the century.

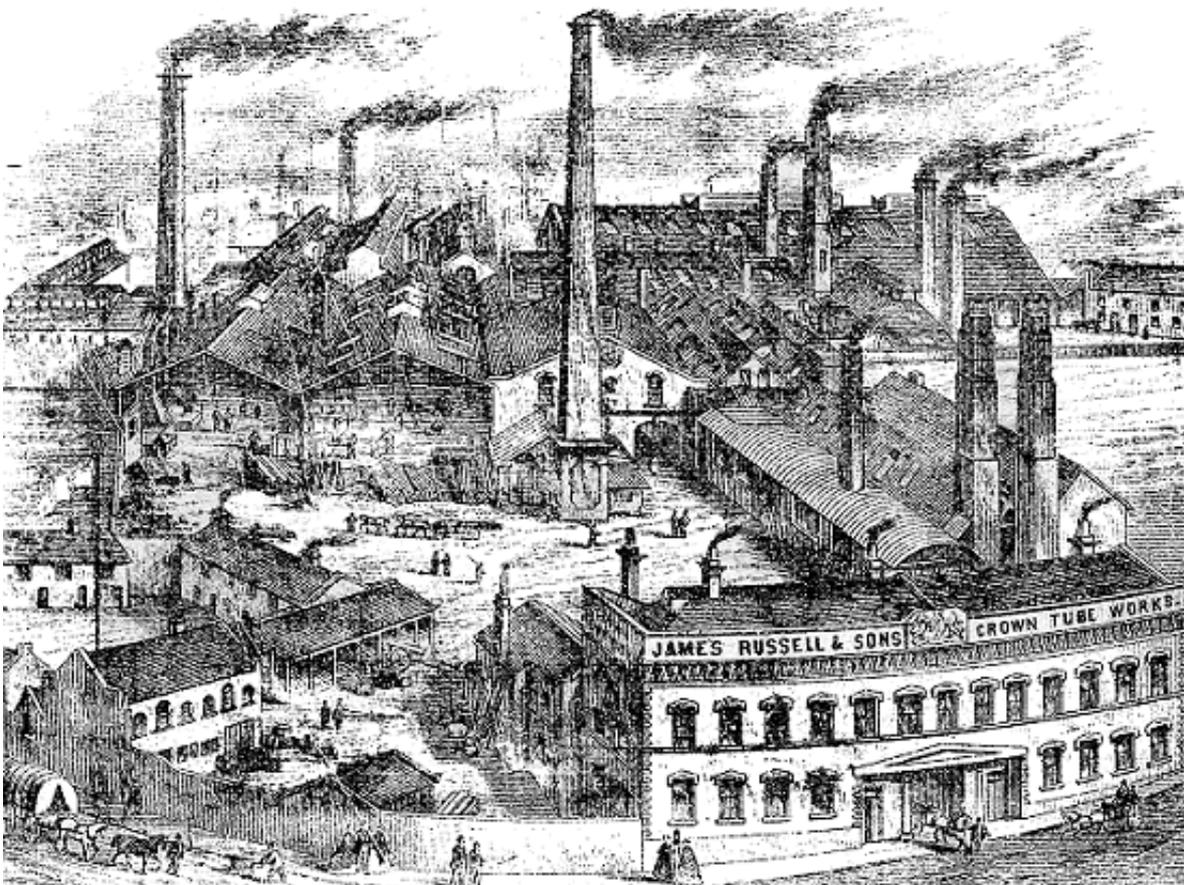


Image from 1877 tool Catalogue on Bev Parker's "A History of Wednesbury" website (see later).

However, Russell's initial success, also, led to much unrest and hostility in the trade from the many men who were put out of work; Whitehouse himself was said to have feared for his life. Russell's works were spied on and he had them surrounded by a high wall, but this had not prevented details of the process escaping. Other tube makers could no longer compete unless they too adopted Whitehouse's process - some acquired a licence to do so from Russell; others sought to evade infringing the patent by modifications or embellishments to its methods, some of which were themselves patented. Russell did not countenance any infringement of Whitehouse's patent, however ingenious the attempted evasion.

Some indication of the enormous wealth that accrued to Russell can be found on this [link](#) to the *Birmingham Images* website of *The Library of Birmingham*. Under an image of an etching or drawing of a large rambling house is the following description: "Endwood Court was built for James Russell of the Crown Tube Works in 1838. It was designed by the architect William Thomas and cost £7,000" (relative project labour cost in 2016 £5.5 million -[measuringworth.com](#)). This "Mansion", as Russell was later to describe his residence in his will, was set in grounds of about 10 acres and was located in the, then wealthy, Birmingham suburb of Handsworth Wood.

The Contentious Mr Russell - Richard's First Appearance

There are three reported infringement cases prior to 1839 where Russell had pursued a rival tube maker to a full trial of the issues; each time he was the victor.

Many other infringing tube makers probably threw in the towel on being threatened with proceedings. At least one, more defiant, rival did not concede to Russell immediately; in this case Russell issued a Bill (a claim) and the matter went to court but was compromised without a verdict being entered. This case was unreported, however, some details of it are contained in pleadings in 1841 in a fourth reported case: the "great suit" of Russell v. Ledsam.

These 1841 pleadings are held in *TNA* at Kew and were amongst the many parchment court rolls that we photographed there in June 2016. In his testimony in his Bill against Ledsam et al, Russell had referred to infringement proceedings he had instituted about six years previously against his older brother John, with whom he had been in business for a short period prior to 1825. James Russell testified that the trial judge had ordered that

John's tube works should be inspected by experts, two for each party, who would then submit their conclusions to the court. The inspections took place on 13th and 14th October 1836.

In 1841 James was to name his 1836 experts as the recently knighted "Sir Marc Isambard Brunel" (1769-1849 - the father of the great Isambard Kingdom Brunel) and a "Mr Carpmael Civil Engineer" (William Carpmael (1804-1867), whose engineering background served him well in his then actual career as a patent agent and lawyer).

John's experts were both described as "Civil Engineers". The first named was John Farey (1791-1851) "the mechanical engineer and polymath", who has already made an appearance in Richard's story in the "The Dust-Pressed Process" (p.176). John Russell's second expert was "Mr Richard Prosser".

Therefore, by 1836 Richard must already have been considered an authority on tube technology, perhaps not an authority of equal standing with Brunel and Farey, but nevertheless an engineer whose opinion was, presumably, respected in engineering circles. The esteemed Farey himself must surely have endorsed the appointment of his fellow expert for the defence.

Readers of "Rescuing Richard" may recall that 1836 had already been a hugely eventful year in Richard's life. In March of that year he had been acquitted of the forgery charges instigated by his older brother Thomas; in April he had married his first wife Sarah Potter; in August he had successfully sued his brother for slander and his brother's partner for malicious prosecution. Richard was actually working for Thomas Morton Jones (c1788 - 1857), an American venture capitalist, at Jones's Chunk Engine Works on the Coventry Road in Bordesley, where Richard and Sarah went to live at about this time. Jones also had an interest in the Britannia Nail Manufactory in Aston, which was shortly to be renamed The Chunk Nail Company. Richard was probably employed by Jones at both sites as his chief engineer from about September 1834. In fact, since 1830, most of Richard's time would appear to have been dedicated to the invention, manufacture and operation of nail making machinery.

Clearly, as a practising mechanical engineer of some years standing, Richard would in any event have acquired some knowledge of tube manufacture. However, if, as I have speculated in "Rescuing Richard", he had been working with or assisting the American inventor Dr. William Church (c1778 - 1865) in his earlier career, then by 1836 his expertise in this subject may already have been considerable.

Richard Bissell Prosser had associated Dr. Church with the Chunk Engine Works owned by Jones his fellow American ("Rescuing Richard" p.99). In his *Workshop of the World* on p.xi *Ray Shill* states that the Works were: "Originally devoted to making engine parts and boring cylinders, it is possible that the railway locomotive engine designed by Church was assembled here." The engine in question was "The Surprise"; its boiler exploded in 1840 killing the driver and a workman when being trialled at Bromsgrove ("Rescuing Richard" p.103 - which also refers to the steam omnibus designed by Church: trialled in 1836, it was built at the nearby Bordesley Parks Works part of which probably formed the workshops and house in Watery Lane that Richard leased from about 1839).



The image above (widely available online), of the aftermath of a steam engine explosion in Ohio in 1943, graphically illustrates the number of tubes in the boiler.

Multiple metal tubes are integral components of a steam engine's boiler and Church, a prolific patentee, had taken out several tube patents between 1829 and 1835. The following four years covered the period when Church and Jones were embroiled in the battle for ownership of the Britannia Nail Manufactory - this story is told in "Rescuing Richard". Church had sided with Jones's opponents and, whilst Jones won the battle, his (inherited) fortune was exhausted and in 1839 he had to cede ownership of the nail business to the Birmingham MP and businessman Joshua Scholefield.

Richard's fortunes were, however, reversed when he was recruited by Jones in 1834 and rescued from the brink of bankruptcy. By 1839 Richard was

sufficiently well off to acquire his own workshops in Watery Lane and move his family from the Chunk Engine Works to the house at 9 Camp Hill ("The Dust-Pressed Process" pp.6 -10). He was also able to afford to take out the first of the five English patents that were granted to him between 19th February 1839 and 17th June 1840.

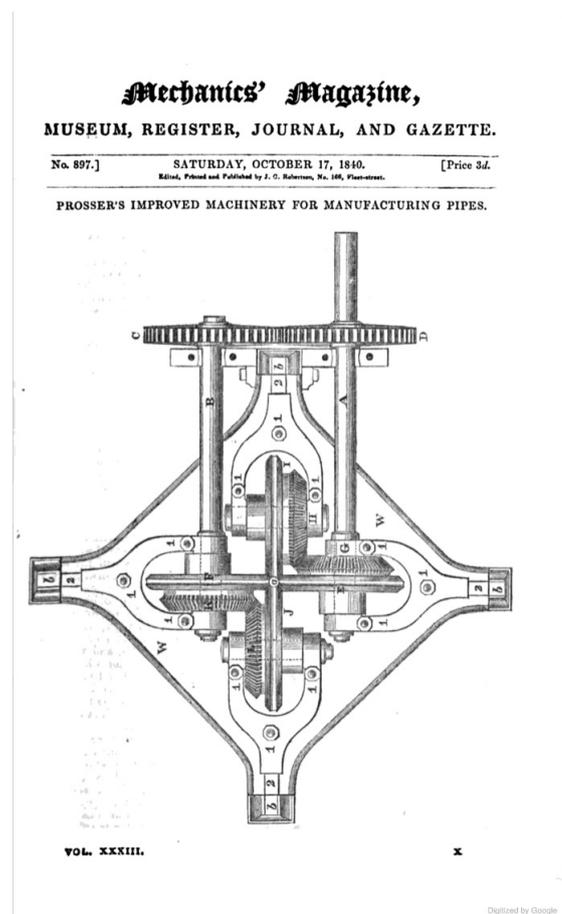
In fact, the first of these five patents covered two unrelated inventions, perhaps a cost-saving exercise. The story of one of these inventions, the Chunk stove, has already been described in "Rescuing Richard". The other invention in the February 1839 patent (No. 7969) related to: "My apparatus for generating steam (*which*) consists in the employment of vertical tubes attached to the bottom of ordinary boilers". Richard claimed that his "apparatus" prevented the destruction of the boiler tubes which otherwise occurred under earlier patented inventions using tubes in steam engines. Except for one short account ([link](#)), I have not, so far, discovered any review or comments on this the first of Richard's patents relating to tubes nor whether it was successfully applied,

However, much was to be written about Richard's next tube patent (no.8454), which was granted on 27th March 1840 under the title "Machinery for Making Pipes". This and his other "English" patents were, in fact, enforceable where any infringement occurred in England, Wales and "all Her Majesty's colonies and plantations abroad" (but not against infringement in Scotland and Ireland).

Shortly after the enrolment of Richard's specification on 26th September 1840 the *Mechanics' Magazine*, in its issue dated 17th October, featured a report on the patent as its lead article with one of the six drawings in the specification on its front page. *Image - Google Books*

The article was a précis of the nineteen page text of the specification and made no comments as to the actual performance of the machinery, which suggests that the author had not seen it in operation.

Readers of "Rescuing Richard" will recall that the editor of the *Mechanics' Magazine*, Joseph Clinton Robertson, was



probably Richard's patent agent at this time. In addition, Robertson had recently appointed Richard as his Birmingham agent ("Rescuing Richard" pp. 178/179).

The publicity afforded to Richard's patent by this popular weekly publication may, therefore, not seem surprising, except that normally an inventor would not welcome such a detailed description of his innovatory machinery being made so widely and easily available. Presumably, Richard had sanctioned the publication of the article. What was his intent?

There was no allusion to Whitehouse's patent in the article and Richard had ignored it in his specification, although he did refer to two earlier tube patents which predated Whitehouse's. However, there can be little doubt that the owner of Whitehouse's patent, the fiercely protective James Russell, had, in effect, been put on notice by Richard of a patent to rival that of Whitehouse's, for which Russell had just secured a costly six year extension.

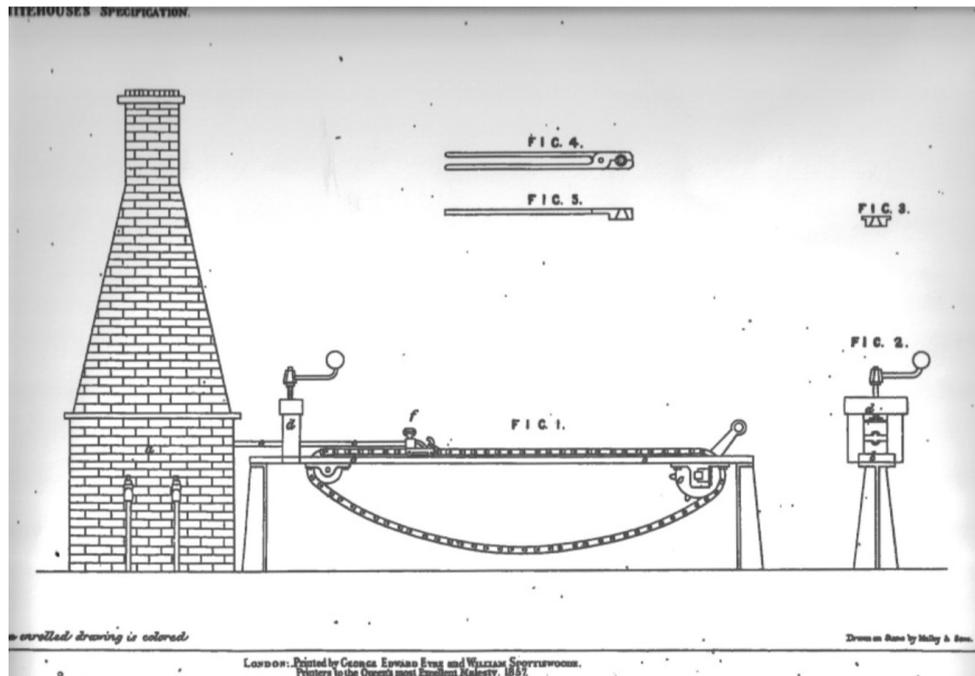
Richard would have had detailed knowledge of the application of Whitehouse's process following his appointment in 1836 as an expert in Russell's infringement suit against his brother. In addition, he would have been familiar with the successful arguments put forward by Russell's experts and the decision of their Lordships in the Court of Exchequer in the much publicised case in 1834 of Russell v. Cowley, Dixon and others. In 1838 Russell had succeeded in another closely argued suit in the Scottish courts: Russell v. Crichton (the Whitehouse patent had also been taken out in Scotland and Ireland). The measure of damages in an infringement action was usually based on the total profit made by the infringer out of his piracy. In the Crichton case it was testified that Russell had been awarded £6,000 against Cowley; Crichton had to pay £1,050. These were substantial sums.

The publication of the *Mechanics' Magazine* article must, surely, indicate that Richard was confident that the new machinery patented by him in 1840 could not be successfully challenged by Russell in the courts.

Whitehouse's Patent v. Prosser's Patent

I will now make a layman's attempt to describe and differentiate between the two patents as succinctly as I can without going into too much technical detail - much of which is beyond my understanding in any event. (PDFs of the two patents and of others referred to in subsequent chapters can be found on the website prossertheengineer.co.uk.)

For a start, one obvious distinction is that of length. The printed text of Whitehouse's specification takes up three pages; that of Richard's takes up nineteen. The one drawing (image below) accompanying Whitehouse's shows relatively uncomplicated apparatus and tools; the six drawings accompanying Richard's are of complex machinery.



Whitehouse commenced his specification by describing a preparatory step: namely the preparation, by existing methods, of a flat rectangular strip of iron (known in the trade as a "skelp") by heating it over an open fire and bending ("turning") it until the edges met or "nearly so", thus forming a "long cylindrical", but unwelded, tube. Whitehouse's patent was essentially a new welding process. He adopted the simple expedient of putting the turned unwelded skelp, which was attached to a chain by a clamp or other "fastening" at one end, into a furnace where it was heated to a much hotter temperature than could be achieved over an open fire. The heated skelp was drawn out by the chain onto a long bench ("a drawer bench") and pulled through two semi-circular dies within a screw press. The skelp was, in fact, so hot ("welding heat") that forcing it through the two dies caused the two abutting edges to weld forming a "butt" welded tube. The clamp was then released and the process reversed to weld the other end of the tube.

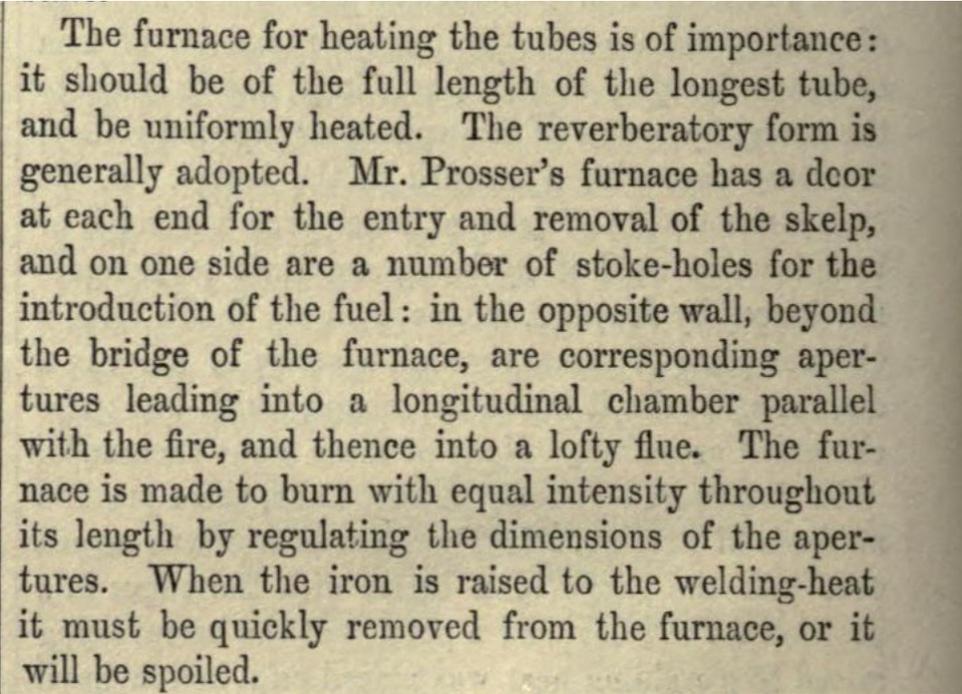
The screw press and dies apparatus was not the only method used by Whitehouse to weld the tube; he also described pulling the red hot tube through a hole formed in the head of a pair of pincers held by a workman. The dangers inherent in either method are obvious, but were then commonplace.

Most importantly, Whitehouse was careful to declare that the implementation of his process after the heating of the tube in the furnace to welding heat was not confined to the screw press or pincers that he had described; in effect he sought to cover any method of passing the tube through dies or holes to effect the welding.

Whitehouse concluded his specification with a statement of the advantages he claimed for his new welding process over existing methods: improvements in the quality of the iron of the finished tube; the increase in the length of tube that could be achieved at an economic cost (up to eight feet rather than four feet); the greater strength of the weld and resultant greater resistance to pressure; and the smoothness achieved to both the external and internal surfaces of the tube.

Richard's 1840 patent was granted fifteen years after Whitehouse had patented his invention for "welding tubes of iron".

Although Richard's specification described and included drawings of a furnace, it made no claim to Whitehouse's innovation necessary for the actual welding: the preparatory heating of turned skelps to welding heat, "the point of fusion", in a furnace.



The furnace for heating the tubes is of importance: it should be of the full length of the longest tube, and be uniformly heated. The reverberatory form is generally adopted. Mr. Prosser's furnace has a door at each end for the entry and removal of the skelp, and on one side are a number of stoke-holes for the introduction of the fuel: in the opposite wall, beyond the bridge of the furnace, are corresponding apertures leading into a longitudinal chamber parallel with the fire, and thence into a lofty flue. The furnace is made to burn with equal intensity throughout its length by regulating the dimensions of the apertures. When the iron is raised to the welding-heat it must be quickly removed from the furnace, or it will be spoiled.

Image - extract from 1854 Cyclopædia of useful arts, mechanical and chemical, manufactures, mining, and engineering: Tomlinson, Charles, 1808-1897 (Google Books)

Richard's patent was for "Improvements in machinery and apparatus for manufacturing pipes" after such preparatory heating of the skelps which, importantly, could be of any metal - not just iron. The machinery could be used to make a pipe from either a turned or partially turned skelp, even from a mostly flat skelp (i.e. that had only been turned a few inches of its length at both ends: an innovation that had, in fact, been suggested in a patent granted in 1836 to one of James Russell's sons, Thomas Henry Russell). Richard also claimed that his machinery could form a pipe without the skelp having been heated to a welding heat (any required welding would have to be achieved by soldering or "other means").

Instead of the rudimentary tools and apparatus employed by Whitehouse, Richard's machinery was mechanically sophisticated:

...Mr Richard Prosser civil engineer Birmingham has recently patented certain improvements in machinery or apparatus for manufacturing pipes in which he ingeniously employs two pairs of grooved rollers working in combination so as to cause an equal and uniform pressure to be given around the whole circumference of the pipe. The manner in which this is accomplished will be understood on reference to the engraving on our front page... (Mechanics' Magazine 17th October 1840)

The engraving referred to is illustrated on page 17 and shows the first of the six drawings from Richard's specification. As Richard explained himself at the beginning of his long description of his machinery, the use of grooved rollers to make pipes was not in itself innovatory and he referred to two earlier patents those of "Mr Wilkinson" in 1790 and "Henry Osborne" (actually "Osborn") in 1817. However, the machines of these two patentees only employed two rollers, one above the other, which therefore resulted in uneven compression on the surfaces of the pipe. The 1836 patent of Thomas Henry Russell had also used two rollers for turning but not for welding an iron pipe, which was done using dies.

Richard's machinery could use either four grooved rollers (illustrated) or three, each exerting the same pressure and operating at the same velocity, and could operate in either direction - forwards or backwards. The pipe was propelled through the machine by the rotation of the rollers which in turn were driven by the rotation of the two cog wheels at the top of the drawing shown on page 17. The metal rod forming the axis of the cog wheel on the right was connected to the external power source, which Richard in his specification briefly described as "mill-work". "Millwork" was the term used for a system of pulleys and belts powered from a line shaft:

*A **line shaft** is a power driven rotating shaft for power transmission that was used extensively from the Industrial Revolution until the early 20th century. Prior to the widespread use of electric motors small enough to be connected directly to each piece of machinery, line shafting was used to distribute power from a large central power source to machinery throughout a workshop or an industrial complex. The central power source could be a water wheel, turbine, windmill, animal power or a steam engine. (Wikipedia - [link to full entry](#))*

The specification paid particular regard to one tool that was claimed to be essential to the successful operation of the machine. The use of an appropriately sized mandrel to lend internal support to the pipe at the point that it passed between the rollers and to smooth the pipe's internal surface. I have previously explained that a mandrel was the solid metal cylindrical rod around which a blacksmith hammered the skelp when making a pipe by hand. Richard's mandrel was a bulb-like enlargement at the end of a much narrower metal rod. One of the attributes of Whitehouse's patent was that a mandrel was not needed in his welding process and was, therefore, not mentioned.

Richard claimed that a number of his machines could be operated in combination to reduce the dimensions of the pipe, to increase its length and even to make a curved pipe - an early form of production line.

Although his specification was silent on the point, his machinery, unlike Whitehouse's process, was capable of both butt welding or lap welding the pipes; these two methods are discussed later.

Richard did not restrict the types of pipes that could be manufactured with his machinery: either by length or dimension or metal type or end use. In addition to pipes for the conveyance of gas or fluids, he mentioned pipes for "locomotive engines with tubular boilers" and copper or brass pipes for use as "rollers for printing calico or other substances". An intriguing reference to making welded iron pipes for use as "railway bars in the form of hollow cylinders or pipes" was unexplained - might Richard have harboured hopes that his machines could be used to make rails for railway tracks?

Whilst the maximum length of pipe that Richard alleged could easily be made by his machinery far exceeded that in practice claimed for Whitehouse's patent, it was the operating speed of Richard's machinery that distinguished it most dramatically from Whitehouse's method - Richard stated that the four rollers effecting the welding could "move at the rate of three hundred and twenty feet per minute, or even faster than that".

As quick as Whitehouse's method was when compared to previous pipe making techniques, it was no match for that claimed by Richard in his specification: "two seconds for a pipe ten feet in length". In April 1842 the *Mechanics' Magazine* was to allege that using Whitehouse's method it would take at least forty seconds to draw out an eight foot pipe - the maximum length made by it in practice.

Notwithstanding the enormous improvements to tube manufacture claimed by Richard for his machinery over the "apparatus" (the screw press, dies and pincers) used by Whitehouse, Richard would have been aware of the need to ensure that his specification did not fall within the following catch-all wording that had been astutely inserted in Whitehouse's:

I do not confine myself to the employment of this precise construction of apparatus as several variations may be made without deviating from the principles of my Invention.

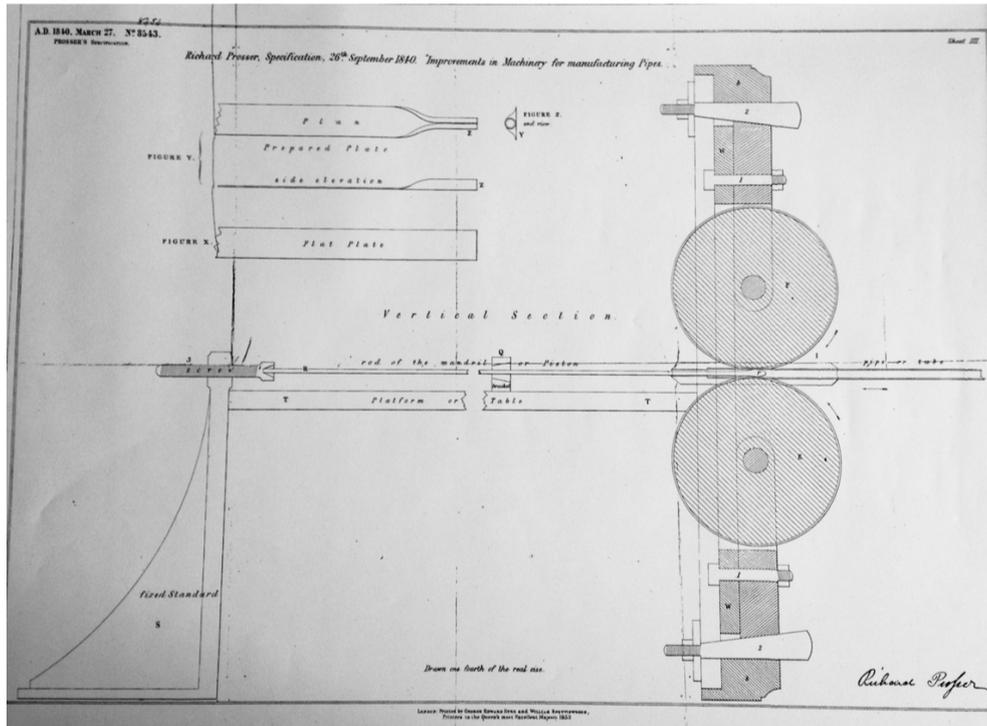
Richard's stipulation that a mandrel must be used was of great importance. When James Russell sued Cowley and his partners in 1833 one of the defences put forward on behalf of Cowley was that Whitehouse's patent was invalid as it adopted the same principles as an earlier patent granted to Henry James and John Jones in 1811 for making gun barrels. Their Lordships rejected this argument in 1834 in the last of several hearings on the ground that James and Jones's process, whilst otherwise similar, required the use of a mandrel, whilst Whitehouse's did not.

John Russell had been using machinery which combined the use of rollers and a mandrel when he was sued by his younger brother James in 1836. According to James (in his 1841 testimony in *Russell v. Ledsam*) the use of the mandrel specified by John was a "blind" as it, in practice, served no purpose and was merely introduced in an attempt to evade falling foul of Whitehouse's patent. James alleged that the 1836 case was compromised by his agreeing to grant his brother a licence to make tubes using rollers (but not pincers). Richard would probably have known of this outcome having acted as one of John's expert witnesses.

Cowley had also used rollers, but it was proved that these had not effectively welded his pipes and that the welding was actually achieved by drawing the rolled pipe through a device called a "scorpion" whilst still at welding heat; the scorpion was held to be similar to the "apparatus" used by Whitehouse.

James Russell's long and successful defence of Whitehouse's patent had gained much publicity and, in any event, would have been well known and

much discussed amongst his peers in the metal trades who were, no doubt, envious of Russell's monopoly of the enormously lucrative gas pipe industry. Richard would have known that the commercial success of his patent would depend on his being able to demonstrate to prospective purchasers, or licensees, that not only did his rollers effect a successful weld, but, also, that the stipulated use of a mandrel was necessary and not a "blind".



Drawing 3 of Richard's 1840 patent showing the bulb head of the mandrel within a tube being welded between two of the four rollers. The patent appears to have been one of the first of the pre-1852 patents to be re-published in printed format. The print date was 1853 and Richard signed the drawings of the print held at the Patent Office.

The 1840 Licence: Charles Palmer and the Union Rolling Mill

On 20th June 1840, less than three months after the grant of his patent on 27th March 1840 (and over three months before the enrolment of his specification on 26th September 1840), Richard granted a licence to make **iron** pipes using his new machinery.

The licensee was a Charles Palmer and his name had been known to me for several years. Richard Bissell Prosser had identified him in his *BI&I* in the briefest of outlines of the business dealings that followed the grant of his

father's patent. Richard's son must have known far more about these matters than he was prepared to divulge to his readers in 1880 in the *Birmingham Weekly Post*.

My researches in 2016 revealed that Palmer was probably a nominee only for the business consortium led by Daniel Ledsam: the defendants in the "great suit", which was referred to elsewhere by Richard Bissell Prosser in the same article but with no reference to his father's involvement. It is inconceivable that Richard's own son, who, in addition to his own personal recollections, had gained an encyclopaedic knowledge of the history of invention, patents and patent law, was not familiar with the background to this precedent-setting litigation, even though he was only ten years old when the case reached the House of Lords.

Charles Palmer (c1796 - c1846) was probably already well known to Richard in 1840. My searches on the *Ancestry* genealogical website revealed that a Charles Palmer, described as a "Metal Roller", was living in Bradford Street, Deritend, Birmingham in the 1841 census with his wife Charlotte and four sons (respectively a clerk, a chemist, a druggist and a civil engineer). The stated occupation of the father was consistent with his being the Charles Palmer I was seeking.

In 1823 Palmer had been living in Lombard Street when one of his sons was baptised and was described as a "Steel worker and toy maker" of that address in Pigot's 1822 trade directory. Lombard Street, Deritend, was the address of Richard's father Walter, the builder, in his listing in the same directory. In the mid - 1830s Richard's proposed nail manufactory was at 70 Bradford Street on the corner of Lombard Street. By 1839 a Charles Palmer was living at 128 Bradford Street, but his trade was not identified; Richard was residing not far away at the Chunk Engine Works on the Coventry Road.

By 1840 Palmer had been employed at the Union Rolling Mill (URM) in Cambridge Street, Birmingham, for at least four years as its managing clerk - adverts on behalf of the URM giving his name as the contact first appeared in the Birmingham press in 1836.

The URM had been built between 1824 and 1830 on a site, adjacent to a canal wharf and with a frontage on the south side of Cambridge Street, which had been leased in 1824 to five prominent businessmen in the Birmingham metal trades: Daniel Ledsam and his nephew Joseph Frederick Ledsam both, inter alia, button makers; William Potts a brass founder; Matthew Dixon a factor and silversmith; and Robert Walter Winfield then a brass founder (his

foundry was close by - also on Cambridge Street), but later Birmingham's leading brass manufacturer and famed for his firm's patented brass bedsteads.



*1839 map - Union Rolling Mill to N of Baskerville Wharfs
(David Rumsey Map Collection: Reproduced under Creative Commons License)*

These wealthy individuals were, no doubt, the principal financiers of the development of the site, which, in addition to the rolling mill and its tall chimney (said to be the tallest in the town), also included: an engine house

and adjacent boilers; a mill wheel; a warehouse and other buildings, some of several stories, comprising workshops; and a 95 horse power steam engine. Unsurprisingly, the construction costs overran and £5,000 had to be borrowed from Thomas Ledsam, the father of Daniel, which was secured by a mortgage on the long lease (source: an assignment of the 1824 lease dated 27th September 1853 held in *The Library of Birmingham Archives*).

The mill building itself and the canal wharf (image p.6) survived until the 1930s when it was included within a larger site clearance and the wharf was filled in. The site of the URM was not built over again until the construction of The Library of Birmingham, which was opened in 2013.



Site of URM to E of International Convention Centre - the vacant area between the two buildings (Repertory Theatre and Baskerville House) on Cambridge Street. (mapmoose.com)

Palmer's duties as managing clerk of the URM complex included letting out workspace with, presumably, the benefit of a power supply provided by a line shaft (p.22); selling and acquiring machinery; hiring staff; advertising for investors in new business ventures; and hiring out the rolling mill to metal

dealers for the purpose for which it was constructed: the flattening between heavy rollers of metal bars to form metal sheets of uniform thickness, such as skelps for the manufacture of pipes and tubes.

In July 1840 Palmer placed a "Wanted" advert on behalf of the URM in the Birmingham press for "a very powerful Draw-bench".

The appearance of this advert may just be coincidental, except that it occurred only five weeks after Richard had granted the licence to Palmer to make pipes of iron under his new patent. In fact, the acquisition of a "Draw-bench", whilst used by Whitehouse in his specification, was inconsistent with pipe manufacture under Richard's patent, which required none. However, it might not be inconsistent with the actions in 1840 of someone inexperienced in the manufacture, who was experimenting with complicated new machinery and had struggled to make it work correctly - as Palmer was later testified to have done.

There is no credible suggestion in any of the reports of the hearings in *Russell v. Ledsam*, nor in the pleadings in the case that are held in *TNA*, that Palmer was acting in any capacity other than as the manager of the URM. Russell did not seek to make Palmer a named party to the proceedings that he first filed on 7th July 1841 against the "numerous" owners of the unincorporated URM: he named only the five original leaseholders plus a "John Marrian" described as a "stamper" but reserved the right to join further owners as defendants when identified.

The URM consortium was actually clearly a partnership, but possibly a rather informal arrangement, at least in its earlier years of existence. In 1844 a notice of dissolution was advertised naming eleven partners, of whom two had resigned the previous November. The nine continuing partners included the six sued by Russell in 1841. The preliminary contents (recitals) of the 1853 assignment of the URM lease was to identify several other individuals who had, in fact, been partners in the firm since at least 1830; their involvement may have remained uncertain as in 1848, when Russell was to re-file his 1841 claim, it was amended to limit the defendants to the six he had originally identified.

There could be a number of explanations for Richard granting the licence in June 1840 to Palmer rather than to the then partners in the URM: the complexity and inevitable ongoing complications of contracting with a large and fluid number of persons being the most obvious. In addition, the wealthy partners, some from respected Birmingham families (including the Ledsams

and Winfield), may have been wary of the speculative project and the possible repercussions, particularly should James Russell have decided it posed a threat to his business - some of the partners in the URM may not have wished to be involved at all.

Certainly, it seems unlikely that Richard would have granted the licence to Palmer in his personal capacity - Palmer would not have had the capital required to make a success of the venture upon which payment of the (hopefully increasing) licence fees to Richard depended. Palmer a trusted employee of the URM and, perhaps, a trusted acquaintance, or even friend, of Richard's may have been a nominee licensee acceptable to both parties.

Richard Bissell Prosser must have had access to some of his father's business papers in 1880 as he was able to quote the amount of the licence fees/royalties payable under the 1840 licence in his *BI&I* : £4 13s 4d per ton of manufactured pipe. This amount was confirmed in a legal document held in *The Library of Birmingham Archives*, which I inspected in 2016. (The document, which was dated 27th April 1844, will be described in more detail later in this narrative).

The recitals in the 1844 deed included details of the terms of the 1840 licence and these suggested that Richard had received a capital payment up front in addition to the licensee's undertaking to pay future royalties. The licence was stated to be for the remainder of the fourteen year period of the patent, but restricted the authorised manufacture to "Iron Pipes or Tubes" using Richard's new machinery. Other terms included requirements: to pay in aggregate a minimum royalty of £150 every six months irrespective of the tonnage of pipes actually manufactured (the exclusivity of the licence to be terminable by Richard if any shortfall remained unpaid after twenty one day's notice - leaving him free to grant licences to others); to maintain business records and accounts for inspection by Richard; as to the place of manufacture, which Richard could specify and was entitled to inspect (both the works themselves and the machinery used - the latter suggests that the licensee was required to buy the machinery off Richard).

An income of £300 per annum in 1840 was equivalent to nearly £25,000 per annum in 2016 when measured relative to the historic standard of living but was ten times the latter sum if measured relative to historic labour earnings (even more relative to economic status) - measuringworth.com.

Richard would, of course, have been hoping to earn far greater returns than the minimum specified.

Chapter 11

The Great Suit - Its Ten Year Course



Lincoln's Inn. (Old) Hall, Chapel and Chancery Court by Thomas Shepherd, 1830 (Wikimedia).

1841

James Russell would not have been privy to the contents of the 1840 licence when, on 7th July 1841, he filed his claim against the owners of the URM for infringement of Whitehouse's patent. He would have known of Richard's patent and could have obtained a copy of the specification, which was a document of public record. His knowledge as to who were the owners of the URM in 1841 was probably based on hearsay.

In his claim Russell testified that he had been informed on 5th May 1841 of the infringement which was taking place on the premises of the URM where "iron pipes for gas and other purposes" were being manufactured, purportedly legitimately, under Richard's patent pursuant to a licence granted to the URM's owners. He identified his informants as "his sons & late partners" who

had a licence from him to make pipes under Whitehouse's patent - this statement had followed on from his description of his compromised dispute with his brother John in 1836 (described previously pp.14/15), which may suggest that the two circumstances were connected (and that Russell's relations with his own sons were difficult).

Russell referred to the method of pipe manufacture adopted in Richard's patent: the use of rollers and his "careful" wording specifying the use of a mandrel; he also, again, pointed out that Richard had been an expert witness for his brother in 1836. As he had in his dispute with his brother, James Russell contended in his testimony that, notwithstanding the "careful" terminology of Richard's specification, the mandrel as used at the URM in pipe manufacture was a deception and served no purpose and, in addition, that in some instances pipes had been made using no mandrel at all.

Russell's testimony, transcribed in a small neat hand, took up five large sheets of parchment. Inter alia, he also: questioned the efficacy of certain aspects of Richard's patent; complained that the URM's owners had "undersold" large quantities of iron gas pipes forcing Russell and his licensees to offer large discounts to their customers; asked that the URM's owners be required to disclose their business records and provide a full account of sales and profits realised. Finally, he requested the court to grant him an injunction restraining the defendants from continuing the alleged infringement.

There is nothing in the pleadings and records held by *TNA* to indicate what, if any, response was lodged in court by the defendants. It would not be surprising to discover that they had adopted delaying tactics and had still not filed any defence when Russell eventually secured a hearing date for his suit.

1842

The first hearing in "the great suit" took place on 26th April 1842 in London in the Court of Chancery before the Vice-Chancellor Sir Lancelot Shadwell (1779 - 1850); more than nine months had passed since Russell had filed his claim. *Image - Sir Lancelot Shadwell VC from member's public family tree on Ancestry website.*

Contemporary reports of the hearing appeared in the press and the *Mechanics' Magazine*. A more detailed report of the legal arguments was



contained in an 1846 publication now available [online](#): *Law Reports of Patent Cases* by *William Carpmael Esq.*

Carpmael was the lawyer and patent agent with an engineering background who had acted as one of Russell's experts in his earlier claims against Cowley in 1834 and, again, in 1836 against his brother John Russell (for whom Richard had been an expert witness). Carpmael continued to represent Russell in the claim against the URM; his *Patent Cases* reported extensively on the hearings in the Cowley case and those pre -1846 against the URM's owners. (Richard and Carpmael were to cross swords again, when they each publicly voiced strongly opposing views in the campaign that preceded the enactment



in 1852 of the controversial Patent Law Reform Act.) *Image: William Carpmael c.1860 © Science Museum*

Carpmael's report of the 1842 hearing concentrated on the legal arguments; the main issue in contention was, he reported, the use of the mandrel in Richard's patent, which he "Mr. W. Carpmael" and the other witnesses for Russell testified was used "colourably" i.e. as a "blind" and deception. The defendants, needless to say, had denied this was the case and had, also, put forward other arguments for denying that Whitehouse's patent had been infringed. Carpmael, in his report, did not dwell at length on Sir Lancelot's summing up or decision.

The reports in the press and, in particular, the *Mechanics' Magazine* were less concerned with the legal issues. They each reported that the Vice-Chancellor had been very impressed by the substantial differences in the methods of manufacture adopted by each of the two patents. In particular Sir Lancelot referred to two of the great improvements introduced by Richard's - the speed of the propulsion of the pipes by the rollers and the greater length of pipe that, allegedly, could be manufactured (the parties' lawyers had entered into a pantomimic exchange on the latter subject of the "Oh no you can't - Oh yes we can" type).

The *Mechanics' Magazine*, whose editor was a supporter of Richard, quoted Sir Lancelot at length when he gave his reasoning for refusing the injunction requested by Russell at this initial hearing:

And one thing which occurred to me was this, that if it be true that there is a very great improvement by means of the machinery under which the defendants are acting, why, if I were to grant an injunction in the first instance, I might be depriving the public for a time of the benefit of that very improvement. Now I should be extremely unwilling to do that, unless I felt the case was irresistibly clear, and therefore I rather think the safest and the best course, and therefore the course I ought to pursue, is to direct there shall be an action brought by the plaintiff, in such manner as he may be advised, against the defendant, for the purpose of determining this question; and I shall direct it in the usual terms, that both parties may be at liberty to apply.

The Vice-Chancellor, therefore, ordered that either party was free to commence proceedings for a full hearing of the dispute before a special jury and that, before doing so, each was to be entitled to inspect the other's premises and manufacturing processes. No order for costs was made pending the outcome of any further trial.

This result must have been greeted with a degree of triumph by Ledsam and his co-defendants - they were free to continue manufacturing iron pipes in great quantities and it was to be another two years before Russell managed to secure a verdict on his claim by the appointed special jury in the Court of Exchequer. The value of Whitehouse's patent was being seriously eroded and it was due to expire on 25th February 1845 - the enormous expense that Russell must have incurred in the prolonged proceedings required to secure its extension in 1839 would have been a persuasive factor in his decision to continue with his claim (together with his continuing new commitment to pay Whitehouse £500 annually).

One other person, almost certainly present at the hearing, would have been greatly relieved by Sir Lancelot's decision - Richard, who would continue to receive his royalties from the URM. How much these were is unknown but they must have been considerable, possibly several thousands of pounds per annum.

More than six months passed before Russell's new writ was issued on 14th November 1842 in the Court of the Exchequer. I have not traced the actual

pleadings in *TNA*, but a full transcript of them exists which was lodged in later proceedings in this prolonged legal battle.

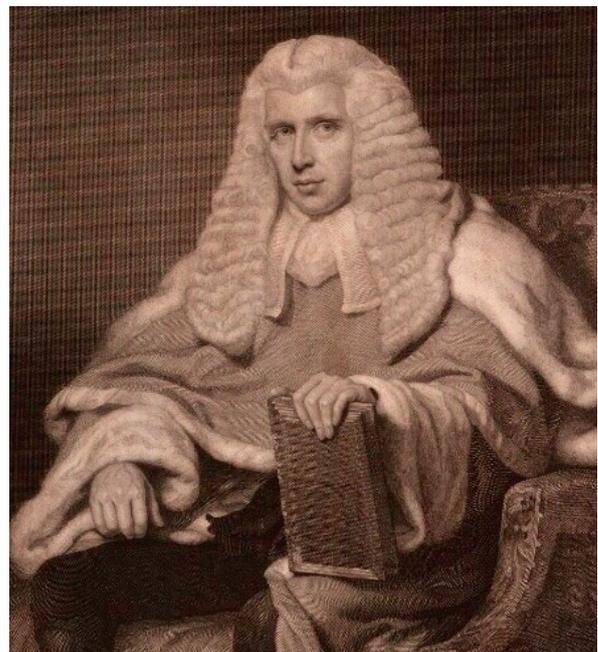
The writ largely repeated the claims that Russell had made in July 1841, except that he now contended that the defendants had first commenced manufacturing and selling iron pipes infringing Whitehouse's patent on 27th February 1839, more than a year before the grant of Richard's patent. Russell complained that he had "been and is greatly injured and has lost and been deprived of divers great gains and profits" by the defendants' continuation of the infringement, and concluded his writ with a claim for damages of £1,000 - a very large sum, but perhaps less than might have been expected.

1843

This time the defendants, headed by Daniel Ledsam, responded reasonably quickly and filed their defence on 21st January 1843. In fact, they did not just put forward one defence, but altogether specified ten grounds for denying their guilt; some of which, as was the common practice, were intended to confuse the issue (and the jury) and clearly had no prospect of success. Russell's lawyers responded on 14th February 1843 with a request for clarification of the evidence on which the defendants were relying to support some of the ten grounds; the resulting exchange in these preliminary skirmishes culminated in an initial hearing before judges of the Exchequer Court on 1st June 1843 - their decisions on each of the points in dispute meant that the honours earned were about equal.

At last, on Thursday 7th December 1843 the trial of Russell v. Ledsam and others commenced in London. Evidence from witnesses for the plaintiff Russell occupied two and a half days concluding on the Saturday. The case for the plaintiff again emphasised the alleged deceptive use of a mandrel by the defendants. The Exchequer Court, presided over by one of its judges or "Barons" Sir Edward Hall Alderson (1787-1857 - *Image Wikipedia*), and the special jury reconvened on the Monday to start hearing the witnesses for the defence - but the trial:

was unexpectedly suspended. At the opening of the court it was announced that one of the special jurors, in the



interval since Saturday evening had been seized with a violent attack of the gout, and that his attendance that day was impossible. A medical certificate to this effect having been produced... (The Wolverhampton Chronicle 13th December 1843).

The outcome of the ensuing discussions between Baron Alderson and the parties' lawyers was that it was "eventually agreed" that the trial should be postponed until "the sittings after Hilary Term".

Russell was, no doubt, dismayed at this unfortunate turn of events. Ledsam and his fellow defendants were probably delighted - not only had they been granted yet another delay, they had also gained the distinct advantage of hearing the other side's evidence in full without having to put all their own cards on the table; how fortuitous for them (and Richard) was that juror's sudden indisposition.

1844

The next Hilary Term would have finished sitting at the end of January 1844. However, over six months had passed before the trial was resumed on 24th June 1844 before Baron Alderson and, apparently, the same members of the special jury.

The hearing was reported at length by *Carpmael* in his *Patent Cases*; he had, yet again, been one of Russell's expert witnesses at the trial and the tenor (and editing) of his report favoured his client. The *Mechanics' Magazine's* short report on the verdict favoured the defendants. The long report in *The London Journal of Arts, Sciences and Manufactures and Repertory of Patent Inventions Vol. XXV* was probably written by an independent commentator and was largely comprised of transcripts of the more significant statements and exchanges made during the course of the hearing by and between the Baron, the lawyers and the witnesses.

Baron Alderson had been one of the judges in Russell's 1834 suit against Cowley and Dixon; a considerable advantage in his role as the presiding judge - questioning and clarifying the various technical points that arose on tube manufacture as well as giving guidance to the jury on points of law. The Baron also suggested in remarks that he made that at least some members of the special jury may have had some technological expertise - the actual legal qualification for sitting as a special juror was based on property ownership.

The trial lasted a further two days; the Baron had commenced the adjourned hearing by reminding the jury of the evidence that had been given on behalf of Russell the previous December which he "could hardly expect that you will have an entire and full recollection of...".

Of the ten defence grounds, nothing was reported of the evidence and arguments that must have been put forward on the majority of them - some of them could have been quickly dismissed as spurious.

The outcome of the trial, as reported, centred on two issues: one of which was whether the use of the mandrel described in Richard's specification was genuine or a subterfuge. Carpmael and his co-experts had testified six months previously that it was a "blind" based on their inspection at the URM's works. They had produced examples of pipes and mandrels purporting to show that the mandrels used at the URM were smaller than the circular hole formed between the four rollers of Richard's machinery and as such served no useful purpose.

In June 1844 Baron Alderson advised the jury at length on the outcome of the Cowley case, which had decided, in effect, that Whitehouse's patent was for the manufacture of iron pipes or tubes without the use of a mandrel. The Baron was clearly of the view that if the URM could prove that its use of the mandrel was genuine, then Russell's claim would fail.

The second central issue was an argument, put forward by the defence, that Whitehouse's 1825 patent was itself invalid as it adopted a process that had already been patented by Russell himself in 1824, which did not require the use of a mandrel. Russell had abandoned his method in favour of Whitehouse's and his patent had expired in 1838. There was much discussion between the lawyers, the Baron and the jury on technical points and the Baron clearly intimated that in his view Whitehouse's patent was invalidated by Russell's, but he directed that it was for the jury to decide the issue based on their opinion of the technicalities involved.

In setting this second issue to one side, the Baron pointed out that it would, in any event, become an irrelevance if the defence could show that the use of the mandrel in Richard's machinery was not a sham.

The defence then called forward its witnesses. The URM's lead expert was John Farey the well regarded mechanical engineer who, together with Richard, had acted for Russell's brother when he was sued by Russell in

1836. The following description of what followed is from the report in *The London Journal etc*:

*Mr. John Farey, Mr. John Barnes, and Mr. Thomas Buckle, civil engineers, were then severally called on the part of the defendants, and proved that they were the viewers appointed under an order of the Court of Chancery, to inspect the plaintiff's and defendants' processes. The plaintiff's process is for welding butt-jointed tubes by drawing each end three or more times through dies or swages without a mandrel; and that the defendants' process and practice (under Prosser's patent) is for welding butt and lap-jointed tubes, by means of four grooved rolls, with a mandrel, at one operation; and that it would be impossible for the plaintiff, by his process, to make lap-jointed tubes, such as manufactured by the defendants, for marine, locomotive, and other boilers.**

* [The important distinction between butt welding and lap welding is described later (p.83). Carpmael in his report gave a more detailed account of the evidence given by Farey (which was supported by the defence's other experts) and his persuasive arguments refuting those of the plaintiff's alleging the deceptive use of the mandrel.]

Mr. Charles Palmer proved he was formerly manager of the defendants' works; that he was in the employment of the defendants while Mr. Prosser's invention was worked in 1840 and 1841; and that the practice was to heat a previously prepared skelp to a welding heat, and pass it through the rollers on a mandrel. That the mandrel was an essential part of the process, and that tubes could not be made without it, especially the thin tubes used for steam boilers: the principal use of the mandrel being to keep the bore of the tube perfect, and free from scoria [slag], large quantities of which were pushed by the mandrels from the insides of the tubes.

On his cross-examination the witness stated—That early in the use of the machine, (in the year 1840), "he made 100 tubes without a mandrel;" "they were in the warehouse when I left; the fact is, they were an eighth of an inch in the bore, and six-eighths in diameter; and being a novice, I had them turned up, and when they were turned up they did not meet by a great deal; the furnace was hot; and my observation was, that if fastened together they will be more useful than they are now, in the rough state, and they have been used for jobbing purposes in the manufactory."

Mr. Jervis. — The infringement is now proved.

Baron Alderson. — Here are 100 tubes made without a mandrel.

The London Journal's report then continued with a transcript of the heated exchange between Mr. Jervis (for Russell) and the two lawyers acting for the URM with the Baron also interceding. The URM's team argued vociferously that the 100 tubes had been made merely as an experiment and were not fit for use as tubes; that the actual point in issue was whether the general/usual method of manufacture at the URM, which was always with a mandrel, constituted an infringement of Whitehouse's patent. The Baron disagreed:

Baron Alderson. — Your case is two-fold: you say, that when you used the rollers you used the mandrel; and if so, inasmuch as Mr. Jervis's client does not go for an infringement by the use of the rollers and the mandrel together, then, if you have never made any tubes excepting by means of the mandrel passing through the rollers, and welding in that way, you would not have committed any infringement in any view of the case; now it appears you have passed through the rollers 100 tubes without the mandrel.

The arguments continued: the defendants' team pointed out that the offending faulty tubes were not used and were only kept for reuse to make "staples, nails etc."; the hapless Palmer was recalled who confirmed he had received the order for the extremely (impossibly?) narrow tubes from a customer in Newcastle, who was insistent that they should be delivered notwithstanding Palmer's belief that they would be returned as unsuitable (they were). (In later proceedings the URM litigants were to allege that the Newcastle customer was in league with Russell; and in one outburst in the 1844 trial, following Palmer's recall, a defence lawyer accused Russell of planting his own employees in the URM works: "*we are inundated by men applying to be hired by us, from the plaintiff, merely to watch our works, and induce us to use our instruments in a different way; and we can shew that they themselves did use them, and that we did not; and then they go away and say that we are working according to the plaintiff's patent.*")

The Baron remained unmoved - in his view the manufacture of the 100 tubes, unusable or not, without using a mandrel constituted an infringement and, as Russell was not seeking damages (he must have dropped this part of his claim), there was no longer any need for the jury to decide whether the use of Richard's bulb-headed mandrel was a sham or not.

The defence team remonstrated that this, the genuineness of Richard's mandrel, was central to the issue that the Vice-Chancellor had wanted the special jury to decide upon when he refused Russell an injunction in 1842 in the court of Chancery: namely whether or not the substantial differences and improvements to tube manufacture under Richard's patent precluded any infringement of Whitehouse's. The Baron did not agree - the only question to be addressed was whether there had been an infringement and that of the 100 tubes sufficed (it would appear that the terms of reference to the Exchequer Court may have been capable of this narrow interpretation).

Again, the defence complained that a verdict for the plaintiff would inevitably give the wrong impression when the issue of damages arose - that when this was referred back to Chancery for adjudication that Court may be misled by the Exchequer verdict. The Baron was having none of this spurious insinuation as to the competency of his colleagues in Chancery, but he did make the following comment at one point: *"I quite agree with you, Mr. Henderson; you are not responsible for damages for any tubes which have been made upon a mandrel bona fide used; every body agrees to that."*

The Baron was, however, adamant that the issue as to the bona fides of Richard's mandrel was not going to be decided in his Court: *"We had better leave the Court of Chancery to take care of itself. Do not let us be kept here three or four days, because you want to take care of the Court of Chancery."*

No matter how much the defence team argued on the injustice of Russell "snatching" a verdict based on one minor infringement, the Baron remained intransigent.

Russell's lawyer urgently emphasised that the plaintiff was not seeking damages at this juncture and was not concerned beyond establishing that there had been an infringement (however minor); when pressed by the defence to concede the bona fides of the use of the mandrel in Richard's machinery he refused to address the issue.

An infringement having been proved, the Baron in his summing up for the jury therefore concentrated on the the remaining central issue: the validity of Whitehouse's patent in the light of Russell's own earlier patent. Having previously made known his own view (that Whitehouse's was invalid), the Baron was careful not to impose his opinion on the jurors in his summation of the opposing arguments, but nevertheless he appeared to be seeking to guide the jurors to find for the defence.

The jury retired to consider its verdict and, according to *Carpmael*, returned to the court after "a short time" - and found for the plaintiff Russell on all of the ten grounds put forward by the defence.

The report in *The London Journal* ended with a note that it was understood that the defendants intended to apply for a new trial in the following legal term; the *Mechanics' Magazine* also reported this likelihood due to: "The verdict of the Jury being at variance with the Judge's charge".

The short article in *The Wolverhampton Chronicle* dated 3rd July reported on the victory for the local Black Country employer: "thus again establishing Mr Russell's patent".

Yet, Russell's was in essence a hollow victory: the URM remained free to manufacture iron pipes and tubes using Richard's machinery - the alleged deceptive use of the mandrel had not been addressed by the Exchequer jury. Russell was awarded costs and the later transcript of the 1844 proceedings disclosed that these amounted to a hefty £1,877; in addition the defendants would have had to meet their own legal costs.

Bearing in mind that Whitehouse's extended patent was due to expire in February 1845 in any event, one might think that the URM's owners would have been happy to leave it to Russell to pursue the proceedings further - if he dared to in the light of the questioning of the validity of Whitehouse's patent by the Baron and the defence's evidence as to the bona fides of its mandrel usage.

However, it was Ledsam and his fellow defendants who now decided to turn the tables and pursue Russell; perhaps over confident of the prospects of success before a panel of the Baron's colleagues without the interference of an unreliable jury. Their decision was probably, also, commercially driven - the potential of Richard's patent was evident, but to exploit it fully would have required an enormous injection of capital for the construction of a new factory and acquisition of more machinery. However, the validity of Richard's patent had been challenged by Russell and the issue was still outstanding; a perceived need to eliminate this uncertainty may have determined Ledsam and his fellow investors to return to the courts (this initial assumption of mine is probably broadly correct, but the full background was more complicated than I then knew).

In its issue dated 16th November 1844 the *Mechanics' Magazine* reported that on 11th November the defendants in the case of Russell v. Ledsam had

been granted a hearing to decide whether a new trial should be granted on the ground, as they alleged, that the Exchequer jury's verdict was "perverse and against the evidence". In addition, although it had not been previously reported, Baron Alderson had reserved the court's right to review the jury's verdict in favour of the plaintiff on another two of the ten defence grounds; this review was also to be heard. The two grounds in question challenged the validity of the extension of Whitehouse's patent by Russell in 1839; they involved important, but abstruse, points of law, upon which, in the Baron's view, a definitive legal ruling was desirable.

1845

The new hearing commenced on Saturday 31st May 1845 before four of the Barons of the Exchequer court, including Baron Alderson. How long the hearing lasted is unknown, but the lengthy judgement was not delivered until Saturday 28th June; a full transcript was reported by *Carpmael* and also in *The Law Times* dated 13th September. (The legal arguments put forward at the hearing were, this time, not reported by *Carpmael* and I have traced no detailed reports in the press.)

The judgement commenced with the Barons' decision on the defendants' request for a new trial due to the alleged perversity of the special jury's verdict in June 1844 on two issues, namely the contentions:

Firstly, that Whitehouse's patent was invalid due to the prior existence of Russell's own 1824 patent; an argument which Baron Alderson appeared to support in 1844. The Exchequer Barons (or a majority if Alderson had not changed his views) disagreed and gave their reasons for drawing a distinction between the two patents (they related to the types of circumferential pressure adopted). The judges reached this conclusion notwithstanding that Russell's 1824 patent did not require the use of a mandrel, the lack of which they had already declared was also an essential constituent when describing Whitehouse's:

...the principle of the invention was the welding of iron pipes in a state of welding heat without a mandrel or internal support; and with circumferential pressure;...

Secondly, a contention (the limited extent of which was not immediately apparent to me when I read the judgement) that Whitehouse's patent had not been infringed by Richard's **when Palmer made the 100 pipes without a mandrel** (the Barons had, in fact, not been asked to decide whether the proper use of Richard's machinery, i.e. with the (allegedly sham) use of the bulb-ended mandrel, infringed Whitehouse's).

This, perhaps unexpected, contention had been given some support by a remark made by Baron Alderson in his 1844 summing up, which had referred back to statements made by Farey at the very end of his evidence for the defence (reported in full by *Carpmael*). Farey had added an additional defence argument: that Whitehouse's process was one of drawing, i.e. pulling, the pipe as in wire-drawing; whereas Richard's was: *...the well known process of rolling. These two processes are considered at all times different, and therefore the process of the defendants must be considered different from the patent of Whitehouse.*

In 1844 Baron Alderson, having summarised the arguments concerning the Russell patent, had continued by referring the issue raised in Farey's closing remarks to the jury. The Baron speculated that the decision in the Cowley case might have been wrong, in so far as it had decided that the lack of a mandrel was the real merit of Whitehouse's patent and ended his summing up with the following statement:

if the essence of the plaintiff's patent be for drawing, I must say I should recommend you should take very seriously into your consideration whether you should not find a verdict of not guilty for the defendants.

The 1845 judgement made it clear that this issue, drawing as opposed to rolling, caused the four Barons some difficulty:

some of us have entertained more doubt...but after much consideration (we) think that the defendant's mode, though it is an improvement in some respects on the plaintiff's patent, is in others the same, and is an infringement of it.

The Barons' reasoning for their decision was summarised and included reference to the "catch-all" wording in Whitehouse's patent: they considered that the circular hole formed by Richard's four rollers achieved the same effect (the welding of the iron pipe at welding heat) as that of the tools described by Whitehouse or the unidentified alternative apparatus that he suggested could be used. The Barons considered that the method of propulsion was not material as the "circumferential pressure, **without a mandrel**,..." under both patents was the same - notwithstanding that they acknowledged the improvements "in some respects" made by Richard's machinery. The inclusion of the words I have highlighted, easily overlooked, confirmed to me my conclusion that in 1845 when the Barons decided against the defendants that there had been "an infringement" it was only in relation to the 100 defective pipes made by Palmer in 1840.

The defendants' request for a new trial was therefore denied.

The 1845 judgement next dealt with the points of law that Baron Alderson had reserved for review in 1844: those that had arisen when considering two of the defence's grounds that had challenged the validity of the 1839 renewal of Whitehouse's patent. This, the lengthier part of the judgement, was of great interest to lawyers as it established a number of binding legal precedents. However, the learned Barons' conclusions did not assist Ledsam and his co-defendants: their challenge was not upheld.

The report of the 1845 Exchequer verdict in *The Times* dated 30th June (repeated in the Birmingham press) caused Russell some consternation as it mistakenly concluded that it had been held that "the defendant had not infringed" Whitehouse's patent. *The Times* issued a correction on 9th July as was pointed out by Russell in notices that he had inserted in *The Birmingham Journal* and *Aris's Birmingham Gazette* dated 12th and 14th July respectively.

Russell stated in his notice in the *Journal* that he was concerned that its readers would have been misled by *The Times's* initial report. In fact, the corrected version was also misleading as the minimal extent of the infringement was not explained. All accounts of the "great suit", even Richard's son's, give the impression that Russell was the outright victor and had effectively invalidated Richard's patent, but this was not the case. Richard's 1840 patent was never successfully challenged as is clear from Richard Bissell Prosser's description of it in his *BI&I*: an inconsistency that I could not reconcile with the accounts of Russell v. Ledsam until I realised the hollowness of Russell's victory.

I have found no reports in the Birmingham press of any response on behalf of the URM's owners to Russell's notices. Nor did the *Mechanics' Magazine* comment on the outcome of the 1845 hearing; a surprising omission in the light of its previous interest in the case.

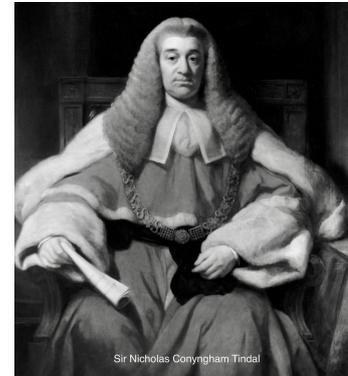
However, Ledsam and his five co-defendants were to continue hounding Russell through the courts and, in effect, appealed against the June 1845 verdict on their attempt to have the extension of Whitehouse's patent declared void. A Writ of Error was issued whereby the roles of the parties were reversed; in these proceedings the six named URM's owners were the plaintiffs and Russell was the defendant.

The proceedings in Ledsam and others v. Russell were issued on 7th July 1845; only nine days after the Exchequer Barons' judgement was given. The Writ has survived and is held by *TNA*; I have not traced any pleadings, but

the points of law to be addressed were the same as those heard in June 1845.

1846/1847

The case was heard on 19th June 1846 in the Court of Common Pleas before seven of its judges led by the Chief Justice Sir Nicholas Conyngham Tindal (b.1776); the Court's judgement was reserved. Tindal died on 6th July 1846. The delivery of the Court's judgement was then delayed until 6th February 1847 and it affirmed the decision given by its Exchequer colleagues in 1845. *Image - Wikipedia*



1848

Undeterred, the URM's owners appealed to the House of Lords, where yet again they were defeated on all counts. The Lord Chancellor Charles Christopher Pepys, 1st Earl of Cottenham (1781 - 1851), delivered its judgement on 11th July 1848. *Image - Wikipedia*



All the accounts to date of the "great suit" suggest that the House of Lords verdict was the end of the litigation. The pleadings held in *TNA* reveal otherwise.

On 25th August 1848 Russell sought leave to amend his original 1841 claim; leave was granted and the amended Bill was reissued in the Court of Chancery on 26th August. The material amendments limited the defendants to Daniel Ledsam and the five other Birmingham business men actually named in the 1841 Bill as the owners of the URM. Russell had not only resurrected his claim for infringement of Whitehouse's patent by the URM, but also his challenge to Richard's patent - more than three years after the earlier patent had expired.

On 11th November 1848 the defendants filed their Answer (defence), which was written in a very small hand on five large parchment sheets - equalling Russell's Bill both in length and the then usual repetitious prolixity.

The defendant's actually admitted infringing Whitehouse's patent but only in one minor instance - the manufacture of the 100 faulty tubes by Palmer without using a mandrel (an infringement that had already been confirmed by

the four Barons of the Exchequer in 1845). The defence referred to the hearing in 1844 before Baron Alderson and pointed out: that the jury then had not been asked to address the issue as to whether the use of the bulb-headed mandrel under Richard's patent was bona fide or a sham; that this issue was still outstanding; and that if, as the defendants contended, the use was genuine then, in accordance with the ruling in *Russell v. Cowley*, Richard's patent did not infringe Whitehouse's. More than seven years had passed since Russell first challenged Richard's patent - years of intensive litigation between the parties - and this fundamental issue had still not been ruled on by the courts.

The defendants also sought to deny the URM's involvement with tube manufacture altogether with the following, somewhat unlikely, résumé of the events that occurred in 1840 and 1841:

The URM acting through Daniel Ledsam had been persuaded by their then managing clerk Charles Palmer (conveniently deceased by 1848) to allow him to experiment to make tubes using the machinery patented by Richard Prosser "taking only his salary" i.e. in his own time presumably. Prosser had granted a licence to Palmer and the URM had never owned any interest in his patent. Palmer's attempts to make tubes were unsuccessful and he had made little progress in mastering the machinery when the defendants were served with the Bill issued by the plaintiff Russell. The threat of this litigation caused the defendants to cease the attempted tube manufacture on their premises and the machinery and stock were sold to an unidentified party in November 1841. The 100 faulty tubes were made by Palmer without using a mandrel in his early experiments and this infringement was admitted, but Palmer had been "set up" by Russell and his sons with an order from one of their customers to make very small tubes too narrow for a mandrel. The defendants assessed the damages due to the plaintiff for these 100 tubes at £10 or less.

It hardly needs to be pointed out that the time and expense spent by the defendants in litigation against Russell in the preceding years was totally inconsistent with the assertion that they had never successfully manufactured tubes and were no longer involved in the business after November 1841.

The defendants also explained that they (plus a Charles Capper who they did not seek to join in the proceedings) were the proprietors of the URM, now described as an unincorporated joint stock company and the owner of an engine to power a rolling mill for rolling metal, sawing timber etc., which they hired out to others. The URM's business was allegedly now unprofitable; in

fact, it had no assets and had ceased to trade; the owners wanted to wind up the company, but could not do so because of Russell's revived suit.

The Answer concluded with a submission by the defendants that the "main question" in issue in the amended suit was still that of the bona fides, or not, of Richard's mandrel; that it was the conduct of the plaintiff Russell that had prevented this question from being previously determined in the manner that it could "only properly be tried (*i.e.*) before a Jury"; that the plaintiff was resurrecting his 1841 suit on the "very same question", which would necessitate "the enormous expense of a Second Trial to be endured".

1849

There was no "Second Trial", or at least none that Russell participated in, as he died on 11th January 1849, aged 74, at his "Mansion" Endwood Court (it was demolished in the 1960s except for its lodge which still stands on Handsworth Wood Road in front of a block of flats - Handsworth's current "Endwood Court"). I have not identified Russell's wealth at death, but the length of his will, made shortly before his demise, suggested he left a fortune.

However, even Russell's death did not put an end to the litigation. A copy of his will is available on line (through the *Ancestry* website) and reveals that probate was granted on 24th August 1849 to a Thomas Jesson, a solicitor, one of the executors appointed by Russell.

1850

On 21st May 1850 Jesson issued a Bill of Revivor in Chancery in the suit of Jesson (originally Russell) v Ledsam and others. Ledsam and the five other defendants filed their Answer (defence) on 16th November 1850. Both of these comparatively short pleadings have survived and are held in *TNA*; the Bill comprises one and a half parchment sheets and the Answer just a single sheet.

In his Bill Jesson briefly recounted the earlier history of the "great suit" culminating in the decision of the House of Lords. He explained that: when his 1841 Bill was reissued in 1848, Russell had decided to abandon his attempt to include the other numerous owners of the URM as defendants as it had proved impossible to identify them; the six named defendants were the principal directors and managers of the joint stock company; he, Jesson, was acting in his capacity as the executor of the deceased Russell's will (the other executor appointed by Russell, a surgeon, having renounced probate).

The nub of Jesson's claim centred on the "perverse" verdict of the special jury in the trial before Baron Alderson that had taken place in 1843 and 1844, when the jury had rejected all of the grounds put forward by the defence. Jesson sought to argue that this verdict in favour of Russell for infringement of Whitehouse's patent had, at law, applied not just to the one hundred tubes made by Palmer without a mandrel, but also to all the great number of tubes made at the URM under Richard's patent using his, allegedly, sham bulb-headed mandrel; it was the profits made from the latter tubes that Jesson claimed the defendants should account for to Russell's estate.

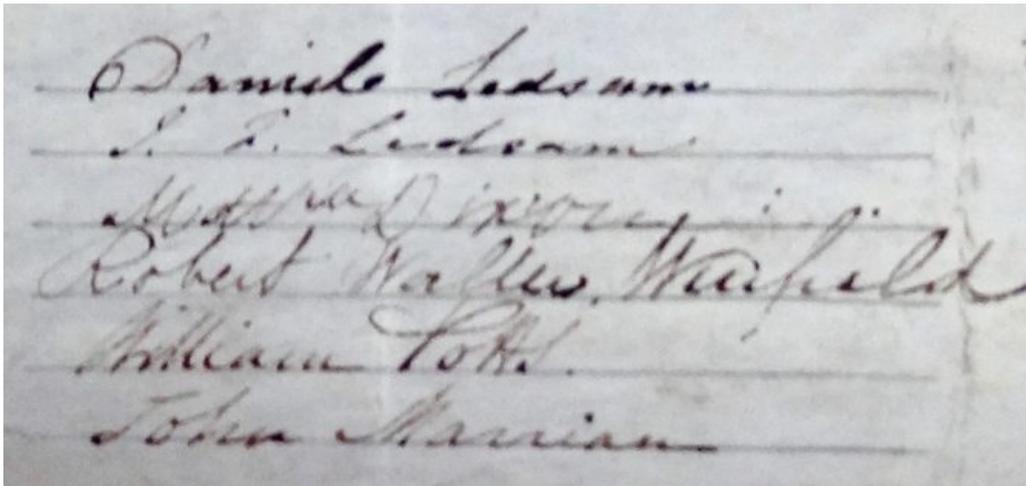
The defendant's Answer countered this claim by including a transcript of the discussion between the lawyers and Alderson in the latter part of the 1844 hearing. Alderson had then made it clear that the issue, as to whether in the correct application of Richard's patent the use of the mandrel was bona fides, remained unresolved, but that if the use was genuine then Russell's claim would fail in respect of those tubes.

The brevity of Jesson's Bill, and its somewhat spurious main argument, suggests that it was not a serious litigious threat. Negotiations had, no doubt, been taking place between himself and the defendants to settle the 1841 suit, which would have otherwise abated following Russell's death with consequent cost implications. The defendants, who were keen to proceed with the sale of the URM site and wind up their business, could not do so until the litigation was brought to an end.

The outcome of these, the last identified proceedings in the "great suit", is unknown. A settlement must have been reached as on 27th September 1853 all of the then owners of the URM sold the long leasehold site, its rolling mill and steam engine to one of their consortium, Robert Walter Winfield. The consideration stated in the 1853 assignment of the 1824 lease, considerably less than the original development cost, was only £3,643 10s, of which £746 5s went to repay the balance of the loan still outstanding from Thomas Ledsam (Daniel's by then deceased father).

Chapter 12

The Great Suit - The Cause and The Cost



*The signatures of the six defendants in the “great suit” at the end of their testimony in their 1850 Answer to Jesson’s Bill of Revivor.
The National Archives: C14/1174/R40*

The Lost Cause

The litigious warfare between Russell and the URM owners had dragged on for ten years.

What had commenced in 1841 with an attempt by Russell to challenge the legitimacy of Richard’s 1840 patent had become, after 1844, a much publicised attack challenging the validity of Whitehouse’s patent and its six year extension by Russell in 1839. It is for the latter cause, the failed counter-attack by Ledsam and his co-defendants, that the “great suit” was to be remembered and was deemed yet another victory by Russell in the defence of the 1825 patent.

Whether Russell greeted the House of Lords decision, delivered in July 1848, as a victory is another matter. The initial delaying tactics and the subsequent Writ of Error proceedings pursued by his opponents had successfully thwarted Russell from pursuing his own claim for the best part of the

remainder of the decade. When he did revive his 1841 Bill in August 1848, the elderly Russell may have been encouraged to do so in the knowledge that Richard's patent had recently come under attack in the London courts from another quarter. Russell was not to survive long enough to know the outcome of those proceedings, which will be disclosed later in this narrative.

The significance of Richard's patent in the story of the "great suit" has long been overlooked - deliberately so by Richard's son in his *BI&I*. However, In 1916 in a letter to the *Journal of Gas Lighting and Water Supply*, in its November 21st issue, Richard Bissell Prosser, then aged 78, was, at last, to admit that "my father, the late Richard Prosser of Birmingham, was the real defendant in the case of Russell v. Ledsam".

The Cost - The Lawyers' Bounty

It seems unlikely that Jesson, Russell's executor, recovered any significant damages and additional costs as a result of his revival in 1850 of the original 1841 suit. During his lifetime Russell had been awarded costs throughout the later proceedings, but even a successful litigant is usually left out of pocket.

As for Ledsam and his co-defendants, the legal and associated costs that they incurred must have been enormous. What was puzzling was that these must mostly have been incurred after 1844, when it was they who had taken the fight to Russell after the tumultuous hearing before Baron Alderson that year; at a time when, according to their defence testimony in 1848, they had severed their connection to the Birmingham tube venture. This defence was not credible, except that Richard's son in his *BI&I* supplied some evidence to support it - his account of the assignment of the 1840 licence of Richard's patent (that originally granted by Richard to Palmer) to two individuals, a London lawyer and his wealthy client, who were to set up a, subsequently successful, tube manufactory in Smethwick in 1845.

Mr Hackwood's Interesting Account

According to one later commentator the total costs incurred by Ledsam and his co-defendants exceeded half a million pounds - which assessment can be taken with a large handful of salt, but is indicative of the enormity of these liabilities (*Frederick William Hackwood - Wednesbury Workshops 1889 - a surviving copy of which is held in the Keith Gale Library at the Black Country Living Museum*).

Hackwood (1851-1926), a teacher, wrote copiously about his beloved Black Country, including Wednesbury his birth place, and its industries. His little books, if *Wednesbury Workshops* was typical, are entertaining: gossipy as well as informative - but factually not reliably so. I had come across an intriguing reference to *Wednesbury Workshops* in an online book (*The Manufacture of Iron and Steel Tubes: Edward C. R. Marks 1903*) and was able to view it at the *BCLM* in May 2016. Image - *F.W. Hackwood: Wednesbury Faces Places and Industries Website*



Three chapters of *Wednesbury Workshops* are dedicated to its tube trades and, in particular, that of James Russell. *Hackwood*, in his rather rambling style, outlined his largely inaccurate version of the "great suit" story (but this did include a credible quote ascribed to Daniel Ledsam: "Oh, that's only a milk score; go at it again." when he was advised that the total costs of the litigation might be £70,000).

Hackwood does not mention Richard's name in the context of the "great suit", although he, briefly and dismissively, described his four-roller machinery - the development of which he ascribed, without identifying his source, to an "Englishman named Morton Jones". He alleged that: Jones when visiting France had seen unsuccessful experiments taking place for the manufacture of cannon balls using rollers and conceived that the idea could be applied to tube manufacture; after returning to England, Jones had invested a huge amount of time and money (including his wife's dowry) in his own experiments in Birmingham; Jones had eventually exhausted his resources and was then betrayed by a "friend" in whom "he had put implicit confidence" when dealing with his creditors; this "confidential neighbour" had somehow "kept" Jones's tube machinery for himself, improved it and took out a patent which he immediately sold to "a Birmingham gentleman of large means named Ledsam".

That Richard's employer, the American Thomas Morton Jones, had been involved in the development of Richard's new machinery was not unexpected, but I was nevertheless taken by surprise to see his name mentioned by *Hackwood* - I had come across so few references to him in my earlier researches for *The First Story: "Rescuing Richard"*.

The French connection described by *Hackwood* is also credible and would coincide, and provide some credence, to my speculation in "Rescuing

Richard” (pp. 182-184) of a possible nail manufactory venture set up in France by Jones in about 1835 with which Richard was involved.

In October 1838 Jones's indebtedness had forced him to transfer ownership of the Chunk Nail Company and the freehold of its manufactory at the old Britannia Brewery site in Aston to Joshua Scholefield and had still left him owing £4,300 to this MP for Birmingham. Subsequently, Jones sold the machinery and tools of the Chunk Engine Works in February 1840 at auction; these included the "Great Lathe" with an 18 foot bed capable of boring “any sized cylinder up to 4 feet in diameter” and a gas tube welding machine. In the auction particulars, prospective purchasers were asked to direct all enquiries to Richard at his Cherry Street offices. The Works themselves were not sold (Jones, then a landlord, still owned them in 1851 - *Birmingham Rate Books 1831-1913 Ancestry*). Jones managed to stave off bankruptcy until November 1841 when the following report appeared in a London newspaper:

Morning Advertiser 18th November 1841

The numerous failures that have occurred again this week give evidence of the disorganised state of all branches of commerce. Judging from the further stoppages, minor ones though they are, the book trade has not yet recovered from its recent embarrassment. We must notice one failure being an illustration of the reverse of fortune, in a party well known in the fashionable circles of Paris and London, as well as in the mercantile world; we allude to that of Mr. Thomas Morton Jones. This gentleman, an American by birth, but long resident in this country, was originally possessed of great wealth, and was the owner of most extensive properties in South America, upon which some valuable mines exist. These subsequently passed into other hands, by no fault of the owner, far below their value, together with the immense properties with which they were connected, and Mr. Jones has since been located at Birmingham and in Worcester, a merchant, where we believe he stood high in consideration as a man of wealth.

Jones had lodged \$66,000 of "Colombian stock" as security for the balance of his debt to Scholefield in 1838.

Hackwood was probably not familiar with this background to Jones's misfortunes in the cut-nail industry, which I had uncovered in 2013 and 2014 in researching pleadings held in *TNA* and in documents secreted in old property deeds for the Britannia Brewery site held by the *Staffordshire Records Office*. The battle for ownership of the largest nail manufactory in the

country was a complicated affair which had lasted several years but had never become public knowledge as there was no coverage in the press.

So, Jones's money problems were not solely attributable, as suggested by *Hackwood*, to his experiments in pipe and tube manufacture. Those experiments would in any event have been conducted by Richard - Jones was a businessman, an investor/speculator, not an engineer. The threat of bankruptcy may, in fact, have been hanging over Jones for some time before 1840. It would not be surprising if Jones took steps to protect assets from his creditors, perhaps with the help of a "confidential neighbour" in whom he had "implicit confidence". Even though it was not uncommon for an employee inventor to take out patents jointly with their employer, whilst Richard was working for Jones he, nevertheless, took out his patents solely in his own name.

Hackwood's unattributed allegations as to the unnamed Richard's betrayal cannot be refuted categorically. However, as described in "Rescuing Richard", Jones's bankruptcy was short lived and he had repaid or reached a settlement with his creditors within a year. He subsequently moved his family from his gentleman's residence in the countryside of Showell Green, Yardley (then in Worcestershire), to number 1 Baskerville Place (later renumbered 1 The Crescent) close to the URM and to the tube works with which Richard was closely connected: tube works which Richard was to occupy himself from about 1849. Records found on *Ancestry* described Jones as an accountant in 1847 and a boiler maker in 1849. I prefer to believe that Richard supported his previous employer and patron during his financial crisis and continued to do so afterwards. Jones outlived Richard by three years; he died in Birmingham in 1857 aged about 69; his estate was probably of little value as I have found no probate record. (More of the background of this once wealthy American, a friend of the U.S. president John Quincy Adams, is told in "Rescuing Richard" in which he plays one of the leading roles.)

Returning to the "great suit", *Hackwood* did suggest a reason for the protracted and obdurate nature of the litigation between the parties - namely that, unsurprisingly, it was somehow tied into the competition between their two businesses - but, not for the manufacture of iron pipes for gas, for the manufacture of iron pipes and tubes for steam engines. The accuracy or not of this explanation was initially unclear.

What was Richard's role in the litigation?

That Richard must have retained a close involvement in the “great suit” litigation as a party with a financial interest, if not as a financial contributor to the costs, will become self evident in the following history of his 1840 patent during its fourteen years of existence - a complex web of business dealings to which Russell would not have been privy.

But First - The Great Suit: A Postscript

The Defendants

Daniel Ledsam (1772-1857): the son of Thomas Ledsam a wealthy metal dealer, button and nail maker; his family firm, Thomas Ledsam and Sons, was based in Great Charles Street, Birmingham, and, also, had a London address in 1823. Daniel followed his father into the metal trades and seems to have been involved in various businesses but, principally, as a screw maker in Edmund Street. He lived at Summer Hill in Ladywood during the 1820s and 1830s (his house is identified in the 1839 map on p.26 - top left), but by 1849 he and his wife were living with his wealthy, unmarried, sister Ann at 14 The Crescent (just to the north of the URM site in Cambridge Street) where he died on 18th December 1857, aged 85. Ostensibly, he was reasonably wealthy at his death with extensive property interests. His estate was initially assessed at about £30,000, but a note was later endorsed on the probate in 1863 that the return had been reduced to £385 "on the ground of debts" (source: probate held in *The Library of Birmingham Archives*). Russell may well have contributed to Ledsam's downfall, but a notice in the *London Gazette* revealed that the High Court had ordered a forced sale of all the properties in his estate in September 1859 as a result of a judgement in otherwise unreported litigation instigated by Ledsam against his son-in-law Charles Hopkins and others. I have found no obituary, but the local press reported on tributes paid to him at meetings of a number of Birmingham institutions and public bodies with which Ledsam was regularly associated during his lifetime. He bequeathed his estate to his only surviving son the Rev. Daniel Ledsam the incumbent of St. Marks in Ladywood. The name of Ledsam Street in Ladywood is, no doubt, associated with the family.

Joseph Frederick Ledsam (1791- 1862): a nephew of Daniel, was a better known local dignitary than his uncle as evidenced by the obituary quoted on the next page from the *Birmingham Daily Gazette* dated 30th December 1862. He was extremely wealthy - he invested £186,000 in the LNWR (London and North-Western Railway) when it was formed in 1846 (*The Times* August 13th 1846). However, his estate on death was valued at about

£60,000. Image below: Joseph Frederick Ledsam by Samuel Cousins, after Eden Upton Eddis mezzotint, 1852 NPG D37236 © National Portrait Gallery, London - Creative Commons License.

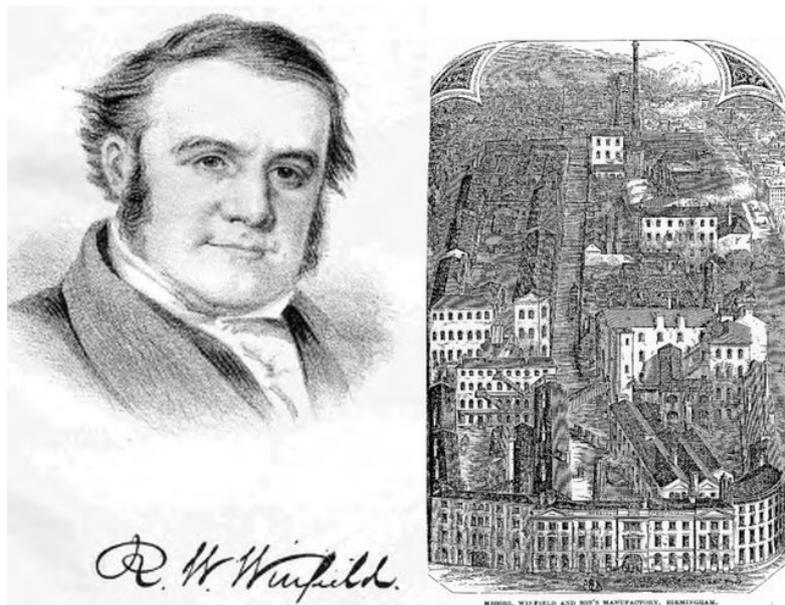


DEATH OF MR. JOSEPH FREDERICK LEDSAM.

We deeply regret to have to record the demise of our respected fellow-townsmen. Mr. J. F. Ledsam. which took place at his residence at Chad Hill yesterday (Monday) morning, after a long and painful illness. which he had borne with exemplary fortitude and resignation. Mr. Ledsam was, we believe, at the time of his death a magistrate for the counties of Warwick, Worcester, and Stafford, and a deputy-lieutenant for one at least of those counties. He was also for many years Deputy-Chairman of the London and North-Western Railway, and Chairman of the Birmingham and Staffordshire Gas Company, also an active Governor of King Edward's School. Amongst many public services for which the town is indebted to him may be mentioned his chairmanship for many years of the Committee of the Birmingham Musical Festivals, which have been in no small degree indebted to his assiduity, courtesy, and judgment, for their eminent success. In him the General Hospital has lost a very active and liberal trustee and member of the committee, and many other public institutions are by his death deprived of a devoted assistant. To the poor he was a liberal though unostentatious friend, and all classes will join in sincerely mourning his decease.

Matthew Dixon (c1778-1861): a factor, manufacturer of plated ware and silversmith of 136/137 Snowhill, Birmingham, died at Handsworth aged 83; estate less than £450.

Robert Walter Winfield (1799-1869): surprisingly, I have found no contemporary obituary for this prominent Birmingham business man, although a report of his funeral at St John's Perry Barr listed many of the local dignitaries amongst his pall bearers and the cortège from his house The Hawthorns, Ladywood Lane (now Road) in Edgbaston. Winfield's brass manufactory was on Cambridge Street on the same side and to the east of the URM. Known as the "Cambridge Street Works" his business had prospered during the 1830s and 1840s making and selling a comprehensive range of goods, in addition to his patented bedsteads. In the 1851 census he described himself as a merchant employing 500 men. His acquisition of the URM lease in 1853 extended the site of his Works which remained in existence until the end of the 19th century. At his death in 1869 his estate was valued at about £60,000. (In 2013 he too was a new entrant to the *ODNB*.)



Portrait from Edwards: Personal Recollections of Birmingham and Birmingham Men (free eBook - Project Gutenberg); 1860 engraving from advert of Works viewed from Easy Row with URM chimney in background.

William Potts: a brassfounder at 15 Easy Row, Birmingham in 1835 and at 16 Easy Row in 1850, when he also manufactured gas and oil lamps, chandeliers and gas fittings; deceased by the date of the 1853 assignment of the URM site lease, but otherwise untraced. Easy Row, just to the south-east

of the URM, commenced at the junction of Cambridge Street and Great Charles Street - see 1839 map p.26.

John Marrian (1796 - 1868): a stamper and piercer in 1841 at High Street, Bordesley and in 1851 at 28 Upper Priory; by 1861 he was a brewer at 107 Lupin Street, Aston employing 9 men and a boy. He died at Sherborne Street, described, surprisingly, in the Letters of Administration to his estate as a "Writing Clerk"; effects less than £100.

The Complainant/Plaintiff

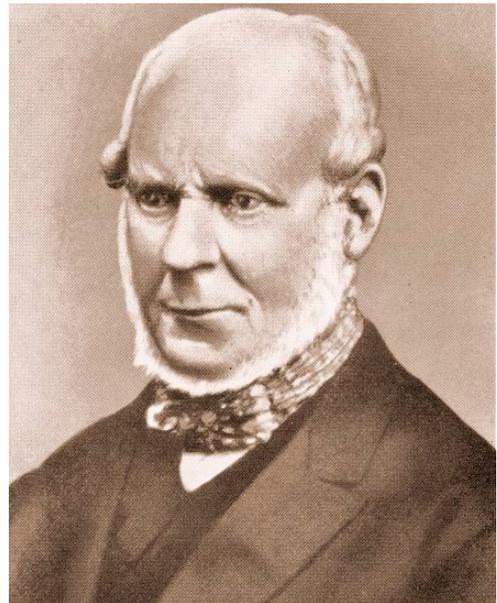
James Russell (1774 - 1849) - for more about Russell (and his brother John) and the continued success story of their respective tube works throughout the 19th century go to the marvellous website *A History of Wednesbury* : <http://www.historywebsite.co.uk/articles/Wednesbury/Tubes.htm>

Cornelius Whitehouse (1795 -1883)

The webpage above includes a link to one for Whitehouse. His page on the website *Grace's Guide to British Industrial History* includes a transcript of an obituary which concluded with the following statement:

No one will be surprised, though it is much to be regretted, that in common with many other patentees, the benefits Mr. Whitehouse conferred upon all countries through his invention did not leave his latter days with such substantial means as the importance of the industry he created ought to have afforded him.

(http://www.gracesguide.co.uk/Cornelius_Whitehouse)



It would not be surprising to discover that the obituarist, in the journal *The Engineer*, was Richard's son, Richard Bissell Prosser. Ledsam and his co-litigants in their challenges to Russell's extension of Whitehouse's patent had alleged that Russell had not honoured his financial commitments to Whitehouse - the courts had held that this was irrelevant being a matter between Whitehouse and Russell. This allegation was repeated in the above obituary and Richard's son had also referred to it in his *BI&I*. Image: *Whitehouse in his later years - A History of Wednesbury website*.

Richard Bissell Prosser's admiration for Whitehouse was confirmed in his 1916 letter to the *Journal of Gas Lighting etc.* (see image next page - *University of Michigan/Hathi Trust*).

(This letter, which I only came across whilst writing this section of *The Third Story*, repeated an error that Richard's son had also made in the *BI&I* in 1880, where he stated that Russell had agreed to pay Whitehouse an annuity of £300 in 1825. The original annuity was, in fact, only a paltry £50 as I have previously stated. The reports of the 1845 judgement of the Exchequer Barons explained that in 1836 Russell and Whitehouse had entered into an agreement whereby Whitehouse was to renew the patent and assign the renewal to Russell, whereon Russell was to increase the annuity to £300 and provide Whitehouse with rent free accommodation, but on condition that Whitehouse worked solely for Russell, including on improvements to tube manufacture. For whatever reasons, in 1838 it was Russell who applied to extend the patent; part of his submission to the Privy Council was a document whereby he covenanted to pay Whitehouse £500 per annum for the duration of the extension, if granted, but without any obligations on Whitehouse's part. Russell does not appear to have been an overly generous man.)

Nov. 21, 1916.]

JOURNAL OF GAS LIGHTING

MR. H. E. JONES'S "GAS ENGINEERS OF THE LAST CENTURY" LECTURE.

The Hawksley Lecture by Mr. H. E. Jones, which was summarized in the "JOURNAL" for Nov. 7 (p. 279), was similarly dealt with in the columns of the "Engineer;" and this has led to the subjoined letter being addressed to our contemporary by Mr. R. B. Prosser.

The following passage occurs in the report of Mr. Harry E. Jones's lecture: "In 1825, Whitehouse brought out a patent of Russell's dated 1817, for cheaply-made tube of greater length and uniform section of metal, welded by a patented process." No patent was granted to Russell in 1817; but Mr. Jones was probably thinking of Henry Osborn's patent granted in the same year for "producing cylinders of various descriptions." This was primarily intended for the manufacture of gun-barrels; but according to the "Mechanic's Magazine," Vol. XXXVI., p. 366, Osborn commenced to manufacture gas-pipes about 1820. The invention patented in 1825 by Cornelius Whitehouse (who was a workman in the employ of Russell) was entirely independent, and was of great importance. It was assigned to Russell, who had to bring many actions against infringers, in all of which he was successful. At the expiration of the patent in 1839, it was extended for six years. Whitehouse was paid an annuity of £300 during the life-time of the original patent, and £500 a year during the term of the extension. I should like to put these facts on record, in justice to the memory of Whitehouse, who died in 1883, in his eighty-ninth year. I have an interest in the matter, because my father, the late Richard Prosser, of Birmingham, was the real defendant in the case of *Russell v. Ledsam*—the patent in question being worked by the Birmingham Tube Company, with which Mr. Ledsam was connected. I greatly doubt whether old gun-barrels were used to any considerable extent for the conveyance of gas; for it must be remembered that they were small in bore, and not uniform, and that the external diameter at the breech end was greater than that of the muzzle, so that they must have been very troublesome to connect. Whitehouse's patent undoubtedly did much to extend the use of gas for lighting purposes. The same remark applies to the method of squirting lead-pipe, patented in 1820 by Thomas Burr, of Shrewsbury. I may remark, in passing, that Burr's invention was not quite new, as his method was described by Joseph Bramah in a patent which he obtained in 1797. As late as 1819 gas was looked upon with great suspicion; and Mr. J. W. Phipson, of Birmingham, took out a patent for safety gas-piping, consisting of an inner tube of lead, over which a casing of brass was drawn. Mr. Jones speaks of the disregard shown by the various competing gas companies to the rights of local authorities in regard to the opening of roads. But if he will look at the early Gas Acts, I think he will find that the powers of the companies in that behalf were very extensive.

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Chapter 13

The “Curious Particulars”



“A Lawyer & his Client” by and published by Robert Dighton hand-coloured etching, May 1812 NPG D9061 © National Portrait Gallery, London: Creative Commons License

I have, again, adopted a chronological approach in the following narration of the complicated business dealings and consequent litigation that occurred in the British iron tube industry during the period 1841 to 1850 whilst the “great suit” itself was still ongoing: the “curious particulars” alluded to by Richard Bissell Prosser in his *BI&I*.

This parallel history commences with the events which took place at the tube manufactory that was first established in Cambridge Street, Birmingham on

the back of Richard's 1840 patent. Much of the background is unknown and can only be speculated upon, but it is reasonable to assume that a major influence on the parties involved was the threat to Richard's patent when Russell instigated the "great suit" in July 1841.

1841: Mr Cutler's Patent

In 1848 the URM defendants were to allege that, in the light of Russell's opposition, they had ceased tube manufacture on 3rd November 1841; clearly a spurious claim.

On 6th November 1841 an English patent (no. 9140) was granted to Job Cutler of Birmingham for "Improvements in the Construction of Tubular Flues for Steam Boilers". As was usual, the enrolment of its specification was delayed (to preserve its secrecy) for as long as was permitted in the grant: until 6th May 1842. Despite its title the patent was, essentially, for welding "iron or steel" tubes using alternative methods (dies, two rollers or hammers) adopting Whitehouse's process but using a "necessary and important" mandrel. In addition, it incorporated a dubious claim for the invention proclaimed in the patent's title, which was actually merely the application of existing inventions for a new purpose: the use of tubes in steam boilers and the coating of iron or steel tubes with copper or brass for such use. As Richard's son pointed out in his *B&I*, unsurprisingly, Cutler's patent was to be challenged for infringing previous patents and for lack of novelty. What is surprising, however, is that the proceedings to do so were not commenced for several years.

The significance of this, seemingly irrelevant, attempt at patent plagiarism by Cutler will become apparent.

Job Cutler (1799 - 1867) was to play a leading role in the other litigation that bedevilled Richard and his 1840 tube patent during the later 1840s. However, for a few years, until early 1846, Richard and Cutler were, in fact, collaborators; when this collaboration first commenced is unclear, but it must have been no later than early 1843.

By searching online, mainly on *Ancestry* and the *BNA*, I discovered a number of records and reports that I could confidently connect to Cutler thanks to his relatively uncommon Christian name: Cutler's parents were Presbyterians; he had one child, by his first wife Harriet, a son John Walford Cutler (1822 - 1871), later a Birmingham solicitor; in 1828 a Job Cutler was made bankrupt

and his button manufacturing business at Pope Street on Camden Hill was advertised for sale; in 1832 a witness of the same name was described as a "manufacturer" in a coinage forgery trial and in 1834 he gave evidence when he was "employed by the Mint" to detect coin forgers. I have found no trace of Cutler in any trade directory prior to 1841. His patent that year was, in fact, his sixth. In 1838 and 1839 he had been granted five patents for inventions ranging from "cutting corks" to "constructing chains for suspension bridges" as well as one other for tubes; two of these were granted jointly to Cutler with a "machinist" Thomas Gregory Hancock - Cutler described himself as a "Gentleman".

By 1841 Cutler and his second wife Ann were living in a house with gardens in then rural Sparkhill on Ladypool Lane on or close to its junction with Stratford Road; they had two servants. Thomas Morton Jones, his large family and five servants lived less than a mile away in Sparkhill House at the junction of Stratford Road and Showell Green Lane; Jones's fourteen room house with stables, coach house and an adjoining cottage was set in twenty acres. I already knew the approximate location of Jones's large residence from his entry in the 1841 census; it was my researches for Cutler that led me to discovering "To Let" adverts in *Aris's Birmingham Gazette* in March 1841 for Sparkhill House then in the occupation of (the financially beleaguered) "Mr Moreton (sic) Jones". It is my belief that Jones and Cutler were well known to each other, possibly even good friends.

Reports found in the Birmingham press have revealed that Jones was definitely well known to the URM lead defendant Daniel Ledsam - they had sat on the same committees and in 1837 the two men had led a small delegation of concerned Birmingham policyholders of the Norwich Union Life Assurance Company, then thought to be in financial difficulties.

In the 1841 census Cutler described himself as of independent means - a misleading description as he was, in fact, still involved with the winding up of the firm of Cutler Benson and Co., the owners of the wire mill known as the Bordesley Mills in Adderley Street, Bordesley, close to Jones's Chunk Engine Works. This seven partner firm had been dissolved in October 1840 for unknown reasons and in May 1841 all of its machinery was advertised for sale by auction. In September 1842 a letter from Cutler was published in the *Birmingham Journal* in which he disassociated himself from the insolvency of one of his former partners Cornelius Benson, who was also the firm's solicitor. Cutler had accused Benson of grossly overcharging for work undertaken in connection with Cutler's patents.

1842: Mr Bower's Tangled Web of Deception

On 4th May 1842, only eight days after the first hearing in the "great suit" (when the Vice-Chancellor Sir Lancelot Shadwell had declined to grant Russell an injunction without further investigation of the merits of his claim), the URM's manager Palmer assigned the licence granted to him in 1840 by Richard to a solicitor named Edward Bower. In later proceedings (in 1853) Bower was to allege that, at some unidentified date prior to the assignment, he had entered into partnership with Palmer for the manufacture of iron pipes pursuant to the 1840 licence and had agreed to advance the partnership the sum of £2,000 as working capital on terms that entitled Bower to two thirds of the partnership's profits to Palmer's one third. Presumably, it was also a condition of such a large investment that Palmer was to assign the 1840 licence to Bower.

Edward Bower (1801-1863) was the son of a Birmingham metal manufacturer, Thomas Bower, a thread maker (as in screws) in Edgbaston Street. His solicitor's practice had been based in Paradise Street since at least 1833 and in 1841 he was living at what must have been a large residence, "The Elmhurst", on the Coventry Road (in the vicinity of the Hay Mills brook and Golden Hillock) with his wife Eliza, their five children and three servants. Bower's Paradise Street office was close to the URM and he lived not far from Cutler and Jones. In April 1843 one local newspaper was to report that he had been described as one of the proprietors of the "Rolling Mill Tube Company" in court proceedings, although his name was not included in a list of the URM partners published in the notice of the retirement of two of them later that year (nor was he a party to the 1853 assignment of the URM lease - although he witnessed the signatures of some of the assignees).

In 1842 Bower was unlikely to have been acting in a personal capacity, if he was the "great suit" would surely have been brought to a swift conclusion: its continuation only makes sense if Ledsam and the other owners of the URM, or (more likely) some of them, retained an interest in Bower and Palmer's new tube venture. In my view, in the events that follow, Bower was acting as a "front man" for a consortium of URM owners and, perhaps, other investors of whom he may have been one. However, any surviving documentary evidence to support this supposition has not yet come to light.

The Bower/Palmer partnership was short lived and was dissolved with effect on 20th September 1842 following "disagreements".

The terms of the dissolution were set out in a deed dated 22nd October 1842: Bower paid Palmer an undisclosed sum for his share of the business's stock in trade and covenanted to perform the licensee's obligations under the 1840 licence, including the payment of all future royalties due to Richard accruing from 29th September 1842 (per Bower 1853). In addition, according to recitals in an 1845 deed (held in *The Library of Birmingham Archives*), Bower had also undertaken to pay Palmer £150 per annum during the continuance of the licence, which Palmer acknowledged was solely vested in Bower by virtue of the earlier assignment. The annuity payable to Palmer equated to half of the minimum royalty payable to Richard - nevertheless, a reasonable income.

On the face of the documentary and other evidence Richard was not a party to the arrangements between Palmer and Bower. His consent may not have been required to its assignment under the terms of the 1840 licence: an unusual omission, but the licence did entitle Richard to specify the place of manufacture of the iron pipes under his patent (see p.29). However, Richard's involvement seems almost certain in the light of the contents of a deed made between Bower, Richard and another Birmingham solicitor, Thomas Slaney, dated 23rd October 1842, only one day after that between Bower and Palmer - the two deeds would, undoubtedly, have been prepared concurrently.

The complicated terms set out in the second deed were summarised in the recitals of a later document: Bower was to pay £2,500 to Richard who, in return, agreed to transfer a third share in the ownership of the patent itself and its royalties to Bower "so far as (it) relates to Pipes or Tubes of Iron **inclusive of steel** but not further" (*my highlight*) ; Bower was also to have the exclusive right to grant (sub) licences to other manufacturers to make "Pipes or Tubes of any description of iron **as aforesaid**" and all premiums and royalties (gross) received were to be shared equally between Richard and Bower; Richard was prohibited from making iron tubes or machinery under his patent without Bower's consent; the patent was to be assigned to Slaney to hold as a trustee on trust for Richard and Bower in the agreed shares; the terms of the 1840 licence otherwise remained unchanged. The very large premium of £2,500 was to be paid by twelve half yearly instalments of £200 on 25th March and 29th September and a final payment of £100 on 25 March 1849; with each instalment Bower was to pay six month's interest at 5% pa. on the full balance outstanding. (Source: an assignment dated 27th April 1844 also held in the *The Library of Birmingham Archives*.)

After 23rd October 1842 Bower was, therefore, still entitled to manufacture iron tubes himself under the 1840 licence, which remained vested in his

name, but the royalties payable to Richard would be reduced by one third. Alternatively, or in addition, Bower was free to grant sub-licences to other manufacturers and the royalties and any premium they paid were to be shared equally between Richard and Bower.

The brief and only reference in the 1844 deed to "steel", an alloy of iron and other elements, is confusing - if it was an accurate reflection of the terms of the 1842 agreement between Richard and Bower. The 1840 Licence had, after all, limited the manufacturing rights to iron tubes.

Richard's was not the only tube patent in which Bower had an interest after he had dispensed with the services of Palmer.

Earlier in 1842, on 23rd July, Cutler had granted Bower an exclusive licence to manufacture under his recently enrolled 1841 patent. Bower paid Cutler a small premium of £200; the agreed royalty was £2 6s 8d per ton of manufactured tube subject to minimum of £16 13s 4d per month. This royalty was half that payable under the 1840 licence of Richard's patent. This transaction was followed by another on 11th October 1842 when Cutler and Bower signed a document described as a "Memorandum of Agreement" in later court proceedings.

This "Memorandum" provided for a deal between Cutler and Bower similar to that Bower was to enter into with Richard less than a fortnight later: Bower was to buy a third share in Cutler's patent for £1,200 payable by instalments and the royalties payable under the July licence were in effect to be reduced by one third; Bower was to have an unfettered right to grant new licences - any premiums received to be shared equally and royalties shared one third to Cutler and the balance to Bower; BUT Bower had the right to annul the October agreement within the following 6 months if it was found that tubes and flues could not be welded under Cutler's patent with nearly equal "facility and goodness" as those under Richard's patent "in work" at the URM as determined, if disputed, by independent civil engineers or "scientific gentlemen"; if the October agreement was annulled Bower was to be repaid any instalments of the premium already paid. The third party to the "Memorandum" was the solicitor Thomas Slaney, to whom the patent was to be assigned to hold as a trustee for Cutler and Bower.

So, by the end of October 1842 Bower had acquired exclusive rights to tube manufacture under both patents and/or the exclusive right to grant sub-licences to do so. In the case of those under Cutler's patent, the rights included steel as well as iron tubes.

In the meantime, successful tube manufacture under Richard's patent had clearly gained momentum at the URM - if Russell's allegations as to the great injury and loss of profits suffered by him are to be believed. These allegations were made in support of his second writ filed against Ledsam and his co-defendants on 14th November 1842.

Plans must also have been afoot to expand the Birmingham tube manufactory - plans which involved "extensive works" at a site in Cambridge Street adjoining that of the URM. The projected capital expenditure must have been considerable and more than Bower and his backers could or wanted to raise. A new character was to enter the story: a wealthy London solicitor named George Selby, with whom Bower had entered into partnership in the tube venture with effect on 25th December 1842 according to the recitals in the assignment dated 27th April 1844.

This assignment, by Bower to Selby, was of a half share in Bower's rights and obligations under the agreement with Richard dated 23rd October 1842. The 1844 recitals also stated that Bower and Selby had "jointly" paid all the royalties due to Richard under the October 1842 agreement since its inception. Selby had in effect acquired (at what price is unknown) a one sixth share in the 1840 patent, but the 1840 licence (and the manufacturing rights it granted) remained vested in Bower's name.

Whether Richard was aware of Selby's involvement in 1842 is unknown.

1843: "The Patent Welded Iron Tube Company" Commences Trading

If not actively involved, Richard and Cutler would, nevertheless, each have been keeping a close eye on the developments in Cambridge Street in early 1843 at both the URM and also at the building adjoining its western boundary in which a new bespoke tube manufactory was being set up.

Neither patentee may have been privy to the terms of each other's agreements with Bower at the time of their negotiation. However, it seems unlikely that these were not disclosed to each other by 20th April 1843 the date of the grant of their joint English patent, no. 9707, entitled "Improvements in the Machinery to be used in Manufacturing Pipes and Bars, and in the Application of such Pipes and Bars to various Purposes". The patent was enrolled on 19th October 1843.

Richard was the first named of the joint patentees, who were described as "Civil Engineers" of Birmingham. As Richard Bissell Prosser explained at the beginning of his final article on metal tube manufacture in his *BI&I*: "With the exception of a mode of turning up skelps there is nothing relating to the actual formation of tubes" in this patent. The other "Improvements" patented related to a method of forming sockets for joining lengths of pipe; methods of removing "excrescences", e.g. scale, from their exterior surfaces (including a machine to be used in conjunction with Richard's 1840 machinery); and for ornamenting tubes by using engraved rollers.

The suggested "Purposes" to which the improvements could be applied included specifically the manufacture of bedsteads - the product being sold by Winfield from his manufactory adjoining the URM. However, whether the patent was profitable for the patentees is unknown; the *BI&I* is silent apart from a comment by Richard's son that, for some unknown reason, the patented use of engraved rollers to ornament tubes did not appear to come into use (although the process met with success after it was re-patented with modifications in 1852 by another patentee).

Whilst, it would appear that Richard and Cutler were on good terms with each other at this time, there is evidence that, at least, Cutler's relationship with Bower had deteriorated. Whether, due to knowledge of the better bargain struck by Richard with Bower, or for other reasons, Cutler had refused to implement the terms of his October 1842 "Memorandum of Agreement" with Bower.

On 2nd May 1843 Bower filed a Bill against Cutler in the Court of Chancery; it consisted of five parchment sheets of densely written testimony and is held in *TNA* at Kew. Bower's long complaint can be boiled down to an accusation that Cutler was in breach of contract in that, despite repeated requests, he had not completed the assignment of the patent to Slaney, the proposed trustee, and was conspiring with unnamed/unidentified third parties to deprive Bower of his rights in the patent. Bower maintained that he had duly paid Cutler £300 being the first instalment of the agreed premium of £1,200. Bower, also, sought an injunction to prevent Cutler assigning the patent to someone else. The London solicitor acting for Bower was an associate of Selby.

Cutler's prevarication would have been a considerable embarrassment to Bower and his backers: the new tube manufactory was nearing completion and it was hoped to advertise it nationally as open for business, not under the banner of Richard's 1840 patent (which was under attack by Russell), but

using Cutler's of 1841, perhaps as a front. When Bower had gone into partnership with Selby he had also agreed to sell a half share in his interests in Cutler's patent to Selby (as well as those he had in Richard's) and could not formalise this agreement until Cutler formalised his with Bower.

The dispute was settled before it reached Court; a defence was not filed by Cutler (or has been lost). In separate proceedings between Bower and Cutler in 1847 both parties testified in surviving pleadings that the terms of their 1842 agreement were revised: Bower was to pay an increased sum of £2,200 by instalments for a half (rather than a third) share in Cutler's patent; the other terms as to division of premiums and royalties to remain as originally agreed in October 1842.

How quickly this compromise was reached is unknown, but the weekly journal *The Railway Times* carried the advert below in its issue dated 13th May 1843 and in its following five issues:



THE PATENT WELDED IRON TUBE
COMPANY having completed their extensive works for the manufacture of "The Lapped Joint Boiler, Gas, and other Tubes," take leave to call the attention of Railway Companies, Engineers, Locomotive and Marine Boiler Makers, Gas Companies, &c. &c., to the acknowledged superiority of these Tubes over any others yet introduced, in point of Economy, Quality of Material, and Manufacture.

This Company possesses the sole and exclusive right of the manufacture and application of Lapped Joint Welded Iron or Steel Tubes, or Lapped Joint Welded Iron or Steel Tubes, covered or coated with copper, brass, or other metals, or alloys of metals, for Steam Boiler purposes.—See *Cutler's Patent, sealed Nov. 6, 1841.*

Any person using the above description of Tubes for Steam Boiler purposes, unless supplied by this Company, will be immediately proceeded against for infringement of the before mentioned patent.

JAMES HARDY, Manager.
 Cambridge-street, Birmingham, May 9, 1843.
 London Agent—Mr. M. Nottingham, 6, Benet's place, Gracechurch-street.
 Country Agent—Mr. J. George Scott, late of Princess-street Works, Birmingham.

*The Railway Times, Volume 6 Published 1843: University of Michigan
 Google Books*

I have not traced this advert in any other publication; insertions in the *Mechanics' Magazine* and the press would have been an obvious placement,

would be "immediately proceeded against" - an open challenge to Russell, perhaps.

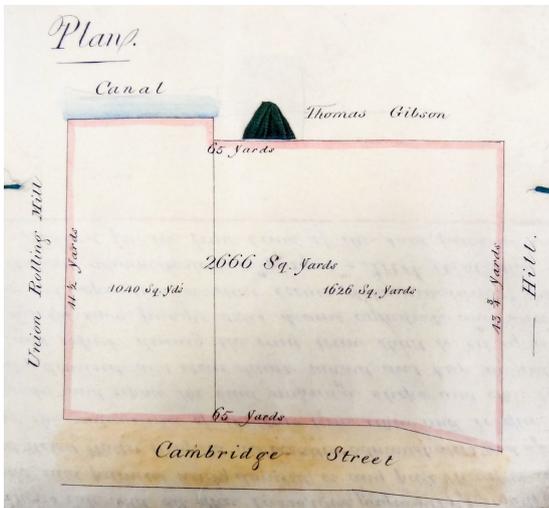
James Hardy (c1793 - 1865), named in the advert as the manager of the new company and, no doubt, Palmer's replacement, had already made a name for himself. In his *BI&I*, Richard's son was to describe him as "the inventor of a most valuable method of forging railway axles", for which he had been granted patents in 1834 and 1835, together with another patent in 1838 for machinery for manufacturing "various heavy articles" including "shafts, rails and tyre-iron". Hardy, a Scot, was in fact a church man by vocation, except for a period of his life between 1834 and 1846 when he used his inventive talent to further a career in engineering.

More about Hardy's earlier business ventures can be learnt on this [link](#) to the *A History of Wednesbury* website. However, its author suggests that he resumed his religious calling in about 1839, earlier than was in fact the case. In October 1846 Hardy did take up the curacy at Stratton on the Fosse in Somerset, becoming its rector in 1858 until his death in 1865 (*Ancestry* and *BNA*). His move to Somerset may have been financed by two patents that were granted to him in 1844 and 1845 for tube making machinery; *The Library of Birmingham Archives* holds an assignment of the 1844 patent which recited that Hardy had assigned it to Bower and Selby in September of that year "subject to the payment of certain sums of money and royalties" to Hardy.

(In his 1844 patent Hardy had described alleged improvements to the two roller system of Osborn's 1817 patent (also referred to by Richard in his 1840 patent), some of these improvements were apparently dispensed with by Hardy in his 1845 patent. The anonymous review of Hardy's 1844 patent in the *Mechanics' Magazine* dated 26th October 1844 makes interesting reading for its vituperative attack on its unnecessary complexity and length. Links: [1844 MM review](#); [1845 patent précis](#))

In 1843 Russell must have been aware of the opening of the new tube manufactory in Cambridge Street under the management of the talented and experienced Hardy. What else he knew, as to its true ownership and the processes being used, would probably have been based on speculation only. As Russell had endeavoured to do with his own manufactory, Hardy and his employers would have put strict security measures in place to protect their privacy and the trade secrets of their business.

In the meantime, Russell must, also, have been very frustrated by the slow progress of his "great suit" against Ledsam and other URM owners throughout 1843. His reaction can only be imagined when, in early December, the trial hearing, having at last commenced and having heard the case for the plaintiff, was adjourned due to the juror's alleged attack of gout and before the defence had presented any of its evidence. Much of the evidence for both of the parties would have been that of their respective experts' findings at the inspections of the two tube manufactories: Russell's and the URM's. These inspections must have taken place in 1843, possibly even after The Patent Welded Iron Tube Company had commenced trading; Russell's experts may have been intrigued by the activities taking place in the building immediately adjoining the URM's premises.



This building was number 42 Cambridge Street and it had previously been occupied by 28 year old George Crowther (c1816 - 1864), a timber merchant and cooper, according to his entry in the 1841 census.

George was the son of Thomas Crowther (1775 - 1831), who was described as a "Carpenter and Box Maker" at the address in *Wrightson's* 1823 trade directory. Thomas had been granted a ninety year lease of the large site in 1828 by Thomas Gibson, who had let the adjoining site to Ledsam et al in 1824 - Crowther's site at 2,666 square yards was in fact slightly larger than that of the URM. *The Library of Birmingham Archives* holds a sub-lease of 42 Cambridge Street granted by George Crowther to Winfield in 1857. *Image of sub-lease plan above left: The Library of Birmingham: MS322/10. Image above right extract OS map 1887 maps.nls.uk (orientation reversed).* (Winfield had been able to add the property to his growing empire following

the death in 1854 of Richard - its previous occupier, whose workshop and inventive base it had been since 1849/1850 following the relocation of the tube manufactory to Smethwick.)

George Crowther must have sub-let 42 Cambridge Street in late 1842 or early 1843 to Bower and, probably, Selby or some other nominee or nominees of the owners of The Patent Welded Iron Tube Company. (In the 1851 census Crowther and his family were living in the "hamlet of Bordesley" and described himself as a "proprietor of land".)

One other noteworthy event occurred in 1843, which may be coincidental only. On 18th October, the day before the enrolment of the specification of Richard and Cutler's joint patent, an English patent was granted to Thomas Morton Jones - the first and, possibly, the only one granted to him. Jones, cleared of his bankruptcy, was now "of Birmingham"; he had moved his family from the countryside in Yardley in late 1841 having auctioned off the valuable contents of Sparkhill House in November of that year (*BNA*).

Jones's patent, no. 9913, was for "Furnaces; also Vessels for Heating Liquids, etc.". It was clearly intended to have some application to tube manufacture; Richard's son did not comment on it in his *BI&I*. Whether it met with any success is unknown. Nevertheless, I question whether Jones had the expertise required to describe, never mind invent, the processes specified.

1844: A Rival Scottish Venture Emerges

In later court proceedings both Richard and Cutler were said to have earned substantial royalties from The Patent Welded Iron Tube Company, but in its early years of trading the revenue they each received may have left them dissatisfied.

On 21st March 1844 another tube patent for "Metal Pipes and Bars" was granted jointly to Richard and Cutler - in Scotland. Richard was again the first named patentee and was described as a "Civil Engineer"; Cutler was this time described as a "Gentleman". It was Cutler who signed the declaration that led to the enrolment of the long Specification and its fourteen accompanying drawings on 20th July 1844. Copies of the drawings and a handwritten, fifty-one page, transcript of the text is held in the *National Records of Scotland's* patent archives, whose archivists were very helpful in tracing the relevant records.

The Scottish patent in fact incorporated and replicated three of the patentees' English tube patents: Richard's of 1840; their joint 1843 patent; and Cutler's of 1841 - described in that order. The first thirteen of the accompanying drawings were the same as those in the English patents. The fourteenth drawing was referred to at the very end of the text and described an allegedly new improvement to the previously described processes.

Throughout its existence, until it and several other tube makers merged to form The Scottish Tube Company Limited in 1912, The Caledonian Tube Company of Coatbridge in Lanarkshire boasted that it was established in 1844 in its advertisements. According to Richard 14th March 1844 was the actual date of the initial formation of the partnership that traded under that name (he testified to this in 1848 in his Summons filed in the Scottish Court of Sessions against two of his former partners in the firm). The original partners in 1844 were Richard, Cutler, William Baker and Charles Robinson.

William Baker (1804 -1860) was born in Harborne a rural village four miles to the south-west of Birmingham, now one of its suburbs. In 1841 Baker, a "nail factor" (manufacturer's agent), and his wife and two young sons were living in the Black Country in the village of Oldbury, then in the parish of Halesowen in Worcestershire and six miles due west of Birmingham.

Charles Robinson (c1802 - 1848) was also in the nail trade; in 1826 his father had placed an announcement in the press that he had handed over his nail business to his son. In 1841 Robinson, his wife and three young daughters were living with his in-laws, an elderly farmer and his wife, in Northfield another rural village eight miles south of Birmingham, where his nail manufactory was located on the corner of Broad Street and Berkley Street. He had previously been in partnership with Cutler in the failed firm of Cutler Benson and Company, the owners of the wire mill at Bordesley Mills; their wives may have been related, possibly sisters.

Whilst Richard, Cutler and Robinson were probably primarily investors in the Scottish venture, it was Baker who relocated to Scotland with his family to manage the new tube manufactory. To qualify for this post, Baker would surely have required a background in engineering - whether he was the William Baker, "an engineer", acquitted of manslaughter for three deaths in May 1844 as a result of the explosion of a boiler in Old Swinford (seven miles from his home in Oldbury) must remain speculative (*BNA*).

The following extract from *Wikipedia* explains why Richard and his partners chose Coatbridge, ten miles east of Glasgow, as the site of their new business:

...The Monkland Canal was constructed at the end of the 18th century initially to transport coal to Glasgow from the rich local deposits. The invention of the hot blast furnace process in 1828 meant that Coatbridge's ironstone deposits could be exploited to the maximum by the canal link and hot blast process. The new advances meant that iron could be produced with two thirds less fuel. Summerlee Iron Works was one of the first iron works to use this technology. By the mid 19th century there were numerous hot blast furnaces in operation in Coatbridge.
(<https://en.m.wikipedia.org/wiki/Coatbridge>)

In 1864 Andrew Miller, in his *The Rise and Progress of Coatbridge and Surrounding Neighbourhood*, was to write that:

The Caledonian Tube Works [was] established in 1844 by the late William Baker, the first work of this description in Scotland, for the manufacture of the patent lap welded iron tubes for steam boilers.

In 1844 Baker must have wasted no time in setting up the new manufactory: by 1846 it was named in a French journal as the third of three recommended suppliers of iron tubes for marine and locomotive boilers. The other two recommendations were for James Russell and Sons of Wednesbury and The Patent Welded Iron Tube Company of Cambridge Street, Birmingham. (*Annales maritimes et coloniales:1846 - pp.587-589*)

Back in Birmingham, on 27th April 1844 Bower and Selby were at last in a position to complete the deeds that vested interests in Richard's 1840 and Cutler's 1841 English patents in Selby, who had actually been a contributing partner in the new Cambridge Street tube company since December 1842. Why it took so long to finalise the documents is unknown, but the delay suggests disagreement either between the parties and/or with Richard and/or Cutler.

In the case of Richard's patent the deed was described as an "Assignment of Royalties": Bower remained the owner of one third of the patent itself, but Selby was to be entitled to one half of the royalties that Bower was entitled to retain under the terms of his October 1842 agreement with Richard. In other words, with effect from 25th December 1842 Richard would be entitled to two thirds of the royalties due (under the 1840 Licence originally granted to Palmer) and Bower and Selby would keep a sixth each. (If sub-licences were granted by Bower to other manufacturers the royalties received would have

been due one half to Richard and a quarter each to Bower and Selby.) Selby paid Bower £1,200 for his share in the royalties and covenanted to share the burden of Bower's obligations in the October 1842 agreement. (Source: Assignment of Royalties dated 27th April 1844 Bower (1) Selby (2) held in *The Library of Birmingham Archives*)

Richard was not a party to the deed, he was unlikely to be aware of its terms and might not even have known of Selby's involvement - or, if he was, may have been withholding his cooperation in the hope of achieving some financial betterment. Richard, therefore, had no contract with Selby and legally it was Bower who remained solely liable to Richard for performance of the obligations of the licensee of the 1840 patent. Bower, in addition to Selby's indemnity, had presumably previously received indemnities from the investors he was secretly representing: the consortium led by Ledsam. Bower's own fees for all this work and responsibility must have been considerable.

In the case of Cutler's 1841 patent, the deed that was completed on 27th April 1844 between Bower and Selby has not come to light. The contents of a later deed suggest that (inter alia) Bower had declared that he and Selby were jointly entitled to the half share in the patent that Cutler had agreed to transfer to Bower in 1843.

In June 1844, seven months after its adjournment in December 1843, the hearing of the "great suit" was resumed; the defendants' evidence was heard, including that of the URM's erstwhile manager Palmer and the revelation of his attempt to fulfil the order from a customer in Newcastle for 100 very narrow tubes, which led to Russell getting his verdict for this minor infringement.

It would seem likely that by the time of this hearing no tubes had been manufactured on the URM's premises for a year or, at least, many months. (Perhaps, a semblance of continuing manufacture had been maintained in one of its workshops for Russell's experts to inspect if this had not occurred before 9th May 1843, the date The Patent Welded Iron Tube Company had commenced trading next door.)

Christmas Day 1844 was, allegedly, the date that the partnership between Bower and Selby was dissolved according to statements in a flurry of documents completed between the parties in early September 1845. On the same festive day Bower was also alleged to have transferred full ownership

of The Patent Welded Iron Tube Company to Selby and his new partner William Robert Hodges.

1845: A Very Busy Year

On 25th February 1845 Russell may have reflected on his luck on the day, more than two decades previously, when he was unexpectedly visited by the young Whitehouse, who had entrusted him with his idea for a new process of tube manufacture. Whitehouse's original patent had been granted on 26th February 1825 and Russell's monopoly over his groundbreaking process was to end on its 20th anniversary with the expiry of the renewed patent.

It is surprising that the Whitehouse patent was not overtaken sooner by a more mechanised process, but it does appear that its supremacy was not overturned until the advent of Richard's truly revolutionary rolling machinery in 1840. These machines, some still in use in 1880 according to Richard Bissell Prosser, must surely have rendered Whitehouse's labour intensive and, comparatively, very slow process uncompetitive. Other attempts at modernisation had been made, which had been unsuccessful in practice or successfully challenged by Russell, but Richard's machinery actually worked and Russell's attempt to challenge his patent had, in fact, not been recommenced after the June 1844 hearing.

With Whitehouse's patent about to expire, Russell may have decided that it was no longer cost effective to continue his battle with the URM's owners, and/or he may have been persuaded that a continuation was too dangerous, particularly bearing in mind the legal argument put forward by the defendants' lawyers: that the Whitehouse patent was itself invalid due to the prior existence of Russell's own 1824 patent - an argument that the special jury had rejected, but which Baron Alderson had appeared to favour in June 1844. If the jury had heeded the Baron then this would really have opened up a can of worms for Russell - would all his licensees, Cowley and the other alleged infringers that he had sued been able to file claims against him?

In November 1844 it was, in fact, the URM defendants who had applied for a new trial on various grounds, including the "perversity" of the special jury's verdict in June of that year. Their application failed on all the issues (pp.41-44). The judgement of the Court of the Exchequer was delivered on 28th June 1845 and must have been greeted with considerable relief by Russell as the challenges to the validity of Whitehouse's patent and its extension were thrown out. Barely a fortnight later, on 13th July 1845, the Writ

of Error was filed by Ledsam and the other five named defendants complaining of the "Manifest Error" of the June judgement.

At the date of the filing of this, in effect, appeal, the ownership of The Patent Welded Iron Tube Company was vested in the names of Bower and Selby in equal shares. Less than two months later the documentation was completed for the sale of the half share in the Company held in Bower's name to Selby and his new partner Hodges - backdated to 25th December 1844. Either the latter date was a pure fiction or the parties had delayed finalising the terms of the deal pending the Exchequer judges' verdict. Their judgement would have strengthened Selby's negotiating position.

Selby was, without doubt, a very clever but dishonest solicitor: a fraudster and an archetypal Dickensian villain. Hodges, his client since at least 1828, was possibly just one of many that Selby had defrauded during his, seemingly, successful career as a lawyer and businessman.

George Selby (1801 - 1870) was born in Otford in Kent to Thomas and Mary; Thomas (d.1832) was a "Gentleman" of some wealth according to the contents of a transcript of his will held in the records of the Prerogative Court of Canterbury (*Ancestry*). George and his older brother Thomas were solicitors in practice together in Serjeants' Inn London and in Malling in Kent until 1844. As early as 1828 the brothers had colluded in a fraud against Hodges, who was later to describe George as his "confidential solicitor" in bankruptcy proceedings in 1855 when the brothers' criminality was eventually exposed. In 1828 Hodges had been advised by George to invest £4,000 on a mortgage security that did not exist and George maintained the fiction of the loan (supposedly to another client) by paying interest himself to Hodges for over twenty years. George had already speculated in many business and property ventures by the time he became involved with the new Birmingham tube company in late 1842. On 25th March 1844 Thomas Selby had resigned from the brothers' London practice and George had taken in a new partner there, an Edward Mackeson. These changes had occurred just a month before George and Bower had, at last, completed the documentation for the purchase by George of a half share in The Patent Welded Iron Tube Company effective from 25th December 1842.

All future references to "Selby" refer to George unless otherwise stated.

Selby and Bower had known each other since at least 1840, when they had acted as joint assignees of a bankrupt's estate. Bower may have been unaware of Selby's true character; in 1855 the Commissioner overseeing

Selby's bankruptcy proceedings described him as "a man of education and great acuteness and intelligence... who had stood in the first class of solicitors in London".

William Robert Hodges (1781-1863) was not a man of business, but he was extremely wealthy having made and inherited a fortune through his father Benjamin, who had died in 1827. Benjamin Hodges & Sons of Church Street, Lambeth in London was originally founded in 1774 and became "for many years one of the most extensive distilleries in this metropolis" (*The Annual Register vol. 15 p. 309 - 1843*). References to "Hodges gin" featured in popular ballads. (Image left "*Broadside Ballads Online: Bodleian Libraries*.) William Robert and his father retired from the family partnership in 1823 leaving his younger brother Benjamin George in sole charge. In 1829, on the death of a son, William Robert was living at Millfield House, Great Bookham, Surrey, which was still his address in September 1845 according to a document held in the *The Library of Birmingham Archives*.

Selby's stated address in this document was "Smethwick Grove near Birmingham". In April 1844 Selby had given two addresses in the Assignment of Royalties from Bower: Serjeants Inn and "Hagley Road Edgbaston". Selby's purchase of the Smethwick mansion (previously known as "The Grove"), sometime during the following sixteen months, is confirmation of the early existence of his plan for the eventual relocation of the recently established Birmingham tube manufactory to Smethwick. Selby had purchased the freehold of The Grove and a large part of its extensive grounds in his sole name.

(An insight into the earlier history of the Smethwick Grove estate can be found at: http://www.moilliet.ws/Smethwick_Grove.html)



**HODGES' CORDIAL
GIN.**

THE Gin! the Gin! Hodges' cordial Gin!
It fairly makes our head to spin:
It gives us marks, and without bound,
It turneth our head completely round;
It plays with our eyes, it mocks our brain,
And sends us rolling in the drain.
I love the Gin—I love the Gin,
And in a butt of it I could swim,
Or ever live 'mongst butts below,
For the Juniper's taste so well I know;
If a drunken storm should rise, and a row begin,
What matter, what matter—we'll settle it all with Gin!

I love, I love—oh, how I love to bide
With a foaming Gin-cask by my side;
Where every quartern gives relief,
We whistle a stave and drown all grief:
And when our browns to the host we show,
The Gin-cock then will merrily flow.
I never tasted Braithwaite's swipes,
But I always found it gave the gripes;
So back I flew to my favourite juice,
Until my sorrows were all reduced,
No three-outs I'll have, but my whack to the brim,
For when I was born, my mother she gave me gin.

The Gin it flow'd, the glasses to adorn,
On the drunken hour when I was born:
The nurse she sung, but I did scream,
My mother call'd out for *vallies cream!*
And never was heard such a drunken crush,
As welcomed to life the child of lush!
I've lived since then in riot and din,
Full thirty winters, quite warm with gin:
With ready blunt to the shops I range,
But where I find it good I never change:
And Death! whenever he comes so grim,
Shall find, shall find me, gutting Hodges' Gin!

Printed, Printed, wholesale by and Marble warehouses,
9, 11, St. Andrew Street, Broad Dial.



Smethwick Grove, Seat of George Bacchus Esq: Antique Print c. 1830

The first week of September 1845 saw the completion of, at least, five documents effecting the transfer of the ownership of The Patent Welded Iron Tube Company into the joint names of Selby and Hodges; two of which, dated 3rd and 5th September respectively, are held in *The Library of Birmingham Archives*.

Thanks to the contents of the later deed we know that on 1st September Bower had assigned the licences, which he still owned, under Richard's 1840 patent and Cutler's 1841 patent to Thomas Selby to hold on trust for Bower and Selby in equal shares. (Previously, Bower's dealings with Selby had, in effect, related to the receipt of royalties payable under the patents; Bower had sold half of the share he owned in these royalties to Selby.) The licences granted exclusive tube manufacturing rights under the patents.

The earlier deed dated 3rd September was an assignment (first mentioned on p.69) of the 1844 patent granted to the tube manufactory's manager James Hardy. This recited that this patent had also been assigned on 1st September - by Hardy to Selby's brother (Thomas) to hold on trust for Bower and Selby as (nominally) the existing owning partners of the tube company. On 3rd

September Thomas Selby assigned Hardy's patent to Henry Reynolds (another solicitor - Bower's partner) and Mackeson (Selby's London partner) to hold on trust for Selby and Hodges as the actual (effective from 25th December 1844) current owning partners of The Patent Welded Iron Tube Company. Significantly, this assignment provided that the trustees were prohibited from assigning the patent in the future without the consents of the Company's then partners AND Bower.

The contents of the later deed dated 5th September revealed that it was, in fact, the last of three documents completed on that date effecting the back-dated transfer of the tube business to Selby and Hodges.

The combined effect of these three deeds was: to formalise the dissolution of the previous partnership between Bower and Selby; for the assignment by Thomas Selby of the two licences of Richard's and Cutler's patents to Reynolds and Mackeson on the same trusts and terms as they already held Hardy's patent - including the prohibition against future assignments without Bower's consent; for the acquisition of the whole of Bower's share in the tube business for an undisclosed sum by Selby and Hodges who would continue trading as "The Patent Welded Iron Tube Company"; AND for the payment of future royalties to Bower during the continuance of the respective patents and licences.

The first of the three deeds was recited to have specified that these royalties were to be at the rates of: £7 8s 6d per ton of tubular flues and pipes or tubes for steam boilers or similar purposes; and £1 per ton for gas pipes and tubes for similar or other purposes - manufactured under any of the three patents. The agreed rates were inserted in a different hand in spaces that had been left by the clerk who had transcribed the rest of the document.

The third and surviving deed was a "Deed of Covenant" made between Bower (1) Selby (2) and Hodges (3); in effect it guaranteed Bower annual royalties of not less than £2,000 under the first deed failing which Bower and/or Selby were free to grant licences to others. The ambiguous wording seemed to infer that the onus to make up any deficiency in this minimum royalty payment (which was required to be paid within one month of the expiry of each year) was to be paid by Hodges. Were Bower and Selby conspiring to defraud Hodges? Some credence is given to this speculation by the fact that the witness to all the signatories, including his father's, was the twenty one year old son of Hodges, William Algernon Sydney Hodges - presumably at Selby's instigation and without any objection from Bower. On

the face of it, the gullible Hodges had not thought it necessary, and perhaps had not been advised, to seek independent legal advice.

The "Deed of Covenant" was noted as "No. 7" on its cover - suggesting that at least two other deeds were completed, one of which was probably the partnership deed for the new partnership between Hodges and Selby. The terms of this partnership are unknown, but in the surviving deeds Hodges was always the first named - the supposed lead partner, no doubt true in terms of his financial commitment.

The end result of all these complicated arrangements was that, subject to the continuing payment of a minimum annual royalty of £2,000 to Bower, the manufacturing rights under the licences granted by Richard and Cutler and under Hardy's patent were to remain exclusive to The Patent Welded Iron Tube Company. However, whilst the Company actually owned Hardy's patent, Richard's patent and the right to receive royalties under its licence was owned two thirds by Richard and one sixth each by Bower and Selby. The ownership of Cutler's patent is less clear, but the documentation suggested that Bower had assigned his rights in it to Selby, in which case Selby and Cutler were the joint owners equally.

The assessment of the respective royalties, the attribution of their correct derivation i.e. to the relevant patent, and the calculation of the amounts due to the rightful recipients must all have been fiendishly complicated. To avoid disputes scrupulously accurate and verifiable records would have had to be kept by the Company (as was required of the licensee under Richard's licence) - it was later alleged that these were not maintained.

To complicate matters even further, Selby had himself been granted an English patent (no.10546) on 8th March 1845; he attended to the enrolment of its specification in London on 8th September, very shortly after his and Hodges's purchase of the Company had been finalised. Richard Bissell Prosser described the patented inventions in his *BI&I* as "a machine for turning up skelps" (which was to be used in conjunction with Richard's 1840 machinery) together with various other improvements to tube manufacture detailed in "the elaborate specification". Richard's son may have known the identity of the true inventor - it cannot have been Selby: Richard or Hardy were the obvious contenders.

On 1st May 1845 Richard had also been granted an English patent (no. 10469); its specification, enrolled on 1st November 1845, was even longer than Selby's. The main invention was of "A new principle of tube making...

although it was never successful on a large scale. The edges of the skelps were fashioned in such a manner that when turned up they should not only meet but enter the one into the other". This quote is also from *BI&I* and it continued with a brief description of machinery using cutters, moulds or dies and an hydraulic press that finally closed the tube completely with "a much stronger weld". In addition, Richard's son summarised the other "many improvements in the details of the tube manufacture" claimed in the specification. Whether Richard sold or licensed this patent and, if so, to whom is not known.

The *BI&I*, also, described other tube patents granted during 1845 to Birmingham based patentees with familiar names - Whitehouse, Thomas Henry Russell and Dr. Church. Richard Bissell Prosser's comments do not suggest that these were of any major significance.

In Scotland, The Caledonian Tube Company, which must have commenced production in 1844, has left little trace of its activities in 1845 or at least none that I have been able to trace online. Research in archives and record offices in Scotland might reveal more of its early history, but is beyond the scope of this narrative. Richard's tenure as a partner was, in fact, to cease in 1846 and it is the resulting litigation that has provided the only information that has come to light for events in Scotland in 1845 .

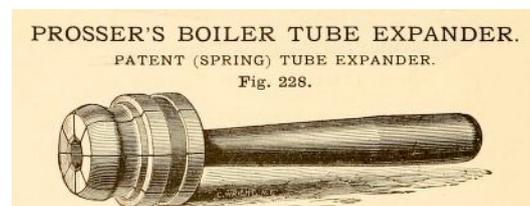
In February 1848 Richard was to testify in his claim in the Scottish Court of Sessions against Cutler and Baker (Robinson had died in January of that year) that a formal "Contract of Partnership" was concluded between the four partners in mid-October 1845. The testimony described (and in some instances quoted) some of the material terms of the agreement: the business was to trade as "The Caledonian Tube Company" manufacturing and selling "welded Iron tubes for steam boilers and other purposes" under Richard and Cutler's 1844 Scottish patent during its fourteen year term; the four men were equal partners in the assets and profits of the firm and as to its liabilities; the liabilities included the tenant's obligations in a lease of the firm's premises which had been granted to Robinson and Baker, the latter was described as the "Managing Partner" (when searching in the *BNA* I did discover a property for sale in 1871 located opposite the Company on the junction of Main Street and Sunnyside Road, Coatbridge); the partners were to be allowed to draw £75 a quarter on account of profits, but no more unless the estimated value of the firm's assets exceeded £6,000; any partner wishing to resign had to give at least six months notice and he was to be paid out his share in the firm (to be assessed by two valuers - one appointed by each side) over a period of four years; on dissolution the partners were each to be entitled to be repaid

any monies they had advanced to the firm in priority, with the exception of £1,500 injected by Robinson and Baker (perhaps their "entrance fee" to the venture). *Image: O.S.1899 maps.nls.uk - possible location of Caledonian Tube Co. identified bottom right.*



The testimony suggested that the joint Scottish patent was one of the assets of the Company and a reference to an "assignation" may be to the assignment of the patent. The partnership agreement probably contained many other provisions as to the governance of the firm, but the rest of Richard's testimony was concerned with its terms as to what was to happen when a partner resigned.

On 18th November 1845, one month after completion of The Caledonian Tube Company partnership agreement, Richard was granted another Scottish patent in his sole name. The very long specification with seventeen accompanying drawings was enrolled on 16th March 1846. In the preamble Richard described the claimed inventions to be for improvements in: tube manufacture; tube-making machinery and apparatus; and "the apparatus for fastening tubes in their intended places in Steam Boilers and other vessels". The drawings include duplicates of eleven of the twelve of his May 1845 English patent. This later "non-Birmingham" patent was also, briefly, mentioned in *BI&I* by Richard's son for the last of its stated improvements, which Richard did not patent in England: "the tube expander for fastening boiler tubes in their places was also the invention of the late Richard Prosser, who manufactured large quantities of them....for many years it was the only efficient substitute for the old method of tightening the ends of tubes by driving in a taper plug." An online search against "Prosser's tube expander" will produce numerous references which confirm this statement. Presumably, it was Richard's intention to sell or licence these patented improvements to the Scottish firm. *Image: Walworth Manufacturing Co. Boston, Mass. 1878 Catalogue - Google Book - see also Tubes etc. Part 2 pp. 46/47.*



There can be little doubt that as early as the

beginning of 1845 The Caledonian Tube Company was trading and competing with its Birmingham rival and that both firms would have been using Richard's 1840 machinery. However, the principal product for both enterprises was to be not iron gas pipes but the iron tubes for steam boilers referred to above in Richard's testimony. The Scottish firm was set up specifically for this purpose; the Birmingham firm had been making these tubes since at least May 1843 as advertised in *The Railway Times* (p.67). Both concerns subsequently branded their tubes as "lap welded", an important selling point.

In June 1844 the defence's expert, the mechanical engineer Farey, had told the Court hearing the "great suit" of Russell v. Ledsam that Whitehouse's process was for butt welding only and, unlike Richard's machinery, could not be used for lap welding. The already long established method of lap welding achieved the stronger weld required to withstand the greater pressure to which the many wider but thinner and, therefore, lighter, tubes in steam boilers were subjected - tubes which Farey had stated the URM defendants were already manufacturing. The distinction between these two types of welding can best be seen in the simple outlines of unwelded tubes shown below. In either method the profile of the edges of the tube skelp had to be appropriately prepared before being welded. (Richard's May 1845 English patent referred to above had included machinery for effecting another version of lap welding, which he had claimed resulted in an even stronger weld.)

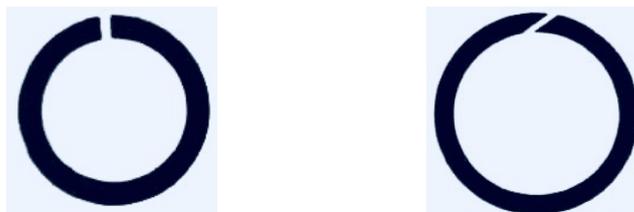


Image - simple butt weld left and lap weld right: An Outline of Mechanical Processes ... Arranged for the Instruction of Midshipmen at the U. S. Naval Academy and for Students in General - G.W. Danforth 1912. [Link](#) to transcript of section on welded pipe manufacture on Chest of Books website.

In fact, Russell had also been making tubes for steam boilers but could not compete on price with the Birmingham and Scottish firms according to M. Gervaise, an under-engineer in the French Royal Navy. Gervaise's short stay in England, on his way to the U.S. to fulfil a commission to investigate the application of tubular boilers in marine steam engines, must have taken place sometime in late 1844 or very early 1845 according to the publisher's note on the report Gervaise sent back to France before leaving England. The 35 page

memorandum, sent from Liverpool, was actually dated 31st January 1845 and was published in the official bulletin of the French navy, the *Annales maritimes et coloniales*, in the second of its volumes to be published in 1846 (which alone runs to over 1,000 pages).

Gervaise had found that English tube manufacturers had abandoned the use of copper for boiler tubes favouring iron instead. The section of his report headed "The price of iron tubes" commenced: "*In England there are three manufactories which supply the industry with the iron tubes necessary for consumption. At present, the demand for this raw material is so great that these three large establishments have difficulty in satisfying the orders.*" (Google Books translation - Gervaise would have incurred the wrath of the Scots for this slip, but he does later refer to the Glasgow firm as the supplier to "the north of Great Britain".)

Gervaise continued: "*I will give the current prices of these three houses, beginning with that of MM. Russell, who has the reputation of delivering tubes of a very superior quality, and which, as we shall see, charges his goods accordingly...these gentlemen have not manufactured tubes of a diameter greater than 3 or 3 1/4 inches English; But, at some time, they will be equipped to give more considerable diameters.*"

The Russell firm referred to above was that of James Russell - as can be seen in the image on the next page of the tables of prices for each of the three British firms that were quoted, in English, in the French naval engineer's report.

All the quotations are for tubes for boilers; those of the Wednesbury and Birmingham firms are described as "patent lap welded", but the Glasgow firm remained silent as to the process adopted. Whichever patented method Russell was using it was, probably, a wrought, i.e. largely unmechanised, process, which claimed to produce a quality product, but at prices "*of an exaggeration which cannot be justified by the merit attributed to their manufacture, and which greatly impairs the outlet of their products.*"

Having dismissed Russell's tubes as too expensive, Gervaise comments on his competitors' prices are revealing (notwithstanding the limitations of the, otherwise astonishing, Google translation service):

The other two houses deliver the same commodities at a moderate price, and of a very good quality, since the work of making the tubes cannot yield to the use of a lower quality raw material.

In the prices demanded by the Birmingham Company (the second quoted), an exaggeration of the [price of the] tubes of four inches is still visible; It is due to the fact that it is not an ordinary manufacture in the factory, all the demands hitherto made at smaller diameters. The British Admiralty, several of the great establishments in London, were supplied by that house, and important expeditions were being made by it on behalf of several houses in France, among others M. Mazeline, Haven. The north of Great Britain derives its products from the factory established at Glasgow, the third one quoted. Its prices are the lowest, the most rationally established, and they are especially advantageous for large diameters. I have seen, in Scotland, very fine products delivered by this establishment, which has lately been formed and still imperfectly known.

JAMES RUSSELL AND SONS
Wednesbury Staffordshire, near Birmingham.
New patent lap-welded tubes for marine boilers.

	2 1/2	3	3 1/4	3 1/2	4	4 1/4	4 1/2	outside diameter.
Thickness of iron	1/2	1/2	1/2	1/2	1/2	1/2	1/2	
Nett prices	2/0	2/4	2/10	3/6	4/	4/6	5/	per foot.

For locomotive boilers.

Thickness of iron n ^o 14 wire gauge.	5/8	3/4	7/8	2	2 1/8	2 1/4	outside diameter.
Nett prices	1/	1/1	1/2	1/4	1/6	1/10	per foot.

Delivered in London.
Tubes in about 10 feet lengths.

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588

ANNALES MARITIMES.

THE PATENT WELDED IRON TUBES COMPANY,

Cambridge-Street, Birmingham.

The patent lap-welded iron tubes for locomotive and marine boilers.

	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	4	outside diameter.
Nett prices	1/	1/2	1/4	1/6	1/8	1/10	2/8	4/	per foot.

Delivered in London.

Thickness of iron any required, say from 1/2 inch for marine boilers.

ROBINSON AND BAKER,

Caledonian tube works Coatbridge, near Glasgow, Scotland.

Tubes for boilers.

	2 1/2	2 3/4	3	3 1/4	3 1/2	4	4 1/2	5	outside diameter.
Nett prices	1/5 1/2	1/7	1/9	1/11	2/11	2/8	2/8	2/11	per foot.

Delivered in Glasgow.

Any required thickness of iron, say 1/2 of an inch. Greatest length is 12 feet.

Gervaise actually quoted in full a letter he had received from the "head" of the Glasgow manufactory informing him that they were preparing to introduce the larger tube, 5 inches in diameter, which Gervaise had indicated would be required by the French navy. The undisclosed signatory of this letter was, presumably, Baker and the firm's price list was headed "Robinson and Baker" - was Richard's and Cutler's involvement being deliberately concealed?

The French under-engineer's report, also, gives some indication of the rapid growth and early success of the Birmingham company. The potential rewards were enormous and would have promised great riches for Hodges and Selby, notwithstanding the large royalty payable to Bower and shared between Ledsam and his fellow investors. Whether this royalty, £7 8sh 6d per ton of pipe made (or a minimum of £2,000 per annum), was inclusive of that Bower was contracted to pay to Richard is unclear - but there was no suggestion that it was in the recitals in the deed dated 5th September 1845.

This deed had, inter alia, assigned the manufacturing rights held under the 1840 licence (originally granted by Richard to Palmer) to the solicitors, Reynolds and Mackeson, on trust for Hodges and Selby. Richard had sold a third share in his 1840 patent (and, therefore, also in the royalties due under the licence) to Bower in 1842; Bower had sold half his share in the royalties to Selby in 1844. Of the royalty of £4 13sh 4d per ton of pipe made, Richard would have been due just over £3 2sh and Bower and Selby about £1 11sh each. After September 1845 the total royalties payable to Bower would have been nearly three times those due to Richard, who had still not been paid in full by Bower for the third share in his patent (the half-yearly instalments of £200 ran until 1849).

If Richard had any suspicions as to this disparity in the returns received from his patent, then it is unsurprising that he may have secretly conspired with Cutler to set up a rival manufactory in Scotland. The price list sent to the French under-engineer by the then "imperfectly known" Scottish company under-cut not only Russell but its Birmingham rival as well. One of the reasons it was able to outbid the latter, may have been that it was not burdened with payment of royalties to the same extent, if at all. If the Scottish patent was actually owned by the four partners of The Caledonian Tube Company, no royalty would have been payable, however, Richard and Cutler may have been paid a premium when they, effectively, sold a half share in it to Robinson and Baker.

As will be seen, Cutler and Bower had not resolved their earlier differences over his patent; a dispute which was to find Cutler, himself no novice in

business matters, also at odds with the formidable Selby and in receipt of no royalties under his English patent.

Hodges was, probably, the only "innocent" party in these convoluted dealings. He was also, probably, Selby's principal source of finance in the acquisition of the Birmingham company from Bower and its future re-location to a site owned by Selby in Smethwick. Had he been advised how many fingers still remained in the pie after September 1845 in the way of his liability for royalties due - not only to Bower, but to Selby and Cutler and, of course, Richard?

Having sold The Patent Welded Iron Tube Company and whatever interests they held in it through Bower, it might be expected that Ledsam and his co-defendants would have dropped their Writ of Error proceedings commenced in July 1845 against Russell - this was not the case; the "great suit" was to be continued for another three years, at enormous cost to the Birmingham investors.

On the face of it, Ledsam's determination to continue the litigation, in which he and his co-defendants were now seeking to invalidate the six year extension of Whitehouse's patent granted in February 1839, may have been motivated by concern to protect the profits made during those six years. The continuation of this challenge to his extension of Whitehouse's 1825 patent, was to prevent Russell from reinstating his own 1841 suit against Ledsam et al; the suit in which Russell sought to recover damages equivalent to these profits on the ground that the bulb-headed mandrel of Richard's 1840 patent was indeed a sham and therefore infringed Whitehouse's.

However, I believe the greater motivation to Ledsam and his co-investors after September 1845 was their concern to protect and preserve the continuing payment of the new royalties due from Hodges and Selby to Bower, who was still acting on their behalves; AND, in addition, to prevent Russell competing effectively in the market for the then main, and more lucrative, product of the Birmingham company, not iron gas pipes, but iron tubes for steam boilers. The surviving evidence suggests that the latter company's production of lap welded iron tubes for steam boilers had surpassed that of gas pipes some time before the beginning of 1845 and maybe as early as May 1843 when The Patent Welded Iron Tube Company first opened for business under the guise of adopting Cutler's patent. Russell's unmechanised methods would have meant that he was unable to compete in the lap welded market. If, however, Russell had succeeded in his

claim, Richard's patent would have been invalidated and his machinery would have been available for copying by Russell (and all and sundry).

My hypothesis coincides with the assertion made by Hackwood, the Wednesbury historian, that the "great suit" actually concerned the competition between the two Midlands manufacturers for the market for tubes for steam engines.

One question still remains unanswered, namely: why Russell did not instigate a writ of scire facias against Richard, the remedy then available to anyone seeking to annul a patent for unoriginality - over two years were to pass before another old adversary of Richard's took this step.

1846: Richard Switches Allegiance

On 30th January 1846 Richard served written notice on William Baker, the "Managing Partner" of The Caledonian Tube Company, at its "Counting House" in Coatbridge of his resignation from the Scottish partnership effective on 30th July 1846. What precipitated this, apparently sudden, volte-face is unknown.

If Richard had served the notice himself it would have entailed a journey of over 280 miles from Birmingham of which, probably, less than half could have been undertaken by rail at that date; an inconvenience which soon disappeared in this era of extraordinarily rapid expansion of the British railway system.

In his 1848 testimony, Richard was to describe how the other partners subsequently requested that the first internal valuation of the assets of the Company, due to take place on 25th March, should be postponed until nearer the resignation date; a delay to which Richard agreed - a decision he may later have regretted. Richard's description of subsequent events suggested that there was some disagreement as to the valuation process, but eventually, in accordance with the terms of the partnership agreement, each side appointed their own valuer to attend at the Coatbridge manufactory on 30th July; both valuers duly attended - but were not allowed to conduct the valuation on that day and were asked to return two days later. Richard's appointee "Mr. John Martin Rowan of Glasgow" did so, but "Mr Henry Gimblet of Birmingham", the continuing partners' valuer, did not appear as he had returned to Birmingham.

In addition to a valuation of the partnership's assets, Richard had also previously written to Baker on 8th July requiring an assessment of the profits made by the firm to enable the value of his quarter share in both these and the assets to be agreed at the same time. The continuing partners persisted in thwarting Richard's attempts to implement the valuation procedure specified in the partnership agreement. Instead, at some unspecified date, Richard was presented with a "Balance Sheet" of the Company as at 30th July, which he described as "imperfect and erroneous".

Richard gave no hint in his 1848 testimony as to why he did not commence the court proceedings in Scotland sooner. When younger, he had been quick to resort to litigation against his own brother - as I have described in The First Story: "Rescuing Richard". As recently as 1845, he had lost no time in suing the owners of the renowned Royal Worcester Porcelain firm for infringing his dust-pressed process patent; these proceedings were settled on the second day of the hearing in July that year ostensibly in Richard's favour, but he did not recover his costs. In February 1846, he had filed another associated claim in Chancery involving the same patent against a fellow Birmingham mechanical engineer, Benjamin Wakefield; these proceedings were probably settled or withdrawn before trial, but were still ongoing in October 1846. (It may just be a coincidence that Wakefield was represented by the Birmingham solicitor Thomas Slaney, who was also acting for Cutler.) In March 1846, Richard had also successfully sued a former employee Samuel Bayliss for slander at the Warwick Assizes but had only sought nominal damages and again did not recover his costs. Perhaps, his experience in these last three suits had dampened Richard's enthusiasm for recourse to litigation.

The events in Birmingham in early 1846, no doubt, had a bearing on the conduct of the Scottish partners that year or, at least, on two of them - Richard and Cutler.

By March 1846 Cutler's involvement in the rival Scottish venture had clearly come to the knowledge of those interested in the fortunes of the Birmingham tube concern now owned by Selby and Hodges.

In a suit that Bower commenced against Slaney (as the trustee of Cutler's patent) and Cutler in March 1847, Cutler was to testify in his defence that he had sued Bower in 1846 for unpaid royalties due under the licence that Cutler had granted to him in 1842. Cutler claimed that: Bower had paid the royalties up to and including those due on 25th December 1845, but had failed to account for those payable on 25th March 1846; Bower had subsequently told Cutler that he refused to make any further payments giving various reasons.

These reasons, according to Cutler, had included claims by Bower that: Cutler's patent was invalid; the Birmingham company had not made any tubes under his patent; The Caledonian Tube Company, of which Cutler admitted being a partner, was advertising in England offering a cheaper product [*I have found no evidence of this at all in the British press in my searches in the BNA*]; and "Messrs. Russell" were selling "Cutler" tubes in contravention of the exclusive licence granted to Bower [*In 1847 a "Mr. Russell, a manufacturer of tubes at Birmingham," was to give evidence in other proceedings that Cutler had granted him a licence, but that his patented methods had not worked. This unidentified member of the Russell family was not James presumably, whose well known manufactory was at Wednesbury;*]. Cutler maintained that: he had suggested that the dispute be referred to an eminent lawyer, Sir Fitzroy Kelly, for determination, but that Bower had refused this offer; he had also met with and confronted Selby and Hodges, now effectively the owners of the licence (Bower had received indemnities from them for the royalties, but he remained solely contractually liable to Cutler for their payment). Selby's response, quoted by Cutler, indicated that he and Hodges supported Bower and were not to be intimidated with threats of proceedings having the "broadest back ...longest purse... sharpest knife" (the latter to be used to cut Cutler's throat allegedly).

The case of Cutler v. Bower was due to be heard at the August 1846 Warwick Assizes. Bower had also instigated proceedings against Cutler - a writ of scire facias that sought to annul Cutler's English patent. In his 1847 testimony Cutler gave a long account of the events that occurred in Warwick immediately before the commencement of the 1846 trial - the following is a short résumé of Cutler's version of these events:

The parties and their lawyers had met to discuss a possible settlement. Cutler may have already known that Bower's team of lawyers was to be lead by the "eminent" Sir Fitzroy Kelly himself; Bower was also accompanied by Richard - described by Cutler as "a friend" of his adversary. It was the "friend" who apparently opened the talks with a proposal that full ownership of the 1841 patent be reassigned back to Cutler. After discussions had taken place between the lawyers and their respective clients, settlement terms were said to have been agreed on the basis that: Cutler would forgo his claim for royalties if Bower discontinued the writ of scire facias; the licence and the patent were to be reassigned to Cutler; each side was to pay its own costs; the terms agreed to be in full and final settlement of all past and future contractual liabilities - except for Cutler's claim for £200 plus interest for the outstanding instalments of the increased premium that Bower had

(reluctantly) agreed to pay for a half share in the patent in 1843, a claim which Cutler had insisted that he retain the right to pursue. The lawyers spent some time agreeing and drawing up a "Memorandum of Agreement" of the settlement terms, which was signed by Kelly and Cutler's counsel. The Court was informed of the settlement and the trial was then discontinued without a verdict.

Immediately afterwards, a dispute arose as to the wording of the compromise agreement. Cutler's son, John Walford Cutler, was in attendance as the "clerk" to Slaney, Cutler's solicitor. The son was reading a copy of the signed agreement when he exclaimed "Father we are done the agreement is good for nothing"; he had noticed that the agreement had been altered to provide for a reassignment of the licence only and not of the patent. Kelly had already left the Court as he was due to appear at the Gloucester Assizes, but another Counsel in Bower's team claimed that the alteration accorded with the terms agreed. Kelly was actually followed and tracked down for his view on the disputed point, which he declined to give without reference to his own clerk as he had "no clear recollection". Cutler's 1847 testimony was silent as to whether Kelly later made known his view.

Richard's presence at the pre-trial discussions in Warwick in August 1846 can only have occurred a short time after his presumed attendances with Rowan, his valuer, at the Coatbridge factory, when the expected valuation of the Scottish Company's assets had not taken place. Cutler had described him as his opponent's "friend", implying that Richard was now on Bower's side in the English dispute. This would not be surprising in the light of the recent events in Scotland, but what were the circumstances that had led to Richard's resignation from the Scottish firm - were they purely internal or had Richard been induced to sever his relationship with Cutler and his other partners by threats or inducements emanating from Birmingham?

Whatever the reason or reasons, by August 1846 Richard had clearly decided that his interests would be best served by siding with the participants in the Birmingham tube business against his erstwhile associates with whom he had set up the rival manufactory in Scotland. *The Railway Times* dated 29th August 1846 appears to have been the first of the editions of this weekly newsletter to carry an advert for the Birmingham firm that was inserted regularly in its following editions and, also, in other trade publications including the *Mechanics' Magazine* and in *The Times* and other newspapers in Liverpool and Newcastle until the end of 1848. However, the advert did not feature in the Birmingham press - perhaps declined in the interests of

neutrality by the publishers/owners or, more likely, because Birmingham was not a centre of steam engine manufacture.



TO ENGINEERS and BOILER-MAKERS.
—Lap-welded Iron Tubes for Steam-Boilers.—The Birmingham Patent Iron Tube Company, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive licence from Mr. Richard Prosser, the patentee.
 These Tubes are now very extensively used in the boilers of marine and locomotive steam-engines in England and on the continent; are stronger, lighter, cheaper, and more durable than brass or copper tubes, and warranted not to open in the weld. They may be fixed in the boilers without ferrules, and can be taken out and refixed without additional trouble or expense.
 Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames-street.

Advert The Railway Times 29th Aug 1846 - Google Book

The advert (above) reveals that Selby and Hodges had changed the name of their firm to The Birmingham Patent Iron Tube Company and that, whilst its principal place of business was still at 42 Cambridge Street, premises in Smethwick and a warehouse in London are, also, mentioned. The only product promoted is the lap welded iron tube for steam boilers made under an exclusive licence from a patentee now identified as Richard (not Cutler - the purported patentee named in the firm's adverts in *The Railway Times* in May and June 1843).

The 1843 advert had also named the manufactory's manager, Hardy, another patentee, who had sold at least one of his tube patents to his employers in September 1845. In October 1846 Hardy was to return to his true vocation having acquired the curacy in Somerset at Stratton on the Fosse; his intention to do so had probably been known for some time. Selby and Hodges must have needed to appoint a new works manager, an engineer, but, if so, he was never named in the publicity campaign that featured in the advert above. It is doubtful that Richard would have had the time to fulfil that role full time but

may have acted in some advisory capacity to the Company's owners Hodges and Selby.

Although both the owners had been named as its "managing directors" in various unrelated press reports, in practice, it was actually Selby who had run the Company and had maintained a tight control over the business and its finances according to evidence given in his bankruptcy in 1855.

By the end of 1846 all three of the manufactories recommended to his superiors in the French navy by under-engineer Gervaise were embroiled in litigation with, or connected to, one or the other of the three.

Cutler was still in dispute with Bower over the outcome of his discontinued suit at the trial in Warwick in August. Bower, no doubt backed by Selby, Hodges, Ledsam et al, was probably the instigator of the second writ of scire facias challenging his 1841 patent that was filed by a London lawyer against Cutler on 2nd November 1846. This writ, held in *TNA*, referred to the first scire facias writ that had been filed by Bower and the (disputed) compromised proceedings by Cutler against Bower. The proceedings in England may have influenced Richard's strategy on his negotiations with Cutler, Robinson and Baker in Scotland; if Cutler's English patent was ruled invalid would it have strengthened Richard's hand in the dispute over the border?

As for the "great suit": Russell (who was now the defendant in the Writ of Error proceedings lodged by Ledsam and his five co-defendants in Russell's 1841 suit) must have been anxiously awaiting the judgement of the Court of the Exchequer. The Birmingham investors' challenge to the extension of Whitehouse's patent had been heard on 19th June 1846, but the seven judges led by Lord Chief Justice Tindal, having heard the complex arguments, reserved their decision. Tindal's death in July probably contributed to the long delay which then ensued and the judgement had still not been delivered when 1846 drew to a close. As well as the actual litigants, Richard (and Selby and Hodges) were, no doubt, equally alive as to the implications for them of a verdict in Russell's favour.

1847: Cutler's Piracy Exposed (but not deposed)

The judgement of the Court of the Exchequer in *Ledsam and others v. Russell* was given on 6th February 1847 - in favour of the Wednesbury manufacturer. The Birmingham consortium's challenge had failed yet again and costs were awarded against them. The decision was virtually ignored by

the press; the *Morning Advertiser's* three line report is the only mention I have found and it conveyed a sense that the long running story was no longer newsworthy - "for the case has been constantly before the public during the last two years".

Whether Ledsam still considered the accumulated legal costs incurred by his side a mere "milkscore" (as alleged by *Hackwood*) would seem doubtful; it would not be surprising if these were in excess of £20,000 (in excess of £2 million in 2015 according to the Bank of England inflation calculator). Adverts in *Aris's Birmingham Gazette* in early 1847 for the sale of the URM site and all its buildings and machinery were, in fact, the latest of a series that had appeared in the newspaper since July 1846. Initially advertised for sale by private treaty and then by auction in October 1846 the property remained unsold at the end of that year. The increasing urgency of the disposal was indicated by the prominent notice, headed "Preemptory Sale", of a second auction first inserted in the *Gazette* on 25th January 1847; in addition, this advert identified the sellers' solicitor as "Mr. Bower" of Paradise Street.

The 1847 auction was fixed for 12th March and was again unsuccessful. The successful brass bedstead manufacturer Winfield, the owner of the adjoining site and the ultimate purchaser of the URM works in 1853, was obviously biding his time - he was also, of course, one of the URM owners and, as such, one of Russell's named opponents in the "great suit".

Notwithstanding that the URM's "Important and Valuable Works" had failed to sell, the Birmingham litigants and their supporters were prepared to finance an appeal of their defeat in the Court of the Exchequer to the highest court in the land - the House of Lords. If Russell, on hearing of his victory in February 1847, had hoped to revive his own challenge to Richard's patent, he was to be prevented from doing so for another seventeen months.

In the meantime the litigation between Bower and Cutler was ongoing. Cutler's testimony in the action that Bower issued against Slaney on 13th March 1847, indicated that Cutler had himself also issued proceedings against Bower, Selby and Hodges following the disputed outcome of his 1846 suit but had not pursued this action pending the outcomes of Bower's suit and the second writ of scire facias challenging his own patent. The 1847 pleadings held by *TNA* consist of four separate testimonies: those of Bower, Slaney, Cutler and Selby - the last two were joined in the proceedings as defendants at the request of Slaney, who had been sued in his capacity as the trustee of Cutler's patent for its joint owners (Cutler and Bower).

Bower had sued Slaney for breach of trust in that Slaney had refused to assign Cutler's patent to Bower after the latter had served written notice in January 1847 requiring Slaney to do so in accordance, allegedly, with the provisions of the October 1842 agreement. Slaney admitted that Bower was entitled to call for the patent to be assigned to him but claimed that Slaney could not do so without Cutler's consent, which Cutler had withheld. Slaney referred to the outstanding dispute over the agreed terms of the 1846 compromise agreement between Cutler and Bower; he therefore requested that Cutler should be joined in the proceedings. In addition, Slaney also sought to add Selby as a party as he believed he was also, in some way, interested in the patent. Slaney's defence testimony had been filed on 30th April 1847.

On 30th August Selby filed a very short statement: denying that he was a "necessary" party in the action, although he did admit to having acquired an interest in the October 1842 agreement; confirming that he was, and had always been, "desirous" that Slaney should assign Cutler's patent to Bower; and requesting that his costs be paid by "those" who had insisted that he be joined in the proceedings.

Cutler's long testimony was filed on 4th September and largely consisted of his previously described account of the events that occurred at the Warwick Assizes in August 1846. Cutler confirmed that: he wanted to be joined in the proceedings but did not wish Selby to be a party; he also contended that Slaney was unable to assign his patent to Bower without his consent, which he had withheld as the requested assignment did not accord with the intended settlement terms in 1846, which should have resulted in the patent being reassigned back to him; that Slaney was not, as alleged by Bower, still acting for him in his personal capacity and that he was now represented by his son, John Walford Cutler.

This action, which does not appear to have gone to trial, was still active in November 1847 when Bower's solicitors obtained permission to make some amendments to his claim. Bower had not represented himself; in the 1847 pleadings his Birmingham solicitors were noted as Messrs. Wills and Oliver of 22 Temple Row. This firm's senior partner Frederick Wills had acted for Richard in the suits he had instituted against the owners of Royal Worcester Porcelain in 1845 and Wakefield in 1846. Frederick Wills (1793 -1874) was a brother of William Wills, another Birmingham solicitor, who was a prominent figure in *The First Story: "Rescuing Richard"*; Oliver, the younger and junior partner, had left the firm by 1849. In 1848 Messrs. Wills and Oliver were to be named as the solicitors acting for Ledsam and his co-defendants when their

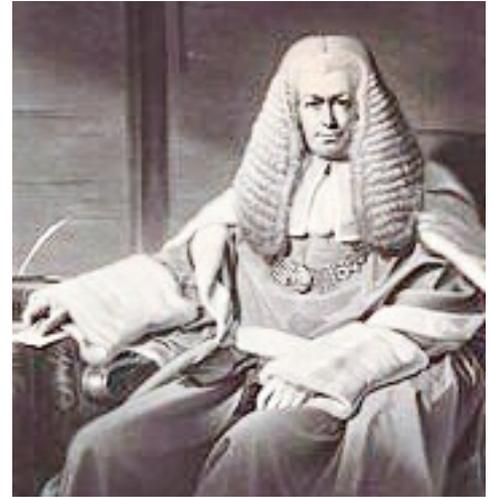
London agents lodged their client's defence after Russell re-filed his 1841 writ in the "great suit"; these London agents were the same as those instructed by Ledsam's side in 1845 when the Writ of Error was filed. The fact that Wills had also been instructed by Bower lends support to my supposition that Bower, in all his dealings, was acting as the nominee, a mere frontman, for the Birmingham consortium led by Ledsam. That Wills had also very recently acted for Richard in unrelated litigation may have had no direct relevance but suggests that he may have had some influence with him.

Cutler was under attack on more than one front. On 25th November 1847 a third writ of scire facias challenging his patent was "Tested" and was declared "Returnable" on 11th January 1848 according to a document of which only the back sheet, held in *TNA*, survives; these proceedings were presumably discontinued by their unknown instigator.

The first of these scire facias' writs had been instigated by Bower and withdrawn by him as part of the disputed settlement terms in August 1846 (according to Cutler's September 1847 defence testimony). The instigator of the second writ in November 1846 was a London lawyer, but he was clearly suspected of being a nominee of Bower and Selby by Cutler and his defence lawyer at the trial that took place over two days on 1st and 2nd December 1847. The case of *Regina v. Cutler and others* was, in fact, not finally disposed of until July 1849; all the hearings were fully reported in a number of legal treatises on patent law and the case became a frequently cited legal precedent.

A writ of scire facias (Latin - "make known") was a legal remedy of long standing of a more general application and, specifically, was available to anyone who wished to seek to repeal a patent; the most common ground for doing so was that the invention claimed by the patent was not new and that the Crown, the grantor, had been misled by the patentee. As patents were then granted by the Crown, they had to be repealed by the Crown and the writ was issued in the Crown's name upon application to the Attorney General by the aggrieved petitioner - the Crown was legally obliged to lend its support to any claim of public nuisance by illegal monopoly. In order to discourage vexatious suits it was usual practice for the Attorney General to require the applicant to put up a bond for the patentee's costs in the event that the scire facias suit was unsuccessful. The patentee might not be the only defendant, as all parties known to have an interest in the patent had to be joined in the proceedings. (*Coryton on Letters Patent 1855*)

In Regina v. Cutler and others, the "others" were Slaney, the trustee in whom ownership of the patent was vested, and Bower and Selby, who were each the actual owner of a quarter share in it (Cutler being entitled to the remaining half). At the hearing the Crown was represented by the Attorney General, Sir John Jervis (1802 - 1856), and two leading patent lawyers; Cutler and Slaney were jointly represented by a team of three lawyers; whilst Bower and Selby only deemed it necessary to employ one between them. The names of some of these barristers, which included two Queens Counsel, are familiar from earlier cases relating to tube patents - including that of Russell v. Ledsam. Jervis himself, who had only been appointed Attorney General in 1846, had led Russell's legal team in the 1844 and 1845 hearings of the "great suit". *Image - Sir John Jervis: Wikipedia*



The second scire facias application was heard in London in the Court of Queens Bench before its Chief Justice, Lord (Thomas) Denman (1779 - 1854) and a special jury. The reports of the case suggest that the elderly Chief Justice, unlike the legal teams representing the parties, was somewhat out of his depth on abstruse points of patent law and tube technology, but it was his duty to direct and guide the jury in coming to its decision on the correct verdict. *Image - Lord Thomas Denman: Wikipedia*

On 1st December 1847 Jervis led the presentation of the case for the prosecution, which took up the whole of the first day. Altogether sixteen grounds had been put forward by the applicant for the repeal of Cutler's patent, which Jervis summarised for the jury as follows:

"what we contend is, first, that those portions of the invention which are useful were not new; and, secondly, that those portions which were new are not of any utility; and with respect to the third and fourth parts, I say they cannot be made the subject of letters patent. It will be clearly shown that at least one part of the process described in the specification is impracticable." (Reports of Cases Relating to Letters Patent for Inventions: Edward McCrory 1855)

The "third and fourth parts" of Cutler's patent were not for any method of tube manufacture but were for the mere use of welded tubes in the construction of tubular flues of steam boilers, and included a claim for coating iron or steel tubes with copper or brass for such use. Jervis argued that such use did not qualify as an invention as it was merely an application of a pre-existing invention to another purpose and he, also, proved, as the defence admitted, that the method of coating iron tubes with brass was already well known before the patent was granted.

Jervis had already given the jury résumés of the scire facias process; the history of metal tube manufacture; and of all the material prior patents granted since 1809 - the latter in support of his contention that the first two parts of Cutler's patent, in so far as the two methods of tube manufacture described were of beneficial use, had plagiarised other earlier patents. As evidence that the "new" adaptations (to these earlier proven methods) proposed by Cutler in his patent were of no use in practice, Jervis explained to the jury that:

"The defendant Cutler entered into an agreement with a Mr. Russell, a manufacturer of tubes at Birmingham, for the manufacture of tubes according to this patent; but when the necessary experiments were made by the defendant, at Mr. Russell's manufactory, for the purpose of testing the practicability and value of the invention, it was found to be wholly useless. Mr. Russell will prove before you what was the result of the experiments. At one time the tubes were broken, at another the machinery itself gave way; so that, in the end, Mr. Russell, though he had under the agreement acquired an interest in the invention, was obliged to give it up altogether. The invention has recently been put to the test of actual experiment, the defendant Cutler having the opportunity afforded him of attending if he chose, when it was found, and will be proved here today, that tubes could not be made in the mode described and claimed as part of the invention." ... Mr. Russell and several other manufacturers were then called as witnesses for the prosecution, to prove the want of novelty and want of utility in each part of the invention, and that the first part of the invention was impracticable, and that tubes could not be made in the manner described in the specification."

I have not been able to identify a member of the Russell family with a manufactory in Birmingham itself at this time, but James's brother, and rival, John was probably the most likely candidate. "Mr. Russell" and the other witnesses gave evidence that both of the two methods of tube manufacture proposed by Cutler's patent were impracticable, although they had only tested one of them.

The presentation of the prosecution's case having taken up the whole of the first day, the trial resumed on the next day, 2nd December 1847, with the case for the defendants, Cutler and Slaney, presented by Serjeant - at - Law Thomas Noon Talfourd (1795 - 1854). Talfourd, who was to be knighted in 1849, was a great friend of Charles Dickens, who had dedicated Pickwick Papers to him for his contribution to the introduction of copyright legislation (<http://www.djo.org.uk/indexes/authors/thomas-noon-talfourd.html>).



Talfourd's opening remarks were, in fact, directed at Bower and Selby; he accused them of being co-defendants in name only and complained that they had, in fact, been assisting the prosecution instead of lending support to his clients. He explained that Bower and Selby were not only part owners of the patent but also the licensees of the manufacturing rights under it (implying that they would therefore benefit from the patent's repeal). *Image - Thomas Noon Talfourd: Wikipedia.*

Talfourd proceeded (inter alia) to argue that tubes made under Cutler's patent were more useful than those made under earlier patents; he contended that tubes could be made thinner "so as to allow a more rapid generation of steam" as the patent adopted the method of lap welding which produced a stronger joint (rather than the previously commonly adopted method of butt-welding). Talfourd also attempted to undermine the prosecution's evidence as to the uselessness of Cutler's methods by arguing that:

"If the invention of the patentee is as useless as is represented, why should the prosecutor (whoever he is) incur all the trouble and expense to procure a repeal of this patent? If a man were to take out a patent for building castles in the air, no one would be silly enough to proceed by scire facias, in order to repeal such a patent. All the witnesses who have been called on the part of the prosecution have admitted that the objects proposed are most desirable, though they denied that those objects have been accomplished."

Witnesses were then called in support of the defence contentions as to the novelty, practicability and utility of the first two of the patent's claimed inventions relating to the manufacture of tubes; a model of apparatus was

produced in an attempt to demonstrate the patented processes using lead strips.

Talfourd does not appear to have confronted what, in fact, was the main issue of these proceedings - whether the mere use of tubes in constructing tubular flues for steam boilers could be deemed to be an invention. The defence had already conceded that the coating of tubes with copper or brass for such use was not a new process. Talfourd's defence arguments were further weakened when it was admitted that lap welding was "not new". It was also, tellingly, conceded that the "defendant's apparatus" was not in use in England.

The lawyer for Bower and Selby then addressed the court: he assured the jury that his clients' were bona fide in their support of the patentees' rights, but that he did not intend to cross-examine any of the prosecution witnesses or proffer any evidence as "it had been done so much more ably by his learned friend Serjeant Talfourd."

Further discussion took place between the lawyers, including the judge, on points of law. The prosecution referred, in particular, to past cases where the application of an existing article or process to a new use was ruled not to be an invention citing the following earlier dictum: "Lord Abinger C.B. illustrates it thus: "Because a spoon has been found a useful instrument to eat soup with, suppose that it had never been applied for the eating of peas, a man could not have a patent for eating peas with a spoon." This is a familiar illustration, but it is conclusive."

The defence did not seek to refute this point but did reject the prosecution's argument that the entire patent failed in any event - because it had been established that one part of it, the first of Cutler's methods of tube manufacture, had been proved to be useless when tested by Russell and other prosecution witnesses. Chief Justice Denman asked the prosecution for its authority for this proposition; a case was cited, which the defence sought to distinguish from the present circumstances. These latter legal arguments, without the benefit of a "spoon" or similar analogy, were probably mostly lost on the jury.

Denman's summing up of the issues and the law to the jury probably left its members further confused; a confusion that was no doubt exacerbated by the discussions that then took place between the judge and the various lawyers.

In fact, Denman had been quite clear in his instructions to the jury to find for the Crown on the issue of the validity of the third and fourth parts of the

patent, the mere application of tubes for a new purpose, as the law was quite clear on this issue and no question of fact arose. In the subsequent discussions Denman re-enforced this instruction, to which, as a matter of form, the defence lodged an objection.

However, Denman was less than clear in his summation of the issues to be addressed by the jury in relation to the first two parts of Cutler's patent; these issues were of fact and law. The jury was told that, at law, the burden of proof was on the prosecution to show that, as a matter of fact, the methods of tube manufacture described were either not novel or, if novel, were not practicable and therefore not useful. However, Denman's summing up was, to say the least, confusing when it came to directing the jury as to its verdict as to whether, at law, the invalidity of part of the patent rendered the whole of it invalid as contended by the prosecution. In fact, Denman ended up directing the jury that if they found any part of the patentee's claim to be novel and practicable/useful then they must declare the whole of the patent to be valid. The prosecution, needless to say, objected to this direction in the following discussions, but it was allowed to stand.

How long the jury deliberated is not known - for "some time" returning to the court at about 6 p.m. according to one report. It delivered its verdict:

"The jury found that the whole of the invention was new and practicable; and on Lord Denman C. J. asking them if they had formed an opinion that coated tubes were an improvement, the foreman said, "We did not consider it; " and after conferring with the rest of the jury said, "My Lord, the jury are desirous of returning a general verdict for the defendants, if your Lordship will accept it in that way." Verdict for the defendants."

The prosecution immediately objected that the jury had ignored Denman's instructions on the third and fourth parts of the patent and that he had misdirected the jury when directing that the partial validity of a patent validated the whole. The exact wording of the verdict came up for discussion at a subsequent hearing at which Denman acknowledged his mistakes and declared that there had "better" be a new trial. No verdict was therefore formally recorded. The Attorney General's initial application on behalf of the Crown for a new trial, before Denman and three other judges of the Queens Bench, was not heard until 14th January 1848.

However, the declaration as to the mistrial does not appear to have been reported in the press. *The Times* together with other London newspapers; the *Birmingham Journal*; and the *Wolverhampton Chronicle and Staffordshire Advertiser* had all given detailed accounts of the proceedings. They had all

reported the jury's verdict in favour of the defendant Cutler with no, or only a brief, mention that the Crown had raised objections. The report of the trial in *Aris's Birmingham Gazette* was short but, as with the other press accounts, had confirmed that "the inventor Cutler" had been successful in the defence of his patent "for improvements in the construction of the tubular flues of steam boilers" - steam boilers for locomotive and marine (and other) engines.

The Attorney General had opened the prosecution's case at the trial with a reference to the monopoly that had been granted to Cutler by the Crown for these "alleged improvements". The relevant (fourth) part of the patent was not limited to the use of tubes manufactured under its first and second parts or coated with copper or brass under its third part, it purported to apply to all "...welded iron or steel tubes drawn through a circular hole or die, or between rollers and which have been drawn over a mandril..." - as was the case with tubes made under Richard's patent. It was for this reason that Cutler's patent had assumed an importance to the warring parties far in excess of that which it appeared to merit.

TNA holds yet another application for a writ of scire facias, the fourth, against Cutler's patent, which was lodged by William Algernon Sidney Hodges (the 23 year old son of Selby's partner William Robert Hodges), who gave his address as 42 Cambridge Street Birmingham. The application was probably lodged in December 1847, shortly after the unsatisfactory conclusion of the trial, to which (inter alia) it referred citing (as justification for bringing the fourth writ) the injury that would be caused to its prosecutors by the potential delay of two years before a retrial. The younger Hodges' application was presumably unsuccessful as it was marked "No order".

The outcome of the December trial and the subsequent publicity was followed by a heated exchange of pronouncements by Bower and Cutler on the December proceedings and their previous litigation, which appeared in the Birmingham press before the end of the year. Those made by Cutler were supported by Slaney; Bower had the support of The Birmingham Patent Iron Tube Company, whose nominee he now claimed to have been in all of the litigation.

Cutler had apparently sent out a circular in mid-December claiming that he was "making arrangements with Manufacturers in England to make Tubes under his Patent" - to which Bower responded in the press claiming still to be a part owner of the patent and that Cutler was unable to enter into such "arrangements" without his authority. A long letter from Cutler was then published, in which he referred to the disputed outcome of the 1846 litigation,

accompanied by a letter from Slaney, in which he stated his view that the patent now belonged wholly to Cutler. Bower's response included what he claimed was a transcript of the 1846 compromise agreement - it made no mention of the patent being reassigned to Cutler, only the licence - and also referred to an unsuccessful suit brought by Cutler seeking rectification of the agreement. Bower's response concluded as follows:

The Public is also informed, that the Birmingham Patent Iron Tube Company is the parties really interested in the Action before referred to, have recently issued a printed Circular, which explains the real situation in which Mr Cutler's alleged Invention is now placed, a copy of which is also set out hereunder.

EDWARD BOWER.

Birmingham, January 1, 1848.

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The above image is an extract of the notice placed by The Birmingham Patent Iron Tube Company in the *Newcastle Courant* dated 14th January 1848. The notice took up an entire column of the broadsheet and commenced with the following statement:

**TO THE CONSUMERS OF STEAM BOILER
TUBES.**

**THE QUEEN v. CUTLER AND OTHERS.
IN SCIRE FACIAS.**

THE Public mind having been misled as to the real termination of the trial of the above Writ by the verdict of the jury; and some erroneous notions also existing as to the real state of circumstances between the parties connected with that action, we think a perusal of the following public correspondence, which has appeared in the Birmingham Newspapers, will have the effect of correcting any such notions.

We are, Gentlemen,
THE PATENT WELDED IRON TUBE COMPANY.
42, Cambridge Street, Birmingham, Jan. 3, 1848.

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Newcastle upon Tyne was, of course, not only a centre of shipbuilding but was also the birthplace of locomotive manufacture, where George Stephenson and his son Robert had set up their famous factory in 1823.

Bower's claim to have been acting as a nominee for Selby and Hodges in all the litigation was only half the story. At the time Bower was still concerned for the consortium of Birmingham investors fronted by Ledsam on behalf of whom he was, presumably, collecting the royalties payable to him by Selby and Hodges under the 1845 sale agreements. However, Bower was also still legally the sole licensee contractually liable to Richard for payment of the royalties due under the 1840 licence of his patent, but, for which, Selby and Hodges had given Bower a full indemnity in 1845 (whether in addition to or as part of the royalty payable to Bower (on behalf of Ledsam's consortium) of over £7 per ton of tubes, which had been agreed in the same 1845 negotiations, is unclear).

Some indication of the amounts actually being paid to Richard was revealed in a press report of the trial in July 1853 in the case of Bower v. Hodges and Selby. The evidence then given disclosed that there had been an earlier dispute between the parties in 1847, which arose when it was discovered that The Birmingham Patent Iron Tube Company had failed to account for royalties due on one of its tube making machines; the defendant owners of the Company had contended that the machine, a new one, was not the same as Richard's; Bower had contended that it was virtually the same. The 1847 dispute was referred to the mechanical engineer John Fairey for determination, who had found for Bower and it was said that the amount paid by the defendants was between £1,300 and £1,400 (worth in excess of £120,000 in 2015 according to the Bank of England's inflation calculator). (*The Daily News 9th July 1853*)

The newspaper article suggests that this payment was in respect of royalties due for a period of a year or less for this one machine and that all the Company's other machines were "Prosser" types - how many is unknown. The law reports of an earlier, precedent making, hearing in the case in June 1853 (on a point of law) made it clear that in both 1847 and 1853 Bower was only suing for the royalties due to Richard (in 1853 the amount awarded was nearly £3,000 for the tube output of another new machine that the Company had alleged was not one of Richard's). However, success in the suit for Richard's royalties would also have substantiated a claim by Bower against Selby and Hodges for the additional royalty that they had agreed to pay to him in 1845.

The 1853 case reports also reveal that up until 29th September 1847 Selby and Hodges had complied with their obligations to record and account for the weight of tubes manufactured under Richard's patent and to pay the royalty due to him. This happy state of affairs did not continue; subsequently records

were not maintained by the Company and the royalty was not paid or was underpaid. The 1853 claim was originally for £10,000, part of which the defendants had already paid into court (this was a ploy adopted to mitigate any award of legal costs); Selby and Hodges had sought to deny all liability using a spurious argument rejected by the judges at the June hearing. By the July trial the only issue outstanding between the parties appears to have been the claim for about £3,000 for the one new machine - presumably the remainder of the claim had been settled previously out of court.

So, the end of 1847 was to see Richard at the centre of an entangled web of interconnected disputes and litigation. His short-lived collaboration with Cutler in Scotland had ended the previous year and he appears to have thrown in his lot with the alliance between the Birmingham tube manufacturers and the investors represented by Bower.

This alliance was already showing signs of unease, as evidenced by the attempt by Selby and Hodges to sidestep Richard's patent. However, the two sides must have remained united in their opposition to Cutler as shown by their combined efforts either to gain control over or to secure the repeal of his patent, which purported to grant a monopoly over the manufacture of iron and steel lap welded tubes for steam engine boiler flues - the principal product of The Birmingham Patent Iron Tube Company. In addition, the owners of the Company would have had every reason to support Ledsam and his consortium in their attempts to frustrate Russell's challenge to Richard's patent.

As for Richard, it would have been in his interests to remain on good terms with both of the Birmingham factions (it would not be surprising if they had harboured doubts about him after his involvement with Cutler and the Scottish venture).

The Birmingham investors included men of wealth and influence - not just locally. In the case of Ledsam's nephew, Joseph Frederick Ledsam, he was a major investor in and was to become deputy - chairman of the recently formed London and North Western Railway.

However, commercially, Richard must have felt that it was in his own financial interest to align himself more with the tube manufacturers who generated the royalties payable to him under his patent. Future events suggest that he may have collaborated closely with Selby and Hodges; an hypothesis that, on the face of it, is inconsistent with Bower having to sue the pair for royalties owed to Richard.

In Scotland, The Caledonian Tube Company continued to maintain a low profile in the U.K. during 1847; unlike its Birmingham rival it did not advertise its arrival on the scene in the British press or trade journals. Richard had still not been paid out for his quarter share in the Company at the end of the year; almost two years since he had given six months' notice of his resignation and nearly eighteen months after he ceased to be a partner. Nor had Richard advertised notice of his retirement, as was the usual practice on the dissolution of partnerships, to protect himself from claims from creditors of the firm for post-resignation debts. Outwardly all may have appeared quiet on the Scottish front in December 1847, but battle was about to commence.

1848: Regina v. Prosser - The Attorney General, The Master of the Rolls and The Lord Chancellor Deliberate.

On 13th January 1848 an English patent was granted to "Job Cutler of Spark Brook (sic), Birmingham, civil engineer, and Charles Robinson, of the same place, gentleman, for certain improvements in welded iron pipes or tubes, to be used as flues for steam boilers". According to Richard Bissell Prosser the object of the patent "was to make boiler tubes thicker at one end...by rolling them...with a taper mandrel inside"; the thicker end, therefore more heat resistant, end to be affixed nearest to the boiler's furnace. This description suggests that the rolling was carried out after the tube had been formed and welded and, as such, was not a method of manufacturing the tube itself. (The Scottish patent granted to Cutler on 28th August 1849 may have been for the same process.)

The attempt to repeal Cutler's 1841 patent, following the December mistrial, continued throughout 1848. The legal procedure for obtaining an order for a new trial was in itself long winded - as had been predicted by Hodges junior in his unsuccessful scire facias application. At the hearing on 14th January 1848 Denman admitted his mistakes and an order was made which entitled the Attorney General to apply for a new trial. This application was not heard until mid-November 1848 when for two days the lawyers for first Cutler and then the Crown argued against and for a new trial before Denman and three other Queens Bench judges. Their judgement was not delivered until 30th January 1849 - in favour of the Attorney General for a new trial, which did not take place until July 1849.

Cutler must have been aware that his 1841 patent remained in danger after the Attorney General had indicated that the Crown intended to seek a new

trial. On the day that this may have first become clear to the parties one of the three remaining partners of The Caledonian Tube Company died.

It is, probably, just a coincidence that the nail manufacturer Charles Robinson died on 14th January 1848, his death occurred shortly after those of two of his young daughters; their abode in the burial register was recorded as Ladypool Lane, Birmingham. This was also the address in Sparkbrook in 1841 of Cutler, his probable brother-in-law. In 1841 Robinson and his family had been living with his parents-in-law in Northfield, now a Birmingham suburb but then a village in Worcestershire, where he and his two daughters were to be buried in St. Laurence's graveyard.

It is difficult to assess what effect, if any, the repeal of Cutler's English 1841 patent would have had on the Scottish business, whose tubes were made under the 1844 Scottish patent. It is possible that the latter patent, which incorporated the former (together with Richard's 1840 and his and Cutler's 1843 joint English patents), might also have been jeopardised.

However, the real value of the Scottish patent lay in the monopoly it granted in Scotland over the rights to make and use Richard's 1840 tube machines. A value that Richard wished to see reflected in the amount (still not agreed) to be paid by Robinson, Cutler and Baker for his quarter share in The Caledonian Tube Company as at 31st July 1846. Robinson's death would have added the further complication that his estate would also be due to be paid out the value of his one third share in the Company as at January 1848. The sum being sought by Richard was such that it may have led led Cutler and Baker to resort to a desperate measure following Robinson's death.

On 31st January 1848 Irving Van Wart "of Birmingham... Merchant" filed an application to the Attorney General for a writ of scire facias to be issued for the cancellation and repeal of Richard's 1840 English patent. Van Wart stated that to his knowledge no legal proceedings had been "taken upon the said Letters Patent" - why I cannot explain as the "great suit", surely, cannot have escaped his or his lawyers' attention?

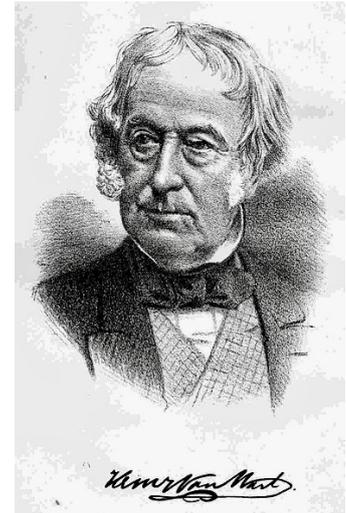
Readers of the First and Second Stories, "Rescuing Richard" and "The Dust-Pressed Process", will be familiar with the Van Wart name. A brief introduction to this interesting family of American merchants and venture capitalists can be found on pages 47 and 48 of "The Dust-Pressed Process".

Both Irving and his father Henry Van Wart (1784 - 1873) had been well known to Richard for many years, but the background to their previous appearances

in these Stories had suggested to me that they were unlikely to have been on friendly terms with each other. The Van Warts' role in this Third Story has confirmed this speculation.

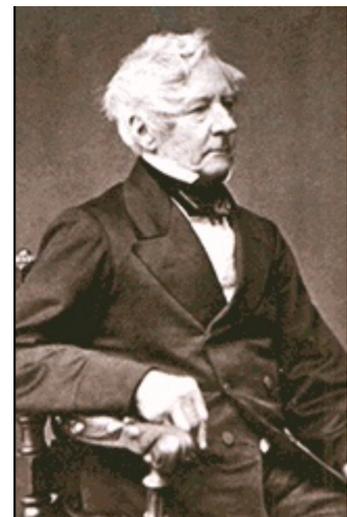
Irving Van Wart (1808 -1896) may, indeed, have been staying with his father in Birmingham in January 1848, but, like his father, he was, in fact, an American by birth and was in charge of the U.S. branch of the family business, which was based in New York.

Irving's father, British by naturalisation since 1825, had become a very successful and prominent businessman in Birmingham; his firm Henry Van Wart & Son traded from 23, Summer Row as commission agents for British manufacturers wishing to export their goods to the U.S. - one of their clients was The Caledonian Tube Company. *Image - Henry Van Wart: Wikipedia.*



In fact, by the beginning of 1848 the Van Warts had probably acquired a share in the Scottish Company. In a notice, inserted in *The London Gazette* dated 6th June 1851, it was revealed that two new partners had joined the firm prior to 9th February 1850, the date that one of these two, Samuel Aspinwall Goddard (1796 - 1886), quit the partnership. The continuing partners following Goddard's resignation were named as the two remaining original partners Cutler and Baker - and Henry Van Wart.

Goddard, another American, was a great friend of Van Wart senior and had been involved in a number of speculative business ventures with him, including the (unsuccessful) steam omnibus invented by Dr. Church. Goddard, who had also been granted British citizenship in 1839 having been resident in Birmingham for many years, was a great supporter of Church's inventions - to his personal cost ("Rescuing Richard" pp. 102-104; 159/160 - where, unaccountably, I (initially) wrongly named him Stephen Aspinwall Goddard). *Image - Samuel Aspinwall Goddard c.1865: Goddard family genealogy site.*



In census returns Goddard described himself as a merchant (an "American" one, according to his entries in trade directories, operating from 50 Newhall

Street), but less successfully so than Van Wart. Goddard was actually bankrupted in 1842, together with his then partner, and was not discharged until 1847 but re-emerged still trading at 50 Newhall Street in 1849. His long obituary in *The Birmingham Daily Post* dated 27th July 1886 makes interesting reading telling of: his ancestral background as a member of one of the elite families of Brookline in Norfolk County, Massachusetts (now part of Greater Boston) and his paternal grandfather's active support of the American War of Independence; his own high standing in Birmingham both in business and, more particularly, on political issues. Church and Henry Van Wart were just two of the several other American émigrés named by the obituarist who had made their mark in the town in the first half of the nineteenth century - another was Richard's previous employer and patron Thomas Morton Jones. ([Link](#) to Goddard obituary: Image © *The British Library Board* all rights reserved.)

Past events recounted in *The First Story* suggest that the earlier alliances of Van Wart/Goddard/Church and Jones/Richard formed rival factions in Birmingham. A rivalry that may have persisted a decade later, although Jones possible continuing association with Richard in 1848 remains speculative.

Whether or not this conjectured rivalry seriously influenced Van Wart senior and Goddard in their decision to join forces with Cutler and Baker in the Scottish tube venture seems doubtful. That they had done so, probably unknown to Richard, at sometime during 1848, if not earlier, seems likely in the light of the urgent need for an injection of capital into *The Caledonian Tube Company* to finance the payments due to Richard and Robinson's estate.

Goddard only remained a partner for a year or two; it was the Van Wart father and son who had the greater incentive for their continued involvement and presumed investment in the Scottish firm.

The Van Warts had been acting as the manufacturer's agent for *The Caledonian Tube Company* in the U.S. since at least July 1847 as evidenced by an advertising campaign in the *American Railroad Journal* that first commenced during that month. (Source - [Wikisource](#))

The *Journal*, a weekly published in Philadelphia, had already been carrying a very similar advert for over a year inserted by a business rival of the Van Warts, who was also based in New York - Thomas Prosser, Richard's older brother. The story of the brothers' feud that led to Thomas's bankruptcy and emigration to the U.S. in 1838 is told in "Rescuing Richard". Thomas is also a

leading character in “The Button Wars” (Part One of “The Dust-Pressed Process”), which tells of his attempts in the U.S. to patent and exploit the revolutionary dry ceramic process for button manufacture in competition with the English potter Herbert Minton, who had acquired an interest in Richard's English patent in 1840. In 1844 Thomas had sued another importing agent for infringing his U.S. button patent - the agent was Irving Van Wart; the claim was settled out of court on undisclosed terms, but the aftermath suggests that Thomas subsequently superseded the Van Warts to the lucrative agency in the U.S. for the import of Minton's, by then famous, Prosser's Patent Agate Buttons.

**LAP — WELDED
WROUGHT IRON TUBES**
FOR
TUBULAR BOILERS,
FROM 1 1/2 TO 5 INCHES DIAMETER,
and
ANY LENGTH, NOT EXCEEDING 17 FEET.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,
Patentee.
25 Platt street, New York.

LAP-WELDED WROUGHT IRON TUBES
for Tubular Boilers, from 1 1/2 to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.
JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

The above or similar adverts were inserted in the *American Railroad Journal*, frequently appearing on the same page and even adjacent to each other, until March 1850 when those for The Caledonian Tube Company abruptly ceased.

The Van Warts' advert appears to deliberately mimic that of Thomas, but boasted of its client being able to produce a wider tube. Both adverts claimed patentee rights to their products. Thomas, not for the first time, was being somewhat economic with the truth; as was the claim for Cutler in the rival advert. Neither Thomas nor Cutler had obtained any U.S. tube patent before 1849; Cutler obtained only one, but not until 1851.

The importance of the U.S. tube market to these old rivals (whose business premises were close to each other in Platt Street, New York, in what is now Downtown Manhattan) was explained in an article on the lap welded tube trade in *Scientific American* dated 27th February 1858 (the magazine was founded in 1845 and is still published every month):

This is a comparatively new branch of American iron manufactures, and is at present retained under the control of a very few persons, who endeavour to keep the processes as profoundly secret as possible. The advent of railroads called into existence extensive manufactures of

copper and brass tubing for the flues of locomotive boilers. Previous to that era, gun barrels and gas pipes of small caliber had been manufactured of wrought iron, but lap-welded iron tubes, such as are now used, were unknown. Owing to the high, price of copper and brass in comparison with iron, many persons in England especially were incited to invent machinery to manufacture unriveted wrought iron tubes of various sizes, to supersede those of the more expensive metals. Their efforts were at last successful, and although copper and brass tubes are still preferred by many, the lap-welded iron tubes are now extensively used for all kinds of multi-tubular boilers and various other purposes. Lap-welded iron tubes were first introduced into our country, from England, about the year 1845, by Thomas Prosser & Son, of this city, and were manufactured under a European patent previously secured.

The article continued with a description of the attempts to make lap welded tubes in the U.S., which were said to be unsuccessful until 1852. In 1858 there were still only two U.S.manufacturers and "The English lap-welded tubing of good quality still meets ours in the market". The author also provided a useful example of the number of such tubes used in the boilers of the transatlantic steamship "[Baltic](#)" (Wikipedia link): 5,624 tubes measuring in total 29,562 feet. *Image below: Wikipedia*



In addition to the huge demand for the tubes for steam engines, railway and marine, another major market for the tubes in the U.S. was revealed to be for artesian wells, which Thomas was to refer to in his adverts in the *American Railroad Journal* from 1854. The *Scientific American* article concluded: "Judging, therefore, from its utilitarian character, the manufacture of American lap-welded iron tubes must ultimately attain to gigantic proportions."

Back in 1848, the Scottish manufacturer exporting its tubes to the U.S. through the Van Warts' firm was clearly identified in its adverts in the *Journal*.

Thomas's adverts are silent as to his supplier. Selby would surely have insisted that its name appeared prominently in the adverts if it had been The Birmingham Patent Iron Tube Company.

(In fact, the now Smethwick based company did appoint another New York firm, William Bird & Co. of 44 Wall Street, its agent in 1851 according to its adverts for "Prosser's Patent" tubes in the *Journal*, which appeared throughout the last six months of that year. However, this arrangement seems to have been short lived and by September 1852 Thomas, whose tube adverts had ceased as Bird's commenced, was back advertising "his" tubes but now under the heading "Prosser's Patent Lap-Welded Wrought Iron Boiler Tubes" - by then his supplier was definitely the actual patentee's firm: "Richard Prosser & Co. Birmingham". Invoices from Richard's firm to his brother's in New York occasionally appear on eBay, including one kindly sent to me by the china button collector Jody Behrbaum (see "The Button Wars" for her invaluable contributions to that story). This invoice was for two shipments of iron tubes in November 1852; the charges for 276 tubes were a total of £4 13s 4d (2016 - £465 based on RPI) and were for shipping costs and commission only - the cost of the tubes themselves and their manufacturer were not identified.)

The above excursion in this narrative across the Atlantic explains the surprising intervention in England by the American Irving Van Wart as the prosecutor who applied, on 31st January 1848, to the Attorney General for the issue of a writ of scire facias seeking the repeal of Richard's 1840 patent. The Attorney General authorised the issue of the writ on 9th February 1848: "Let this writ issue taking the usual Bond. John Jervis" is written on the back sheet of the draft writ accompanying the application.

Jervis was already familiar with Richard's patent having represented Russell in "the great suit" in 1844/1845 and must have immediately realised that Van Wart's application was probably connected to the ongoing scire facias proceedings he, as Attorney General, was already pursuing against Cutler's patent.

There were two defendants named by Van Wart in his application - Richard, the patentee, and Thomas Slaney, the Birmingham solicitor, who was also one of the defendants in the Cutler case. In October 1842, when the now opposing parties were, presumably, on good terms, both Richard's and Cutler's patent had been assigned to Slaney to hold as trustee for the respective owners. Notwithstanding his seeming allegiance to Cutler in 1848, Slaney must still have been the trustee of Richard's patent (for Richard as to

two thirds and Bower as to one third - why Bower was not joined in these proceedings remains a mystery).

Van Wart had specified a number of grounds for his application; all generalisations to the effect that Richard's claimed inventions or part of them were not new or had not been adequately described.

In the law reports of a hearing in *Regina v. Prosser (and another)* that took place in November 1848 it was revealed that the bond given by Van Wart, in compliance with the Attorney General's direction, was guaranteed by two sureties. The names of the sureties were identified - Henry Van Wart and Samuel Aspinwall Goddard.

How long the bond formalities took to complete is unknown, but court records held in *TNA* reveal that the writ was not served on Richard until 4th September 1848. It may, therefore, be that Richard was unaware of the pending challenge to his patent on 23rd February 1848 - the date that his Scottish lawyers issued proceedings in the Court of Sessions against Cutler and Baker. A transcript of the long statement of Richard's claim is held in the *National Records of Scotland*; in total he estimated he was owed £25,000 - the value of his quarter share in The Caledonian Tube Company as at the date of his retirement on 31st July 1846 plus his legal costs. Using the Bank of England's online inflation calculator his claim would have been for about £2.7 million in 2015, however, its actual economic value in 1848 was far greater (measuringworth.com).

In England Richard was represented by Frederick Wills of the Birmingham firm of Messrs. Wills and Oliver in the "Prosser" scire facias proceedings: the solicitor he had instructed himself in the actions he had instituted a few years previously for infringement of his dust-pressed patent. In 1848 Wills was also still acting for Bower in the litigation (on behalf of Ledsam's consortium) between himself and Cutler. The solicitors employed by Wills as his London agents in these scire facias proceedings were Messrs. Selby and Mackeson - "Selby" was George Selby of The Birmingham Patent Iron Tube Company. It would appear that all those interested in the survival of Richard's patent had put aside their differences to oppose Van Wart's writ.

In fact, the defence of Richard's patent did not follow the usual course. It would not be surprising if Richard and his advisers were wary of submitting to a trial by judge and special jury, in the light of the recent wayward verdict in the "Cutler" scire facias proceedings. An earlier example of the uncertainty of such trials had occurred in 1844 in the "great suit", when the special jury had

found for Russell notwithstanding the trial judge's reported guidance to the contrary.

Instead of seeking to defend Richard's patent, his lawyers' mounted a counter-attack and sought to strike out Van Wart's writ by filing an application to the Attorney General requesting that he no longer proceed with the prosecution or, adopting legal terminology, for "nolle prosequi". This application was heard by the Attorney General at some date prior to 23rd October 1848 but was unreported and none of the pleadings appear to have survived. However, the law reports of later hearings, first before the Master of the Rolls and subsequently the Lord Chancellor, in November and December 1848 and January 1849 shed light on what must have occurred in the hearing before Jervis, the Attorney General.

It may be that Jervis was slightly disconcerted to find that Richard's legal team presenting the case for the "nolle prosequi" application were the two eminent lawyers who were supporting him as Attorney General in the Crown's prosecution to repeal Cutler's patent: Mr. M. D. Hill Q.C. and Mr. Hindmarch (who together had also recently represented Ledsam and others in the "great suit" in their appeal to the House of Lords in July 1848).

Matthew Davenport Hill Q.C. (1792 - 1872) was born in Birmingham and remained associated with his birthplace throughout his long and distinguished career (details of which can be found in his *Wikipedia* entry ([Hill](#)), which also includes links to that of his father and other family members, including his younger brother Sir Rowland Hill, the inventor of the modern postal system). M. D. Hill [Portrait](#) Link.

"Mr. Hindmarch" was well known for "his ability in patent-right cases" according to his obituary in the *Solicitors' Journal & Reporter* dated 1st September 1866. The majority of his many obituaries named him as Mr. J. W. Hindmarch, the name he appears to have practiced under; some other obituarists gave his baptismal name of William Mathewson Hindmarch (1803 -1866) as confirmed on his appointments as a Q.C. in 1862 and the Recorder of York in 1865.

Van Wart was also represented by two barristers, one of whom, "Mr. T. Webster", was a member of Cutler and Slaney's team opposing the Attorney General in his prosecution of Cutler's patent.

Whilst there were no reports of this the first hearing of the "nolle prosequi" application, the grounds submitted by Hill and Hindmarch in their attempt to

persuade the Attorney General not to prosecute Van Wart's writ must have been substantially the same as those presented to the Master of the Rolls in the much reported subsequent hearing.

In essence, three separate objections to Van Wart's writ were put forward on behalf of Richard by his two eminent legal counsel. (Slaney, named as a co-defendant in the writ, was not a party to the "nolle prosequi" proceedings.)

The first objection was on a point of law, which had never arisen before - whether an alien was entitled to request the Attorney General to seek the repeal of a patent, a monopoly, granted by the British sovereign. Hill argued *inter alia*: that this right was legally only available to one of the Queen's subjects in the territories covered by the patent, which none "of the millions" of these subjects had sought to exercise in the eight years of the patent's existence; that it would be very "singular" for an alien to be entitled to do so in order, as the "young" Van Wart had alleged, to protect his interests in tube manufacture in America. Hill and Hindmarch cited a number of legal authorities and precedents in support of this contention, which the counsel for Van Wart subsequently sought to counter at some length - commencing with an ingenious, if unconvincing, argument that his client was not an alien as his father's naturalisation had endowed the son with the rights of a British subject.

Secondly, Hill argued that the bond given by Van Wart junior was insufficient, even with the backing of his father and Goddard as sureties. The bond was an undertaking to pay Richard's (and Slaney's) costs in the event that the *scire facias* proceedings were unsuccessful. Hill maintained that this pledge might prove unenforceable since there was nothing to prevent the American businessman from absconding and returning to New York immediately after the conclusion of the proceedings. As to the two sureties, Hill pointed out, correctly, that both had been bankrupts in the past (Goddard twice allegedly). In his rebuttal Van Wart's barrister admitted that this was the case, but that Van Wart senior, whose brief bankruptcy had been in 1817, had been an Alderman of the borough of Birmingham since its incorporation (in 1838) and that Goddard, notwithstanding his 1842 bankruptcy and an earlier insolvency, was still doing business with the "Birmingham bank"; further more both sureties had each sworn to owning net assets in excess of £1,000 - in the case of Henry Van Wart to "far more than" that sum.

The third objection was an assertion as to the vexatious and oppressive nature of the proposed prosecution as evidenced by the undisclosed collusion between Van Wart junior and Cutler on behalf of The Caledonian Tube

Company, which explained the true reason why the "young American" was seeking the repeal of Richard's patent; a claim based on facts that had not been revealed to the Attorney General by Irving Van Wart in his oath supporting his application. Hill summarised the background to the dispute that had arisen in Scotland over the valuation of Richard's share in the Coatbridge company; he pointed out that Van Wart junior was that company's manufacturing agent in the U.S. and, moreover, that his solicitor was Cutler's son; he explained that Richard's patent formed part of the joint Scottish patent and that its repeal in England would be used by Cutler and Baker as an argument to reduce the amount they were due to pay to Richard for his share in the Scottish tube company (according to Hindmarch this plot had to be implemented in England as the remedy of *scire facias* was not available in Scotland). Van Wart's barrister responded: that this allegation was speculation only; that his client's true motive in promoting the proceedings was to secure a reduction in the price of the tubes so as to further his own business interests in America; that the two bond sureties had also sworn as to the *bona fides* of their principal's application. The two sureties, Van Wart senior and Goddard, were, in fact, probably already part owners of The Caledonian Tube Company - presumably unknown to Richard and his advisers.

If not already known, or suspected, by the Attorney General, he may have been disconcerted even further by this accusation by Richard's lawyers that the Crown was actually being asked to repeal Richard's patent to further the cause of Cutler (whose patent the Attorney General was already prosecuting aided by Hill and Hindmarch) in a business dispute between the two patentees.

In the reports of the subsequent hearing before the Master of the Rolls, Hindmarch there contended that the Attorney General had stopped the hearing before him on the ground that "the matter was one of too serious a nature for him to determine" and should "go before a Judge at Court". Jervis, although a senior lawyer, was acting as a minister of the Crown in his capacity as the Attorney General.

The hearing of *Regina v. Prosser* before the Master of the Rolls (The Lord Langdale 1783 - 1851- *Image right: Wikipedia*) was held over two days on 9th and 10th November 1848. The opposing teams of lawyers presented their cases in full to his Lordship. The Attorney General himself was not present. There was



some disagreement between the two sides as to which of the issues the absent Attorney General had intended should be referred to the judiciary. Webster for Van Wart contended that Jervis had overruled all the opposing legal team's objections to his client's application other than the first "respecting the rights of an alien". Hill for Richard maintained "that, virtually, the Attorney General gave no decision whatsoever". Webster then raised the issue as to whether the Attorney General had the power to refer the case to the courts to which Hill responded that "it would be a great defect in our constitution, if that officer possessed no power of permitting such an important case to be argued before his Lordship, the Master of the Rolls, or the Lord Chancellor".

The Lord Langdale decided he needed time consider the case and reserved his judgement, which was not given until 25th November, when he gave the reasons why in his legal opinion he had "no authority to interfere in this matter". He held that the decision to support any scire facias prosecution and the subsequent conduct of the prosecution was the sole responsibility of the Attorney General to be taken and conducted exercising his own judgement and discretion as the protector of the public against illegal monopolies on behalf of the Crown. As such, the judiciary had no jurisdiction in the matter until the actual trial; during which, as pointed out by the Master of the Rolls, the Attorney General would still be able to exercise his discretion to drop or stay the case if he became persuaded by the evidence, or if the presiding judge expressed the view, that the trial should not proceed on the ground of hardship (due to the allegations as to the vexatious and improper intentions of the actual prosecutor Van Wart being substantiated) or further security for costs being warranted.

Having refused to interfere in the prosecution, The Lord Langdale could not resist expressing his opinion on the merits of Richard's attempt to have Van Wart's writ withdrawn:-

Being of opinion that I have no jurisdiction in the case, it is unnecessary, and perhaps not proper, for me to express any opinion on the reasons on which the application is grounded; but having paid, necessarily, some attention to the subject, I hope I may be excused for saying, I see no reason to doubt the propriety of the decision that was arrived at by the Attorney General on the two principal points of objection. I need not now consider at all the duty which the Crown has to protect legal patentees against improper litigation. There can be no doubt it is the duty of the Crown to protect the public from illegal monopoly; an illegal monopoly is a public grievance, and the able arguments addressed to me in support of this application, have failed to persuade me that the Crown, having

been informed of such a grievance, having the power and authority to remove it, if it be such, ought to be disabled from directing the necessary proceedings, to ascertain the truth, because this information was given by an alien, or by a person who had no special or direct interest in the matter, or was endeavouring to promote the interest of some other person, or was actuated by some improper motive....

Upon the whole I am of opinion, that this application must be refused, and refused with costs.

However, the decision of the Master of the Rolls was not the end of the matter as Richard's lawyers immediately lodged an appeal to the head of the English and Welsh judiciary, the Lord Chancellor the Earl of Cottenham, Charles Christopher Pepys (1781 - 1851), who five months previously had found for Russell in Ledsam and his co-defendants' appeal to the House of Lords.

The first hearing of the appeal before the Lord Chancellor occurred in his court in Lincoln's Inn on Wednesday 7th December 1848; what took place was not reported, but a transcript of the notes of a "Mr. Tolcher", the court's shorthand reporter, are held in *TNA*. These reveal that Richard was again represented by Hill and Hindmarch. Van Wart's legal team was now headed by a "Mr. Rolt" (probably the later Sir John Rolt, who was to be appointed Attorney General in 1866) with "Mr. Webster" still in his supporting role.

The Lord Chancellor opened the hearing by demanding to know: "Why is the Attorney General not here?". Jervis had yet again absented himself from attending the judicial hearing he had sought on the important issues that had been raised on the prosecution of a writ he had himself filed in his ministerial capacity. Both teams of lawyers sought to argue that the actual prosecutor, Van Wart, was represented at the hearing, but, in what appears to have been a heated and prolonged discussion, the Lord Chancellor was not to be dissuaded that the Attorney General should not be present. In particular, his Lordship required clarification as to what, if anything, the Attorney General had ruled upon at the first hearing - a point still in dispute between Hill and Webster. The hearing was therefore adjourned to allow "Mr Hill's client" to ascertain when the Attorney General could attend. Court documents held in *TNA* reveal that Hill was unable to consult with Jervis until Friday 5th January 1849.

There can be little doubt that Van Wart's attempt to repeal his patent must have alarmed both Richard and his supporters when the writ of scire facias

had, eventually, been served at the beginning of September 1848. The legal costs incurred by Richard in the *nolle prosequi* proceedings would have been considerable; to what extent, if any, Richard was assisted financially by Selby, Hodges and Ledsam and his fellow investors is not known.

Regina v. Prosser was not the only “tube” case money spinner for the lawyers in 1848. *Regina v. Cutler* had been rumbling on throughout the year; in February, Richard’s writ in *Prosser v. Cutler and Baker* had been issued in the Scottish law courts; in July, the final appeal in *Ledsam and others v. Russell* was heard in the House of Lords resulting in the defeat of the latest, and last, attempt by the Birmingham defendants in the “great suit” to have Russell’s 1839 renewal of Whitehouse’s patent annulled; in August, Russell had reissued his 1841 writ against Ledsam and the then named co-defendants, who had filed their defence in November.

In addition, on 9th May 1848 Chief Justice Denman had delivered the judgement of the Court of Queens Bench in the case of *Cutler v. Bower*. (Both of the litigants were already known to Denman - he had been the presiding judge who had given the discredited guidance to the special jury in *R. v. Cutler* on 2nd December 1847. In January 1848, he, together with the same three judges of the Court who were to sit with him again in May in *Cutler v. Bower*, had granted leave to the Attorney General to apply for a new trial in his attempt to repeal Cutler’s patent.)

Cutler had, probably, commenced the proceedings against Bower in 1847 in response to Bower’s suit against him and/or following the disputed 1846 compromise agreement in his first suit against the Birmingham solicitor. Cutler’s claim was for £2,200. This large sum represented the total amount of the increased premium that Bower had been coerced into agreeing to pay for a half share in Cutler’s patent in 1843; payable by instalments, Bower had, allegedly, paid none of them.

Pleadings in the case are held in *TNA* and the online record indicates that initially Selby, Hodges and Slaney were named as co-defendants, but they appear to have been removed from the record by the trial. The case was reported at length. Bower was represented by Hill, the Q.C. who later led Richard’s legal team in *R. v. Prosser*, and his main defence arguments were based on the contention that Cutler’s patent was invalid and therefore worthless. Hill’s arguments failed as, in effect, the Court held that, in the particular circumstances, Bower’s covenant to pay the premium was enforceable irrespective of the validity (or not) of the patent. *Cutler v. Bower*

was to become a much cited precedent in patent cases and on issues of estoppel.

By the end of 1848 most of the leading judiciary in the London law courts must have either been directly involved or, at least, become familiar with the background to the battles that were being pursued through the courts for dominance in the market for iron tubes for boilers for steam engines. The names of the participants and, in particular, those of Russell, Ledsam, Cutler and Prosser must have become well known.

For Richard, one other event at the beginning of this leap year would have dominated his personal life - the death of his wife, Sarah, on 29th February, shortly after the birth of their seventh child, a daughter, who only survived her mother by three months. Richard was present at Sarah's death according to her death certificate, presumably having recently returned from Scotland after being sworn to his testimony in his claim against Cutler and Baker. (See "The Dust-Pressed Process" pp.96/97)

1849: Prosser and Cutler - Precedent Makers

On 19th January 1849 the hearing of Richard's appeal in the nolle prosequi proceedings in Regina v. Prosser resumed before the Lord Chancellor. The Attorney General was in attendance. *The Law Times* dated 10th March reported that: "The proceedings being unusual, the question was argued at considerable length" by the respective teams of lawyers.

The "question" or rather questions were the same as those aired before the Master of the Rolls. The Attorney General was then addressed by the Lord Chancellor: "The application asks me to interfere with your authority." To which challenge a, seemingly, refortified Jervis responded:

The Court has no power to interfere with a writ of scire facias to repeal a patent. Any stranger may inform the Attorney General of the facts which lead him to give his fiat for the writ; and whether the informant be worthy or unworthy, the Attorney-General, if satisfied of the facts, proceeds upon them. He proceeds on the facts disclosed, not on the complaint of any person who gives the information. That applies to patents and charities, it being the duty of the Attorney General to act when furnished from any source with information of facts requiring his interference. In this case the writ has been issued, and the Court cannot compel the Attorney General to enter a nolle prosequi, and he declined to enter it.

The Lord Chancellor reserved his judgement which he gave on 23rd January 1849; he affirmed the decision of the Master of the Rolls, namely, that the matter fell outside the jurisdiction of the courts. *Regina v. Prosser* was to become a much cited precedent of long standing for the legal principle that the Attorney General had an uncontrolled discretion to cause a writ of scire facias to repeal a patent to be issued and could do so upon the information of any person - including an alien. It also decided that it was for the Attorney General to determine liability for the costs of the proceedings.

If Cutler and the Van Warts celebrated this, apparent, initial victory after the Lord Chancellor's decision was published, they were premature in doing so. Jervis, having had his absolute authority confirmed by the judiciary, did not proceed with the prosecution of the attempt by Van Wart junior to repeal Richard's patent. What had persuaded the Attorney General that he was not under a duty to do so is not known; perhaps, he was not "satisfied of the facts" as to the claimed invalidity of Richard's patent - Jervis must, himself, have become something of an expert on metal tube technology by 1849. In effect, Jervis endorsed the validity of Richard's patent by abandoning the prosecution. What, if any, order was made by the Attorney General as to the legal costs incurred is also unknown; neither of the parties involved, Richard nor Van Wart, would have escaped financially unscathed, but their respective supporters may have contributed to their legal bills.

However, the Attorney General had decided to press on with his attempt to repeal Cutler's patent; his application for a new trial had been heard before four judges of the Queen's Bench in November 1848 and was granted in their judgement given by Denman C.J. on 30th January 1849. In doing so, Denman had to confirm that he had misdirected the special jury at the first trial, when he had advised it that the partial invalidity of a patent did not invalidate the whole.

The second trial of *Regina v. Cutler and others* was heard on 2nd July 1849 before another Queen's Bench judge, Sir William Wightman (1784-1863; [Portrait Link](#)), and another special jury. The parties were represented by the same teams of lawyers as at the first trial - Jervis A.G. supported by Hill and Hindmarch appeared for the Crown; Talfourd, Whitehouse and Webster for Cutler and Slaney; and Henderson for Bower and Selby. In fact, the jury was not required to exercise its own judgement; Wightman firmly directed it to find for the Crown on its main contention that the mere use of tubes in constructing tubular flues for steam boilers could not be deemed to be an invention where the tubes themselves were manufactured by previously

known methods. Talfourd for Cutler (and Slaney) reserved the right to appeal the verdict - but Cutler did not do so.

Regina v. Cutler established the rule that:

The mere application of a known article for a new use, the mode of application not being new, but, before the date of the patent, having been used in applying analogous articles to the same purpose, is not a manufacture... and cannot be made the subject of a patent.

Cutler therefore lost his English patent. His attempt to secure a monopoly over the manufacturing rights of tubular flues for steam boilers had failed - at least over those manufactured in England and Wales.

Richard, Selby and Hodges, no doubt, cheered the eventual outcome of both of the proceedings brought by the Attorney General.

Bower and his clients, the Birmingham investors led by Ledsam, would also have been relieved; especially as the death of James Russell on 11th January 1849 must have encouraged them to hope that his revival in 1848 of his 1841 Bill in the "great suit" might die with him. This was not to be the case.

Russell's claim, that Richard's patent had infringed Whitehouse's, would have been undermined by the failure of the attempt to have Richard's patent repealed. Although Russell's executor, Jesson, was to revive the "great suit" in 1850, this was likely to have been a tactical step to try to force Ledsam and his co-defendants to settle - to make some financial offer to free them to proceed with the sale of the URM site and wind up that business.

However, 1849 was the final year that the three competing tube manufacturers' war of attrition was to be conducted in open court.

Whilst the London barristers may have lost a lucrative income stream, the Birmingham and other solicitors instructed by the litigants would have continued earning fees for a while longer - negotiating the terms of settlement between the various parties.

In 1851 Bower was still living on the Coventry Road with his wife, seven children and four servants; by 1861 the family had moved to the village of Knowle, Solihull but with only two servants. At his death in 1863 Bower's estate was valued at about £1,500 - ultimately, Bower does not appear to

have become very wealthy from his involvement with Ledsam and the other Birmingham tube investors.

Chapter 14

An Incomplete Epilogue

The known aftermath to the “great suit” has already been told; what follows concerns the subsequent history of the Coatbridge and Smethwick rivals of Russell’s Wednesbury firm.

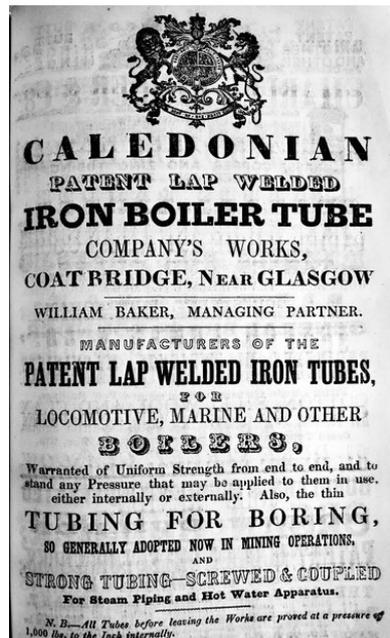


Image 1852 advert : Grace’s Guide to British Industrial History website

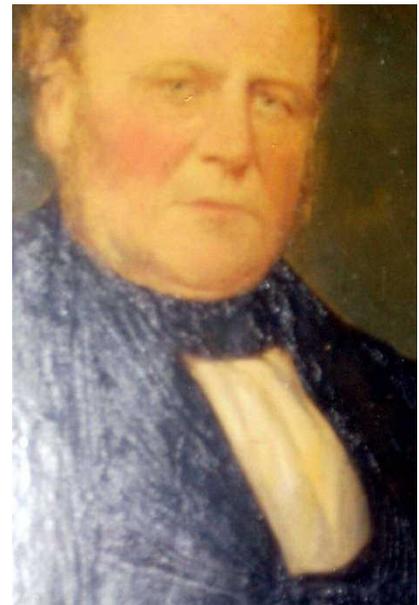
In Scotland, Richard’s claim against Cutler and Baker for £25,000 for his quarter share in The Caledonian Tube Company was settled out of court on unknown terms. The deal was probably concluded in January 1850; may be on the 29th of that month the date of the notice inserted in both *The London Gazette* and *The Edinburgh Gazette* confirming that Richard had ceased to be a partner in the firm “from 30th July 1846”. The notice had been signed by the three parties and their signatures were witnessed by lawyers. Normally a departing partner would be concerned to advertise his resignation without delay to avoid possible claims against him for partnership liabilities accruing after his departure; why Richard had not done so remains unexplained - unless he had not wished to admit to his involvement in the Scottish venture back in 1846.

Henry Van Wart and Goddard were, no doubt, both involved in the settlement negotiations as partners in the Company, but Goddard himself resigned very shortly afterwards on 9th February 1850 (perhaps a backdated departure as the notice advertised over fifteen months later was dated 26th April 1851).

Cutler, Baker and Van Wart senior continued trading as The Caledonian Tube Company until 1st January 1856. On that date Cutler and Van Wart both resigned from the partnership but separately - Cutler first and then Van Wart according to the two notices promptly advertised in both *Gazettes*.

Baker, the managing partner, was left the sole owner of the Scottish firm, presumably having bought out both retiring partners. He died on 22nd December 1860 at his home Woodside House in Coatbridge; his estate was valued at £10,825 in the records of the Glasgow Commissary Court (*BNA*).

So, Baker died a relatively wealthy man - a wealth almost certainly derived from the success of The Caledonian Tube Company and its use of Richard's machines. *Image: From public family tree on Ancestry website.*



The 1851 census had described Baker as an employer of 130 men, but by 1864 the number of employees had reduced to "30 to 80 according to the demand" (*Andrew Miller: The Rise and Progress of Coatbridge*). That "demand" was said to be global.

Ownership of the Company had, initially, passed to two of Baker's sons following their father's death. It continued to trade until 1912, when it was one of the many local tube manufacturers that merged to form The Scottish Tube Co. Ltd., which was acquired by the mighty firm of Stewarts and Lloyds Ltd. in 1931, and which, in turn, became part of British Steel on the nationalisation of the industry in 1967. Denationalisation took place in 1999 on the formation of the Anglo-Dutch venture Corus Group plc, currently (2017) owned by Tata Steel part of the immense Indian international conglomerate - the Tata Group of businesses.

Back in Birmingham in the mid-nineteenth century, Van Wart senior and Goddard remained respected members of the business community until their deaths.

A link to Goddard's 1886 obituary is provided on page 109. His wealth at death is unknown as I have traced no probate record, but he had been living in some comfort with a son and two daughters in a large house neighbouring Little Aston Hall to the north of Birmingham. He was buried in his family's vault at St. Bartholomew's church in Edgbaston, the wealthy Birmingham suburb where he had lived for several years at 43 Frederick Road - not far from "The Shrubbery", the large residence of his great friend and fellow American Henry Van Wart on the Hagley Road.

The older Henry Van Wart had died in 1873 leaving an estate of about £30,000. He, too, had been buried at St. Bartholomew's. He has an entry in *Wikipedia* ([Henry Van Wart](#)) and a more informative, if subjective, memoir can be found in this [link](#) to *Personal Recollections of Birmingham and Birmingham Men: E. Edwards (1877)* at pages 35 to 37. *Edwards* was clearly well connected and his studies of some of his eminent Birmingham acquaintances include or refer to other names appearing in this and the previous stories in Richard's life.

Irving Van Wart was living with his father in Birmingham in 1861 and appears to have based himself predominantly in England from about this time. He died in Edgbaston in 1896. In 1880 he may have read Richard Bissell Prosser's articles in the *Birmingham Weekly Post* with much interest.

Both Van Wart senior and Goddard survived Richard (d.1854) and Thomas Morton Jones (d.1857), also a U.S. emigre to Birmingham, by many years. Cutler survived both the latter, but predeceased the former duo - his recruits to the Scottish partnership at the time of his disputes with Richard and the Birmingham tube investors.

By the time of his death in 1867 Cutler's fortunes had seriously deteriorated. In 1851 he was still living on Ladypool Lane (no. 29) in Sparkbrook with his wife, his solicitor son, his wife's niece and three servants plus a visitor, described as a lawyer's clerk. Cutler had told the census enumerator that, in addition to being a tube manufacturer at Coatbridge, near Glasgow, he was also a "Metal Dealer. Spoon & Fork Manufacturer employing 23 men". The latter works were at 49 Lombard Street in Deritend - close to the site 20 years previously of the proposed nail manufactory, which was to be the subject of the feud between Richard and his brother Thomas.

By 1855 Cutler was in financial difficulties; his landlord of the Ladypool Lane house had distrained for rent (*Library of Birmingham Archives*) and the entries in trade directories cease. In 1861 Cutler, his wife, her niece and one servant

are living next door to his son, who had married and gained six children during the previous decade. The Cutlers had moved about a mile further out of Birmingham to Greet in the parish of Yardley. Cutler described himself as a "Retired Manufacturer".

The probate record for Cutler reveals his assets at his death to be worth less than £800. His son, who had been made an Alderman of the borough of Birmingham prior to the 1861 census, only survived his father by four years, but his estate was modest too - about £1,500 - perhaps unsurprisingly as the 1871 and 1881 censuses revealed that his, yet again, pregnant widow had been left with nine children, aged 1 to 18 years, to support.

Cutler senior had taken out at least two more English patents post-1852, one for spoons in 1853 and another for tube improvements in 1856. The latter was taken out in the same year as his departure from the Scottish partnership - about a year after Cutler had been unable to pay the rent on the Ladypool Lane house. Whatever had actually precipitated these circumstances, another factor may have been the impending expiry in 1858 of Richard and Cutler's 1844 Scottish patent on which The Caledonian Tube Company's success had been founded using, not Cutler's, but Richard's 1840 lap welded tube machinery.



Image - 1880 Kelly's Directory Staffordshire

Tube-making was apparently brought to the town by George Selby, a lawyer and a partner in a tube-manufacturing concern, the Birmingham Patent Iron and Brass Tube Co., established in 1842. In 1846 he bought Smethwick Grove and some adjoining land and shortly afterwards erected a tube-works near the house for the company. It lay in the angle between the present London Street and Grove Lane and had a frontage on the Cape arm of the Birmingham Canal to the east. The works was in

production by 1851. The company was still in operation on the same site in the 1880s, when it was making lap-welded iron and steel boiler tubes, solid-drawn brass and copper tubes, tubes and fittings for gas, steam, and water purposes, and brass and copper sheets. The company probably ceased operations in the late 1880s, and by 1903 the works had become part of the St. George's Works of Guest, Keen & Nettlefolds.

*(Extract from British History Online - Smethwick: Economic History
<http://www.british-history.ac.uk/vch/staffs/vol17/pp107-118>)*

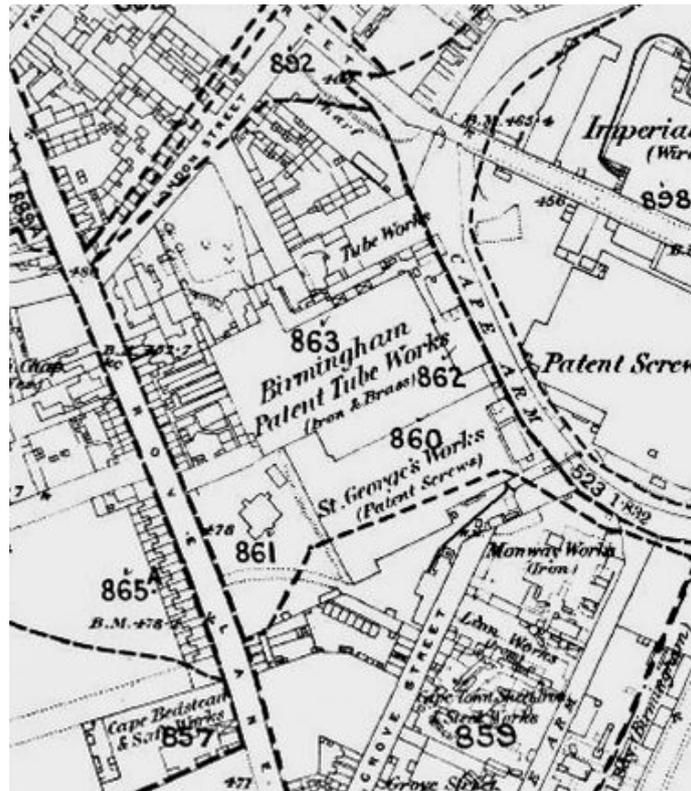


Image - OS Map name 072/03', in Map of Birmingham and its Environs (Southampton, 1884-1891), British History Online <http://www.british-history.ac.uk/os-1-to-2500/birmingham/072/03>

The subsequent, post 1849, history of The Birmingham Patent Iron Tube Company was to provide some interesting material for *Hackwood* the chronicler, in his *Wednesbury Workshops*, of the Russells' tube empires. *Hackwood's* entertaining version of the events that occurred in 1850 and their aftermath is incomplete and inaccurate, and the truth was, in fact, even more colourful than his fiction.

Selby and Hodges's business had been manufacturing exclusively from the Smethwick tube factory on the site of The Grove estate (owned by Selby) since about the beginning of 1849; the last press adverts for the Company

including the 42 Cambridge Street address appeared in December 1848 (although those in the *Mechanics Magazine* continued until the end of June 1849). The Company's advertised product range had previously (after mid-1847) expanded to cover a variety of tube products including "gas pipes".

In Selby's, much publicised, bankruptcy proceedings (heard in 1855) Hodges was to claim that he first became aware in 1850 that "the utmost confidence", in which he had held his "confidential solicitor and adviser" since before 1828, was, in fact, badly misplaced.

Actually, Hodges probably began to harbour some misgivings about Selby's conduct before 1850 as their partnership in the Smethwick tube company was dissolved on 28th March 1850 and was swiftly notified in the *London Gazette* published the following day. The terms of the dissolution would not have been agreed overnight and probably took several weeks to conclude. Significantly, Hodges had instructed another solicitor to advise him; his trust in Selby was no longer absolute.

According to *Hackwood's* account of these negotiations, it was the very wealthy Hodges who wanted to buy his partner out of the business and was confident that Selby would not be able raise the funds to do so himself. At the meeting between the parties and their advisers as described by *Hackwood*:

Hodges had asked Selby to pay him in cash for his share in the Company or agree to sell out to him; Selby had prevaricated suggesting that he could not possibly raise the amount required (a valuation had already taken place and been agreed) and that some compromise must surely be possible to enable the partnership to continue; Hodges rejected this proposal and repeated his demand; again Selby remonstrated that Hodges was being unreasonable, but Hodges stood firm; whereon, Selby had placed £73,000 in bank notes on the table "before the eyes of the astonished Hodges".

Hackwood, writing in 1889, acknowledged that his source for this anecdote of the actual events in 1850 was an article in a local newspaper published "some years ago" - probably at a time when Selby's eldest son was still a part owner of the tube business.

In 1855, Hodges was to tell a different story when he testified in both of the separate bankruptcy proceedings of Selby and his older brother Thomas. Much evidence was given of the collusion between the two sibling solicitors in the fraud against Hodges that had continued over the previous 27 years after Hodges had, on Selby's advice, agreed to loan £4,000 to a client of Thomas

Selby in 1828; unbeknownst to Hodges the client, a Mrs Shepherd, had died in 1829 without receiving the money; Selby had maintained the fiction of the loan by paying the agreed interest to Hodges. Hodges had discovered this deception later in 1850 and unsuccessfully demanded repayment - in 1855 the loan of £4,000 was still outstanding plus three years interest. In addition, Hodges gave details of the dissolution terms of the tube partnership, which he maintained he had wanted to quit following a "quarrel" with Selby; Hodges's share in the business (which he alleged had cost the partnership £45,000 to set up in Smethwick in 1845) had been valued at about £25,000, of which Selby had paid him £5,356 in cash in March 1850; the balance was to be paid by instalments and, of these, in total he had received about £14,000.

Each of the Selby brothers owed huge amounts to their creditors and the proceedings in London in their respective bankruptcies were fully reported in the London press.

George Selby was, by far, the worst defaulter of the two and was found to have debts of about £200,000 and assets of negligible value by the independent accountant appointed to scrutinise his affairs. The judgement in his bankruptcy was published in full in *The Times* dated 4th December 1855 and opened with the following remarks by the presiding Commissioner in the Court of Bankruptcy:

...the case was to him a very painful one; it was the case of man who had once filled a very respectable position in London as a solicitor, and like many others, was not satisfied with letting well alone, but had betaken himself to a variety of speculations, had entered into various partnerships, and had carried on various schemes, until he had left himself with hardly anything to pay his creditors, and found himself in this Court in the melancholy position of owing debts and liabilities to the amount of nearly £200,000, and had not enough to pay his creditors a farthing in the pound. To see in that position a man who, as his advocate said, had stood in the first-class of solicitors in London, was indeed a melancholy spectacle.

The judgement revealed that Selby had, actually, been insolvent to the tune of between £20,000 and £30,000 on 30th March 1850, the day after he bought Hodges out:

From that time he went on getting worse and worse, until the bankruptcy - the only concern which yielded him any profit being the Tube Company at Birmingham, and he was in the habit of transferring profits and capital from that to the other concerns which were disastrously ruinous.

The Commissioner was particularly critical of two aspects of Selby's conduct during the period 1850 to 1855: his continued extravagant lifestyle and his transfer of the ownership of the "Tube Company" to his son, "a youth of 22", who he had made a partner in the firm in March 1854 shortly before his own resignation from the business - "thereby depriving his creditors altogether of the chance of getting anything from that concern". The judgement does not explain how the clever Selby had managed to avoid falling foul of the laws that should have prevented such a scheme succeeding. Indeed, there was no suggestion that the instalments paid by Selby to Hodges post March 1850 were fraudulent preferences of him as a creditor. (The Commissioner had expressed his gratitude to Hodges for giving evidence against Selby, including that of his gross misconduct in the matter of the "Mrs. Shepherd" loan; Hodges had also testified that he had had to meet claims against the tube company for indebtedness incurred prior to his resignation, which had exceeded the amounts Selby had paid to him - one such claim might have been that of Bower's in 1853 (see pp.104/105))

A notice dated 25th August 1854 inserted in *The London Gazette* revealed that Selby had in fact gained three new partners in the tube business since Hodges's departure. In addition to Selby's young son, George Thomas Selby, they were a Henry Johns and a Sampson Hanbury. The notice, also, revealed that the firm had been renamed and was now called the "Birmingham Patent Iron and Brass Tube Company".

Johns, an enameller, had probably joined the firm in 1850, as he and Selby were said to have set up an enamelling business in Birmingham in that year (*Birmingham and Midland Hardware District: S. Timmins 1866*). Johns had resigned from both partnerships on 25th August 1854 according to the adjacent notices in the *Gazette*.

On 3rd November 1854 a further notice appeared in the *Gazette* announcing the dissolution of the renamed tube company on that date. The notice, signed by Selby as well as his son and Hanbury, stated that the latter two signatories would attend to the winding up of the affairs of the old partnership but would continue carrying on the business in future together.

The "new" firm's trading name was so similar to that originally adopted by Selby and Hodges as to be virtually indistinguishable to its customers. The Birmingham Patent Tube Company was to continue in business for at least another 28 years.

According to *Hackwood*, Hanbury was “a banker” and when he was writing the name would probably still have been a familiar one in the country’s business community.

Hanbury’s introduction into the tube business may have occurred at the same time as Selby’s young son in March 1854. In 1851 Sampson Hanbury (1827 - 1894), aged 24 and unmarried, had described himself in that year’s census as a farmer employing 18 men, 5 boys and 10 women on a farm of 380 acres called Rossmerryn in the parish of Budock near Falmouth in Cornwall. However, he was a Londoner, not a local, and had been born in Lambeth then in Surrey; on 10th August 1852 he was married at Westminster to Anna Marie Barclay. Hanbury’s father was Osgood Hanbury, a successful banker; my brief research into the history of British banking revealed how intertwined the leading banking families were by marriage - the names of the Barclay and Lloyd families have survived, many others, including that of Hanbury, have disappeared from the banking world.

In the 1861 census Sampson Hanbury was living at Warley Hall with his wife, two young children, his widowed mother-in-law, an unmarried sister-in-law and a large retinue of household staff - from a housekeeper to a page boy. Hanbury described himself as a “Manufacturer of Iron Tubes and Farming 250 acres”. Warley Hall (aka Abbey) was located about three miles due west of the centre of Birmingham; Warley was then a village in Shropshire, but now falls within the district of Smethwick in Sandwell, West Midlands. The Hall was only about two miles distance from the tube manufactory. (A brief history of the Hall can be found on this [link](#) to a local historian’s website.)

No doubt, Selby senior was responsible for this scion of the enormously wealthy Hanbury family joining the tube partnership and he must have considered he had engineered quite a coup - although, it is unlikely that the Hanburys’ investment was made without some knowledge of Selby’s invidious financial position.

Hanbury was about four years older than his new partner, Selby’s eldest son. George Thomas Selby (1831 - 1897) was the fourth of ten children and in 1851, aged 19, he was living with his father and mother, his siblings and the family’s six servants at Grove House, Grove Lane, Smethwick; Selby senior described himself as a “Manufacturer of Brass Tubes” and the family would have been living close by the tube works. However, by 1861 Selby junior, aged 29, was living in the Warwickshire spa town of Leamington with his wife, their one month old daughter and four servants; he described himself as an “Iron Manufacturer”, but was living about 27 miles away from the works.

Selby senior was no longer living in Smethwick in 1861, he had returned to the south-east to Kingston in Surrey with his wife and eight of their children but with only three servants. Selby senior, now a “Retired Solicitor”, survived to live in reasonable affluence, despite his vast bankruptcy, until his death in June 1870 - his estate was valued at about £2,000. His erstwhile partner Hodges had died in 1863 at his London residence at 49 Leicester Square; his gin-based fortune may have suffered at the hands of Selby, but he still left assets of about £45,000.

Hanbury, residing at nearby Warley Hall, may have been the active partner in the tube business by 1861, but by 1871 he had taken his family and household staff to live in Regency splendour in Torquay’s Hesketh Crescent. Hanbury did not mention his continued part ownership of the Smethwick tube company and gave no occupation other than that of “Justice of the Peace”. Selby junior, a widower, was living in London at an equally salubrious address in 1871 at 1 Eaton Square in Knightsbridge with his three young daughters and six servants - his “occupation” was recorded as “Houses. Dividends”.

Hanbury was to die in 1894 in Devon leaving an estate of £90,000; Selby junior died in 1897 in Aylesford in Kent leaving an estate of £84 4s 7d.

My research into the history of The Birmingham Patent Tube Company post-1855 has been limited and has revealed little. Hanbury and Selby junior did not remain the only members of their respective families to be partners in the business. Hanbury's brother-in-law, confusingly named Hanbury Barclay, and Fraser Selby, one of George Thomas’s younger brothers, joined the firm at an unidentified date or dates.

Hanbury Barclay (1836 - 1909) was living in Carpenter Road Edgbaston in 1861 not far from his sister’s family at Warley Hall - aged 24 and a bachelor, he lived alone except for three servants and described himself as a “Tube Manufacturer”.

Fraser Selby (1835 -1910), aged 25, of no occupation was living in Kingston with his father, mother and other unmarried siblings in 1861; his whereabouts in 1871 remain unknown, but in July 1873 he was resident in Edgbaston when he married and declared himself a “Manufacturer”.

In 1871 Barclay, now married with four children, a “Tube Manufacturer” was living in Handsworth on the Hampstead Road in Church Hill House (now (2017) a disused pub: “The Endwood”) - the family were served by eight staff.

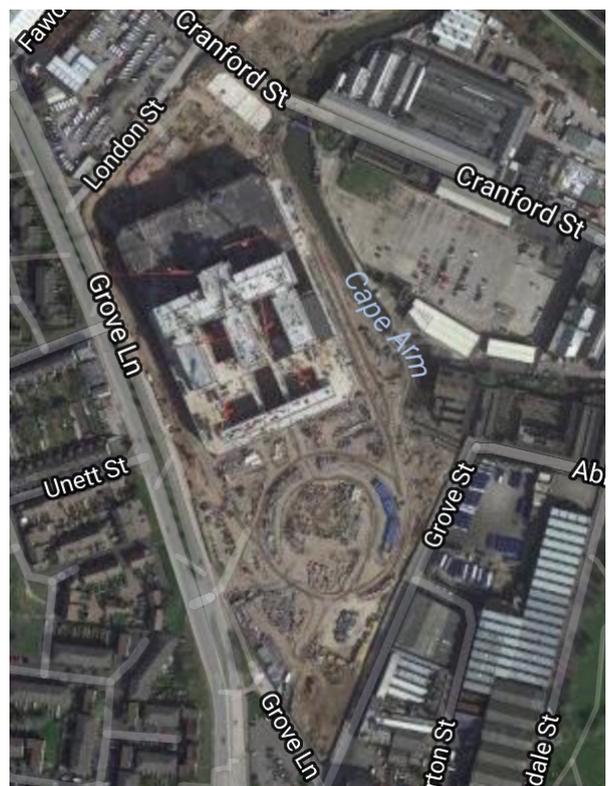
In April 1877 there was a parting of the ways when the partnership was dissolved, although no formal notice was placed in *The London Gazette*. Instead, the Birmingham press noted that they had been informed that Sampson Hanbury, Hanbury Barclay and Fraser Selby had left not only the Smethwick partnership, now apparently again called the Birmingham Patent Iron and Brass Tube Company, but also that of the Imperial Tube Company of Gas Street Birmingham - the latter business, previously separately owned, had, presumably, been recently acquired. The press had also been told that Hanbury and Barclay together with a Theodore Turley, "their late manager", had formed a partnership known as the Anchor Tube Company, which would carry on business "as previously" at the Gas Street premises.

Selby v. Anchor Tube Company was a case that was heard in the Vice Chancellor's court in July 1877. George Thomas Selby successfully sued his two ex-partners for representing to potential customers that they were the rightful successors to the business of the Imperial Tube Company, which name Selby, for a short time, continued to trade under in new premises in Birmingham.

This suggested falling out between George Thomas Selby and his three partners might not be surprising if he was neither contributing finance nor effort to the firm - merely taking the dividends as indicated by his entry in the 1871 census.

The Smethwick tube company was not to survive long under the sole ownership of the, now deceased, George Selby's eldest son and it disappeared from trade directories after about 1883. (The land on which Selby and Hodges's tube manufactory was built now (2017) forms part of the site on which the £350million Midland Metropolitan Hospital is being constructed - [Link](#).) *Image - Google Earth 2017 - former tube factory in course of demolition?*

The Anchor Tube Company continued trading from Gas Street until 1911 under Turley's stewardship; Barclay, who had extensive banking and other business interests, had resigned as a partner in



1887 (*The London Gazette*) and his brother-in-law Hanbury had died in 1894.

George Thomas's, more business-minded, younger brother, Fraser Selby, now an "Iron Master", was living comfortably with his family on the Hagley Road in Edgbaston in 1881 and 1891. He returned to the south-east to Bromley to live in his retirement and was sightseeing in north Wales in 1910 when, aged 74, he was driving the vehicle that overturned into a ditch in Portmadoc in a widely reported early motor-car accident - his passengers were thrown clear, but he was less fortunate and was the only fatality.

The tube business founded by James Russell had continued to prosper until the end of the nineteenth century and remained in existence until 1929 when it, too, was acquired by Stewarts and Lloyds Ltd (link: [*A History of Wednesbury*](#)).

Chapter 15

Richard's 1840 Patent - A Success Story?



Scots Fusilier Guards cheering Queen Victoria at Buckingham Palace before leaving for the Crimea - 1854: unattributed image on britishbattles.com

We know from advertisements and other sources that during the 14 year life of his 1840 patent Richard would have been entitled to receive royalties for lap welded iron tubes manufactured using his machines in England, Wales and the “colonies” and, presumably, in addition, for other types of tubes capable of being made with his machines. We also know that the market for these tubes extended beyond the U.K. to the “Continent” (of Europe) and the U.S. (see also post p. 161).

Richard was, probably, also making and selling the machines themselves (from his workshops in Watery Lane until about 1849/1850 and thereafter from 42, Cambridge Street) or licensing someone else to make them for the tube manufacturers (the Smethwick company only had an exclusive licence for iron tubes).

Were his machines superseded by any others invented before the expiry of the patent?

On 21st March 1854 Richard attended the newly rebuilt Houses of Parliament to give evidence to the Parliamentary Select Committee on Small Arms. The Committee, which sat during March and April 1854, was established to seek to ascertain the “Cheapest, most Expeditious and most Efficient Mode of providing Small Arms for Her Majesty’s Service” in the light of the difficulties encountered in procuring adequate supplies of muskets and the likely imminent participation of Britain in the already ongoing Crimean War (the British declaration of war was made on 28th March 1854) .

The Committee was particularly concerned to learn whether the system of manufacturing production (to become known as the “American System”), already successfully implemented in the U.S. in its federal armouries, could be adopted by the British Board of Ordnance, the government body responsible for arms procurement, at its own then modest armoury: the Royal Small Arms Factory at Enfield near London.

The “American System”, as then practised in the U.S., had centralised the manufacture and assembly of the component parts of the firearms at its two armouries; whereas, in Britain, the gun barrel tubes and other parts were to a substantial extent made separately in the Black Country (in various workshops) and sent to the Birmingham Gun Quarter for assembly. It was claimed by one witness, the American gunmaker Samuel Colt, and by others of the expert witnesses that, in the U.S., the introduction of mechanisation to the manufacture of each component of the firearm had achieved such uniformity that the parts were, if not wholly, at least largely, interchangeable. This claim was disputed by other witnesses, in particular the British gunmakers who had been called upon to give evidence. However, it was recognised that the ability to replace and swap the parts of a musket was an obvious and enormous benefit, which the British, mainly unmechanised, method of component manufacture certainly did not accommodate. In fact, the British government’s system of arms procurement was extraordinarily inefficient; procured firearms of poor quality; and was, nevertheless, expensive.

Richard had been called upon to give evidence as a “noted English machine builder” - the description awarded to him by *David Hounshell* in his interesting comments on the Committee’s proceedings in his book “*From the American System to Mass Production ...*” published in 1984 (pp. 17 to 25 - available online at this [link](#)). In addition, Richard, as he confirmed to the Committee at

the commencement of his testimony, was in the process of writing a report on the construction and manufacture of firearms for the Patent Office. The report was to be an Appendix to the, soon to be published, volumes of the prints of the specifications of all the pre-1852 firearms patents (*SD 2022 correction*); this project was still unfinished at the date of his unexpected death on 21st May 1854.

Hounshell pointed out that Richard, who was just one of the many experts examined by the Committee (the others included names, such as Colt's, better known then and now), was one of the most outspoken of the witnesses. For the purpose of this Story in his life it is some of Richard's forthright remarks on his involvement in tube manufacture, which are relevant.

In the course of his examination Richard, having confirmed in response to questions from his first interrogator the Chairman of the Committee, Lord (Sir William) Molesworth (1810 - 1855) that he was (inter alia) a patentee of machinery for making tubes for "Steam boilers and rocket tubes, iron welded tubes", continued by agreeing that he had "supplied large quantities of such tubes to America and to France" and that his "tubes for tubular boilers were in general use". Image - *Sir William Molesworth: Wikipedia*



The issue of supplying tubes to foreign parts was followed up by Lord Seymour (Edward Adolphus Seymour later the 12th Duke of Somerset (1804 - 1885)) in his interrogation of Richard:

You supply the tubes for rockets, do you not? - Yes, to the United States.

Do you supply any tubes for rockets to the Ordnance here? - No.

Are the tubes used by the Ordnance of the same kind as the tube that you supply? - The tubes that I have seen used by the Ordnance are very clumsy things; they are brazed.

At what rate do you supply the tubes to the United States Arsenal? - I have not supplied many rocket tubes; I have sent tubes to the United States.

Have you supplied any other Government? - Yes, the French Government.

Then the French and American Governments have the advantage of your superior tubes, while the English Government are still using their clumsily contrived ones made by themselves? - The French Government gave an order for my tubes in Birmingham, and inspected the process, to see that they were alright; and now they are made in France by my process.

They paid you for the patent, did they not? - Nothing; people never think to pay inventors; I supplied them to the Government; they were prohibited tubes, but as they were for Government steamers, they got over that; I supplied the Government engineer, the late Mr Barnes.

Have you ever offered to supply the Government here? - No I am not a tube-maker; it is my patent, and the Patent Tube Company at Birmingham are working it, and supply the Government.



Image - Lord Seymour The Duke of Somerset by Carlo Pelligrini 1869: Wikipedia.

Richard's guarded responses to Lord Seymour's questions suggest that Richard was himself supplying tubes to the U.S. and France, which in turn suggests that he had excluded sales to these jurisdictions from the licence under which the Smethwick company was manufacturing tubes. If, however, as he maintained he was "not a tube-maker", who supplied Richard with the tubes he sent to the U.S. and France? Presumably it was the Smethwick company.

Richard was, in fact, probably harbouring hopes of an arms contract with the British government himself in the near future, as evidenced by a copy letter held by the *British Library* to Sir Thomas Hastings, a Member of the Board of Ordnance, dated shortly before Richard's death - his patent, and therefore the exclusive licence enjoyed by "the Patent Tube Company", was due to expire on 24th March 1854, just three days after his appearance before the Committee.

Lord Seymour's examination of Richard continued:

What is your own business? - I am a civil engineer.

You have been chiefly concerned in the invention of machinery, and the application of it, have you not? - Yes, and the bringing it out.

That has made you acquainted with all the different patents which have been taken out for barrel-making? - Yes, that, and having the advantage of being at law for some years to defend my patent.

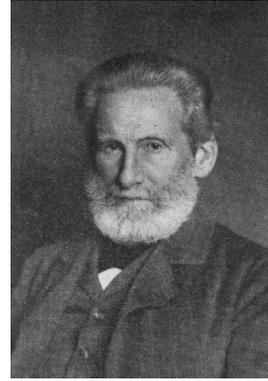
Has there been any improvement in barrel-making within your experience? - Not since 1817; not the slightest, except my own patent, 1840.

Not in machinery or anything else? - Not the slightest, that I am aware of, except my own.

Earlier in his testimony Richard had told the Chairman that he was "acquainted with all the patents that have ever been taken out in this or any other country" for making gun barrels. The 1817 patent referred to was that of Henry Osborn (mentioned by Richard in his own patent (see p. 18)), which used just two rollers instead of the four of Richard's machinery. Richard later clarified to the Committee that his claim in 1854, as to the continued preeminence of his own patent since 1840, related to its welding process. Whilst he did not elaborate on this point, Richard was clearly referring to the stronger lap welding that could be effected using his machines, which explains why he ignored Whitehouse's important 1825 patent for welding iron tubes by the weaker butt weld, a method that was therefore unsuitable for firearms. (Richard's patent covered all metals and, in seeming contradiction of his earlier statement that he was "not a tube-maker", he was, also, to confirm to the Committee that he had made thousands of hardened steel tubes, a lighter but more expensive alloy of iron and other elements, which suggests Richard was considering steel for gun barrel manufacture - he was probably aware of the attempts by Bessemer (and others, perhaps including Richard himself) to perfect a process to lessen the cost of producing steel; Bessemer was to patent "his" famous process in 1856.)

Richard's claim as to the superiority of his patent, which he repeated when questioned by another M.P., would not have been made lightly in such a knowledgeable and public forum and on a subject of such importance to the town of Birmingham. One of the other Committee members who questioned

Richard at some length was, in fact, the opinionated Birmingham M.P. and prominent local industrialist George Frederick Muntz (1794 - 1857), who had made a fortune out of his 1832 patent for the famous “Muntz” metal alloy for sheathing ship’s hulls and who was himself interested in tube manufacture. *Image - G.F. Muntz: alchetron.com unattributed.*



Earlier evidence of the commercial success of Richard’s machinery, not only in the manufacture of tubes for rockets and steam boilers, but for more prosaic types of tubing, was reported in the *Birmingham Journal* dated 24th November 1849.

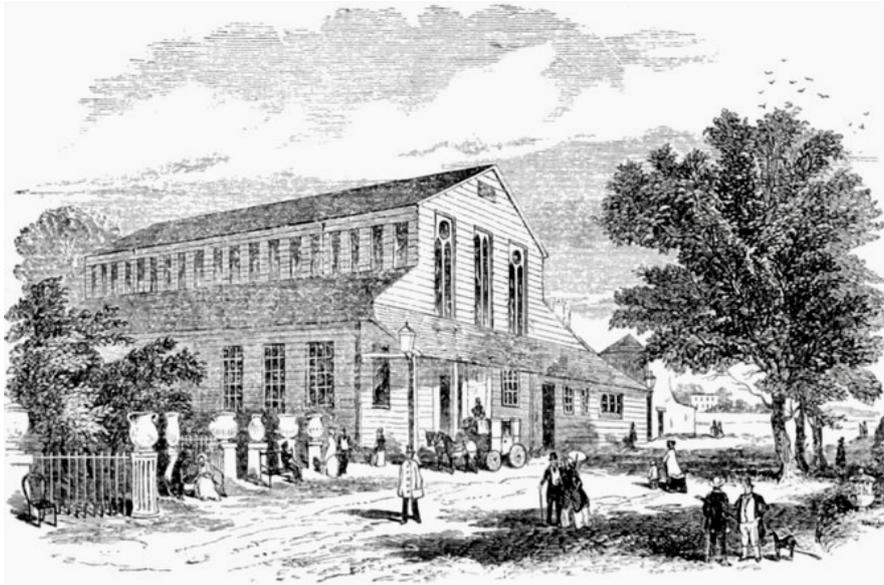
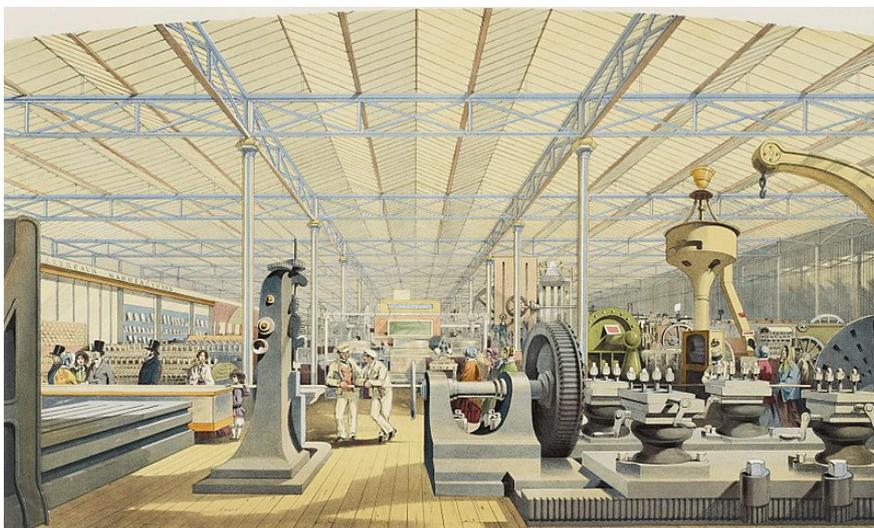


Image - Birmingham Exposition of Arts and Manufactures 1849 from “The Crystal Palace Its Architectural History and Constructive Marvels” by Peter Berlyn and Charles Fowler: [Project Gutenberg eBook Link](#)

A trade exhibition, an “Exposition of Arts and Manufactures”, was being held in Birmingham in a large but temporary wooden building in the extensive grounds of Bingley House on Broad Street, to the west of the tube works at 42 Cambridge Street. One of Richard’s 1840 machines was on display and the *Birmingham Journal* had continued its previous extensive coverage of the exhibition, which had opened on 3rd September, with a long article which contained the following encomium of his patent and to the utility of its end-product (even if the correspondent was unaware of the patent’s potential application to all metals):

Mr. Prosser's four-roll machine for the making of Iron Tubing is one of the best modes of production put into use for the reduction of the price of an article daily and hourly coming more into requisition, in confirmation of the utility whereof thus saith The Times:- "Pipes appear to be the order of the day. Pipes to let pure water in—pipes to carry foul water out—pipes for warming—drainage—ventilation;—pipes to bring in gas for burning—pipes to carry off the products of combustion. Pipes to the rich man's marble bath room—pipes to the poor man's brick-paved kitchen;—pipes for the fountains of St. James's; and pipes for the stinking cess-pools of St. Giles's. For ornament and pleasure—for economy and cleanliness—for health and comfort—for arresting conflagration and extinguishing pestilence - pipes! The whole sanitary question, indeed, may be regarded little more than a question of pipes."

The *Journal* had previously reported on the visit of Prince Albert to the "Exposition" on 19th November; the Prince renewed his acquaintance with Richard when he viewed the tube machine "exhibited and explained by Mr. Prosser". (Richard's first known meeting with the Queen's consort occurred in 1843 when Richard attended on the Prince at Buckingham Palace to demonstrate the manufacture of dust-pressed tesserae - "The Dust-Pressed Process" pp. 118/119).



*Moving Machinery Court at The Great Exhibition: Louis Haghe
Royal Collection Trust / © Her Majesty Queen Elizabeth II 2017.*

In 1851 the Jury of Class 1 at the first world trade fair, the Great Exhibition, held in Paxton's magnificent glass edifice in London's Hyde Park, were to award a coveted Prize Medal to Messrs Selby and Johns of Smethwick for

the “excellence” of their exhibit of a “cylindrical iron tube 12 feet long and 7 inches in diameter drawn by a patent process”. The identity of the patentee was not acknowledged. Richard’s name only appeared in one of the thirty Juries’ reports, that for Class XXV, in its explanation of its reluctant decision not to grant its highest award, a Council Medal, to Monsieur Bapterosses for his exceptional ceramic buttons; Bapterosses was awarded a Prize Medal and a “Very Special and Honourable Mention” - *ibid.* pp. 81/83.

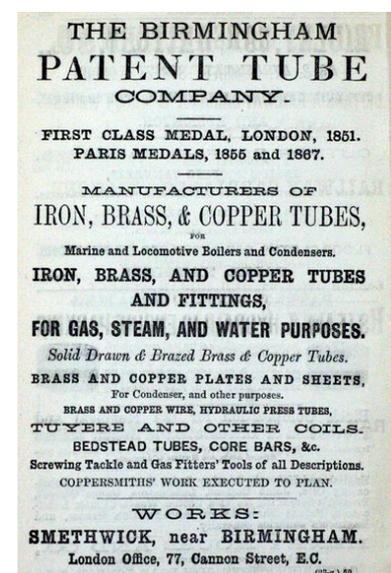
On 21st June 1851 the *Birmingham Journal* reported on the visit by the estimated two to three hundred “Royal & Foreign Commissioners, The Executive and Jurors” of the Great Exhibition, who had accepted the Mayor of Birmingham’s invitation to visit the town and its industries, including some in Smethwick:

The works of the Birmingham Patent Tube Company were likewise visited by many. Here they had an opportunity of seeing how a number of iron plates, of about fifteen feet in length, four inches in breadth, and of about a quarter of an inch in thickness, were formed into tubes adapted for steam boilers, at the rate of fifteen feet in four seconds. The whole process was shown, even the testing of the tubes by an hydraulic press to the extent of 400 lbs. to the square inch.

As we know, under the terms of its licence from Richard, the Smethwick company was only entitled to make iron tubes (despite Bower’s early attempt to insinuate that iron included steel - pp.63/64). The firm appears (from its advertising) to have confined its production to such tubes (for gas, steam and other purposes as well as for boilers for steam engines) until it changed its name for a short period to the Birmingham Patent Iron and Brass Tube Company sometime prior to August 1854, when Johns left the partnership - Richard’s patent had expired in March.

In 1880, in his *BI&I* Richard’s son, Richard Bissell Prosser, was to write that some of Richard’s machinery was still in use at the Smethwick tube company. The business’s range of products had expanded as evidenced by the advert right dated to 1874. *Image: Grace’s Guide to British Industrial History website.*

The 1840 licence for iron tubes granted manufacturing exclusivity to the licensee, but Richard would have remained free to manufacture himself or grant licences to do so to others for pipes and tubes



of other metals. The extent to which he did so is unknown, but there must have been many manufacturers keen to take advantage of his fast and efficient machines - including, possibly, Winfield the owner of the brass works on Cambridge Street adjoining the URM site, which he was acquire in 1853 to be followed by the acquisition of the adjacent tube works in 1857.

Hackwood in his entertaining, but highly inaccurate, account was to claim that the patentee of the four-roller tube machinery, the unnamed “false friend” of Thomas Morton Jones, had earned annual royalties in excess of £20,000 for “many years” before the patent’s expiry in March 1854. There can be little doubt that his 1840 patent must have been very profitable for Richard, notwithstanding the cost of all the ensuing litigation - much of which would have been borne by others, in particular Ledsam and his co-investors.

The financial success to him of the patent would have been one of the reasons why Richard (still probably a co-owner) did not seek its renewal - a renewal would normally only be granted if the applicant had not yet reaped the rewards their ingenuity and/or investment deserved by the patent’s expiry. In 1839 Russell, an assignee rather than the patentee, had, in fact, persuaded the Privy Council that the expense he had incurred (including that of pursuing infringers of Whitehouse's patent) merited his being granted a renewal. Russell had the advantage that he was the sole owner of Whitehouse's patent; the complicated and secretive business dealings over the ownership of Richard’s patent may have also discouraged any attempt at renewal by its other co-owners Bower (on behalf of Ledsam et al) and Selby.

My researches into the tube machinery inventions patented by Richard during the 1840s have revealed that, at least, one of these, his 1840 patent, was far more profitable for him than I had previously believed. Probably, far more so than the dust-pressed process patent. The success of the 1840 patent was to enable Richard to expend an enormous sum (£20,000 according to his son) on the development of a machine which was eventually patented in 1850. The so-called “anti-welded tube” machine, of which “Great things were expected” (*BI&I*), and Richard’s other later tube patents will be described in Part 2 of this Story.

Coda: Hackwood's Disconcerting Ending

I cannot omit from Part 1 of this Story the startling conclusion of *Hackwood’s* version of the background to and outcome of the “great suit” and the history of the Smethwick tube company, the local rival of James Russell’s

Wednesbury firm. Writing in 1889, *Hackwood*, ever loyal to his hometown of Wednesbury, had grudgingly admitted the continued success of the method of lap welding employed by the “roughly constructed” machine with four rollers; a method, which he acknowledged had remained largely unchanged and was, by then, producing millions of tons of tubes each year. He then closed his account as follows:

Let us, for a little while, trace the “friend” of Morton Jones who “did” his neighbour out of machinery and method and afterwards patented, as his own, the process of lap-weld tube-making. He received for his patent an enormous sum of money, perhaps not less than £180,000; but indulging in expensive establishments, and spending money as freely and as easily as he got it, and continually trying experiments – some of them very foolish ones – he soon found that his means failed him, and on the expiration of his patent, he saw no way of recovering his former splendour, so he retired from public life to live on the wreck of what, with care, might aptly be called, a large fortune. But although he retired from the cares of business, trouble seems to have followed him, and so to have affected his mind that, one summer’s morning, standing before the large looking glass in his bedroom, he cut his throat. Thus died the patentee of the lap-welded tube process, but not by any means the inventor of its theory.

Hackwood did not reveal his source for this disturbing allegation. Richard died on 21st May 1854 only two months after the expiration of his 1840 tube patent; the cause of death recorded on the death certificate was “Acute Hepatitis 3 days”. He had certainly not “retired from public life” nor from “the cares of business” (nor was he still in possession of “a large fortune”). *Hackwood* had earlier described the unidentified “false friend” of Morton Jones as his “neighbour” during the period leading up to the grant of the patent, the late 1830s - a description he repeated in the quote above. At this time Jones was living outside Birmingham at Sparkhill House on the Stratford Road in the then hamlet of Sparkhill; Job Cutler was living less than three quarters of a mile away, nearer to Birmingham, in Ladypool Lane in still rural Sparkbrook - just off the Stratford Road. Richard would have been in the employ of Jones from about 1834 until about 1839 living amongst the workshops and other industries located in Bordesley (from 1838 within the Birmingham town borough) - for much of this period living actually at Jones’s Chunk Engine Works on the Coventry Road.

Cutler died, aged 68, in 1867 of “General Debility”. As previously narrated, in 1861 he had described himself as a “Retired Manufacturer” to the census enumerator; he and his wife now just had one servant. His death was

registered by his wife's unmarried niece, who was still living with them in Greet in apparently reduced circumstances and his estate was recorded as less than £800.

Next door in 1861, Cutler's son, the lawyer and Birmingham Alderman John Walford Cutler, was living with his wife and six young children, one nurse and, also, just one servant. The son died on 1st March 1871, aged 48, leaving an again pregnant wife and nine children and a modest estate of about £1,500. The report of his death in *Aris's Birmingham Gazette* dated 4th March referred to his having suffered ill health for some years and having been unable to work or conduct his civic duties for several months before his death (his illness evidently did not prevent him from exercising his conjugal rights however) - his death certificate recorded that he had died of "Jaundice Congestion of Lungs Dropsy". At a meeting of the town council, Birmingham's mayor moved a vote of condolence having described Cutler junior as a man who "had made many friends and not a single enemy".

It seems unlikely that *Hackwood*, a respected schoolmaster as well as local historian, had concocted his allegation of a suicide in order to embellish his story for his readership. However, other parts of his narrative are so full of inaccuracies and conflation that it has the feel of being the story told by the last of many participants in a game of "Chinese whispers" - a tale that has been passed on through many mouths and has become scrambled in the telling, but includes vestiges of truth.

The closing statement in the quote on the previous page is one such example of *Hackwood's* misrepresentations. In his patent Richard had laid no claim to the invention of the already long established "lap-welded tube process" itself, but in 1854 he had publicly declared that his 1840 machinery was still the best available for the manufacture of such tubes. According to *Hackwood*, it remained so at the time he was actually writing "*Wednesbury Workshops*" over thirty years later - a contemporary and therefore, probably, one of his more reliable comments.

(Images of the relevant chapters from *Wednesbury Workshops* can be found on this [Link](#) . The images are reproduced with the permission and by courtesy of the *Black Country Living Museum*.)

Chapter 16

1849: Some Personal Insights



*1817 Sale Particulars plan of High House Farm (orientation S/N):
Image - reproduced with the permission of the
Library of Birmingham ref. MS 20/186 B*

The repercussions for the other involved parties of the culmination in 1849 of the litigious and other events detailed in this first part of The Third Story in Richard's life have already been described - so far as is currently known. Richard's dealings with some of these parties must have continued for some time; in particular, his dealings with Bower and Selby were, necessarily, to continue until the expiry of his 1840 patent in late March 1854 - when his income from that source would have ceased. It is reasonable to assume that Richard's business relationship with these two clever and, in the case of Selby at least, unscrupulous lawyers was not without its difficulties - as evidenced by the previously recounted attempts by Selby to evade payment of royalties due to Richard.

In The Second Story (“The Dust-Pressed Process”) the little that has come to light of Richard’s personal life during the period 1840 to 1848 was related on pages 92 - 98. During the following five years until his death in May 1854 Richard was to remain extraordinarily busy on new projects and initiatives as well as his continuing involvement with existing ones - in particular, his dust-pressing patent and his earlier tube patents.

At the beginning of 1849 Richard’s personal life must have been beset with difficulties. Aged 44 he was now a widower, his first wife, Sarah, having died in February 1848, and he had been left with six surviving children to support aged from 12 to just 2 years old. Although Richard was clearly a wealthy man, much of that wealth had probably emanated from his 1840 tube patent, which was still under threat not only from Irving Van Wart’s scire facias Writ but, also, Russell’s infringement claim. In addition, Cutler’s claim to a monopoly on tubes for steam engine boilers had not yet been declared invalid and the partnership dispute in Scotland had not been resolved.

High House

Richard and his young family were still living at the High House in Kings Norton, a village south of Birmingham and then within Worcestershire. He, also, still retained the long leasehold workshops and house in Watery Lane, Bordesley, where his mother and older sister, Hester, were living in 1841 with Emma Potter, the deceased Sarah’s youngest sister (who was to be described as an “imbecile” since infancy in a later census return). It would not be surprising to learn that his elderly mother and sister were staying at High House after Sarah’s death, not only to assist in the management of the house but also, as a matter of Victorian propriety, to act as chaperones to Sarah’s younger sister Hannah Potter, Richard’s unmarried sister-in-law, who had been living with the family in 1841 and had apparently continued to do so.

High House was a large eighteenth century residence situated on the northern outskirts of Kings Norton bordering on the hamlet of Cotteridge on the Pershore Road and opposite Kings Norton railway station (which was actually opened in 1849 and provided a service between Birmingham and Gloucester). The previous occupant of the house was a Joseph Walton described as a farmer in the 1841 census and clearly a man of some means from the details of him found in later census and other records on *Ancestry*. In 1847 Richard had probably taken a fourteen year lease of the property together with the 60 acres of adjoining farmland referred to in the 1851 census; the family had moved there in late 1847 according to Richard Bissell

Prosser. High House, in the countryside some six miles south of Birmingham, would have been a much healthier environment for Richard's young family and his wife who was again pregnant. However, neither mother nor the baby girl had survived for long following the birth.



*Image - O.S. 1903 maps.nls.uk
High House at top and Kings Norton village at bottom.*

To date, I have discovered no image or photograph of High House - even though it was not demolished until about 1955 according to the recollections of a local inhabitant, whose family had lived in a flat in one of its outbuildings for a short time - [Link](#). The entire 60 acre farm site was redeveloped by Slough Estates into a business park - now known as the Kings Norton Business Centre.

The earliest description of the house found to date (and that closest to the period of the Prosser family's occupation - 1847 to 1861) is the 1869 advert transcribed immediately below:

TO be LET, with immediate possession, HIGH HOUSE, King's Norton, near to the Railway Station. The House comprises three Reception Rooms, seven Chambers, Bath Room, &c.; extensive Domestic Offices. Lodge Entrance, four Acres of Garden and Pleasure Grounds, two Vineries, and Conservatory. Stabling, extensive Farm Yard and Buildings, ornamentally-planted Park of Twenty-six Acres, sloping to the south, with

the option of Twenty to Seventy Acres of Pasture and Arable Land. — For particulars and card to view, apply, Messrs. Bateman and Corser, Architects, 12, Cherry Street, Birmingham. (Birmingham Daily Gazette 7th October 1869)

In 1891 the house failed to meet its reserve at an auction sale after the bidding had reached £7500; the more detailed description of the “residence” in the advert right from *The Birmingham Daily Post* dated 16th May 1891 appears to largely correspond with that in 1869. (Image © The British Library Board all rights reserved)

By the beginning of 1849 Richard’s eldest son, ten year old

Richard Bissell Prosser, may already have been a boarder at “Messrs Nesbit’s Chemical and Agricultural School” at 38, Lower Kennington Lane, Lambeth in London. The Nesbit father and son, the owners of this small school, may have been well known to Richard, if not by personal acquaintance, then by reputation (see “Rescuing Richard” pp. 158/159). It was the son, John Collis Nesbit (1818-1862), who led the party of twelve pupils on “A Tour to the North of England” from 27th August to 18th September 1849. More about the Nesbits and the “Tour”, including a transcript of the diary kept by young Richard Bissell Prosser, can be found on the website prossertheengineer.com .

Whether Richard harboured any hopes of his eldest son having a career in farming seems unlikely; the school’s curriculum was certainly biased towards the sciences and mathematics but also included the classics and English literature according to one newspaper report.

Lot 1.—
THE RESIDENCE,
which stands on a Terrace, at some distance from the road, is approached by a broad Carriage Drive, bordered by numerous Shrubs, Evergreens, and handsome Trees, with a Well-built LODGE at Entrance Gates. It contains Vestibule, Entrance Hall, Dining Room (21ft. 9in. by 16ft.), Drawing Room (20ft. 6in. by 16ft.), Breakfast Room (20ft. 6in. by 16ft.), Housekeeper’s Room (12ft. 6in. by 16ft.), seven well-proportioned Bed Rooms, Dressing Room, Bath Room, w.c., Housemaid’s Closet, Kitchen (15ft. 6in. by 14ft. 6in.), Butler’s Pantry, two Sculleries (one with Baker’s Oven), two Larders, Dairy, Cook’s Pantry, Wine Cellar (with bins) and two Ale Cellars, with Coalhouse and convenient Out-offices. The Premises are in good order, and fitted with all appliances necessary for a House of this character, and there is a plentiful supply of water. The STABLE and COACH-HOUSE are a convenient distance from the House, and include Stalls and Loose Boxes for four horses, Harness and Corn Rooms, double Carriage House, and other accessories. The PLEASURE GROUNDS comprise Grassy Slopes, beautifully studded with fine Forest Trees and handsome Shrubs of mature growth, in the midst of which is an Ornamental Fish Pond; and a Rustic Summer House, environed by secluded Walks, forms a pleasing retreat. The picturesque views obtained from the Residence and Grounds embrace lovely bits of pastoral landscape and woodland scenery, and the ancient Parish Church and quaint village of King’s Norton are a conspicuous attraction in the mid-distance. The KITCHEN GARDEN is walled, and planted with a choice selection of Fruit and other Trees. The Greenhouses consist of a Planthouse and Peach-house, and two Vineries. The FARM BUILDINGS are admirably arranged, and comprise Cowhouse for sixteen cows, Calf-house, Cart-house, Stable, commodious Barn, Wagonshed, Cartshed, Piggeries, and other Buildings, in an enclosed Foldyard.

The “Tour” must have been an exciting but exhausting experience for the boys - in particular, the younger ones. Eleven year old Richard Bissell’s account concludes with the party staying at High House on the last four nights having travelled down by rail from Liverpool on Friday 14th September 1849. On arriving in Birmingham that afternoon they had visited the trade “Exposition” being held in the grounds of Bingley Hall on Broad Street before continuing on their journey to Kings Norton. It would not be surprising if Richard’s exhibits, in particular, had been brought to the attention of the boys; these included one of his 1840 tube machines - however, if so, his son did not comment on these in his, unsurprisingly, short diary note of the long day’s activities.

Richard may even have been present at the Exposition as on the following day he definitely did accompany the school party on an excursion by “omnibus” to Dudley to attend a lecture on geology. Richard Bissell’s diary entry for the day contained the only reference to his father in his journal when he mentioned that “Mr Prosser and Miss Potter” were, also, present in Dudley. “Miss Potter” was presumably his aunt Hannah and her presence supports my supposition that she had continued to reside at High House following her sister’s death.

The boys were allowed a rest on the Sunday apart from having to attend a service at Kings Norton church, but their education continued on the Monday when they returned to Birmingham and visited six manufactories, including the “Smethwick Tube Works”. The latter were undoubtedly the works of The Birmingham Patent Iron Tube Company owned by Selby and Hodges who were manufacturing iron tubes under Richard’s 1840 patent. Richard Bissell’s diary note on this visit included a short description of a red hot tube being welded by a machine with “four wheels with grooves”.

On the next day the “Tour” party returned to London via Birmingham, but not before it had made yet further visits in the town led by the inexhaustible John Collis Nesbit.

Image right from obituary for John Collis Nesbit in Illustrated London News 19th April 1862 © The British Library Board all rights reserved. (Nesbit was the father of Edith Nesbit (1858-1924) - author of The Railway Children)



The Birmingham Exposition

Nesbit and his pupils had visited the Birmingham “Exposition” on the afternoon of the day that the British Association for the Advancement of Science had held its annual dinner in the Town Hall. Over four hundred members and guests attended the dinner and the list of just a few of the distinguished attendees in the *Birmingham Journal’s* report on the following day, 15th September, was impressive. Whether Richard was amongst their number is not known, but the presence of so many important dignitaries (and scientists) in Birmingham (many, if not most, of whom would probably have visited the town’s trade exhibition before the dinner) suggests that he may well have been present in the exhibition building when his son and fellow “Tour” members viewed the exhibits.

The Birmingham “Exposition of Arts and Manufactures” (or “Manufactures and Arts” depending on which report you read) had been especially organised to coincide with the meeting of the Association in the town. It had opened on 3rd September and closed on 15th December 1849 and attracted over one hundred thousand visitors. The press coverage nationally was extensive, but it has to be admitted that Richard’s name as an exhibitor appeared in very few of the reports and these were mainly in the Birmingham press. The exhibits that caught most of the press attention were those shown by then well known Birmingham manufacturers such as Elkington (electro-plated wares), Osler (glass), Winfield (brass goods), Hardman (stained glass), Westley Richards (guns) to name just a few - and amongst the many other smaller local exhibitors there was a firm of sibling brother confectionary makers named Cadbury. Of the exhibitors from elsewhere, the name of Richard’s collaborator in the dust-pressed process, Herbert Minton of Stoke, was prominent - Minton was a member of the exhibition’s organising committee; his extensive display included samples of his “famous tiles”.

Richard, in fact, had four known exhibits in the exhibition, but only one was of his own invention: an example of his 1840 tube machine (the *Birmingham Journal’s* reports of which (including of Richard’s second known encounter with Prince Albert) were described on pp.141/142).

On his visit to the Exposition on 19th November Prince Albert had inspected, at least, one other of Richard’s exhibits according to the *Journal’s* reporter: a working model Richard had made of “Sir Samuel Bentham’s ship timber cutting machine”, which was also “explained by Mr. Prosser”.

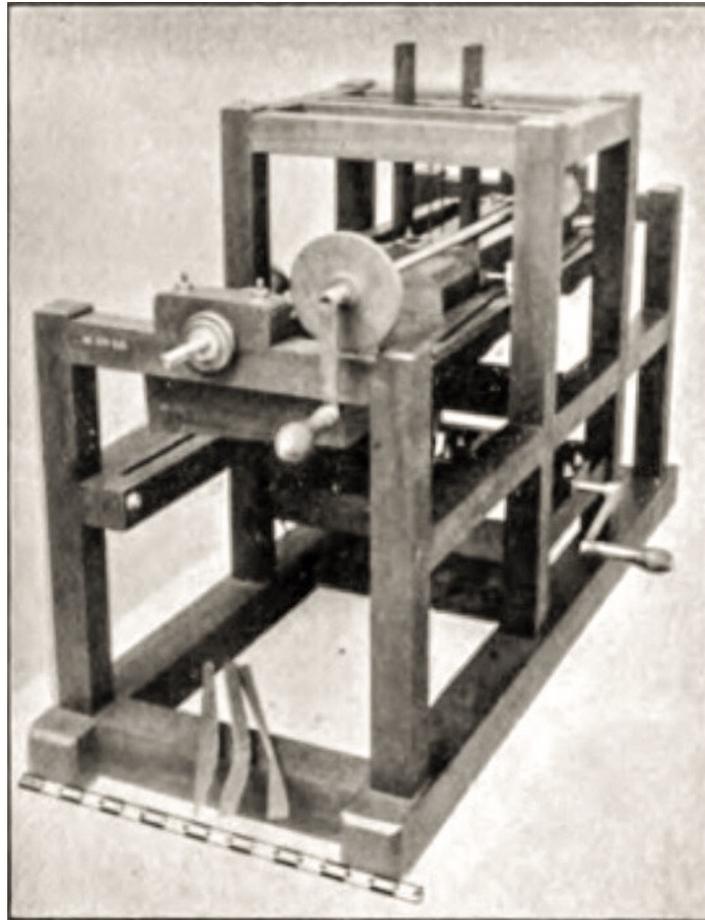
Whether Richard's explanation was in the vein of the *Journal's* subsequent commentary on this exhibit, less than a week later, is not known, but the writer of this later article certainly voiced opinions that Richard held in relation to Sir Samuel's invention, which he considered Sir Marc Isambard Brunel (father of the famed Isambard Kingdom Brunel) had unscrupulously purloined (Sir Marc and Richard had been on opposing sides in 1836 when Russell had sued his own brother - p.15). The article, transcribed below, even reads as though Richard could have been the author, perhaps the reporter had overheard Richard holding forth on his motivation for providing his exhibit, which was connected to his outspoken support of the ongoing campaign for a reform of the country's patent system, the inadequacies of which had deprived many inventors of the reward they deserved for their efforts:

To the same narrow-minded prejudice which actuated the mob who destroyed the Jacquard loom, persecuted its inventor, spread terror and dismay into the bosom of Crompton, who first introduced mill spinning into this country, and thereby laid the foundation of one the chief branches of our export trade— may be traced the source of that opposition which hindered the adoption of the machine for the sawing of ship timber, patented by Sir Samuel Bentham, and contributed by Mr. Richard Prosser, C.E. Upon the patent of Bentham was founded that extensive application of machinery to the working of timber for ship purposes now in operation at Portsmouth, and commonly but erroneously attributed to the inventive powers of Brunel. The machine under consideration is the only one which is automatic in its operation. It is stated upon authority as yet uncontradicted, that the labour of the inventor of this machine saves annually a sum of money equivalent to £16,000. We should like to know how much our Government has rewarded the descendants of this national benefactor; or shall we suppose that like the inventor of railways they remain unnoticed, or, like the relict of Taylor, the co-inventor of steam navigation, does the widow luxuriate on some £50 per annum of a pension—thus does great England honour those who are her glory and her boast—poverty, neglect, a dole grudgingly given, somewhat equivalent to the pension a nobleman leaves his used-up valet is what is usually accorded to those who have been the promoters of the most valuable gifts.*

*([Link](#) to DNB entry for James Taylor - 1753-1825)

It was not just a coincidence that Bentham's patent was one of the three chosen by Richard when in September 1852 he (at his own expense) had printed and published three old patents as examples of the manner in which the specifications of all the pre-1852 patents should be made readily

accessible. The third and latest of these three related patents was that of Sir Marc Brunel.



1. Saw-frame for ships' timbers, p. 284.

Richard's working model of Sir Samuel Bentham's woodworking machine. Image from Google eBook of Part 2 of the Catalogue of the Mechanical Engineering Collection in the Science Division of the Victoria and Albert Museum Second Edition 1908. The Division became The Science Museum. (Traced thanks to a note made by Richard Bissell Prosser in his copy of Richard's 1852 publication which explained that Richard gave the model to Bentham's widow who donated it to the Museum - the model itself was later located as recounted in the next Story - The Emancipation of Inventors .)

Another of Richard's exhibits in 1849 was a selection of examples of pottery, perhaps acquired by Richard in his researches associated with the development of the dust-pressed process:

an interesting series of Earthenware Vessels, contributed by Mr. Prosser, and manufactured of English clay during the 17th and 18th centuries. In many cases these vessels are of great beauty both in shape and colour,

and the whole series would be extremely useful in any Museum of comparative manufactures. (Birmingham Journal: 29th October 1849)

Richard's early pottery collection was amongst the miscellaneous lots sold at the end of the second day of the auction of Richard's library in April 1855. Richard Bissell Prosser's note (in the copy of the auction catalogue that he donated to the Birmingham library in August 1917) stated that the lot was bought for the large sum of £10 10 shillings (about £1000 in 2016) by the Midland Institute in Birmingham, but in 1915 the collection's whereabouts could not be found despite an extensive search at the Institute and in other "likely places"

According to the same *Journal* report, Room F of the "Exposition" contained a miscellaneous selection of exhibits from models of tubular bridges to a patented "elastic bed bottom" and, in addition, "on the walls of the room are freely-executed copies of the frescoes of Raffaele (sic), in the Vatican, contributed by Mr. Prosser, C.E.". These "copies" of Raphael's magnificent frescoes on the pilasters of the Loggia in the Vatican were also sold at the 1855 auction; the lot's description in the catalogue merely refers to "copies" and does not identify the copier, but the press report suggests that they may have been paintings rather than engravings. The frescoes had, of course, been much replicated as evidenced by the abundance of antique watercolours, prints and engravings in public collections and still being privately sold. Whatever their provenance, it seems unlikely that Richard would have exhibited the "copies" if they were of an inferior quality. *Image: watercolour - Perrone, J. & Raphael. (1805)*



[Arabesque decorations on pilaster in the Loggia of the Vatican / Raph. Sanct. pinx ; Justinus Perrone fecit]. Vatican City, 1805. [Rome] [Photograph] Retrieved from the Library of Congress, <https://www.loc.gov/item/2015652303/>.

In 1855 the "Engravings, Illustrated Works, Maps etc" section of the auction comprised forty-eight lots, many of them consisting of multiple items. In all about 1,300 items were included in the 600 or so lots comprising Richard's library, but these did not include the 707 volumes, many of great historic value, that he had loaned to the newly established Patent Office Library in

London in 1853 and which were to be described as “a bibliophile’s dream” by a recent commentator (*John Hewish - Rooms at Chancery Lane: 2000*).

A Gentrified Lifestyle

When Richard found the time in his busy life to acquire such an extensive and valuable library remains a mystery; presumably he had bought much of it during the 1840s and it seems likely that in 1849 most of the volumes were displayed in the large library at High House - some in the “handsome Library Bookcase, 16 feet long, of best English oak, with patent sliding panels on rollers”. This bookcase (together with a “LIBRARY of upwards of 350 Volumes of valuable Works”) was included in an auction in 1861 when Richard’s widow, the former Hannah Potter, and his children finally vacated High House - five other large bookcases had been included in the 1855 library sale.

The 1861 advert was a surprising late discovery in my research and it revealed that the number of valuable books owned by Richard was actually significantly greater than previously known. (Speculation - had Richard acquired the “select library of books”, part of the household furniture and contents of Sparkhill House, that his former employer, the bankrupt American Thomas Morton Jones, had been forced to sell by auction in November 1841: books that had probably been collected over several decades including many on the then wealthy young Bostonian’s tours of Europe and Russia more than twenty years previously?)

When Nesbit and his pupils stayed at High House in September 1849 they would surely have been invited to view the contents of the magnificent library by its, no doubt, proud owner.

The advert of the 1861 auction in Aris’s Birmingham Gazette dated 16th March, also, gives some indication of the style in which the Prosser family must have been living in 1849:

...(by direction of Mrs. Prosser, who is changing her residence)—part of the elegant and modern HOUSEHOLD FURNITURE; including handsome American, French, and iron Bedsteads, splendid Spanish mahogany double-winged LADIES' WARDROBE, with plate glass front, Gentleman's Wardrobe, and Chamber Appendages, excellent DINING ROOM, DRAWING ROOM, and LIBRARY FURNITURE; comprising mahogany and oak pedestal Sideboards, set of three splendid carved oak Library Tables, and six Chairs to match, a handsome Library Bookcase, 16 feet long, of best English oak, with patent sliding panels on

rollers, a set of oak Dining Tables, on richly carved pillars and sides, with three loose leaves, noble Chimney Glass, best British plate, 70in. by 42in., walnut frame, pair of Victoria Lounges, mahogany Sofa, Trafalgar Chairs, PIANO-FORTE, Brussels and Kidderminster Carpets, LIBRARY of upwards of 350 Volumes of valuable Works, bracket Timepiece, crystal Chandelier, Etc; Kent's Patent Mangle, and Kitchen Requisites; valuable FARMING STOCK, IMPLEMENTS, Etc, comprising broad and narrow wheeled Carts, Harvest Cart and Sock Cart, by Stratton, of Bristol; handsome dark grey Phaeton HORSE, seven years old; PHAETON, and Harness, capital PONY PHAETON, Whitechapel DOG CART; Ploughs, Harrows, Scuffle, Samuelson's Patent Turnip Cutter, Shanks's Patent Lawn-mowing Machine, Chaff Engines, Weighing Machines, Etc, Etc, upwards of three tons of Upfill's IRON HURDLES, powerful grey Cart MARE, two useful Shorthorn STIRKS; PLEASURE BOAT with sails and rigging complete, Summer Arbour, Fixtures and Effects...*

**(Stirk: a yearling bullock or heifer)*

In 1861 Hannah was only disposing of part of the contents of High House and, of these, not all were listed in the advert. Notwithstanding that Richard's estate was initially thought to be insolvent after his death in May 1854, his actual wealth was such that it proved possible to realise sufficient of his assets to pay off his debts and still leave his widow and family living in some style with at least three carriages at their disposal in 1861- where they went sailing in the "PLEASURE BOAT" remains unclear: perhaps only on the pond within the grounds of the house.

The advert also makes it clear that High House was still a working farm. In the 1851 census Richard declared that he employed four farmhands. His library included many books on agriculture and animal husbandry; he had sent his eldest son to a boarding school that specialised in the education of farmer's sons. Richard's interest in farming was further evidenced by the report in *The Worcester Journal* dated 19th December 1850 of The Birmingham and Midlands Cattle Show that had been held in Birmingham the previous week. In Class XXI for a "Pen of Five Pigs of one Litter not Exceeding Three Months Old" entries numbers 304 and 305 were awarded a "Highly commended—Exhibitor and Breeder, Mr. Richard Prosser, King's Norton, Worcestershire." (Richard's near neighbour James Baldwin, a paper manufacturer whose son James junior was also on the 1849 "Tour", had greater success: winning two "Firsts" in other classes for his pigs.)

Little else has come to light of Richard's private life in 1849. We know that his eldest son was being educated at Nesbit's school in London; in 1851 his five

other surviving children were each described as “Scholar at home” at High House and they had a live-in governess: this was, probably, the position in 1849.

Newspaper reports in November named Richard (and Minton) as amongst exhibitors at the “Exposition” who had offered to donate an exhibit to the Queen’s Hospital in Birmingham for it to sell; just what Richard donated is unknown (not the Raphael paintings clearly and he subsequently gave the model of Bentham’s machine to its inventor’s widow (per Richard Bissell Prosser); nor, surely, his main exhibit: one of his 1840 tube machines). The hospital had only been built in 1847 on Bath Row and the building still exists - [Link to brief history](#). Image - *Wikipedia*.



The only other newspaper report of a personal nature so far located in 1849, which probably related to Richard, appeared first in *The Worcestershire Chronicle* dated 16th May. The paper had reported that: “Mr. W. Prosser, of King's Norton, civil engineer, has been fined by the Income Tax Commissioners for that district in the mitigated penalty of £10 and costs, for refusing to take upon himself the office of collector of property and income tax for one of the divisions of the parish of King's Norton.” No “W. Prosser” or other likely “Prosser” has come to light on searches on *Ancestry* - “civil engineer” or otherwise. It is hardly surprising that Richard would have preferred to pay this large fine rather than undertake this onerous duty.

In addition to his large family residence at High House, Richard had acquired interests in two other properties by the beginning of or during 1849. *Francis West's* trade directory published that year had one entry for Richard: “Prosser Richard, civil engineer, Baskerville Place; house, 18, Broad Street”. In April 1849 Richard was recorded as the occupier of the house in the Ladywood ward’s rate book (*The Library of Birmingham Archives*); in the April 1848 rate return 18 Broad Street was stated to be unoccupied.

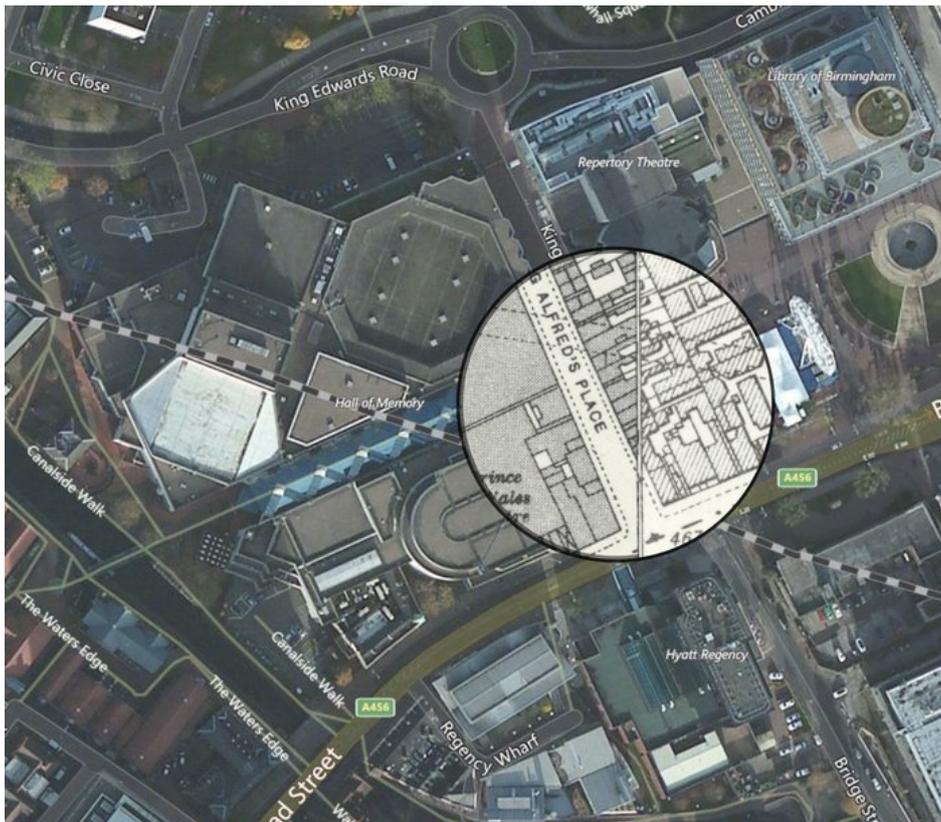
The reference to his place of business, “Baskerville Place”, was to an area rather than a building - an area of mixed use which adjoined or could be said to include the tube works at 42 Cambridge Street (see map p.70).

Richard was first recorded as the occupier of 42 Cambridge Street in the rate return assessed in April 1852. Prior to that: Bower and Selby had been named as the occupiers in the annual rate books for 1844, 1845 and (even though the business had by then been transferred to Selby and Hodges) in 1846; in 1847 and 1848 the occupant was unnamed; Hodges name alone was entered in 1849; and in 1850 and 1851 the occupier was stated to be "George Stevens for Patent Iron Tube Works".

Richard, therefore, does not appear to have formally occupied the Cambridge Street Tube Works for his own business until some date after the May 1851 rate return. In 1849 he still retained his long-leasehold Watery Lane house and workshops and these were not put up for sale until March 1851. Completion of the acquisition of the Tube Works by Richard may have been delayed as a consequence of the disagreements between Selby and Hodges, which resulted in the dissolution of that partnership in March 1850. The unscrambling of those business arrangements had still not been finally resolved in 1855 when Selby was made bankrupt. I believe Richard had probably been allowed to make use of Selby and Hodges' manufactory, either for his own purposes or under some joint business arrangement, after the Birmingham Patent Iron Tube Company had vacated it at the end of 1848. Eventually in late 1850/early 1851 he may have been able to conclude the purchase of the lease granted by Crowther in 1842/1843 (to, presumably, Bower and Selby) or had taken a sub-lease; he was probably operating his business from both the Watery Lane and Cambridge Street locations for some of the intervening period.

Richard had never advertised his presence at Watery Lane; he had kept the location of this inventive base a secret and had given his business address as offices in Cherry Street from about 1838 (he was last recorded there in a directory published in 1847). He was not quite so secretive as to the location of his new workshops and offices, but the actual address at 42 Cambridge Street does not appear to have been publicised during his lifetime.

The house at 18, Broad Street was located close to the tube works, the property's entry in the 1851 census suggested that it was the penultimate house before King Alfred's Place. Richard no doubt stayed there some nights when working in Birmingham. At some point his older sister, Hester, and now very elderly mother moved from the Watery Lane house; in 1851 they were each recorded as an "Annuitant" living at 18, Broad Street in the census; Emma Potter was still living with them, but this in-law of supposedly limited intelligence was now described as their cook and, in addition, they had another female servant.



Images - O.S.1892 maps.nls.uk with Bing Hybrid photo of current buildings in background. The property's entry in the 1851 census suggests that No.18 Broad Street was the penultimate building before King Alfred's Place. It was situated opposite Bridge Street and the site now forms the part of Centenary Square immediately adjoining the Birmingham Symphony Hall. The site of the Cambridge Street Tube Works forms part of the site of the Library of

Birmingham and the new concourse and buildings linking the Library to the Repertory Theatre (the Tube Works were in no. 42 Cambridge Street - part of the "Brass & Copper Works" identified on the 1892 map (the word "Brass" overlies the Tube Works)).

At the close of 1849 Richard may have felt less besieged by difficulties than at the commencement of the year. Cutler's patent was no longer a threat; the Attorney General had not progressed with Van Wart's attempt to challenge Richard's 1840 patent (just when this prosecution lapsed or was withdrawn is not known); the negotiations for the settlement of the Scottish partnership dispute were probably well advanced; James Russell had died and Jesson his executor had yet to revive the "great suit".

Richard also had in prospect the grant of the patent for the exciting new "anti-welded" tube machinery invention - the development of which must have occupied much of his time and attention throughout 1849 and probably for some years previously (and in which he had invested an enormous amount of his wealth). This patent was eventually granted on 11th April 1850 and will be the subject of Part Two of The Third Story, together with some more insights into Richard's personal life during 1850, including his "illegal" second marriage.

Post Script

Further evidence of the claimed success of Richard's 1840 patent unexpectedly came to light immediately prior to publication. The image below is an extract from the specification for the U.S. mail steam ships the "Baltic" and "Arctic" which was published in the *Civil Engineer and Architect's Journal 1853 vol. 16 p.203*. The "Baltic" has already featured in this narrative in Chapter 13 on p.111, but at the time of writing that Chapter the provenance of its boiler tubes was then unknown.

BOILERS.

Four tubular boilers: of iron, to be made from plates and rivets of the best quality, and to be placed on board and secured; length of boiler 22 feet, 14 ft. 3 in. high; two of them to be 14 feet wide and two 15 feet, and to have steam-chimneys 4 feet high.

Tubes: to be Prosser's lapwelded, two inches diameter outside, $\frac{1}{16}$ -inch thick; the whole number of tubes in the four boilers to be 5624; of that number 2812 to be 5 feet long, and 2812 to be $5\frac{1}{2}$ feet long; the ends of tubes to be secured in tube-plates by Prosser's tube-expander.

Those readers looking for an index will not find one - for which I make no apology. This electronic format should be searchable on most devices; an essential aid in my own researches.