Chapter Fifteen

Toolmakers

Sons of John(3)

During their brief marriage, young Rebecca, and John(3) had a son John(4). Rebecca died and John married Rebecca's step-sister Sarah Binney. Their seven children were, Elizabeth, Ann, and Lydia, and four more sons, Philip, Thomas, William, and Samuel.

John(4) married Mary Wilkinson and John (5), their eldest became a farmer.

Philip does not show in many of the records of the Sheffield metal industries. We know his birth date. He sold a property in Crimicar Lane, Upper Hallam Sheffield, in 1852 and in that deed, he was another sawmaker.

Thomas, William and Samuel, fortunately did leave some ripples almost a splash! Of the three, Samuel left least on record.

Thomas's Saw Business

John(3) and Sarah baptised their eldest, Thomas on 19th September 1779. Seventeen years later his father died on 19th July 1796, preceding his mother Sarah by two years. As the oldest of Sarah's children, Tom doubtless got the smithing business left by his father John(3). The farm almost certainly went to John(4). This farm, and the share in the property left to John and Sarah by her father gave the sons their start in life. There is a gap in the information from the time of Sarah's death in 1798 until the first record of Thomas and William in 1812, when they had succeeded to owning a company. They both married by this time but little else is known. Thomas married Elizabeth Hinchcliffe from a local family, on 25th December 1801 and William married Sarah Osborne on 18th April 1803. Osburns had been around in the Sheffield region for a long time. The spelling difference may not be significant. Both brothers married aged twenty-two but nine years were to elapse after William's marriage before their business took off.

During these intervening years, they learned how to make saws, and how to make things from thin metal strip.

Whiteley Wood Road, near the end of Trap Lane, where they lived, contains a small chapel. It was built in 1789, and is a memorial to Thomas Boulsover, who, in 1743, invented Old Sheffield (Silver) Plate. Before the invention of electro-plating, Old Sheffield Plate was a remarkable success story. Thomas Boulsover made money. Although he left others to fully exploit his invention, he became rich by making silver buttons, which were much in fashion. Old Sheffield Plate buttons could not be distinguished from solid silver ones, so with their lower price, they proved a great hit. With the money he made, Thomas Boulsover bought a large house called Whiteley Wood Hall. It is very close to Trap Lane and just opposite where it joins Whiteley Wood Road. At the northern end of Whiteley Wood Road, about six hundred yards from Trap Lane, was Thomas Boulsover's rolling mill, now called Wire Mill Dam. This rolling mill produced thin steel plate suitable for sawplate and for making other items fashioned from strip. Boulsover had workmen making saws, for whom he built a small hamlet at Whiteley Wood.

Although their father John had a smithy for scythes, Thomas and William Tyzack must have learned how to make saws and bought their sawplate from Boulsover's mill, within easy walking distance of their home.

Thomas Tyzack founded a company, shown in a trade directory in 1817[1] as Thomas and William Tyzack sawmakers of South Street, (now the Moor). Five years before that Ecclesall Township Rate Books[2] show Thomas, at thirty-three years old, occupying substantial property in Sharrow. There, from February 1812, he had a house and land. By August 1812 he occupied a shop in Moor East [3]. He was making saws by then. John(3), his father, made only scythes. At this time Thomas was the foremost brother in the joint business. His name always appeared first in the Trade directories, although alphabetical precedence alone could also have caused this. But Thomas was the name in the Rate book for the premises they both used in South Street.

Soon they had diversified into other products. As well as saws now they made patent scythes, busks and calico webs. All these items were made from thin strips of steel. Busks were used in ladies corsets. They were made from thin strips of steel, strong, light and resilient, and much in fashion. Calico webs were thin strips of steel shaped into a narrow blade and used for cleaning calico. The patent scythe was the first type of scythe they claimed to make. Scythes were of two types, the original or crown scythe and the patent scythe. A crown scythes is a solid forged tool, with its hard steel plate cutting edge sandwiched between two pieces of softer iron, the whole being forged or welded together. It is more suitable for the rougher kinds of work. Patent scythes are used for cultivated ground and cleaner crops. They use a wrought iron

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1 Sheffield Directory, 1817, page 63

2 Ecclesall Township Rate Books, February 1812, page 83, Sheffield Central Library

3 Ecclesall Township Rate Books, August 1812, page 49, Sheffield Central Library

back riveted to a thin blade of steel. In later years the total output of patent scythes was about three times the output of crown scythes.

A directory of 1830 showed Thomas, by now aged fifty-one, as a saw, scythe and steel busk maker in Sharrow Lane. We know he had a house and land in Sharrow and may have been also working out of those premises, or on the Porter, a river close by.

By the year 1845, Thomas had returned to Walk Mill, on the Sheaf, which had been leased to his grandfather and inherited by Thomas Slack and Grandmother Tyzack. Thomas became the new tenant of Walk Mill, although not in the original house. Indeed he was still there in 1849 when the dam at Whirlow burst. The stream down Ryecroft Glen flooded Thomas Tyzack's house but it survived to exist today, on Abbeydale Road where the stream joins with the River Sheaf.

Tom's sons worked with their father and were noted as the "& Sons" in the company name, "Thomas Tyzack & Sons". Philip, Charles, George, Benjamin and Thomas(2) were the boys of a rather large family. By 1854 the firm was making crucible steel and by 1863 it also advertised files. Grinding ceased at Walk Mill in 1864 when Thomas(1) the elder died aged 85 on 24th February 1864. It was a bad time for the family. Within the year son Philip died on 7th December 1864 and son Thomas(2) on the 15th July 1865. But then Sheffield was not a healthy place to live. A Medical Officer of Health was appointed in 1872 and his first report talked of open drains, polluted rivers, endemic fevers and lively cholera bacillus. There was a fearful mortality among middle-aged cutlers.

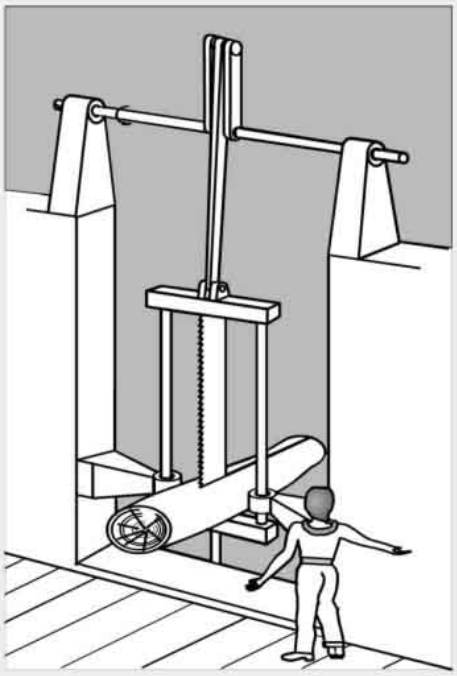
Thomas(2) the son of Thomas(1) the elder lived in the family house in Sharrow Lane. The Lane is about four miles from Walk Mill, today more than easy walking distance. Sharrow Lane was not a typical working locality. It is only about a half mile away from where uncle Samuel lived in later life, in Edmund Street. One reference[4], says that they started the companies in Porter Street. That was close to the Sharrow address and had the water power of the Porter available. Thomas(2) the son died intestate. In a pedigree, by Jackson, which gave his address, his brothers, namely George and Benjamin are both called saw manufacturers. Perhaps these were the two most active in the father's business. The pedigree scribe annotated brother James as non compos mentis, poor fellow. Hopefully in modern times he would not have been written off with such a defeatist epithet. As usual in those days, Thomas(1) the elder's whole family had been quite large. There were ten children born.

Thomas Tyzack & Sons made mostly hand saws in the early days. Almost all smithies made scythes and Thomas's would have been no exception. Later he would have made various types of machine saw blades. In those days men using pit saws cut trees into timber. One man would stand on top of the log and one would be down in the pit below. The saw was nearly six feet long with a handle at each end and of course large teeth. Pit-saws were in common use. Their teeth were fashioned by grinding or later by

[4] The Implement and Machinery Review. 1st December, 1887.

punching under a fly-press followed by filing to sharpen. Grinding the surface to ensure perfect flatness finished the handsaws and later the circular saws and removed the scale formed after hardening and tempering. Ten saw manufacturers were recorded in the Gales and Martin's Directory of Sheffield of as early as 1787.

There were a few mills on the rivers sawing timber by waterpower. At that time circular saws did the actual wood cutting, but sometimes reciprocating saws, operated like a pit hand saw found favour. The picture_ shows one operating about 1820. In these reciprocating saws the blades were similar to those of handsaws. A square frame about six feet high held the blade taught and vertical. The sides of the frame consisted of two greased rods sliding up and down in bearings. These bearings were fixed and acted as guides. An eccentric, above the frame, caused the saw frame to move up and down when connected to the wheel shaft. The saw teeth were about one and one half inch long and about an inch deep and the saw about five or six inches deep. It made one stroke every one second or so. It is not clear how the log was fed into the blade.



Reciprocating Water driven saw

There was a sawmill in 1830, near where the present Sheffield railway station is today, called then Pond Tilt Mill. Then the power was 6.5 hp and this drove a tilt hammer and a sawmill. By 1850 "Pond Street Sawmills" as it became known, was steam powered. In 1876 German Wilson of Malin Bridge Wheel, which was by the confluence with the Rivelin, advertised that he sawed timber by water power. Two references though are not a great number out of 137 mills. It is difficult to imagine the firm of Thomas Tyzack sawmakers getting very fat on power saws for local sawmills. We can only conclude that the bulk of the early business was in handsaws and small saws of the type used in the furniture industry. To remain viable much of the output must have been carried around the country, in spite of the poor local roads, and perhaps even overseas.

Circular saw blades were a local speciality. The circular saw was patented by a sail-maker from Southampton in 1777 called Samuel Miller. He patented *"an entirely new*

machine for more expeditiously sawing all kinds of wood, stone and ivory; and the saws are made of a circular figure". A horizontal windmill drove the saw and an automatic log carriage of sorts was provided. There is nothing to show that Miller ever constructed the machine. Another Southampton man, Walter Taylor [5], gets the claim to be the first to master the inherent difficulties of making the circular saw into a workshop tool.

Walter Taylor was a ships carpenter and won contracts from the Royal Navy for ships blocks. He tried various forms of mechanisation to meet the growing demand but in 1781 he used circular saws with a watermill on the Itchen, (Wood Mill). Later Sir Samuel Bentham, who had visited Taylor's mill, made improvements. His primary contribution was to segmental circular saws.

Following these developments the father of the renowned Isambard Brunel, Sir Marc Isambard Brunel, designed machinery for making ships blocks. By 1808 he was turning out 130,000 blocks per year. The machinery employed cross cutting machines both circular and reciprocating. It enabled ten unskilled men to do the work of one hundred and ten skilled artisans. Hand sawyers opposed all these improvements vigorously. But by 1845, Spear & Jackson's catalogues for example, were offering engine turned cast steel circular saws in Sheffield from 2 inches to 48 inches diameter.

Elsewhere other inventors had patented an endless saw. In France L. C. A. Albert took out the patent for his "endless saw" (scie sans fin) in 1779. However the first patent in UK for a bandsaw was No. 3105. William Newberry, in 1808, specified *a machine for sawing wood, splitting or paring skins.... , with an endless serrated steel ribbon, stretched around pulleys.* He envisaged a bandsaw ribbon with flanged pulleys to carry it; support guides to maintain the line of cut; wedge devices for tension; a canting table for sawing material; roller-feed for straight pieces; and a radial arm for cutting wheel felloes. In 1855 General Tulloch introduced one to the Woolwich Arsenal for cutting metal.

So most of the pressure for the introduction of machine tool saws seemed to come from the stimulus of munitions, particularly ships. The family aimed more at the agricultural and furniture markets.

Samuel the Fender & Sawmaker

Now we come to the youngest son of John and Sarah, Samuel. Samuel was born in Ecclesall Bierlow near Sheffield. He lived around Ecclesall all his life. At the death of his wife Harriet, both Samuel and Harriet were at Greystones. They had probably lived there since they were married. Greystones is within one half mile from Whiteley Wood where his brother William worked, and about the same distance from his father's farm in Trap Lane. It is also close to Wire Mill Dam where Thomas Boulsover had his works. That works advertised fenders in its catalogue. Samuel's grandfather, Thomas

[5] Dickinson, Dr H. W., "The Taylors of Southampton" Edgar Allen News Vol. 35

Binney, owned land at Greystones,[6] plot 204 on the enclosure map. Thomas left a cottage to Samuel's uncle William Binney, with garden, croft and land at Graystones. At the time William could not occupy it because Amos Ridge lived in it.
Samuel married Harriet when he was eighteen so it seems quite likely it was perhaps a local relationship.

We can assume that Samuel worked in Ecclesall, probably within walking distance of where he lived. At all the christenings of his many children, he called himself a fendermaker and by 1841 at the census he was still a fendermaker. By the time of the 1851 census, Samuel and three of his sons, Henry, Joseph, and Samuel junior had all become sawmakers like most of the others. So Samuel senior concentrated on sawmaking sometime after his 51st birthday. After 1838 he moved from Greystones to No. 103 Edmund Street. All the brothers seem to have moved in the same direction. They all moved eastwards. Clearly business was easier to transact near the centre of Sheffield.

A Stove Grate Manufactory was built in 1806 at Green Lane works, which were to become the site of William Alexander's firm in later years. It was leased to John Shaw and Jobson for the purpose in 1805. This was under a mile away from where Samuel lived in later life. But many firms made fenders in the area until around 1870 when the slow combustion grate was introduced.

From the middle of the 1800's there was a rapid development of the domestic grate. It was aimed of course at increasing the appalling inefficiency of the older hearths and at reducing the amount of smoke escaping into the room. In earlier designs the heat output was low until the fire really burnt through to the top of the coal. Throughout the 1700's and the 1800's a smoky chimney was a common cause for complaint against domestic fireplaces. The problem was more acute if coal was burnt. Then the atmosphere of a room became unbearable if the thick black sulphurous smoke was not drawn properly up the chimney. The fault lay largely with the design of the chimney but attempts to cure the problem influenced the design of hearths. A tiled surround to better reflect the heat replaced the earlier large amount of decorative iron work. To complement the surround, hearths too were increasingly tiled and this resulted in a decline in the use of iron and brass fenders.

So Samuel changed his trade with the decline in the use of fenders. By 1851 he was a sawmaker but so were his sons. Most likely it was a strategic family decision, aimed at supplying saws to Henry, who by then had moved to London. Also by 1859 his son Samuel was selling saws in No. 94 Pearl Street.

During this period, (in spite of Napoleon's embargo, imposed in 1806), there was a vast increase in English exports arising from the benefits of the inventions of Watt's steam engine, Arkwright's weaving machinery, and the growth of the British Colonies. The increased population caused a growth in demand that pushed up farming prices

[6] Ecclesall Enclosure Award Schedule, plot 204, 1788.

and profits. Property owners' wealth increased enormously but wheat rose to famine prices and the distribution of the new wealth was patchy. The population in the fifteen years that precede Waterloo, showed a rapid increase from ten to thirteen million. This increase also kept down wages. The growing use of machinery and its concentration in factories, broke the many small traders working from home. It pauperised many families and as a result in the winter of 1811-1812 the change from handicrafts to machinery caused the Luddite machine breaking riots.

Severe justice sentenced to death those found guilty of breaking machines. Nineteen men were hanged in public in January 1813 outside York Castle. One lad of sixteen years was hanged for being a lookout for the breakers. Ecclesall has a place called Gibbet Hill.

War ended after the defeat of Napoleon at the battle of Waterloo in 1815. A National debt resulted from the war and brought these problems to a head. Britain incurred the largest debt of any nation thus far. The sudden cessation of demand caused great distress among gunmakers, braziers, and workers in steel and iron. Half a million men once soldiers, found themselves without employment. Farmers found a sudden depression in their prices but labour saving machinery was still reducing the men required.

The year 1816 produced a bad harvest and labourers resorted to burning ricks and smashing machinery. A Sheffield Union Society was founded in October 1816. On 3rd December 1816 a meeting in Sheffield market started a march led by ringleader John Blackwell carrying a blood-stained loaf on a pole[7]. The local magistrates called out the military and read the Riot Act.

In 1817 the Derbyshire Insurrection, an outbreak by framework knitters, saw three men hanged and eleven transported for life. Problems such as these, with general agitation, continued. There was a brief respite after the good harvest of 1818 but in general the sharp depression lasted until 1821.

The period also saw the introduction of the notorious Corn Laws; wheat had been 126s 6d per quarter in 1812, by 1815 it had fallen to 65s 7d. The government passed the Corn Law of 1815; no foreign corn could be imported to Britain until the price of home-grown corn reached 80s a quarter. This act remained on the statute until, after a terrible battle in Parliament, Peel repealed it in 1846.

During the 1830's to the 1850's the main pattern of the railway system of Great Britain came into existence. The railway first came to Sheffield in the form of a line to Rotherham, opened in 1838. Together with the line from Masbrough to London this completed a rail-link to London. Masbrough is within a mile of Rotherham’s centre and Masbrough station opened in 1840. In the Sheffield region there were the plans in 1845, for the Sheffield and Bakewell Railway. The main Midland Railway came along

[7] Economic & Social History of South Yorkshire, Pollard & Holmes.

a bit later. Planning of that route, in the 1860's, put it largely along the Sheaf Valley and it was opened in 1870. This line encroached on most of the dams and affected many mills and metalworking businesses still using the mills. By this time however steam power was coming into vogue and made it possible for companies to continue with their businesses elsewhere. However, the Tyzacks continued to figure in many mill transactions after that date. Perhaps that was due to conservatism or perhaps due to their existing investment in the sites.

Before we leave Samuel we must refer to some women in his life. He married Harriot, (various spellings), probably around 1808, but where or exactly when or even what her surname was before marriage has not been found. He was eighteen and she twenty.

They had ten children of whom six were girls; the first child, Henry was christened on 15th January 1809 and the last Sarah 11th September 1831, was born 22 years later. Harriot, his wife, was born in 1788 and died aged 50 in 1838. The certificate attributes her death to the decline of age. It is somewhat unusual that Samuel does not appear to have remarried, although he was only 48 when Harriot died. There is an unaccounted for Jane Tyzack who appears as a Grocer at No. 94 Pearl Street, Ecclesall in the 1862 White's Directory. She was not son Samuel(2)'s wife. Samuel(2) married a Priscilla but lived as a Grocer at the same address.

Samuel(1) died in 1865, after his son Samuel(2).

I found fallibility of the 1851 census. Samuel(1) was present at No. 103 Edmund Street, Ecclesall as a widower and head of the household. According to the census return, the other seven persons present were all born as Tyzacks. Three of them had wives none of whom was present. One year old Frederick Tyzack was included and entitled to be there with his mother, the unmarried Sarah Tyzack. It is not credible that not one of the three wives of the married sons was with her husband on census night, particularly when son Henry, who dwelt in Shoreditch, London at the time, also turned up present in the Shoreditch census. Thus he at least was recorded twice. One can only conclude that the census return in Sheffield had been filled out incorrectly.

Henry the eldest son, baptised in 1809, married Sarah Story in 1830. That was when he was twenty-one years old. Sarah came from Rotherham and that is where they married. This was just before the introduction of the Civil Registration in 1837 and so it is not recorded what Henry did for a living then. Sarah had eight children. Samuel was born in 1833, Mary in 1836, Louisa in 1838, Elizabeth in 1841, Maria in 1844, Frederick in 1845, and Ebenezer in 1846. The list adds up to only seven because there was probably a William in 1830, but the only record of him is a scrap of faded pedigree drawn many years ago by a descendent of Frederick. It showed William born about 1829 and shot in USA.

Soon after 1838, Henry made the biggest decision of his life. He went to London to seek his fortune. He was an adventurous man. His great-great-grandfather, Benjamin left Hagley and went to Norton near Sheffield in 1719. Ever since then, for the last 120

years, the Tyzacks had lived and died in Ecclesall or close by. What could have been the draw in London to tempt him into such unknown territory? Find out later!

There is no record of any relative in London and although there were several other Tyzacks there, none was closely related. London at the time was squalid, dirty and full of disease. Communications with home were tenuous. His move was a virtual emigration.