

## **An account of John Lombe's silk-mill at Derby, 1791**

(William Hutton, *The History of Derby* (1791), pp. 191-194, 196-200, 202-209; in D. B. Horn and Mary Ransome, eds., *English Historical Documents, Vol. X, 1714-1783*, N.Y: Oxford University Press, 1969, pp. 458-61. William Hunt was an apprentice in Lombe's mill. The mill was built in about 1717 after John Lombe's visit to an Italian silk mill and was the earliest silk throwing factory and the earliest textile production building that could be described as a factory in England. The building, much altered, still exists in Derby.).

All the writers, from *Gregory to Gough*, who have travelled through Derby, for half a century, give us a description of the *silkmill*. But it is doubtful, whether an adequate idea can be formed of that wonderful machine, when described by an Author who does not understand it himself. Some have earnestly wished to see this singular piece of mechanism; but I have sincerely wished I never had. I have lamented, that while almost every man in the world was 'born *out* of Derby, it should be my unhappy lot to be born in. To this curious, but wretched place, I was bound apprentice for seven years, which I always considered the most unhappy of my life; these I faithfully served; which was equaled by no other, in my time, except a worthy brother, then my companion in distress, and now my intelligent friend. It is therefore no wonder if I am perfectly acquainted with every movement in that superb work. My parents, through mere necessity, put me to labour before Nature had made me able. Low as the engines were, I was too short to reach them. To remedy this defect, a pair of high pattens were fabricated, and lashed to my feet, which I dragged after me till time lengthened my stature. The confinement and the labour were no burden; but the severity was intolerable, the marks of which I yet carry, and shall carry to the grave.... It was again my unhappy lot, at the close of this servitude, to be bound apprentice to a stocking-maker, for a second seven years; so that, like Jacob, I served two apprenticeships; but was not, like him, rewarded either with wealth or beauty. The time spent at the silk-mill is not included in the last fifty years. The erection of other mills has given a choice of place; and humanity has introduced a kinder treatment....

John Lombe, a man of spirit, a good draughtsman, and an excellent mechanic, travelled into Italy, with a view of penetrating the secret. [of silk throwing] He stayed some time; but as he knew admission was prohibited, he adopted the usual mode of accomplishing his end by corrupting the servants. This gained him frequent access in private. Whatever part he became master of, he committed to paper before he slept. By perseverance and bribery he acquired the whole, when the plot was discovered, and he fled, with the utmost precipitation, on board a ship, at the hazard of his life, taking with him two natives, who have favoured his interest and his life, at the risk of their own. But though he judged the danger over, he was yet to become a sacrifice.

Arriving safe with his acquired knowledge, he fixed upon Derby as a proper place for his purpose, because the town was likely to supply him with a sufficient number of hands, and the able stream with a constant supply of water. This happened about the year 1717.

He agreed with the Corporation for an island or swamp in the river, five hundred feet long, and fifty-two wide, at eight pounds *per ann.* where he erected the present works, containing eight apartments, and 468 windows, at the expence of about ££30,000. This island, with another, called the Bye-flat, were part of the continent, but separated, ages past, by cutting two sluices to work four sets of mills. The ground continuing flat, farther West, would yet allow one or two sets more.

This ponderous building stands upon huge piles of oak, from sixteen to twenty feet long, driven close to each other with an engine made for that purpose. Over this solid mass of timber is laid a foundation of stone.

During three or four years, while this grand affair was constructing, he hired various rooms in Derby, and particularly the Town-hall, where he erected temporary engines, turned by hand. And although he reduced the prices so far below those of the Italians, as to enable him to monopolize the trade, yet the overflowings of profit were so very considerable, as to enable him to pay for the grand machine as the work went on.

It appears that the building was completed, and in full employ, several years before the leases were executed, which was not done till 1724, and extended to seventy-nine years.

Being established to his wish, he procured in 1718 a patent from the Crown, to secure the profits during fourteen years. But, alas! he had not pursued this lucrative commerce more than three or four years, when the Italians, who felt the effects of the theft from their want of trade, determined *his* destruction, and hoped that of his works would follow.

An artful woman came over in the character of a friend, associated with the parties, and assisted in the business. She attempted to gain both the Italians, and succeeded with one. By these two, slow poison was supposed, and perhaps justly, to have been administered to John Lombe, who lingered two or three years in agonies, and departed. The Italian ran away to his own country; and Madam was interrogated, but nothing transpired except what strengthened suspicion...

John dying a bachelor, his property fell into the hands of his brother William, who enjoyed, or rather possessed the works but a short time; for, being of a melancholy turn, he shot himself. This superb erection, therefore, became the property of his cousin, Sir Thomas Lombe. I believe this happened about the year 1726.

If the Italians destroyed the man, they miscarried in their design upon the works; for they became more successful, and continued to employ about 300 People.

In 1732 the patent expired; when Sir Thomas, a true picture of human nature, petitioned Parliament- for a renewal, and pleaded, "That the works had taken so long a time in perfecting, and the people in teaching, that there had been none to acquire emolument from the patent." But he forgot to inform them that he had already accumulated more than £80,000: thus veracity flies before profit. It is, however, no wonder disguise should appear at St. Stephen's, where the heart and the tongue so often disagree.

Government, willing to spread so useful an invention, gave Sir Thomas £14,000 to suffer the trade to be open, and a model of the works taken; which was for many years deposited in the Tower, and considered the greatest curiosity there.

A mill was immediately erected at Stockport, in Cheshire, which drew many of the hands from that of Derby, and, among Others, that of Nathaniel Gartrevelli, the remaining Italian, who, sixteen years before, came over with John Lombe: him I personally knew; he ended his days in poverty; the frequent reward of the man who ventures his life in a base cause, or betrays his country.-Since then eleven mills have been erected in Derby, and the silk is now the staple trade of the place: more than a thousand hands are said to be employed in the various works, but they are all upon a diminutive scale compared to this.

The describers of this elaborate work tell us mechanically, as followers of the first author, that "it contains 26,000 wheels, 97,000 movements, which work 71,000 yards of silk-thread, while the water-wheel, which is eighteen feet high, makes one revolution, and that three are performed in a minute. That one fire-engine conveys warmth to every individual part of the machine; and that one regulator governs the whole."- By these wholesale numbers, the Reader is left about as wise as before. The design of writing is to communicate the same intelligence to the understanding, as might be conveyed through the eye or the ear, upon the spot. Had the Author made the number of his *wheels* 10,000 less, he would have been nearer the mark; or if he had paid an unremitting attendance for seven years, he might have found their number 13,384. Perhaps his, *movements*, an indeterminate word, will also bear a large discount; but as I am neither in the humour to calculate nor contradict, I shall leave him in possession of his own authority. What number of *yards* are wound, every circuit of the wheel, no man can tell; nor is the number open to calculation. The wheel revolves about *twice* in a minutes Nor is the superb fire-engine, which blazes in description, any more than a common stove, which warmed *one corner* of that large building, and left the others to starve: but the defect is now supplied by fire-places. The *regulator* is a peg in the master-wheel, which strikes a small bell every revolution: near it is a pendulum, which vibrates about fifty times in a minute. Twenty-four returns of the pendulum is the medium velocity of the wheel.-Although there are a vast number of parts, any one of which may be stopped, and separated at pleasure; yet the whole, extending through five large rooms, is *one* regular machine, which moves and stops together. Every minute part is attended with two wheels, one of which turns the other. If you separate the two, the last stops of course, while the former moves gently on.

The raw silk is brought in hanks, or skaines, called slips, and would take five or six days in winding off, though kept moving ten hours a day. Some are the produce of Persia; others of Canton, coarse, and in small slips; some are from Piedmont, these are all of a yellowish colour; and some are from China, perfectly white. The work passes through three different engines; one to wind; the second -to twist; and the third to double. Though the thread is fine, it is an accumulation of many. The workman's care is chiefly to unite, by a knot, a thread that breaks; to take out the burs and uneven parts, some of which are little bags, fabricated by the silk-worm, as a grave for itself, when Nature inspires the idea of leaving the world: the bags are neatly closed

up, and hung to a thread, as the last efforts towards its own funeral. They generally moulder to a darkish dust; sometimes are totally gone: but I have frequently taken them out alive. The threads are continually breaking; and to tye them 'is principally the business of children whose fingers are nimble. The machine continually turns a round bobbin, or small block of wood, which draws the thread from the slip, while expanded upon a swift suspended upon a centre. The moment the thread breaks, the swift stops. One person commands from twenty to sixty threads. If many cease, at the same time, to turn, it amounts to a fault, and is succeeded by punishment. From the fineness of the materials, the ravelled state of the slips and bobbins, and the imprudence of children, much waste is made, which is another motive of correction; and when correction is often inflicted, it steels the breast of the inflictor.