

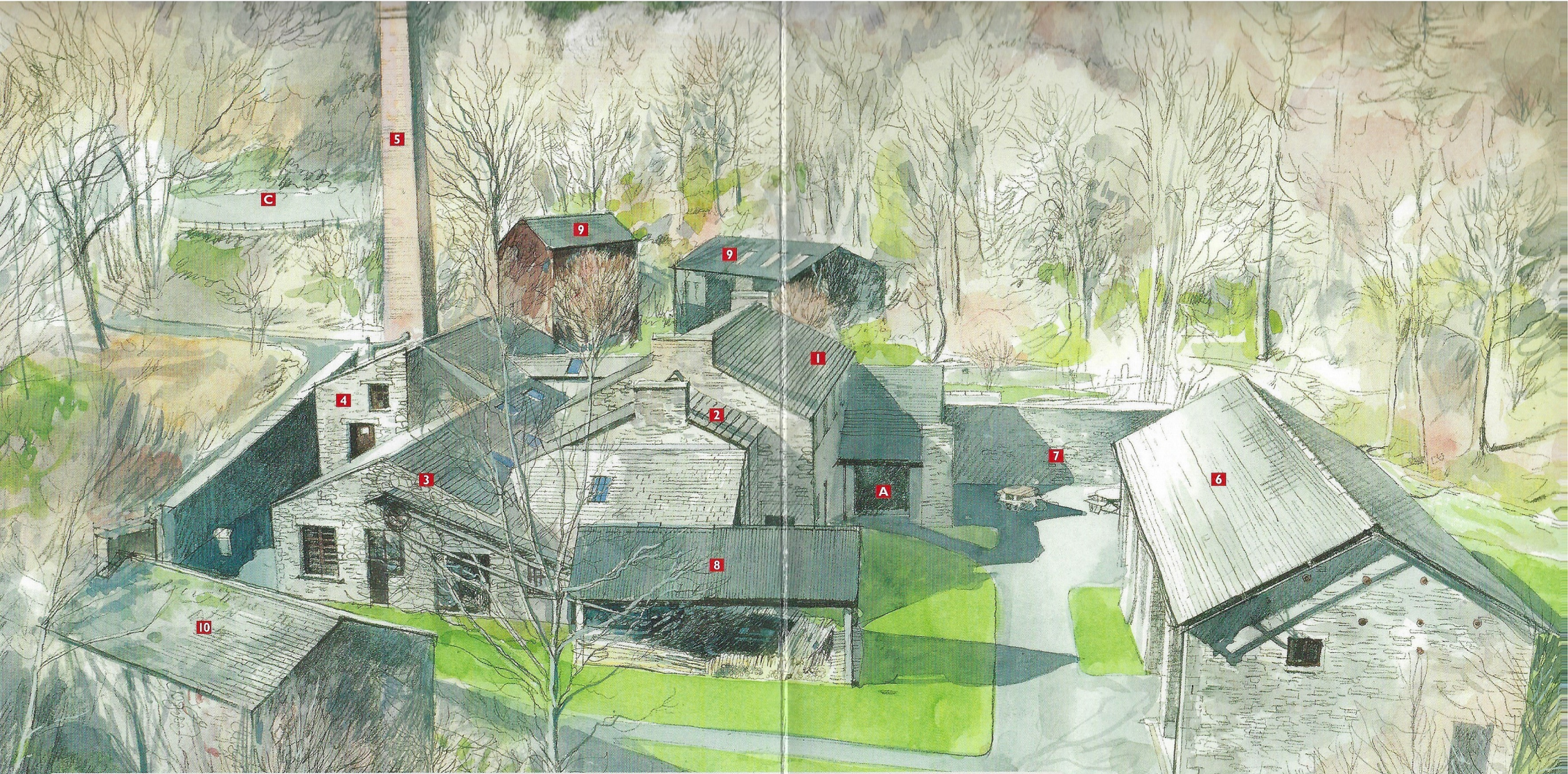


ENGLISH HERITAGE

# STOTT PARK BOBBIN MILL



*Step into England's story*



## STOTT PARK BOBBIN MILL SITE GUIDE

- 1** Old mill (page 4)
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- 7** Site of demolished coppice barn (page 16)
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- 10** Blacksmith's shop (page 20)
- A** Ticket office and sales
- B** Lower car park
- C** Upper car park

### FACILITIES

Shop, exhibition and accessible toilets.  
Picnics welcome in the grounds – picnic tables on site.

### ACCESS TO THE SITE

The interior of the mill is accessible only as part of a guided tour.

The ground floor is accessible for wheelchairs, but the upper floor is reached by a steep wooden stair. The mill is located on uneven, sloping ground, with some loose gravel paths and smooth grass.

### PARKING

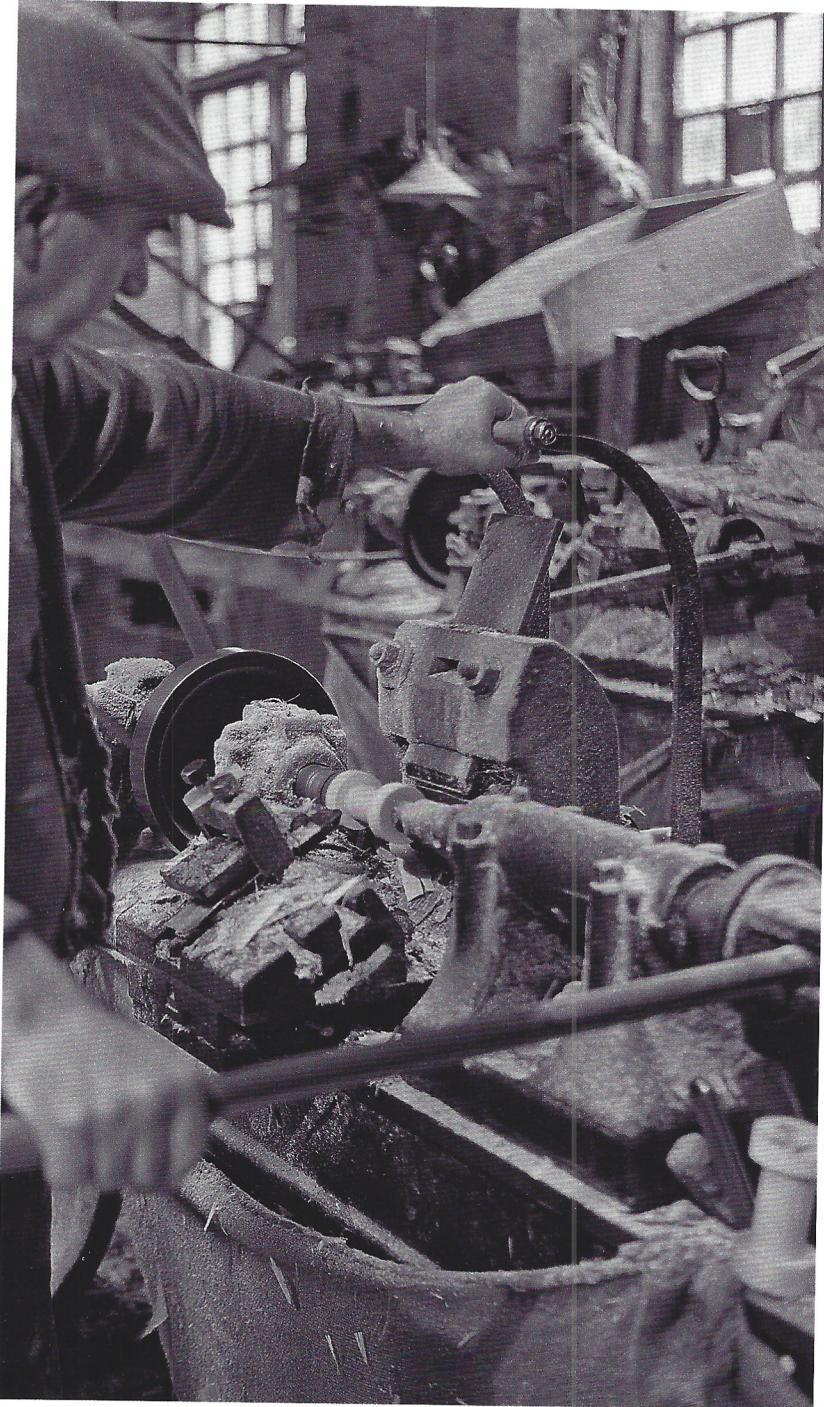
Lower mill car park: free parking 50m from mill entrance, with disabled spaces available.

Upper mill car park: pay and display parking 200m from mill entrance. Parking fee is refunded for English Heritage members and visitors undertaking a guided tour.

**B**

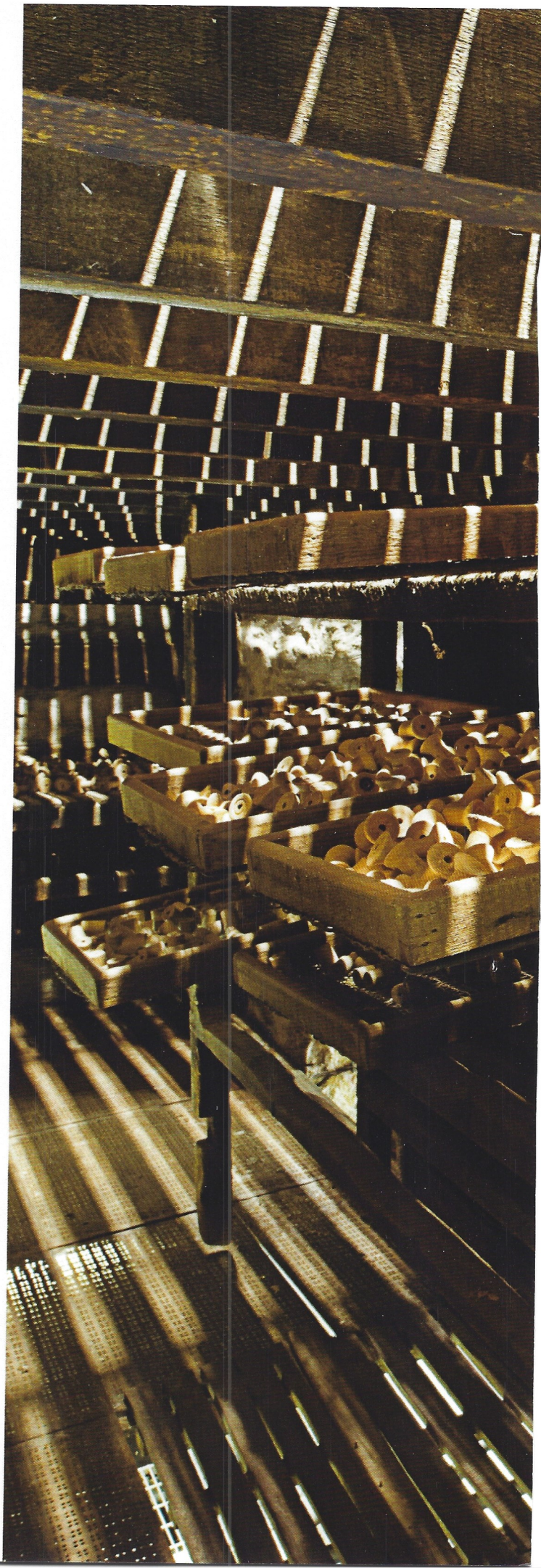
# Stott Park Bobbin Mill

Peter White



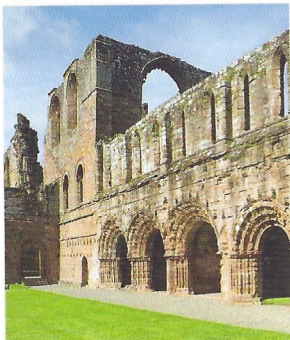
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## IN THE AREA



Furness Abbey



Carlisle Castle



Brougham Castle

## FURTHER READING

- JD Marshall** *Furness and the Industrial Revolution* (Barrow, 1958)  
**JD Marshall** *Old Lakeland* (Newton Abbot, 1971)  
**JD Marshall and M Davies-Shiel** *The Lake District at Work: Past and Present* (Newton Abbot, 1971)  
**JD Marshall and M Davies-Shiel** *Industrial Archaeology of the Lake Counties* (2nd edn, Cumbria, 1977)  
**JD Marshall and JK Walton** *The Lake Counties from 1830 to the Mid-Twentieth Century: a Study in Regional Change* (Manchester, 1981)  
**D Philipson** *Lakeland Bobbin Makers: The Philipson Mills, Cunsey to Spark Bridge* (Dent, Cumbria, 2010)  
**J Whitehead** *Lost Children: Ulverston Workhouse in the 19th Century* (Dent, Cumbria, 2006)

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## PICTURE CREDITS

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# Tour of the Site

## OVERVIEW AND SETTING

Surrounded by coppiced woodland, Stott Park Bobbin Mill is located where the road following the west shore of Windermere meets the road leading to Finsthwaite village. To the south of Stott Park the road leads to Newby Bridge, passing Lakeside quay and the railway station, dating from 1869.

The main mill buildings are grouped around an open yard. On the east side is an intact coppice barn and to the north is the site of another, demolished barn. On the west side is the original, two-storey mill of 1835, with a row of windows on its upper floor that provided as much light as possible for the original lathe shop formerly within. Against the gable wall is a saw bench, driven, like all the machines, by a belt from the line shaft. Flanking the old mill is the large, single-storey new lathe shop, built with the boiler house and its tall, red-brick chimney during the 1870s to early 1880s. The blacksmith's shop, one of the original buildings at Stott Park, was built detached to minimize the risk of fire. Behind the old mill's waterwheel pit is a large, travelling saw bench and crane. Also here are the infilled millpond and a drying shed with louvred sides.

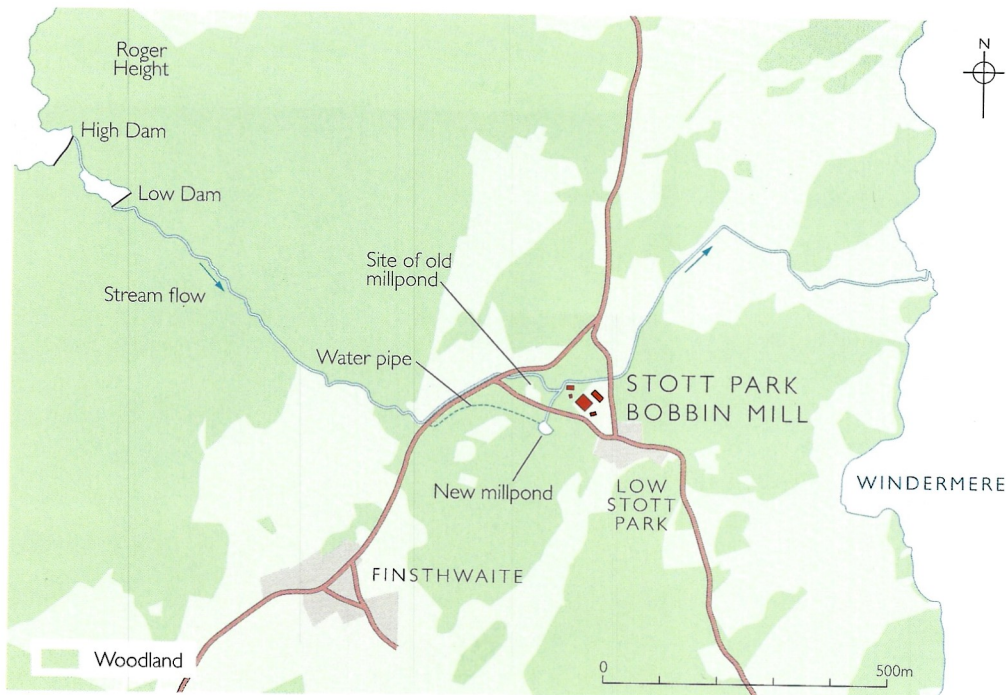
Until the late 1800s, the houses on the opposite side of the road accommodated the bobbin master and his workers. The surrounding coppiced woodland stretches beyond Finsthwaite village as far as High Dam, about half a mile distant. This artificial lake is the source of the stream that provided power for the mill wheel and, later, the turbine.

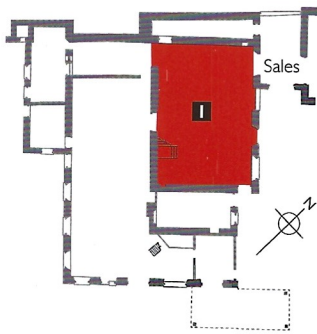


*Above: The stream leading from High Dam fed the millpond and powered the mill's waterwheel and water turbines*

*Below: Map showing the location of Stott Park Bobbin Mill*

*Facing page: Trays of wooden bobbins in the drying room above the boiler. The perforated metal floor allowed the heat from the boiler to rise up and warm the room, drying out the wood and making the bobbins easier to turn on the lathes*





## Inside the Mill

Stott Park was a mechanized workshop where coppice poles or, later, larger planks were transformed into finished bobbins. This process involved many separate stages and each of the machines on display was designed to perform a specific task. During the mill's history, faster, more-automated machines were added and processes were adapted. The machines displayed today date from different periods in the mill's history.

*Below: Portrait by Richard Evans of Harriet Martineau (1802–76), writer and social reformer, friend of Charles Dickens and a resident of Ambleside from 1846*

*Bottom: The circular saws on the ground floor of the old mill were driven by a belt from the line shaft*

### OLD MILL: GROUND FLOOR

The old mill, of two storeys, was built in 1835. The upper floor has windows on either side to maximize light, and housed the original lathes, where the wooden bobbins were turned. The lower floor, by contrast, is poorly lit. Just below the ceiling is the line shaft. This revolving shaft, originally powered by a waterwheel, was connected to each of the machines in the mill by unguarded leather belts. The rotating shaft drove the belts, which, in turn, powered the moving parts of the machines.

#### Circular Saws

The bobbins would originally have been finished in this area, but when the new lathe shop was built the circular saws, which had probably originally been outside, were relocated here and into the area now used as the reception and shop.

The circular saws were used for the first stage of bobbin making, where long poles of coppice wood were cut into short 'blocks' to be turned on the lathes. The saws are unguarded; to protect his fingers, the operator would use a piece of wood to position the piece being sawn. To stop the saw turning, the 'fast and loose pulley' was used to disengage the belt from the saw by 'knocking off' the belt onto a free running, or 'loose', pulley.



*'The tree-stem to be wrought is brought to the circular saw. It is first cut across into blocks. ... It has been no uncommon thing for a careless workman to have all the fingers of one hand sawn off across the middle.'*

Harriet Martineau describing the process of bobbin manufacture that she witnessed at Horrox's bobbin mill, Ambleside, *Household Words*, November 1851





## How are Bobbins Made?

*Smaller bobbins, which formed much of Stott Park's production, were made from turning a single short length of coppice wood.*

Long coppice poles, peeled of bark, were cut to a manageable length and seasoned for up to a year in a coppice barn **1**. They were then cut on the circular saws into cylindrical blocks, the length of the finished bobbin **2**. A hole was then bored through the block using a boring machine **3**. Next, the block was turned on a 'roughing lathe' to the outline shape required **4**: bobbins had two ends and a shank between; 'pirms' for spun yarn only had one end, and a tapered shank. The rough bobbin was then dried **5**, because crisp, firm wood could be worked more easily and did not tear or drag on the lathe. The holes were then 'rinced' or cleaned out, and the final

shape required was produced on the finishing lathe **6**. Finally, some bobbins were placed in a revolving drum with beeswax to polish them **7**; some were coloured.

Larger bobbins were made from three pieces of wood. Flat discs were bored and turned to form the ends, and the shank was turned as a



cylindrical block which narrowed at each end. The larger holes bored in the ends enabled them to be fitted onto the shank and glued in place. They were then dried and finished.

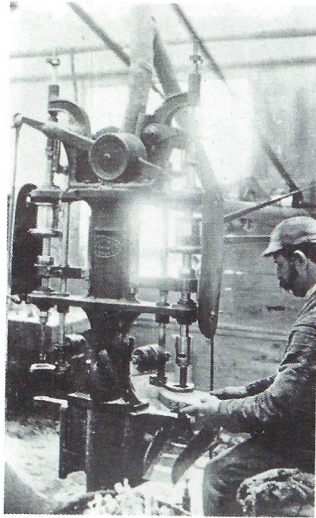
As wear and tear on bobbins could be heavy, the ends of the holes were often 'bushed'. Larger diameter holes were drilled a short way into the bobbin ends and a lining of harder wood, or metal, was inserted to form a bearing.



*Left: A wide variety of bobbins and reels could be made on the lathes at Stott Park*



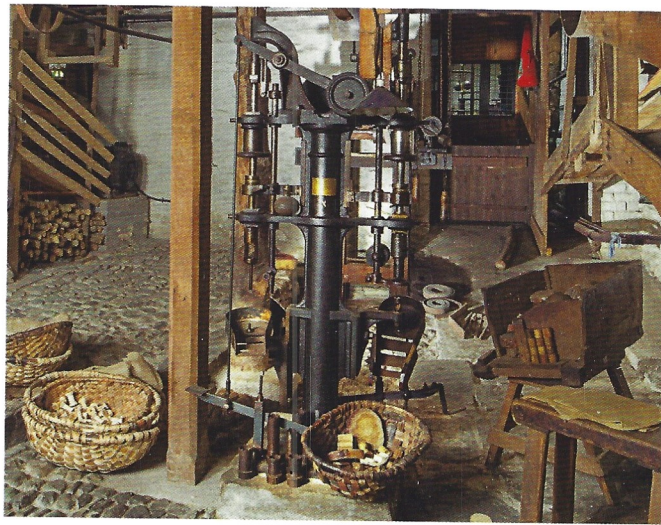
## TOUR: BLOCKING MACHINE



*Above:* A blocker operating a machine similar to that at Stott Park

*Above right:* The blocking machine at Stott Park dates from 1927. It was made by Thomas White and Sons of Paisley, who specialized in machines for the textile and bobbin industry

*Below:* Bobbin blocks and the 'cake' from which they have been cut



### Blocking Machine

The other machine on the ground floor of the old mill is a blocking machine, a type introduced in the Lake District in about 1860, when it transformed the working practices of the industry. It cuts 'blocks' or cylinders from large diameter timber, so freeing the bobbin maker from needing to use only small diameter coppice wood. These blocks could then be turned to form bobbins. The waste, a perforated disc of wood known as a 'cake', was used to fuel the boiler of the steam engine (see page 7). Operators of the machine were known as 'blockers' as this was a specialized task. The blocker operated a foot pedal to bring the saw down to cut the wood, moving the cake after each cut. The process required careful judgement to cut the maximum number of blocks and to minimize waste, without injuring hands. This machine, which is designed for use by two blockers, is now seen as it was left, tooled for a single operator.

This blocking machine dates from 1927, but an earlier one was in use here by 1900 – the 1901 census for Stott Park lists John Brittle as a blocker. The 1927 machine ran at up to 8,000



### Swill Baskets

Swill making was a craft dependent on the coppice woodland, and these baskets have been made by specialist craftsmen and women in the Furness area of the Lake District for centuries. A swill is a bowl-shaped basket made by weaving oak strips to a rim formed from a hazel pole bent and fixed to an oval

shape. The wood was made pliable by steaming, and each basket would take about four to five hours to make. Swills have no handle, being held by the rim and carried under the arm. They were used to carry small items in the house, on the farm and in industry, and many were used at Stott Park. There are very few specialist swill makers today.



*Above:* Early 20th-century swill basket makers in Finsthwaite village

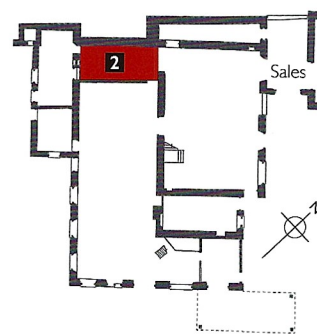
revolutions per minute, more than twice the speed of the other machines, so it could only have been operated when additional power was available from the steam engine.

All the machine operatives in the mill were paid for what they produced, not by the hour. Bobbins were ordered and made by the gross, or 12 dozen. Workers kept a tally by notching a wooden stick for each dozen produced, to reduce the likelihood of a dispute between master and men, and so that no one needed to count beyond 12. Each blocker would be expected to produce 35–40 gross (i.e. between about 5,040 and 5,760) pieces per day.

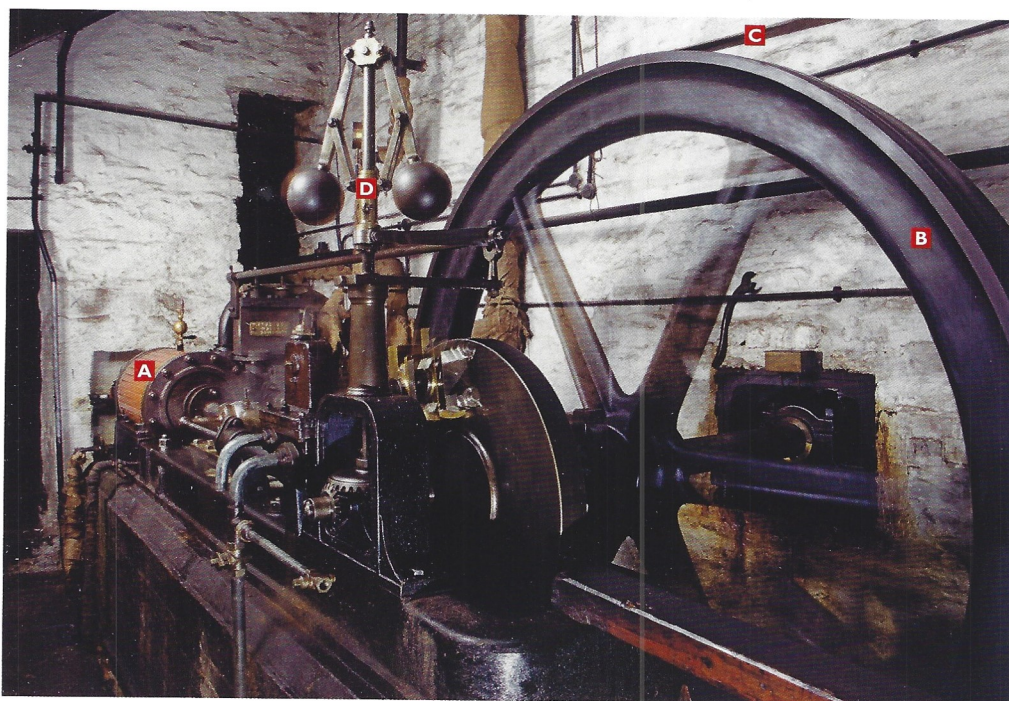
## 2 ENGINE ROOM

A severe drought in the Lake District in 1859 stopped many water mills for weeks, and this event led those bobbin masters who could afford it to install steam power. The engine is housed at one end of the new lathe shop, which was built between 1870 and the early 1880s (see page 8). The exact date for the installation of the Stott Park engine is not known, but it is likely to have been shortly after the new building was finished. It is positioned so that it can easily drive the line shaft in the old mill, as well as the shaft in the new shop, where the newer, heavier machines are fixed to the ground.

The engine is a simple, single cylinder, double-acting horizontal machine with a condenser with no moving parts. Given sufficient steam pressure it could develop 40hp. Made by William Bradley and Sons, of Brighouse, near Halifax, it was never the sole source of power, complementing a water turbine until the 1940s, when an electric motor was installed.



*Below: Stott Park's steam engine in use. Steam entering the cylinder **A** drove the flywheel **B**, which powered the machines in the new lathe shop via a drive belt **C** linked to the line shaft. The 'governor' at the top of the engine, with its two weighted balls **D**, regulated the amount of steam entering the cylinder, ensuring that the flywheel maintained a constant speed*



## TOUR: NEW LATHE SHOP: HAND BORING MACHINES



*'Regular ventilation or means of admitting fresh air or carrying off dust seems to meet little attention.'*

From the report of JE White, factory inspector, describing conditions at Chadwick's Mill, Stavely, c. 1860s

*Above: Dusty conditions in the new lathe shop in about 1971*

*Below: Interior of the new lathe shop*

- A** Hand boring machine
- B** Line shaft
- C** Hand-slide roughing lathe
- D** Semi-automatic boring machine

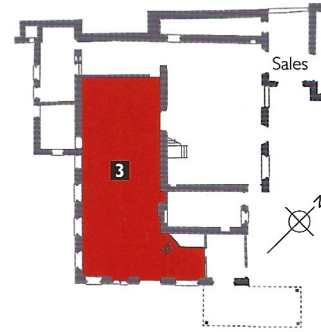
### **B** NEW LATHE SHOP

This building, crammed with machinery, was built between 1870 and the early 1880s to modernize the mill, and the key processes of bobbin manufacture were relocated here. It was the last and only major improvement. Old lathes from the first floor of the old mill were probably moved here, mounted on timber 'beds', made of two parallel wooden beams fixed to the fabric of the building, as they had been in the old mill (see page 14). The new shop also accommodated faster, more modern machines, which were mounted on their own iron frames fixed to the ground. It is difficult now to imagine all the belts moving, men and apprentices operating their machines, and boys covered in dust and shavings constantly dodging among them, carrying the roughs and finished bobbins in swill baskets. Little attention was paid to ventilation, or the control of dust, which settled on every available surface, causing a health hazard and a fire risk.

### Hand Boring Machines

Immediately to the left on entering the shop, the small, unguarded and unguided machines mounted on timber beds are boring machines, used to drill a hole through the length of the small timber cylinder or block. This was an essential first part of the turning process, as the hole enabled the block to be held on the lathe. The operator, often a boy or an apprentice, half sitting beside the machine, would simply hold the block against the drilling bit, which was revolving at 3,000–4,000 revolutions





a minute, and push at least twice, to clean out the hole as it was drilled. The position of the hole was judged by eye. The process was hazardous: any imperfection in the block could cause it to split or shatter, sending sharp splinters of wood in all directions, and causing injuries to the face and hands.

### Roughing Lathe

After boring a hole in the block, the next process was 'roughing': turning the blocks approximately to the size and shape of the finished bobbin. The machine demonstrated is a 'hand-slide' lathe, a type common in the early to mid 19th century. It runs at about 3,200 revolutions a minute.

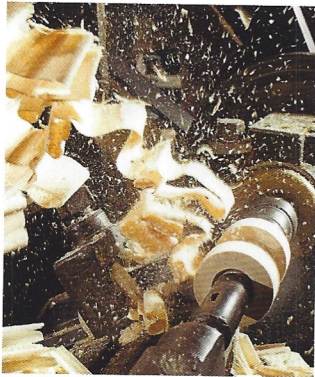
The importance of the holes in the blocks is readily apparent. At one end, the hole in the block is fitted over a pin on the unpowered tailstock of the lathe. The hand lever then moves the block towards, and clamps it against, the revolving 'mandrel', mounted on the powered headstock. The mandrel



*Above: In this photograph, taken shortly before the closure of the mill in 1971, Stott Park's foreman, Jim Graham, is working the hand boring machine to bore holes in blocks of coppice wood*

*Left: A hand-slide lathe in action. Known as the 'roughing lathe', the machine demonstrated is operated using both hands and is used for turning bored blocks into bobbin roughs*

## TOUR: SEMI-AUTOMATIC BORING MACHINES



*Above: A block being turned on a roughing lathe. The roughing process produced swathes of turnings, which quickly settled knee or even waist high. The shavings created a fire risk in the mill, but in later days were used as fuel for the boiler*

fits partly into the hole in the block to locate and hold it securely, and has small teeth which cut into the end of the block so that it turns without slipping. A handle then moves the toolbox or 'saddle' containing the chisels onto the revolving block. The rough is shaped by the number and setting of the chisels in the saddle.

Bobbin turners would make their own chisels, often from scrap metal, such as discarded vehicle springs. They kept them sharp on a grindstone (see page 12), to enable quicker working and to lessen the likelihood of a block stalling or shattering while on the lathe.

### Semi-Automatic Boring Machines

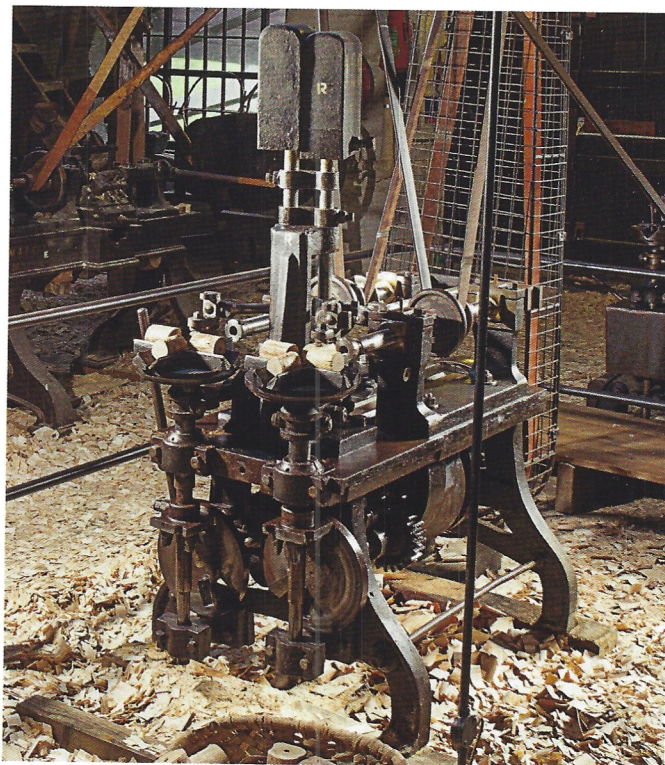
The two free-standing machines in the centre of the shop are semi-automatic borers manufactured by the local firm of Braithwaite, which had been making this sort of machine from about the 1860s. They replicated the task carried out by the hand borers, and run at about 4,300 revolutions a minute. Their design and weight clearly indicate why it was not possible to continue using the upper floor of the old mill. They also show how a process could be 'de-skilled', requiring only the repetitive placing and removal of the blocks on the turntables: tasks which were carried out by the youngest of boys.

The second semi-automatic boring machine was used for 'ricing', or cleaning out the holes to the correct size for their eventual use. The task was the same as for the initial drilling of the holes, and both machines could be used for this operation.



*Above: An operator in 1968 placing pieces onto the revolving turntable of the semi-automatic boring machine*

**Right:** One of the semi-automatic boring machines. This machine automated the process of boring the holes in the bobbin blocks, which had previously been done by eye with a hand boring machine, and allowed two blocks to be bored simultaneously, speeding up the process. It could be used by an operator with only the most basic skills



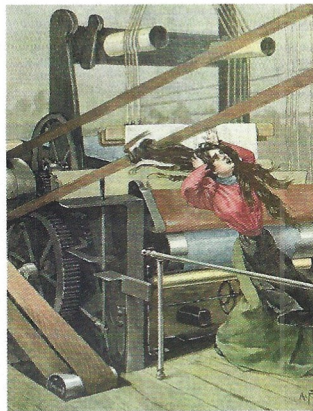


## Child Labour

*Until the introduction of the Factory and Workshop Act of 1878, boys as young as eight years of age were employed in the mills.*

After the Act was introduced, 10 years old was, in theory, the lowest age at which work was permitted, and then only half-time up to age 14, to allow attendance at school. The boys worked up to 16 hours a day in often repetitive manual tasks.

In the 1860s JE White, a factory inspector, reported on bobbin mills in the Lake District, Bradford and Barnsley: *'some [boys] put on glue with a brush; others put in small pieces of wood, called bushes, with a hammer, sort the bobbins, carry away the pieces sawn ... at the circular saws etc. The first machine work done by them is boring the hole through the centre of the bobbin, "rining" [pronounced 'rining'], or cleaning out the mouths of the holes bored, and "roughing", a kind of rough turning, all done at lathes worked by power.'* His



report included first-hand accounts of the hazards involved: *'My hand is tied up because the bobbin split in a knot and the boring bit went into my hand'* (John Black, aged 13).

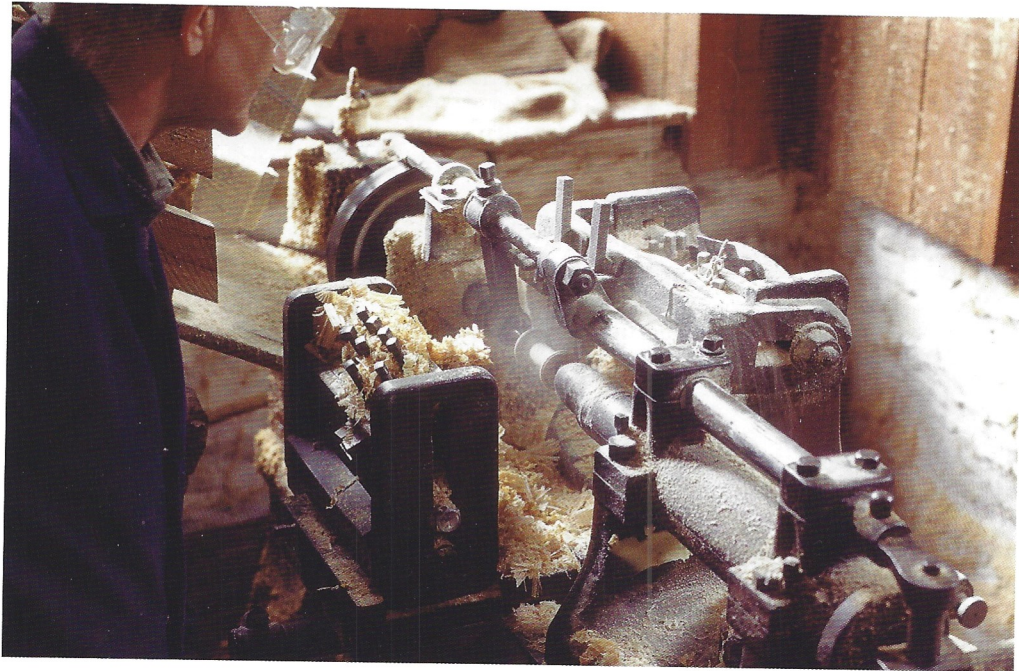
The line shafting was also recognized as dangerous: an inquest at Crooklands was told in December 1860 that Thomas Fox, aged 14, was carried up by the belt of a lathe and his head and part of his shoulders were

held fast between the iron drum and the ceiling. His head was crushed and his skull fractured. He was reported to have died instantly.

There were also hazards outside the mill. In November 1849, Kit Cloudesdale, aged 13, was sent on an errand from Stott Park five miles over the fell to Force Forge mill. He failed to return during extreme weather, and four days later he was found dead from hypothermia near Rusland village.

**Top:** A young boy working the semi-automatic boring machine at Stott Park in the 1890s

**Above:** Moving belts were extremely dangerous, and in many mills there were reports of injuries – or worse – when limbs, clothes or hair were caught in the machinery, as shown in this graphic lithograph of 1898



*Above: The half self-actor 'finishing lathe' in use: turning the dried bobbin creates a cloud of fine sawdust*

*Below: Detail view of a rough being turned into a bobbin on the finishing lathe*



*'The bobbin goes to a lathe, where, in turning, it is met by a stout, three-sided sharp tooth or blade, which, quicker than the eye can follow, cuts off the corners and leaves a bobbin, perfect in shape.'*  
Harriet Martineau,  
*Household Words*, 1851

### Finishing Lathe

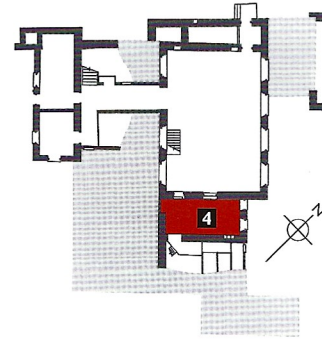
After the rough bobbins had been turned, they would be taken away and dried before returning to the shop for finishing – that is, being turned to their final shape. Finishing was carried out by the most skilled turners, and their output determined the productivity of the whole mill. It is difficult to give a precise figure as a wide variety of products were made, but they could turn many hundreds of bobbins per hour. What is not known is the amount of 'down time' for meals and for maintenance, including sharpening the chisels.

The finishing lathe demonstrated was made by the local firm WA Fell of Troutbeck Bridge, and runs at 4,700 revolutions a minute. It is a technological improvement on the roughing lathe seen earlier, and was known as a 'half self-actor'. A push and pull movement on one handle performed the sequence of cutting, as the spinning rough was brought into contact with the fixed chisels. The tools were pre-set to create an identical finished bobbin each time. Introduced during the mid 19th century, this machine also caused some controversy, because it was perceived as 'de-skilling' – older finishing lathes required the turner to use his experience and judgement to create an identical bobbin by eye as each rough was turned.

### 4 TOOL ROOM

On the first floor of the original outshut adjoining the old mill is the tool room. The most prominent feature in this room is a large grindstone, constantly being turned by a belt from the line shaft. Keeping chisels in proper shape and sharp was vital, and the grindstone would have been heavily used. It is located here because the thick stone walls separating it from the lathe

## TOUR: TOOL ROOM



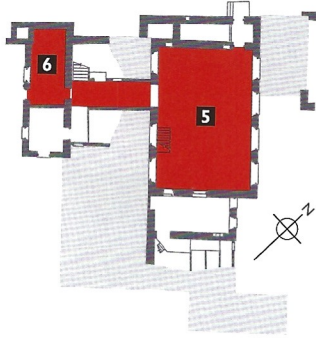
shop created a fireproof environment. Tool sharpening caused a stream of sparks – a ready cause of ignition which could quickly engulf the whole mill. For the same reason, until the boiler was installed, this small room also had the only fireplace, used for warming the glue when making the larger bobbins. These bobbins were too big to be turned from one piece, so the ends were dowed and glued to the shank. This room, like the boiler stokehole, would also have been a popular place for the mill workers to keep warm during the few breaks in the working day.

*Above left: Larger bobbins were made in three pieces – two ends and a shank – which were glued together*  
*Above: Mandrels and chisels for use on the lathes. Different bobbins required different sizes and shapes of chisels, and all were kept sharp on the grindstone in the tool room*  
*Below: The tool room with the fireplace on the right*





## TOUR: OLD MILL: FIRST FLOOR



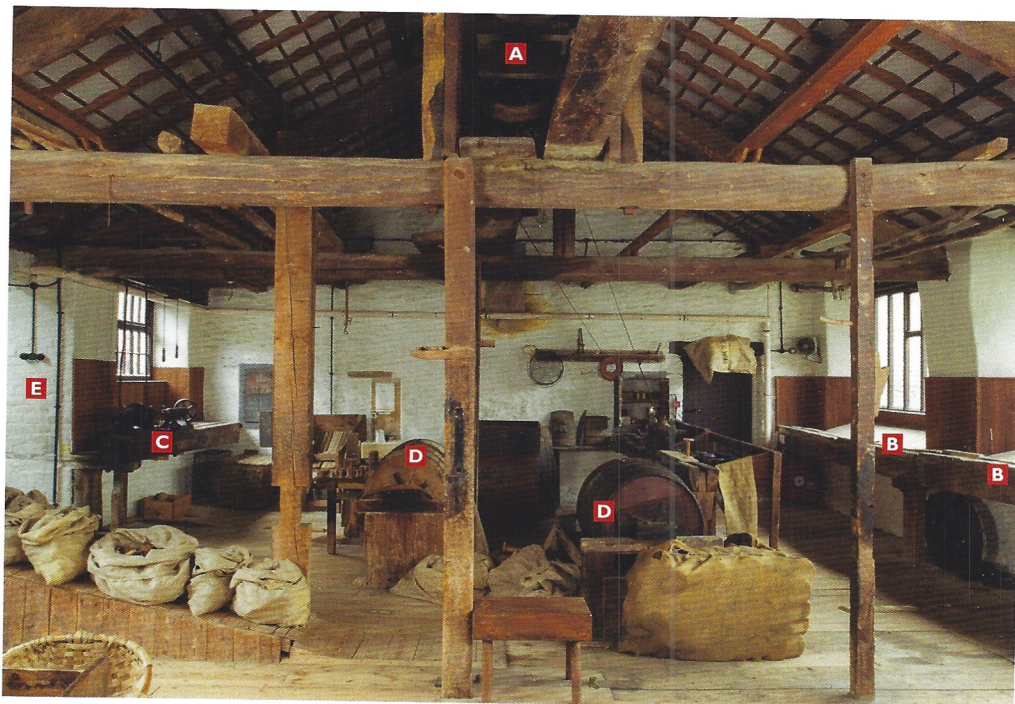
### 5 OLD MILL: FIRST FLOOR

Before the new lathe shop was built, the upper floor of the old mill was the main production area with between 25 and 30 machines located here. Some of the parallel timber beds on which they were mounted survive. All the machines were called 'lathes', although, as in the new lathe shop, they would have been a combination of turning and boring machines. Early machines had components in common: the borers would have had a single powered headstock mounted on the timber bed; the turning lathe would have had two stocks – the powered headstock, and a dumb tailstock to hold the piece being worked in place. An example of an early hand-turning machine survives, fixed to the timber beds to the right of the doorway leading from the workshop to the gallery. All the machines were driven by belts from the line shaft in the apex of the roof.

*Above: The first floor of the old mill was the original lathe shop. Some of the timber lathe beds can still be seen in front of the large windows*

*Below: The upper floor of the old mill*

- A** Line shaft
- B** Timber beds for original lathes
- C** Early hand-turning machine
- D** Polishing barrels
- E** Doorway to gallery and drying rooms



After the new lathe shop was built, the final processes of bobbin manufacture were moved here: gluing, staining, cleaning, counting and polishing. The angled, slatted trays, known as riddles, were used for cleaning and counting: the loose sawdust was shaken off as the bobbins slid down the tray into swill baskets. The bobbins were polished by being placed in the barrels with a lump of beeswax and spun at high speed.

A doorway forced through the original wall leads to a gallery, a useful place today to view the engine room, on one side, and the new lathe shop, on the other. Its original purpose was twofold: it provided easy access to the line shaft of the new lathe shop, and it led directly to the drying rooms and dispatch door.

The line shaft needed constant maintenance: bearings needed greasing and the leather belts required regular replacement. All production in the mill would cease if the shaft stopped turning, so some tasks, such as repositioning a slipped belt, were carried out as it was still revolving. This could result in horrific accidents, and on occasion death, although there are no records of any such incidents at Stott Park.

The final checking and weighing of the products took place on the gallery and finished bobbins were loaded onto wagons through the dispatch door on the north side. Bobbins were transported in sacks, and although they were ordered, made and sold by the gross, they varied greatly in size and weight. The first part of the journey from the mill was always by road, originally by horse-drawn carrier's wagon, but later by lorry. This carriage was charged by weight, and the scales were located here.

#### 6 DRYING ROOMS

The gallery leads to a low-ceilinged room on the first floor of the boiler house (see page 20): a similar space occupies the second floor above. These rooms had perforated floors, which allowed the heat from the boiler to rise up. The bobbin roughs were placed on the slatted racks to dry before being worked into their final shape on the finishing lathes. The boiler greatly speeded up the drying process, which had previously taken place in the kiln, or in separate sheds with louvred sides.

*'In the Bobbin Mill of Mr B Turton, at Staveley ... an apprentice of the name of William Wray, was employed in putting a strap upon a drum, his left arm got entangled and was caught between the strap and the*

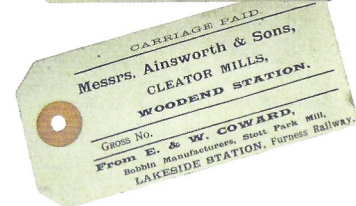
*shaft, and before assistance could be rendered the whole of his arm was drawn in by the machinery. It was so dreadfully mangled that immediate amputation was inevitable ...'*  
Kendal Mercury, 1 August 1835



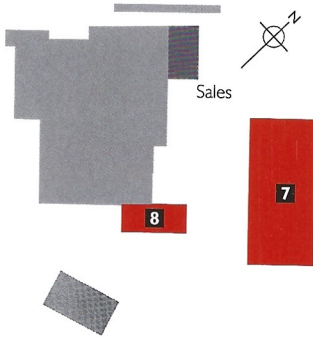
*Above:* A riddle for cleaning and counting finished bobbins, on the first floor of the old mill

*Below:* Delivery labels with the names of Stott Park's customers were attached to sacks of finished pieces

*Bottom:* The line shaft, drums and unguarded drive belts



## TOUR: COPPICE BARN



*Right: The coppice barn with its characteristic stone piers*

*Below: Coppice was bought as a standing crop. In autumn the local press and public notices advertised sales such as this one, for woods owned by Thomas Newby Wilson*



*Below: Coppice poles stored in every available space in the mill yard, 1965*

## Outside the Mill

### 7 COPPICE BARN

Former bobbin mills can often be recognized because their distinctive coppice barns survive. When Stott Park closed, there were three barns, two with characteristic square stone-built piers, and one with timber poles, supporting Westmorland slate roofs. Their purpose was to shelter the coppice timber from rain while allowing a good circulation of air to assist seasoning and prevent rot. Only the surviving example was structurally sound when the mill closed, and it now houses an exhibition. At some point, the upper part of one bay was adapted to house the manager's office – a useful place from which to oversee activity in the mill yard.

Coppice wood was harvested in the autumn, and large stocks, as much as 4,000 tons, would be held at the mill. This amounted to thousands of poles which would be stacked in the open air, leaning vertically against all the mill buildings.



Stripping the bark from the poles was the first part of the process. It took place in the barns, space permitting, or in the open yard. The poles were then cut to a manageable length and seasoned in the barns before going to the mill to be sawn into blocks. The bark was a valuable by-product, used in tanning.

## 8 SAW SHED

A large circular saw is located in an open-sided shed against the end of the old lathe shop. As it would have been physically impossible for the longer coppice poles to be sawn inside the mill, they were first reduced in length here.

However, this arrangement clearly dates from after the construction of the new lathe shop between about 1870 and the early 1880s, as the line shaft driving the saw is an extension of the shaft within that building.



*Above: The large circular saw was used to reduce the length of the harvested coppice poles*

## Coppicing

*The landscape around Stott Park is dominated by coppiced woodland, and the easy availability of coppice poles was crucial to the development of the bobbin industry.*



The coppice wood had been carefully harvested for centuries to make charcoal; a key ingredient in the manufacture of gunpowder, an important local industry.

Coppiced means 'grown for cutting' and the plantations contain particular tree species, including alder, ash, birch and willow. The trees are cut almost to the ground, so that the following year the stump or 'stool' produces up to 20 shoots which grow into long, straight poles. They can be cut time and again on a cycle

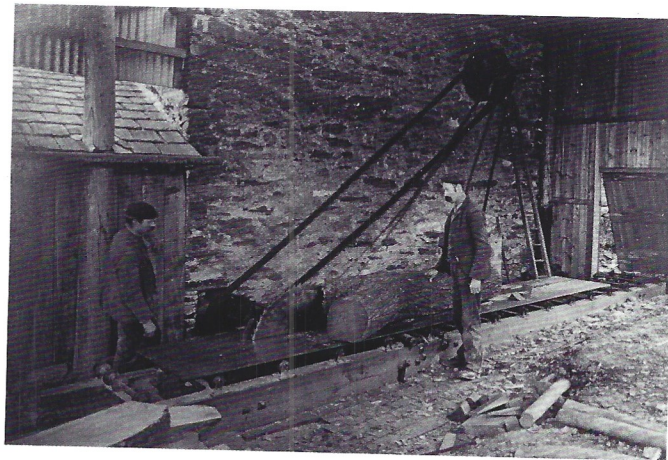
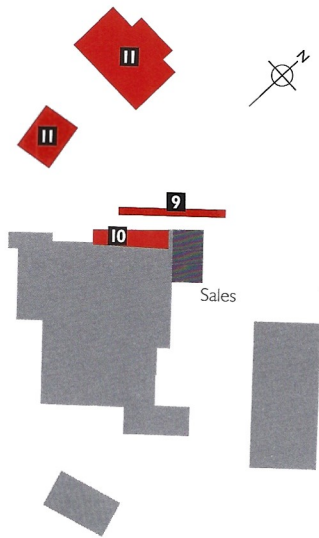
which varies from 7 to 15 years. For bobbin wood, a 15-year cycle was normal, and an acre of woodland could produce up to 10,000 poles at one cutting.

Most bobbin mills would find supplies within a range of about 20 miles, as the local roads were poor and the poles were cumbersome to transport. The original owners of Stott Park, the Harrison family, also owned a significant area of coppice, but we do not know on what terms this was available to their bobbin

master tenants. The purchase of coppice wood carried significant risk for the bobbin master, however, both with regard to its quality, which could affect the ease and speed of production, and the quantity, because as Harriet Martineau observed in 1851: *'The wood will need a year's seasoning in the sheds of the bobbin-mill; and by that time the prospects of trade may have changed.'*

*Above: Late 19th-century coppice cutters at work*

## TOUR: TRAVELLING SAW BENCH, WHEEL PIT AND DRYING SHEDS



### 9 TRAVELLING SAW BENCH

Located on the higher ground behind the mill and wheel pit, a travelling saw bench was originally sheltered by an open-sided shed. This huge machine enabled large baulks of timber to be cut into planks from which pieces could then be sawn for use on the blocking machine. The saw was powered from the main line shaft and it was probably installed after the introduction of the steam engine, which boosted the available power. The machinery now in place is not original to Stott Park and was installed here when the site was restored in the 1970s.

### 10 WHEEL PIT

Water to power the mill originally collected in the pond, now infilled, behind the drying sheds, to the north-west of the main mill buildings. It was then channelled to the wheel pit, which is an integral part of the old mill, to drive the mill wheel. A cogged drive then transmitted power to the line shaft within the mill at a much higher speed than that of the turning waterwheel.

In 1858, just over 20 years after the mill was built, the wheel was replaced by one of the newly invented turbines, which made more efficient use of the available water supply. The turbine now in the pit is the second replacement of the original and dates from 1931. The original millpond did not provide sufficient water pressure to run the turbine, so the stream was diverted to a small header pond (not currently accessible) located across the road to the south-west of the mill. The water was brought to the top of the pit through a large diameter cast-iron pipe, and then flowed vertically to the turbine casing.

### II DRYING SHEDS

In the 40 years or more before the installation of the boiler between 1870 and the early 1880s, the roughed bobbins would have been dried over several weeks in sheds filled with racks and with louvred sides to control the flow of air. Two drying sheds, by then in use for other purposes, survived at Stott Park at the time of its closure, and have been restored.

*Above: The travelling saw slicing logs into planks for the blocking machine, 1906. Another machine, not original to Stott Park, now stands in its place*

*Below: One of the original drying sheds. The first floor was accessed via a stone ramp. The second floor was accessible only by ladders*



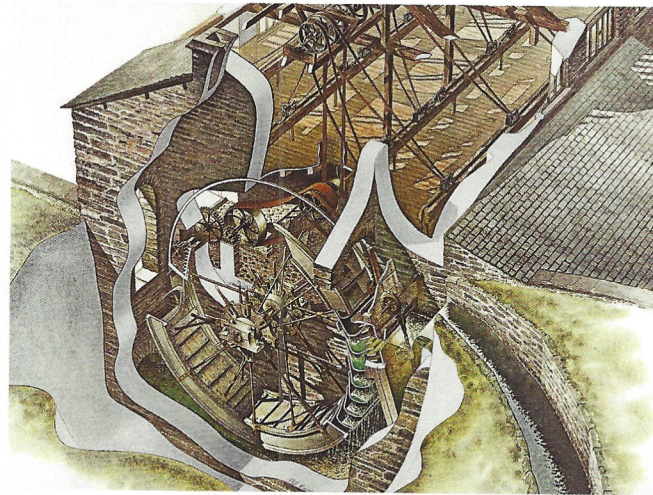
## Powering the Mill

*All the machines at Stott Park were driven by a rotating line shaft, but the source of power was adapted over time.*

At first, the shaft was powered by a waterwheel. From the pond just to the north-west of the mill an open channel fed water to the wheel at 'breast' level, about three-quarters of the way up its leading arc, filling the buckets so that it would 'pitch back' when turning. The weight of the water in the buckets evened out the shaft speed despite the constantly variable load. A cogged rim fixed to the wheel then drove a pinion on the line shaft. The wheel, 24ft in diameter by 4ft 6in wide (7.3m by 1.37m) developed up to 35hp.

### Turbines

In 1858 the wheel was replaced by a turbine made by Williamson Brothers of Kendal. The enclosed turbine was marginally more efficient than a waterwheel, gave greater control and eliminated spillage. It needed water at a higher



pressure, so the stream from High Dam was diverted to a new header pond, and then ran through an iron pipe into the turbine casing. Williamson Brothers, and their successors, Gilbert Gilkes & Co., were leaders in turbine development. Three turbines were installed successively: Gilkes supplied a replacement in the 1890s and a third in 1931 came from Armfield of Romsey, Hampshire.

### Steam Power

The steam engine, installed between about 1870 and the early 1880s, was probably bought second-hand. Built by Bradleys of Brighouse, and

developing up to 40hp, it supplemented the turbine, and was a standby in times of drought. Its boiler was fuelled by using timber waste from the mill.

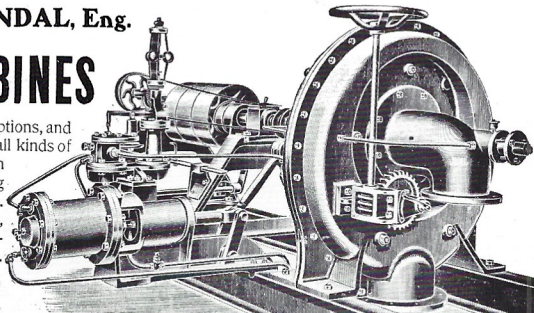
### Electric Motors

Finally, power was provided by electric motors; the first, in 1941, was installed by Barrow Corporation. A second was added in 1959. These new prime movers were simply and cheaply linked to the line shaft – an unusual arrangement, as by that time it was more common within industry in general for each machine to have its own electric motor, so that it could be operated independently.

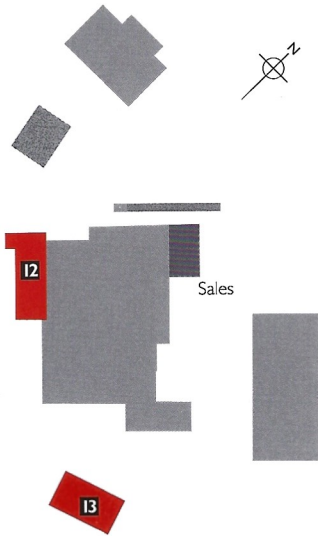
**G. GILKES & Co., Ltd.,** Turbine Manufacturers,  
Kendal, Eng. Hydraulic Engineers,

## TURBINES

Of all descriptions, and suitable for all kinds of work, such as driving Dynamos, Pumps, Mills, Fans, Compressors, &c.

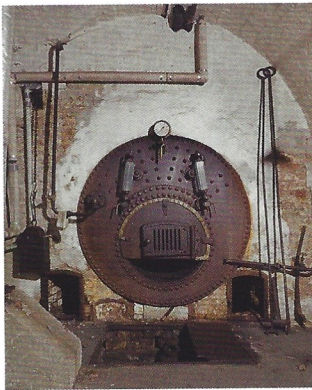


*Above: A cutaway reconstruction drawing of the old mill, showing the transmission of power from the waterwheel to the line shaft, then by belts and pulleys to the machines*  
*Left: An advertisement for Gilkes of Kendal, suppliers of Stott Park's second turbine in the 1890s*



### 12 BOILER HOUSE

The boiler house, with its prominent chimney, was probably built immediately after the completion of the new lathe shop, added between about 1870 and the early 1880s. It housed the boiler for the newly installed steam engine (see page 7). The boiler is of the 'Cornish' type, in which the water is surrounded by two long flues running from the fireboxes to the chimney base. The boiler house is separated by a wall from the new lathe shop, an area of high fire risk. The stokehole was accessible both from the outside, and from within the new lathe shop by means of heavy fire-proof metal doors, so that the shavings and 'cakes' could be swept down for fuel directly from the workshop. At the time of the 1911 census, Henry McDonald, aged 19, was being specifically employed at Stott Park as a stoker. The upper floors in this part of the building, warmed by the boiler below, were used for drying the roughed bobbins (see page 15). This original boiler is not now in use. A small vertical cross-tube boiler was installed in the adjacent building in 1991 to power the steam engine for demonstrations.



### 13 BLACKSMITH'S SHOP

This small detached building is characterized by its large hearth and perforated metal loft floor. Built well clear of the main mill buildings to reduce the risk of fire, it is depicted on the 1848 Ordnance Survey map, so must have been built early in the mill's history. Originally, it was probably a kiln used, until superseded by the boiler house, to dry the roughs. Chisels, knives and drilling bits would also be worked here by the

*Above: The front of the original boiler seen from the stokehole. The shavings and cakes were used as fuel and could be swept directly into the stokehole from the adjacent new lathe shop*





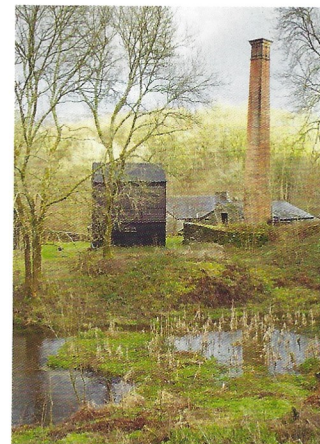
bobbin makers themselves, together with some bobbins, which, in order to prolong their life, required metal 'bushes' (see page 5), or had ends sheathed with protective metalwork.

### HIGH DAM

An abundant, steady supply of water was critical to the survival of a bobbin mill. The source which supplied Stott Park's millpond was impounded at High Dam, an artificial tarn some 122m (400ft) above and 800m (0.5 miles) to the west of the mill (see map, page 3). High Dam is shown on the 1848 map, and was included in the sale of the mill to the Cowards in 1921. It provided water exclusively to Stott Park, and its size gives a good idea of how much would be required for a modest-sized mill. It is reached by a steep path off the road to Finsthwaite village, and it would have been a daily task for one of the mill's boys to make the trip up to High Dam to open the sluice in the morning and to close it at the end of the day.

*Above left: The blacksmith's shop was probably also originally used as a kiln to dry bobbin roughs*

*Above: Saws for use on the blocking machine might have been worked in the blacksmith's shop*



*Above: The original millpond, now largely infilled, lay to the north-west of the mill buildings and was fed by a stream from High Dam*

*Left: View from High Dam, which supplied water to the mill, south-east towards Stott Park and Windermere*





# History of the Mill

## THE TEXTILE INDUSTRY

The initial demand for bobbins was probably stimulated by the 1780s through the appearance of mills in the Lake District spinning wool, cotton and flax. In 1850 there were still about 85 such spinning mills in production. The expansion of Lakeland bobbin manufacturing, however, was undoubtedly due to the phenomenal growth of the Lancashire cotton industry, in which the consumption of raw cotton doubled between 1830 and 1843. Millions of bobbins were needed to hold yarn in the spinning process and on the textile looms. The most completely mechanized factory industry in the country, by 1851 textile mills employed almost one million people, more than a tenth of the working population of England and Wales. It was the mainstay of the country's economy, accounting for well over half the value of all exported home-produced goods.

The cotton factories – William Blake's 'dark satanic mills' – were multi-storey buildings on a larger scale than the country had ever seen, and to add to their visual impact, most of them were concentrated in clusters in the towns surrounding Manchester. A graphic contemporary account from the *Penny Magazine* of 1843 reads: 'When we depart from ... Manchester and walk in any direction towards the suburbs we come in sight of the cotton-factories, those enormous brick structures which excite such astonishment in the mind of a stranger. There are nearly two hundred of these vast piles in the immediate vicinity of the town ... ten or twelve hundred cotton factories ... engirdle Manchester.'



*'The mechanics and work people ... both in Salford and Manchester [were] a very intelligent, but painfully unhealthy-looking population ... men as well as women.'*  
Queen Victoria, writing in her journal, 1851

**Above:** Portrait of Queen Victoria in 1859 by Franz Xaver Winterhalter

**Below:** This view of Manchester from Kersal Moor by William Wyld, 1852, shows the scale of industry in the city

**Facing page:** This colour lithograph of 1851 shows the doubling room at Dean Mills, Manchester, with many thousands of bobbins in use on its machines



## HISTORY: THE TEXTILE INDUSTRY



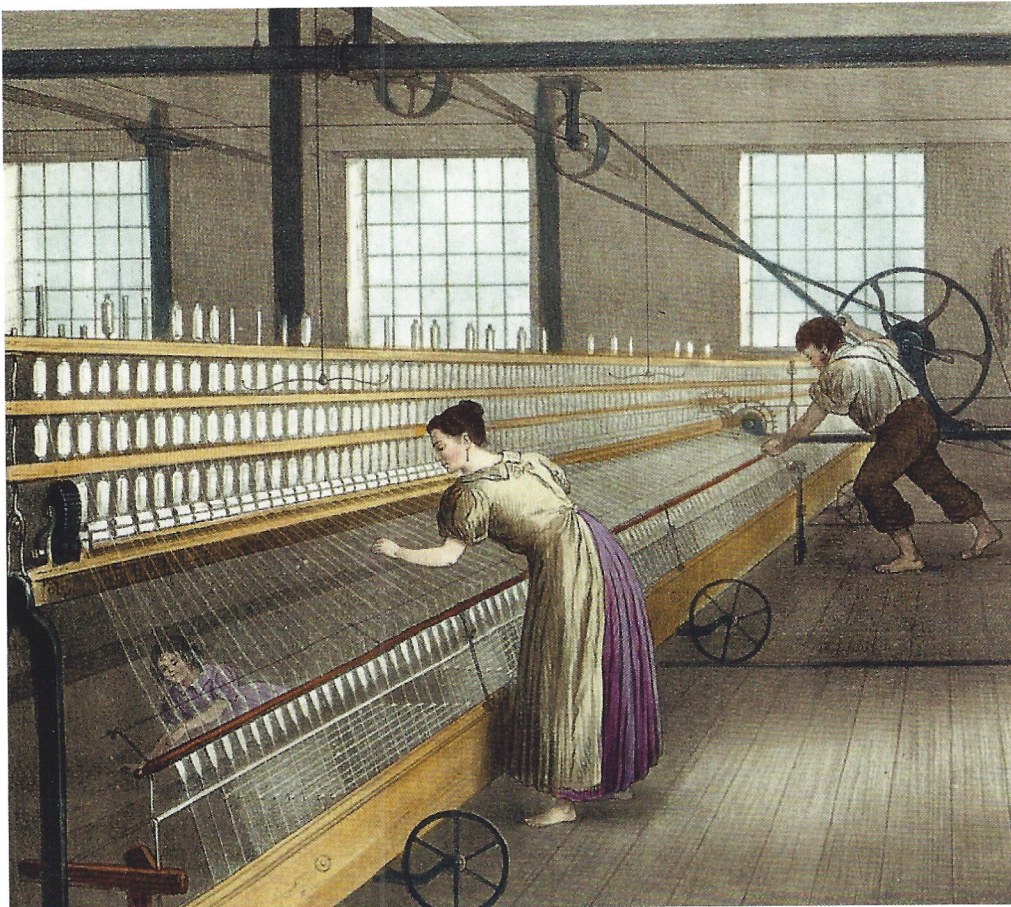
*Above: Many different types of bobbins were required. This illustration from a bobbin maker's catalogue of 1895 shows thread, silk and woollen winding bobbins, which could be supplied plain, waxed or coloured*

*Below: This lithograph of 1840 showing a spinning mule in a textile factory demonstrates the vast number of bobbins required*

Bobbins were needed in a variety of shapes and sizes. 'Roving', early in the yarn spinning process, where corded wool or cotton was drawn out and slightly twisted into lengths for spinning, required larger bobbins. Then, after various stages, the spun yarn was finally wound onto 'pirms', the tapered, single-ended bobbins which fitted into the shuttle on the loom.

Many more bobbins were always required than those actually on the machines, and a large mill would use many thousands to maintain production. Due to wear and damage, stocks of bobbins needed constant replenishment. As there was little standardization of textile machinery until the 1890s, bobbin manufacturers had to either produce a diverse range of products, or, at greater risk, rely on the regular custom from one or more particular mills.

In any case, the different branches of the textile industry had different requirements. The silk 'throwsters' or spinners of Macclesfield used very delicate, small bobbins called 'caps' on their machines, while the woollen trade, mostly in Yorkshire, required a similar range of bobbins to cotton manufacturers, but larger and heavier. In addition, reels were supplied to carry sewing cotton, thread and ribbon, both within the factories and for sale as commodities.





### STOTT PARK MILL

John Harrison was a typical well-established yeoman, whose family had lived for generations in Furness, which was then part of Lancashire. In the 1600s the family had inherited Low Stott Park Farm and the adjoining land, and by the early 1800s they were living in a substantial house called The Landing, at Lakeside. In late 1835 Harrison advertised for a tenant to lease the bobbin mill at Stott Park, which was described as having been 'recently erected'. Up to half the 40 or so bobbin mills in operation in the Lake District had been converted from other uses – textiles, corn, iron or pencil making. Purpose-built bobbin mills tended to be in the more urban settings of Staveley, on the River Kent, and Keswick, on the Greta. No archaeological evidence has so far indicated an earlier origin for Stott Park, but the name of the adjoining coppice, Smithy Haw Wood, suggests that the site might originally have been used for ironworking. Certainly, it was very well located for that purpose, with an ample supply of both water for power and coppice wood to make charcoal.

It was common for bobbin mills to be built and owned as a speculative venture by the local minor gentry or yeomen, farmers and corn millers, as was the case here, and the original building at Stott Park, now called the old mill, is a textbook example of a bobbin mill. The compact, rectangular, two-storey structure had a wheel pit at one end and a fireproof outshut at the other. The building, together with the adjoining millpond, supplied by its own reservoir at High Dam, surrounded by coppice, all within one ownership, and with reasonable access by road must have seemed a good investment. John Harrison died in 1843 and was succeeded by his brother Myles, who died five years later. Then, for almost 20 years, until her death in 1867, the estate was run by Myles's widow, Elizabeth. During this time, the mill was leased to a succession of tenant bobbin masters, who ran the mill as a business.

*Above: The mill originally comprised just the central building with its adjoining outshut. The other buildings, such as the saw shed to the left, were later additions*

*Below: Stott Park Mill is shown on the first edition of the Ordnance Survey map, 1848, shortly after it was built. The original old mill building, blacksmith's shop and millpond have been picked out in colour*



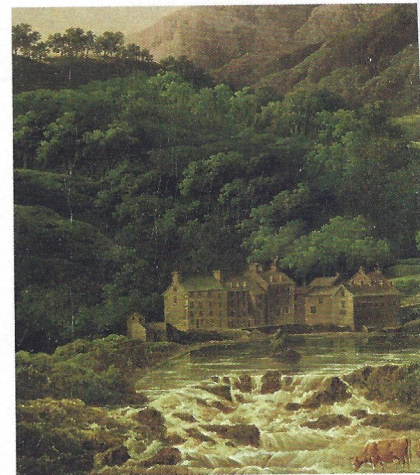
# Lakeland Industry

*Until very recently the Lake District was an industrial landscape where manufacturers who ran mills and furnaces took advantage of the natural environment.*

In the 1700s the Lake District was wild, remote and sparsely populated. Farming occupied most of its inhabitants and industrial activity generally supported the agricultural economy. In Keswick, however, pencils were made using lead mined in Borrowdale, while in Furness, then part of Lancashire, there were several exporting industries producing iron, gunpowder, textiles and barrel hoops. Hidden in valleys and woodlands, they exploited the coppiced woodland, iron ore and water power.

## An Industrial Landscape

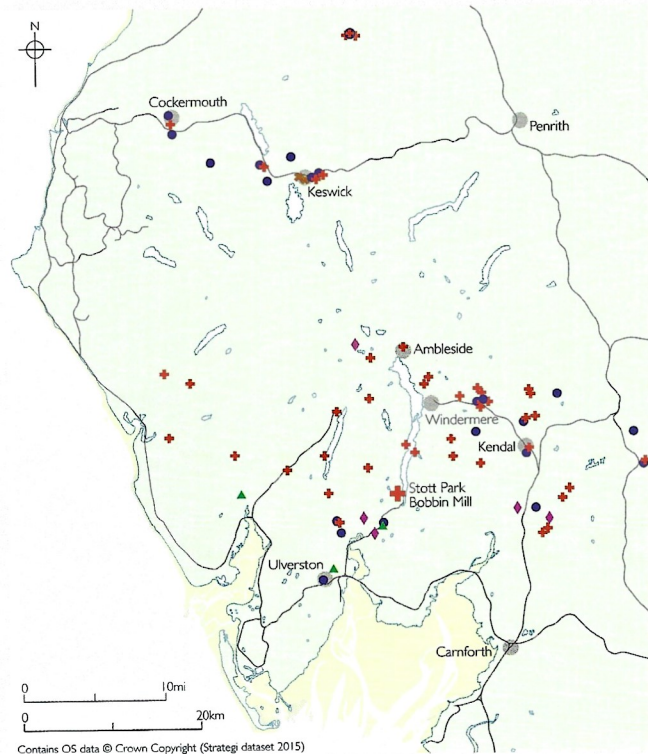
Coppice wood was a vital resource. Made into charcoal, it fuelled four iron blast furnaces built in the Lake District between 1711 and 1747. Of these, Backbarrow used charcoal until 1921; another, Nibthwaite, was converted to a bobbin mill in 1850. Charcoal was also used in gunpowder works at Low Wood and Elterwater. Water power was no less important. The bellows of the furnaces, the grindstones of the corn mills and the machinery of the spinning mills absolutely depended on it.



Across the Lake District there were more than 600 water power sites in 1850, up to 80 of them spinning wool.

There were also craft-based industries. The area was an outpost of hand-loom weaving, but the most significant commodity also used the coppice: many thousands of barrel hoops, made by plaiting oak strips, were taken by sea to Liverpool where coopers used them to bind staves imported from New England.

While bobbin turning, with its beginnings in the 1780s, was a competitor for the same resources as these established industries, it was able to take advantage of the transport infrastructure which had developed for them. But by the 1860s, when costs were already high, the bobbin mills faced further challenges from



*Left: Map of principal Lakeland industrial sites in the 1860s*

- Textile mills
- ✚ Bobbin mills
- ▲ Iron works/blast furnaces
- ◆ Gunpowder works
- Pencil/lead mills
- Railways



*Left: Backbarrow Cotton Mill by Charles Towne (1763–1840)  
Below: Besom, or broom-making was another traditional Lakeland industry that relied on coppice wood*



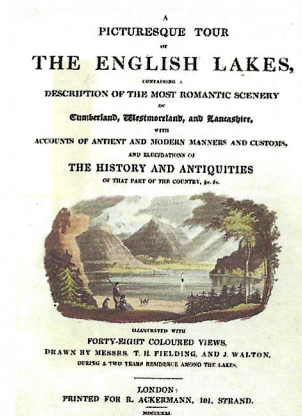
which they never recovered despite the extension of the railway network at this time. Limitations of water supply to drive mill wheels forced bobbin masters to install expensive steam engines; labour costs were driven up by the regulation of child labour and competition for workers with 'new' occupations in railways and hotels; and the import of timber opened up the market for bobbins to overseas makers.

**Tourism**

From about 1800, however, came a new industry which knew no bounds: tourism. The rich, excluded from the continental Grand Tour by the wars with France, sought

wild and spectacular landscapes at home that satisfied the contemporary taste for the Romantic. In 1810 William Wordsworth published his *Guide Through the District of the Lakes*, one of the earliest guidebooks to the Lake District. It anticipated the far-reaching growth of this industry, which took off during the 1840s when the railways provided access for the growing mercantile class.

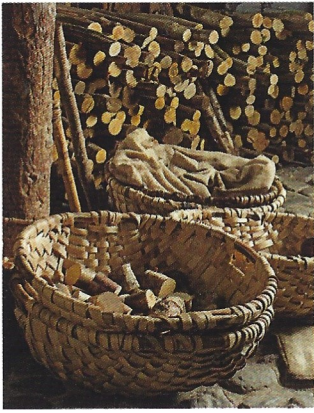
Today, tourism remains the mainstay of the Lake District economy and the old manufacturing industries, including iron smelting, wood turning, bobbin making and charcoal burning, had all died out by the 1980s.



*Middle left: Charcoal burners at work, 1909*

*Middle right: A cooper with a barrel bound with timber hoops*

*Above: The title page from TH Fielding and J Walton's A Picturesque Tour of the English Lakes, one of the early guides to the Lake District, published in 1821*



Above: Blocks and roughs in willow baskets. The early bobbin masters were tenants who owned few assets besides their stores of coppice wood, tools, machines and pieces being worked

### THE EARLY BOBBIN MASTERS

For the most part, bobbin masters were tradesmen, while the owners tended to be of a higher social class, and often occupied significant positions in the local community. Many masters never owned the mills they worked. They leased the buildings and the important riparian rights which ensured the water supplies to power the mills. This arrangement left them carrying the considerable short-term risk of the business with very little by way of assets, which were limited to machines, tools and stock in trade. Failures were a regular occurrence, and from bankruptcy notices in the press, it can be seen just how slender some of their resources were, as many masters owned no buildings at all.

We do not know the exact arrangements of the Stott Park lease, but it is likely that the buildings and the riparian rights remained the responsibility of the owner. Such an arrangement did not encourage a long-term commitment and it may go some way to explain why the lease changed hands so frequently in the early years: a time when the industry was expanding, with opportunities for tenants to move on to larger or better-suited premises.

The first lessee at Stott Park was named Rushforth who, by 1839, was in partnership with a man called Smith. By the

## Apprentices, Journeymen and Masters

Until about 1900 the bobbin industry was very heavily dependent on young apprentices.

Usually taken on at about the age of 14, apprentices were 'indentured', that is, legally bound to their masters for seven years, a very long period considering the limited range of skills bobbin making required. In reality, these boys were a source of labour which was both very cheap



and captive and they could be released before their term expired only by a magistrate. They regularly absconded and, if caught, the punishment could be severe. Soon after Thomas Evers moved to Crooklands Mill, one of his apprentices,

Thomas Thompson, ran away and was discovered working as a dock labourer in Liverpool. A serial offender, who had attempted to entice others, he was sentenced to the House of Correction with hard labour for two months.

end of December that year they had moved on, and William and James Bethom were the bobbin masters. The 1841 census records James Bethom as employing four journeymen and six apprentices. By the next census, in 1851, one of the journeymen, William Wharton, a cousin of Bethom, was running the mill. He died at the age of 37 in 1855, leaving four children. Such a premature death was not unusual; the dusty working conditions in the mills caused consumption and other respiratory illnesses.

On Wharton's death the lease was taken up by Thomas Evers, whose tenure began the Coward family's connection with Stott Park. Evers had married Susannah, the second daughter of Jeremiah Coward of Skelwith Bridge, when Evers worked at the bobbin mill there, run by Coward's son John. During Evers' time at Stott Park, the waterwheel was replaced by one of the newly invented turbines, made by Williamson's of Kendal. The turbine was purchased by Elizabeth Harrison, the owner of the mill. By the mid 1860s Evers had moved on and his sister-in-law, Elizabeth Coward, took over the lease.

In 1867 Stott Park's owner Elizabeth Harrison died, and her grandson, Thomas Newby Wilson, inherited the estate, which included the bobbin mill. He took little interest in the mill, and it was run by trustees on his behalf.

On the successful completion of his indenture, the apprentice was eligible for employment as a skilled hand, or journeyman. In bobbin mills, it was normal for the journeyman sawyers and bobbin turners to be paid for what they produced, not by the hour. Some journeyman bobbin turners later went on to manage, or even to own a

mill, and so became known as bobbin masters.

From the 1850s bobbin masters increasingly acquired their own property and in the process some attained a higher social status, regularly being named as members of the Grand Jury and as Poor Law Guardians. Thomas Evers, who took on the Stott Park lease in 1855, was originally



*Above: Thomas Newby Wilson, who inherited Stott Park Bobbin Mill in 1867 and died in 1915*

apprenticed in Yorkshire before becoming a bobbin turner, first at Skelwith Bridge for John Coward, then at Force Forge. He bought the large Crooklands bobbin mill in Preston Richard parish in 1864. In October 1866, by then a man of property, he was listed as a member of the Grand Jury for the local assizes.



*Far left: The indenture, dated 28 December 1839, of Charles Jackson, aged 14. This legal document bound Jackson to William and James Bethom, bobbin masters at Stott Park, for seven years*

*Left: A Grand Jury of the Assizes, by John Morgan, 1861. The jurymen depicted in his painting included innkeepers, tradesmen, legal men and the owner of a silk mill*



## HISTORY: THE COWARD FAMILY

*Right: An early photograph of the Skelwith Bridge Hotel, formerly the Hare and Hound public house, owned by Jeremiah Coward*

*Below: A stencil for marking hessian sacks for bobbins. The initials stood for Elizabeth and William Coward, who ran the mill from 1863*

*Bottom: Early photograph of one of the bobbin mills at Skelwith Bridge. The Cowards ran two mills there until the 1890s*



### THE COWARD FAMILY

Jeremiah Coward of Skelwith Bridge was an innkeeper and corn miller, the owner of the Hare and Hound public house (now the Skelwith Bridge Hotel), and an astute man of business. Two local bobbin mills had passed into his ownership and by 1851 his son John employed no fewer than 25 men and 15 apprentices in two mills at Skelwith Bridge. John Coward died suddenly in 1858 at the age of 44, and production at Skelwith Bridge ceased while Jeremiah sought a tenant. By 1861, however, presumably having had no takers, Jeremiah described himself as a 'bobbin manufacturer' while John's widow, Elizabeth, ran the boarding house for the unmarried journeymen and apprentices at Skelwith Bridge. Her son William was a clerk in one of the bobbin mills there.

In September 1863 the Stott Park lease held by Eyers was advertised. Although neither Elizabeth Coward nor her son William had practical experience of bobbin manufacture, they took on Stott Park, no doubt relying on the journeymen there of long standing: Charles Jackson, first apprenticed at the mill in





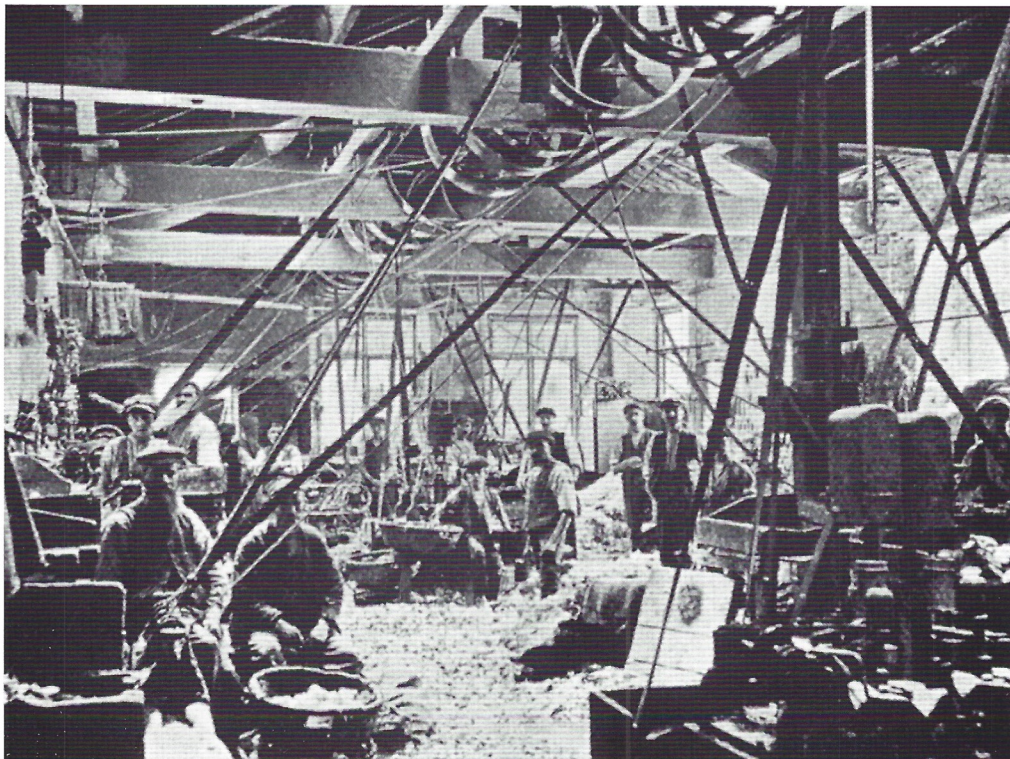
*Left: Charles Jackson boring end pieces for bobbins on the upper floor of the old mill in about 1905. Originally indentured at Stott Park as an apprentice in 1839, he worked there for 68 years until he died in 1907*

*Below: The new lathe shop in the 1890s*

1839, and George Borwick and Robert Bowness, both in their twenties, who had also been apprenticed there. By 1871 they employed nine men and six boys at Stott Park – eight bobbin turners, one sawyer and six apprentices, all locally born.

### EXPANSION AND DIVERSIFICATION

During the 1870s and early 1880s, the only major improvement to the mill was put in hand. It is likely that the upper floor of the old mill building was simply not robust enough to house more modern, heavier machines and it may have been a straightforward question of either to improve the mill or to close. The new, ground-floor lathe shop and the steam engine were the key elements of the modernization.



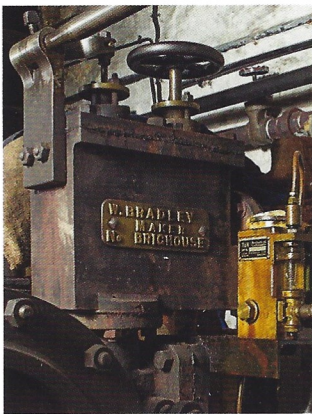
## HISTORY: EXPANSION AND DIVERSIFICATION

**Right:** The Furness Railway reached Lakeside in 1869, giving Stott Park much better access to its customers. This locomotive, number 20, would regularly have transported goods from Lakeside station

**Below:** The maker's plate on Stott Park's steam engine. The engine was bought second-hand from an obscure source, Bradley's of Brighouse, near Halifax. This thrifty approach to investment was indicative of the way the Cowards managed Stott Park



The costs would have fallen to Thomas Newby Wilson's trustees, and we can only speculate why they embarked on such an ambitious scheme. Perhaps they perceived a business opportunity as other mills closed due to shortages of water, pressure on labour costs as child employment was regulated, and the after-effects of the Lancashire Cotton Famine (see below). Modernization was intended to overcome these challenges: new, faster machines would make Stott Park more efficient, and the steam engine would both increase the available power and provide a reserve in the unlikely event of a failure of the water supply. Moreover, the arrival of the railway at Lakeside station in 1869 particularly favoured Stott Park, by providing a much better transport link to its markets. Finally, from the little we know of the Cowards, it is likely that they were determined to protect their investment in Stott Park, making the case for improvement to the mill's owners.



### The Cotton Famine

The Lancashire Cotton Famine, which lasted from 1861 to 1865, was initially caused by overproduction of raw and woven cotton and was worsened by the

American Civil War, which led to an interruption in the supply of baled raw cotton from America. Many Lancashire mills were forced to close; mill workers lost their employment and fell on extremely hard

times, relying upon relief.

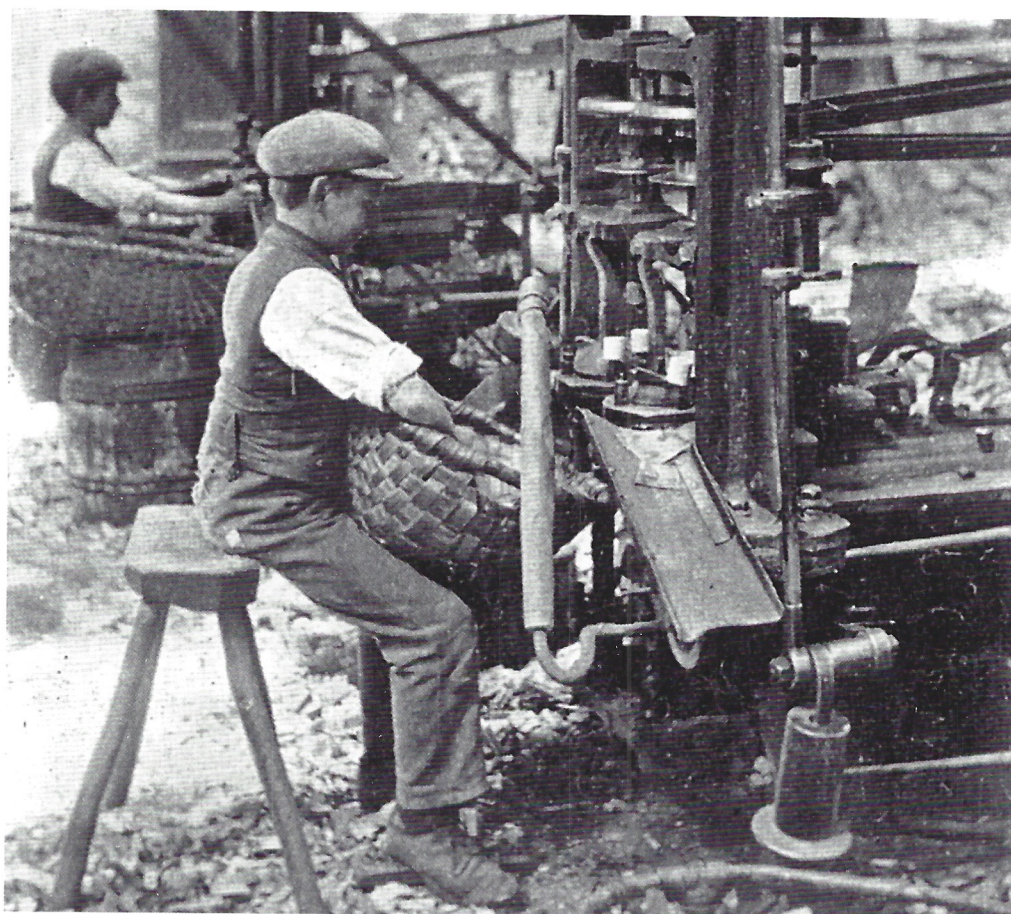
When cotton supplies were restored, many mills reopened. Although the impact on the textile industry was short term, many bobbin manufacturers never really recovered.



**Above:** A Quaker soup kitchen feeding distressed mill workers, 1862

**Right:** 1868 engraving showing bales of cotton ready for shipping at Charleston docks, South Carolina





### A WORKHOUSE SCANDAL

From 1867 the employment of young people in the bobbin mills was regulated by legislation following the Report of the Child Employment Commission. Bobbin manufacture remained largely a male preserve, and apprentices 'lived in' as boarders with the bobbin master and his family. In order to maintain a steady supply of labour at the lowest cost, from about 1870 the bobbin masters at six mills in the area around Stott Park indentured a total of 58 pauper boys from workhouses, aged between 10 and 15 years old. Twelve went to Stott Park. Although they came within the oversight of Ulverston Union workhouse, seven of the boys taken on at Stott Park came from the West Derby Union workhouse, in the centre of Liverpool, and two others came from Salford.

In June 1878 a furious row, instigated by John Gibson, a member of the Ulverston Board of Guardians, broke out in correspondence to the *Ulverston Mirror* about the treatment of these juveniles, mostly aimed at conditions at Force Forge mill. Gibson accused the bobbin masters of 'perpetuating a system binding the workhouse lads to a trade which lads alone can easily work at, and by keeping up a constant supply of boy labour they ... utterly spoil the market for the journeymen, most of whom come on to the rates of the very Union which deprives them of employment'.

*'We send them at 12 or 14 for seven years without remuneration ... When their time is up they are discharged ... and we send other boys to fill their places at the mills. They are in many cases ... over-worked, half-clothed and fed and in many ways very unfairly used.'*

John Gibson, 1878, letter to the Ulverston Board of Guardians

Above: Boys at work on semi-automatic boring machines



## The Workhouse

*Some of Stott Park's young apprentices were pauper boys sent from the workhouses.*

Since Elizabethan times, poor relief had been the responsibility of a parish. Rates were collected and distributed to those in need towards the costs of rent, food, clothes or fuel.

Apprenticeships could be arranged for children from the age of nine. This was known as 'outdoor relief', and it worked reasonably well in a mainly rural society. Industrialization and the rapid growth of large cities upset these arrangements, and led to the Poor Law Amendment Act of 1834.

Under this Act, parishes were obliged to group into 'Unions' and build workhouses. The presumption was that relief had to be worked for: 'all relief whatever

to able-bodied persons or their families, otherwise than in well regulated workhouses ... shall be declared unlawful and shall cease'. Workhouses were built all over the country, and in them men were segregated from women, and parents from their children, and work – of sorts – was provided. The Act was not popular, and unwanted children posed a particular problem. Their plight was immortalized by Charles Dickens in his novel *Oliver Twist*.

Ulverston Union Workhouse was built in 1837–8, and from 1840 its Board of Guardians (the individuals elected to administer the workhouse) brought in arrangements for pauper boys and girls above the age of 12 (13 from 1872)



to be offered as apprentices and to be clothed during their term. As well as bobbin turning, apprentices were sent to learn a variety of trades, including hoop making, shopkeeping, tailoring, dressmaking, blacksmithing and shoemaking. They were visited every quarter by the Relieving Officer of the workhouse, and it is from his reports that we know of the apprentices indentured by the bobbin mills, including Stott Park.

*Top: Boys in the Crumpsall Workhouse, Manchester, about 1897*  
*Above: A cobbler and his apprentice in a painting by Max Liebermann, 1881*



The Cowards were among the bobbin masters who petitioned for an investigation of the charges against them, but there were bobbin mill owners among Gibson's fellow Guardians on the Ulverston Board and calls for a government inspection went unheeded. The matter remained unresolved. The allegations must be seen, however, in the context of a strong demand in other parts of the country at this time for journeyman turners, and the 1881 census which lists three Stott Park journeymen who started work as pauper apprentices. One, Edward Mashiter, spent his working life there and was followed by his son. On occasions when apprentices were badly treated they were not always blameless, and when one complained of 'not being allowed in the home', his master responded that 'he would not leave the girls alone'. They were almost certainly difficult to manage, and they regularly absconded.

Nevertheless, the apprentices' detailed allegations were graphic, and must be given some credibility. One 18-year-old spoke of being beaten 'for not keeping up', and of being expected to do domestic work on Saturday afternoons and Sundays. The reported hours of work were 6.30am–6.30pm on weekdays, with 30 minutes for breakfast, 40 minutes for dinner

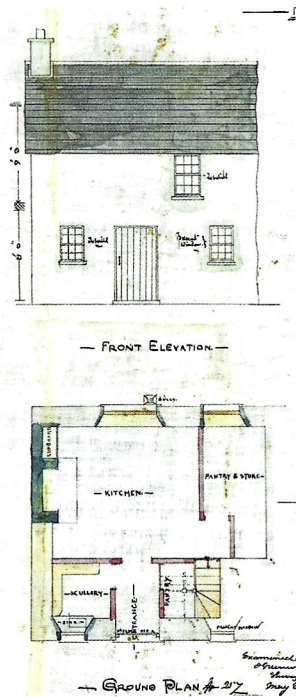
**Above left:** Ulverston from the north-west, 1842. The Ulverston Union Workhouse, built around separate courtyards for men, women, boys and girls, is shown in the centre.

A number of pauper boys from this workhouse were indentured as apprentices at Stott Park

**Above:** An illustration of 1848 showing a boy factory-worker being beaten by his master. Contemporary accounts often reported the ill-treatment of apprentices at the bobbin mills

**Below:** A study by Charles West Cope (1811–90) for his 1841 painting *Poor Law Guardians, Board-day Application for Bread*. Boards of guardians were made up of elected individuals and local magistrates who administered the workhouses





Above: Plans drawn up for John Coward in 1884, to convert a small stable in Finsthwaite into a bobbin worker's cottage

Below: Sarah Gibson (on the right), wife of bobbin turner John Gibson, in front of her home, Church Cottage, Finsthwaite, with one of their daughters in 1911

and 20 minutes for tea. One complained that he had only just been 'put to' (that is, been taught a trade) after more than six years, and had spent the previous year looking after the steam engine. More than one report spoke of worn, shabby clothing, and 'spare' living. In July 1878 two of the West Derby apprentices at Stott Park, William Lockley and Henry Fazakerley, complained about the food. In both cases the Relieving Officer noted: 'Master complains of his conduct'. Interestingly, these lads continued to work for the Cowards as journeymen.

### LIVING CONDITIONS

From the 1880s there were considerable changes to the composition and domestic arrangements of the workforce. In his day, Thomas Eyers had employed a boy as young as 11. During his time the teenage and unmarried journeymen lived under his roof in Bobbin Mill House, opposite the mill: no fewer than 25 people in total, including his family. However, the move to living in family households had already started.

By 1851 Charles Jackson, the journeyman who had originally been indentured at Stott Park in 1839, was living in a cottage with his wife (who also kept the grocer's shop) at Plum Green, Finsthwaite, and other bobbin workers' families followed. By 1891 the Clarkes, Curwens, Fells, Mashiters and Gibsons were all established there, as indeed was John Coward, Jeremiah's grandson, who succeeded his brother William as master. He rigidly controlled the bobbin mill business, as well as the Plum Green shop run by his spinster sisters, Eliza and Margaret, which workers were obliged to use. Bobbin Mill House was split into three households, in one of which lived William's widow, Ann, with four of her immediate family, a servant and 11 unmarried mill employees. After Ann's death the building was split among separate family households.





### EARLY 20TH-CENTURY DIVERSIFICATION

By 1900 the variety of occupations available locally had increased considerably, with the railway and the hotels at Lakeside and Newby Bridge in particular employing large numbers. It became the exception, not the rule, for journeymen's sons to follow their fathers into the mill. There was one very notable exception, however. The 1891 census records a young female worker at the mill, 13-year-old Emily Curwen, who is listed as a 'bobbin borer'. Her father had worked at the mill since Eyers's day, and the family were settled at Plum Green. It is not clear whether Emily worked half time in view of her age. Certainly the records list a number of apprentices at Stott Park aged 13 for some years after 1880, indicating that the Factory and Workshop Act (see page 11) was not strictly enforced by the authorities.

The range of the work being produced in about 1900 is indicated by the following year's census when the seven journeymen among the 24 workers described themselves as 'thread bobbin turners'. Thread bobbins were reels for carrying finished products such as cotton, thread and wire, rather than bobbins used on process machinery in spinning mills. By 1908, when there are some surviving business records, the full diversity of the product range is clear: it includes tool handles, pick-axe shafts and 'spout bobbins'— the small circular wooden washers used between walling and the cast-iron brackets which hold downpipes from gutters. The 1911 census recorded 16 employees. There was no mention of apprentices; there were only two teenagers. Five men had reverted to describing

*Above: The mill in about 1906. The small building in the foreground housed the mechanism for the weighbridge sited immediately in front of it. It was used for weighing single-axle horse-drawn carts*

*Below: Jim Graham senior, described in the 1911 census as a 'bobbin blocker' at work on the blocking machine*





## HISTORY: THE LAST OWNERS



*Above:* The Copse, Finsthwaite, built by John Coward in 1903. The house still stands in the village

*Above right:* A selection of the turned wood products made at Stott Park in its later days. These included a variety of reels and bobbins, as well as ladder rungs and croquet mallets

*Below:* The new lathe shop in 1971, shortly before its closure when fewer than ten workers remained at the mill



themselves as bobbin turners, another, the former pauper apprentice called Henry Fazakerley, was a shaft maker, and there were three sawyers. There was also a stoker, suggesting regular use of the steam engine. Until the First World War of 1914–18, Stott Park was sending its products as far afield as India. During the war, the Admiralty was a major customer for duffle-coat toggles.

Despite using increasingly old fashioned and labour-intensive machinery, Stott Park managed to turn flexibility to advantage, profitably producing a variety of small, simple products turned from wood in large volumes. In 1903 John Coward built a substantial house in Finsthwaite, named 'The Copse', and moved out of Plum Green. In 1921 his son, also named John, no doubt with profits further boosted by the First World War, purchased the mill, a considerable acreage of coppice and High Dam from the estate's trustees.

### THE LAST OWNERS

During the Second World War of 1939–45 Stott Park's output was considered sufficiently worthwhile for the installation of the first electric motor in 1941. In 1954 'Bobby' Coward succeeded his father John, but the key figure running the mill was Jack Ivison, who started work there in 1927. He was taken into partnership with John Coward and his son, and unlike John Coward, who lived at Cartmel Fell, Ivison lived in Finsthwaite village near the mill and among its workers.

Although the bare minimum of investment was made to the buildings and machines, it is remarkable that the business was able to continue, relying on a few loyal customers and the versatility of the old machines. Towards its closing days the mill was even able to take advantage of the craze for children's yo-yos. The business finally succumbed in 1971 for a variety of reasons: the age of its workforce and the labour-intensive machinery it was using, the poor state of repair of the mill buildings, and, probably above all, the increasing preference for items cheaply produced from plastic rather than wood.



## A Career at Stott Park

*On 19 February 1980 the oral historian Ken Howarth interviewed Jack Ivison about his recollections of working at Stott Park Bobbin Mill.*

'I started at the bobbin mill in 1927. If you got a job you just stuck to it in those days because there weren't many jobs about. I went there as a clerk, and there wasn't enough to keep me going so I used to wander down of the mill and do little jobs – help with the counting and sorting and what not.

'In those days we made a lot of bobbins for the wire trade. And we made a lot of reels for sewing cotton and thread. It was about that time that we started making spout bobbins. We used to make a tremendous lot. But just before we gave over in 1971 – the introduction of plastic pipes and down spouts and what not – well, they had their own in-built lugs that didn't need these spout bobbins, and the trade just dropped like that.

'[Timber] was all bought locally within an area of about



fifteen miles radius. We preferred birch. We used to get birch, alder, ash, sycamore, hazel, rowan. [Birch is] a nice soft wood to turn and nice to handle and not too heavy.

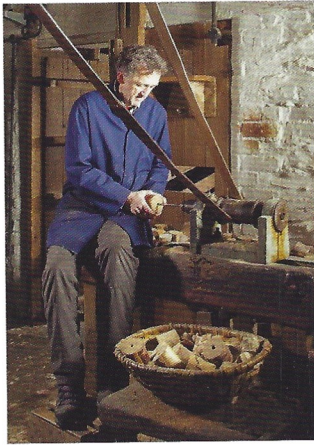
'When I first started working there would be about 18 to 20 [employees]. When we gave over in 1971 the numbers had gone down to about eight. There were one chap used to work for a month

or two and then say "Oh I'm off", and off he would go, and there were bobbin mills all up and down the nor' west then and he used to go from one to another. They were mainly local, although some came from as far as Backbarrow and Haverthwaite. We had some men here that came from these [orphans'] homes in Liverpool. Each man had his own paraffin lamp. It was a dangerous job but with all the dry shavings and what not. But they never had any fires. The electric came about 1935. [In the Second World War] we were making a lot of reels then for the shoe trade – a reel that held two ounces of thread [for] stitching the shoes.

'Every now and again we'd hire a chap with a tractor [to] come for a couple of days and do nothing else but cart [away the shavings] because they got eighteen inches, two foot deep. Factory inspectors used to come. They used to stand at the door and blow their tops!

*Above: Jack Ivison (1906–85), who ran the mill until its closure. He enthusiastically supported its preservation as a museum*  
*Left: The new lathe shop in 1968. Jack Ivison, on the left, wearing a cap, is taking an order for bobbins from Billy Johnson, a thread manufacturer from Manchester*





*Above: An important part of the conservation programme has been the retention of knowledge and skills required for bobbin manufacture. Here, the hand boring machine is demonstrated*

*Below: View of the restored mill from the south-east*

### CLOSURE AND CONSERVATION

At the time of closure, the physical state of the buildings was poor: two of the coppice barns were on the verge of collapse, and the main roofs needed replacement. Although Stott Park was not the last bobbin mill in the Lake District to close, its machines and processes had not been updated since the late 19th century, unlike those of the remaining mills: the mill was, in effect, a time capsule, which presented a unique opportunity to preserve and protect its industrial heritage. As such, before all else, detailed records were made of the buildings and machines. Unfortunately, the records of the business, except for early 20th-century account books, had been destroyed.

Jack Ivison was enthusiastic about the mill's preservation, however. He recorded his experiences, together with a detailed description of what it was like to work in the mill, and how the machines were operated, on a series of tapes which were transcribed and lodged in the Cumbria Archives, Kendal.

The buildings were then carefully dismantled, repaired and reinstated. The machines, which were all serviceable, were catalogued and re-assembled, and the steam engine, which had completely seized up, was brought back into use with the installation of a new boiler. Historical and archaeological research was carried out and continues to the present day to provide accurate information for the tour and machinery demonstrations, enabling visitors to appreciate this vanished Lakeland industry.

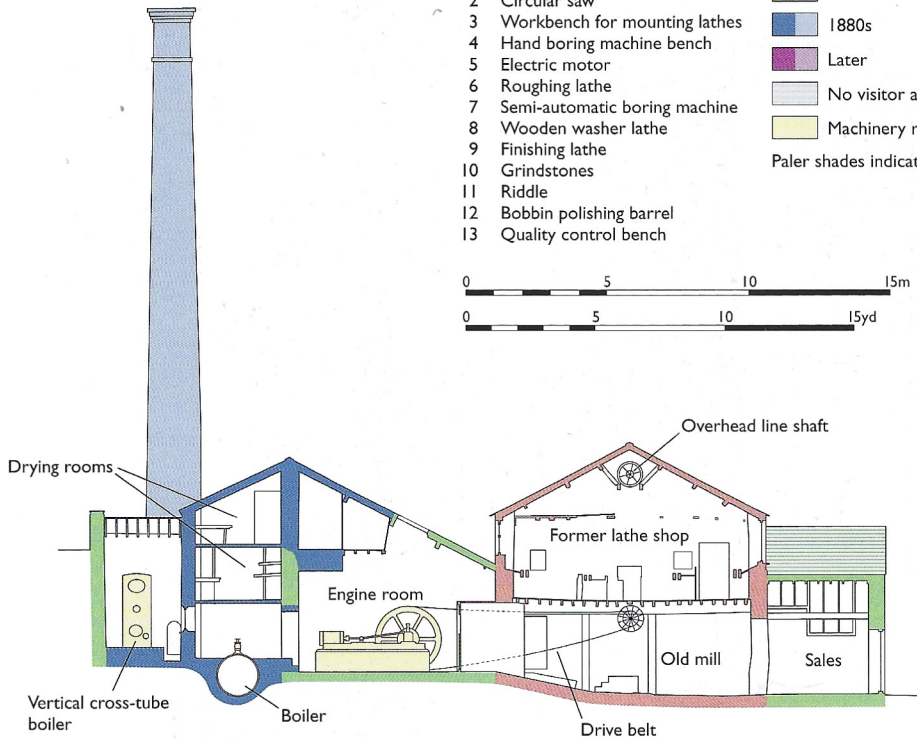


# STOTT PARK BOBBIN MILL

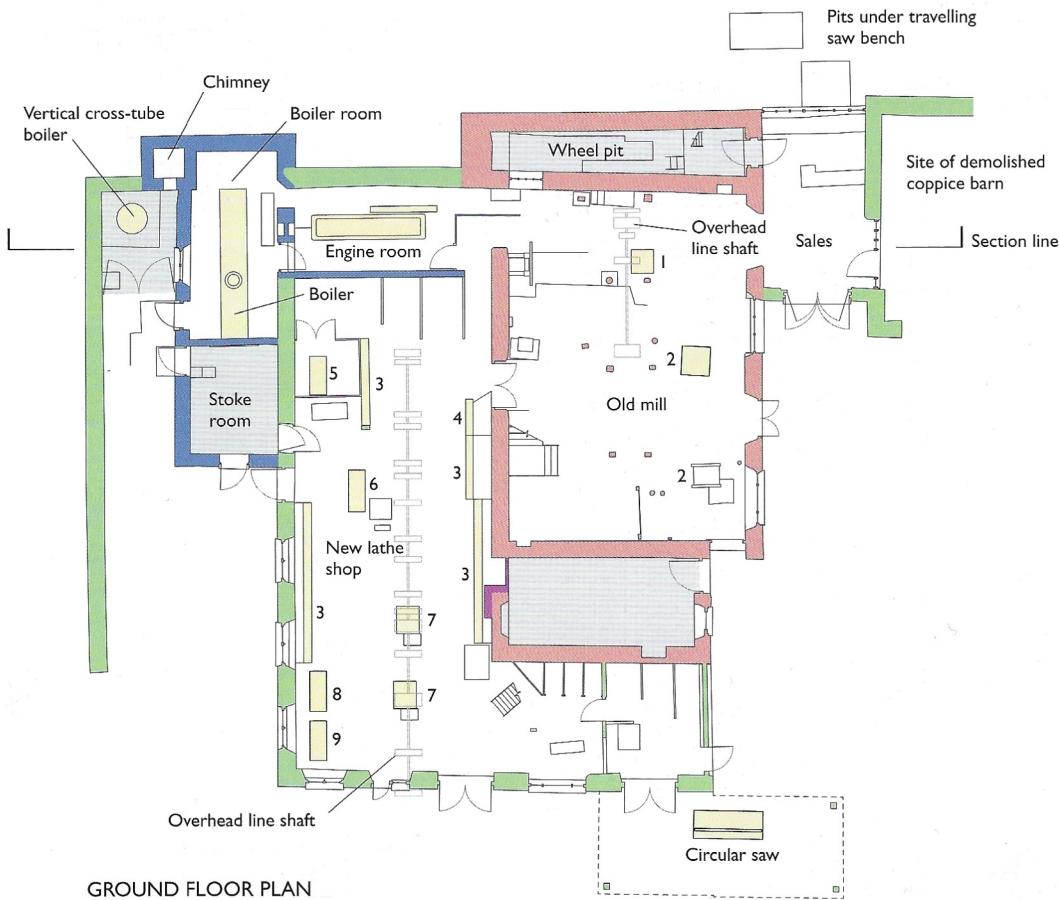
## KEY TO MACHINERY

- 1 Blocking machine
- 2 Circular saw
- 3 Workbench for mounting lathes
- 4 Hand boring machine bench
- 5 Electric motor
- 6 Roughing lathe
- 7 Semi-automatic boring machine
- 8 Wooden washer lathe
- 9 Finishing lathe
- 10 Grindstones
- 11 Riddle
- 12 Bobbin polishing barrel
- 13 Quality control bench

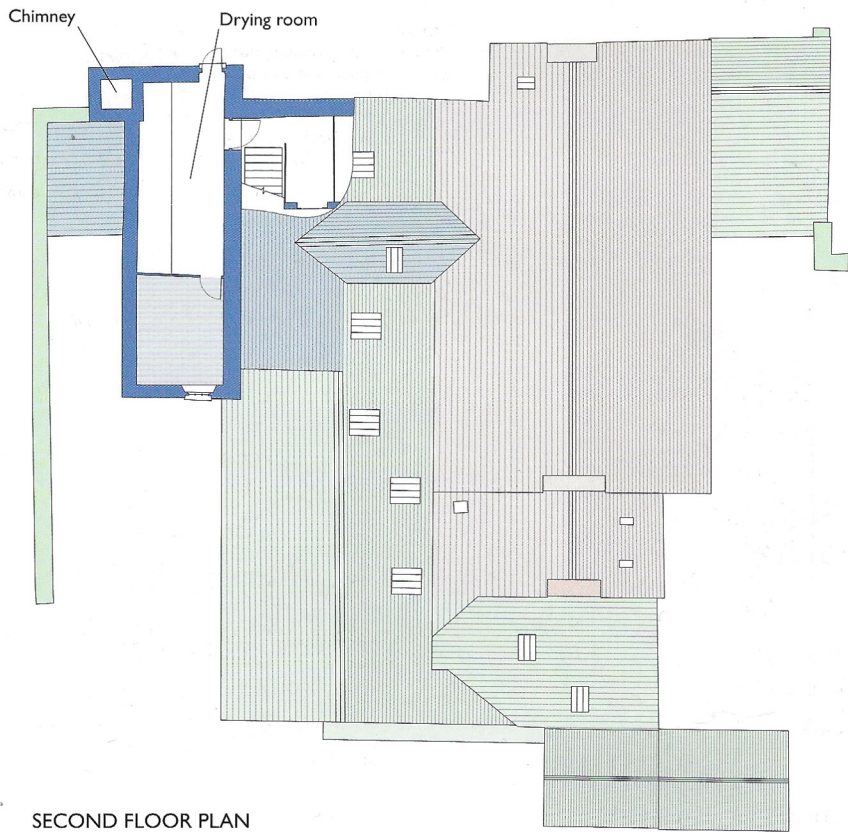
- 1835-6
  - 1870s
  - 1880s
  - Later
  - No visitor access
  - Machinery referred to on drawing
- Paler shades indicate low walls or roofs



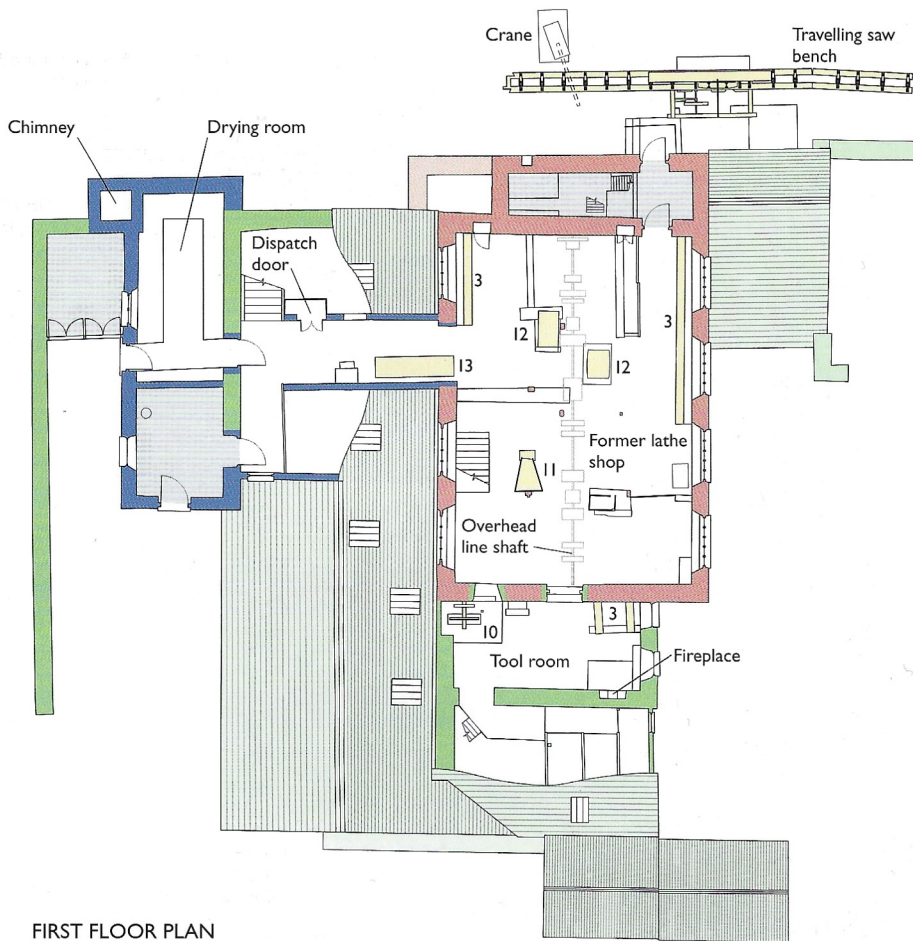
SECTION



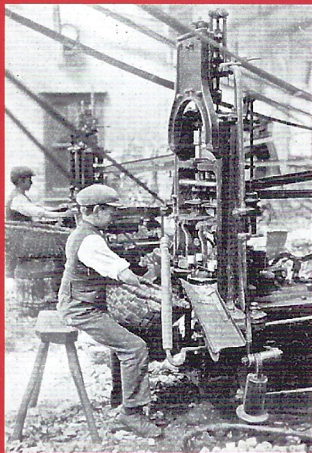
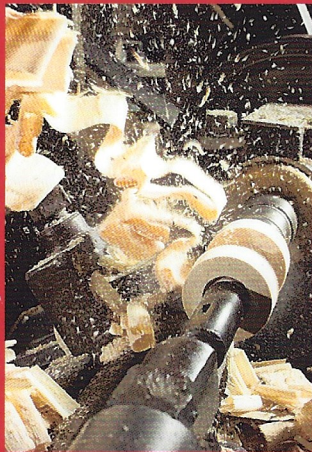
GROUND FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN



'There are myriads of bobbins sent from the neighbourhood of Windermere, all over Lancashire and Yorkshire, and into Scotland and Ireland, and to the United States, and our own colonies, and many to busy Belgium ...'

Harriet Martineau, *Household Words*, 1851

This guidebook contains a complete history of Stott Park Bobbin Mill and its place in the story of Lakeland industry, as well as a tour of the guided areas inside the mill, and the buildings outside. It is richly illustrated with maps, plans and many historic photographs.

<http://www.english-heritage.org.uk/visit/places/stott-park-bobbin-mill>

