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THE ASHFORD MARBLE WORKS AND CAVENDISH PATRONAGE, 1748-1905

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Abstract: The marble industry in Ashford in the late 18th and 19th centuries struggled to compete with its rivals in other Derbyshire towns. At first the Ashford mill had distinct advantages in terms of its adjacent marble quarries, its water power and the ingenious machine patented by Henry Watson of Bakewell. The mill also enjoyed the patronage of the Dukes of Devonshire, Lords of Ashford. However, after the 6th Duke's completion of the sumptuous north wing at Chatsworth and his subsequent death the patronage declined and so did the industry. By the beginning of this century it had virtually vanished in the county.

For a century and a half the small marble working industry at Ashford-in-the-Water owed its existence and prosperity principally to members of the Cavendish family at Chatsworth. They continually encouraged a succession of ingenious proprietors, to whom they leased the marble quarries, in or near Ashford, together with mill sites on the River Wye. Thus a small Peakland craft whose products of black and grey marble can be traced back to prehistoric times became an industry of some national importance in the 19th century.[1]

Ashford became the property of Sir William Cavendish and his wife, Bess of Hardwick, when they bought Chatsworth in 1549. They began to build one of the first "country houses" in the north of England, between 1551 and 1584, and quickly appreciated the qualities of Ashford marble for embellishing its interiors. Bess used it again in her new house at Hardwick which was begun in 1590. The 4th Earl and 1st Duke of Devonshire used it extensively in the baroque Chatsworth House which he began to build in 1687 and the 6th Duke employed it in almost every room in the new extensions of 1818-1840.

By the mid 19th century it had been introduced into the many houses owned by the Dukes from Ashford Hall to Devonshire House in London, from Holker Hall to Chiswick and from Bolton Abbey to Lismore Castle in Ireland.

Estate churches, too, were liberally adorned with monuments, fonts, pulpits and flooring in a variety of local marbles - black, grey and red.

Before the mid 18th century marble artefacts were the production of craftsmen working largely by hand - sawyers, polishers, turners, carvers and sculptors. Prominent among them was the Watson family whose fame was established by Samuel Watson (1663-1715) of Heanor in Derbyshire. He came to notice among the army of artists and craftsmen who helped to make the 1st Duke of Devonshire's house the "Palace of the Peak". He was almost the equal of his contemporary, Grinling Gibbons, to whom Watson's achievements were once wrongly attributed.

Samuel's son, Henry (1714-1786), was also born at Heanor, followed his father as a sculptor and monumental mason and worked at Chatsworth for the 3rd and 4th Dukes. Samuel's grandson and Henry's nephew, White Watson (1760-1835), was the third of the line who, among a variety of other talents, could carve and sculpt.[2] Amongst his patrons were the 5th Duke of Devonshire and the Dukes of Rutland and Northumberland.

It was Henry Watson who first turned his attention to the potential of the industrial production of Derbyshire spars and marbles. His nephew, White Watson, tells us how his uncle invented a lathe for turning vases from local spars.

In the year 1743 as Lord Duncannon, and Henry Watson of Bakewell, statuary, were riding in Eyam Dale, his Lordship's horse stumbled on a piece of water-icicle (stalagmite) which lay in the road, which appearing a different nature of stone from what they had generally seen on the road, his Lordship asked Mr Watson if he thought it possible to produce a quantity of it and to make it into ornaments; to which he replied he wished much to try it; upon which, his Lordship in a short time sent Mr Watson a drawing of an urn he had brought from abroad: when Mr W. got a quantity of water-icicle and begun making the vase in his house (the Bath House) in Bakewell.

Robert Bradbury was the man he chiefly employed in the business and many ingenious mechanics were employed to make a machine to turn the icicles in, when the lathe was invented and a sharp-pointed tool found the best, having a square plug of wood put into each end of the piece to be turned.

In September 1743, the first vase was completed which was sent to Lord Duncannon together with an annexed drawing (this is missing from Watson's manuscript).[3]

Meanwhile, Henry continued to work at Chatsworth and assisted James Paine, the architect, in the construction of the new bridge and the stables.[4] On the former he probably turned the balusters for the parapet and the latter he adorned with a spirited carving of the Cavendish achievement of arms which still reflects the grandeur of that executed by his father on the west pediment of the house. However, the famous black and white marble floor which he designed for the Great Hall at Chatsworth [5] in 1779 was a product of a newly invented machine which he patented in 1751. This he installed at the marble works he had established on the outskirts of Ashford village in 1748.

It was Henry's ingenuity that revolutionised the processes of cutting, polishing, and turning stone and marble by the use of water power from the River Wye. His famous "machine" was one of the early wonders of the Industrial Revolution; contemporaries referred to it with a sense of awe and it became one of the modern "wonders of the Peak".

Watson's specification of 1751[6] describes his machine as "A certain invention for the cutting or sawing marble, or any other stone, for sweeping or facing and also pollishing the same, by a new-invented Machine or Engine of great advantage to His Majestie's subjects, by supplying them with marble or stone for stables, chimney pieces, paveing, and for all other purposes wherein, stone or marble is used". This was submitted to the High Court of Chancery on 3rd December 1751 and enrolled on the

11th of that month. His description of his invention was accompanied by a "plan and section, with an explanation of the same". Unfortunately the Patent Office at Swansea can no longer trace these. However, two drawings of the invention survive among White Watson's papers at Chatsworth.[7]

The larger of the two consists of a plan and a part-section of the machine and must be a copy of that submitted with the original specification. It is sealed and signed "Henry Watson" at the bottom right and opposite is written "signed sealed and delivered in the presence of John Gardom [and] John Griffith". At the base is inscribed, "I do hereby humbly certify that upon the third day of Decembe[r, one thousand] seven hundred and fifty one, Henry Watson of Bakewell in the Co[ounty of] Derby ~~carver~~ (sic) stone cutter and carver mentioned in the instrument to [which] is annexed entitled The Plan and Section with an explanation [referred?] unto by the instrument to which this is annexed the sign seal and exe(sic) into the [... in] the presence of Jo. Hough, one of the Masters Extraordinary in the [High Court] of Chancery".

This drawing has its parts lettered and numbered, both in the plan and the section, and must have been accompanied by the "explanation" referred to, but this is missing from the Chatsworth manuscripts.

The second and smaller of the two drawings consists of the section and plan for an associated piece of machinery but not in finished form. Its parts are neither lettered nor numbered and its sketchy nature suggests it was one of, perhaps, a number of preliminary essays before the final solution was reached.

Both the drawings are produced here (see overpage) in a clarified form and what now follows is an account of how the machinery worked.[8] The first drawing shows the plan of two buildings on either side of a water wheel. According to the scale given on the original drawing, this wheel had a diameter of about 12 feet, was 2 ½ feet wide and housed in a pit 3 feet wide. The lower building (I) contains the cutting and polishing machinery and the adjoining one (II) the grinding and polishing bed. The upper building, with its lighter machinery, was the turning shop (III).

The Cutting and Polishing Shop (I)

This is shown in both plan and section and reveals how
A the water wheel is fed from
B the sluice gate which is controlled by
C a hand-operated lever
D is the gear-wheel with two offtakes at the
E and F lantern pinions.
G is a crank on a pinion shaft supplying reciprocation to
H a bridle and stiffened connecting rod, the forked end of which is connected to
I a square sub-frame. This is suspended from drop-rods connected by
J and K, links to two overhead shafts, to permit oscillation.
L three vertical slide bars are carried by I and they, in turn, carry
M saw frames. These are open-topped, each with three cutting wires provided with screw tensioners. As these are free to slide vertically, under their own weight, they automatically maintain contact with the stone or marble as they cut.
N is a squared block being polished.
O is the launder distributing water from
P the flume and sand from the chute to the cutting and polishing units. After use the sand and water mixture drains down
Q the lower collecting chute and into the
R sump, where the sand would be reclaimed after settlement.
S water for the flume is collected beside the water wheel and fed by gravity via
T a pipe which has
U a shut-off valve, which can be closed when work is being carried out on the saws.

The section clarifies the method of sawing (on the left) and polishing (on the right). On the left the chute for the sand (P) is vibrated by a star wheel (V) as the water is added from the launder (O). The star wheel spreads the sand sideways to form a thin film, and a spreader plate (W), reciprocated from the link (K), limits the depth of sand flow.

The double polishing mechanism on the right is clearly visible. The crank (G) from the lantern pinion (E) drives a lever system (X), which is finely adjustable with a weight, and a pantograph (Y) to control the pressure on the three polishing pads. Meanwhile, the table beneath the pads is driven at right angles by levers (Z) from a crank geared to the water wheel's main drive, creating the effective circular motion.

The Grinding Shop (II)

The analysis of this part of the machinery is more difficult as there is no side elevation. The operation appears to take place on a flat, ring-shaped bed on which the sawn slabs would have been fixed by pegs, or clamps, to provide a virtually unbroken face to the grinding medium. Power is taken from the lantern pinion (F), along a shaft passing beneath the ring-shaped bed (1), to a similar pinion (2). This engages with an overhead pin wheel (3), carrying a double-framed unit (4), which revolves over the grinding-ring table. The extremities carry miniature chain hoists (5), each adjusting the length of chain supporting the grinding pads beneath (6). This allows them to trail behind the unit to the point where they will maintain a true path without swinging from side to side, or attempting to rotate. The outer rods of the unit (7) operate from the central drive by a cranked cog (8) to reciprocate the small chain winches, and hence the grinding pads, to avoid grooving the slabs.[9]

The Turning Shop (III)

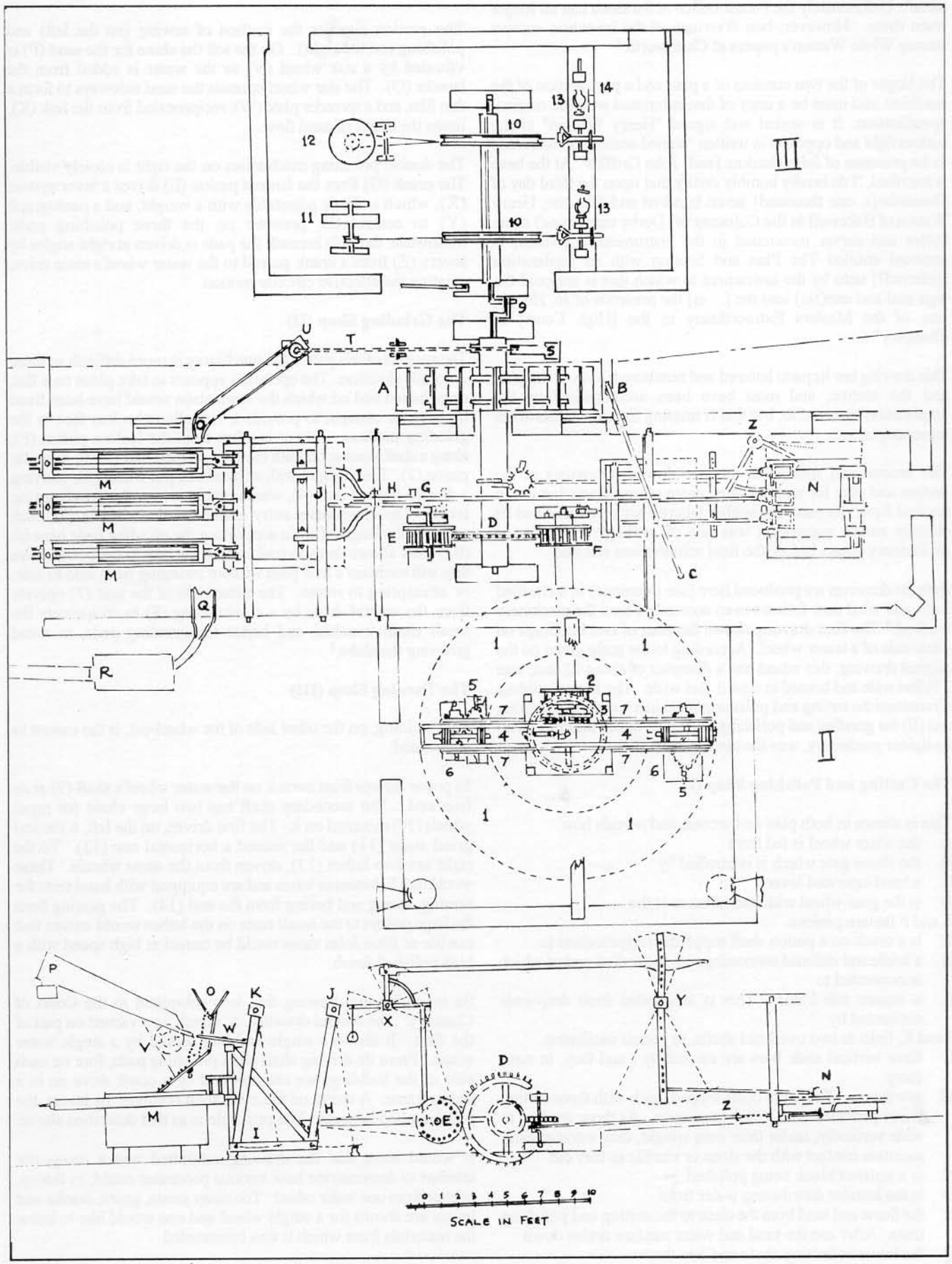
This building, on the other side of the wheel-pit, is the easiest to understand.

Its power derives from a crank on the water wheel's shaft (9) at its free end. The secondary shaft has two large chain (or rope) wheels (10) mounted on it. The first drives, on the left, a vertical grind stone (11) and the second a horizontal one (12). To the right are two lathes (13), driven from the same wheels. These would turn balusters or vases and are equipped with hand rests for turning, facing and boring from the end (14). The gearing from the large pulleys to the small ones on the lathes would ensure that marble or Blue John vases could be turned at high speed with a high polished finish.

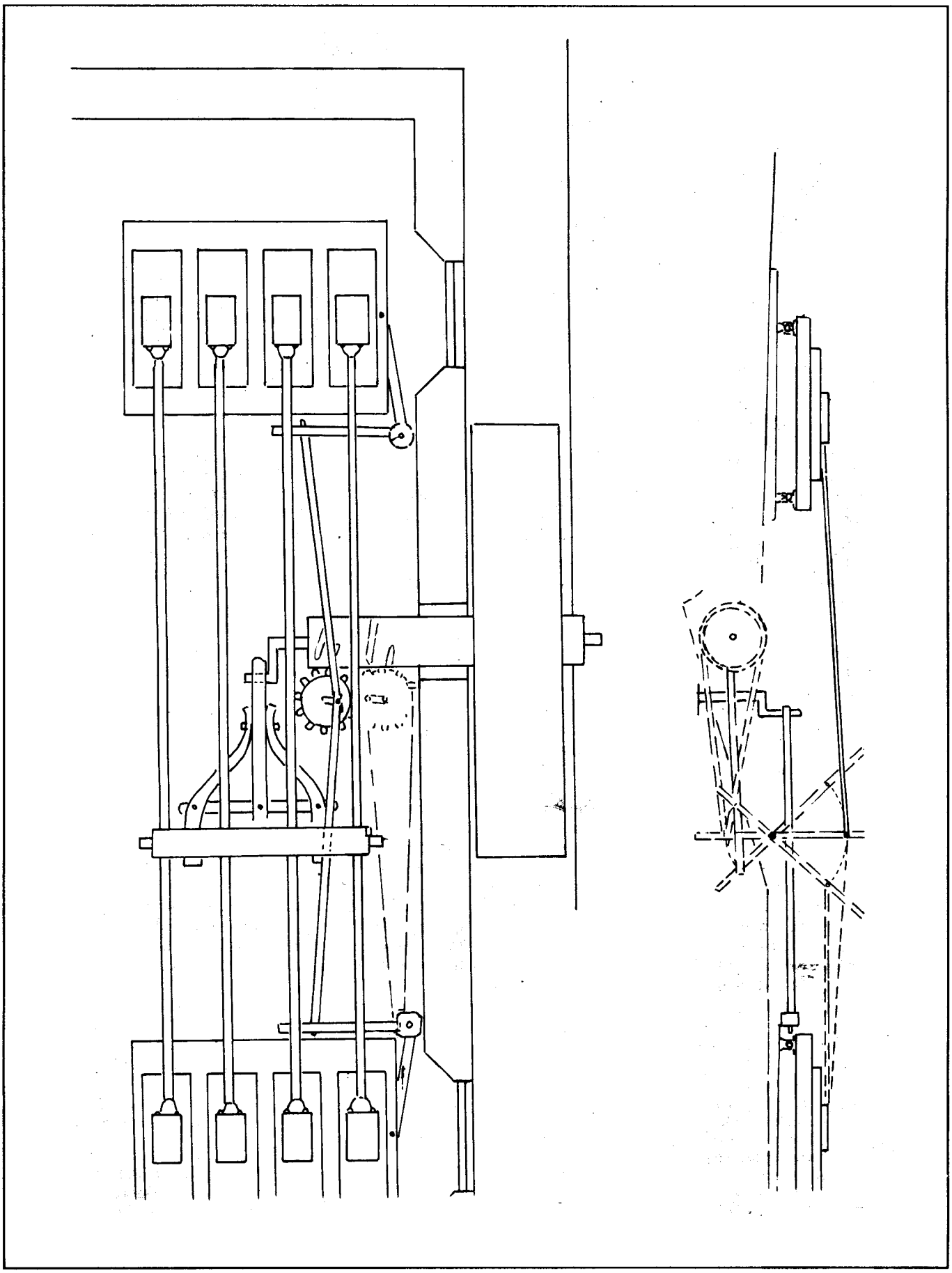
So much for the drawing that was submitted to the Court of Chancery. The second drawing, or sketch, is a variant on part of the first. It shows a single building served by a single water wheel. From its driving shaft eight polishing pads, four on each side of the building, are reciprocated by a crank drive on to a sliding frame. A worm on the main shaft revolves, by levers, the polishing bed beneath. The principle is as that described above.

It would seem that the drawing submitted was a composite attempt to demonstrate how various processes could, in theory, operate from one water wheel. Too many joints, gears, cranks and levers are shown for a single wheel and one would like to know the materials from which it was constructed.

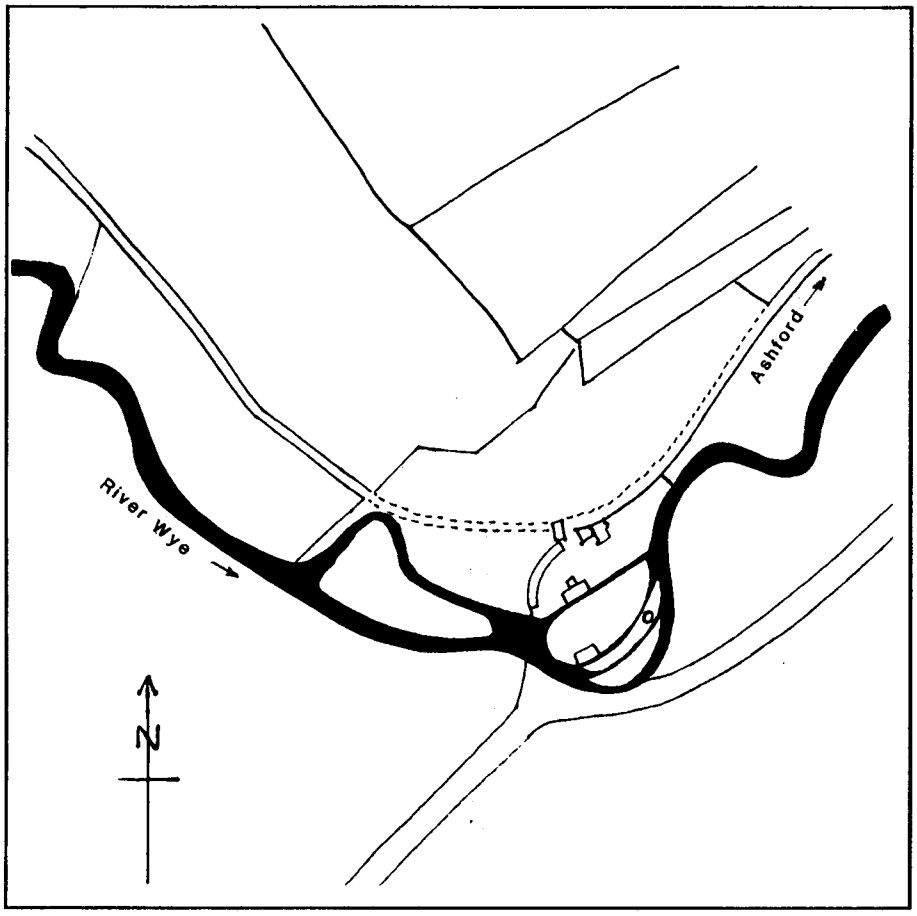
The site on which the machinery was installed was at the west end of Ashford village in a loop in the River Wye. This was probably a site for working marble before Watson arrived in 1748. Indeed, it may have been here that Thomas Accres, the marble mason who



Plan and part-section of Watson's stone and marble cutting machinery as submitted in 1751.



Section and plan for an associated piece of machinery.



The Ashford Black Marble Mill from the 1766 estate map at Chatsworth.

worked on Hardwick Hall, made "an engyne for the sawing of blackstone" in 1595. An estate map of Ashford and Sheldon, drawn for the Duke of Devonshire in 1766, gives the earliest known plan of the site.[10] It shows a leat cut almost at right angles to the River Wye to the west of the site. This creates an island before rejoining the river at a point widened to accommodate a weir and three wheel races.

The three processes of sawing, polishing and turning appear not to have been placed in adjacent buildings, nor to have been powered by a single wheel. The plan (above) shows three buildings, one on each of the three leats. An 1840 plan of the site reveals the same arrangement and allows us to identify their functions.[11] The first race, crossing the centre of the site, operated the saws and may have contained the turning lathes in 1751. The second wheel powered the grinding and polishing machine and the third an additional saw mill. This last may have been the location of the earliest mill on the site.

The local poet, John Howe, a tallow chandler of Ashford, described the processes at the site in his poem "Monsal Dale", published in 1816.

And turning to the left, by Cliffend green,
We first admire the curious machine.
Here grating saws divide the ponderous blocks,
(Hewn from the quarries of the neighbouring rocks,)
And here the engine's retroactive power
Sweeps the rude marble's rugged surface o'er,
Till polish, by another process brought,
Gives elegance, surpassing even thought,
Fit to adorn the palace and the dome,
The poor man's grave-stone, or the rich man's tomb.
Here Stalactites are, by artists' aid,
Wrought to all forms that fancy e'er pourtrayed;
And, when thus manufactured, may conduce
Either to luxury or real use.

The three mill wheels were dispersed around an inner marble yard. The outer yard, which had entrance gates from the Ashford-Buxton road, was enclosed by the workshops and stables on the west side and by the manager's house on the east.

Such was the arrangement of Ashford Marble Mill in Henry Watson's time. However, his inventive genius was not matched by his business acumen. The mill did not flourish and as a contemporary remarked, "though a patent was obtained to secure the profits of the inventor, the advantages were not commensurate with the expectations that had been formed".[13] Henry may have had partners in the foundation of his marble mill; one of them was probably John Gardom of Bakewell.[14]

Henry Watson appears to have become involved with members of the Platt family of Rotherham before he established his marble mill. The Platts were mason-architects who came from Lyme Park near Stockport in the 17th century and had established a thriving company as builders and architects in Rotherham in the 18th century.[15] Perhaps Henry Watson first met the Platt brothers, Edmund, John and George, when he and they were working for the architect Giacomo Leoni in the 1730s. The Platt brothers were active in securing stone and marble from the Peak quarries at this time and by 1765 they appear to have become the principal share holders of the Ashford Marble Mill.

White Watson tells us how they became involved in working Blue John.

The business (Henry Watson's) made rapid progress and improvement for several years; till 1765 when the Amethystine Fluorspar, or Blue John, was discovered at Castleton (some of which had been sent in 1750 by Mr Watson to the Marquis of Rockingham to be laid in the gravel walks, which Mr W. charged 2/- per cwt at Bakewell).

"Robert Hall of Castleton was the first man who procured a quantity of Blue John (his neighbours styled him Blue John), who sold it to Messrs Platts and Co at the Marble works in Ashford at three pounds per ton, delivered at Ashford.

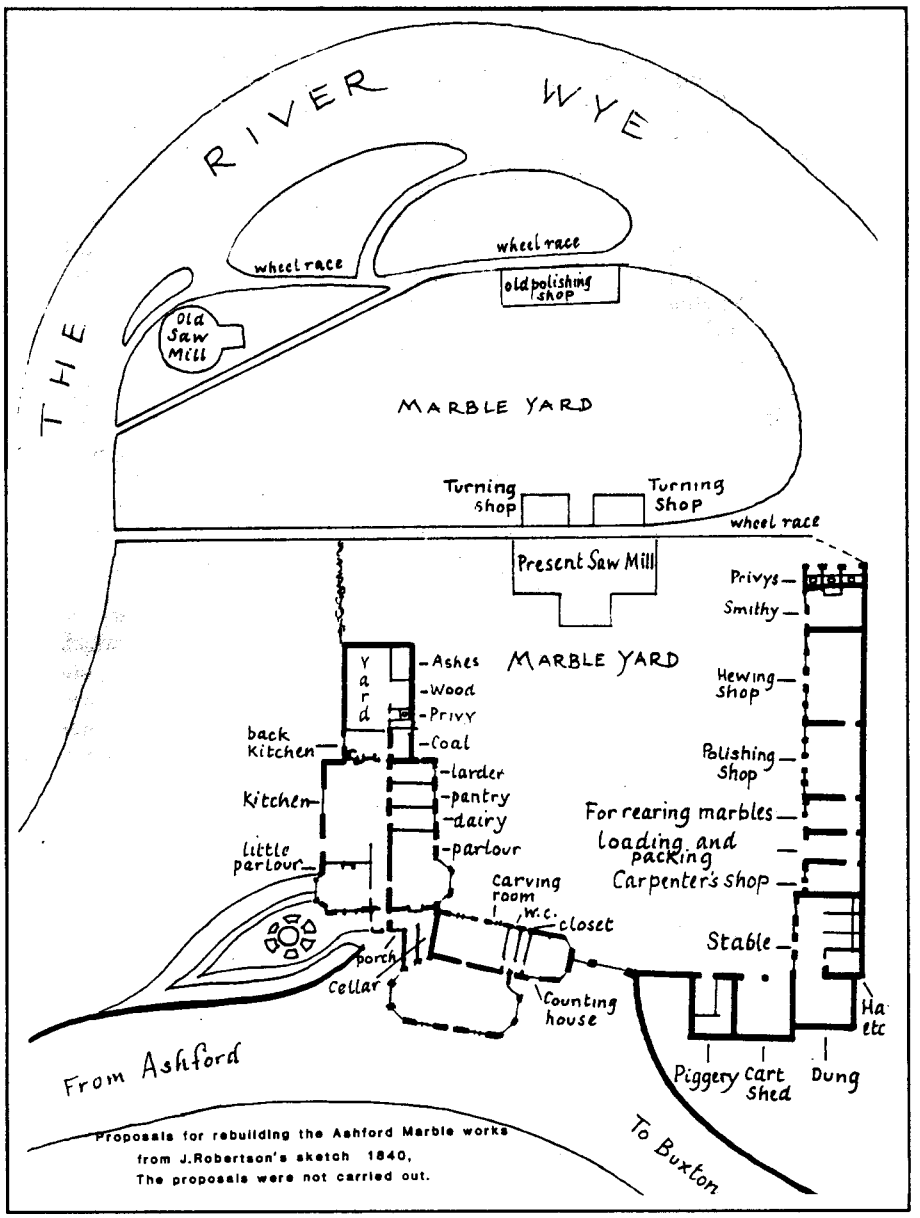
Messrs Platts and Co carried on a manufactory of this spar for one year. Then Lady Mazareen's Agent, Mr Norman, had the getting of it by Auction for a twelve month, viz. from Decr. 2nd 1765 to Decr. 2nd 1766 at forty shillings the first year, who have had a lease of it for 100 years. The next year at forty pounds. The third year Mr Platts took it at ninety four pounds. Then Lady M, whose property the spar was, took it into her own hands and sold it by the ton, which continues to this day."[16]

The architect and mason John Platt (1728-1810) appears to have been the dominant partner in running the Ashford Mill in the late 18th century. Henry Watson had retired to the Bath House in Bakewell by 1774, for his nephew White Watson went to live with him there in that year. The Ashford Mill continued to decline and the principal source of patronage, Chatsworth House, had no major building programme in hand. In 1783 the Ashford Marble Machine Company, as it was then called, experienced a financial crisis. Three of the partners, ironmongers from Wolverhampton,

who, no doubt, maintained the machinery, became bankrupt. They were bought out by the three Derbyshire partners, Alexander Bossley of Bakewell, John Gardom of Bubnell and John Platt of Rotherham.[17]

Platt was striving to find major customers but with no great success. He rented the Ashford black marble quarries of the Duke of Devonshire as well as the grey marble ones at Ricklow Dale, near Monyash. In 1778 his design for repaving Lincoln Cathedral in black, grey and bird's-eye marbles was considered striking and ingenious but was rejected as too expensive.[18] John Platt died in 1810 and the marble business was carried on by George Platt. White Watson made a silhouette portrait of George with this caption beneath - "Mr George Platt - Ashford Machine d. Ashford, April 20, 1824, aged 84 years".[19] So, after half a century the ownership of the mill by the Platt family brought little more profit than that of Henry Watson.

A Marble Works cashbook for the years 1816-1818 survives in the Chatsworth archives.[20] Although there are small accounts to individuals and companies around the country, there appear to be no major commissions for these years. The ballroom floor for one Mr Heacock in 1817 appears to be a sizeable job, but many of the entries concern the sale of mortars, pestles and slabs. Some of these are sold to strangers passing through Ashford.



Proposals for rebuilding the Ashford Marble Works from J. Robertson's sketch, 1840. The proposals were not carried out.

There are other reasons for the failure of the marble works to make substantial profits. The quarries and the water power may have been on hand but a good transport system was not. The local boom in turnpike roads occurred between 1750-60, just after Henry Watson had established his mill, but the main turnpike road from Ashford to Buxton, promoted by the Duke of Devonshire, was not opened until 1810.

Marble workers set up in business at Matlock and Castleton, Bakewell and Buxton. Industrial espionage appears to have led to competition from Derby. White Watson again tells us how this happened.

When Mr. [Henry] Watson had brought the business to great perfection his man, Jonathan Morton, in whom he placed great confidence and who was the principal man in working it, stole some of the stone and, erecting a lathe at his house in Great Longsdon, carried on the business unknown to his master, - feigning himself ill and neglecting his Master's business. He was connected with Richard Brown, Clerk of All Saints Church, Derby, Stone Mason, who purchased the goods of him. One day he took some to Mr. Port's of Ilam Hall who was a great friend of Mr. Watson's, and who, suspecting them, detained the goods for a few days, fixing a day for Brown to call again. In the meantime Mr. Port invited Mr. Watson to come on that day to Ilam, which he did, and then met Brown, - the goods were produced, Mr. Watson declared that they were made by his man which Brown acknowledged, saying "he had bought them of Jonathan Morton and paid him for them." Thus, Brown begun the business which he still continues in.[21]

Richard Brown (d. 1785) had advertised himself in 1735 as a monumental mason who "performed monuments, gravestones, chimney-pieces on reasonable terms".[22] By 1765 he, too, had procured supplies of Blue John for in that year he made two "purple obelisks" for Kedleston Hall. His business in Derby began to prosper, not only because of good means of transport and communication, but also because his son, Richard II (1736-1810) installed a steam engine to drive his machinery.

In 1824, when George Platt died, Richard Brown III secured the control of the Ashford Marble Mill. The Browns had already secured rights to extract marble from the Duke's quarries and in 1823 and 1828 shafts were sunk by the Duke of Devonshire for the newly discovered red marble at Newhaven. Richard Brown is paid in the latter year for "making trial of a quarry of red marble found near Newhaven and of getting some specimens for His Grace".[23]

Richard Brown III ran the Derby and Ashford Marble works for six years. Whether he promoted the former at the expense of the latter is not clear, but the Ashford business continued to limp

along. Rhodes commented

"The grey marbles dug from the quarries of Derbyshire are less esteemed than formerly, and the works where they are sawn into slabs and polished, are sinking into disuse and decay. This may be regretted, as the numerous shells and the great variety of figures they contain, when cut transversely, exhibit an infinite variety of vegetable and animal remains, that are not less curious than beautiful. The black marble of Ashford is not surpassed, perhaps not equalled, in any part of the world; its deep unvaried colour, and the compactness of its texture, fit it to receive the highest polish; a mirror can hardly present a clearer or a more beautiful surface: hence it is highly esteemed, but being difficult to work, it is too expensive for common occasions. In Chatsworth House there are some columns of this marble, which are used as pedestals for busts, and some ornamented vases of exquisite beauty".[24]

Nevertheless, others still felt that good profits could be made from working marble. By 1821 John Lomas was doing so two miles down-stream from Ashford, at Bakewell. He appears to have had a works in Grammer Croft, beside the Wye, where he cut and polished marble for chimney pieces and monuments. Twelve men were employed there by 1833, working marble from the Duke of Rutland's quarries. A leat had been opened below Bakewell bridge and "blocks of the finest quality were sawn and polished for various uses".[25]

In 1830 Richard Brown III retired from the marble business. He had no sons and sold his Derby works to the noted monumental mason, Joseph Hall the younger, of Derby; the Ashford works were sold to George Oldfield of Ashford, a less known monumental mason, who continued there until 1855.[26]

During the lean years of the Ashford Marble Mill, from the 1760s to the 1820s, little building work was being carried out at Chatsworth House. However, the interests of the Cavendish family in the minerals and fossils of the area had not diminished. Their patronage was now extended to the new science of geology and the collection of mineral specimens. In this field they secured the services of one of the leading experts, White Watson.

Watson was a provincial polymath; like his uncle and grandfather before him he was a monumental mason and carver but was also an antiquarian, museologist, silhouette artist, writer, gardener and plantsman. His botanical and horticultural pursuits earned him election as a fellow of the Linnaean Society. At the Duke of Rutland's Bath House, where he lived in Bakewell, he not only revitalised the town's bathing facilities, but laid out the Bath grounds in an attempt to establish a botanical garden.

Within his house he had created, by his death in 1835, a museum of geology, natural history and archaeology that predated that of William Bateman of Lomberdale Hall and was celebrated beyond the Peak. Minerals and fossils, first collected by his uncle Henry, were the principal exhibits of this collection which Glover described in 1833.[27] Watson's trade card tells us that he "executes monuments, tombs etc., gives lessons on geology and mineralogy and furnishes collections; affords information to antiquarians and amusement to Botanists".[28]

Watson enjoyed a closer patronage from the 5th Duke and his family than that of his grandfather and uncle earlier. As early as 1788 he had provided the Duke with a tablet of Derbyshire "fossils" (comparative slabs of rocks and minerals).[29] The Duchess, the famous Georgiana, was as interested in geology as her husband. She employed Watson to make a fossil room at Chatsworth and to design cabinets of specimens for it. He lent her books and visited the house to give talks to the family on geology.[30]

When the Duchess wished to have a simulated Derbyshire cave constructed in the gardens Watson was called upon in 1798. He used tufa to make the entrance of a grotto which was then planted with ivy and other rock plants. The interior was lined "with Derbyshire fossils, as organic remains found in the respective strata; stalactite, calcareous crystallisation's etc.".[31]

Watson was so well favoured that he was able to secure a £100 loan from the Duke in 1801. He was invited to the Duke's birthday dinner party in 1808 and in 1810, as an expression of his gratitude, he dedicated his geological work, *A Delineation of the Strata of Derbyshire,* to his patron.[32]

When the 5th Duke died in 1811 patronage continued to a lesser degree with the 6th. He, as the young Marquis Hartington, had been taught by Watson and had bought his own tablets of fossils, ironstones and coal from him. On his accession he instructed Watson to overhaul the collections he and his father had built up and ordered samples of black marble and limestone in the following years.[33]

However, the new Duke began to follow new architectural interests which no longer required Watson's help and advice. His mother's grotto, which Watson had erected in 1798 and repaired in 1807, was taken down and largely rebuilt in the 1830s. Watson's interior of fossils was removed and relined with specimens of copper ore from the mine at Ecton.[34] Indeed interest in the earlier collections of minerals declined and the Duke's new architect, Jeffry Wyatt (later Sir Jeffry Wyattville) did not enthuse about them.[35]

Yet the Duke's interest in precious minerals never diminished and he began to collect antique marble sculptures and gemstones, porphyry, malachite and other stones including the world's largest uncut emerald. The local marbles, especially the newly discovered red, had a special appeal and were to play an important part in his new building schemes.

Chatsworth's new extensions to Wyattville's designs began in 1818 and the work continued for the next twenty two years. The Duke looked to the Ashford Marble Mill during this period for the luxury fittings his new building required - first to Richard Brown III and increasingly to his successor in 1830, George Oldfield. Marble was used in almost every room with particular emphasis on important ones like the Sculpture Gallery, the Dining Room and the Library.[36]

Oldfield, we are told, had installed "improved machinery" by 1835[37] but he was finding it difficult to keep pace with the demands of Chatsworth and the other houses that were following its example. New designs, particularly using tessellated surfaces and inlaid work, were employed on floors, fireplaces and tables as well as on ornaments and jewellery.

Ashford was beginning to boom, for the first and only time, as a marble working centre and new factories were opened. Downstream from the original marble mill, just at the point where the leat for the old corn mill leaves the Wye, George Redfern, an Ashford carrier, had installed by 1846 a water wheel for cutting and polishing. By this time, too, Richard Savage, Edward and Robert Smith are listed separately as marble turners. William Milnes, a quarry owner, is named as a manufacturer of inlaid mosaic and tessellated marble tables along with John Tomlinson, a village draper, who was established in the same type of business.[38] In short, much of the smaller marble work was being carried out as a cottage industry.

Such activity began to transform the village; heavy wagons trundled from the quarries to the mills; others transported the finished work to the points of sale. Heaps of raw material and waste were not an uncommon sight. This was particularly so at the

Old Marble Mill which, with its run-down buildings, had become unsightly to those passing its gates.

The Duke, who was rebuilding Edensor as a model estate village in 1839-45, considered improving the entrance to Ashford. In 1840, he instructed John Robertson, who worked in Paxton's office and who had designed the Edensor housing, to present drawings for improvements to the Ashford Marble Mill. Robertson's drawings for an impressive facelift are at Chatsworth.[39] His tidied plan for the site gives us an idea of the principal buildings whose location had not basically altered since Henry Watson's time. The chief alteration with which he was experimenting was a new show-room facing the road to the left of the entrance gates. However his finished elevations depict a different design to advertise the Mill and its products. Like Edensor village, the architectural elements are eclectic - chiefly a fusion of cottage ornée and classical styles. The dominant new showroom, with an adjoining carver's workshop and counting house under one roof, was to be rather grand with a classical pediment and a Tuscan portico. The showroom itself was a gallery lit from above by a drum-shaped, glazed cupola.

The scheme was not taken up, presumably because the bulk of the cost would have been borne by George Oldfield's Marble Mill Company. Two houses designed by Robertson for the Duke still stand beyond the site of the mill gates on the old road into Ashford village; they give us some faint idea of the splendid scheme to create a model factory and a new entry to the village.

MARBLE WORKS, ASHFORD,

DERBYSHIRE,

ESTABLISHED IN 1748.

JOSEPH TWIGG, AND CO.,

Beg to announce that they have taken the above Works, and are now in full possession of all their peculiar privileges, and are prepared to supply the Trade with the various Marbles—for which the neighbourhood of Ashford-in-the-Water is so justly celebrated—in Block, from their extensive quarries.

They take this opportunity, respectfully, to inform the Nobility, Gentry, and Public generally, that they continue to carry on the manufacture, (by the aid of their very efficient water-power machinery), of Chimney Pieces, Monuments, Tombs, Tablets, Columns, Baths, Slabs, Mortars, and every other article, for the formation of which marble is applicable, on the most moderate terms.

A variety of Designs for Monuments, Tablets, &c., are kept at the works for inspection; and, generally, a variety of Chimney Pieces, and other finished work, will be exhibited in their Show Room.

The most prompt attention will be given to all orders and instructions, with which they may be favoured, for marble work of whatever kind; and in soliciting the patronage of the Trade, and of the Nobility, and Public generally, J. T. and Co. beg to state that any work which they undertake to perform, either by contract or otherwise, shall be executed in such a manner as cannot be surpassed, either as to terms or workmanship, by any existing manufactory.

J. T. & Co. feel no hesitation or delicacy in stating that, as they are now but just commencing Business on their own account, their Show Room and Premises are not so amply stored as they could wish them to be; but they feel assured that, by strict assiduity and attention—fair and upright dealing, a very few years will place them in such a position as to render the invitation to their Friends and the Public to look over these ANCIENT TIME-HONOURED WORKS, far more satisfactory than at the present time.

ALL ARTICLES PURCHASED FROM J. T. & Co. ARE SAFELY PACKED, AND FORWARED TO ANY PART OF THE KINGDOM.

Ashford-in-the-Water, Derbyshire,
November, 1855.

The old factory had reached its zenith with the completion of the new north wing at Chatsworth, followed by the Great Exhibition of 1851. George Oldfield sold out in 1855 to Joseph Twigg, a local quarryman. He published the above optimistic announcement.[40]

The last paragraph of this advertisement indicates that Oldfield had not left the business on the soundest footing - a condition Joseph Twigg and his son strove to remedy over the Marble Mill's remaining fifty years. In 1862 new plans were drawn up for new workshops on the Ashford Mill site, but whether these, by S. Rollinson of Chesterfield, fared any better than Robertson's in 1840 is not clear.[41]

A trickle of work continued from Chatsworth but in 1858 the 6th Duke died and the era of unparalleled extravagance was over. The 7th Duke viewed with some concern the considerable annual expenditure and debts which his predecessor had bequeathed him. His one indulgence was the rebuilding of Edensor church in 1865, to the expensive designs of Sir George Gilbert Scott.[42] The costly interior fittings in various coloured marbles were placed in the hands of J. Twigg and Company. The old monuments were dismantled and restored to new locations, including the magnificent Jacobean black marble and alabaster tomb to William, 1st Earl of Devonshire and Henry Cavendish which was re-sited in its own chapel. Twigg's marble masons also carved the pulpit, the font, the sedilia and the marble margins to the floors.

As Edensor's new church neared completion the rebuilding of Ashford's began in 1868. Though by no means as splendid, nor by so renowned an architect, Ashford marble was appropriately employed inside, including red marble shafts in the chancel arch.

This ecclesiastical work secured Twigg's reputation. We are told by 1895 that "the works are . . . fitted with the most improved machinery. He employs a large staff of skilled workmen, and is able to execute with taste and finish, surpassed by none, any species of marble work, from the flat slab of a wash hand stand to the most elaborate reredos or pulpit. Marble mosaic pavements of the most artistic and lovely designs for entrance halls and floors are manufactured here".[43] The materials came from the black, russet, birdseye and rosewood marble quarries.

The "most improved machinery" referred to the abandoning of the old vertical water wheels and the installation of the new iron turbines lying horizontally in their iron casings within the old water courses. At the Old Batch Mill in Ashford, known by 1860 as the Derbyshire Marble Works, George Redfearn had a turbine

A.D. 1751 . . . . . N° 664.

Machinery for Sawing Marble and Stone.

WATSON'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME:

KNOW YE that His present Majesty King George the Second, by His Letters Patent under the Great Seal, bearing date at Westminster the Eleventh day of October, in the twenty-fifth year of His reign, hath, for Himself, His heirs and successors, given and granted unto HENRY WATSON, of Bakewell, in the County of Derby, Stone Cutter and Carver, and to his exors, admors, and assignes, especial lycence, full power, sole priviledge, and authority, to make, use, exercise, and vend, within that part of Great Britain called England, Dominion of Wales, and Town of Berwick-upon-Tweed, "A CERTAIN INVENTION FOR THE CUTTING OR SAWING MARBLE, OR ANY OTHER STONE, FOR SWEEPING OR FACEING AND ALSO POLLISHING THE SAME, BY A NEW-INVENTED MACHINE OR ENGINE OF GREAT ADVANTAGE TO HIS MAJESTIE'S SUBJECTS, BY SUPPLYING THEM WITH MARBLE AND STONE FOR STABLES, CHIMNEY-PEICES, PAVEING, AND FOR ALL OTHER PURPOSES WHEREIN STONE OR MARBLE IS USED;" together with the whole profit, benefit, and advantage from time to time accrueing and arising by reason of the said Invention, for and dureing the term of fourteen years, according to the form of the Statute in that case made and provided; in which Letters Patent, amongst other things, it is provided that if the said Henry Watson shall not particularly describe and ascertain the nature and form of his said Invention, and in what manner the same is to be performed, by an instrument in writing under his hand and seal, and cause the same to be inrolled in the High Court of Chancery in three calender months next and imediately after the date of the said Letters Patent, that then the said Letters Patent, and all liberties and advantages thereby

granted, shall utterly cease, determine, and become void, anything before in the said Letters Patent contained to the contrary in anywise notwithstanding.

THEREFORE FURTHER KNOW YE, that I, the said Henry Watson, in pursuance of the intention of the said Letters Patent, and of the provisoe therein contained, do hereby fully and particularly describe the nature, form, and maner of my said Invention in manner following (that is to say):—

The said Invention, with regard to its nature, is an engine or machine worked by water, that saweth or cutteth marble or any other kind of stone, and that sweepeth or faceth and also that polisheth such marble or other stones; and the engine or machine, with regard to its form, is fully described and appeareth in and by the Plan and section, with an explanation of the same, to these Presents annexed; and the said several businesses of sawing, sweeping, and pollishing, described in the said Plan and section, are also capable of being performed by any other inanimate or animate powers; all which is a full and true description of my said Invention.

In witness whereof, I, the above-named Henry Watson, have hereunto set my hand and seal, the Third day of December, in the twenty-fifth year of the reign of our Sovereign Lord King George the Second, and in the year of our Lord One thousand seven hundred and fifty-one.

HENRY WATSON.

Sealed and delivered in the presence of,
JOHN GARDON,
JOHN GRIFFITH.

AND BE IT REMEMBRED, that the Third day of December, in the year above written, the aforesaid Henry Watson came before our said Lord the King in His Chancery, and acknowledged the Indenture aforesaid, and all and every thing therein contained and specifyed, in form above written. And also the Indenture aforesaid was stampt according to the tenor of the Statute made in the sixth year of the reign of the late King and Queen William and Mary of England, and so forth.

Inrolled the Eleventh day of December, in the year above written.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1856.

in place by 1876.[44] Twigg followed suit with two turbines at the original mill, now known as the Old Marble Works; the first was set up in the saw-mill in 1884 and the second in the polishing shop in 1895. The third mill retained a conventional wheel of iron with wooden blades. This last mill had, by 1884, been sub-let to Rowland Holme of Ashford as a comb manufactory.[45]

Despite the new technology the demand for local marble declined. The only commissions from Chatsworth involved the repair of work installed over the centuries. Fashions were changing and the material that had graced middle class houses and ecclesiastical monuments was little wanted. There were too many factories, even beyond the Ashford-Bakewell area, producing small marble artefacts and most towns had at least one monumental mason. By 1899 James Beresford of Belper had marble works not only in Derby but also in Carrara, Italy, from where he imported stocks of rough and sawn marble.[46]

In Ashford John Redfearn had succeeded his father in 1887 at the Derbyshire Marble Works but they closed soon after. Joseph Twigg left the Old Marble Works to his son but these ceased production in 1905.[47] Downstream John Lomas had sold the Bakewell Marble Mill to C. Groom and Company, timber merchants, by 1899 and by 1900 it had been purchased by Robert Smith, builder and timber merchant, of Castle Street.[48]

The last vestiges of the small army of marble workers also vanished about this time. John Bradbury, of the family that had been in the trade since his ancestor Robert had worked for Henry Watson, was last mentioned as a marble mason in Church Street, Bakewell, in 1900.[49] In Ashford the postmaster, Abel Tomlinson, who had won the prize medal at the 1862 International Exhibition, was still creating marble mosaics in 1906.[50]

As for the original marble mill, little is left. The Duke of Devonshire sold the site, along with his holdings in Ashford, and it now serves as a storage place for the Peak Park Planning Board. The three leats still survive, two with derelict turbine wheels. The comb mill, once such a picturesque inspiration for generations of artists, has a dilapidated gable remaining together with fragments of its old water wheel.[51]

FOOTNOTES

1. For information on Derbyshire marbles see the following articles by Trevor D. Ford: 1958 The Black Marble of Ashford-in-the-Water, Derbyshire. *Liverpool and Manchester Geological Journal*, Vol. II, pp. 44-59; 1958 Ashford Black Marble. *Monumental Journal*, Vol. XXV no 5, pp. 279-288; 1958 Inlaid Ashford Marble. *Derbyshire Countryside*, Vol. XV, No.5, pp.24-25;. 1963 The Peak District in the Great Exhibition of 1851. *Bulletin PDMHS*. Vol. II, Pt 2, pp.87-92; 1964 The Black Marble Mines of Ashford-in-the-Water. *Bulletin PDMHS*. Vol II. Pt. 4, pp 179-188.
2. For White Watson see G.P. Challenger, 1981. White Watson (1760-1835). *J. of the Bakewell and District Hist. Society*, No. 8, pp.21-35; P.W. Robinson, 1990. White Watson's Cashbook. *JBDHS*, No. 17, pp.16-22; T.D. Ford, 1973. Introduction to the reprint of White Watson's *Delineation of The Strata of Derbyshire*, Moorland, Hartington; E. Meeke, 1994. More about White Watson. *JBDHS*, No. 21, pp.57-65.
3. T. Brighton 1994. White Watson's Memorabilia. *JBDHS*, No 21, p 27.
4. Chatsworth Mss. Letter of Henry Watson to James Paine. Jan 29th (1761?).
5. Chatsworth Mss. 'Designs, Agreements and Bills of Carved-work executed at Chatsworth by Samuel Watson from 1690 to 1712 etc. etc. etc.' (Collected by White Watson). The design for the marble floor was reproduced in F. Thompson, *History of Chatsworth* (1949) pl. 57. It was lifted and reorganised in 1833 (6th Duke's building accounts).
6. See Appendix I for Henry Watson's patent.
7. Chatsworth Mss. 'Designs, Agreements and Bills . . .' *op. cit.*
8. The drawings are taken from the originals by Mr. A.G. Dixon, draughtsman, and the technical descriptions are based on comments by two engineers, Mr. Harold Streets and Dr. Denis Ashurst. The simplified labelling is the author's.
9. J. Britton and E.W. Brayley 1802. *The Beauties of England and Wales*, Vol III, p 484 remarked "The machinery [at Ashford] is somewhat similar in construction to that described in the marble and spar works at Derby; and, like that, is put in motion by water. One part, called the sweeping mill, from its circular motion, is, however, different; by this a floor containing eighty superficial feet of marble slabs, is levelled at the same time".
10. Chatsworth Ms in the map chest. For Accre's machine see D. Durant and P. Riden. *The Building of Hardwick Hall*, Part 2, pl. xii. Derbys. Rec. Soc. 1984.
11. See note 39, no 1, below.
12. John Howe, 1816. *Trifles Light as Air*. Sheffield, pp.19-20. (Dedicated to the Duke of Devonshire).
13. D.P. Davies, 1811. *A new historical and descriptive view of Derbyshire*. Mason, Belper, p.602.
14. He appears to have been a mercer. He witnessed and signed Henry Watson's submission of his invention in 1751 and was a partner with John Platt in 1783 (see No. 17 below).
15. For details on the Platt family see R. Gunnis, *Dictionary of British Sculptors (1660-1851)* (revised edn., 1968), p.308. H. Colvin, *A Biographical Dictionary of British Architects (1600-1840)*, 1978, pp.640-642. J.D. Potts, *Platt of Rotherham, Mason-Architects 1700-1810*, Sheffield 1959.
16. T. Brighton *op. cit.* pp 27-28.
17. Derbyshire Record Office. 184M/F1.
18. Lincoln Cathedral Archives cited in R. Gunnis, *loc. cit.*
19. T. Brighton, 1981. The Silhouettes of the artist White Watson, *JBDHS*, No. VIII, p6.
20. Chatsworth Mss. C160. Payments are made to White Watson but for what is not specified.
21. T. Brighton, 1994. *"White Watson's Memorabilia"*, pp 28-29.
22. *Derby Mercury*, 1735.
23. Chatsworth Mss. Accounts 1823 f72 and 1828 f 87.
24. E. Rhodes, 1824. *Peak Scenery*, Sheffield, p129
25. S. Glover's *Directory of Derbyshire*, Vol. II (1833) pp.65-66.
26. R. Gunnis (*op. cit*, p283) wrongly names C. Oldfield of Ashford.
27. Glover's *Directory, loc. cit.*
28. T. Brighton, 1981. The Silhouettes of the Artist White Watson. *op. cit.* Catalogue, No. 4.
29. T.D. Ford, 1995. White Watson (1760-1835) and his Geological Tablets. *Mercian Geologist*, Vol. XIII, No. 4. Appendix p164. T.D.Ford, 1960 White Watson and his geological sections. *Proceedings of the Geologists' Association*, Vol. LXXI, pp 349-363.
30. Chatsworth Mss. Accounts, 1800 f45; 1801 f116; 1804 f20; 1806 f87; 1807 ff22 and 25; 1808 ff 27 and 82; 1810 f74; 1811 ff6 and 26; 1812 f50; 1833 f112. Robinson, *op. cit.* p18. Challenger *op. cit*, p33.
31. White Watson's scrapbook in the Duke of Northumberland's Mss. at Alnwick Castle. Watson also records that he repaired the grotto in 1807. This tallies with Chatsworth Mss. Accounts, No 17 1807 f25 which records he was paid £21-1-0 for 18 days work replacing fossils, stalactites etc.
32. The presentation copy is in Chatsworth Library. The 6th Duke bought further copies in 1812 (Accounts June 3, 1812 f50).
33. Accounts Dec. 31 1811 f26.
34. This interior is still in place though the room is kept locked to avoid the vandalism that had plagued Georgiana's grotto.
35. The 6th Duke tells us in his *Handbook* (see F. Thompson, *A History of Chatsworth*, (1949) p200) that Sir Jeffry described some "beautiful specimens" of Blue John, intended for a cabinet of minerals . . . to be the exact resemblance of his grandmother's counterpane.
36. The *Chatsworth Building Accounts (1831-46)* contain some 120 references to the installation of marble fittings.
37. S. Pigot, 1835. *Directory of Derbyshire*, p 18.
38. Samuel Bagshaw, 1846. *History, Gazetteer and Directory of Derbyshire*, Sheffield, p422.
39. These cannot be traced at present but Chatsworth possesses photographs of them taken in Jan. 1991 by the RCHM of England. The drawings are signed "JR, Doncaster, 4th Feb 1840". They are
    1) Rough Sketch for the Marble Works, Ashford.
    2) Ashford Marble Works. Elevations and section of Showroom, Counting House etc.
    3) Ashford Marble Works. Ground plan of showroom, Counting House etc.
    4) Ashford Marble Works. Plan of the roof of Showroom, Counting House etc.
    5) Ashford Marble Works. Plan, elevations and sections of workshop etc.
40. Chatsworth Library. William Bateman's *Derbyshire Collections*, Vol. 1. A pencilled note says the notice was written by Thomas Brushfield of Ashford.
41. The original drawing cannot be traced at Chatsworth (see n 39). The photograph of 1991 shows 'New workshops, Ashford Marble Works, 1862'. There is a plan and a section.
42. Chatsworth Mss. Box 93, no.163. Costs of Building Edensor Church, 1865 to 1870.
43. Bulmer, 1895. *History and Directory of Derbyshire*. 1895, p297.
44. Chatsworth Mss. L93/72. Indenture between the Duke of Devonshire and George Redfearn. The turbine is marked on the accompanying map.
45. Chatsworth Estate Book of Reference to the Plans 1884 (corrected to Lady Day, 1901, 1902, 1904).
46. Derbyshire Record Office. Ms 4964 Z2. He boasted "one of the largest stocks in England . . . and the latest machinery which cannot be surpassed".
47. Kelly, 1887. *Directory of Derbyshire*, p204. E.E. Twigg and Co. is mentioned in Kelly's *Directory* in 1900 but not in the 1904 edition.
48. Bennet, 1900 *Business Directory of Derbyshire*, 1899. Kelly's *Directory*, p40.
49. Kelly, 1900 *Directory 1900* p40.
50. Bennet, 1906-7 *Business Directory of Derbyshire.*
51. See T.D. Ford *op. cit. PDMHS Bulletin* Vol II pt 4. Oct 1964, pp187-188.

Trevor Brighton.