Publications: (continued)

Wind and Water Mills No. 9.

Published April 1989, 52 pages, 16 photographs, 15 drawings and maps.
Contents: The Vanishing Windmill.
Memories of Walk Mill, Eccleshall.
From Tide Mill to Severn Barrage.
Two South African Windmills.
A Tide Wheel at Tintern?
£1.95 (inc. postage)

The following publication is available from D.T.N.Booth, 18 Hawne Close, Halesowen, West Midlands, B63 3QQ.

Watermills on the River Rea in South Shropshire

By Tim Booth, 28 pages including 12 drawings and 1 map
£2.00 (inc. postage) [all proceeds will be used for the restoration of Wrickton Mill]

THE MIDLAND WIND AND WATER MILLS GROUP

(affiliated to the Society for the Protection of Ancient Buildings)

This Journal is published by the Midland Wind and Water Mills Group, which is concerned with the study of the history and technology of mills, and, in principle, with their preservation and restoration. Its area is the region loosely defined as the Midlands, especially the central counties of Staffordshire, Worcestershire and Warwickshire.

The Group, which functions as an autonomous society, holds monthly meetings, with talks and discussions, during the winter, and arranges tours to mills during the spring and summer. Members periodically receive a Newsletter and the Journal.

For further particulars, please contact:

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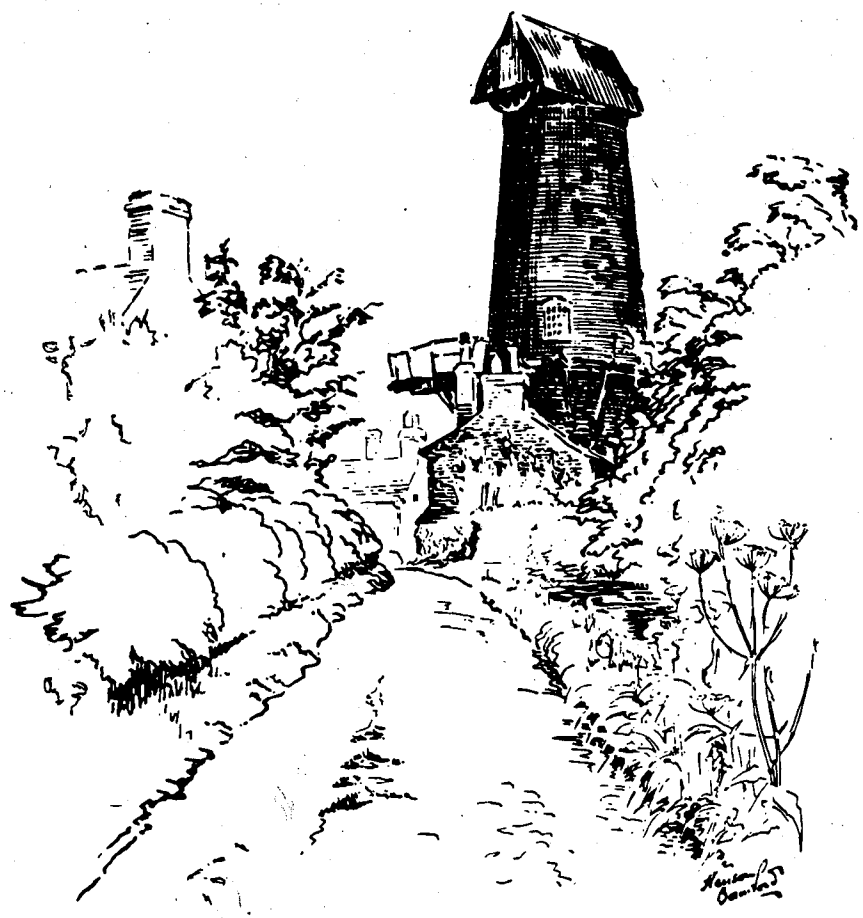
Wind and Water Mills

The Occasional Journal of the Midland Wind and Water Mills Group

affiliated to the Society for the Protection of Ancient Buildings

Number 10



Wind and Water Mills, although the journal of the Midland Windand Water Mills Group and therefore naturally concerned with the mills of the Midlands, is not intended to be narrowly parochial.Interesting and important articles relating to mill matters in other parts of Britain and the world will be included whenever available. In general, articles by members will have priority, but submissions by others will be willingly considered.

A.B.

Cover illustration, Harbury Windmill, from an old postcard.

Midland Wind and Water Mills Group Publications

The following publications are available from:
Mr. B. Job, "Meadowside", Clayton Road, Newcastle-under-Lyme, Staffordshire. ST5 3ET

Staffordshire Windmills

by Barry Job, 76 pages, 35 photographs plus line drawings and sketches.
£1.75 (inc. postage).

Wind and Water Mills No. 3

Published June 1982. 48 pages, 15 drawings and maps.
Contents: Watermills of the River Salwarpe and its Tributaries. Part 2.
A History of Norton Lindsey Windmill, Warwickshire.
Drawings of Norton Lindsey Windmill
Notes on the Structure and Machinery of Norton Lindsey Windmill.
Millstone Making in France: When Epernon Produced Millstones.
French Millstones.
Everton Windmill, Nottinghamshire.
£1.00 (inc. postage)

Wind and Water Mills No. 4

Published July 1983. 64 pages, 41 drawings and maps.
Contents: Nineteenth-century Millers at Turn Mill and Elmbridge Mill,Worcestershire.
Watermills and Water-powered Works on the River Stour. Part 1.
Bedfordshire Windmills.
The Horizontal Mills of Hazara.
The Development of the Water Turbine.
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Wind and Water Mills

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HON. EDITOR

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Congleton,
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SHUT MILL, ROMSLEY, NORTH WORCESTERSHIRE.

By E. Penissa Wills.

According to "The Place-names of Worcestershire" Schute Lane was recorded in 1295, le Schute brok in 1307 and Shote and Shet Mill in 1500. Shet Myll also appears in the Rentals of the Abbey of Halesowen in 1500. Shote Mill is presumably an early example of the spelling of the word shoot, which denotes a rush of water, and appears in the New English Dictionary of 1613. It's a case of "you pays your money and takes your choice". Most early maps, rent and rate books reject the lot and spell the mill as Shutt with two Ts. Currently both mill and lane are spelt with one T.

From mediaeval times, and possibly earlier in Saxon times, the Shut Brook has been dammed to form a mill pool. When we came to Farley Cottage in 1926 there were two additional pools above the mill pool. Torrential rain from a cloudburst caused a flash flood, which washed away soil surrounding the overflow pipe in the dam of the upper pool. In time the lower pool filled with mud and silt. Today they no longer exist.

The mill ground grain from about 1300 till 1880 when it went over to grinding bones for manure. About 1950 an octogenarian told my Father that for several years, as a boy, between 10 and 16 years old he used to visit the mill and remembered the big cauldrons in which the bones were boiled before grinding.

The mill closed down altogether in 1886 (according to the late H.E.S. Simmons).

The present late 18th century mill-house, probably built over earlier foundations, with its warm red bricks, oak window frames, and split oak roof-lathes, looked until very recently much as it did in 1926, except for the removal of a brick wall enclosing the pig-styes and muck-yard in front of the barn, and another wall which protected the front door from straying cows when the herd wended its way to and from the milking shed.

By early 1989, completion of considerable repair and reconstruction work, new building, and a barn-to-dwelling conversion, brought inevitable change, but without damage to the general charm of this ancient mill site.

The mill pool, however, continued to do good work. In 1932 my Father installed a hydro-electric plant to make electricity for Farley Cottage, using a small turbine and D.C. generator, which continued to work till 1954 when it gave place to the grid supply. This installation involved a considerable amount of clearing work.

In 1920 the mill wheel and machinery had been removed and shortly afterwards the mill was demolished, leaving behind parts of the walls and some of the blue paviour floor bricks, which my Father later re-laid as a path round a flower bed.

Of the mill's original three pairs of millstones 2 pairs only remained, still in place on a wooden frame. Two 4 foot diameter upper and lower millstones of Derbyshire grit, one upper millstone of Welsh conglomerate and one nether millstone of French Burr.

With considerable effort all these stones were rolled up to Farley Cottage. The Derbyshire grit nether stone was placed before the front gate, and by candle-light my Mother and Father imprinted their initials, L and M.J.W. 1926, on the still-soft concrete infilling of the millstone's central hole. The Derbyshire grit upper stone came to rest outside the front door of the house.

The Welsh Conglomerate upper stone provided a garden seat. An upper stone can be identified by the two notches, one each side of the central hole, technically known as the "eye", cut to carry the driving cross-bar at the head of the vertical driving shaft. These two notches can be clearly seen on this garden-seat millstone.

The blocks of the French Burr nether millstone were split up to make steps leading up to the orchard. These steps, alas, were covered in concrete by the present owner's late husband, and have become lost history.

In 1932 many feet of rubbish had to be dug out of the deep pit where the overshot water-wheel used to be. The clearance disclosed the big oak spindle, whose great weight demanded special tackle to lift it out before the bottom of the pit, and the old drainage culvert, could be reached. The culvert was about three feet high and half filled with mud. Eventually the oak beam was lowered to top one of the wall remains and soil was filled in behind this structure to make another flower bed.

Next, in order to empty the pool, came the most dangerous job of finding the blocked up draining hole at the base of the overflow sluice gates. My Father, perched on a ladder placed down the cavity of the overflow culvert, prodded and prodded at the big mud deposit. Suddenly a trickle of water came through. "Come up quickly" we cried, and luckily he did, rapidly pulling up the ladder after him. All was just out in the nick of time to avoid an avalanche of water, mud, bricks, and rubbish.

So eventually the pool was drained and the catch of 17 large perch and one bullhead was transferred to the Shut Mill cottage bath, later to be taken by members of a Coarse Fishing Club to a Black Country canal.

My ever-observant Father then noted "I discovered that the present pool, which is about 9 feet at the dam, and the present dam itself with its well-engineered flood gate, two overflow-cills and brick-lined sluices and culverts, all are on the top of a mediaeval dam or dams, amounting to another 14 feet. The mediaeval pool must have silted up completely, before the present structures could have been made".

"In the 13th century, if there was a mill at this spot, it would have been driven by an undershot wheel with paddles turned by a rapid stream of water from the pool."

The introduction of the electricity generator underlined the need for a good, continuous water supply. If no heavy snowfall melted slowly into the earth, or the winter

was long, ice-bound or dry, the generator could only be used spasmodically or not at all. Then out came the paraffin lamps and candles. So how did the miller manage to keep up his grinding operations?

Firstly from the Shut Brook, which rises near the west side of the Rolling Hill, which I re-explored with a friend in September 1984 after the long summer drought of that year. Two big springs were still flowing freely. Much of the field about them was of soft wet mud, indented with horses hoofmarks. A considerable patch of the field was blue-mauve with Devil's-bit Scabious, a flower which appreciates marsh or bog conditions. From this gathering ground the brook flowed on down the valley collecting from two more spring rivulets.

In Shut Mill pool itself are several big springs, and at one side is a deep-seated perennial spring which today supplies Shut Mill, Farley Cottage, and two other houses, as well as the mill pool. Regardless of weather changes this spring always maintains a full flow, and must have been the miller's chief stable supply.

Secondly from the Fox Brook, whose waters come from a big spring rising in the garden of Spring cottage, Spring Lane, and from other springs near Whitehall Farm. On its way downstream it collects water from a number of small springs, and passes through two pools at the Dell. At the valley bottom it flows through a culvert under Shut Mill Lane to join the Shut Brook. There they begin their joint flow downstream as the Bell Brook or Belne Brook, to give it its ancient title. Before this culvert was put in, the Fox Brook flowed on the right of the road, and further along, this river bed was filled in and macadamed for use as a traffic lay-by.

The Fox Brook is erratic, reflecting the weather. It can be a barely whispering trickle, a reasonably sized brook, or a raging torrent. Since the valley has no main drains an occasional flood is not unwelcome.

The Tithe Awards of 1844 for "the township of Romsley in the Parish of Hales Owen in the County of Salop" (as it was then), comprised a large-scale map and a schedule of fields and buildings. These showed that both Shut Mill and Farley Cottage were owned by one man, and another man appears to be the occupier of both properties. Shut Mill, evidently the "top" property is described as Shutt Mill House barn pool plantation garden and yard, and Farley Cottage is described as Farm House shop (meaning "nailers" shop) garden etc. (Commas are not normally used in these schedules).

The important point I want to make is that this map clearly shows that the miller owned the necessary fields in which to bring across a leat from the two water-gathering pools at The Dell, following a steady contour line, at about 600 ft., to cross Shut Mill Lane and enter the leat, whose remains are still visible up on the left roadside bank as one approaches the mill down Shut Mill Lane. The water could then cross the track leading to Newhouse Farm and flow into the mill-pool.

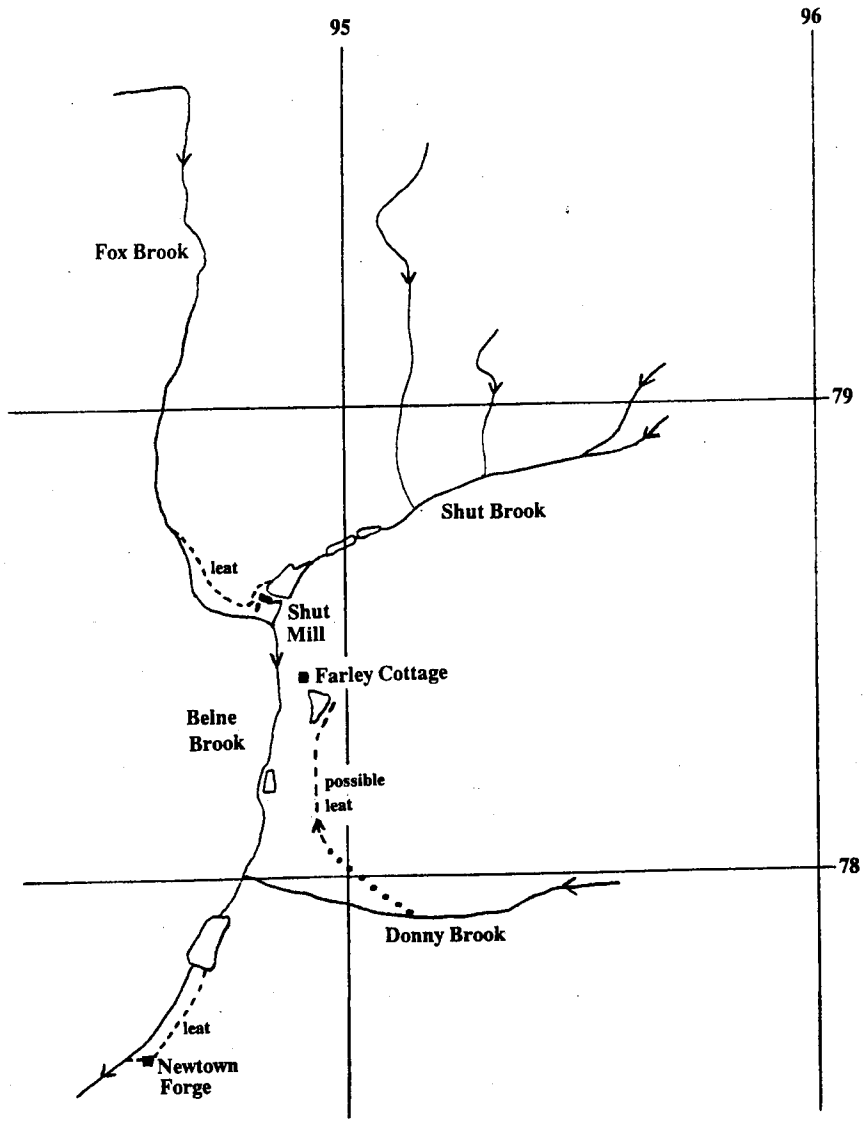

Figure 1. A map showing the streams and leats around Shut Mill.

Thirdly from the Donny Brook, or Danny Brook, which rises in the ground above Romsley Hill Cottage, which in 1926 was known as the Donnybrook Cottage, and was then the official residence of the Sanatorium Doctor. This brook is augmented by a spring rising in a field by Farley Farm, which is piped under Farley Lane and eventually seeps down to the brook. Curving round the edge of Great Farley Wood, the brook joins the Belne Brook at the bottom of Woodfield Lane. It is some way below Shut Mill. A leat running on the 600 ft. contour is however a possibility, as there remains to this day a dry, apparently level channel over the part marked by dashed lines in the map accompanying this article, and which could have been fed from the Donny Brook by a watercourse as indicated by dots. At the northern end there is no apparent channel to the Shut Mill pool. It is in general unconvincing, but my Father queried in his mind the possibility of a leat along these lines, supplementing the miller's water supply from this additional source.

Author's Acknowledgments.

I would like to thank the numerous friends who have helped me in the historical work, the field work, and the preparation of this article.

Editorial note.

Shut Mill was the uppermost mill on the Belne Brook system, which had 26 mills in its length of less than ten miles between its source and its confluence with the R.Stour. Many of these were iron-forging and blade-grinding mills, but Shut Mill was one of the corn mills. These mills and their watercourses were described in two articles in Wind and Water Mills No. 1 (1980) and one in No. 2 (1981). In the 1920's Miss Wills's father, the late Leonard J. Wills, Professor of Geology at the University of Birmingham from 1932 to 1949, bought the mill and the surrounding land which included Farley Cottage, which he made the residence for himself and his family. Miss Wills, who still resides nearby, here tells the interesting story of the mill and gives more detail of its water supply than could have been attempted in the earlier gazetteer-type articles. This article is adapted from part of the script of a talk given by Miss Wills to the Romsley and District History Society on 25 April 1985. The grid reference of the mill is SO 948786.

WATERMILLS ON THE BROOME AND HURCOTT ESTATES.

By A.F. Brown.

The above Estates, between Kidderminster and Stourbridge, Worcestershire, were sold by direction of The Rt. Hon. The Earl of Dudley at the Lion Hotel, Kidderminster on July 30th 1918, the auctioneers being Messrs. Edwards, Son and Bigwood. A copy of the sale catalogue has recently been examined for mills included in the various lots but unfortunately, a plan which should have accompanied the catalogue is missing. However, in the "General Remarks" appertaining to the Hurcott Estate, there is a section devoted to Watercourses; the Belne Brook is not mentioned and rather, the section refers to "Courses Nos. 1, 2, 3 and The Mearse Course". These courses are later described in this article which also sets out the periods during which some 14 farms and 2 mills, not to mention the brook itself, were permitted to draw their allocations of water. The time-sharing of water on this scale is believed to have been uncommon, and details are thought not to have been previously published for this particular system.

Earlier references to mills mentioned in this article have appeared in "Wind and Water Mills" as follows:-

Hurcott	Vol 6 pages 22 to 26 and 27 to 33
Bellington	Vol 1 pages 31 and 43
Heathy	Vol 1 pages 31 and 34

A brief summary of the sale including those lots which include mills is:-

Estate	Acres	Income p/a	Major properties	Lots with mills etc.
Hurcott	2682	£3600	Hurcott Paper Mill	(47) Hurcott
			Springbrook House	(28) Bellington Farm
			Dunclent House	(33) Heathy Mill Farm
			12 farms	(17) Blakedown Old Grinding Mill
			225 acres of wood	(18) Springbrook House
			Sawmill & yard	(60) Estate Saw Mill
Broome	560	£960	3 farms	(14) Broom Lodge Farm

The lots listed in the last column above are now fully quoted from the catalogue in so far that they describe mill features.

HURCOTT PAPER MILL (lot 47) consisting of:-

(a) A three-storey Front Block, having on the Ground Floor Boiling Room about 52 ft. by 20 ft. and Chest Room, 52 ft. by 24 ft.. On the First Floor:- Convenient Office, Sorting Room, 42 ft. by 20 ft., Beater Room 52 ft. by 24 ft. with concrete floor and spacious Sorting Room on the Third Floor.

(b) A Lofty one-storey Roof-lighted Machine Room, 53 ft. by 24 ft. 6in., with concrete floor.

(c) A two-storey Block, 54 ft. by 26 ft. having Press Room on the Ground Floor with Drying Rooms over.

(d) Another two-storey Block, 44 ft. by 21 ft., with Cutting and Calender Room on the ground Floor and Drying Room over.

(e) A ditto, 50 ft. by 20 ft. with Packing Room on the Ground Floor and Drying Room over.

(f) Lofty one-storey Roof-lighted Engine Room, 31 ft. by 13 ft. 6 in.

There are also Sanitary accommodation and other one-storey Outbuildings.

Included in the Sale of the Paper Mill are the excellent Water Wheel, 16 ft. diameter, 13 ft. breast with iron buckets and second motion shaft; a multitubular Steam Boiler 4ft. 6 in. diameter, 9 ft. 3 in. long with fittings and iron stack, and such rights with regard to Hurcott Pool as were granted to the Hurcott Paper Mills Ltd., by the Lease to them.

Description	Schedule Area (acres)	Tenant	Rent
Paper Mill	0.212	Hurcott Paper	£155, Repairing
Garden	1.254	Mills Ltd	Lease terminating
Hurcott Mill and			Midsummer, 1919
Buildings	0.795	"	
Garden	0.564		
Water	0.125	in hand	

BELLINGTON FARM (lot 28)

This was described as a picturesque half-timbered house with Bellington Mill and two brick and tile cottages and 202 acres of land, let to Mr. Wm. Dickinson at a rent of £300 per annum. Bellington Mill was "a two-storey brick and tile building" with one pair of stones and a 12 ft. over-shot wheel. There is a manuscript note in the catalogue "A.T.Phesey bought it £5600 - £27-10-0 per acre".

HEATHY MILL FARM (lot 33)

This was described as a well built brick and tile house, a cottage and "a substantially built three-storey grist mill with overshot water wheel" and 102 acres of land, let to Mr. Geo. Stones at a rent of £220 per annum. The Mill Pool occupied 0.849 acre. A manuscript note reads "£4400 - £43 per acre."

BROOM LODGE FARM (lot 14)

This was situated within one mile of Churchill and Blakedown Station and four miles from Stourbridge. With the house and farm buildings were also "Windmill Pool" of 5.331 acres and "The Old Broome Mill and Cottage" which together with land occupied 98 acres, let to Mr. Gilbert Slater at £160 per annum.

BLAKEDOWN GRINDING MILL (lot 17)

This mill, then disused, was with a cottage and garden occupying lr. 30p. adjoining Blakedown Viaduct. The whole was sold for £200.

SPRINGBROOK HOUSE (lot 18)

This was situated within half a mile of Churchill and Blakedown Station and with the gardens, stabling and motor accommodation and The Old Forge, extended to 31 acres, 2.425 acres being Wheatmill Pool. The catalogue states "The Forge is at present sublet to the Blakedown Stamping Company. There is an 11 ft. over- shot Water Wheel, a capital brick and corrugated-iron warehouse, and a 50 ft. Chimney Stack". The whole was sold for £2900.

THE ESTATE SAW MILL (lot 60)

This was situated at Blakedown adjoining the Viaduct and together with a cottage occupied 1.094 acres of which 0.430 was Saw Mill Pool. Included in the sale were a creosoting tank, circular saw bench, log bench, grindstone and a Water Wheel.

WATERCOURSES

Under the heading "General Remarks" appertaining to The Hurcott Estate, there is a section devoted to watercourses. The Belne Brook is nowhere mentioned and water supplies to the various properties arise from what are termed "Courses 1, 2, 3 and The Mearse Course".

A map (see Figure 1) has kindly been supplied by Dr. G.Tucker to show the location of the watercourses mentioned below. About 10 years ago, when they were explored by Dr. Tucker, they were all traceable in part.

Course No. 1 was divided between five farms and Park Hall and during successive periods of fourteen days each commencing on every other Monday, each was allotted either 24 or 48 hours use. For a period of 48 hours from 8 am on alternate Mondays, it was diverted into "The Mearse Course".

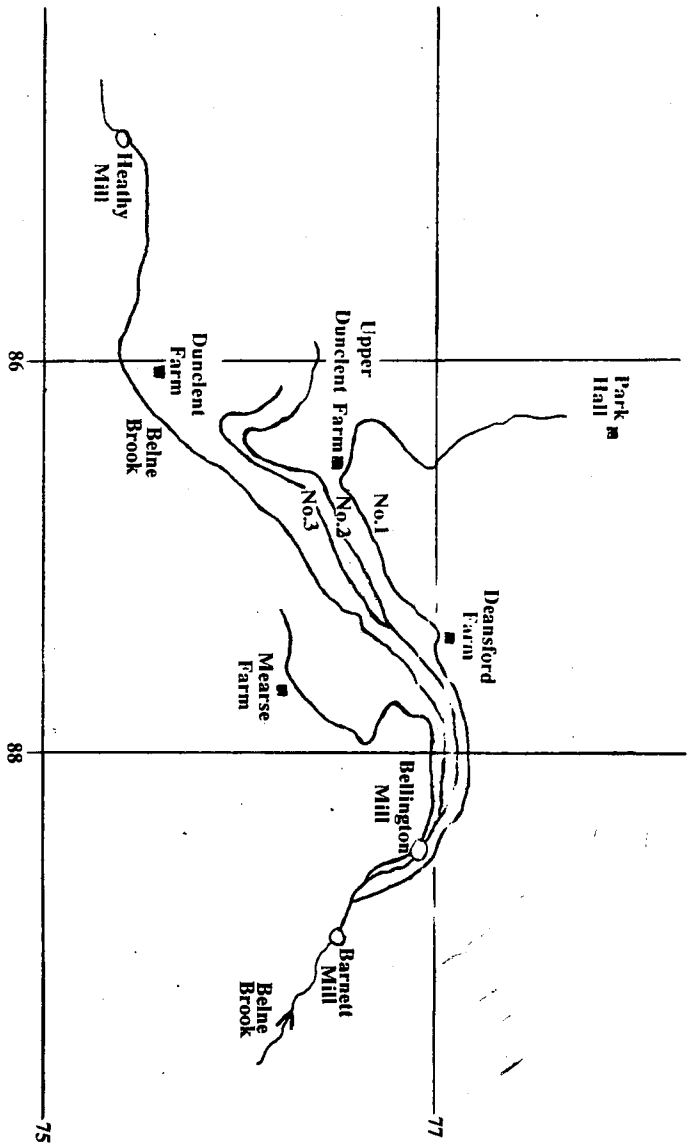

Figure 1. A map of the watercourses on the Estate.(Kindly supplied by Dr.G.Tucker.)

Course Nos. 2 and 3 were divided between five farms and the property "Dunclent". During successive periods of 48 days, each was allotted periods of 1, 2, 3, 4 and 6 days use, "Dunclent" having four periods of six days. Bellington Farm and Mill was allotted water on the 1st, 25th and 26th days in the period and Heathy Mill on the 14th, 24th, 38th and 48th days, all days commencing at 8 am.

The Mearse Course is described as:-

"... has been used for very many years for irrigating and supplying water to Bellington Farm (including The Mill) and to Mearse Farm which belongs to an adjoining owner. The owners of Bellington and Mearse Farms are entitled on two successive days in every fortnight to have the water which would otherwise flow into Course No. 1 diverted into The Mearse Course at its commencement at Barnett Bridge. The owner of Bellington Mill is entitled to the use of whatever water passes through the Mearse Course for the purpose of his Mill save on the said two successive days in every fortnight, when the Mearse Farm is entitled to the prior right to use such water. Subject thereto, the occupier of Bellington has the prior right to the water passing through The Mearse Course.

It has been the practice for each tenant on the day on which the water is allotted to him to regulate the Gates on the Course or Courses in the Farms higher up the stream, and to enter along the Course for that purpose. It is intended to continue the system as shown in the preceding Statement in the manner provided in the Conditions of Sale."

Editor's Note.

The following mills are on the Wannerton Brook (see "Wind and Water Mills", 2):

Hurcott, SO 852778.

Broome, SO 892788.

Blakedown Grinding Mill and Sringbrook Forge, SO 879782.

Blakedown Sawmill, SO 875783.

The following are on the Belne Brook (see "Wind andWater Mills", 1):

Bellington, SO 885769.

Heathy, SO 848754.

HARBURY WINDMILL.

PART 1 - HISTORY OF THE MILL.

By Bill Seaby.

The windmill was probably erected in the first decade of the nineteenth century. This is borne out by two things: a) the lower courses of stone are said to have come from Chesterton House, demolished in 1802, a very likely source in an area far from natural stone building material; b) the windmill is given as "nearly new" in an advertisement of 1814, an expression often used for mills built within a period of about ten years. The date stone above the main entrance, as testified by H.E.S. Simmons in 1943, had long since weathered away.

In any case in 1814 the mill was advertised for sale[1] as "a capital Windmill, six storeys high, nearly new, with all necessary machinery in good condition. The above premises, in the occupation of Mr. Henry Hudson, being situated at Harbury in the county of Warwick. Apply to Solicitors."

We do not know who bought the mill, but the initials **IBMD/1814** and a much smaller **RC** carved into a window jamb on the first floor may be those of the new owners and another associated with the mill, although apparently not those of the miller at the time of the sale. However the miller in 1820 seems to have been Edward Thomas Horley as there is a report of a Commission of Bankrupt in his name[2], "of the parish of Harbury, Co. of Warwick, Miller. To surrender 13th March at the Warwick Arms Inn in the Borough of Warwick".

In 1848 the windmill was again up for sale and was then in the occupation of R. Leeson, who had been miller since at least 1845 according to the directory. The advertisement reads[3]: "To be sold by auction. The well erected Tower Mill situated at Harbury, together with the dwelling house, now in the occupation of Mr. Leeson. Apply to the tenant or to Dr. Montgomery, Southam."

After a period, during which J. Page was in occupation to about 1861, John Belcher took over as miller, and it was during his occupancy that the mill was for the third time advertised for sale[4]. "Windmill for sale. A good mill with two pairs of stones and gear, in good working condition. Also house adjoining with stable yard etc. Apply to Jno. Belcher, Harbury, Leamington." By 1878 Belcher had become partly incapacitated and again advertised[5] "for a young man to look after the windmill and live in the house. Apply J.B. Harbury Mill, Leamington." But a further advert[6] suggests that Belcher had given up altogether. It reads: "To be sold by private contract. A brick Tower Corn Mill with two pairs of stones. A capital grist trade has been carried on for 17 years by the present occupier. Illness sole cause of selling. Address T. Belcher, Harbury Mill."

It seems not to have been sold on that occasion for a similar advert[7] appears which is again signed T. Belcher. However, although the 1880 directory gives John Belcher as miller, eventually William Verney, another Harbury man, took over the windmill, and his name appears in the 1884, 1888 and 1892 directories.William Verney seems to have made over the mill to his son, George Frederick Verney about 1890, and during the latter's tenancy a terrible accident occurred. *The Miller* records it as follows: "Fatal accident on the night of Thursday, March 9th, while engaged in working his windmill. He was alone at the time, and being apparently caught in an upright shaft, got entangled in the gearing where both his legs were crushed. As the evening wore on and he did not return home, his wife became anxious and took friends with her to the mill. Here the shocking discovery was made of Mr. Verney's lifeless body whirling round with the machinery. The mill was stopped and a doctor summoned, but he could only attest the fact that the deceased was beyond all human aid. At the inquest one of the jury made a presentment respecting the dangerous dilapidated condition of the mill. He observed that there were no means of stopping the mill except from the stage, which he considered from its rotten state to be unsafe for anyone to step on. He urges that each of the floors of the mill should be provided with a brake for throwing in and out: at present, supposing two men were at work and one got caught in the machinery, it would be almost hopeless for his companion to save him." A much longer account of the tragedy and inquest is given in the *Warwickshire Advertiser* and *Leamington Gazette*

A second fatal accident is recorded later in the decade[8] "At Harbury, Warwickshire, a mill of this type (with staging) and in bad condition, it is related that one of the millers, going upon the balcony during the night to trim the sails round on a change of wind, was caught in the darkness by a projecting pin that had been used in a rough way for making a repair; being caught by a sailyard and literally beaten to death; while the other miller, on going out to ascertain the cause of delay sustained serious injury by falling through or over the balcony upon the roof of an adjoining cottage."

Samuel and William Haynes, father and son, who came from Chesterton wind and water mills, took over Harbury mill from Verney's widow in 1894 and, after repair of the staging and probably other repairs to the interior, carried on milling there. A postcard of about 1900 shows the mill in apparently perfect order with carts carrying sacks of grain being unloaded, and the door on the second floor wide open to receive the sacks. The four cloth sails which turned anticlockwise, are shown unfurled.

William and John Haynes are given as millers during the first decade of the present century and, when Chesterton Windmill failed in 1910, William Haynes became full-time miller. It continued with grist milling and remained in the family until 1952 when Herbert Haynes, grandson of Samuel, sold it. The windmill had stopped sailing before the first World War, and the sails which were becoming dangerous (it is recorded that one fell off and pierced an adjoining roof) were removed in the early 1920s. The stocks however only came down in January 1934. It was worked by a steam engine from about 1912, and this was later replaced by an oil engine, and in the early 30s by an electric motor. The staging remained, but in bad condition, until about 1936 when all the planking was removed. Sometime in the 1950s the whole supporting structure was

taken down, only short spokes were showing at third floor level when the mill was photographed in 1977.

Mr. T. Goerres of Leamington eventually purchased the mill in 1964, and in the lower floors and adjoining workshop set up a business called Harbury Engineering Ltd for the manufacture of precision tools. Over the years he did much restoration to the upper storeys, putting in new floors, repairing windows and generally weather-proofing the building. In 1982 he put on the present cap as the old boat cap had seriously deteriorated and was letting in water during rainy weather. It is largely due to him that the upper floors containing the original machinery have survived so well.

When Mr. Goerres retired from business in 1988 the mill building came up for sale by Cartwright Holt, Estate Agents at Leamington Spa, and the property was eventually sold to Mr. P. Mason of Radford Road, Leamington. Permission was sought from the District Planning Dept. at Stratford for the lower floors of the mill to form part of a new house complex, designed by the firm of Malcolm Peters, Chartered Architect. It was during this period, when the mill building and adjoining store rooms were empty, that a number of members of the Midland Mills Group decided to carry out a survey. This took place under the leadership of Barry Job on 15 April 1989.

N.B. Much of the historical material given here is derived from notes made by the late H.E.S. Simmons, whose collections are housed in the Science Museum Library

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1. *Warwickshire Advertiser*, 30th July 1814.
2. *London Gazette*, 26th Febuary 1820.
3. *Midland Counties Herald*, 9th March 1848.
4. *The Miller*, 5th July 1875.
5. *The Miller*, 4th March 1878.
6. *The Miller*, 6th May 1878.
7. *The Miller*, 7th June 1879.
8. R.Bennett & J.Elton, "The History of Cornmilling", Vol 2, 1899, pp 297-8.

HARBURY WINDMILL.

PART 2 - THE SURVEY.

By Barry Job.

The decision to survey Harbury Windmill was prompted by the submission of a planning application to convert part of the mill to residential use. In its later years the ground floor of the mill had been used as an engineering workshop. In association with this use a number of unsightly buildings had been added around the mill base. One of these apparently incorporated an old brick barn but this has been much altered and rendered over. Otherwise, these outbuildings are of no merit and the planning application intended replacing them with a two storey dwelling constructed of reclaimed bricks connecting with the two lower mill floors. The lower mill floors would also be incorporated in the dwelling but as these are empty of mill machinery the effect of the conversion on the mill might be regarded as minimal. The machinery on the higher floors is largely intact and it was thought that the conversion would restrict access. Consequently, the Midland Wind and Water Mills Group were informed of the proposed conversion, through Bill Seaby of the Warwick Museums Service, with a view to a group of Mills Group members carrying out a survey of the mill. Permission to gain access was kindly given by the new owner Mr. P. Mason and a number of members arrived at Harbury on the morning of April 15th, 1989.

In the last few years the original boat shaped cap, which had been latterly clad in corrugated iron sheet, was removed and replaced with an apex roofed structure pierced by windows to the front and rear. Whilst this had the merit of being weather-tight and being similar in basic design to the original it lacked any of the curves of a boat shaped cap. Other alterations carried out at about the same time included the replacement of windows and doors and removing the remains of the stage timbers with the resulting holes in the tower being bricked up.

Whilst appreciating the difficulties of carrying out a mill survey with a number of people, the restricted time available necessitated a team approach. The intention of the survey was to record the details of the mill tower and all of the machinery within it, but not the outbuildings nor the new cap. Thus the members divided into small groups to measure and record their allotted part of the mill. A centre line was projected on to every floor of the mill to allow offsets to be taken and to establish a uniform approach. An electronic surveying instrument was used to measure the vertical height to each floor. This quickly showed that the height to the curb was some sixty feet. Thus with the original cap in place the total height would be approaching seventy feet. For the sake of uniformity of presentation it was decided that one person would supervise the scale drawings. It is hoped that any errors which have crept in whilst transcribing the measurements are not too serious.

Thanks must go to Bill Seaby for initiating and organising this interesting exercise, to the Group Members and friends who were present on the day to give their support.

HARBURY WINDMILL.

PART 3 - DESCRIPTION.

By Barry Job.

Standing in Mill Lane this large windmill dominates the small village of Harbury. The height of the tower, some 60 feet to the curb, necessitated the use of a stage at third floor level to reach the four common sails, each sail must have been over 30 feet in length. The batter of the tower is continuous but it appears to have been constructed in two sections. The first two floors are of stone and have an octagonal interior which contrasts with the circular interior of the four other brick floors. As shown in Figure 1, the tower is pierced by a number of windows and a number of doors; three on the ground floor, one on the first floor for loading wagons and two on the third floor to reach the stage. In the window jamb on the first floor are the initials **IBMD** and **RC** and the date **1814** whilst set in the opposite wall is a weight stone presumably to convert from Gallons to Pounds and from Bushells to Stone and Pounds (see Figure 3).

The first three floors are now devoid of machinery but presumably this was not always so. Only on the third floor are the original sack hoist flaps to be seen but on the other floors their position is shown by various trap doors. However, on the first and second floors this lies to the south whereas it lies to the north on the other floors. A pulley bolted to a ceiling beam on the second floor was probably fixed to accommodate this awkward change of position (see Figure 4).

The third floor contains one bolter, its bearings being suspended on timber framework from the ceiling (see Figures 5 & 6). The matching machine on the opposite side of the floor is missing. The drive is taken from the spur wheel above. The timber drive shaft carried a clasp arm gear wheel with the wooden teeth set at an angle to the horizontal to drive the iron cog on the inclined bolter shaft. Also on this floor directly below the stones are the belt drives to the flyball governors which control the tentering gear (see Figure 8).

The fourth floor is the stone floor which carries a pair of French Burr stones of 49 inches in diameter and a pair of Derbyshire Peak stones of 52 inches in diameter (see Figures 9 &10). These still retain the major items of stone furniture although their lack of wear suggests that they may be replacements. No evidence of the grain feed arrangements is present. The stones were overdriven by wrought iron quant posts and stone nuts, these were located at the driven end in a glut box fixed to cross ties. Meshing of the stone nut with the spur wheel was retained by a wedge in a rectangular groove in the box. A safety chain was fitted to the glut box to limit movement of the quant post during disengagement. At right angles to the stones is the wrought iron bolter drive shaft. The top of the shaft is bolted to a moveable timber arm slotted into two support beams. The arm is extended to form a handle the whole being locked during the operation of the bolter by a wedge.

The timber Great Spur wheel is of clasp arm construction and is keyed to the main shaft by timber wedges. It is butt and lap jointed and is secured by 12 bolts. The massive oak vertical shaft is bound at the lower end with two iron bands. It is supported on a 3 inch diameter iron insert which rotated in an adjustable cast iron bridging box bolted to cross supports in the floor. Here the shaft is 16 sided but it becomes 8 sided and then square on the next floor. Set in an awkward position close to the wall and under the bin floor steps is a winch for raising the stones for dressing. Timber supports carry an iron bound octagonal timber windlass drum. Two square holes have been let through the drum for the insertion of operating bars, which unfortunately are missing. Hooks fitted in the ceiling beams above the stones would have carried the pulley blocks.

The fifth floor is the bin floor but all of the grain storage and feed equipment has been removed (see Figure 11). All that remains to be seen is the vertical shaft, with a low rectangular curb around the hole in the floor where it passes through to prevent grain spillage falling to the floor below, and the sack hoist trap now fitted with a close fitting cover. Access to the cap, which is some distance above, would have been by ladder but this is missing.

Set in the ceiling are two main support beams which would have carried the cap floor joists but these are also missing. In addition, they carry the wrought iron tie bolts which secure the curb ring. Two other joists carry a support tie for the hoist mechanism (see Figures 12 & 13). This is of the conventional friction type; the drive being taken from an iron flange bolted beneath the wallower (see Figure 7). The six spoked wallower is also all of iron and engages with the wooden teeth of the brakewheel (see Figure 14). This is of heavy construction with a morticed and bolted frame. The timber ring with the 74 teeth pinned through the back is supported by four timber segments on the front side and a continuous ring of iron flanges in two sections on the other. The iron band brake is in sections and is operated by the weight of the heavy pivotted brake beam. The brakewheel is wedged onto the windshaft and is also supported by tie rods.

The massive oak windshaft, like the brakewheel, is showing the ravages of time and appears to be original (see Figure 17). Shrunk and wedged iron bands strengthen the ends and help to secure the heavy iron poll end which is over 3 feet long and will accept sail stocks of 12 inches by 16 inches. The other end of the windshaft is held in a tail bearing secured to the cap frame. The frame consists of morticed and bolted oak timbers of about 12 inches square (see Figures 15 & 16). It is braced by tie rods and has four cap centring wheels bolted across the inner corners of the frame. Each wheel is held in a cast iron box, the bottom of which can be unbolted to lower the wheel down from its axle. Each wheel is braced by long tie rods to the adjacent wheels. They run against the inside of the curb ring. On the top of the brickwork the weight of the cap is taken by eight iron skids. Only six skids are shown on the drawing for clarity, the alterations to the cap with the removal of original timbers and the substitution of a simpler cap structure has produced a situation which requires further work to decipher the original dimensions of the cap. Inside the brickwork the curb ring consists of cast iron segments, interestingly carrying various numbers of teeth to give a total of 159. Secured between the two rear beams of the cap frame is an iron pinion engaging with the curb ring to wind the cap and a rim gear on the same shaft. Unfortunately, the pinion

which drove the rim gear is missing although its angled support frame is still in place. There must have been further supporting framework extending to the rear to carry the pinion shaft and the large chain wheel to be seen in old photographs.

Thus Harbury Windmill is fortunate in having the majority of its machinery in position. It is true that many detailed items are missing but the major interior components are present and it is tempting to consider that with the addition of sails and staging the mill could then be turning under windpower once again.

Acknowledgements.

The Editor would like to thank all those members that took part in the survey of Harbury Windmill, including those providing essential support and sustenance throughout the day.

All the plans of the mill have been produced by Barry Job from original material supplied by the various members of the survey team.

The plates are reproduced by kind permission of the following:
Bill Seaby & The Warwickshire Museum, plates 4 & 6; A.E.Bancroft, plates 2,5,&7; Barry Job, plates 1,10,13,14,15,16 &17; Alan Gifford, plates 8 & 9; and Andrew Findon, plates 3 & 11.

Plate 12 was drawn by Jo Roberts.

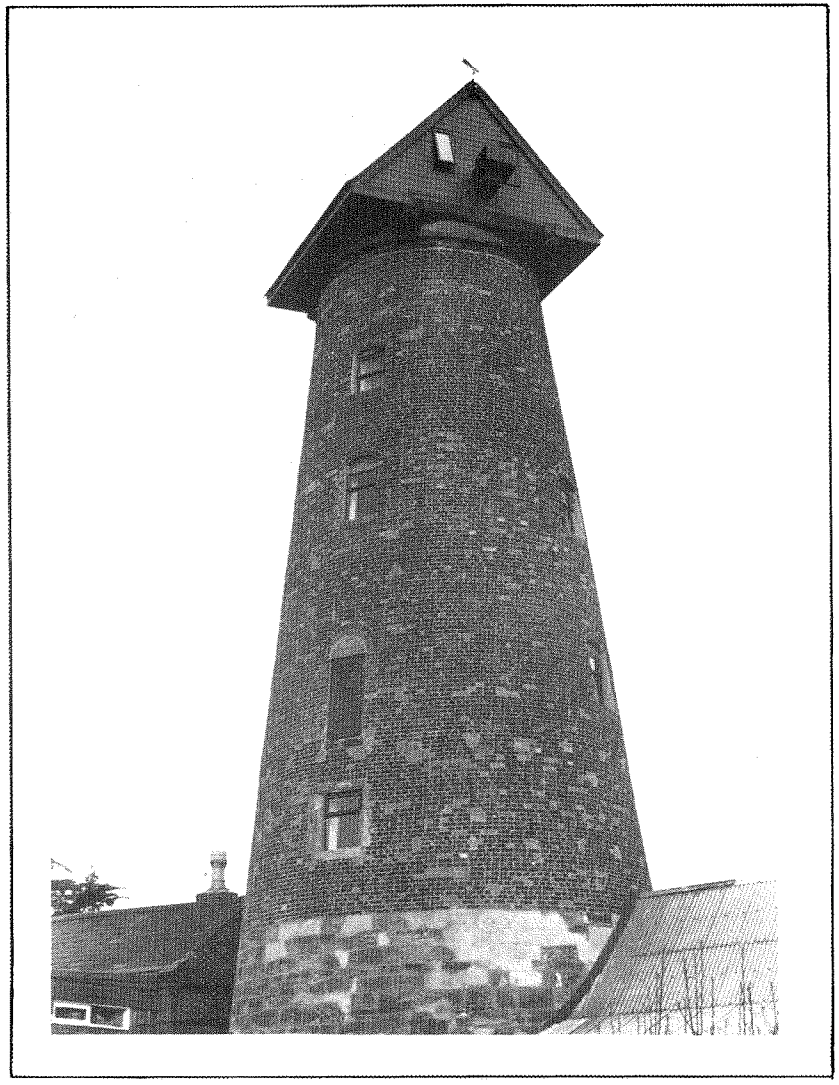

Plate 1. Harbury Windmill, 1989, viewed from the south-west.

Plate 4. The Windmill at Harbury about 1900.
(reproduced by kind permission of The Warwickshire Museum).

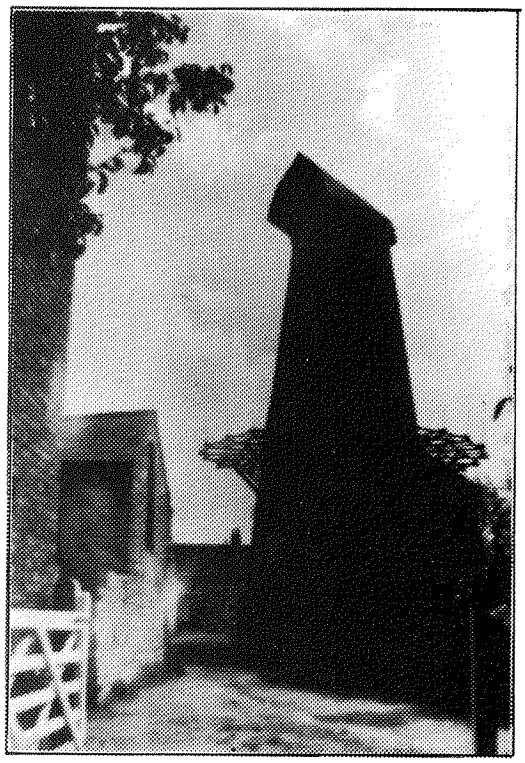

Plate 5. Harbury Windmill, 1950's, viewed from Mill Lane.

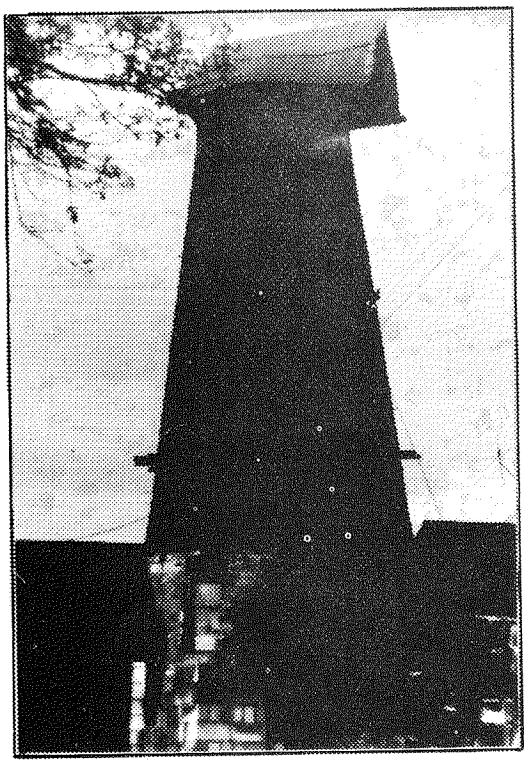

Plate 2. Harbury Windmill, 1961, showing the last vestiges of the stage and the corrugated iron cap.

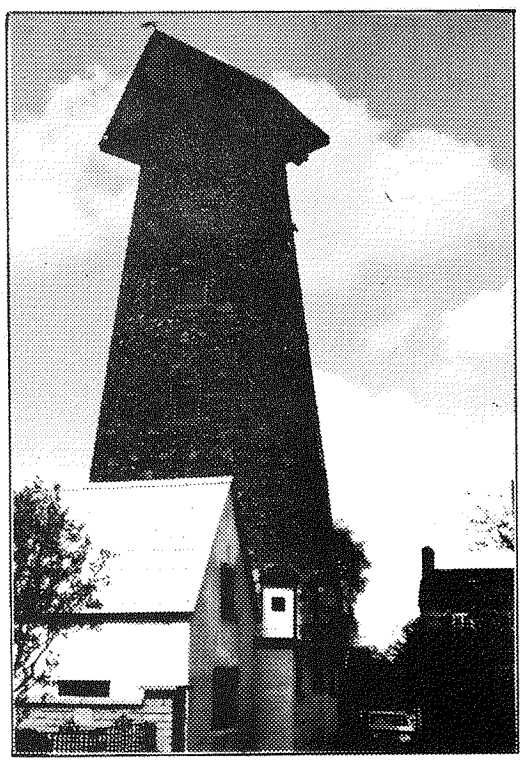

Plate 3. Harbury Windmill, 1989, viewed from Mill Lane.

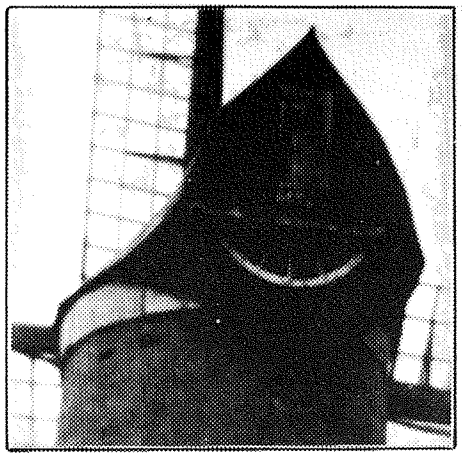

Plate 6. Rear view of the cap, 1900's. *(reproduced by king permission of The Warwickshire Museum).*

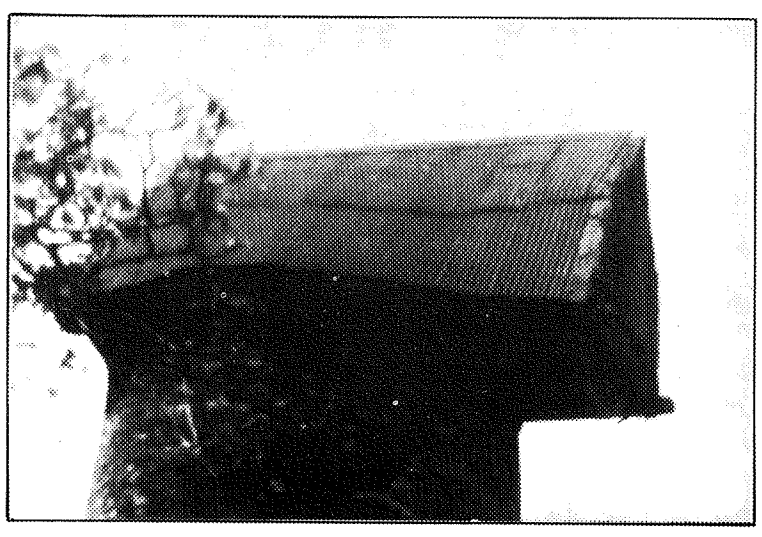

Plate 7. The corrugated-iron cap about 1961.

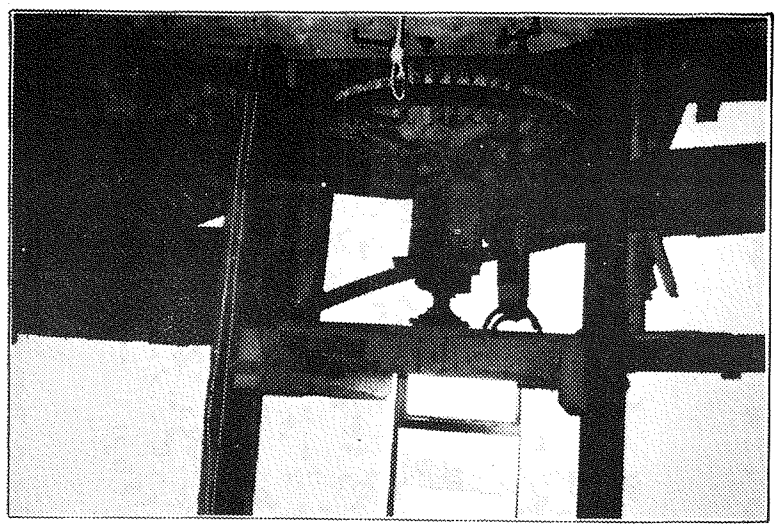

Plate 8. View of the bolter and tentering arrangements on the third floor.

Plate 9. Members of the surveying team at work on the stone-floor.

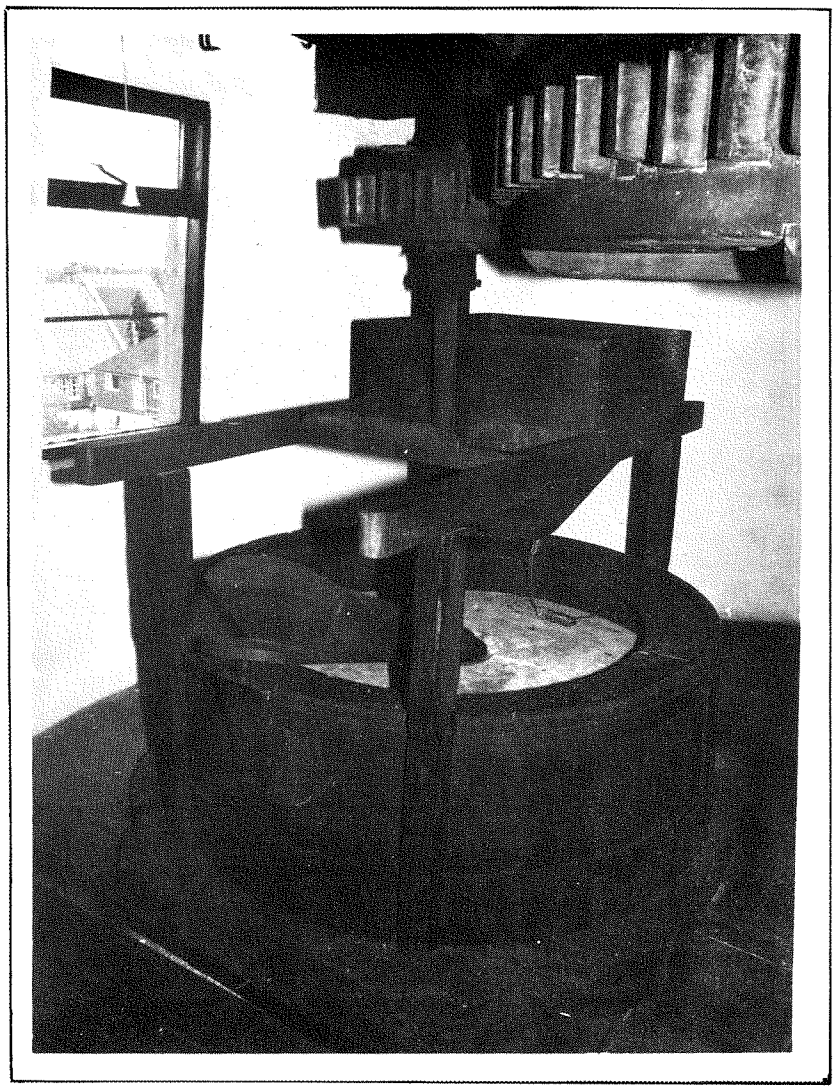

Plate 10. One set of stones and remaining stone furniture on the fourth floor.

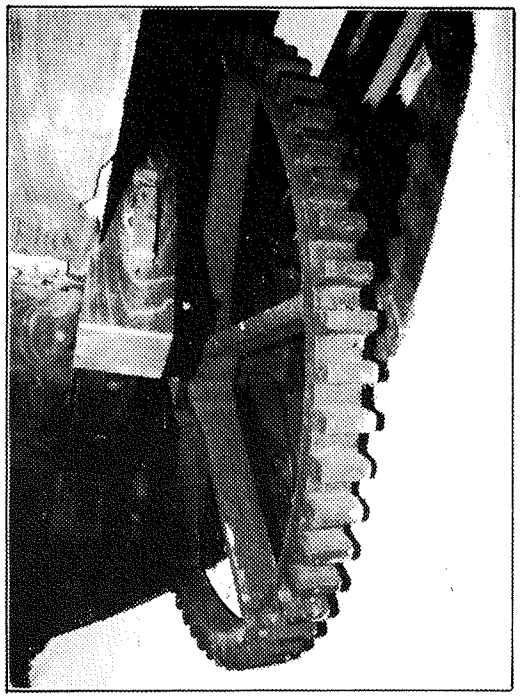

Plate 11. The winding gear for the cap.

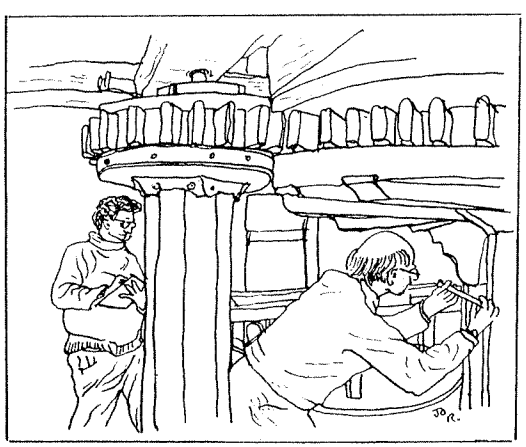

Plate 12. Members of the survey team at work on the stone floor.

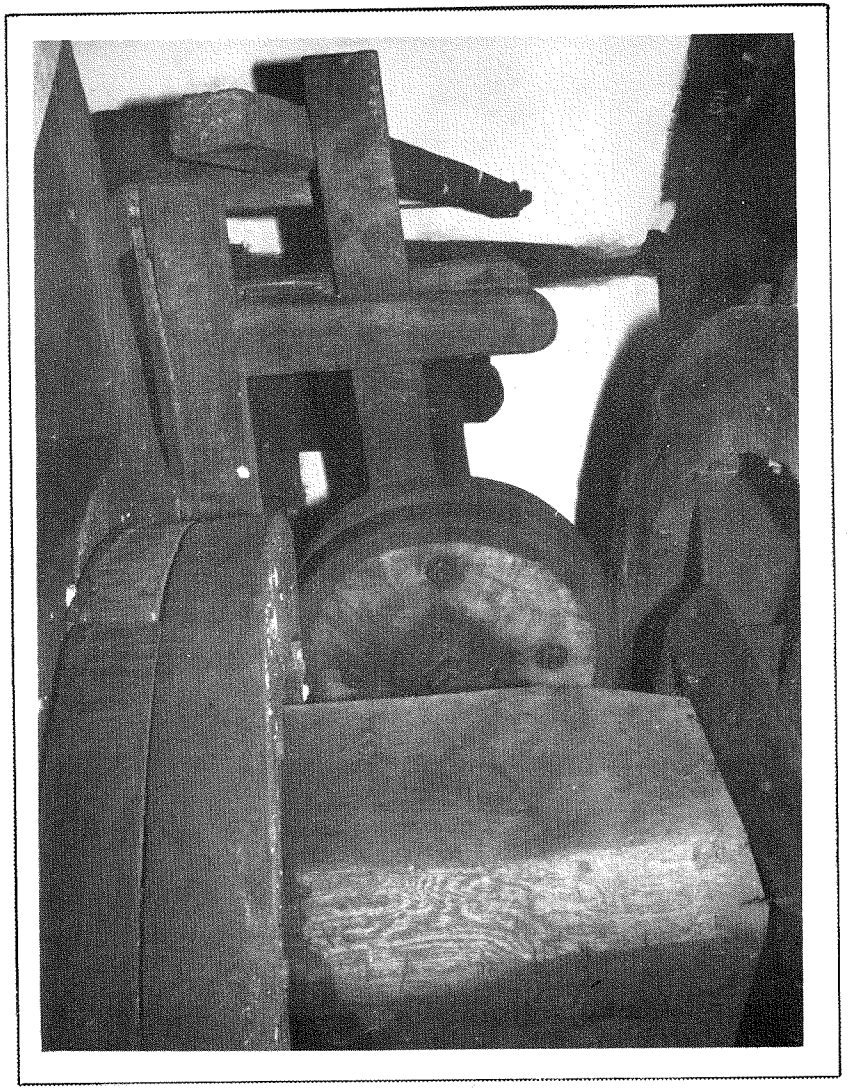

Plate 13. The friction drive for the Sack hoist.

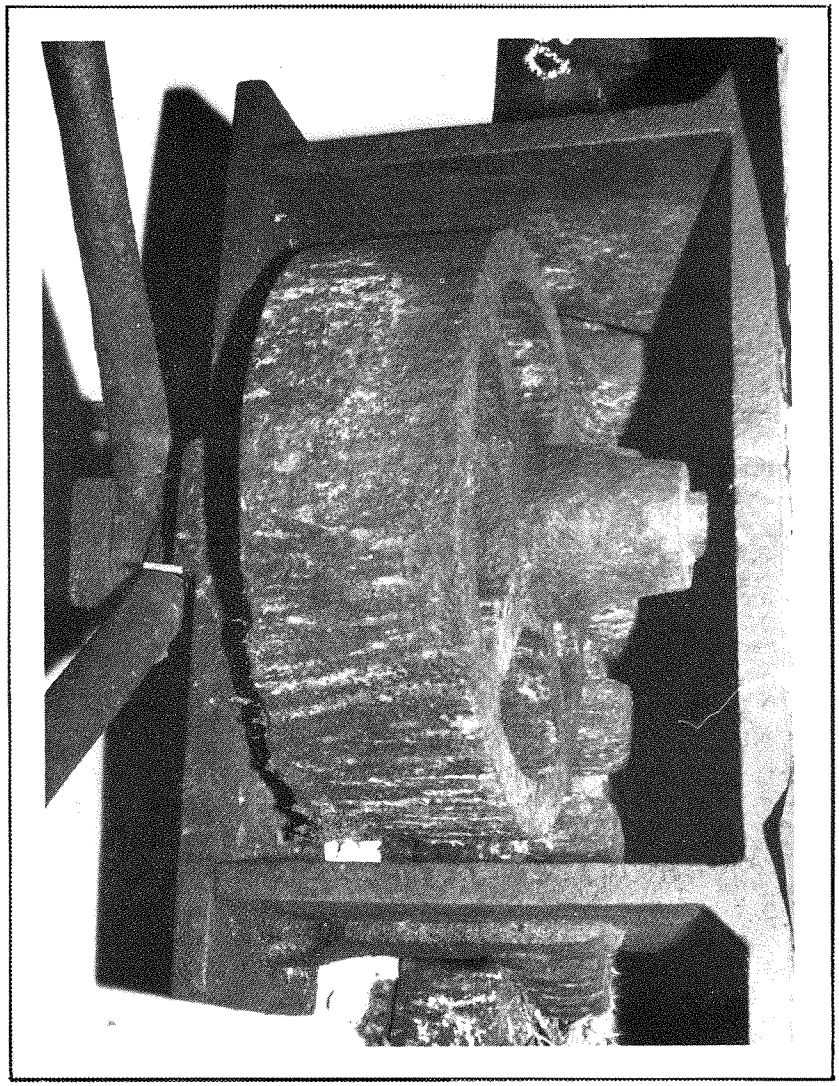

Plate 14. A cap centring wheel and some of the curb-ring teenth.

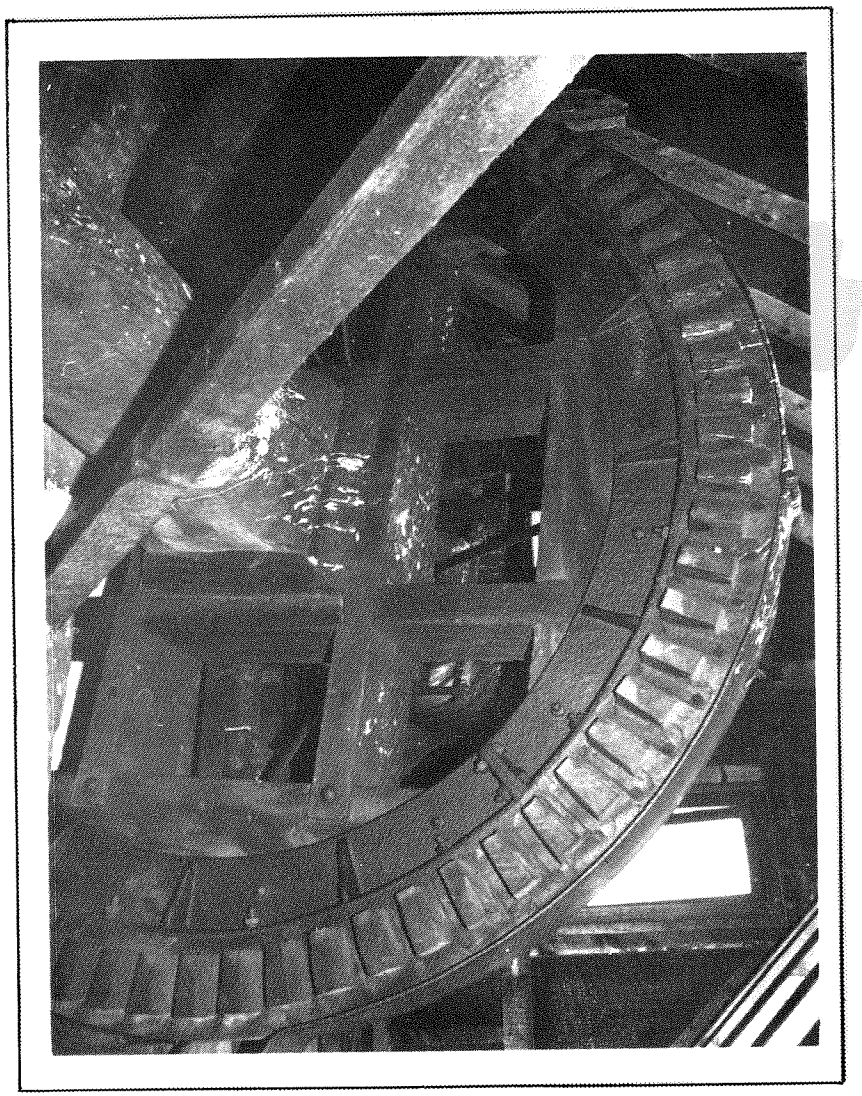

Plate 15. The brakewheel.

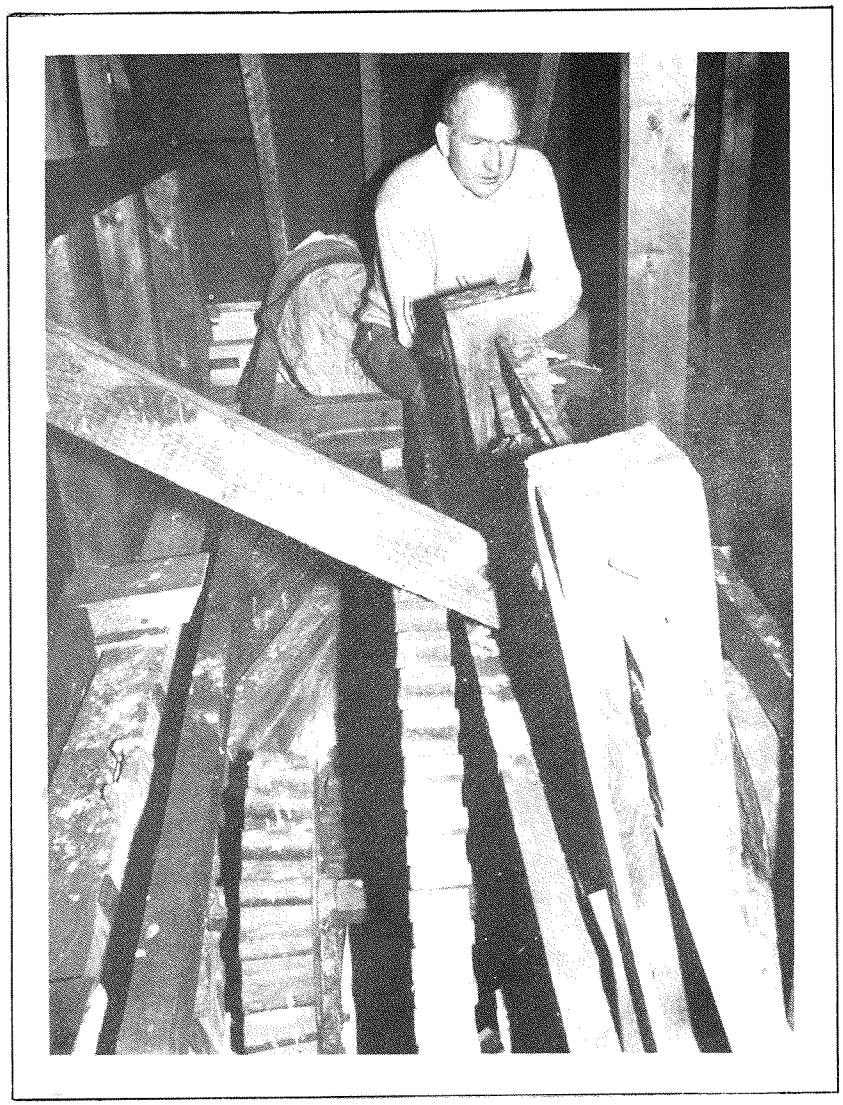

Plate 16. A member of the survey team in the cap.

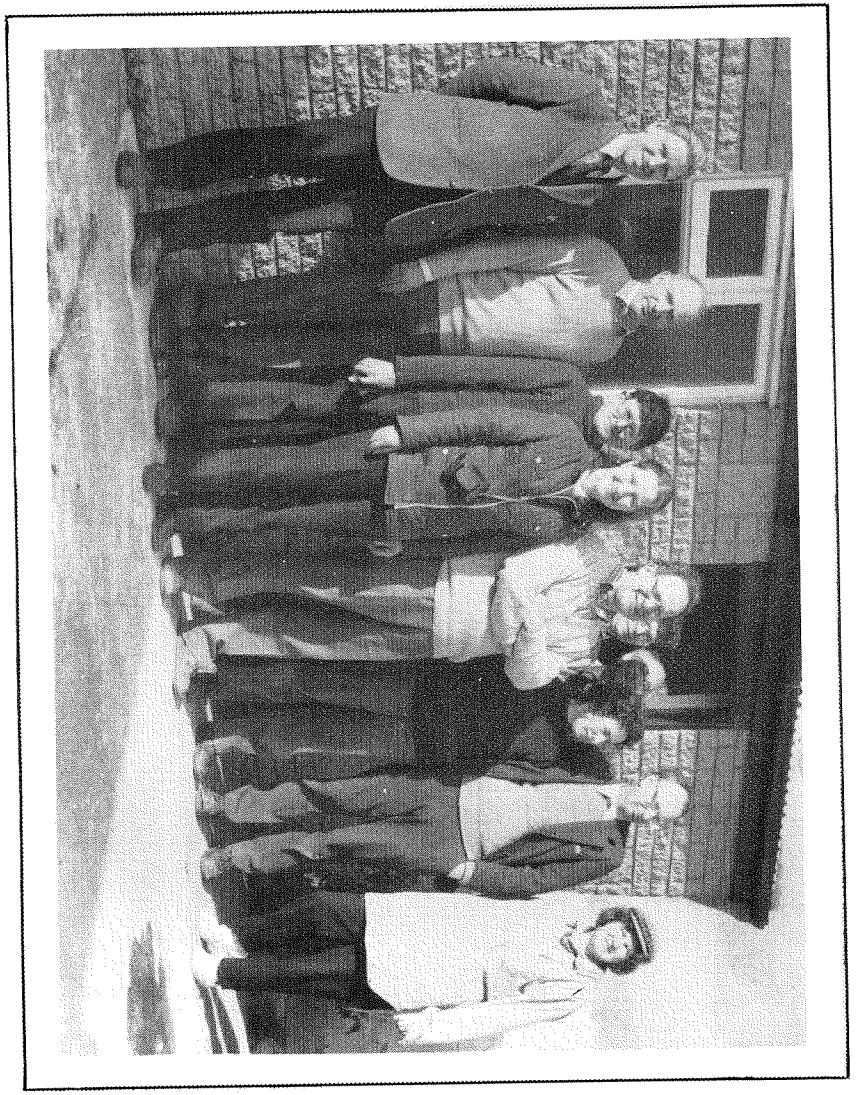

Plate 17. Some of the members of the survey team, from left to right: John Young, Robin Clarke, Susan Young, Alan Gifford, Andrew Findon, Ian McKenzie, Kate Bonson, Tony Bonson, and Jo Roberts.

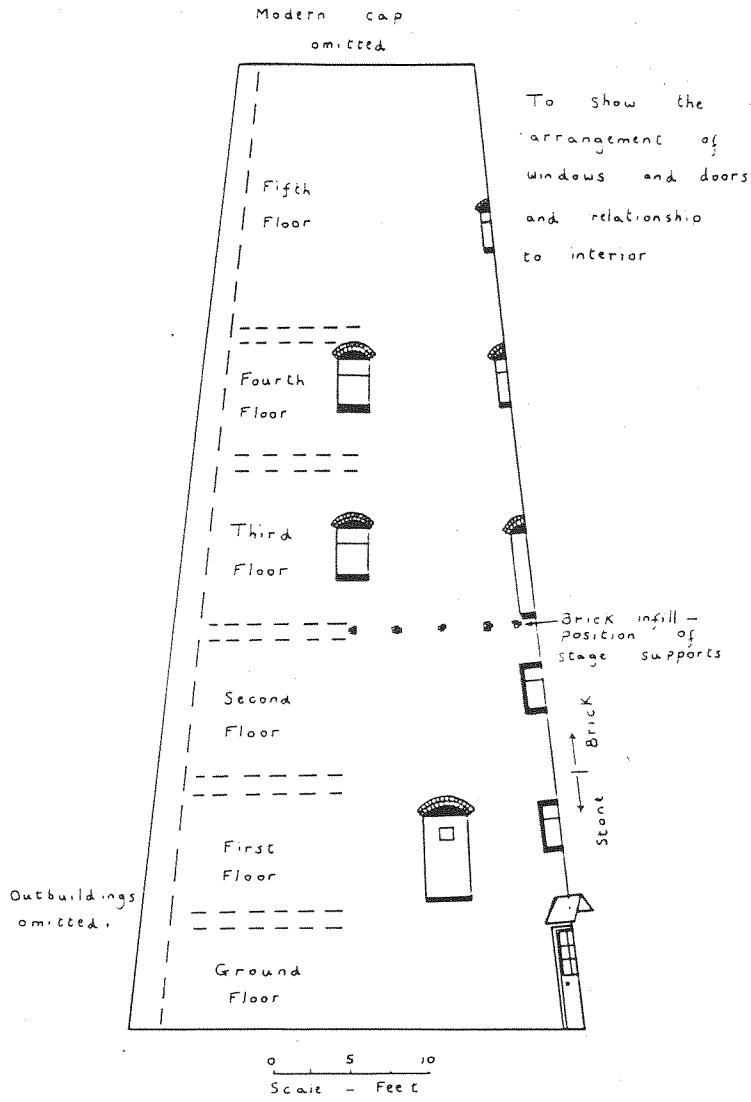

Figure 1. Elevation from the south. (Mill Lane). Measured by B.Job & J.Roberts

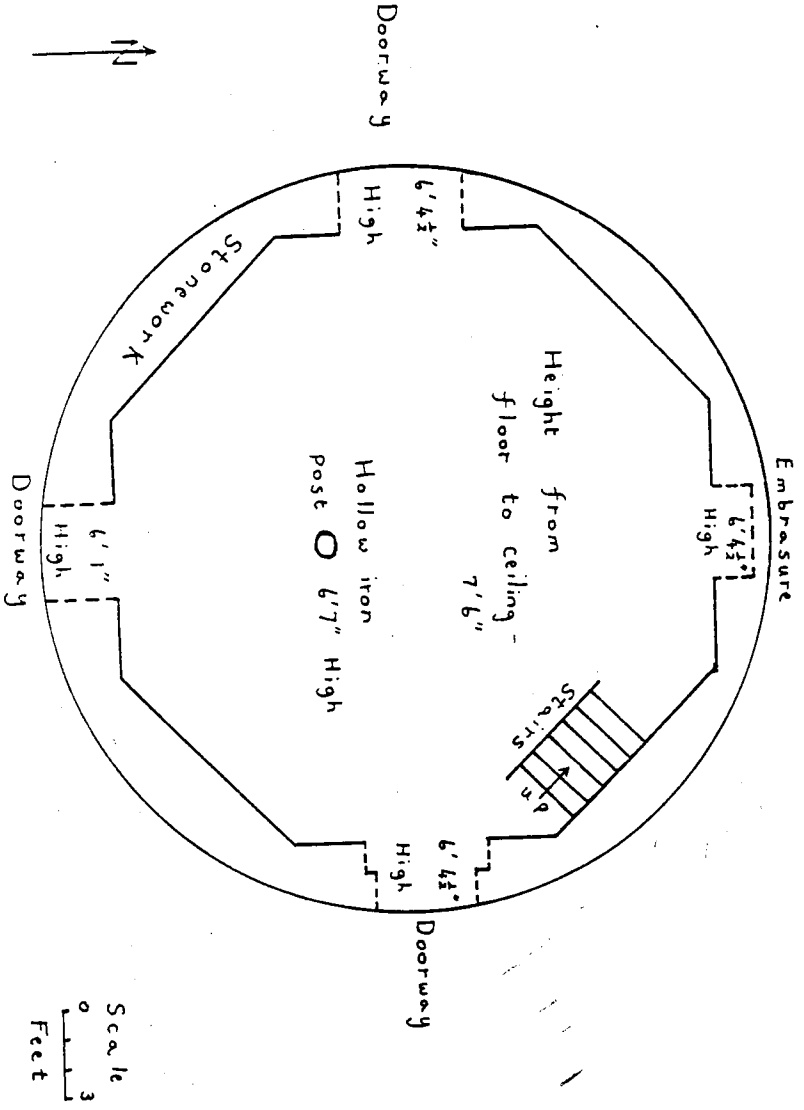

Figure 2. Plan of the Ground Floor. Measured by W. Seaby & J. Young.

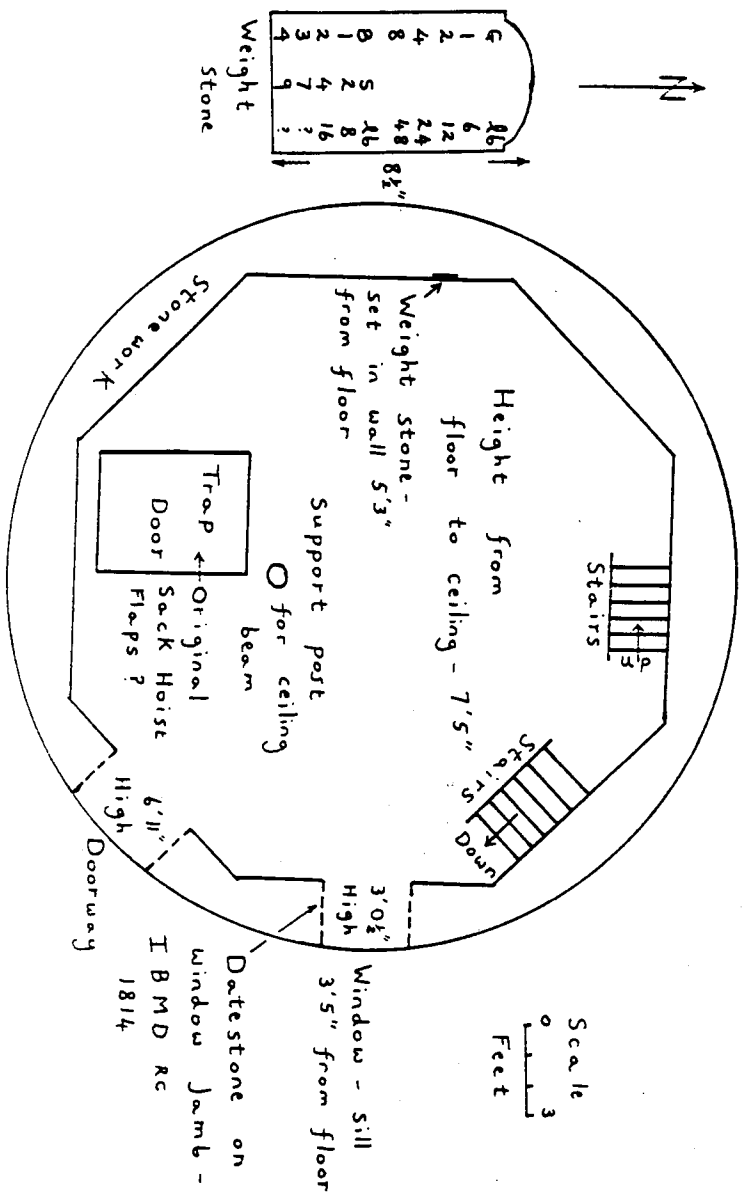

Figure 3. Plan of the First Floor. Measured by W. Seaby & J. Young.

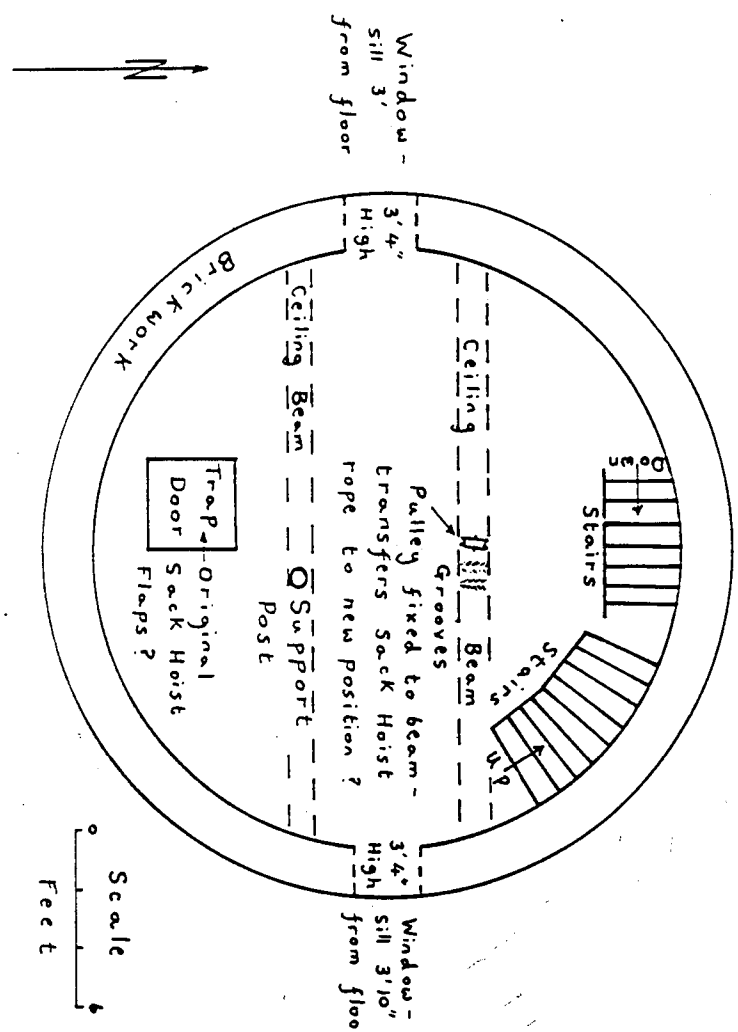

Figure 4. Plan of the Second Floor. Measured by W. Seaby & J. Young.

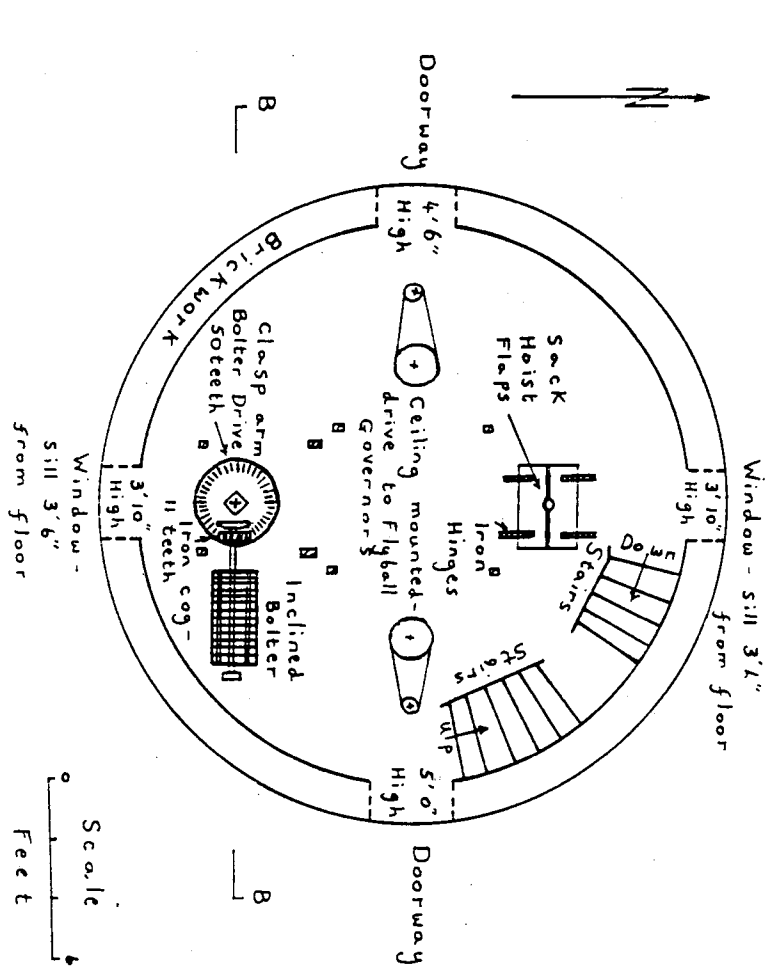

Figure 5. Plan of the Third Floor. Measured by A. Gifford and A. & K. Bonson.

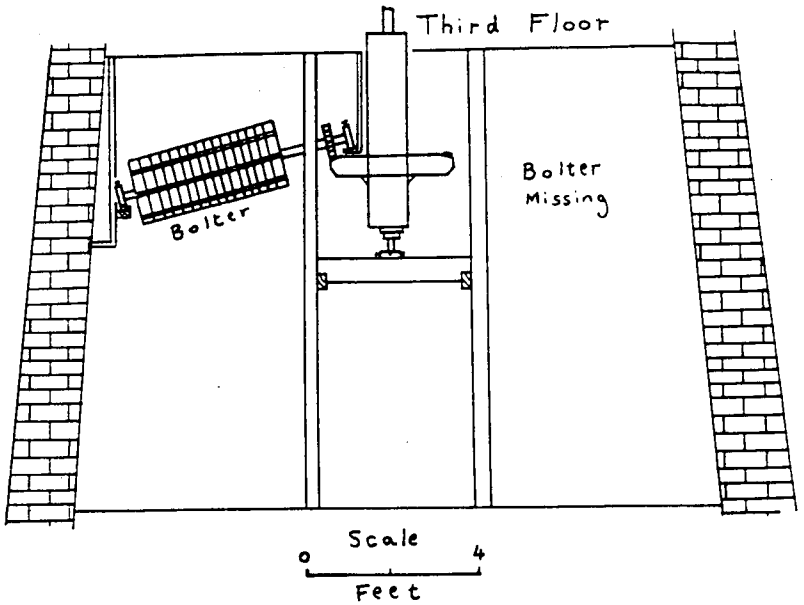

Figure 6. Elevation on section BB. Measured by A.Gifford and A.&K.Bonson.

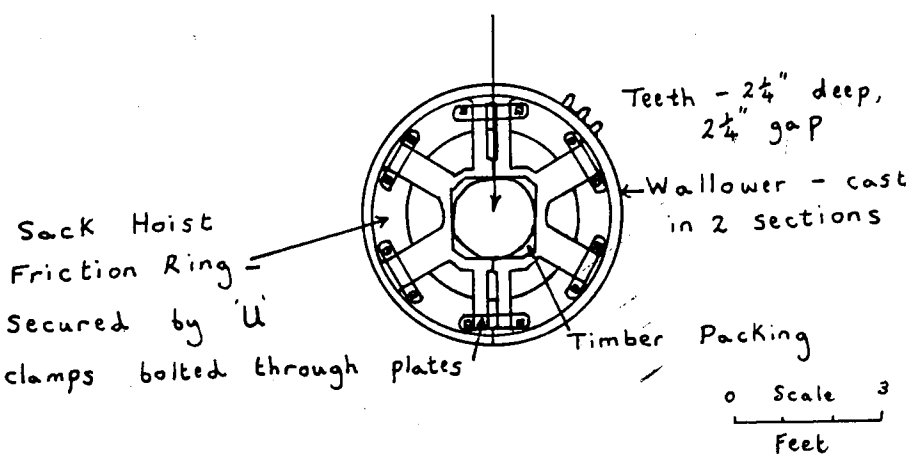

Figure 7. Plan of the wallower. Measured by A.Findon and J.Roberts.

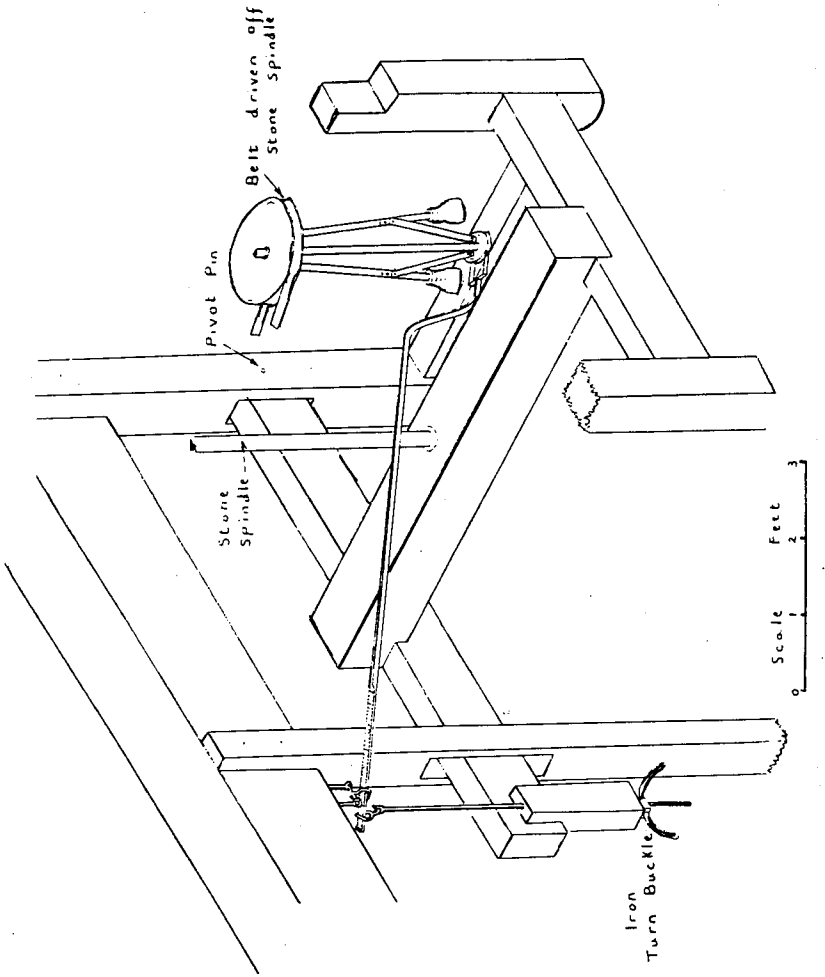

Figure 8. An isometric view of the governor and tentering arrangement. Measured by A. Gifford and . & K. Bonson. Drawn by A. Gifford & B. Job.

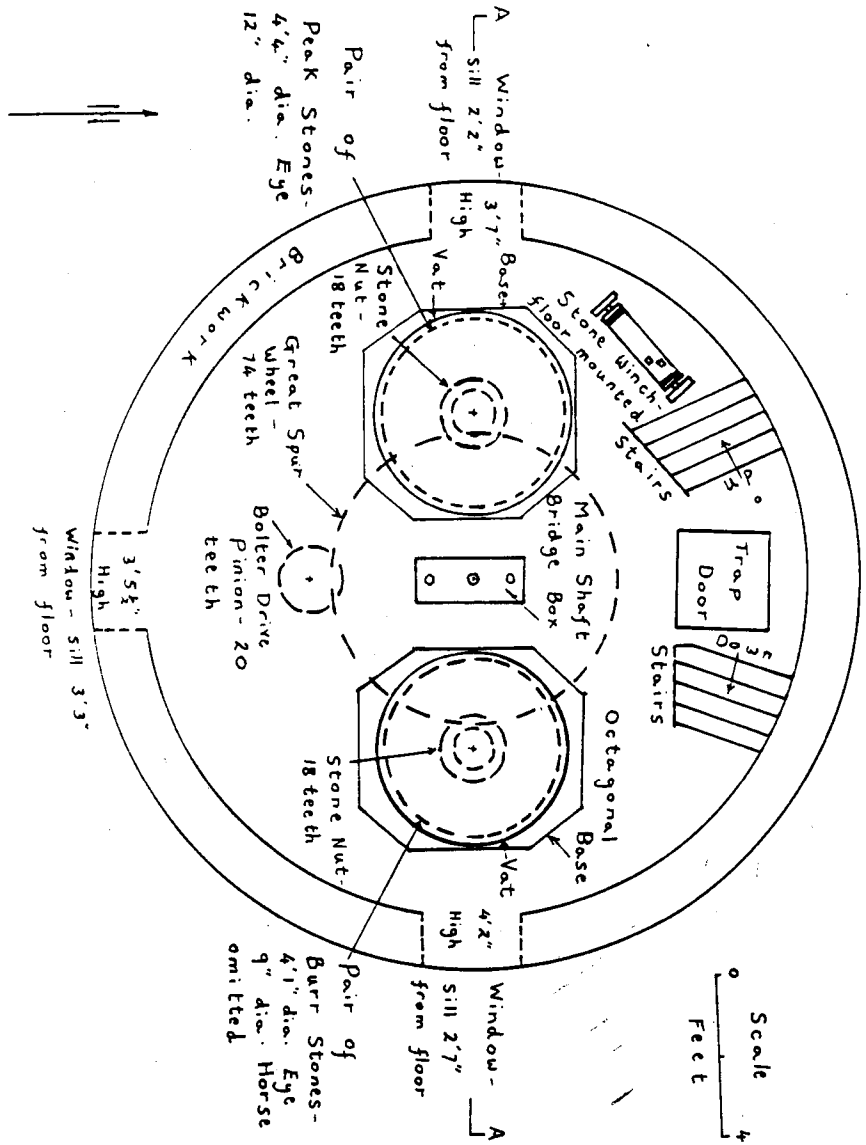

Figure 9. Plan of the Fourth Floor. Measured by J. Hill & I. McKenzie

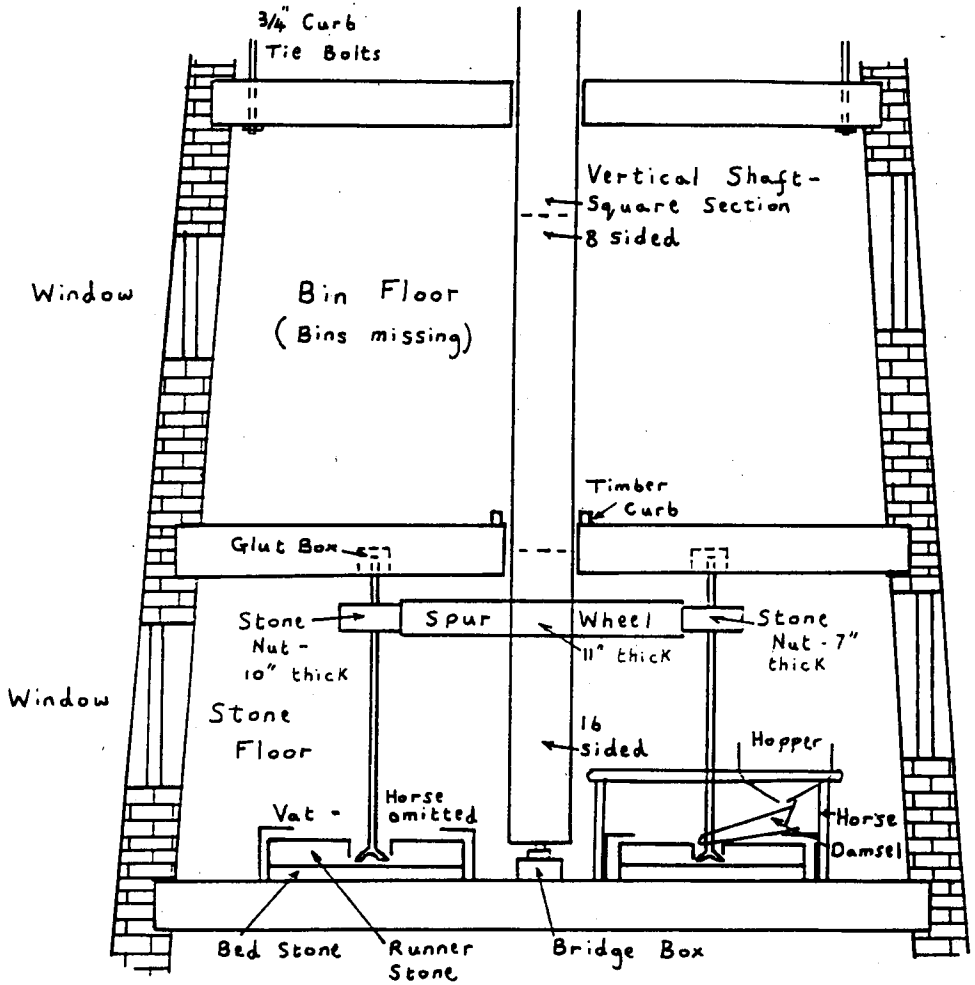

Figure 10. Elevation on Section AA. Measured by J. Hill & I. McKenzie.

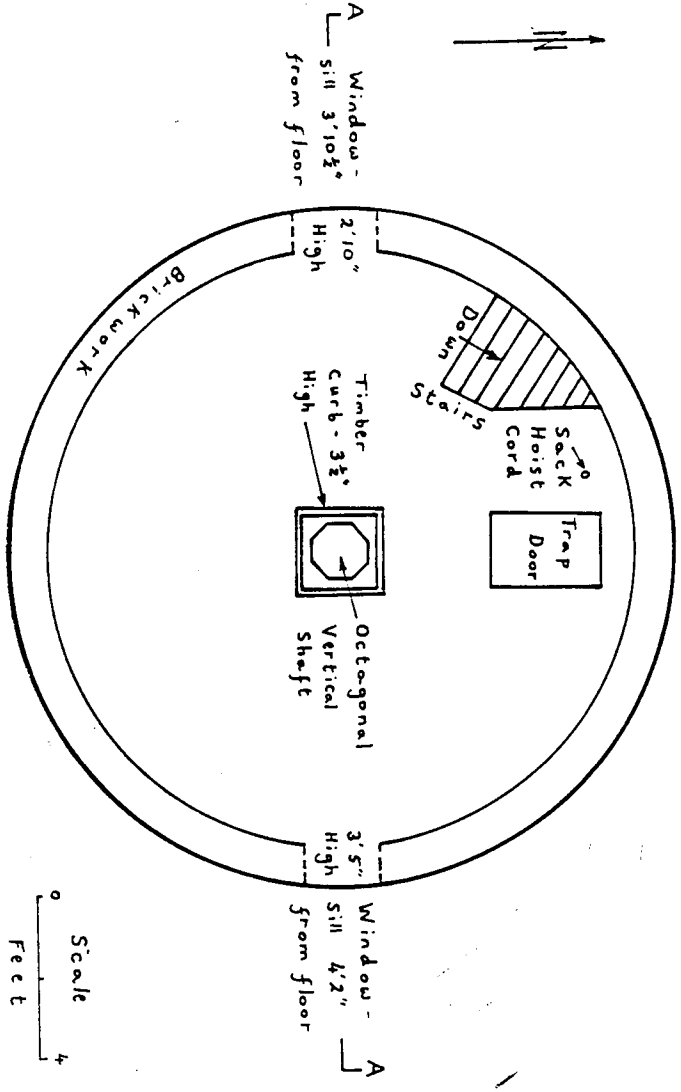

Figure 11. Plan of the Fifth Floor. Measured by J. Hill & I. McKenzie.

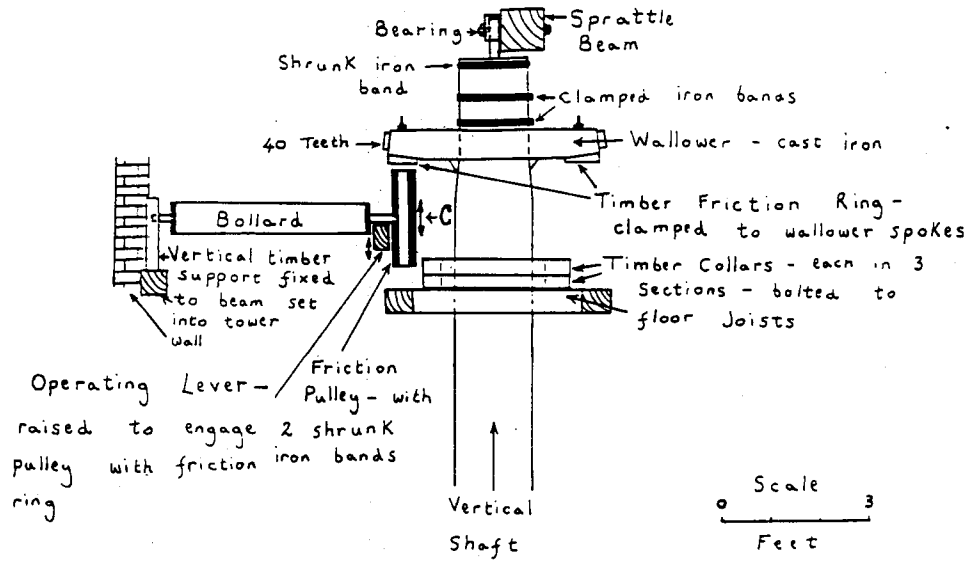

Figure 12. Elevation of wallower and sack hoist. Measured by A. Findon & J. Roberts.

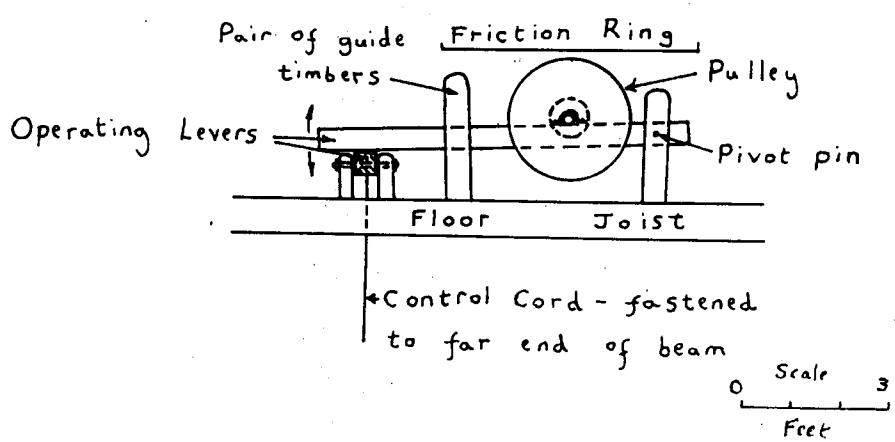

Figure 13. Elevation view in direction C. Measured by A. Findon & J. Roberts.

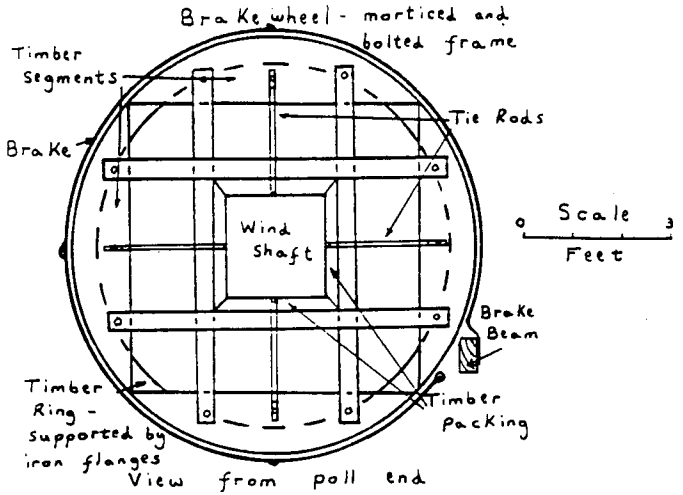

Figure 14. Elevation view of the brake wheel. Measured by R. Clarke & Job

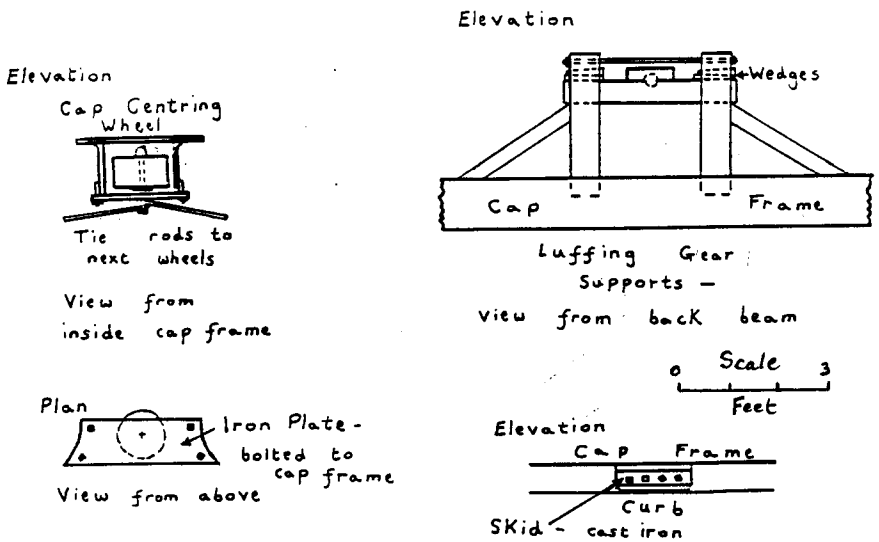

Figure 15. Various details from inside the cap. Measured by R. Clarke & B. Job.

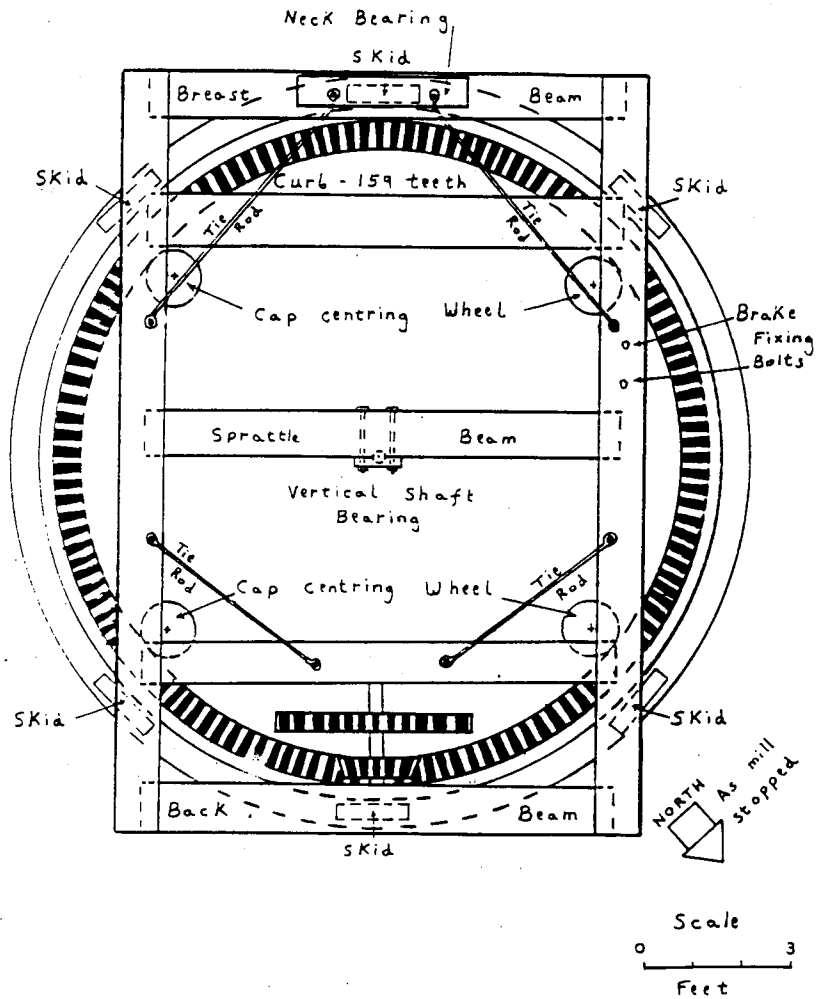

Figure 16. Plan of the cap frame. Measured by R. Clarke & B. Job.

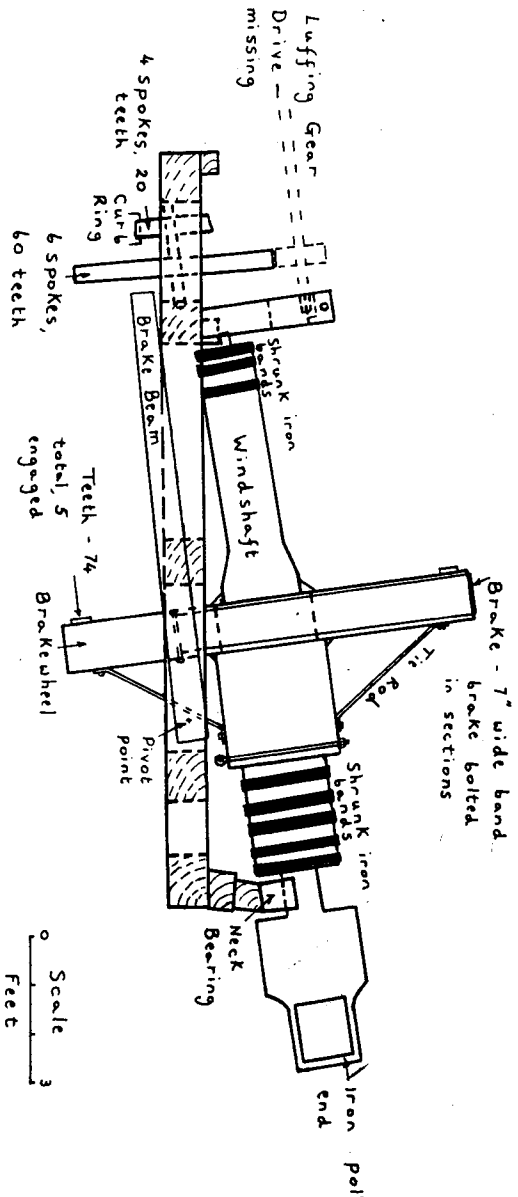

Figure 17. Elevation of the windshaft and cap frame. Measured by R. Clarke & B. Job.

A SCOTS MILL.

By Wilf Foreman.

When I was in Scotland in the Spring I picked up this fascinating story at Lochinvar.

"The story is told in Assynt of how John MacCleod of Achmelvich set out to Suilven over 130 years ago intent on getting the hardest stone available for his mill stones. Having selected the stone from Caisteal Liath he set about dressing them on the spot. The stones were taken down from the mountain to boats waiting in the bay of Inverkirkaig. They were then rowed the 5 miles to Port Altna Bradhan where they were hauled up to the site of the mill and set to work turning, rumbling, and grinding for many years".

This was a formidable journey. John MacCleod had a climb of some 2,500 feet after a ten mile struggle through forest and bog, then the same trip back to the coast carrying the stones.

The field workers' survey notebooks used in the production of the first Ordnance Survey maps exist of that area and record countless small water mills which seem to have disappeared back into the heather by now. However, in the above story you will see that names are mentioned and by some crafty mapwork I pinpointed the site of what must have been this particular mill, indeed there was evidence on the site.

It is quite isolated, particularly as there were no roads in that area till later and heavy loads were carried on animal drawn sledges. The water supply was a sizeable loch whose capacity would seem to have been increased by a wild jumble of stones piled at the outlet, then the water passes all around and under a welter of boulders and access can be gained to the site from above by hopping from one to another. On some of the boulders there is evidence of prepared steps, a thoughtful idea for those carrying a weighty sack.

A heap of stones persuades some of the water to divert to the mill where it passes under the remaining structure to rejoin the main stream. It is difficult to see why such an isolated site was chosen but most of the comings and goings were perhaps by boat - the trip up from the shore was the easier of the two ways. Perhaps the craftily hidden site escaped notice. The landlords levied what was called, I believe, mulcture; in fact a tax to be paid on all grain processed, with the familiar ban on the use of querns.

The walls of the mill now stand about 5 feet high and are built of random unmortared stones; the upper parts have collapsed both in and out and there are no reference points to suggest machinery arrangements. The Norse type mill was usual to the area.

The plan is a rough circle of 10 feet diameter on average with a sort of pout where the door occurs (see Figure 2.).

There are 7 stones on site, 6 of them conglomerate. Inside there is a 48ins x 4ins grey runner overlapping a pink bedstone, though not in working position. Recesses for rhynds can be felt through the 4ins eyes but it is not possible to feel their form as they are shallow. Nearby is a pink 3 ft runner, face down, with a rounded back, 6ins thick with a 4ins eye. Just below the mill a number of stones have been dumped. There is a 48ins x 4ins red sandstone bedstone, badly layered off on the back, with a $4^1/_2$ins eye; a pink 48ins x 6ins runner with rounded back and a $4^1/_2$ins eye; a grey 36ins x 6ins runner with a 2ins eye; and nearby a 48ins x 6ins runner with a $4^1/_2$ins eye (see Figure 2). All are badly weathered and there are no signs of dressing as such, the various recesses for rhynds are eroded but can be recognised, some quite unusual (see Figure 1).

The 4ft. stones may be evidence that the mill was up-rated at some time. If the 3ft. stones were the original they might possibly be the ones John McCleod brought down, each a load of some 650 lbs.

For those who have the opportunity to visit this exciting site it is on Sheet 15 of the O.S. 2nd series ref: NC 054 262.

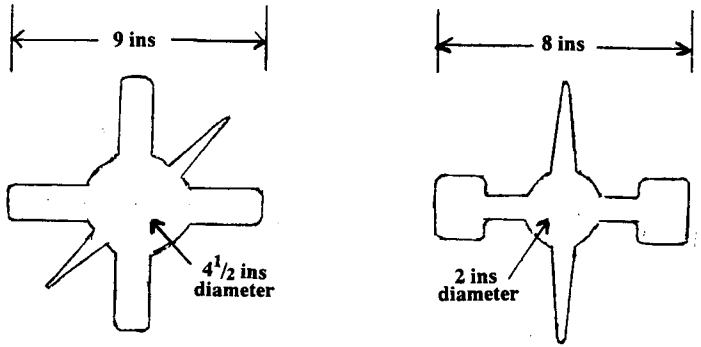

Figure 1. Two types of recesses for the rhynds on the millstones.

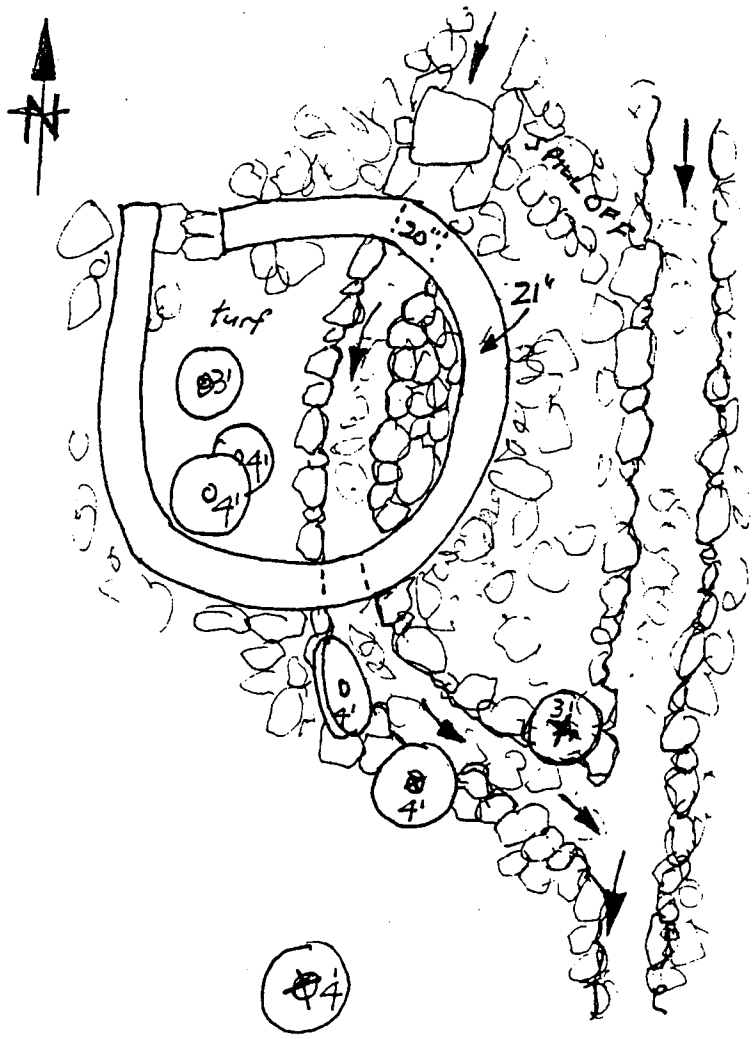

Figure 2. Plan of the mill site.

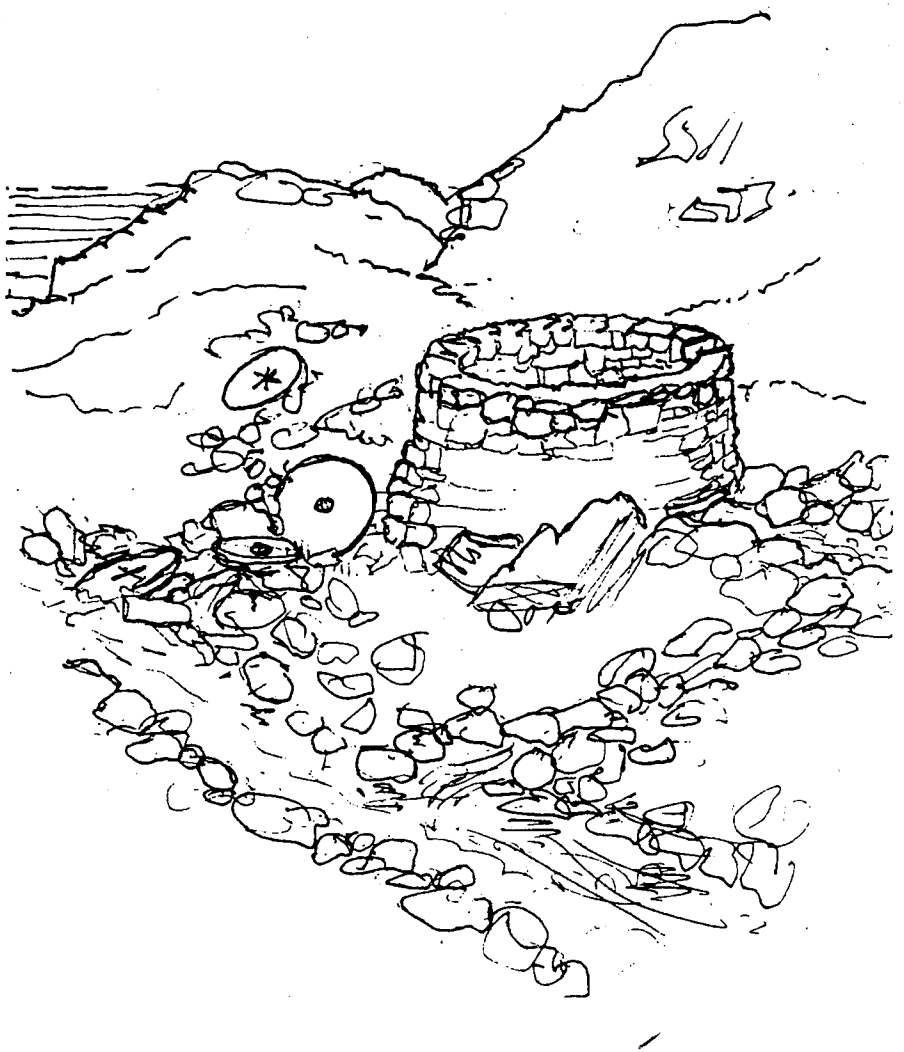

Figure 3. A sketch view of the mill site from the north-west.

Publications: (continued)

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Published July 1984. 48 pages, 17 drawings and maps.
Contents: Fladbury Mill, Worcestershire.
Watermills and water-powered Works on the River Stour. Part 2.
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The Dressing of Millstones: English Practice.
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continued overleaf