

### Harnessing the Wind.

It was magic ! We clicked a brass knob by the door and in the centre of the ceiling glowed an electric light!

True, it wasn't a very bright one and the shade was made of a flattened cocoa tin painted dark green on top and white underneath, but it was a real light.

No more candles to read by in bed, no smelly oil lamps to clean, just press a switch and there was a light. We felt very superior, for our light came from a windmill at the end of the garden.

I can never remember the time when my father wasn't making a windmill. At first a spare bedroom was given over to him and my brother and I went to sleep with the sound of hammer and saw in our ears. Eventually the various parts were manoeuvred down the stairs and finally the mill was erected at the bottom of the garden.

From an old and faded photograph the first mill appeared to be quite small. It had canvas sails and was bolted down on a concrete base.

It was completely home-made: mother's egg-whisk provided a vital part, as did an old pram-wheel. My father was an engineer by profession, but was also an expert carpenter and every detail was finished with the exquisite precision of the born craftsman.

I suppose it was somewhere about 1908 or 9 that the mill was elevated to a platform over mother's hen-house: this is the first one I remember.

There was a 'fantail' at the back which faced the sails to windward automatically, but in those early days a sudden change of wind from say N.E. to S.W. might cause the mill to become 'tail-winded'.



On such occasions, if my father was away, mother had to climb up and turn the mill round by hand to face in the right direction. On one never-to-be-forgotten day a gale blew up and though the brake was on the mill started to run. My mother, realising the danger of over-heating, bravely climbed up and released the brake: to her horror the mill raced madly, the sails blew off and landed some ~~dista~~ distance away in a neighbour's garden!

Legend records that she fainted from the shock! As a result of this it was realised that canvas sails were unsuitable and new louvred sails ( my father preferred to call them 'sweeps' ), were planned.

Louvred sails have, of course, been used on wind-mills for hundreds of years. In 1966-7 The COUNTRYMAN published a photograph of a mediaeval post-mill carved on a bench-end at Bishop's Lydeard in Somerset with conventional louvred sails.

The new sails, however, were to be hinged longitudinally - my father's invention. The two sides, known professionally as the 'leading edge' and the 'trailing edge', bent back against a spring and allowed the wind to spill through them.

They were much more flexible than the old type of ~~xxx~~ canvas-covered sail which had to be reefed, and were difficult and as experience had shown, even dangerous to handle.

The louvres were all made by my father in his workshop and I well remember being sent to fetch him in to meals, to which he came with considerable reluctance!

Incidentally he would never stop the mill with the sweeps positioned thus but always      Though an old miller's superstition, like so many of these traditions it had a practical basis, because it lessened the leverage and strain at the base of the sweeps.



We moved house fairly frequently and the mill moved with us; in later years it stood on the roof of father's workshop.

In the earlier months of the 1914-18 war German spies were believed to be lurking behind every bush. We were living at that date on the slopes of the Hog's Back, not far from Guildford station, and some patriotic individual reported mysterious flashing lights in that neighbourhood - obviously a spy sending messages to the enemy!

The 'signals' were eventually traced to our cottage by the police, who discovered that they were caused by the sails of the mill passing over the lighted and uncovered skylight in father's workshop!

After the war we moved again, this time to the country and once more mill and workshop were erected, the house wired up and the lights switched on.

It must have been in the early 1920's that my father went into the 'mill business' on a larger scale.

He developed a bigger and better mill which had far greater capacity than our home-made domestic mill.

A firm in East Anglia undertook the manufacture and the unique features which my father had included were patented.

The battery-charging system was particularly advanced at that date. The batteries - or accumulators, the term he preferred, were charged in 'banks': when the wind was sufficiently strong a switch was automatically thrown which enabled the accumulators to be charged in double banks.

This allowed a much wider range of wind-force to be utilised. To quote from the booklet which was published in 1923 " The force of the wind varies as the cube of its velocity: thus the effect of a wind of 20 m.p.h. is 8 times that of a 10 m.p.h. wind. Wind power is present almost



everywhere and is free to be used to an extent only limited by the capacity of the windmill. There is a saying among millers that 'they are able to grind four days a week'".

These commercial mills had specially designed sails which were streamlined, on the principle of an aircraft propeller, so giving less resistance to the air and allowing a faster revolution. They were hollow and built of aluminium sheet in front and silver spruce at the back.

The mills were built to specification and some were erected at country houses to supply domestic light and power.

A special mill was designed to run the Ames Costa Engineering Sludge plant, and plans were drawn up for a farm mill which would operate a Pulper, Cake breaker, Chaff Cutter, Cornmill and Sawbench as well as lighting the house and farm buildings.

The tower of a mill erected about 1926 at Dymock in Gloucestershire still stands, though the sails and fantail have gone. of the mills were built on the Windward Islands, and there is another tower at Blackheath, near Guildford.

Though ~~my father xxxxxxxxxxxxxxxxxx~~ electric light and power became available to many homes in the 1930s, my father, who died in 1946, did not live to see even remote cottages supplied with electric cookers, washers and television sets. I am sure, however, their owners were never as proud as we were when we switched on our very own free home-made electric light!

During the miner's strike in 1971 how I wished I could still 'harness the wind' to come to my rescue as I struggled with candles and a picnic stove !

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I am indebted to my brother C.L.Burne, for all the technical descriptions in this article, and to Mr. Rex Wailes M.I.Mech.E. F.S.A. who holds all my father's drawings and photographs for his help. Mr. Wailes will be speaking about the mill at a convention of 'Millinologists' in Holland in May.

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19 January 1973.

Dear Mr. Wailes,

I am sorry to say I have had no luck with the article on my father's mill. I enclose the two replies I have had and am disgusted with The Field as they have kept it six weeks and I don't believe they would have sent it back then - I only received it this morning - if I had not written to ask if they had it in case it had been lost in the post.

I have been writing for over thirty years and usually find Editors courteous and business like.

I gave them your address and have told them that I am sending the letter on to you as I can't tell them anything about the Symposium, of course.

A carbon copy of the article is enclosed, though I may have made some small alterations in the wording as I retyped it after they sent the first one back from The Countryman. I have another copy so I shall not want it back, or the letters. I don't quite know where else to send it, if it is to be topical for the May issue there is not much time left now the monthly magazines which need a three months advance - which is why I am so annoyed with The Field. I think my only hope is to try a Surrey periodical, most counties seem to have one now. I will try to find out from my brother. Unless you have any ideas?

I hope you are able to do something for The Field on the Symposium, at least it will be some reward for your help to me! I am afraid publishing anything except pornography is fraught with difficulty nowadays, the cost of printing is so high that printers will soon price themselves out of a job. I suppose we shall then subsidise them on Social Security!

Yours sincerely,

*Lavender M. Jones.*

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P.S. I remember my father saying of Lloyd George when he first brought in National Insurance - 'that man ought to be hanged, drawn and quartered!' and as you know I am sure, he couldn't kill a fly!