

## H.J.H.King & Co. – Founded187

### KINGS OF NAILSWORTH

Acquired by Redler Industries Ltd. in 1961

The two articles headed “The Nailsworth Engineers” by Tony Yuoles and published by the Gloucestershire Society of Industrial Archaeology in 1989 give good coverage of the first 75 years with Harry and his son Hubert operating the business. The other article published earlier in 1977 in the Model Engineer by R.M. Ayres headed H.J.H.King & Co. of Nailsworth includes drawings of some of their devices. This latter article is stored in the Gloucestershire County Archives together with some of the company’s early drawings.

Following the death of Hubert in 1952, the company was bought by Jesse Rymer - as recorded. His career had been with Listers, Sentinel and others, and he had developed an air cleaning system for air intake to combustion engines. This was used by the ministry for air intakes in desert environment for example to prevent sand entering air intakes. The novel system comprised a compartmental filter where compartments could be switched out of service in turn for cleaning with a reverse blast of air.

Jesse was joined by his brother Alfred who took on sales, particularly in the malting side of the business, whilst the company pursued development of the reverse jet filter into the general industrial field.

Up to this time, most of the malting business had been in the supply of ancillary items particularly for kiln draught and temperature control but included kiln turners and these were supplied to most of the brewer’s and distiller’s maltings throughout the UK. Maltings were still very labour intensive with flat bottomed steeping tanks that had to be hand filled and emptied for transfer to germination floors where the chitted barley was spread and turned manually over several days, It was then transferred by bucket elevator to the kiln floors for hand spreading and turning before removal for de-culming and final dressing.

Conveyors (Ready Built) supplied inclined portable elevators to help clear the steeps .In the 1950’s, REDLER introduced the Power Shovel to clear the growing floors and kiln floors and the Bulk Thrower to spread the germinated malt on the kiln floors. This reduced the manual labour but there was still a considerable amount needed ( I had tested the first Thrower at Cirencester Maltings in about 1953 and was later involved in laying out rope routes for the Power Shovel to make it serve several growing floors from one point)

The 1950’s saw development into the UK of pneumatic malting technology. This was a change to pressurised airflow for germination and kilning and brought closer control for the biochemical process. It needed plenum chambers under perforated floors for the germination and kilning stages so that controlled draught and temperature could be provided. Steeps became conical to self -discharge for pumping the chitted barley as a slurry on to the germination floors which were now perforated aluminium plates. The plate area was some 6 metres wide and maybe 30 metres long in concrete walls that allowed the chitted barley to be laid to a depth of about a metre so that saturated chilled air could be forced through the bed of grain.

This was known as the Saladin box and Kings entered the new field at Gainsborough with a joint venture with Van Caspel - as referred to at the end of the articles. R.J Dangerfield had joined the company early in this period and managed technical developments and the huge contract was successfully completed but it did overwhelm the company's capacity. Evenso, they next won a contract for a large saladin malting for John Crisp as F&G. Smith at Great Ryburgh in Norfolk

But Kings did not have the capability to continue with such large contracts. REDLER had done the barley and malt handling side of the contract – as they so often did alongside King, and REDLER had the necessary resources. As a result, the future was assured for King's taking on turnkey contract by joining up with REDLER in 1961 (which were then part of the Cozens and Sutcliffe Group) and the company became known as "KINGS OF NAILSWORTH".

Jesse Rymer left the company and Alfred was joined by H.E. Mutton and E.E (Ted). Smith of REDLER. Norman Miller, King's Works Manager, became REDLER's Production Controller Furthermore, Redler's Development Department was now being used to support the technical side and that is where I became involved with Kings. Studies were made of kiln air flows by regular checks on the green malt bed through the kilning cycle where Kings had pressurised the under floor. Various other involvements followed culminating in helping to commission the F&G. Smith plant.

Kings were already negotiating with Munton & Fison for a 30,000 TPA malting on a green field site at Flamborough Head and I then headed a team at Dudbridge for the final design with the many subcontractors - with Ted.Smith as director in charge. It was constructed and commissioned on time in 11 months in 1964 by using Critical Path Analysis which meant very quickly "freezing" the design to release details of the necessary closely integrated builder work..

By now, the traditional King orders had finished apart from the occasional sausage filling machine and the last mine winder brake engine was supplied in 1963 to a company in India.

The Flamborough plant was followed by several others – including gutting a huge traditional floor malting in Scotland and converting to Saladin style, Malting technologists and biochemists developed many innovations to the basic process and the Domalt continuous malting plant was built in Scotland but malting otherwise remained a batch process and the market became saturated for a few years.

The Kings works at Nailsworth was disposed of in the late 1960's and the staff etc. moved to Dudbridge and amalgamated with Redler.

Then a new era started. The Saladin box was adapted for germination and kilning in the same box. Recirculation of hot air for kilning gave fuel savings, and the steeping phase went back to large circular flat bottomed steepers with the Giracleur device for automatic emptying Nitrous oxide from oil and gas kiln burners became a concern and indirect heating was introduced with huge arrays of glass tube heat exchangers.

Single vessel malting followed and the Buckie contract had two 30 metre diameter stainless steel vessels containing rotating floors each processing 350 tons of Barley

and having in-built loading / unloading machinery - all able to withstand immersion in steep water and later tolerate the heat of kilning with consequent expansions of the sizeable watertight vessels.

Following this came the Allied Brewers tower malting at Burton on Trent where the separate stage process was reverted to and stacked in a tall circular reinforced concrete tube. This was the ultimate in automatic control where the process was managed from a control panel by one man as the barley was moved through the process in flat bottomed circular chambers.

The maltster's complex biochemistry needs were interpreted by Dick Dangerfield's engineering and technology and he became an authority in the field as, with Redler's process control division under Stan Bourne, Redler had the capability to provide truly turnkey malting – a far cry from the days when Hubert King put his bike and fishing line on the train for a tour of Scotland's distilleries selling bi-metal louvre gear and top draught fans etc. On site commissioning was supported by Dr, Graham Kelly who fine-tuned the monitoring and control in conjunction with the maltsters.

During the course of all these changes, Redler had also absorbed Nalder & Nalder at Wantage and then the Boby business from Vickers around 1980 and Redler became the sole supplier of malting plant in the UK. Robert Boby of Bury St. Edmunds had been a competitor in Saladin days by developing rotating drum malting. After purchase by Vickers, they developed the GKV which was a circular vessel incorporating machinery for germination and kilning – Redler often supplying the circular Giracleur steep alongside. On the continent Redler's licensee, Buhler, had acquired Miag's malting interests in the 1970 period and had become the only other major competitor.

Another lull in demand followed in the 1980's as the huge output of a few modern plants met brewers and distillers needs. Business went on and included the design, manufacture and build of Que Que Maltings in Zimbabwe for Bantu beer. This contract came during Ken Bucknell's time in southern Africa and the maltings was opened by Ian Smith of Rhodesia days and ex Battle of Britain pilot. Eventually, in the 1990's, the malting business was sold to Qualter Hall and after a few years Qualter Hall sold it on to Don Valley Engineering where it remains at present.

At this time, it seems that Crisp Malting is the only major independent UK maltster left, the few others being joined up in groups.

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