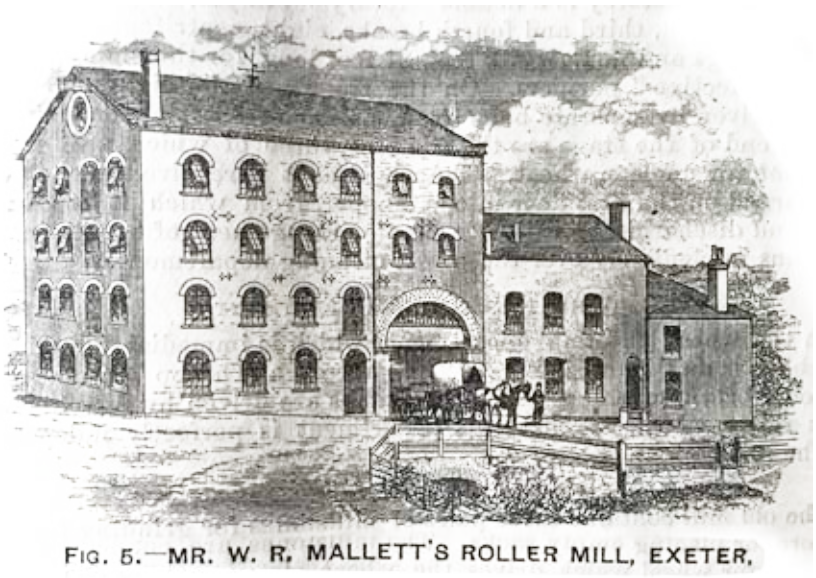


FIG. 5.—MR. W. R. MALLETT'S ROLLER MILL, EXETER.

The 1888 Plymouth Milling Convention Part 1

Milling journals of the past at The Mills Archive

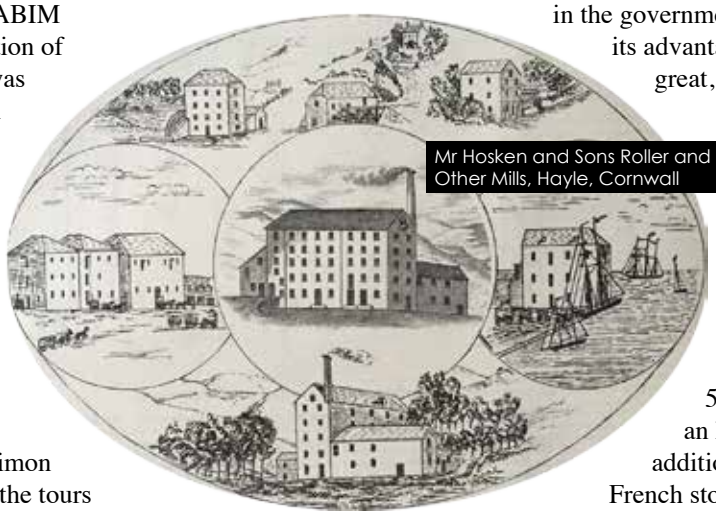
by Mildred Cookson, The Mills Archive, UK

Milling conventions and exhibitions were and still are an excellent way for the milling profession to keep abreast of the latest developments in technology and milling practice. They also attracted commercial organisations, keen to display their latest innovations in a rapidly changing world.

Not surprisingly the media of the time, represented by the weekly journals Milling and The Miller were in attendance. As a result, we have at the Mills Archive a detailed historical record of the steady replacement of millstones by roller machinery.

One such event was the NABIM Plymouth Milling Convention of 1888, whose programme was described and illustrated in July 1888 of The Miller, giving us an overview of the state of milling in the south of England at that time. The events had three main elements: technical papers, mill tours and a "ladies' programme".

The technical papers, read by such people as Henry Simon and J Harrison Carter, and the tours of local mills would still work 130 years later, but this lady miller, would not be pleased to be offered a ladies' programme, even with the military band concert promised!



Mr Hosken and Sons Roller and Other Mills, Hayle, Cornwall

Government Flour Mills and Bakeries

The first tour by steamer up the River Tay, allowed a view of the Royal Navy's "Royal William Victualling Yard" designed and built by the famous engineering partnership of John & George Rennie in the 1830s. The complex contained the Government-owned flour mill and bakeries housed in large buildings situated on the quayside.

The mill contained 24 pairs of stones and the bakery contained twelve ovens. Finally completed in 1883, the mill building was 74 metres long, 18 metres deep 21 - 22 metres high. Two wings each contained twelve pair of stones which were driven by two engines of 45 horse power. The millstones were four ft in diameter, and turned at 123 rpm. The grain cleaning and bolting machinery worked simultaneously with the grinding.

In 1870, when the GH Bovill's patent for the improvements in the manufacture of flour was causing a stir, six pairs of French four ft stones were taken out and replaced by Belgian stones of 4ft 6ins diameter and to each of the six pairs of stones was attached an exhaust. Bovill patented the use of an air blast and exhaust between the millstones. This plan was first adopted in the government dockyards, and once its advantages were found to be so great, it became generally used by millers.

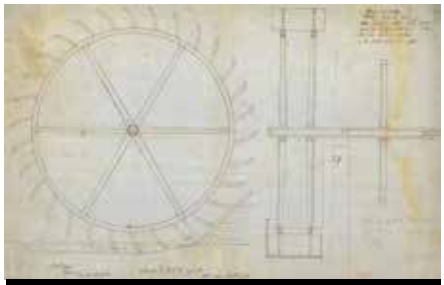
About this time a silk reel of 30ft was installed. When in operation at least five of the Belgian stones were always in operation, and these could grind 4,000 to 5,000 lbs of wheat in an hour. The east wing, in addition to the twelve pairs of French stones, had two pairs of Peak stones used to make oatmeal.

Mr WR Mallett's Exwick Roller Flour Mills

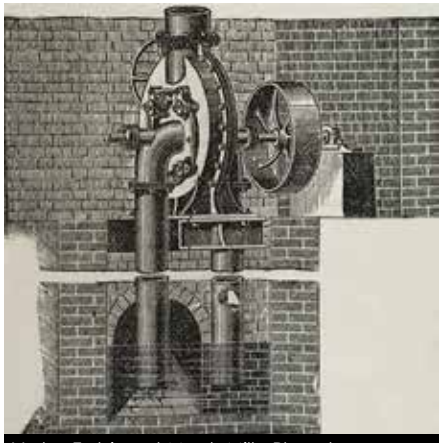
One of the many interesting mills that convention visitors could visit was Mr Mallett's Flour Mills in Exeter. Set up on the Simon System, the mill was built on or near the foundations of a medieval flourmill with a well-defined history. The Exwick flour mill had been in the possession of the Buller family since 1859.

The mill that was visited in 1886 building had a five sack an hour roller plant. The mill location was particularly advantageous, as it was close to the railway and in the

The Royal William Victualling Yard

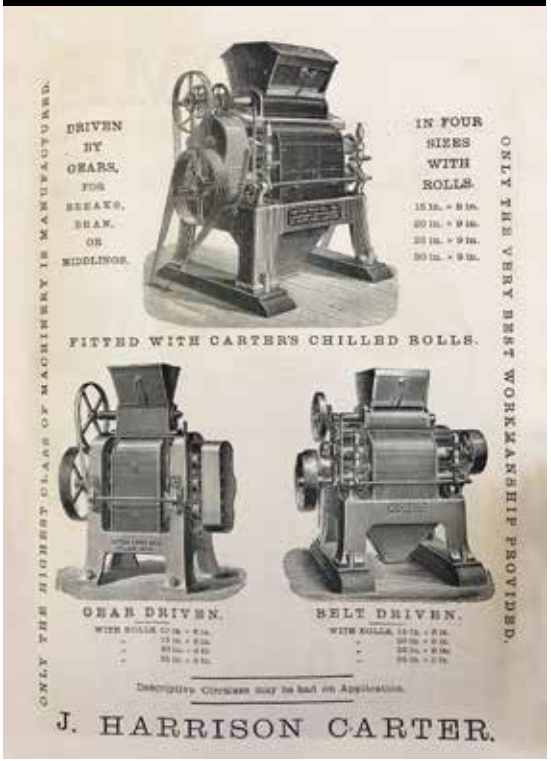


Bodley Drawing of a Poncelot Waterwheel (Mills Archive)



Vortex Turbine at Marsh Mills, Plympton

J Harrison Cartwight's roller mills with chilled porcelain rolls



2¼ foot pinion. The first floor had the roller mill for breaking the wheat on the system of five breaks and flouring the middlings and semolina in eight reductions.

The old mill, while connected to the new, was separated from the roller mill on the first floor by iron doors. It still contained three pairs of stones for grinding feed and a store for placing empty sacks. The millstones were connected to the same waterwheel, which drove the wheat cleaning machinery of the roller mill.

Although the traditional mill was not constructed to take a roller mill plant of modern design, from both the outside and inside the four storey Exwick Mill was a success with its striking feature of a 20ft high arched doorway. It also had on each floor a line of water buckets and a London fire brigade hand pump ready for use should the deadly foe of all flour mills, fire, occur.

centre of one of the best wheat districts of the fertile West Country.

Built into the wall of the mill was a stone showing the date 1325, recording the fact that the building stood where the Benedictine monks of the Priory of Cowick worked its predecessor in that year. The mill was powered by the cheapest method, since the medieval origin gave it ancient water rights so Exwick flourmills had a practically unlimited supply of water drawn from three rivers, which together drained about one half of the whole county of Devon.

The power came from a waterwheel cast at the Bodley Foundry in Exeter and was 11ft 8in diameter by 16ft wide, built of steel and powering the mill to produce five sacks of flour per hour. The wheel was a Poncelot type, quite rare in England, even though their curved paddles improved the efficiency of undershot waterwheels from about 30 percent to 70-80 percent.

The drawing from the Bodley Foundry shows the design of one of their Poncelot wheels and is one of several hundred original drawings that the Mills Archive helped to conserve when they were rescued from the demolished drawing office when the Foundry closed down.

On the ground floor the waterwheel shaft turned the pit wheel of 10¼ feet diameter, which in turn connected to a

Other mills visited

Other mills visited in Devon included Mr Samuel Coles New Roller Mill at Lifton (Dell's System) and Mr R Harvey Daw's Marsh Mills at Plympton (Carter's System). The latter was noteworthy for its use of a 61-80hp Vortex turbine, installed by Gilkes of Kendal.

Tours continued into Cornwall, including Messrs John Lake & sons Truro (Robinson System), Mr T Hitchins' Trenance Mill St Austell (Childs' System), Messrs Hosken & Son's Loggans Mill, Hayle and Messrs JH Trevithick & Sons steam flour mill also in Hayle. The Cornish mills will be the subject of my next column.

These articles only give a brief glimpse of the several million records held by the Mills Archive Trust. If you would like to know more please email me at mills@millsarchive.org.

Similarly, if you would like to receive my regular newsletter on our progress in building the world's first public roller flourmill archive and library, please email me.