The French connection

This year marks the 200th anniversary of the first patent being granted for a technique for preserving foods in metal cans. But who really developed the process? John Nutting investigates in the first part of a history of canmaking.

It is known, and certainly widely in the canmaking industry, that an Englishman Peter Durand registered a patent in 1810 for preserving meat and vegetables in such a way that anyone who wanted to use metal for canned products would have to buy it from him to exploit the process.

Durand’s patent marks the first event that led to the creation of the global canmaking and canning industries, both of which were vital to the mass production of preserved foods, which is why this year is celebrated as the 200th anniversary of the food can.

Less widely known is that Durand was in fact an agent acting for one of a number of entrepreneurs who at the beginning of the 19th century had been working to find a solution to a need for keeping a range of foods safe for human consumption after lengthy periods during transportation.

It is generally thought that France’s future Emperor Napoleon Bonaparte voiced a need for feeding his armies in winter, which would give him a strategic advantage and is said in 1795 to have offered a 12,000 Franc prize to anyone who could solve the problem.

This account of the prize is fiction, says Norman Cowell, former senior lecturer in the department of Food Science and Technology at Reading University, who has carried out extensive research into the origins of tinplate food packaging. There was certainly a need by the French military which was trialling preserved vegetables. The key to the cross-channel link was that because the French had been in conflict with England since 1803 as part of the Napoleonic wars, securing the necessary patent in London required the collaboration of a British national.

French confectioner Nicholas Appert had been developing the sterilisation of vegetables in corked Champagne bottles since 1804 at his factory in Massy, south of Paris. Around 1809, he was given the grant after presenting his products to the French scientific establishment. Subsequently, the French Navy successfully tried out a variety of preserved foods using his techniques.

The story of how Peter Durand came to file his patent in August 1810, three months after reviews of Appert’s first edition of L’Art de Conserver, pendant plusieurs Années, toutes les Substances Animales et Végétales were appearing in Paris, suggests that he was less the inventor of the food can and more an agent for another Frenchman, Phillippe de Girard, who had been working on the use of tinplate cans for preserving food in the year leading up to early 1811 when he demonstrated them in London.

The history of tinplate being used for a variety of applications was by then already several hundred years old. The manufacture of tinplate, or the whitening of iron, started in the 14th century in Bavaria and Saxony. It prevented iron’s corrosion and enabled the soldered fabrication of intricate articles such as pots, lanterns, decorative boxes, plates and drinking vessels that were more robust than pewter, which is soft because it is mostly tin. By the end of the 18th century the tinplate industry had expanded so much that South Wales alone was home to several dozen manufacturers.

It shouldn’t come as a surprise that food was originally packed in tinplate containers without sterilisation, and often with nasty results. Indeed, there are references to the Dutch navy using foods packed in fat within tinned iron canisters well before the end of the 18th century. Gordon Robertson, in his recent book ‘Food Packaging, Principles and Practice’, says that records show that between 1772 and 1777 the Dutch government supplied its navy with roast beef in this way. It is also recorded that ‘Hollander’ packed cooked salmon with salted butter or olive oil in tinned iron boxes more than ten years before the Durand patent.

Peter Durand was born in London in 1766 and was baptised as Pierre. His parents Jean and Marie were Huguenots from Protestant stock who had emigrated from France. Cowell’s research revealed that Durand was married twice and worked as a broker from offices at Craven Street, Hoxton, in north London for four years until 1807.

The 1810 patent for ‘Preserving animal
and vegetable food’, which allowed for a variety of packaging options including iron and tinplate, wasn’t the only one Durand registered, the second patent in 1810 for an oil lamp, said to also have been invented by Girard seven years earlier. Durand, being a British citizen, would have been in a more secure position to take out a valid patent under the laws of Britain, for an oil lamp, and would too have reason to be angry. When Appert came to London, Girard had been suffering from business problems and was in a debtor’s prison in Paris. His demise is apparently unknown, but Appert, in not moving fast enough from glass bottle to tinplate cans, also failed to profit from his idea, dying with a state pension in 1841.

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