

HEARTH TO HOB



The story of electric cooking

The first iron cooking stove was made in China somewhere between 100–200 A.D. but it was to take over seventeen hundred years before anything like it appeared in Britain. All cooking was done over an open hearth fire or in a brick oven.

Previous page:
An early EDA
advertisement for
electric cooking.

The fuel for cooking was wood or charcoal although, from the beginning of the eighteen hundreds, in the towns and in larger country homes, sea coal (so called because it was largely transported by sea and inland via the new canal system) was more frequently used as it burned longer and more evenly. Charcoal had been used for cooking since Roman times but it was considered unhealthy and, by 1800, there was already a shortage of the native timber from which it was derived, for the great forests like Sherwood and Dean had been cleared to create more land for growing food.

Most homes in the late eighteenth century had a hearth. Except in the wealthier houses, the hearth was in the living room where it served to heat the room and do the cooking. An iron basket normally held the fuel. This stopped the fire being clogged with ash while the draught from underneath made it burn better. Some also had an iron box that fitted beside or behind the grate and this was used for baking and roasting. It was this that encouraged the development of a stove capable of higher cooking temperatures and holding in the heat.

In 1802, George Bodley, an iron founder in Exeter, patented a closed top cooking stove. Made of cast iron, it had a small grate, an oven and a flat surface for heating pans. It was so successful that, in the following years, all sorts of "improved versions" appeared. By the end of the century, in all the rows of houses built for factory workers in the industrial towns and cities, every one had an iron grate, side oven and a hotplate that had been fitted into an open hearth and bricked in. Some even provided hot water and heating to other rooms and most were beautiful, decorative examples of the iron founder's art.

Such was the popularity of the iron stove that it was not so much the smoke from the factories and mills that created the grey grime and dark fog in the Victorian cities and towns, as the continuous outpouring from millions of small, low chimneys connected to stoves burning cheap coal. The atmosphere in

towns and cities was far from healthy and lung and chest diseases were a major cause of early death.

Another disadvantage was that most stoves had to have the ash removed and be relit each morning. Also, the only way to clean cast iron was to "blacklead" – an unpleasant task which needed to be done regularly if it was to look clean and smart.

Gas, made from coal, was tested for cooking in 1812 but, since few homes had a kitchen, it was not thought practical. Most of the research was towards keeping the flame as cool as possible as it was used to give light not heat. Gas was also expensive compared with coal from the new mines opening in Scotland, the North East and Wales.

In 1824 a gas "grill" was designed and made in Liverpool and this became popular in hotel kitchens. As the heat was more easily controlled and it proved to be faster than cooking by heat from below, it encouraged the introduction of gas ranges in 1841. Even so it was not until well into the second half of the nineteenth century that a gas "stove" was available for homes in towns and cities where a cheap town gas supply had been provided for lighting.

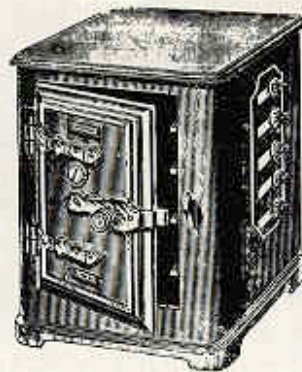
Electric stoves

The possibility of using electricity for cooking was examined in 1885 but it was concluded that "the absence of a true flame renders it unsuitable." Fortunately, there were those who thought otherwise, recognising that it would be cleaner in use and, in 1891, electric cookers were demonstrated at an electrical exhibition at Crystal Palace.

The first practical electric cooker for the home was designed in Britain by H.F. Dowsing and marketed in 1893 by Crompton & Company of



Above: Electric hot plate from France 1900.



Below: An electric oven from the Crompton catalogue of 1899.

COOKING BY ELECTRICITY.
ABSOLUTELY THE BEST SYSTEM OF COOKING.

MATHIEU WILLIAMS, whose works of Cookery have become classic, stated:

"The ideal cooking arrangement is one which will RADIATE HEAT FROM ALL DIRECTIONS UPON THE FOOD TO BE COOKED."

THIS IDEAL HAS NOW BEEN REALISED by the application of Electricity to Cooking. The ELECTRIC OVEN is the ONLY one that fulfils these conditions.

IT IS NOT AN EXPERIMENT.
IT IS A PRACTICAL SUCCESS.

Electric Cooking and Warming Apparatus of the different descriptions given below can be seen in

ACTUAL PRACTICAL WORK
At 82 & 83, QUEEN STREET, CHEAPSIDE, E.C.

where they are being exhibited by THE CITY OF LONDON ELECTRIC LIGHTING COMPANY, LIMITED, from whom any apparatus can be purchased or hired and every information obtained.

Electric Cooking and Heating Apparatus can be made to work at any desired voltage to suit private installations, prices on application.

Ovens and Apparatus	Hot Plates Reticles Hot Stoves Cup Stoves	Ovens, Warming Cabinets Hot Plates Hot Stoves
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PUBLISHED BY THE CITY OF LONDON ELECTRIC LIGHTING COMPANY, LIMITED, 82 & 83, QUEEN STREET, CHEAPSIDE, E.C.

One of the first advertisements for electric cooking (1894).

Opposite page:
This 10 kW Carron cooker installed in a Croydon, Surrey, home in 1900 was in daily use until 1975.

Chelmsford (whose founder, Colonel Crompton, was one of the pioneers of electrical power for the home). The idea was soon copied by others even though it was said of electric stoves that "cakes baked by this apparatus have an indefinable electrical flavour"!

The first electric "stoves" were made of cast iron in designs almost indistinguishable from the gas cookers "as an unfamiliar appearance might alarm servants uneducated to this new force." This was a comment from Carron Ironfounders (who are still

making electric cookers today) who also admitted that their stoves were regarded as more of a scientific novelty.

By 1894 the City of London Electric Lighting Company Limited were offering electricity at "four pence per unit" and on 15th June 1894, electric stoves were used by them for a promotional "all-electric banquet". This was the first public dinner cooked by electricity – six large ovens with hot-plates being used for 120 guests. The Company followed this up by issuing an advertising leaflet offering cookers for hire from seven shillings to twelve shillings a quarter, when a shilling represented something like £1 in today's buying values.

Everyone who attended the numerous cooking demonstrations, organised by the City of London Lighting Co Ltd, was impressed, although some feared that "the magnetic forces may enter the food with a deleterious effect upon the digestion". So wrote a correspondent in the popular journal, *John Bull*.

The controls for these early electric "stoves" were placed in a box on the wall nearby with a set of impressive looking brass switches. "The servants must be warned not to dowse water upon these switches no matter the provocation" was the instruction of one of the first customers to his cook. The servants



might well have been frightened as these cooker control boxes often gave off sparks, flashes and even a sinister humming.

The price of electricity came down as power stations were built in every city. Fears of any possible dangers soon faded as the many advantages were seen. "It is fairly clear," wrote Mr A.F. Berry in 1917, "that one ton of coal burned at the generating station of an electricity works suffices to do the cooking that ordinarily requires ten tons of coal in a private house."

Mr Berry was writing towards the end of the First World War and he was illustrating the use and economy of his Tricity electric cookers in munition workers' canteens and field kitchens.

It was this war that was to reduce the number of domestic servants from two and a quarter million in 1914 to less than a million in 1919. For several centuries domestic service had been the principal form of employment open to working women; now they could earn more money working in a factory and so post war housewives had to do their own cooking where previously they might have employed a cook. One thing was

Left to right:
Belling
'Modernette' cooker
of 1919.
Falco cookers of
1914 and 1925.



immediately clear: housewives were not going to use the dirty troublesome coal range they had inflicted on their servants.

In 1919 Belling introduced the small "Modernette" cooker made of sheet metal, developed from a lightweight design created in the war years for cooking in submarines. It offered to a post war population, faced with low salaries and unemployment, a low cost, lightweight, simple, reliable cooker and the only thing preventing it from capturing popular appeal was that in the "Roaring Twenties" only about a fifth of the homes in Great Britain were connected to the main supply. The introduction of a "flat rate tariff" – one charge for lighting and one for cooking and heating – coupled with all sorts of low cost offers to have your house wired, began to open up the market and the demand for electric cookers grew.

In 1935 a Baby Belling cooker with an oven and small hob could be bought for under £4 and a small electric heating ring cost 19s.6d. (98p).

Most families hired their electric cooker from the electric company. Hiring was more common than outright purchase for both gas and electric cookers until about 1938 – a practice which,

unfortunately, tended to discourage innovation. The models had to be robustly built and improvements which might have made existing models obsolete, and so unsuitable for re-hiring, were largely ignored.

Among the new ideas whose application was delayed by this practice was the thermostat. This was capable of controlling the oven heat automatically but until 1938 a thermometer and a three heat switch were the only means of monitoring and



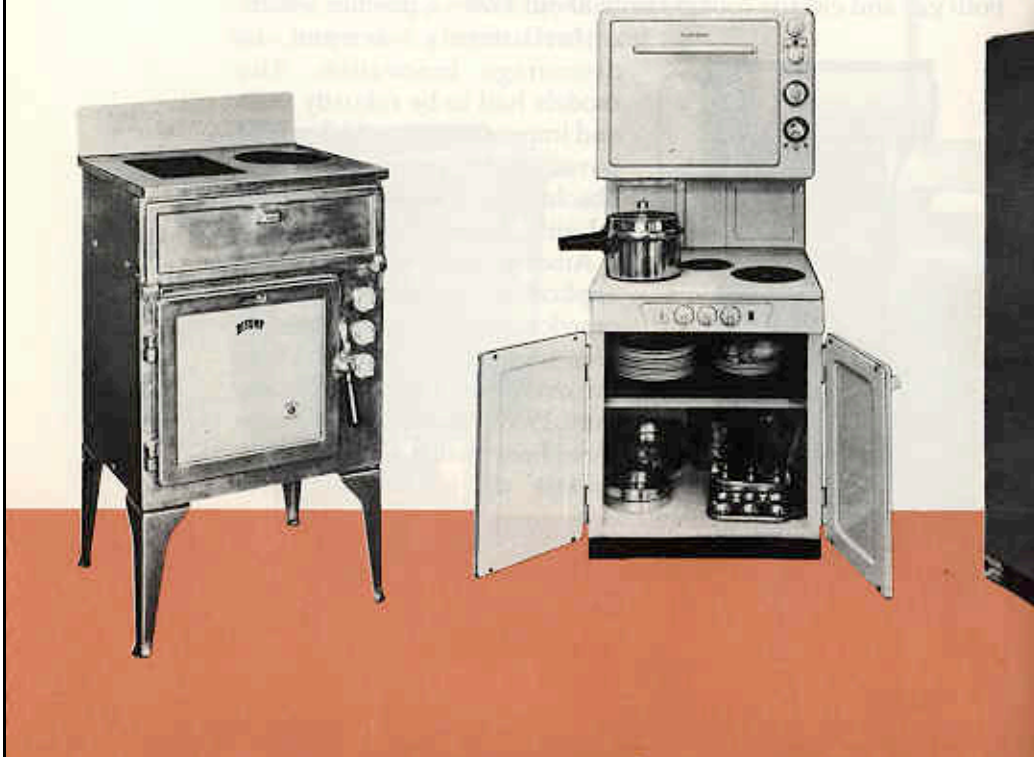
Left to right: Electric cooker manufacturers after 1945 strove to improve performance and design. A cooker made in aluminium (1945) and a new design with the oven above the hob and storage space beneath (1955) both by English Electric. One of the first of the waist high ovens (1956) made by 'English Rose'. A double width cooker (1953) and a popular model of 1958 with a viewing window for the oven, both by Creda.

adjusting the oven temperature. The cook had constantly to alter the switch and time the cooking carefully.

Some ovens now had a frameless, glass inner door and, by 1939, the solid hotplates on the hob had been improved so they heated up and cooled down more quickly. They were more easily controllable, too, and it was no longer necessary to follow a tip used, up to that time, of placing a small coin between the boiling plate and the pan if you wanted to "simmer" food.

The oven now had open wire elements set behind removable panels and, by 1940, when production of all domestic appliances ceased, the basic design of the electric cooker with hob over a grill chamber and an oven had been established.

The first of the post war cookers was a copy of a 1939 design, although new materials were being tested. The English Electric Company in 1945 used their wartime skills in building aircraft to make a cooker in aluminium "to avoid the bottleneck in iron castings and help the National Housing Drive"! Most cookers were made of iron with a cream vitreous enamel finish and a black or cream hob with large and small solid plates and a square, iron



grill/boiler. This was primarily the heating element for the grill but it was also used for slow cooking on the hob.

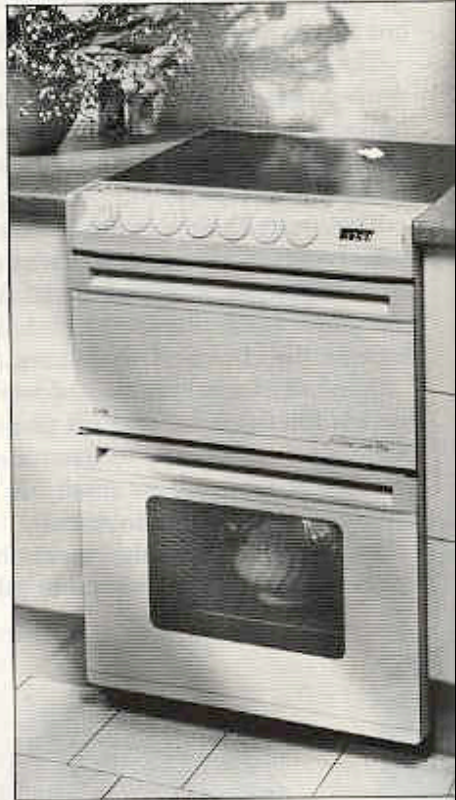
The grill chamber on the post war cookers usually had a drop-down door. Instead of standing on four short legs, the cookers were now being made in pressed sheet metal and were given a squared-off base, often with a warming drawer for plates below the oven.

The control knobs of the cookers continued to be placed at the front beside the oven – but there they were easily within the reach of small, inquisitive fingers. A better, safer place was to have all the controls on a raised panel behind the hob and this soon became the choice of all makers.

Some of the makers also added an automatic clock that would switch the oven on and off at pre-set times. Not all the early autotimers were easy to use: one owner awoke at 3.00 am on Christmas morning to smell his turkey cooked and ready for eating twelve hours too soon!

As man headed for the moon, that same technology was being used to change and improve both the kitchen and the cooker.





Among many refinements and improvements of the 1960s was the grill chamber which became larger and could also become a second, small oven; the hob was given four fast radiant rings – some with dual circuits to suit small pans. After 1969 linings for the oven had a coating that resisted grease so never needed cleaning, and then came ovens with fan heaters which gave even heating throughout the chamber. These were British inventions or improvements on transatlantic ideas.

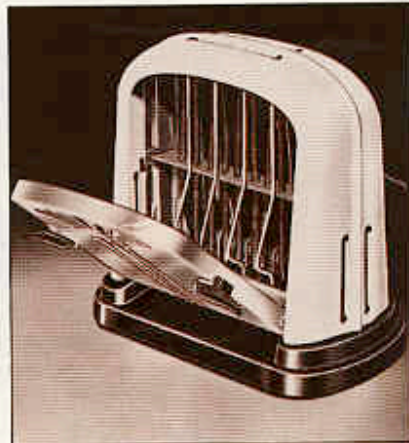
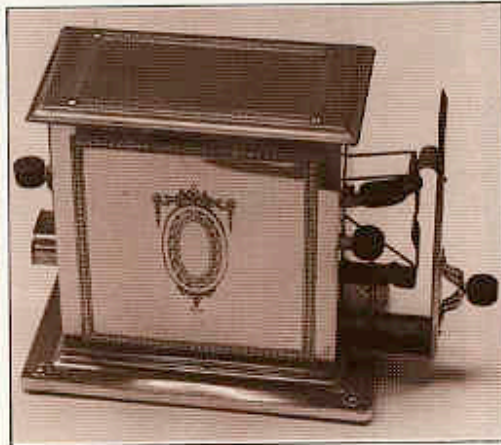
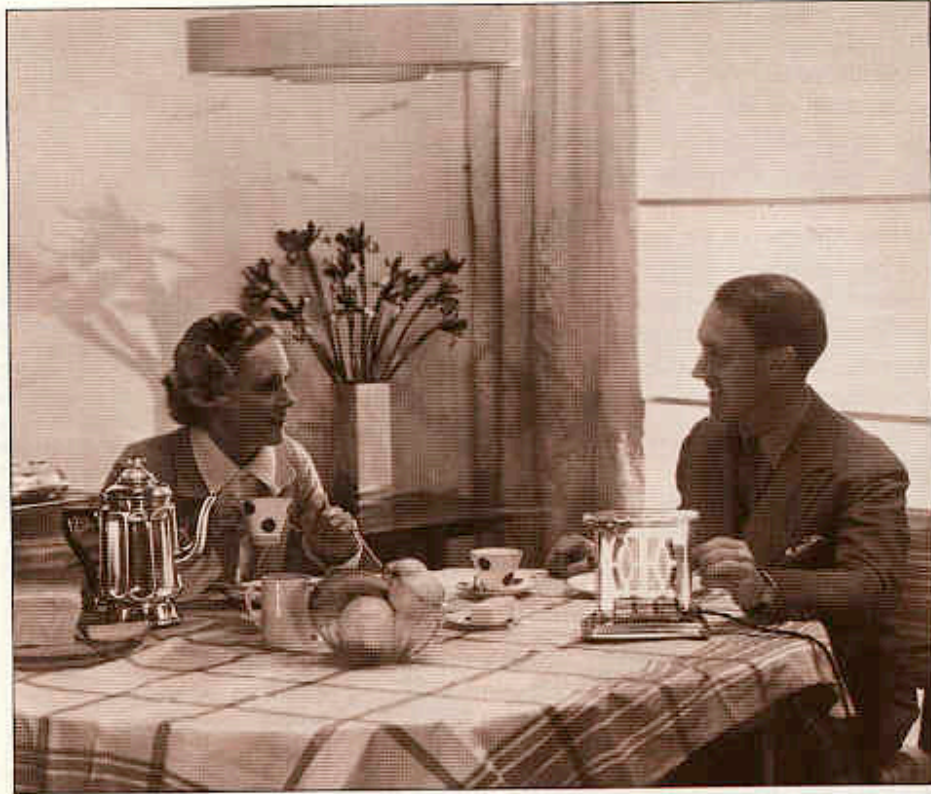
The designers were also questioning the basic shape of the cooker. Electricity had, up to now, been applied to shapes designed for other fuels. The 1970s saw the introduction of separate oven and boiling units – dividing oven and hob saved stooping, allowed more cooking space and the metal cabinet was replaced with a wood surround to make it more of a piece of furniture.

The Victorians had tried hard to give their stoves “eye appeal” with decorative ironwork and beautifully constructed hinges that you can often see today – and not just in museums! The designers of the 70s strove, too, to link good appearance with function. One example was the ceramic hob that was first seen in 1966. An accidental discovery when a furnace went wrong in an American glassworks, this attractive, opalescent surface proved to be as strong as cast iron, but yet capable of conducting heat vertically through its surface. The electric heating elements mounted underneath needed no protective metal sheath, and, when switched on, just the patterned areas on the ceramic surface (which could serve also as a counter top) became hot. In 1982 came a new method of hob cooking using tungsten halogen lamps which give off heat similar to those used for lighting. Cooling is faster and more controllable. Further research has now produced a method of replacing the heating elements with a magnetic heat induction coil – a device which heats the contents of the pan rather than the pan itself.

Microwave cookers

Most dramatic development of all is the cooker that does not use direct heat at all but instead uses electro-magnetic energy – microwaves that are similar to radio waves. Although a magnetron which creates the microwaves had been designed

Opposite page:
A microwave cooker (Creda), modern slot-in cooker with ceramic hob (Creda), built-in oven and hob (Belling) and a tungsten halogen plate in use on a ceramic hob (Tricity).



experimentally in 1924, it was two Englishmen, Dr. H.A. Boot and Sir John Randall who, in 1940, discovered and developed a high powered version which was to give Britain its war-winning lead in airborne radar. They discovered that water in the path of a microwave radar beam heats up. At first this was regarded as an irritating complication but, since food contains moisture, they realised that food placed in a metal box and subjected to microwaves heated up very rapidly indeed – in seconds rather than minutes.

The first microwave cooker for sale appeared in 1947 in the U.S. and it was not until almost ten years later that large commercial models were sold in the U.K. designed for the catering market. A small, domestic model was not designed until 1965 and a version arrived in Britain in 1972.

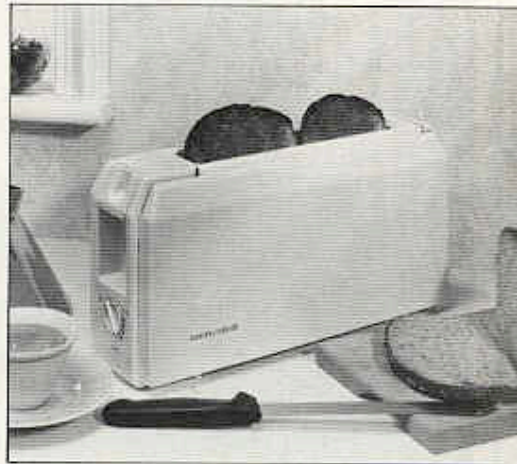
The microwave cooker has since proved so successful, because of its speed, its energy saving features and its compact size, that there are now many cooks who think that one day it might even replace the conventional cooker.

The small cookers

Electricity made possible the use of small, portable cooking appliances. They could be used in any room with a socket outlet and it meant that some meals, like breakfast, and some dishes could be cooked away from the kitchen. Most were faster, more efficient and used less energy than the cooker. The electric toaster is faster than the toasting fork or the grill; the electric kettle more efficient than a kettle on a hob.

The first electric toaster was British – made by Crompton & Company in 1893 but the slices of bread had to be reversed by hand. Then came a model that ejected the slices from the end. The pop-up toaster was the invention in 1926 of an American

Opposite page top: Breakfast time in 1939 with electric food warmer, coffee pot and toaster. This early type of toaster reversed the bread when the side was opened. *Below left:* An alternative design (1938) had a sliding drawer. *Right:* A popular toaster of 1949 (HMV); – soon ousted by the pop-up toaster. The 1988 version (this page) has automatic browning.



whose first models had a tendency to launch the slices six feet into the air – frequently on fire! The double-sided toaster in the form now owned by thirty-four per cent of households in the U.K. dates from 1937, although it was not common in Britain until 1949.

The contact grill, two plates of heated metal placed in direct contact with the food and, known as an infra-red grill, was a British invention. It dates from 1922 and was revived in 1966 – serving as a sandwich toaster or a fast grill in today's improved version.

Another British invention that was ignored at first was the "kettle-cooker". This appeared in 1971 in the United States to revive and improve on the age-old method of tenderising meat and retaining flavour by cooking for many hours over a slow flame. The electric version does this better and more economically since the heat source and the food are enclosed together within one cooking pot.

Among other more portable cookers that applied the simplicity of the electric heating element to a conventional cooking task were the electric saucepan (1893); the frypan (1911); the deep fat fryer (1942) and the yoghurt maker (1969).



Modern electric frypan.