

Then & Now

The advent of licence agreements saw Ozonair in the concept of high velocity terminal control system, packaged central plant, and supplementing of the existing air filter range with additional products from the Cambridge Filter Corporation of Syracuse.

Through this vast expansion more production space was vital and the premises were extended to a site at Aylesford Nr. Maidstone. By the middle of 1974 a corporate decision had provided for the closure of the Rochester plant to concentrate the entire production and administrative functions under the one roof at Aylesford.

In April 1976 Ozonair was acquired by the Senior Engineering Group Ltd and became a member of the Air Handling & Plastics Division along with Henry Hargreaves & Sons Ltd, and Plastics Design & Engineering Ltd.

Potterton

Thomas Potterton Ltd was founded in the 1850's as a firm of general contractors; but it was under the founder's son, Thomas Potterton, that the company began pioneering the gas-fired boiler and concentrating on gas usage fuel and bulk water heating. By 1894 the zig-zag flue for solid fuel ranges had been designed—a precursor of the secondary heating surface in modern boilers. The first ever gas-fired central heating boiler was introduced by Pottertons in 1903—the "Victor" which was installed in four vertical banks in Eugène Sandow's Physical Culture Institute, causing a sensation in the heating trade. This was the forerunner of today's modular Diplomat.

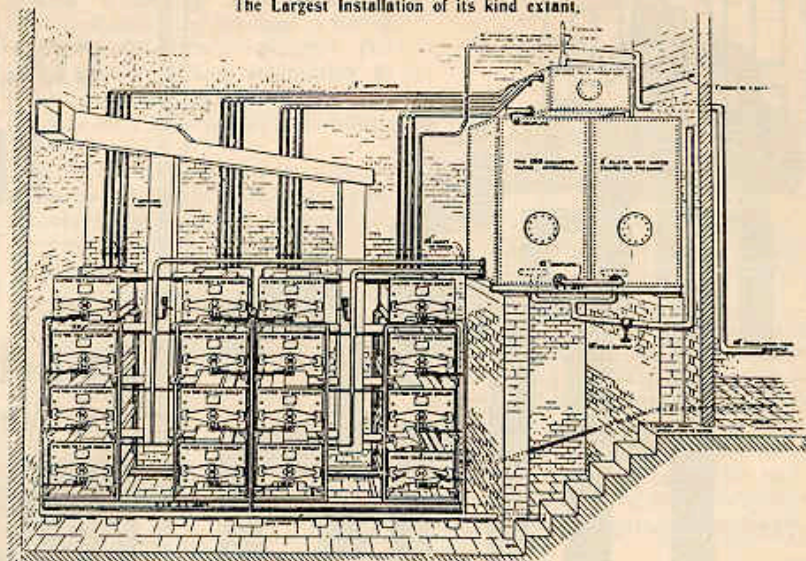
Thomas Potterton, Jnr, was succeeded by his two sons, A. B. Potterton and T. F. C. Potterton.

Then followed the introduction of large boilers like the celebrated Rex "D" series, a source of central heating and hot water in town halls, department stores and such.

In 1955 the "Diplomat" gas-fired boilers made their debut and the

GAS HEATED HOT WATER SUPPLY

The Largest Installation of its kind extant.



An early Potterton installation

company entered the oil-fired boiler market with the introduction of the "DOA" series.

In 1961 the first balanced flue appliance was introduced by the company, and in 1973 the gas-fired wall-mounted boiler—the "Netaheat" was introduced.

A. B. Potterton was IHVE President in 1936, and Ernest Brooks in 1969.

PUMPS

It was in 1868 that Mr. Frederick A. Pullen, the 27-year old son of an Isle of Wight schoolmaster, started business in the City of London as an import and export agent for engineering products. His intention was that the products he handled and the service he offered should be second to none, and early in his business career he realised the value of specialisation, dealing mainly with pumping equipment for water supplies. Mr. Pullen's business prospered, and his twin sons joined the company at the turn of the century, both having served engineering apprenticeships, and bringing with them a wide range of experience and new contacts. At the time of Frederick Pullen's death in 1908, various sidelines in both sales and manufacturing had been adopted, and the business was showing a steady rate of growth.

The year 1912 saw a move to King William Street, and within a couple of years, Frederick A. Pullen & Co. found themselves deeply involved in the war effort. As was the case with so many firms, they found that meeting the demands of the War Office stretched their production capability to the maximum, and by 1916 they were installed in a factory in Vauxhall, with a labour force of 40 women engaged upon munitions work.

This move to the much larger premises was justified after the war, with an increased demand for pumps and pumping equipment. The Pullen brothers started the manufacture of a new range of centrifugal pumps to supplement their existing steam and vacuum pump ranges, thus establishing a close connection with the heating and ventilating industry. This connection was further strengthened by the decision taken shortly after 1925, when Mr. Percy Jones, the present Chairman, joined the company, to concentrate on pump manufacture.

World War II again resulted in the company working at fever pitch to meet military demands. The pump design and production programmes were vastly accelerated, and in addition the company diversified, producing such equipment as mobile dissolved acetylene gas plants, the famous "Wobbly Wheel Roller" soil compaction machine, and the prefabricated bituminous surface laying machine used extensively in airfield construction and generally known as the "stamp licker".

The post-war years saw a relaxation in building restrictions, enabling property developers to realise their plans for multi-storey office and apartment blocks. This in turn brought a call for more efficient and sophisticated fire prevention, heating and cold water boosting pump equipment. Pullen's rose to the occasion with the wide range of pumps developed during the war, plus their new automatic cold water pump booster system.

In 1950, the Pullen brothers' partnership was dissolved, and Fredk. A. Pullen & Co. Ltd. was formed with the brothers and Mr. Percy Jones as Directors; shortly afterwards they were joined by Mr. F. T.

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Snow. Neither brother was to live long, however, and from 1952 onwards Mr. Jones held the office of Chairman and Managing Director.

A further expansion marked the formation in 1960 of Fredk. A. Pullen (Holdings) Ltd., and the purchase of additional factory space in Vauxhall in 1962. Simultaneously, a comprehensive plant replacement plan was implemented, and the entire factory re-equipped.

Once again, however, the company found that it had outgrown itself, and 1963 saw the purchase of the site of its present headquarters in Beddington Lane, Croydon. Major demolition was carried out, and work started on the new factory and office block, initially a two-storey building, in May 1964. By June 1965, the move was complete. Adjacent to the new building was the Hendra iron foundry, an old established firm supplying iron castings for general industrial purposes. Fredk. A. Pullen (Holdings) Ltd. bought the business in 1967, and formed Pullen Foundries Ltd. as a subsidiary. Once again, major rebuilding was carried out, followed by the installation of new plant throughout. Pullen's export business is also beginning to play a significant part in the company's fortunes.

Lee, Howl and Co. Ltd., was founded in 1880 by two brothers Edmund and Oliver Howl and by William Lee. The company was originally known as Lee, Howl, Ward and Howl. The two brothers had been associated with their fathers business, the Tibbington Collieries and Brickworks. This undertaking had been started in 1827, on what had been an agricultural estate. William Lee was one of the earliest pioneers in galvanised sheets. Black Country pits in the early days were often affected by excessive water, and at one time the pits of Tibbington Collieries were prevented from working for five years due to this cause.

Having a mining background no doubt influenced the founders in taking up the manufacture of pumps. The initial idea of adding engineering to other interests was largely due to Edmund Howl, who had passed through an apprenticeship at Crewe.

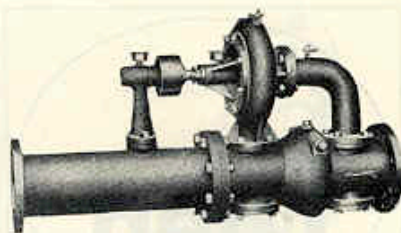
During the early years the company produced many items other than pumps, notably refrigeration plant. However, for many years, the sole interest has been in the manufacture of pumps, and over the years the range has been developed into one of the widest in the UK, ranging from small hand pumps to power driven units with outputs of up to 3300 m³/h. The company is fortunate in having many men who have worked for them all their lives, and there have been instances of three generations being employed. The present Managing Director and Chairman is Mr. O. B. Howl, a grandson of one of the founders.

London Waterworks

The origins of **Worthington Simpson** go back to the late 18th century. Although the earliest Westminster Directory shows that in 1826 there was an engineering firm in Eccleston Street, Pimlico, London, in the name of Simpson & Thompson it is known that as early as 1790 Thomas Simpson, the father of James, was working as an engineer in Westminster installing and maintaining steam pumping plant at various London Waterworks, and undoubtedly by this date he had established workshops for this purpose. It is also clear from the Westminster Directories that in 1839 Simpson & Thompson became known as Simpson & Co of Belgrave Road, and thereafter in 1842 the firm was known as William Simpson & Co of Belgrave Road; the latter moved to Grosvenor Road in 1860.

The first indication of registration as a Limited Company was in 1886 when James Simpson & Co., Ltd. was formed to carry on the business of pump manufacturers and engineering contractors in a factory built in 1859 at 101 Grosvenor Road Pimlico, on the Embankment alongside the river Thames. The original buildings were demolished in 1936 to make room for the existing Pimlico Estate and they were still used by the firm up to this date, although new engineering works had been built at Newark-on-Trent, in 1901.

Association of James Simpson & Co with the Worthington Pump Corporation of America in 1886 resulted in world-wide expansion of the British firms' activities and the company became Worthington-Simpson Ltd in 1917. In 1969 Worthington-Simpson Ltd was fully integrated into the Studebaker-Worthing Inc. international organisation.



The original Holden & Brooke Fullway accelerator

Holden and Brooke Ltd was founded in 1883 and soon became established at Sirius Works in West Gorton Manchester, where centrifugal pumps, heat exchangers and a vast range of steam auxiliaries were manufactured. The centrifugal pumps were given the trade name 'Sirius' and included multi-stage 'High Lift' units of up to eight stages and 3000ft heads.

A standard product made World War I has an interesting link with present day production. This was a simple type of fullway accelerator consisting of a belt-driven end suction 'Sirius' pump mounted over a pipe to which it was connected and into which was fitted a non-return valve. This arrangement was redesigned in 1926 and the new unit given the name 'Selfix'. This was the first type of pump by any manufacturer in the UK to connect directly into the pipework and dispense with bedplate and concrete foundations. Holden and Brooke's current Selfix Six accelerator is a modern derivative of the basic idea.

Heat exchanger manufacturer was transferred to a new factory which had been built at Sharston in 1938 thus enabling Sirius Works to expand production of centrifugal pumps to meet an increasing demand.

Shortly after World War II, the nearby firm of Frank Pearn and Co Ltd was incorporated and the famous 'Pearn' reciprocating pumps became part of the Holden and Brooke range. Pearn works now manufacture the 'Trimax' series of high pressure, treble ram pumps.

Holden and Brooke at present offer one of the most comprehensive range of pumps and ancillary equipment for the building services industry. These products are in use in many countries throughout the world where the experience and skills of so many years have earned a reputation for quality and reliability.

VALVES AND FITTINGS

Last year **Royles Ltd** celebrated their centenary. The business was started in 1876 by Mr. J. J. Royle in Great Bridgewater Street, Manchester, manufacturing steam traps, reducing valves and other steam fittings. Later in the last century, Mr. Royle was joined by O. M. Row, President of the

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Institution in 1911, the inventor of the indented tube, and the company commenced manufacturing heat exchangers incorporating the indented tube,—in fact the word *calorifier* was originated by Royles at the beginning of the present century, and it is now the accepted designation for all tubular heaters used for providing hot water supply or heating services in every type of building.

At the turn of the century the business had expanded to such an extent that it was necessary to seek larger premises, and new works and offices were erected at Irlam, where the company still is. New products were introduced, including pipeline strainers, for which the company now enjoys a world wide reputation.



A Royles heat exchanger, c. 1890

In 1970 Royles took over the pipeline speciality section of Lancaster and Tonge Ltd. of Pendleton, Manchester, thus further expanding their range of products. In 1975 the company became a member of the Leeds based Fairbairn Lawson Group and embarked upon a further expansion programme, introducing a range of valves designated primarily to meet the needs of the petrochemical, oil and associated industries.

Recently the company was appointed sole UK distributors for the Commercial Filters Division of the Carborundum Company. It has been said that the history of Hopkinsons organisation is also that of the progress of valve design and manufacture. The founder established from the outset



**THE PROSPERITY OF ENGLAND
DEPENDS UPON THE SUCCESS OF HER MANUFACTURES, AND
THE AMOUNT OF SUCCESS THAT IS ACCOMPLISHED IN ALL
PRACTICAL SCIENCES, DEPENDS SOLELY UPON HAVING
THE RIGHT MAN IN THE RIGHT PLACE, TO ARRANGE AND
CONDUCT THEM.**

John Hopkinson with the steam engine indicator that he invented

the principles of technical competence and quality of product.

The **Hopkinson Engineering** business started in 1843 by Joseph Hopkinson has grown to employ a workforce of around 2,000 people. Hopkinsons valves, boiler mountings, actuators, sootblowers and control gear now serve the power and process industries throughout the world.

One of the most striking characteristics of Hopkinsons is the completeness of direct control over the manufacturing process, Hopkinsons is one of the very few valve manufacturers to have not only their own non-ferrous foundry but also a steel foundry. The same concern for the highest standards of manufacture is reflected in the wide use of numerically controlled precision machine tools and the latest manufacturing techniques.

Hopkinsons view of testing is comprehensive. It extends from the closest examination of all materials through every stage of manufacture to final proving. (Hopkinsons have the rare distinction of A.S.M.E.'N' stamp approval—internationally recognised as the highest possible rating for work in the nuclear field).

The supply of valves, controls, heat exchange plants and other ancillary equipment for the heating industry has been an integral part of the service

offered by the **BSS Group** of Companies since its foundation in 1899. Although the Group, which became a public company in 1963, is one of the largest organisations of its kind in the United Kingdom, now has interests on a broadly diversified basis, the heating engineer and contractor still account for a significant percentage of its turnover.

With head offices at Leicester and brand new central warehouse facilities at nearby Lutterworth, the **British Steam Specialties Limited** and its associate companies in the North of Ireland and Eire control a multi-million pound distribution network throughout the British Isles.

These companies offer a complete industrial pipeline and heating equipment service, covering both supply and technical back-up facilities from a network of over 20 depots strategically located throughout the country. All BSS branch warehouses provide a trade counter service for off-the-shelf or urgent collections by customers in addition to the normal prompt delivery service.

The comprehensive range of items carried in stock include tubes and fittings of all types including plastics, valves to suit all applications, steam and air traps, condensate pumping sets, pumps and pumping equipment, heat exchange equipment instruments and

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meters for temperature, pressure and flow, strainers, filters, boiler mountings, heat emitters, powered ventilators and air conditioning units.

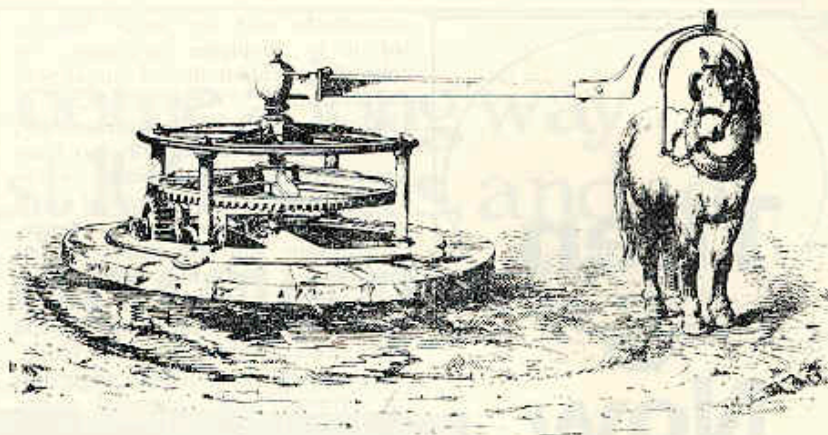
Cockburns Ltd of Glasgow have been manufacturing valves for over a century and their products are in service on land and sea throughout the world. Cockburns began in 1862 when David Cockburn, a marine engineer, conceived the idea that there was a demand for small boilers and tubular steel vessels. He opened a small factory in McNeil Street, Glasgow, having as his chief assistant his son, Robert Cockburn. During the early years the production of small boilers was abandoned and the value side of the business developed, from which evolved the Cockburns safety valve.

In 1899 Robert Cockburn took over the business of his brother, George Cockburn, also a valve manufacturer, and from that association emerged the company of Cockburns Ltd, of Cardonald. The demand for Cockburns valves steadily grew, pushing factory resources to the maximum. After World War II additional premises were sought and in 1953 a new branch works was opened at North Shields. Growth continued throughout the fifties with further production and sales facilities being opened in Holland in 1958 (Cockburns Nederland N.V.). In 1959 a further link in the development of the organisation occurred with the opening of Cockburns (Springs) Ltd, with premises adjoining the main Cardonald works.

Throughout the Company's long history it has developed by virtue of several factors: reliability, special applications, and research.

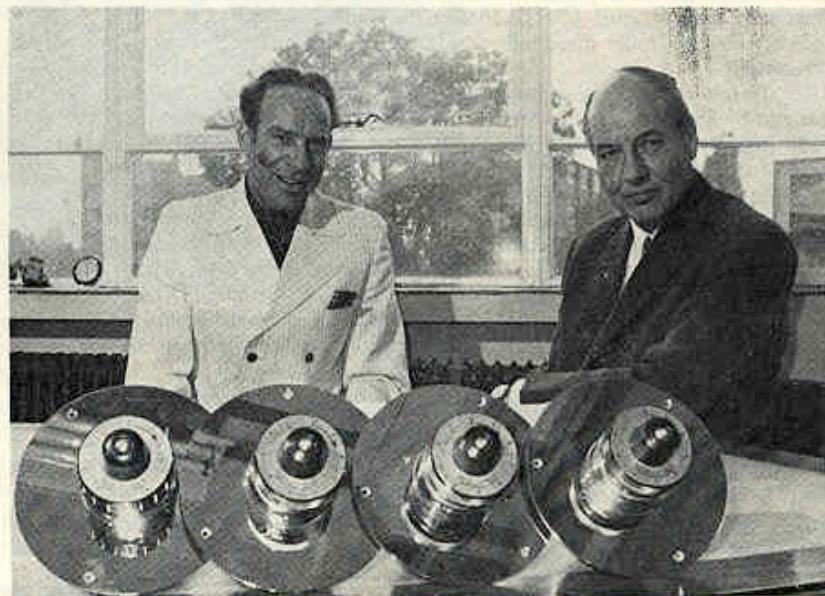
Fifth Generation

For a family business to survive—let alone thrive—for nearly 180 years in the competitive and highly cyclical brass foundry business requires both consistent initiative and an equal degree



*Pump Frame for deep Well
To be Worked by Horse Power*

The horse-operated deep well pump by Meynell & Sons



Family management of the fifth generation. Mr. Lionel C. Meynell (right) Chairman and Mr. Hugh B. Meynell (joint Managing Director)

of flexibility. So Meynell Valves of Wolverhampton are almost unique nowadays for the way the company is still very actively managed by the Meynell family themselves—the fifth successive generation to do so. To quote the present Deputy Chairman Hugh Meynell—"over the years our product range has steadily changed, and at any given time we have concentrated on trying to produce whatever England has required".

In 1798, as Boulton & Watt were still trying to develop their range of steam engines, "Meynell & Sons"—as they were then called—wisely hitched their star to the four legged variety of horse power. The earliest surviving catalogue shows the simple, but very robust, pump for deep well operations—operated by a lone horse plodding

steadily round and round. Later in the 19th century, in line with increasing standards of affluence, a range of ornate gas chandeliers was produced—the intricate and detailed designs being a lasting tribute to the skills of British brassfoundry men.

In war time as in peace, the diversity continued. In 1914 production was switched to provide equipment for mobile water carriers for the British Army in France. In the last war by contrast, Meynells provided both equipment for refuelling submarines at sea and for fighting fires on land.

Recently, a brewery in Oxfordshire highlighted yet another facet of the company by suddenly ordering items from a supposedly extinct catalogue dating from the 1930's. In those years the firm used to make brass beer pumps.

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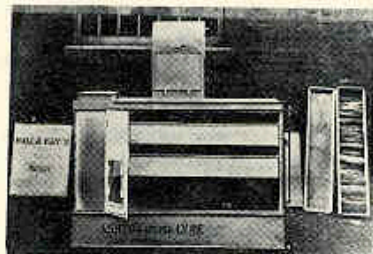
A set of four such pumps, each topped by a handpainted porcelain handle and all mounted inside a precision made mahogany cabinet, cost just £2.10.0—and of course trade discounts were available!

After the last war a decision was wisely made to find areas where the firm could build its own viable future. The most successful of these efforts has proved to be in the area of mixing valves. Instead of importing foreign designs under licence, Meynells concentrated on developing their own. Having a pattern shop, tool room, drawing office and foundry on site made this easier—but the real reason for the success lay in the way the company sought to find out what customers actually needed the valves to do. Before producing a thermostatic hot and cold water mixing valve for example, Meynells deliberately went to the most critical user—the hospitals—to find out both what they needed and why.

The result has been the outstanding success of the "Safemix" range of thermostatic mixers, and the "Blendamix" range of manually operated blending valves.

UNUSUAL APPROACH

Another interesting example of a firm that has approached building services from a different direction is **Hall & Kay Engineering Ltd.** It was established as sheet metalworkers in Ashton-under-Lyne in 1878. In its early years its



The first "air conditioner" made by Hall & Kay in 1881

connections with the textile industry led it to supplying equipment for controlling ventilation and humidity in the local mills. "Air conditioning" in 1890 was not quite what we mean today, but it gave the company a start from which it has never looked back.

Today the firm has accumulated a vast store of knowledge in the design, manufacture and installation of air conditioning, ventilating, fume extraction, heating and other services, fire protection and electrical installation and instrumentation throughout the World, and has involvement in multiple services for airports, banks, chemical plants, computers, hospitals, hotels, mines, offices, steelworks, superstores, textile factories, universities and all forms of manufacturing plants.

An interesting example of a building services firm that has developed from the lighting rather than the heating side is **Higgins & Cattle Ltd.** The Company's origin can be traced back to the period when the principal method of providing lighting and heating for industry, and lighting for commercial and domestic premises, was by means of gas installations.

At the turn of the twentieth century, the Company became involved in the electrical contracting industry and in 1903 was formed under the name of **Higgins & Griffiths.** This Company gradually expanded its activities to include projects both in UK and overseas.

After further changes, the Company was incorporated in 1934 as **Higgins & Cattle Ltd.** From this base, the Company continued to develop and broaden the scope of its operations to include undertakings involving the complete design and installation of electrical and mechanical services within projects at home and abroad. It gained experience in electrical transmission and distribution schemes and for the past decade has concentrated more and more on overseas contracts, thus acquiring a considerable store of expert knowledge in widely differing areas, quite apart from the contracting and commercial facilities available from foreign-based associated companies.

All aspects of overseas work—including estimating, financing and engineering—are handled by the Head Office U.K. Team which has overall responsibility for the contracts. Resident ex-patriate supervisory staff and local specialist labour is used on site.

An approach to building services through the gas industry was made by **Humphreys & Glasgow Ltd,** which began as a partnership in London in 1892 to exploit American gas industry knowhow in Europe. From modest beginnings the company rapidly reversed the trend, being responsible for many innovations incorporated in plant



Standing in front of the engine are Dr. Glasgow left and Dr. Humphreys right.

in the USA and all over the world. For many years the name of **Humphreys & Glasgow** was synonymous with the water gas process.

With the advent of natural gas, the company rapidly diversified into the oil, chemical and petrochemical industries and about the same time in 1967 formed HGS to exploit natural gas conversion. HGS grew rapidly and at the peak period of gas conversion had over 1500 technicians and 900 vehicles with three schools for training conversion fitters.

Again when conversion work began to fall off, HGS moved into the field of mechanical services relating particularly to heating, ventilating, air conditioning, plumbing and boiler change-over. This was further extended to include property modernisation on a large scale with HGS providing all the necessary services, procurement and field labour but organising the whole scheme to give the minimum inconvenience to residents.

More recently HGS has become involved in North Sea Oil and Gas projects working alongside the parent company both on offshore production platforms and onshore terminals.

HGS with an annual turnover of £16 million is only ten years old but is a worthy offspring of the Victorian born parent, **Humphreys & Glasgow.**

MAINLY DOMESTIC

Domestic appliances are not expected to last 100 years, but ironically enough, the latest fuel cost figures show that one of the best performances in fuel conversion is turned in by a stove that has scarcely changed in design for almost this period.

It was in the 1880's that the family firm of **Pither** acquired the patents of a continental slow-combustion anthracite stove. Stoves on this principle have been made and marketed under the Pither name ever since.

The story of Pither's survival into the last quarter of the twentieth century is a heartening one for people who regret the continuing disappearance of small specialist firms in monster mergers. For Pithers have been able to reverse the trend. They have twice been swallowed by larger firms but have managed to come out unscathed.

It is, alas, no longer possible to make the proud claim of the earliest surviving Pither catalogue c.1890 that "The fire burns 12 hours without Attention, Trouble, Danger, Direct or Waste at a cost of 10d". But today Pither claim that their small Studio stove will heat an average sized room for about only 1p per hour.

War and Peace

The Founders of Carron Company in 1759 at Falkirk in the midlands of Scotland were Dr. John Roebuck, of Sheffield, an eminent scientist and mineralogist, Samuel Garbett, of Birmingham, chemical manufacturer, and William Cadell, of Cockenzie, merchant. The famous engineer, John Smeaton designed and built the water-powered furnace bellows for Carron over two hundred years ago.

Incorporated by Royal Charter in 1773, the company's strength has been due to a readiness to recognise the ever-changing demands of her customers, and to evolve and develop techniques to meet those demands. James Watt came to Carron for cylinders for his steam engine. William Symington, who

has been called the father of marine engineering built at Carron the engines for the first steamship. The Duke of Wellington would have only Carron shot and Carron cannon. Lord Nelson had "Carronade" guns on *Victory* at Trafalgar. Major-General Henry Shrapnel, R. A., chose Carron castings for his new shell.

In the arts of peace. Carron designs for domestic equipment were guided by John Adam, eldest of the four famous brothers Adam, who led the renaissance of English interior decoration. John Adam was one of the earliest partners in Carron Company and he, with the brothers William and Henry Haworth, designed a complete series of dog-crates, register-grates and surrounds for the discriminating taste of the day. At the present time baths, sinks, cookers, radiators are designed and made at Carron.

Drawings Non Existent

Hattersley Brothers Ltd is the 'oldest' or 'earliest born' of the UK Companies that constitute the **Stelrad Group**. Thomas Hattersley made the kitchen range in our picture with skilled

moulders at Swinton, Mexborough, Yorkshire, more than 100 years ago, along with other cooking ranges and hot water boilers.

In those days drawings were non-existent. A pattern was made and then from it with green sand from Mansfield a mould. After enough modifications to make it a "good 'un" that was it. Over 100 different Yorkshire Ranges could be ordered with details such as "wrought drawn brandy with rack"—"bright fret"—"wrought iron crow". You could also order Hotel, Restaurant or Mansion Cooking Ranges, Vegetable Steamers or Steam Jacketed Boiling Pans that eventually satisfied the appetite in the countries largest hotels. The Yorkshire Range we show was only taken from daily use and put into a South Yorkshire Industrial Museum earlier this year.

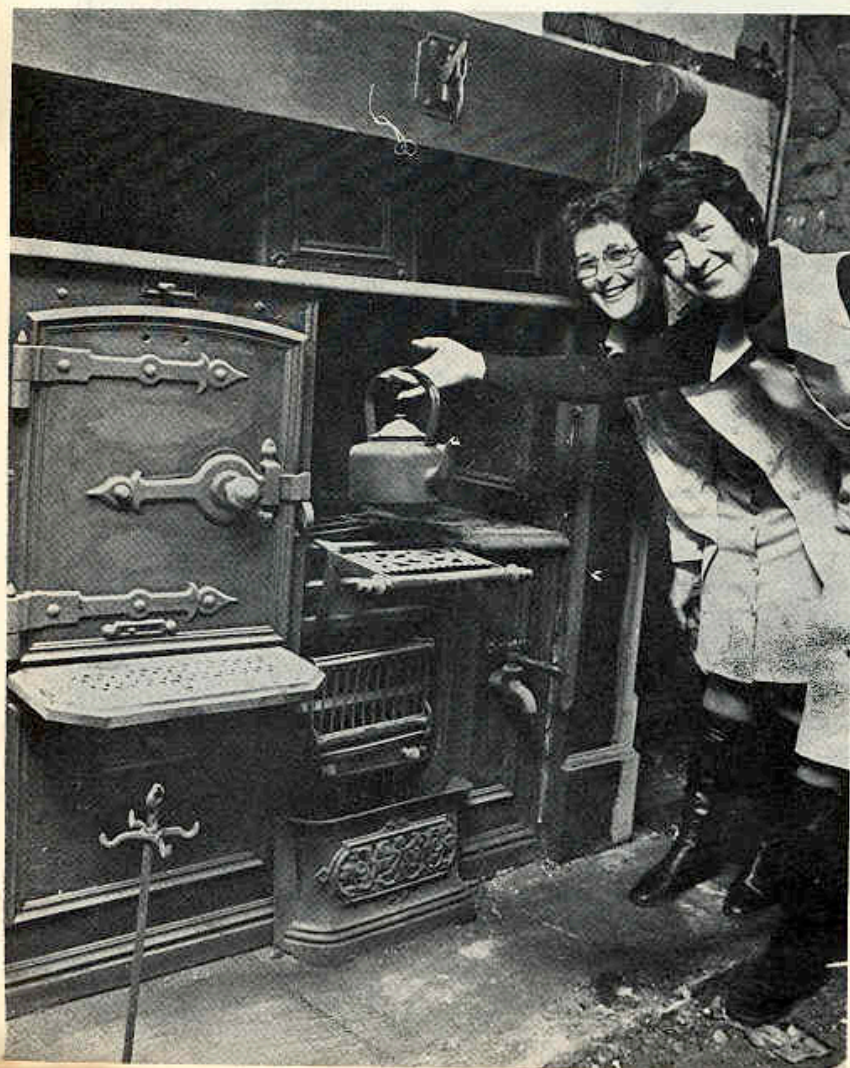
Change has been successfully made from those days when coal was the king fuel and Hattersley's 80 Page catalogue included an article on the Art of Cooking well.

Now the main products are gas-fired Vulcan Continental and Verona Domestic Heating Appliances. These units have been developed completely by Hattersley, and their patented cast-iron heat exchangers have the advantage of a close grain porous free structure. This is the result of continuous line production from resin bonded cores.

Vulcan Boilers are of course not intended for home cooking as were their earlier family but they do give warmth throughout the house and lots of hot water that would delight the original Thos. Hattersley and no doubt get a nod of approval from him.

Radiation Group

In 1886 John Wright, a tinsmith from Essex, set up a workshop in two attics in Broad Street, Birmingham, to make gas appliances, considered a dangerous occupation at the time! By 1872 he had organised a hire service for gas cookers and was also making convector heaters. In 1879 he handed a now thriving business over to his two sons. Demand grew so much that production was transferred to the present site at Essex Works, Birmingham, which was named after John Wright's birthplace. The company at the turn of the century had sold over 855,000 "Eureka" cookers, and were also making ornate gas fires in metal surrounds.



Left. A kitchen range made by Thos. Hattersley, well over 100 years old

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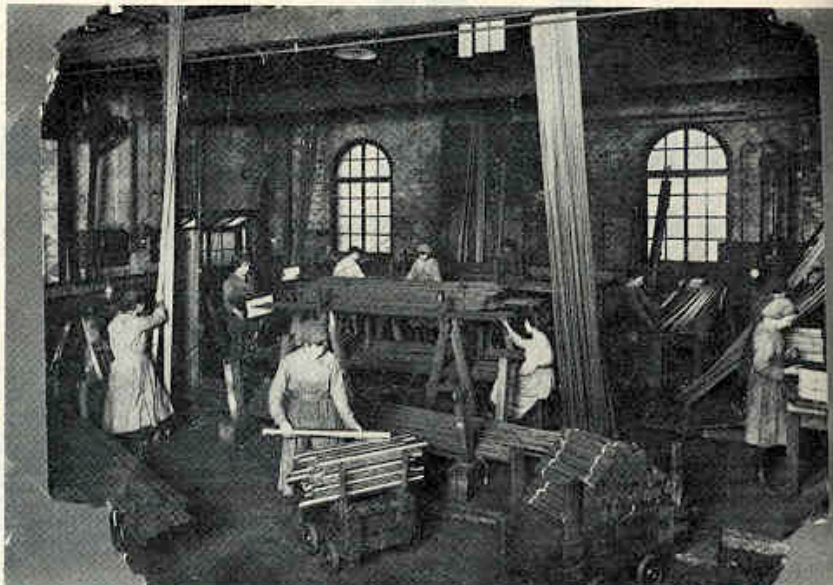
The Wright brothers sold out to young Henry James Yates, the first man to establish commercial laboratories with qualified chemists and physicists. It was he that persuaded five other companies to join with him to form **Radiation Ltd** in 1919. In 1964 the decision was taken to concentrate on making gas fires only, and the company became known as Radiation Gas Fires Ltd.

In 1969, now members of the Tube Investments Group, Radiation Gas Fires joined with other famous gas names—Ascot and Parkray, to form New World Gas Heating Ltd. In January 1977 New World Gas Heating and Glow-worm combined to form a new company called **TI Gas Heating Ltd.**

In 1858, three brothers set up a small foundry in Queen Street, Belper, and, by 1882 their bill-heads announced the Company's products as including 'stove grates, kitchen ranges and all kinds of castings to drawings or patterns'. By the turn of the Century, increased demand meant **The Park Foundry Co. Ltd.**



An early Wright gas fire



Yorkshire Copper Works in World War I

moving to a new 13½ acre site at Derby Road, where it remains today. The clay on the site also proved excellent for brick-making and for some years the foundry operated as a brick producer as well.

In 1929, **The Park Foundry Co. Ltd.** became part of **Bratt Colbran Ltd.**, which in turn joined the **Radiation Group** in 1936. Rationalisation in the post war period saw the **Park Foundry** specialising in the manufacture of solid fuel appliances, taking over the combined interests of **Wilson and Mathiesons of Leeds** and the **Eagle Range**, of Birmingham until then separate areas in the Group.

The **Radiation Group** was taken over by **Tube Investments Ltd.** in 1967, and today **Parkray** are entirely responsible for the Group's solid fuel appliance production. In addition the **Park Foundry** also undertakes work for other members of **T. I. Domestic Appliances.**

Since World War II, **Parkray** has done much to revolutionise the whole concept of solid fuel domestic heating, with the introduction of 'open fire' convector heaters and glass fronted solid fuel heaters.

In November 1934 **Amos Whiteman**, his sons and six others left the **Park Foundry**—now **Parkray**—and set up the **Derwent Foundry** at nearby **Milford**. They paid £500 to an established London company for patterns and the right to use the **Glow-worm** trade name, and began manufacturing solid fuel boilers, wood burning cookers and combination grates. In 1937, entrepreneur **Lionel King** bought the company, and it proved extremely profitable, but he in turn sold to the **South Western**

Industrial Corporation in 1949. This corporation was split up a few years later, and a new company, **Midland Aluminium**, was set up including both **Glow-worm** and **Tower Housewares.**

The 1950's saw the development of a range of thermostatically controlled solid fuel boilers and the **Thermglow** boiler, **Glow-worm's** first gas-fired appliance. Their real entry into the gas market however came with the acquisition of **Sunrod Limited** in 1960, who had patented a new heat exchanger design. This boom period meant expansion for **Glow-worm**, and they moved part of their operation to a new site at **Belper**, two miles away.

In 1975 **Midland Aluminium** became part of **T. I. Domestic Appliances Limited**, reinforcing **Glow-worm's** position in the gas central heating market with their domestic boilers and gas fires.

Electrical firms belong to the 20th Century but **Creda** can trace their origins back to 1898 when they were called **Simplex Steel Conduit Ltd.** Later the company changed its name to the **Credenda Company** and was based at **Oldbury**, near **Birmingham**. In 1909 **Creda** introduced their first electric cooker. Electricity was then still new and revolutionary and few people felt it would become an indispensable national fuel with considerable benefits. **Creda** became one of the founder members of **Tube Investments Ltd** in 1919. The **Blythe Bridge works**, in **Staffordshire** was acquired in 1945, and remains the headquarters of the company today, producing a wide range of electrical appliances.

In April 1973 **Jackson Electric Limited** of **Yate** merged with **Creda**, taking over

the production of the comprehensive home laundry range and some cookers. Also in 1975 Creda increased their hold on the electric heating market when they took over the marketing of the Sunhouse range of electric fires and heaters.

Creda continue to maintain their reputation as innovators today, the modern electric cooker owes much to their research and development as do the heating and home laundry products.

MISCELLANEOUS Tubes and Fittings

The history of some of the constituent parts of YIM Ltd.—an IMI company devoted solely to the design and manufacture of copper and copper alloy tubes, plates and fittings,—can be traced back almost 200 years. An organisation of six factories and subsidiaries its headquarters and large manufacturing unit are located at Leeds on the site of a 19th Century racecourse.

First industrial use of the site dates from 1889 when Elmores Depositing Co produced tube by depositing copper on

mandrils using a patented process of electrolysis. This company later became the Leeds Copper Works. The enterprise failed to prosper and in 1909 the Yorkshire Copper Works was incorporated to acquire the undertaking. After initial difficulties the YCW began to make steady progress and demand for its products created by the 1914-18 war firmly established it.

The 1920's saw the company making a name for itself as a producer of high quality condenser tubing and from 1930 onwards the works expanded rapidly as the use of copper for domestic plumbing became more widespread. This development was aided by the introduction of the now famous 'Yorkshire' integral ring capillary fitting in 1934.

After World War II considerable re-equipment and the adoption of modern production methods for both tube and fittings gave rise to another period of steady growth leading to the merger in 1958 with ICI Metals Division and the formation of the Yorkshire Imperial Metals that we know today.

Behind YIM Ltd. lies the accumulated

skill and knowledge gained from years of experience working with copper and its alloys producing high quality products for the construction and engineering industries throughout the World. Products include:—capillary fittings, compression fittings, microbore heating components, stopcocks and valves, copper and copper alloy tubes.

A Consulting Engineer in 1862

Although consulting engineers are not considered to have entered the building services industry until after World War I there is at least one exception.

In November 1862, Henry Lea, at the age of 23, started his career as a consulting engineer, and created the firm of Henry Lea & Son. He advised people to whom he thought that fact would be of interest by means of a letter, in copper-plate writing, a copy of which appears here. It is interesting to note that even as long ago as 1862, he was concerned about the efficient use of fuel.

He was joined in the Partnership by his son Frederick, who took over the running of the practice in 1912 when Henry died. Frederick in turn took into Partnership Donald Lea in 1938, who was left in 1939 as sole Partner when Frederick died in that year. In 1939 Henry Lea & Son amalgamated with Edwin S. Hoare & Partners and formed the firm of **Hoare Lea & Partners**.

With the onset of war, the sort of works to which the Partnership had been accustomed—mostly hospitals, schools and all types of public building—ceased almost overnight. At the same time many of the staff joined HM Forces.

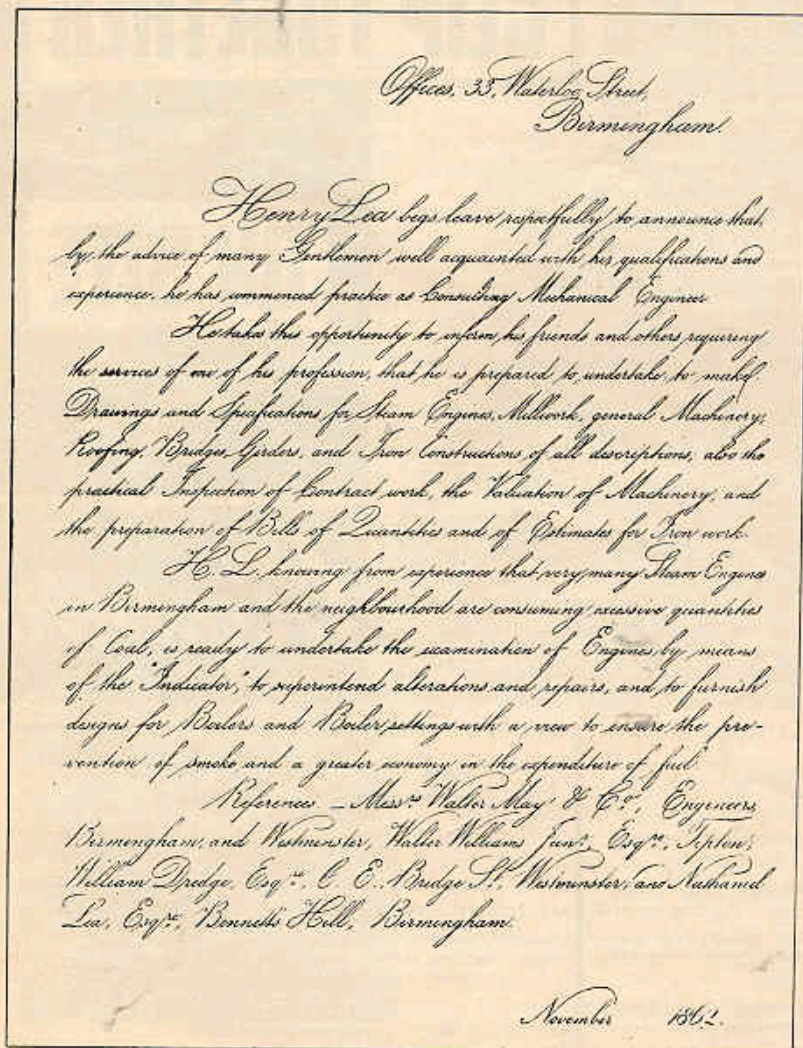
However, the building of factories, extensions of airfields and similar war work became vital and extremely urgent. Of the remaining staff, some were deployed to work at airfields, etc, and after the bombing of Liverpool, were employed on the provision of emergency housing for the bombed-out people. Others were engaged designing bomb factories and similar essential works.

After the war, the firm became engaged again in the design of services for the peak school-building programmes of the 1950's and 60's, and followed this with a massive turnover of works for new and re-furbished hospitals.

With the current fall off in works in the U.K. the present Partners have enlarged their activities overseas, and all make regular trips to overseas markets throughout the year.

Builders Merchants

In 1905, a wholesale ironmongers premises at 49 Holdenhurst Road, Bournemouth trading as F. Betts, was sold to the shop manager and his traveller. These men were Richard



Then & Now

Kennedy and William Trafford Clegg. Both came from the North of England—Richard Kennedy having been born in Ashton-under-Lyne in about 1870 and William Clegg, the son of a well known Rochdale writer and publishers, John Trafford Clegg. The business supplied building materials to an expanding Bournemouth which was fast becoming a fashionable holiday resort. It was not until 1912 that a private company was formed, Kennedy's (Bournemouth) Ltd.

In 1937 the company opened one of the most modern builders' merchants premises in Southern England in Commercial Road, Southampton and also in that year the company opened extensive electrical goods showrooms at 167 Holdenhurst Road, Bournemouth. For most of the company's first 30 years it relied upon its good reputation for quality, style and competitive prices to the building trade and it was not until 1931 that the first general illustrated catalogue was introduced.

The second catalogue appeared 30 years later in 1961 followed by a third in 1967 and the fourth in 1975. A glance at the company's catalogues over the years shows the vast increase in sales of tools, paints and decorating materials.

Today Kennedy's (Builder's Merchants) Ltd forms the main trading arm of the Kennedy's (Builders' Merchants) Limited Group of Companies.

Burners

In the late 1800's Aerogen Co Ltd. was founded under the railway arches at Camden Town. Eighty years later, the Company, now established in Alton, has grown to become one of the leading manufacturers of gas, oil and dual-fuel burners and specialised industrial heaters. A measure of the Company's success is their recent investment of £100,000 which includes the construction of a new factory extension, to meet increased business.

Chimneys

The scientific design of chimneys and flues is of comparatively recent origin. One leading firm, however, has a long history. F. E. Beaumont Ltd, the industrial chimney and air pollution control specialists, was established in 1876, when William G. Beaumont founded the firm of industrial painters and steeplejacks. After 'W. G.' died in 1924, the firm continued in operation under the direction of his sons Percy and Albert. A year later Albert founded F. E. Beaumont to extend the steeplejack work, and was joined in 1937 by his son Max.

Just before the outbreak of the 1939 war the arm was engaged in traditional steeplejack work as well as the building of 240ft. and 360ft. high radar towers for the Air Defence of the UK. Later in the war the firm carried out the salvage of sunken shipping and also in the demolition of dangerous structures using high explosives.

In 1944 plant was purchased for the fabrication of steel chimneys and this grew considerably as the years passed. In 1958 a further factory was purchased and equipped for the fabrication of aluminium cladding for steel chimneys. By 1966 orders had outstripped the production capacity of the two London Works and a new factory of 30,000 ft. was built at Mere in Wiltshire. This was the first factory in the world designed solely for the mass production of individually designed steel chimneys. Output from the Mere factory is now approaching 50 tons of steel chimneys each working week, and this year Beaumont's anticipate they will export and erect more chimneys overseas than in any previous year.

Max's two sons Nicholas and Michael joined the Company in 1969 and 1973.

Beaumonts have designed, manufactured and erected 350 ft. high self supporting and guyed chimneys, but continue to manufacture chimneys of all sizes above 1 ft. diameter.

Water Treatment

The Company now called Dearborn Chemicals was founded in 1887, as a result of the initiative of a young American chemist named William Edgar, whose curiosity had been aroused when he chanced to see a scaled boiler being removed from a plant after only one year's service. He decided to work out the chemistry of the problem and to look for a way of solving it. Now a division of the Chemed Corporation, the Dearborn operation covers two continents. Its research laboratories are based in the U.S.A., Canada and Widnes, England. The U.K. field force of over 70 professional chemists and engineers helps solve the water treatment problems of thousands of industrial users.

The primary objective of the Dearborn field specialist is to maintain customers' plant at peak efficiency by the prevention of surface deposition and corrosion—whether the plant be used for steam generation, cooling, process, air-conditioning, or general plant services.

Emphasis in recent years has moved towards realising the potential of water-treatment technology in the sphere of energy and water-conservation. Boiler blowdown heat recovery systems, for

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Demolition of an old chimney by Beaumonts in the 20's

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instance, are now a standard part of the Dearborn range of services.

Instruments

Foster-Cambridge have recently moved from two separate premises in North London, into a new purpose-built factory located just off the A1 near to St. Neots in Cambridgeshire. Joining Foster-Cambridge in this move are Fielden Electronics and Metrawatt, creating one of the largest instrumentation companies in the UK, and bringing together expertise in electronic and mechanical process control instrumentation, level instrumentation, multi-meters and portable test equipment, as well as other specialised equipment. The new factory is the latest development in the history of a company whose origins go back to the beginning of the 1890s. Over the last 85 years, it has developed from a small concern housed in a single workshop, into one of the

largest manufacturers of temperature control instrumentation in the U.K.

In 1891 Robert W. Paul started an instrumentation business in Hatton Garden, London, and in 1897 he moved his instrumentation manufacturing facilities, along with other business interests, to premises he had erected previously in a field at Muswell Hill. In 1920 the company was amalgamated with the Cambridge Scientific Instrument Company and took the name of Cambridge and Paul, and in 1924 the company's name was again changed to Limited.

In 1968 the Cambridge Group of companies joined forces with the George Kent Group to make the largest independent British manufacturers of industrial instruments. After re-organisation, the industrial companies were separated from those involved in scientific and medical products and the Foster Instrument Company of Letchworth was amalgamated with Cambridge Instruments to form Foster Cambridge Ltd.