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### The Irish Plumber and Heating Contractor, August 1963 (complete issue)

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# THE IRISH PLUMBER & HEATING CONTRACTOR



Vol. 3. No. 5.

AUGUST, 1963.

## THE BRILLIANT NEW **Fordham**



### THE NEW ETERNA (MK. II) LOW LEVEL

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Micro-photograph of Harper Meehanite



Micro-photograph of Ordinary Cast Iron

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Resists corrosion in waterways and combustion chamber better than ordinary cast iron.

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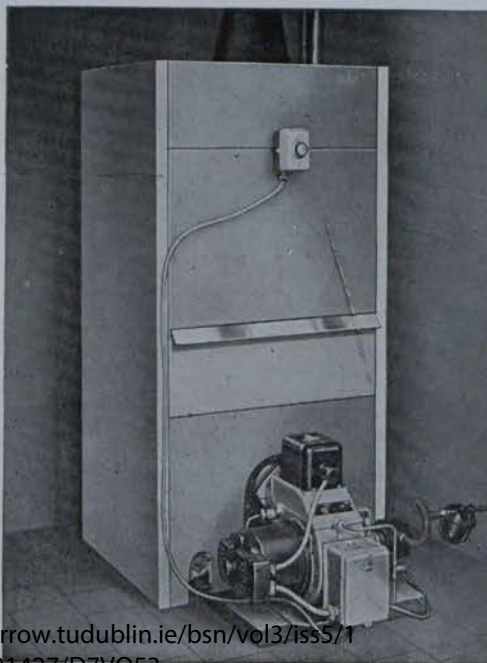
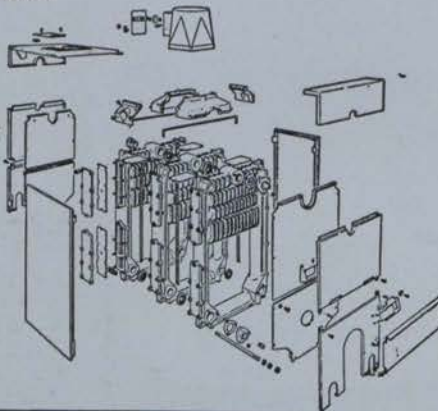
Greater resistance to mechanical and thermal shock in operation and to transit and assembly damage.

Less risk of distortion, leaks and cracked boiler sections.

A longer working life with constantly high operating efficiency.

(\*Meehanite' is a registered trade name)

Diagrammatic view of the HARPER BOILER



### THE HARPER BOILER WITH HOPES BURNER

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Frost and damage resisting.  
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*The Irish Plumber and Heating Contractor.*

## “Still living in the thirties, Dad?”



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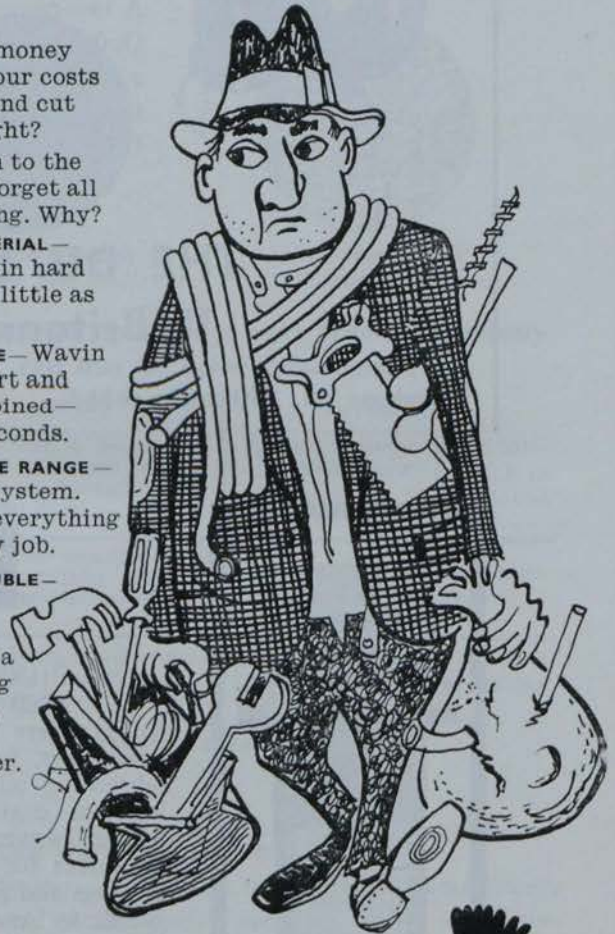
**RIGHT!** It's easy. Turn to the Wavin system and forget all other forms of piping. Why?

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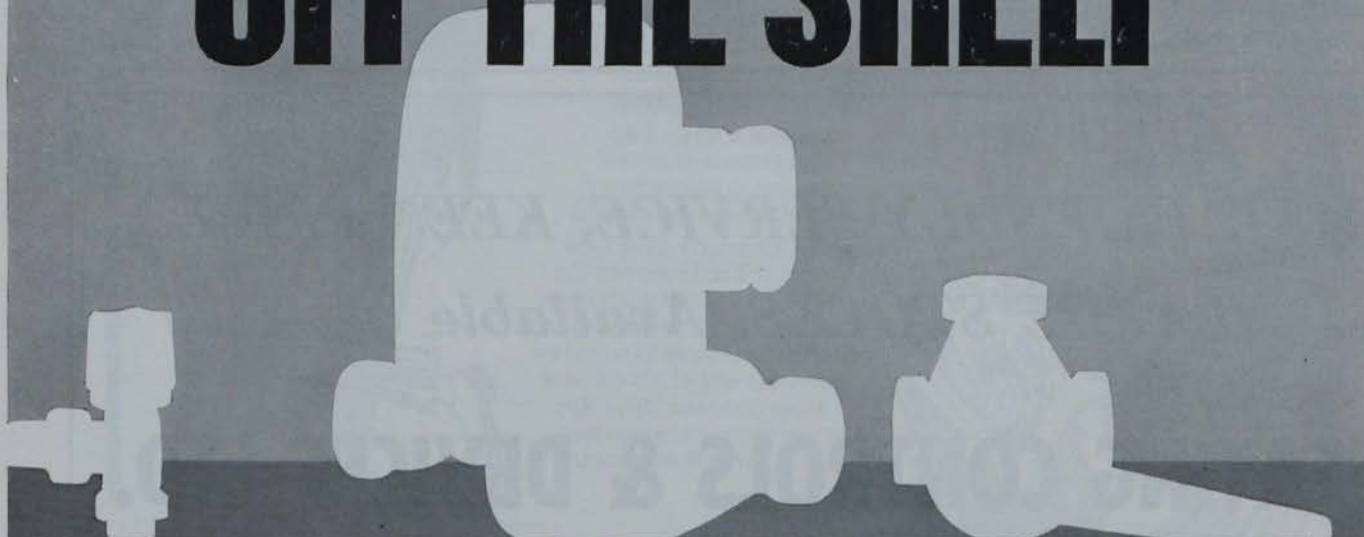
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regulate the heat and balance the system. Two valves for the price of one.

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Vol. 3. No. 5

The only publication in Ireland for the craftsman plumber and contractor, the heating, ventilation, insulation, air conditioning and refrigeration engineer and contractor, the electrical contractor, supplier, manufacturer and wholesaler of fittings and equipment for the trades.

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AUGUST, 1963.



# THE IRISH PLUMBER & HEATING CONTRACTOR

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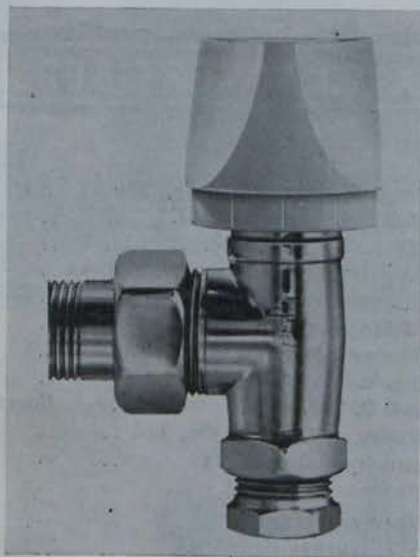
# B.S.A. HARFORD INTRODUCE TWIN ACTION RAD VALVE

**THE NEW** B.S.A. Harford twin action radiator valve both regulates the heat and balances the system. It is a beautifully styled piece of equipment. Simple in operation, the heat output of the radiator is in direct proportion to the position of the handwheel, and it is easy to turn throughout its life as the novel O-ring ensures lasting easy movement and freedom from leaks.

The valve can be pre-set limiting the maximum position to which the valve will open (usually the function of an additional lock shield valve) and it is therefore only necessary to fit one valve to each radiator.

The new T.A. valves are available in  $\frac{1}{2}$ " or  $\frac{3}{4}$ " angle or straight and finished in brass or polished chrome, with either handwheel or lockshield. All valves are supplied complete with compression nut and olive and can be used with copper or iron pipework.

Inquiries to B.S.A. Harford Pumps Ltd., Northside Hse., Mount Pleasant, Cockfosters, Barnet, Herts.



● The new B.S.A. Harford twin action radiator valve which both regulates the heat and balances the system.

## TRADE TOPICS



Pictured here is the winning entry in the 1963 National Leadwork Competition, sixth in the biennial series sponsored by the Lead Development Association in England for plumbing students.

The national winning entry was submitted by D. Bradburn, M. Ditchburn and T. Richards, students under Mr. E. W. Watson at Workington College of Further Education.

## New technical leaflet series

A NEW series of technical leaflets providing valuable information on Stillite Mineral Wool Insulation Mats for thermal insulation and sound-proofing of floors is now available from Stillite Products Ltd.

Taking the form of a brochure supported by sets of loose leaf specification sheets the literature describes the three grades of insulation mats—S.M.3, Stilmat and Stilphon 20—and their applications in the building industry. The Irish agents are Structural Waterproofing Co. (I.) Ltd., 7 Upper Fitzwilliam St., Dublin.

## His best idea ever!

**THE LARGEST** individual award to made to an employee of the De La Rue Group under their suggestion scheme has been presented to Mr. John Hone by Mr. E. Thorne, Works Director of Thomas Potterton Limited. Mr. Hone, who is a gas assembler at the Warwick factory of Thomas Potterton received a cheque for £662,

*Continued next column*

## Seen at Interplas '63

**THIS** splendid exhibition held at Olympia, London, recently, really was an 'eye-opener'. Although largely given over to exhibitions of raw materials, fabricating machinery, and the thousand and one things commonly made in plastics, there were one or two stands containing items of direct interest to the plumber.

Most notably, the new 'Yorkshire Imperial Plastics' Company's stand. This displayed polythene and P.V.C. tubes in all forms, together with the very latest ideas in jointing methods.

For their first exhibition as a new company they chose this International Exhibition to show some of the more unusual ways of manipulating and using rigid P.V.C. pipe.

The dominant feature of the stand was the initial letters of the company Y.I.P. fabricated in 10-in. diameter 'Polyorc B' pipe 20 ft. high (See Fig. 1).

Because of serious transport problems—the 'Y' spanned 15 feet and the

'P' 10 ft.—the pipe was bent and cut to pre-determined lengths and then fabricated by welding on site at Olympia. The two welders from Leeds were closely watched by a large crowd of Exhibition display staffs from other stands, many of whom were probably watching plastics welding for the first time in their lives.

This is thought to be the first time a firm has successfully produced in 10-in. P.V.C. pipe 90° bends which are entirely wrinkle and ripple free.

The application is hardly plumber's work, but it might well be used in P.V.C. pipework used in food process work.

In smaller scale the bending and welding of P.V.C. pipe is plumber's work and 'Yorkshire Imperial Plastics Ltd.' of Leeds publish very informative literature which is free and which no up-to-date plumber can afford to be without. Write to P.O. Box 166 Leeds, for your information folder right away.



which together with the £408 he has already received, made the total award worth £1,070.

Following certain improvements in design, Mr. Hone suggested that it was possible to eliminate one small component from a number of models in the "Diplomat" boiler series. This led to savings of £2,139 over the first twelve months following the introduction of this change in design. Under the terms of the suggestion scheme award, Mr. Hone receives 50 per cent of the total savings in the first twelve months.

## Fibreglass Area Sales Manager

**MR. CHARLES E. BIRKENHEAD,** Insulation Divisional Manager of Fibreglass Limited has announced the appointment of Mr. John McCormack as Area Sales Manager in Ireland. He is taking over from Mr. J. C. Parry-Jones who has held the post since 1955 and who will shortly be transferring to a new post in the Fibreglass London Office.

Mr. McCormack is already known in Northern Ireland where he has been responsible for all contacts in the Marine Field.



● Mr. John McCormack

Educated at West Park Grammar School, St. Helens, Lancashire, Mr. McCormack was engaged by Fibreglass Ltd. nine years ago to work at their head office. He worked for five years there, spending two and a half years of these in the market research department. He has since worked for them in Scotland, the Midlands and the

## TRADE

## TOPICS

North West of England. For the last two years, when based in Glasgow, he specialised for the company in Marine Insulation.

### New subsidiary

**THE BOOKER** Group has formed a new subsidiary company—Delmore

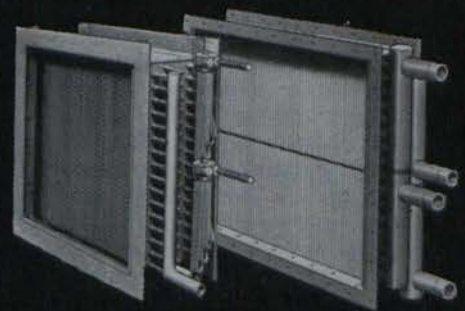
Heating Ltd.—which has acquired the central heating business formerly carried on by Delmore Engineering Co. Ltd. The new company, which will operate from premises on the Poyle Trading Estate at Colnbrook, Bucks., will continue to market the well-known Delmore range of oil-fired boilers and other equipment.

The new subsidiary will work in partnership with the Booker Group's existing central heating company, International Boilers and Radiators of Gateshead, which is already firmly established in the market of gas boilers, radiators and circulating pumps.

**T**HE way we make heating and cooling coils is unconventional. The tubes pass through a series of perforated plates mechanically bonded by a special tube expansion process. Result—a perfect metal to metal contact that no amount of expansion or contraction can affect. Also, a more than usually efficient and uniform distribution of heat from a more durable unit. The choice of tube metal, of size and capacity, is up to you. There is, of course, a standard range and it is a very extensive one. For details please write or 'phone any of the addresses below, Dept. IP5.

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*The Irish Plumber and Heating Contractor.*

the  
author

**John G. Bolton**

Lecturer in Plumbing and Heating at the College of Technology, Bolton Street, Dublin.

# IN AND OUT OF HOT WATER

**H**OT water and heating installations have always been a subject of great interest to those in the trade, and heated arguments as to the relative merits of various systems and the problems involved in their installation often arise amongst the men on the job, so perhaps it may be of interest to discuss a few of the troubles which plague the life of the ordinary contractor!

For our first case, the job involved a combined heating and hot-water system installed in a private house. The system was of the usual design with an indirect cylinder and expansion and domestic cold feed tanks (Fig. 1). One of the radiator valves on the heating circuit had become defective and the plumber was sent to replace it. In order to do so he drained the circuit, fitted the valve and refilled. A few days later, a complaint was received that the expansion tank on the heating circuit was overflowing.

The trouble was, at first, thought to be a leaking ballcock—grit having got under the seating during the refilling of the tank—but on checking, the valve was found perfect. The next point examined was the domestic cold supply tank.

## Leaking

**T**HIS was positioned about one foot higher than the expansion tank, and the ballcock was found to be leaking to a slight extent. On tying up this ballcock, the water level in the tank was seen to be dropping slowly but steadily, although no sign of leakage on the system could be seen.

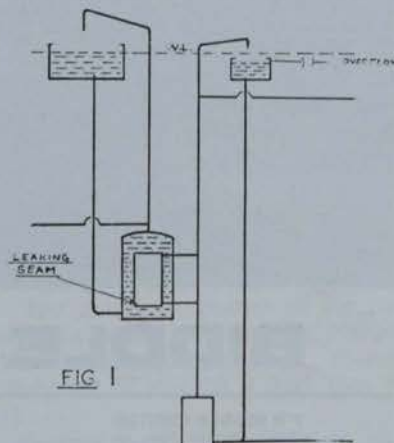
This clue, however, made the trouble

immediately apparent—a fault in the internal cylinder of the calorifier—probably a leaking seam, with the result that the slight differential in pressure, due to the one foot difference in head, caused the water in the outer cylinder to penetrate into the internal, and thence back-up into the expansion tank.

Unfortunately this defect is almost impossible to repair without dismantling the cylinder or cutting an access door in it, so a new indirect cylinder had to be fitted.

When the customer received the bill for the job, he claimed that the contractor was negligent in that he should have drained both sections of the cylinder at the time so as to equalise pressure.

This argument was, of course, plain nonsense, as the slight out-of-balance pressure would not normally be



sufficient to cause damage unless a defect already existed to some extent. To put this over to the customer required, however, some "straight talking", and it again illustrates the old cry "it was alright until your plumber touched it"—most contractors will be familiar with it!

## Some danger

**O**F course, if the pressure differential had been of a greater difference, there would be some danger, especially in old cylinders, that a defect might develop during the draining of one circuit, and in this case it is advisable to drain both circuits and thereby equalise pressure.

**Collapsed Cylinder:** The story of this unfortunate happening began when the plumber was sent to connect up a dish washing machine to an existing hot water system.

Everything was going fine, the cold feed to the cylinder was shut off at the gate valve, and it only remained for the hot-water tap over the sink to be opened so as to drain the pipe and insert the tee for the washer unit.

However, when the tap was opened, a loud noise was heard from the cylinder situated on the first floor. On rushing up to investigate, water was seen spurting from the cylinder which had partially collapsed. Of course, by this time, the household was fully alert, with many dire remarks about damage to ceiling, decoration, etc.

On a full inspection of the job it was found that a non-return valve had been fitted at some time or other on the expansion pipe (Fig. 2)—no doubt with the idea of preventing air being

*Continued page thirty-five*



# BIG 4 FOR ALL PLUMBING & HEATING CHOSEN BY CRAFTSMEN

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valves and fittings for copper tubing. Equally reliable for use with plastic pipes.

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radiator valves and fittings for small-bore central heating — efficient, unobtrusive and cheaper to install.

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# AN IRISH PLUMBER & HEATING CONTRACTOR SPECIAL SURVEY

## REVIEW OF DOMESTIC SANITARYWARE

# NEW, IMPROVED METHODS

**N**ew and improved methods of manufacture to new, sensitive designs, have lifted even the essential items to such a level of eye-appeal, that sanitary-ware is no longer ordered in an off-hand manner.

Up-to-date designs impart an air of elegance and charm which older appliances lacked, however functionally efficient they happened to be.

**The bathroom**, in particular, takes on a new look when newly fitted under carefully selected modern fitments. In newer house designs, more space is being allocated to this vital amenity, and not before time. It is a room used regularly by all members of the family. It is a room which should radiate good living and this means cleanliness and elegance.

Cleanliness demands adequate supplies of hot and cold water, in appliances which are convenient, hygienic in themselves, and in harmony with the general decor of a bathroom spacious enough to disrobe, bath and dry in comfort. Bathrooms so small that one has to dry hopping first on one foot and then the other, are a thing of the past or should be. It is true that bathroom fitments are not all that cheap, but when they are wisely bought they are deserving of a good setting.

### Relaxation

In ancient times the bath was a place of relaxation. In many cases it was a Forum wherein affairs of state were discoursed upon at length. Almost 2,000 years after the Roman baths, and having passed through a phase of "sticking a bath in", somewhere in the house, just because it was the "done thing". Mr. and Mrs. Everyman now begin to realise the potential value of a well equipped bathroom—and long for one.

by our clients and keeping them informed of the wealth of present-day sanitary-ware development in material and design? Do we all carry around a few up-to-date illustrated brochures—or are we letting the T.V. and car salesman queer our pitch?

Victorian prudery now almost gone sanitary-ware is to be seen tastefully displayed in all large stores, and in the very best magazines. A great deal of manufacturer and merchant advertising puts these desirable fitments well in the public eye. A profitable field is open to all who will make the effort to suggest that now is the time to re-establish the sanitary equipment in the home and thereby enhance its appeal to all, and to increase its value both in hard cash and as a home of elegance, hygiene and comfort.

### Essential item

**The bath**, next perhaps to the W.C., is an essential item. The rectangular 'Magna' pattern is now exclusively used for domestic work. Made to B.S. dimensions so far as length, width, and depth are concerned, these are now available in cast-iron, pressed steel, or plastics materials—notably, perspex.

For rugged lasting qualities plus rich appearance, the modern cast iron bath leaves nothing to be desired (save, possibly, an easy way of lugging it upstairs initially). Cut-away fronts give easy access to and from the bath, and toe-indented side panels make for easy child bathing. Relatively small though these refinements may appear, they do add to the comfort of bathing. They are therefore, important points well worth customer consideration at the time he is thinking of buying the bath which is going to last him a long time.

to oust cast-iron, are becoming more popular. Stain-free, coloured all through, non-chippable, and 'warmer' than other materials, they are being more used and each customer is blessed by the plumber who has to transport the plastics bath from lorry to the first floor bathroom, since a full sized bath weighs less than  $\frac{1}{2}$  cwt. complete with panels.

### Pleasing

Robin Plastics Ltd. of Newcastle-upon-Tyne have recently introduced a most pleasing range. Designed to basic standard dimensions, these are available in ten different models. Each model is obtainable in ten different colours. For estate work they seem to fill the bill, for with them, more than 100 different schemes are possible within 100 size standardised bathrooms.

New from the Continent are entire bathroom lay-outs in perspex. Imagine a machine moulded egg packing box, and you can image a plastics sheet moulded in much the same manner to form a bath, wash-hand basin, W.C., and in some cases a bides as well, all conjoined to form walls, and floor of the bathroom.

Things to come?—they are here, and although these are not common as yet, we can be sure to see more of this kind of 'one-piece' bathroom suite in the near future.

**Shower baths** have sprung rapidly to the fore in the past few years. Once considered the prerogative of the very well-to-do, this extremely useful appliance, in one form or another, is

Perspex baths, although taking time

Continued page thirty





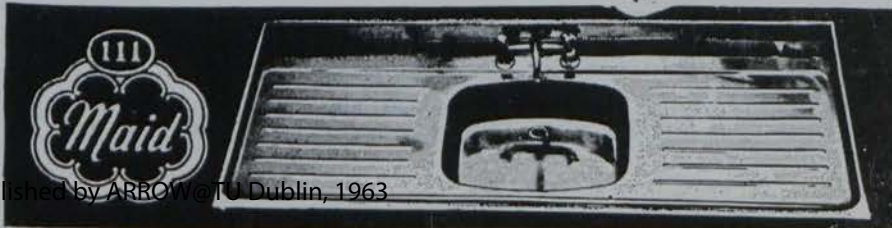
## FROM ANY ANGLE

QUALITY SHOWS! "Maid" stainless steel sinks and bowls by HAMMOND LANE look as good as they are! Deep mirror polish—skilful modern design—a variety of types and sizes—the only sinks and bowls of their kind manufactured in Ireland. You'll want to know more. Contact your local Builder's Providers or Hardware Merchants.

"MAID" by

**Hammond Lane Industries Ltd.**

111 PEARSE STREET, DUBLIN 2  
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*The Irish Plumber and Heating Contractor.*

# 2,800 Million BTU



This figure is the total capacity of the boilers manufactured by D.S.V. in the last twelve months.

→ **2800 MILLIONS**

This figure speaks for itself—and shows the confidence our customers have in us.

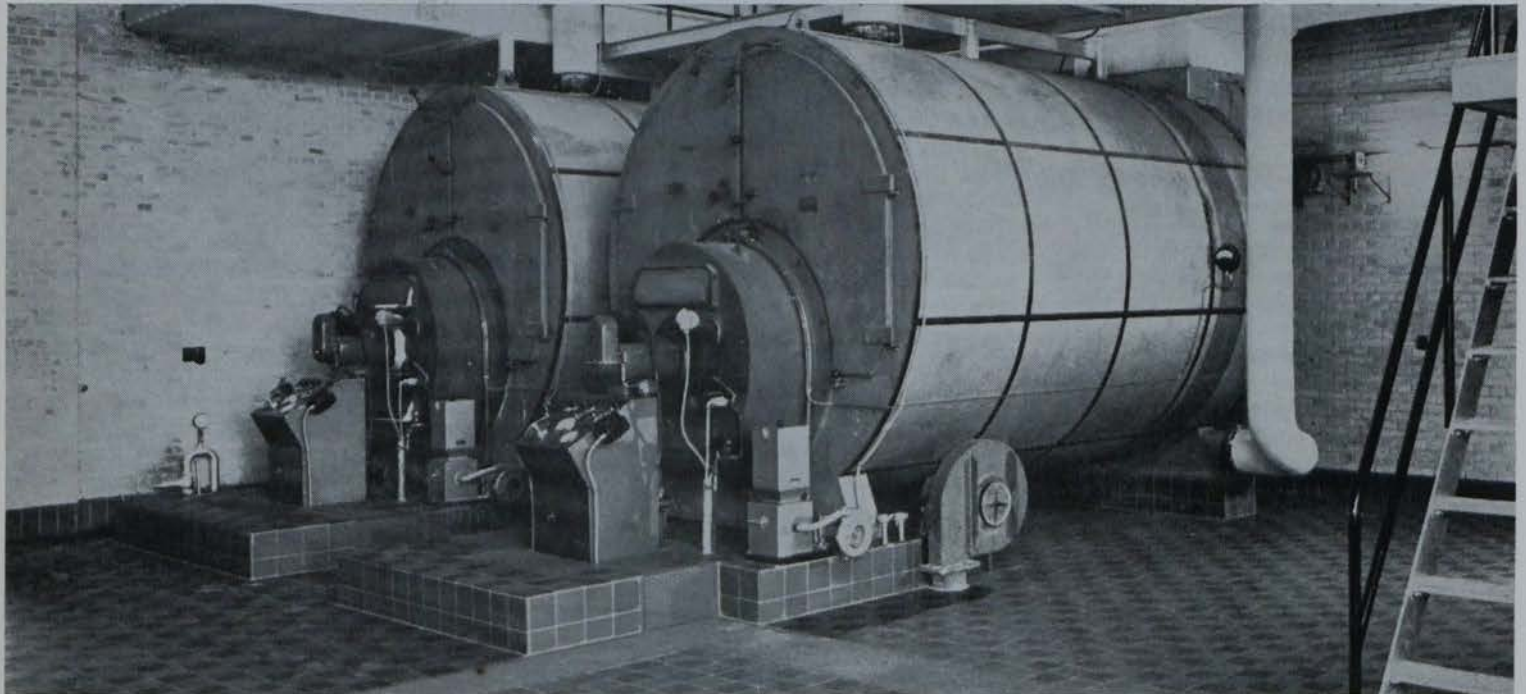
→ **2800 MILLIONS**

This figure at the same time indicates our practical experience which D.S.V. customers enjoy.

→ **2800 MILLIONS**

This figure confirms what specialists are saying.

## D.S.V.—THE BOILER WITHOUT PROBLEMS



**D.S.V. STEEL-PLATE BOILERS FOR:**

HOT WATER  
HIGH TEMP: HOT WATER  
LOW PRESSURE STEAM  
HIGH PRESSURE STEAM

**Other Products:**

OILBURNERS  
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## A/S DANSK STOKER & VARMEKEDEL KOMPAGNI

**Denmark:**  
4, Landgreven  
Copenhagen K  
Phone MI 2070  
Cables: Lynfyfyr  
Telex: 5167

**Eire:**  
38, Pearse Street  
Dublin 2  
Phone 72104  
Cables: Lynfyfyr Dublin

**England:**  
Oil-Age Boiler Co. Ltd.  
46, Victoria Street  
London, S.W.1  
Phone ABB 5103  
Cables: Ollagbo London S.W.1.





REVIEW OF INDUSTRIAL AND COMMERCIAL  
BOILERS, BURNERS AND CONTROLS . . . . .

# DEVELOPMENT IN INDUSTRY MEANS NEW SCOPE FOR TRADE

**T**HE last few years has seen a considerable development in the industrialisation of Ireland. Many new factories, with products ranging from tops to aircraft, have been started and, under the impetus given by re-equipment grants, many existing factories have introduced modernisation programmes.

Each of these developments brings with it its own problem of heating which must be tackled and solved to the same high standards displayed by other branches of engineering in these concerns. Most managements realise that there is a great difference between conditions which fall short of provoking complaint and those which conduce to the maximum physical and mental efficiency of those employed. Morale can be improved, efficiency increased and absenteeism reduced by providing a high standard of working conditions.

## Factories Act

The Factories Act requires that "reasonable temperatures" be maintained in work places, and is specific only in the case of sedentary workers, specifying 60° minimum. The sensation of comfort, however, is not a function of temperature alone, but is dependent also on the relative humidity of the air, on air movement, on the radiant temperature of the surroundings, and on the degree of activity of the subject.

These factors, with the exception of the last, were related to one another initially by American investigators, and a single factor called the "Corrected Effective Temperature" has been

developed as a measure of comfort. It is determined from charts on the basis of globe thermometer temperature, wet bulb temperature and the velocity of the air.

Its use is necessary in industrial work particularly where high humidities, high ventilation rates and the emission of radiant heat are characteristics of the process. The presence of these factors constitute the basic difference between industrial and conventional building heating practice.

## Standards

The degree of heating may be determined by other factors besides those relating to personnel. The standards of accuracy, uniformity and cleanliness demanded in some industries can only be achieved in temperature and humidity controlled atmospheres. This has led to the introduction of air conditioning in certain processes, such as lithographic printing, pharmaceutical manufacture, textiles, tobacco processing, etc. It is interesting to note that the growth of air conditioning in industry has arisen from the necessity of maintaining conditions for products rather than the comfort of people. In fact, the optimum conditions for a process may lie well outside the comfort zone, and a compromise must be arrived at in practice.

In order to meet the varied requirements of industrial work, technical development is required continually in heating practice. Some definite trends have emerged and these will be discussed briefly here.

On the theoretical side, must work

continues to be done to place design on a sound scientific basis. This enables engineers to design, in a systematic manner, an installation which will in practice provide the desired conditions. In planning systems, there is a movement towards closer matching of the heating system and its controls with the thermal characteristics of the building and of the process. In a new project this requires earlier consultation between the services engineer, the management, the building designer and the plant engineer, than hitherto.

Failure in this matter can result, in extreme cases in a building which cannot be adequately heated or cooled, and in a plant layout which causes unsatisfactory working conditions.

The trend in architecture towards the use of larger windows and higher intensities of artificial lighting, especially in larger office blocks, has focussed attention on the problem of heat gain. Further sources of heat gain in factories are heated process plant, electric motors, switchboards, friction of machines, etc. The removal of this heat may require methods which must be considered in the basic planning of the building. In certain cases, some form of air conditioning may be required.

## Factory built

In the field of plant, there is a trend towards the wider use of factory built equipment of standard ratings. Packaged boilers, packaged pumping sets and packaged air conditioning plants are examples. Industrial processes are in a state of development

*Continued page fifteen*



*The Irish Plumber and Heating Contractor.*

# NEW

## LOW-PRICED

# "IDEAL" RAD 66

## SMALL-BORE ACCELERATOR



You've wanted this for a long time; a low-priced accelerator with all the advantages of more expensive models and some extra advantages of its own. It is the "Ideal" Rad 66, a small-bore accelerator designed to meet the special requirements of domestic central heating installations. An important new feature is the 'Hydromatic' electrical gap which, while starting, is very small to give high torque, and then automatically increases to give smooth, quiet running. Its output regulator is easily adjusted over a wide range of ratings. It has a self-cleaning bearing with reversed water flow. It is compact, and can be mounted close to a wall or in corners, at floor level, or in a confined space. The "Ideal" Rad 66 measures 7½" x 6" x 4½", and weighs 13 lb. You cannot install a more advanced or efficient accelerator for small-bore central heating.

# IDEAL - Standard

LIMITED

List prices: "Ideal" Rad 66—£20, in bronze £27.10.0.

<https://arrow.tudublin.ie/bsn/vol3/iss5/1>

DOI: 10.21427/D7VQ53



"Ideal" Mixflow valve and starter switch are available as extras.

For more information, write to us at: PO Box 60, Ideal Works, Hull, Yorkshire

"Ideal" is a trade mark of Ideal-Standard Limited



**QUADRANT ENGINEERS**, 167, Strand Road, Sandymount, Dublin, have recently introduced the fan-assisted Fortaventi, a Dutch boiler for anthracite of grain size upwards. Available at a reasonable price and now installed in various localities in Ireland, it has a range from 80,000 Btu/hr. to 1,320,000 Btu/hr.

This compliments the Fortano-K range of natural draught boilers for domestic heating now available from Dublin stock.

★ ★ ★

**THE 1963 RANGE** of boiler/burner units for central heating and domestic hot water supply, with outputs from 47,000 to 120,000 B.T.U.S. per hour is announced by Clyde Fuel Systems Ltd. The Model C range are economic in operation.

The boiler unit is cast iron throughout, giving long life and full accessibility and all internal surfaces are water-cooled. The steel insulated casing is attractively finished in hammer blue.

The fully automatic oil burner, which is of the pressure jet type, is silent running and the controls include water thermostat and photo-electric cell for flame failure. A room stat can be supplied for remote control.

**In conjunction with this Special**

**Survey we review here products**

**from the leading manufacturers'**

**ranges.**

A feature is the use of a stainless steel flame pot, in place of combustion chamber brickwork, which allows greater heat release to the bottom of the boiler, resulting in better circulation.

Irish office—Clyde Fuel Systems Ltd., 6 Mount St. Crescent, Dublin.

★ ★ ★

**SUPPLIED** with the new Redfyre De Luxe 80 oil-fired boiler is this attractive Honeywell room thermostat which constantly controls the temperature of the heating circuit. Framed in white the clearly printed dial is set below a fluted panel and has two pointers, the lower is set to the desired temperature by the householder and the upper indicates the actual temperature of the circuit. Measuring 4½" x 2¼" the unit is enclosed in a moulded plastic case in silver bronze.

Irish agents—Baxendale and Co. Ltd., 7 Capel St., Dublin; W. P. F. Hume Ltd., 6-12 Hyndford St., Belfast.

★ ★ ★

A **WIDE** range of Dowty Bigwood fully automatic spill type modulating oil burners is available for firing all types of hot water and steam raising boilers up to a maximum oil burning capacity of 120 gallons per hour using fuel oils of 200 to 3,500 seconds viscosity Redwood No. 1 at 100°F. Special twin nozzle burners are also available for firing Lancashire and twin flue Economic type of boilers. The burners are manufactured by Messrs. Joshua Bigwood and Son Ltd., in collaboration with Dowty Fuel Systems Ltd. These burners are capable of being operated for prolonged periods with no maintenance or attention whatsoever.

Irish agent—Mr. P. J. Casey, 38 The Rise, Mount Merrion, Dublin.

★ ★ ★

**THE BABCOCK AND WILCOX** Steambloc packaged boiler can burn the heaviest grades of fuel oils with

*PRODUCT REVIEW continued on page seventeen.*



*This special survey—another in a series on important aspects of the plumbing and heating trades—has been compiled by technical expert, Michael J. Walsh, who is Senior Engineer with a leading Dublin firm of consulting engineers.*

*From page thirteen*

continually, and seldom outlive the building in which they are housed with its ancillary services. The use of packaged units gives the important advantage of flexibility in these circumstances. The use of sectional equipment, such as boilers and radiators, gives some flexibility as regards rating. Nevertheless, their use is in decline and they are being replaced by steel units of standard ratings.

The availability of a wide range of pumps of high efficiency and proven reliability has assisted the movement towards smaller pipe sizes and higher velocities. High pressure hot water is increasingly used in place of steam, as a heating medium for process and heating work, because of its lower initial cost and the easy application of modulated thermostatic control. Heating systems, although extremely diverse in detail, continue to be

variations of the conventional forms—Central heating by pipes, radiators and convectors; Unit heaters; Radiant heating; Plenum systems; Air conditioning.

There is usually no difficulty in providing sufficient heat, but its proper distribution in large open workrooms may not be easy. Unit heaters are extensively used, but care must be taken to provide a sufficient number of them to secure good distribution and to avoid uncomfortable temperature gradients being set up. The air velocities and temperatures must also be carefully designed to achieve satisfactory results.

Many of the varied requirements of factory heating can be met with one or other form of radiant heating system, and its use is steadily increasing. It gives rapid heat-up in large open areas, is very suitable for local heating, and temperature gradients can be practically eliminated. Radiators

and convectors give excellent results in smaller rooms. Plenum systems provide ventilation as well as heating to large internal areas and the positive pressure maintained inside reduces draughts from infiltration.

Air conditioning, as previously mentioned, is seldom employed except where the process requires closely controlled atmospheric conditions.

Many installations of these heating systems will no doubt be required in Ireland in the coming years, as the industrial sector of our economy expands. The growth of this sector is of considerable interest to all concerned with heating, and the timely issue of an industrial supplement\* by the *Irish Plumber and Heating Contractor* commencing in January, will help to keep both managements and the heating trade in touch with this development.

\*See September issue for full details.



The Irish Plumber and Heating Contractor.

# BUDERUS BOILERS for OIL

from 46,000 Btu/hr. to 3,000,000 Btu/hr.

● Buderus boilers are gaining on others for high efficiency, pleasing appearance, competitive prices and especially quick delivery. (Many sizes now from Dublin stock).

P10W	Output Btu/hr.	Length inches	
5	46,000	14	} height 34" width 15"
6	53,000	17	
7	61,000	20	
8	69,000	23	
9	78,000	26	
P20W			
6	82,000	18	} height 40" width 18"
7	94,000	21	
8	107,000	24	
9	119,000	27	
10	131,000	30	



Sole Agents:

## QUADRANT ENGINEERS

167 STRAND ROAD,  
SANDYMOUNT, DUBLIN, 4  
Tel. 693940/43.

# FORTANO-K Magazine Boilers — Anthracite

A REASONABLY PRICED DUTCH BOILER FOR HIGH EFFICIENCY ON SMALL ANTHRACITE, FOR KITCHEN INSTALLATION.

	Btu/hr.	Height	Width	Length	Flue
*K1	60,000	40"	15"	20"	5"
*K2	72,000	40"	15"	22"	5"
K3	84,000	40"	17"	22"	5"
K4	100,000	40"	19"	22"	6"
K5	116,000	44"	17"	26"	6"

\*Now ex stock DUBLIN.

Tappings back or sides; flue right or left.

Magazine contains about 8-hour full load burning.

Insulation jacket and autoflame controller supplied.

The larger FORTAVENTI series is available up to 1,320,000 Btu/hr.



Sole Agents:

**Quadrant Engineers, 167 Strand Rd., Sandymount, Dublin 4**

693940/43.



viscosities up to 7,000 seconds Redwood No. 1 at 100°F. The Steambloc packaged boilers are fully automatic units and are supplied with all ancillary equipment mounted on a common base ready for connection to oil, water and electricity supplies. The oil burners are pressure jet spill back type fully modulating and can handle the heaviest grades of fuel oils up to 7,000 seconds Redwood No. 1 at 100°F.

The units have a guaranteed average thermal efficiency of 82.5 per cent and are supplied pre-tested ready for connection to oil, water and electricity supplies.

Messrs. Penman and Co. are a subsidiary of the Babcock and Wilcox Organisation. Messrs. Penman produce boilers suitable for coal, turf or oil firing. The Penman boilers are built to British Standard Specification and are extremely robust units. At present two Penman wetback boilers are being installed in the Cork Distilleries, Cork.

Edwin Danks (Oldbury) Ltd., are supplying a complete boiler installation at present to Fry Cadburys for their new factory at Malahide.

For some years now the steam services to the factory were being supplied by an Edwin Danks Oldbury two pass economic dry back boiler rated 12,000 lbs. per hour. Recent extensions have necessitated the installation of additional plant and at present an 18,000 lb. per hour high velocity double pass self-contained economic type boiler of Edwin Danks manufacture is being installed. The unit is to be fitted with Dewrance safety valves and steam fittings.

The oil burner to be fitted to the boiler is the Edwin Danks Air Spin Oil Burner. This unit combines the advantages of air atomisation with those of the spinning cup. The Edwin Danks air spin burner allows operation at very low oil temperatures and affords a high degree of turn-down to meet low loads.

Messrs. H. R. Holfeld Ltd., 2-4 Merville Road, Stillorgan, Dublin, represent Edwin Danks and other Babcock and Wilcox Associates.

★ ★ ★

**THE MOBREY** modulating level controller for steam boilers incorporating low water cut-out and alarm, one of the well known products of Ronald Trist and Co. Ltd., Slough, Bucks., is designed to give long service without attention other than normal half yearly servicing. It is

## SPECIAL SURVEY

from page fifteen

suitable for all shell and water tube boilers within its pressure range. It is relatively unaffected by fluctuations in boiler pressure and can be started up from cold provided feed-line pressure exists (minimum 50 psi) 3.5 kg/sq. in. It is operated by source of power always available on boiler—i.e. feed-line pressure from pump and electric supply.

Other products of this company include: electric smoke density indicator. Mobrey three light alarm panel, type 5843P, for indication of high and low level, dual controls (MK 11) for steam boilers, vertical electric controls for steam boilers, Hilo "JG" water alarm type 13100, Thermofeed regulators, and glandless level switches for all purposes. Their range also covers the Trist-Lucifer solenoid-operated valves and Trist-Santer controls.

Technical representatives—J. I. Yates Ltd., 56 Lower Mount St., Dublin, and J. I. Yates Ltd., 14-16 Copeland St., Belfast.

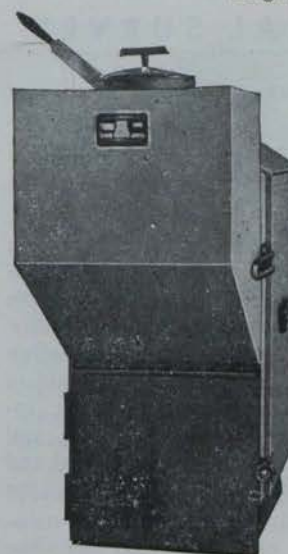
★ ★ ★

**SATCHWELL CONTROLS LTD.** make several types of oil burner controls, the basic function of which is to start and stop the burners at appropriate intervals so as to maintain the required water temperature in the boiler. At the same time, there must be precautions to ensure that unburnt oil is not pumped into the boiler in the event of flame failure. Two methods are used to achieve this, one employs a thermal device and the other a photo-sensitive cell.

The 'Unigard' and 'Duogard' (lists DS 111.01 and DW 111.02) are of the former type, both of which fully



● The Satchwell Unigard oil burner control.



● This is the Fortaventi, a Dutch boiler for anthracite of grain size upwards, for which Quadrant Engineers are Irish agents.

comply with B.S. 799 Part 1 1962. The photocell types are the DG and 'Visigard' (lists DG 121.02 and DEL 121.01). Both types employ a photocell mounted in the draught tube so that it can 'see' the flame and thus causes the control to shut down the burner if the flame fails.

They also manufacture the DB Boiler Draught Control designed to provide an automatic accurate and reliable control for hand fired boilers.

Irish agent—Mr. R. E. Ayers, Gray-stoke, Nashville Rd., Howth, Dublin.

★ ★ ★

**THE SUPAPAK**, fully automatic package boiler, made by Danks of Netherton Ltd., Dudley, Wores, is a treble pass horizontal wet back economic boiler. It has one off set furnace flue on the right-hand side, along which the gases pass, thence through a water-cooled gas port to the return gas cell, to which is connected the upper first pass of tubes. The gases then travel to the front end where they are transferred by the insulated smoke-box casing into the second pass of tubes positioned in the lower part of the boiler shell, within the cooler water zone, to the gas outlet box.

This tube displacement, by improving the water circulation, and establishing a maximum temperature difference between the gas and the water produces a high heat transfer rate.

Irish agent—Luke, Martyn and Co. Ltd., 1 Sandyhill Park, Drumbeg, near Belfast.

★ ★ ★



**SPECIAL SURVEY**

from previous page

**ONE WAY** to avoid sulphuric corrosion of the heating surface of the boiler is to use a DSV injector.

Experience based on extensive chemical analysis of the deposits in the smoke-tubes shows that injection with magnesite by using a DSV injector gives up to 100 per cent neutralisation of the free sulphuric acid; boilers which were previously without injection were seriously corroded, and there was both free sulphuric acid and corroded sulphate of iron in the deposits.

A fairly constant part of the sulphur which is found in varying quantities in all fuel oils burns to  $SO_3$ —sulphur trioxide—which together with the water vapour in the smoke forms  $H_2SO_4$ —sulphuric acid—and this attacks the heating surface of the boiler.

Irish office—Danish Stoker and Boiler Co. Ltd., 38 Pearse St., Dublin.



**THE PORTABLE** Combustion Testing Equipment (The Shandon "4-point" combustion efficiency system) is designed to make the necessary tests as quickly and simply as possible. The equipment is universal in its application—it is equally suitable for testing solid fuel, oil or gas burning installations from the smallest size to the largest. The equipment's compactness, coupled with its robust design, makes it genuinely portable and ideal for field engineers, heating engineers, contractors and factory maintenance engineers.

Irish agents—H. R. Holfeld Ltd., 2-4 Merville Rd., Stillorgan, Co. Dublin.



**A RECENT** lesson in economy was seen at the Metropolitan Borough of Southwark which installed two Trianco oil fired automatic boilers each of 2 million B.t.u. capacity to replace hand-fired cast iron sectional boilers at their Municipal offices.

At the same time, they connected the Library heating system to the main system and scrapped the Library boiler.

They also connected the heating system of the Town Hall to the Trianco operated system and scrapped the Town Hall hand-fired boiler.

Continued opposite

# 6 Good reasons why

## A TRIANCO SOLID FUEL BOILER IS THE AUTOMATIC CHOICE FOR THE MODERN HOME

- 1 A Trianco Boiler is thermostatically controlled. You set the thermostat, the Boiler does the rest.
- 2 A Trianco Boiler is gravity fed automatically with small anthracite from a large integral fuel hopper permitting burning for up to 72 hours without attention or refuelling.
- 3 The Trianco Boiler is declinkered in 2 seconds by a simple lever movement. (No dust, no loss of heat). This is a Trianco Exclusive Feature. The clinker and ashtray only requiring emptying once or twice a week.
- 4 The Trianco Boiler gives more heat for less fuel and burns a wider range of fuel than any comparable boiler.
- 5 A Trianco Boiler will provide central heating and constant hot water, cleanly, economically and efficiently.
- 6 A Trianco Boiler is attractively designed in a choice of colours and is a fine engineering product, made to give years of trouble free operation and backed by a first class service.

*Trianco Solid Fuel Domestic Boilers from 50,000 B.t.u. capacities. Larger Trianco Boilers up to 3 million B.t.u. (oil fired) and 2 million B.t.u. (solid fuel).*

# TRIANCO

For further details write or phone our TRIANCO agents in Eire:

5, Upper Fitzwilliam St.,  
Dublin, 2.  
Phone: 63061.





Now the three systems all work off one main boiler installation and staff have been made available for other more congenial work, costs have been reduced and what is more, the staff in the Municipal offices do not now need supplementary electric heating.

Irish agents—Heatovent Supply Co., 5 Upper Fitzwilliam St., Dublin 2.

★ ★ ★

The **HARPER** Meehanite Boiler is manufactured in 7 sizes from 100,000 to 400,000 B.t.u. The cast Meehanite sections are resistant to corrosion, less liable to be broken in transit and less liable to failure in service. The boilers have a waterway floor and are easily cleaned from the sides. They are available with Camron, Hopes, Nuway, Quiet May and Selectos burners.

Irish agents—Messrs. W. Finucane and Co., 5 Upper Pembroke Street, Dublin 2.

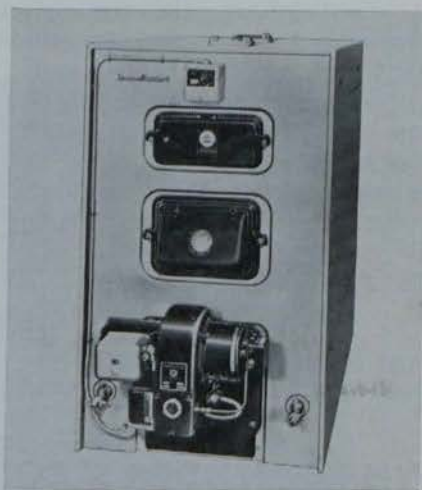
★ ★ ★

A **RE-STYLED** casing for their three-stage, mercury-in-steel, temperature controller, which gives more protection and an improved appearance, was recently introduced by the British Rototherm Co. Ltd.

The controller operates on rise or fall of temperature; it can be set, if necessary, to show a warning light, followed by an alarm bell, and with complete cut-off of plant at the third stage. It is available within the limits of minus 30°F to plus 1,200°F and equivalent °C. The instrument is designed principally for the protection of large electrical power transformers.

Irish agent—Rototherm Precision and Instrument Co. Ltd., Beechwood Works, Killiney, Co. Dublin.

★ ★ ★



**THIS IS** the "Ideal Vanguard" boiler, a new oil fired boiler available in seven sizes, from 175,000 to 385,000 B.t.u./hr. An important advantage of

## SPECIAL SURVEY

from previous page

this boiler is that the air/fuel ratio is pre-set to give optimum CO<sub>2</sub> and smoke vales, with a minimum of adjustment on site. The "Vanguard" is available with a choice of Camron or Selectos Burner.

Irish agent—Mr. E. J. Cocker, Stonegate, Granville Rd., Blackrock, Co. Dublin.

★ ★ ★

**CLAYTON** steam generators with capacities ranging from 518 lb. to 6,000 lb. of steam per hour from and at 212°F at pressures up to 295 lb. per sq. in. are being constructed in the following standard sizes: 518; 1,035; 1,730; 2,600; 3,000; 3,800; 6,000 lb./h.r. steam is available within five minutes of pressing the starting button. The advanced design of the generator provides a thermal efficiency of 75 per cent to 80 per cent throughout the entire operating range. Steam is produced only as it is used. They are produced by Vulcan Foundry Ltd., Newton-Le-Willows, Lancashire.

Irish agents — Auto-Combustions (Ireland) Ltd., 144 Lower Baggot St., Dublin.

★ ★ ★

A **NEW** bellows-operated room thermostat—Type RA—has been produced by Robert Maclaren and Co. Ltd., Kilbirnie St., Glasgow C.5.

Basis of the RA design is the temperature sensitive bellows which is also the instrument knob. This knob projects into the room air stream and thus detects temperature changes quickly, reducing operating time lags to the minimum. Because of its specially 'finned' design, the knob-bellows responds to both radiant and convected heat.

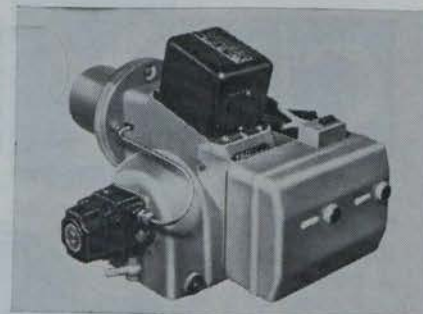
★ ★ ★

**THE SUGG 3707** incinerator is particularly suited for installation in blocks of flats and similar buildings. The incinerator must be built into the wall and have an independent flue. It is easily fixed into position, and has a projection of only 3" from the wall face. Capacity: 630 cu. in. each loading; gas rates: 12 cu. ft./hr. (C.V. 500); finish: outer casing cream vitreous enamel; weight 65 lb.

Irish agent—Mr. W. Cole, Dunblane, 7 Whitebeam Ave., Clonskeagh, Dublin.

★ ★ ★

**THE MODEL P.H.** oil burner, produced by G. C. Pillinger and Co.



Ltd., Purley Way, Croydon, Surrey, has been introduced to meet the widespread demand for a single unit rated to cover the intermediate range 250,000 to 650,000 B.t.u. per hour of compact construction and pleasing design. It is also very quiet in operation and highly efficient.

Irish offices—G. C. Pillinger and Co. (Ireland) Ltd., 20 Sycamore St., Dublin 2, and 35 South Terrace, Cork.

★ ★ ★

**VENNER** have designed the seven-day programme switch to control heating systems where a differing daily programme is required. As each day can be planned separately, allowance can be made instantly for week-end periods, half days or sudden changes of plan.

The switchgear is operated by the simple attachment of a metal blade on to the periphery of the dial, its leading edge set in line with the switching time required. The switch is held closed by the blade, which determines the length of the On period. 1, 2, 3, 4 and 8 hour blades are supplied and appropriate combinations cover intermediate periods. Where no On switching is required at all, then no blades are fitted to the segment of the master dial for that day.

The unit incorporates a tri-positional manual switch which enables either the programmed switching to take effect or alternatively for the installation to be switched permanently On or Off.

Irish agents—Roper Bros., 5 South Anne St., Dublin 2.

★ ★ ★

**YOU REQUIRE** heat both for a hot water supply and for central heating. The heat demand of these two separate systems varies widely from day to day and hour to hour. By combining hot water storage and the heat source for both systems in a single compact unit, the Hoval boiler ensures automatically that you use only the minimum fuel necessary to meet the total demand

Continued page twenty-one

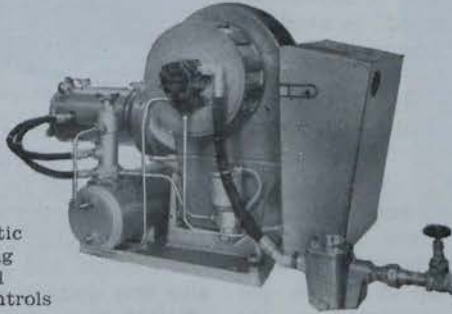


# CLYDE

THE **BIG** NAME IN **HEATING**  
FOR **RELIABILITY & ECONOMY**

## CLYDE OIL BURNERS

- ★ Clyde 'Hob' Burners are suitable for heavy fuel oils
- ★ Thermostatically controlled
- ★ Fully Automatic
- ★ Silent Running
- ★ Easy to install
- ★ Electronic Controls



All high/low flame burners are supplied with our 'COMPOSITE' head to give high combustion efficiency and maximum turn down ratio.

Write for full details to:—

## CLYDE AIR HEATERS

- ★ FULLY AUTOMATIC
- ★ RAPID TEMPERATURE RISE
- ★ FLEXIBLE HEAT DELIVERY
- ★ CONTROLLED AIR CIRCULATION
- ★ RELIABLE AND EFFICIENT
- ★ THE MOST EFFECTIVE METHOD OF HEATING LARGE BUILDINGS
- ★ HORIZONTAL UNITS USING LIGHT OR HEAVY FUEL OILS CAN ALSO BE SUPPLIED

Sizes available:

Heat Output	Model
150,000 BTU's/hour	CH 1
250,000 BTU's/hour	CH 2
400,000 BTU's/hour	CH 3
700,000 BTU's/hour	CH 4



Also manufacturers of all systems of oil firing.

## CLYDE FUEL SYSTEMS LIMITED

Queen Elizabeth Avenue, GLASGOW, S.W.2.  
80 Holywood Road, BELFAST, 4. Tel. 656365.

6 Mount Street Crescent, DUBLIN, 2. Tel. 66489.  
Hardcock House, 30-31 Marlboro St., CORK. Tel. 21729.

Service Centres: Londonderry, Armagh and Limerick.



# NEWMAN HENDER VALVES AND FITTINGS

Known throughout the world for the dependability and quality of their wide range of valves and fittings you cannot do better than ask Newman Hender *first* for the valve or fitting you require. Stocks are held in Dublin of many patterns to meet constant and urgent demands.

### VALVES ARE OUR BUSINESS

... in most types and sizes  
... for most temperatures and pressures  
... for most industries all over the world.



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**C. H. LOCKHART LIMITED**

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existing at any time and the heat losses of a separate storage cylinder and of boiler-cylinder pipe work are eliminated.

All Hoval boilers are efficiently lagged with mineral wool to the recommendations of B.S.S. 1588. Downward radiation is prevented by a thick refractory base. Of Swiss design they are manufactured in Britain by The Farrar Boilerworks Ltd. of Newark.

★ ★ ★

**DUNHAM-BUSH** natural draught convector heaters are suitable for use in all pumped hot water and steam central heating systems. Features of all their convectors are—casing knock-outs, quick action lever operated damper (where fitted) no fixing screws on front plate, all front plates designed for future additions of damper assembly, dual tapped hearers, easy grading of elements, simplified venting for concealed convectors.

Irish agents—H. R. Ayton Ltd., 20 Harcourt St., Dublin.

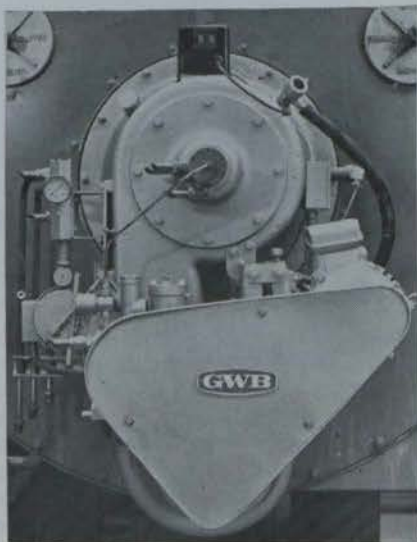
★ ★ ★

**AS FAR** back as 1923 Hartley and Sugden Ltd., boiler manufacturers, Halifax, introduced the first Oilex models. Design has kept pace with development of the oil firing industry. Although specially designed for oil firing Oilex boilers can be connected to solid fuel firings should the necessity arise. They are constructed from the best British mild steel boiler quality plates, the complete outer shell being in one piece and firebox pressed—thus reducing welding to the minimum. All stays are electrically welded over.

Irish agents—McGrath and Kenny, 48 Townsend St., Dublin.

★ ★ ★

**G.W.B. FURNACES** Ltd. of Dudley have now decided to market as a separate unit, the well known Voriflow fuel burning systems.



## SPECIAL SURVEY

from page nineteen

Voriflow burners have been fitted to all G.W.B. Powermasters since their introduction into these islands some 10 years ago. There are more than 1300 installations in existence in Britain, and

some tens of thousands of Voriflow burners in use throughout the world. They have not been available as independent units here until now.

The Dudley Co. claims that these well proven burners have extremely high efficiencies, long life, and because they have no moving parts exposed to flame or high temperature, have a trouble free existence with low maintenance.

*Continued overleaf*

FOR ALL INDUSTRIAL APPLICATIONS

*Pillinger*

ELECTROMATIC

PRESSURE JET OIL BURNERS



“Pressureheat”

From the new HIGH efficiency, LOW cost range of Pillinger Fully Automatic Pressure Jet Oil Burners, the model P.H. is one of the “PRESSUREHEAT” series of Industrial Heating—Hot Water—Steam Raising Equipment manufactured by G. C. Pillinger & Co. Ltd. Adaptable to all conventional and many purpose-made Hot Water and Steam Boilers. Pillinger Burners are COMPLETE oil firing units having “built-in” starters and “Flame Sensitive” photo-conductive “Synchro-safe” control; Pillinger Combustion head; pressure regulating and “cut off” valve.

The Pillinger range of fully automatic Oil Burners covers all boiler ratings from 60,000 B.Th.U's/hr. up to 4,500,000 B.Th.U's/hr.

*Our technical department is at your service. Fully illustrated literature available on request.*

*Pillinger*

ELECTROMATIC  
FULLY AUTOMATIC OIL BURNERS

G. C. PILLINGER & CO. (IRELAND) LTD.

20 Sycamore Street, Dublin. Dublin 77007.

Cork Branch: 35 South Terrace. Cork 23955.

Head Office: G. C. PILLINGER & CO. LTD., 602 Purley Way, Croydon, Surrey.



They are particularly effective on heavy fuel oils up to 3,500 seconds Red wood No. 1 which they can burn efficiently with a wide range of modulation, in fact a 5 to 1 turn down ratio, and they have smoke free operation.

At the present moment the range covered by these burners is from 1,400 lb. to 40,000 lb./steam an hour.

Irish agents — Hendron Bros. (Machinery) Ltd., 2 Little Denmark St., Dublin and Everton Engineering Ltd., Whitehouse, Newtonabbey, Belfast.

★ ★ ★

**BASTIAN AND ALLEN** Ltd., of Harrow, Middlesex, manufacturers of

## SPECIAL SURVEY

from previous page

electrode steam boilers, state that their boilers are supplied as separate components which comprise the boiler complete with all mountings and lagging, the control panel, the main circuit heater and the feed pump. For the larger sizes the controls and circuit heater are all housed in a floor mounting cubicle. The patented pressure modulator and load control relay fitted to the boilers give accuracy in load and pressure which are vital to

many industrial processes and to research laboratory work.

Irish agents — Hendron Bros. (Machinery) Ltd., 9 Little Denmark St., Dublin.

★ ★ ★

**INTERNATIONAL BOILERS** and Radiators Ltd., Earlsway, Team Valley, Gateshead, announce plans to market in September a complete range of new gas-fired boilers.

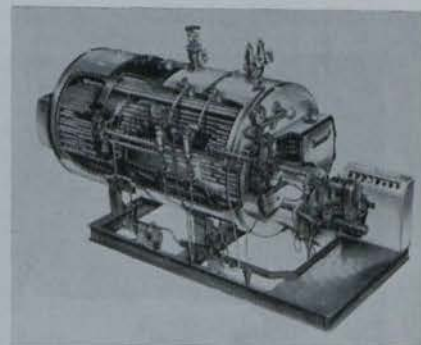
The "Capital" range of small bore units will be made in four sizes, 35,000, 50,000, 70,000 and 100,000 B.T.U.'s and these will be known respectively as the "Capital 35", 50, 70 and 100 and be complete with Multiflo variable head accelerators—with the CP.2.H on to the 100.

They are in smart white enamelled casings, having a front hinged door. All controls will be at the front and the cast-iron flueways are easily accessible for cleaning, and are all glass-lined. All these boilers will be suitable for conventional flues or balanced flues, and there will be no "extras"—everything is included, night shut down, push button ignition, Honeywell Adatrol Controls, 4-tap time clock, low voltage room thermostat socket, draincock, 1" check valve, and flue brush, and accelerator pump. There is facility for mounting a cylinder thermostat and no possibility of reverse circulation.

Irish agents—Monsell Mitchell and Co. Ltd., 67-73 Townsend St., Dublin 2.

★ ★ ★

**THE HTAP** is the Horizontal "Thermax" in packaged form, combining all the finest features of the standard Horizontal "Thermax" with



the advantages of packaged design at its best. It can be fitted with rotary or pressure jet oil burners, both of which are fully modulating and automatic on the smaller sizes, automatic high/low flame on/off oil burners may be used, all of which can operate very efficiently with fuel oil up to 3,500 seconds



# We don't just sell a boiler then run away

### We return to the scene of the sale three times a year

When you instal a John Thompson Multipac Boiler, our Service Contract becomes automatically available, entitling you to three annual visits by our mobile teams of boiler engineers. Based at Glasgow, London, Birmingham, Manchester and Belfast, these specialist engineers carry out a rigorous inspection of all working parts, controls and burner units of your MULTIPAC installation. In the United Kingdom and Eire, John Thompson also operate a genuine 24 hour emergency service for all boiler ancillaries — including burner replacements.

For full details of MULTIPAC Maintenance Service, please contact any of our branches:-

**BELFAST** 16/20 Rosemary Street, Belfast.

**BIRMINGHAM** 2 Greenfield Crescent, Edgbaston, Birmingham 15.

**GLASGOW** John Thompson (Wilson Boilers) Ltd., Lilybank Works, London Road, Glasgow E.1.

**LONDON** Tavistock House East, Woburn Walk, Tavistock Square, W.C.1.

**MANCHESTER** Sunlight House, Quay Street, Manchester 3.

### Features of the MULTIPAC boiler:

- Is of the well proved 3 pass design
- Has dished wet back combustion chamber, (no refractory troubles)
- Easy access to all parts of boiler for maintenance
- Uses patented Primary Split Burner Quarl for ease of replacement
- Only boiler with burner panel over-riding control, fitted as standard (i.e. boiler can be kept steaming on hand control though panel "Automatics" are unserviceable)
- Ladder & gangway is fitted as standard
- Sequence slowdown controls fitted for safety in operation
- No need for costly pumping and heating sets (if O.S. tank is local to boilerhouse)
- Boiler accessories are of uniform manufacture and only the finest are fitted
- Boilers are rigorously tested under all operating conditions before despatch

There's a 'MULTIPAC' installation in your area — contact our nearest branch office and we will arrange for you to see it in action.



**JOHN THOMPSON PACKAGE BOILER DIVISION** · Lilybank Works · London Road · Glasgow E.1

IRE: William Peat & Sons Ltd., Dalkey, Co. Dublin.



**YOU'VE SEEN THE REST  
NOW LOOK AT THE BEST . . . . .**



**NORAH 400**



**ELECTRO-OIL BURNER**



**INDUSTRIAL BOILER**

# NORAH BOILERS

**SWEDISH MADE** (*Efficient,*  
*Clean, Modern*)

- WE CAN SUPPLY ANY TYPE OR SIZE FROM OUR STANDARD RANGE BETWEEN 57,000 BTU AND 10 MILLION BTU FOR INDUSTRIAL PURPOSES.
- NORAH BOILERS ARE SECTIONAL CAST-IRON UNITS COMPLETE WITH INSULATING JACKET AND SHEETMETAL CASING. NO BRICKWORK LININGS REQUIRED.
- OIL-FIRED, SOLID-FUEL FIRED AND EVEN INSTANTLY CONVERTIBLE DUAL-PURPOSE UNITS AVAILABLE.
- 80,000 BTU PACKAGE UNIT WITH CALORIFIER INCORPORATED FOR THE MEDIUM-SIZED MODERN HOUSE.
- ELECTRO-OIL BURNERS FOR PERFECT COMBUSTION SERVICEABLE WITHOUT REMOVAL FROM BOILER.

OUTPUT RANGES FROM 21,000 BTU TO 3 MILLION BTU/HR. AVAILABLE ALSO FOR BURNING HEAVIER OIL WITHOUT NEED FOR SPECIAL BOOSTER PUMPS OR PRE-HEATERS, AND WITH AUTOMATIC "HIGH-LOW" SYSTEM.

**Irish Agents: IRCO TRADING CO. LTD.**

**9, Eden Quay, Dublin, Eire. Telephone: 48277.**



*The Irish Plumber and Heating Contractor.*

Viscosity Redwood No. 1 at 100°F (38°C). They are the product of Ruston and Hornsby Ltd., Lincoln.

Irish office—Ruston and Hornsby Ltd., 190 Pearse St., Dublin 2.



**O.B.C. LTD.**, stockists and distributors of heating equipment, 2 Vines Lane, Droitwich, Worcs., have forwarded a most comprehensive series of leaflets embodying complete lists, with drawings, of spare parts.

Irish offices—O.B.C. Ltd., 5 Upper Fitzwilliam St., Dublin; 23-27 Cupar St., Belfast 13.



**THE NEW** Bossot forged radiator valves are designed for incorporation in gravity feed or accelerated heating systems, and can be used on hot water or low pressure steam. The lockshield valves can be supplied with or without dust caps.

The Boss double regulating valves are fitted with an 'O' ring in place of the normal type of gland, thus ensuring perfect water tightness and ease of action. The main spindle and regulating screw do not come into contact with the heating medium, therefore, the valve can be safely and easily regulated at all times.

Irish offices—The British Steam

**SPECIAL SURVEY**

*from page twenty-two*

Specialties Ltd., 33 Leeson Park, Dublin; Distillery St., Belfast 12.



**CROSBY NOZZLE** relief valves are substantially the same as the Crosby nozzle safety valves, except that they are offered in a greater number of styles to meet the widely varying requirements. They employ the variation effect and other advanced fixtures of Crosby design. The design of the Crosby nozzle valve produces a great smoothness of operation. The valve opens without "warn" or simmering and as the pressure decreases, the disc is lowered progressively to a low lift, then sharply closes to a positive shut off. The disc closes firmly but without shock. The contour of the nozzle and the absence of obstructions prevent the formation of eddy currents; the fluid flow is parallel with the seats and cannot cause cutting and leaks.

Irish agents—Luke, Martyn and Co. Ltd., 1 Sandyhill Park, Drumbeg, near Belfast.



**JANITOR GAS-FIRED** boilers come in four models—the G30 (30,000 Btu/

h); G45 (45,000 Btu/h); G60 (60,000 Btu/h) and G85 (85,000 Btu/h). Push-button ignition and programme control can each be fitted inside the case at extra cost. A pump can be fitted inside the casing at a slightly extra cost for use with small bore installations. The Janitor is a product of Powell Duffryn Heating Ltd., of Camberley, Surrey.

Irish agent—Mr. D. H. Sullivan, Green Park, Coleville Rd., Clonmel.



**THE MARK IV** furnace baffle can, it is stated, reduce fuel costs by up to eight per cent in Lancashire Economic and Scotch Marine boilers fired with coal or oil. These baffles have been fitted to a number of turf fired boilers in Ireland and very good results have been obtained. Baffles have also been fitted to gas fired and C.F.T. fired Lancashire boilers.

Irish agents—Halpin and Hayward Ltd., Unity Buildings, 16-17 Lower O'Connell St., Dublin and 7 Bedford St., Belfast.



**GOLD FLAME** is a modern oil burner easily managed, simple to install and of such a construction that it can be installed in practically all kinds

*Continued page twenty-seven*

**COMBUSTION EQUIPMENT LIMITED**

61 BELSIZE LANE, LONDON, N.W.3.

Telephone: Swiss Cottage 4462-3

**GIVE SIX GOOD REASONS WHY YOU SHOULD**

**Install the B.C.U.R.A. Mark IV FURNACE BAFFLE**

1. DUST-FREE FURNACE TUBES in turf or coal-fired boilers.
2. REDUCED side flue and exit gas temperature in turf, coal, or oil-fired boilers.
3. HIGHER CO<sub>2</sub>%.
4. FULLY GUARANTEED—No cure, no pay.
5. FUEL SAVINGS—Initial cost recovered in weeks.
6. 2,000 already fitted.

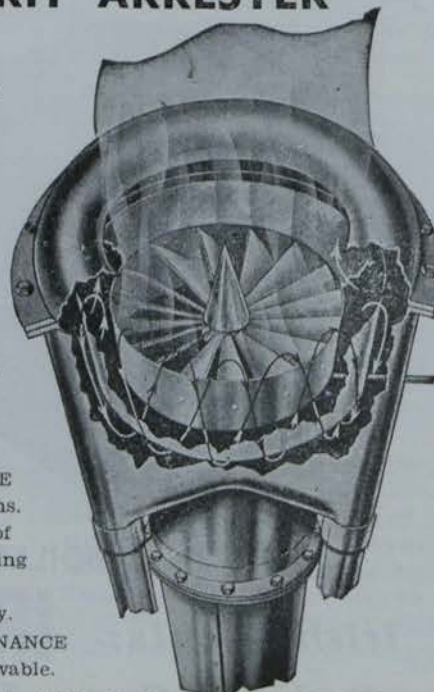
**Fit the 'AIR-LOK' DAMPER**

1. REDUCED Stand-by losses.
2. Obvious and immediate FUEL ECONOMY.
3. Better CONTROL.
4. ADAPTABLE to most types of Boilers and Furnaces.
5. It is a quality controlled MEEHANITE Casting.
6. Very long life—no maintenance.



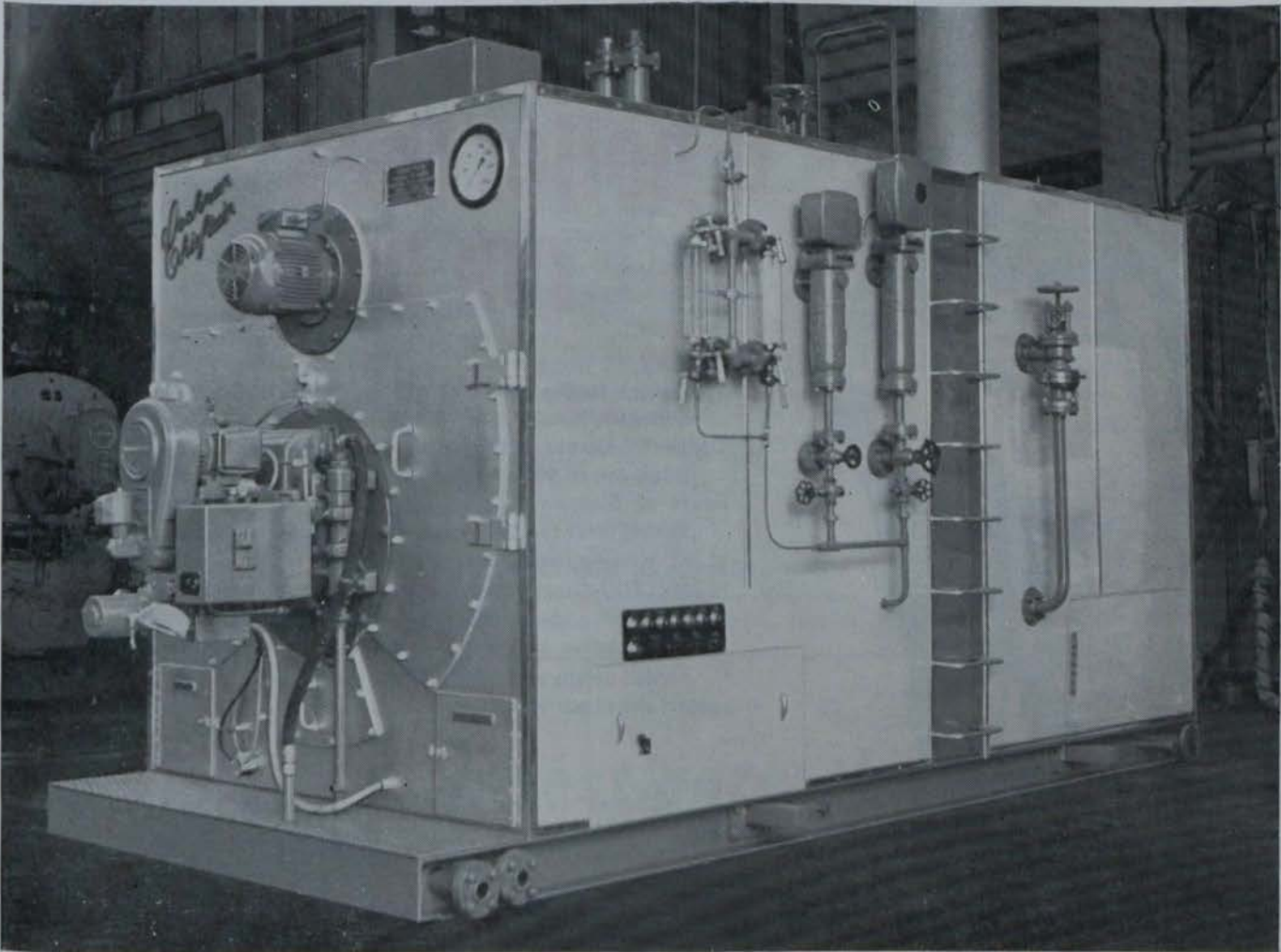
**Choose a CORY GRIT ARRESTER**

1. LOW cost
2. HIGH efficiency, complying with the requirements of The Clean Air Act.
3. LOW pressure drop. NO FANS REQUIRED.
4. RAPID INSTALLATION —3 have been fitted at one plant in 24 hours.
5. COMPACT AND EASILY ADAPTABLE to any site conditions. Fitted at top, base of stack or in the ducting leading to it horizontally or vertically.
6. EASE OF MAINTENANCE All parts easily removable.





# COCHRAN CHIEFTAIN



## COOL AND SILENT IN RUNNING

The Chieftain is completely enclosed within a clean-shaped, steel rectangular casing—the space between this and the shell acts as a duct for the air supply which is drawn by fan from the rear of the boiler. The radiant heat from the shell is used to pre-heat this air, both augmenting the thermal efficiency and keeping cool the outside of the boiler. Further, operating noise is reduced as the air is drawn from the rear at low velocity. Thus this compact boiler can, if desired, be installed inside a factory close to the plant for which the steam is needed.

## THREE PASSES

The first of these is the furnace flue; this has a large diameter and contains a waisted section providing structural flexibility and acceleration of combustion. There are two passes of smoke tubes; between them they ensure great strength in construction and the minimum of draught loss.

## HEMISPHERICAL REAR CHAMBER

This is water-cooled and is immensely strong. The design of this chamber, together with the large furnace, achieves an exceptionally low back-end temperature.

## HIGH EFFICIENCY

The combination of this boiler with the Hamworthy Rotary Cup Oil Burner plays a large part in securing an efficiency of 84% over the entire modulating range of 4 to 1.

## THE CASING

This makes possible cool, silent running and also provides a useful flat working top. Fully automatic, economical in floor space with excellent internal accessibility. The impressive result of 3 years of development and intensive testing which embodies over 80 years experience by Cochran's in building high quality boilers.

Manufacturers: **COCHRAN & CO. (ANNAN) LIMITED, ANNAN, DUMFRIESSHIRE, SCOTLAND.**

**TEL.: ANNAN 2111.**

Agents: **S. W. CARTY & SON, 12 LOWER MOUNT STREET, DUBLIN. TEL.: 62018.**

**SOUTHERN ENGINEERING CO., LTD., PARNELL PLACE, CORK. TEL.: 21712.**

AP50





# We don't just sell a boiler then run away

## We return to the scene of the sale three times a year

When you instal a John Thompson Multipac Boiler, our Service Contract becomes automatically available, entitling you to three annual visits by our mobile teams of boiler engineers. Based at Glasgow, London, Birmingham, Manchester and Belfast, these specialist engineers carry out a rigorous inspection of all working parts, controls and burner units of your MULTIPAC installation. In the United Kingdom and Eire, John Thompson also operate a genuine 24 hour emergency service for all boiler ancillaries—including burner replacements.

For full details of the MULTIPAC Maintenance Service, please contact any of our branches:-

### BELFAST

16/20 Rosemary Street, Belfast.

### BIRMINGHAM

2 Greenfield Crescent, Edgbaston, Birmingham, 15.

### GLASGOW

John Thompson (Wilson Boilers) Ltd., Lilybank Works, London Road, Glasgow E.1.

### LONDON

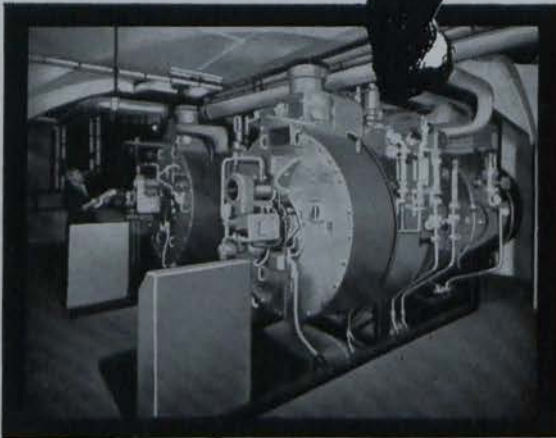
Tavistock House East, Woburn Walk, Tavistock Square, W.C.1

### MANCHESTER

Sunlight House, Quay Street, Manchester 3.

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- Is of the well proved 3 pass design
- Has dished wet back combustion chamber, (no refractory troubles)
- Easy access to all parts of boiler for maintenance
- Uses patented Primary Split Burner Quarl for ease of replacement
- Only boiler with burner panel over-riding control, fitted as standard (i.e. boiler can be kept steaming on hand control though panel "Automatics" are unserviceable)
- Ladder & gangway is fitted as standard
- Sequence slowdown controls fitted for safety in operation
- No need for costly pumping and heating sets (if O.S. tank is local to boilerhouse)
- Boiler accessories are of uniform manufacture and only the finest are fitted
- Boilers are rigorously tested under all operating conditions before despatch



Installation in your area—contact our nearest branch office and we will arrange for you to see it in action

JOHN THOMPSON PACKAGE BOILER DIVISION • Lilybank Works • London Road • Glasgow E.1

EIRE: William Peet & Sons Ltd., Dalkey, Co. Dublin.

GI/62



of boilers and hot air furnaces. They are available in five sizes for 35/45 sec. oil. Models LT (low pressure), LJ, LI, LM and LG, suitable for boilers from 50,000 to 1,250,000 Bth us per hour. Four sizes are available for use with 200 secs. oil, having built in pre-heaters. They are made by Billnerbolagen, Goteborg, Sweden.

Irish agents — Patton Engineering Enterprise, 30 St. Anne's Rd., Drumcondra, Dublin 9.

★ ★ ★

**LATEST ADDITIONS** to the range of products of the Beeston Boiler Co. Ltd., of Beeston, Nottingham, are the Beeston/Nu Way and Beeston/Superjet matched boiler burner sets.

The object of the Matched Boiler Set is to provide an integrated central-heating boiler unit complete with firing and control equipment, retaining, at the same time, the advantages of the boiler and burner manufacturers supplying direct to the Trade. Joint specifications have been drawn up covering the boiler, burner, combustion chamber, and control system to provide the optimum operating performance.

The Beeston Robin Hood 'Senior 3' boiler sections have the same external dimensions as the existing New 'Senior'

## SPECIAL SURVEY

*From page twenty-four*

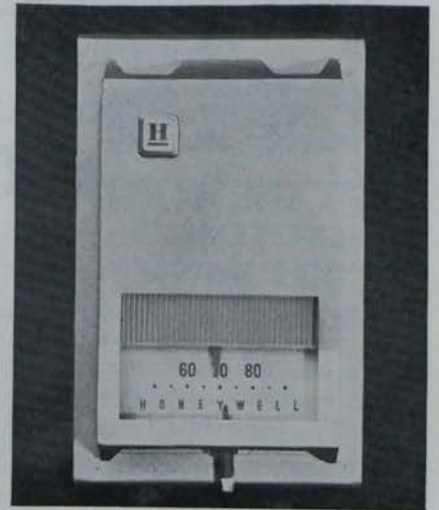
boiler, but additional secondary heating surface has been added to give an increased output. The gas passes have been re-proportioned to increase the general operating efficiency, and improvements have been made to the sealing between sections and between sections and the boiler stand.

This boiler complies fully with British Standard 779:61 and the rated output is based on tests required by this Standard.

Irish agent — Mr. D. H. Sullivan, Green Park, Coleville Rd., Clonmel.

★ ★ ★

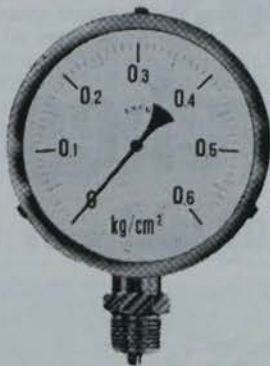
**SUXE COMBUSTION** Ltd., Hemel Hempstead, Herts., are the sole selling organisation in Britain for the Moring boiler, hot water or low pressure steam, solid fuel or oil fired. It is fully automatic, including automatic ash removal into mobile containers. This firmly established Continental boiler, now being manufactured in the U.K., has many distinctive features. The efficiency of 85 per cent plus is con-



● This attractive Honeywell room thermostat is supplied with the new Redfyre De Luxe 80 oil-fired boiler. (See report page fifteen).

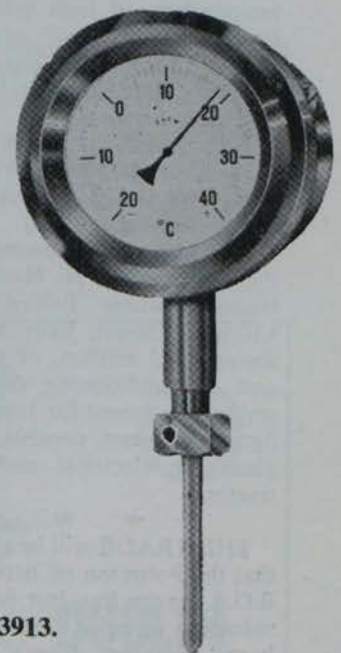
sistent under varying load conditions. Boiler cleaning is a very simple operation and can, if necessary, be carried out under on load conditions.

Irish agents—Thos. Heiton and Co. Ltd., 18 Westmoreland St., Dublin.



● A complete line of Gauges always in stock.

**Investigate the Manotherm Range of Gauges and Corrosion Resistant Thermometers —**



**MANOTHERM LTD.,**

14 CORN EXCHANGE BUILDINGS, BURGH QUAY, DUBLIN. Tel. 73913.



The Irish Plumber and Heating Contractor.

**NORTHERN**  
FROM  
**ALLEN MCDOWELL**  
**NOTES**

**EXCITEMENT  
DIES DOWN**

**T**HE general excitement in the heating trade earlier this year when it was thought that the Esso Petroleum Co. intended going into the distributive field seems to have died down.

In a discussion between our northern correspondent and Mr. Patrick Hume, managing director of Hume and Co. and the man whose letter helped publicise the affair, he stated that he had not come across any direct case recently of Smith's boilers (the firm involved) being sold to an installer.

Mr. Hume has had considerable correspondence with cross-channel heating merchants and has a number of letters from authoritative sources on the matter.

★ ★ ★

**RISING STANDARDS** of living and the growth of multi-storey blocks of offices and flats have created an increasing demand for improved heating, ventilating and air-conditioning systems.

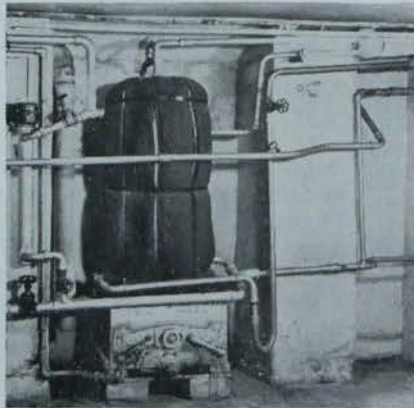
And until recently the high cost of installing such systems meant that invariably they were confined to large office blocks and hotels, etc. But the introduction of high velocity installations with "packaged" air handling and water chilling plants has reduced considerably, both the capital involved and the space required.

As expected, competition in the field is keen and some large American groups are making a determined assault on the market.

One U.K. firm however, is well in the running—G. N. Haden and Sons. Haden's, whose Belfast office is in Linenhall Street, have a turnover of around £13 million, of which heating and air-conditioning design and installation account for two-thirds of this figure. The rest consists of industrial plumbing, electrical and piping contracting.

★ ★ ★

**THE TRADE** will be pleased to hear that the Potterton oil-fired boiler in the B.O.A. range has just had a fantastic reduction in price. The new price has been operative from the first of



**53 And Still  
Going Strong!**

The oldest "Victor" boiler produced in the course of a "Ve'cran hunt" by Thomas Potterton Ltd., was this one which was installed in 1910. When located, after a full scale national search for the oldest serving "Victor", this 53-year-old was still in use every day supplying domestic hot water to a Kensington household.

The Potherton search brought to light numbers of "Victors" installed many years ago and still in constant use. However, the 53-year-old proved to be the oldest located in service.

**Marketing  
change over**

**HULL STEEL** Radiators Ltd., Hull, have acquired the issued share capital of Craddock-Kellow Ltd., previously the Company's marketing agents.

Marketing will now be done through their own sales force, and Mr. W. J. Craddock, formerly managing director of Craddock-Kellow Ltd., has been appointed to the Board of Hull Steel Radiators Ltd. and will be responsible for all selling and marketing activities.

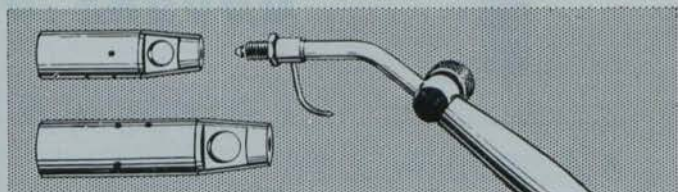
Mr. Craddock will be based at the Company's South Wales office at Washington Chambers, Stanwell Rd., Penarth, Glamorgan.

**Pipe Bending**

Pipe bending equipment—while Hilmor Ltd. were listed under this heading in the June issue trade directory their address was omitted from the alphabetical lists. It is Caxton Way, Stevenage, Herts.

**Kosangas  
Blow-Torches**

**for every plumbing job!**



There's a wide range of Kosangas blow-torches, for all types of plumbing work. They're far more efficient than the conventional types.

The Kosangas TH3 and TH4 high pressure blow-torches are specially designed for *paint-burning, pre-heating and soldering.*

The Bullfinch Mark II has a full range of heads, including soldering attachment. Use Kosangas blow-torches, with the small Kosangas portable cylinder, also for *roof-felting, jointing of plastic pipes, and other heating needs.*

A plumber's portable furnace with wind protected burner is available.

Send for details to: McMullans Kosangas Ltd., 1 Upper O'Connell St., Dublin. Tel: Dublin 40761-4.



AIR  
CON  
FIBER  
GLASS  
GOES  
TO  
BUILD  
INSULATION

**TRADE**

**TOPICS**

**ENHANCED**

IDEAL-STANDARD Limited announce that back flow connections are now supplied on a number of their sectional central heating boilers. These enhance the appearance of the boilers, particularly when installed, because the flow pipe no longer rises through the top of the boiler jacket.

The "Ideal" boilers which have this new feature are the "Classic Elite" and "Neo-Classic" No. 1 series of solid fuel boilers and the "Paragon Elite" and "Paragon" No. 1 series of oil-fired boilers. The NC-O.1. series of boilers for oil-firing is also concerned.

**Eight burners**

BAHCO-CONDRUP Ltd., a member of the Bahco-Primus International Group, announce the introduction of a new and advanced Universal Set of "Primus" Propane Industrial Apparatus.

Eight burners, with a B.T.U. rating extending from 2,400 to 140,000, a soldering iron, and two soldering bits, are designed to work from one handle.

The "Primus" Universal Set can be used with the larger "Primus" cylinders or, by means of a simple "Primus" adaptor, with any standard propane gas cylinder.

Irish agents: Messrs. Rutledge & Thompson, Ltd., 3 Corn Exchange Place, Dublin.

Fibreglass is a name found mixed up in the whole field of air-conditioning and heating. This is only to be expected: Fibreglass has been of inestimable value in providing the new forms of thermal and acoustic insulation that help to make modern air-conditioning so silent and efficient. The most recent advances are based on Fibreglass Superfine wool, a material far finer and more consistently fine than any previously available. It is used in many types of external and internal duct insulation. Fibreglass Rigid Sections for hot and chilled water lines are highly efficient and cheap to install; and Fibreglass air filters are probably more widely used than any.

**MONSELL MITCHELL & CO. LTD.**  
Sole distributors of  
Fibreglass heat insulation products  
in the Republic of Ireland

**JAMES RYAN (DUBLIN) & CO. LTD.**  
Sole stockists of  
Fibreglass Air Filters  
in the Republic of Ireland



FIBREGLOSS LTD • 21 MERRION SQUARE NORTH • DUBLIN • TEL: DUBLIN 67060



**GAS OR ELECTRIC?  
WELDING OF COURSE!**



But we also have a wide range of cutting and heating equipment, accessories and safety equipment. Delivery services everywhere.

CONTACT **INDUSTRIAL GASES (I.F.S.) LTD., DUBLIN**



*The Irish Plumber and Heating Contractor.*

quickly gaining in public favour.

In its simplest, though none the less effective form, it takes the shape of a combination mixer tap set and the bath. This has a diverse valve to discharge waste at the common outlet to bath, or to a shower spray fitting. The shower fitting may be of the telephone handset pattern or a modification of this with means of temporarily fixing the shower spray at shoulder height for an upstanding shower. Alternatively, the spray may be fixed permanently at high level.

**Effective**

Floor wetting is avoided by a single shower proof curtain—a cheap and effective method, or, in more palatial taste, by hinged glass screens.

Shower trays, for use independently of the slipper bath, are available in many styles, chiefly based on the standard square pattern, though corner ones are now available, and in glazed fireclay or vitreous enamelled cast-iron.

These may be enclosed in tiled cubicles or simple curtain surrounds. Separate shower baths do, of course, require extra space, but even so, it is now possible to get prefabricated

**SPECIAL SURVEY**

*from page ten*

shower cubicles and these are invaluable as the basis of a second bathroom. In some modernisation work where it is quite impossible to insert a standard slipper bath anywhere at all, the shower cubicles might well be a reasonable solution.

Something like three feet square of space is all that is needed for these. Given this, the H and C water supply and waste connections, a possible unused space becomes a very real boon. Think of the father after a hard day at tennis, in the garden, or even just home from work, a shower bath is a most welcome 'freshener'. He can use it too, even if his daughter is relaxing, titivating, or whatever it is that daughters spend so much time doing in bathrooms.

**The WC**, the all important W.C., can be eye-catching as well as

functional. New and pleasing styles are now in production and one should no longer simply order an 'S' or 'P' trap pan. A careful scrutiny of the now available styles is a 'must'.

The rimless pan by John of Armitage is one of the newer patterns.

It was developed, upon the suggestion of a medical man, for use in hospitals. The idea being that by eliminating the rim, a germ lodgment feature was also eliminated.

Corbel pans, another pattern developed for hospital use, since elimination of the pedestal base makes for more hygienic conditions around the pan—and removes the need for that monstrous, shaped rubber W.C. mat, are now increasingly used in domestic work.

**Anywhere**

Chair brackets for corbal pans allow them to be fitted anywhere, even to light construction partitions. The pans are also available in rimless pattern and are well worth investigation.

**Flushing cisterns** vary but little in principle of construction but notable aesthetic design innovations are clearly apparent. Slimmer casings, in less

*Continued page thirty-two*



**SANITARY WARE  
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# RANKE STEEL BATHS

Seamlessly drawn from one steel  
sheet in one operation



*Ranke*

Plumbers everywhere will recommend RANKE enameled Steel Baths. Their constant, supreme quality is recognised in all parts of the world. High shock resistance ensures minimum risk to chipping whilst in transit. RANKE Steel Baths have a high gloss enamel finish which remains unimpaired after many years wear. See your merchant today and inspect them—you'll be completely satisfied.

RANKE were the first manufacturers of enameled Steel Baths in the world, and the experience they have gained enables them to produce the finest of all enameled Steel Baths. The RANKE range of baths lead the field and will continue to do so, as they have the most advanced production methods. The excellent quality of the RANKE Bath has been acknowledged everywhere and the ever-increasing sales have resulted in three new developments.

- (1) Now four seamlessly drawn models.
- (2) New design, giving positive advantages.
- (3) Centre End Tap Hole positions available.

All baths in standard sizes and available in Standard White finish and also in B.B.M.A. Colours in Primrose 105, Pink 106, Turquoise 108, Blue 103 and Sky Blue.

**Enquiries invited from the Merchant Trade**

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IRISH AGENT:

**T. J. KENNEDY LTD.,**

23 LOWER ORMOND QUAY,  
DUBLIN, 1. 'Phone: 41974.





This special survey—another in a series on important aspects of the plumbing and heating trades—has been compiled by technical expert A. L. Townsend, M.R.S.H., M.I.P.

From page thirty

resonant materials of the plastics kind, offer neater installation and work with quieter action — a very desirable feature.

The Bidets, particular, soothing, and complete cleansing function are being appreciated and homes, which might previously have been considered quite ordinary, are now being equipped with these useful sanitary appliances. Especially are these being more used in new architect designed homes in which bathroom space is designated sufficiently to accommodate the bath, L.B., W.C. and Bidet in proper order and useful elegance.

### Not cheap

Not a cheap appliance, although a complete set of vitreous chinaware basin with chromium pop-up waste

outlet, H & C mixer taps and diverter valve, are now available for £17, it is an appliance which, as soon as clients are sensibly informed of its function both as a cleanser of the excreting organs, and as a foot-bath, many of them cannot rest until they have had one fitted. The bidet is no status symbol, it is fast being recognised as the 20th century replacement of the frightfully ineffective toilet tissue.

Lavatory Basins have advanced a long way from the older standard patterns and although these are still available, and will be used for some time to come, the really elegant bathroom can sport a wash hand basin of really classic design, these days.

There are many styles in many colours, and in vitreous chinaware and perspex. Choice will depend so much upon personal taste—but is your client aware of the many patterns which

could grace his bathroom?

The Kitchen Sink, the centre of so many modern plays and T.V. dramas, need no longer, be a poverty-stricken 'necessary'. The housewife spends more of her time in the kitchen and, just as her spouse expects to have the latest in cars, electric powered tools, and other pleasing and labour saving devices, so she is entitled to a modern sink. This is not an expensive 'luxury'—it is an investment—a kitchen proud housewife will produce gastronomic delights which will more than pay for the cost of any up-to-date-sink.

### Separate

Separate tops with integral drainers, are available in pressed steel, Perspex, vitreous enamelled, cast-iron, and glazed vtreclay. Either of these can be fitted on a stand made to suit, or of course they can be had in factory



**GROHE** *Thermostat*

with Temperature Gauge



## Automatically Controlled Thermostatic Mixing Valves

Turn the gauge to the temperature required. Mixed Hot and Cold water of any temperature between 50° F. and 160° F. will be delivered automatically. The chosen temperature remains constant and no further adjustment is required. Detailed information is available from our Irish representatives.

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Grohe Thermostat. Lahr.  
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Agents  
in  
Ireland: **Norman Stewart Ltd.,  
Central Hotel Chambers,  
Dame Court, Dublin.**  
Telephone: Dublin 73086.



August, 1963.

**THE MAID** stainless steel sinks and bowls manufactured by Hammond Lane Industries Ltd., Pearse St., Dublin, has become a popular feature of the trade. Models of the sink include the 42" x 18" with tap holes, left or right hand drainer fitted with 19" x 13" x 7" bowl, and the 63" x 21" double drainer sink with tap holes fitted with 19" x 13" x 7" bowl. Also available are double bowl-double drainer units and double bowl single drainer units.

Inquiries are invited for all types of special stainless steel units, for hotels, hospitals, institutions, etc.

★ ★ ★

**THE LEISURE** basin, a product of Allied Ironfounders Ltd., Long Eaton, near Nottingham, is all steel with an acid and alkali resisting vitreous enamel finish. It can be supplied fitted with a rectangular shaped stand in laminated plastic covered wood.

The basin is formed from the finest quality deep drawing vitreous enamelling steel and is supplied in seven

## SANITARY WARE

*from previous page*

made cabinets—the now well known sink units.

**Food waste disposal units**, are useful since they remove the need for the unpleasant sink tidy and eliminate soiled kitchen refuse pails. Still a little bit expensive though for the ordinary domestic dwelling perhaps at £37 or £40 each? However, they are easily installed and recent patterns may be fitted to standard 3½ in. sink openings, and the latest models are a good deal more silent in operation than some of the earlier ones were.

'Cleanliness is next to Godliness'—this everyone knows is true. If cleanliness is combined with convenience, and elegance, then the basic of the happy home is well laid—and modern sanitary-ware can provide this.

The house warming boom lasted very well. Let us now have an enlightened attack on outmoded sanitary installations and convince clients that they really should 'Get with it' and modernise that early 12th century ablutions so that it becomes a 'relaxation room', better still let us convince them that they should have two 'relaxation rooms'.

## SPECIAL SURVEY

*from previous page*

colours. Overall sizes: The basin size—24½" long x 15¼" wide x 7¼" deep; the bowl size—19½" long x 12½" wide x 7¼" deep.

Plumbing: The position of the outlet for the bowl conforms to British Standard Specification, this simplifies fitting to an existing trap.

Irish agent—R. T. Large and Son, Stephen's Place, near 47 Merrion Sq., Dublin.

★ ★ ★

**DURANTITE**—the glossy black material in which Lynx cisterns are moulded—is non-resonant, deadens all sounds. The cisterns re-fill quietly and quickly. They are fitted with the non-corroding Shires Kingfisher syphon—the flush at a touch mechanism. The cisterns are completely rust-proof and impervious to corrosion. They are tough and strong but light in weight, making them easier to fit, more hygienic. There are low level and high level types.



● Shires' Lynx

The Continental seat, supplied as a standard fitting on the Uni Lynx is also available separately and with its exclusive adjustable sliding bolt it can be fitted easily to most leading makes of W.C. pan.

Irish office—Shires and Co. (Ireland) Ltd., Stannawn Drive, Crumlin, Dublin.

★ ★ ★

**RANKE** steel baths are seamlessly drawn from one steel sheet in one operation. The quality of this firm's products is recognised all over the world. Last year alone 50,000 Ranke steel baths were exported. The back rest slope of 35° of the model Regina 5' 7" enables enjoyment of a full bath in the most comfortable position. The

new design results in 20 per cent. hot water saving.

Irish agents—T. J. Kennedy Ltd., 23 Lower Ormond Quay, Dublin.

★ ★ ★

**THE V1073 "LYNTON"** vitreous china wash basin produced by Doulton Sanitary Potteries Ltd., Royal Doulton Potteries, Whieldon Pottery, Stoke-on-Trent, is one of the most striking of the range of this well-known firm.

Irish agent—S. M. Jones, 47 Wellington Quay, Dublin.

★ ★ ★

**FORDHAM** of Wolverhampton, first manufacturers ever to offer a coloured plastic cistern, have now produced an entirely new high level cistern which incorporates every feature desirable in the modern cistern. An attractive new streamline shape, complete rigidity and stability, have been achieved by use of the most up-to-date moulding techniques.

The Fabula is of plastic throughout—shell syphon, ball float, Acquasave ball valve, and overflow. It is robust, light weight, easy to handle and install, and can be transported and stored without risk of damage. The material—the latest thermo-plastic—is also sound deadening.

This 2-gallon high level cistern is completely reversible, and can be readily switched for right or left hand supply and operation. It has a high gloss finish.

Fordham also offer a four-piece telescopic high level plastic flush pipe. This can be packed inside the Fabula—simplifying packing and delivery, and avoiding loss in transit.

Irish agents—R. T. Large and Son, Stephen's Place, rear 47 Merrion Sq., Dublin.



● The Fordham Fabula

*PRODUCT REVIEW continued on following page*



*The Irish Plumber and Heating Contractor.*

## SPECIAL SURVEY

*from previous page*

A COMPLETELY new concept in bathroom suites is a combined bath, shower and hand basin made from glass fibre. It is ideal for flats, mobile homes or space saving conversions. The Suzette, produced by H. L. Kinns Ltd., Shere, Surrey, is available in several colours.

★ ★ ★



THE "KINGSTON" wash basin by Ideal-Standard has completely changed people's ideas of what a basin should be. This practical and neat design is available with or without a pedestal.

A corner basin can often be a good space saver. The Anglesey by Ideal-Standard is a neat functional design suitable for many types of installations.

Irish agent: Mr. E. J. Cocker, Stoneygate, Granville Road, Blackrock, Co. Dublin.

## NEXT MONTH

### SPECIAL SURVEY

Next month's issue will carry a comprehensive Review of oil fired domestic boilers, burners and controls.

## NEXT MONTH

## EXHIBITION TO MARK JUBILEE

AN EXHIBITION to mark the Golden Jubilee of 1913, organised by the Dublin Council of Trade Unions, opens at the Main Hall, R.D.S., on September 17 for five days.

A spokesman for the organisers said: "This will not be another industrial exhibition. It will be very much more. In decor, in pageant, and in the stands themselves, we hope to portray graphically and dramatically not only what we have achieved in the past fifty years, but an indication of what we hope can be achieved in the future."

## Big PVC pipe delivery

THE FIRST deliveries of Chemidus PVC pipe to Armagh R.D.C. have taken place. This news follows the recent announcement that Chemidus Plastics Ltd., of Ashford, Kent, have secured the largest single PVC pipe order ever to be placed in these islands. The contract for some 47 miles of pipe for a water supply scheme is valued at £45,000.

The scheme will be in three phases, the first will be in the Kinnegeog area, north of Armagh, covering 25M square yards, and will consist of over 15,000 yards of 3", 5,000 yards of 4" and 6,500 yards of 6" Chemidus Class C 3,000 PVC pipe.

Following on this, phase two covering the Grange Upper area, north-east of Armagh involves over 18,500 yards of 3" and 5,000 yards of 4", the area covered totals some 21M square yards.

Finally phase 3 in the Annaghmore Railway Station area, north of Grange Upper and covering 20M square yards will have over 18,000 yards of 3" and 10,500 yards of 4" bore Chemidus 3,000 Class C PVC pipe. The total area involved is 13,400 acres or 21 square miles.

## Sole agent

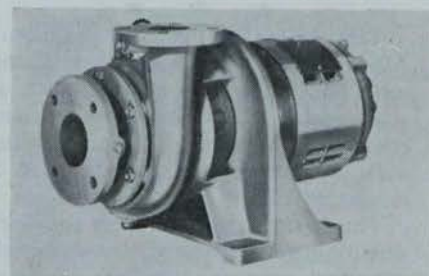
G F. MORLEY Ltd., 45 Quinns Lane, Fitzwilliam Square, Dublin 2, have been appointed sole agents in

## TRADE

## TOPICS

Ireland, including Northern Ireland, by Messrs. Zeross Engineers Ltd., Quarry Lane, Wyke, Chichester, Sussex.

Zeross manufacture a widely used range of anti-boost valves.



● One of the new Worthington-Simpson range of hot water circulators designed to ensure economic operation and to promote efficiency in large heating systems.

Features of this range—Sleeve bearings, capacities from 5 to 200 g.p.m., heads from 3 to 60 feet, motors from ½ to 5 B.H.P., single and three-phase.

From Worthington Simpson Ltd., 20 Herbert Place, Dublin.

## New addition

ONE OF THE ADDITIONS to the Royal Venton range of Vitreous china sanitary ware from John Steventon & Sons Ltd., Middlewich, Cheshire, is a new angle basin. It is in two sizes: (705) 18in. x 18in.; (706) 24in. x 18in.

The tap holes are at 5½in. centres with the centre of the waste 10in. from the corner. Overall height of the basin is 13½in. It is fixed to the wall with two 501 wall hangers and two screws in concealed screw holes. The basin is available in white.

Irish agents: R. T. Large & Son, Stephen's Place, near 47 Merrion Square, Dublin.



# CYLINDER TROUBLE

FROM PAGE EIGHT

sucked in to the draw-off pipe which was branched off the expansion near the ceiling.

The explanation for the collapse seems to be as follows—when the sink hot-water tap was opened for draining, the water rushed quickly down the vertical supply, but, due to the blocked vent, a momentary partial vacuum resulted which in turn was sufficient to cause “cave in” of the cylinder.

## Prevented air

**O**F course, the fault lay with the non-return valve which prevented air entering. When the valve was removed from the system, where, incidentally, it should never have been put in the first place, it resulted, as expected, in a poor, spluttering flow from the taps due to the ingress of air bubbles at the expansion pipe. This trouble was easily remedied by altering the draw-off as shown on the drawing.

This alteration eliminated all troubles in the system, but when the final account was rendered for payment, some comment was caused at the size of it, especially when the whole matter began with the fitting of a tee coupling for a dish washer!

While on this subject of cylinder collapse, it may be of interest to consider a mild case, where the cylinder wall becomes slightly dented or pushed inwards, but does not leak, and so the question arises as to the possibility of getting the dents out and thereby avoiding the cost of a new cylinder (Fig. 3).

Well, first and foremost, it must be made clear that if the copper wall shows any sign of creasing or cracking around the edge of the dent, it would be foolish to try and repair it, as an inherited tendency to failure would remain, but, on the other hand, if the dent is small and unsightly, but otherwise sound, it can be “blown out”—this method is also applicable to a cylinder which may have got a knock on the job before installed.

## The method

**T**HE method used is as follows—the cylinder is placed on the floor or on a bench near a cold water tap

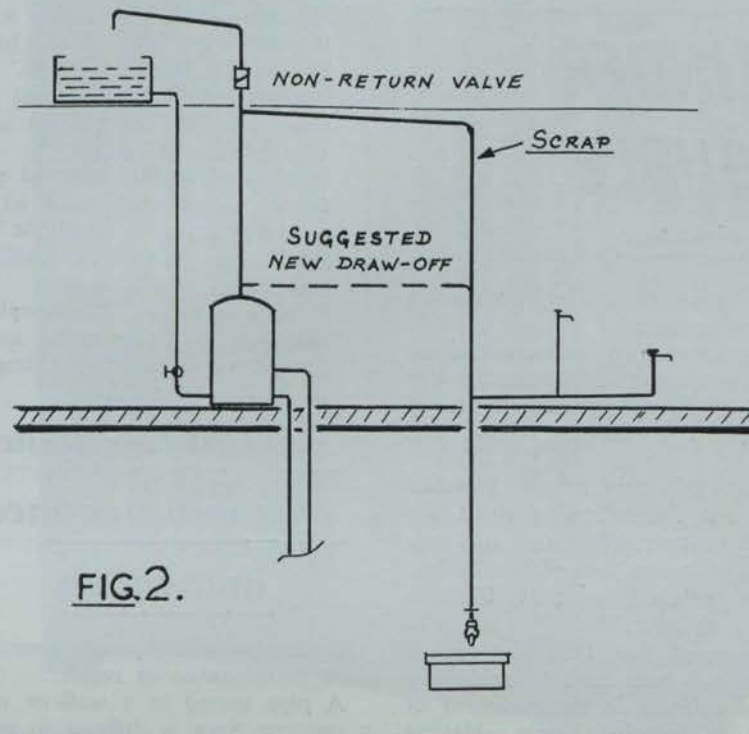


FIG. 2.

supplied from the main (preferably) or a tank giving a head of about 40 to 50 feet. We will take in this case a water tap with a pressure of about 20 lbs. per sq. in at the outlet.

The cylinder has all openings, except two, plugged. One is at the base, the return tapping or cold feed inlet, and the other the expansion or vent outlet. A strong hose or similar pipe is now connected securely from the tap to the selected tapping at the base of the cylinder and the water turned on. As it flows in, this air will be heard rushing out of the vent until the cylinder is completely filled with water. The tap is then shut off to enable the vent outlet to be capped off. When this is done, we are ready for the “blowing out” of the dent.

First, open the tap slowly and watch the cylinder carefully. The dent will be seen to gradually ease out, and a slight tapping with a lead dresser will assist matters. There is one danger to guard against with this method and it is a

very important one. The concave base of the cylinder is subjected to great downward pressure and if not watched carefully may collapse.

For this reason, it is advisable to place the cylinder on two timber blocks so that the base can be checked by putting a hand against it during the “blowing”.

## Assumed

**S**OME readers may wonder why this method works—well, we assumed that the tap gave a pressure of 20 lbs. per sq. inch, which pushing into the cylinder exerted 20 lbs. on each square inch of the copper wall. As the average 30 in. x 18 in. cylinder has a surface area of 2,188 sq. ins. this means a **total** pressure of 2,188 x 20 = 43,760 lbs. or approx 19½ tons. If we take the tap pressure as being 30 lbs. P.S.I.—by no means unusual—the **total pressure** exerted on the cylinder would then be

Continued overleaf



The Irish Plumber and Heating Contractor.

# BASIC PRECAUTIONS AGAINST FROST DAMAGE

**TO BEAT THE HAZARD OF FROST DAMAGE ADOPT THE FOLLOWING SIMPLE PRECAUTIONS:—**

## CYLINDER TROUBLE

from previous page

29 tons, hence the reason for watching that concave base!

The writer has, on various occasions, blown out dented cylinders by this method, and removed all traces of damage, but remember "watch that base".

To conclude this article, I would like to tell the following story. An apprentice came to me on one occasion with a sad tale of how he had been blamed on blowing out the base of a new cylinder.

It appeared that this boy and a plumber had been sent to replace a damaged cylinder in the basement of a high building in Dublin. Having removed the old cylinder, the new one was installed, and the boy sent up to the tank to open the cold feed valve. On getting back to the basement, the plumber was found in dire distress, the cylinder base having collapsed to form a downward bulge like a balloon!

The apprentice was immediately

"BLOWING OUT"  
COLLAPSED  
CYLINDER

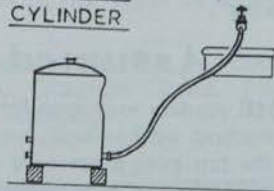


FIG. 3.

blamed, on the grounds that he had opened the gate valve too quickly and so blown the bottom out of the cylinder! It only goes to show that age does **not** always bring wisdom!

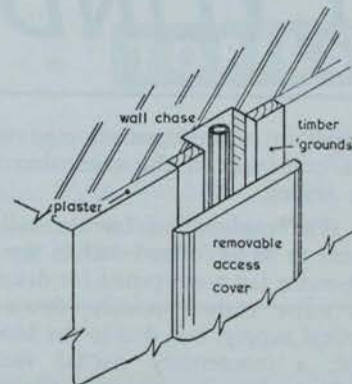
After all, what else could be expected when a cylinder tested to 30 lbs. P.S.I. maximum was installed under a head of 80 ft!

- (1) Fix pipes away from places where the air temperature is liable to fall to freezing point or below.
- (2) Insulate pipes from contact with cold walls by fixing them about  $\frac{1}{4}$ " off the wall surface.
- (3) Insulate all unduly exposed pipes from contact with cold air by wrapping them with suitable "lagging" or thermal insulating material.
- (4) Provide means of completely draining the entire water system in cold weather if the building has to be left unheated.

## A word too about pipe maintenance and repair

Remember that pipes do sometimes need maintenance or repair.

A pipe buried in a wall or under a concrete floor is difficult to get at, to say the least. Should a pipe burst in such a position it could do serious damage to the building before the leakage of water was detected and put



Provision for access to pipes

right; and, clearly, the work of getting to the pipe would be difficult and costly.

Some form of pipe duct should be used to house pipes which, for some reason or other, cannot be mounted on the surface.

Under concrete floors, an earthenware pipeline makes a good and fairly inexpensive duct.

Where a pipe has to be fixed below a wall surface, it should be fixed in a properly made chase fitted with a removable wood cover so that easy access to the pipe is possible.

● **PLASTICS IN PLUMBING**—Due to pressure on space this month the above feature has been held over.

## Instantaneous HOT WATER from steam—without storage

Cox Steam and Water Mixers deliver from 50 to 24,000 gallons per hour.

They operate with the highest efficiency at all pressures. Silent, efficient, compact and easy to install, replacing bulky and costly calorifiers.

### MODELS:

- ★ (1) BABY COX ( $\frac{1}{2}$ "") for wash-basins, sinks, etc.
- ★ (2) JUNIOR COX 1-5 ( $\frac{3}{4}$ "-2") for process work, vats and general purposes.
- ★ (3) SENIOR COX (2 $\frac{1}{2}$ "-8") for large volumes of hot water for process hot water supplies.

**NO TIME LAG - NO STORAGE - NO STEAM TRAPS  
NO LOSS OF CONDENSATION - NO MOVING  
PARTS TO GO WRONG**

## COX WATER HEATERS

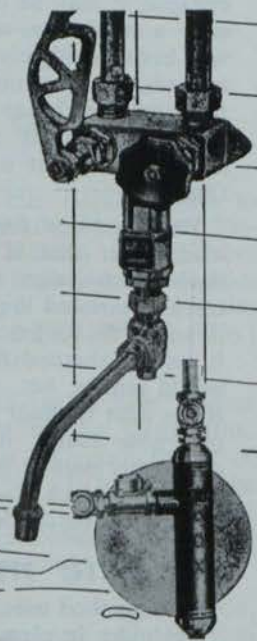
Manufactured by COX ENGINEERING CO. LTD.

Dept. IP11, 14 Park Lane, Sheffield, 10.

Tel.: 62483. Telegrams: "Heaters Sheffield"

Agents:

Halpin & Hayward Ltd., Unity Buildings, 16-17 Lower O'Connell St., DUBLIN. Tel. 43270.  
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**THERMODARE**  
 Turn on the  
**HEAT**  
 with the big  
 economy of  
**CONTROLLABLE**  
**NIGHT**  
**STORAGE**  
**HEATERS**



Here's a success story that is no fairy tale. For the success of Thermodare Night Storage Heaters is built on hard facts — facts such as these :

Thermodare Night Storage Heaters use only low-priced off-peak current — and they give off heat when it's needed.

They are heaters of the highest quality — thermostatically controlled and featuring the built-in Thermal Link.

They are easy to install because wiring is simple and inexpensive and requires no structural alterations.

They do away with flues, ashes, fumes, pipes, boilers and fuel storage.

They blend discreetly with the decor of any room or hallway.

Available in two tone colours of brown/light grey and fawn/light grey.

They comply in all respects with the recommendations of the Electricity Development Association.

**Make the  
 Thermodare  
 Success  
 YOUR  
 Success**



The sign of  
 good heating

Trade Mark

Manufactured by Unidare Ltd., Unidare Works, Finglas Co. Dublin





**A. L. TOWNSEND**  
M.R.P., M.R.S.H.

The author, a lecturer at Oxford College of Technology, continues the first part of a four stage course on plumbing.

## DOMESTIC WATER SUPPLY (contd.)

# Cocks, taps and valves

**DICTIONARIES** define the word "cock" as "a tap"; the word "tap" as "a fitting from which a liquid may be drawn"; and the word "valve" as "a fitting for controlling the flow of liquids." As you can see, there is plenty of room for confusion between the various names for fittings controlling the flow of water. Until a standard method of identification has been worked out, this is bound to continue. The important thing is to know the differences in construction of plug cocks and screwdown valves, and to understand how these differences affect their use.

**Plug Cocks** have been used for centuries, and are a very simple form of tap. A tapered plug, which is hollow, turns in a tapered hole in the body. When the plug is turned the hole through its middle lines up with the inlet and outlet holes in the plug cock body. Through this passage the water flows.

As you will see from this description, water can be made to flow or stop by only a 90°, or quarter turn of the plug. This gives a very fast action.

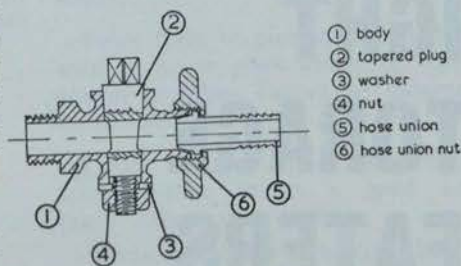
Earlier it was said that water hammer occurs when the flow of water is abruptly stopped. Any form of tap which opens and closes quickly is liable to cause this, especially plug cocks, since they open and close particularly quickly. For this reason they must not be used on pipes carrying water at town mains pressure, where fast water flows are to be expected. They must only be used for

low pressure work—oil drums, tea urns, and so on—or where once they are opened they will not be closed until all water is drawn off and the flow ceases; for example, in drain down cocks for emptying hot water systems.

**Screwdown valves**, as the name suggests, are taps with valves, commonly called "jumpers," to which a seating washer is fixed. The valve is operated by a screw threaded spindle which must be turned several times before the tap is fully open or closed. The screwdown action therefore gradually slows up the water flow and allows the energy built up in motion to die down before the flow is finally stopped.

**Warning.** Screwdown taps have a packing gland to prevent water from leaking along the operating spindle. If this gland is allowed to wear, or is badly packed so that it becomes loose, the spindle could be "spun" down with a flick of the finger, thus creating a sudden stoppage of flow, and possibly water hammer.

Special screwdown taps used in hospitals and surgeries have a rapid action screw thread which needs only a quarter turn to shut it off. This enables the doctor to wash his hands and turn off the tap with his elbow so that his hands can remain sterile. Again, these rapid action taps could cause water hammer on the higher pressure systems and so this special type of tap should be fed by low pressure distribution pipes from stor-



- ① body
- ② tapered plug
- ③ washer
- ④ nut
- ⑤ hose union
- ⑥ hose union nut

age cisterns, and not directly off the town main.

**A Bib Tap, Bib Valve or Bib Cock.** is a type of screwdown tap used where a tapped boss, or other connection for the tap, is at right angles to the wall face. This is the sort of tap that is usually fixed above fireclay kitchen sinks. It is fitted with a  $\frac{1}{2}$ " or  $\frac{3}{4}$ " B.S.P.T. connection of the male or external kind.

Our illustration shows the important features of a B.S. Bibcock.

All tap diagrams have numbers indicating their various parts. To make it easy to refer to them, the key to these numbers is as follows:—

- (1) Body.
- (2) Headgear.
- (3) Spindle.
- (4) Packing gland nut.
- (5) Packing.
- (6) Valve plate or "jumper."
- (7) Washer and seating.
- (8) Capstan (or Crutch) turn.
- (9) Easy clean cover.
- (10) Headgear—body washer.



- (11) Backnut.
- (12) Union nut or "cap."
- (13) Tail pipe or liner.
- (14) Nozzle.

# DOMESTIC WATER SUPPLY

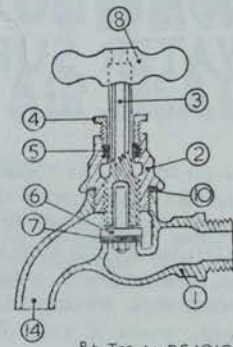
from previous page

A **pillar tap** has exactly the same headgear, or working parts, as a bib tap, but it has a long vertical inlet screwed  $\frac{1}{2}$ " or  $\frac{3}{4}$ " to pass through a lavatory basin top or through the roll edge of a bath. (See illustrations).

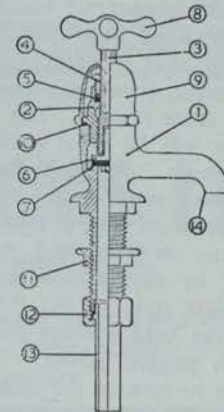
**Globe taps** also have the same head gear as bib taps, but are fitted with a horizontal female threaded connection, usually  $\frac{3}{4}$ " long, so that they will fit through the side or end wall of a bath. (Illustration shows a typical

globe tap).

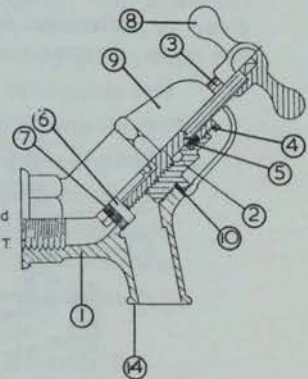
**Stop taps or stop valves** again have head gear just like that of a bib tap, but a different body to suit the particular purpose of the valve. It is used to form a part of a water pipeline and control the flow of water



Bib Tap to BS 1010



Pillar Tap to BS 1010



Globe Tap to BS 1010

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along it. (Illustration).

Some stop taps have an emptying down tap or washer seated screwdown plug. This fitting is neat, and can be very useful in frosty weather, since it makes possible the complete drainage of the rising main.

**Warning.** Stop taps must be fitted in a pipeline the right way round. The water must enter the tap below the seating valve. If it were fitted the wrong way round, the water press-



The Irish Plumber and Heating Contractor.

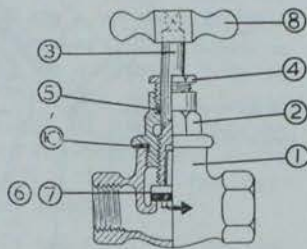
## DOMESTIC WATER SUPPLY

from previous page

ure on top of the seating valve would keep it closed even though the tap spindle were put to the open position. An arrow on the stop tap body points the direction in which the water should flow through the tap. If the supply main is shut off and drained down for any reason, the "non-return" action of the loose valve plate will stop any backflow from the service pipe.

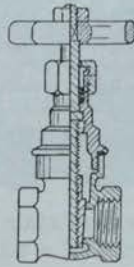
**Draw-off taps** for use on service pipes, that is pipes subject to mains pressure, have loose valve plates for the same reason. The pressure in the pipe will be great enough to lift the "jumper" as the tap spindle is put to the open position.

Draw-off taps for domestic hot water services, and cold water taps fed by distribution pipes, which are subject only to the "head" pressure of the cold storage cistern, are fitted with pegged valves. The valves are free to turn in the spindle so that the seating washer is not worn away in use, but the pegging ensures that as the tap is opened the valve plate is automatically lifted off the seating. Otherwise the "jumper" might stick down in the closed position, and the low water pressure would not be able to lift it.



Stop Tap screwed both ends B.S.P.T.

**Fullway gate valves** are used where it is important that there should be the least possible restriction to water flow, as with low pressure distributions from storage or feed cisterns.



Fullway Gate Valve

A gate valve is operated by a screw spindle, generally of the non-rising type. That is, instead of rising out of the fitting when the valve is opened like the screw-down tap spindles, it rotates without rising and the wedge shaped valve "climbs" up the spindle screw thread.

Gate valves are supplied with female screwed end connections in B.S.P.T. and in a wide variety of sizes.

Illustration shows a sectional view of a gate valve. Compare the head-gear design, and the water flow path, with those of the screwdown valve.

**Materials for Valves, Cocks and Taps.**—The dimensions and manufacturing tolerances of draw off taps, that is, of bib taps, globe, pillar, and stop taps, must by Bye-Law comply with the design requirements of B.S.1010.

All taps below 2" nominal size, and that means all domestic draw off taps, must be made of a corrosion-resistant alloy.

Taps are usually made from heated "slugs" of brass which are hot pressed in hydraulic presses. Brass for this process needs to be ductile and of good strength, and an alloy of 60 parts copper to 40 parts zinc is often used.

Taps should be capable of withstanding a pressure of 300 lbs. per square inch, and many Water Undertakings insist that all taps used on services carrying their water must be stamped by them as a sign that the fitting is approved for use in its area.

Most of the taps used to-day are plated with chromium to make them

easy to clean and nice to look at. This is done by electro-plating—a form of electrolytic action.

## TRADE TOPICS



This W.C. pan is made in stainless steel, said to be the first to be produced. It was made by Associated Metal Works (Glasgow) Ltd., 30 S. Andrew's Square, Glasgow, C.1. The Dublin office is at 168 Pearse Street, and the Belfast office at 8 Long Lane.

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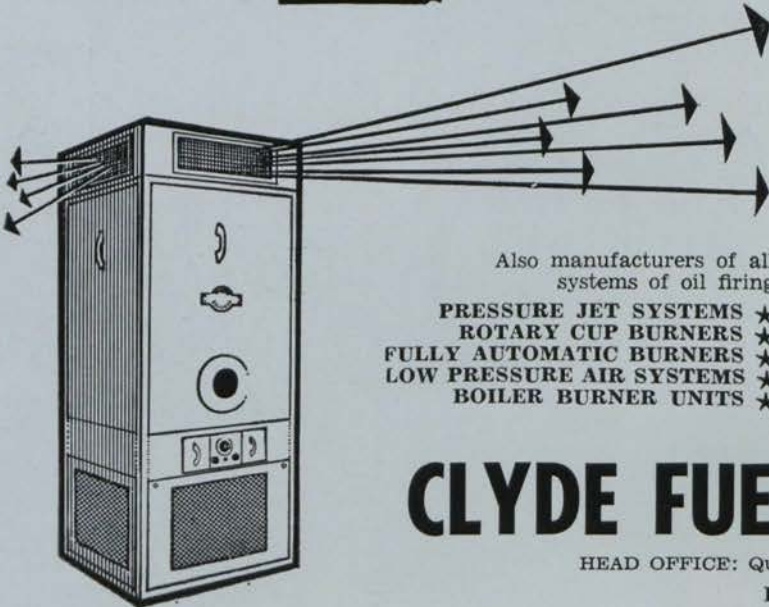
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