

9-1-1962

### The Irish Plumber and Heating Contractor, September 1962 (complete issue)

Follow this and additional works at: <https://arrow.tudublin.ie/bsn>



Part of the [Civil Engineering Commons](#), [Construction Engineering Commons](#), and the [Construction Engineering and Management Commons](#)

---

#### Recommended Citation

(1962) "The Irish Plumber and Heating Contractor, September 1962 (complete issue)," *Building Services Engineering*: Vol. 2: Iss. 6, Article 1.

doi:10.21427/D7FH8F

Available at: <https://arrow.tudublin.ie/bsn/vol2/iss6/1>

This Article is brought to you for free and open access by the Journals at ARROW@TU Dublin. It has been accepted for inclusion in Building Services Engineering by an authorized editor of ARROW@TU Dublin. For more information, please contact [arrow.admin@tudublin.ie](mailto:arrow.admin@tudublin.ie), [aisling.coyne@tudublin.ie](mailto:aisling.coyne@tudublin.ie), [vera.kilshaw@tudublin.ie](mailto:vera.kilshaw@tudublin.ie).

# THE IRISH PLUMBER & HEATING CONTRACTOR



**MRS  
1970**

**KNOWS WHAT  
SHE WANTS**

And she knows just where to get it. Because the hard hitting advertising which first sells her on the idea of installing Shell and BP Housewarming also tells her of the superb service offered by her local Appointed Installer. The special Shell and BP Appointed Installer's sign is prominently featured in each advertisement to help her remember it.

There are hundreds of Mrs. 1970's. All looking for the Irish Shell and BP Limited Appointed Installer's sign — the sign which they know means prompt efficient service. Hundred's of Mrs. 1970's — hundreds of systems to install and service. It's obviously very good business to give Mrs. 1970 what she wants!

## SHELL AND BP HOUSEWARMING

THE ORIGINAL SCHEME FOR OIL-FIRED CENTRAL HEATING IN THE HOME

IRISH SHELL AND BP LIMITED  
SHELL-BP HOUSE,  
13-16 FLEET ST., DUBLIN 2.

IRISH SHELL AND BP LIMITED



**HOUSEWARMING PLAN**

**THOSE WHO  
SPECIFY IT...**



**THE ARCHITECT** with an eye for efficiency also sees in the Lynx's clean-cut lines contemporary styling at its very best.

**THOSE WHO  
INSTALL IT...**



**THE PLUMBER** finds it easiest of all to fit; the concealed fixing is neat and simple.

**THOSE WHO  
OWN IT...**



**THE CUSTOMER** is delighted to discover that such a handsome cistern also has the most discreetly quiet and dependable mechanism she's ever encountered.

**...All acclaim the**

*Shires* **LYNX**

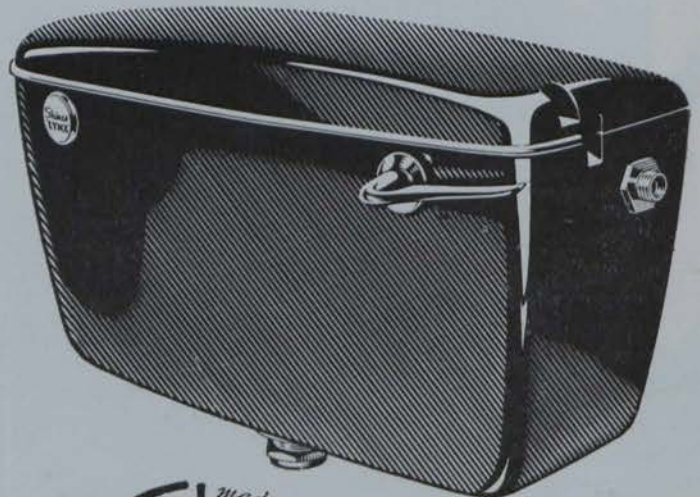
**MADE IN IRELAND**

Shires Lynx is today's most popular cistern, for replacements or new installations. Lynx high and low level cisterns are made of black Duranite — tough and durable, non-crazing, non-corrosive. The Kingfisher syphon mechanism gives a powerful flush: made of polythene — non-corrosive, non-ageing and unbreakable — it can be used in hard or soft water areas. It conforms to BSS 1125 and Water Works specifications. Capacities: 2, 2½ and 3 gallons.

**EVERY GENUINE LYNX HAS THE  
NAME ENGRAVED ON THE CISTERN**

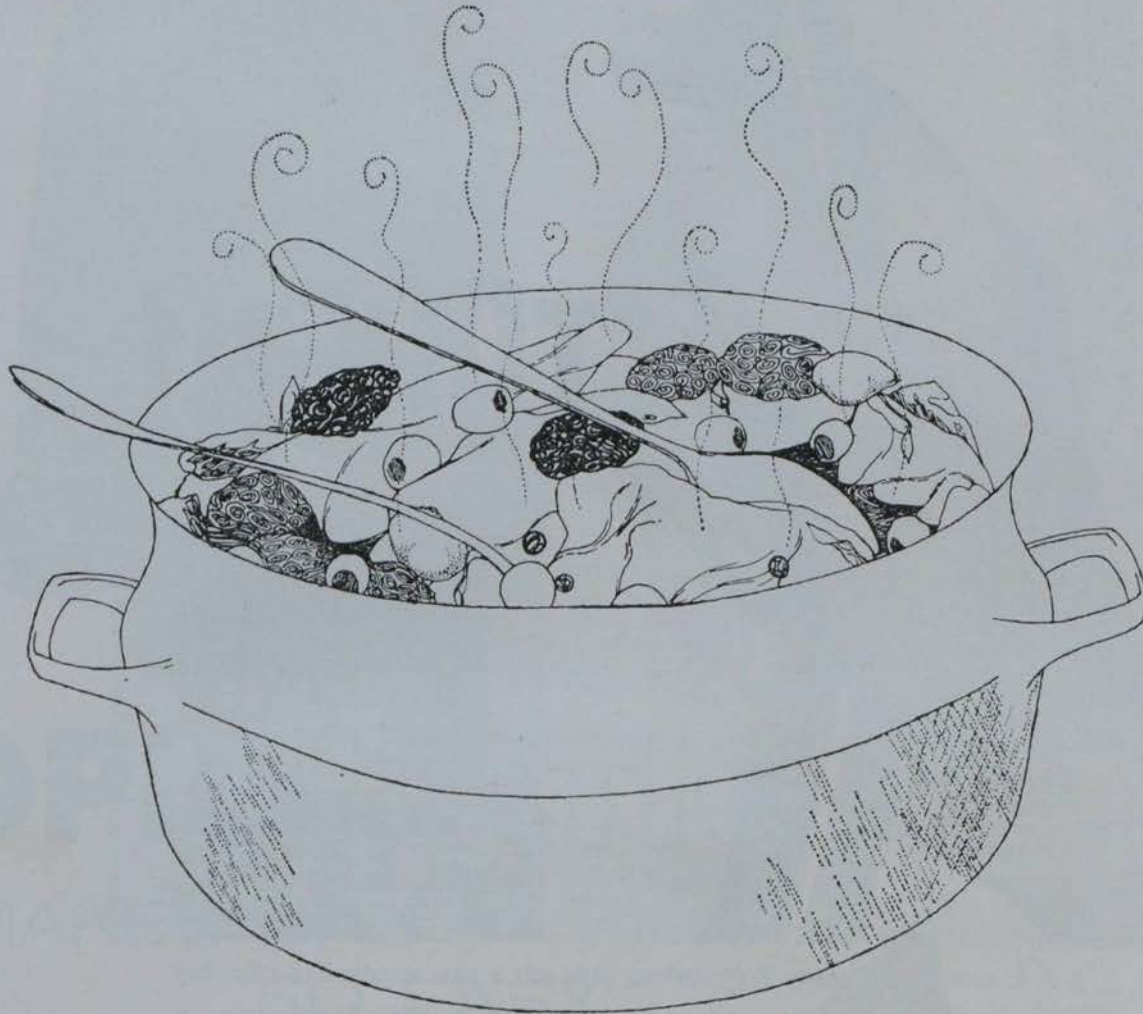
Other Shires' products are the Uni-Lynx close-coupled suite, cistern fittings and the Polyfloat cold water cistern float.

Available from all recognised builders' providers in the Republic



*made by*  
*Shires*  
*for your convenience*

# piping hot - or cold?



If it involves pumping—be it hot or cold water—we can supply the suitable pump for the job from a comprehensive range of pumps designed for the heating and plumbing industries.

'Monobloc' pumps, for instance, are ideal for air conditioning, boiler feed, boosting, circulating systems, condensate, filtering, fresh water, heating systems, refrigeration, sprinkling, sump service, transferring,

washing, water softening and many other duties. They range in size from 1" to 5" diameter delivery, covering capacities up to 1200 g.p.m., and heads up to 210 feet. 'Vortex' pumps, with heads up to 600 feet, are especially suitable for boiler feed duties. Automatic domestic water supply sets are also available.

Illustrated below are typical models from our range of 'Monobloc' pumps.

*Send now for fully descriptive literature*



## Worthington - Simpson Ltd

20 HERBERT PLACE · DUBLIN

PUMPS · COMPRESSORS · HEAT EXCHANGE EQUIPMENT



P8564

*The Irish Plumber and Heating Contractor.*



S & L new High Density Polyethylene pipe sets a new standard of efficiency and economy in handling and application. S & L High Density pipe is adaptable, durable and reliable; it is extremely tough but flexible and is the ideal pipe for cold water and air supply lines. Its resistance to corrosion makes this pipe the natural choice of the engineer when confronted with problems of conveying acids and chemical effluents in the works or in the laboratory. Round the clock quality control and intensive laboratory research combine to give a pipe of constant quality you will find completely reliable, which, need it be said, is made to British Standard specifications. Look for this mark S & L, it is your guarantee of quality and service.



## **New! High Density Polyethylene Pipe**

Fully approved by Department of Local Government and  
Dublin Corporation.  
Stocked by all leading merchants.

**STEWART AND LLOYDS OF IRELAND, LTD.**  
EAST WALL ROAD, DUBLIN 3

# MORE FEATHER-BEDDING FROM HARFORD



## the NEW

# OPIOMATIC

(Patent applied for)

### MAKES LIFE SO EASY FOR YOU!

**VARIABLE HEAD** covering all requirements on small bore or iron pipe installations up to 300,000 BTU's. Regulate and set whilst in position!

**ENDS STOCKING PROBLEMS**—one model only to carry.

**NEAT SELECTOR KNOB**—easily accessible to permit compensatory adjustment, thus eliminating system noises.

**TWO YEAR FREE REPLACEMENT GUARANTEE** and full cover under the Harford "Feather-Bedding" Scheme.

Send now for full details of this latest piece of Harford equipment and for particulars of "Feather-Bedding for Installers"—describing the four important forms of protection offered only by Harford Pumps Ltd.

**NOTE: A FULL RANGE OF INDUSTRIAL PUMPS HAS JUST BEEN ANNOUNCED—SEND NOW FOR FULL PARTICULARS.**

## HARFORD PUMPS LIMITED

Harford House, 7/9 Charlotte Street, London, W.1



# BIG 4 FOR ALL PLUMBING & HEATING CHOSEN BY CRAFTSMEN

## 1 INSTANTOR

the most efficient joints in the world for copper tubing. Equally reliable for use with plastic pipes.

## 2 ENDEX

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

## 3 CONEOR

go underground with safety. Coneor couplings are zinc-free gunmetal castings specifically chosen for use with soft copper tubing.

## 4 FYFFE'S

up-to-date range of *PLUMBERS' BRASS WARE* is at your stockist's now. All patterns can be supplied—polished or chromium-plated.

## ADD THEM UP TO A FIRST CLASS JOB

IT PAYS TO KEEP TO THE FYFFE LINES

Fyffe Couplings (Ireland) Ltd.

Instantor Works, James's Street, Dublin, 8.

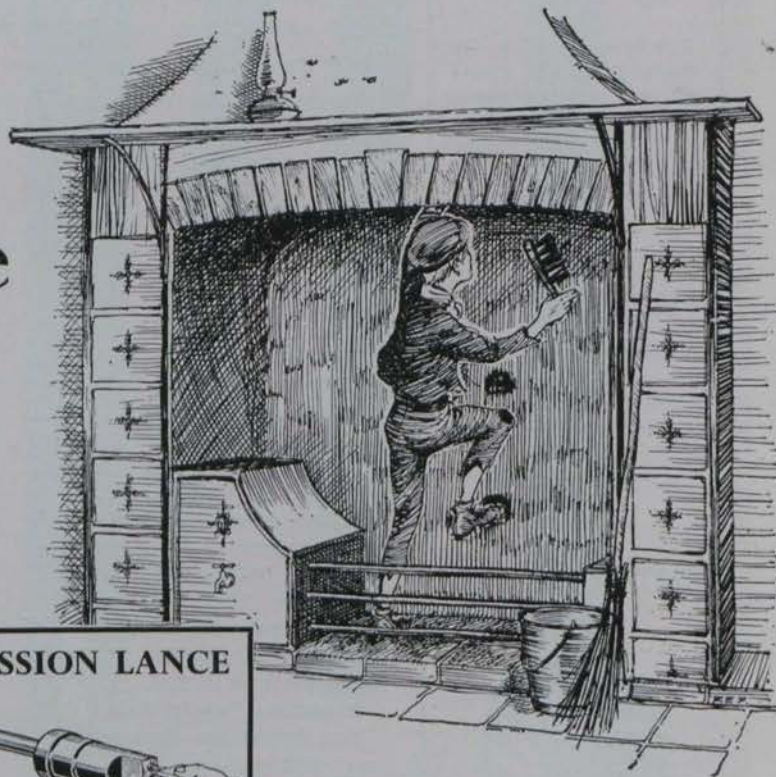
# HIGH GRADE OIL FUELS



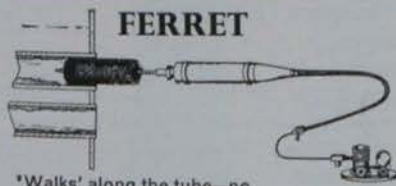
## FOR INDUSTRIAL AND DOMESTIC USE

### Not any more

They never did use small boys for cleaning boiler tubes—  
and the idea is as dated as hand brushing  
now that Airnesco brush automation is available  
for water tube boilers, waste heat boilers,  
and economic type boilers.



**FERRET**



'Walks' along the tube—no pushing or pulling—the operator stands still and waits for the 'Ferret' to push itself up the tube and return to him.

**PERCUSSION LANCE**



Cleans a 300 tube fire tube boiler in 30 mins—without brushing—by air puffs alone.

**AIRNESCO PRODUCTS LTD.**

For further details of these and other Airnesco Products, and for a free demonstration in your own works, write now to





Vol. 2. No. 6

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.

Published monthly by Irish Trade & Technical Publications. Annual subscription, 21/-, post free. Single copies, 1/9, post free.

Editorial and advertising offices:

Callaghan Chambers, 13/15 Dame Street, Dublin, 2. Tel.: 56466, and 133 Royal Avenue, Belfast.

Tel.: Belfast 22796.

SEPTEMBER, 1962.



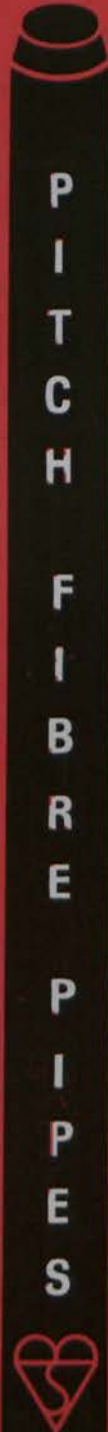
# THE IRISH PLUMBER & HEATING CONTRACTOR

## IN THIS ISSUE

- John G. Bolton, A.M.Inst.W., in this the last article of his welding series deals now with gas welding stainless steel and zinc alloys .. . . . 36
- William A. McMaster, our Northern Correspondent, reports on page .. . . . 40
- A Horse Show report of interest to the trade appears on page .. . . . 42
- Trade Topics—the column that keeps you in touch with the trade—are on pages: twenty-two, twenty-four, thirty-nine, and forty-two.
- Questions are Answered on page forty-four.
- This month's issue contains two special surveys—
- Hot Water supply equipment and boilers beginning page nine.
- Thermostats, thermometers, temperature indicators, etc., beginning page twenty-seven.
- A. L. Townsend's regular article has been unavoidably held over due to lack of space in this issue.—Ed.

## INDEX TO ADVERTISERS

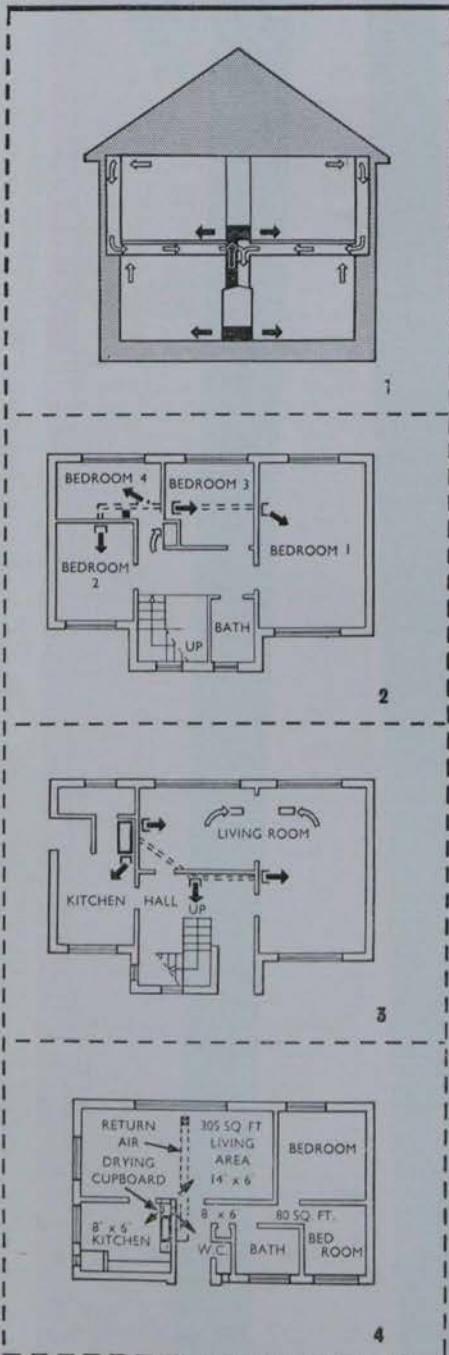
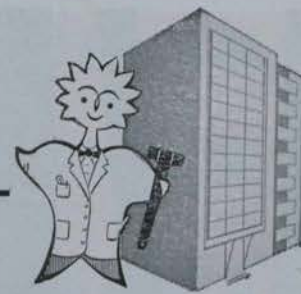
Accurate Recording Instrument Co.	33	Industrial Exhibitions Ltd.	39
Airnesco Products Ltd.	5	Irish Shell & B.P. Ltd.	Cover i
Alliance & Dublin Consumers' Gas Co.	8	Leinster Engineering Co. Ltd.	26
Biddle, F. H., Ltd.	43	Manotherm Ltd.	30
British Steam Specialties Ltd.	26	Masser Domestic Appliances Ltd.	16
British Rototherm Co. Ltd.	29	McMullans Kosangas Ltd.	18
Boylan, M. A., Ltd.	38	Mono Pumps Ltd.	43
Carthorn (1949) Ltd.	37	Monsell, Mitchell & Co. Ltd.	41
Coppercraft Metal Works	10	O.B.C. Ltd.	35
Cox Engineering Co. Ltd.	19	Quadrant Engineers	Cover iv
Crowe, W. & L. Ltd.	24	Sanbra-Conex (Ireland) Ltd.	Cover iii
Electricity Supply Board	13	Sampson, J. J. & Son, Ltd.	28
Esso Petroleum Company (Ireland) Ltd.	23	Shamrock Petrol Ltd.	5
Fibreglass Ltd.	25	Shires & Co. (Ireland) Ltd.	Cover ii
Fyffe Couplings (Ireland) Ltd.	4	Stewarts & Lloyds of Ireland Ltd.	2
General Electric Co. of Ireland Ltd.	15	Temple Tubes Ltd.	7
Harford Pumps Ltd.	3	Trianco Ltd.	11
Hammond Lane Industries Ltd.	17	Vauxhall Boiler Co. Ltd.	14
Holfeld, H. R., Ltd.	32	Wavin Pipes Ltd.	41
		Walker, Croweller & Co. Ltd.	20
		Worthington-Simpson Ltd.	1



**TEMPLE TUBES LTD**  
Passfield - Hampshire  
Tel: Passfield 281 (5 lines)

# GAS FOR CENTRAL HEATING - SPECIAL TARIFF REDUCTION FOR DOMESTIC INSTALLATIONS

GAS will give you trouble-free, low cost results by GAS Boiler or Fanned Air system—full technical advice on application.



## ADVANTAGES

- 1 Automatic - clock control gives immediate heating when required.
- 2 Hot water supplied by heating unit or separate multipoint gas water heater.
- 3 Gives whole house warmth.
- 4 Circulates cool air in summer.
- 5 On two part tariffs can offer cheapest of all running costs.

## USE IN HOUSES

Fig. 1 Diagram illustrating warm air heating with warm air discharging from the inner walls.

Fig. 2 First floor plan.

Fig. 3 Ground floor plan.

## USE IN BUNGALOWS

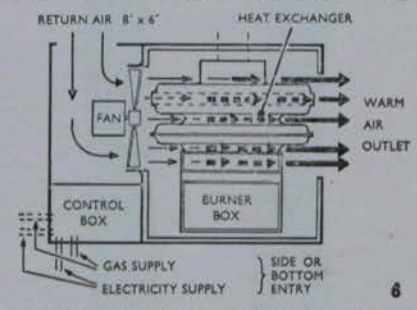
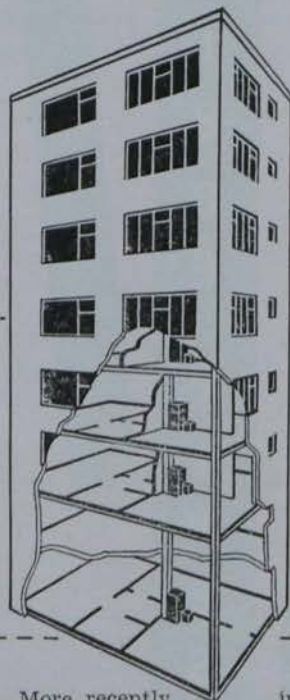
Fig. 4 Typical ducting serving main living rooms of a bungalow.

## USE IN TALL FLAT BLOCKS

Fig. 5 Cut away model showing warm air units in block of flats. The Se-Duct flue system is also shown. This removes combustion products safely, cheaply and efficiently at heights up to 180 ft. or more.

## THE WARM AIR UNIT

Fig. 6 Diagram of typical warm air space heater.



## SMALL BORE HEATING

More recently introduced is what is known as "small bore" central heating. Small copper pipes only  $\frac{1}{4}$ " or  $\frac{3}{8}$ " in diameter are used and an electric pump is added for the forced circulation of the hot water. This means that the system is much simpler and, consequently, cheaper to install, for it is free from the limitations imposed on a gravity circulation system. It also means that central heating can now be fitted into existing houses with an absolute minimum of structural alterations. In a new house the small bore method can be used to serve a conventional radiator system. A point worth noting is that the gas boiler serving a small bore system need not be installed in a basement; it can be fitted in any convenient position in the house, provided that a flue pipe can be connected to it.

**DUBLIN GAS COMPANY**

D'OLIER STREET, DUBLIN. TELEPHONE 71811.



# AN IRISH PLUMBER & HEATING CONTRACTOR SPECIAL SURVEY

## HOT WATER SUPPLY EQUIPMENT & BOILERS

# ALL NEEDS NOW SATISFIED

**H**OT WATER on tap is a boon in the home. No home is fully equipped without some form of domestic hot water provision. In larger houses, hotels, commercial and industrial premises, adequate hot water services are indispensable.

This progressive trade has witnessed remarkable developments in the past few years. Development in hot water supply equipment has not lagged. To-day there is equipment to meet all possible needs, be it a simple kitchen sink supply or a comprehensive installation for a vast hotel. For a small local supply to a photographer's sink or for the insatiable demand of industrial process work.

Choice of one or other type of installation and the more detailed choice of individual items of equipment is made easier and with more certainty of correctness if attention is given to the following factors:—

1. How much hot water is needed?
2. At what temperature?
3. When is the hot water required?
4. What fuel is to be used?
5. What space is available to accommodate the equipment?
6. What builder's work is involved, e.g., flues, fuel stores, etc.?
7. To what extent is automatic control desirable?

8. Comparison of capital costs of different arrangements.
9. Comparison of running costs.

### System choice

**C**LEARLY, system choice is not a matter to be lightly undertaken. Eventual selection of system and equipment demands careful examination of all available items so that a reasoned final choice may result to provide an installation of reasonable capital cost, which will perform the stipulated duty with economy of operation, low maintenance, and with a minimum of manual attention.

A review of basic equipment might well begin with solid fuel domestic hot water equipment for the home.

The simple fire grate back boiler in its modern unit construction form should not be lightly passed over. The cheerful glow of the open fire is still very acceptable and where this same fire can be usefully harnessed to provide hot water too, it is unwise not to utilise it to the full. Possible previous unhappy experience of older pattern brick set back boilers which failed to work because of incorrect setting or of poor system design, should not prevent a new look at the up-to-date boiler-flue sets of scientifically designed unit construction

with integral boiler set exactly as the designer intended and guaranteed to function as well in the home as on the test bench.

These small units cannot be expected to provide copious amounts of hot water in a short time. The hot water output will be related to the state of the fire. Obviously a bright fire will produce more hot water than one which is banked or slumbering. There may be objection to having to light a fire to get hot water in the summer but this is easily overcome by installing an electric immersion heater in the hot store vessel for summer use or for temperature boosting in cases of unusually excessive demand in winter.

### No addition

**I**N THE smaller domestic dwelling a modern open fire grate or openable stove with back boiler will meet all normal hot water demands with virtually no addition to the accepted space heating cost of fuel.

Given a reasonably bright fire, such boilers will produce 5 to 6 gallons of hot water at 140°F. per hour. Mindful of the long periods between demands for hot water, i.e., early morning

*Continued overleaf*



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

breakfast time, lunch time, and likely evening bath, it will be seen that the boiler will supply some 30 gallons every six hours or so without forcing.

The comprehensive "Approved Appliance Lists" of the Coal Utilisation Council of 3 Upper Belgrave St., London, W.I., will prove most helpful in choice of equipment of this kind. All listed appliances have been bench tested and performance, as advertised, proved and easily obtainable in domestic use.

All readers, and especially those living in hard water districts, will be aware of the generally messy business of cleaning out back boilers in situ. For this reason, and in case of possible later addition of a small radiator for background heating, an indirect hot store provision is strongly recommended for all back boiler installations. Alternatively, a Primatic hot stove may be used or a Sigmund Thermotank added to existing direct cylinder.

An interesting development in central background warming by open fire back boilers is the Dunsley type R16 or R18 boiler. This is shaped like

*From previous page*

## **SPECIAL SURVEY**

the Milner fireback which it replaces. The open fire is thus enclosed at back and sides by the water jacket of this new type boiler. The R16 and R18 fit 16in. and 18in. fire openings, respectively. One type has an opening in the back to accommodate a possibly existing back boiler which stays in place when the old fireback is removed to make way for the Dunsley boiler.

### **One fire**

**I**N THIS manner, from the one fire and at no extra fuel cost, the room is space heated from the fire, domestic hot water is provided by the old back boiler and radiators heated by the Dunsley boiler may be installed to provide useful warmth elsewhere in the house. The Dunsley boiler so installed will, of course, need a separate cold feed and circulatory pipe-work system. The heating system being quite apart from the domestic,

relieves the need of changing direct hot store vessels for indirect ones. It also prevents radiator temperature variation as hot water is drawn from the domestic system.

Details can be had from Dunsley Heating Appliance Co., Ltd., Holmfirth, Huddersfield.

In cases where heavier hot water demand calls for larger equipment of the independent type, system and equipment choice covers a wide range of fuels and installation arrangement.

**Solid fuel systems** still offer operating economy where stoking and ash removal routine is acceptable. For small domestic dwellings the modern solid fuelled independent boilers leave little to be desired. Using anthracite or other approved slow burning fuels of high calorific value, these efficient little boilers will operate efficiently and with little trouble for the housewife. They will easily cope with all likely domestic hot water requirements and are of low capital cost.

**For larger houses**, where combined systems of D.H.W. and central heating are proposed, or where trouble free D.H.W. in copious amounts are

# **Coppercraft Metal Works**

68 LEESON CLOSE,  
LOWER LEESON STREET,  
DUBLIN, 2.

Telephone: 65628

Manufacturers of:—

- ★ **Copper Hot Water Storage  
Cylinders and Tanks**
- ★ **Indirect Cylinders of all  
types**
- ★ **Steam and Hot Water  
Calorifiers to Engineers'  
specifications**
- ★ **Capacities from 20 to 1,000  
gallons**

**ENQUIRIES INVITED**

## SPECIAL SURVEY

from previous page

needed, solid fuel boilers of the automatic kind are becoming very popular. The gravity feed, fan assisted draught boiler by Trianco is typical of this high efficiency equipment in the solid fuel range. Such boilers give peak efficiency with fuel economy and minimum labour in operation. They are obtainable from 50,000 B.t.u.'s upwards and burn anthracite peas.

### Establishments

**DOUBLE duty boilers** are a trend in boiler houses of really large establishments. In boilers of this kind one firebed or combustion chamber provides the heat source for both central heating and D.H.W. supply. The D.H.W. is heated in an indirect cylinder integral with the boiler casing and surrounded, in some cases, by the central heating water, which is direct heated by the combustion of fuel within the firebed. This arrangement obviates the need for separate indirect cylinders and eliminates fixing and space problems sometimes associated with such ancillary equipment, especially in small boiler rooms. The integrally fixed hot store requires no primary circulation pipework and overall heat losses are reduced, thus making for economy in equipment and operating costs as well as saving on valuable space.

Boilers of this kind by C.T.C. Heat (London) Ltd. add flexibility of fuel usage to the above advantages. Two combustion chambers are provided so that solid fuel or oil fuel can be used at will.

**Refuse destruction** may be undertaken in the solid fuel fire box of this particular boiler. With the hygienic trend towards smokeless incineration of refuse, these boilers are in the forefront of boiler development for larger buildings. They are well worth close examination.

Reverting to the smaller home installation, and it is with these that so much valuable and profitable work can be found, especially in modernisation or improvement work, space for a hot store vessel is often

Continued overleaf

et al.: The Irish Plumber and Heating Contractor, September 1962 (complete)



## 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:



BY APPOINTMENT TO  
H.M. QUEEN ELIZABETH  
THE QUEEN MOTHER,  
MANUFACTURERS OF  
DOMESTIC BOILERS  
Trianco Ltd. - 5, Upper Fitzwilliam Street

**TRIANCO**  
automatic boilers

5, Upper Fitzwilliam St.,

Dublin, 2.

Phone: 63061.

difficult to find. It is in such cases that the combination feed cistern-hot store vessels prove such a boon.

**Oil Fired boilers** for D.H.W. alone or for combined systems are now manufactured in so many styles and price ranges. These, apart from bi-annual maintenance inspections, offer fully automatic and trouble free operation.

## Popular

**R**ANGING from 30,000 B.t.u.'s upward in output, mostly nowadays with fan assisted draught provision, oil fired boilers with simple fuel store, clean and easy fuel deliveries,

*from previous page*

# Oil fired boilers are very popular

and of course automatic control, are very popular for all types of installation, large or small.

**Balanced flue oil fired boilers** have made their debut and are worth considering where space problems arise and where flues are non-existent or would be difficult to build. One such boiler by Perkins, the Mini-Boiler, is capable of producing 50,000 B.t.u.'s per hour and yet it is so small that it may be "hung" on the kitchen wall with its purpose designed flue arrangement terminating flush with the external wall surface.

**Gas fired boilers** offer complete automation of control, absence of fuel supply or fuel storage problems and, being absolutely silent and clean in operation, they are being seriously considered where these factors are of prime importance. The relatively simple flue arrangements needed for gas fired boilers is one other important advantage of this type of modern equipment for D.H.W. and central heating services.

**Gas circulators** of the Radiation New World type enable elimination of boilers if circumstances make the fixing of a boiler difficult. The model C12LF will heat 5½ gallons of water through a 100°F. in one hour and is suitable for connection to a 30-gal. hot store cylinder. A gas circulator of this size takes up very little space, requires but a small diameter asbestos flue, alternatively it can be of balance-flue type, and can be fitted with the hot store either in the kitchen or in a cupboard upstairs.

Alternatively, the circulator may be connected into an existing solid fuel system to boost temperatures or to serve as the sole D.H.W. heat source in summer or any other time the boiler fire happens to be unlit. Other capacities of circulator are available to suit hot store vessels of up to 100 gallons.

**G**AS water heaters of the single or multi-point types still show popular appeal. Suitable for any hot water service but particularly useful where space is at a premium or where hot water is required remote from a central supply, the instantaneous gas water heater serves very well.

The smaller single point heaters

quite common ones. They are intended to serve only the appliance near and over which they would be fixed, but so used they solve in a simple and inexpensive way the problem of D.H.W. supply to isolated fittings or in cases where other forms of equipment just cannot be accommodated.

Pressure type storage heaters offer an alternative arrangement for "central" electrically heated D.H.W. supply. The 20, 30, or 40 gallon storage cylinders, heavily insulated to minimise wasteful standing losses, are fitted with two heating elements. One of these is at high level in the cylinder to give 6 gallons or so for use at

(72 Cu. Ft./hr.gas rate) need no flue and one cold water supply pipe will provide C.W. to the sink or L.B. served as well as feeding the heater. Larger heaters require flue provision but with balanced flue appliances now available this offers no problem so long as an external wall may be used to fix the appliance on. Even where an external wall is not available, as sometimes occurs in flat blocks, the provision of a pre-cast concrete duct (Se-Duct) enables appliances of the balanced flue type to be fixed away from external walls.

Installation of equipment of this kind requires prior care to ensure adequacy of gas supply and meter capacities. Also that when cistern fed the head on the highest tap served is sufficient to operate the automatic water-gas valve. Usually an 8ft. head is needed. This latter requirement is easily satisfied when, where with water undertaking approval, the appliances are connected direct to the main supply pipe.

**Electric water heating equipment** for domestic use is well known. The popular 1½ gallon sink heaters now in tastefully designed cases give efficient, clean, and trouble-free service without taking up a great deal of space.

## Capacities

**NON-PRESSURE** storage appliances of this kind are made in various capacities, 2, 5, and 12 gallons being

L.B. or sink. The other heater is situated low down in the cylinder so as to heat the entire content for bath or laundry purposes. Both elements are thermostatically controlled, and whilst it is customary to leave the top element always alive under the control of its thermostat, the bottom element may be switched in or out at will.

In this way and switched off when baths are not needed, there is some saving of radiation losses from the smaller volume of continuously heated water at the upper part of the storage vessel. In some cases the top element is of 1,000 kW. loading, and the lower one 2 kW.; in others both are 3 kW. and this, of course, gives quicker recovery or heating up after hot water withdrawal.

Twenty-gallon appliances of this kind may be accommodated beneath the sink draining board, and for this reason are particularly useful where space problems exist. All appliances of this kind are fed from a high level cold feed cistern of suitable capacity; 40-gallon nominal is usually sufficient for small domestic installations. Although referred to as pressure type equipment, these appliances are subject to installation at lesser heads than 60ft. Not that this is likely to cause bother in ordinary domestic work, the need to be mindful of this fact in multi-storey work will be clear.

*continued page fourteen*

# SELL ELECTRIC WATER HEATING

You have plenty of support when you suggest ELECTRIC water heating to your customers. A large scale advertising campaign is helping to convince the public that electric water heating is the best, and a full range of water heating appliances enables you to provide the ideal system for every home.

There are electric water heating systems available to suit every home, every family. Sell electric water heating all-year-round and you're selling a wonderful service.

## ELECTRIC WATER HEATING IS HANDIER !



**SPECIAL SURVEY***from page twelve*

**"OFF PEAK" electric water heaters** are the latest ideas in electrical D.H.W. equipment. The Sadia N50 will heat and store adequate hot water for the daytime needs of an average family. This it does during the night before and using "off peak" current at reduced rates it can produce D.H.W. quite cheaply. The equipment has been given exhaustive tests before marketing and fully justifies its scientific design, based, as it is, upon careful study of domestic hot water usage patterns.

**Instantaneous electric water heaters** are restricted in development by the current carrying capacity of normal house wiring cables. Heaters of this kind are obtainable, but with maximum loading of 3 kW. the hot water output is limited to about one pint per minute raised through 100°F. For isolated points using little hot water, or where slow discharge of heated water is acceptable, these compact appliances might find useful application.

The Heatrae Lido Express is a very useful new heater which might be classified as instantaneous. Its 3 kW. element will produce water heated 105°F. to 110°F., an adequate temperature for hand washing, at the rate of two pints per minute for as long as the water is allowed to run.

**Steam water heating equipment** is not for the domestic dwelling but its application should not be ruled out for dairy or farm use or in any place where exhaust or live steam is freely available.

Bulky and expensive heat exchangers or calorifiers may be used and commonly are used where bulk storage of heated water for subsequent distribution to fittings is required.

**Simplicity**

**B**UT for simplicity of equipment Cox water heaters leave little to be desired. Cold water and steam are jointly entrained through a mixing chamber in which the latent heat of the steam is liberated to the heating of the water which issue from the swivel outlet, or to an arranged system of distributive pipework.

Cox steam water heaters are made in sizes to produce from 50 to 24,000 gallons per hour. The smaller models have  $\frac{1}{2}$  in. connections and are quite small. The largest model has 8 in. flanged connections and is, of course, intended only for industrial application. Perhaps not so well known to the smaller contractor, these heaters have proved themselves over many years of economic, trouble-free service in many different applications. They are well worth closer examination.

This survey aims to emphasise the fact, well known to most of our readers, that the D.H.W. services field is a vast one. Choice of system and items of equipment really does need careful examination of all possible alternatives in light of known service requirements before a final decision is taken. Only in this way can the very best arrangement be determined.

● On the following pages in conjunction with this special survey we review products from the leading manufacturers ranges.

**VAUXHALL BOILER COMPANY LIMITED**

(Formerly: BOUËLLAT ENGINEERING LIMITED)

**BONDWAY HOUSE, BONDWAY, LONDON, S.W.8.**

Telephone: VICTORIA 9851.

Telegrams: BOUËLLAT, LONDON, S.W.8.

**VAUXHALL - GOLCALOR - Series Flow  
FULLY PACKAGED HOT WATER BOILER**

The most advanced new boiler for working pressures up to 150 p.s.i. with assured Series Flow (patented) circulation, integral circulating pump, purpose made oil burner, pre-heated combustion air, pre-heating of return water, pressurised furnace, correctly positioned flow and return stools, compact, highly efficient, all parts accessible through front door.

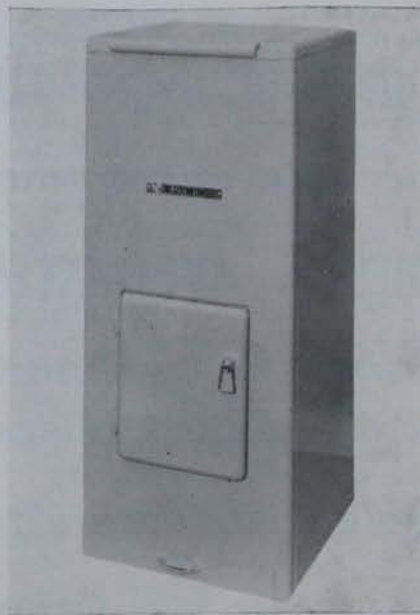
**OUTPUTS: FROM 300,000 BTU/HR. TO 3 MILLION BTU/HR. SUITABLE FOR 35 S.R.I. FUEL OIL THROUGHOUT AND 200 OR 960 S.R.I. FOR OUTPUTS FROM 500,000 BTU/HR.**

● We review here products of the leading manufacturers in conjunction with this special survey.

**T**HE AGA gravity feed boiler is very different in its design and operation from the normal method of solid fuel burning boiler. Home produced solid fuel is burned under close combustion control, enabling full value of heat to be obtained, and being smokeless there are no installation restrictions. Due to accurate thermostatic control the boiler is equally suitable for new or existing systems, either for small bore or large bore pipes, with radiators, convectors, skirting heating or other hot water media.

The fuel automatically falls under its own weight from the storage hopper to the fire, giving heat and hot water when required. The gravity feeding replaces fuel consumed in the fire bed, keeping a constant size fire. The hopper is only topped up once a day, in winter, and once every five or six days in summer under normal conditions, depending on the boiler selected. All stocking and banking up is eliminated.

The only control is a thermostat,



which can be adjusted over a wide range of temperatures.

For additional comfort more controls can be fitted, including room thermostats, outside temperature compensators, time switches and thermostatic radiator valves, most of which give further economy.

Models available are the Aga "GF" 45; "GF" 65; "GF" 85; and "GF" 125. The recommended fuel for Aga "GF" boilers is Irish anthracite grains, 3/16—3/8" size. The boilers are manufactured by Allied Iron-founder- Ltd., and distributed by Masser Domestic Appliances Ltd.

★ ★ ★

THE RUSTON horizontal thermax packaged boiler is of the three pass wet back welded design, having the flue and combustion chamber totally immersed in water with no internal brickwork apart from the burner quarl. All tubes are expanded into their tube plates, not welded, and this method of construction has already years of trouble free service.

Differential tube expansion in the two passes of the tubes is allowed for by arranging the tube banks between three tube plates instead of the more normal two. No induced draught fan is needed with this type of oil fired boiler as a forced draught fan mounted integral with the oil burner supplies all the primary and secondary air necessary to ensure correct combustion, and CO<sub>2</sub> readings of the

*Continued page seventeen*



## water heaters

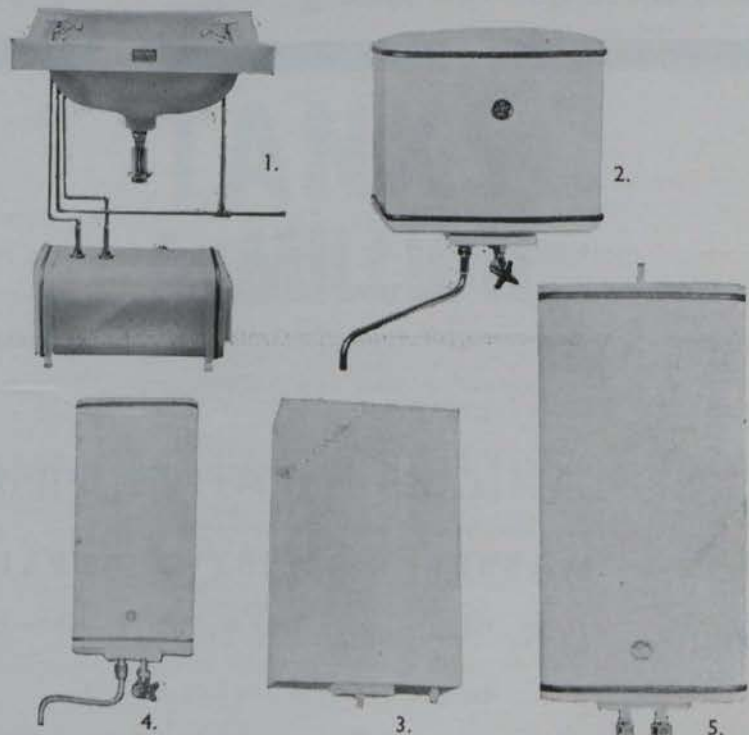
1. UNDERSINK WATER HEATER. Easily installed under sink, with special fitment provided. Thermostatically controlled. Capacity 2 gallons. Loading 1 KW. Price £12-10-0.

2. 'HOTFLO' 2 GAL. WATER HEATER. Easily installed. Thermostatically controlled. Glass fibre tank lining prevents heat loss. Loading 1 KW. Price £11-5-0.

3. CISTERN TYPE STORAGE WATER HEATER — Available from 5 gal. capacity upwards. Ball valve tank, hot water tank heating elements and thermostat are embodied in one unit. Price from £23-19-6.

4. NON-PRESSURE TYPE WATER STORAGE HEATER—Single outlet only. Takes its cold water supply direct from mains. Available in capacity from 2 to 20 gals. Prices from £11-5-0.

5. PRESSURE TYPE WATER STORAGE HEATER — for multi-point installations — takes its cold water supply from an overhead tank. The 15 or 20 gal. sizes provide ample supplies for the average household. Larger sizes are available for hospitals, schools, institutions, etc. Price from £11-5-0.



**THE GENERAL ELECTRIC CO. OF IRELAND LTD.**

HEAD OFFICE AND WORKS  
DUNLEER, CO. LOUTH. Tel. DUNLEER 9.  
SHOWROOMS AND SALES OFFICE  
54 DAME ST. DUBLIN 2. Tel. 71141

**ALLIED IRONFOUNDERS LIMITED**  
*announce the appointment of*  
**MASSER DOMESTIC APPLIANCES LIMITED**  
*(Sole Distributors for Aga Cookers*  
*and Agamatic Boilers)*  
*as Sole Distributors for*  
**AGA GRAVITY FEED BOILERS**

**AGA**

**GF 45**

Heat Output: 45,000 Btu.  
Hot water only: 30-120 galls.  
Heating only: 275 sq. ft.

**AGA**

**GF 65**

Heat Output: 65,000 Btu.  
Hot water only: 40-150 galls.  
Heating only: 400 sq. ft.

**AGA**

**GF 85**

Heat Output: 85,000 Btu.  
Hot water only: 40-200 gal's.  
Heating only: 500 sq. ft.

**AGA**

**GF 125**

Heat Output: 125,000 Btu.  
Hot water only: 50-300 galls.  
Heating only: 750 sq. ft.

*Masser Domestic Appliances Limited will inspect and approve sites before installation, instal the boilers on prepared sites and provide efficient after-sales service.*

*AGA GRAVITY FEED BOILERS are thermostatically controlled, operate on low-cost Irish Anthracite Grains and are fully guaranteed from date of installation.*

*Write or telephone for full details to:*

**MASSER DOMESTIC APPLIANCES LIMITED**

*Annesley Works, East Wall Road, Dublin 3. Telephone 79801.*

## PRODUCT REVIEW

from page fifteen

order of 14 per cent. are attained.

Flame failure and low water safeguards are incorporated and can operate efficiently with fuel oil up to 3,500 secs. viscosity Redwood No. 1 at 100°F. or 38°C. The feed pump, which is mounted on the base frame, is also completely automatic in operation. The manufacturers are Ruston & Hornsby Ltd.

★ ★ ★

McMULLANS KOSANGAS Ltd., have available water heating equipment for use with Kosangas. From their range we note the following of particular interest: the 515/1 Ascot single point sink water heater designed to operate on low water pressure with regulating water tap; the 510/1 Ascot boiling water heater designed for tea making or any job that needs really boiling water. In less than a minute this sink water heater gives continuous boiling water. Fitted with a three-heat control, it can give endless hot water or warm water instantly and abundantly.

The Ascot Water Heater 525/1 can be used as a single point or multi-point heater, giving speedy hot water at the temperature selected; the 701/1 Ascot Multi Point Heater is a complete family hot water service. It gives endless hot water for baths or hand basins with washing up water in the tap in the kitchen.

The manufacturers are Ascot Gas Heaters Ltd., North Circular Road, Neasden, London, for use with Kosangas by McMullans Kosangas Ltd., Upper O'Connell St., Dublin.

★ ★ ★

G.E.C. IMMERSION heaters are easily fitted by means of a flange, no bolts or solder being needed, and the elements can be withdrawn if necessary. The screwed 2½" type is designed for entry on the side of the cylinder or tank and incorporates a thermostat which can be set to suitable temperatures (160°F. is the most economical). The water heats by contact with the element tubes and a steady circulation of hot water throughout the tank is created.

Also from the G.E.C. range of water heating equipment we note the pressure type storage heater which takes its cold water supply from a ball-valve tank and a vent or expansion pipe must be fitted to return to that

tank. Hot water may then be drawn from standard taps at points required through connections to the vent pipe or from the outlet provided. The 15 or 20 gallon sizes provides ample supplies for the average household, larger sizes being available for hospitals and institutions, etc.

From the General Electric Co. of Ireland Ltd., Dunleer, Co. Louth, and Dame St., Dublin.

★ ★ ★

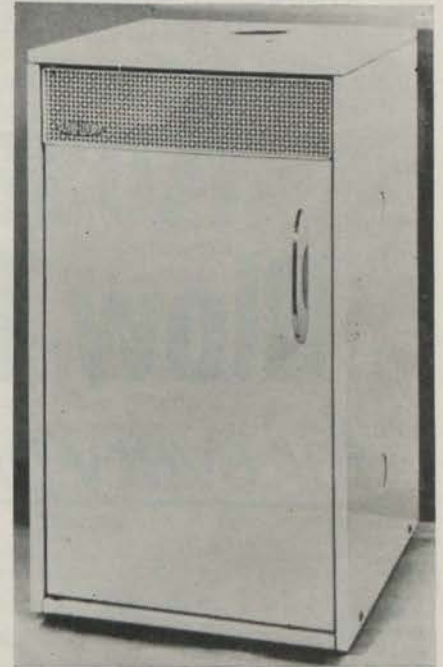
HOLDEN & BROOKE Ltd. (Sirius Works, Manchester) advise that they have introduced three new products: the Selflo Accelerator, Wython Storage Calorifier, and Braddon Non-Storage Calorifier, in the past year.

The Selflo accelerator is a glandless circulating unit designed for minimum maintenance. Indeed, for all intents and purposes, maintenance may be said to have been eliminated. It is available in four sizes, from 1" to 3" bore branches, and can handle up to 64 g.p.m. Maximum head available is 15 ft.

The Wython range of Storage Calorifiers is manufactured by BSS 853, Storage capacities up to 600 gallons are available, with a variety of heating elements, which makes it possible to offer transfer duties up to 2,000,000 B.t.u.'s/hr. A delivery of eight weeks is at present available.

The Braddon range of Non-Storage Calorifiers work on a water to water Heat Transfer principle. Duties up to 10,000,000 B.t.u.'s/hr. are available from sixteen sizes. Irish agent: G. C. Pillinger & Co. Ltd.

THERMGLOW Mk II, a new and improved version of the successful gas-fired Thermglow boiler by Glow-worm Boilers Ltd. (Hatton Garden, London), is shown here with top flue discharge. The Thermglow is also available with a balanced flue outlet. It has a rating of 30,000 B.Th.U./hr.



Gas jets are totally enclosed, eliminating the risk of danger to children, while provision has been made for servicing and maintenance.

Dimensions are: height, 36"; width, 20"; depth, 19"; Tappings, 1½";

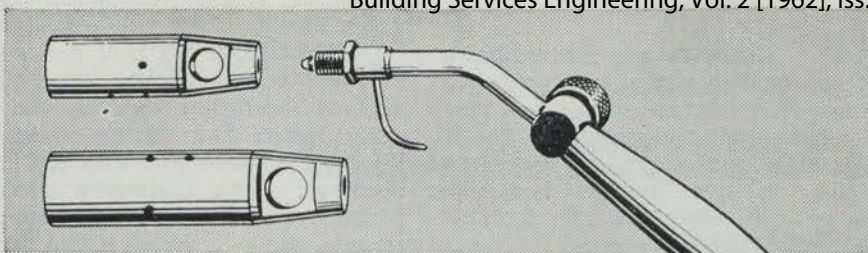
Continued overleaf

# TANKS A MILLION

No, it's not a printer's error! We're not sure just how many galvanised tanks and copper cylinders

## HAMMOND LANE INDUSTRIES LTD.

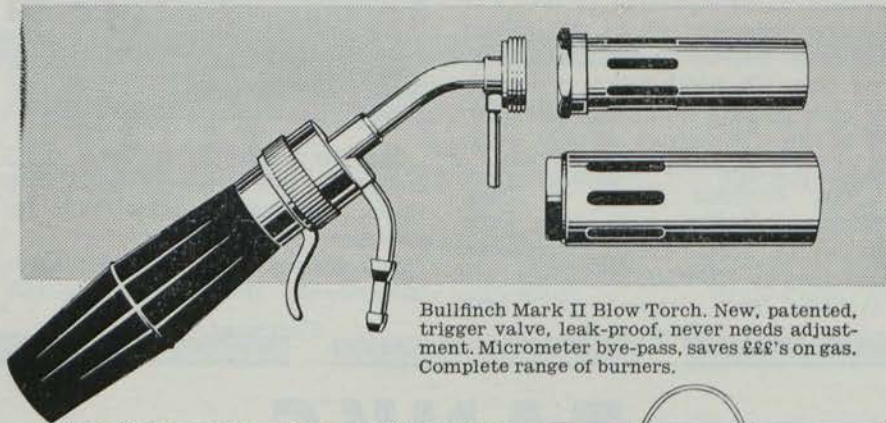
have produced, but it seems like a million. New, increased production methods now enable HAMMOND LANE to supply all sizes and capacities from stock. For further information write direct to: 111 PEARSE STREET, DUBLIN, 2.



(TH3) (TH4) Kosangas High Pressure Blow Torch. Wooden handle. Needle control valve, for gas adjustment. Supplied with large or medium burner heads.

# Kosangas Blow Torches

*for every plumbing job!*



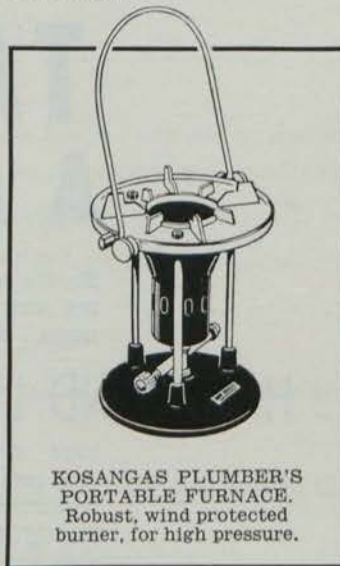
Bullfinch Mark II Blow Torch. New, patented, trigger valve, leak-proof, never needs adjustment. Micrometer bye-pass, saves £££'s on gas. Complete range of burners.

Make full use of the wide range of Kosangas blow torches, available for plumbing work. They're much more efficient than the conventional type.

The Kosangas TH3 and TH4 are designed for paint burning, pre-heating and soldering. The Bullfinch Mark 2 has a wide variety of heads, including soldering attachment. In conjunction with the small portable Kosangas cylinder, use Kosangas blow-torches for:

- PAINT BURNING · PRE-HEATING
- SOLDERING · ROOF FELTING
- JOINTING OF PLASTIC PIPES
- ANY OTHER HEATING NEEDS

The Kosangas plumber's portable furnace, with wind protected burner, is excellent for outdoor plumbing and cable work, requiring liquid asphalt, pitch, zinc, lead, tin and other fusible materials.



KOSANGAS PLUMBER'S PORTABLE FURNACE. Robust, wind protected burner, for high pressure.

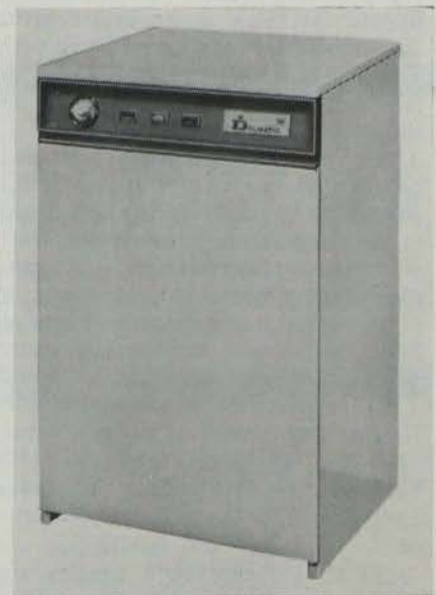
Send for fully descriptive lists and leaflets to:  
McMullans Kosangas Ltd., 1, Upper O'Connell St., Dublin. Tel. Dublin 40761-4.

B.S.P. both sides. Pump flow connection where fitted: 1" B.S.P. Gas connection, 1/2 B.S.P. Electrical connection where fitted, 200/240 volts; 5A. 50 cycles. Flue connection: 4" vertical socket outlet.

★ ★ ★

THE LATEST addition to the Delmore range is the "Delmatic 55," the first fully automatic oil-fired boiler produced by Delmore Engineering Co. Ltd., operates on automatic controls from fuel supply through glow-plug ignition to thermostatic cut-out. The burner is of a vaporising pot-type. All controls are governed by a single master switch on the Rockite control panel. Three signal lights key the stages in the boiler's heating sequence. B.t.u. capacity is 55,000 per hour.

Ignition and heating time averages around 4 minutes, so each on/off sequence lasts upwards of ten minutes. Flooding of the burner is prevented by a rising shut-off float.



The circulating pump can be built into the casing of the boiler when provided as a small bore unit. It can be governed by a room thermostat if required which will ensure the steady flow of heat all around the house. Alternatively, when the constant action of the boiler is not required, a time switch can be employed to cut out ignition for pre-selected periods without any manual control. The whole unit is pre-wired and requires minimum installation and maintenance. The Irish agents for the manufacturers are the Irish Technical Production Co. Ltd.

★ ★ ★

THE VAUXHALL Golcalor fully packaged hot water boiler is a product of the Vauxhall Boiler Co. Ltd., Bondway House, Bondway, London, S.W.8. A number of units of up to 2.5 million B.t.u./hr. will be in operation for the first time during this heating season. The range of these boilers, originally between 0.3 million and 2.0 million B.t.u./hr., has been extended to up to 3 million B.t.u./hr.

The boiler is a three-pass Shell boiler, tubeless, the gas passage being annular spaces between cylindrical water ways, fitted one within the other. The combustion air is pre-heated to approximately 200°F. by passing through the full face boiler door, developed to act as an air heater. The unit is provided with an integral circulating pump; pre-heating of the return water and the medium pressure air burner allows the use of heavy oils if desired.

★ ★ ★

SIMPLEX Electrical Co. Ltd., Creda Works, Blythe Bridge, Stoke-on-Trent, Staffs., include in their range immersion heaters, immersed length 10", loading 2,000 watts; and immersed length 11½-36", loading 3,000 watts; 2¼" B.S.P.T. heads with pocket suitable for rod type thermostat. An alternative model is available with pocket suitable for TQB-type thermostat.

★ ★ ★

COX WATER heaters are designed for mixing steam with cold water under the correct thermal conditions to ensure that the heat exchange takes place under the highest possible efficiency.

The "Baby Cox" is a chromium plated mixer with interlocking steam and water valves and a check valve on the water side. The valves are either renewable disc type with renewable screw-in seats (standard model) or made of stainless steel (S/S model). It is simply connected to ½" steam and water mains and is ready for use on wash basins, sinks and small service points in factories for a maximum temperature of about 160°F.

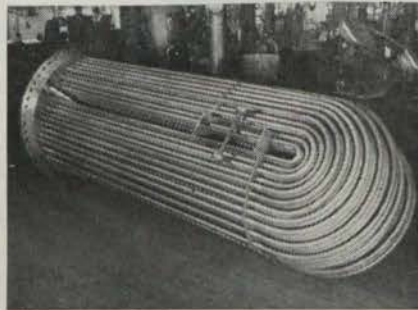
The "Junior Cox" and "Senior Cox" ranges are widely used in every branch of the steam using industry for process work, or for cleaning operations for temperatures up to 200°F. They are controlled by standard steam and water valves, and a check valve should be installed in the water line.

Interlocking valve system can be

fitted to the heaters if desired, to prevent the steam valves from being opened before the water has been turned on. The manufacturers are the Cox Engineering Company Ltd. Irish agents: Messrs. Halpin & Hayward Ltd., 16 Lower O'Connell St., Dublin.

★ ★ ★

ILLUSTRATED here is a large four pass Calorifier Battery in the process of construction by Hartley & Sugden Ltd., Boiler Manufacturers, Halifax, England.



The British Standards Institution has granted the firm the first licence to use the famous Kite Mark on Calorifiers made to B.S.853 Part 1. Units made by Hartley & Sugden Ltd., to this standard, will in future carry the Kite Mark.

★ ★ ★

THE NEW Bossot Radiator Valves are available in the standard type of valve, also the double regulating type and with ends screwed B.S.P. or in B.S. 659 Copper Tube. They are

extremely neat and compact and are ideally suitable for all types of hot water heating installations. From the British Steam Specialties Ltd.

Also from the range of British Steam Specialties we note the Boss-Rad 66 small bore heating circulator, which features a "hydraulic" electrical gap, which upon starting is very small to give high torque, and once running automatically changes into a large gap to give smooth, quiet running.

The maximum working temperature is 230°F. and standard units are suitable for 210-250 volts A.C. 50 cycle, single phase, having a consumption of 75/85 watts. Other voltages and periodicities can be supplied to order.

★ ★ ★

FROM the range of Glow-Worm Boilers Ltd., we note the newly-introduced model G.50 gas fired central and domestic water heating boiler rated at 50,000 B.t.u./hr. Its dimensions are 30½" high, x 13" wide.

Operating for water heating only, the G.50 will raise 50 gallons of water from 50°F. to 150°F. in one hour. On heating only it will provide for 278 sq. ft. of radiating surface, including pipes. On a combined system, the G.50 will handle a 30-gallon indirect hot water cylinder plus some 230 sq. ft. of radiation—eight or nine double panel cast iron wall radiators.

Two versions are available—the

*Continued overleaf*

## 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 (½") for wash-basins, sinks, etc.
- ★ (2) JUNIOR COX 1-5 (¾"-2") for process work, vats and general purposes.
- ★ (3) SENIOR COX (2½"-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

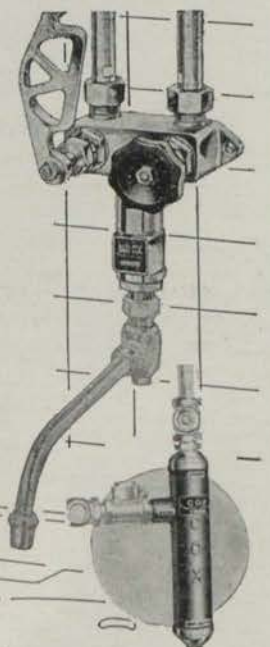
Manufactured by COX ENGINEERING CO. LTD.

Dept. IP.7., 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.  
Bedford Buildings, 7 Bedford St., BELFAST. Tel. 26343.



standard G.50 and the G.50 S.B. small bore packaged unit. The standard model is fitted with non-electric gas controls, including main cock, gas pressure governor, thermo-electric flame failure valve, relay valve, and thermostat and top flue.

The G.50 S.B. is a de-luxe version fitted with a low voltage electrical control system and circulating pump for small bore heating. The unit is completely pre-wired and the controls include electrically operated boiler thermostat, "plug-in" provision for low voltage room thermostat control of the circulator, electrically operated low voltage clock controller, and push button electric ignition.

★ ★ ★

THE NEW WORLD Stratalyn is a regulo-controlled gas water heater for attachment to a hot water storage cylinder or tank by means of a single connection in much the same manner as an immersion heater. The connection comprises a fitting with combined flow and return waterways and a flexible flow pipe.

The flow pipe is arranged vertically within this storage vessel and terminated close to the top, thus hot water is injected directly into the top ready

## PRODUCT REVIEW

from previous page

to be drawn off as required. In this way mixing is avoided and good stratification assured.



Stratalyn will provide ample hot water for the average household. The output is 5½ gallons of water per hour

raised 80°F.

The manufacturers are Radiation New World Ltd., Radiation House, North Circular Road, London, N.W.10. The Irish agent is Mr. C. S. Rolls, 115 Crawfordsburn Road, Bangor, Co. Down.

★ ★ ★

RAYBURN Brook fire with under floor draught combines the advantages of an open fire in the sittingroom with warmth in the bedrooms and bathroom. It will heat the room in which it is installed plus four radiators and a towel rail.

The 16" Rayburn sunk fire is supplied with fret strip, in cream, mottle, mushroom, blue, primrose, birch grey, or black vitreous enamel, complete with sunk ashpit fire and S.C. boiler flue with large C.I. boiler having ¾", 1", or 1¼" B.S.P. tappings one side only; with long period burning extension plate finished in stove enamel black; without gas ignition; with front or side air inlet and two feet of pipe for under floor air supply.

The Rayburn fire is a product of Allied Ironfounders Ltd., and is manufactured by the Coalbrookdale Company Ltd., Wellington, Shropshire.

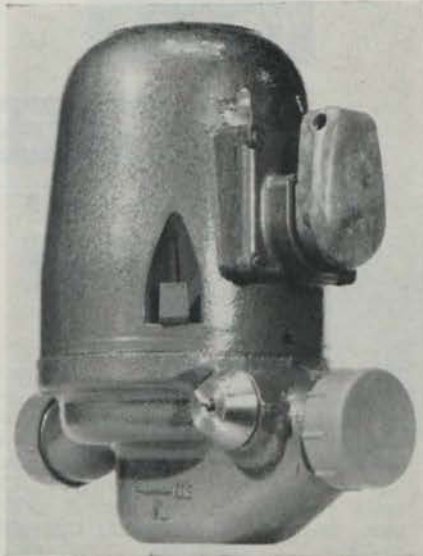


This is our latest shower valve, the Leonard 72, available for both exposed and concealed pipework. Larger Leonard valves are, of course, available for multi-point uses such as batteries of showers, ranges of basins and troughs, washbasins, etc.

Manufacturers—  
Walker Croweller &  
Company Limited,  
Cheltenham.

MODERN PLANT LTD.  
CRUMLIN RD., DUBLIN

Dublin 51049 & 51040



### The New Opiomatic

Harford Pumps Limited, at a London reception late last month, announced the introduction of their Opiomatic Variable Head Pump which covers all requirements on small bore or iron pipe installations up to 300,000 b.t.u.'s. It is capable of covering all duties up to 8ft. head or 24 g.p.m.

Micromatic adjustment enables the pump to be set at any intermediate point between the highest and lowest flow and head characteristics, and it is fully adjustable to any selected duty after installation by an easily accessible selector.

The Opiomatic carries a two year free replacement guarantee and is fully covered by the Harford Service Protection Scheme.

A full range of Opio Industrial Pumps were also being introduced early this month with duties up to 20 ft. head and flow rates up to 160 g.p.m. The Irish agent is G. A. Reid, Esq., Fade Street, Dublin.

THE DIRECTORS of Bekon Supplies Limited of Beaconsfield and Bell's Asbestos and Engineering Limited of Slough announce a joint venture for the manufacture, sale and distribution of steel panel radiators.

The steel radiators hitherto marketed by Bekon Supplies Limited under the trade name Bekon, will be re-named Belkon and marketed by Bell's Asbestos and Engineering Limited, Bestobell Works, Slough, Bucks.

## TRADE

## TOPICS

### INTERNATIONAL APPRENTICESHIP COMPETITION

"IN the five years in which we have been represented in these International Competitions, the Irish boys have taken eleven first places, eight second places and ten third places. When we consider that all the competitor countries are highly industrialised and that most of them have substantially larger populations than ours, these results have been more than gratifying," said the Minister for Education in his address to the apprentices selected to represent Ireland at the Spanish International Apprenticeship Competitions, on the eve of their departure.

"Their task was a formidable one. Not only would they be in competition with the representatives of Spain, Portugal, Italy, Belgium, Britain, France, Luxembourg, Austria, Switzerland and West Germany, but they would also naturally wish to live up to and, if possible, excel the previous splendid Irish record of achievement. That was a challenge which you young men will readily—and, please God, successfully—take up."

This was the sixth year in which a team of Irish apprentices would have engaged in these competitions. They were on each occasion guests of the country in which the competition was held. He was happy to announce that for 1963 the International Organising Committee has accepted an invitation from the Irish Government to hold the competitions in Ireland.

The Minister went on to pay tribute to those employers and firms without whose co-operation it would not have been possible to form a team for these competitions.

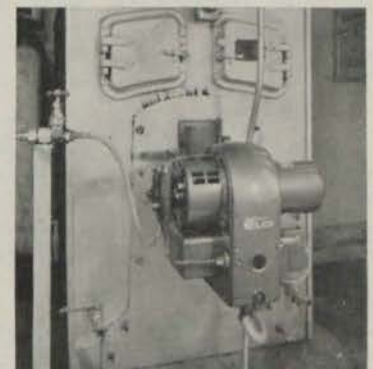
● The Plumbing Trade was represented by William O'Rourke, 99, Kildare Road, Crumlin, Dublin.



### Sole Distributors

Lee, Howl & Co. Ltd., pump manufacturers of Tipton, Staffs, have concluded an agreement with Perfection Parts Ltd., 59 Union Street, London, S.E.1., whereby the latter become the sole distributors in the U.K. for the Lee Howl/Webster pressure jet oil burner fuel unit. This fuel unit is manufactured by Lee, Howl & Co. Ltd., under licence from the Webster Electric Company, Racine, Wisconsin, U.S.A.

The standard Lee, Howl/Webster fuel unit, as well as being supplied as basic equipment on new burners, is also interchangeable with existing fuel units as it is fitted with international standard flange mountings. The pump is capable of handling fuels from kerosene to oils of a viscosity of 1,000 seconds Redwoods No. 1.



Shown here is an Elco Std. 1.12 Gas Oil Burner fitted to an Ideal Britannia 2K series boiler, converted from coke firing used for central heating of a water pumping station in Britain. (See "Seek Agents" elsewhere in Trade Topics in this issue).



# HEVAC: FUEL ECONOMY METHODS A MAJOR FEATURE

**NEW FUEL** economy methods for industry and the home will be a major feature of the 2nd International Heating, Ventilating and Air Conditioning Exhibition (Hevac) at Olympia, London, from September 26 to October 5.

Throughout the exhibition, the accent is on higher efficiency of equipment, conservation of heat, and simplified installations leading to lower capital cost.

Last year's exhibition attracted more than 45,000 visitors, including 1,345 from overseas, and this year the £50,000,000-a-year industry is making a determined effort at Olympia to expand its export market, now worth more than £5,000,000 a year.

A method of combining heat and light from the same "radiator" is to be shown at Olympia by **Copperad Limited**. The unit, known as the Raylight, consists of a continuous radiant strip heating surface, designed for operation on steam or hot water, with a tubular fluorescent lighting strip passing through its centre. The heat output is as high as 1,416 B.t.u.'s per hour per foot run.

**Danfoss (London) Limited**, who produce more than a million hermetically sealed compressors a year for domestic refrigerators, have introduced thermostatic valves for individual room control of central heating. The controllers need no electricity supply.

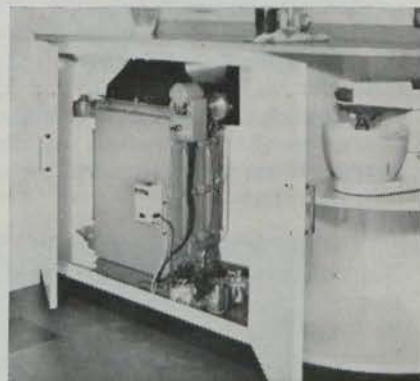
Main feature of the **Keith Blackman Limited** exhibit at Olympia will be a new fresh air type "Heat Throw" unit-heater, designed for space warming in factories, workshops, warehouses and public buildings.

**Trianco Limited** introduce solid fuel boilers with automatic fuel feed and clinker disposal which works at a rate controlled by the boiler load. Also new is a 55,000 B.t.u./hr. domestic boiler designed in collaboration with the National Coal Board to burn coke as an alternative to anthracite. This is the P.55 boiler.

**Woods of Colchester, Limited**, show for the first time aerofoil bifurcated fans which can handle saturated at-

mosphere and hot gases up to 400 degs. F. The company, the largest exporter of industrial fans in Britain, produces axial flow fans from one-and-a-half inches in diameter to eight feet. The Colchester factory is laid out to meet production demands of some 400,000 fans a year.

**Thomas Potterton Limited** will be putting on the market in October balanced flue models of their "Diplomat" gas-fired boilers and small bore units. These new models will be displayed on Potterton's stand at the Exhibition.



A 'Diplomat' installed under a working top in a kitchen.

Briefly, the principle of a balanced flue appliance is that it should take air for combustion directly from, and discharge the products of combustion directly to, the atmosphere outside the room in which the appliance is fitted. This is achieved by twin ducts—one inlet, one outlet—which are "balanced."

A new "dry" air conditioning unit which employs an indirect steam humidifying section, making it particularly suitable for hospital operating theatres, will be shown for the first time at Hevac by **Davidson & Co. Ltd.**, Sirocco Engineering Works, Belfast, 5.

The unit, which gives full scale air conditioning, has no sprays so there is no danger of water-borne bacteria. The indirect steam humidifier is patented and is produced in collaboration with Calomax (Engineers) Ltd. Air filters to individual specification can be fitted.

TRADE

TOPICS

TENDERS

(See also page 42)

**TIPPERARY (S.R.) County Council:** Tenders are invited for the construction of the Fethard Regional Water Supply Scheme in accordance with the Drawings, Specification, Bills of Quantities and General Conditions of Contract prepared by Timothy J. O'Riordan, Esq., B.E., M.I.C.E.I., Consulting Engineer, 6 Burlington Road, Dublin 4, from whom documents may be obtained on payment of a deposit of £25 (returnable).

The Contract provides for the construction of 99,000-gallon reservoir at Campscastle, 60,000-gallon reservoir at Drangan, 20,000-gallon reservoir at Garraunmore, pumphouse at Ballinard Cross and the laying of the following water-mains:

431 lin. yds. of 8" S.I. concrete lined pipe.

5,509 lin. yds. of 6" diam. pipe.

6,372 lin. yds. of 5" diam. pipe.

1,106 lin. yds. of 4" S.I. concrete lined pipe.

772 lin. yds. of 4" S.I. pipe.

42,526 lin. yds. of 4" diam. pipe.

19,287 lin. yds. of 3" P.V.C. pipe.

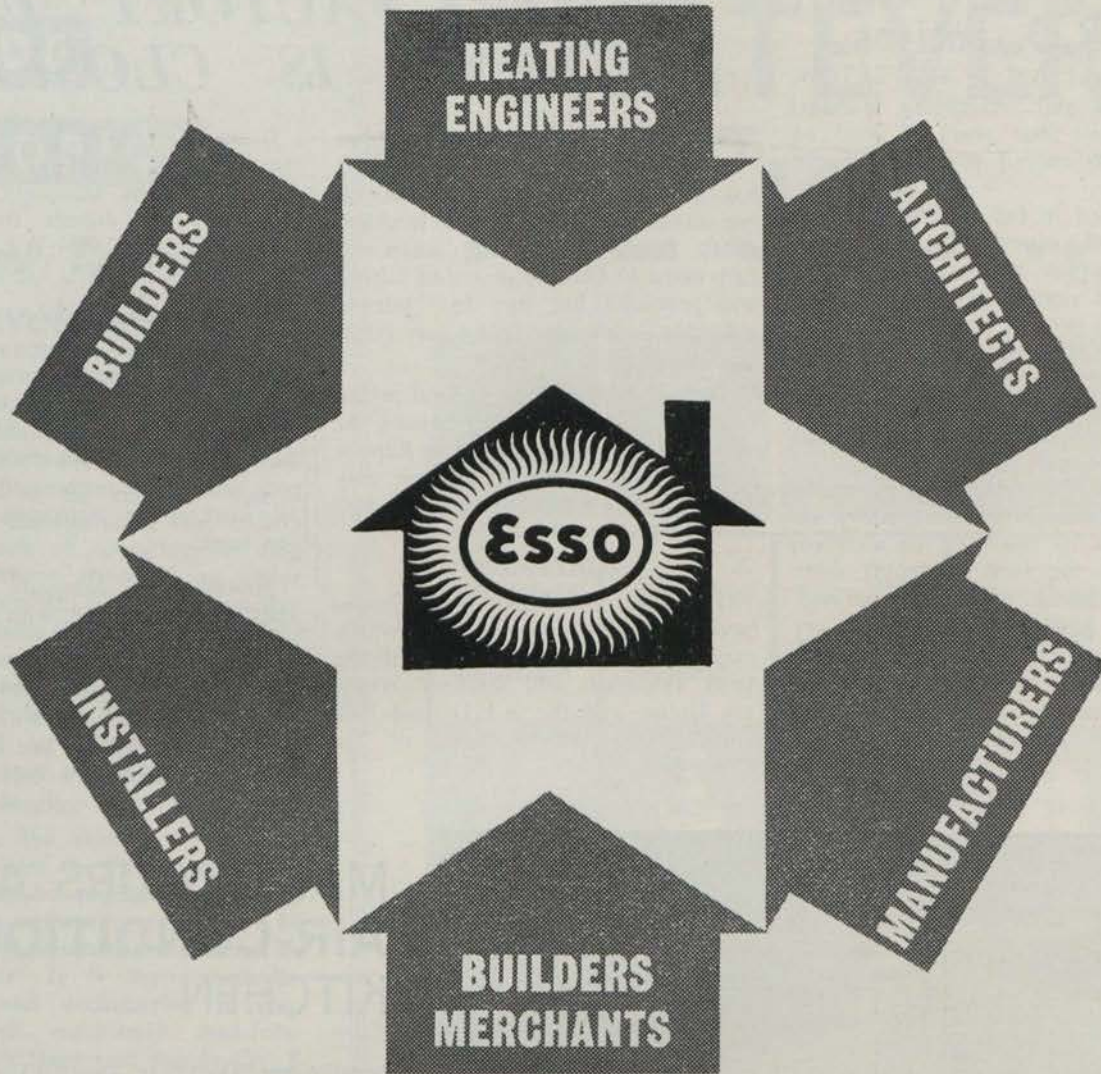
1,180 lin. yds. of 2" P.V.C. pipe.

Sealed tenders endorsed "Fethard Regional Water Supply Scheme—Contract No. 2" and accompanied by Bill of Quantities priced and extended in ink, should reach C. WALSH, Secretary, County Buildings, Clonmel, not later than 5 p.m. on October 4, 1962.

**GALWAY County Council:** (Mountbellow Sewerage Improvement Scheme) Supply and Installation of Sewage Ejector and Filter Distributing Apparatus—Tenders are invited for the supply and erection of (a) C.I. Sewage Ejector, capable of raising 36 gallons per minute of unscreened sewage to filter distributors against a static head of 14 feet, together with air compressor and A.C. induction motor, etc., (b) Two sets of Rotary Distributing apparatus each capable of dealing with a D.W.F. of 17,000 gallons per day—all in accordance with the Plan and Specification prepared by F. H. McGrath, Esq., B.E., A.M.I.C.E., A.M.I.Mun.E., A.M.I.W.E., A.M.I.C.E.I., of Messrs. H. G. L. O'Connor and Co., Consulting Engineers, 4 St. Francis Street, Galway, from whom contract documents may be obtained on the payment of a deposit of £5 5s. (returnable).

Completed tender forms must be delivered to the Secretary, Galway County Council, County Buildings, Prospect Hill, Galway, not later than October 15, 1962.

Sealed tenders shall be marked "Tender for Ejector and Distributors for Mountbellow Sewerage Scheme."



## OIL-FIRED **CENTRAL HEATING**

has a lot to offer you!

*If you would like to discuss your particular problems why not contact*

**ESSO HOME HEAT DEPT.**  
**STILLORGAN, CO. DUBLIN**

TELEPHONE 881661

## Bord na Mona P.R.O. retires

**M**R. WILLIAM J. STAPLETON, PRO and advertising manager for the past four years of Bord na Mona, has retired on reaching the age limit.

He served in the Irish Army with the rank of colonel, and later organised a gigantic hostel and catering scheme on remote peat bogs during the war to provide fuel for the country. With the further development of the peat industry he organised the building of new villages and subsequently took over the duties of marketing manager for peat moss.

Even in retirement he will not be inactive, because he was recently appointed to the board of the company operating the Irish transport company's hotels.

### NEW P.R.O.

Mr. Michael Conroy, formerly with the publicity department of Aer Lingus, has been appointed PRO and advertising manager to Bord na Mona.

## POTEZ FACTORY IN GALWAY IS CLOSED

**T**HE Potez factory, Galway, has been closed down indefinitely, it has been announced by the managing director, Mr. Herbert S. Buckley.

Mr. Buckley said that when the firm came to Galway plenty of labour was promised, but due to "outside influence" they now found they could not continue.

They had been given an oral promise, he said, that they would be negotiating with one union, a Republic of Ireland union. Now they found "nobody would pass the pickets of an outside union."

### AGREEMENT

The Irish Congress of Trade Unions have also issued a statement which explained that representatives of the Irish Transport and General Workers Union and the A.E.U. had held consultations with officers of the Congress.

It was agreed by the parties that the dispute at Potez was between the A.E.U. and the company, and that there was no dispute between the I.T.G.W.U. and the A.E.U. or between the I.T.G.W.U. and the company.

In order to avoid continuing hardships on those involved, went on the statement, and so as not to impede the development of this industry in Galway, it was decided that the dispute should be terminated, and that all workers be instructed to report for work.

However, the company have gone ahead, as announced, with the closure of the factory.

As we go to press there have been no developments in the dispute following the report that Potez principals in Paris are to intervene.



## MAKE YOURS AN AIR-CONDITIONED KITCHEN

Install a new "Gold Star" Ductless Hood!

No more cooking smells in any part of your home. Here is a new cooker canopy; installed in under twenty minutes with two screws. Two wonderful filters; one absorbs grease and smoke, the second of activated charcoal eliminates odours, stale air and steam. Requires no pipes, ducts or holes in the wall.

NO HEAT LOSS; NO DRAUGHTS; COMPLETELY ELIMINATES COOKING SMELLS, GREASE AND FUMES; INSTALL IN A FLAT OR HOUSE—TAKE IT, WHEN YOU MOVE! KEEPS KITCHENS FRESH, CLEAN AND PLEASANT:

PRICE—24", £28-13-0; 36", £34-14-0, OR EASY TERMS. FROM ANY E.S.B. OR GAS COMPANY SHOWROOM OR ENQUIRE FROM YOUR LOCAL DEALER.

### GOLD STAR DUCTLESS HOOD

Write for further details and leaflets to the sole distributors.

**W. & L. CROWE LTD.**

EAST WALL, DUBLIN — TELEPHONE: 43101

**TRADE**

**TOPICS**

**New Trianco development**

With the co-operation of the National Coal Board, important new developments have been taking place in the Laboratories of Trianco Ltd.

The aim of the research was to enable the smaller solid fuel boilers to be capable of operating for long periods without attention on lower grade anthracite and on alternative freely available fuels. A major breakthrough has been reached with the new Trianco P.55 boiler, which replaces the original P.50.

The P.55 has a capacity of 55,000 B.t.u.'s/hr. and will burn cokes as well as anthracite.

As with the existing range of Trianco boilers, the P.55 is fitted with a large hopper requiring attention, when using anthracite, once every 24 hours in cold weather, once a week in the summer. It is thermostatically controlled and declinkering is very simple and completely dust-free. Irish Agents: Heatovent Supply Co., 5 Upper Fitzwilliam St., Dublin.



Mr. Colin W. Hart, Manager of the Flux Division at Fry's Metal Foundries, died suddenly recently. The position which Fry's hold in this particular field is largely due to his inspiration.

# WHATEVER THE JOB...

Tanks	Pipes	Boilers	Ducting
Fibreglass Flexible insulation	Fibreglass rigid sections	Fibreglass Crown 200	Fibreglass Filmed insulation

## there's a special FIBREGLASS INSULATION that's made for it

Fibreglass has a very high insulation value. It is simple to handle, fire-safe, vermin and rot-proof. You can get these forms of insulation delivered in the quantities you want when you want them. The sole distributors of Fibreglass heat insulation products in the Republic of Ireland are

Monsell Mitchell & Co. Ltd., 67/73 Townsend St., Dublin, 2

**Fibreglass Limited**

21 MERRION SQUARE DUBLIN

# The NEW Boss-Rad 66 Circulator



“The most advanced design in the circulator field today”

- ★ **SLIMLINE** — Compare its size with other pumps
- ★ **NEW ‘OUTPUT REGULATOR’** — One pump covers 95% of all small-bore heating systems
- ★ **‘HYDRAMATIC’** Starting/running action
- ★ **REVERSED FLOW LUBRICATION** — Keeps bearing free from dirt

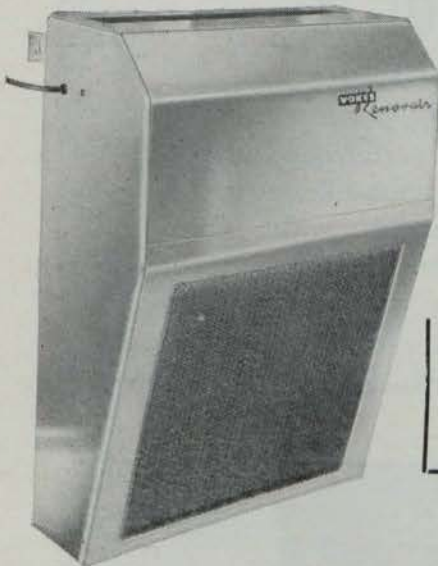
AND IT'S **Low Priced**

Write for full details to:—

**THE BRITISH STEAM SPECIALTIES LTD.**  
33 LEESON PARK, DUBLIN. Tel. 66961. Also at BELFAST

## **VOKES** offer guaranteed correct solutions to air filtration problems

### VOKES ‘RENOVAIR’ SMOKE REMOVAL UNIT



The ‘Renovair’ is the latest addition to the comprehensive range of Vokes air filters, and is ideal for use in meeting halls, offices, restaurants or any building or room where people congregate. Simply switch it on and it completely clears tobacco smoke and other airborne contaminants from the atmosphere within a few minutes. And

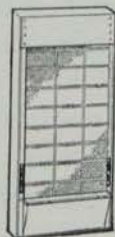
because the Vokes ‘Absolute’ filter in the ‘Renovair’ cleans air which is then recirculated, heat loss is eliminated with consequent saving on heating bills. Please write for descriptive leaflet. Other Vokes filters widely used in air conditioning and ventilating applications include:—

**S.C.**—A completely automatic filter for handling large quantities of air.

**Super-Vee**. — An inexpensive expendable filter panel suitable for many industrial applications.

**K.600 Kompak**. — A high-efficiency filter unit with replaceable filter medium.

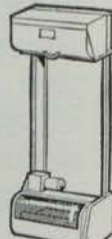
**Autoroll**. — An electrically or manually operated filter combining high efficiency with low operating costs.



S.C.



Super-Vee



Autoroll



K.600 Kompak

Full technical data available from the Sole Agents:

## **THE LEINSTER ENGINEERING CO., LTD.**

158-159 CHURCH STREET, DUBLIN. 'Phone 77093/4.



# AN IRISH PLUMBER & HEATING CONTRACTOR SPECIAL SURVEY

REVIEW OF THERMOSTATS, THERMOMETERS,  
TEMPERATURE INDICATORS, ETC.

## THERMOSTATIC CONTROL LONG RECOGNISED AS ESSENTIAL

**T**HERMOSTATIC control has long been recognised as essential ancillary equipment in large-scale heating design and operation. Scientifically designed appliances manufactured to fine engineering tolerances and assembled with care applicable to the sensitive instruments they are, modern thermostatic control devices offer valuable measures of automation in plant operation. Thereby, thermostatic control not only affects considerable economy of labour in plant attendance, it also affords uniformity of plant performance within fine limits and so enhances plant efficiency. Above all, thermostatic control eliminates human error of judgment. It can sense temperature variation before the effect becomes physiologically noticeable. In this way it can make compensatory adjustment to ensure a consistently desirable level of comfort conditions within a building.

Efficiency, ease and economy, those are the factors which make thermostatic control a "must" in larger installations. Smaller domestic installations too may be operated with improved all round comfort and economy by utilisation of the right kind of thermostatic control in the right place.

Thermostatic control instruments work on the simple and well-known principle of thermal movement (expansion and contraction) of materials subjected to temperature variation. This thermal motion is then transmitted in some way to provide the prime force causing the instrument to function.

### Example

A simple example is the rod type thermostat as commonly used with electric immersion water heating elements.

The thermostat is of the immersion kind too, and though often made integral with the heater head, they may be separately installed in the hot store and still control the electric circuit to the heater. An invar steel push rod, secured at the sealed end of the brass immersion casing of the thermostat, is free to move longitudinally through the thermostat end, which is fixed in the heater head or independently to the hot store side. Invar steel moves hardly at all under all normally encountered temperature differences; in other words its length is invariable over a wide temperature range—hence its name, Invar steel.

But brass, having a fairly high coefficient of expansion, does move a measureable amount over a relatively narrow temperature variation. It is this simple variation of movement for given temperature differences which cause the thermometer to work.

In the contracted cool state, the brass case will "shorten" and push the invar bar outward to close a micro-gap switch and cause electricity to flow in the heater element and thus heat the water.

As the water heats so the brass thermostat case expands. The "lengthening" effect of this draws back the invar steel push rod until, at a pre-selected temperature, it is drawn back so far that the micro-switch snaps open to break the electric circuit to the heater element.

Other forms of thermostat employ similar bi-metallic motivating elements but in strip or coil form. The safety cut-off as fitted to instantaneous gas water heaters, and the coil elements in thermostatic blending valves for D.H.W. temperature control or for small bore heating temperature control are typical examples of this kind.

*continued overleaf*



*This special survey—another in a series on important aspects of the plumbing and heating trades—has been compiled by a special correspondent.*

from previous page

Again, invar steel and some other more heat sensitive material forms the laminated strip or coil. When subjected to temperature variation the differential expansion of the laminates will produce a bending motion which, by simple bend or coil wind action, will impart forces capable of adjusting electrical or fluid flows.

Bi-metallic thermostats are commonly used for local control of equipment as suggested in the above examples. Sometimes it is necessary or desirable to provide some form of remote thermostatic control.

Immersion phial operated thermostats with phials filled with heat sensitive liquids are designed to meet this need. As the temperature of water or air surrounding the heat sensitive phial varies, so the expansion of the volatile phial content varies and imparts this variation through its connected and filled capillary tube to motivate some form of mechanical control of fuel or water flow.

Thermostats of this kind are used to adjust primary water or steam flows to large heat exchangers or calorifiers for central heating or large hot water storage systems.

In domestic work thermostats of this kind are used as room-stats. These being immersed in air in the room, react to any sensible temperature variation and react accordingly to operate blending valves or to monitor motorised valves to increase or decrease heating water flows in conformity with pre-destined requirements within the room. Alternat-

ively, individual radiators may have control of this kind. These are but two methods of thermostatic control application to domestic installations. Advertisements in this issue will perhaps suggest others. Each should be examined with care as to suitability for differing circumstances against the time when you may wish to recommend these labour saving and fuel saving items of equipment.

### Convinced

Everyone is convinced of the need to thermostat control simple electric water heaters. The same need to avoid overheating, misuse and wastage of fuel, and to obtain uniformity of comfortable usage and performance is just as essential in all other kinds of installation.

Thermostatic control equipment may, at first sight, appear an expensive luxury. A moment or two's reflection aided by technical literature from manufacturers will show that one can hardly afford to be without adequate thermostatic control. Regarded as an investment, the installation of suitable control will repay the outlay in fuel economies

which will result. The improved convenience and comfort which will derive will be very much appreciated.

Modern boilers for domestic use are invariably fitted with thermostatic control. These react to increase combustions as boiler temperature falls and to reduce or stop combustion as a pre-set high temperature is reached. Such controls, either integral with the boiler as in the bi-metallic devices which open or close primary air ports to combustion chambers of solid fuel boilers, as push rod immersion types used to control gas flow rates to gas-fired boilers, or as phial type immersion thermostats used to monitor fuel flow to oil-fired boilers, these may be regarded as limit stats.

In space heating where different rooms may need to be at different temperatures regardless of boiler operating temperature, the limitation of boiler temperature alone becomes clear.

### Monitored

Individual room control monitored by room-stats is one solution to this problem. It is a long standing technique for large schemes but to-day manufacturers have spared no effort in scaling equipment dimensions and costs of this form of control to well within domestic application range.

Zonal control is another form of fuel saving arrangement coupled with improved internal conditions according to prevailing external temperatures.

Zonal control by simple manual control or by more convenient time switch apparatus is increasingly sought after by well advised clientele and contractors who recognise this as an important adjunct to thermostatic control. Domestic boilers with integral time-switching for zonal control of bedroom and living zones are now available or the apparatus can be bought separately to convert existing systems.

Zonal control by thermostatic de-

## Automatic Controls for Oil Firing, Compressed Air and Water Supply by—

# DANFOSS

- Solenoid Valves, Boiler water level controls. Type R.A. Thermostatic Radiator Valves. Type R.A.I. Thermostatic Industrial Valves for Automatic Controls, Hot Water Tanks, Air Ducts. All types of Immersion and Room Thermostats.

Agents and Stockists:—

**J. J. SAMPSON & SON LTD.**

12a Wexford Street, Dublin. Phone 51856.

vice is a recent development in large scale heating. It is equally applicable to domestic systems. It aims to maintain internal temperatures constant regardless of heat losses or heat gains according to building orientation and solar heat intensity. It is well known that South facing rooms need less heat to warm comfortably than North facing rooms do. Solar heat gain to Southern aspect rooms, even in winter, demands some adjustment of circulating heating water to those rooms if these are not be wastefully and uncomfortably overheated.

### Heat Gains

Suitable, well disposed thermostatic controls will automatically sense these heat gains or heat losses and will operate valves to adjust compensatory water flows to those circuits at zones they are installed to govern.

Advertisements and illustrations accompanying this survey will indicate just how wide the field of thermostatic control really has become. Items become so specialised in nature and function that care is needed in selection to be sure that the best results are obtained. Fixing, too, is important and demands a consider-

## SPECIAL SURVEY

*from previous page*

able "know-how" but manufacturers are most helpful in providing free information and installation advice where this is necessary.

Thermostatic devices, usually of the volatile liquid in phial type, are used in the smaller types of steam traps which are essential items in steam equipment installation.

### Fire Valves

Similar phial type heat sensitive elements are used in fire valves—so necessary in the safe operation of domestic oil fired boilers. The thermostatic phial is fitted above the boiler. Any untoward increase in temperature, possibly due to burner fault giving rise to boiler fire, will be sensed by the expansive liquid in the phial and this will react to create a positive cut off of fuel supply to the boiler.

Thermometers are heat sensitive

devices used to provide visual temperature indication of whatever fluid, air, water, oil, etc., in which they may be immersed, or with which they may be in contact.

Immersion thermometers of the mercury in glass kind are well known. Where used in D.H.W. or heating work they should be of the well type. This allows withdrawal of a defective thermometer without interference with the water content of the system.

### Trouble Free

Contact thermometers, usually employing the bi-metallic coil principle of differential expansion, do not enter the water stream at all. These rely on thermal conductivity through pipe walls, radiator walls, etc. They are neat, effective and trouble free. For all tubes they are available in clip-on form. One enterprising manufacturer has produced a magnetic contact thermometer which should find useful service in system testing.

*Continued page thirty-one*

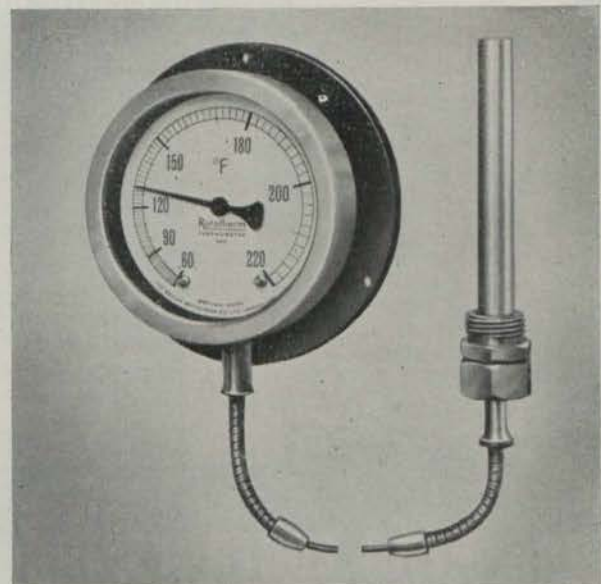
**In any industry...**

**TO MEASURE,  
RECORD  
OR CONTROL  
TEMPERATURES**

*accurately*

**Rototherm**

Bi-metal · Mercury-in-steel · Vapour pressure Thermometers

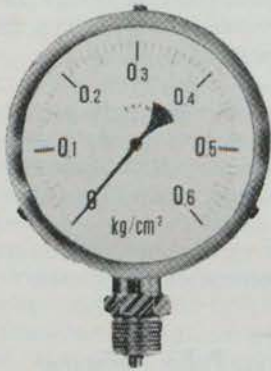


**are visibly better!**

**THE ROTOTHERM PRECISION & INSTRUMENT CO. LTD.**

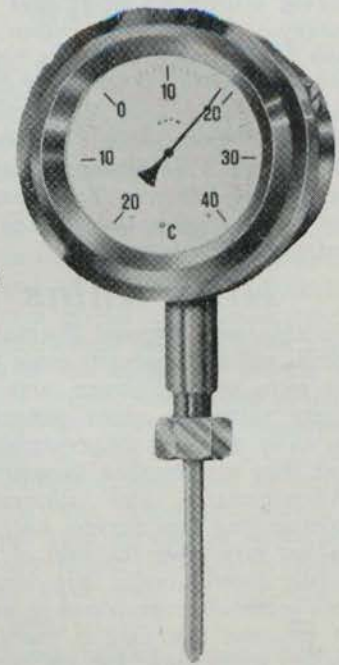
**Beechwood, Church Road, Killiney, Co. Dublin. Tel.: Dublin 86566, and Merton Abbey, London, S.W.19.**





● A complete line of Gauges always in stock.

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




Here's the first really **NEW IDEA** in electric heat thermostats

There's no other room thermostat like it. Its large dial actually "meters" desired temperature changes. Each "click" is a change of 1° . . . reduces tendency to over-, or under-adjust. And, it gives faster response to both convective and radiant heat. You'll also like the faster installation and easier wiring. Write for Bulletin 3205 . . . it's free!

**PENN CONTROLS, INC.** Goshen, Indiana

▲ **Easier to wire**

There's no more looping of wires . . . simply insert straight wire end under the new "quick-connect" large terminals and tighten.

★

▲ **Decorator Panel**

Click Dial thermostat blends perfectly with any room decor. Snap-in front panel is easily removed for painting to match any colour scheme.

# MANOTHERM LTD.,

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

from previous page

The instrument firmly attaches to cast iron or steel pipes and rods, boilers, etc., and thus eases the rapid and accurate examination of temperature in any part of the system under test. It is a welcome replacement for the time honoured "sense of touch," which is a very inadequate and unreliable guide to temperatures above about 100°F.

Electric thermocouple instruments are rather specialised instruments for much the same work. These are generally to be found only in use with the really "big boys" of the heating world.

Although of little real value in a fully thermostatically controlled domestic system of heating or D.H.W. supply, thermometers have an important application in installation testing at all times and in visual tem-

perature indication of system performance in large installations.

Thermostatically operated fire valves for domestic oil fired boilers have been mentioned and brief mention must be made of recent advances in other devices for oil installations. Oil tank gauges of new pleasing and practical design are now available, along with alarms designed to prevent overspill of tanks in filling from some remote, unsighted point.

### In conjunction with this special feature we review here products from the leading manufacturers ranges.

THE PACKAGED boiler control unit—Mark 11—now introduced by Venner Ltd., is easily adapted to suit small gas and oil fired boilers designed for automatic control by thermostat which have been introduced in recent years by several manufacturers. It provided a closer control over heating procedure than has hitherto been possible.

With a gas fired boiler a solenoid gas valve is introduced into the bleed line, which is then operated by the control unit in the same way as the existing thermostat valve controlled by water temperature.

The packaged boiler control unit comprises a neat panel fitted with a time switch, miniature sockets for connecting the various remote circuits, and a six-way rotary switch. The five sockets provide connections for mains input, room thermostat, solenoid gas valve (or oil burner) and accelerator pump, thus considerably simplifying the external wiring. This special facility enables a valve or circulating pump to be changed by the hot-water engineer without recourse to an electrician.

★ ★ ★

CLORIUS TEMPERATURE regulator type V consists of a directly acting thermostat and a regulating valve. It is used for the regulation of water and steam up to 25 a.t.m. and 400°C. (750°F.). The expansion and contraction of the feeler liquid (usually glycerine) influences a piston in the adjusting cylinder and the piston directing determines the position of the valve cone. The thermostat is set at the desired temperature by turning the handle on the adjusting cylinder.

The Clorius type V is made in the following types: V-0 range scale of 30-90°C. (85 to 195°F.) with 18 kgs. closing power. V-1, between 10 and 140°C. (30-280°F.) with 25 kgs. clos-

ing power; and V-11, between 10 and 140°C. (30-140°F.), with 70 kgs. closing power.

The manufacturers are Odin Clorius, A/S Engineers, Kalvebod Brygge 20, Copenhagen, and the sole distributors in Ireland are Modern Plant Ltd., Crumlin Road, Dublin.

★ ★ ★

IN THE Satchwell range from Rheostatic Co. Ltd. is the M. motorised valve designed to control the flow of low pressure hot water. It is particularly suitable for use with the Satchwell TL Thermostat. It can be used to control individual radiators, zone heating or other equipment.



Remarkably compact and cheap to instal, the valve body is made in five sizes, from ½" to 1½" B.S.P. Three types of valve bodies are available: (1) straight-through with ends screwed for installing in pipework; (2) straight-through with radiator union; and (3) angle with radiator union. The gland has been specially designed to give long trouble-free service and no adjustments are required.

★ ★ ★

THE ACCURATE RECORDING Instrument Company of Montague St., Dublin, through its activities in the field of pressure, vacuum, temperature, process control, and boiler house instrumentation, covering steam flow, water flow, gas analysis, and the automatic controls for firing, is assisting in the drive towards greater efficiency, standardisation, and the reduction of production of costs.

The Company manufactures a range of instruments in Dublin and has a trained staff of technicians readily available for site maintenance and advice to factory managers. The techniques of vapour pressure and liquid expansion fillings for thermometers have been refined. The Company is geared in its test equipment to calibrate and recalibrate instruments sent in.

The experience gained in the instrument field allows for full maintenance of all instruments, both British and Continental, and a comprehensive stock of spares is held in the workshop covering replacements of movements, pivots, jewels, integrators, etc.

★ ★ ★

THE NEW "Protecta" thermostatic water mixing valve completely eliminates any danger of scalding in the home, factory, hospital, etc. Predetermined temperature of the water is set on the temperature selector, and the water temperature will remain constant at all times as it flows through the mixing chamber.

The temperature selector can be locked in a predetermined position to control hot water to the "nth" degree. From: Belco Manufacturing Co. Ltd., Shortlands, London, S.W.6.

★ ★ ★

Continued overleaf

A NEW BI-METAL actuated thermometer specially designed for external use has been produced by the British Rototherm Co. Ltd., Merton Abbey, London, S.W.19. The thermometer has a 7" dial with easily legible figuring so that the temperature reading can be clearly seen at a considerable distance.



The dial has dual scale, being marked in both Fahrenheit and Centigrade. The Fahrenheit scale is in black and the centigrade in red. The thermometer is weatherproof and is intended for outside walls of factories, schools, shops, stations, municipal and church buildings, seafront promenades

## PRODUCT REVIEW

from previous page

and other positions where outside temperature readings are important or of general interest to employees or the public.

Merton Room Thermometer (pictured here) is also a product of the British Rototherm Co. Ltd., and has a clear 2½" dial marked in either Fahrenheit or in Centigrade or with both scales together. The plastic case is available in a good range of colours.

★ ★ ★

ZONE-A-TROL straight-flo valves are designed to make it easy and inexpensive to provide and instal individual room temperature control or zone control on any new or existing hydronic baseboard, convector, radiator or radiant panel heating system.

Low voltage, motorised Zone-A-Trol straight-flo valves installed as required on the piping system and automatically control the flow of water through the radiation in each room or

zone as called for by a controlling thermostat located in the corresponding zone.

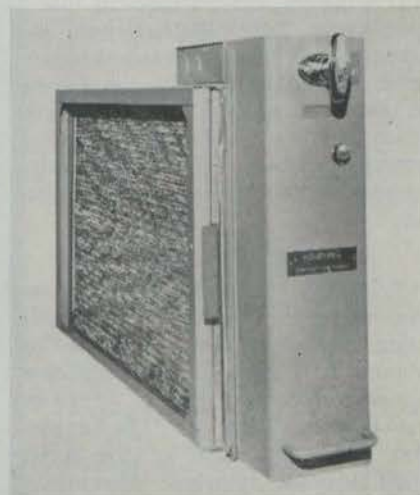
As the controlling thermostat calls for heat the Zone-A-Trol valve slowly rotates to open position, and lets the heat flow through the radiation until the thermostat is satisfied and then automatically closes. The manufacturers are Thermocontrol Installations Ltd., Valentine Place, Blackfriars Rd., London. The Irish agents: Accurate Recording Instrument Co. Ltd.

★ ★ ★

FITTED to a warm air-heating system, the Honeywell Residential Electronic Air Cleaner removes up to 95 per cent. of the dirt from the air before it can enter the home.

The cleaner operates on the principle of electrostatic precipitation, charging the countless billions of dirt particles in the air with electricity and trapping them in an electronic cell. A remote control wall panel shows how the cleaner is operating. When heating is not required, air in the home is kept clean and pure by fan operation.

Manufacturers of the electronic air cleaner and the Daynite thermostat that controls the warm air heating are Honeywell Controls Ltd. The company's Irish office is at 38 Upper Mount St., Dublin.



The Honeywell control centre controls both the electronic air cleaner and warm air heating (button "auto"), or for summer use re-circulates and cleans the air (button "on"). The protective screen indicator glows red when the screen needs cleaning and the system performance meter warns when the electronic cell needs washing out, usually at four monthly intervals.

**FUEL  
IS  
MONEY...  
DON'T  
WASTE  
IT!**



Save fuel—and money!—by using one of the Bacharach "FYRITE" Combustion Testing Kits for regular checks on combustion efficiency in heating systems.

Bacharach instruments, such as the FYRITE CO<sub>2</sub> Indicator (above) are used by the following important organisations:

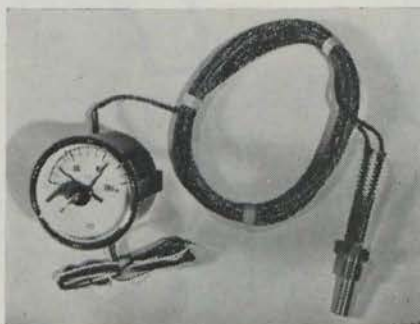
- The Irish Refining Company Limited, Cork;
- ESSO Petroleum Co. (Ireland) Ltd.;
- Bord na Mona;
- Henry Denny and Sons Ltd.;
- The Condensed Milk Company of Ireland (1928) Ltd.

For full information about all the Bacharach combustion testing instruments, write to:

**H. R. HOLFELD LTD.**  
2-4, MERVILLE ROAD, STILLORGAN, DUBLIN.  
Telephone: 881603.

## PRODUCT REVIEW

O.B.C. LTD. have been appointed sole distributors of the new Stork "Combistat" combined thermostat and thermometer, manufactured by Stork Fernthermometer, Stuttgart, West Germany (pictured here).



The "Combistat" combines temperature measurement and control in one small instrument using hand-set or pre-set micro-switches and is automatically actuated by connecting direct to mains voltage at 220/250 volts A.C.; 5 amp. Remote pockets can be supplied for use in air, gas, oil, water or solid mediums, while the capillary with its extra small bore and standard double-copper wound sheeting is extremely flexible and capable of being bent in any direction without affecting

from previous page

the working of the instrument.

The "Combistat" is designed for the remote operation of automatic plants where it replaces the normal immersion thermometer and thermostat and relay, and is ideal for small bore hot water installations, hot air systems, and ventilation and air conditioning.

★ ★ ★

MANOTHERM Ltd. (Amiens St., Dublin) are marketing their own super-quality mercury in-steel oil fitted dial thermometers, which are available in 4" and 6" sizes, including rigid stem and distance reading model. When normal water-tight dial thermometers are exposed to the air temperature fluctuations, condensation usually appears on the glass of the dial, making reading of the scale difficult.

This is prevented by the filling of the Manotherm thermometers with a special oil which prevents condensation, and there is the added advantage that the working parts of the instrument have continuous lub-

rication and abrasion is out of the question. Axles and pinions will not tarnish.

Manotherm are agents in Ireland for a wide range of thermometer gauges by Rueger of Lausanne, Switzerland, and for a range of electric heat thermostats, air volume control kits, and click dial electric thermostats manufactured by Penn Controls Inc., Goshen, Indiana, U.S.

★ ★ ★

THE FOLLOWING new developments are announced by R. B. Pullin & Company Limited.

H8 Immersion Thermostats—Standard models: H8/7F, range increased to 30°-190°F.; H8/11F, range increased to 90°-190°F.; H8/18F, range remains at 120°-180°F.

New High Temperature Model—H8/11FH: temperature range 150°-250°F.; Differential, 8°-15°F.; and Rating, 15 amps at 250V A.C.

L4 Floor Thermostat—New 20 amp. model will be introduced during October, 1962. Calibrated at 95°F., there is margin for adjustment over a range of temperatures from 70°F. to 120°F.

Irish agents: National Agencies Ltd., 7 Upper Camden St., Dublin.

★ ★ ★

# ARIC (IRELAND) LTD.,

6, Montague Street, Dublin, 2

Manufacturers of: *Thermostatic Controls*

*Pressure Switches*

*Thermographs*

*Dial Thermometers*

*Pressure Gauges*

*Vacuum Gauges*

*Process Controls*

*Boiler Instrumentation*

Maintenance: *All Instruments, British and Continental*

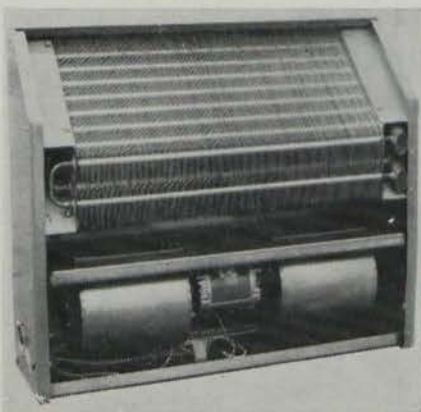
**Phone: 53821**

# TRADE TOPICS

Ideal-Standard have introduced a new wall radiator of modern design. Called the Trimline, it is an elegant looking radiator with slim vertical flutes between the top and bottom waterways. The neat appearance makes it ideally suitable for installation in houses and many other types of buildings.



The new radiator is lighter and better looking than the "Neoline" which it replaces; but dimensions, heating surface and prices are the same. The "Trimline" is made of cast-iron for strength, long life and high heat transmission. Irish Agent: E. J. Cocker, Esq., Stoneygate, Granville Road, Blackrock, Co. Dublin.



F. H. BIDDLE LTD., 16 Upper Grosvenor St., London, W.1, have announced the development of a forced convection unit heater capable of functioning at a predictably acceptable noise level, and with a satisfactory heat output, whatever the application. (Contractor, August issue).

## Questions

## Answers

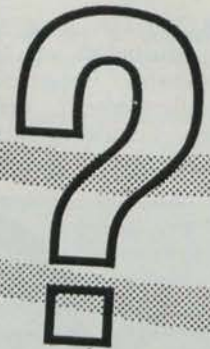
### On using polythene tubing

Our client wants to instal underfloor heating and has suggested that polythene tube in its long lengths might be useful for this work. We have no experience of polythene tube for this work and would be glad to have your opinion.

**P**OLYTHENE tube has been used for embedding in serpentine coils in the floor screed for space heating by floor warming. No reports of defect have come to light and since the floor temperature must, for foot comfort, be kept at not more than 75°F. at its surface, the water temperature in the polythene tube will be well below 140°F. Even taking the high co-efficient of expansion of polythene into account, it is not thought that the tubes should come to any serious harm at low operating temperatures.

However, with every respect for the undisputed physical and chemical properties of the material and being aware of the need to try new materials and ideas, the author would rather in this instance use ½in. or ¾in. copper tube to B.S.1386 in place of the polythene, which has yet to stand the test of time in this heating application. Copper tube has been used for very many years for heating work and in floor warming systems. Its behaviour is therefore known to be good. It too is obtainable in coils of long length; 60ft. is the standard coil length though 120 lengths are obtainable. Joint techniques, too, for copper are well tried and tested. Solder capillary joints are commonly used for this work.

The Copper Development Association of 55 South Audley Street, London, W.1, has recently produced a



publication entitled "Radiant Heating." This is free to architects, builders, plumbers and heating contractors. Querist might well find a copy well worth sending for.

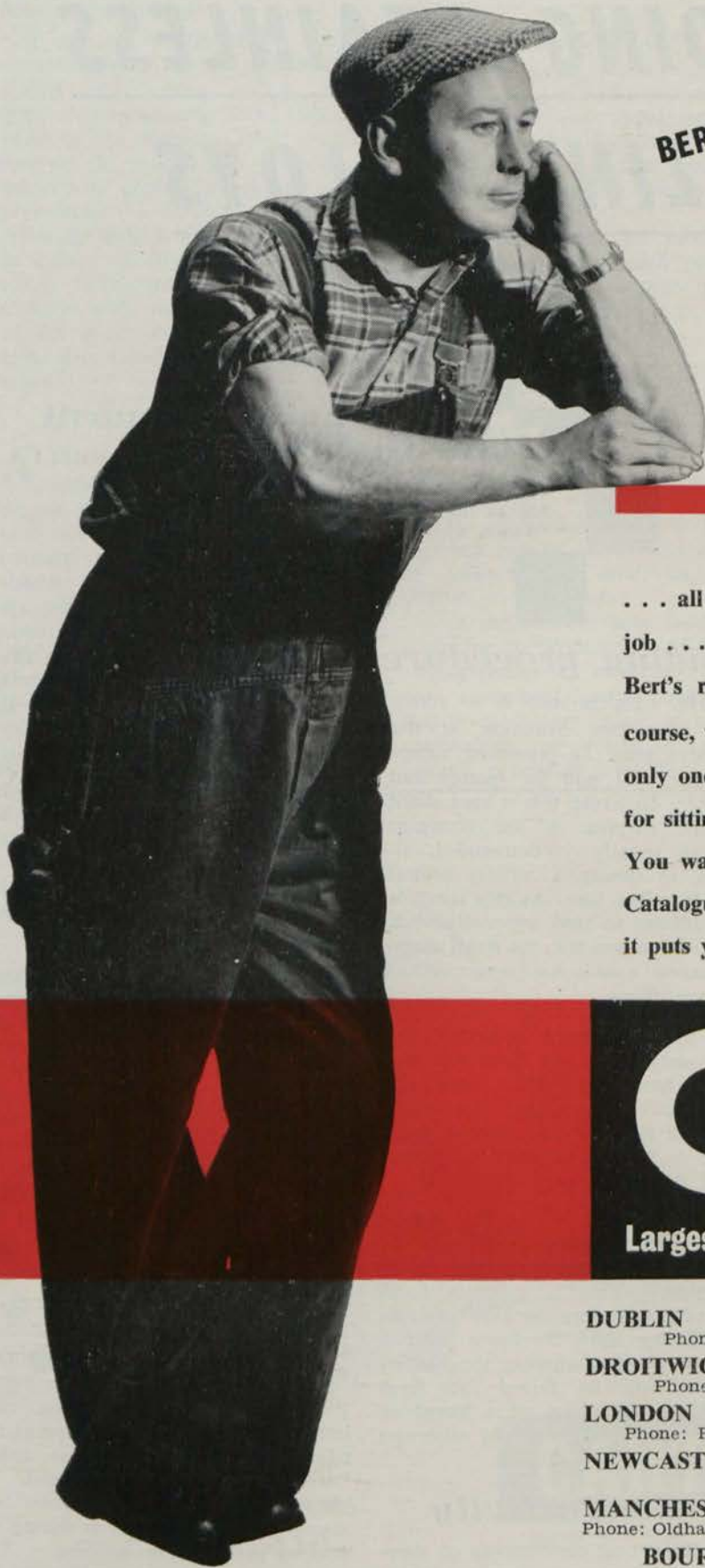
★ ★ ★

### Fitting a Shower Spray

Wishing to fit a shower spray over my bath, I enquired of my local stockist, who told me that if I lived in a bungalow the shower arrangement would not be wholly satisfactory on account of low head pressures existing. Is this so? and if so am I to be without a shower just because I happen to live in a bungalow?

**M**ANUFACTURERS of shower spray attachments and control equipment usually clearly state that a minimum of 5ft. head at the shower spray is necessary for satisfactory operation with a consistently good outflow with some useful velocity from the spray. This requirement becomes an obvious one when it is remembered that head promotes the pressure which causes water to flow and overcome resistance of tubes and fittings, etc. The less head available, the less pressure there will be and in consequence a lesser flow of water.

Querist should examine the possibility of obtaining the requisite head by raising his cold feed cistern in the roof space. In a double pitched roof this should be possible and not an expensive operation, but take care to ensure adequate thermal insulation to protect the cistern from freezing in winter. Small centrifugal pumps as used for small bore heating have been used to boost pressures to showers but this is thought to be like taking a steam hammer to crack a nut.



**BERT SAYS  
OBC HAVE GOT EVERYTHING  
BERT KNOWS!**

. . . all the bits and pieces for any heating job . . . branches everywhere . . . smashing service. Bert's right, O.B.C. have got everything. And, of course, when you get the lot from O.B.C. it means only one invoice. Suits me! I never was one for sitting at a desk all night!  
You want to get hold of a copy of the O.B.C. Catalogue. Why don't you send now? Bert says it puts you right on any job. Bert knows.

**OBC**  **LTD**

**Largest Heating Equipment Merchants**

**DUBLIN**  
Phone: 61653 & 63061.

**DROITWICH**  
Phone: 2551 (10 lines).

**LONDON**  
Phone: RELiance 7971/2/3.

**NEWCASTLE**  
Phone: 810857.

**MANCHESTER**  
Phone: Oldham Main 9488/9/90.

**BOURNEMOUTH**

**BELFAST**  
Phone: 31576.

**BRISTOL**  
Phone: 292694.

**LEICESTER**  
Phone: 74908.

**GLASGOW**  
Phone: DOUglas 5115.

**CARDIFF**  
Phone: 28613/4/5.

Phone: Christchurch 1522/3.

# ***GAS WELDING STAINLESS***

---

## ***STEEL, ZINC ALLOYS***

---

**STAINLESS Steel:** Up to some years ago, this type of high-alloy steel did not figure to any great extent in the trade, but recently problems regarding its weldability have arisen due to the use of the material for pipe lines in the brewing and allied industries.

Stainless steels can be divided into two groups—the hardenable steels alloyed with chromium and carbon and the non-hardenable kinds alloyed mainly with chromium and nickel and having the lowest possible carbon content. It is with the latter group that we are mostly concerned.

This group is known as the Austenitic 18/8 class (18 per cent. chromium and 8 per cent. nickel) and is of good weldability. Steel of this type is **non magnetic**, so that a simple test is to apply a magnet to the job. If it is attracted, the steel is not of the 18/8 variety and its weldability is doubtful. If, on the other hand, the magnet has no effect, it may be taken that the steel is weldable.

### ***Trade names***

**M**ANY of the trade names familiar in the plumbing and heating industry, such as "Staybrite," come within the latter class.

To return to our subject—it must be kept in mind that the 18/8 stainless steels expand to a great extent when heated—one authority mentions a figure of 50 per cent. over that of mild steel. This expansion must be allowed for and, if possible, the pipe or section should be held in a jig. If thin sheets are being welded, the edges should be turned upwards to form a flange and then tacked at intervals of from one to two inches, depending on sheet thickness. Any distortion can then be dressed out and welding finally completed. Similarly, pipes can be tacked to keep them in alignment. It is important to bear in mind also that rapid speed of welding is essential.

the  
author

**John G. Bolton**

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

### ***Welding procedure***

**I**F THE stainless steel is to retain its properties, oxidation at the weld area must be prevented, otherwise the weld will be spongy and porous. To avoid this a very slight acetylene surplus in the blowpipe flame is usually recommended, although, in theory, a strictly neutral flame is called for. As this latter is often difficult to hold, especially when the blowpipe gets hot, the small acetylene excess avoids the danger of an oxidising flame.

On the other hand, of course, too much acetylene in the flame will produce a hard and brittle weld with unsatisfactory corrosion resistance. The ideal flame should have a slight flicker or feather of acetylene at the tip of the inner cone.

The filler rod is usually fluxed before welding commences, and the joint area is coated with flux on its **underside**. This is different from the usual procedure, because in welding stainless steel, the flame protects the top surface whereas the under-surface, with its fluxed face, will avoid the formation of a burnt or spongy underbed as would otherwise be the case.

### ***Conductivity***

**A**S THE heat conductivity of stainless steel is only about half that

of mild steel, it is usual to fit a slightly smaller nozzle tip to the blowpipe than would be used for the same thickness of mild steel.

During the actual process of welding, the filler rod end should be surrounded by the flame all the time. The usual weaving motion of the rod as applied in general welding is to be avoided, so that oxidising of the melted rod end, or oxide inclusions in the weld, do not take place.

The molten pool should be kept as quiet as possible, and a steady progressive forward movement of the blowpipe is to be aimed at. The white, inner cone should be kept as near as possible to the surface of the metal, but not, however, touching. As previously mentioned, the weld should be completed as quickly as possible, and the pool of molten metal kept covered by the flame during the process so as to avoid contact with the air.

### ***Weld decay***

**A**LTHOUGH austenitic stainless steels weld easily, the heating of the metal during the process may later lead to possible corrosion at the edge of the weld. This is called "weld decay" and is due to chromium-carbide precipitation occurring in the metal grains during the cooling period after welding. This only occurs near the weld edge be-

cause this zone cools at a slower rate than the weld itself.

It can be prevented by adding certain elements to the stainless steel during manufacture and by using filler rods containing these elements. Most of the stainless steel welding rods on the market are specially developed to eliminate weld decay by preventing the carbide precipitation. After the weld is finished the job can be cooled slowly or quenched in water—either method being equally effective with little or no alteration of the grain structure. Quenching may also assist in scale or flux removal.

### Bronze welding

**ALTHOUGH** familiar to all in the trade as a means of jointing copper, it is sometimes overlooked that this technique can be used for jointing stainless steel tubes and sheets. At present, on the market are special bronze rods containing about 20 per cent. nickel, and these give an almost perfect colour match. They are used to a large extent for jointing tubular frames and similar work—particularly hospital equipment and so forth.

When using this process, care must

from previous page

### Gas welding

be taken to avoid overheating, otherwise successful bonding will not take place—a dull red appearance will indicate correct temperature. Speed is also another important factor—the faster the welding rate, the better the job.

Plain butt welds or face-to-face joints should be avoided as slip-fit or recessed joints are more reliable. A flux is necessary, and can be applied as a paste or powder.

### Silver brazing

**THIS** again, is another method of jointing stainless steel and involves the use of a silver solder having a melting point of about 650°C.

It is particularly suitable for the capillary type of joint where the slip-fit tolerance is small—say about 0.003in. as maximum.

This method has been used in the trade for the connection of stainless steel pipelines to scientific and similar equipment—particularly where this is of foreign origin with metric connections, so rendering ordinary jointing procedure difficult.

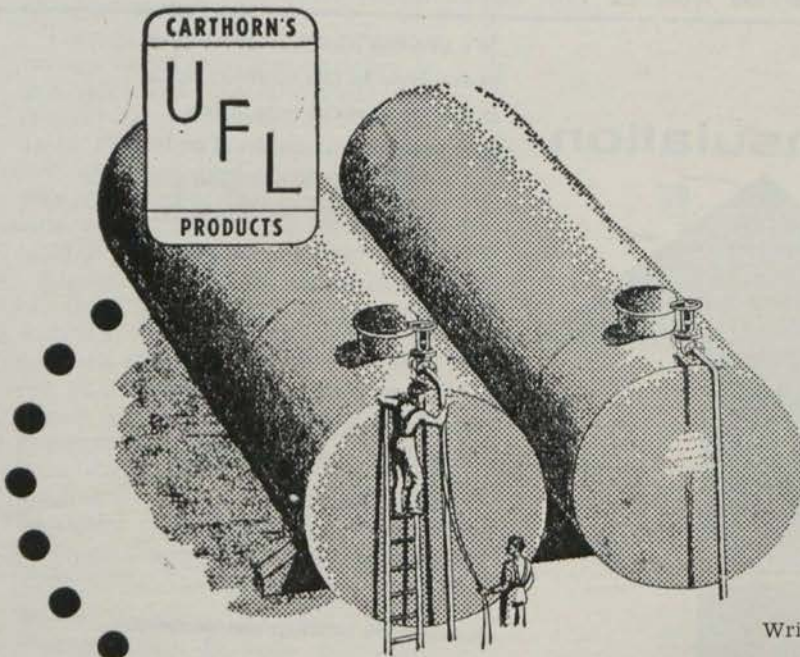
The pipe ends are fluxed before assembly and then the joint is rapidly and uniformly heated—taking care not to overheat. When correct temperature is reached the silver alloy will be found to flow freely and form a neat capillary fillet joint. A soft carburising flame is necessary, and on completion the joint should be washed with hot water to remove all traces of flux.

This silver brazing process is, of course, familiar to many craftsmen as a method of jointing copper and copper-based alloys, but is not so well known for use with stainless steel. Both rods and flux are easily obtainable from any welding suppliers.

### Welding zinc

**THE WELDING** of zinc and its alloys does not at present enter into the ordinary workshop routine, but for some time past, a noticeable number of articles of the zinc die-cast variety have appeared on the market—examples being pump fittings, grids, siphon units, etc. This is due to the fact that the metal has a high resistance to corrosion while at the same time being low in cost.

Continued overleaf



Sales Company for

**UNIVERSAL  
FABRICATORS  
(Dublin) Ltd.**

# WELDED STEEL TANKS

FOR FUEL OIL STORAGE AT  
DOMESTIC AND INDUSTRIAL  
INSTALLATIONS.

ALL CAPACITIES  
B.S.S. & A.P.I. SPECIFICATIONS

Write for our illustrated "Standard Tanks" Folder.

**CARTHORN**

(1949)  
LTD.

Commercial Buildings  
Dome Street, Dublin  
Tel. 73475

Northern Ireland: W. D. Craig & Co., 32 Arthur Street, Belfast.



from previous page

In the event of fracture of these fittings, their repair by welding is sometimes suggested, but this is not an easy matter as the melting point of zinc die-cast alloys varies from about 350°C to 400°C, and due to the low specific heat of the metal there is a great danger of excessive melting.

Very often, a welder when handed a small zinc casting—perhaps black with grime—may mistake it for cast-iron, but if the metal is examined carefully, especially at a fracture, the grain structure will be seen to be rather larger and hexagonal in form. A final test is to touch the flame to a corner when the metal will be seen to immediately run.

### Welding preparation

**ALL CASTINGS** must be first cleaned by washing—if necessary in a caustic soda solution. If the casting is chrome or nickel plated, this must first be removed from around the weld area.

Next, the fractured parts should be dressed to form a V gap, and then bedded down on a base of fire cement. The idea is to have a solid backing

As this article concludes the present series on gas welding techniques as applied to the plumbing and heating industry, it is opportune to point out that with so many new metals and alloys coming on the market, it is necessary for every employer and operative to

keep up with modern developments in this field, otherwise the work will be lost to us. For instance, the advent of argonarc welding, CO<sub>2</sub> welding, and so forth, while not of immediate interest for site work, nevertheless gives a pointer as to the future.

with a dam of cement at each end of the Vee so as to stop the metal flowing away when heated. If the casting is hollow, the spaces can also be filled with the cement or, alternatively, plaster of paris so as to prevent collapse.

### Flame adjustment

**FOR MOST** types of work in the plumbing and heating field, a small blowpipe with a tip size smaller than that used for steel of the same thickness, will be found sufficient.

The flame must be small, with a very slight excess of acetylene, and when welding, the blowpipe tip should be moved in a weaving motion to avoid overheating. The inner cone of the flame should be held about 1-16in. to ¼in. away from the metal pool.

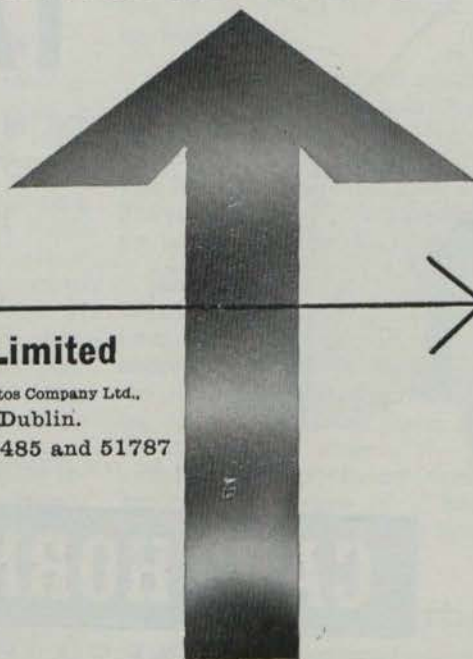
Filler rods of a composition suitable for most types of zinc based

alloys are available on the market, but some welders prefer to make their own rods by melting scrap zinc and running it into a makeshift mould such as a piece of angle iron. If care is taken, this method is satisfactory, but the commercial rods have the advantage of scientific control during manufacture.

To avoid risk of overheating, a thick filler rod (say ½ or ¾in., depending on the job) should be used, as it helps to absorb some of the heat.

It is possible to weld zinc without the aid of a flux, but it will help considerably if a flux such as that used for aluminium is applied. This type of flux has a chloride base and a melting point compatible with zinc. When welding is completed, all flux should be washed off to avoid danger of corrosion.

## Thermal Insulation



### M. A. Boylan Limited

A subsidiary of The Cape Asbestos Company Ltd.,  
50a Harcourt Street, Dublin.  
Telephone: 52397, 54485 and 51787



We are the foremost insulation specialists in the country with many important insulation contracts to our credit. The huge Oil Refinery at Whitegate and the Derrinlough Briquette factory are recent examples. If you have any heat-loss problem, discuss it with our highly experienced technical staff. Our recommendations are offered free and without obligation.

Sole agents and stockists for:

'Rocksil' rock wool

Rigid Sections

Flexible Sections

Blankets

Mattresses (wire-mesh-backed)

Loose Wool

'Caposite' amosite asbestos

moulded blocks and pipe sections

Also full range of plastic materials and hard-setting compositions.

**TRADE****TOPICS**

### **Sole distributors**

ALLIED IRONFOUNDERS LTD. announce the appointment of Masser Domestic Appliances Ltd. (Sole Distributors for Aga Cookers and Agamatic Boilers) as sole distributors for AGA Gravity Feed Boilers. (See report contained in Special Survey in this issue).

Masser Domestic Appliances Ltd. will inspect and approve sites before installation, instal the boilers on prepared sites and provide efficient after-sales service. Aga Gravity Feed Boilers are thermostatically controlled, operate on low-cost Irish anthracite grains and are fully guaranteed.

### **Seek agent**

CORRIE MacCOLL & SON Limited (Seething Lane, London, E.C.3), who market the extensive range of Swiss designed Elco oil burners in Britain, are seeking to appoint an agent in Ireland.

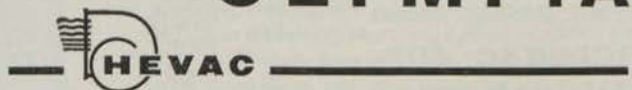
These precision built fully automatic burners work on the pressure jet principle and are available in a capacity range from 60,000 B.t.u.'s/hr. up to 12,000,000 B.t.u.'s/hr. Mono-bloc units are used up to 7,000,000 B.t.u.'s/hr. For higher ratings box type burners are employed, using a separate fan.

Elco oil burners are suitable for fuel oils from 35 seconds to 3,500 seconds Redwood No. 1 at 100°F. All burners are equipped with photo-electric cell flame failure control and each burner is fired and tested prior to despatch. These burners are now fitted exclusively to two makes of boilers; they have also been fitted to numerous other types of boilers in many installations throughout Britain.

● Mr. James Gardner Keith, General Manager, Bath Division and Blast Furnace Division, Carron Company, Falkirk, has been appointed Deputy Chairman of the recently formed executive committee who manage the affairs of the Company under the Chairmanship of Mr. H. C. Wilson Bennetts.

CONSULTING ENGINEERS · ARCHITECTS  
TECHNICIANS · BUILDERS' MERCHANTS  
BOROUGH ENGINEERS · CIVIL ENGINEERS  
HEATING AND VENTILATING ENGINEERS  
STRUCTURAL ENGINEERS · DRAUGHTSMEN  
SURVEYORS · REFRIGERATION ENGINEERS  
MUNICIPAL ENGINEERS · PLANT ENGINEERS  
DESIGNERS · BUILDING CONTRACTORS  
HOSPITAL ENGINEERS · HOUSING MANAGERS  
SHIP DESIGNERS · TRANSPORT OPERATORS  
FACTORY MANAGERS · CONTROL ENGINEERS  
MARINE ENGINEERS · **SHOULD VISIT THE  
SECOND INTERNATIONAL**

# HEATING VENTILATING AIR CONDITIONING Exhibition OLYMPIA



Two hundred firms from 10 countries, occupying an area of 100,000 square feet, will be showing all aspects of heating, ventilating and air conditioning, including industrial air handling and treatment, dust and fume collection, mechanical draught, process heating, refrigeration, and all allied and ancillary processes and equipment.

**OLYMPIA · LONDON  
26 SEPT — 5 OCT 1962**

*Times:* 10 a.m. — 6 p.m. daily, except Sunday. Close at 4 p.m. on final day.

*Late Evenings:* Open until 9 p.m. on Thursdays, 27th Sept. and 4th Oct.

*Admission:* 3/6, or by ticket obtainable from exhibitors. Overseas visitors free.

AN **IEE** EXHIBITION

**INDUSTRIAL EXHIBITIONS LIMITED  
9 ARGYLL STREET, LONDON W.1**

**TRADE**

**TOPICS**

FROM THE NORTH OF IRELAND BY OUR  
CORRESPONDENT WILLIAM A. McMASTER

# Plumbing Trades Union official is honoured

**AS I WRITE**, there is some danger of a shipping strike in the port of Belfast. This danger has existed for several weeks, when shipping clerks employed by Belfast Steamship Company at the port withdrew their services because of a difference in pay as between shipping clerks at the port of Dublin and in Belfast. The situation has been temporarily eased by the Minister for Labour appointing a court of inquiry. The court will sit under the chairmanship of Mr. Justice Shiel and the other members will be Mr. Robert McCurdie, general manager of Wellman Smith Owen Ltd., and Mr. James Scott, executive officer for Ireland of the Plumbing Trades Union.

Those who know Mr. "Jimmy" Scott will applaud this choice. His wise counsel has been of great value to the Joint Council for the Plumbing Industry in the North of Ireland and will be of equal value in the wider subject of the shipping dispute.

## Increase for Plumbers

**PLUMBERS** in the North of Ireland shared in the wage award given to the building industry recently. A claim by operatives in the building trade was made for "a substantial increase" in the basic rate. This was considered by the National Joint Council for the Building Industry last May, when it was decided to submit it to an independent arbitrator.

The arbitrator was Professor H. S. Kirkaldy, Professor of Industrial Relations at Cambridge University, and he was assisted by nominees of the British Employers' Federation and the General Council of the T.U.C.

The decision of the arbitrator was reached on July 27 that an increase of one penny per hour should be

granted as from 20th August. This increase did not automatically apply to the building industry in Northern Ireland, which has its own negotiating body, but the Plumbers are not represented on this body, their wages and working conditions being legislated for by the Joint Council for the Plumbing Industry (N.I.). Under the terms of this legislation, wages are adjusted in accordance with the decisions of the N.J.C. B.I. in Great Britain and thus Northern Plumbers received the penny per hour increase automatically.

The current basic rate for journeymen plumbers in Northern Ireland

is now (from August 20 last) 5/10d. per hour. This is the second increase which they have received in the present year, the last (also 1d. per hour) being made under the Cost of Living Index last February. Increases for apprentices have been adjusted in accordance with the new rates for journeymen. The full list of rates now applicable is as follows:—

**Journemen**—5/10 per hour.

**Holiday Credits**—9/9 per week (Summer).

.. .. 3/9 per week (Statutory).

### Apprentices who make regular attendances at Technical Education Classes.

Year.	Wages per hour.	Holiday Credits per week:	
		Summer.	Statutory.
First .. ..	1/2d.	1/11½	9d.
Second .. ..	1/9	2/11	1/1d.
Third .. ..	2/4	3/11	1/6
Fourth .. ..	2/11	4/11	1/10
Fifth .. ..	3/6	5/10½	2/2
Sixth .. ..	4/4½	7/4	2/10

### Apprentices who DO NOT ATTEND or do not make regular attendances at Technical Education Classes.

Year.	Wages per hour.	Holiday Credits per week:	
		Summer.	Statutory.
First .. ..	10½d.	1/6	7d.
Second .. ..	1/2	1/11½	9d.
Third .. ..	1/9	2/11	1/1
Fourth .. ..	2/4	3/11	1/6
Fifth .. ..	3/2½	5/5	2/1
Sixth .. ..	4/4½	7/4	2/10

## All quiet on this Scottish front

THE SILENT BALLCOCK Co. Ltd. report that the first housing scheme in Britain with a silent operating water system has been built in Stonehaven, some miles south of Aberdeen.

The unit installed was the Craig Silent Ballvalve, full details of which may be obtained from the Irish agents: Irish Equipment Co. Ltd., Ballymount road, Walkinstown, Dublin.

When a plumber is looking for a



pump...



Fully guaranteed and complete after sales service available by our own technical engineers.

...for **CENTRAL HEATING**

he cannot buy better than the

# SIGMUND THERMOPAK or SILENTFLO

and the prices are very competitive. Why not buy the best at practically no extra cost?

### SPECIAL FEATURES:

- Super Silent and self-lubricating.
- Being glandless, is free from leaks and needs absolutely no attention whilst operating.
- Special silicon-impregnated winding—no starter protection needed.
- Precision-ground sleeve bearings—for long life.

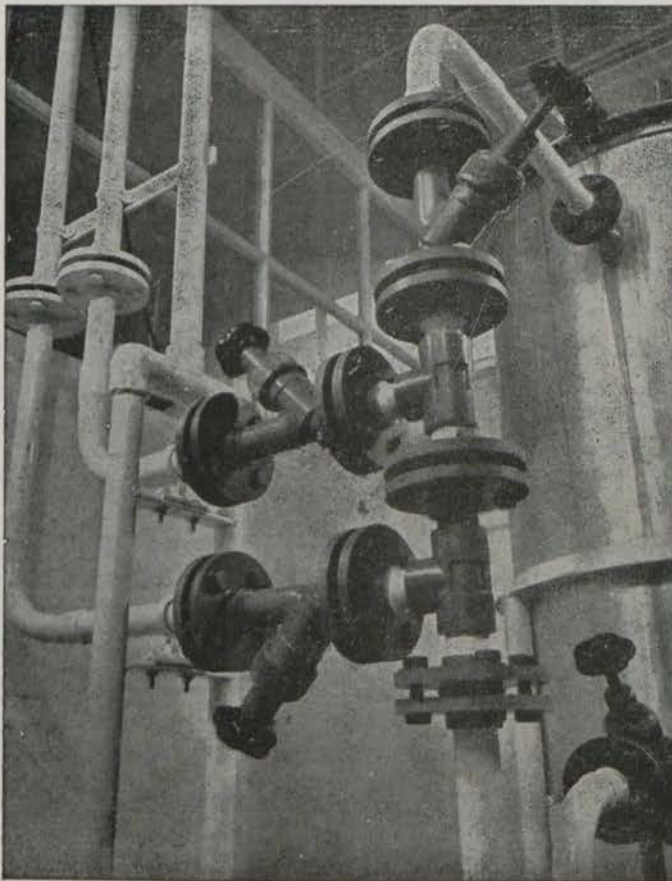
PRICES AND ILLUSTRATED LITERATURE SENT ON APPLICATION.

ONLY AVAILABLE FROM THE SOLE AGENTS FOR REPUBLIC OF IRELAND:

## MONSELL, MITCHELL & CO. LTD.

67-73 TOWNSEND STREET, DUBLIN 2.

Phone 76282



## We chose Wavin PVC...

### AT CASTLEFORBES WORKS

Castleforbes Works had a problem! A highly corrosive chemical, used in their modern manufacturing process in Dublin made very short work of conventional pipes. This could mean frequent renewal of the pipe-lines, with consequent loss of production and the risk of dangerous bursts—but they chose Wavin PVC because Wavin PVC Pipes are immune to chemical attack. They are also inexpensive and easy to instal, with a complete range of PVC fittings. And they solved their problem efficiently and cheaply.

If you have a problem in pipework, why not consult Wavin—the pioneers of PVC in Ireland.

# wavin

WAVIN PIPES LIMITED  
CIAN PARK, DRUMCONDRA, DUBLIN 9  
Telephone : 48000 or 373614/6

## TENDERS

**OFFICE of Public Works:** Sealed tenders addressed to the Secretary, Office of Public Works, 51 St. Stephen's Green, Dublin 2, and receivable up to noon on October 9, 1962, are invited for supply and installation of a Steam Boiler Plant at Central Mental Hospital, Dundrum, Co. Dublin, in accordance with plans, specification and conditions of contract exhibited at this Office.

Plans and specification may be obtained from the Secretary on deposit of £25 (refundable).

**MEATH County Council:** Tenders are required for the supply of one Booster Pump with storage tank and fittings. Specification can be had from County Engineer's Office, Navan.

**COUNTY Kilkenny Vocational Education Committee:** Tenders are invited for the complete Central Heating Installation at Castlecomer Technical School, Co. Kilkenny.

Drawings, Specification, Conditions of Contract, may be obtained at the offices of Cunningham and O'Coilain, Architects and Engineers, 74 High Street, Kilkenny, on payment of a sum of five guineas (£5-5-0) (returnable).

Tenders in sealed envelopes endorsed "Tenders for Central Heating Installation in Castlecomer Technical School", together with all Contract Documents, must be lodged with Cunningham and O'Coilain, 74 High Street, Kilkenny, not later than 12 noon, October 6, 1962.

## TRADE

## TOPICS

### NEW IRISH HEAT COMPANY

A NEWLY-REGISTERED company, Irish Domestic Oil Supplies Limited, plans to carry on the business of manufacturers and patentees of, dealers in and agents for central heating apparatus and equipment.

Full details of the company are:— Registered Office: Not stated (Republic of Ireland). Nominal Capital: £100 divided into 100 shares of £1 each.

Names and descriptions of Subscribers to Memorandum and Articles of Association: Subscribers of One share each—T. G. McVeigh, solicitor, and Arthur Dey, solicitor, both of 32 Kildare Street, Dublin.

Names of First Directors: Not stated.

● Mr. G. J. Stanley, Commercial Sales Manager, has been appointed General Sales Manager, Vokes Limited, Vokes Genspring Limited and Vokes-Cardwell Limited.



Changes in the design and materials used for their Central Heating Regulator are announced by Hattersley (Ormskirk) Limited, of Ormskirk, Lancashire. The shape of the headwork has been restyled and is moulded from Ivory-coloured Delrin, which is tough and stain resistant and stays cool in use.

The pressure range for this new Regulator has been raised to 150 feet head. Maximum water temperature is 200 degs. F. An innovation is the use of Pioneer NU-LIP glandless sealing rings. If the NU-LIP ring leaks within five years of fitting a new seal will be provided free by the makers.

Further details from the Irish agent: W. H. Leech, 414 Ravenhill Road, Belfast.

## HORSE SHOW CROWDS WERE BIGGER

**THE** Royal Dublin Society report that attendances at this year's Horse Show were up on last year. Here now are some of the more interesting exhibits on stands of interest to the trade. (This report was held over from last month due to heavy demands on space).

The range of Dimplex pressed steel water radiators and oil filled electric radiator was displayed by **A. Bell & Co. (Eire) Ltd.**

On the **Baxendale** stand the Irish Shell and B.P. Housewarming Plan was the main feature. Boilers on display were: Redfyre; Wilson Oilheat; Watts; and the new Wilson Wallflame 60. Sanitary ware featured: Ideal-Standard W.C. suite; Ideal Kingston bath; and Twyfords and Shanks wash basins.

The **E.S.B.** prominently displayed

the well-known Creda Corvette water heater.

Expelair fans and water and immersion heaters were shown by the G.E.C.

On the **Dockrell** stand the Allwood's range of kitchen fittings attracted keen interest. Also featured was the Gold Star ductless hood.

The **Dublin Gas Company's** exhibit featured a display of an Ideal-Standard gas boiler. Shown too was the Halcyon space heater manufactured by William Sugg & Co. Ltd. Main and Ascot water heaters were also displayed.

Bathroom and W.C. fittings, including Paul sink fittings and Armitage Ware wash basins and taps, were exhibited by **Davies Limited.**

The familiar range of Maid stainless steel sinks and bowls was dis-

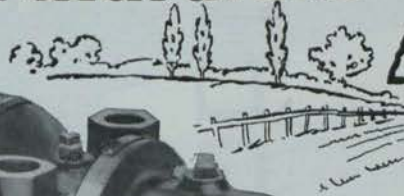
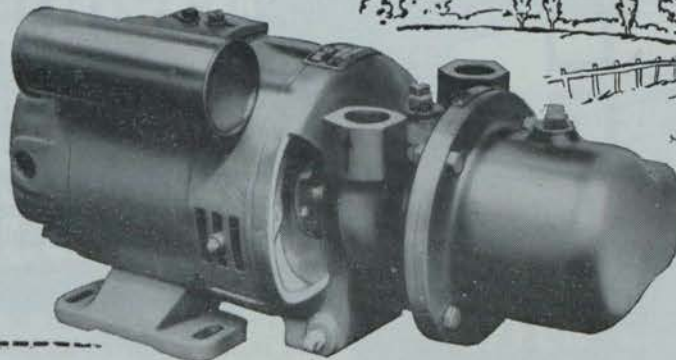
played at the **Hammond Lane Industries Ltd.** stand. Here we also saw the Conquest space heater with boiler and the County room heater.

The Mallow firm of **W. H. Thompson Ltd.** featured the Kresky perimeter warm air heating on their stand. With this system warm, filtered and humidified air is delivered at or near the windows so as to cover the outside walls with a blanket of warm air.

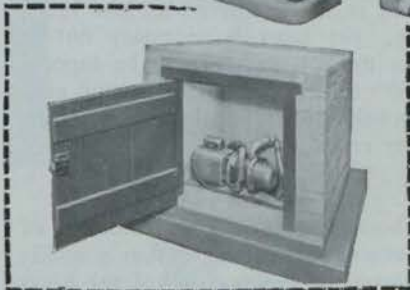
The Potez direct and Convector hot air heating units were displayed by **M. Rowan & Co. Ltd.**

The extensive **Unidare Ltd.** exhibit included Aquadare pumps and pressure systems; welding electrodes; Hydrodare tubing, and Terrain P.V.C. soil and waste system.

# a **MUST** in rural areas



The MII Mono Pump will provide 165 gallons of water for less than a 1/2d. in power cost—sufficient water for two days for the average household. And it is self-priming with a 25 feet suction lift.



- It can be neatly tucked away in the garden—or it is silent in operation for indoor installation.
- It can also be used for pumping supernatant water from cess-pools.
- No oiling or greasing required.

*Attractive terms to dealers*

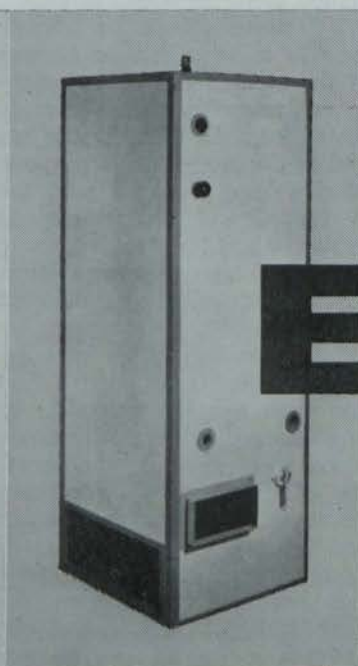
## The **MONO** pump

MONO PUMPS LIMITED • MONO HOUSE • SEKFORDE STREET • LONDON E.C.1

Phone: Clerkenwell 8911 Grams: Monopumps 'Phone London

and at Belfast, Birmingham, Capetown, Dublin, Durban, Glasgow, Johannesburg, Manchester, Melbourne, Newcastle, Wakefield

MP270/L9614



## WARMFLO central heating

is designed for the two to three bedroomed house or bungalow. It incorporates a 30 gallon copper hot water indirect cylinder and a large bore finned tube heating element with twin centrifugal fans thus providing in one compact casing a unique source of Warm Air Central Heating and domestic hot water supply.

a product of

# BIDDLE

craftsmanship

Biddle craftsmanship has for many years guaranteed top quality products. This quality is maintained by highly skilled craftsmen, whose comprehensive knowledge and experience of the heating, ventilating and air conditioning fields, makes Biddle equipment the finest in the world.

Literature about WARMFLO can be obtained from:

**F. H. Biddle Limited**

British Trane Co. Ltd. (Manufacturing Division)

16 Upper Grosvenor Street,  
London, W.1.

Tel: HYDe Park 0532



### TECHNICAL REPRESENTATIVES:

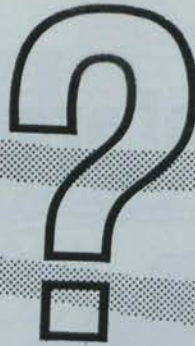
D. H. BUTLER, ESQ.,  
7, Blackwood Crescent,  
Helen's Bay, Belfast, N. Ireland.  
Tel: Helen's Bay 2119

QUADRANT ENGINEERS,  
6 Mount St. Crescent, Dublin, Eire.

Tel: Dublin 61492

**Q**uestions

**A**nswered



## Covering A New Flat Roof

We have been invited to tender for covering a new flat roof in Nuralite but not having used this material before we would be glad to have some descriptive comment on its properties and fixing.

**N**URALITE was developed specifically as an alternative to the traditional metal sheet roofing materials hitherto used by the plumber. It is a thermo plastic roofing sheet made from Asbestos and Bitumen; both are among the most durable of materials and so the lasting qualities of Nuralite are assured.

It is suitable for renewing old and defective metal roof covers and for all new work. It can be laid on many types of roof decking, and the lightness of the material (8oz./sq. ft.) makes it very suited to modern lightweight constructions. For the same reason it may be recommended in replacement of heavier metal sheetings where time has robbed the timber decking and supports of ability to support heavy coverings much longer with safety.

### Flat Sheets

It is supplied in standard flat sheets measuring 8ft. x 3ft. and is about 1/10th of an inch thick. The Directory of Manufacturers, Agents, etc., published in the June "Contractor," shows Thomas Dockrell & Sons of Dublin to be the Irish Agent for the Nuralite Company.

As previously mentioned, Nuralite

is a thermo plastic material, i.e., it is pliable when hot. This simple physical property forms the basis of most of the Nuralite working techniques. To form an upstand or to shape a corner it is only necessary to heat the sheet area involved by a blow-lamp flame and when the correct, easily judged temperature is attained the sheet is hand manipulated to the desired shape. On cooling it sets and the new shape is permanent under all normal exposure temperatures. The optimum heating temperature for forming is 360°F. Exactitude in temperature is not essential. In practice one soon finds the most suitable heat application. A useful tip is to keep the heat source moving and to give a good spread of heat.

Solar heat does not adversely affect the fixed roof covering. Although high temperatures have been recorded on metal roof surfaces in hot weather, -140°F. is not uncommon—the softening temperature of Nuralite is so much higher than this that sun heat will not even make the bitument component of the sheeting tacky.

The material, in common with all other plumbing materials, is affected by temperature changes. It will expand and contract with temperature change but to a lesser extent than lead or zinc but a little more than copper. Provision for this thermal movement is made in fixing techniques.

Nuralite will withstand foot traffic if laid and fully supported on firm decking. Useful as this property is, in common with all other material used for roof covering, the less foot traffic the material gets, the less risk

there is of accidental damage.

Jointing of Nuralite follows two basic methods which differ only according to whether the material is to be laid in the "traditional" manner, i.e., following closely upon styles of joint formation as long used for some of the plumber's metal roof sheetings, or whether it is laid in the new and improved Nuralite twinrib roofing technique.

Both systems employ a welding technique resulting in a homogeneous joint of identical composition to the sheets joined.

Traditional Nuralite roofing employs wooden rolls to break the roof into bays so as to minimise thermal movement effects just as is done with metal roofing. The rolls in profile would be about 1½ins. high and 1½ins. wide. No taper is necessary but at drips the roll ends would be tapered at 60° to carry the roll capping continuously down to the top of the lower roll capping.

### Heating

Sheet jointing and the insertion of gussets as at "Break" details is simply achieved by heating one of the edges to be joined, inserting a knife to laminate the sheet into two equal half thicknesses and then, whilst sheet is still plastic through heat, the edges are teased back to make a "Y" formation along the length of joint. The "Y" limbs should be about ¼ins. long to allow a ¼in. to ⅜" insertion of the mating edge. The other sheet to be inserted into the prepared laminated edge is then lightly warmed and at the same time a purpose supplied welding block of pure bitumen is heated and its molten surface rubbed on to the sheet edge. In this way, and treating both sides of the mating edge alike, the sheet edge is "tinned" with bitumen.

This tinned mating edge is then inserted into the laminated sheet and the whole joint area heated. In the re-plasticised state the lamination is closed to clamp on to the tinned mating edge. One more good heat application fuses the applied bitumen and the bitumen in the sheets being joined. Special "ironing" tools are now heated to compress and trim the joint to shape in true craftsmanlike fashion.

The Nuralite Technical Handbook is issued free of charge to plumbers. No doubt Messrs. Thomas Dockrell of Dublin will be glad to send one to any reader who might be interested.

**FOR BETTER  
QUICKER  
LOWER COST  
PLUMBING !** .....



**OFFER A COMPLETE RANGE OF  
PLUMBERS BRASSFOUNDRY TAPS & FITTINGS**



5302 Bibcock



290 Trap

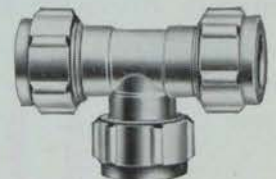


5301 EC. Pillarcock



086 Lavatory Waste

The CONEX Compression Joint is everywhere recognised as the simplest, speediest, strongest and most economical joint for copper and plastic tubes. It is approved by leading Water Authorities throughout Ireland. In addition to a wide range of CONEX Compression Joints and Fittings, Valves, Stopcocks, and Drawn Copper Traps, we can supply an extensive range of Brass Traps, Pillarcocks, Bibcocks, Wastes, Plugcocks, etc. Your enquiries will receive our immediate attention.



12x Tee-Piece



171x Combined Fitting



53x Stopcock



1650 Valve

★ **VERY PROMPT DELIVERIES**

★ **ATTRACTIVE PRICES**

**HOT BRASS PRESSINGS TO SPECIFICATION  
POLISHING & CHROME PLATING CAPACITY**

**FREE! WRITE TODAY FOR YOUR FREE COPY  
OF OUR FULLY ILLUSTRATED CATALOGUE**

**SANBRA-CONEX (IRELAND) LIMITED**

**SANTRY AVENUE, SANTRY, CO. DUBLIN.**

Telephone: Dublin 373637. Telegrams: SANCO, DUBLIN.

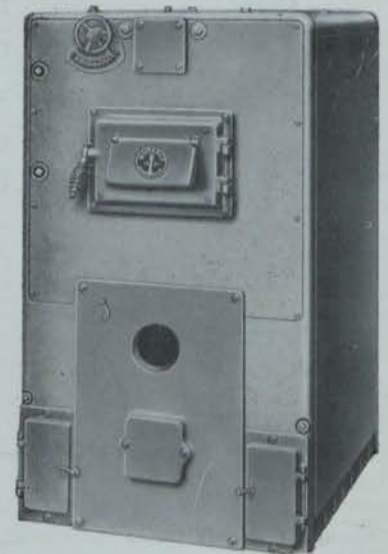


Oil  
Turf  
Anthracite  
Coke  
Gas

**BUDERUS BOILERS**



**CAST IRON**



**From 46,000 B.T.U.'s  
to 3,000,000 B.T.U.'s**

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

**Write for our  
stock price  
list**

Sole Agents:

**QUADRANT ENGINEERS**

6 Mount St. Crescent, Dublin, 2.

Telephone 61492.