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The Irish Plumbing and Heating Engineer, July 1964 (complete issue)

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ENGINEER



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July 1964
Published by ARROW@TU Dublin, 1964
Vol. 4 No. 4

*Special Monthly Supplement:
Industrial Heating & Ventilating In Ireland*



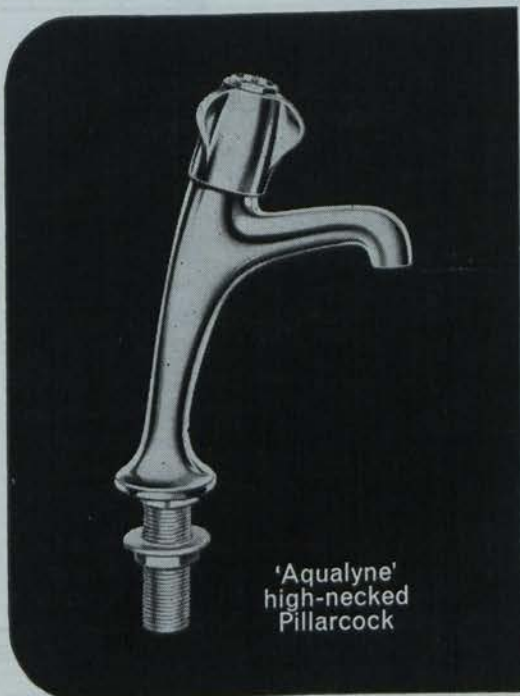
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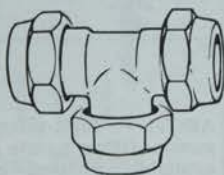
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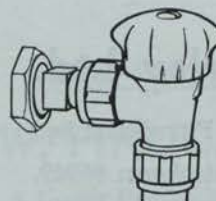
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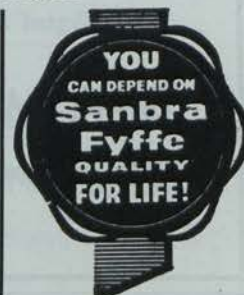
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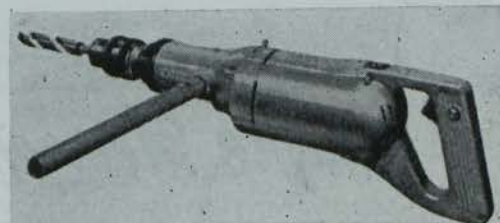
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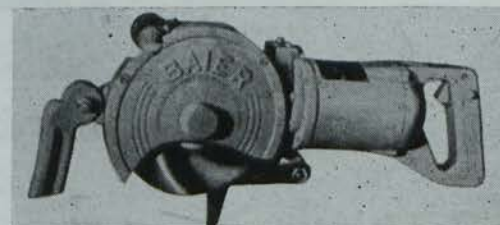
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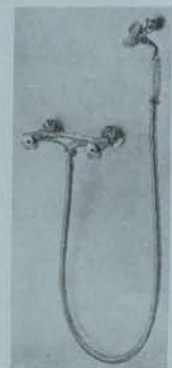
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The Irish Plumbing and Heating Engineer.

TAOISEACH LAUNCHES DROGHEDA'S BIG PIPE VENTURE

THE Taoiseach, Mr. Lemass, last month opened the new Newtown-stalaban (Drogheda) factory of Asbestos Cement Pipes Limited. The factory is a joint Cement Limited-Turner & Newall Limited project.

At the opening ceremony was the chairman and managing director of Asbestos Cement Pipes Limited, Mr. A. G. Larsen, who is also chairman and managing director of Cement Limited. Mr. K. Neve, a director of both Asbestos Cement Pipes Limited and of Turner & Newall Limited, was also present.

The attendance also included directors and officials of the various companies involved in the project. The Minister for External Affairs, Mr. Aiken, the Parliamentary Secretary to the Minister for Finance, Mr. O'Malley, together with secretaries of various departments, were also at the opening.

The new factory is designed to process initially 12,000 tons of Asbestos Cement pressure pipes in diameters ranging from 4 ins. to 18 ins. with an overall length of 4 metres. Pipes are manufactured from a carefully controlled mixture of Asbestos fibre, cement and water. The planning of the factory is designed on a "straight through" layout with raw materials delivered to one end of the building and completed pipes collected at the opposite end for stocking prior to despatch.

Asbestos fibre is imported from Rhodesia and Swaziland and requires only final treatment before use. This is carried out in the Rod Mill which, by rolling action, opens the fibre clusters to ensure even dispersal in the mix. In the manufacturing process the fibres act as reinforcement to the cement.

Twelve hours after manufacture the pipes are taken by overhead crane to maturing tanks where they are stored in water for seven days. Subsequently, the pipes are trimmed to length, tested and checked before



despatch. Each pipe is individually tested to twice its working pressure. All pipes may, if required by the customer, be bitumen coated if so desired.

Much of the popularity of Asbestos Cement pressure pipes is based on the many favourable features of the basic material. Pipes are strong, light and easy to handle. They may be readily cut and drilled on site, have an extremely smooth bore and are corrosion resistant. A specially designed joint between pipes allows easy curves to be negotiated using straight pipe lengths and compensates for ground movement that may occur due to subsidence after laying.

In addition to pressure pipes, it is also intended that the factory shall produce sewerage and drainage pipes.



BASINS for use with counter-tops are popular; but they are often difficult to fix. The Swanlyne "Lake" basin, from Alfred Goslett & Co. Ltd., 127-131 Charing Cross Road, London, W.C. 2, has proved its merits owing to its ample bowl space, anti-splash front rim, and absence of any form of metal trim in fixing.

The new Swanlyne "Lake" Drop-in Basin has no front frieze. Therefore it is fixed directly into a counter-top. The back and sides have bevelled edges to facilitate cleaning and to make it easier to sweep back into the basin any water which may have been splashed on the counter-top.

The new basin is made in Vitreous China and can be glazed in any of the standard colours, or in a two-tone finish with the white bowl being combined with coloured outside.

IRISH PLUMBING & HEATING ENGINEER

Vol. 4. No. 4. JULY, 1964.

THE IRISH PLUMBING AND HEATING ENGINEER is the only publication produced in Ireland catering exclusively for the heating, plumbing and ventilation industries with a guaranteed circulation covering the Republic of Ireland and Northern Ireland every month.

This month W. J. R. Couchman is back with another part of his Seven Deadly Sins of domestic heating installation series.

After last month's 1964 Directory issue, Trade Topics and our In Brief feature are crowded with news of recent trade happenings and new equipment introductions.

Readers may also want to know that limited numbers of copies of the Directory issue are available from us, price five shillings (post free).

Allen McDowell has compiled another edition of Northern Notes. Next month he will present a Northern special edition.

This month our Special Review feature looks at hot water, pipe and room thermostats, thermometers and temperature indicators.

An important development in the more widespread use of gas in heating is reported with the opening of the Dublin Gas Company's new heating centre.

Editorial and advertising offices:

Callaghan Chambers, 13/15
Dame Street, Dublin 2.
Tel. 56465-6.

London: J. T. Robson &
Son Ltd., 30 Fleet Street,
London, E.C.4. Tel.: Fleet
Street 4438.

Belfast: Allen McDowell,
43 Horn Drive, Belfast 11.
Phone 614606.

in brief . . .

FOLLOWING the recent re-organisation of the sales forces of Radiation companies marketing gas appliances, representation in Northern Ireland and the Irish Republic is now as follows:

Radiation New World Ltd.; Radiation Gas Fires Ltd., and Radiation Catering Equipment Ltd.—Mr. Charles Rolls, 115 Crawfordsburn Road, Bangor, Co. Down (Bangor 5427).

Ascot Gas Water Heaters Ltd.; Radiation Central Heating Ltd., and Radiation Parkray Ltd. (solid fuel heating appliances)—Mr. Lance F. Young, 85 Gransha Road, Bangor (Bangor 3528).

* * *

WE REGRET that product entries for Duro Developments, 11 Upper O'Connell Street, Dublin, 1, agents in Ireland for Baier Combi Hammer-Drills; Baier Cold Metal Saws and Stalex Expansion Plugs, were omitted from our 1964 Directory of Manufacturers, Agents, etc. An advertisement giving full details and illustrations of this equipment appears on Page 1 of this issue.

* * *

THE CEMENTATION Company Limited of London has appointed Mr. James McGing as Managing Director



of The Cementation Company (Ireland) Ltd., Dublin (pictured here). Mr. McGing, who is a graduate of NUI, has been over 25 years with Cementation. He served as contracts engineer and agent for a number of years before

being transferred to India, where he worked for seven years, latterly as area manager based on Calcutta.

* * *

A NEW edition of a 12-page brochure describing their range of products is now available from Durapipe and Fittings Limited of West Drayton, Middlesex. Besides detailing the range of pipes, fittings and valves that the Company manufacture in both ABS and PVC, the brochure also contains sections on jointing methods, advice on installation technique and detailed chemical resistance tables. In addition are tables giving details of dimensions and recommended working pressures.

VERTICAL Venetian blinds have been designed to heat or cool a room as well as to block sunlight or vision from outside.

Developed by Radiant Hydronics, of 467, Hamilton Avenue, Palo Alto, California, they consist of hollow, vertical metal slats. Hot water flows through them in winter or cold water in summer. The blades can be adjusted to increase or decrease the amount of sunlight entering a room. Cost is from 3.75 to 10 dollars per sq. ft., depending on installation and size.

* * *

THE NEED for an authoritative and comprehensive Directory of the Building Industry in Ireland has long been felt. Such a publication has become especially necessary of recent years when developments in the building and construction industry have been so spectacular, and the need has been met by The Building Centre of Ireland's recently published Building Directory.

* * *

BECAUSE of the growing demand throughout Europe for their products, the Hart & Cooley Manufacturing Co. of Michigan, U.S.A., have opened a large new manufacturing plant at Lokeren near Brussels to meet European requirements. The new factory, which covers more than 300 acres, will manufacture the complete range of more than ten thousand different grilles, registers and diffusers which until now have been imported from America. The sole U.K. and European agents for Hart & Cooley equipment are Van den Bosch Ltd., while Irish agents are Heating Controls and Devices Ltd.

* * *

A NEW publication on cast iron repair work has been prepared by Oerlikon Electrodes (G.B.) Ltd., Kelvin Way, Crawley, Essex. The leaflet is available to readers and gives a comprehensive list of recommendations to assist works maintenance departments to obtain successful repairs in cast iron.

* * *

THE DIRECTORS of J. Brockhouse & Co. Ltd. have decided to pay an interim dividend on the ordinary stock of 4%—four—less tax (same) on account of the year ending September 30, 1964, payable June 30, 1964. The Directors report that the estimated profits before taxation for the half year to March 31, 1964, amount to £566,242 (£364,100 for the corresponding period last year).

* * *

A NEW-STYLE information sheet



Inside Sanbra Fyffe's new Santry factory

OUR pictures were taken in the new Sanbra Fyffe Limited factory at Santry. Last month we reported the official opening of the factory, which is manufacturing the well-known Conex-Instantor compression couplings for domestic copper pipes; plumbers' brassware; Aqualyne and Easilyne luxury brassware; bath and sink mixer sets; and radiator valves for central heating, including the revolutionary Setflo and Lockflo valves.

Inside the new Factory—its exports are worth £25,000 a month—we see the feminine touch at the controls of machines turning out plumbing equipment and a young operative at his turning machine.



has been published by Ascot Gas Water Heaters Limited. It features the 611 range of instantaneous gas water heaters for bathroom hot water.

A highlight of the information folder is a full-colour technical diagram of the appliance. This publication is intended for trade and technical distribution and is in addition to the standard sales leaflet.

the 7 deadly sins of domestic installation

PART FOUR

HAVING established how much heat is needed in each room—last month's subject—we now have to get down to the detailed design. This is very important. Time spent on design is never wasted, because time spent on design saves time spent on call-backs, and call-backs on design faults can be the most expensive of all to the installer. So a design fault can be a deadly sin indeed!

The design procedure for small-bore systems, such as the one under consideration, can be divided into four stages. These are:—

- Calculation of heat requirements. (We have done this).
- Positioning of radiators and pipe runs. (The subject of this article).
- Pipe and pump sizing.
- Final establishment of boiler and radiator sizes.

Positioning of Radiators and Pipe Runs: The best place for a radiator is under a window. This is because the window, source of the greatest heat loss, is likely to be the coldest spot in the room. In addition to this, furniture is not usually sited in front of a window, and the deposits of dirt which eventually accumulate above any radiator can easily be wiped off glass.

Skirting heating, of course, is a different proposition. Even a small room may need eight feet run, or more, of skirting heating. So against the advantage of low, fast, unobtrusive heat must be set the minor disadvantage of increased length. Where possible, however, an outside wall should always be the first to be fitted with skirting heating. These are all technical considerations. The customer, of course, may have his own ideas about radiator positions.

The positioning of pipe runs is a far more complex subject. First of

all there are certain "golden rules." These are:—

- Always "lay to a fall"—all the way between any high point and any low point. Then make sure you can vent the high point and drain the low point.
- Keep it good looking, or inconspicuous. Better still, out of sight.
- Keep it short; avoid wasteful design.
- Keep it away from cold spots.
- Remember that long straight runs will expand considerably when heated.
- Try to avoid taking large pipes across joists which would require deep notching.
- Insulate any work in unheated spaces.

Next, let's take a deep breath and plunge into the one-pipe versus two-pipe controversy. Briefly, the advantage of one-pipe work is that it is simple, and gives maximum economy of pipe and labour. The disadvantages are that it is difficult to keep radiator temperatures even throughout. The circulating pressure available for each radiator is very limited, and it is not usually possible to feed radiators from above. Two-pipe work involves rather more time and material (but not twice as much), and it can look unsightly if the pipes are exposed.

On the other hand, radiator temperatures may be constant throughout, and there is plenty of circulating pressure available for any radiator.

Figure 1 shows a one-pipe circuit. If we assume that the pressure loss or frictional resistance of a 100 foot circuit is, say, fifty inches water gauge, and if the two connections to the radiator A and B are four feet apart, then it follows, over-simplifying a bit, that there is a circulating pressure of two inches water gauge available for the radiator. If the connections from the main to the radiator are very long, especially if they are horizontal, then there may be insufficient water reaching the radiator because the resistance of the connections at the required flow rate would be greater than the rather limited circulating pressure. In addition to this, each radiator in turn is discharging cooled water into the main, and it follows that the last radiator on the circuit will always be much cooler than the first. The radiators can, in practice, be balanced to some degree. The alternative is to allow, in sizing the radiators, for the different emission temperature.

A good designer does not close his mind to either system, but uses each one in the right circumstances.

In a two-pipe system, each radiator is connected from the flow, and back into a separate return. Therefore, if

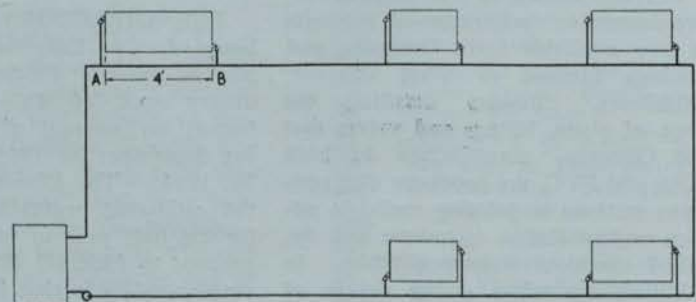


FIG. 1.

from previous page

all the radiators be turned off no circulation takes place, and the full output of the pump, less the circulating pressure absorbed en route by the pipework, is available for any radiator. The only problem here is the reduction of the circulating pressure, since, left uncontrolled, the radiators nearest the pump would "short-circuit" the rest of the system. This is why the radiators on a two-pipe system **must** be fitted with lockshield valves, or double-regulating valves, and properly balanced.

Moving from the general to the particular, we can now get down to the job we are taking as a worked example.

First, radiator positions. The radiators may be sited under the windows at all points except for the hall and the kitchen. There is no window that we can use in the hall, so we cite the radiator where it will not be in the way too much, while it is still so placed that as large an area as possible is receiving radiant heat. Since there is no window above, a radiator shelf or deflector will be needed in order to prevent staining. Incidentally, this should either be let into the wall or sealed to it with a rubber or plastic joint. A deflector with a crack behind it is worse than no deflector at all.

The kitchen is usually a special case in any home. If the boiler is sited in the kitchen, as it will be on this job, then you can count on some heat emission from the boiler—possibly two or three thousand B.t.u./hr. (often the manufacturers give a figure), and more from any flue pipe that may be exposed in the kitchen. In a small kitchen this sort of input, plus waste heat from cooking, is often good enough, although it is rather an unscientific approach to heating.

THIS sparkling and well-informed series is by **W. J. R. COUCHMAN**. His name will not be unfamiliar to many readers, as Mr. Couchman maintains close contact with the trade throughout Ireland and is ideally informed to compile this new series.

Another special point about a kitchen is that modern kitchens tend to be crammed with working tops, a cooker, washing machine and so on, and almost always the sink is below the window. So placing a radiator can be rather a problem!

One way out of this difficulty is to use a compact column radiator, rather a dust trap. Another is to use a panel radiator mounted **vertically** so that the minimum of wall width is occupied. On my own jobs I am rather fond of using a particular model of fan convector which is made for kitchens and bathrooms, and is finished in white enamel. These little units are about a foot across by a few inches in width and depth, and, with an output of 4,000 B.t.u./hr., such a unit, mounted out of the way at high level, would be just right for this job. The other 2,950 B.t.u./hr. which we found were needed will, we can safely assume, be made up by the boiler.

Next, the pipe runs. Here we must divide the system into two parts. There is the pipework system serving the radiators; this will be under the influence of the pump. Because of the high circulating pressure that the pump provides, these pipes will be "small-bore," mostly half-inch work. The other part of the system is the circulation to the hot water cylinder which must, of course, be an indirect one. Some designers use the pump to provide a circulation to the hot water cylinder as well as to the radiators, and in certain circumstances this can be satisfactory. Normally, however,

the circulation to the hot water cylinder should be by "gravity," or thermo-syphon. This is because:—

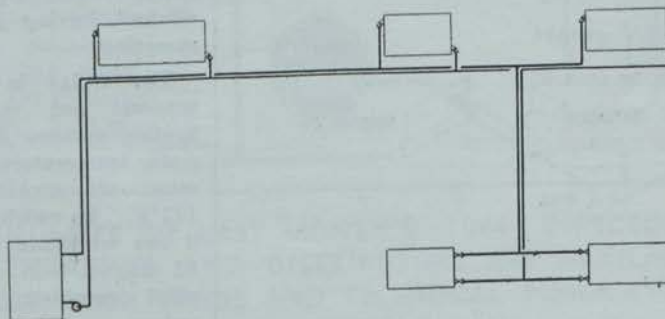
- (a) If a solid fuel boiler is used there must be a "heat leak" which can take off excess heat from the boiler when the pump stops. The heat input from a gas or oil-fired boiler can be stopped or reduced very much more quickly than with any solid fuel boiler; due to this, while a "heat leak" for such boilers is highly desirable, it is not usually essential.
- (b) While the demand for heat in any home varies, and may cease in the summer, the demand for hot water is constant and should therefore be independent of the pump.
- (c) Certain types of heating control systems operate on the pump, and the operation of such controls should not affect the hot water system.
- (d) In general, the gravity hot water circulation in a domestic system will work on a greater temperature difference than the pumped circulation. Because of this the hot water temperature tends to be lower than the heating system temperature, and most householders prefer this.

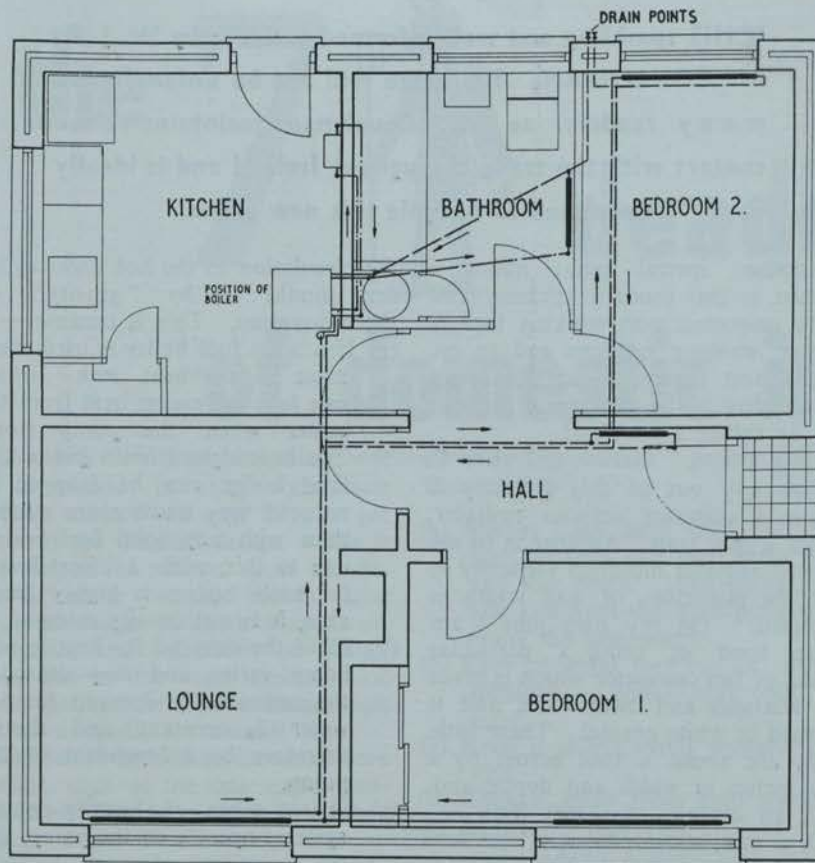
Our system is now beginning to take shape. We now have fixed points, the radiators, cylinder and boiler, to interconnect, and we know that the heating circulation will be pumped and the hot water circulation will not. The bathroom radiator, or towel-rail radiator, ought to be connected to the hot water circulation, since this is one room where heat may be required even in the summer when the pump is not running.

This particular job could easily be designed as a one-pipe system using a ring main, but if a two-pipe system is used, while the total pipe length will be greater, some of the pipe sizes will be reduced. Using a two-pipe system, therefore, we have simply to connect up basically as shown in Figure 2, using the minimum of pipe-

Continued overleaf

FIG. 2.





Domestic installation

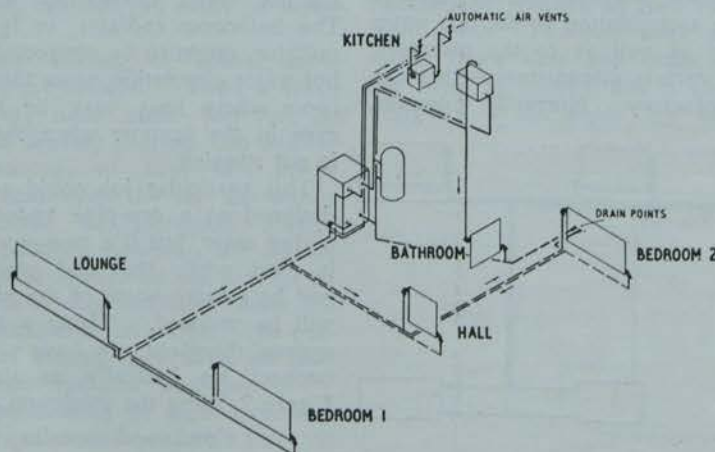
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work and remembering the "golden rules." Thanks to the timber floor, most of the work can be out of sight. Drainage points and insulation will, of course, be essential.

A suitable layout is shown in plan in Figure 3, and an isometric drawing of the system only in Figure 4. The chances are that no two designers

would set out this pipework in quite the same way, so I may get some rude letters!

Note that, at this stage, apart from the convector in the kitchen, we do not know the size of anything. Now that we know where everything is going, we can proceed with this aspect of the job next month.



New accelerator from Harford

THE B.S.A. Harford OPIXY accelerator, which was one of the sensations of the 1964 Hevac Exhibition, where it was seen for the first time, will be available in August.

This remarkably handsome glandless accelerator, which is finished in blue and grey, is ideal for the small or medium sized installation. It is fully variable to any selected duty up to 6½ g.p.m. either before or after installation by the adjustment of an easily accessible selector. This facility to vary the performance enables system noises to be eliminated.

A push button, concealed underneath the electrical plug, is available to free the shaft should it become stuck through dirt in the system. A vent screw in the top of the pump enables trapped air to be quickly released.

The Opixy can be installed with the shaft either horizontal or vertical and on either flow or return. Long life and silent operation are ensured by specially designed water lubricated bearings and the accelerator is covered by a two-year free replacement guarantee. The Opixy is particularly efficient, having a low power consumption.

The Opixy is designed for low pressure hot water closed central heating systems up to a maximum water temperature of 200°F. Maximum air ambient temperature is 122°F. Its weight is 9 lb. 12 ozs., and it can withstand a static pressure of 22 lbs./sq. inch. The pump is supplied complete with ¾" standard unions.

trade Topics

LEVERING floor boards up with a crowbar, bolster or whatever is handy usually causes considerable damage to the boards by splitting and edge bruising and necessitates the fitting of new boards.

ANSWER TO INSTALLATION PROBLEMS

Now all this can be overcome by novel tools developed by Delway Products Ltd.

Before tongued and grooved floorboards can be taken up, it is necessary to cut through the tongues, and the Delway cutter does this work more quietly and with less damage than a padsaw. To operate, simply lay the cutting wheel into the crevice between the boards, apply foot pressure and the tool is then pushed along the length of the board. Joists and underfloor services cannot be damaged.

To follow up the Delway floor board lifter, which weighs only a few pounds, is designed to lift floor boards with the minimum of damage. Constructed of heavy duty aluminium alloy, the lifter requires a minimum of 8" headroom and will straddle board widths from 2½" to 10"

Delway Products also produce an automatically adjusting joist boring tool which takes bits up to 1" or 1½" if required. Drills into wood, metal or masonry. It can be accurately adjusted to bore from 1½" to 7" depth down the joist and will drill comfortably into awkward corners.

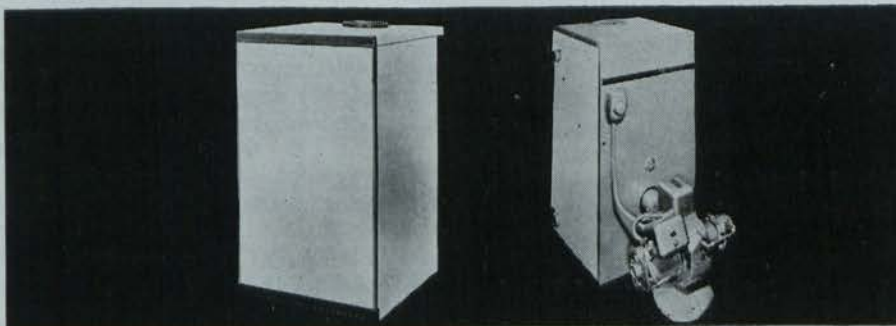
Once the tool is adjusted for depth, the automatic jack maintains pressure and the hole is made quickly and easily by just turning the handle. Sole agents for Ireland (32 Counties) are: National Agencies, 7 Upper Camden Street, Dublin 2.

They don't let you D O W N at Wilsons

Every Wilson oil-fired boiler is fired and tested for you before it leaves the works. The outputs are guaranteed, *tested* outputs into water

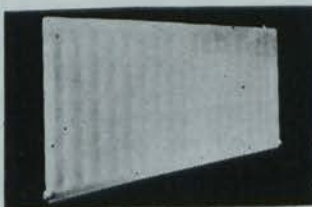
Every Wilson radiator has a guaranteed emission figure—a figure calculated to B.S. : 3528 : 1962 by the Heating and Ventilating Research Association, Bracknell.

All boilers are very accessible for your checking and cleaning —saves you time on the job. And if there is trouble with a Wilson installation, we do want to hear about it. Because it is not our custom to assume that the installer must be at fault.

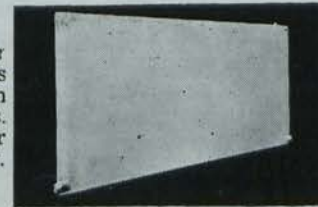


Wilson Wallframe. Five models available with outputs from 45 to 150 thousand B.T.U. Advanced technical design without frills. The biggest selling wallframe boiler in the country.

Wilson Boiler/Burner Units. Pressure-jet fired. Outputs from 70 to 800 thousand B.T.U. Larger models now with Wilson Cosytube baffle for maximum corrosion-free life.



Wilson Radiators. Their extra slim design makes them favourites with housewives. 816 sizes with standard popular range for quick delivery.



Full details from

Henry Wilson & Co. Ltd.

Makers of Heating Equipment since 1840

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Telephone: Simonswood 3541

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Mr. C. O'Dewda, Brooks Thomas & Co. Ltd.; Mr. J. Coleman, P. Lynch, & Co. Ltd.; Mr. D. O'Connell, Sales Manager, Heating Division of Unidare Ltd.; Mr. P. Troy, E. C. Hancock Ltd., and Mr. R. Simmons, Chairman of Electrical Contractors Association of Ireland, photographed at the Thermidare Heating Exhibition in the Hibernian Hotel, Dublin.

MR. D. LUKE (centre), Manager, Heating Division of Messrs. Unidare, Finglas, discussing the Thermidare Embedded floorwarming cable heating system with representatives of the E.S.B. at the Thermidare Heating Exhibition held in the Hibernian Hotel. Left to right: Messrs. W. Kelleher, P. Walshe, D. Luke, J. Tansey and F. Cleary.

trade Topics

"TORTOISAIRE"—a new economic, efficient oil-fired central heating system, has been introduced by Charles Portway & Son Ltd., manufacturers of a wide range of oil-fired heating equipment. Built into the structure of the house, it is simple to install and circulates warm air cheaply to every room.

NEW C.H. SYSTEM FROM PORTWAY

Intended for the average 3/4 bedroom home, the system is extremely flexible and includes as an extra an electric immersion heater for use when the weather is too hot for water to be heated through the boiler of the central heating system.

The "Tortoise" is based on the principle of the blue flame oil burner in which horizontally opposed jets work on a natural draught of not more than 0.08" w.g. in a 4in. fluepipe. It emits a maximum 40,000 B.t.u.'s when on high flame, and is also extremely efficient on low flame (70 per cent.), and can be set for any required heat output between 7,000 and 40,000 B.t.u.'s.

A specially designed robust steel heat exchanger provides an integral waterway giving from 2,000 to 10,000 B.t.u. output. This flexibility can be achieved with a hand operated damper which reflects burner gases away from the waterways to prevent boiling.

* * *

AN INSTANTANEOUS gas water heater specifically designed for bathroom use has been

NEW ASCOT GAS WATER HEATER

introduced by Ascot Gas Water Heaters Limited. The model, 611/4,

supplies hot water to the bath and bathroom basin by means of a swivel spout. As well as the spout, the heater is fitted with an extra outlet for connection to an additional hot tap or shower.

The compactly designed 611/4 is ideally suited for installation in properties being modernised and is particularly useful as a replacement for the old type "geyser" as it has the same size flue outlet. Two gallons of hot water per minute raised 50 degrees F from cold, or one gallon per minute raised 100 degrees F from cold, can be obtained from this Ascot.

* * *

A NEW type of slotted plastic drainage pipe was introduced to Ireland last month by Stewarts & Lloyds of Ireland Ltd.

SLOTTED PLASTIC DRAINAGE PIPE FROM S. & L.

The pipe is manufactured from "Carag" 60-22, a polyethylene compound developed by Shell Chemical Company. It has an internal diameter of 2 inches, a wall thickness of .05 inches with 1 1/4 inch transverse slots at 2 inch intervals. The slotted area covers 0.6 per cent. of the pipe surface. The pipe is used in conjunction with a permeable fill but trials without the fill are being carried out in England. In this country An Foras Taluntais are to receive a supply for research purposes.

The distributors say that although the cost of plastic pipes is the same order as that of tiles, the final installed cost is expected to be lower. Flow measurements have shown that the 2 inch plastic pipe can adequately replace 3 in. tile drains and the controlled slot in the new pipe prevents blockage by large soil particles.

* * *

THE WING "Draught-Maker," when installed in a chimney, creates a

TO BEAT CHIMNEY PROBLEMS

positive suction around the fire-place opening, pulling smoke and fumes up the chim-

THERMODARE HEAT SYSTEMS ON SHOW

THE Heating Division of Unidare Limited last month staged, in Dublin, a highly successful exhibition of Thermidare heating systems.

News makers at the well-attended exhibition were:—

- Unidare skirting heating, which is discussed in our industrial section special heaters survey.

- The latest improvements in domestic night storage heaters, including the three R's—the graceful and colourful Renoir, Rembrandt, and Rubens—which will be introduced to the Irish market shortly.

- Embedded floor heating for homes and offices which, report Unidare, is being installed in many of the new insurance and bank buildings in Dublin and in all the new Post Office exchanges in Dublin and throughout the country.

- Outdoor infra-red heating which is an interesting departure and is a type of heating which can be used for football stadiums, railway stations, etc.

Also attracting keen interest at the exhibition was the method of controlled output heating with the Thermidare central fan unit. A revolutionary heating system this, it is currently being developed by Thermidare and incorporates the use of domestic storage heaters in conjunction with a compact central fan.

The central fan, operating noiselessly, blows ducted cold air over the core (refractory blocks) of each installed storage heater. The result is a low level heated air stream which will provide full comfort conditions for 24 hours daily, to any or all rooms where storage heaters are installed at off peak rates.

from previous page

ney. Even when first lighting a fire there will be no trace of smoke, and no soot or fumes can escape into the room.

It consists of a special fan unit carried by a long shaft through a smoke plate from the electric motor. Fan and shaft project into the chimney through a casing let into the brickwork. When in use the fan draws air from inside the chimney, creating a draught suction at the fireplace opening, pulling the flue gases up the chimney to be dissipated at the top. Although a positive air suction takes place, no uncomfortable draught is noticeable.

The manufacturers of the "Draught-Maker" are Curwen & Newbery Ltd., London Road, Devizes, Wiltshire, and the unit is suitable for all open fireplaces, heating and domestic boilers, stoves, cookers, and solid fuel appliances. There are two maximum speed unit available and the unit is easily removed for cleaning. Irish agents: W. Finucane & Co. Ltd.

trade Topics

ENNIS ENGINEERING Co. Ltd., 55 Mary Street, Dublin, have been

BIG NEW AGENCY FOR ENNIS ENG.

appointed agents in Ireland for HI-VEE Heating Ltd., Watford, and the Wanson Co. Ltd., manufacturers of "Thermobloc" air heating systems.

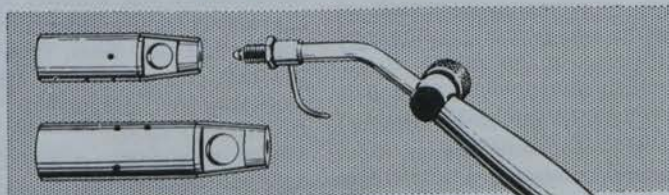
The Hi-Vee warm air units are indirect water to air heat exchangers with ducted air circulation. Over the range 20,000 to 70,000 B.t.u./hr. they only require connection to a normal indirect system fired by boilers using either gas, oil, or solid fuel. The system provides all domestic hot water in addition to the warm air heating. Multiples of Hi-Vee units connected to a boiler of sufficient capacity will



This is the Kenwood Waste-Away A462, a new double powered kitchen waste disposer. Increased power deals with 5½ pounds of kitchen waste per minute. Easy installation is a key feature of this unit. The fast action cutters are in chrome/cast iron alloy. The ½ h.p. high torque motor, which has cut-out protection, never needs oiling. From Kelly & Shiel Limited of Dublin and Cork.

Kosangas Blow-Torches

for every plumbing job!



There's a wide range of Kosangas blow-torches, for all types of plumbing work. They're far more efficient than the conventional types. The Kosangas TH3 and TH4 high pressure blow-torches are specially designed for paint-burning, pre-heating and soldering. The Bullfinch Mark II has a full range of heads, including soldering attachment. Use Kosangas blow-torches, with the small Kosangas portable cylinder, also for roof-felting, jointing of plastic pipes, and other heating needs. A plumber's portable furnace with wind protected burner is available. Send for details to: McMullans Kosangas Ltd., 1 Upper O'Connell St., Dublin. Tel: Dublin 40761-4.

heat premises of any size and type. Stocks of standard size ducting and air registers are carried by the Company. A Show House, demonstrating the Hi-Vee system, at "Richelieu," Sydney Parade, Dublin, will be open to the trade from July 10th, 1964, for a period of approximately four weeks.

For the larger industrial applications Ennis Engineering are now marketing the Thermobloc "Universal" range of Air Heaters in the Republic of Ireland. Heat outputs range from 200,000 B.t.u./hr. to 16,000,000 B.t.u./hr., and the heaters are designed to burn either oil, coal or gas.

* * *

● MR. G. H. C. CRAMPTON, B.A.I., of Dublin, has advocated that all existing vocational organisations should consider housing themselves in the same building. The National Institute of Physical Planning and Construction Research Ltd. and The National Advisory Council for the Building Industry might occupy the same building. Indeed, one of these two bodies may be the spearhead to advance the idea, he states.

Eleven

The Irish Plumbing and Heating Engineer.

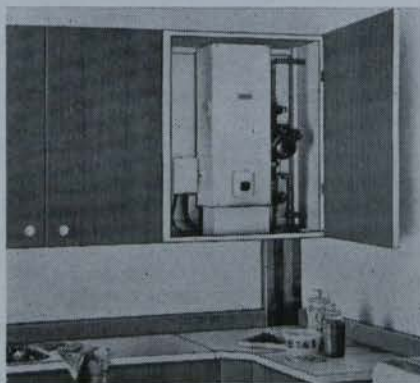
Reporting

A special correspondent reports on

WHY ITS GAS FOR HOME HEATING

WHILST gas has always been a powerful competitor in the field of space heating, the introduction by the Dublin Gas Company of a two-part tariff charge for domestic central heating greatly improved its competitive position and as a result the number of home heating installations has shown a remarkable increase.

With the exception of the first 50 therms per quarter, the tariff makes gas available at the low price of 1/6 per therm. A further advantage of the tariff is that it does not differen-



ABOVE—A G 301 small bore installed in the kitchen.

BELOW—This G 35/45 Ductair has been installed in a kitchen cupboard. Note the airvents in the cupboard door.



tiate between the gas used for central heating and for other purposes. Therefore a consumer using gas for cooking, water heating and refrigeration in addition to central heating, will not only have the advantage of home heating at an economical cost but will show a substantial saving in the cost of water heating. Consequently almost all gas central heating installations include provision for hot water supply.

Whilst the tariff applies essentially to domestic central heating systems, it has been extended to cover certain installations which can in some respects be termed domestic but are not strictly within this category. The possibility of extending the principle of tariff charges may be envisaged as a result of the improved gas production methods now being planned. These new methods will produce a more highly refined, non toxic gas with such immediate advantages to consumers as reduced servicing problems and an increase in appliance life. These advantages must inevitably reduce the cost of home heating by gas.

New Home Heating Centre:

An example of the Dublin Gas Company's progressive approach to the problems of home heating and their confidence in the future of gas in this field is the opening of a new home heating centre adjacent to their D'Olier Street Showrooms.

The centre comprises a showroom where many examples of home heating appliances can be inspected, including warm air units, boilers, connectors and gas fires, and a reception area where advice may be obtained on all home heating problems. The showroom display includes a section of a modern kitchen layout incorporating a warm air unit which can be seen in operation. In addition the centre is the headquarters of a fully trained staff who not only advise on all aspects of home heating and hot water supply but also industrial and

commercial heating problems and large scale catering.

Service:

Realising the value of providing the best possible service, the Company not only offers a technical advisory service on all heating matters but undertakes the planning and installation of all types of systems. Furthermore, the nucleus of what will eventually become a complete servicing organisation has been formed and is at present engaged in overhauling all the gas home heating units in readiness for the forthcoming heating season.

In addition to its own facilities the Company has arrangements whereby the vast resources of the manufacturers and the Gas Council Research, Development, and Testing organisation is at their disposal; in fact they do not market any appliance until it has been tested and approved by the Gas Council.

Central Heating Systems:

Introduced to provide home heating on a selective basis, the ducted warm air system has now become a most popular system for whole house heating, particularly in new houses where the system can be installed during construction. If account is taken of the saving in building costs by the elimination of flues, fireplaces, etc., the nett cost of such a system is remarkably low, generally in the region of £130 to £150.

With this system a centrally located unit distributes warm air through ducts to outlet registers situated at low level in each room. A high level duct returns the air to the unit and this feature, coupled with full automatic control of temperature and operation and individual control of each outlet register, makes this type of system extremely flexible and economical. Actual running costs for a 45,000 B.t.u.'s per hour installation average £60 to £80 per annum.

In order to minimise running costs such desirable features as adequate

Continued page thirty.

industrial heating & ventilating IN IRELAND



NO. 6—Presented with the July, 1964, issue of The Irish Plumbing & Heating Engineer.

New split system heat pumps here

A NEW range of split system heat pumps, designed for industrial and commercial air conditioning, is now available in the U.K. The equipment, known as the HD range, consists of three models—the HD120, the HD175, and the HD240. They are equally suitable for heating and cooling. Their outputs on cooling range from 8½ to 17 tons of refrigeration. On heating the units have a performance ranging from 90,000 B.Th.U.'s per hour to 233,000 B.Th.U.'s per hour, without addition of supplementary heat, and with ambient temperatures as low as 45°F.

The addition of supplementary heaters, which are an incorporated feature of the units, can add substantially to the above performance.

Manufactured by Westinghouse Electric Corporation of U.S.A., the equipment is available through Thermo-tank Ltd.'s Land and Products Division, 302-308, High Street, Slough, Bucks.

To simplify installation, and to provide a neat appearance, the heat pumps are supplied in two units. One, known as the outdoor section, is designed for roof or exterior mounting and incorporates a compressor, condenser and fans. The indoor section, which serves

NORTHERN Notes

the area to be treated, is equipped with an evaporator and air circulator fans.

If the outside temperature should fall to an abnormally low level, the heat pump's output can be boosted by automatically-operated supplementary heater elements located across the fan outlets of the indoor section. In addition, the unit is capable of automatic defrosting on the other coil.

* * *

A TECHNICAL leaflet describing their new range of Plevomastic two-part polysulphide based sealing compositions is now available from Evode Industries Ltd., of Swords, Co. Dublin, who manufacture Plevomastics under an agreement with Evomastics Ltd., of Stafford. Plevomastic Sealants conform to the draft specification No. 1 recently issued by the Sealant Manufacturers Conference of the F.B.R.A.M., of which Evomastics Ltd. are members.

* * *

The industrial section this month carries two further special Reviews, in our current series of Surveys of important aspects of the industrial, heating and ventilating fields.

The first of these deals with heaters (electric, electric surface, etc.), while the second deals with valves. Equipment reviews accompany both surveys.

Trade Topics cover the month's news.

The conclusion of Daniel Heeney's Mechanical Refrigeration To-day series will appear next month.

Editorial and Advertising Offices:

Callaghan Chambers, 13/15 Dame Street, Dublin 2. Tel. 56465-6.

London: J. T. Robson & Son Ltd., 30 Fleet Street, London, E.C.4. Tel.: Fleet Street 4438.

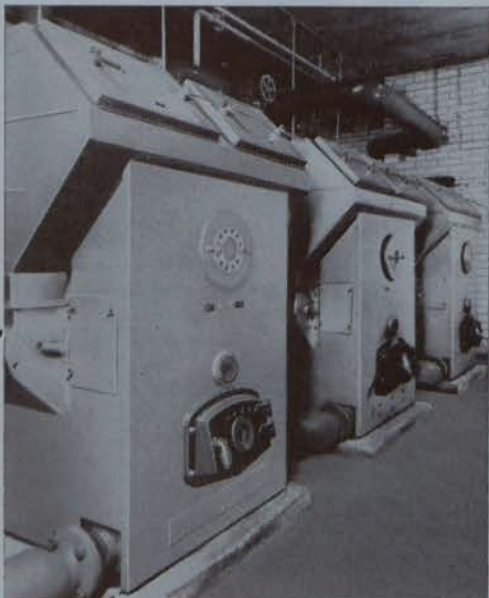
Belfast: Allen McDowell, 43 Horn Drive, Belfast 11. Phone 614606.



A three-quarter view of the outdoor condenser units of the Thermo-tank heat pump installation at Ilford, Essex.



*The warm hearted tale
of 280 old folk
5 gardener-handymen
and 15 boilers named Allied*



It happened when the Gloucestershire County Council built five homes to house 280 old people—like this one at Arle, near Cheltenham. Old people need warmth more than the young. Like the young they need constant hot water. These homes had to make sure they got both—without heavy fuel bills. Because each has only one gardener-handyman to do all the man's work from fuse mending to flower raising, these homes also had to have a heating and hot water system as work-free as possible. This was the tall order the County Architect Department handed to Allied Ironfounders. They chose Allied for many reasons—not the least being that Allied offer the biggest choice of large boilers—oil-fired, gas or solid fuel. And that they could rely on Allied for the most experienced advice. The happy ending to the story came in the form of 15 Allied Automatic Magazine anthracite boilers—one for hot water and two for central heating in each home. Over the past year, with its terrible winter, each set of boilers has never needed more than one hour's attention each day and has used much less fuel than expected. (In Arle House the total consumption was just over 82 tons for the year.) *Similar Allied boilers have recently been installed in 31 Schools, 8 Welfare buildings, 6 Police Stations, 5 Council Buildings, 10 Clubs, 17 Factories, 19 Hotels and 13 Churches.*

County Architect R. F. FAIRHURST, Dipl. Arch. (L'pool) A.R.I.B.A., A.M.T.P.I. Installed by T. H. HASKETT, LITTLEDEAN.

ALLIED INDUSTRIAL BOILERS ARE MADE BY ALLIED IRONFOUNDERS 

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MONTHLY SPECIAL REVIEW

HEATERS: Electric Surface, Feed Water, Gas, Immersion, Oil, Tubular.

HEATERS IN UNSURPASSED VARIETY WITH ELECTRICITY

OF the many different types of heaters presently on the market, electricity provides us with an unsurpassed variety. There is an electrically operated counterpart of almost every heater operated by gas, hot water and oil, as well as a few peculiar to electricity only, such as storage heaters and infra red heaters.

Electricity as a means of heating has many advantages; short time lag, flexibility of service equipment, absence of fumes and absence of boiler plant to mention but a few. The running cost, however, is generally the deciding consideration against which should be balanced the lower capital cost.

Storage heating consumes electricity in the off peak hours—generally 11 p.m. to 8 a.m.—at a considerably lower rate than normal. However, it has the disadvantage that the daily heat output is relatively independent of the weather conditions. The storage heater is constructed of a solid refractory material through which the heating elements are threaded and the whole encased in a sheet steel casing. The refractory brick absorbs heat from the elements during the night and dissipates it during the day. They are available in sizes from 1 Kw. to 3 Kw.

A luminous electric radiant fire is to be found in almost every home today, even those heated by low pressure hot water or warm air central heating. They are available in all shapes and sizes and makes from $\frac{1}{2}$ Kw. to 3 Kw. with single, double or even multi-bar luminous resistors. They are particularly useful for a quick local heat up but will not heat a reasonably large room to any degree. They also tend to absorb oxygen in the room and it is desirable to place



This special review was compiled by a special correspondent.

water in an open container in front of them.

Infra red heaters consist of a heating element at a temperature of about 1,000° C encased in a fused silica tube. The application of the infra red heater depends on the operating waveband. Wave bands of 2 and 4 micron are very acceptable to the human body, while in between, a wave band of about 3 micron is quickly absorbed by liquids and as such is very useful in drying. The heaters are available in a variety of sizes from 100 W. to 4,000 W.

Tubular electric heaters are available in lengths from 2 to 12 feet and are generally rated at about 60 W. per foot run. They are also available in single or multi-bank units. The heating element, which consists of a nickel chrome coil, is interwoven through mica spacers and the whole encased in a seamless tube, blanked off at one end and a terminal block at the other.

AMONG the recent developments in electric wall and skirting heaters there is now a unit which combines radiation and convection in equal proportions to give a variation of from 3° F—4° F. from floor to ceiling. Control of these units can be achieved by selecting the output on a dial or by roomstat. Both methods of control can incorporate a time clock.

Gas fires are suitable for heating extra large living rooms as the com-

bined radiant and convective output is sometimes as high as 18,000 B.t.u.-hour. They do, however, require a flue to take away the products of combustion. The exposed fire effect has an instant appeal to the public, though the wire guard some manufacturers describe as an added safety precaution is virtually an essential. Most makes incorporate an ever burning pilot light.

Potez Industries produce a paraffin oil air heater incorporating the vapourising cup principal. The products of combustion should be ducted out of the heated space and as oxygen for combustion is drawn from the heated room an "airless" atmosphere is sometimes felt. The flame, which is visible through a large hemispherical sight glass, is controlled by varying the amount of oil to the burner.

THE main characteristic of all the above heaters is their flexibility. They can be easily moved from room to room and they allow individual control of room temperature. Even where central heating is installed, it is not unusual to find these individual heaters. For private houses, they still constitute the main form of heating and will continue to do so for very many years.

IN the equipment Review on the following pages we take a look at new developments in the fields covered by this special Review. (All claims are those of the manufacturers).

NEW FROM Unidare Ltd. is their skirting heating system which attracted keen interest during the recent Dublin exhibition of the Finglas company's heating division products.

Supplied in lengths of 2 ft. and 4 ft. to a present maximum of 6 ft., Unidare skirting board heating replaces the traditional wooden skirting board in new houses. Alternatively it may be mounted on existing skirting boards. To provide full comfort conditions with average insulation, it is generally sufficient to install skirting heating along the perimeter of two outside walls.

Hot water, at a mean temperature of 170 degrees F, is pump circulated through a continuous length of the special finned sections contained within the attractively designed casing. The temperature can be controlled throughout the system or through individual circuits, depending on the layout design.

Some of the many features of the system are:—Robust one-piece back and top with inset deflector for maximum efficiency; foam plastic seal on back panel to limit convection discoloration; suspension hangers to allow expansion and contraction of heating element; solid brackets easily installed into moulded slots; and non-ferrous heating elements with $\frac{1}{4}$ " copper pipe, having both ends plain for capillary or compression fittings.

PRODUCT REVIEW

from previous page

ELTRON (London) Ltd. have introduced a new Electric Line Heater which is fitted with patent Electron withdrawable heating elements and is specifically designed for vertical mounting in a confined space. The elements are constructed from helically wound 80/20 nickel chrome resistance wire which is embedded in highly compressed magnesium oxide insulation, and is protected by a $\frac{1}{4}$ " diameter sheath.

The heaters are fitted with a control thermostat and an adjustable hand reset safety Cut-out to prevent damage to the elements or overheating of the oil and the thermostatic control fail. The address of the manufacturers is Accrington Works, Strathmore Road, Croydon, Surrey. The Irish agent is J. I. Yates Ltd.

* * *

A new range of heating appliances by G.E.C. will be available for the coming season. Of particular note is the new Unit Construction Night Storage Heater. The unique unit construction makes stocking a much easier proposition for the contractor and also makes their transport a feasible proposition. There are models in the range as follows: DA3800 (750

watts); DA3801 (1500 watts); DA3803 (2250 watts); DA3805 (3,000 watts).

In addition G.E.C. will introduce a range of oil filled radiators, new model electric fires, a new range of Infra-Red Heaters, Sunliner, and, of course, will continue to produce the extremely popular Tropicana Tangential Fan Heater.

G.E.C. manufacture a full range of Immersion Heaters and Water Storage Heaters. On the industrial side G.E.C. manufacture a very wide range of Electric Duct Air Heaters made to suit individual applications, designed for incorporation in air ducts and plenum systems. Industrial Oil Immersion Heaters have been part of the G.E.C. Industrial Heating range for some time and comprise a range of from 1-3 Kw. loadings. The Sales Office of the General Electric Co. of Ireland Ltd. is at Dunleer House, Store Street, Dublin.

* * *

THE CREDA Redhead Domestic Immersion heater from the Simplex Electric Co. Ltd., Creda Works, Blythe Bridge, P.O., Box No. 5, Stoke-on-Trent, switches itself on and off automatically, keeps the water at just the right temperature all the time. The Redhead is available in lengths of 10", 2,000 watt loading; 11 $\frac{1}{2}$ ", 14", 18", 21", 23", 27", 30", 36", all with 3,000 watt loadings.

* * *

THE ELVACO Danish System of electric heating and ventilating is based on a slow and controlled air flow ensuring a minimum air change of 600 cubic feet per occupant every hour. The system operates by using a central ventilator or blower which distributes clean, fresh air through ducts to ambient air diffusers in each room. The concessionaires for the system are Elvaco Heating Ltd., Belvedere Works, Railway Tce., Feltham, Middlesex.

* * *

THE "MEDWAY 30" balanced flue convector heater, which the illustration shows installed in a school-room, is the first all British balanced flue convector heater and gives an output of 30,000 B.t.u.'s per hour. It is attractively finished in a black matt stove enamel with a copper coated grille and the two coloured Stelvetite panels can be supplied in red, green, or grey.

The Harris Engineering Co., York Works, Browning Street, London, S.E.17, also have a wide range of vertical and horizontal air heaters for use with ducting or as free-standing units. The latest model is the VO.500, which has an output of 500,000 B.t.u.'s per hour.

PRODUCT REVIEW continued
page eighteen.

dimplex

HEATING APPLIANCES

For warmth all round the Home



- ★ Oil filled electric radiators
- ★ Coal and Log effect Infra-red fires
- ★ Infra-red heaters and fires
- ★ Oil filled electric towel rails
- ★ Skirting board convectors

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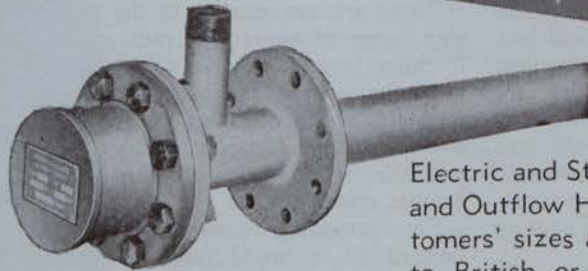
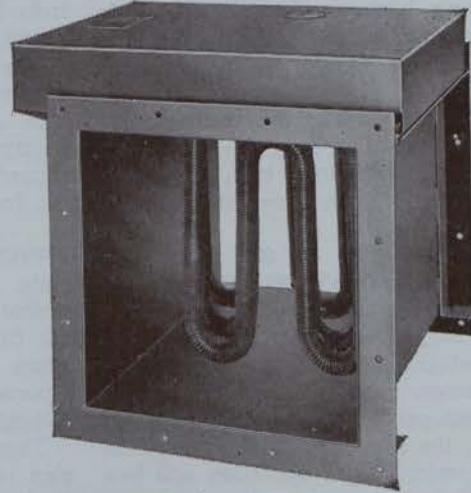
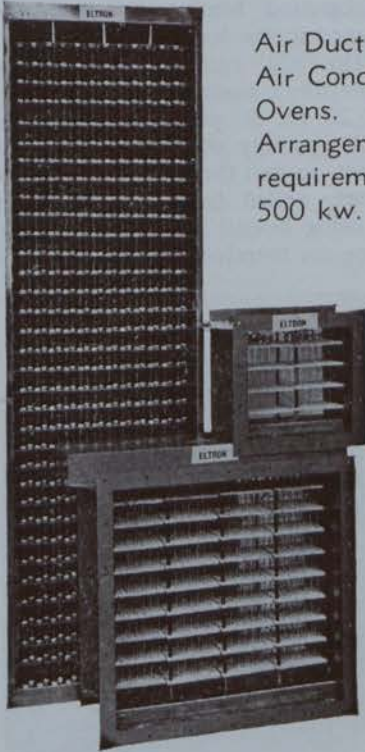
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(Rep.) 136 BOTANIC ROAD, GLASNEVIN

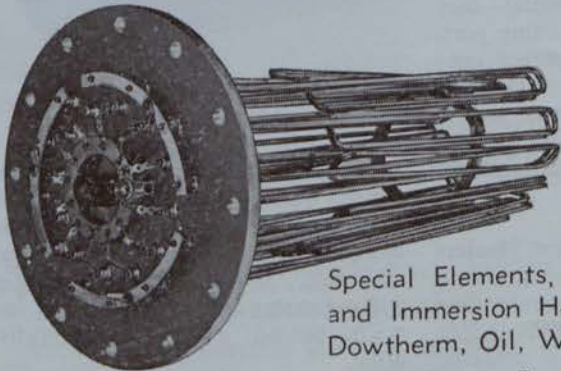
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ELTRON FOR ELECTRIC HEATERS

Air Duct Heaters for Heating and Air Conditioning systems or Drying Ovens. Duct Sizes and Wiring Arrangements to customers' exact requirements. Loadings up to 500 kw.



Electric and Steam Electric, Oil Line and Outflow Heaters. Made to customers' sizes and requirements and to British or American standards. Special Heaters for Dowtherm.



Special Elements, Heating Flanges and Immersion Heaters for Acids, Dowtherm, Oil, Water.



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LTD.

Seventeen

The Irish Plumbing and Heating Engineer.

PRICE reductions of both of their model "F" series of oil fired warm air heaters have been announced by Waterbury Ltd., 195 Stamford Brook, London. The two heaters concerned are the HFF Hiboy model, which provides an upward air stream for duct connection or free-standing discharge, and the DFF Dowflo model, which provides a downward air stream for application to an underfloor ductwork system.

These heaters, which have specific outputs of between 125,000 B.t.u./hr. and 200,000 B.t.u./hr., were introduced last year. The price reduction has been made possible, the firm states, by the economies of long run production methods, which have been introduced to meet the high demand for these heaters.

* * *

THE RADIATION S.2 Satellite overhead radiant gas heater has a heat output of 35,000 B.t.u./hr. Its advantages are radiant heat, giving maximum comfort, rapid heating up without producing high air temperatures, the saving of floor space, flexible control, silent operation and low installation, running and maintenance costs. Fixing and adjustment are simple and with a governed, non-erated burner the appliance will give trouble free service and economic heating in places which would present a problem if conventional heating methods were used.



The Radiation S6

The Radiation S6 Satellite overhead radiant gas heater is built up from three standard two-unit heaters with the inlets linked by a bridged supply. The model S4 is built up from two standard two-unit heaters with the inlets linked by a bridged supply. The manufacturers are Radiation Gas Fires Ltd.

* * *

ISOTAPES consist essentially of an insulated resistance element forming a complete heating circuit with both terminations at one end. They may

SPECIAL REVIEW

from page sixteen

be spiralled round the pipe or straight traced along its underside and are available for temperatures from 100 degrees C to 800 degrees C. There are moisture-proof and flame-proof designs as well as high power, high temperature units together with controls for all Isotape duties—indoors, outdoors and flame-proof.

The manufacturers are Isopad Limited, Boreham Wood, England. The agents in Ireland are Luke, Martyn & Co. Ltd., 1 Sandyhill Park, Drumbeg, Dunmurry, Belfast, Northern Ireland.

* * *

THE FAMOUS Dimplex permanently oil-filled thermostatically controlled electric radiators continue in the full range of fourteen models. These radiators provide the user with a portable central heating system without installation cost.

There are ten models in the Dimplex range of panel type radiators in loadings from $\frac{1}{4}$ " kw. to 2 kw., or in the column type range, a choice of four models in loadings of 1, 1 $\frac{1}{2}$, 2 and 3 kw. All Dimplex radiators are available in a range of nine stove enamel colours.

For providing quick background heating on a broad front, Dimplex offer skirting board styled convector heaters. Available in two sizes—2ft. (300 watts) and 3ft. (500 watts)—they can be used as "floor-standing portables" or for mounting direct onto skirting boards or walls. Dimplex Ltd., Millbrook, Southampton, are represented in Ireland by A. Bell & Co. (Eire) Ltd. (rere), 136 Botanic Road, Glasnevin, Dublin.

* * *

SAFEHEAT Electric Panel Heaters are available in six dimensionally different sizes, with maximum loading capacities of 500, 800, 1,000, 1,200, and 1,500 watts, and can be obtained for use on AC single phase, 200/220 volts, or 230/250 volts. The loading of the heating elements is controlled by a 4-heat switch which also incorporates an "Off" position.

A pilot light is fitted above the control switch, indicating when the heater is switched on. Wiring entry is provided at the rear. With each panel a 6ft. length of P.V.C. insulated and sheathed flexible cord of matching colour is supplied. The panel casings are rigidly constructed from galvanised sheet steel, and have a

stove-enamel finish. "Safeheat" is a product of Wright Electric Motors (HX) Ltd., Century Works, Pellon Lane, Halifax.

* * *

ROBINSON-WILLEY Ltd., Mill Lane, Old Swan, Liverpool, have recently introduced in addition to their complete range of DRUGASAR balanced flue gas space heaters, their new "651" wall mounted heater which is particularly suitable for whole house background heating by being positioned in the hall of small houses.

The "651" extends the range of the Company's heaters down to a rating of 20 cu. ft. per hour. It is fitted with specially constructed flue equipment, so that the heating unit is completely sealed from the room which is being heated and ventilation problems are therefore obviated.



The New "651"

The aluminium outlet duct is contained within the lead coated sheet steel combined wall liner and inlet duct, a grille being fitted on the outside wall. It can also be supplied without casing for partly recessing into walls behind a simple decorative grille.

* * *

THE "SUNHOUSE" wall panel heater is designed to minimise wall discoloration and the duct behind the reflector throws out the hot air and prevents the heat being absorbed by the wall. The back of the heater remains comparatively cool. The isolator switch, located on the left-hand side of the surround, disconnects both elements and the lamp. The size is 13 $\frac{1}{4}$ " high x 21 $\frac{1}{4}$ " wide x 4 $\frac{1}{2}$ " projection. H. Frost & Co. Ltd., of Wall-sall, are the manufacturers.



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THE trim and elegant Forceflo is very specific in the way it meets the demand for warm air heating without noise. Forceflo quietness is tested throughout the audible frequency range and has a *guaranteed* noise criteria rating for any operating condition.

The standard Forceflo unit is only 28 in. high by 9 in. deep. There is a variety of other sizes too; and the design range includes free-standing, concealed,

remote and ceiling-mounted models. Unit output is up to 62,000 Btu/h.

Forceflo — all the heat that's needed and in the neatest, quietest possible way.



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F. H. BIDDLE LTD., 16 UPPER GROSVENOR STREET, LONDON, W.1.
Quadrant Engineers, 167 Strand Road, Sandymount, Dublin 4, Eire. Telephone: Dublin 693943.
Mr. S. Stewart, 26 Neills Hill Park, Belfast 5, N. Ireland. Telephone: Belfast 655759.

Nineteen

The Irish Plumbing and Heating Engineer.

THE IRISH Welding Association's Committee had undertaken a lot of voluntary technical work in order to formulate a comprehensive set of tests for the proficiency of welders. Mr. T. W. Bamford, chairman of the Association, said this at a ceremony in Dublin last month at which nine certificates were presented to young welders.

These tests were based on the widely accepted tests set out in Britain and on continental standard specifications, and had been adapted to Irish conditions without any lowering of the high standard of proficiency necessary to pass each test. "The committee felt that this would be an important contribution to the raising of the standard of welding in this country," he said.

"The committee of the Association is particularly anxious to extend the scope of its activities, and to further advance the science and knowledge of welding throughout the country. The committee is prepared to make available to technical schools, private bodies, and, in fact, anyone who is interested, what information it can of welding and on welding problems," he said.

Mr. A. O'Neill, deputy director of the British Welding Research Association, who presented the certificates, said that technical and technological education were immensely important everywhere. "Here in Ireland, where enviable progress is being made with industrialisation, I believe that the importance of technical education and of high technical standards, is fully appreciated, but it cannot be emphasised too often," he said.



A NEW mercury-in-steel dial thermometer for use in tanks where a protruding stem cannot be inserted has been specially designed by the British Rotothem Co. Ltd. The thermometer (Model 597/1) has a chamber at the back of the casing. The sensing bulb is right-angled and lies completely within the chamber so that the instrument is flush fitting with no projection.

ROTOTHERM'S NEW TANK THERMOMETER

It is particularly suitable for use in vessels with mixing devices or stirring blades, or where heating and refrigerating coils would cause fouling; in sterilizing or anodizing vats into which trays have to be lowered or for electrical applications. The thermometer has a 4 in. dial and a minimum temperature coverage of 110° C (or 200° F). Very short temperature ranges cannot be provided due to the limited length of the bulb. Irish agents: The Rotothem Precision & Instrument Co. Ltd.

* * *

VAN DEN BOSCH Ltd., Europair House, Alexandra Road, Wimbledon, S.W.19, have been appointed sole U.K. Agents for the products of the American-

NEW AGENCIES WON BY VAN DEN BOSCH

Standard Company Controls Division of Detroit. The Van den Bosch franchise covers the complete range of American-Standard non-electric thermostatic control valves for all forms of water-operated heating and cooling units.

Van den Bosch Ltd., Europair House, Alexandra Road, Wimbledon, S.W.19, have also been appointed as sole European agents for all products manufactured by Tuttle & Bailey of Connecticut, U.S.A. Tuttle & Bailey is a division of the Allied Thermal Corporation of America, which is one of the world's largest manufacturers of heating and air conditioning equipment.

* * *

A NEW range of booster plant has been announced by the manufacturers, James Beresford & Sons Ltd., of Acc Works, Kitts Green, Birmingham.

NEW BOOSTER PLANT RANGE INTRODUCED

With a range of five standard models, Beresfords can now meet the needs of the majority of site requirements. Although the units are basically of standard design, some variations in the specification are possible, to accord with specific requirements.

Each unit consists of a pressure storage tank, two centrifugal pumps, an air compressor, all necessary control gear and pipework completed up to suction and delivery connection to the water supply and building water system, respectively. Consequently installation work is reduced to a minimum; it is only necessary to make two pipe joints and couple the electric supply. The unit is completely assembled, tested and adjusted before leaving the

Scientific Association Visit Wavin Pipes



THE Engineering and Scientific Association of Ireland are pictured here during a visit to Wavin Pipes Limited at Balbriggan, Co. Dublin.

Left to right —FRONT ROW: Messrs. F. White, M. Cully, A. W. Spence, P. Liuzzi, D. Carty, R. Jameson, R. Pelissier, J. C. Tonge. SECOND ROW: Messrs. R. Allen, E. C. Botterill, T. Illingworth, Capt. McManus, President, The Engineering and Scientific Association of Ireland; D. C. Coyle, Technical Manager, Wavin Pipes Ltd.; T. Murphy, Wavin Pipes Ltd.; J. Murphy, T. Sheehy, S. Ross, N. O'Kane, A. K. Jackson.

THIRD ROW: Messrs. R. W. Carley, D. A. Gill, Wavin Pipes Ltd.

Twenty

6 BRANCHES THROUGHOUT IRELAND



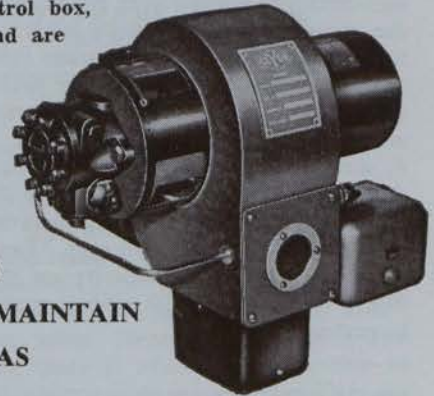
You can now take advantage of six service branches in Ireland. Another addition to the extensive after sales network throughout Ireland.

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Clyde Fuel Systems manufacture a wide range of light oil burners for converting boilers from solid fuel. Complete with photocell flame failure control, thermostat and control box, these burners are silent running and are suitable for light gas or diesel oil.

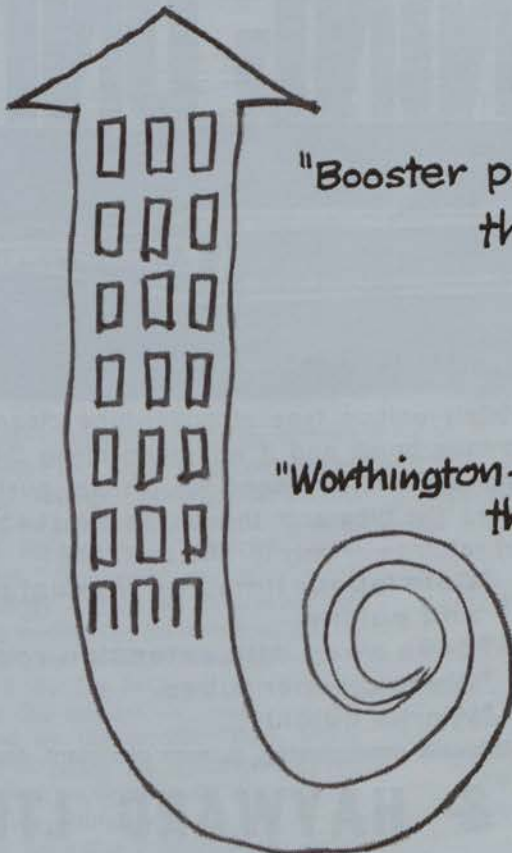
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Branch at Londonderry.

CLYDE FUEL SYSTEMS (IRELAND) LTD.
6 Mount Crescent, Dublin. Tel.: Dublin 66489.
Branches at Cork, Limerick and Longford.



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Full information and literature is available on request.

Worthington - Simpson Ltd
20 HERBERT PLACE DUBLIN

**Pumps • Compressors
Heat Exchange Equipment**



P9335

Twenty-one

from previous page

works so that only minor adjustments are required on site before the plant is put into operation.

Under normal operating conditions, either of the twin pumps is selected to operate as duty pump, the other acting as standby, and under the control of pre-set adjustable pressure switches, this pump raises water from the mains or other source and delivers it into the pressure storage tank where it is contained under air pressure. The five basic standard units are designed for capacities of 1, 2, 3, 4, and 6 thousand gallons per hour, delivered at a mean pressure of 80 p.s.i.; operating at cut-in pressures of 70 p.s.i. and cut-out at 90 p.s.i. Tank sizes are 250 gallons capacity on the No. 1 unit, up to 1,250 gallons on the largest unit.

* * *

HIGH EFFICIENCY aluminium radiators launched by Powell Duffryn Heating Limited

ALUMINIUM RADS USED COMMERCIAL almost a year ago have already proved ideal for use in schools, shops, offices, showrooms and conference halls.

Besides being attractive and efficient, H.E. radiators are economical to use, having only a sixth the water content required for the average panel radiator of the same heating surface. They also give a greater heat emission than steel panel radiators.

A major feature of the radiators is the built-in regulating valve which is fitted during fabrication. This special development gives a precise twin action control in that it both regulates the heat and balances the system, eliminating the need for a separate balancing valve.

* * *

IRISH FOUNDRIES, of Bailieborough, Co. Cavan, is planning to go public. But no

IRISH FOUNDRIES PLANNING TO GO PUBLIC date has yet been fixed for the flotation.

The company, which was formed in 1948, also makes fires and cookers. Among the original shareholders was Bilston Foundries of Staffordshire, England, but this interest has now been transferred to Allied Ironfounders, the U.K. group which recently reported a big advance in profits.

The latest return at Dublin Castle



shows the company to have an authorised capital of £100,000 in £1 shares, of which £30,000 has been issued.

There are a number of small shareholders listed. Two directors of Bilston Foundries are still on the

Board, although the company no longer retains its share stake.

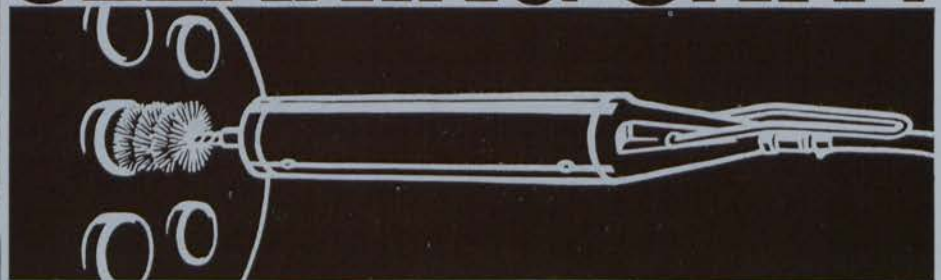
The association with Allied Ironfounders is viewed as a potentially useful one, but, at present, it is more or less dormant.

The pressure of home demand has meant that the export side of the business has not yet been fully exploited.

However, production is at the moment being stepped up very rapidly indeed and the company has major plans in hand.

Certainly the scope at home is impressive. Without taking into account new building, the 1961 census showed some 440,000 dwellings without baths in Ireland.

A UNIQUE BOILER-TUBE CLEANING UNIT!



The Ferret is a completely unique type of boiler-tube cleaning unit. Attach It to a standard tube brush and it will creep along the tube — *without revolving* — and without any need for manual pushing and pulling! When it reaches the tube end, the double thrust action then reverses and the Ferret returns — ready for the next tube!

- THE FERRET**
- *Cuts labour time—no manual pushing and pulling
 - *Does away with extension rods.
 - *Gives cleaner tubes.
 - *Works quickly.

For Publication No. 208, or a demonstration in your own plant, contact:

HALPIN & HAYWARD LTD.,

16/17 Lower O'Connell Street, Dublin, Eire. Dublin 48638/9.



MONTHLY SPECIAL REVIEW

PIPEWORK
VALVES
FITTINGS

Many important developments

PIPEWORK for smaller heating installations is commonly run today in light gauge copper tubing. The ease of installation along with the great variety of capillary and compression fittings, makes for a competitive overall price. A new development of interest to light gauge copper users is the advent of pre-insulated copper tubes. An ivory P.V.C. sheath covers the pipework with the interior of ribbed construction, giving point contact only with the tube. This gives double insulating power by forming a still free air space between the tube and the insulation. The insulation is flexible and can be formed into any shape the tube will take. It is non inflammable and can be buried directly in concrete, plaster or directly into the ground.

To keep abreast with the progress in light gauge copper tubing, a new P.T.F.E. pipe thread sealing tape for mild steel tubing has been introduced. This supersedes the orthodox "Boss White" and hemp jointing compound with advantages that it can seal satisfactorily at 200° C., is self lubricating and can be unthreaded at a later date with ease. It is suitable for jointing water pipes, steam pipes, chemical, pneumatic and gas pipes and even electrical conduits.

IN hot water central heating systems both for mild steel or copper tubing fittings, branches and tees should be gradually swept, particularly where fittings are in any way close together. The resistance of a group of fittings cannot be determined by simply adding the resistance of one to that of the other. The turbulence created by the first will actually increase the amount of resistance developed by the second. Each fitting added in series multiplies this effect, depending on the straight distance between the fittings or bends.

It is particularly desirable to avoid any turbulence on the suction side of



This special review article was compiled by technical expert R. Keating.

a circulating pump. If excessive turbulence is introduced here the direction of thrust can easily be changed. In some extreme cases the direction and force of the thrust can oscillate to such an extent that even a small pump will sound like a threshing engine.

Bends and loops can be used very effectively to combat expansion of pipework. Here again it is preferable to sweep these bends for ease of movement. Valves and fittings should be kept clear of any expansion bends. At any point adjacent to expansion bends or where movement from expansion is considerable, it is desirable to make radiator connections as long

as possible to ease the bending movement at the radiator valve.

RADIATOR valves are always within sight of the client's eye. Crane Ltd. have recently produced a very attractive valve of the straight through, angle or "Y" pattern. Band wheels are white thermoplastic Derlin and the body is available in bronze or chromium plate on bronze. They are suitable for British standard pipe threads or compression couplings and are a keen competitor to the attractive rocket shaped "Nu-Era" radiator valves by John Webb.

With modern fittings and valves and the improvement in welding techniques, there is little excuse for poor appearance in pipework installations. Modern buildings demand neatness above all, and the wide selection of fittings, etc., available cater for all demands in appearance as well as performance.

PRODUCT REVIEW
begins overleaf

THE IMPROVED "VICTORY" FLUSH VALVE The Modern Toilet Flushing System *Silent in Operation*

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Distributors in Ireland: R. T. Large & Son, Stephen's Place, rere 47 Merrion
Square, Dublin.



Twenty-three

The Irish Plumbing and Heating Engineer.

THE LATEST development from Steel Radiators Ltd., Southall, Middlesex, manufacturers of the Stelrad radiators, is their Stelostat, a thermostatic valve fitted to the inlet pipe of the radiator, and which is no larger than the conventional types of radiator valves giving full temperature control.

A great advantage of Stelostat is that it requires no electrical wiring or attachments. The temperature in the room can be regulated according to personal requirements. The valves can be fitted both vertically and horizontally and are obtainable in $\frac{1}{2}$ " or $\frac{3}{4}$ " connections. Their range temperature control is from 50 degrees F to 80 degrees F, and their neat appearance enables them to be placed in any room, without detracting from the decor. A key is now supplied with each Stelostat to enable the installer to manually close the valve so as to be able to isolate the radiator should this be required.

* * *

CROSBY Nozzle Relief Valves handle water, air, natural gas, steam, and the whole range of vapours and liquids encountered in the various stages of oil refining and chemical processing industries.

In this equipment review we take a look at new developments in the fields covered by the foregoing special review. (All claims are those of the manufacturers).

The valves open without "warn" or simmering, and as the pressure decreases, the disc is lowered progressively to a low lift, then sharply closes to a positive shut-off. The disc closes firmly but without shock. Moreover, the contour of the nozzle and the absence of obstructions prevent the formation of eddy currents. The fluid is parallel with the seats and cannot cause cutting and leaks. The alloy steel of the full nozzle and disc give much longer life than any other material.

The manufacturers are the Crosby Valve and Engineering Co. Ltd., Crosby Works, Ealing Road, Wembley, Middlesex. The agents in Ireland are Luke, Martyn & Co. Ltd., 1 Sandyhill Park, Drumbeg, Dunmurry, Belfast, Northern Ireland.

ZEROSS anti-burst valves are made for use with cast iron and asbestos water mains to suit pipe sizes from 2" to 6" diameter, both inclusive. The operation of the valve is such that the increased pressure opens it and allows sufficient water to pass which will reduce the pressure back to well below 300lb. per square inch, at which time the valve automatically re-seats, opening again after a lapse of a short time, and when the pressure again exceeds 300 lb. per square inch. The manufacturers are "Zeross" (Engineers) Ltd., Quarry Lane, Wyke, Chichester, Sussex.

* * *

BELL'S Asbestos and Engineering Ltd., Bestobell Works, Slough, Bucks., have announced the introduction of a new range of radiator valves designed for use on low pressure small bore and gravity central heating systems. The valves are being marketed under the trade name "Belkon," with which the Company is already associated through its range of pressed steel radiators.

"Belkon" radiator valves are available in sizes $\frac{1}{2}$ " and $\frac{3}{4}$ ", straight or angle pattern, in matt or chromium plated finish with connections to suit either copper or iron pipes. The

We are pleased to announce that owing to constantly increasing demand for—

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**VALVES, FITTINGS, FLANGES,
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PRODUCT REVIEW

from previous page

thermoplastic wheelheads and lockshields are readily interchangeable and lockshield patterns can be easily set without using special tools. On wheelhead patterns the distinctive grey position indicator shows at a glance the degree of opening of the valve.

Bell's have also introduced a new range of all plastic valves and expansion units. These comprise a spherical plug cock, an expansion unit, and a visual flow check valve. The EW 80 VP spherical plug cock is manufactured in the size range $\frac{1}{2}$ " to 2" with plain ends to suit B.S.S. 3506 or flanged to British Standard Table "E" drilled, and is suitable for working pressure of 150 p.s.i. at 10 degrees C., and reducing to 80 p.s.i. at 60 degrees C.

* * *

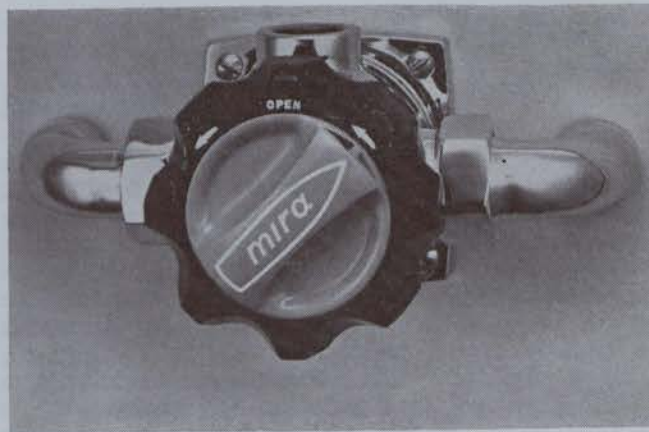
THE BACCHO extract valve RPB is a further development of the well-known plate valve. In the design special consideration has been given to ensuring that the valve shall have a low sound rating even where a relatively high pressure drop is employed.

The inlet ring is so designed that the incoming air does not come into contact with the wall. This ensures that no dirt is deposited in the vicinity of the valve. Any dirt or dust will accumulate on the inlet ring and the valve plate, which may be cleaned easily. The round shape ensures that the valve cannot be mounted in a slanting position.

Baccho RPB Extract Valves—a product of Heating and Ventilating Equipment Manufacturers, Bacho



The Baccho extract valve.



This is the
Mira Mixing
Tap. (See
text).

House, 23 Goswell Road, London—are at present available from stock from their Irish agents, Technical Sales Co. Ltd., 79 Lower Leeson St., Dublin.

* * *

NEW FROM Midland Industries Ltd., Heath Town Works, Wolverhampton, is the MIL Diversion Valve, which is manually operated with integral thermostat. The two inlet ports allow water of differing temperature to flow into the valve via a double controlled valve which is positioned centrally between them. The tempered water flows over a spirally wound bi-metallic element, which positions the double control valve relative to the inlet ports, and is discharged through alternative ports, one of which is plugged according to the piping arrangements of the system, to which the diversion valve is fitted.

The bi-metallic element responds to temperature change of the mixed flow and positions the double control valve such that any changes of temperature are compensated for and a pre-selected temperature can be maintained at the discharge port. The pre-selection is obtained by arbitrarily adjusting the control knob at a point of a fixed scale, which will give the mixed temperature desired. These settings are not calibrated and a thermometer installed in the flow pipe is recommended.

* * *

"BELMONT" radiator valves are produced with connection for both iron and copper pipe installations in either straight or angle patterns, and with wheel head or lockshield. The valve glands consist of two sealing rings which give double seal round the spindle. These sealing rings ensure frictionless operation.

The wheel heads and lockshields of all "Belmont" valves are interchangeable and are held securely in position by recessed screws. This interchangeable feature offers important advantages to both the stockist and the heating engineer.

Peglers Ltd., Doncaster, and Prestex House, Marshalsea Road, London, are the manufacturers of these Belmont radiator valves.

* * *

THE MIRA mixing tap illustrated here is a mechanical mixing valve for hot and cold water from Miraflo Ltd., Whaddon Works, Cheltenham, Glos. It has two concentric controls in the same body—one for the selection of temperature, and the other for the volume of water.

The tap works at water pressures as low as 3' head. Enquiries in Ireland should be made to Modern Plant Limited, Crumlin Road, Dublin.

* * *

THE MEYNELMIX thermostatic hot and cold water mixing valve for showers, etc., is now automatic and hydraulic in addition to being thermostatic. The thermostatic properties which the valve enjoys include an extremely sensitive control over a wide range of pressures, and a simple spring loaded safety device has been incorporated.

In the unlikely event of the thermostatic system breaking, the cold water port is immediately and automatically opened by means of a spring loaded pistol. The device is fitted by the manufacturers with no increase to the cost. The manufacturers are Meynell & Sons Ltd., Montrose St., Wolverhampton.

PRODUCT REVIEW continued
overleaf.

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The Irish Plumbing and Heating Engineer.

PRODUCT REVIEW

from previous page

RADIATOR valves incorporating several new and radical departures from normal valves, are now offered on the Irish market by Theodor Heimeier G.M.B.H. of Lippstadt, Germany. The valves are of the highest quality, being of cast gunmetal, with black or cream plastic handwheels of the shrouded type.

As well as the normal metal to metal seating, a plastic sealing ring is employed and this gives a guaranteed 100 per cent. closure under the highest pressure. A dual regulator device is fitted which can be operated by a normal screwdriver, and thus one valve can do the job of both a handwheel and lockshield pattern.

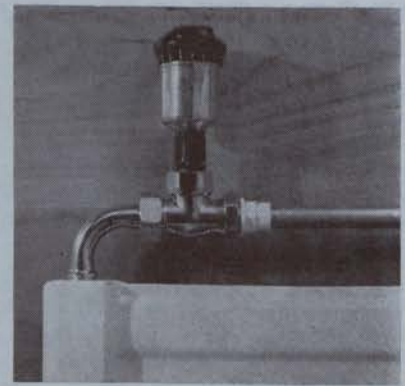
Sizes range from $\frac{3}{8}$ " to $1\frac{1}{4}$ " angle and straight, in self-colour and chrome plated and lockshield patterns are available if required. All enquiries should be sent to the Irish agents,

Messrs. G. F. Morely Ltd., 45 Quinn's Lane, Fitzwilliam Square, Dublin 2.

* * *

THE "FLOSEAL" Lever Operated Sleeve Valve is glandless and the synthetic sleeve gives bubble tight closure on air at pressures up to 300 p.s.i. Combined in this patented valve are the straight through flow characteristics of the Gate Valve, the flow control of a regulating globe valve, and the compactness and quick action of a plug cock.

The "Floseal" can be installed in any position in the pipe line and with flow in either direction pressure drop is minimal. Profile is lower than for conventional valves and the valve fits in easily where others cannot be used. Sleeve and twin seals can easily be replaced without disturbing the pipe line, and the removal of two socket screws gains access to the valve interior. The sighting of the lever between "open" and "closed" positions gives instant indication of valve setting. The manufacturers are Hattersley (Ormskirk) Limited, Ormskirk, Lancs.



The new Radiator valve from Steel Radiators Ltd. (See text).

TWO NEW Valve and Flow Indicator illustrated lists are now obtainable from Sir W. H. Bailey & Co. Ltd., Albion Works, Patricroft, Manchester. The first—list B—illustrates the new range of relief safety valves manufactured by the Company and contains details of two new ranges of relief valves (Nos. 1640 and 1641).

These have many advantages over the previous design of similar Bailey valves. They are much neater and are available at approximately the same prices as previous models. Perhaps the most important feature here is the increased capacity of the No. 1641 safety valve. List K shows for the first time the complete range of Bailey flow indicators and presents very clearly their combined capacity for handling a very wide variety of applications.

* * *

CROSBY VALVE and Engineering Co. Ltd., Wembley, have announced the introduction of a completely new Masoneilan single seat heavy duty globe valve body having exceptional flexibility of application. Extra heavy top guiding of the plug eliminates the need for orthodox bottom guiding, reducing turbulent flow and trouble due to any solid particles which may be in suspension.

Another feature of the new valve is the fact that each size of valve is available with a wide range of interchangeable reduced area plugs and seats for temporary conditions, lower flows, higher pressure drops. The 20,000 series valves are available screwed $\frac{1}{4}$ " to 2" with trim sizes, $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", $1\frac{1}{2}$ ", 2". Flanged $\frac{1}{4}$ " to 10" with not less than four trim sizes for each line size valve. Standard materials, carbon steel body, stainless steel trim; other materials to

FLOATSWITCHES

for

controlling electrically
driven pumps
Limit switches
Liquid level alarms
Motorised valve controls
etc., etc.

MERCURY TUBE and SILVER CONTACT types. Indestructible polystyrene floats. Floatgear also in stainless steel, copper, mild steel and polythene. Deliveries ex stock.

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GIRDLESTONE PUMPS LTD

WOODBIDGE, SUFFOLK, ENGLAND

Tel.: WOODBRIDGE 660.



July, 1964.

order. The Irish agents are Luke, Martyn & Co. Ltd., 1 Sandyhill Park, Drumbeg, Nr. Belfast, N. Ireland.

* * *

THE BASIC features of the Saunders diaphragm valve make it an ideal means of controlling corrosive fluids and gases. Only two components come into contact with the line fluid—the body and the diaphragm.

The $\frac{1}{4}$ " has ptfе hose tail and connections suitable for connection to ptfе or other flexible hose. An adequate joint is obtained provided that a small piece of rubber tubing is slipped over the outside of the ptfе hose; a "Jubilee" clip is used to press the ptfе hose into contact with the ptfе end connections of the valve.

The $\frac{1}{2}$ " valve is fitted with corrosion resistant coated metal flanges which are lined internally with ptfе tubing. This valve can also be supplied fitted with hose tail end connections if required. A sealed bonnet is now a standard feature. The manufacturers are the Saunders Valve Company Ltd., Cwmbran, Monmouthshire.

* * *

THE WORCESTER range of ball valves are now used throughout most

PRODUCT REVIEW

from previous page

countries in the world, in the chemical, petrochemical and allied industries where the full advantage of tight shut-off, low operating torque, long life and ease of maintenance can be utilised to the full. They are available in a range of materials to suit most corrosive conditions and have wide pressure temperature operating curve.

The Worcester Ball Valve is available from $\frac{1}{4}$ " to 6". The $\frac{1}{4}$ " to 2" size can be furnished in bronze, aluminium, carbon steel, or stainless steel. In the Worcester Flange Ball Valve, sizes 3" to 6", the same materials are available and a wide range of seating materials—Buna-N, Neoprene, Nylon, or Teflon—may be used to answer almost any media problem. Enquiries about the manufacturer's range should be sent to The Worcester Valve Co.

Ltd., Victoria Road, Burgess Hill, Sussex.

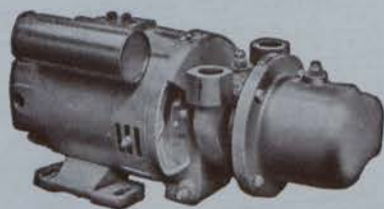
* * *

A NEW range of Zone-A-Flow motorised zone valves has been introduced by White-Rodgers of South Western Road, Twickenham, Middlesex, which incorporates many exclusive features assuring extremely dependable performance.

The valve is operated by a specially designed shaded pole motor that delivers many times the power available by synchronous (clock-type) motors commonly used in zone valves. Working through the greatly improved gear train and valve stem, this high-torque motor provides positive opening and closing power. The gear train is made of Du Pont Derlin R, a super tough material that permits these gears to stand up under extreme friction, impact and fatigue while running quietly.

Each valve is controlled by the D'LUX-line 125-202 three wire low voltage thermostat recently introduced by the company. It is highly sensitive with a narrow differential, heat anticipated to match the Zone-A-Flow valves.

EASY COMPACT INSTALLATION FOR WATER SUPPLY



Self-priming with a suction lift of 25 feet, the electric driven M range of Mono Pumps are compactly constructed, flange mounted to a motor of very low power consumption. Its silent operation permits installation in any convenient position and the non-pulsating, steady flow will not transmit noise through the pipeline. No oiling or greasing of the pumping element is required and no foot valve necessary.



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Heating Controls & Devices Ltd.

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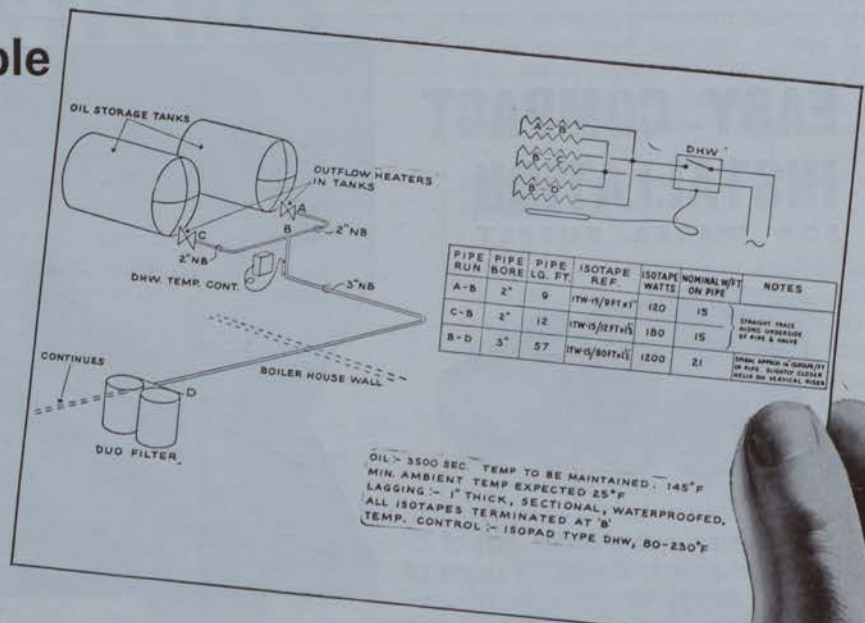
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 BELFAST, N.I. Tel.: Dundonald 2683 (3 lines).

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There's nothing complicated about trace heating the Isotape way. From the Isotape catalogue you can work out for yourself any simple scheme. More complex arrangements can be specified for you from information about the length and bore of pipes, plus temperatures to be maintained. The instructions you receive can be easily implemented by your maintenance staff. Isopad thermostats are able to cope with any conditions and keep power consumption to a minimum. Get your pipe heating problems taped now—by sending for the new comprehensive catalogue.



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The WARM HOME PLAN

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GAS HEATING CENTRE

GAS SHOWROOMS, D'OLIER STREET, DUBLIN. Phone 71811

The Irish Plumbing and Heating Engineer.

GAS FOR HOME HEATING

from page twelve.

insulation, reduction of hot water storage during off peak periods, etc., are incorporated. Temperature control is by indirect acting thermostat controlling the temperature of the water in the storage cylinder.

Central heating by circulated hot water is mainly concerned with the installation of small bore pipe systems and for such systems many types and sizes of gas boilers are available. These boilers are self contained units incorporating circulating pump, safety devices and full automatic control. In addition to the conventional cast iron or steel sectional boilers, a number of "small bore" units of unique design have been produced. These incorporate tinned copper or stainless steel heat exchangers and are "room sealed" and designed for wall mounting. Limited in output, they nevertheless offer a very economical solution to the problem of providing central heating for the smaller house, bungalow, or flat.

Average cost of installation for 44,000 to 70,000 B.t.u.'s per hour installations are £320 to £420. From actual test results of a number of installations the average cost of providing whole house heating, hot water supply and cooking for a three or four bedroom house is in the region of £2 per week.

Gas Fires:

Whilst the higher standard of general comfort provided by a central heating system has become more widely appreciated, nevertheless there remains the demand for at least one source of radiant heat. With the development of the high efficiency convector gas fire has come the realization that this can be provided both attractively and economically without the disadvantages of other forms of radiant heat. These fires have been designed to suit modern building and furnishing trends and provide not only radiant heat from a high temperature source but convected heat from a heat exchanger heated by the products of combustion. The total heat output is 16,000 to 18,000 B.t.u.'s per hour and an average room can be

heated to a comfortable temperature in 1½ to 2 hours.

Overhead Heating:

The advantages of radiant heat from a high temperature source have long been recognised and whilst the present tendency is toward more centralised sources of heat, nevertheless the overhead radiant heater has much to

commend it for the efficient and economical heating of factories, stores, warehouses, shops, etc. Individual gas fired heaters with outputs from 7,000 B.t.u.'s per hour to 70,000 B.t.u.'s per hour, either manually or automatically controlled, and suitable for mounting at heights from 10 feet to 30 feet above floor level, offer a cheap and simple solution to this type of heating problem.

2496 Deck Pattern Pillar Cock

Sperryn

Raised Nose Pillar Cocks comply in all aspects with Clause 53 of Model Water Byelaws 1963

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Telephone: ASTon 4011 (6 lines)

Telex: 33724. Grams: 'Sperryn' Telex B'ham.

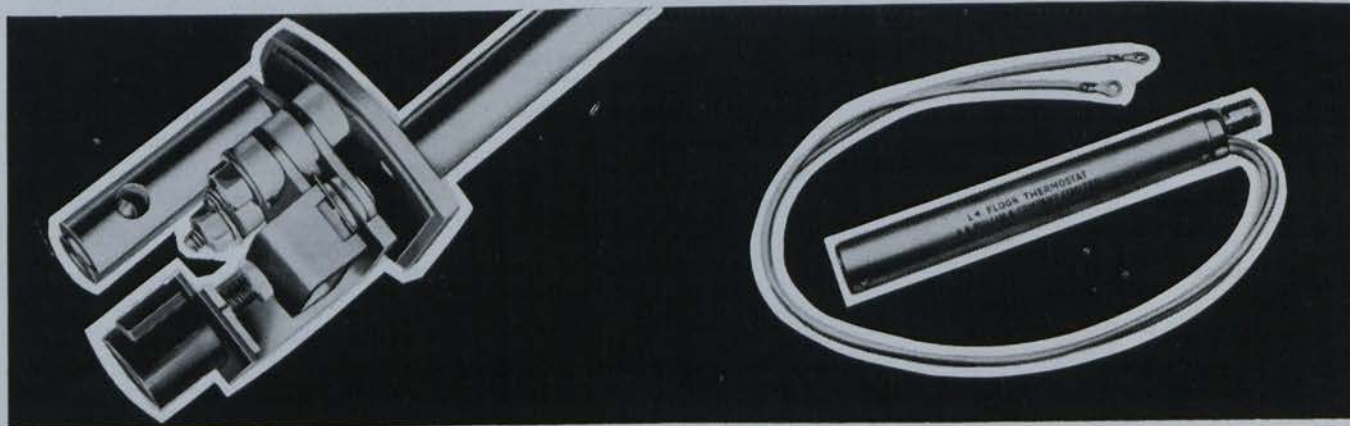
London Office and Warehouse:

131 Great Suffolk St., London, S.E.1.

Telephone: HOP 0131. Telex 24797.



PULLIN FOR PRECISE TEMPERATURE CONTROL

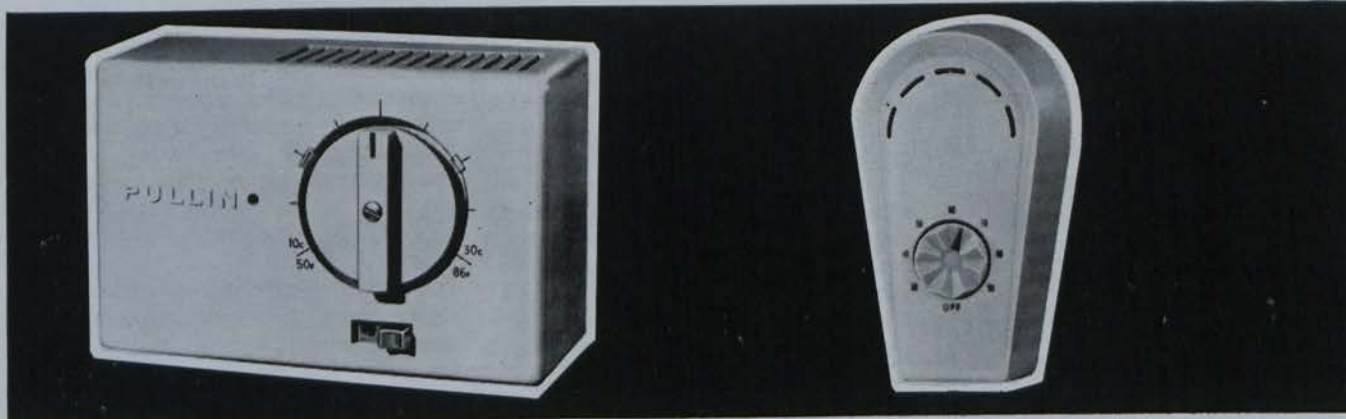


H8 Immersion Thermostat

The Pullin H8 Immersion Thermostat ensures accurate temperature control—gives trouble-free service. Will fit all standard Immersion Heaters. Sizes 7", 11" and 18".

L4 Floor Thermostat

The Pullin L4 Floor Thermostat has been developed as an accurate temperature control for under-floor heating installations. Designed to control the surface temperature of the floor according to heating and comfort requirements.



A3 Room Thermostat

The new Pullin Thermostat is designed for heating applications in small-bore and warm air central heating systems, storage heaters, under-floor heating and electric heaters and radiators.

Plugstat

This plug-in thermostat is the simple and inexpensive way to control electric heaters. The desired room temperature is set on the dial of the plug to ensure comfort and economy in current consumption.

Also supplied with changeover switch to induce cooling.

MANUFACTURED BY:

R. B. Pullin & Co. Ltd.,
Great West Road, Brentford, Middlesex.
Tel.: ISLeworth 1212.

LOCAL AGENT:

National Agencies,
7 Upper Camden Street, DUBLIN, 2.
Tel.: 53343.

SPECIAL REVIEW

THIS MONTH

Thermostats, Thermometers,
Temperature Indicators.

THE RANGE of Satchwell control valves includes both two-position and continuous control action valves in two and three-port types with a variety of models to suit many applications. The continuous control valves are all powered by the new design of motor which has recently been introduced to the Satchwell range.

Three new sizes have recently been added to the MF series of valves, namely, the $\frac{1}{8}$, $\frac{3}{16}$, and $\frac{1}{4}$ inch, and these are particularly useful in obtaining good control of small steam loads.

The Satchwell range of pipe and room thermostats and thermometers include the TL and TM room thermostats, the PA pipe thermostat and the LJ thermometer. The TL is a light current instrument designed to carry loads up to 1 amp at 250 volts AC and is generally used in conjunction with motorised valves or in conjunction with a boiler firing control. The TM thermostat handles loads up to 20 amps and this is commonly used with electric heating equipment. All these controls are manufactured and marketed by the Satchwell Appliance Controls Ltd., East Kilbride, Scotland. The valves are manufactured and marketed by the Satchwell Controls Systems Ltd., Slough.

IN this equipment review we take a look at new developments in the fields covered by the foregoing special review. (All claims are those of the manufacturers).

WHITE-RODGERS Limited of South Western Road, Twickenham, Middlesex, have announced the introduction of their range of Well Immersion Hot Water Controls. In common with the majority of White-Rodgers automatic temperature controls, they operate by Hydraulic-action, the principle of expansion and contraction of a liquid against a diaphragm.

A typical hydraulic action element consists of a diaphragm, a capillary and sensitive bulb. This element provides the working force that operates White-Rodgers temperature controls quickly, accurately and automatically.

The element is filled completely with a special liquid from which all air, gas or other compressible matter has been entirely removed. Whenever changes in temperature occur at the sensitive bulb, this "solid liquid" expands or contracts with power and

uniformity comparable to that of a metal bar, causing an instantaneous movement of the diaphragm. This power and movement is transmitted to the switch, which may be set to operate at any desired temperature within range of the control.

* * *

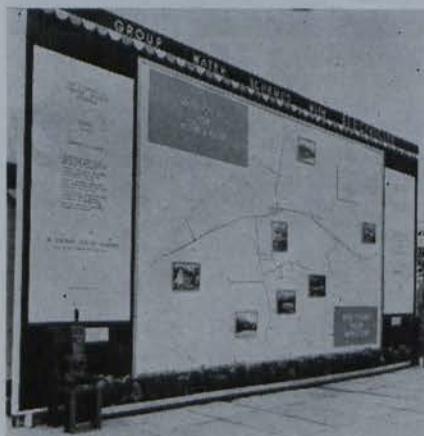
THE T-99 Mercury Switch horizontal series of room thermostats are designed for use on 24 volt systems. It is fitted with variable heat anticipation; also with night cut-off. These thermostats control temperature by opening or closing electrical circuits to heating equipment in response to changes in room temperature.

In the Maclaren RA series of Room Thermostats, the Temperature Sensitive Bellows is incorporated in the instrument knob. It is designed for the automatic control of all space heating installations. The Bellows actuated Micro Switch is capable of handling loads up to 20 amps and is also suitable for controlling through a contractor. The well-proved magnetic switch can be expected to operate successfully over many years. The manufacturers are Robert Maclaren & Co. Ltd., Eglinton Works, Kilbirnie St., Glasgow.

* * *

A PRECISION built, attractively styled room thermostat designed to meet most on/off control requirements for space heating, has now been released by the Thermostat Division of R. B. Pullin & Co. Ltd. The specification include an operating temperature range of 50 degrees F to 86 degrees F, a minimum differential of 2 degrees F (under normally low rate of change conditions), fast natural response secured by adequate provision for air movement and a double action micro-switch.

The thermostat is provided with adjustable limit stops to facilitate day/night temperature selection. Alternatively, the stops can be used to restrict the accidental movement of the control knob. An optional control locking cover is available to prevent unauthorised interference. Pullin & Co. Ltd. are at Great West Road, Brentford, Middlesex. The Irish agents are National Agencies.



This illustrated map of a rural group water scheme at Errill, Co. Laois, was the centrepiece of the E.S.B. farm ex-

TRADE

TOPICS

hibit at the R.D.S. Show. The scheme, which was completed last January, supplies 86 houses. Colour photographs of some of these appear on the map and in the foreground is the pump supplying the scheme.

● LINCOLN FURNACES Limited have moved from Oxted Mill, Oxted, Surrey, to East Grimstead, Sussex.



for measuring,
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TEMPERATURES
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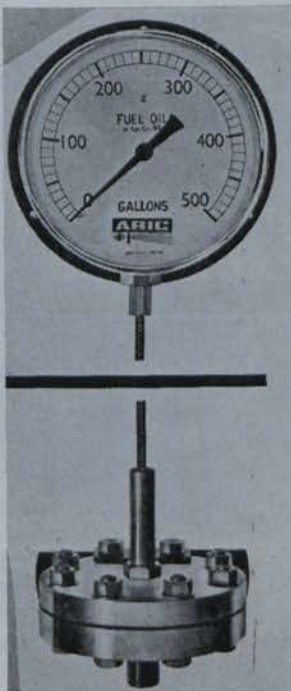
thermometers are visibly better!

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TO 100 FT.**



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cover all types of measurement and
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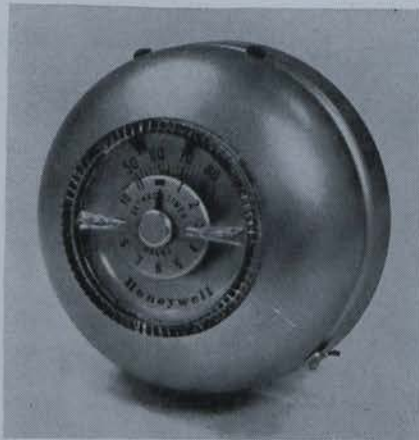
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Thirty-three

The Irish Plumbing and Heating Engineer.



THE HONEYWELL Day-Nite round thermostat incorporates a timing device which can be set manually to give lower temperature for any period of time up to 10 hours. At the end of the selected period the thermostat automatically raises the temperature to the normal level. The normal temperature can be restored at any time during the set-back period.

The Honeywell Electric Clock Thermostat is a completely automatic unit. The day temperature can be maintained throughout the twenty-four hour period if this is required. Both units are from the range of Honeywell Controls Ltd.

* * *

WHITE-RODGERS LTD., South Western Road, Twickenham, Middlesex, have announced the introduction of their IA65 Electric Heat Thermostat. Manufactured in Canada, it is specially designed for the control of electric heating. It is easy to install and is supplied with its own flush mounting conduit box which has $\frac{3}{4}$ " knockouts at the top, bottom and back. Wiring is from the front for quick, positive connections.

Also from White-Rodgers is a range of "Custom-line" warm air controls which have their mounting designed for complete interchangeability with similar makes of controls, thus making ideal for field replacement. The 5D43 "Ace" Fan and limit control has a dial with individual pointers for easy adjustment of cut-in and cut-out temperatures. The snap-on cover has a clear plastic dial-viewing window.

* * *

LUKE, MARTIN & Co. Ltd., 1 Sandyhill Park, Drumbeg, Dunmurry, Belfast, are agents in this country for K.D.G. Instruments Ltd., Manor Royal, Crawley, Sussex.

SPECIAL SURVEY

from page thirty-two

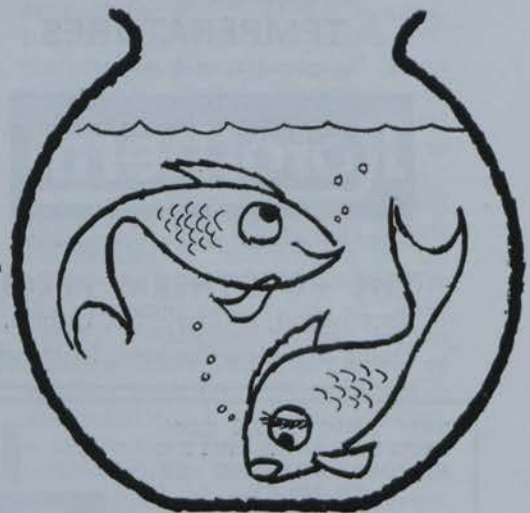
From the Company's very comprehensive range of instruments for practically all purposes we note the series HPA Room Thermostat, in which a stainless steel vapour pressure charged capsule of patented design is incorporated and directly actuates air break contacts rated 15 amp., 250 volts A.C. Various temperature ranges and calibrations are available.

All thermostats are supplied with a nominal switching differential of 1

degree C, but this can be increased to 4 degrees C by set screw adjustment within the unit. Mounting plates are also available to facilitate mounting of the thermostats to a standard $2\frac{1}{2}$ " conduit box.

THE NURALITE Company Limited of Whitehall Place, Gravesend, Kent, has issued an illustrated leaflet dealing with the use of Nuralite for the lining of industrial gutters. This gives detailed practical suggestions for the repair of gutters at minimum cost with little or no disturbance of existing roof coverings. Irish agents: Thos. Dockrell, Sons & Co. Ltd.

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Thirty-four



Heater's style breakaway

A NEW free-standing 20 gallon electric water heater that is not only completely different in appearance from any of the company's existing models but also incorporates a major installation improvement, has been introduced by Sadia Water Heaters Ltd.

To be known as the Sadia Square 20, the appliance is square in plan



(20 ins. by 20 ins.) but is of standard equipment height (36 ins.). The water heater takes up no more room than a conventional kitchen boiler and, like other Sadia UDB types, will also work in conjunction with a fuel-fired hot water system.

The Sadia Square 20 has a cylindrical water container constructed of 19 gauge copper sheet with copper welded seams tested at 60 lb./sq. in. pressure. The water container is lagged with glass fibre, keeping heat loss to a minimum, and there are two independent heating units, both of 3,000 watts loading and both thermostatically controlled. The upper unit keeps about seven gallons of hot water at full temperature. The electricity is switched over to the lower unit when the full contents (20 gallons) of the water heater are required. Irish agents: A. P. Haslam.

BY MEANS of a placing, the shares of Monsell, Mitchell & Co. Ltd. came on the Dublin stock market late last month. This old-established company, with an issued and fully-paid capital of £125,000 in 500,000 shares of 5/- each, has as its chairman Mr. Stephen O'Flaherty, founder of the Volkswagen and Mercedes Benz Group of Companies in Ireland. The number of shares being placed is 125,000.

The company is engaged in the wholesale and retail distribution of all types of building materials, wallpapers, paints, hardware, electrical goods, and plumbing and heating installations. Some years ago, the company, anticipating developments in central heating, decided to become suppliers of heating installations and accordingly established a showrooms for central heating equipment at 67 Townsend Street, Dublin. The company's advent into this line of business has proved especially successful and sales in central heating equipment now account for a significant part of the company's turnover. Sales in its other lines continue to show substantial increases year by year.

How Wilsons tackled problem of radiator heat emission

THE recent announcement by Messrs. Henry Wilson & Co. Ltd. of Liverpool that, after independent tests by the Heating and Ventilating Research Association at Bracknell, they were able to give a guaranteed emission figure for each of their radiators, will be of great interest and importance to many heating engineers.

The story behind these tests begins several years ago. Ever since they have been manufacturing radiators Wilson's have felt that the standard method used in this country for calculating radiator emissions by square foot area was at best a convenient but unsatisfactory rule of thumb and at worst could be wildly inaccurate—"rather like deciding the light emission from an electric bulb merely by measuring the area of glass in the bulb" as one of the management put it. Heating authorities on the Continent agreed with this view.

The rapid increase of interest in central heating, the bigger demand for radiators and the advent of more and more types of radiator on the market, all helped to strengthen Wilson's determination to find more accurate yet straightforward methods of calculating heat emissions. They therefore began a thorough series of tests in their own technical department. The results proved highly satisfactory. Obviously, however, in a matter which could affect every heating engineer's work so greatly, an independent viewpoint was required. Fortunately, the company were able to interest the Department of Building Science at Liverpool University in their radiators and a complete series of tests was carried out under rigorous objective scrutiny in controlled laboratory conditions. Again the results proved highly satisfactory—in fact, it was shown that Wilson's care for their high

reputation had made them underestimate the heat emissions of Wilson radiators.

Immediately after these tests, however, a special British Standard was published for the approved method of testing radiators. Although virtually the same as the method used by the University, the method differs in certain minor details—details which by no means invalidated the results of the tests but which did make it impossible to publish them.

So, once again, more tests. Wilson's immediately applied to the Heating and Ventilating Research Association and a complete series of tests was carried out at their Bracknell laboratories under the supervision of Mr. K. V. Colthorpe and Mr. M. Harmsworth. "Now the results and the exact B.T.U. emission figures are here for all to see," said a Henry Wilson spokesman.

Thirty-five



Propane Torches

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Sievert propane gas burners ignite immediately and burn with an intense clean flame adaptable to all requirements from a small pencil flame to a powerful voluminous flame. Plumbers, Builders and Painters everywhere readily appreciate the advantages of the range of Sievert appliances.




HANDYMAN SET 3790

These sets of equipment are packed in a well-made, strong and attractively finished carrying case containing a range of equipment which enables most jobs to be undertaken.

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Benbow Rd., Cahera West, Dublin, 7. Telephone Dublin 47783.

KEEP PAGE WITH DEVELOPMENTS—SIEVERT SHOW THE WAY

trade Topics

TO MEET the demand from installers and merchants a standard model of their Autogas 45 is being introduced by **NEW GAS BOILER FULLY ELECTRIFIED** Redfyre Limited of Thorncliffe, Sheffield. Incorporating the Adatrol gas control unit and only 13" wide, this new gas-fired boiler is fully electrified, including the thermostat. Provision is made for an electric time clock to be fitted within the casing if required.

Like the small bore unit, this new standard version has an output of 45,000 B.t.u.'s/hr. to support a 30-gallon cylinder plus 180 sq. ft. of radiator surfaces including the service pipes. The pilot flame is lit manually and the boiler then runs automatically with the burner rail igniting and going out to maintain the temperature set on the thermostat.

And by placing the flue gas offtake and the combustion air duct side by side instead of one above the other, Redfyre have avoided any increase in the standard cabinet height of 36" in this new balanced flue model of their Autogas 45 small bore unit. For ease of maintenance the burner rail is fixed to the sealing plate at the base of the boiler so that this and the Adatrol gas control unit can be easily withdrawn. The boiler is encased in a white cabinet which is 18" wide and 21" deep and the thermostat knob is housed in the right hand panel which is finished with an anodised aluminium trim. This new Redfyre Balanced Flue Autogas 45 will be available shortly.

* * *

● AN ORDER for 14 oil-fired warm air heaters has been secured by Waterbury Ltd., manufacturers of warm air heaters, from Hay's Construction Co. Ltd., heating engineers, for Reynolds (Packaging) Ltd., of Dagenham. The order, which is for nine HF 50, three HFF 200, and two HEF 100 heaters, represents a combined heat output of more than five and a quarter million B.t.u./hr.

M. HENRI POTEZ, founder of the Potez Industries of France, said in Galway during a recent visit to this country that he was confident of the future of the Galway factory which manufactures domestic and industrial oil heating units. He was being questioned at a news conference about recent redundancy at the plant. He said he regretted this very much and could understand that it had shaken the confidence of the workers concerned.

Their target for 1964 had been over optimistic and they had been reluctantly forced to reduce it. He gave an assurance that there would be no further redundancies and that the 200 men now employed would be retained. He hoped that, in time, they would reach their original target of employing 700 men.

Their head office staff was working on plans for a diversification in the gas heating line and for market development.

* * *

TURNOVER in the British central heating industry is now running at over £300m. a year, and it is expected to double in the next ten years. The hard winter of 1962/63 made the British reconsider the still lingering Victorian view that comfort is a sin. The result is the first stage of a central heating boom.

Last year only 15% of the 300,000 new homes built were equipped with full central heating. Now it is estimated that the overall figure is 40%, and for new owner-occupied houses with part central heating it may be nearly 75%.

Among existing houses and flats the proportion with central heating is considerably lower. There are over 20 million dwellings in the U.K., but only 1.3 million have central heating installed.

* * *

THE ACQUASAVE ball valve in high density polythene—it is suitable for all cisterns, which is manufactured by Fordham Pressings Limited of Melbourne Works, Dudley Road, Wolverhampton, has, under test, withstood five million consecutive operations at 100 p.s.i. water pressure.

This endurance test was an official one arrived at for the Acquisave valve by a leading water authority. The

test valve is still functioning satisfactorily under normal conditions.

The Fordham Acquisave valve comprises two mouldings, the cap and the nozzle, which screw together, and the cap can, if need be, be unscrewed without use of tools with the valve in situ. The nozzle moulding is avail-

trade Topics



This is the Sanbra Fyffe Limited Stand which attracted keen interest at the recent Royal Dublin Society Show.

able with three different orifice diameters—high, medium, and low pressure ($\frac{1}{8}$ ", $\frac{3}{16}$ " and $\frac{1}{4}$ "), and coloured red, blue and white respectively for easy identification.

PORTABLE TUBE BENDERS



LIGHTWEIGHT BENDING TOOLS

Types GL.O and GL. Minor

Compact machines to produce good quality sets, compound bends, etc., in non-ferrous tube. Robustly built, they can be carried in tool bag and are particularly suitable for small bore heating and similar types of installation.

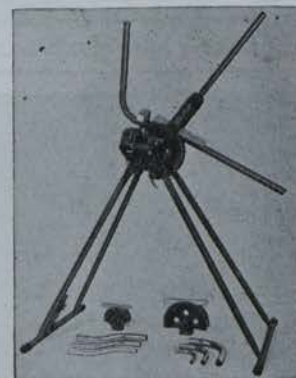
CAPACITY: GL. O— $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ " dia. copper tube.
GL. Minor— $\frac{1}{8}$ " and $\frac{1}{4}$ " dia. copper tube.

FOLDING STAND MODELS

Types GL. 2B and GL. 3B

The original and most efficient portable benders made for bending light gauge copper tube. Require no fixing or bolting down and produce good quality bends, cold and unfilled, to exact measurement on standard radii.

CAPACITY: GL. 2B— $\frac{1}{4}$ ", $\frac{3}{8}$ " and 1" dia. copper tube.
GL. 3B— $\frac{1}{8}$ ", $\frac{3}{8}$ ", 1", $1\frac{1}{4}$ " and $1\frac{1}{2}$ " dia. copper tube.



EASY-WORK RATCHET BENDER

Type RP. 5B

A machine of new design with a rotary bending action through a powerful ratchet operated screw. Completely portable, produces good quality bends speedily, accurately and with minimum of manual effort.

CAPACITY: $\frac{1}{2}$ " to 2" dia. copper tube.
 $\frac{1}{2}$ " to $1\frac{1}{2}$ " o.d. conduit.
 $\frac{1}{2}$ " to 1" nom. bore gas and steam.

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The Irish Plumbing and Heating Engineer.

BELFAST INVOICE RACKET UNCOVERED

RACKETEERS operating a "false invoice" swindle have cost a number of Belfast firms serious losses. The fraud is simply effected by men who present apparently genuine invoices from reputable firms and are supplied with the "invoiced" goods. Days and weeks have elapsed before the frauds have come to light—when the suppliers have sent their bills to the firm named on the invoice, only to be told that the goods had never been ordered.

The firms concerned deal mostly in hardware and so many plumbing items were involved recently that the Northern Ireland Master Plumbers' Association circularised its members warning them to be on the alert.

A spokesman of the Association stated recently: "A number of our members were duped by frauds in this way and we decided that a timely warning would help to stop the racket."

'Phone calls have also been made to

Northern NOTES

some city firms requesting them to have goods ready for collection—by men posing as representatives. R.U.C. are investigating the incidents.

* * *

SIX HUNDRED enquiries; 127 quotations resulting in 64 installations . . . that is the simple question behind the first year of business of Tedcastle, McCormick & Co. Ltd., the Dublin heating firm who opened a branch in Belfast just 12 months ago.

The firm, which has six other branches throughout Ireland, caters for all types of central heating—solid fuel, gas, oil and electric.

Mr. H. G. Edmondston, manager of the High Street branch told me: "We are very pleased with the year's figures."

Tedcastle, who are the sole stockists in the North for Ductair, also rely on an attractive and spacious showroom display where Radiation, Parkray, Potterton, International, Crane, Janitor and A.I. all play their

FROM RUSSIA WITH INTEREST



This highly interested party of Russian students was photographed in one of Davidson & Company's Belfast factories during a recent visit to the Company's Sirocco Engineering works. The visitors, who were accompanied by two interpreters, saw work in progress on fans and dust collectors for home and overseas installation and inspected air preheaters production in the Company's new heavy erection shop.

parts in the central heating age.

The Belfast branch is at 63 High Street—formerly, of all things, an ice-cream shop!

* * *

LEGISLATION to make life here "Brighter and More Inspiring" with the Clean Air Act is to be expedited. The Northern Ireland Minister for Health and Local Government, Mr. William Morgan, has promised.

Speaking at a Lisburn Borough Council function to celebrate the town's elevation to borough status, he said the Clean Air Bill, which has now passed all its parliamentary stages, has been favourably received in parliament, by local authorities and other interested bodies.

His department was now engaged in the preparation of subordinate legislation necessary before the Act can be brought into operation, but there would be no undue delay in putting the facilities available at the disposal of local authorities.

"I shall be asking each council in due course to take a close look at conditions within its area," the Minister added, "and make up its mind whether they warrant the strict control of smoke from domestic chimneys, and if so to draw up a timetable of action. Local authorities should, however, even in advance of this formal request be turning their attention to this question so that when the Act comes into operation all possible speed may be made in implementing it."

NORTHERN NOTES are continued on page forty.



MR. BERTIE VAUGHAN (left) is pictured with Mr. W. Maginnis, Technical Representative of Perkins Boilers Ltd., examining a boiler control panel to be installed in Ministry of Defence contract by the Vaughan Heating Company, Belfast. The panel was exhibited on the Perkins Boiler Stand at HEVAC.

Vaughan heating, which is making big strides under its young managing director, Mr. Bertie Vaughan, recently opened an office in Dublin. The company has been successful in obtaining large industrial contracts in both England and Ireland. They have also undertaken some very large Ministry of Defence contracts.

Thirty-eight

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Northern Notes (cont.)

PETER MacFARLANE & Son Limited, of 23 Cupar St., Belfast, is now a subsidiary of O.B.C. Ltd. O.B.C. is now operating in Northern Ireland as a branch of the parent company in Droitwich.

Their activities in the North are under the management of Miss A. Burnison and the representative on the road is Mr. J. J. Roycroft.

The other interests of Peter Macfarlane & Son are still being carried out, but under a newly formed company—P. D. Macfarlane Ltd., and will continue to operate from the same address. Their 'phone number, however, has been changed to 32002.

* * *

A COMMITTEE of Belfast Chamber of Commerce has urged that a factory to produce smokeless fuel should be established in the North.

The committee, which has issued a report on proposals for clean air legislation, now before Parliament, also wants an immediate survey to assess the province's smokeless fuel requirements.

The report suggests that no decision should be taken on the type of manufacturing equipment to be used until research has been completed to discover a suitable fuel which could be produced from all types of coal.

It also urges the formation of an



DAVIDSON & CO., Limited, Belfast, announce that Mr. W. T. H. Golding, A.M.I.Prod.E. (pictured here), is to join the Company as Works Director.

Mr. Golding will be responsible for all production activities in Sirocco's Bridge End and Mountpottinger Road Works. His appointment follows an organisational change resulting from Davidson's steady expansion in the power station field.

all-powerful central body with executive and over-riding powers to prevent variations in interpretation of the Act.

Concern at the possible burden on rates as a result of grants to domestic users is also expressed.

* * *

THE NATIONAL Coal Board has opened a regional sales office in Belfast which will give a full sales advisory service to industrial consumers in the North.

A free technical service is provided on all aspects of the use of solid fuels for industrial purposes, including up-

to-date information on modern plant and equipment.

The manager is Mr. Roderick D. F. Cameron, who until recently was in charge of industrial sales in the Yorkshire region of the N.C.B. He has been in the coal industry for almost thirty years and is a Scot by birth.

A coal advisory service for domestic consumers, run jointly by the National Coal Board and the N.I. Coal Importers' Association, is already in existence in Castle Lane, Belfast.

* * *

THE ELECTRICITY Board for Northern Ireland has placed a contract with AEI for three 120 MW turbine-generators and associated plant to be

The Union said "NO"

THE PLUMBERS' UNION has told Derry Corporation that it will resist—in every possible way—a scheme to provide free tap washing in the city.

The union describes the plan as "most unjust and unreasonable."

The Corporation decided to refer the matter back to the Water Committee, who had recommended the introduction of the scheme.

installed at the new Ballylumford power station soon to be built on the Islandmagee shore of Larne Lough, Co. Antrim.

The steam turbines and most of their ancillary plant will be manufactured in the AEI factory at Larne.

The new sets will have three-cylinder reheat steam turbines with inlet steam conditions of 1800 lb/in. 2-gauge, 1000F/1000F. The generators will be hydrogen cooled and rated 120 MW, 0.8 power factor; they will generate at 13.8 KV, 3 ph, 50 c/s.

Ballylumford has excellent facilities for fuel reception and storage and is conveniently sited for connection to the new 275 kV. grid system soon to be established by the Board.

When the building is completed, Ballylumford will be the biggest electricity generating unit in Ireland.

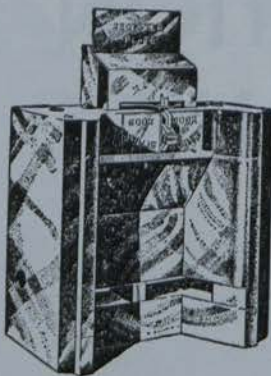
NEXT MONTH

ALLEN McDOWELL will be joined by expert trade commentators for the first annual Northern Ireland special edition of *The Irish Plumbing and Heating Engineer*

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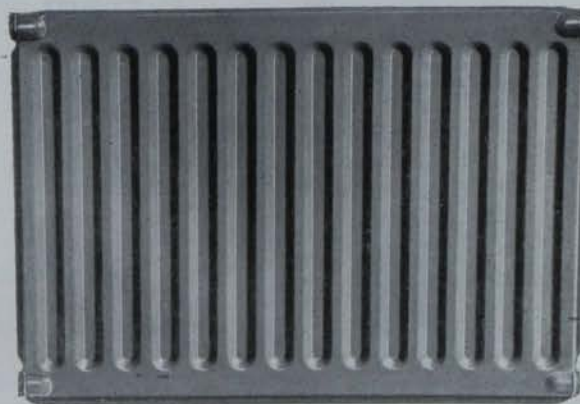
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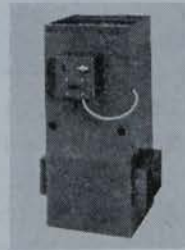
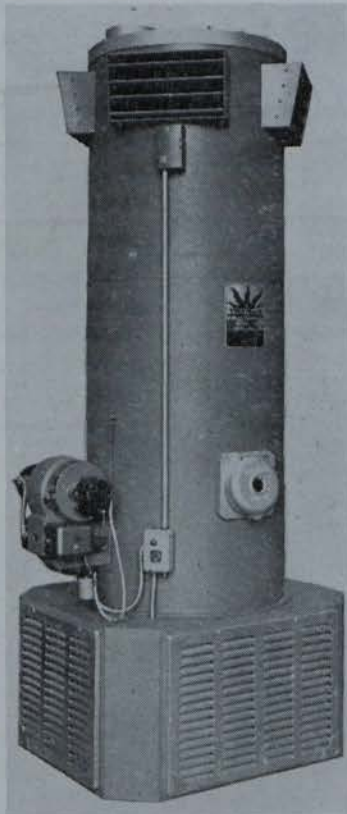
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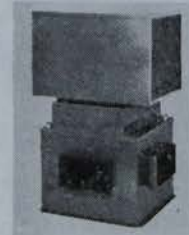


HI-VEE TYPE B UNIT

The type 'B' unit has been designed for full house heating in an average sized dwelling and has a rated output of 35,000 to 50,000 B.Th.U.'s in the B.50 Model and 50,000 to 70,000 B.Th.U.'s in the B.70 Model.

HI-VEE TYPE MINI UNIT

The Mini Unit is suitable for full house heating in a smaller dwelling or will provide partial heating for a larger dwelling. Rated output is 20,000 to 35,000 B.Th.U.'s.



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Agents for Hi-Vee Heating Ltd. (Republic of Ireland and N. Ireland) and Wanson Co. Ltd. (Republic of Ireland):

ENNIS ENGINEERING CO., LTD.

55, MARY STREET, DUBLIN. Telephone: 49351 (10 lines).