

12-1-1963

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

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THE IRISH PLUMBER & HEATING CONTRACTOR



**MRS
1970
KNOWS WHAT
SHE WANTS**

And she knows just where to get it. Because the hard hitting advertising which first sells her on the idea of installing Shell and BP Housewarming also tells her of the superb service offered by her local Appointed Installer. The special Shell and BP Appointed Installer's sign is prominently featured in each advertisement to help her remember it. There are hundreds of Mrs. 1970's. All looking for the Irish Shell and BP Limited Appointed Installer's sign — the sign which they know means prompt efficient service. Hundred's of Mrs. 1970's — hundreds of systems to install and service. It's obviously very good business to give Mrs. 1970 what she wants!

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

IRISH SHELL AND BP LIMITED
SHELL-BP HOUSE,
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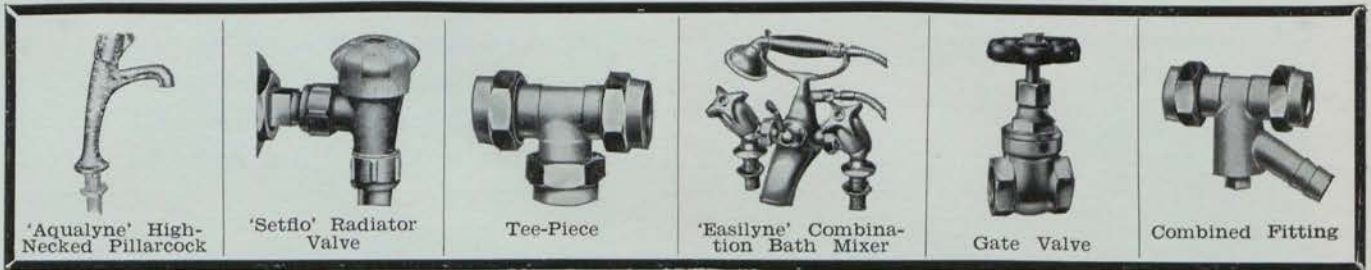


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JOHNSON AND SLATER

(VITREOUS CHINA) (SANITARY FIRECLAY)

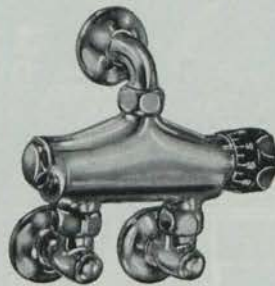
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QUEENBOROUGH, KENT.

JOHN SLATER (STOKE) LTD.,
BERRY HILL, STOKE-ON-TRENT.



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with Temperature Gauge



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

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Hans Grohe. Schiltach.

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PRODUCT**

**"THE DUBOIS PLASTIC
TRAP" (Regd.)**

**A NEW
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PLASTIC TRAPS**



Orthodox Shape!
Smooth Bore Tubular construction.
Outlets can be turned through 220°.
A two-piece trap at a one-piece price.
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Frost and damage resisting.
Light weight = lower transportation costs.



Manufactured by:—

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15 Britannia Street, London, W.C.1**

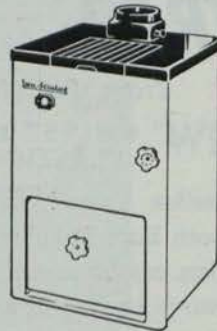
Telephone No.: TERminus 6624-5.

Telegraphic Address: "Bleitraps, London."

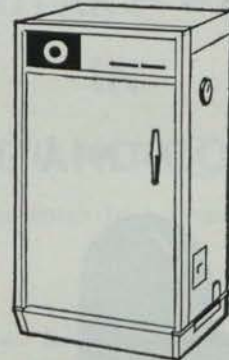
YOUR "IDEAL" for today's modern homes



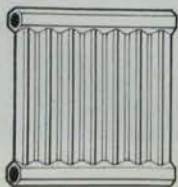
Heating problems? Here are the IDEAL answers . . . elegantly designed, sturdily built, attractively priced. For a first-class job, always specify IDEAL. IDEAL offer widest choice in boilers: for oil, gas or solid fuel.



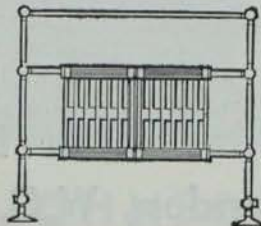
"IDEAL AUTOCRAT"



"IDEAL CLASSIC ELITE"



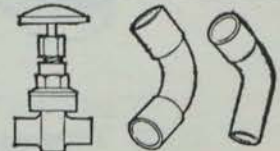
IDEAL radiators: up-to-the-minute design plus cast-iron durability.



Choose from 13 IDEAL towel rail designs; wide variety of sizes, in round and hexagonal tube.



Efficient Compact Low-priced New Ideal Rad 66 small-bore accelerator.



IDEAL valves and unions. In cast gunmetal or hot pressed brass. Polished or chrome finishes. IDEAL "Full-way" fittings in copper or brass for pipe lines in copper.

IDEAL-Standard

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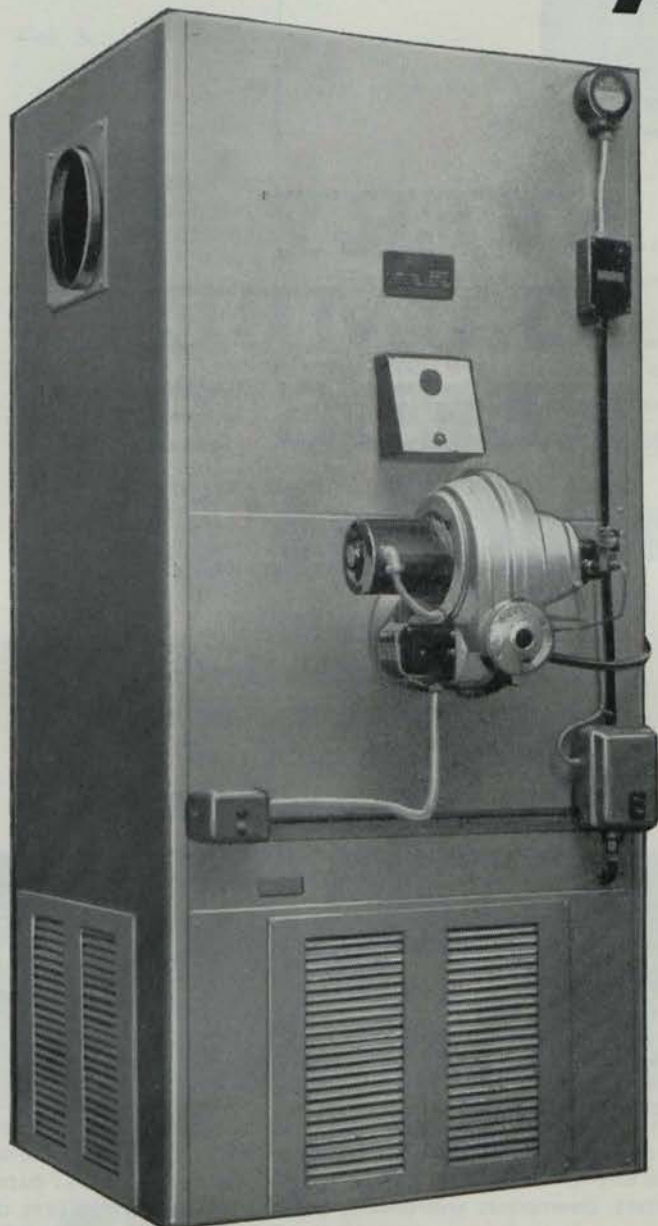
write to: Ideal-Standard Limited · Ideal House · Gt. Marlborough St · London W1 · PHONE GERRARD 3036



516 (Rev.)



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A NEW 450,000 Btu's OIL FIRED AIR HEATER

- 450,000 Btu/hr. for £475
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- Outlet head included for vertical freestanding models
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- Ducted models available
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Complete range of oil heaters now

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450	

Other products include

Gas Fired Air Heaters (Vertical and Horizontal), Gas Radiant Heaters, Gas Flued Convactor Heaters, Electrostatic Air Cleaning Equipment and Mechanical Dust Collectors.

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It's PLUMBER'S MAIT – an amazing, flexible sealing compound which has wonderful qualities of adhesion and yet is clean and easy to handle.

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WATERPROOF!
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REPLACES
RIGID
JOINTING!!**



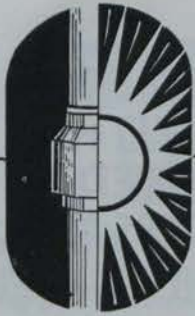
PLUMBER'S MAIT will withstand excessive movements which often lead to failure with traditional jointing materials. This is because Plumber's Mait is flexible thus allowing movement within the joint. Plumber's Mait is ideal for sealing W.C. pans, taps and waste pipes, gutters, downpipes and drains, overlap joints in structures of metal, wood, glass, ceramic or plastic—on any job in fact which requires a flexible, waterproof joint, giving permanency, maximum efficiency, and all round economy.

Don't be without
PLUMBER'S MAIT
FILL IN AND POST
THIS COUPON FOR
FULL DETAILS NOW!

Please send full details and free sample of PLUMBER'S MAIT

NAME

ADDRESS



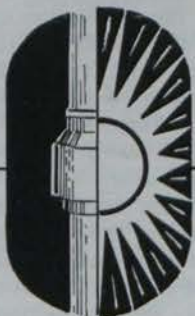
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The only publication in Ireland for the craftsman plumber and contractor, the heating, ventilation, insulation, air conditioning and refrigeration engineer and contractor, the electrical contractor, supplier, manufacturer and wholesaler of fittings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

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DECEMBER, 1963.



THE IRISH PLUMBER & HEATING CONTRACTOR

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We change to our new title—"The Irish Plumbing and Heating Engineer"—and add a monthly supplement dealing exclusively with industrial heating and ventilating.

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Five

The Irish Plumber and Heating Contractor.

Why these International units are so compact

IN THE "Capital" and "Gas Pak" range of gas-fired boilers from International Boilers and Radiators Ltd., the heat exchanger itself incorporates long heat rods, which not only give an extremely rapid heat transfer to the waterway, but enable the heat exchanger itself to be very much smaller than otherwise.

This is why the complete units are so compact. The main point is that the whole of the heat exchanger, including the heat rods, is made in cast iron in one piece, and this is a real break-through, say International.

Schumacher filters

HALPIN & HAYWARD Limited, the boiler efficiency consultants and hydrological chemists, of Dublin, are offering a comprehensive range of filters by the well-known firm, Schumacher.

Three of these are the Schumacher service water filters, compressed air filters and the precoat filter. Briefly the functions of these filters are for dealing with water which may have been rough strained (service water filters); to remove water, oil or muck from compressed air lines; and to deal with water or, in fact, any liquid subject to a high degree of contamination.

Fully explanatory leaflets are available from Halpin & Hayward.

Extract hood

A COMPLETELY new kitchen extract hood has just been introduced by the internationally famous company of AB Bahco, Sweden—one of the largest European manufacturers of ventilating equipment.

Marketed and serviced in England by their subsidiary, Bahco Ltd., the Bahco Bankett incorporates a specially designed centrifugal fan for rapid extract of all cooking smells, grease traps which are easily removed for cleaning, and a built-in light fitting. The whole fitment is attractively styled in the most modern Swedish manner and the fan and light switches are conveniently placed on the front of

TRADE

TOPICS

the hood for easy operation.

The Bahco Bankett is for fitting immediately above the cooker hot-plate.

Irish agents are Technical Sales Co.

Holfield expand

H. R. HOLFIELD Limited of Stillorgan, have set up a cross-channel company to further their export trade with Britain. It is being called H. R. Holfield (Great Britain) Limited, with offices at 92 Goldsmith St., Notting-ham.

in brief . . .

MESSRS. Van Den Bosch advise that they have moved to new offices and warehouses at Europair House, Alexandra Road, Wimbledon, S.W.19.

* * *

THE Irish Development Supply Company, Victoria Lane, Rathgar, Dublin, have been appointed agents in the 26 Counties for Gummers Limited, Rotherham, Yorkshire.

* * *

STEEL Radiators Limited of Southall, Middlesex, have produced a new consumer brochure covering Stelrad radiators, the Stelator circulating pump and the Stelostat thermostatically controlled radiator valve. The brochure is specially designed to appeal to ultimate users of Stelrad equipment.

* * *

THE Du Bois Company Ltd., of 15 Britannia Street, Kings Cross, London W.C.1, advise that they are now making their versatile plastic plastic traps in 1½ in. × 1½ in. seal in "S" and "P" shapes.

* * *

A NEW catalogue illustrating the wide range of industrial heating elements manufactured by Eltron (London) Limited of Strathmore Road, Croydon, Surrey, has just been issued. The company specialises in both prototype and quantity production. A new product from Eltron is their oil electric line heater.

THEIR EFFORTS MET WITH "LIMITED SUCCESS"

TO reach an agreement with the Federation of Builders on the proposed amendments to the Main Contract Form was possibly the most important task they gave themselves during the year, said Mr. J. J. Burke (Roofing Contractors Limited), in his presidential address to the annual general meeting of the Association for Sub-Contractors and Nominated Suppliers, held in Dublin last month.

Mr. Burke said that they kept in "pretty close contact" with the Federation of Builders on this question with a limited success.

Speaking of membership of the Association, he said that the fact that they had not shown any major increase could be attributed to a lack of interest, but, he said: "I rather feel that we have now a membership of the worthwhile firms in the sub-contracting business I do not anticipate any substantial increase in the coming years."

New officers elected were: President, R. J. Chillingworth (Sound Systems Ltd.); Peter McGloughlin (J. & C. McGloughlin Ltd.); A. Gordon Pearson (Smith & Pearson Ltd.); D. D. O'Brien (D. D. O'Brien & Sons, Ltd.); W. Davidson (Keenan & Sons Ltd.), and T. Finlay (F.K.M. Ltd).

Easier ducting

THE NEW flat-pak Ductiar metal ducting developed by Radiation Parkray Limited simplifies and greatly reduces the cost of installing ducting for warm air central heating systems. From 20 standard components and only nine basic shapes, the installer can make all ducting normally required.

Where only one installation or a small number of similar lay-outs is to be carried out, the fabrication can be executed easily and quickly on site, thus eliminating the need for detailed drawings for the metal worker. For schemes involving a large number of similar lay-outs, such as a block of flats or a housing estate, it may be convenient to have the ducting partly or wholly fabricated at the workshop for transport to site in packaged sets or ready-assembled sections.

TRADE

TOPICS

**Smiths Group
appoint Irish agents**

ENNIS ENGINEERING Co. Ltd., 55 Mary Street, Dublin, announce that they have been appointed agents in the Republic of Ireland for the Cameron Engineering Co. Ltd., Portsmouth, a member of the Smiths Group of Companies. A subsidiary Company, Viking Engineering Co. Ltd., has been primed to carry out the installation of Camron boilers and burner units and Smith's "Debutante" range of oil-fired domestic boilers.

The construction of new show-rooms and offices is at present being carried out by the parent company, Forkin Bros. Ltd., building contractors, and is expected to be completed in February next. In addition to the heating showroom there will be facilities for the display of "Forfix" suspended ceiling and roofing materials manufactured by another subsidiary, Forfix Ltd., Capel St., Dublin.

New bolt cutter

THE NEW "Bahco" 341 hydraulic bolt cutter and nut splitter represents a substantial development in bolt cutting and nut splitting technique. The 341 is versatile, only 13 ins. long, weighing approximately 6 lbs., yet developing a cutting force of 8,800 lbs. Its capacity is $\frac{3}{8}$ " diameter bolts, or $\frac{5}{8}$ " A.F. nuts of up to 5 tons/sq. in. tensile strength.

It can work in hitherto inaccessible places; the head turns through 220° and the pump handle rotates through 360°. The closed hydraulic system ensures perfect cutting control.

Seeking agents

Seeking competent agents here are:—

● **CTC Heat (London) Ltd.**, of 17 Sloane Street, London. S.W.1, manufacturers of CTC Double Duty boilers, oil burners, auto-claves and washing machines.

● **Improvair Ltd.**, 94 Queensway, London, W.2, are anxious to appoint an Irish agent. Interested parties should contact **Mr. G. Lakmaker**, Director, at the Com-



Merry Christmas

*The Editor and staff wish
for all our friends
a Happy Christmas
and every prosperity in the
New Year*

**THE KHAM SIN PORTABLE
SPACE HEATER**

is an improved type of portable space heater which gives **instant heat output**. Ideal for warehouses, workshops, grain stores, packing sheds, plaster and paint drying, assembly halls, etc.



- * **HOT AIR**—at the touch of a switch.
- * **ECONOMICAL**—uses paraffin or fuel oil.
- * **CIRCULATING WARM AIR** — covers 2,000-10,000 sq. ft., depending on model.
- * **No exposed flames or fumes.**

FOUR MODELS AVAILABLE

- Model 95—95,000 B.T.U.'s, £98.
- Model 125—125,000 B.T.U.'s, £99-10s.
- Model 200—200,000 B.T.U.'s, £137.
- Model 300—300,000 B.T.U.'s, £172.

Sole Distributors for Irish Republic:

SIMPLEX

BLUEBELL WORKS, BLUEBELL, DUBLIN, 12

Telephone: 503288.

TRADE

TOPICS

**FIBREGLASS
EXTEND RANGE**

FIBREGLASS Limited are now marketing an extended range of products for the air-conditioning and warm air heating fields. The full range comprises: prefabricated ducting, rigid duct insulation, flexible duct insulation, flexible duct liner and air filter units.

The first two of these products—prefabricated ducting and rigid duct insulation—are absolutely new. They are in well-known Fibreglass Crown insulation material. Low weight and low thermal conductivity combine to give highest efficiency.

Prefabricated Ducting has been specially designed for the fast-expanding field of ducted warm air domestic heating systems, and is also suitable for use in the larger types of systems in offices, factories, etc. Rigid duct insulation has been designed primarily for the air conditioning market, to meet the demand for a rigid vapour-sealed slab for application on large ducting.

Fibreglass Prefabricated duct slab is folded to form a rectangular duct.



● The extended coverage given in this issue to the many exciting developments seen at the Building Exhibition has obliged us to hold over the John G. Bolton and A. L. Townsend contributions.



**BENEATH
THEIR
FEET!**

'They' are to-day's home buyers. And they know a great deal about heating—especially the convenience and economy of Thermodare Warmfloor heating. They know, for instance, that Thermodare Warmfloor heating is fully automatic, and that it draws electricity at off-peak hours. And perhaps most important, they know that if it is installed before they buy the house, they pay for it over a period of years.

**TURN ON THE HEAT WITH
THERMODARE**

MANUFACTURED BY UNIDARE LTD., FINGLAS, DUBLIN.



The Sign of Good Heating.



AN IRISH PLUMBER & HEATING CONTRACTOR SPECIAL SURVEY

ELECTRIC Heat Systems just will not be left out in the cold. Commendable efforts have been made in research and design to perfect equipment which will provide all the well known advantages of electrical power, at reasonable capital and running costs.

Portable appliances such as inset fires, free-standing truly portable fires, and the simple black-heat convectors have all had the re-design treatment and look all the more attractive for it.

Infra-red heaters are very well styled to suit all types of interior decoration and these attractive, responsive heaters, for giving quick "islands" of warmth, are deservedly very popular.

Fan-assisted, block-heat convectors now come as small as transistor radios, but their compact size belies their excellent performance.

Thermal storage heaters, backed by national advertising, are attracting many buyers. Where economic background heat is desirable, these have much to offer. Fan-assisted thermal storage block heaters are an improvement in that some measure of heat emission may be obtained by thermostat control of the fan. If a space calls for heat the thermostat sets the fan in motion and cool room air is moved through the heater to emerge as warmed air. As soon as the heat requirement of the room is supplied, the fan is stopped automatically and comes on again only if room temperature falls. This better response to control by room thermostat, in conjunction with fanned heat output helps to silence earlier criticism against block storage heaters. Now, with fan-assisted heaters the room

REVIEW OF ELECTRIC HEATING SYSTEMS AND APPLIANCES

is not overheated should a mild day follow a cold night, as the heat is largely retained in the appliance unless the fan operates in answer to the room-stat call for heat.

In this way heat energy is stored on mild days and the following evening electrical re-charge period curtailed. Thus, these improved heaters not only give better comfort conditions, but do so more cheaply. Obviously they cost a little more initially but the extra cost involved is well worth balancing against better performance and running costs.

Electrical floor warming has its adherents but it is undeniably unresponsive to control, and it can prove rather expensive to run. However, this form of electric heating, too, has seen re-development.

The "Elfido" electrically warmed floor, for example, has heating cables running

along the grooves of T. and G. floor boards. Since timber does not have a high specific heat, as does concrete, and because there is no great mass of timber to be warmed, this system gives rapid "heat-up" and equally quick cooling down according to demand for heat.

It is not, of course, a form of thermal storage in structure as embedded cables in concrete floors are. It, therefore, operates on "On-Peak" tariff at ordinary rates per unit. Even so, since heat is used only whilst the room is in use, or at lower temperatures if the room is temporarily vacant, it can be operated economically according to room usage.

Electrically heated ceilings offer exactly the same facility of control in comfort and economy.

Electrically heated, ducted warm air systems are avail-

able in many ratings and control arrangements. One offers 3 Kw. for "On-Peak" use during the day, when most of the house is unoccupied, but with an extra 6 Kw. on "Off-Peak" for use after 7 p.m. when the "Off-Peak" current at cheaper rates can be used more economically.

Finally, although this is not to suggest that this exhausts the vast range of exciting new electrical heating equipment available, there are the out-fitted radiators which simulate the traditional L.P.H.W. ones, electrically heated skirtings, and the latest thing—an automatic electric central heating unit to serve a L.P.H.W. system. This is available in 18, 24, 30, 36, 48 and 60 Kw. loadings. All comprise tested copper cylinders fitted with industrial type immersion heaters wired to a control panel. Stanton's of Newport, South Wales, will send further details.

Without a doubt, electric ity is "with it," and is carving for itself quite a sizeable share of the house warming trade.

And now, a look at

the past year

Since we published our last review on this subject the E.S.B. has revised the night space heating tariff. Previously supplies for storage heaters or for floor-warming cost 0.8d. per unit for all units consumed. The rate of charge now is: 0.8d. per unit for the first 5,000 units per two months and 0.6d. per unit for excess over 5,000 units per two months.

The effect of this revision has been that there has been a reduction of over 20 per cent. in the cost of off-peak heating for large buildings with a proportionally smaller reduction for smaller buildings.

This revision reflects economies resulting from off-peak use of electricity generation

and distribution plant. The trend is bound to continue so developments in off-peak space heating systems and appliances are of particular importance as any tariff changes will tend to increase the differential between off-peak and on-peak heating costs.

The main advance in the floor-warming field during the year has been in the development of more accurate floor-warming fault location equipment. Equipment has now been fully developed which will locate a cable fault to within one inch before the

floor finish has to be distributed to make the repair. Experience to date with embedded floor-warming systems indicates that a fault should be a very rare occurrence; however, it is reassuring to know that if a fault does occur it will not be necessary to open a large section of floor. Unfortunately, quantity production of the equipment by the manufacturer has not yet commenced.

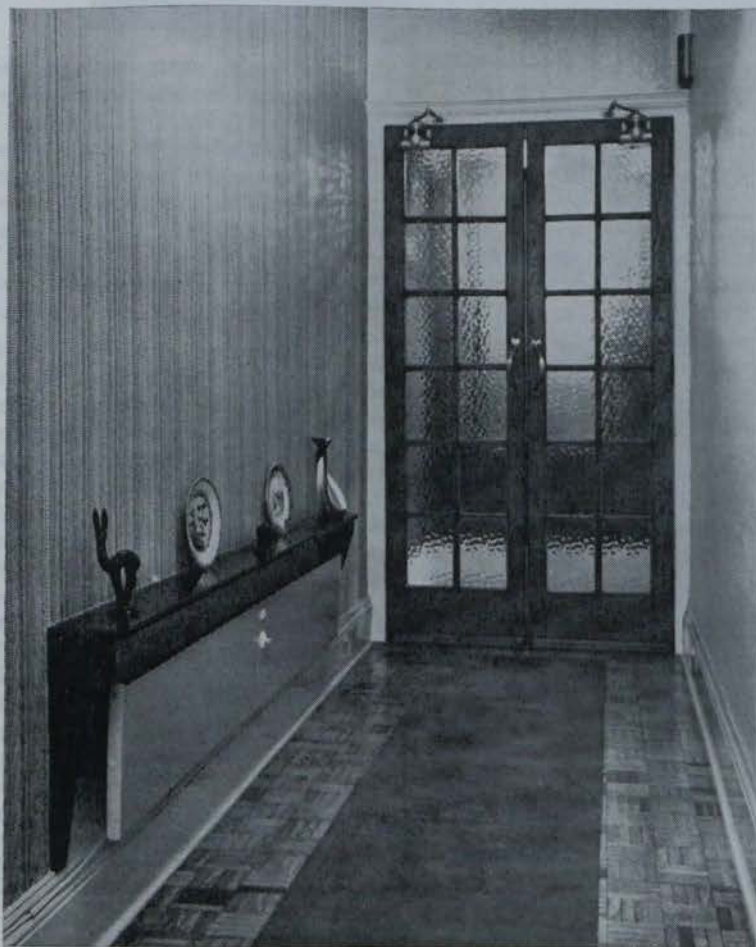
Production of block storage heaters continued on a large

Continued page eleven

'SAFEHEAT'

ELECTRIC PANEL HEATERS

provide the solution to your room heating problems



STOVE ENAMEL STANDARD
FINISHES: OFF-WHITE,
OYSTER, PEARL GREY
or CREAM.

Other colour finishes available at
an extra charge of 5% on list
price:—

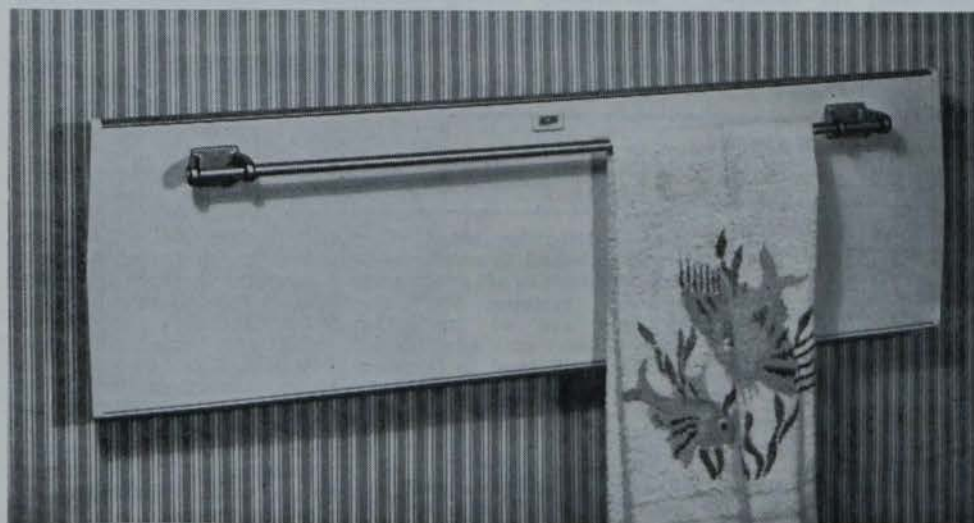
CAPRI BLUE, WEDGWOOD
BLUE and LICHEN GREEN.

The load of the heating elements
is controlled by a 4-heat switch,
also having an 'OFF' position.

These Space Heaters are of the
Medium Temperature Type (in
accordance with B.S.C.o.P CP324.
201—1948 and B.S. 1670) and
can be considered the safest wall
mounting electrical space heating
media for use in homes, offices,
schools, hospitals, etc.

◀ The illustration shows a Model
P3-10 (1000 watts) SAFEHEAT
Panel Heater.

SAFETY Is the keynote in the manufacture of these Electric Panel Heaters



'SAFEHEAT' Panel
Heaters are available in six
dimensionally different sizes
with maximum loading
capacities of 500/800/1,000/
1,200 and 1,500 watt.

Latest addition (illustrated):
500 and 800 watt heaters fitted
with Chromium-plated towel
rall for installation in bath-
rooms.

CENTURY WORKS
PELLON LANE
HALIFAX, ENGLAND

Phone: 60201/2
Cables: "Motor, Halifax"
Telex No.: 51101

WRIGHT ELECTRIC MOTORS (HALIFAX) LTD.

MANUFACTURING ELECTRICAL AND MECHANICAL ENGINEERS. Established 1900.

scale through the year in the works of the two Irish manufacturers and Irish-made storage heaters now command a very large export market. Development of two new models was announced.

One Irish manufacturer is developing a unit-type storage heater. The aim of this development is to facilitate transport by marketing a site-assembly heater. For instance,

SPECIAL SURVEY

from page nine

a 2 KW. heater will be delivered in four component parts, i.e., three separate storage block units weighing approximately 100 lbs. each and the empty heater outer case. It should be possible for

one man to transport the component parts to site without difficulty.

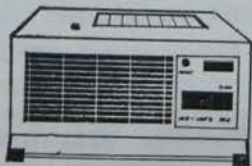
Another Irish manufacturer is developing a controllable-output storage heater. In this heater a fan will force air

through the storage medium so that "boost" heating is available at any time. When the fan is not in operation the heater will behave as a conventional storage heater. It is anticipated that the main market for these heaters will be for living-rooms where full-comfort conditions are required at night-time while background heating conditions suffice during the day.

In conjunction with this Special Survey we review here products from the leading manufacturers' ranges.

BEST SELLING HEATERS

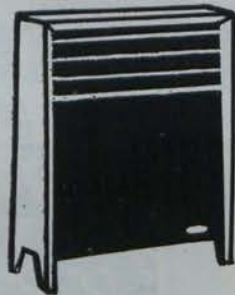
FROM MORPHY-RICHARDS



COMPACT FAN HEATER
£10-15-6



CAVENDISH FAN HEATER
£14-0-0



SHEERLINE CONVECTOR HEATER
£9-15-0

FREE-STANDING INFRA RED HEATER
£6-3-0



MEDWAY CONVECTOR HEATER
£10-17-6



DERWENT CONVECTOR HEATER
£10-15-0

THE SATCHWELL Ratiomatic control is designed for domestic off-peak electric floor heating. By a proportioning action from a combination of inside and outside temperatures and taking into account windage losses, the Ratiomatic automatically gives a changing period which is highly satisfactory.

Where the thermal storage properties of a heated floor are large, tests have shown that no significant advantage is gained by delaying the charging period to the latest possible time in the off-peak period. There is, therefore, no need for a clock mechanism, an expensive item particularly for smaller installations. The Ratiomatic consists simply of two thermal units, one mounted outside the house and the other inside. These units in combination, according to the temperatures they measure, provide a switching cycle, the ratio of "On" to "Off" periods of which governs the charge given to the floor.

An important feature of the system is that the outside unit is sensitive to wind and due allowance is therefore automatically made for this factor in determining the charge. The characteristics of the two units are so designed that the room thermostat is particularly sensitive to a reduced room temperature at the beginning of a charging period as a result of a cold day, but its influence is restricted to ensure that incidental heat gains do not unduly reduce the charge.

* * *

ESWA Limited of 26 Newman Street, London, W1, is offering a new system of surface heating which was developed first in Norway. The Eswa system provides heat from an invisible source above the ceiling—an electrically heated resistance foil is

Continued overleaf

KELLY & SHIEL LTD

UNITED WORKS, DISTILLERY ROAD, DUBLIN 3

The Irish Plumber and Heating Contractor.

mounted immediately above the ceiling face and backed by thermal insulation.

With a heated ceiling the heat is distributed over a very wide area. The warmed ceiling radiates heat to every other surface and fabric in the room, providing a pleasant and fully heated environment. Thermostatic controls are fitted in every room.

The temperature of the ceiling is only 80 to 90 degrees F., but this is sufficient, say Eswa, to provide full

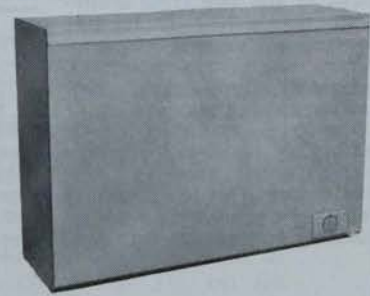
PRODUCT REVIEW

from previous page

comfort with air temperatures of 65 to 70 degrees F.

* * *

THERMALAY is an electrically heated carpet underlay available in suitable sizes to meet all requirements and available from the sole agents, Hughes & Coyle of 11 Blackhall Parade, Dublin 7.



The underlay is just placed under the carpet, connected with a convenient socket and switched on. It doubles for a first-class carpet underlay.

* * *

ANNOUNCED at the G.E.C. trade show, where it attracted keen interest, is the new range of G.E.C. thermal night storage heaters featuring unit construction. (See illustration).

The new range conforms to stringent Electric Development Association specification. Block cannisters—the number of units varies with loading—make for speedy, one person assembly.

The range, designed for continuous low level heating for large areas, is particularly suitable for banking. Large buildings such as schools, hospitals, factories and the like will avail of these feature for neater installation.

A thermostat is incorporated for fine change control and a thermal safety cut out guards against incorrect use of the heater. Four models are available, with the following loadings: 750, 1500, 2000, 3000 watts.

* * *

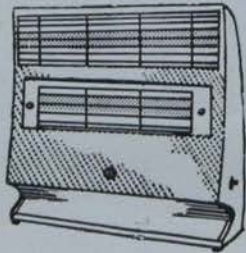
EVERY HEATING eventually could be said to be covered by the combined ranges of Ekco and Morphy-Richards heating appliances from Kelly & Shiel Limited of Dublin and Cork.

The selection of appliances from both ranges is wide and includes radiant fires, infra-red heaters, convectors, radiant convectors, and fan heaters.

Proving a good sales aid must be "Switch On To Comfort," a handbook of electric heaters produced by Good Housekeeping in conjunction with Morphy-Richards. A full-colour production, it does a fine job of selling these appliances.

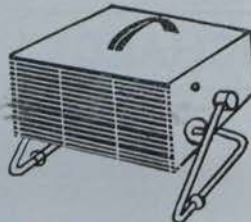
EFFICIENT HEATING

with EKCO style



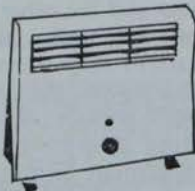
RADIANT K CONVECTOR

Convector plus infra-red heater, £13-19-6.



FANDAIR

Fan Heater, 2 kW. 7-position rotary switch. £12-15-0.



CONVECTOR TYPE FRC

1 kW. £13-17-6.



MALVERN HEARTH FIRE

3 kW. £14-3-0. Coal or log effect.



FIRESTREAK

High level Radiant Heater. £4-7-6.



FANVECTOR

3 kW. Thermostat and 6-position rotary switch, £24-15-0

KELLY & SHIEL LTD

UNITED WORKS, DISTILLERY ROAD, DUBLIN 3

G.E.C.

G.E.C. have spent many years building a reputation of the highest prestige and reliability. Their good name is a byword in the field of all electrical heating appliances where safety is uppermost in the mind of the purchaser. Remember, all G.E.C. heating equipment has passed the most stringent safety tests. Featured here are some G.E.C. best sellers. The Copenhagen streamlined electric fire from £490. Magicoal electric fires from £11 15 0. Convector heaters, portable and wall models from £7. Storage heaters from £1190.

THE GENERAL ELECTRIC CO. OF IRELAND LTD.
Sales Departments, Trade Counter and Showrooms
Dunleer House, Store Street, Dublin 1. Tel. 71141



Kennys

NEW HENRY WILSON DEVICE **TRADE**

A **DEVICE** to protect boilers from the corrosive effects of sulphuric acid resulting from condensation, is being fitted to latest models of Henry Wilson pressure jet boiler-burner units.

Known as the "Cosytube," it is claimed that this cylindrical baffle, which is fitted around the fire tubes, ensures that cold water returning to the boiler does not reduce the skin temperature of the tubes below the dew point temperature of combustion gases so that their condensation is virtually eliminated.

Boilers of different sizes and in widely dissimilar situations were tested with the new device before it went into production, and a patent has now been applied for.

A **NEW** automatic electric central heating unit, which embodies all heating and control equipment within the one unit, has been introduced by Santon Limited of Newport, Mon.

TOPICS

Called the Model QFC, this unit is completely safe—power is automatically cut off when the door is opened.

The unit is compact and, point out the manufacturers, installations costs are low and easily estimated as only direct connections to mains power supply and central heating system are required.

The heater is available in the following loadings: 18, 24, 30, 36, 48 and 60 Kw. Larger central heating units of a different type are available up to 180 Kw. The Santon Dublin agent is Charles Nolan & Co.

THERMOCONTROL Inst. Co. Ltd., London, have introduced a comprehensive range of new controls. The Ventroller LU 73, for example, is a transistorized air conditioning controller using thermistors for temperature measurement and lithium

Time switches under test

NINE portable time switches were tested by the British Consumers' Association for electrical safety, robustness, ease in use and accuracy, and their findings were published in the current issue of "Which?"

Four of the nine switches could be set to switch an electrical appliance both on and off and so were rather more versatile than the other five, which switched on only, says the report. Some switches were easier to set than others and some were a little more accurate than others. None was easy to set very precisely, and one of the on/off type stayed on for an average of 11 minutes longer than it was supposed to do, the report claimed.

chloride cells for humidity measurement. It provides modulating control with correction for system lags and will respond to a change of 1° F. or ¼ per cent. relative humidity.

The Irish Plumber and Heating Contractor.

LAST MONTH WE LOOKED AT SOME OF THE DEVELOPMENTS SEEN AT THE BUILDING EXHIBITION AND HERE WE CONTINUE THE REVIEW.

the BUILDING EXHIBITION

ARMITAGE Ware Ltd. were displaying sanitary fixtures in vitreous china and Excelsior quality fireclay. Hospital, hairdressing and laboratory metal fittings were also on show. Washbasins include the "Wessex" with Nuastyle mixer fittings; the V.1224 "Muresta" wall hung double trap Syphonia W.C. and V.1006 Ormura wall hung bidet. The Muresta and Ormura are the latest designs to be added to the Armitage range.

A new wraparound back boiler designed to give a higher output, was shown by **Baxi** at their stand. Known as the R.O.B.2, the boiler has waterways extending to the front of the side cheeks as well as the back of the fire. It is designed for use with Baxi 16in. fires and is easy to instal.

A new gas warm air central heating system—the Baxi-Gas—was also at the exhibition. This is a 30,000 B.t.u. self-contained unit designed to give full central heating to houses or bungalows of up to 1,000 sq. ft. floor area. Of compact design, it is 31in. wide, by 26in. in height and 18in. deep. The unit is fully adjustable with thermostatic control and time clock which can give automatic shut down at night and starting in the morning.

Chemidus Plastics Ltd. stand featured the use of UPVC for water and gas pipe, for rain water and soil systems, and for electrical conduits. UPVC can be extruded in various forms, including pipe, rod, bar, strip, sheet and also as rectangular ducting. The Company which specialises as extruders of unplasticised polyvinyl chloride—a material of increasing interest to the building industry—is collaborating with a number of well known firms by providing specialised development and manufacturing services.

The Lamtile fume cabinet recently introduced by **Turner & Brown Ltd.** was exhibited by **Cygnat Joinery Ltd.** at the exhibition. The internal surfaces of these cabinets are formed from glazed ceramic tiles bonded to a fibreglass shell. The working surfaces, which are made of tiles $\frac{1}{2}$ -inch thick, are totally acid, alkali and sol-

vent resistant, and will withstand temperatures of up to 200 degrees C.

F. H. Bourner & Co. (Engineers) Ltd., a member of the Delta Metal Group, were displaying their Supatap, Spa Tap, and the Temperfix ranges at the exhibition. On show to the public for the first time was a new Bath Mixer in the Spa N/R range.

A holder for the hand spray is integral with the new mixer unit, while a wall bracket to convert the hand spray to a fixed spray is also included.

Delmore Oil Fired boilers were on display for the first time since Delmore Heating Limited became associated with **International Boilers and Radiators**. The new Series 3 covers capacities of 30,000-128,000 B.t.u.'s/hr. and are all suitable for kitchen installation, being quiet in operation and odourless.

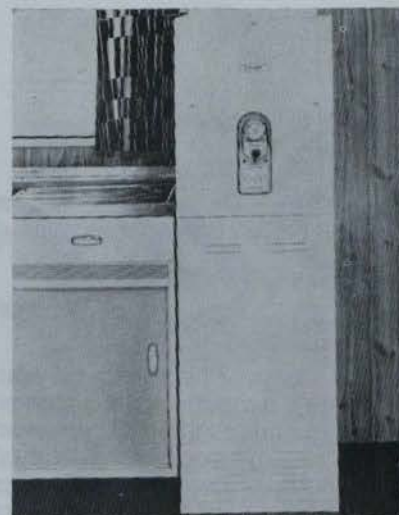
International Boilers and Radiators Ltd. displayed the new "Capital" range of gas-fired hot water and heating boilers, and small bore units, these being introduced to the trade for the first time at the exhibition. They are suitable for either conventional flues, balanced flues or Se-duct.

Also shown was the Thermopak accelerator, and three entirely new units—the new Silentflo, a low output fixed head pump; the Multiflo, which has a variable head with an output for practically every domestic installation, and the Thermoflo, which in addition to having a variable head has a built-in mixing valve.

B.S.A. Harford Pumps Ltd. had among their exhibits three new

THESE B.E. pictures show . . . The G3501 and G4501 new gas-fired warm air central heating units, possessing many new features, from Radiation Central Heating Ltd. Both are identical in size and cover a wide range of outputs, from 30,000 to 35,000 B.t.u./hr., and 40,000 to 45,000 B.t.u./hr., respectively, and are designed for two-to-four bedroom houses. Area Manager for Ireland is L. C. Young, Esq., and the

Twenty-Six Counties distributors are Tedcastle McCormick & Co. Ltd. CENTRE: The G.75B gas-fired, balanced flue boiler (75,000 B.t.u./hr.) is from Glow-Worm Boilers Ltd. of 47 Hatton Green, London, E.C.1. ABOVE: By Lincoln Furnaces Ltd. of East Grinstead, Sussex, is the Model LC.75 (75,000 B.t.u./hr.) from their oil-fired range. Made in high-boy and counter-flow style, it features a pressure jet burner with fully automatic ignition.



from previous page

products which have only been announced in the past few weeks. B.S.A. Hotspur domestic central heating boilers is a new range of oil-fired wall-flame boilers designed to be installed inside the home. The burner is the Toridheet wall-flame burner also made by B.S.A. There are four boilers in the range: the "45," "63," "80," and "110."

The new TA twin action radiator valve incorporates a revolutionary O-ring which ensures that it will not leak and that the spindle will always move easily. The Kosmos thermostatic radiator valve is a proportional regulator which requires no external energy source. It may be installed directly onto the valve or away from the radiator at the end of a 6ft. lead.

Displayed for the first time on the stands of Carron Company, Ironmaster, were two examples of a new range of baths. The Swallow Duo Grip bath features two chromium plated handgrips, much longer than normal, which can be reached easily from any position in the bath. Fitted into the chamfered edges, they do not protrude into or above the lines of the bath; 66-inch and 72 inch length models are available.

Another new bath—reminiscent of the classical Roman bathing rites, is claimed by the manufacturers to be a "revelation in contemporary bath design conceived to set a new standard in gracious living."



The new "Hollywood" Pedestal Shield
Carron Company, Ltd.

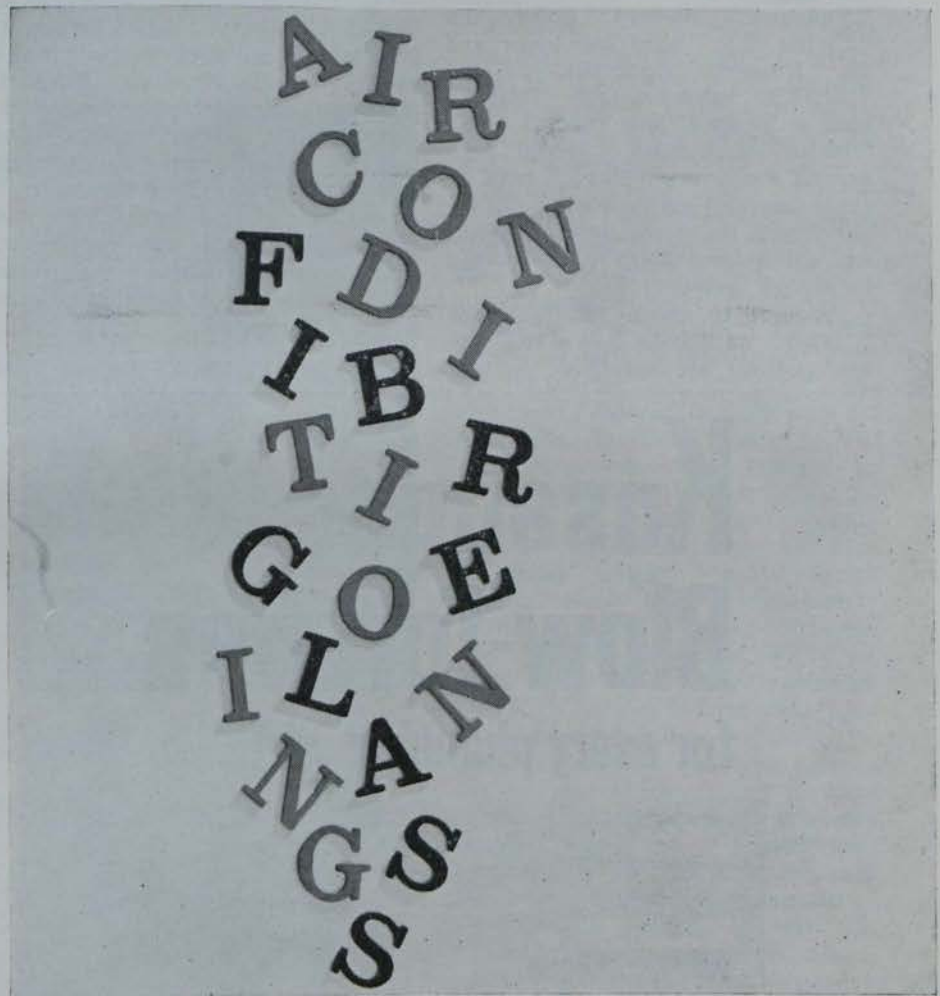
Redfyre Ltd. have introduced their new Autogas 45 small bore unit. Produced to supply domestic hot water plus central heating with small bore systems, it has an output of 45,000 B.t.u.'s/hr. continuous rating. The main gas control unit is the Honeywell Adatrol Unit, which incorporates a gas cook, flame failure device, constant pressure governor and 24-volt operator. Electric glow coil ignition lights the pilot flame simply by pressing a small button on the inner front panel of the boiler.

Bolted to a cast iron base plate, the cast iron boiler has a specially designed, finned, heat exchange surface

to combine maximum efficiency with ease of servicing. There are four flow and return tappings, three 1 1/4" B.S.P. with 1/2" B.S.P. pump connection. The flue off-take is designed for a 4" inside diameter asbestos cement or metal flue pipe.

The Autogas 45 has a capacity of a 30-gallon cylinder plus 180 sq. ft. radiator surfaces, including the service pipes. The boilers will be on display at the exhibition, and will be shown under fire with a typical hot water and heating installation.

BUILDING EXHIBITION report
continued on following pages



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

MONSELL MITCHELL & CO. LTD.

Sole distributors of
Fibreglass heat insulation products
in the Republic of Ireland

JAMES RYAN (DUBLIN) & CO. LTD.

Sole stockists of
Fibreglass Air Filters
in the Republic of Ireland

**Fibreglass
Limited**

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

The Irish Plumber and Heating Contractor.

from previous page

IDEAL STANDARD LTD. exhibited a selection from their extensive range of heating and sanitary equipment. Of particular interest was the versatile "Ideal Rayrad," which can be installed in walls or ceilings and decorated so that it can be concealed.

Of the sanitary equipment, the complete "Kingston" bathroom suite was shown, including the bath, wash-basin, closet suite and bidet—a "Vital" urinal installation, "Trim-line" wash basin and closet suite, and the "Roma" wash basin.

The recently introduced No. 1A "Autocrat" solid fuel domestic boiler was also on show together with the "Vanguard" oil-fired boiler, the "Classic Elite" solid fuel boiler and the "Kingston" gas boiler.

SHIRES exhibited their "Naiad" bath in perspex, and vitreous china "Naiad" wash basin. Special features of the luxury "Naiad" bath include an anti-splash rim, matching panels with toe recess along the front, and a drop-front which makes its easy to step in and out.

Produced to match the bath, the "Naiad" wash basin has a slim tapered pedestal, set away from the wall

the BUILDING EXHIBITION

to give simple access for cleaning. Its overall size is 25 inches by 22 inches, and its height from the floor is 31 inches.

EXPANDITE LTD. products on display included polysulphide, butyl and oil bound mastics, hot poured sealing compounds, waterstops, waterproofing materials, joint fillers and concrete additives. Models incorporating these materials were on show together with mixing and application equipment.

On the stand of ARMITAGE WARE LTD. were sanitary fixtures in Armitage genuine vitreous china and excelsior quality fireclay. Hospital, hairdressing and laboratory metal fittings were also exhibited. Washbasins included the Wessex with Nuastyle mixer fittings, the V1224 Muresta wall hung double trap siphonic W.C. and the V1006 Ormura wall hung bidet. The Muresta and the Ormura are the latest designs in the Armitage genuine vitreous china range.

The CHARLES PORTWAY & SON

LTD. range of Wallflame oil fire boilers were shown publicly to the trade for the first time at the exhibition. Two types are available—the Standard and De Luxe—with ratings from 40,000 to 108,000 B.t.u. Odest efficiency testing equipment for oil fired products were also on display.

Demonstrations of water softening were given on the stand of the PERMUTIT CO. LTD. stand, using the polythene P.4 portable unit. Also on display were various larger types for domestic application.

Three new products were exhibited on the stand of PERKINS BOILERS Ltd. The 60,000 B.t.u. "Mini Gas" boiler is wall mounted with a balanced flue and has been designed to provide full heating and domestic hot water for the average house.

The "Pilot" air heater is oil fired and in a waterproof case for installation. The capacity is 50,000 B.t.u. and the unit is available with vapourising burner or with pressure jet.

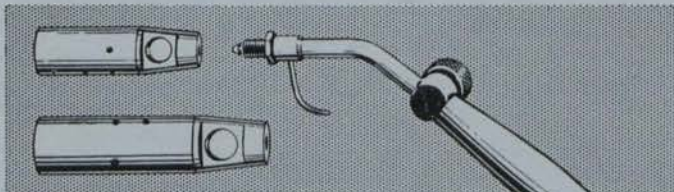
A new portable direct oil fired hot air unit for the building industry, available either with electrically operated burner or with "Swirlamiser" oil burner operated by a small petrol engine where no power is available, was on show on the stand of AUTO COMBUSTIONS (London) LTD. Also on display were ACL domestic boiler-burner units rated from 80,000 B.t.u. to 240,000 B.t.u.

A comprehensive display of portable bottle gas burning appliances was on show on the stand of WM. A. MEYER LTD. Model 3851 is a burner support incorporating melting pot. A handy tool for melting small quantities of lead, it is designed to facilitate the pouring of molten lead into pipe joints. Its portability makes it especially suitable for repair and maintenance work.

The new Transatlantic GB35 gas-fired boiler was on display at the stand of W. H. PAUL LTD. It has a heat output of 35,000 B.t.u. and can be supplied as a package unit complete with electric ignition, balanced flue, and electric water circulation accelerator.

A wide range of plumbers' brass-foundry, for water and steam applications, including sanitary fittings of all types, gate valves, radiator valves, ball valves and non-ferrous pipe fittings were exhibited by SPERRY & CO. LTD.

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.

from previous page

Included on the stand was a full range of gas main cocks, small gas fittings, jet cocks, and swivel cocks. Thermostatic gas controls, direct and indirect acting together, with remote control valves, were also shown. Manual, semi-automatic, and automatic gas central heating boiler controls were displayed as working exhibits.

GUMMERS LTD. exhibited a completely new thermostatic mixing valve. It has many unique features of design. The shut-off and temperature control are incorporated in the single control knob. If the cold supply fails, the valve shuts off automatically. The firm also displayed the new deck sink mixer, and a combined bath mixer-shower fitting.

The development in the use of the steel tube as a structural member was strikingly emphasised on the stand of STEWARTS & LLOYDS Limited. The stand was an exhibit in itself as it incorporated and demonstrated in service the company's structural hollow sections.

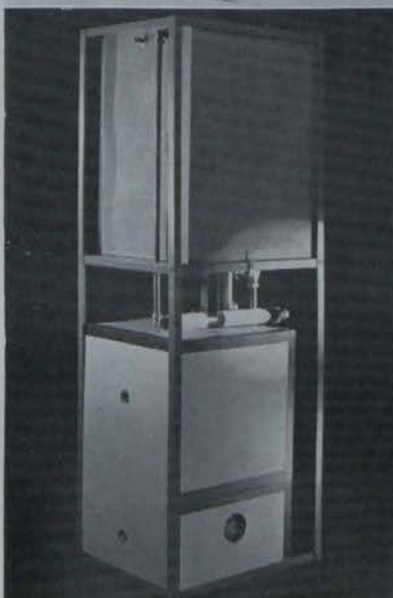
The stand was designed by A. M. Gear and Associates, who used a National Elliott 803 computer to assist in the calculations which the complexity of the structure involved. The stand afforded the opportunity to study hollow sections in relation to a number of structural features. Two of the outstanding advantages of tubular construction—high strength to weight ratio and easy and economical maintenance—were readily appreciated. The Irish Office is Stewarts & Lloyds (Ireland) Ltd.

From the range of FISHER & LUDLOW LTD. (Irish agent, T. J. Philips, Esq.) at the exhibition, two items were of particular interest. One was the model FDL, 16½" x 53½", double-bowl and single drainer sink designed for setting in a work top. Weighing 16lbs., the multi-fluted drainer ensures faster draining, improved sound deadening and added strength.

The other, the model FL, 16½" x 35½", weighs 10lbs. The bowl is recessed and can be pierced either 1½" to take a standard waste fitting or 3½" to take either the increasingly popular basket strainer waste or an electric food waste disposal unit.

ROTHERHAMS LTD. exhibited

Also seen at Olympia was this Halcoyon F60 gas fired selective warm air heater by William Sugg & Company Ltd. CENTRE: G. A. Harvey & Co. (London) Ltd. manufacture the Harcopak type 5025 packaged water heating unit. ABOVE: The new circular aspect polythene cold water cistern is of 50-gallon capacity. It is manufactured by Allied Structural Plastics Ltd., a member of



two products which are designed for use primarily in domestic central heating. The Varimatic 2 Circulating Pump for small bore water systems was shown for the first time. It is an improved version of the original Mini-Pump. The improvements chiefly concern the method of assembly so as to facilitate servicing after installation, which is now possible without removing the pump from the system.

The Minimatic Time Controller is designed for 24-hour control of any type of heating system and can be set to operate with a delay of anything up to 14 days. The controls can be set to give two "on" and two "off" periods of any duration in 24 hours.

A comprehensive range of toilet seat assemblies was shown on the EKCO PLASTICS stand, together with a range of plastics toilet accessories and the latest version of the Ekco "Supersink."

The new "Essex" seat is offered in a choice of five standard colours, while the new "County" is shaped to blend with modern low-level suites and has concealed hinge mountings of ingenious new design. The Irish agents are Kelly & Shiel Ltd. of Dublin and Cork.

A new range of sanitary ware for bathroom, cloakroom and hospital was shown at the exhibition by TWYFORDS LTD. Most of the exhibits on the stand were new additions to the Twyford range, including the luxury "Athena" and "Viking" pedestal washbasins and baby bath.

The "Athena" is an attractive flat-top washbasin made of "Ceramant" vitreous china measuring 28" x 21", having a large deep bowl and good tray space.

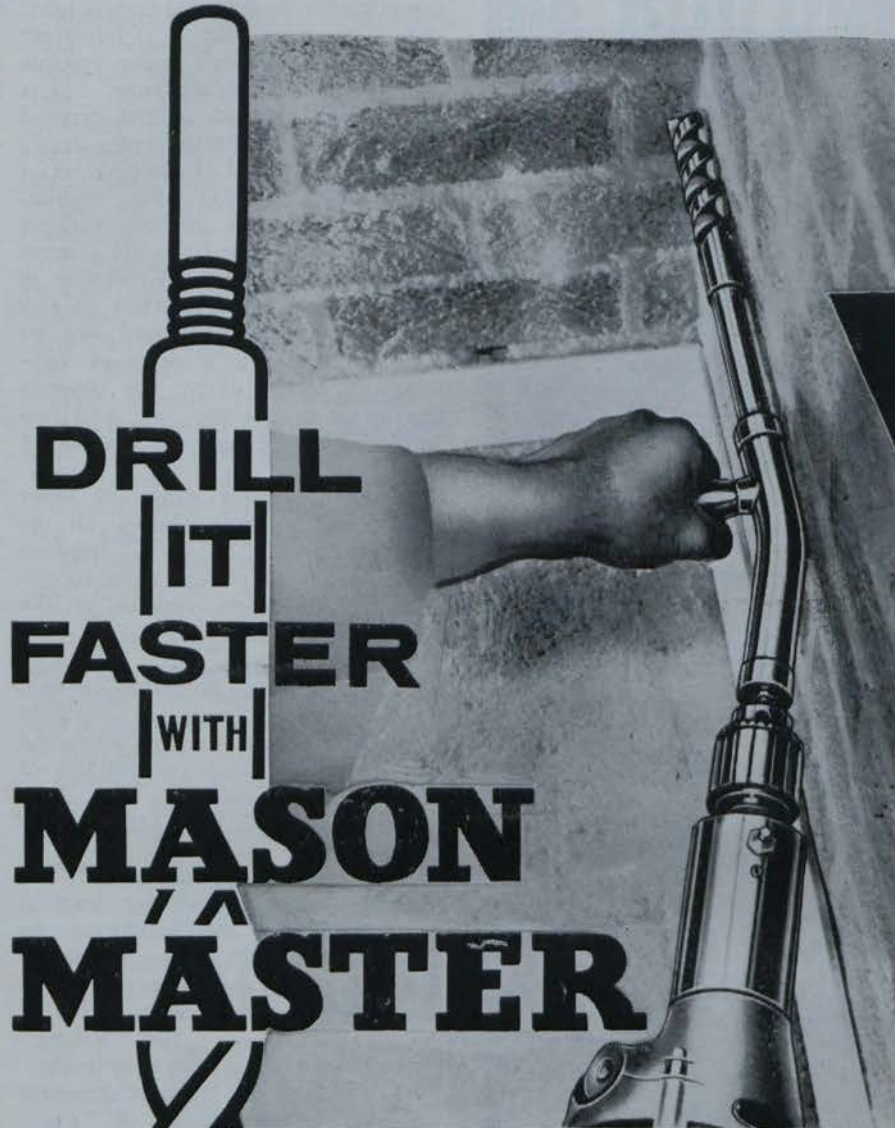
The DANFOSS RA type valve is the only one which makes it practical to convert existing radiators with hand operated valves into an efficient fully automatic temperature controlled heating unit. No electrical installation whatsoever is needed. It makes the control independent and not subject to electrical failures. The Irish agents are J. J. Sampson & Son Ltd.

CISTERNS LTD. had on display a comprehensive range of all-plastics bathroom equipment, including the Super Viking cistern and the Super Viking Monoflush close-coupled suite. A feature of the unit is the finger-tip action—only slight pressure is needed to start the hushed yet powerful "turbomatic" flush.

BUILDING EXHIBITION
REPORT

continued page thirty

The Irish Plumber and Heating Contractor



**MASON MASTER
SKEW DRIVE**
CLOSE APPROACH
DRILLING ATTACHMENT

Designed to cope with the need for holes close up to an adjoining wall. Fits directly into the chuck of all electric drills from $\frac{3}{8}$ " capacity upwards.

Employs standard Mason Master S.F.S. drills from $\frac{9}{16}$ " to $1\frac{1}{8}$ " diameter.



**MASON
MASTER
MAJOR**

For lightweight rugged power with $\frac{5}{8}$ " chuck for trepanned holes up to 2" diameter in brick.

Further details of the whole range of Mason Master Quality Tools from:—

JOHN M. PERKINS & SMITH LTD

BRAUNSTON • RUGBY

'Phone: Braunston 351-2 (4 lines)

Potterton's new boiler series

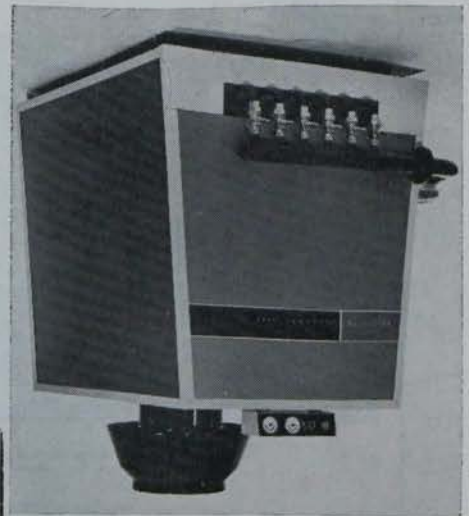
A NEW SERIES of gas fired boilers, revolutionary in appearance and incorporating several research developments, is announced by Thomas Potterton Limited. These fully-automatic gas-fired boilers, which are to be known as the Diplomat "G" series, are designed to meet the heating needs of offices, factories, schools, hospitals and a wide variety of other such buildings. There are six boilers in the series, ranging in output from

TRADE

TOPICS

900,000 to 2,025,000 B.t.u.hr. Potterton introduce these as fully-proved heating units.

With the co-operation of a leading London store, there are now over a dozen installations of the units in places as far apart as Bath and Perth. Several of these are in roof-top boiler houses. In fact, the installation can



One of the six boilers in the new Diplomat "G" series.

= SCHUMACHER = Porous Ceramic Filters For All Liquids And Gases



SPECIALISTS IN FILTRATION OF WATER SUPPLIES FOR INDUSTRIAL, HOSPITAL AND DOMESTIC USE.

Schumacher Filters

for removal of moisture, oil and impurities from compressed air systems.

Porous Ceramic Tiles

for Aeration and Fluidisation

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7 Bedford Street, Belfast.
Phone 26343.

be sited anywhere in a building, from the basement to the roof, and a major feature is that it does not require a resident engineer. This has been made possible by the electric ignition and flame safety features provided by the Potterton Electronic Ladder Pilot. Thus the highly automatic "G" series boiler can be lit at the press of a button.

IRISH AGENT FOR TRANE LTD. APPOINTED

Mr. Hugh McGeough, B.E., 11 Castlewood Park, Rathmines, Dublin, 6, has been appointed Sole Agent in Ireland for Trane Ltd., manufacturers of Air Conditioning, Heating, Ventilating and Heat Transfer equipment.

Oil-fired Aga

THE TRADITIONAL Aga cookers use solid fuel. Using the same heat-storage principle, the first oil-fired Aga cooker, the Model OB, is now announced by Allied Ironfounders Ltd. Other oil-fired models are being developed, and will be in production shortly.

The heart of the new cooker is a Don natural-draught burner, with fully automatic control by Aga thermostat. So efficient is the Aga cooker that the output is quite adequate to provide hot water for domestic use as well as two-oven cooker, and the Model OB is in fact a cooker/boiler.

Continued overleaf



Confucious say:

**There's No Such Thing
As a Cold House with Kresky Oil Heat**

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TO GIVE YOU PARTICULARS
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WARM AIR PERIMETER HEATING



APPOINTED INSTALLER FOR
IRISH SHELL AND BP LTD

TRADE

TOPICS

from previous page

Fuel consumption is quoted as averaging approximately 12 gallons of commercial kerosene per week. The storage tank required should be of 300-gallon capacity. Even in the event of a power cut, the burner control automatically switches to "low fire," thus maintaining cooking temperature.

New humidifier

HULL STEEL Radiators Ltd., of 1515, Hedon Road, Hull, announce the introduction of the Hull Rad Perma Humidifier.

Designed to give centrally-heated rooms a fresh, healthy atmosphere and to relieve the suffiness caused by any form of continuous heating, the Perma Humidifier maintains a pleasant warmth at a constant level without affecting the normal heat output of the radiator. As dry air has a cooling effect on the skin, the air feels warmer when the humidity is higher. When a few drops of an air freshening essence are added to the water content the unit is also effective as an air purifier.

Of attractive appearance and made of a durable plastic material, the Perma Humidifier is simple to install on any type of radiator and is easy to maintain and clean.



The New World Newlyn K.30 is a high speed gas water heater.

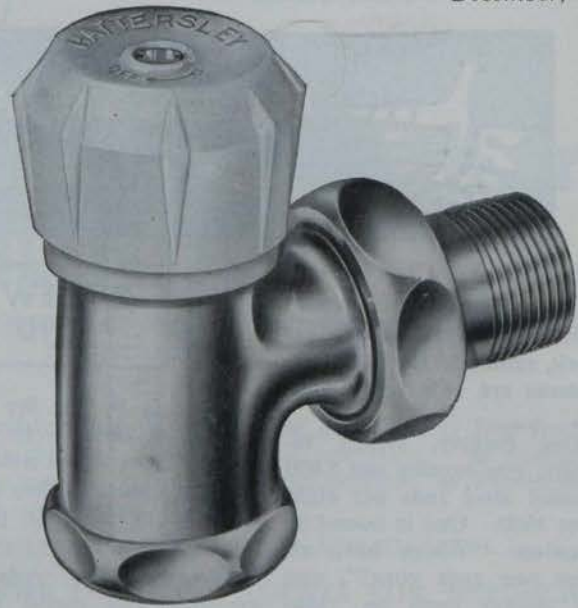
December, 1963.

The Delflo Radiator Valve.

Hattersley Valves are way ahead in style and efficiency.

The compact handwheel (or lockshield) of the Hattersley Delflo Valve is made of ivory coloured Delrin — tough and stain resistant. Angle patterns available in $\frac{3}{8}$ in — $1\frac{1}{4}$ in sizes. Straight patterns available in $\frac{3}{8}$ in — 1 in sizes.

The new Central Heating Regulator for low pressure heating systems up to 150 ft. head and 200°F is now available in $\frac{1}{2}$ in, $\frac{3}{4}$ in and 1 in sizes for either iron or copper pipe. PLEASE WRITE FOR FULL DETAILS.



HEATING ENGINEERS LOOK AHEAD WITH

HATTERSLEY

VALVES



The new Central Heating Regulator.

PATENT No. 936182



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JUDGING by reports that merchants just cannot satisfy all trade demands ex-stock, radiators for L.P.H.W. systems are still very popular.

One factory, visited recently, was turning out 5,000 pressed steel rads per eight hour shift. One is bound to question: "Where have all these new rads gone?", and the answer must be "into someone's home, every one—that is where the rads have gone."

Are you and your customers frustrated because you just cannot complete a job through late delivery of rads? Perhaps a little stockpiling on your own account would avoid this and help you to further trade since you would have the material to do the jobs.

The cast-iron radiator is still with us, but the steel

REVIEW OF RADIATORS AND CONVECTORS

radiator is by far the most popular it seems. Its slick, modern lines blend well with modern decor. They are in no way offensive in period homes either.

Copper panel rads are available and useful where waters are aggressively corrosive.

Bent radiators are now obtainable and the problem of angled and semi-circular bay windows are no longer a problem. For a small extra cost manufacturers will bend radiators to submitted plan shapes.

A new idea, and a most welcome one, is the bottom entry connections. These offer simpler, shorter and neater pipe connections,

Thermostatic radiator controls are conspicuous by their absence—or near absence. Very few manufacturers seem to make thermostatic rad valves. A little competition in this field might do a power of good and bring down the prices of these useful components.

Fan assisted convectors are now well established, and although the wall mounted radiator proclaims the status of a centrally heated home, convectors do the jobs just as well—often better, and with less ostentation. Quiet, efficient and most responsive to temperature control, fan assisted convectors can be wisely used to give the very

best in comfort and economy of heating.

In the past, some heaters have been rather bulky and this has been used in argument against their application. Nowadays, fan assisted convectors can be had in much slimmer styling but every bit as effective as the tubbier ones.

A point, often overlooked, is the fact that purpose-made fan-assisted convector units are available for use as a central air warming appliance for ducted warm air distribution to several rooms. Many such appliances are made to operate a gravity circulation from boilers fired by solid gas, or oil fuels. Used in this way, the fan-assisted convector can be a serious competitor with pumped small bore and radiator systems.

Why not examine them more closely?

In conjunction with this Special Survey we review here products from the leading manufacturers'

ranges.

Irish agents are Monsell Mitchell & Co. Limited.

* * *

THE CREDA Simplex radiator (1,000 W.) is a stylish panel heater. It provides a constant and gentle source of background heat and is thermostatically controlled. This model will not overheat and is available as a floor stand or wall mounting model in two-tone finishes. Agents here are Electro-Diesel (Ireland) Limited.

* * *

THE CONRAD is the new Radiant convector from F. H. Biddle Limited. These heaters are suitable for use with low, medium or high pressure hot water from a two-pipe accelerated system and combine the advantages of both convection and radiation.

They are very light—a 6ft. model weighs only 49 lbs.—and this means that they can be fixed to virtually any type of walling or partitioning, quickly and easily, by one man.

A correctly designed Conrad system will provide rapid heating up to the design room temperature. As the primary coil is tested to a pressure of 1,300 p.s.i., these heaters are eminently suitable for use in the highest buildings regardless of static head and with the heating medium at any pressure.

Conrad heaters are available in nine different lengths, from 24 ins. long up to 72 ins. long, in six increments. All heaters are a standard height of 22 ins. overall. Agents: Quadrant Engineers and, in Northern Ireland, D. H. Butler.

* * *

SINCE their introduction, early this year, the new special Safeheat electric panel heater for bathrooms has been

Continued page twenty-four

WITH seventeen single panels up to 6 feet long that can be coupled together to form any length plus seventeen sizes in factory-welded double panels, and single radiators that can be banked into treble panels, International offers a radiator range of fantastic versatility.

There are no seams to mar the rolled top finish of these radiators and they are extra slim, being made in one piece. Pressed from cold-rolled steel for extra strength (tested to 70 p.s.i.) there is also International venting for capacity filling; maximum wetted area for the utmost heat emission.

And also from International are their Powerglo permanently sealed oil filled radiators which produce a fast, simple and economic way of central heating installation.

There are four Powerglo models: Elba, ½ kilowatt; Capri, 1 kilowatt; Maderia, 1 kilowatt, and Bermuda, 1.4 kilowatt. Available in white, black, chrome finish and silver birch.

When a plumber is looking for a pump...



...for **CENTRAL HEATING**

he cannot buy better
than the

SIGMUND THERMOPAK or SILENTFLO

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

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Twenty-three



installed in "great numbers," report Wright Electric Motors (HX) Ltd., of Century Works, Pellon Lane, Halifax, the manufacturers.

The bathroom panel heater, suitable also for kitchens, etc., is available in two specially designed models complete with a chromium plated towel rail 32 ins. long.

These heaters are available in addition to the well-known standard safeheat electric panel heaters. As they are of a totally enclosed type, all heating elements are out of sight and touch and are fireproof. Easily installed, the heatload is varied at the turn of a switch.

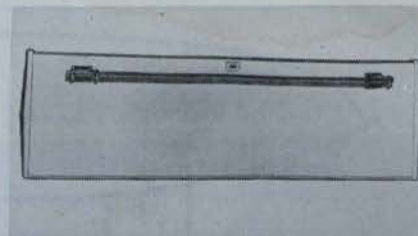
PRODUCT REVIEW

from page twenty-two

Safeheat panel heaters are available in six dimensionally different sizes with maximum loading capacities of: 500, 800, 1,000, 1,200 and 1,500 watts each. Four standard colours are available with three alternative ones.

* * *

DIMPLEX Limited have produced a brilliant forty-page booklet selling their "Home Warmth Plan," which makes use of their range of radiators, thermal storage heaters, convector



The bathroom panel heater from Wright Electric Motors.

heaters, infra-red heaters and radiant fires.

The booklet is crammed with information of these products and data which allows for accurate assessment of heat needs. Also from Dimplex is another booklet dealing with their central heating plan by hot water, and here again every aspect of the plan is covered. Irish agents are A. Bell & Co. (Eire) Limited.

* * *

NEW from Sterling Domestic Appliances of Dagenham, Essex, is the Eventherm Superplus panel radiator, introduced at the Building Exhibition.

Produced in 1 Kw., 1½ Kw., and 2 Kw. units, Eventherm radiators can be used either for individual background heaters or combined as a complete central heating system.

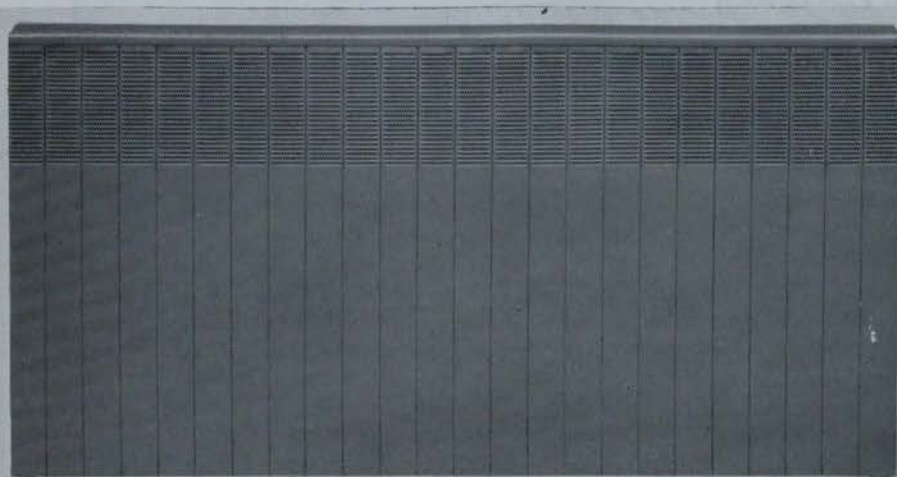
Advantages include instant heat, fully variable thermostat and automatic cut-out control for safe surface temperature.

* * *

SINGLE UNITS, continuous modular units, semi-recessed units: These heating units are offered by Dunham Bush Ltd. for application where the convector is to be installed within the building structure. The chassis and element is encased within a wall aperture, or builder's work opening, and is concealed by a heavy gauge sheet steel frontplate. This allows maximum usable floor space. All of these units are suitable for operation with pumped hot water or steam as the heating media.

The single recessed units have been designed so as to form a very attractive and functional form of continuous recessed heating. The heating units are joined together by means of metal make-up angles and make-up plates. This method, employing telescopic adjustment, ensures a perfect overall fit and allows for any minor discrepancies in the building construction. By inserting make-up plates of predetermined sizes, any type of module can be quickly and efficiently tailored.

The basic recessed unit is again used to form a most attractive semi-recessed heater.



CONRAD a great step forward in space heating

Conrad is the happy result of a marriage between Convection and Radiation. Room air enters heater near floor level, is then evenly warmed and distributed throughout the room by convection which, combined with radiation from the front panel, offers hitherto unavailable new comfort and climate control. Examines Conrad's revolutionary new features:

- 1 Conrad is so designed that radiation from the panel face is always at optimum value. At low water temperatures the panel approaches the mean water temperature and the difference gradually increases as the water temperature rises.
- 2 Conrad is suitable for all two-pipe accelerated hot water systems. Ideal for multi-storied buildings, every Conrad is tested to 1300 p.s.i. pressure.
- 3 The low water content of Conrad ensures rapid heating up to the design room temperature giving quick response to water temperature changes.
- 4 Conrad's low installation costs bring a new concept of economy. One man can handle the fixing. There are no built-in wall brackets as with ordinary radiators—Conrad needs only 2 or 3 wood screws to firmly secure its lightweight efficiency. A 6 foot model weighs only 49 lbs.
- 5 The heater comes in 9 sizes, rising in increments of 6" from 24" to 72". It is 22" high, projects only 3" from the wall, and should be fitted not less than 4" above floor level.



BIDDLE
F H BIDDLE LIMITED
16 Upper Grosvenor
Street London W1
Tel: Hyde Park 0532

So there you have it. A quiet revolution in space heating. Further details from:

D. H. BUTLER, 7 Blackwood Crescent, Helen's Bay, Belfast. Telephone: Helen's Bay 2119.

QUADRANT ENGINEERS, 167 Strand Road, Sandymount, Dublin 4. Telephone: Dublin 693940

Quality Controlled Products

AFTER EXHAUSTIVE research and close collaboration with heating engineers, in three countries, the Austrian firm, Gebauk and Lehrner, produced Hertz-As Regulating Valve which provides for low plant installation and heating costs.

The three big features of the valve are: accurate proportional regulating pre-setting of the valve; low resistance factor and maximum flow rate; the great tightness of the valve when in use with pumping pressure installations.

The new valve is available from the Irish agent, George A. Reid of 16 Fade Street (off Georges Street), Dublin.

* * *

RADIATORS from the Veba range by Veba Limited of Jamestown Road, Finglas, are already installed in many well-known buildings, including Dublin Airport and Kylemore Abbey in County Galway.

Made of heavy gauge steel, the standard test pressure is 90 lbs. p.s.i., but by means of extra spot welding, radiators tested at 175 lbs. p.s.i. are produced. They are made from one plate of steel, folded over, giving smooth round top without ridge or welding seam. They are available in eight standard heights and numerous lengths up to 32 ft.

Special high panels—40, 48, 56 and 64 ins.—are now available in five lengths. Veba radiators are supplied either curved straight or angled.

* * *

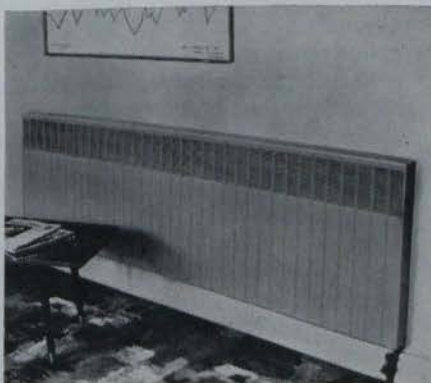
THE LIVERPOOL firm of Henry Wilson are producing a wafer-thin steel panel radiator which has a completely flat surface and they have carried out long term experiments with wallpaper on these radiators. Tests made with various types of adhesive showed that normal cold water paste acted quite efficiently and was not affected by the heat. After three years there has been no signs of peeling, bubbling, lifting or discolouration, and it is estimated that the heat loss cost of the paper is no more than 4 per cent.

In some homes contrasting papers have been applied to make the radiators appear as panels, while in other rooms the radiators have been covered in the same patterned paper as the walls and can hardly be distinguished from the background.

These half-inch-thick "Straight line" radiators of Finnish design are made in various shapes and sizes according to the heating needs. They

PRODUCT REVIEW

from previous page



This is the 72-inch Conrad model from F. H. Biddle Limited.

can be curved or angled to fit into a window bay. A similar panel radiator, the "Wilson Waveline," which is also half an inch thick, has an attractive dimpled surface which does not collect dust. Both types of radiators can, of course, be painted.

RADIATOR news from Copperad Heating is the introduction of their Corinthian range. These radiators, described earlier this year, are of the slim panel type and are available in three standard heights—18, 24 and 30 ins.

Copperad have concentrated on a single slim light model of elegant design. For higher duties double panel radiators are available in matching sizes or, alternatively, the single panel radiators are extendable by connecting end to end to cover all requirements of emission and space. Unobtrusive cover plates conceal the connections and ensure that two or more radiators connected in series—end to end—appear "as one."

They are available in eight standard lengths and two standard depths—slim single panel and compact double panel.

Also from Copperad is a range of Curved Forward Centrifugal fans. In these fans all the advantages of the curved forward blade type have been retained and in addition an advanced design, which offers stable characteristics with a high perfor



Pour OXYPIC, the **guaranteed** leak repair preparation, into a hot water installation and seal leaks, no matter where they are, in **30 minutes!**

Faulty fittings, bad threads, sand holes, any leak through any cause is sealed economically and quickly. No dismantling needed; no patches or welding; no need to even **find** the leak; no trouble at all!
*Oxypic prevents rust and scale. It can also be used as an active leak preventive.

N.B.—Unsuitable for domestic or draw off systems. Retail Price £1 per tin C.O.D., money refunded if not satisfied.

Full details from:

H. Pickup Ltd.

Dept. I.P.C.2, Roscoe Works,
Scarborough. Tel. 4997/8/9.
6 Charlton St., York. Tel. 24611

Established 1892.

Supplies obtainable from:

K. W. Talbot

Builders' Merchant,
43 Charlemont Street,
Dublin, 2.

mance over a wide range of speeds and resistances, has been produced.

* * *

FENTON BYRN & Co. Ltd., of West Molesey, Surrey, are now turning their wealth of experience to solving heating problems in the home. The result is a range of forced-convection units of clean lines and good design with a very high heat output for their size.

For example, the new VL 30 model, available with polished hard-wood surround, measures only 3' 6" wide, 2' 5½" high by 9¾" deep, yet is equivalent in heat output to 150 sq. ft. of conventional radiator.

The company's domestic range of units covers all normal requirements of the small semi-detached to the larger dwelling. Heat outputs available are from 8,000 B.t.u.'s/hr. to 60,000 B.t.u.'s/hr.—small enough for installation in individual rooms and large enough for central siting for whole-house warmth.

Irish agents: W. Finnucane & Co. Ltd.

* * *

CHANGES in the design and materials used for their Central Heating Regulator have been announced by Hattersley (Ormskirk) Limited of Ormskirk, Lancashire.

The shape of the headwork has

PRODUCT REVIEW

from previous page

been restyled and is moulded from Ivory-coloured Delrin, which is tough and stain resistant and stays cool in use.

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

Two additional patterns with both ends screwed female are now available. These are Fig. 805 with hand-wheel, and Fig. 806 with lockshield. All patterns supplied in sizes ½" ¾" and 1".

Hattersley have also announced a striking new range of easy to operate radiator valves in sizes from ¾" to 1" in both straight and angle designs for use on all low and medium pressure hot water heating systems up to 150 p.s.i. and 250°F.

The valves will be known as the Hattersley Del Flo range and features streamlined, compact

new handwheels and lockshields in ivory coloured Delrin. This thermoplastic material has outstanding qualities of strength, toughness and stain resistance and is attractively translucent in appearance.

Glands are permanently packed with P.T.F.E. impregnated asbestos, assuring a smooth and very easy spindle movement and maximum service life.

Irish agent is W. H. Leech, Esq.

* * *

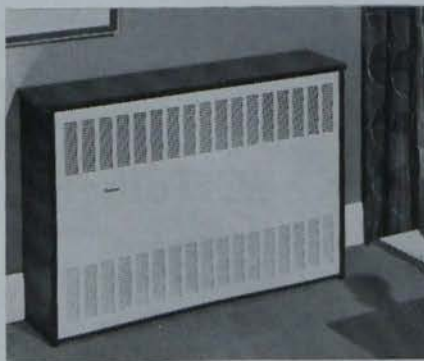
THE RANGE of Nuvello radiators by Steel Radiators Limited of Southall, Middlesex, represents a new Stelrad development. With the 2½ in. wide model 100 per cent. more heating surface per foot run is obtained than with a similar panel radiator, and with the 1½ in. wide model the increase is 50 per cent.

The Nuvello is for wall fixing and is specified extensively for flats, offices and houses. Obtainable in 24 in. only, these radiators are for use on closed circuits only.

Also from Stelrad is their range of panel, double panel, treble panel, two column, three column and six column radiators.



Dunham-Bush multi-purpose converters are pictured in a continuous modular installation.

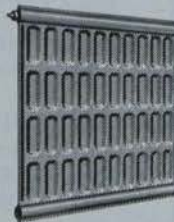


The Model VL 30 forced-convection units from Fenton Byrn & Co. Ltd.

for
CENTRAL HEATING
at its wonderful best

install **dimplex**

PRESSED STEEL
radiators



More efficient, lighter in weight and easier to install than cast-iron, these radiators are virtually unbreakable and will not fracture in frosty weather. They are available in a range of 18 sizes and finished in either primer or stove enamel in a choice of nine colours.

& COPPER
radiators

Designed for use on open circuits, these radiators are non-rusting and, if correctly installed, non-corroding. They will give a lifetime of trouble-free service. Available in a range of nine sizes and in a choice of nine stove enamel colours.



Write for full details to

A. BELL & CO., (EIRE) LTD.
136, Botanic Road, Glasnevin, Dublin

Trade is introduced to new allied range

TRADERS and merchants from all over the North formed an interested audience when Allied Ironfounders announced the latest in their domestic boiler ranges in the Midland Hotel, Belfast, last month.

Last but not one in a successful 16-city tour, the 150 odd guests were greeted by Mr. T. L. Reid, sales director of Allied Ironfounders who, in a short speech, spoke of the boom period in central heating and the seemingly insatiable demand for home heating appliances.

The new ranges consist of the Aga OFP—four oil-fired, pressure jet models with outputs from 70,000 to 140,000 B.t.u./hr., and the Aga G classification—four gas-fired boilers with a 33,000-90,000 B.t.u./hr. output.

Both of the new series have a family resemblance in external styling to the SF models but behind the

NORTHERN FROM ALLEN MCDOWELL NOTES

scenes construction is said to be of a unique and novel design.

The gas-fired range will replace the existing series bearing similar designations.

The OFP is of compact dimensions, especially in comparison to the general trend in oil-fired boilers, and should make an immediate impact. Distinguished by the slightly projecting Nu-Way pressure-jet burner at the base, the "70" model is only 20 ins. wide with a height of 39 inches and overall depth of 27½ ins. The three larger units compare very favourably.

Described as the acme of gas boiler design, the Aga G (gas-fired) is available with or without a small-bore unit. Housed neatly inside the streamlined casing the unit incorporates: electric pump; programme selector switch; push-button electric mains operated ignition as well as a pre-set clock with a two-off, two-on, switch.

- NEW ALLIED DOMESTIC BOILERS
- BELFAST SUCCESS STORY
- FIRST FACTORY BUILT HOUSE OPENED

The boiler body is of cast iron made in two sections for easy assembly, while the unusual flueway is studded to hold heat. All maintenance can be carried out from the front. Dimensions here are again very neat.

Among other Allied Ironfounders' personnel present were: Mr. J. Taylor, sales manager, Northern division; Mr. N. Thompson, Northern Ireland representative; Capt. A. M. McKillop, sales manager for the company's industrial division, while Mr. T. L. Reid, as stated, greeted the guests and answered queries on the new products.

Marketing of the boilers is through the company's Domestic Appliance Division, Sanbury-on-Thames, Middlesex.

NORTHERN NOTES
continued overleaf

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Luxury **AT LISBURN**

Architect Designed : Double Insulation Value
Superlative Quality : Central Heating
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Harkness Construction Co.

Announce the completion of **ULSTER'S FIRST HIGH-SPEED BUILT QUALITY HOME**

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Open for Viewing until 29th February, 1964

Weekdays, 10 a.m.—1 p.m., 2.30—6 p.m. Sundays, 3 p.m.—6 p.m. Evenings: Monday, Wednesday and Friday, 7 p.m.—10 p.m.

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Precision built in 8 WEEKS using modern methods, combined with Factory-produced Components — Several sizes and designs.

Built anywhere in Northern Ireland

ORDER NOW

The Irish Plumber and Heating Contractor.

Ductair system for revolutionary factory-built Lisburn house

THE official opening of Ulster's first factory built house also took place in Lisburn at the beginning of the month.

A revolutionary type of home, the "America Line" bungalow is supplied in sections by Cedar Homes Ltd., Surrey, and constructed on site, ready for moving in, in the incredible time of eight weeks.

The young and enterprising firm concerned with the project is the Harkness Construction Company, Belfast.

Mr. Wm. McKinty of Adam Orr Ltd., who installed the Ductair gas-fired central heating system, told me the dwelling lends itself admirably to the installation and does, in fact, give twice the insulation value of an ordinary cavity brick walled house.

With a floor area of 1,125 sq. ft., the bungalow will sell for about £4,950 complete with central heating and freehold.

The first of these "instant homes" was opened by Councillor Mrs. Marjorie Sinclair. Those at the ceremony included Mr. F. Gooch, sales

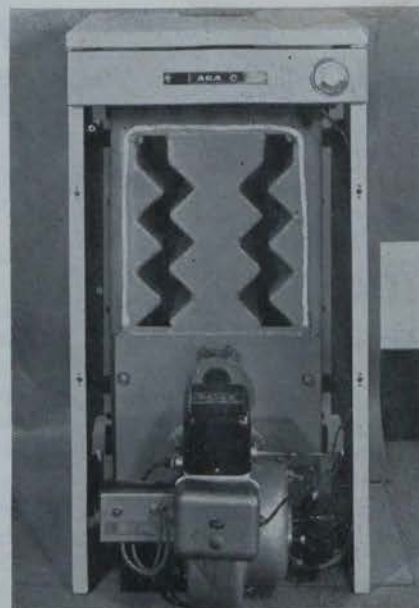
NORTHERN NOTES

from previous page

and technical director of Cedar Homes Ltd.; Mr. M. R. McGown, director of the distributing company in the North, as well as the directors of the Harkness Construction Co., which is essentially a family concern.

in brief . . .

● **G. N. HADEN & Sons Ltd.** have recently been awarded a sub-contract valued at £510,000 for the complete mechanical services at the new Kuwait International Airport. This order was won in the face of strong international competition; 12 firms were invited to tender. Haden's successful tender covers air conditioning of numerous scattered buildings.



The Aga OFP 70 boiler (70,000 B.t.u./hr. output) with front casing removed. This type of zigzag flueway allows a large water-holding area to be heated in a confined space; thus more water is heated faster by a given amount of fuel. (See report, previous page).

BELFAST SUCCESS STORY

IDEAS in home heating have changed a great deal since 1888—the year William Willis opened as a modest plumbing and building contractor in Belfast's Dublin Road.

There were no convector heaters or oil-fired central heating in those days but still young Willis had ideas which—in their own way—were to

help in the development of the luxuries as we know them to-day.

His first patent to be accepted was the Willis Boiler-Cooker, an invention which was soon selling fast throughout Britain and Ireland. From this he developed a fire boiler using the unique method of all-round open fire fitting. And again the idea caught on so that around 1919 the firm was in a healthy position.

Fred Willis took over the firm in 1922 upon the retirement of his father, and the firm continued to flourish as another invention, a hydraulic ram (reckoned the nearest thing to perpetual motion at the time) excited interest. Driving water with its own power, the ram is still to be found in action in Donegal, Monaghan and Cavan.

1950 saw the Super Water Boiler make its entry—an improvement of the Standard boiler marketed 30 years before. Approved by the Coal Board for use in domestic hot water systems, the patent—used entirely from the one open fire—is presently being installed in many housing estates throughout these islands.

Present owner of the firm of Wm. Willis & Co. Ltd. is a grandson of the founder, Mr. David Erskine Willis, while his brother operates Willis Plumbing & Heating, a few blocks away.

Instantaneous HOT WATER from steam— without storage

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

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

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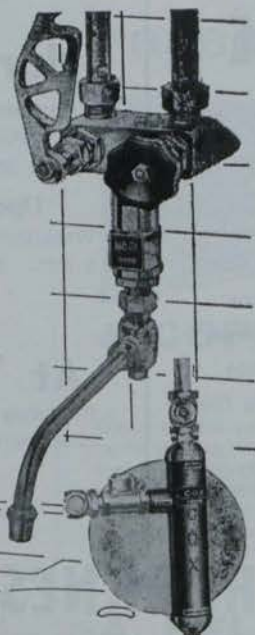
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the BUILDING EXHIBITION

continued

Fenton Byrn & Co. Ltd., fan manufacturers and heating and ventilating engineers, were exhibiting their complete range of ring and axial flow fans, convection heaters, and motorised roof cowls and wall fans.

Of the fans, the latest is the draught-proof, dust-proof extractor fan with a closeable grille operated automatically by a trip switch when the fan is turned on and off. The grille eliminates all back draught and prevents the entry of dust when the fan is not in use. There are two models, 6" and 9", both of which can be obtained for solid or cavity walls.

The company's convection heaters cover a complete range from 8,000 to 80,000 B.t.u.'s/hr. Of these, a range of heaters from 20,000 to 50,000 B.t.u.'s/hr. are available with a choice of elegant surrounds in polished hardwoods. Light-weight glass fibre motorised roof ventilators were also a special feature of the stand. The Irish agent for the firm is Wm. Finucane & Co.

The new "Hollywood" pedestal shield, manufactured by **George Howson & Sons Ltd.** aroused considerable interest at the exhibition. The pedestal, manufactured in vitreous china and available in a wide range of colours, completely hides any unsightly pipes.

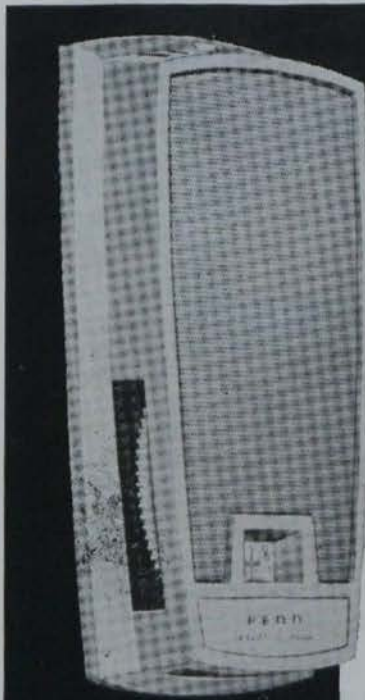
Installation is simple, says the firm, the pedestal being slid into position and then screwed to the wall and floor after the plumbing work has been done. The washbasin itself is fixed on a concealed bracket.

The "Seville," a close-coupled W.C. unit, was also seen on the stand of **George Howson & Sons Ltd.** It has a 3½" full bore trappage with the narrowest part actually at the sump of the W.C., which virtually eliminates the possibility of blockages.

Another feature is that the back wall of the W.C. pan is angled to minimise soiling, while the patented bolting together of cistern and pan ensures ease of fixing and simplification of stocking as standard cisterns are utilised.

The unique "Leonard 72" dual control thermostatic shower valve was the principal exhibit on **Walker Crossweller's** stand at the exhibition. Providing independent selection of

from previous page



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temperature and spray force in one concentric fitting and capable of functioning at the very low head of 3ft., the valve is proving highly popular with architects, builders and plumbers for domestic, commercial, industrial and medical shower applications.

To enable visitors to test the dual action of the valve, a working shower cubicle was installed in the stand. Also displayed was the full range of shower fitting combinations available for the "Leonard 72." The other chief exhibits were the standard and lever-action "Unatap" spray mixing taps.

The stand of **Mirafllo Ltd.**—a wholly owned subsidiary of Walker Crossweller & Co. Ltd.—was devoted largely to a display of Mira domestic shower taps and ancillary fittings. A novel feature of the stand was its additional function as a Shower Information Bureau. Experts were on hand throughout the exhibition to answer the queries of architects, builders, plumbers and the public generally on the purchase, use and installation of domestic showers.

Two new domestic thermal storage heaters were on show for the first time at the exhibition on the **Dimplex** stand. There are two models available—the DSH.225, which is loaded at 2½Kw., and the DSH.300, loaded at 3Kw. They are ideal for providing background heating for rooms "lived-in" for long periods and for halls and landings.

Prominently featured on the stand was a section devoted to the Company's Technical Advisory Service. Visitors to the stand were able to see examples of heating schemes, using Dimplex electric heating appliances, which have been prepared by the Company's engineers for architects, builders and estate devel-

Continued overleaf

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opers. Technical experts were in attendance to give advice on all heating problems. The Irish agents for Dimplex are A. Bell & Co. (Eire) Ltd.

On the stand of **James Barwell Ltd.** was the firm's entirely new conception of a mixer fitting for the modern bath. The new Ambassador Mixer, No. 1316, fits flush on the roll of the bath with the flexible hose hanging out of sight below the roll, when out of use. Twin taps are mounted on the side nearest the user—the fitting can be very easily converted for use from left to right hand. There is an automatic return from shower to bath supply when the taps are turned off.

Two combination fittings for use with steel sinks are also of special interest. One—the new No. 1308 Ambassador Mixer—as a “Deck Type” fitting, fits flush on the upper surface of the sink. The Combination Fitting No. 1310 has a miniature spray—to be used for hot rinsing—projecting from the main body. Incorporated in this fitting is a device which at the touch of a selection trigger automatically injects a measured quantity of liquid detergent into the hot water stream when filling the washing-up bowl or other receptacle.

New designs and developments on display from **Greenwood's and Airvac Ventilating Co. Ltd.** included the “Mechadome”—a powered roof extractor, incorporating controllable louvre blades in extruded aluminium operated by a single motorised control in sequence with the fan motor.

The stand also showed the “Mechavent” Horizontal System, Type CF, for the ventilation of internal bathrooms and toilets in maisonettes and multi-storey flats; “Greenwood's Lloydaire” registers and grilles in Extruded Aluminium; and Residential Grilles—the new Sidewall Register Type 110 features a unique multi-blade damper control mechanism.



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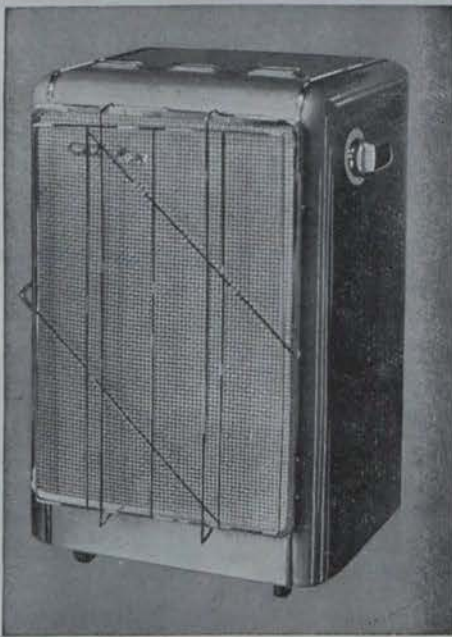
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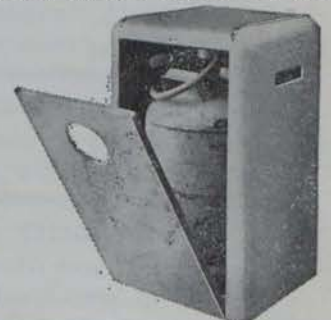


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
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