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

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IRISH PLUMBING & HEATING ENGINEER



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. Hundreds of Mrs. 1970's — hundreds of systems to install and service. It's obviously very good business to give Mrs. 1970 what she wants!

For Central Heating



Irish Shell and BP Limited
Shell-BP House,
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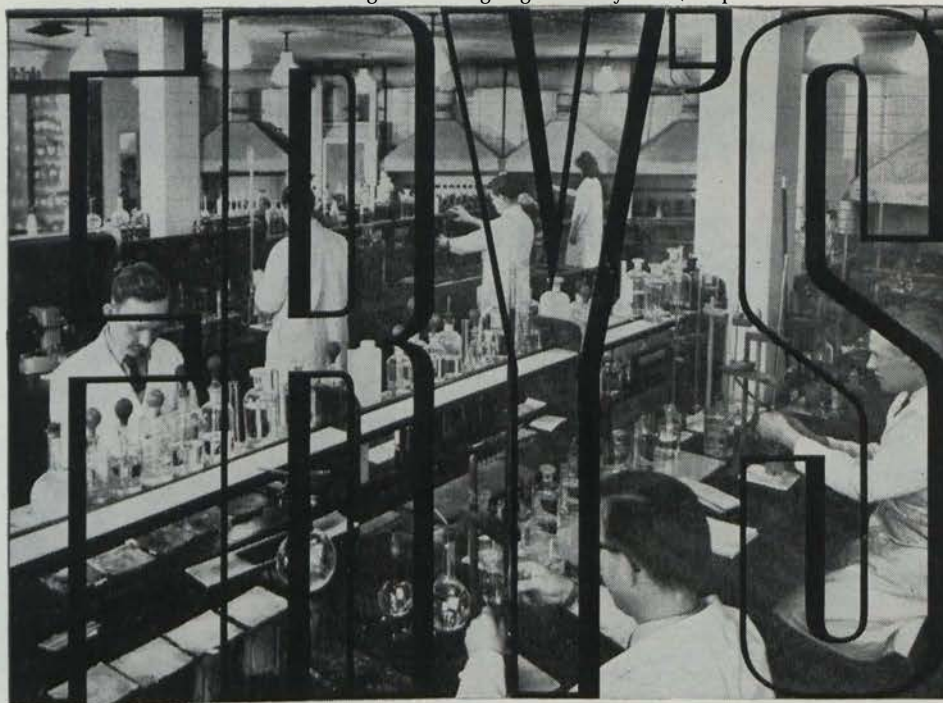
perfection
in
plastic

The cistern which is *different* — not only in its elegant form and brilliant finish, but also in hidden values; in its built-in strength and mechanical excellence.

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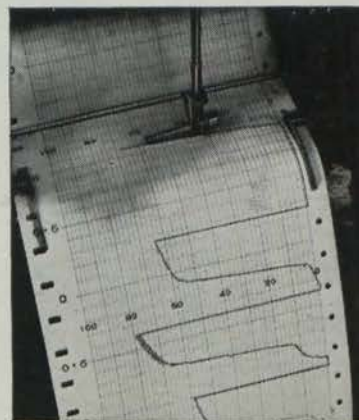
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Orthodox Shape!
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Frost and damage resisting.
Light weight = lower transportation costs.



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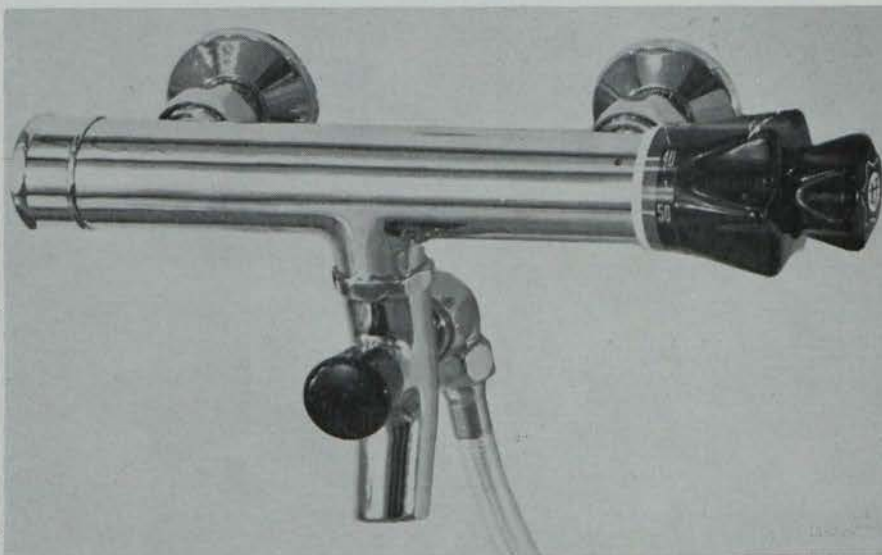
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temperfix

TEMPERFIX—the last word in thermostatically controlled water mixers. Models available to suit all—Hairdressers, housewives, surgeons, hoteliers, etc. User cannot be scalded—valve closes if either supply fails. Set the dial to temperature required and be certain you get only that temperature. Variations in supply pressures do not effect it. Only two controls—one to set the temperature, one to control the flow volume. It will operate on a very low head of water, and hot and cold supply pressures need not be equal. Stocks now available from all reputable Plumbers Merchants.



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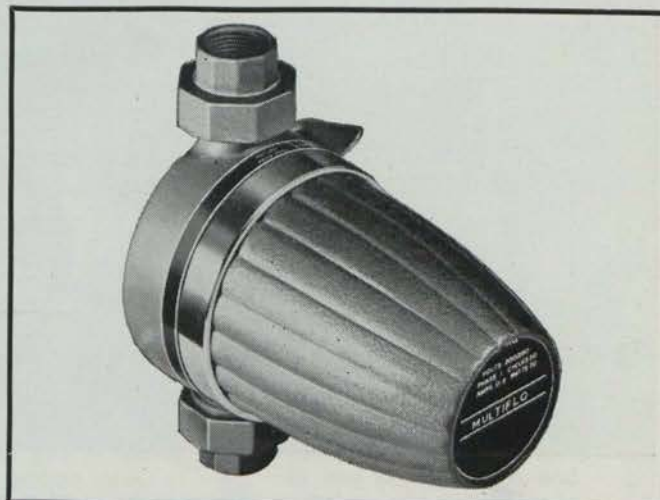
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G. F. Morley Ltd.
45 Quinn's Lane, Fitzwilliam Sq.,
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Great pumps from International

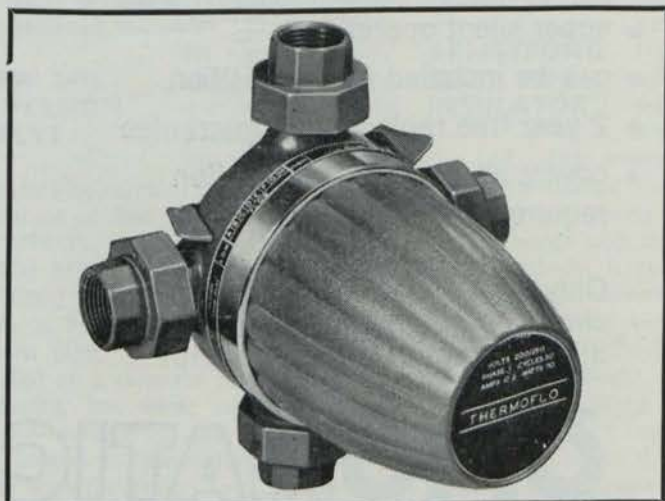
NOW IN QUANTITY PRODUCTION—ALREADY WITH QUANTITY SALES—FIELD TESTED THROUGHOUT THE COUNTRY



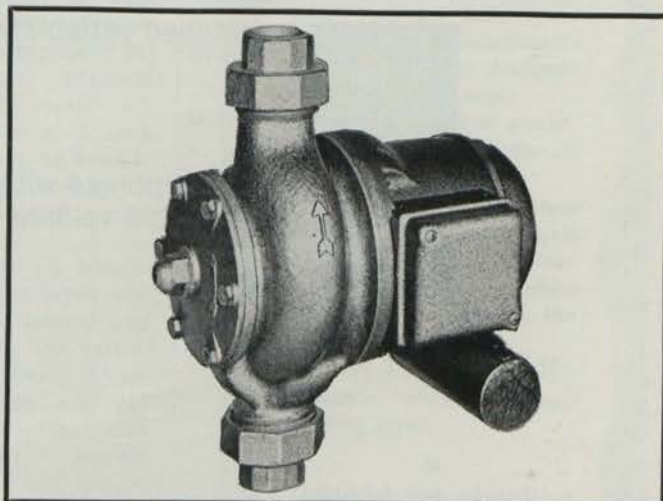
NEW SILENTFLO—suitable for all small domestic installations up to 40,000 B.T.U.s. The RETAIL PRICE is only £16.10.0 and it is a first class pump in the Sigmund tradition. Save time, money and trouble by installing a NEW SILENTFLO.



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THERMOFLO—similar to the Multiflo but has a built-in mixing valve. The RETAIL PRICE is only £23.0.0 which is much less than the cost of separate items, and the Thermoflo is much more compact, and must save installation time.



THERMOPAK CR.I—more of these have been installed in this country than any other pump. Its reputation for reliability and precision engineering form the basis of the steady and heavy demand for this first-class unit. The RETAIL PRICE is £23.16.6.

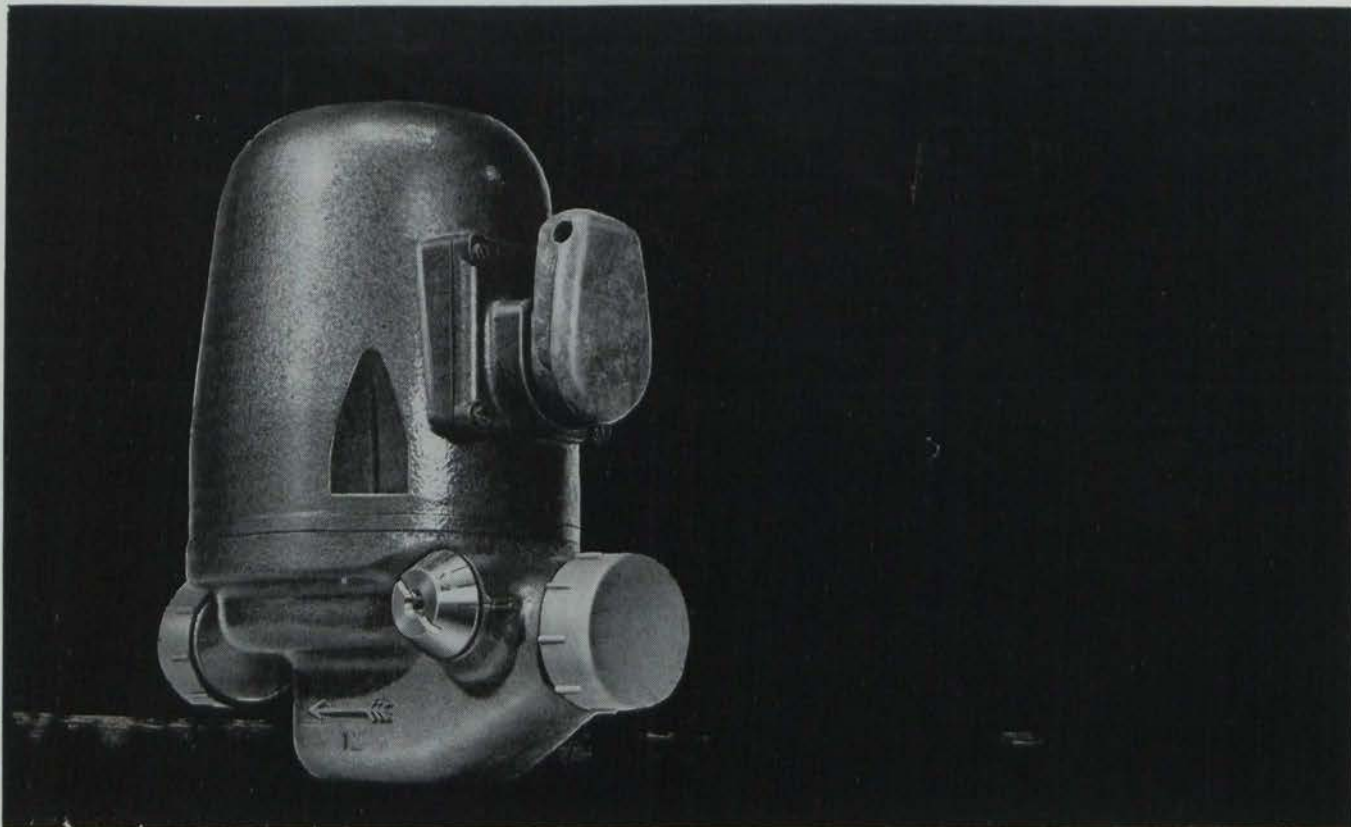
The Brand New International Service Scheme covers these pumps for life—send for details.

International

BOILERS AND RADIATORS LTD

Park House, 22 Park Street, Croydon, Surrey
Tel: Municipal 3581-5
Eire Distributors:
Monsell Mitchell & Co. Ltd.
67/73 Townsend Street, Dublin

Three



ONE PUMP ONLY gives you all this



unmatched variability



clutch combined with
press button venting

- * super silent operation
- * can be installed in any position
- * 2 year free replacement guarantee
- * covers all domestic installation requirements

Only the OPIOMATIC glandless circulating pump gives you all these features in one pump

OPIOMATIC

B.S.A. HARFORD PUMPS LIMITED

Northside House, Mount Pleasant,
Cockfosters, Herts. Tel: HADley Green 2244





Shown here is the extended Santry factory of Sanbra Fyffe Ltd., which was officially opened this month by the Minister for Industry and Commerce, Mr. J. Lynch, T.D.

A WAY has been found at last to silence the splashing and shrieking of water tanks. The discovery of a Dutch firm, it is reported by the Institute for Industrial Research and Standards, may be taken up here by plumbers.

All in plastic, it is said to be essentially silent in operation, largely eliminating the splashing, hissing and groaning of existing tanks.

After the tank has emptied, the water to restore the level is passed through a ball valve, and then through a flexible plastic tube into a small chamber which rests on top of the float.

From here it flows down over the float and slips quietly onto the existing water surface, eliminating splash.

* * *

A NEW diversion valve just released by Midland Industries Ltd. is suitable for use on all domestic central heating systems employing pump circulation.

The range of temperature adjustment is designed to give a choice of flow temperature between 90°/190°F.

The Mil 3-way diversion valve can be fitted into the heating flow pipe with a by-pass connected from the return pipe. The heating mains are treated as a separate circuit from the domestic hot water service and returned water from the heating mains is allowed to recirculate proportionably with the boiler flow, maintaining



Another big HEVAC Exhibition is over. The I.P.H.E. had its own correspondent at HEVAC and his report appears in both sections of this issue.

trade Topics

a selected pre-set temperature in the heating mains.

The Mil diversion valve is thermostatically operated with over-riding manual control. The components are housed in a compact, attractively finished stove enamelled body, with either 1" or 1.1/4" BSP. tappings and can be mounted on either side of the boiler. Each valve is supplied complete with fitting instructions and circuit design information.

* * *

AN EFFICIENT and economical method of pipe insulation is with

ARMSTRONG OFFER PIPE INSULATOR

Armaflex, a flexible foamed plastic insulation material manufactured by Armstrong Cork Co. Ltd. This material is so flexible it can be sleeved directly onto pipes as they are being installed, even around bends and sets.

Alternatively, it can be slit lengthways, snapped around the pipes and the seams sealed with a solvent and rubber contact adhesive. The material can be bought ready-slit if required, but a sharp knife will cut unslit stock very easily. Armaflex has a K factor of 0.78 at 70 degrees F. mean temperature and will remain efficient for many years providing temperatures are maintained between the recommended ranges 30°F.-200°F. It resists deterioration and is equally suitable for hot or cold pipelines to either minimise heat loss or heat gain.

Armaflex is available in lengths up to 6ft. to fit copper and iron pipes from 1/8" to 3 1/2" outside diameter and in wall thicknesses of 1/8" and 1/2". If required an emulsion or chlorinated rubber paint is suitable for decorating. Price, from 1/2 per ft.

IRISH PLUMBING & HEATING

ENGINEER

Vol. 4. No. 2. MAY, 1964

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

When HEVAC closed in Olympia it had smashed all records. Our correspondent was there as part of the big Irish contingent and his report appears in this issue.

Readers will already have covered much of the HEVAC ground with us in our preview issue and will now want to study the final report from this pace-setting exhibition.

Due to our extended coverage of HEVAC we have had to hold over W. J. R. Couchman's fourth article on domestic heating installation.

Allen McDowell contributes Northern Notes on page thirty-eight.

The Special Review topic this month deals with pipes, tubing, fittings and jointings. A Product Review accompanies the review.

Trade Topics report the month's plumbing and heating news.

Editorial and advertising offices:

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

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

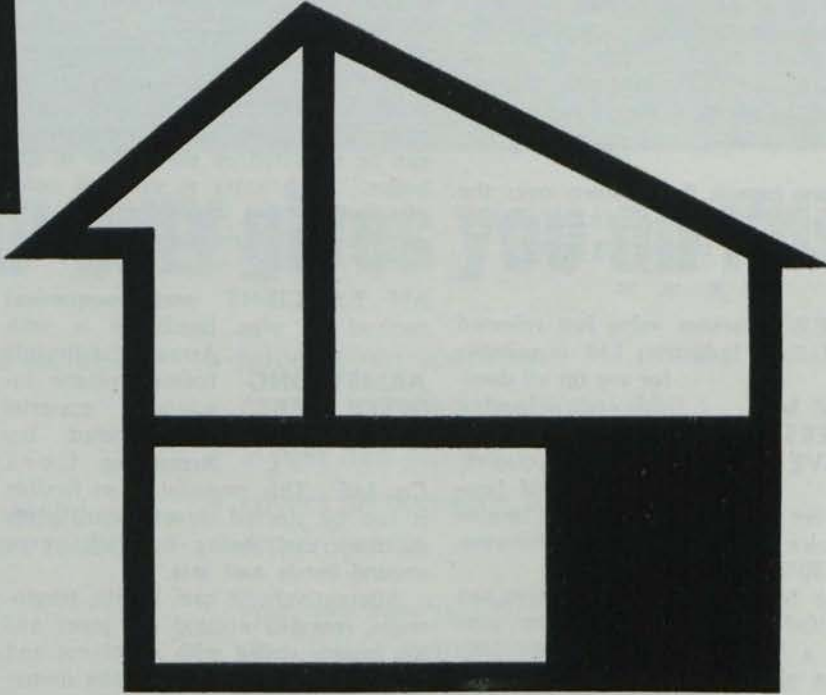
Belfast: Allen McDowell,
43 Horn Drive, Belfast 11.
Phone 614606.



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Yes, Caltex Technical Advisory Service can give you the complete answer to your problems in connection with heating, steam raising and heat conservation.

Whether your problem is centrally heating a bungalow or the insulation, heat conservation or water treatment in an industrial plant.



Caltex service covers every aspect from actual designing to the delivery of fuel oil.



CALTEX HAS THE ANSWER

Consult: Caltex (Ireland) Limited . 6/7 Lower O'Connell Street . Dublin.

trade Topics

"WE should be very pleased to welcome entries from every part of Ireland," said a **1,100 GUINEAS IN HEATING AWARDS** spokesman for the sponsors of the recently launched 1964 National Heating Awards, when asked if Irish entries would be accepted.

Eight awards, totalling 1,100 guineas, will be made by the sponsoring company, the Valor Company Limited.

These awards—of 500, 250, 100 guineas, and 5 of 50 guineas—for papers not exceeding 4,000 words in length, with drawings as appropriate, on the theme, "Domestic Heating of the Future—a Projection Towards A.D. 2,000."

The basic qualification for entry is that the applicant should not have reached his fortieth birthday on October 1, 1964, the closing date for entries. The sponsors hope in particular to encourage participation by heating engineers, architects and architectural students, electrical, gas and other fuel engineers, management, engineering, design, development, marketing and other persons employed by fuel undertakings, appliance manufacturers and distributors.

The aims of the awards are to encourage creative thought and planning about the domestic heating industry and the contribution which it can make to the domestic architecture and environment of the future. All proposals or systems suggested in entries must be scientifically or tech-

nically based upon known lines of development and may be related to any fuel or type of appliance.

All correspondence and applications for entry forms should be addressed to: Norman J. Hart, Secretary, National Heating Awards, 196 Shaftesbury Avenue, London, W.C.2. It is hoped to announce the results of the awards in early January, 1965.

* * *

STANDARDS FOR SMALL BORE HEAT

STANDARDS for small bore domestic central heating systems have been published in Britain. They are contained in a 28-page booklet prepared jointly by the Heating and Ventilating Contractors' Association and the Institution of Heating and Ventilating Engineers in consultation with the fuel interests, manufacturers and other interested bodies and associations. The booklet is divided into two parts.

The first comprises a Guide to Good Practice for the design and installation of small bore systems. The second lists the minimum items of technical information which a customer should receive in an estimate for a small bore system and covers purpose-designed systems and packaged systems.

Copies of the "Guide" are obtainable (price 2/6) from the Heating and Ventilating Contractors' Association, Coastal Chambers, 172 Buckingham Palace Road, London, SW1.

* * *

IDEAL-STANDARD Limited are now marketing a dual flush cistern. It is

IDEAL CISTERN GIVES 25 P.C. SAVING

available in two forms—for use in a low level suite (fitted with a flushing handle), and for use at high level (with a chain and pull).

The cistern and its siphon are made of vitreous china. The choice of



Dual Purpose Ideal Boiler

THE new "Ideal-Rondo" round firepot hot water boiler has many advanced features and is very competitive in price. It will supply all the hot water the average family needs—at a very reasonable running cost. With a two hourly refuelling period, it has an output of 20,000 B.T.U. per hour. Its B.S.S. continuous output with four hourly refuelling is 12,500 B.T.U. per hour. Attractively designed to suit the modern kitchen, it has a neat white stove enamelled casing and a durable vitreous enamelled cast-iron top plate.

flushes is made as follows: for one gallon the handle is pressed and released immediately; for two gallons the handle is pressed and held till the flush is complete. The "Ideal-Standard" dual flush cistern has been successfully tested by a leading corporation. In the houses concerned the method of operation was readily understood and a substantial water saving was shown on the meters specially fitted for the tests.

The cisterns are supplied with operating instructions permanently fired into the glaze on the lid of the cistern, where all users can see them. If all water closets were fitted with the new cistern the saving in a residential area could approach 25 per cent.

● THE QUARTERLY magazine of the Hammond Lane group of companies—"One Hundred and Eleven"—celebrates its Silver Jubilee with its current issue.

This Silver Jubilee issue contains a special message from the chairman, Mr. D. D. Frame, together with appreciations of "111" and a souvenir section.

BATHROOM



BATHTUBS LTD., of Addingham, Ilkley, Yorkshire, have introduced their transition from the old-style, clumsy baths to the sleek, trim "Viking." Made from a revolutionary new re-inforced plastic material, the "Viking" bath combines many special features—will not chip, corrosion resistant, rigid, light, easy to

fix, easy to handle and virtually unbreakable.

The "Viking" is available in white and a range of B.S. bath colours at the same price. Each bath comes complete with a patented cradle to which bath panels may be fixed without the necessity of additional structures—thus showing additional savings on labour and material.

NEWS

The Irish Plumbing and Heating Engineer.

THE largest Irish trade contingent to visit HEVAC attended this year's international exhibition in Olympia. And despite a curtailment of three days—labour problems delayed the opening—the exhibition proved the most successful so far.

The Irish trade was there in force with the biggest turnout since the first HEVAC in 1961. In fact, during the exhibition Belfast's Everton Engineering Co. maintained a shuttle service to London for their staff with the company's own executive aircraft.

The automation of home heating was one of the outstanding developments featured at HEVAC. Control systems have been simplified to bring them to the same degree of solid reliability as the old-fashioned man-operated "push the damper in" technique. Some of the systems shown use electronic black-boxes, made up of solid circuit elements that can be expected to work for years without attention.

This year's HEVAC, organised by Industrial Exhibitions Ltd., was the biggest ever. The stands occupied a record area of 90,000 square feet.



Although it was curtailed by three days because of labour difficulties this year's HEVAC brought in 43,274 visitors. The last exhibition, in 1962, had an attendance figure of 35,000.

An estimate by a spokesman for the organisers, Industrial Exhibitions Limited, gave £7 million as the likely figure for business actually conducted at the exhibition. "This does not take into account the large number of enquiries placed with manufacturers," he added.

The exhibition highlighted the battle between the solid fuel, oil, gas and electricity interests to fulfil the expanding demands for home central heating. All are claiming record figures for the number of installations made during the past few months.

In his speech at the opening of the exhibition, Mr. C. H. Goodwin, MIHVE, president of the HEVAC Association and chair-

man of the Exhibition Advisory Committee said the exhibition's increase in size was to be expected and that it reflected the vital expansion of the industry.

"We can show a fifty per cent increase in turnover in five years. We can expect a similar expansion during the next five years; and it would not be over-optimistic to forecast that our present activities, representing some £300,000,000 a year, will double in a decade," he said.

People were demanding much higher standards of comfort and hygiene in their factories, their offices and their homes. The householder no longer thought that he was pampering himself and his family by providing reasonable warmth. Employers were finding—as the Americans, Canadians and Swedes found a long time ago—that the increased efficiency of a worker under conditions of clean air at the right temperature more than compensates for the cost of air conditioning. In our stores, proper air conditioning and heating had become as important as, say, price-cutting in holding on to the customer!

A NEW boiler—the 0.75—for domestic use and bringing Triancontrol to oil firing by pressure jet, was introduced by **Trianco Ltd.**

The new boiler, burning 35 sec. gas-oil, has exclusive features of construction in the form of "four square" patented inclined flue ways. This form of heat exchanger allows the hot gases to pass up inclined tubes keeping in close proximity to the heating surface by patented flue gas retarder inserted into the tube. The boiler has a vertically inclined forward arrangement offering low resistance to flue gases, thus reducing the chimney draught to a minimum.

The boiler is so designed to allow its installation in the minimum plan area and the flue arrangement can be within the body area with boiler close against a wall. All these points of design and construction make the 0.75 especially suitable for small house heating and to supply domestic hot water and hot water for eight to twelve or more radiators.

Output rating: 75,000 B.t.u.'s/hr.

Eight

Coupled with this are all the features of Triancontrol—automatic operation, great fuel economy and thermostatic temperature control inherent in all Trianco domestic boilers.

Fibreglass Limited showed how they have contributed, through the advancement of insulation design, to the rapid expansion of comfort controlled living in homes, offices, factories and public buildings. Comprising the main feature of their stand was an installation of Fibreglass Prefabricated Ducting—a revolutionary product which forms a complete insulated duct in itself. Supporting displays feature Flexible and Rigid Duct Insulation (both for external insulation of metal ducts) and Flexible Duct Liner (for sound-reducing application inside metal ducting), together with the well-established range of Fibreglass Air Filters.

All **Revo** thermal storage heaters seen at the exhibition had controlled output and were available in four sizes with various storage capacities from 35,000 to 160,000 B.t.u.'s, and



The Rootes Tempair "PA" portable air conditioner.

input loadings from 3 to 6 kilowatts. Using Revo controlled output heaters means that central heating by thermal storage units is even more economical than before. This is because a room thermostat is incorporated in the heater circuit to give warmth when it is wanted whilst preventing the room becoming overwarm, as is possible with an uncontrolled output heater.

Continued overleaf

Thermal Radiators Limited, manufacturers of the Thermalrad convector radiator and distributors of the Ranco thermostatic radiator valve, who commenced trading in the Spring of last year, now report very rapid progress in the Heating Trade. Their stand showed a working model of the Thermalrad radiator with a Ranco valve connected shown opening and closing with change of temperature; selection of various sized radiators, including one 14 ft. long; and a number of both chrome and brass valves.

Internal air pollution is dealt with by the improved H-R radiator humidifiers, with their patented feature of upper louvres for ejection into the room of the humidified air by the convection currents from the radiators, are combined with the Hygromat Mk 11 in its portable or fully automatic version for all conventional central heating systems based on radiators. The unit was shown by **Hygro-Robot Ltd.**



At HEVAC were Mr. E. W. Pigot, Domestic Heating Supervisor, Irish Shell and B.P. Ltd., and Mr. D. Mooney, Domestic Fuel Superintendent.



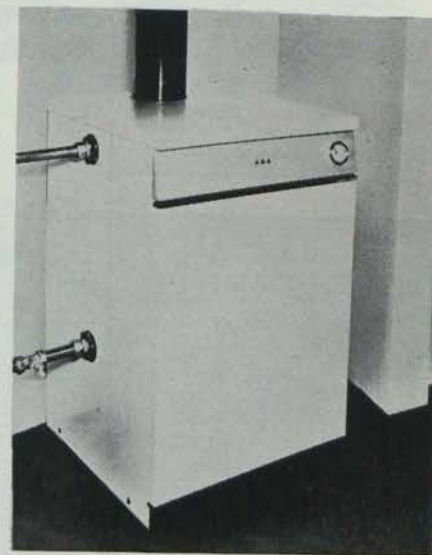
from previous page.

The Hygromat Mk 11 combined with the new A.C.S.M. Executive, provides a clean, properly balanced and invigorating atmosphere when used in conjunction with ducted warm air systems, electric storage heaters, under-floor heating, skirting heating, or even the ordinary electric or gas convectors and fires. Two completely different systems are used in these electrical appliances. The Hygromat is basically an aerosol atomiser. The Executive could be called an electric evaporator.

A new Mercury convector heater developed by **Short Brothers & Harland** was shown by **Uni-Tubes**. The designers' aim has been to achieve maximum efficiency by heating over an extended length at lower levels of the room. The kit supplied offers the alternative of free standing or wall attachment features.

The element itself consists of lengths of 80/20 nickel-chrome wire woven into an insulation tape. This fibre-glass tape is hermetically sealed with resin to prevent oxidation and totally enclosed in a $\frac{3}{8}$ " diameter convoluted Kopex tube which provides both protection for the unit and, more importantly, a greater surface area to warm the air.

The assembly is fixed to a steel



Prominent among the latest equipment for central heating is the Aga SF 50 (50,000 Btu/hr) solid fuel boiler manufactured by **Allied Ironfounders Ltd.** Features are economy of operation, thermostat control, simple fuelling and ash disposal, and the new Aga styling. Overall dimensions: height 36", width 21", depth (front to rear) 23".

support plate and is suitably placed to permit free air-flow across it. Despite there being only one element, three thermal ratings are available, giving 1,135 B.t.u.'s, 2,270 B.t.u.'s, and 3,412 B.t.u.'s, respectively. Selection is simply controlled by a four-way rotary switch.

Lennox Heating Co. Ltd., of Croydon, Surrey, the company which introduced warm air heating equip-

HEVAC SAW A FOUR-PRONGED BATTLE

A four-pronged battle for the privilege of warming the home was launched in London this month when the International Heating, Ventilating & Air Conditioning Exhibition (HEVAC) opened at Olympia.

Solid fuel, gas, electricity and oil interests are competing for what this year is expected to be the biggest domestic switch to central heating. Although in the past 12 months all the heating people are claiming record or near-record business, only a small percentage of the nation's homes are at present centrally heated.

There are, however, outstanding indications of an impressive change-over. Gas fired central heating, for example, is now being installed in both north and south, and the big growth in electrical warming shows every sign of continuing.

One of the big appeals of solid-fuel central heating, which is taking its share of the market, is the variety of new systems with easy fuelling and ash-handling. Continuous automatic solid fuel feeds have been simplified, while all criticisms of "dirty old boilers" have been overcome by dust-free cleaning systems. Another solid-fuel heating appeal is the more general introduction of temperature control systems.

There has been a pronounced advance in the sales of oil burning systems, largely based on the advantages of bulk fuel supplies, ease of maintenance and the application of economy controls which relate the fuel consumption to local weather conditions. The sales of individual oil heaters have recovered following the

severe blow when they came under criticism as potential fire dangers. The industry is rapidly regaining their markets with the introduction of heaters that conform to the new specification.

The HEVAC exhibition this year had a greater than usual international appeal. Apart from overseas firms who were exhibiting directly, other manufacturers from all over Europe were represented by their British agents. Foreign participation represented some 10 per cent. of the exhibition.

Last year, visitors were attracted from 46 countries overseas. "This year," a spokesman of the organisers, Industrial Exhibitions Ltd., said, "the show was larger and more comprehensive and international interest has been wider than ever before."

The Irish Plumbing and Heating Engineer.



from previous page



Compactness is a feature of the Parkray G.301/1 and G.301/2 gas-fired small-bore central heating units which are wall mounting, saving valuable floor space for other kitchen appliances. In this typical installation the unit has been neatly concealed in a cupboard under the draining board.

ment to the British market at the 1962 HEVAC Exhibition, this year made its debut in the water-heating field. Lennox gas storage water heaters are compact and self-contained, eliminating the necessity for a separate storage cylinder, giving an obvious reduction in installation costs.

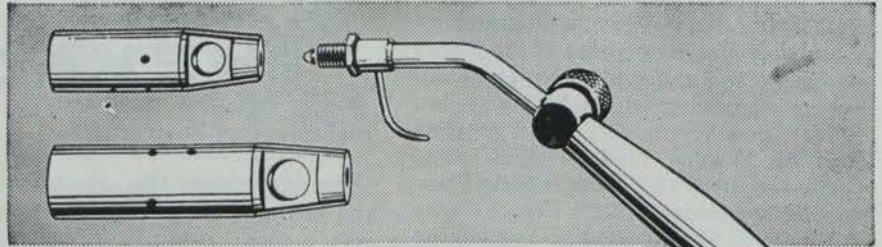
The model on show was the Lennox 20/20 which has a 20-gallon storage capacity. The other two models in the range have 30-gallon and 40-gallon capacity. All three recover their full capacity of hot water in one hour.

in brief . . .

A NEW brochure from Luwa (U.K.) Ltd. gives technical information on their Ultrafilter cells with special paper media combining exceptionally low pressure drop with high gas throughput, and high filtration efficiency (up to 99.98% at 0.4 micron particle size). Copies may be had from the company's address at 340 Clapham Road, London, S.W.9.

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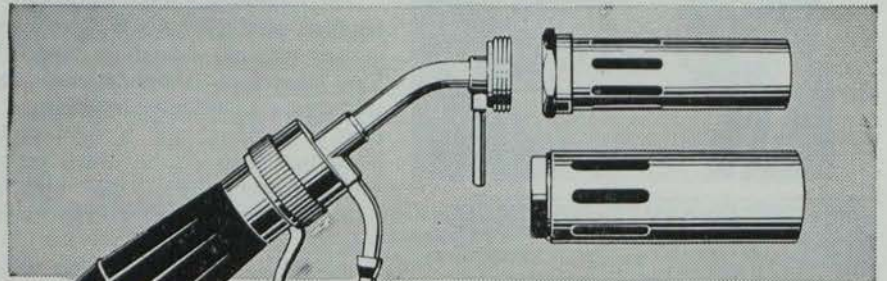
THE ANNUAL general meeting of the Institution of Association of Consulting Engineers will be held in Dublin in 1966.



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

Kosangas Blow Torches

for every plumbing job!



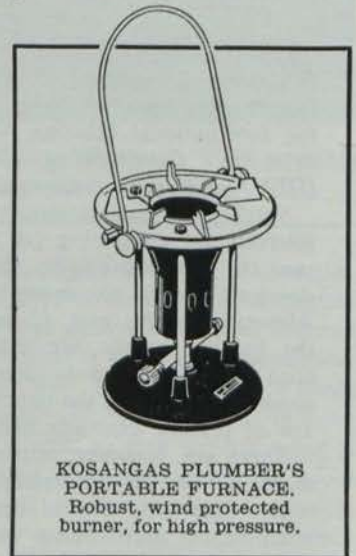
Bullfinch Mark II Blow Torch. New, patented, trigger valve, leak-proof, never needs adjustment. Micrometer bye-pass, saves £££'s on gas. Complete range of burners.

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

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

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

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



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

Send for fully descriptive lists and leaflets to:

McMullans Kosangas Ltd., 1, Upper O'Connell St., Dublin. Tel. Dublin 40761-4.

SPECIAL REVIEW

THIS MONTH

PIPES, TUBING,
FITTINGS, JOINTINGS

UNPRECEDENTED DEMAND FOR TUBES AND FITTINGS

A quite unprecedented demand for tubes and fittings, particularly copper tubes and solder capillary fittings, really has the merchants wondering how best to satisfy their clamouring customers.

Perhaps the run on copper will cause some to seek alternative tube materials. Since the "boom" in small-bore central heating is generally blamed for the present state of events, then we might yet see more engineers and plumbers going over to more practice in oxy-acetylene welding. There is no shortage of $\frac{1}{4}$ -in. black M.S. tube and this, with welded joints, could well be used in small bore work.

Tube joints show little change these days but I am reminded by a display

of expansion fittings I saw at the HEVAC exhibition of the need to use such joints where long runs of the now popular skirting heating are used.

Also on show at HEVAC was the "Kopex" uni-tube flue linings for gas and oil-fired appliances, using conventional brick flues.

The appreciably higher thermal efficiencies of modern boilers does lead to lower fire gas temperatures and consequent greater risk of damaging condensate on the internal brickwork. These linings, grade AL/K2/L for gas appliances, and grade LAL/2A for oil burning ones, are finding increasing use in the domestic boiler field.

Machine made bends reduce the

number of fittings required on copper tube jobs. A really portable, easy to use bender becomes an asset on any firm. The new design Tubela Mini-Bender at £12 10s. 0d., is well worth looking at, as also is the Hilmor GL Minor at £10 5s. 0d. Both machines take $\frac{1}{2}$ -in. and $\frac{3}{4}$ -in. copper tube.

And to close, now that outside diameters of plastic tubes have become standardised, we may find more manufacturers prepared to make attractive and competitively priced fittings.

PRODUCT REVIEW begins on page thirty-three.



ARKES

MALLEABLE IRON TUBE-FITTINGS

FOR GAS, OIL, WATER
AIR AND STEAM SYSTEMS

G. B. PARKES Ltd.

Crown Works, Halesowen, Nr. Birmingham, England.

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- A large number of reducing sizes are made for the heating trade which eliminates the need for bushes.
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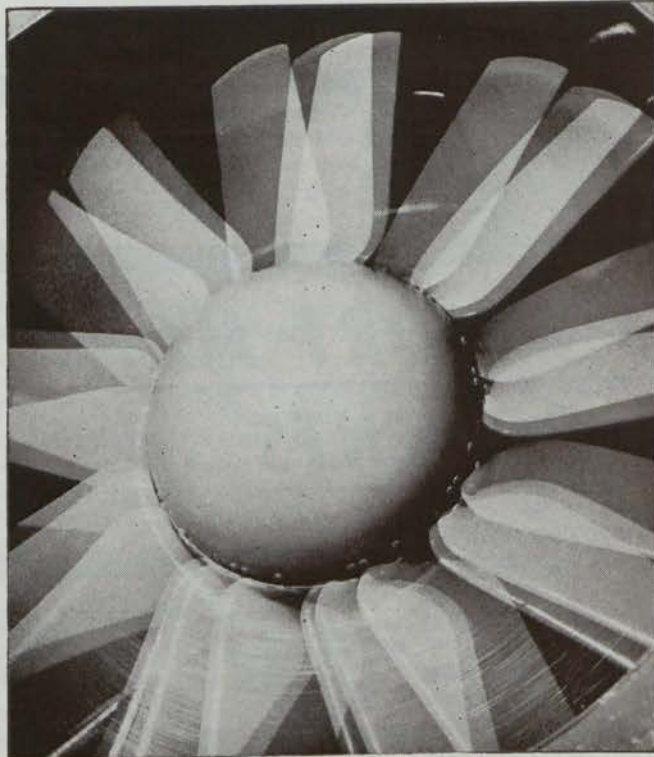
niques. They can be laid in long lengths without jointing, are non-corrosive, acid resistant and easy to handle, cutting costs in labour and time. In Ireland S & L High Density Polyethylene Piping is bringing water on tap at low cost to farmers and rural communities. By constant, forward looking research, Stewarts and Lloyds have developed a wide range of joints for use with these new materials. All this technical skill, experience and research is at your service here in Ireland—when you need piping call S & L.

PIPES FOR PROGRESS

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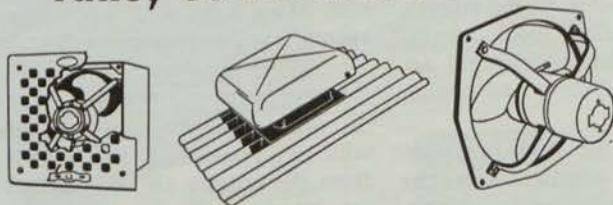
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The industrial section devotes much of its space to an extended report of the HEVAC Exhibition, which this year drew a record attendance at Olympia.

This month's report, coupled with our preview coverage in recent issues, provides readers with comprehensive and detailed information from this highly important event.

Our Special Survey feature this month deals with air conditioning and refrigeration, ventilation and ducting.

Daniel Heeney's concluding contribution under the heading Mechanical Refrigeration To-day, has been held over and will appear following next month's Special Directory issue.

Trade Topics review the month's news.

NUMBER 5 — Presented with the May, 1964, issue of the Irish Plumbing and Heating Engineer.

Editorial and Advertising Offices:

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

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

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



MONTHLY
**SPECIAL
REVIEW**

AIR CONDITIONING,
REFRIGERATION,
VENTILATING,
DUCTING

MANUFACTURERS REPORT MANY NEW DEVELOPMENTS

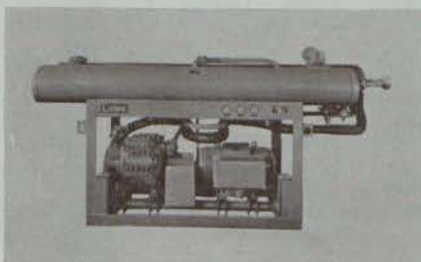
THE LATEST additions to the ever-growing range of RCM air distribution products are the Varicore grilles. Each of these has a removable core and is for use in ceilings or walls, chiefly for extract purposes. The range at present comprises types VSS, VDL, VPS.

The frame of the RCM Varicore grille is of extruded aluminium into which can be fitted whichever core suits design requirements. The grilles are available with opposed blade dampers or equalising grids. Standard sizes are in multiples of 2" up to 48" x 48"—other sizes can be made to order. The agents in Ireland are Mr. P. J. Noone, 5 Upper Fitzwilliam St., and Mr. J. Luke, Sandyhill Park, Drumbeg, Dunmurry, Belfast.

* * *

A COMPREHENSIVE range of air conditioning plant of advanced design and first-class construction is marketed by Luwa (UK) Ltd., Reliance House, Clapham Road, London. The equipment has been designed on a unitary basis to include most duties and applications, and wide use has been made of a component assembly principle which provides great flexibility of application.

Examples from the range include the following: the Luwair SK self-contained air conditioning apparatus with water cooled condenser and in-



The Luwa water chiller.

tegral refrigerator unit, available in five capacity ranges of from 3 h.p. to 6 h.p.

The Luwair S and SV standard units have been designed for air conditioning, air heating and ventilating, using chilled and/or hot water from a central system. There are many possible assembly combinations from standard components.

The WK water chilling machines are for use in larger commercial or industrial installations and also process cooling. These are standard, packaged, fully automatic units supplied ready for service. A complimentary range of cooling towers is also available.

* * *

G.E.C. OF IRELAND Ltd., under the name of their associate company, Messrs. Woods of Colchester, manufacture an extremely wide and comprehensive range of electric fans and ventilation equipment ranging in size from 3½" blade diameter to 95" blade diameter. This new range can be divided into five categories:—

Aerofoil, axial flow fans, air duties of 50 CFM to 240 CFM; Propeller Fans, most popular in commercial, industrial and agricultural applications, and all sizes are carried in the Dublin stock; Roof Extracting Units, suitable for factory and office block ventilation, and for certain agricultural applications, such as piggery and poultry houses.

Xpelair—one of the most competitively priced unit ventilators on the market, complete with speed regulator, back draught shutters, totally enclosed motors, quiet operation and many other desirable aspects; Portable Cooling Equipment—under this heading G.E.C. manufacture table bracket and ceiling fans ranging from 7½" plastic desk fan at 63/- to 56" diameter ceiling fan at £33.



Due to our extended coverage of HEVAC the introduction for this survey has been transferred to page 31. In conjunction with this survey we review here equipment developments in these fields.

G.E.C. of Ireland Ltd. have their head office and works at A.E.T. Works, Dunleer, Co. Louth, and their domestic equipment showrooms at Dame Street, Dublin.

RCM (Air Distribution) Limited have announced the introduction of their Rotary H. and M. Ventilator. It is designed primarily for fan assisted toilet extract ventilation in internal lavatories. The adjustment of the ventilator is tamper proof and can be locked in any one of five positions to effect balancing of the air flow on multi-point systems. The adjustment and locking can be accomplished by means of a recessed head screwdriver.

Technical details of the RCM Rotary H. and M. Rotary are as follows: the material is of aluminium—self colour; the free area in full open position is 3.4 sq. in.; and the sizes of the fixing plate are 7½" x 7½", with fixing holes at 6½" cts. and 10" x 10" with fixing holes at 8" cts. The Irish agents are the Heatovent Supply Co.

* * *

WRIGHT HEAT pumps work on the principle of vapour compression, utilising a refrigerant. Heat is extracted from the outside air and used to heat the interior of the premises—even when temperatures are below freezing, heat energy is available in the atmosphere, giving the heat pump its boost and its economy. Alternatively, in summer, simply by reversing the flow of refrigerant, heat is absorbed from the interior of the building and passed to the outside.

In practical terms, a Wright heat pump actually gives out more heat than the equivalent in-pot of electrical energy. One of the leading heat pump manufacturers in the United States, where the pumps are widely used and cope successfully and economically with the wide extreme of temperature, is Wright Manufacturing of Arizona. Their complete range is available through Smith, Bell & Co. (London) Ltd., Marlon House, Mark Lane, London EC3.

* * *

THE COLT MF Ventilator is the first dual-purpose fire ventilator designed from first inception to give, as well as fire protection, fully weather-proof extraction for day to day use. The design is based upon the principle of the Colt SR Ventilator that exhaust openings at the top and sides will give the most efficient rate of extraction, completely unaffected by the strength of the wind and fully secure against the entry of weather.

In the Colt MF Ventilator the rate of extraction is considerably increased because the resistance to air-flow has been brought down to a level never before achieved. Its low profile means that it projects above the roof less than any fully weathered natural extractor.

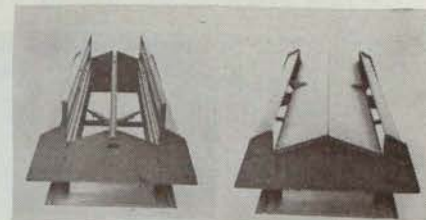
SPECIAL SURVEY

from previous page

The sizes immediately available are the 2050—base 2ft. x 5ft., overall width 28½ ins., height 14½ ins., throat width 14 ins., with 6 ins. top flanges and 4 ins. bottom flanges; the 2060—base 2 ft. x 6 ft., overall width 28½ ins., height 14½ ins., throat width 14 ins., with 6 ins. top flanges and 4 ins. bottom flanges; and the 3080—base 3 ft. x 8 ft., overall width 4 ft., height 1 ft. 9½ ins., throat width 24 ins., with 6 ins. top and bottom flanges. Other sizes will follow.

THE NEW flat-pak Ductair metal ducting by Radiation Central Heating Ltd. simplifies and greatly reduces the cost of installing ducting for warm air central heating systems. From twenty standard components and only nine basic shapes the installer can make all ducting normally required.

We saw in a Review of this system earlier this year that where only one installation or a small number of similar layouts is to be carried out, the fabrication can be executed easily and quickly on the site, thus eliminating the need for detailed drawings for the metal worker. For schemes involv-



In the open position (left), the Colt MF Ventilator gives clear, unimpeded exit for smoke and fume when fire breaks out; in the closed position (right) it gives fully weatherproof day-to-day ventilation.

ing a large number of similar layouts, 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 made assembly sections.

* * *

DOUGLAS Metal Industries (UK) Ltd., Upper Brood St., Trowbridge, Wiltshire, have available a comprehensive range of grilles and diffusers. From their range we note the "Prestige" series SVO and SHO, which combines return air grille with opposed blade damper to ensure an exacting

Continued overleaf

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VOKES

'ABSOLUTE'

AIR FILTERS

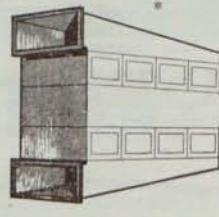


1. Vokes High Temperature 'Absolute' filter. To withstand temperatures up to 1000° F.
2. Vokes 'UNIPAK' system, available in many different sizes for a wide range of air volumes.
3. The Methylene blue test rig at Henley Park, headquarters of the Vokes Group.

Vokes 'Absolute' air filters were developed for use in nuclear energy applications where inefficient filtration could lead to hazardous conditions for both equipment and personnel. Their outstanding performance (99.95% efficiency against particles in the 0.1-0.5 micron range) has quickly led to their adoption by laboratories, food processing plants, etc.—in fact, wherever a need for super efficiency filtration exists. For further information please write for catalogue HJ.

Variants of the 'Absolute' filter include High Temperature High Humidity, and Acid Resistant types—all with a guaranteed efficiency of 99.99% against sub-micronic particles. 'Absolute' filters are available as canister types using an all welded canister assembled between headers, and Vokes can also supply 'UNIPAK' systems for housing several panels in easily-serviced, space-saving units.

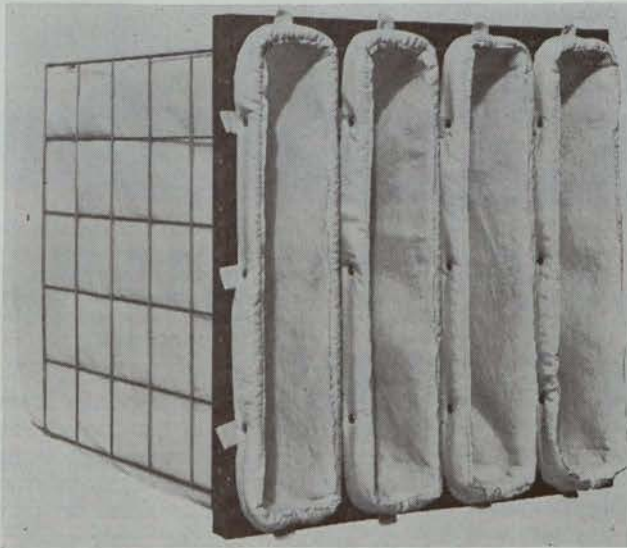
Vokes 'Absolute' filters are tested in accordance with BSS.2831 on a methylene blue test rig. Every filter is subjected to a stream of air containing particles of methylene blue 'dust' ranging in size from 0.1 to 0.5 microns, and rejected if its efficiency is less than 99.95%. Vokes is the only British company to guarantee minimum performance figures in this way and Vokes filters are therefore widely used in all applications which require scientific filtration.



Comprehensive literature covering all Vokes filters is available on request from the Sole Agents:

THE LEINSTER ENGINEERING CO. LTD.

VOKES



**SPECIAL
REVIEW**

from previous page

● The new Uni-Vee bag filter from Vokes (see below).

volume control. The stylish serrated boarder of the grille encompasses all the new Douglas "Aero-Dyne" streamlined fins.

The opposed blade damper is operated with a screwdriver through the face of the register. "Aero-Dyne" vanes are factory set at 35 degrees, unless otherwise specified. The unit is finished in raw or anodized aluminium, prime coat or any desired plated finish.

* * *

VOKES' latest air filter is the Uni-Vee Bag Type for general air conditioning, ventilation and industrial air cleaning, particularly where heavy dust-laden and sooty atmospheric conditions exist; can be used also as a pre-filter in high efficiency systems.

Each unit comprises four filter bags which are manufactured in three grades of material to Vokes own stringent specifications and fitted into a

robust steel housing—a holding frame with detachable wire mesh supporting frames. A turned back cuff on each bag locates over a spigot on the main frame and attached to each cuff are a number of studs which snap into sockets around the spigot periphery, thereby ensuring easy, positive location and sealing of the bag.

The grade "A" bag for high efficiency application has an average efficiency of 99.8% against No. 2 Test Dust BSS 2831, and 80% on the Methylene Blue Test Cloud. Grade "B" is an intermediate efficiency bag having an average efficiency of 99.3% against No. 2 Test Dust and 70% on M.B.T.C., while the lowest efficiency Grade "C" bag has an average efficiency of 95% against No. 2 Test Dust and 40% on M.B.T.C.

Irish agents: The Leinster Engineering Co. Ltd.

* * *

WE ARE advised by Heatavent Supply Company, Upper Fitzwilliam St., Dublin, that Matthews & Yates Ltd., Swinton, Manchester, are introducing a new high efficiency steam or hot water heated battery. Little information is available on this at the moment except that it will be one of the most competitive on the market.

* * *

A NEW range of Breeza Roof Units (Type H), from the London Fan & Motor Co. Ltd., is of the hinged-cap type. Sizes are 12" to 30" and the unit is available stove-enamelled, and in galvanised steel. The base has a wide square flange and a range of fibre-glass adaptors is available for fitting the unit to various types of roofing. One special feature is in the fitting of the fan within the unit; this may be done from above or below so that maintenance may be carried out from the roof of the building or from inside the building as required. Shutters are available as an optional extra.

* * *

THE CONOMAT-X Automatic Roll Type Filter, is an entirely new type of fully automatic air filter for heating, ventilating and air conditioning applications. It is a horizontal type of filter which by virtue of its extended filtering surface allows over 50 per cent. more air volume to be handled.

The simple and compactly designed Conomat-X is particularly suited to installations in which headroom is restricted, and to the advantage of its low capital cost is added the substantial savings in size and cost of duct connections. For large volumes and

Continued page twenty-five.



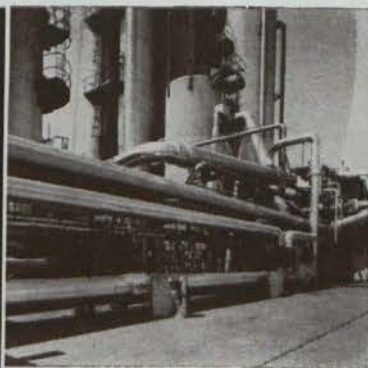
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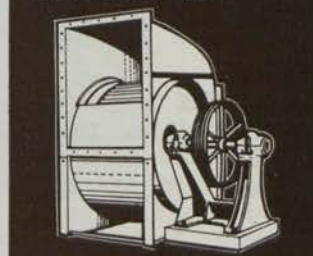
Matthews & Yates Ltd. offer a complete range of CYCLONE High Efficiency, Multivane Paddle, Axial, Propeller and P.V.C. Fans for air conditioning, ventilation, dust and fume removal, heating and agricultural applications. All models can be supplied in a range of sizes and are immediately available.

May we send you full technical details—or advise on your specific requirements?

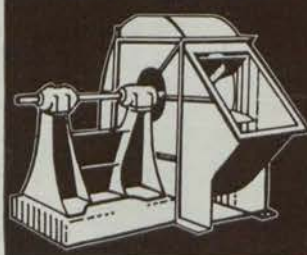
High Efficiency Fans



Multivane Fans



Paddle Blade Fans



Axial Flow Fans



CYCLONE MATTHEWS & YATES LTD

FANS AND EQUIPMENT

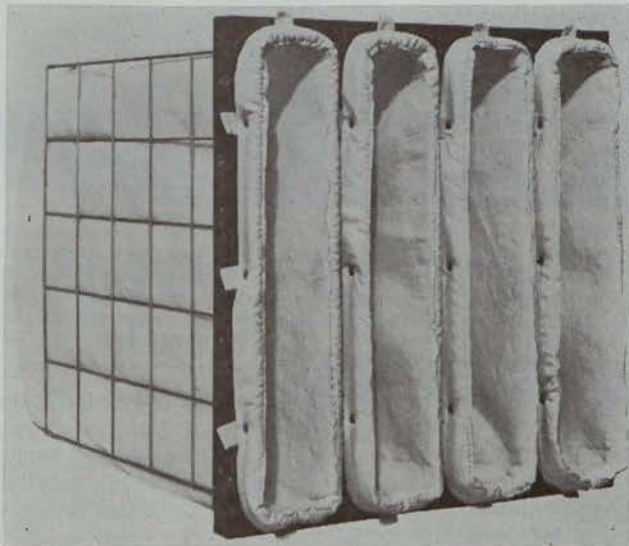
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Agent: Heatovent Supply Company, 5 Fitzwilliam Street, DUBLIN
Tel: Dublin 36061.

Also at London, Glasgow, Leeds Birmingham, Cardiff, Brussels



**SPECIAL
REVIEW**

from previous page

● The new Uni-Vee bag filter from Vokes (see below).

* * *

volume control. The stylish serrated boarder of the grille encompasses all the new Douglas "Aero-Dyne" streamlined fins.

The opposed blade damper is operated with a screwdriver through the face of the register. "Aero-Dyne" vanes are factory set at 35 degrees, unless otherwise specified. The unit is finished in raw or anodized aluminium, prime coat or any desired plated finish. offered with outputs from 690,000 to 1,100,000 B.t.u./hr., and further models of even higher rating are under development. Operation is largely automatic.

Presented by the Company's Domestic Appliance Division were examples from the newly introduced "family" of Aga boilers—solid-fuel, gas and oil-fired—and of the highly popular Rayburn Princess room heaters (high-output boiler and non-boiler models), the Allied water and electric radiators, and other outstanding equipment for the home.

An improved method of zero adjustment incorporated in a wide range of 4 in. and 6in. mercury-in-steel thermometers was shown for the first time by the **British Rototherm Co. Ltd.** The modification ensures that the instrument remains completely sealed during the re-setting. The adjustment is carried out by removing a protective grub screw at the side of the instrument, revealing a screw which directly operates the zero-set mechanism.

The re-designed instrument casings for the Rototherm range of temperature, pressure and vacuum chart recorders are also shown. The new design provides a slimmer, more com-

VOKES' latest air filter is the Uni-Vee Bag Type for general air conditioning, ventilation and industrial air cleaning, particularly where heavy dust-laden and sooty atmospheric conditions exist; can be used also as a pre-filter in high efficiency systems.

Each unit comprises four filter bags which are manufactured in three grades of material to Vokes own stringent standards. The Uni-Vee Bag Type was also exhibited.

John Thompson (Wilson Boilers) Limited (Glasgow) exhibited for the first time the Aquapac" packaged wet-back boiler, suitable for high, medium or low pressure hot water systems. Manufactured in standard sizes to cover a range of 500,000 to 30,000,000 B.t.u.'s, the "Aquapac" has a generous heating surface to permit easy attainment of its rated capacity.

It is a completely packaged unit, incorporating a unique integral mixing and circulating device and a heating and pumping unit. External mixing valves obviate dangers from acute thermal changes.

The principal exhibit of **Musgrave & Co. Ltd.**, of Belfast, was the Rotoline fan, which although standing over 12' tall and weighing 2½ tons, is the smallest of 27 being supplied to Ford of Britain as part of a large ventilation scheme at Dagenham. Also on show was the new Musgrave Axiline axial centrifugal fan. This fan incorporates the most important features of both the centrifugal and axial flow type fan, and virtually offers an axial flow fan which can, say Musgraves, operate at volumes, pressures and noise levels, at which, before

robust steel housing—a holding frame with detachable wire mesh supporting frames. A turned back cuff on each bag locates over a spigot on the main frame and attached to each cuff are a number of studs which snap into sockets around the spigot periphery, thereby ensuring easy, positive location and sealing of the bag.

The grade "A" bag for high efficiency application has an average efficiency of 99.8% against No. 2 Test Dust BSS 2831, and 80% on the Methylene Blue Test Cloud. Grade "B" is an intermediate efficiency bag having an average efficiency of 99.3% against No. 2 Test Dust and 70% on M.B.T.C., while the lowest efficiency Grade "C" bag has an average efficiency of 95% against No. 2 Test Dust and 40% on M.B.T.C.

Irish agents: The Leinster Engineering Co. Ltd.

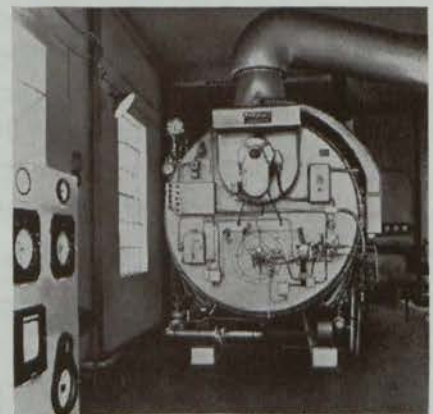
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WE ARE advised by Heatovent Supply Company, Upper Fitzwilliam St., Dublin, that Matthews & Yates Ltd., Swinton, Manchester, are introducing a new high efficiency steam or hot water heated battery. Little information is available on this at the moment except that it will be one of the most competitive on the market.



● ABOVE—The Musgrave Rotoline fan, making its first showing at a major exhibition represents a breakthrough in the design of centrifugal fans, say the manufacturers (see report).

BELOW—Recently installed this Marshall CB.600 automatic packaged boiler (see report).



this development, only centrifugal fans could operate.

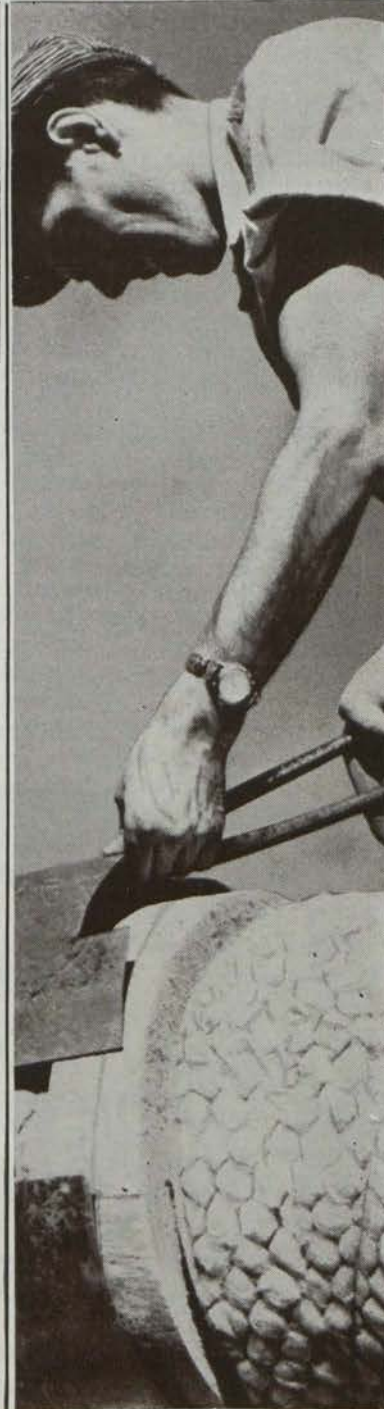
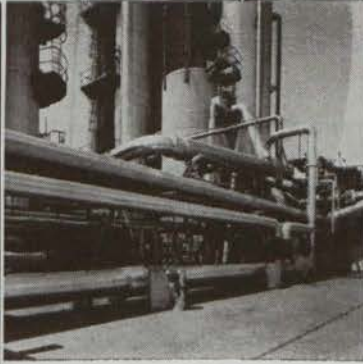
Marshall Sons & Company Limited showed a CB.250 automatic packaged boiler rated at 8,620 lb. steam/hr., and an M.40 with an output of 1,380 lb.

Continued page twenty.

MEN IN THE BUSINESS KNOW

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OF HARCOURT STREET



Boylans of Harcourt Street are sole agents for the insulation products of the Cape Asbestos Group of Companies. The range of products includes: Rocksil and Rocksil-K rockwool materials, Caposite Asbestos Materials, Caposil HT and Caposil 1400 Calcium Silicate Materials, Asbestos Compositions, Rope Lagging and Cloth. Asbestolux. *Consult us with your insulation problems.*

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A member of the Cape Asbestos Group of Companies

TW494

The Irish Plumbing and Heating Engineer.

steam/hr. Marshall's range of boilers consists of units with ratings from 520 lb. steam/hr. to 24,150 lb. steam/hr. and equivalent B.t.u. outputs. They are designed to burn any grade of fuel, oil or gas.

The boilers are four pass horizontal fire-tube units with five square feet of heating surface per rated boiler horsepower. The low furnace confines the hottest gases to the bottom of the boiler well below water level.

A forced draught design and a reduction in the cross sectional area of each pass maintains a high flue gas velocity. The scrubbing action of the gases in the tubes makes frequent tube cleaning unnecessary. Both front and rear doors are either hinged or davit to swing open, exposing tubes and fireside surfaces for inspection and servicing.

Irish agents are Thermal (Ireland) Ltd.

Walker Croweller & Co. Ltd., of Cheltenham, exhibited prototypes of two new products at the exhibition. The first was a gauge with an audible alarm for oil depth measurement, which, in addition to industrial uses, will have a wide application in the domestic sphere, in particular for oil-fired central heating systems.

The second item was a range of edgewise pressure and vacuum indicators for use on applications where accurate draught or pressure indication is required, particularly on boiler plants.

The Walker Croweller stand also featured displays of the company's range of Arkon industrial instruments



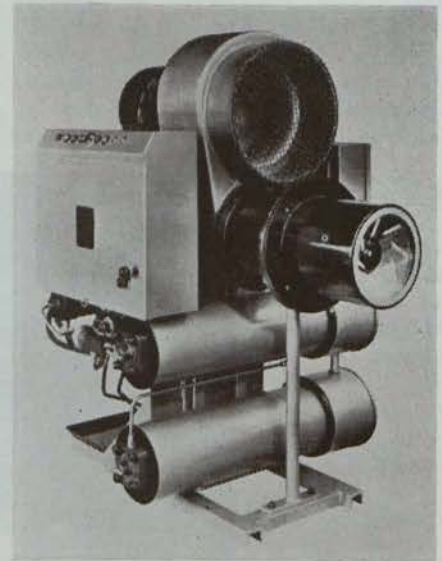
from page eighteen.

and Leonard thermostatic mixing valves.

The stand of Davidson & Co. Ltd. was laid out as a country garden to emphasise their theme of "Selling Clean Air." There is no plant or machinery on the stand, but the range of Davidson's air treatment equipment is illustrated by large photographs and drawings, showing the various units for heating, ventilating, dust collecting and air conditioning applications in locations ranging from mines and power stations to small factories and offices.

The Brockhouse Heater Co. Ltd. showed examples of a new style of modulating oil burner designed in unit form to enable the pumping and heating sets to be mounted in any position away from the boiler and in which the fan is mounted on a short combustion tube at the boiler front. The fan is readily interchangeable to suit any type of boiler.

Although the hydraulics and electrics are the same as in existing Brockhouse burners, modifications have been made to the combustion head so that different flame shapes can be obtained to suit varying diameters of firing tubes. No complicated pre-cast brick quails are necessary to assist combustion, thus avoiding the



This is the new style Compact type oil burner developed by Brockhouse Heater Co. Ltd. of West Bromwich and designed to suit all types of standard sectional boilers (see report).

necessity for frequent replacements. Burners in the new range are produced in ratings from 1,000,000 to 15,000,000 B.t.u.'s using 200, 950 and 3,500 seconds oil and can be supplied to suit all Economic type boilers.

The Lightfoot Refrigeration Co. Ltd. showed for the first time Worthington packaged air conditioners, an air handling unit and a Sentry chiller. The Sentry chiller is the latest packaged hermetic centrifugal machine, designed by Worthington, completely factory-packaged and tested under simulated load conditions. Capacity figures are guaranteed and conform to International refrigeration requirements. A range of 125 to 600 tons is covered by a choice of 14 models. The packaged Air Conditioners on show were types SCY.46 and SCY.66, both water-cooled units of 3 and 5 tons nominal cooling capacity respectively. These are part of a range of air or water cooled units with capacities from 3 to 60 tons, encased in attractive modern styled steel cabinets, finished in beige plastic baked enamel. The units are suitable for immediate installation. Adjustable louvres allow for a combination of air flow direction to suit individual needs. Standard air filters of the throw-away type are used in the system and are easily replaced. The air handling unit Model UFX.040 on show was one of a complete range



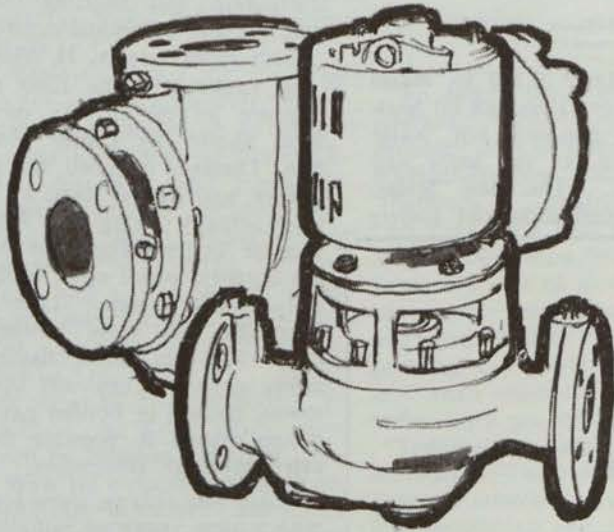
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"Better heating pumps?"
they said—



"Worthington-Simpson" they said



Our hot water circulators and in-line accelerators promote efficiency in large heating systems. Economic operation is ensured by low running costs, simple installation and minimum maintenance. The range of circulators extends to capacities of 750 g.p.m. and heads up to 80 feet. The range of accelerators covers capacities up to 150 g.p.m. and heads up to 15 feet.

We invite you to write for leaflet WS-5179 which gives details of our heating pump range and also a guide to pump selection.

Worthington - Simpson Ltd
20 HERBERT PLACE DUBLIN

Pumps • Compressors • Heat Exchange Equipment

P0315

24 BRANCHES
THROUGHOUT
THE U.K. AND EIRE



CLYDE

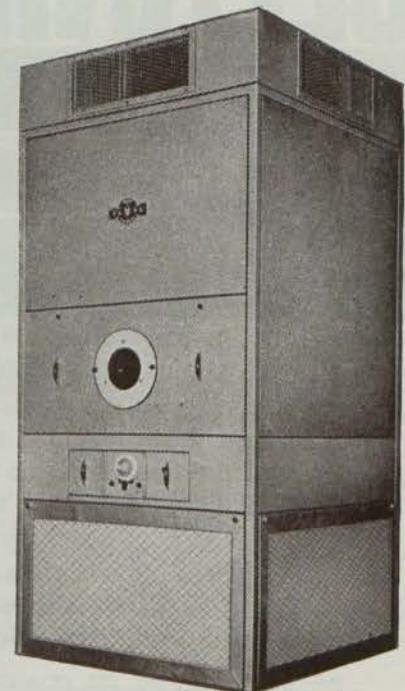
**GEN-O-THERM
AIR HEATERS**

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

SIZES AVAILABLE

Heat output	Model
150,000 BTU's/Hour	CH 1
250,000 BTU's/Hour	CH 2
400,000 BTU's/Hour	CH 3
550,000 BTU's/Hour	CH 3A
700,000 BTU's/Hour	CH 4

For full details write to:—



CLYDE FUEL SYSTEMS LTD.

80 Holywood Road, Belfast. Tel.: Belfast 65365/6.

Branch at Londonderry.

CLYDE FUEL SYSTEMS (IRELAND) LTD.

6 Mount Crescent, Dublin. Tel.: Dublin 66489.

Branches at Cork and Limerick.

The Irish Plumbing and Heating Engineer.

of packaged units from 3 to 20 tons capacity.

Irish Office: **Lightfoot Refrigeration (Ireland) Ltd.**, 121 St. Stephen's Green, Dublin.

J. Stone & Company (Deptford) Limited exhibited for the first time a new range of Stone-Vapor fully automated oil-fired boilers announced earlier this year. Also, for the first time in Britain, a 6900-lb./hr. Circ-U-Latic steam boiler and a 6 million B.t.u./hr. hot oil heater based on the same design was seen.

The new Circ-U-Latic range will in-



from page twenty.

clude units of 8,600-10,350 lb. steam per hour, and equivalent hot oil heaters and high pressure hot water boilers, all based on the same new design features. The new Stone-Vapor vertical coil industrial boilers

combine all the advantages of the earlier Stone-Vapor models such as compactness, low weight, quick start-up and ability to follow fluctuating load with a new fully automatic control system which allows unsupervised starting-up and shutting down, and multiple unit automatic control.

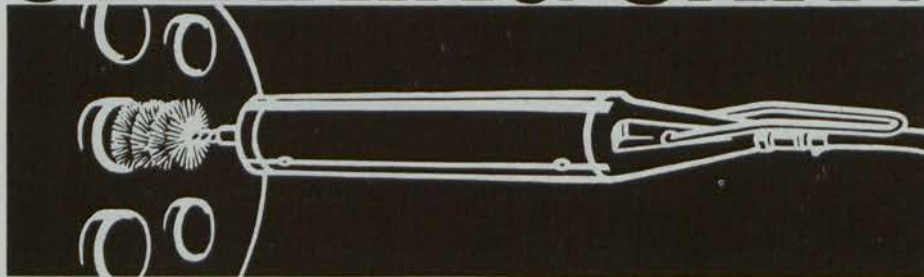
Irish agents are **A. H. Masser Ltd.**

In addition to the Elco range of pressure jet oil burners, new equipment shown by **Corrie MacColl & Son, Limited**, included the Elco gas burner, and on the stand a G4 model was actually firing an Allen-Ygnis Ygnette boiler. The Elco Monobloc gas burners, which cover a boiler capacity range from 32,000-3,840,000 B.t.u.'s/hr., are fully automatic and fitted with an ionic flame failure safety device. They will operate on towns, natural or bottled gas, and the design makes it possible to achieve extremely high efficiencies.

There was also on show for the first time a new range of radiator valves, the Herz-As, Rapid and Callis. The Herz-As is a double action pre-regulating valve which works on the twin cone system. The Rapid valve is a single action hand control or lock-shield valve. The Callis valve is a three-way valve designed primarily for use with one pipe systems and is one of the first of its kind in Europe.

Principal features on the stand of **F. H. Biddle Ltd.** was a specially constructed acoustic chamber, housed

A UNIQUE BOILER-TUBE CLEANING UNIT!



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

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

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

HALPIN & HAYWARD LTD.,

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



The new Biddle dehumidifier is 27" high, 15" wide, 20" long, weighs 105 lb. and has a moisture extraction rate of up to 2.5 gallons per 24 hour period.

in a 14' 6" tall tower, in which was demonstrated at regular intervals the operational quietness of Biddle Forceflo ultra-quiet fan-assisted convector heaters. These heaters are designed to produce highest heat outputs at minimum noise levels, in accordance with the Noise Criteria System of Analysis.

Also displayed was a full range of Forceflo fan-assisted convector heaters embracing heat outputs up to 65,000 B.t.u./hr.; the first range of Standardized Coils that will meet practically every requirement for heating and cooling; a new Biddle dehumidifier; the full range of Conrad radiant-convectors; and a number of warm air heaters manufactured by Waterbury Ltd., an associate company of F. H. Biddle Ltd.

A new series of oil-fired boilers, to be known as the EOA series, were announced by **Thomas Potterton Limited**. With six outputs ranging from 400,000-900,000 B.t.u./hr., the EOA provides heating for medium size offices, schools, factories and a variety of other such buildings.

The new design of cast-iron water-way sections gives efficient heat transfer as well as making cleaning and servicing operations easy. These boilers are supplied with a pressure-jet burner for use with Class "D" (35 sec.) oil. They are intended for natural draught and a special integral draught stabiliser is incorporated in the design. The series features a new style casing.

A new short stem boiler thermostat, type GAB, was one of the recently introduced instruments shown by **Robert Maclaren & Co. Ltd.** of Glasgow. The unit is designed for the temperature control of liquids and is particularly suitable where a sensitive instrument with a short length of stem is required, such as sectional boilers or pipe lines.

The patented switch mechanism is housed in a well designed die-cast watertight enclosure with a graduated knob for external adjustment of the temperature setting. The GAB is available in two versions—a two-contact instrument to break circuit on temperature rise and a three-contact changeover instrument.



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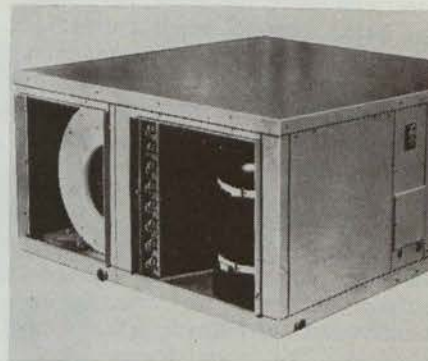
To extend their existing range of overhead Mastertherm-Schwank wall-mounted and suspension type heaters, **Radiant-Heating Ltd.** introduced a "flattened V" model. Available in two sizes, with heat inputs of 25,000 and 50,000 B.t.u./hr., each can be fitted with one of three different types of control—manual operation, solenoid valve or electrical ignition, incorporating thermostatic and clock control when required. The units utilise either town gas or petroleum gases.

Teddington Autocontrols Ltd., of Sunbury-on-Thames, exhibited a wide range of controls covering many heating, ventilating and refrigeration applications. Also displayed on their stand were a selection of small to medium size bellows expansion joints which are manufactured by **Teddington Aircrafts Controls Ltd.**

In addition to the many actual controls there were two complete panels, one for a heating system, the other for air conditioning which incorporates another panel within itself, viz., a "Multistage" Transmatic. There was a second "Multistage" on display complete with sensing elements. These included a new electronic humidity sensing device, Type DAT, its associated amplifier and phase detector. Type DAU, together with the latest room element, Type DAV which was housed in a neat, attractively-styled plastic case.

Chrysler Airtemp Ltd. displayed 16 models from its range of heating and air conditioning units available in Britain at the exhibition. Three completely new units were included in the display. These were: an hermetic water chiller (HWW 00-0), which is easily installed and a quiet running unit, and the largest in an available capacity range of 20-100 nominal tons. It is designed for commercial and industrial air conditioning.

The new room air conditioner



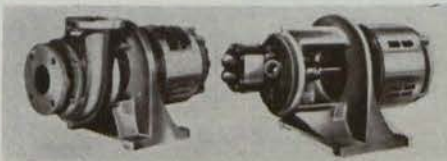
Above—The Chrysler packaged air conditioning unit, and (below) the Greenwood Airvac Mechadome power roof extractor.



(A10-15) is an attractive Airtemp room unit designed for efficient climate control in domestic and light commercial locations. It is compact, easily installed and has a capacity of 8,800 B.t.u./hr. The packaged air conditioner (1104-01) is Chrysler Airtemp's smallest, most flexible packaged air conditioning unit designed to give a balanced atmosphere and clean air in homes, offices and shops.

One of the new **Keith Blackman Ltd.** products showing for the first time was the Conomat-X automatic roll type filter. This is an entirely new type of fully automatic air filter for heating, ventilating and air conditioning applications. It employs an exclusive, long-life filter medium giving up to 94% efficiency with a dust holding capacity of 125 grams/sq. foot. It presents three filter surfaces to the incoming air and handles, thereby 50% more air volume than the conventional filter—and yet is smaller and more compact.

The Conomat-X is supplied as a
Continued page twenty-four.



We picture here two new pumps from **Worthington-Simpson**—the type DFH hot water circulator with capacities to 750 g.p.m. and heads to 80 feet; and (right) the type GAF rotary gear pump with capacities up to 46 g.p.m. (max. pressure 150 p.s.i.). The **Worthington-Simpson HEVAC** exhibits were reported last month in full.

The Irish Plumbing and Heating Engineer.

single or double-deck unit to suit plantroom space, the single, horizontal type being ideal if headroom is restricted. Straightforward design principals are employed throughout to simplify installation, minimise maintenance, reduce costs and afford prompt delivery. The whole range is twice stove-enamelled to give an extra durable finish.

All the main products of **Temperature Ltd.**, commercial and industrial refrigeration and air conditioning manufacturers of Fulham, S.W.6, were exhibited. The central feature of the stand and a main attraction at the show was a demonstration unit of Temperature's new Temkon Versatemp large-scale air conditioning system, which offers the economies and extreme flexibility which result from using independent room air conditioners linked on a water circuit which incorporates the Reclaim Heat Pump principle. Also featured is a 100-ton Tonrac centrifugal water chiller made by Ideal-Standard Industrial Division of Brussels.

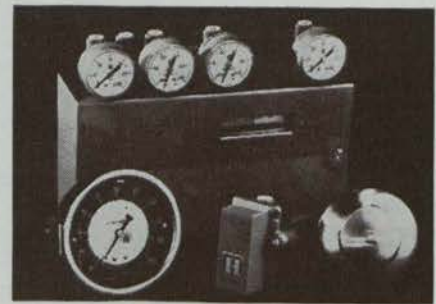
Among numbers of new **Honeywell** products exhibited was the Pneumatic Sensor System which brings a new approach to automatic temperature control, offering the much-desired



from previous page

combination of high-accuracy and simplicity with in-built facilities for indication. The key to this new system lies within its new sensing unit. A method has now been found of developing a linear pneumatic transmission signal over a wide span with inherent self balancing. This built-in "feedback" innovation works on a force-balance principle.

The Sensor is capable of taking the measured variable (temperature, humidity, flow, pressure) and translating it directly into an accurate pneumatic signal that can be used for positioning of the control units and at the same time provide indication of the variable. Due to its simplicity and low cost it is now possible to provide proper supervision of mechanical services for smaller installations. The system has been developed from experience gained by Honeywell in the process control field over many years.



Here are the main components that make up the Honeywell pneumatic sensor system (see report).

Smiths Industrial Division featured a range of instruments for the supervision of both solid fuel and oil-fired boilers. These instruments included flue gas analysis equipment, draught gauges and controllers, strip chart recorders, flowmeters and equipment for automatic boiler control.

The flue gas CO₂ analyser on display was Smiths' latest design which incorporates a special aspirator pump within the instrument case, rather than separately mounted as hitherto. Other design improvements include anti-vibration mountings for the measuring cells, and new plastic control valves.

The **MONO** AUTOMATIC PRESSURE WATER SET
has an ideal capacity range for the average household



- ★ COMPLETELY AUTOMATIC
- ★ SELF-PRIMING PUMP
- ★ STEADY PRESSURE AT ALL OUTLETS
- ★ NO OIL OR GREASING
- ★ LOW POWER CONSUMPTION
- ★ ALL EQUIPMENT ON ONE UNIT

The **MONO** pump

MONO PUMPS LIMITED (Incorporated in England)

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Telephone: DUBLIN 70843

MP308

SPECIAL SURVEY

from page sixteen.

where plant room width is restricted a "double-deck" unit is installed. An entirely new, high efficiency filtering medium, treated by an adhesive fluid additive, is used and is easily replaced when necessary, usually after many months' operation. The manufacturers of this unit are Keith Blackman Ltd., Mill Mead Road, London.

* * *

THE BASIC "Vent-Axia" operates in one direction at its normal speed when wired direct to an ordinary electric switch. However, it is frequently desirable to be able to adjust the rate of ventilation, and this can be done with the single direction control switch (Type SD) which gives a choice of three running speeds.

Vent-Axia keypoint ventilation is designed for the greatest possible ease of installation and maintenance. All the models from the Vent-Axia range are made in four sizes with impellers of approximately 6", 7½", 9", and 12" diameter. Control switches and shutters are available as optional fittings for the entire range of units. The manufacturers are Vent-Axia Ltd., Rochester Row, London, and their Irish agents are the T.M.D.G. Co. Ltd., South William St., Dublin.

* * *

A NEW packaged air conditioning unit, reference KSA, comprising a mixing chamber, filter, heater, cooler, humidifier, fan and silencer section has been introduced by Bahco Ltd., Bahco House, Goswell Road, London. The unit is galvanised throughout from galvanised sheet steel, apart from the humidifier and cooler sections, which incorporate stainless steel casings. The new range comprises four sizes of equipment handling from 500-15,000 c.f.m.

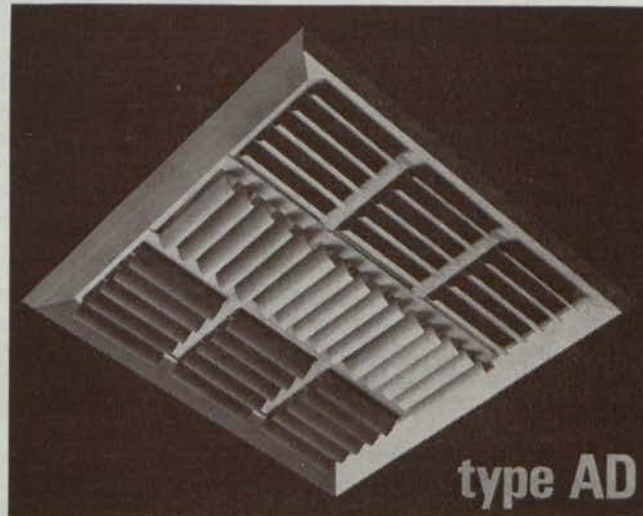
Further information in Ireland may be obtained from Technical Sales Co., 79 Lower Leeson St., Dublin.

* * *

THE TEMKON commercial "De-Humidifier" portable model is a compact fully portable appliance for removing excess moisture from the air. The case is divided into two sections and is of heavy gauge sheetsteel, and stove enamelled with "Acrylic" paint for complete protection. The upper section houses the main electrical terminal block, electric capacit-

Continued overleaf

IT'S NEW



A Diffuser with a difference, giving an infinitely variable combination of 1, 2, 3 or 4 way throws, horizontal to vertical air distribution and volume control in each direction.

This diffuser is easy to install and can be adjusted within a matter of seconds.

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Agents in Ireland:

EIRE

Messrs. Quadrant Engineers,
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Sandymount, Dublin 4.
Telephone Dublin 693940.

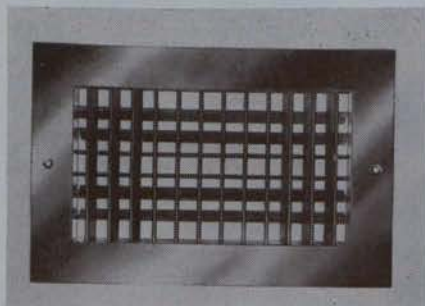
NORTHERN IRELAND

Messrs. P. & D. Macfarlane Ltd.,
23-27 Cupar Street,
Belfast 13.
Telephone Belfast 32002.

WATERLOO GRILLE CO. (GB) LIMITED

23, Jacob Street, London, S.E.1., Bermondsey 2858.

The Irish Plumbing and Heating Engineer.



Greenwoods Lloydair type L.64 double deflection supply grille, with vertical face blades and horizontal rear blades.

ors, thermostat, humidistat, and control switch. The lower section houses the evaporator (air dryer), coil, condenser (re-heat), coil, air filter, fan assembly and fan motor, motor compressor, condensate tray and disposal stub.

Also from the same firm, Temperature Ltd., of Burlington Road, London, comes the Versatemp system of air conditioning which makes practical use of the reclaim heat pump. Also available from the Temkon range is the "Series N" air cooled air con-

SPECIAL SURVEY

from previous page.

ditioner, Model N. 468, and the "Whispair" floor mounted, air cooled air conditioner. The Irish agents are L. Sterne & Co. (Ireland) Ltd.

* * *

SEMI-HERMETIC and multi-drive compressors are manufactured by Dunham-Bush Ltd., Farlington, Portsmouth, Hampshire, in sizes from ½-100 h.p. inclusive. Lightweight components, compact design and an extensive field test programme have resulted in a compressor of efficient and high performance. These compressors are available built into condensing units, air or water cooled and into packaged chillers with capacities up to 200 h.p., the use of the inner fin chillers permitting an unrivalled compactness of design.

Closely allied to this selection of refrigeration products is a range of matched-air conditioning equipment. This includes the series "AH" air handling unit which, with its vast range of options, will filter, cool, humidify and dehumidify air to any application

● For news of the Worthington packaged air conditioners, by the Lightfoot Refrigeration Co. Limited, see our HEVAC report, page twenty.

requirements. The series "M2" Multizone air conditioning unit will condition and control air for up to 14 separate zones from a single unit. The "LSCU" is a completely weather-proof, external roof mounting low silhouette condensing unit that is invaluable for freezing internal space.

ATTENTION MANUFACTURERS, SUPPLIERS!

Each month The Irish Plumbing and Heating Engineer will contain a comprehensive survey of the month's trade news under the "Trade Topics" heading.

We invite contributions to this column by way of news of new product introductions, of product promotions, of developments within your organisations and of appointments, to list a few.

LIGHTFOOT REFRIGERATION

FOR ALL AIR CONDITIONING APPLICATIONS WE OFFER—

Direct Expansion Cooling Units

In packaged form or specially designed for particular requirements.

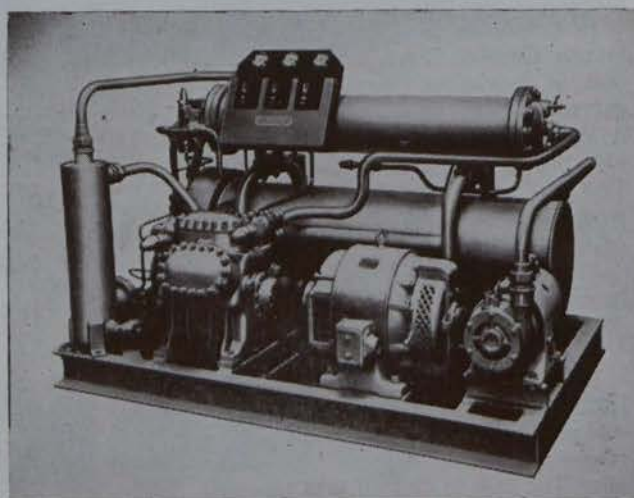
Packaged Water Chillers

(as illustrated) from 10 to 100 Tons Refrigeration.

AND NOW!

The Sentry Chiller

from Worthington, with Hermetic Centrifugal Compressors. 125 to 600 Tons Refrigeration.



10 H.P. Packaged Water Chiller

LIGHTFOOT REFRIGERATION

(IRELAND) LIMITED

121 St. Stephen's Green, Dublin 2. Phone 55088



trade Topics

THE BUSINESS of Satchwell Controls Limited is to be divided into two parts and in future is to be carried on through two new subsidiary companies. For many years it has been this Company's policy to develop its business in two main fields—the manufacture and supply of controls and the design of schemes for heating and air conditioning systems, and the manufacture and supply of temperature and allied controls for all forms of heating appliances, including controls for electric domestic appliances.

In recent years the business in both these fields has been expanding at a high rate and there is every indication that this expansion will continue. It has, therefore, been decided to divide the business into two parts so that a greater measure of concentration and specialisation may be obtained in each sphere of activity.

In future the activities of Satchwell Controls Limited will be conducted entirely through two subsidiary trading companies: Satchwell Control Systems Limited, and Satchwell Appliance Controls Limited.

From that date Satchwell Controls Ltd. will operate as a Management Company, the Board remaining unchanged; Mr. R. W. Towers and Mr. J. Cunningham have been appointed Joint General Managers. The activities of Satchwell Control Systems Limited will deal with heating, ventilating and air conditioning systems, while Satchwell Appliance Controls Ltd. will deal with temperature controls for heating and domestic appliances.

* * *

JOHN THOMPSON (Wilson Boilers) Ltd. have announced a new model in their range of packaged boilers—the Aquapac oil

THOMPSON INTRODUCE AQUAPAC

fired wet-back boiler which has been designed for high, low or medium

pressure hot water systems.

Aquapacs are manufactured in standard sizes to cover ratings of 500,000 to 30,000,000 B.t.u.'s. Each is a completely packaged unit, incorporating its own jet-type mixing and

circulating device, with external mixing valves to obviate dangers from acute thermal changes. A hinged front door provides easy access to the smoke tubes and furnace tubes, the rear door being hinged or davited to suit client's requirements.

* * *

**SUCCESSFUL
KENT TAKE
OVER BID**

IT HAS been jointly announced by George Kent Ltd., and the Leeds Meter Company Ltd. that the directors of the latter have accepted a Kent offer for a majority interest in the equity share capital of the Leeds Meter Company, being 71,017 Ordinary Shares of £1 out of 142,033 which will be in issue.

Both companies' water meter interests have to an increasing extent become complementary in markets and products. A major proportion of both companies' production is exported to markets where there is intensive international competition. The combination of these two leading specialists will therefore promote their greater success.

The Leeds Meter Company has for many years been an exceptionally well-knit team. It is intended that, under its present Board and management, it will continue to operate as an independent entity, maintaining its existing technical and commercial policies, and its customer relations. Progressively, however, it is intended to co-ordinate the development, production and marketing functions so that the special strengths of both companies can be combined to maximum advantage.



Aquapac new from Thompson

INTRODUCED recently by John Thompson (Wilson Boilers) Ltd., an Aquapac oil fired packaged hot water boiler is here shown installed at the Slough Works of Bells Asbestos & Engineering Limited, where it provides 2,500,000 B.t.u.'s for central heating purposes at an operating pressure of 50 lbs. per square inch.

At the rear can be seen a Demipac packaged boiler, installed some two years ago, supplying steam for process work and services.



Steambloc boiler on film

Attending the first showing here of the new film, "Steambloc A Packaged Deal," were (from left): Mr. C. F. Boyle (H. R. Holfeld Ltd.); Mr. B. D. Clarke, managing director, S.B.C., London; Professor P. Leahy (U.C.D.), and Mr. Eoin Kenny (Kenny and Partners). See report overleaf.

A REPRESENTATIVE cross-section of the engineering profession was present at a film show and cocktail reception in the STEAMBLOC BOILER ON FILM Hibernian Hotel to introduce a new film, "Steambloc A Packaged Deal," presented by Spencer-Bonecourt-Clarkson in association with their Irish representatives, H. R. Holfeld Ltd., Stillorgan.

The film and following lecture dealt with the advantages of packaged boilers in general, and more specifically with new developments in the Steambloc boiler. The widening range of application for packaged boilers was emphasised by increased capacities and maximum operating pressure in the standard range, i.e., 25,000 lbs. per hour output at 245 p.s.i. In addition, integral super heaters of radiant or convector design can now be incorporated as a standard feature. Flexibility in response to wide fluctuations in steam demand can ensure a steady steam pressure under all conditions. The addition of modulating feed water control on the larger sizes prevents undue variations of the water level in the boiler under severe draw-off conditions.

For central heating application, and



in particular for high pressure hot water systems, the boiler can operate under fully flooded conditions with temperature control instead of pressure control.

Altogether, this was an interesting and instructive film in colour and sound, which incidentally is available on loan to interested firms or organisations for group showings on application to H. R. Holfeld Ltd.

* * *

THOMAS POTTERTON Limited have announced an agreement with

PORTWAY TO MARKET WALLFLAMES

for kitchen installation, will be an important addition to Potterton's present BOA series of pressure-jet oil-fired boilers.

Charles Portway & Sons Limited to undertake the marketing of their standard range of wallflame oil-fired boilers. The object is to provide a nation-wide sales and service backing for these well-tried appliances. The new series, which is

£3 MILLION TAKE-OVER OF UNIDARE LTD.

A £3 Million take-over of Unidare Ltd., the Dublin manufacturers of electrical equipment by the Pye company of Cambridge, England, was announced early this month.

The announcement was made by Mr. Charles O. Stanley, chairman of Unidare and of the English company. The take-over has involved 75 p.c. of the Unidare shares and the remaining 25 per cent. are staying in the hands of Irish shareholders.

The managing director of the new concern, which will still be known as Unidare, is Mr. Perry Greer, former general manager. The former managing director of the company, Commander A. R. Bradshaw, becomes deputy-chairman.



Vessel heated by Isopanel and pipes by Isotapes

not just a heating tape . . .

. . . but a complete system. Isotape electric heating tapes keep pipes at the right flow temperature in all conditions. From the many standard types it's easy to suit any length and bore, easy to install at low first cost. Isotape thermostats ensure lowest running costs. Keep by you the new Isotape catalogue which lists the range—including moisture proof and for flame proof areas—and is laid out to make ordering easy. Complex pipe tracing problems are dealt with completely by the Isopad engineering service.

Isotape

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SPECIAL REVIEW

THIS MONTH

MORE ABOUT PUMPS etc.

THE LATEST circulating pump model from Rotherhams Ltd., of Coventry, is the Varimatic 2, which is of an advanced design which makes it particularly suitable for domestic installations from the smallest to over 150,000 B.t.u. Adjustment to the precise requirement of each individual system is made with dial control to give variation in output without the use of baffles or restrictors.

Direct to copper compression couplings are supplied with each unit. Light weight, flat base (avoiding the necessity for bending pipework) and simple wiring, without the use of a capacitor, further reduce the cost of installation. The stator unit is encapsulated to provide full protection against external damp and accidental damage, and the internal construction is further arranged to ensure complete separation of the circulating water from the stator unit, giving unique double protection of the motor.

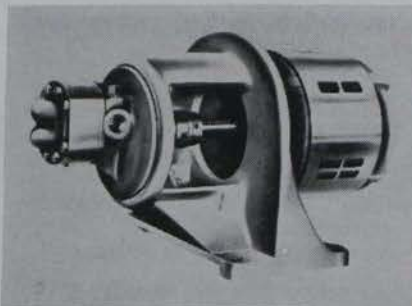
Mr. G. A. Reid of 16 Fade Street, Dublin, has been appointed agent in Ireland for Rotherhams and his arrangements include the provision of on-the-spot technical service facilities here.

* * *

THREE TYPES of cellar pumps are now being manufactured by Stuart Turner Limited, the Henley-on-Thames firm represented here by Mr. D. P. Engert, Ardee Road, Rathmines. The pumps for sump drainage or bilge pumping have outputs from 250 to 600 gallons per hour at 5ft. head. The pump is centrifugal with a Delrin impeller and is mounted on flexibly coupled extension of motor spindle.

* * *

WORTHINGTON-SIMPSON Ltd., Newark, Notts., are manufacturing a new range of rotary gear pumps. There are six models available, each of which has two forms of construction—foot mounted for direct connection to electric motor, or frame mounted—close coupled to electric



The Worthington-Simpson type GAF rotary pump.

motor. The pumps will handle an extremely wide range of liquids up to 9,000 seconds Redwood No. 1 viscosity. Capacities up to 46 g.p.m. and pressures up to 150 p.s.i.

All the pumps in the range can operate in either direction of rotation. This flexibility is further enhanced on the four smaller flange mounted units by incorporation of double suction and discharge ports enabling 28 different piping arrangements to be made. Double helical gears are used in these pumps which eliminate trapping of liquid between the teeth, thus resulting in smooth flow and low power consumption. The single stuffing box may be fitted with packing or mechanical seal to suit application. Built-in relief valves are available on all models. The Irish office, Worthington-Simpson, is at 20 Herbert Place, Dublin.

* * *

THE SAFRAN Type CDVE hot water circulator is based on similar



In our equipment review in connection with our special survey of pumps, circulators, etc., we promised further reviews this month and here they are.

* * *

lines to the well known type CCE unit but incorporates additional features to meet more extensive specifications. Made in the same flanged sizes as the Type CCE, which are 1½", 2", 2½", 3", and 4", the design is such that without draining the heating system the electric motor can be removed and the mechanical seal easily and quickly replaced.

Also from the same Company—Saunders Valve Co. Ltd., Safran Pump Division, Drayton Street, Wolverhampton—is the Safran type EVB pump which is an automatic unit specifically for use wherever flood or excess water is to be disposed of, and once set into position it will continue to do this. The pump is suitable for 2ft. 6in. depth of sump and is fitted with an open bladed impeller capable of handling solids up to ¼" in diameter in suspension in the liquid being pumped.

* * *

A COMPLETE range of Viking rotary pumps is available from Zwicky Limited, Slough, Bucks., through the Irish agents, Heatavent Supply Co., 5 Upper Fitzwilliam St., Dublin.

The Viking heavy duty pumps are constructed throughout for tough pumping jobs. It is available in standard fitted, bronze fitted, steel fitted, or all bronze construction.

It is ideally suited for pumping heavy, viscous liquids as well as light, volatile materials. It is suitable for pressures up to 200 p.s.i. on lubricating liquids, and 100 p.s.i. on non-lubricating liquids. The Viking revolvable casing permits a selection of port arrangements, making possible any 45 or 90 degree angle.

Casing liners are available on 35, 50, and 90 g.p.m. sizes. Liners eliminate the disconnecting of piping from the casing ports if the pumps become worn from excessive use.

Twenty-nine

The Irish Plumbing and Heating Engineer.

HANDLEY PAGE Ltd., the pioneer aircraft company, has entered the space-heating field.

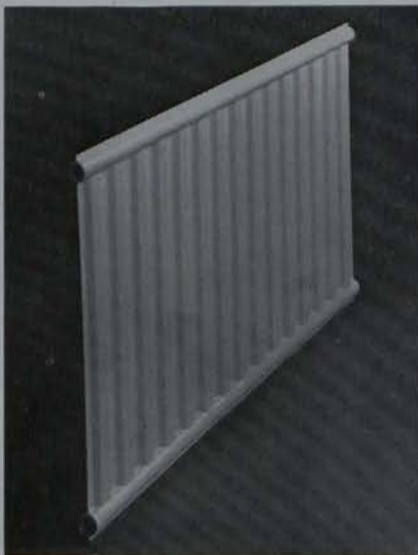
AIR COMPANY Already, it is in
ENTER SPACE production with its
HEATING range of both electric oil-filled and hot-water radiators. Agents have been appointed already for the North.

Handley Page permanently-sealed oil-filled electric radiators, providing controlled warmth with safety, form an efficient central-heating system when used as the sole means of heating. No maintenance is required with normal use. Approved by the B.E.A.B. and complying with specification B.S.3456, this radiator has automatic control and is attractively styled.

Panels are pressed from first-quality mild-steel sheet and are seam-welded electrically between the flutes and around the outside edges. This results in a radiator that is stiff yet light in weight and thoroughly resistant to shock or abuse. It may be on a wall or may stand freely.

Their slim and distinctive styling harmonising with either period or contemporary decor, Handley Page high-quality pressed-steel hot-water radiators are similar in construction to that of the oil-filled variety.

These first-class radiators are offered at an economical price in a range of popular sizes: 12, 18, 24 and 30 inches high. Single panels are only 1.35 ins. wide and double panels 3.25 ins. wide. No less than thirteen standard lengths are available from stock and panels of special lengths can be made to order.



One of the Handley Page hot water radiators.
Thirty



NEW LITERATURE available from **Worthington Simpson Ltd.**, at **Newark, Notts.**, covers **rotary gear pumps for general service** and, in a second new publication, **heating pumps and associated equipment.**

* * *

A TRIBUTE to the co-operation between manufacturing, technical and business interests in the Irish Welding Association, was paid by the Minister for Industry and Commerce, Mr. Lynch, at the annual dinner of the Association.

It was encouraging to note, he said, that the members were making increased use of the most modern welding techniques in the production of large and small vessels and tanks, some of which had been exported to such widely separated areas as the United Kingdom, Nigeria and the Persian Gulf.

* * *

THE NATIONAL Apprenticeship Board is taking special steps to ensure that pupils in vocational schools are fully informed about the various apprenticeship training schemes now in operation. It is hoped that, in this way, all pupils wishing to make a career in one or other of the skilled trades will be fully aware of what they must do to secure apprenticeships.

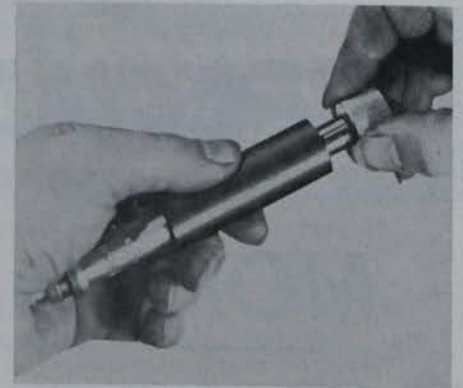
* * *

MR. GERALD McGAURAN and Mr. Robert Byrne, employees of Ringsend E.S.B. Station, Dublin, tied for first place in the examination of the City and Guilds of the London Institute for Boiler Operatives. They were awarded medals.

They competed with 560 boiler operatives from England, Scotland and elsewhere. They are students at the centre established at Ringsend to enable operatives to keep abreast of developments in design and operation of boilers and turbines.

The presentation of the medals was made by Mr. W. O'Neill, Head of the E.S.B. Generating Department, who said that the class at the centre started with 12 students in 1961 and had now 60 members.

* * *



Will restore damaged nozzle

USERS of any oxy-acetylene cutting equipment can now restore a damaged nozzle to peak performance in a matter of seconds. A few turns in the Wescol Nutip refacer removes the damaged end, and restores performance.

This new cutting tool, available from Wescol of Lower Horseley Field, Wolverhampton, has silver steel cutters specially angled to produce the best results. It can be used for all types of one piece oxy-acetylene nozzle. It is supplied in a strong plastic box that can readily be carried in the pocket.

This little tool is very inexpensive, costing less than the price of two new nozzles.

ALLEN GWYNNE'S PUMPS Limited, Firth Road, Lincoln, have added

NEW SUMP PUMP a new unchokeable sump pump to their range. It has a **JOINS RANGE** 1½" B.S.P. delivery branch and can pass solids and spheres up to ¾" in diameter.

The pump is extremely easy to install and is simple and robust in construction with maintenance cut down to a minimum. The delivery branch incorporates a 90° bend and points vertically upwards, avoiding a separate 90° bend and so reducing the size of the sump required.

The motor is rated at ½ h.p. at a speed of 1440 r.p.m., producing a range of duties from 10 to 50 g.p.m. at 25 to 10 ft. head. The pump is controlled by a simple float switch and will operate from a minimum water level of 4" to a maximum of 24". Starting is automatic.

INDUSTRIAL EXTRA

THIS ARTICLE IS COMPLEMENTARY TO OUR INDUSTRIAL SECTION AND ITS SPECIAL REVIEW OF AIR CONDITIONING, ETC.

COMFORT CONSCIOUS SEEK HIGHER LIVING STANDARDS

IRISH people over the past few years have become very comfort conscious, and this is a direct result of better travelling or working abroad and also the fact that central heating has now become an accepted essential to good living. Ten years ago the cost of such an installation was not within the financial reach of the ordinary person, but with increased standards of present-day living such is not the case to-day.

Whilst people ten years ago accepted as the ideal a room temperature of 60°F., nowadays we find that this

temperature is more in the region of 70°F. They now also find that temperature control in itself is not sufficient and this has intensified their interest in air change (ventilation), relative humidity control, etc., which now brings us to the question of air conditioning and ventilation.

Ventilation: Ventilation installations were always haphazardous affairs in this country due mainly to the fact that proper regulations governing the standard of ventilation, air changes, etc., were non-existent and this refers particularly to public buildings such

as cinemas, theatres, etc. Architects in many instances were to blame for the poor standard involved, and it was only with the advent of the consulting engineer or large heating contractors with proper design staff that this state of affairs was corrected. Ventilation in cinemas, dance halls, etc., was in the majority of cases either non-existent or of such poor design and quality that the resultant effects were, to say the least, disastrous.

In many of our city restaurants it is a well known fact that extract ventilation from their kitchens are often interconnected with the toilet ductwork. However, some recent installations to new buildings such as hotels, etc., are of excellent design and compare well with installations in foreign countries.

VENTILATION may be either natural or mechanical. The latter involves using fans with interconnecting sheet metal ductwork for either supplying or extracting air, or a combination of the two. Ventilation is normally used where there is a large occupancy of people such as cinemas, restaurants, etc. The reasons for ventilation are to keep the C.O₂ content down, to control smells, body odour, etc., and, of course, for breathing purposes. Mechanical ventilation can be undertaken by using propeller fans, or by a central plant room with distributing ductwork.

The initial method has the disadvantages of poor air control and also the fact that it is not normally possible to clean the air as the pressure drop caused by the air passing through the filter would be excessively high for this type of fan. This system, however, does have the advantage of low capital cost and ease of installation. The latter method will effect good control to suit comfort conditions if properly distributed.

Continued overleaf

FLOATSWITCHES

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

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

Generous discounts to the trade.

Stocked by most Electrical Wholesalers

Available from the Manufacturers



GIRDLESTONE PUMPS LTD
WOODBRIDGE, SUFFOLK, ENGLAND
Tel.: WOODBRIDGE 660.



The Irish Plumbing and Heating Engineer.

VENTILATION

from previous page

However, this system can only be used with fans of the axial flow, or centrifugal characteristics. This type of installation falls under one of the following headings: (a) Extract; (b) Supply; and (c) Balanced (supply and extra).

(a) Normally used where there is an air of unpleasantness, i.e., odours,

etc. It has the disadvantage that unpleasant waste products have to be delivered in such a position as not to cause annoyance.

(b) This system has the advantage of better distribution and control. Also the air may be heated or cooled, if necessary, as well as the fact that should the surrounding external atmosphere be unpleasant all air leaks will be outwards.

(c) This is an excellent system and with proper design should give

ideal comfort conditions. It also has the advantage that a high percentage of the air, if treated, i.e., heated or cooled, can be recirculated, thus keeping running costs to a minimum.

Air Conditioning: Air conditioning is a term which is very often indiscriminately used. It is not correct, in engineering language, to apply this term to an air handling plant which has not got refrigeration as an integral component of the installation.

The normal air conditioning system consists chiefly of supply fan ductwork, filter, heater battery, cooler battery and refrigeration plant together with extract fan and ductwork. The governing factor on design of air conditioning systems is whether the application is for industrial or comfort conditions. For industrial applications it is almost impossible to generalise and every case must be considered on its own merits. The overriding circumstances being imposed by the particular manufacturing process. For comfort conditions the overriding factor is, of course, the requirements of the individuals who are to occupy the conditioned space. Normal comfort conditions are usually associated with temperatures in the region of 65°F. and 50% relative humidity.

The factors to be considered in design of an air conditioning system are solar heat gain, bodily heat gain, i.e., the body loses heat by radiation, connection and evaporation, heat gain from machinery, lights, etc. There are certain factors which will help in reducing heat gain from the solar source, i.e., shading by adjacent buildings, recessed windows, double glazing and, of course, venetian blinds. The latter two factors are normally a component part of most air conditioning plants as conditioning plant is expensive to install and it is essential to effect every possible reduction in heat gain.

Refrigeration is usually the most expensive component of the plant, and is measured not in B.t.u.'s/hr. but in tons, 12,000 B.t.u.'s/hr. being equivalent to one ton of refrigeration.

2496 Deck Pattern Pillar Cock

Sperryn

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

Bath, Sink & Basin Fittings



SPERRYN & CO. LTD.

MOORSOM STREET WORKS · BIRMINGHAM 6

Agents for the Republic of Ireland:
C. B. SHERIDAN,
10, Herbert Place, Dublin, 2.

Telephone: ASTon 4011 (6 lines)
Telex: 33724. Grams: 'Sperryn' Telex B'ham.
London Office and Warehouse:
131 Great Suffolk St., London, S.E.1.
Telephone: HOP 0131. Telex 24797.



from page eleven.

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

WAVIN PIPES Ltd., Balbriggan, have introduced to both the Irish and the British markets a new combined saddle and ferrule made of hard PVC. This unit is available in both dry and self-tapping types, and may be had for PVC pipes from 2" up to 9" nominal (225 mm.) diameters.

These important new units are introduced to ensure what is virtually a factory made connection on site. They simplify a job which site conditions often make difficult. Connections are made literally in minutes. No special equipment is needed—in fact nothing more than a bit and brace, or a ferrule key. In essence this new development means that the connection made on site is already factory tested before ever reaching the contractor.

* * *

BY VIRTUE of its unique design, the Conex-Instantor fitting (basically designed for use with Irish domestic copper tube) is equally suitable for connecting the various types of Polythene tubes.

A full range of Polydaptors is now available from stock to suit normal gauge Polythene tube to BS. 1972 from Sanbra Fyffe Ltd., and when these are used with Conex-Instantor Couplings, no heating or expanding of the Polythene tube is necessary. Also available from stock is a full range of Conexcel adaptors which will convert Conex-Instantor couplings so that they can be used for jointing soft temper underground copper tubes to B.S. 1386-1947. An important feature of this adaptor is the specially formed anti-friction ring which prevents jamming when tightening up and makes full allowance for the slight variations in the gauge or thickness of the copper tube.

* * *

G. B. PARKES LTD., Crown Works, Halesowen, near Birmingham, manufacture "P" Brand tested mal-

Continued page thirty-five.

THE AMAZING 'POLYDAPTOR'

means it is no longer
necessary to heat any size
of the popular
normal gauge

HYDRODARE

Low Density
Polythene Tubing
when making a compression joint.



Hydrodare $\frac{1}{2}$ " and $\frac{3}{4}$ " normal gauge are thus approved for use underground in the Dublin Corporation area, when used with fittings which do not require a manipulation of the pipe.

For your convenience, merchants requiring Polydaptors may now order from the manufacturers of genuine Hydrodare Tubing.



UNIDARE LIMITED

FINGLAS, DUBLIN 11

“Still living in the thirties, Dad?”



Look, the way to make money in plumbing is to cut your costs of materials. Right? And cut your labour-time. Right?

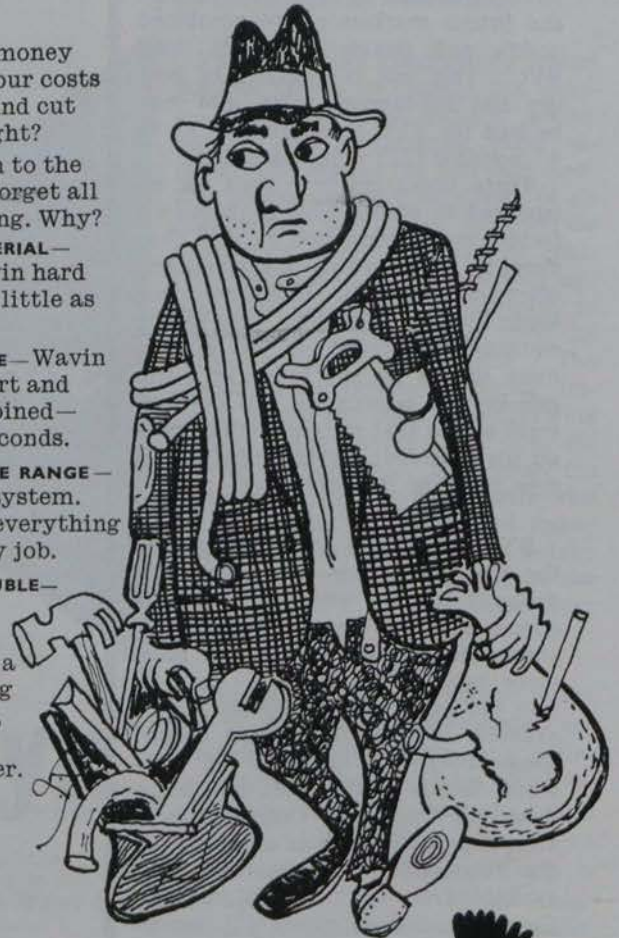
RIGHT! It's easy. Turn to the Wavin system and forget all other forms of piping. Why?

YOU SAVE ON MATERIAL— You can buy Wavin hard PVC Pipe for as little as 2d½ a foot.

YOU SAVE ON TIME— Wavin is easy to transport and handle. It can be joined—permanently—in seconds.

YOU HAVE A COMPLETE RANGE— Wavin is a complete system. Your stockist carries everything a plumber needs for any job.

YOU SAVE YOURSELF TROUBLE— All the modern Plumber needs is a hacksaw and a tin of cement. In short, for a water or chemical plumbing job, Wavin is the cleanest, quickest, neatest, most convenient money-earner. Quote on Wavin!



wavin

worth looking into ...

WAVIN PIPES LIMITED (Head Office and Works) BALBRIGGAN. Telephone 212260.

Also at London, Liverpool, Lisburn.

leable iron tube fittings which are made and stocked for immediate delivery in all British standard sizes. In addition the company makes a number of non-standard reducing sizes which eliminates the necessity for bushes, which on heating installations gives a considerable advantage both in efficiency and cost.

"P" brand fittings are individually tested by air pressure under water. The agent in Ireland is W. Finucane & Co.

* * *

RENNERT & CO., G.M.B.H., Dusseldorf, have introduced to the Irish market bath fittings, which incorporate a combined overflow and waste assembly. This assembly includes a stainless steel overflow fitting of new design, with a "parking spot" for the rubber plug when not in use.

The outlet tail of the overflow has a compression joint, as has also the overflow connection on the waste. The necessary preformed plastic bend to connect overflow to waste is included in the set, this doing away completely with the necessity to use lead or other pipe between the overflow and trap.

The trap is of a very neat design in cast brass, and the waste outlet grating is in stainless steel. The pillar taps of the set are the No. 31 design, incorporating the usual raised nose and non-rising spindle head work. Prices for the complete set are competitive. The Irish agents for the manufacturers are G. F. Morely Ltd., 45 Quinn's Lane, Fitzwilliam Square, Dublin.

* * *

KINGDOM TUBES Ltd., Tralee, are now making $\frac{1}{2}$ " and $\frac{3}{4}$ " copper tube to BS 659. This is the gauge of copper tube used for all overground work in Britain and Northern Ireland, and is exactly suitable for use with capillary fittings such as MBL. Supplies are available from all good plumbers' merchants.

* * *

THE MARLEY Vinyl Soil Pipes and Fittings system has been designed so that the majority of installations can be carried out with items available from stock, thus reducing or even eliminating the customary waiting period for specials. The pipes and fittings do not require painting and no maintenance is required once the material is in service.

The pipes and fittings are manufactured from unplasticised P.V.C., which is tough and resilient, and will not support combustion. They fully utilise

SPECIAL SURVEY

from page thirty-three.

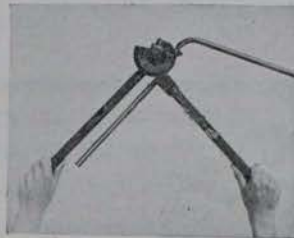
the properties and potential of vinyl, being light in weight, neat in appearance, having a smooth bore, and a simplified system of jointing. The pipes and fittings will not rust or corrode and are not affected by coastal or industrial atmospheres or by the use of domestic cleansing agents. Marley, of Sevenoaks, Kent, are represented in this country by Concrete Products of Ireland Ltd., Lucan, Co. Dublin.

Continued overleaf



A selection from the full range of Marley's new plumbing product—4" Vinyl soil pipe.

PORTABLE TUBE BENDERS



LIGHTWEIGHT BENDING TOOLS

Types GL.O and GL. Minor

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

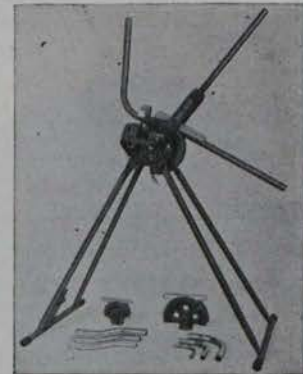
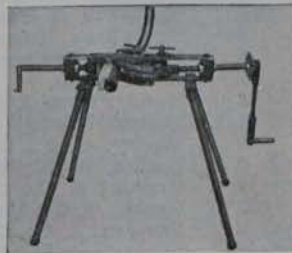
CAPACITY: GL. O— $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ " dia. copper tube.
GL. Minor— $\frac{1}{2}$ " and $\frac{3}{4}$ " dia. copper tube.

FOLDING STAND MODELS

Types GL. 2B and GL. 3B

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

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



EASY-WORK RATCHET BENDER

Type RP. 5B

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

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

SEE OUR PERMANENT EXHIBITION AT THE BUILDING CENTRE OF IRELAND, DUBLIN.

FIRST
MADE






FINEST
MADE

For details of range of hand-operated, hydraulic and motorised machines handling up to 8" dia. tube, apply to local stockist or write to:—
Dept. F, HILMOR LTD. (Sales and Service), CAXTON WAY, STEVENAGE, HERTS.

the first choice on the site Plumbers fit

CONEX-INSTANTOR

COMPRESSION COUPLINGS

 <p>CONEXCEL ADAPTORS For converting standard Conex-Instantor Type 'A' fittings for use with soft temper Under-ground Copper Tube to B.S. 1386.</p>	 <p>For use with Irish Domestic Copper Pipe and Polythene Tubes: Low Density to B.S. 1972, and High Density to B.S. 3284.</p>	 <p>'POLYDAPTORS' Low Density Polythene to B.S. 1972 and High Density Tube to B.S. 3284 are easily and quickly jointed by replacing the compression ring with the 'Polydaptor', and using the flanged insert appropriate to the tube being used.</p>
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SANBRA FYFFE LIMITED, CONEX WORKS, SANTRY AVENUE, DUBLIN, 9.


TELEPHONE: DUBLIN 375131 (5 lines).

Telegrams: Sanbra, Dublin. Telex 5325.



Quick automatic change

FROM HALF-CUT TO FULL-CUT




"48" PATTERN PATENT ADJUSTABLE RATCHET TYPE CHASER DIE STOCK

"48" Pattern Chaser Die Stock 1½", 2" and 4" B.S.P. Quick automatic change from half-cut to full-cut enables threads to be formed, when required, in two operations on 2" and 4" sizes (Patented).

THOMAS CHATWIN & CO.

Victoria Works, Great Tindal Street, Birmingham, 16.

Telephone: Edgbaston 3521-3.

CHATWIN also manufacture

Stocks and Dies (Angular and Square Pattern) Pipe Cutters Stillson Pattern Pipe Wrenches Screwing Machines up to 2" (Pipe and Bolt) Stocks, Taps, Dies, Tap Wrenches in polished wooden cases

ONE OF THE **BROCKHOUSE** COMPANIES

The Irish Plumbing and Heating Engineer.

Northern NOTES

● The first of twelve 240 ton regenerative air preheaters for Eggborough power station.



FOLLOWING the announcement that Davidson & Co. had been awarded a £1,900,000 contract for the supply of air preheaters and fans to Cottam power station, Nottinghamshire, details of a new order for similar equipment for the power station which the Electricity Board is building at Ballylumford, Co. Antrim, have been released. This contract is worth £450,000.

In addition to the Cottam contract, Davidsons have received substantial orders for equipment for several other major power stations—including a £1½ million contract for preheaters for Eggborough, in Yorkshire. In addition more than 20 air conditioning units of a new “dry” type specially designed by Davidson have been ordered for seven major hospitals in Northern Ireland.

MERCER BROS., engineers’ representatives of Bedford Street, have been appointed sole Irish agents and distributors for Handley Page hot-water panel radiators.

To launch their venture into the heating field a reception was given in a city hotel last month at which local architects, heating engineers and a host of interested parties saw the products—and met the men who will market them throughout Ireland.

Essentially an electrical firm, Mercer Bros. is a complete family affair. Terry, Walter junior and Victor share

the responsibilities with their father in running the old established business.

The marketing of the Handley Page radiators, however, is in the hands of Mr. Terence Mercer. “I know this is an entirely new field for us but I am certain we are onto a winner,” said the enthusiastic Mr. Mercer.

* * *

OVER 300 local authority officials, builders, architects, consulting engineers and Ministry representatives were the guests of Radiation Ltd. in a Belfast hotel last month.

The occasion was the meeting of

the Northern Ireland Association of Gas Managers, at which the marketing services manager for Radiation Limited, Mr. A. H. Edney, read a paper on the marketing of gas appliances.

The meeting was followed by a brains trust panel made up of Mr. F. Davies, director and general manager, Radiation Gas Fires Ltd.; Mr. S. A. Radley, general manager, Radiation Central Heating Ltd., and Mr. G. E. Jeffs, sales director, Ascot Gas Water Heaters Ltd.

A reception followed at which the other invited guests attended.

The display of gas-fired space and water heating appliances also created interest, where the Crystsglow, Britain’s first glass-fronted gas fire, took a front seat.

Other units on display included the Ductair range as well as the latest in Ascot gas water and space heating appliances.

Note: Northern area managers Mr. Charles Rolls and Mr. Lance Young—also in attendance—have now solved their “overlapping” problem.

In future Mr. Rolls will be in charge of catering equipment, gas fires, and Radiation New World Ltd., while Mr. Young will take over Ascot water heating range as well as Radiation Parkray Ltd., and Radiation Central Heating Ltd.

* * *

PULLEN PUMPS—the range of which includes industrial heating ac-

CENTRAL HEATING

WITH THE FAMOUS

‘All-Around’ Grate Boiler



The Willis “All-Around” grate boiler is the most powerful grate boiler on the market—proof of this claim is to examine the design—the boiler fits “All-Around” any open fire, giving a larger heating surface than any ‘Back’ boiler—ask your merchant, he knows.

HEATS 3-4 RADIATORS PLUS PLENTY OF HOT WATER—FROM ONE OPEN FIRE.

Made in Belfast by WILLIS, the Name Famous for 40 years in Open Fire Heating.

Write now for details to: Wm. Willis & Co. Ltd., 23/9 Dublin Road, Belfast, 2.

Continued page forty.

May, 1964.



HOT NEWS from Handley Page

Handley Page, constructor of Britain's fast-as-sound Victor V-bombers, has entered the space-heating field. Its new range of hot-water panel radiators has the unmistakable hallmark of the company's unique design and vast engineering skill.

Handley Page radiators are formed from high-quality 18-gauge mild-steel sheet, electrically seam-welded for extra strength. Their distinctive, easy-to-clean, vertical fluting provides a rigid, light-weight product which stands up firmly to shock or ill-treatment. Each radiator is tested to 100 p.s.i.—twice the normal working pressure.

Slim, elegant, efficient, economical—Handley Page radiators are perfect for all closed-circuit heating systems. And their construction allows them to be angled or curved to suit bay-window requirements.

BRIEF SPECIFICATION :

HEIGHT: Four standard heights - 12", 18", 24", 30".
WIDTH: Single panel - 1.35"; Double panel - 3.25".

LENGTH: Thirteen standard lengths up to 88.5" available from stock.

Special lengths made to order or single panels can be connected together in series.

FINISH: A coat of stove-enamelled white primer is standard. Stove-enamelled gloss finishes available at an extra charge.

All enquiries to: MERCER BROTHERS · 21 BEDFORD STREET · BELFAST 2 · BELFAST 33331.



Knockmore - Lisburn - N. Ireland

TELEPHONE: 2277 (4 LINES), 2771 (3 LINES).

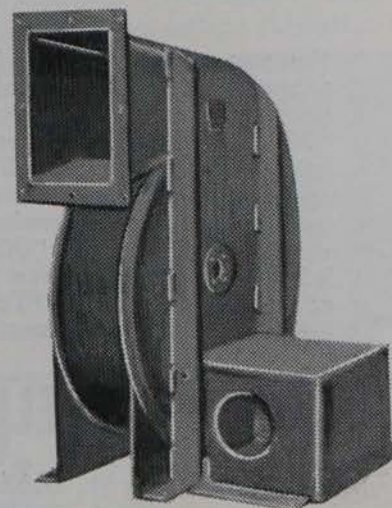
SHEETMETAL FABRICATORS, STEEL STOCKHOLDERS

WE OFFER A SPECIALIST SERVICE IN THE DESIGN AND
MANUFACTURE OF PLANTS FOR THE FOLLOWING
APPLICATIONS—

**AIR CONDITIONING
PLENUM HEATING
DUST CONTROL
VENTILATION**

Manufacturers of:—

CENTRIFUGAL FANS - BOILER FLUES - RADIATOR SHELVES



The Irish Plumbing and Heating Engineer.

from page thirty-eight.

in brief . . .

Northern Notes (cont.)

celerators with capacities of up to 1,600 gallons per minute, a multi-stage high head, a boiler feed sump, as well as deep well and sewerage pumps, have appointed Messrs. P. & D. Macfarlane Ltd., of Cupar Street, Belfast, as their sole agents and service engineers in the North.

Manufactured by the London firm of Fredk. A. Pullen & Co. Ltd., Pullen Pumps are well known for high efficiency and long life.

Of special interest to domestic and fire hydrant fitters is the Pullen water booster—particularly suited to tall buildings. Due to the design of the system, which does not need compressed air equipment, very little space is required in the plant room.

Full technical information and assistance in preparing schemes is available through the new Belfast agents or direct from Fredk. A. Pullen & Co. Ltd., 58 Harleyford Road, Vauxhall, London, S.E.11.

THERMOCONTROL LTD., the manufacturers of a wide range of heating and air conditioning control equipment, have recently opened a contracts, sales and service office in Northern Ireland at 17 College Square South, Belfast 1; Telephone Belfast 31881.

* * *

FOR THE second year in succession Chemidus Plastics Ltd. of Ashford, Kent, have been awarded Armagh Rural District Council's P.V.C. pipe contract. The 1964 contract is for some 38 miles of pipe and valued at £31,000. Chemidus Plastics Ltd. was the lowest of nine tenders received.

* * *

A £20,000 contract to supply The English Electric Company Limited with 124 Velan automatic drain units has been awarded to British Steam Specialties of Leicester. These units, operating on various pressure-temperature conditions up to 2,500 p.s.i./1,050°F., will be used on the drainage systems of the "English Electric" turbines at the Central Electricity Generating Board, West Burton Power Station.

Biddle agent for North



Mr. Stewart, who has been appointed Biddle agent for N.I., is pictured here. His address is 26 Neill's Hill Park, Belfast, 5.

Announcement by
J. I. YATES LIMITED
14-16 COPELAND ST., BELFAST

In view of some doubt which still appears to exist as to its present management, J. I. Yates Limited again wish to state that Mr. Jocelyn I. Yates has now no connection whatever with the Company, having some months ago completely severed his connection with it. The Company, however, continues to represent all its former Principals, including Bailey Meters & Controls Ltd., Clyde Soot Blowers Ltd., E. Green & Son Ltd., Ronald Trist & Co. Ltd., amongst others.

"SO I SAID— JOSAM"

Yes, you see he wanted to know if there was a really comprehensive range of drain fittings available on the European market, so naturally I said "JOSAM." "JOSAM," I said, "they've got the lot—floor drains, anti-flooding valves, roof drains, oil and grease interceptors, shock absorbers—the lot. Take a look at this roof outlet," I said, showing him this advert. "The very thing!" he said. "JOSAM, is it?" "JOSAM it is," said I. So off he went to Dockrells to have a look at the rest of the range. Yes, that's right, Dockrells of Georges St. Oh, don't mention it—you're welcome!



THOS. DOCKRELL, Sons & Co. Ltd.

South Great Georges St., Dublin, 2. Phone 76871.

SOLE DISTRIBUTORS FOR REPUBLIC OF IRELAND.

★ **NEW INTERNATIONAL PRESSED STEEL RADIATORS**

*In Single, Double
and Treble Panels*

EX STOCK

★ Also — **THERMOPAK and
SILENTFLO ACCELERATOR
PUMPS**



PRICE LIST AND ILLUSTRATED LEAFLETS ON REQUEST FROM

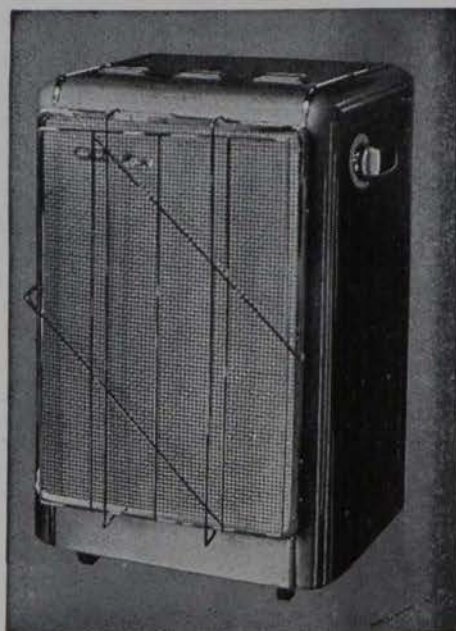
Sole Agents for Republic of Ireland:

Monzell, Mitchell & Co. Ltd

67-73 TOWNSEND STREET — DUBLIN, 2. 'Phone 76282.

THIS IS FLAMELESS HEAT

CATALOR LIQUID-GAS thermo-reactor for domestic, office or industrial heating.

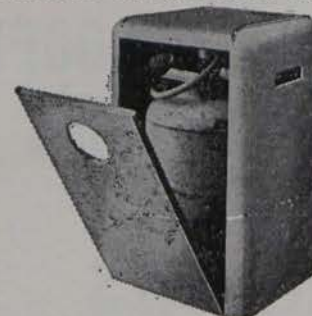


"Catalytic Heating"—What It Means And How It Works. When liquid propane or butane meet a pre-heated platinised "catalyst" they are oxydised into carbon dioxide and steam; heat is generated in the process, and the (patent) "CATALOR" heater gives off this heat as 46 per cent. radiation and 54 per cent. convection. The heating element does not ignite or glow; it simply pours out penetrating heat which is healthy, clean and SAFE. Even a naked flame held near the CATALOR element is extinguished. The larger models need only a few minutes of electric pre-heating; then an automatic cut-out switches off the current as the element grows hotter.

Left: Model 6035 CATALOR
'Housemaster' Domestic Heater, £25-12-0.

NO PIPES OR WIRES

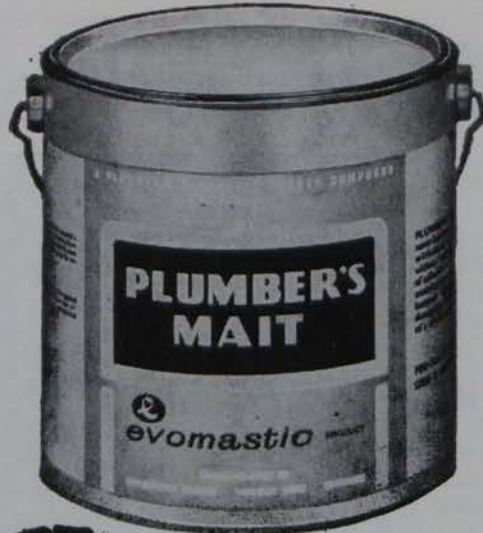
CATALOR Heater is self-contained,
holds butane or propane bottle, runs
on smooth castors.



W. & L. CROWE LTD.

East Wall,
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Phone 43101.

Sole Distributors of CATALOR (Patent) Liquid-Gas Heaters throughout Ireland.



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