

practical

# home-building & decorating

MARCH 1971  
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# FAN CLUB

By HAROLD KING

Frequent changes of air are necessary in the home—to remove air which has become stale or moisture-saturated. The best way of achieving this is to fit an extractor fan. Described here are some of the many fans available.

**A**N APPARENT contradiction is the fact that in any well-heated and well-insulated home it is necessary to have frequent changes of air.

Air becomes stale and foetid and may be heavily laden with moisture as a result of steam from cooking and washing. In Britain, with a damp winter climate the problem of condensation is intensified in the colder months.

Apart from physical discomfort, damp air can ruin furnishings, fabrics and decoration in the house.

In the kitchen, particularly, damp stale air will cause the smells from cooking to hang about in the air, often for hours.

While many living rooms need about

two air changes an hour, a kitchen needs as much as 15 air changes and a bathroom 20 air changes an hour.

Although this can be achieved by opening a window, this is seldom a satisfactory method—since you also allow cold draughts to enter. The best solution is to fit an extractor fan.

The usual position for a fan is the kitchen or bathroom, but any room can benefit from this facility. Air can be quickly changed in a main room, for example, to remove cigarette smells after a party or other celebration.

The benefit an extractor fan gives is it takes stale air out. In the average house, however well insulated, fresh air is induced into the building.

Moisture-saturated air is not always apparent. What happens is that this air meets a colder surface such as a painted wall or the glass on a window and turns to water. In other words, though on a small scale, this is how rain occurs.

Double glazing and tough-warm surfaces such as polystyrene, cut down this problem of running water. Gloss-painted surfaces are usually cold to the touch and prove to produce condensation, although proprietary anti-condensation paints are marketed.

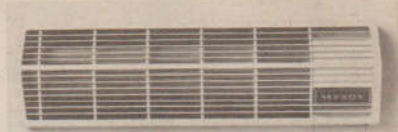
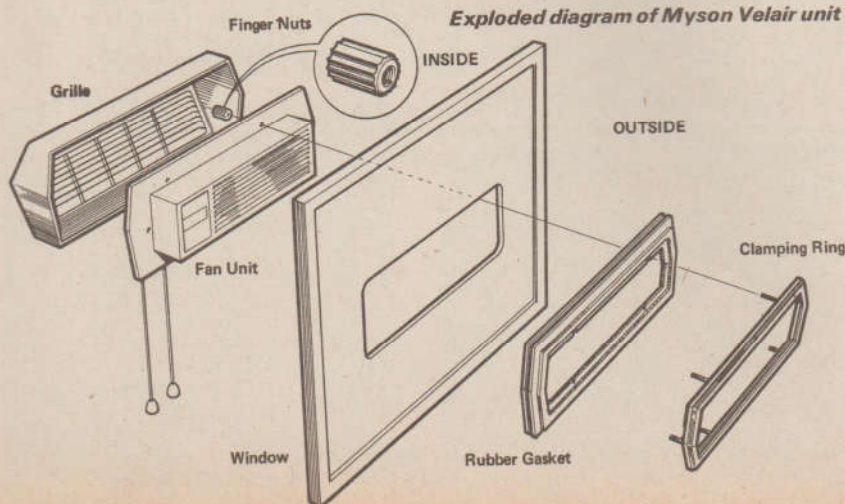
To assess the size of fan needed for each particular room the following formula can be used; multiply the length and the height of the room by its length and breadth, and then multiply that figure by the required number of air changes. This provides the required cubic air movement in one hour.

The majority of manufacturers of extractor fans rate these in cubic feet of air extracted each hour.

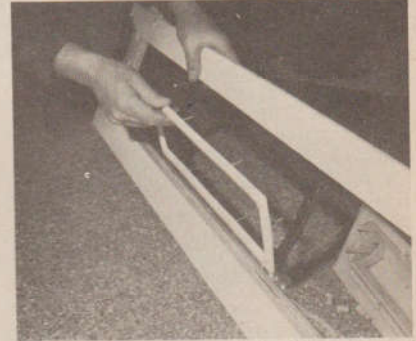
Extractor fans come in various types, meeting differing fixing requirements. Some provide a reverse action, enabling cool air to be drawn into the home in summer.

In a kitchen, the ideal place for an extractor fan is above the cooker, the chief source of steam.

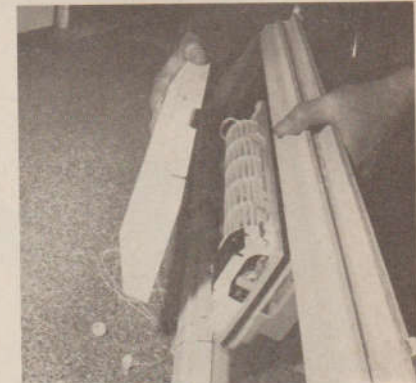
In other conditions, the fan should be installed at a farthest point from the door. Replacement air can flow over the whole area. In larger areas, several fans may be needed to produce a wider spread of air.



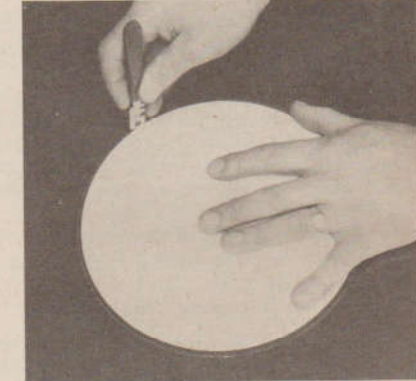
1. Tough and compact, the Myson Velair unit features a tangential-type fan



2. Rubber gasket and clamping ring of fan seen being fitted to transom window



3. Last stage in installing the Velair is to secure front grille in position



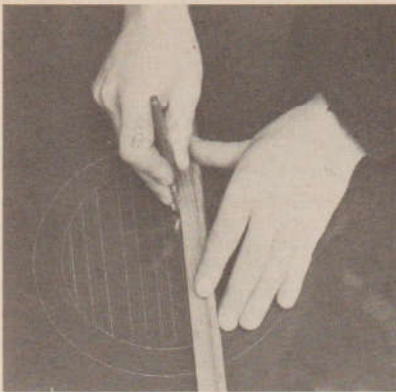
4. The first step in cutting a circular opening in glass is to score the rings

Avoid installing fans near doors which may be left open, as this short-circuits replacement air between the door and fan.

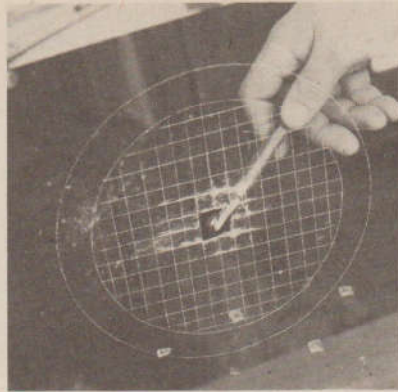
Do not have windows open near the fan, since this may also cause short-circuiting. Similarly, a fan should not go into a transom light above an opening door.

The average fan should be mounted

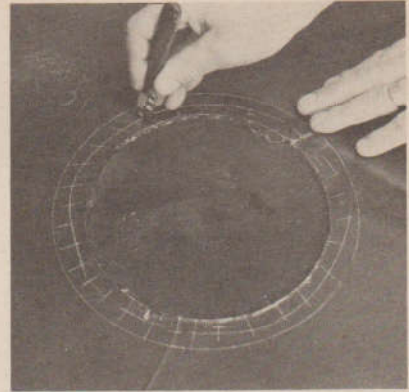




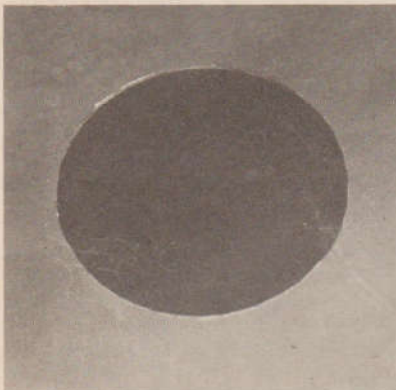
5. Lines are scored and cross-hatched across the inner-ring area using cutter



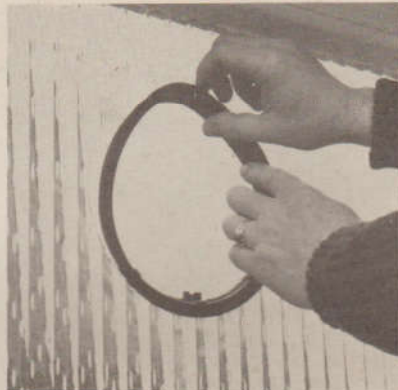
6. The centre is tapped and broken out, using the lipped portion of the cutter



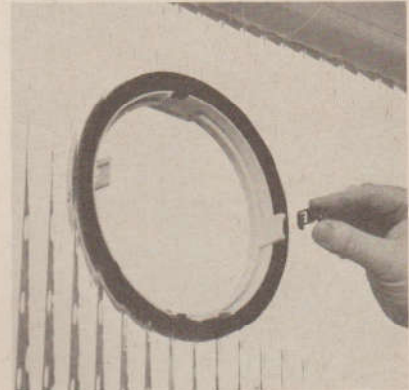
7. Outer ring is scored and segmented, so hole can be enlarged to desired size



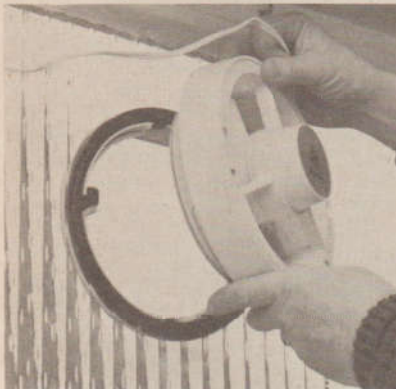
8. The completed circular opening, ready for installing an extractor fan unit



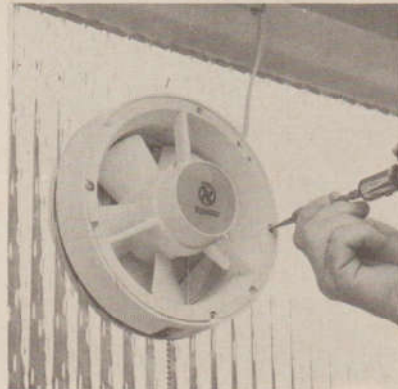
9. Fitting rubber gasket of the Xpelair window fan around prepared hole in glass



10. After fixing in position the outer surround, locking clips are then fitted



11. The fan assembly is then carefully manoeuvred into position for securing



12. Screwing fan assembly to the locking clips; inner grille is then fixed



13. After circular hole is cut in pane the Thermor rim gasket is next fitted



14. With the rim fixed in position, the body of the fan is slipped into place



15. Once the fan's body is secured to the rim, the outside casing is mounted

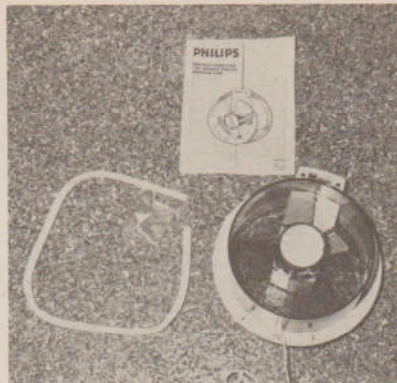


16. The internal fan fascia is secured to the main body with screws provided

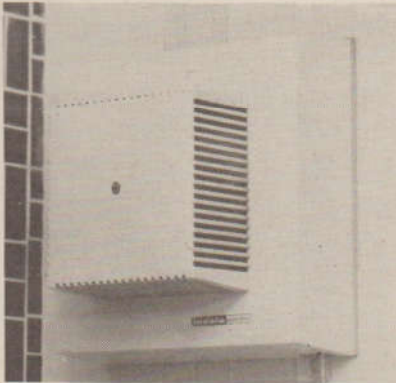




17. The Ekco-Hawkins fan has reversible mechanism which is switched by hand



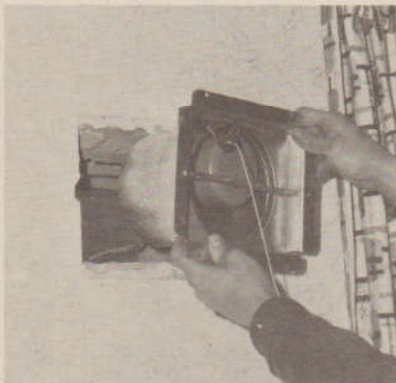
18. An HR3404 Philips extractor fan is shown before assembly, showing parts



19. This square-set casing houses the Indola electric toilet extractor



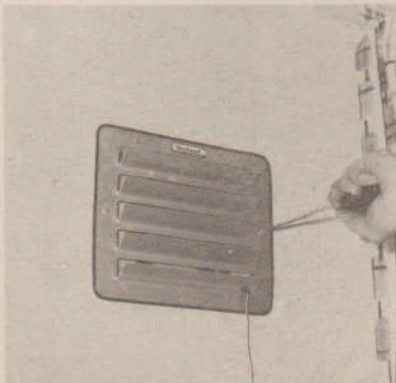
20. Two-part ducting forms part of the wall-mounted Ventwall extractor system



21. Main body of the extractor with ducting is slipped into brickwork cavity



22. Outside louvre casing, in aluminium, is secured by screwing to the brickwork



23. Ventwall's interior louvred aluminium face plate is permanently fitted

fairly high and at least 3 ft. 6in. from direct heat from burners and hot-plates.

The Myson Velair extractor fan differs materially in appearance from the conventional rotary fan. This unit employs a tangential fan, the impeller unit in the maker's central-heating convectors. The unit consists of a grille, fan unit and rubber gasket and clamping ring.

Operated by two pull-cords, the unit has a nominal rating of 10,000 cu.ft of air per hour and is said to be able to withstand an outside wind of 15 mph—higher than conventional rotary fans.

A useful feature is that the impeller

unit can be simply unlatched and washed in warm soapy water, then easily reclipped in place.

The fan needs an aperture of 16.71in. (424.5mm) x 4.96in. (126mm). This opening is something of a challenge to cut in a smaller fan light, but straightforward for a larger window.

A template is provided for glass cutting. For most applications 32oz (4mm) glass can be used; for panes over 16 sq ft or in conditions of extreme wind,  $\frac{7}{32}$ in. (3.5mm) drawn sheet or  $\frac{1}{4}$ in. (6mm) plate glass should be used. Alternatively, a piece of clear Perspex sheet could be used.

The accompanying diagram shows the simple assembly arrangement of the unit. It must be connected to a 3amp fused source.

It has a body and front grille in ABS plastic, with rust-proofed and stone-enamelled steel weatherflap.

Cutting a circular opening in situ in a pane of glass is possible but the liability of breakage is very much higher.

It is best to use new glass and work on a clean, flat surface. Normally 32oz. (4mm) or heavier is needed for a fan.

Sealed-unit double glazing can be supplied with pre-cut hole. A glass cutter can be bought fairly cheaply, but it is advisable to buy a good one. A compass or radius cutter can also be bought.

In this case, kitchen plates met the radius of certain average fans.

The technique for cutting glass is to score an inner and an outer ring—so a larger and smaller plate were used. This is called a "safety" ring and reduces the risk of breakage during the cutting operation.

Lines were then scored and cross-hatched across the inner-ring area. The centre was then gently tapped and broken out, using the lipped portion of the cutter.

Now the outer ring was scored and segmented, enabling the hole to be enlarged to finished size.

The glass was positioned, puttied and bedded into place and a Thermor Multivane Iris Shutter fan was fitted. This is made largely of white, durable plastic.

This was a simple, four-stage operation. First, the rim gasket was inserted, followed by the body of the fan. The outside louvre grille was next fitted, finally followed by the grilled interior-fascia.

The unit has a  $7\frac{1}{2}$ in. blade and rate of extraction is given at 12,700 cu.ft. an hour.

Two models are offered—standard (for extraction only) and reversible (two speeds of extraction and two of air intake). A version is also available for cavity-wall-mounting.

Another unit, the Kleenair Iris fan, has an extractor rate of 16,000 cu.ft./hr.

Among the range of fans made by the Colchester Fan Marketing Co. Ltd are units specifically for bathrooms and toilets. One which can be either wall or

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## FAN CLUB

window-mounted is the TA15, which is a cord-operated unit with a built-in timer. This operates for three minutes at a slow speed and then for a further five minutes at full power and then switches off. It extracts about 900 cu ft of air in that period and can be set to run constantly.

The 6in. metal-bladed fan is housed in a fully enclosed white plastic casing and has an extraction rate of 7,500 cu.ft/hr.

The Xpelair 6in. window-mounted fan, Model FXC6, can be installed by one person from inside the room and sets in a freeglass area of 8½ in. sq. Moulded in ivory plastic, it is operated by a single cord switch, which opens or closes the draught-excluding outer cover. Its capacity is 8,000 cu.ft/hr.

The company's 6in. built-in wall fan has a capacity of 10,000 cu.ft/hr. This is remotely controlled by any proprietary on-off switch. The draught-excluding shutters open and close electrically as the fan is operated.

Available from the Dawton Electric Company is the Ventwall extractor fan designed to fit standard 9in. x 6in. air bricks.

Features include aluminium anodised interior louvres to allow movement of air from the ceiling, aluminium anodised blades, cylindrical duct to eliminate turbulence and opening and closing shutter valve.

Powered by a continuous-rated motor, 200/250 AC, the fan is treated against corrosion.

Two models are offered—8,000 cu ft/hr, 30 watts; and 11,000 cu ft/hr, 40 watts. Models are also made for window fitting.

Made from tough, clear polystyrene to cut light loss to a minimum, the Philips window fan features an automatic weather-proof outside hinged flap.

As well as taking air out, the blades can be reversed—with a flip of the handy front control—to draw in fresh air.

Operating on 240v AC, with a loading of 15 watts, the fan is easy to fit—the size of hole required being 7½ in. dia.

Also fitted with reversible fan blades is the Ekco-Hawkins extractor fan.

Made from a hard, non-corrosive plastic with a transparent weatherproof outside hinged flap, it has an air displacement of 8,700 cu ft/hr (250 cu. m).

*Manufacturers and suppliers of fans featured here are: Thermor Electrical Appliances Ltd, Madison House, Molesey Avenue, West Molesey, Surrey; Ekco-Hawkins Ltd, Drury Lane, Hastings, Sussex; Xpelair Ltd, P.O. Box 15, Colchester, Essex; Colchester Fan Marketing Company Ltd, 9 and 11 Vernon Building, Westbourne Street, High Wycombe, Bucks; Myson Air Units Ltd, Industrial Estate, Ongar, Essex; Philips Electrical Ltd, Century House, Shaftesbury Avenue, London, W.C.2; and Dawton Electric Company, Ventholm, The Common, Earlswood, Solihull, Warks. Other makers include: Vent-Axia Ltd, 60 Rochester Row, London, S.W.1; and Greenwood Airvac Ventilation Ltd, Regal House, London Road, Twickenham, Middx.*

continued from page 18

## SPARE ROOM— EXECUTIVE DEN

Tiling was carried out in conventional fashion, a level batten, one tile high, being used to ensure accuracy. The lower row of tiles was set in later. Vertical alignment of the tiles was constantly checked during tiling, using a builder's spirit level.

A proprietary tile cutter and a notched trowel were the main tools used, with a pair of pincers to "nibble" away small sections, as when cutting-in around the light switch and a power point. The current was, of course, shut off at times when power and lighting terminals were accessible when working.

The Tidmarsh cedar wood venetian blind was then fitted, the window reveals being plugged to take the fixing screws for the blind fixing brackets.

Tebrax rails and brackets were next fixed to the walls above the console unit with 2in. No. 8 screws, the walls also first being plugged to accept the screws.

The Barry Staines loose-lay Trident Carpet tiles in Adam Gold, were easily cut to size to fit the contours of the floors. Carpet tiles were chosen since this involved the minimum of wastage in cutting-in.

Such tiles can easily be moved around or relaid. These consist of nylon fibre and have an embossed pvc backing which gives a positive floor grip without adhesive.

The tiles were cut with a sharp knife; offcuts can often be used to fill in where smaller sections are needed, without joints being apparent.

Sinclair Radionics Series 2000 solid-state stereo amplifier, with its associated trough-line stereo FM tuner, were shelf-mounted above the console unit. These are stylish units with matched, attractive anodised-metal cases which helped enhance the general style of the room.

A Teleton tape unit and a Dual record player were used in conjunction with the amplifier.

The room served simply as a control point for this equipment, since its dimension would not have been truly satisfactory for inclusion of the two spaced speaker units needed for stereophonic reproduction of sound.

Speakers were located in an adjacent room and controlled from the convenient point on a shelf above the console.

It is possible, of course, to mount small shelf speakers for average reproduction, or listening could alternatively or additionally take place using stereophonic headphones.

It is obviously important the record and tape console units are firm structures, so that performance of equipment is not marred by vibration.

The record deck was the Dual 1219, Stereo automatic unit. This was mounted in position by using a supplied template to mark the aperture to be cut. The unit is a versatile one, enabling both single and

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automatic playing of records, with fine control of the stylus.

The tape deck, also stereophonic, was the Teleton FXB 510D. This unit incorporates two preamplifiers and, like the record unit, is played through the Sinclair Radionics amplifier. It can record off the air or from a microphone.

This unit is supplied in a simple wooden case, is demountable and can be quickly put back into the case if it is to be operated away from the console. Mounting lugs on the deck enable this unit to be fitted into an appropriate aperture cut into the console deck.

Once screwed in place, both units were linked to the amplifier and speaker units. The requirements are simply set out in detailed instructions supplied.

Each unit was attractively styled in black and aluminium, matching both each other and the Sinclair units.

The products and materials used for this executive den are listed as follows:

Gold Star Handi-board in fine-line teak-veneered chipboard used for the units by Berman Brothers Ltd, Goodwin Road, Edmonton, London, N.9.

Top Spot desk lamp, spot lamp and central recessed light were from Mazda Division, Thorn Lighting Ltd, Thorn House, Upper St. Martins Lane, London, W.C.2.

Litestand dimmer switch by Bremar Engineering Ltd, Queen Mary's Avenue, Watford, Herts.

Stereo record player by Dual Electronic Industries Ltd, Paramount Industrial Trading Estate, Stokenchurch, Bucks.

Tape unit from Teleton Electro (UK) Ltd, Teleton House, Robjohns Road, Widford, Chelmsford, Essex.

Trident range, loose-laid, carpet tiles in Adam Gold, by Barry Staines (Sales) Ltd, Staines, Middx.

Hand-printed 6in. ex-stock ceramic wall tiles, CPR 623 WM 234, from Pilkington plus Carter Tiles Ltd, PO Box 4, Clifton Junction, Manchester M27 2LP.

Crown Vinyl-gel paint in Blue grass by Crown Paints Ltd, Darwen, Lancs.

Tebrax Shelving System made by Tebrax Ltd, 63 Borough High Street, London, SE1.

Natural Cedarwood wooden slatted venetian blind from Tidmarsh' and Sons, Transenna Works, Laycock Street, Islington, N1 1SW.

Series 2000 Solid-state Stereo Amplifier and FM tuner from Sinclair Radionics Ltd, London Road, St Ives, Huntingdonshire.

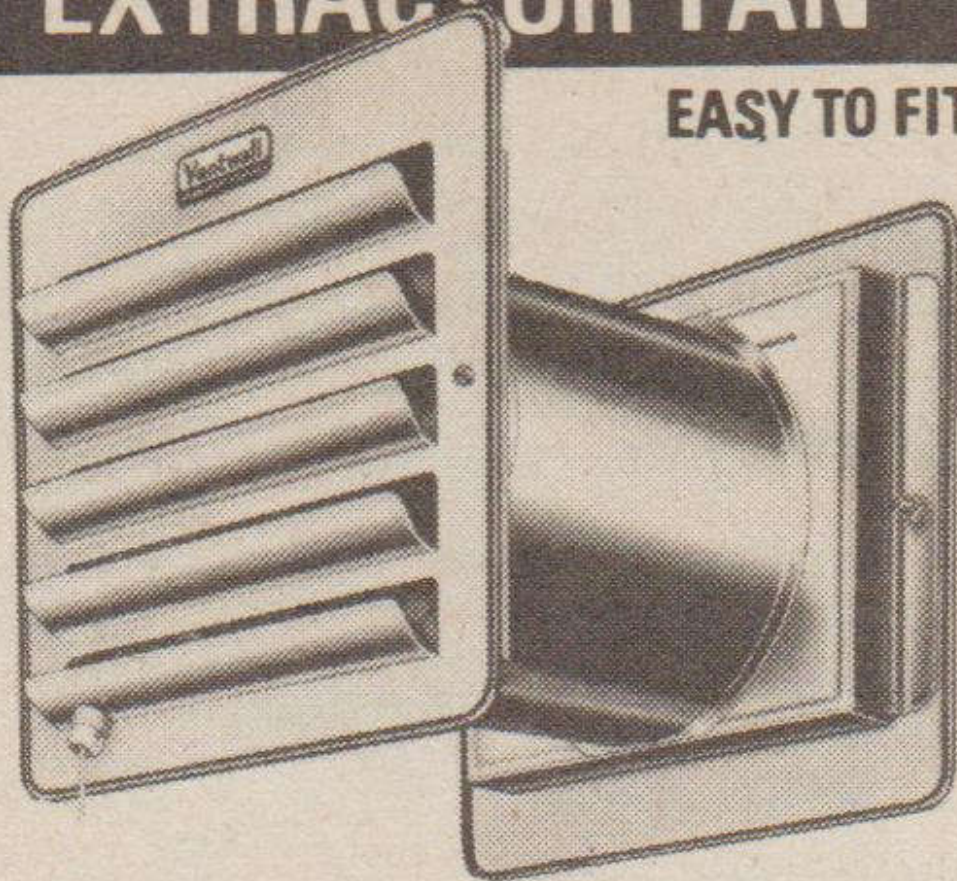
Door furniture from S. Leboff (Fobel) Ltd, Hyde House, Edgware Road, Colindale, London, N.W.9.





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