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The **PRACTICAL  
HOUSEHOLDER**

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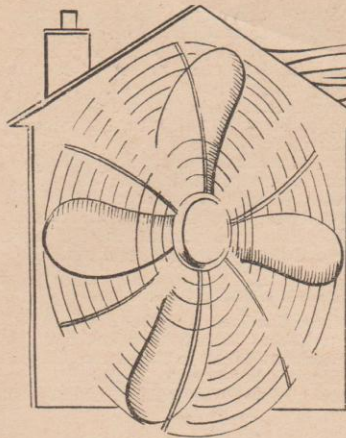


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*Making a Refrigerator Sink Unit*





# Fan Ventilation for the Home

Ensure a Healthy Atmosphere in Your Home by Banishing Stale Air. A Ventilating Fan is the Answer, So Why Not Fit One as Described in This Article? By A. WELBY

WITH the installation of an adequately rated ventilating fan your house can be a haven from summer heat during both day and night. In addition to banishing stale air it can also save housework. A good fan, whether placed in attic or basement, helps to keep the house clean. If you think your home is perfectly clean as it is, then consider that in the average dwelling-place 400lb. of cooking grease and over 2,000 gallons of water vapour are added to the air each year.

This moisture and grease will cause damage and expense unless it is allowed to escape, and it cannot do so in the ordinary house. Water vapour soaks into walls and causes timber rot; grease settles on walls, ceilings and woodwork, dulling paintwork and polished surfaces. In 24 hours four people can contribute 1½ gallons of moisture to the air. What you can do is to keep the air circulating with a fan.

Naturally you will not want to run an ordinary cooling fan during the winter, but by its use in the four or five summer months you can have many of the comforts of air-conditioning at a fraction of the

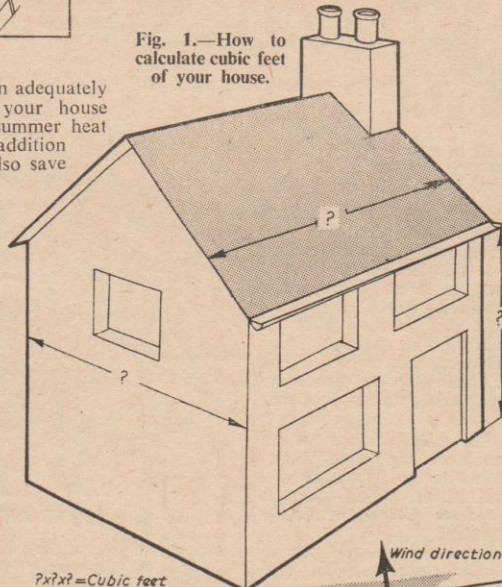


Fig. 1.—How to calculate cubic feet of your house.

?x?x?=Cubic feet

## Types of Fans

There are three distinct types of fans: *Propeller*, with two or more blades coupled to the motor shafting; *axial flow*, a modern development of the propeller, with the blades arranged to operate in the airstream; *centrifugal*, a metal casing in which revolves a multi-bladed impeller.

In the first class come the simple ceiling and desk fans. They function quite satisfactorily unless there are insufficient openings in the building through which the air can be transmitted.

The axial-flow type is more efficient, though it tends to be noisy when working against pressure. However, it can be conveniently fixed in windows or walls.

Centrifugal fans can be obtained with extremely large capacities, but they are expensive even in the smallest ratings. Their use should be reserved for quite large buildings, especially where ducting has to be employed.

## Air Changes and Ventilation Space

Your selection of a suitable fan should be based on the number of air changes required over a given time. Where entire household ventilation is required there should be one complete air change every 1½ to 2 minutes; for separate rooms one change every 3 to 5 minutes will be quite adequate.

Next you have to determine the total cubic volume of space you want ventilated (Fig. 1). For instance, a large six-room house may have 10,000 cu. ft. and will require a fan capable of delivering 7,500 cfm. at normal static pressure, one com-

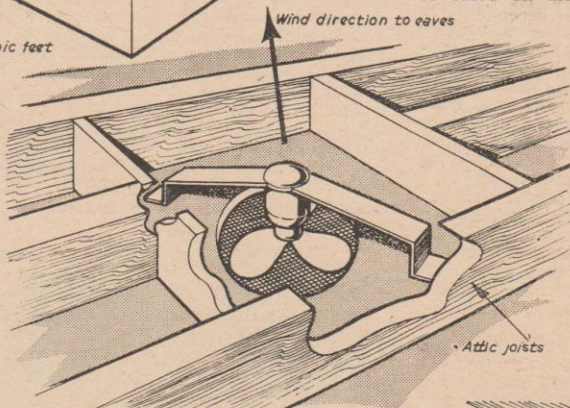


Fig. 3.—An attic fan.

normal cost. Homes with this type of ventilation can be 20 deg. cooler at night and 10 deg. cooler in the day.

The type of fan under discussion works by pulling in fresh air through a special aperture or open windows and expelling warm stale air that would otherwise remain in the house. Ventilating fans depend not primarily for capacity upon the size of motor used to drive them but upon the design and diameter of the blades. However, it is true that the bigger the unit the larger is its capacity. They are rated according to the number of cubic feet of air moved in one minute (cfm.) instead of by horse power.

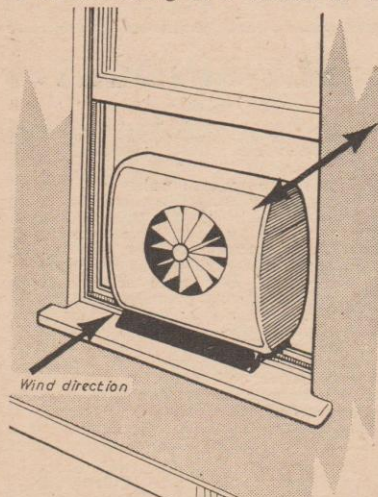


Fig. 2.—A window fan. Although a multi-bladed fan is shown it is normal practice to use a three-bladed fan as for an attic (Fig. 3).

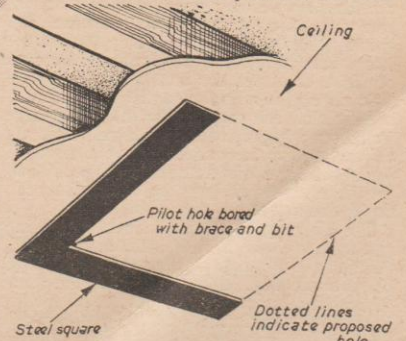


Fig. 4.—Marking out the square in the ceiling.



plete air change every 1½ minutes; a separate room of 900 cu. ft. will need a fan rated at 300 cfm. one air change every 3 minutes. Unfortunately there is more than one rating method used by fan manufacturers, so it is wise to estimate on the generous side.

Your fan should not only possess an adequate capacity for the job to be done, but should operate as quietly as possible. But there will never be complete silence since the rush of air itself through windows

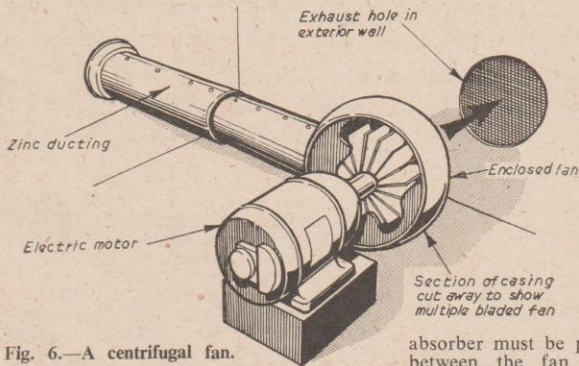


Fig. 6.—A centrifugal fan.

or louvres will cause a certain amount of noise. The slower the fan the quieter it will be, but it will be lower in capacity.

### Window and Attic-type Fans

When buying a fan look carefully at the blades to see that they are strong and well balanced, especially the latter. Blades that are not properly fitted can cause noise and possibly damage the motor bearings. You should also bear in mind where the fan is to be fixed; portable fans and those fixed within easy reach of straying fingers should always have a guard.

The most convenient type of fan for the small modern home is the window fan, especially the portable type (Fig. 2). Probably your local electrical dealer will be glad to arrange a free demonstration; naturally this is impossible with most types which require structural alterations in the home and permanent fixings. Many designs of window fan can also be hung from ceilings or placed on a table.

Admirable as these small fans are, they are incapable of ventilating more than two rooms at the most. If you want ventilation throughout the whole house then you need a more powerful permanent model. With these you have scope as to fixing. Normally they are placed in the attic, on an exterior wall or in the basement.

Let us deal first of all with the layout required for the attic-type fixing (Fig. 3). We need air-inlets into the house. These can be provided by open windows or, if you wish to go to additional expense, by special inlets with filters fixed in the walls. Then there is the fan, which should be out of sight. Perhaps the best place is in the attic ceiling, as near the centre of the house as possible. Air can then be drawn equally well from any part of the building. Last of all we require an outlet for the stale air. Again we have this automatically provided by the many small gaps between tiles and under the eaves.

The only structural work involved is in cutting the hole in the attic ceiling. It should not be beyond the scope of any home handyman. First determine the size of the fan framework and bear it carefully in mind as you decide the exact position of the hole. Then, from the attic side of the ceiling, bore a fairly large pilot hole with

bit and brace (Fig. 5). Now, using the hole as a starting point, you can mark with the aid of a large steel square the borders of the required opening. This is best done on the plastered side of the ceiling, from the lower side. The plaster must be heavily scored with a chisel, using a small piece of flat board as a cutting guide, and then cut away with a medium-toothed key-hole saw. When the plaster is removed the unwanted joists can be cut away with a handsaw and the hole edged with suitable boarding. This should be stoutly nailed or screwed so as to provide a base for the fan as well.

### Shock Absorber

The fan itself should need no fixing as its weight will hold it steady. However, some form of shock

absorber must be positioned between the fan and the framework of the ceiling hole on which it is to rest. This is most conveniently provided by gluing thick pads of foam rubber to either. With a rigid fixing vibrations of the motor will be transmitted to the ceiling and walls causing unnecessary noise.

The wiring of the fan to the electricity supply may have to be a job for the professional unless there is a power plug conveniently situated.

It may be desirable to fit some form of shutter under the fan hole. The easiest method is to cut a square of pegboard and screw it to the wooden edging of the hole. However, it is as well to remember that the smaller the fan intake the less air can be moved. A shutter offering negligible air resistance could be made from steel wire mesh treated with gold paint and secured in a wooden framework. To prevent un-

wanted winter draughts either of these shutters should be replaced with hardboard. Handymen who wish to go to further expense could purchase a set of louvres especially made for the purpose. Most of these work automatically; they rise with the suction of the wind when the fan is operated and close when not in use.

For the installation to function efficiently it must be stressed that there should be adequate openings at three points: on the house exterior, by open doors, windows or special grille arrangement in the attic ceiling and through the roof and eaves.

### Wall and Centrifugal Fans

A large fan can also be fixed on an exterior wall at top floor, ground floor or even basement level. In these cases the fan unit has to be mounted vertically and involves piercing the wall. Unless the

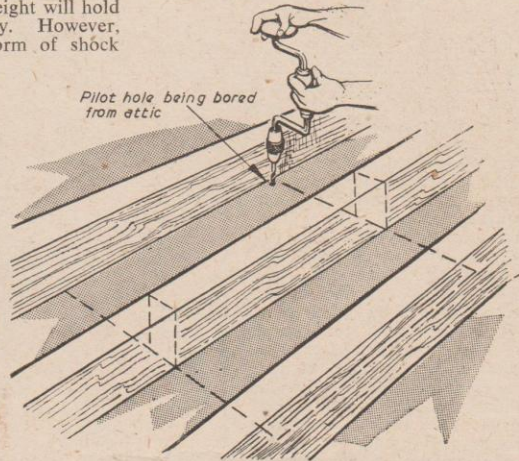
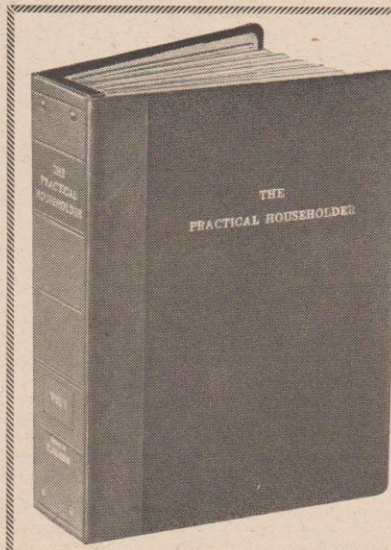


Fig. 5.—Drilling pilot hole for locating square in ceiling.

handyman has had experience of brickwork he would be advised to content himself with the simpler attic installation. The basement installation may be undesirable if there is not a clear passage to the upper rooms in which the air can move. However, if there is no other acceptable position the difficulty could be overcome by using a centrifugal fan connected to the main building by zinc ducting (Fig. 6).



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AS a service to our readers we have arranged for self-binders to be supplied in which they may preserve their copies of this journal. Copies can be inserted as received and you do not, therefore, have to wait for the completion of the volume. You secure the same all-time protection as with ordinary binding. The self-binders are in green waterproof and greaseproof cloth, attractively lettered in gold. This system avoids copies becoming damaged or mislaid. The Easibinder opens flat at any page of any separate edition and gives quick reference facilities. When the volume is complete our annual index published at 1s. 3d. should be inserted.

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Simplex lampholder fan

**Suede Cleaner Eraser**

**P**ERSUEDE, the new dry suede cleaner, resembles a large pencil eraser and is as simple to use. The appearance of badly marked suede shoes and similar accessories can be cleaned quickly and easily and certainly take on a new look. The surface is rejuvenated and the nap considerably raised. The eraser is sold with a piece of plastic sponge to rub off the free dust and dirt and also to remove any cleaner left on the surface. Available in eight colours: navy, black, grey, green, mid-brown, red and beige, price 3s. 11d. per block from shoe shops and department stores and distributed by New Way Products, 78, Buckingham Gate, London, S.W.1.

**Collapsible Garden Chairs**

**A** SELECTION of canvas and steel garden chairs are being marketed by Desmo Ltd., Pensnett Trading Estate, Brierley Hill, Staffs. Shown in our illustration is the "Sun Lounger," a comfortable chair with three different back-rest positions. The tubular legs are finished in pale green hard gloss enamel. It folds compactly for carrying and storage and is ideal for the garden, caravan, etc. Price £3 19s. 8d. The range also includes the "Restateze," a chair of more conservative design with arm-rests, price £2 12s., and the "Restawile" light garden chair also in canvas and steel, price £1 11s. 8d., with an optional headrest price 14s. 1d. extra. To complete the set, a portable folding table, which can also be



Desmo Sun Lounger.

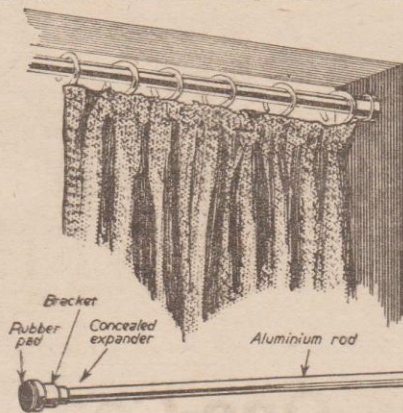
used as a bed tray, is supplied with a pastel green top and cream legs or with a gold top and bronze legs. Price £1 9s. 7d. and £1 12s. 8d. respectively. The size of the top is 20in. X 15½in.; height 13in.; weight 7lb.

**LAMPHOLDER FAN**

**T**HE Simplex lightweight fan shown in our illustration depicts the modern way of indoor cooling. It will fit into any lampholder and becomes an efficient ventilator within a few seconds. The body is pleasantly styled in white plastic and the 8in. diameter polythene blades can be touched while spinning without danger of injury. The motor is silent and vibration-free; consumption 20w; voltages, 200-250 or 110-125 A.C.; weight, approximately 1lb. Price £4 2s. 4d. from the sole distributors, Mercia Enterprises Ltd., Godiva House, Allesley Old Road, Coventry.

**Quickfit Curtain Rod**

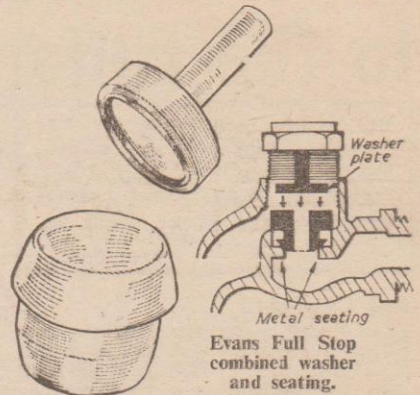
**Y**ET another method of curtain hanging is the Quickfit curtain rod resembling that seen in the houses of our Victorian grandparents, but nevertheless meeting the needs of modern living, with the important difference that it requires no screws. It is all done with compression. The



The Quickfit, curtain rod in position and details of the attachments.

aluminium rod fits into a bracket topped with a rubber pad; the plain end of the rod is inserted in the unthreaded bracket and placed against the wall and the second

bracket is held against the opposite wall and the slotted end of the rod enters the second bracket. The rod is then given a firm turn locking it securely. The rod,



which is polished aluminium, retails at 3s. per ft. and the end brackets, supplied in five colours, green, black, pink, grey and red, cost 6d. per pair. Alternative spacers are included to adjust the length. Sole distributors are Universal Sellers Ltd., of 99, Baker Street, London, W.1.

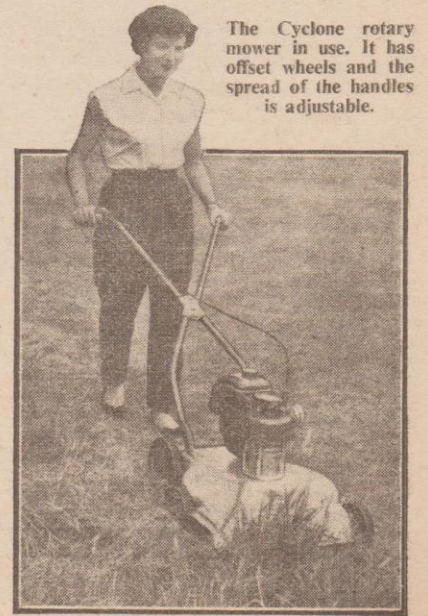
**Combined Washer and Seating**

**T**HE Full Stop combined washer and seating incorporates another use for hard-wearing nylon. The seating is made of H/D polythene and the washer plate of nylon thus eliminating the problem of cavitation. It covers the defective metal seating and is

impervious to chemical actions which cause the metal seating to wear and corrode. Our illustration shows the simple method of fitting the Full Stop in position. Price 1s. 3d. from F. H. Evans & Co., 138, Plashet Road, Upton Park, London, E.13.

**ROTARY AND MOTOR MOWERS**

**RANSOMES SIMS & JEFFERIES LTD.**, of Orwell Works, Ipswich, have introduced, during the past twelve months, the Cyclone and the electric Minor Mark 8. The first is Ransomes' contribution to the ever-widening family of rotary mowers on the market. It is powered by a J.A.P. two-stroke engine and has a cutting width of 18in. Safety for the operator is assured by careful shrouding of the cutters beneath the extra-deep main frame pressing and a "hummock" disc fitted to the cutter disc enables the mower to ride over uneven ground without scalping the turf. The offset wheels and adjustable spread of the handles enable it to be easily operated along walls and fences, under trees and over neglected parts of the garden, giving a reasonable finish and economical service to those who can give only limited attention to grass cutting. Price £27 6s. The electric Minor Mark 8, a development of the Minor motor mower, is wired for an A.C. 210/240 50 cycles supply, but motors for other types of supply can be fitted. A Brook ½ h.p. motor is fitted and the machine is supplied with 75ft. of three-core flex. Available either as a 14in. or 18in. model with a cutting capacity of up to 2,000 sq. yds. per hour. Price £58 and £65 8s. respectively.

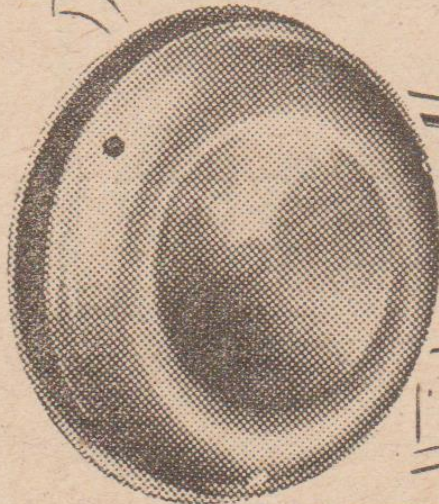


The Cyclone rotary mower in use. It has offset wheels and the spread of the handles is adjustable.





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WITH

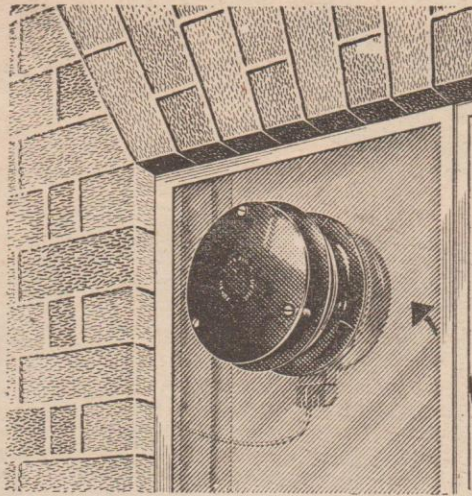
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# Out

WITH

# cooking smells, steam

(and condensation)



Fit Vent-Axia and your ventilation problems are solved—simply—once and for all! Cooking smells, steam and damaging condensation are removed at the touch of a switch. Thus, the atmosphere in your home becomes fresh and wholesome and your own personal comfort is increased enormously.

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