

[54] **AIR CONDITIONER WITH DISPOSABLE AIR FILTER**

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[22] Filed: **Jan. 12, 1972**

[21] Appl. No.: **217,348**

[52] U.S. Cl.**62/317, 62/303, 55/354, 55/466**

[51] Int. Cl.**F25d 17/04**

[58] Field of Search**62/303, 317; 55/354, 466**

[56] **References Cited**

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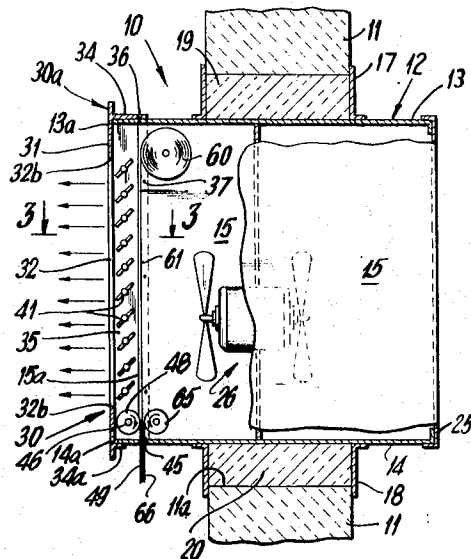
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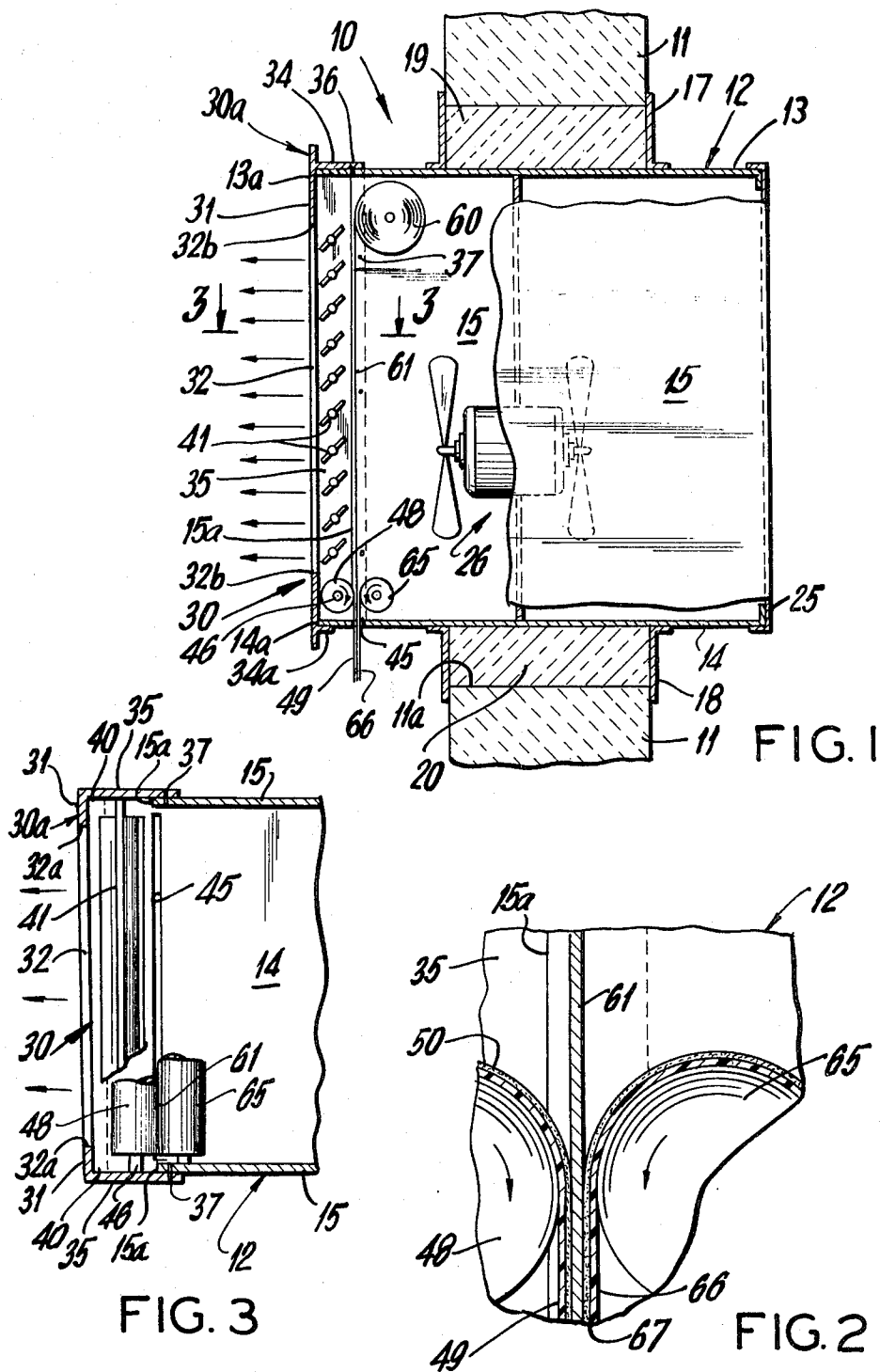
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[57] **ABSTRACT**

A roll of disposable filter sheeting is located at the upper end of the air discharge side of the air conditioner chassis. Two rolls of adhesive sheets are located at the lower end of the discharge side. The filter is drawn down to cover the discharge opening and out through a slot at the bottom of the chassis. The adhesive sheets from the two rolls come into contact with opposite sides of the filter as it comes out of the chassis and cover the used filter portion, when said used portion is drawn down to cover the discharge opening with a fresh, clean portion of filter. The withdrawn piece of filter being covered on both sides may be withdrawn and severed and disposed of without dirtying the hands of the operator.

10 Claims, 3 Drawing Figures





AIR CONDITIONER WITH DISPOSABLE AIR FILTER

This invention relates to box type air conditioners for walls or windows.

An object of this invention is to provide in an air conditioner of the character described, a roll of filter sheeting located at the upper end of the discharge side of the air conditioner, which sheeting may be drawn down to cover the air discharge opening, and means to cover both sides of the filter as it is pulled down through a slot in the bottom of the air conditioner, whereby to permit removal of a used section of filter without dirtying the hands.

Another object of this invention is to provide in an air conditioner of the character described, two rolls of plastic sheets, on opposite sides of the filter sheet, and located at the lower end of the air discharge opening, with adhesive at the surfaces of the rolls facing opposite surfaces of the filter sheet, to contact the filter sheet as it is drawn down through said slot, whereby to facilitate removal of used sections of filter sheeting, without dirtying the hands of the operator.

Yet another object of this invention is to provide an air conditioner of the character described in which a discharge baffle assembly is detachably attached to the discharge side of the air conditioner box and carries one of the two adhesive rolls, to facilitate mounting the filter sheet roll and the other of said two adhesive rolls in the box.

Still another object of this invention is to provide an air conditioner construction of the character described in which the last two sections of filter sheeting is of a color different from the color of the rest of the roll, as a warning that a new filter roll should be installed.

Yet a further object of this invention is to provide a strong, rugged and durable air conditioner construction of the character described which shall be relatively inexpensive to manufacture, easy to manipulate and assemble and service, which shall be clean and practical to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which is shown various illustrative embodiments of this invention,

FIG. 1 is a vertical sectional view through an air conditioner embodying the invention;

FIG. 2 is an enlarged portion of the structure of FIG. 1, showing the rolls of adhesive coated sheeting on opposite sides of a portion of the filter sheet; and

FIG. 3 is a cross-sectional view taken on line 3—3 of FIG. 1.

Referring now in detail to the drawing, 10 designates an air conditioner embodying the invention. The air conditioner 10 is of the wall or window type here shown as being mounted on a wall 11. The air conditioner comprises a box 12 having a horizontal top wall 13, a horizontal bottom wall 14 and vertical side walls 15. Top and bottom adaptors 17, 18 respectively, fixed to the top and bottom walls 13, 14, respectively of the box, engage the wall 11. The box passes through opening 11a in wall 11 and spacers 19, 20, may be interposed

between the box 12 and the wall 11. A rear cover 25 covers the rear end of the box which is at the outside of wall 11. The box 11 and the apparatus 26 inside the box for cooling the air passing through the box from the outside of wall 11 to the inside of the room, may be of generally conventional construction and is well known. However a detachable baffle assembly 30 is detachably attached to the inside end of the box 11 in the manner hereinafter explained.

Said side walls 15 terminate in vertical edges 15a located rearwardly of the front edges 13a, 14a of the top and bottom walls 13, 14.

The assembly 30 comprises a front frame 30a comprising a vertical front wall 31 provided with a rectangular cut-out or opening 32, forming side inner edges 32a and top and bottom edges 32b. This cut-out 32 is for passage of air from the box to the inside of the room to be air conditioned.

Extending rearwardly from the front wall 31 is a top flange 34 frictionally contacting the top surface of top wall 13. A bottom flange 34a extends rearwardly from front wall 31 and is located at the underside of bottom wall 14. The front edges 13a, 14a of top and bottom walls 13, 14 contact the inner surface of front wall 31.

Extending rearwardly from said front wall 31, are side flanges 35 frictionally contacting the outer surfaces of side walls 15. Screws or other fasteners 36 may serve to fasten flange 34 to top wall 13. Screws or other fasteners 37 may serve to fasten side flanges 35 to side walls 15.

It will be noted that flanges 35 cover the spaces between edges 15a of side walls 15 and the front wall 31. The top and bottom walls 13, 14 have side extensions 40 at their front ends contacting the inner surfaces of flanges 35, in front of edges 15a.

Mounted on and between side flanges 35 are a series of louvres or horizontal baffles 41 which may have usual means to adjust their angles.

Said bottom wall 14 is formed, just forwardly of the front edges 15a of side walls 15, with a transverse slot 45.

Mounted on and between side flanges 35, and below the lowermost baffle or louver 41, is a horizontal shaft 46 on which is removably mounted a roll 48 of plastic or other flexible sheeting 49 carrying at its outer side, a layer 50 of pressure sensitive adhesive. The sheeting 49 passes down from roll 48 through slot 45.

Mounted in any suitable manner on and between side walls 15, just below top wall 13 and close to edges 15a is a roll 60 of filter flexible sheeting or paper 61 which may pass down behind the baffles 41 and through slot 45. The filter hence covers the cut-out or opening 32 in front wall 31 and is located close to the baffles. The adhesive layer 50 on web or sheet 49 contacts the front face of the filter sheet when the filter sheet and the layer 50 come together, thus causing sheet 49 to stick to and cover the front face of the portion of filter sheet 61 that passes down through slot 45.

Rotatably mounted on and between side walls 15 at the level of roll 48 is a second similar symmetrically disposed roll 65 of plastic or other flexible sheeting 66 coated at its outer side by a layer 67 of pressure sensitive adhesive which contacts the rear side of filter sheet 61, as said filter sheet passes between rolls 48, 65, to stick to and cover the rear side of said filter sheet.

It will now be understood that after a given period of use, the section or portion of the filter sheet 61 covering the opening 32 will become dirty and lose its usefulness as a filter. At that time the filter sheet with the sheetings from rolls 48, 65 stick to opposite sides thereof, can be pulled down to expose a fresh clean portion of the filter sheet in covering relation relative to said opening 32. The pulled down portions of sheets of rolls 60, 48 and 65 may then be severed or cut off somewhat below bottom wall 14, leaving enough of said sheets to be grasped by an operator to allow pulling down of said sheets again. The width of slot 45 from front to rear is just sufficient to allow pulling the sheets down but small enough to press said sheets together to cause the sheets 49 and 66 to adhere to the center filter sheet 61.

Since the dirty or dust laden used portion of the filter sheet is covered wholly on opposite surfaces by the sheets 49, 66, handling of the used portion of the filter sheet to be cut away and disposed of, is a clean operation, and the hands of the operator may remain clean.

It will be noted that when the baffle assembly 30 is removed, the baffles 41 and the roll 48 come out with it, to facilitate installation or replacement of filter roll 60 and of adhesive roll 65.

The last two sections of filter in roll 60 may be of a color different from the color of the rest of said roll to give warning to provide a new replacement for said roll.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative.

I claim:

1. An air conditioner comprising a box having an air outlet opening, a roll of filter sheeting, means to mount said roll on the box at one end of the outlet opening in such position that the filter sheeting can be pulled to cover said air outlet opening, a pair of rolls of flexible sheeting, and means to mount said pair of rolls at the opposite end of said air outlet opening and on both sides of the portion of filter sheeting pulled from said roll of filter sheeting, said pair of rolls carrying adhesive

on faces thereof to contact opposite surfaces of said pulled filter sheeting.

2. The combination of claim 1, said box having a transverse slot through which said filter sheeting and the sheeting from said pair of rolls may pass.

3. The combination of claim 1, said box comprising a detachable discharge baffle assembly, provided with said air outlet opening, a series of baffles mounted on said assembly, one of said pair of rolls being mounted on said assembly.

4. The combination of claim 1, said box comprising a top wall, a bottom wall, and side walls, and a detachable discharge baffle assembly provided with said air outlet opening, a series of baffles mounted on said assembly, one of said pair of rolls being mounted on said assembly, said roll of filter sheeting and said other of said pair of rolls being mounted on said side walls.

5. The combination of claim 4, said bottom wall being formed with a transverse slot through which said filter sheeting from said roll of filter sheeting and sheeting from said pair of rolls, may pass, with said sheeting from said pair of rolls adhered to said filter sheet.

6. The combination of claim 5, the end portion of the filter sheeting of said roll of filter sheeting being of a color different from the color of the rest of said sheeting to give warning when said roll of filter sheeting should be replaced by a fresh roll.

7. An air conditioner comprising an air conditioner box having an air discharge opening, a roll of filter sheeting, means to mount said roll adjacent one end of said opening, said sheeting being adapted to be pulled to cover said air discharge opening and beyond said opening, and means to cover one or both surfaces of portions of said filter sheeting that are pulled beyond said opening to permit removal of said portions of said filter sheeting, without dirtying the hands of the person removing said portion.

8. The combination of claim 7, said covering means comprising application of adhesive coated sheeting to said one or both surfaces of said portions of said filter sheeting.

9. The combination of claim 8, a minor end portion of said roll of filter sheeting carrying means to warn that said roll should be replaced.

10. The combination of claim 8, said box having means to press said adhesive coated sheeting to said filter sheeting.

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