



(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: **90113935.2**

(51) Int. Cl.⁵: **F24F 13/22, F24F 1/00**

(22) Date of filing: **20.07.90**

The title of the invention has been amended
(Guidelines for Examination in the EPO, A-III,
7.3).

(30) Priority: **06.02.90 IT 1927290**

(43) Date of publication of application:
21.08.91 Bulletin 91/34

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

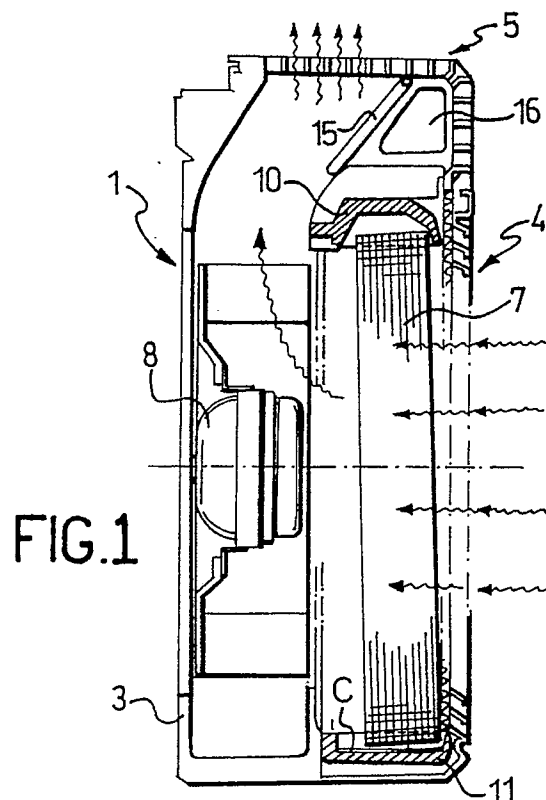
(71) Applicant: **DELCHI/CARRIER S.P.A.**
Via R. Sanzio, 9
I-20058 Villasanta (Milan)(IT)

(72) Inventor: **Crippa, Giacomo**
Via Pasteur, 37
I-20059 Vimercate, Milan(IT)

(74) Representative: **Checcacci, Giorgio et al**
c/o JACOBACCI-CASETTA & PERANI S.p.A
Via Visconti di Modrone, 7
I-20122 Milan(IT)

(54) **Dual installation for an air conditioning unit.**

(57) This air conditioning unit (1), comprising a cooler or heater bank (7) housed within a case (3), is of a type which may be optionally installed in either of two positions turned over from each other. The unit (1) also comprises two condensation water drip pans (10,11) fixedly accommodated inside the case (3) to lie beneath the bank (7) in either of said positions. Thus, the unit (1) may be installed as desired in either of two positions turned over from each other, requiring no specific preparatory work.



This invention relates to an air conditioning unit comprising a cooler or heater bank housed within a case, being of a type which may be installed in either of two turned-over positions relatively to each other.

It is common practice to have air conditioning units installed in a room to be air-conditioned in either of two ways. In a first of these ways, which is the more frequently used one for home applications, the unit is arranged to rest on the floor or somewhere close to it, leaning against a wall; ambient air will enter the unit through the lower region thereof and exit through the upper region, establishing a flow essentially directed from the bottom up.

In the second way, more frequently used for office or business premises applications, the air conditioning unit is mounted to a wall, at a location close to the ceiling or up location; ambient air will enter the unit through the upper region thereof and leave it from the lower region, establishing a flow essentially directed from the top down.

When the air conditioning unit is operated in the cooling mode, condensation water forms on the cooler bank which drips down and must be collected in a specially provided pan placed beneath the bank. With air conditioning units designed for installation in just one position, the drip pan is affixed to the case of the air conditioning unit; by contrast, with units for dual installation, the drip pan may be accommodated in either of two different ways, according to installation. In this instance, proper assembling of the drip pan is included amongst the unit installation operations.

The technical problem that underlies this invention is that of providing an air conditioning unit which can be selectively installed in either of two turned-over positions without involving any specific preparatory work.

This object is achieved, according to the invention, by an air conditioning unit comprising a heat exchange bank housed within a case, adapted for selective installation in either of two turned-over positions relatively to each other, and being characterized in that it comprises two condensation water drip pans fixedly accommodated within the case to lie beneath the bank in either of said positions.

Such an air conditioning unit may be optionally installed in either of two positions, turned-over from each other: in each of said positions, one drip pan will locate beneath the cooler bank and collect condensation water, whereas the other pan will be left unused above the bank.

Further features and advantages of an air conditioning unit according to the invention will become apparent from the following detailed description of a preferred embodiment thereof, given refer-

ence to the accompanying drawings.

In the drawings:

Figure 1 is a sectional view taken through an air conditioning unit according to the invention;

Figure 2 is a sectional view of the air conditioning unit in Figure 1, shown in a different installation position turned over from that shown in Figure 1; and

Figures 3 and 4 are perspective views of the air conditioning unit in Figure 1, shown in the two installation positions corresponding to Figures 1 and 2, respectively.

In the drawing views, generally indicated at 1 is an air conditioning unit comprising an outer case 3 formed with air intake 4 and discharge 5 ports.

Housed within the case 3 is a heat exchange bank 7; the bank 7, being of a type known per se, consists of a heat exchanger which is supplied with a fluid which may be either cooled or heated through a separate unit and admitted through appropriate lines, not shown in the drawings.

Inside the case 3, at a location substantially adjacent to the bank 7, there is mounted a fan 8 operative to force air into the case 3 through the ports 4 and out of it through the ports 5 after flowing through the bank 7.

The case 3 accommodates on its inside two condensation water drip pans shown at 10 and 11 and being respectively located above and beneath the bank 7, in the position depicted in Figure 1.

Also provided, inside the case 3 and close to the air discharge ports 5, are a baffle plate 15 and a set of baffle plates 16 lying across the baffle plate 15, for changing the direction of the air flow leaving the air conditioning unit 1.

The air conditioning unit 1 may be optionally installed in either the position shown in Figures 1 and 3 or the position in Figures 2 and 4. In the former instance, the general direction of the exit air flow will be essentially from the bottom up, as indicated by the arrows; condensation water C formed over the bank 7 while operating in the cooling mode will collect into the pan 11. In the latter instance, the exiting air flow will flow essentially from the top down, instead; condensation water C formed over the bank 7 during operation in the cooling mode will collect into the pan 10.

The baffle plates 15 and 16 may be used to change the direction of the air flow from the discharge ports 5 irrespective of the installation position of unit 1.

Claims

1. An air conditioning unit (1) comprising a heat exchange bank (7) housed within a case (3), adapted for selective installation in either of two turned-over positions relatively to each

other, characterized in that it comprises two condensation water drip pans (10,11) fixedly accommodated within the case (3) to lie beneath the bank (7) in either of said positions.

5

10

15

20

25

30

35

40

45

50

55

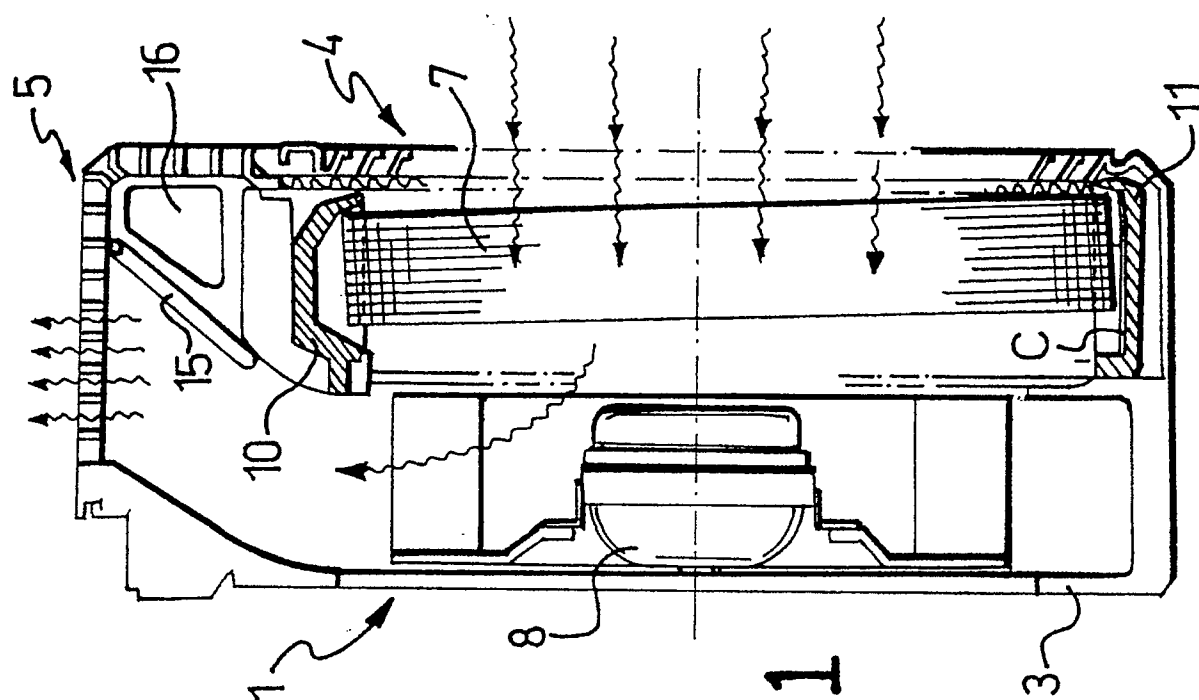


FIG. 1

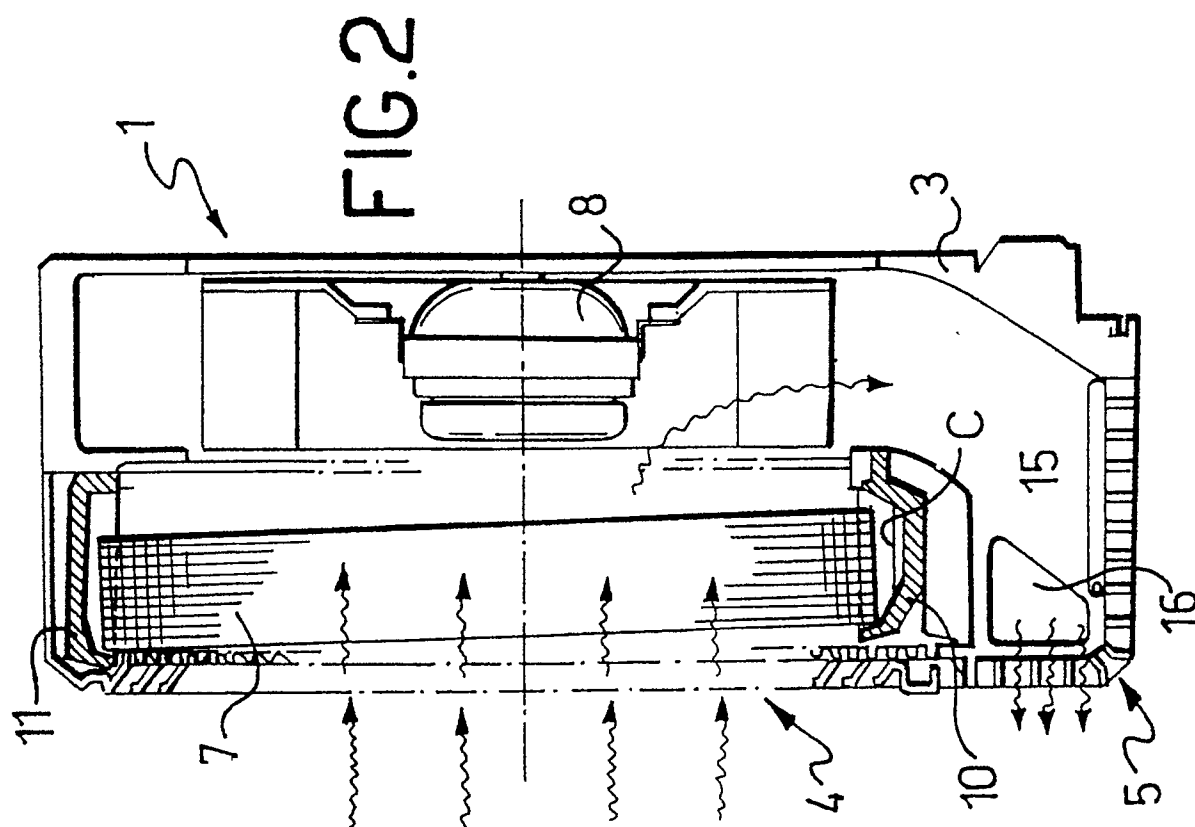
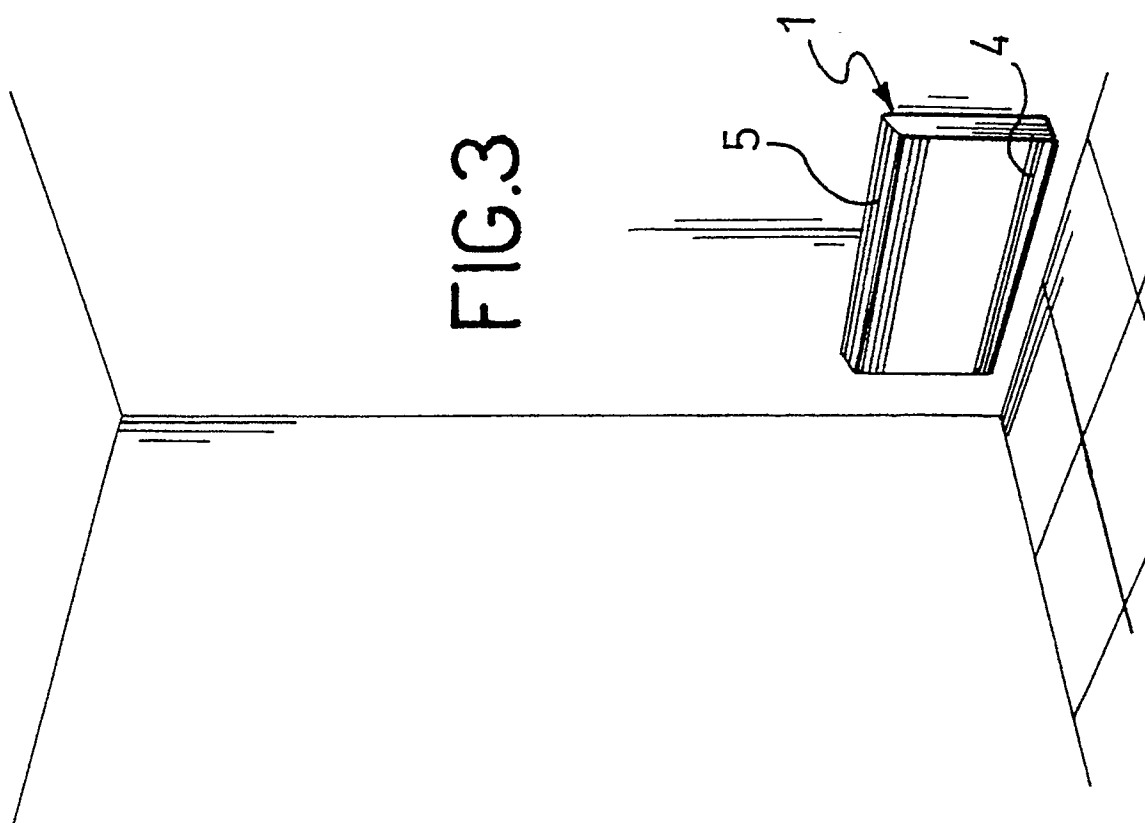
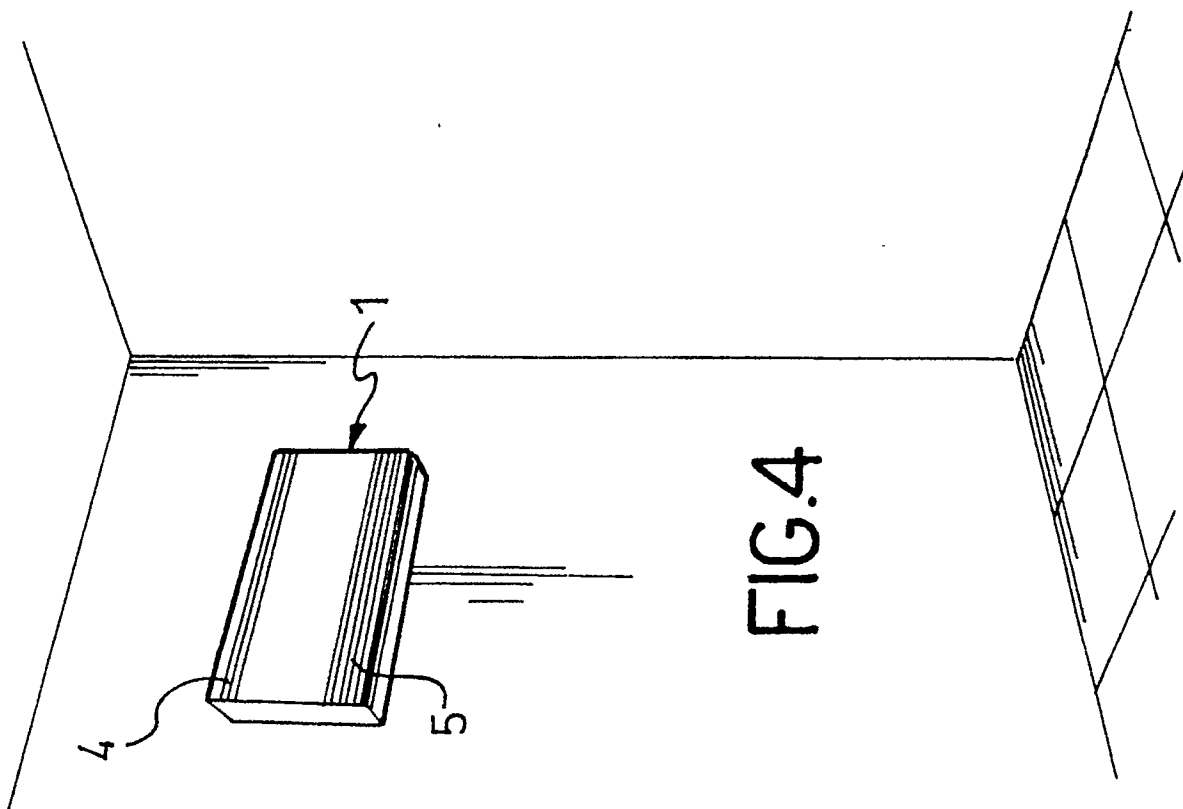


FIG. 2





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 90113935.2
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	<u>US - A - 2 794 624</u> (CAMPAGNA et al.) * Fig. 1; column 2, lines 67-71; column 3; claims *	1	F 24 F 13/22 F 24 F 1/00
Y	<u>US - A - 2 553 143</u> (NEELY) * Fig.; column 3, lines 39-49; claim 2 *	1	
Y	<u>US - A - 2 927 442</u> (KOOIKER) * Fig. 1,2; column 1; column 4, lines 9-24; claims *	1	
A	<u>US - A - 2 959 030</u> (MEHALICK) * Fig. 1,2; column 4, lines 4-6 *	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			F 24 F
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 17-04-1991	Examiner LANG
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			