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(54) Extraction unit particularly for kitchen hoods

(57) An extraction unit particularly for kitchen hoods comprising a tubular body (10,110) which is divided internally into at least two regions by partitions (11,12,13,111a,111b,112a,112b,113a,113b), of which at least one is a longitudinal partition (11,111a,111b); at least one centrifugal electric extractor (16,17,116,117) is arranged in a first region (14,114), its intake axis being parallel to the longitudinal partition (11,111a,111b) and its delivery (23,24,123,124) communicating with the second region (15,115,126) by means of suitable openings of the longitudinal partition (11,111a,111b).

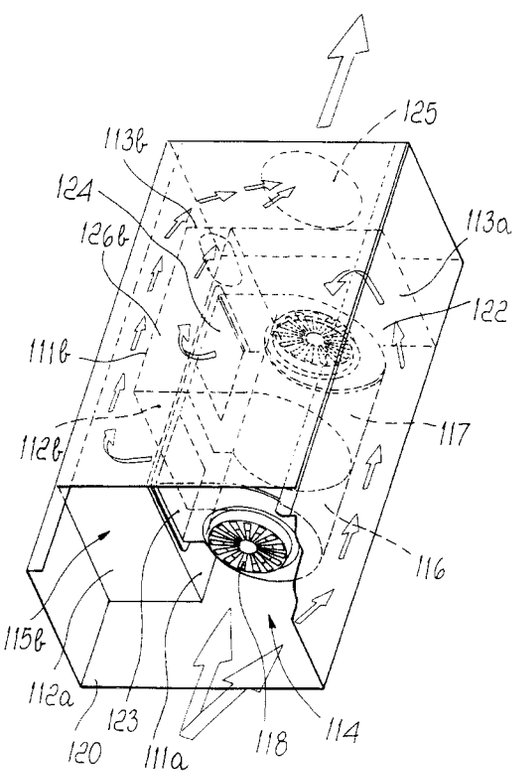


Fig. 2

EP 1 149 639 A2

Description

[0001] The present invention relates to an extraction unit particularly for kitchen hoods.

[0002] Due to styling and aesthetic reasons, the hoods currently used in the domestic field of kitchens are gradually reducing the thickness of the fume extraction part.

[0003] Current extraction devices mostly have a cubical shape and a minimum dimension which is in any case greater than 10 cm for extractors having a flow-rate of 250-1000 cubic meters per hour and a pressure of 1.5-5 mbar, while the maximum available height is 3-4 cm.

[0004] It is inevitably necessary to move the extraction devices from the region directly above the kitchen to other regions.

[0005] Accordingly, hood manufacturers currently no longer locate the extraction device in the air intake and filtering container but above it.

[0006] Hoods having plan dimensions with widths of less than 90 cm are in any case heavily penalized from the aesthetic standpoint.

[0007] Another solution that is currently in use consists in placing the electric extractor near the ceiling and using a connecting housing of acceptable size between the intake region and the motor (which is larger), which is located adjacent to the ceiling.

[0008] This solution is still aesthetically not very successful.

[0009] The aim of the present invention is therefore to provide an extraction unit which can be provided with a flow-rate which can vary between 250 and 1000 m^3/h, with a pressure between 1.5 and 5 millibars, which can be inserted in current vertical housings of decorative hoods having a width substantially of 220 mm, a depth substantially of 170 mm and a height substantially of 500 mm.

[0010] Within this aim, a consequent primary object is to provide an extraction unit which is more flexible than current ones from the point of view of installation.

[0011] Another important object is to provide an extraction unit which has a simple structure and a low cost.

[0012] This aim and these and other objects which will become better apparent hereinafter are achieved by an extraction unit particularly for kitchen hoods, characterized in that it comprises a tubular body which is divided internally, into at least two regions, by partitions, of which at least one is a longitudinal partition, at least one centrifugal electric extractor being arranged in a first region, its intake axis being parallel to said longitudinal partition and its deliveries communicating with the other regions by means of adapted openings of said longitudinal partition, all leading toward a common outlet.

[0013] Advantageously, the tubular body has a quadrangular cross-section and in a first region there are two electric extractors with opposite intakes, the first electric extractor aspirating directly from the intake of the body and the second electric extractor aspirating through the free regions between its volume and the volume of said body, both deliveries communicating with a second region.

[0014] Further characteristics and advantages of the invention will become better apparent from the detailed description of two embodiments thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a perspective view of a first embodiment of an extraction unit according to the invention, in phantom lines;

Figure 2 is a perspective view of a second embodiment of an extraction unit according to the invention, in phantom lines.

[0015] With reference to Figure 1, an extraction unit for kitchen hoods comprises, in a first embodiment, a tubular body 10 which is conveniently made of metal plate (or of another material) and has a quadrangular cross-section and is divided internally by a longitudinal partition 11 and two transverse partitions respectively 12 and 13, into two regions, respectively a first region 14 and a second region 15, both of which have an L-shaped profile with predominant longitudinal portions.

[0016] In the first region 14, particularly in the longitudinal portion two electric extractors 16 and 17 are placed with mutually opposite respective intakes 18 and 19 arranged on a common axis which is parallel to the longitudinal partition 11.

[0017] The electric extractor 16 aspirates directly from the intake 20 of the tubular body 10, while the second electric extractor 17 aspirates through the free regions 21 between its circular body volume and the quadrangular body volume of said tubular body 10.

[0018] An axial region 22 must be conveniently left between the transverse partition 13 and the intake 19.

[0019] As shown in Figure 1, both deliveries 23 and 24 communicate with said second region 15 of the tubular body 10 through suitable openings, designated by the same reference numerals, of the longitudinal partition 11.

[0020] The air is thus conveyed toward the outlet 25, which is located in the second region 15.

[0021] The outlet 25 can vary in shape according to the evacuation pipes that are provided and can have a check valve, not shown in the figure but generally has a cross-section corresponding to that of the two regions 14,15. The latter applies also for the intake 20.

[0022] An electromechanical valve, not shown in the figures, for air flow control may also be provided in the tubular body 10 if it is necessary to adapt the extraction unit to centralized extraction systems or to extraction systems provided with separate extractors.

[0023] The intake 20 can instead be provided with a seat, not shown in the figures, for carbon filters and/or grease filters.

[0024] It should be noted in particular that in the extraction unit according to the invention it is possible to insert lighting elements, manual electric controls and/or remote controls, and that the extraction unit can be fixed to a wall and/or ceiling directly, optionally by means of anchoring elements which allow adjustment, rigidly and/or with vibration-damping systems.

[0025] Furthermore, the apparatus can be provided with a connection flange in the lower decorative part of the hood and, if necessary, with a complementary flange for interfacing any compatible underlying part; it can also be provided with appropriate power supply devices, control devices or branch-offs of lighting elements.

[0026] With reference to Figure 2, an extraction unit for kitchen hoods comprises, in a second embodiment, a tubular body 110 which is conveniently made of metal plate (or other material), has a quadrangular cross-section, and is divided internally, by means of longitudinal partitions 111a and 111b and transverse partitions 112a, 112b, 113a and 113b, into three regions, respectively a first region 114, a second region 115 and a third region 126, all of which having predominant longitudinal portions.

[0027] In the first region 114, particularly in the longitudinal portion, there are two electric extractors 116 and 117 are placed with mutually opposite respective intakes 118 and 119 arranged on a common axis which is parallel to the longitudinal partition 111.

[0028] The electric extractor 116 aspirates directly from the intake 120 of the tubular body 110, while the second electric extractor 117 aspirates through the free regions 121 between its circular volume and the quadrangular volume of said tubular body 110.

[0029] An axial region 122 must be conveniently left between the transverse partition 113 and the intake 119.

[0030] As shown in Figure 2, the deliveries 123 and 124 communicate respectively with the second region 115 and to the third region 126 of the tubular body 110 through suitable openings, designated by the reference numerals, of the longitudinal partition 111.

[0031] The delivery flows thus remain distinct up to the outlet 125.

[0032] In practice it has been observed that the intended aim and objects of the present invention have been achieved.

[0033] In fact by having two electric extractors whose axes coincide but whose intakes are mutually opposite, and by utilizing the difference in transverse shape of said electric extractors with respect to the body in which they are placed, they can be fed with a much smaller space occupation than currently provided by hitherto known extraction units.

[0034] The extraction unit is structurally simple, since it is structurally made of metal plate or equivalent material which is appropriately shaped and includes the electric extractors.

[0035] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0036] All the details may further be replaced with other technically equivalent elements.

[0037] In practice, the materials used, so long as they are compatible with the contingent use, as well as the dimensions, may be any according to requirements.

[0038] The disclosures in Italian Patent Application No. PD2000A000108 from which this application claims priority are incorporated herein by reference.

[0039] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. An extraction unit, particularly for kitchen hoods, **characterized in that** it comprises a tubular body (10,110) which is divided internally into at least two regions by partitions (11,12,13,111a,111b,112a, 112b,113a,113b), of which at least one is a longitudinal partition (11,111a,111b), at least one centrifugal electric extractor (16,17,116,117) being arranged in a first region (14,114), its intake axis being parallel to said longitudinal partition (11,111a,111b) and its deliveries (23,24,123,124) communicating with the other regions (15,115,126) by way of suitable openings of said longitudinal partition (11,111a, 111b), all leading toward a common outlet (25,125).

2. The unit according to claim 1, **characterized in that** said tubular body (10) is internally divided into two regions (14,15) by partitions (11,12,13), of which at least one (11) is a longitudinal partition, at least one centrifugal electric extractor (16,17) being arranged in a first region (14), its intake (18,19) being arranged so that its axis is parallel to said longitudinal partition (11) and its delivery (23,24) being connected to said second region (15) by way of suitable openings of said longitudinal partition (11).

3. The unit according to claim 2, **characterized in that** said tubular body (10) has a quadrangular cross-section and **in that** in said first region (14) there are two electric fans (16,17) which have opposite intakes (18,19) and a common axis, the first fan (16) aspirating directly from the intake (20) of said body and the second fan (17) aspirating through the free regions (21) between its body volume and the volume of said tubular body (10), both deliveries (23,24) communicating with said second region (15).

4. The unit according to one or more of claims 2 and

3, **characterized in that** said tubular body (10) is divided into said regions (14,15) by a longitudinal partition (11) and by two transverse partitions (12,13), so that said regions (14,15) are L-shaped, said electric extractors (16,17) being arranged at the longitudinal portions of said regions (14,15).

5. The unit according to one or more of the preceding claims,
characterized in that the intake (20) of said tubular body (10) has a cross-section corresponding to the sum of the cross-sections of said two regions (14,15).

6. The unit according to one or more of the preceding claims, **characterized in that** the outlet (25) of said tubular body (10) has cross-sectional dimensions corresponding to the sum of the cross-sections of said two regions (14,15).

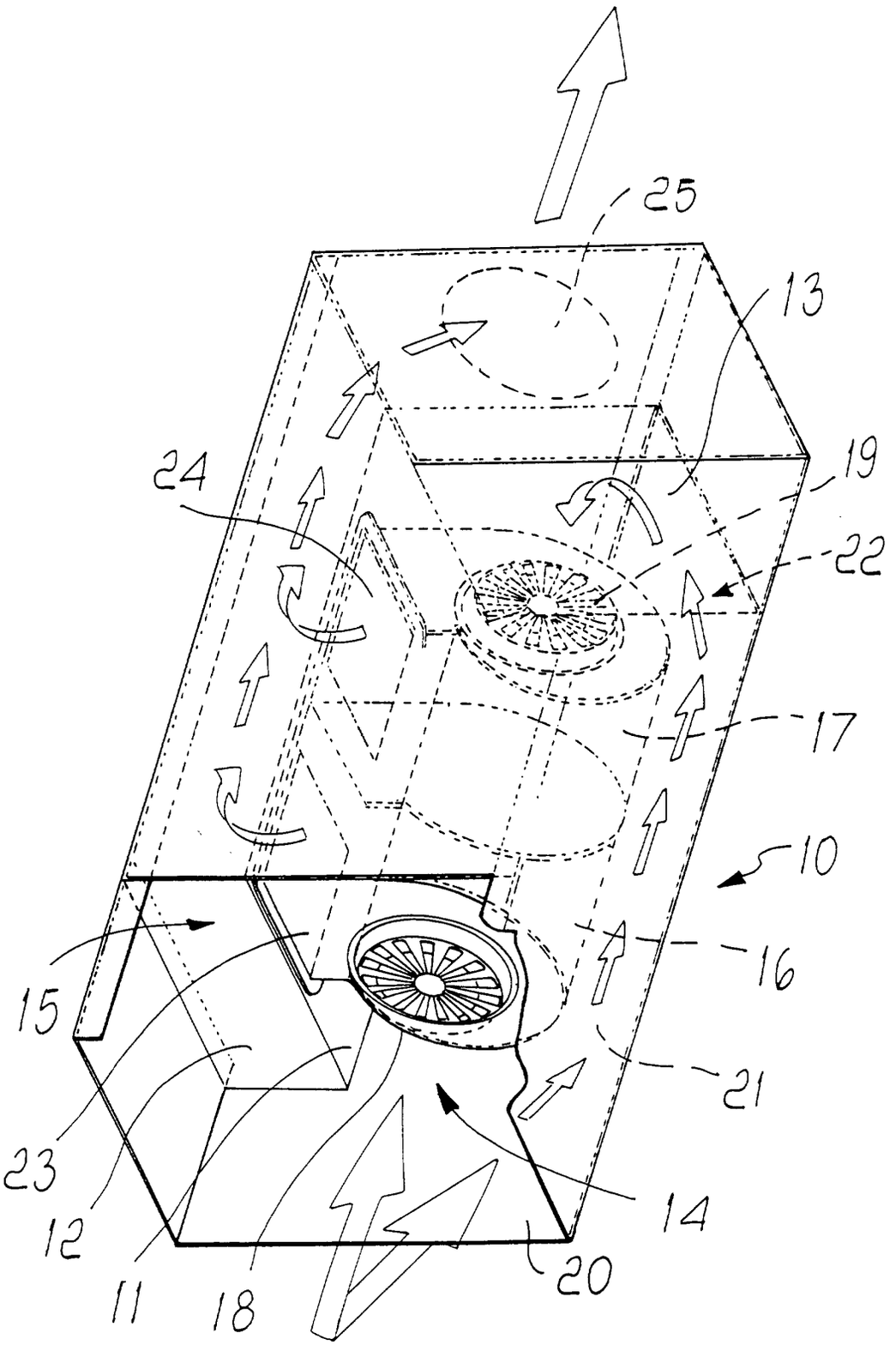
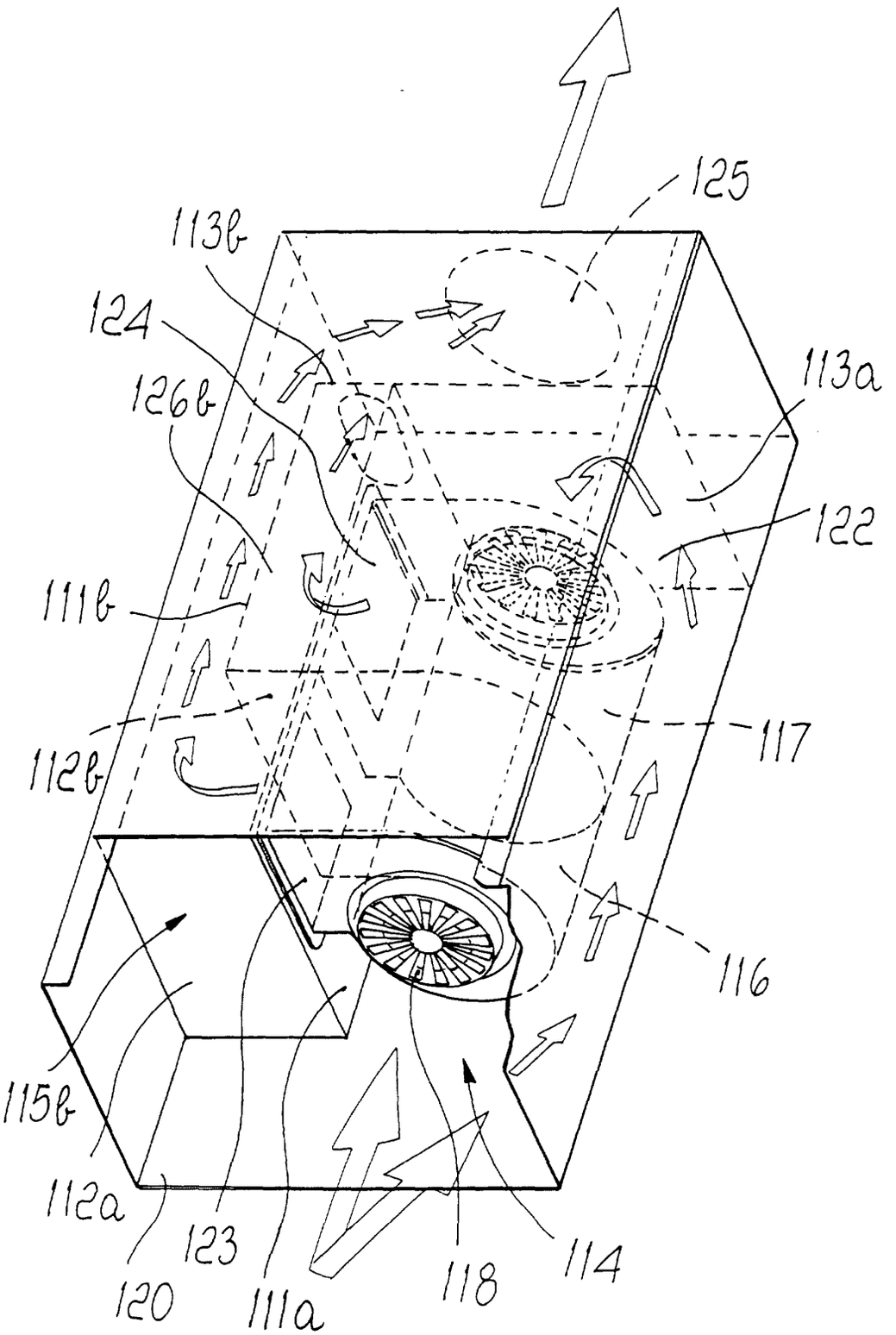


Fig. 1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113b
124
126b
113a
122
111b
117
112b
116
115b
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111a
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114

Fig. 2