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(54) **A cooker hood structure for kitchen units, with improved acoustic insulation.**

(57) A cooker suction hood structure for modular kitchen units, with sound proofing obtained by forming a housing chamber (2) for a fan motor (3), the chamber being made in sound deadening material and being carried by the hood casing (1*a*, 1*b*) which can also be provided, particularly in the zone surrounding the said housing chamber (2) with a lining layer (10) of material having acoustic absorption characteristics.

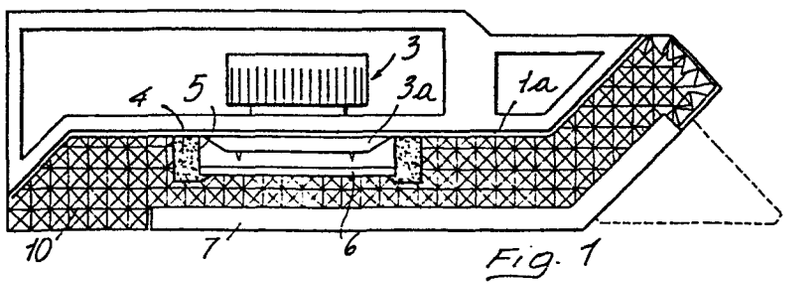

Fig. 1

EP 0 183 657 A1

"A Cooker Hood Structure for Kitchen Units, with improved acoustic insulation"

The present invention relates generally to a cooker hood structure for kitchen units, and particularly to a cooker hood structure with improved acoustic insulation.

As is known, a problem which is currently found in the production of cooker hoods is that of the noise which they generate in operation. This noise is generally caused by two separate factors, the first is constituted by the vibration of the motor and fan unit when running, which is to some extent amplified by the kitchen units to which the hood is fitted, as well as by the casing of the hood itself; the second is constituted by the noise of the moving air stream driven by the fan. This is caused by aerodynamic turbulence due to the impacts between the moving airstream and the guide surfaces and ducting which direct the flow of air and which, due to the continuous impact between the air stream and the walls generates turbulent noise which can be heard from outside the cooker hood with obvious consequent inconvenience.

The present invention seeks to overcome the above mentioned disadvantages by providing an improved cooker hood structure for kitchen units, which will have an extremely low noise level in use, whilst nevertheless having a construction which follows the general lines of conventional cooker hoods.

The present invention also seeks to provide such an improved cooker hood in which the reduced noise level is obtained without any detrimental loss in the performance of the hood, particularly as far as the air displacement and filtering performance of the hood are concerned.

According to the present invention, therefore, there is provided a cooker hood structure for kitchen units, comprising a casing defining air flow passages from an air entrance opening to a fan driven by a fan motor, characterised in that the fan motor is housed in a chamber carried by the casing, the walls of the motor housing chamber being substantially entirely made from a sound absorbing material.

A feature of the present invention is that it provides an improved cooker hood structure, which whilst having significantly improved characteristics, is structurally simple and able to satisfy all of the most stringent requirements in use. Another feature of the present invention is that it provides a cooker hood structure which is of simplified construction and which, nevertheless, is competitive from a purely economic point of view.

Various embodiments of the present invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 shows, in section, a cooker hood of the so-called exposed type;

Figure 2 is a cooker hood of the encased type;

Figure 3 is a simplified version of a cooker hood of the exposed type; and

Figure 4 is a simplified section of a cooker hood of the encased type.

With reference to the said Figures, the improved cooker hood for kitchen units, with sound deadening means, according to the invention, comprises a support casing, generally indicated 1a for the exposed type cooker hood and 1b for the encased type hood.

On the support casing 1a or 1b there is carried a chamber 2 for housing the drive motor for the fan unit, generally indicated with the reference numeral 3. The chamber 2, which has a shape compatible with that of the associated support casing 1a or 1b, has the important characteristic of being made of sound absorbing material and, in particular, preferably, expanded polyurethane. Surrounding the fan 3a driven by the motor 3 there is provided an annular air space 4 coaxially of the fan 3a and limited by cylindrical concentric sections 5; within this annular air space 4 is a filter preferably formed by activated carbon, to form an annular filter zone 4, which is in communication axially at one end with

the said fan 3a, which in use creates the air flow, whilst at the other end it is closed by a circular sector 6, which is also made of sound absorbent material, preferably constituted by light, expanded polyurethane.

In the lower face of the hood there is provided a filtering section 7 made in non-woven fabric which performs a dual function, the first of which is that of providing a first filtering barrier, and the second of which is that of constituting a further sound deadening closure element for the hood itself.

In the embodiments of Figures 1 and 2, the walls of the said support casing 1a or 1b, are provided with a lining 10 of material with acoustic absorption characteristics which advantageously has a surface in relief, for example a plurality of pyramid-shape asperities, which creates a secure barrier against the propagation of acoustic waves which could be generated by the air flow.

In Figure 3 there is illustrated a simplified embodiment which conceptually follows that explained above in that the exposed suction hood illustrated has the same elements as the embodiment of Figure 1 with the exception of the layer 10 and there is provided a different filtering element of activated carbon, indicated 20, which has a disc-like portion 21 disposed coaxially with the fan 3a and positioned so as to lie in the intake air stream. The filter 20 is supported by means of an annular body 22 which holds

the filtering disc-like body around its perimeter.

Similarly, in Figure 4, there is shown a further simplified embodiment in which the activated carbon filtering element is the same as that illustrated in Figure 2 but the sound absorbing layer 10 is not provided.

From what has been illustrated and described hereinabove it will be seen how the invention achieves the proposed objects and in particular, the fact is underlined that arrangements have been adopted in order acoustically to isolate the fan motor 3, as well as to prevent the propagation of acoustic waves generated by contact between the flowing air stream and the guide walls.

It is important to note that the improved characteristics are obtained with extremely simple structural means.

Claims:

1. A cooker hood structure for kitchen units, comprising a casing (1a,1b) defining air flow passages from an air entrance opening to a fan (3a) driven by a fan motor (3), characterised in that the fan motor (3) is housed in a chamber (2) carried by the casing (1a,1b), the walls of the motor housing chamber (2) being substantially entirely made from a sound absorbing material.

2. A cooker hood structure according to Claim 1, characterised by the fact that the walls of the said motor housing chamber (2) are made of expanded polyurethane.

3. A cooker hood structure according to Claim 1 or Claim 2, characterised by the fact that it is further provided with an annular filter element of activated carbon disposed ccncentrically around the said fan (3a) and enclosing an air space (4) which at one end communicates with the said fan (3a), and at the other end is closed by a closure member (6) of soft expanded polyurethane.

4. A cooker hood structure according to Claim 1 or Claim 2, characterised by the fact that it is further provided with an activated carbon filtering element (21) which has a body with a substantially disc-like shape disposed coaxially with the said fan (3a) and supported by an annular connection body (22) on the said motor housing chamber (2).

5. A cooker hood structure according to any preceding Claim, characterised by the fact that the air entrance opening to the cooker hood casing (1a,1b) is covered by a non-woven fabric filtering element (7).

6. A cooker hood structure for kitchen units according to any preceding Claim, characterised by the fact that there is provided on the said casing (1a,1b), in the region thereof at least partly surrounding the housing chamber (2), a layer (10) of material having sound deadening characteristics.

7. A cooker hood structure according to Claim 6, characterised in that the said layer (10) of material having sound deadening characteristics on the said casing (1a,1b) comprises a layer of material with a plurality of pyramid shape superficial asperities.

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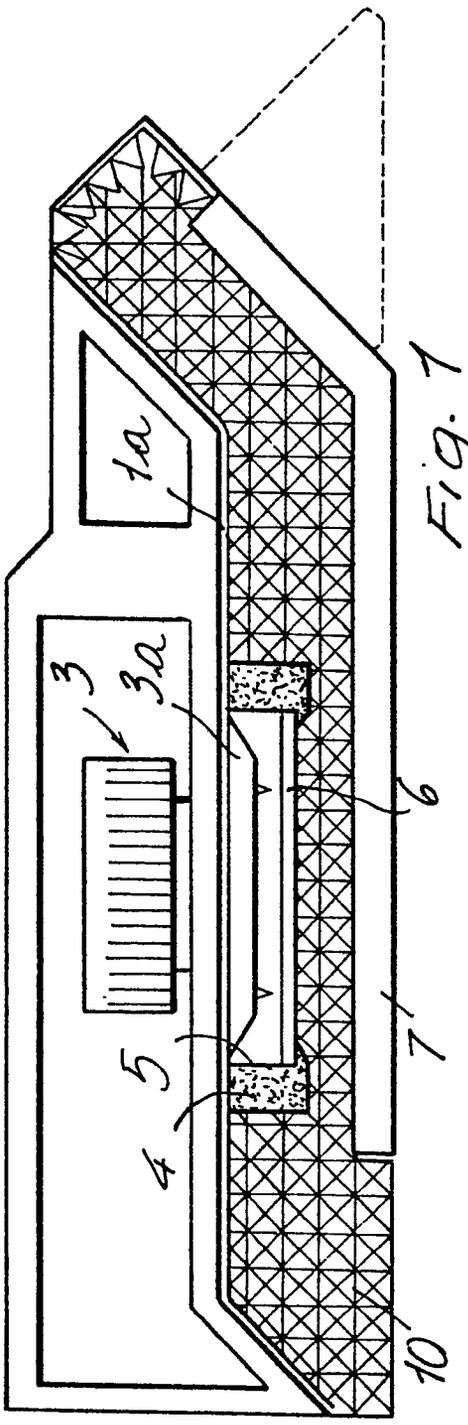

Fig. 1

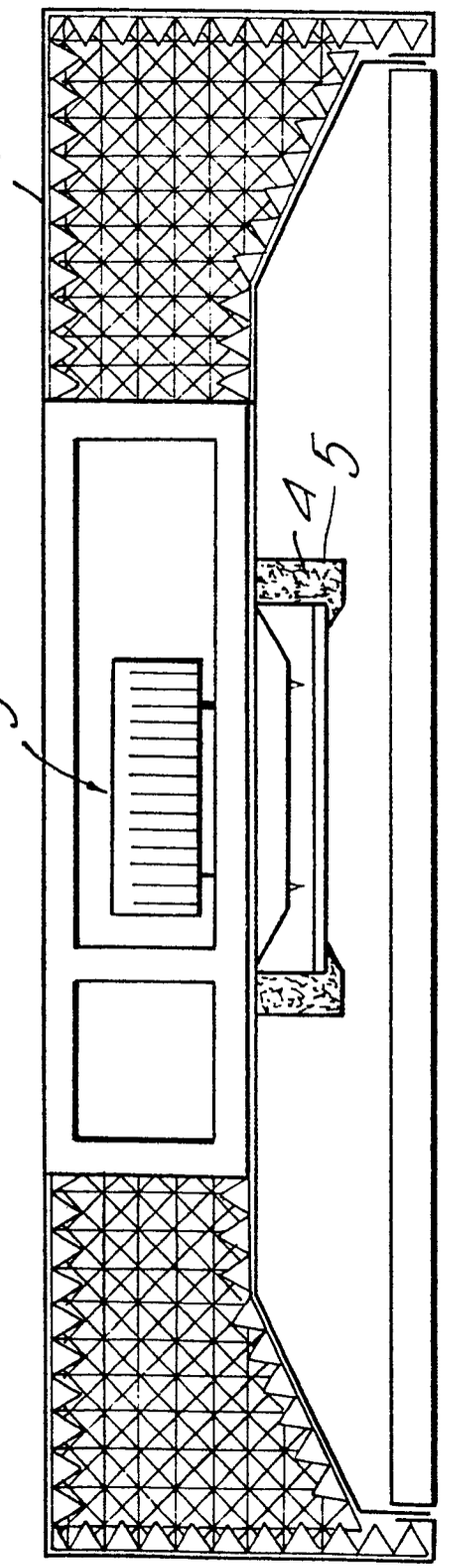

Fig. 2

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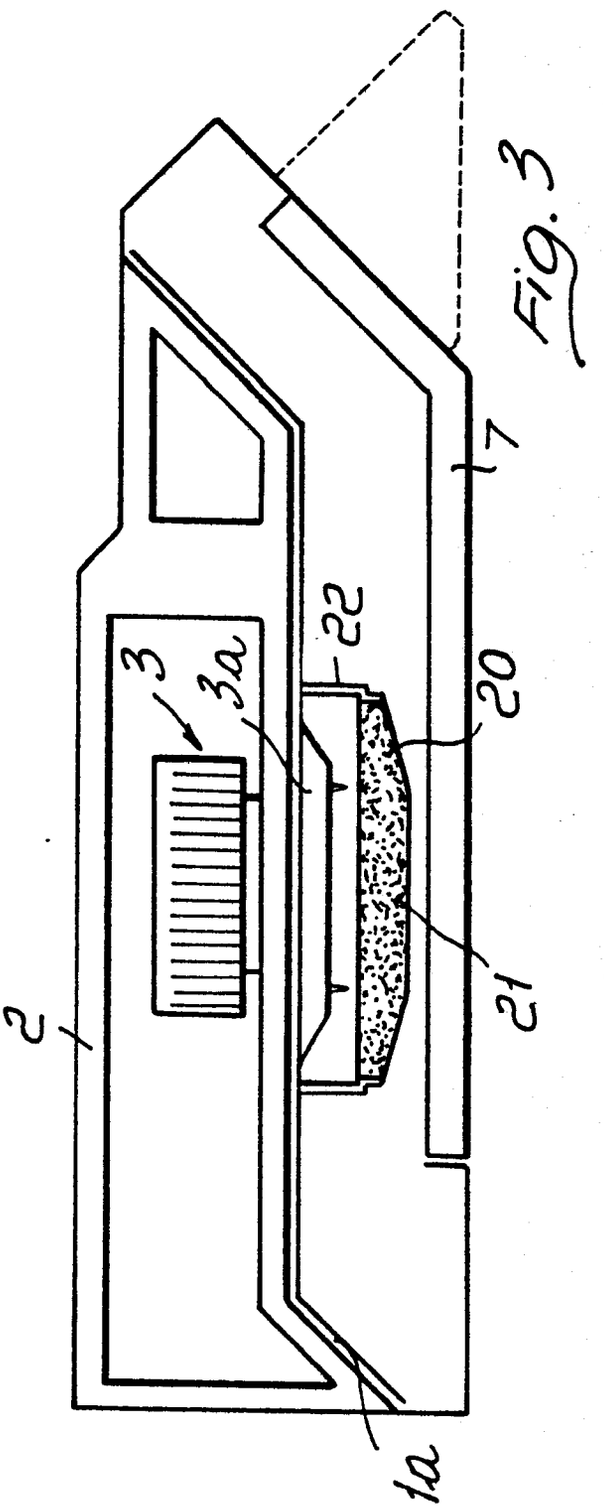

Fig. 3

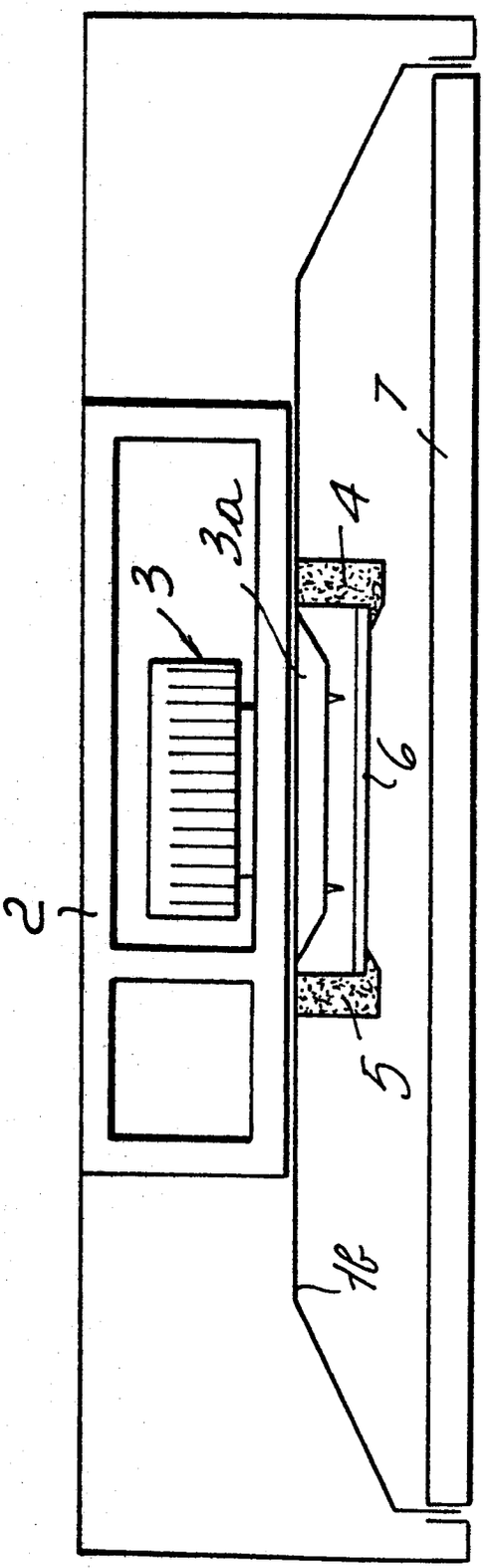

Fig. 4

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EUROPEAN SEARCH REPORT

0183657
Application number

EP 85 83 0293

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	DE-U-6 900 973 (GAGGENAU) * Page 5, Schutzansprüche 1-3, figures 1,2 *	1	F 24 C 15/20
X	DE-U-7 811 284 (SÜDDEUTSCHE METALLWERKE GmbH) * Page 7, paragraph 3; page 8, paragraph 1; figure 16 *	1	
X	FR-A-2 506 185 (BAUKNECHT) * Page 3, lines 22-35; figure 1 *	1	
A	FR-A-2 493 966 (BARBARIN)		
A	BE-A- 860 545 (H. LANNOY)		TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			F 24 C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	17-02-1986	VANHEUSDEN J.

CATEGORY OF CITED DOCUMENTS

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