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(72) Inventor: **Van Hoyweghen, Paul**
9220 Hamme (BE)

(74) Representative: **Donné, Eddy**
Bureau M.F.J. Bockstael nv
Arenbergstraat 13
2000 Antwerpen (BE)

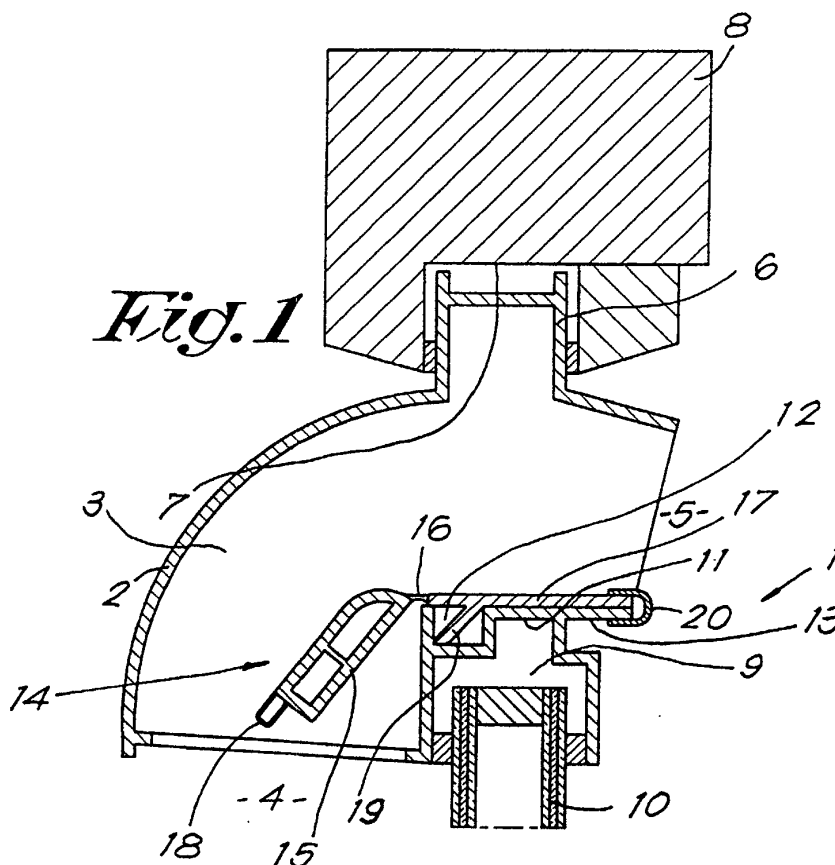
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(71) Applicant: **Aralco, Naamloze Vennootschap**
9220 Hamme (BE)

(54) **Improved ventilating grid**

(57) Improved ventilating grid of the type which substantially consists of a frame (2) which is fitted at the top in the groove of a window or similar (8) and which, at the bottom, is provided such that it can receive the glass (10) of the window or similar (8), and whereby the ven-

tilating grid (1) further comprises a channel (3) in which a closing-off flap (14) is provided, characterized in that this flap (14) can be removed at any moment from the frame (2) of the ventilating grid (1), applied therein, respectively.



Description

[0001] The present invention relates to an improved ventilating grid, more particularly a device which usually is provided at the upper side of a window or such in order to be able to determine, in an adjustable manner, the ventilation of the space closed off by such window or the like.

[0002] Different kinds of such ventilating grids are known, to wit ventilating grids whereby a slide is applied with openings which can be closed, opened, respectively, totally or partially; rotating ventilation grids whereby a drum is applied which either can be turned, partially or totally, into opened position, closed position, respectively, or not; and flap grids whereby tilting flaps are provided which can close, open, respectively, the passage of the ventilating grid by tilting.

[0003] The present invention relates to ventilating grids of the third type.

[0004] As generally known up to the present, this kind of ventilating grids consists of a passage which gives out into the atmosphere and which is in direct connection with the interior of a closed-off space, whereby in this passage, a flap is provided which, by means of a hinge and an appropriate operation mechanism, can be moved from a position in which said passage is entirely or almost entirely free, in other words, open, up to a position in which said passage is entirely closed off.

[0005] These ventilating grids are of a very simple construction, relatively inexpensive and rather reliable in function.

[0006] A disadvantage of said kind of flaps, however, is that the tiltable actual closing flap is not removable.

[0007] This means that the cleaning of such flap is difficult, if not impossible, as the flap can only be reached through the narrow passage of the ventilating grid.

[0008] The same is valid for the maintenance of such flap, maintenance which usually is desirable in order to be able to treat, lubricate or similar, the supply parts of the flap, such as the actual closing-off part and/or the hinge part.

[0009] Finally, the non-removability of such closing-off flap means that the replacement thereof is completely impossible without removing the window or such concerned.

[0010] Thus, the present invention relates to a ventilating grid with a tilting flap, said grid being of the third type which offers an efficient remedy for the aforementioned and other disadvantages of the existing flaps.

[0011] To this aim, the ventilating grid according to the invention substantially consists of a frame which is fitted at the top in the groove of a window or similar and which, at the bottom, is provided such that it can receive the glass of the window or similar, and whereby the ventilating grid further comprises a channel in which a closing-off flap is provided, characterized in that this flap, at any moment, can be removed from the frame of the ventilating grid, applied therein, respectively.

[0012] With the intention of better showing the characteristics of the invention, hereafter, as an example without any limitative character, a preferred form of embodiment of a ventilating grid with tilting flap according to the invention is described, with reference to the accompanying drawings, wherein:

figure 1 represents a cross-section of a schematic representation of a ventilating grid according to the invention;

figure 2 is a view similar to that of figure 1, however, with the main parts of the ventilating grid taken apart;

figure 3 represents a variant of figure 1;

figure 4 represents a cross-section of a preferred form of embodiment of a ventilating grid with tilting flap according to the invention.

[0013] In figures 1 and 2, a very schematic representation of an improved ventilating grid 1 according to the invention is represented.

[0014] This latter substantially consists of a frame 2 which borders a channel 3 forming the connection between the environment 4 and the space 5 into which the frame 2 gives out.

[0015] At the top, the frame 2 is provided with a protruding part 6 which can be suitably fitted in the groove 7 of a window or similar 8.

[0016] At the bottom, the frame 2 is provided with a space 9 in which the pane 10 of the window concerned, an extra profile or such 8, can be provided.

[0017] According to the present invention, the upper wall 11 of said space 9 comprises, on one hand, a recess 12 and, on the other hand, a lip 13.

[0018] The flap 14, which can close off the aforementioned channel 3, substantially consists of a first rigid part 15 which is connected, by means of a hinge 16, to a second rigid part 17.

[0019] The free extremity of said rigid part 15 is provided with a lip or actual closing-off part 18 made of a supply material.

[0020] The hinge 16 as well as the actual closing-off part or lip 18 can be formed by extruding the flap 14 on the basis of a two-component synthetic material, in such a manner that the parts 15 and 17, after hardening, become rigid, whereas the hinge 16 and the actual closing-off part remain supply.

[0021] Said rigid part 17 is provided with a protrusion 19 which can cooperate with said recess 12 in the upper wall 11 of the space 9 of the frame 2, whereas the free extremity of the rigid part 17 extends up to above the aforementioned lip 13 of the upper wall 11 of said space 9, when the protrusion 19 of the flap 14 is situated in the recess 12 of the frame 2.

[0022] This lip may extend according to the represented direction as well as in opposite direction.

[0023] Finally, over said lip 13 and the free extremity of the rigid part 17 of the flap 14, a clamp, clip or such

20 is provided which retains the flap 14 in respect to the frame 2.

[0024] From figure 1, it becomes obvious that the rigid part 17 of the flap 14, by means of the cooperation between the protrusion 19 and the recess 12, is immobile in respect to the frame 2, when the clamp, clip or such 20 is provided over the lip 13 of the frame 2 and, at the same time, over the rigid part 17 of the flap 14.

[0025] In this position, the rigid part 17 of the flap 14, together with the actual closing-off part 18, can be driven by means of an appropriate, not-represented mechanism in order to put the flap 14 in such a position that it closes off the channel 3 entirely or partially, frees it, respectively, such that either an air circulation can be obtained or not from the atmosphere 4 towards said space 5.

[0026] In order to clean, maintain or to replace the flap 14, it suffices to remove the clamp, clip or such 20, such that the flap 14 as a whole can be removed from the frame 2 in a simple manner.

[0027] In figure 3, a form of embodiment is represented which is approximately equal to that of figure 1, whereby, however, in this case the recess 12 is congruent to the protrusion 19.

[0028] In figure 4, finally a practical form of embodiment of a ventilating grid according to the invention is represented, whereby in this case the frame 2 consists of two parts, an outer part 2A, for example, consisting of metal, such as aluminium, and an inner part 2B which is realized in synthetic material in order to thereby realize a cold bridge.

[0029] In this embodiment, the rigid part 17 not only is provided with the protrusion 19, but also with a second protrusion 21, whereby the protrusion 19 engages with a recess 12 in the frame 2, whereas the protrusion 21 engages behind a protruding edge 22 of the frame 2, as a result of which a double positioning of the flap 14 in respect to the frame 2 is obtained.

[0030] On the opposite, the protrusion 21 can be provided on the frame 2, and this protrusion 21 can effect behind a protruding edge 22 of the flap 14.

[0031] Further, in this preferred form of embodiment, one or more spacers 23 are provided which, at the bottom, show a U-shaped clamp 24 which can be compared to the aforementioned clamp 20 from the first example and which at the top has a hook 25 which can be hooked removably into a recess 26 in the frame 2.

[0032] In this case, the removal of the flap 14 will only be possible after this flap or the spacers have been removed from the rigid part 17 and the lip 13 of the frame 2 and these spacers have been removed from the frame 2 by turning these spacers in order to thus remove the hook 25 from the recess 26.

[0033] In an embodiment variant, the recess 12 can be provided in the rigid part 17 of the flap 14, and the protrusion 19 will be provided on the upper wall 9.

[0034] It is obvious that in this manner, a ventilating grid is obtained whereby the flap 14 can be removed,

mounted again, respectively, in a simple manner.

[0035] Of course, the present invention is not restricted to the embodiments described heretofore and represented in the accompanying drawings; on the contrary, such ventilating grid, the removable fixation of the flap 14 in respect to the frame 2, respectively, can be realized in a variety of forms and dimensions, without leaving the scope of the invention.

[0036] So, for example, the shape of the recess 12 and of the protrusion 19 might have any other form whatsoever than the one represented in the drawings enclosed hereto, to wit partially or entirely bent, partially straight, etc.

Claims

1. Improved ventilating grid of the type which substantially consists of a frame (2) which is fitted at the top in the groove of a window or similar (8) and which, at the bottom, is provided such that it can receive the glass (10) of the window or similar (8), and whereby the ventilating grid (1) further comprises a channel (3) in which a closing-off flap (14) is provided, **characterized in that** this flap (14) can be removed at any moment from the frame (2) of the ventilating grid (1), applied therein, respectively.
2. Improved ventilating grid according to claim 1, **characterized in that** in the frame (2), at least one recess (12) is provided with which a protrusion (19) of the flap (14) can cooperate and whereby a clip, clamp or such (20), (24), respectively, is provided which retains the flap (14) in respect to the frame (2) when the protrusion (19) is situated in said recess (12).
3. Improved ventilating grid according to claim 1, **characterized in that** on the frame (2), at least one protrusion (19) is provided which can cooperate with a recess (12) in the flap (14) and whereby a clip, clamp or such (20), (24), respectively, is provided which retains the flap (14) in respect to the frame (2) when the protrusion (19) is situated in said recess (12).
4. Improved ventilating grid according to claim 2 or 3, **characterized in that** said recess (12) has a rectangular shape, whereas the protrusion (19) is inclined.
5. Improved ventilating grid according to claim 4, **characterized in that** the protrusion (19) extends from a corner of the recess (12) up to the corner of this recess (12) situated diagonally opposed thereto.
6. Improved ventilating grid according to claim 2 or 3,

characterized in that said recess (12) and the protrusion (19) both are inclined, whereby the shape of a protrusion (19) is congruent to the shape of the recess (12).

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7. Improved ventilating grid according to claim 2 or 3, **characterized in that** the frame (2), apart from the recess (12), comprises a second recess, protruding edge or similar (22) with which a second protrusion (21) of the flap (14) can cooperate. 10
8. Improved ventilating grid according to claim 2 or 3, **characterized in that** the flap (14), separately from the recess (12), comprises a protruding edge or similar with which a second protrusion (21) of the frame (2) can cooperate. 15
9. Improved ventilating grid according to claim 2, **characterized in that** said clip, clamp or such (20), (24), respectively, is simultaneously provided over a lip (13) of the frame (2) and a part (17) of the closing-off flap (14) extending next to said lip (13). 20
10. Improved ventilating grid according to claim 9, **characterized in that** the clip, clamp or such (24) forms part of a spacer (23) situated in the channel (3) of the ventilating grid. 25
11. Improved ventilating grid according to claim 10, **characterized in that** the spacer (23) comprises a hook (25) at the top with which it is attached to the frame (2) in such a manner that it can be hinged out. 30

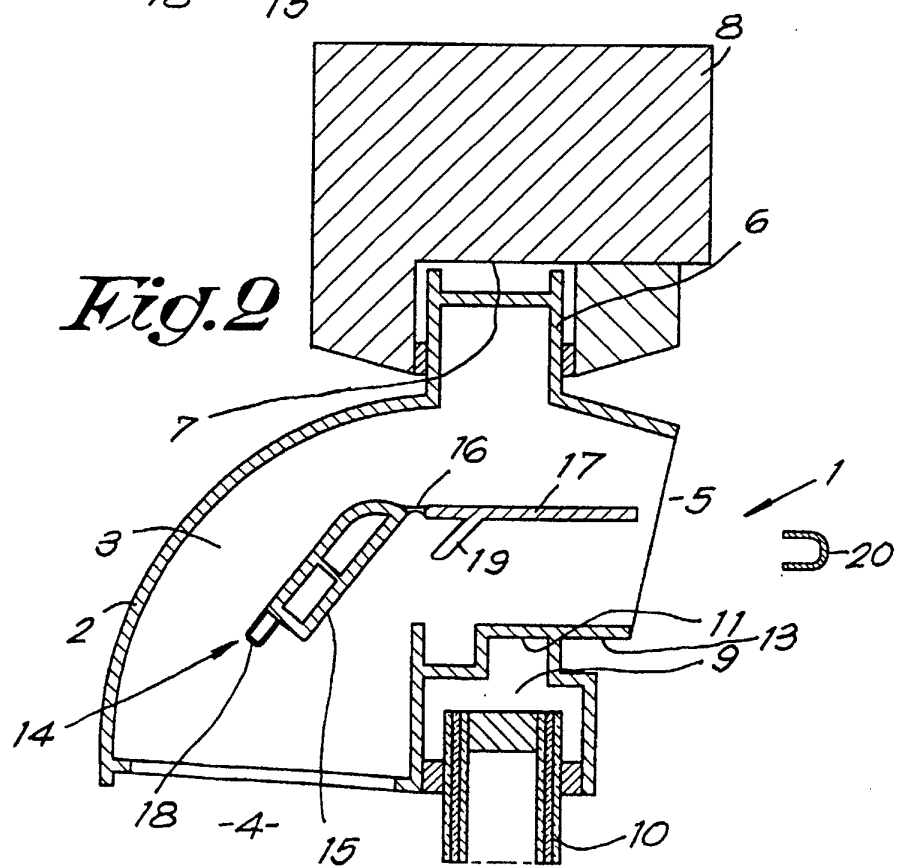
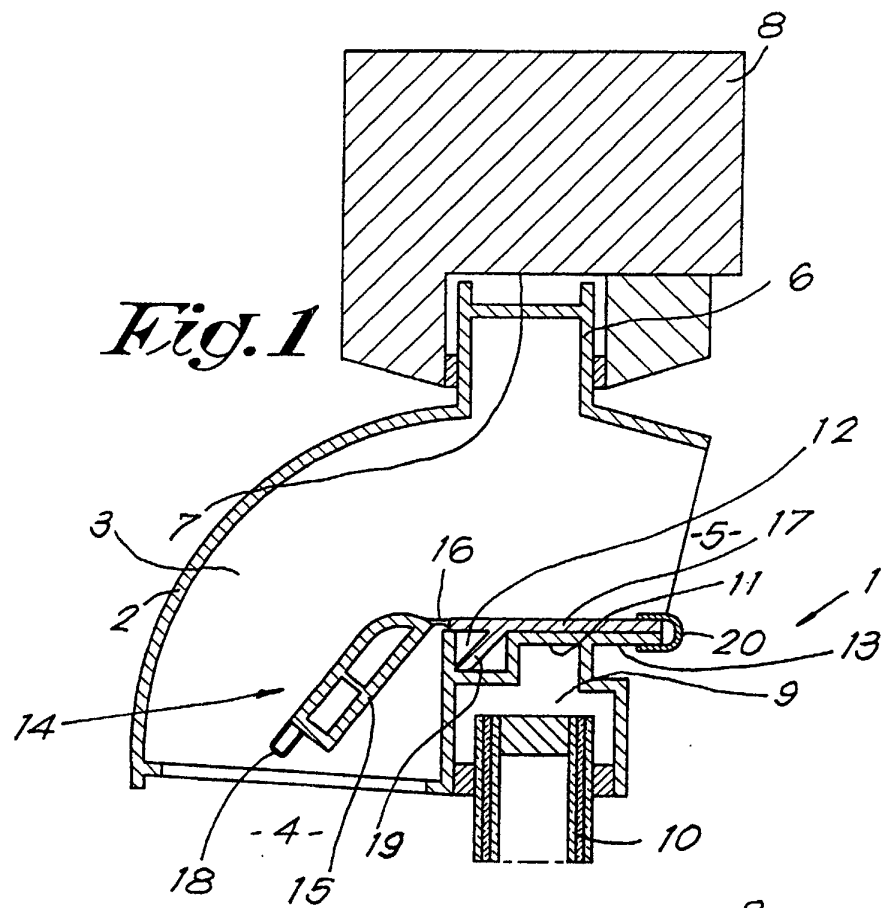
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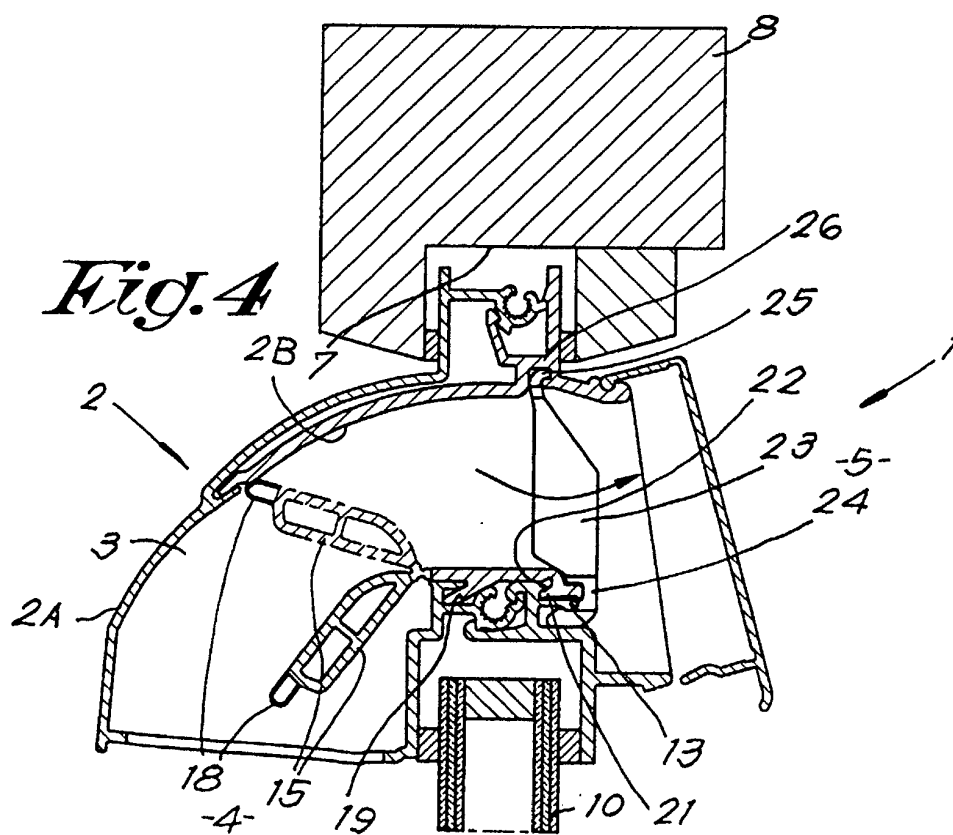
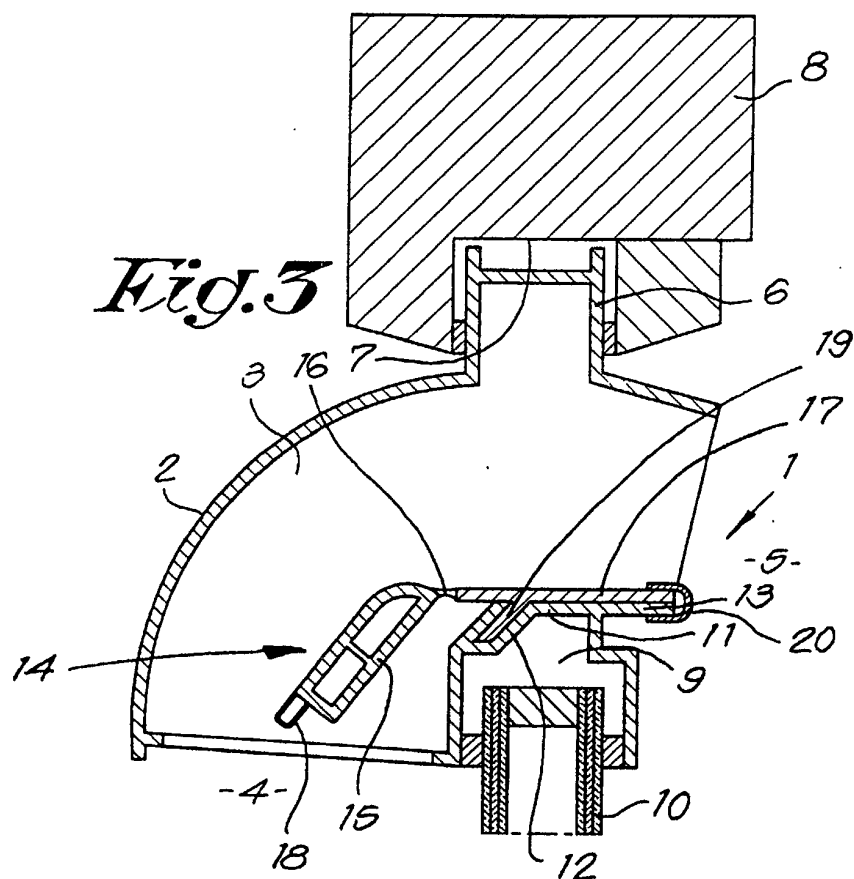
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EUROPEAN SEARCH REPORT

Application Number
EP 02 07 5231

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.7)
A	EP 0 236 557 A (SIEGENIA FRANK KG) 16 September 1987 (1987-09-16) * abstract; figures *	1-3	F24F13/18
A	EP 0 406 933 A (GIEMETA LUVEMA BV) 9 January 1991 (1991-01-09) * the whole document *	1	
A	BE 1 008 692 A (ARALCO NV) 2 July 1996 (1996-07-02)		
A	GB 1 269 080 A (AMERICAN METAL CLIMAX) 29 March 1972 (1972-03-29)		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F24F E06B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 30 May 2002	Examiner Gonzalez-Granda, C
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 07 5231

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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30-05-2002

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0236557	A	16-09-1987	DE	3603591 C1	16-07-1987
			DE	3603686 A1	13-08-1987
			DE	3631732 A1	24-03-1988
			DE	3632349 A1	07-04-1988
			DE	8623856 U1	13-11-1986
			AT	71453 T	15-01-1992
			DE	3683367 D1	20-02-1992
			EP	0236557 A2	16-09-1987
			ES	2029227 T3	01-08-1992
EP 0406933	A	09-01-1991	NL	8901594 A	16-01-1991
			DE	69003192 D1	14-10-1993
			EP	0406933 A2	09-01-1991
BE 1008692	A	02-07-1996	BE	1008692 A6	02-07-1996
GB 1269080	A	29-03-1972	DE	1923654 A1	27-11-1969
			FR	2008593 A5	23-01-1970
			IE	32687 B1	31-10-1973
			NO	123817 B	17-01-1972
			SE	354344 B	05-03-1973