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(54) **Levegőkivezetés**

Az európai szabadalom ellen, megadásának az Európai Szabadalmi Közlönyben való meghirdetésétől számított kilenc hónapon belül, felszólalást lehet benyújtani az Európai Szabadalmi Hivatalnál. (Európai Szabadalmi Egyezmény 99. cikk(1))

A fordítást a szabadalmas az 1995. évi XXXIII. törvény 84/H. §-a szerint nyújtotta be. A fordítás tartalmi helyességét a Szellemi Tulajdon Nemzeti Hivatala nem vizsgálta.

Air outlet

Description

[0001] The present invention concerns an air outlet according to the generic term in Claim 1.

STATE OF THE ART

[0002] Such air outlets are known and used in the market in many forms and designs. It has however proven that in these air outlets the air currents are difficult to control, and it is not possible to have a good induction of the air in a room. The different characteristics of cool and warm currents of air in particular represent a challenge.

[0003] In order to improve the insertion of air into a room, EP 0 816 773 B1 shows a diffuser-type outlet connector in

which an air duct connector is employed. In order to be able to bring the air into the room as far as possible, the air duct connector is provided with a long element. To regulate the air inlet, the air duct connector can be arranged infinitely at different heights. In this way, the arrangement is good to bring warm air far into a room. Cool air can also be brought into

the room and cannot be led along the ceiling before falling to the floor, as is important for ventilating the entire room. By adjusting the air duct connector, only the range, but not the direction of the flow can be controlled.

[0004] US 3 063 356 A reveals a ventilation device with a diffuser to optimise the introduction of air mass of different temperatures into a room.

[0005] US 2 616 355 A reveals an adjustable ventilation device with several concentric pin elements.

[0006] GB 2 313 661 reveals a ventilation device with air conduction blades and a procedure to set a ventilation device.

[0007] DE 39 39 418 A1 reveals an air outlet device to ventilate rooms with a ring of air conduction blades.

[0008] GB 2 277 374 A reveals a temperature-controlled ventilation device with an air scoop put on the hub.

[0009] US 6 176 777 B1 reveals a self-regulating diffuser for air conditioning systems with an inner and an outer pin element.

TASK

[0010] The task of the present invention is to create an air outlet, with which the cool and warm air can be conducted

into a room in such a way that it is ventilated in the best way possible.

SOLUTION TO THE TASK

[0011] The features of Patent Claim 1 lead to the solution of the task.

[0012] This means that between the frame and the outlet connection, a gap which can be altered in size is formed. If the gap is large, the air can flow out through the outlet connection, but will then be deflected to the bottom of the room on the surrounding frame. This means that this air penetrates far into the room. If, on the other hand, the gap is reduced, the air flows more to the side, and can spread along a ceiling, and then fall to the bottom. This avoids drafts when introducing cold air.

[0013] In a preferred air outlet, the outlet connection is set up in a revolving manner towards the frame. In

addition, the outlet connection is led through one or more links. The links can be positioned directly in the frame or in the angular pieces which are arranged on the frame or also a room ceiling or the like. It is also conceivable to spheroidise the links in a ring which surrounds the outlet connection.

[0014] The outlet connection shows conductor elements primarily with a lubricious layer which works together with the link or links, and run in this or these. For this, the links are designed in such a way that when pivoting, an upwards or

downwards movement is automatically produced in the direction of the flow. According to the invention, several slit links at an incline or a ring, or respectively spiral, are conceivable around the edge.

[0015] In the outlet connection, it is preferable to have another air conductor connection arranged there. This can be allocated to the frame and fixed to this, then the air conductor connection does not move with this when pivoting,

but rather stays in its position.

[0016] A further possibility is that the air conductor connection is allocated to the outlet connection, and its movement vis-à-vis the frame is the same as the direction of the flow. This depends on the particular application of the air outlet

Both possibilities should be considered by the ideas of the invention.

[0017] The movement of the outlet connection is created using a driver. In doing so, a thermomotor is used as driver for the pivot movement of the outlet connection. This has an expanding material element which expands under heat. In the air outlet, the thermomotor should be integrated in such a way that the warm and/or cold air flowing past can be used to steer the motor, i.e. the thermomotor sets the outlet connections at the desired height according to the temperature of the air flowing past. It is however also conceivable that temperature sensors will be used which steer an electro-hydraulic or pneumatic driver according to the temperature of the air to be introduced into the room. Of course, the ideas of the invention also include manual settings.

DESCRIPTIONS OF FIGURES

[0018] Other advantages, features and particulars of the invention are produced from the following description of preferred examples of use using the drawing; this shows in

Figure 1 a cross-section of an air outlet according to the invention;

Figure 2 a side-view looking in direction x of the air outlet according to Figure 1;

Figure 3 a schematic top view of another example of use of the air outlet according to the invention.

[0019] Figure 1 shows an air outlet 1 according to the invention. This shows a diffuser-type arched outlet connection 2 with a central axis 9, a frame 3 and an air conductor 4. The frame 3 is designed in the present example of use according to Figure 1 as a ring which encloses the outlet connection 2, and is integrated into an opening represented in a room ceiling. This opening is covered with an air outlet plate 5 up to the room.

[0020] Bolts 6.1 to 6.4 are arranged on air outlet connection 2, as also shown in Figure 3. Their surface is provided with a lubricious layer, primarily plastic.

[0021] There are a total of four links 7 integrated into the frame 3. These are, as shown in figure 2 as an example of a link 7, designed as slits which are integrated into the frame 3 with a gradient of about 45°. The links have a width b,

which correspond with a diameter d of the bolt 6.1 to 6.4. The link 7 stretches from a lower edge 8 of the frame 3 to ca. $2/3$ of the frame 3.

[0022] As represented schematically in Figure 3, in each case two bolts 6.1 and 6.3, and 6.2 and 6.4 opposite are arranged on the outer area of the outlet connection 2. For this, the four links are correspondingly paired opposite one another, and in this example of use, in a corner 10.1 to 10.4.

[0023] The outlet connection 2 is attached to frame 3 by its bolts 6.1 to 6.4 which run in the links, and connected to the frame.

[0024] In the present example of use, the air conductor connection 4 is fixed to the frame 3 with brackets which are not represented.

[0025] The present invention functions as follows:

[0026] Figure 1 shows the air outlet 1 with an outlet connect 2 set high. This position serves primarily to introduce warm air into a room. Led through an inner side of the outlet connection 2 and an outer side of the air conductor connection 4, but deflected by frame 3, warm air will be introduced deep into the room vertically in the direction of the arrow P.

[0027] Contrary to this, cool air should be led along a ceiling - not represented - for as long as possible, before it falls to the bottom of the room. Therefore, cool air will be introduced from outlet connection 2 in the direction of the arrow K,

downwards. In this way, outlet connection 2 and the air conductor connection 4 move closer together. But since both expand outwards like a diffuser, the air flow will also be steered outwards and carried along the ceiling before falling to the bottom.

[0028] In order to set the outlet connection 2 in arrow direction K in the lower position, it must be pivoted on its central axis g. Through this pivot movement, the outlet connection 2 with its bolts 6.1 to 6.4 pushes along the links 7

and moves down in arrow direction K. In doing so, the path put back down is directly proportional to the angle of the pivot depending on the gradient of the angle α of link 7.

[0029] The pivot movement can be designed either manually or with a motor.

[0030] In order to set the outlet connection 2 upwards again, the pivot movement of outlet connection 2 is made in the other direction to the central axis g.

Reference mark list

1	Air outlet	34		67	
2	Outlet connection	35		68	
3	Framework	36		69	
4	Air conductor	37		70	
5	Air outlet plate	38		71	
6	Bolts	39		72	
7	Link	40		73	
8	Bottom edge	41		74	
9	Central axis	42		75	
10	Corner	43		76	
11		44		77	
12		45		78	
13		46		79	
14		47		X	View direction
15		48		(X	Corner
16		49		B	Width
17		50		D	Diameter
18		51		P	Arrow
19		52		K	Arrow
20		53			
21		54			
22		55			
23		56			
24		57			
25		58			
26		59			
27		60			
28		61			
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30		63			
31		64			
32		65			
33		66			

LEVEGŐKIVEZETÉS

Szabadalmi igénypontok

1. Levegőkivezetés meleg és/vagy hideg levegő helyiségbe történő bejuttatására, melynek keretbe (3) foglalt kivezetőcsonkja (2) van,
 ahol a kivezetőcsonk (2) a kerethez (3) képest áramlásirányban (K) olyan mértékben mozgatható, hogy a keret (3) a kivezetőcsonk (2) felemelt helyzeténél a kivezetőcsonkból (2) kiömlő levegőt nyílirányba (P) tereli,
 ahol a kivezetőcsonk (2) legalább egy kulisszában (7) vezethető meg, ahol minden esetben két egymással szemközt kulissza (7) áll rendelkezésre,
 ahol a kulissza (7) a kerethez (3) van társítva,
 ahol a kulissza (7) egy szöget (α) képez, és ferde réssel van ellátva,
 ahol a kivezetőcsonk (2) a kerethez (3) képest elforgatható, és ahol a kulisszák (7) olyan módon vannak kiképezve, hogy elfordulásuk automatikusan a kivezetőcsonk (2) áramlásirányban (K) felfelé vagy lefelé történő elmozdulását eredményezi,
 ahol a kivezetőcsonk (2) és/vagy levegőterelő-csonk (4) mozgatása motoros,
azzal jellemezve, hogy
 a mozgítás termomotoros.
2. Az 1. igénypont szerinti levegőkivezetés, **azzal jellemezve, hogy** a kivezetőcsonknak (2) legalább egy terelőeleme (6.1 - 6.4) van, amely a legalább egy kulisszával (7) együttműködik.
3. A 2. igénypont szerinti levegőkivezetés, **azzal jellemezve, hogy** a terelőelem egy csavar (6.1 - 6.4), amely műanyag borítással van ellátva.
4. Az 1-3. igénypontok bármelyike szerinti levegőkivezetés, **azzal jellemezve, hogy** a kivezetőcsonkhoz (2) levegőkivezető lemez (5) van társítva.
5. Az 1-4. igénypontok bármelyike szerinti levegőkivezetés, **azzal jellemezve, hogy** a kivezetőcsonkban (2) levegőterelő-csonk (4) van elrendezve.
6. Az 5. igénypont szerinti levegőkivezetés, **azzal jellemezve, hogy** a levegőterelő-csonk (4) a kivezetőcsonktól (2) függően vagy attól függetlenül áramlásirányban (K) mozgatható.
7. Az 1-6. igénypontok bármelyike szerinti levegőkivezetés, **azzal jellemezve, hogy** a termomeghajtás a beömlő levegő hőmérsékletével szabályozható.

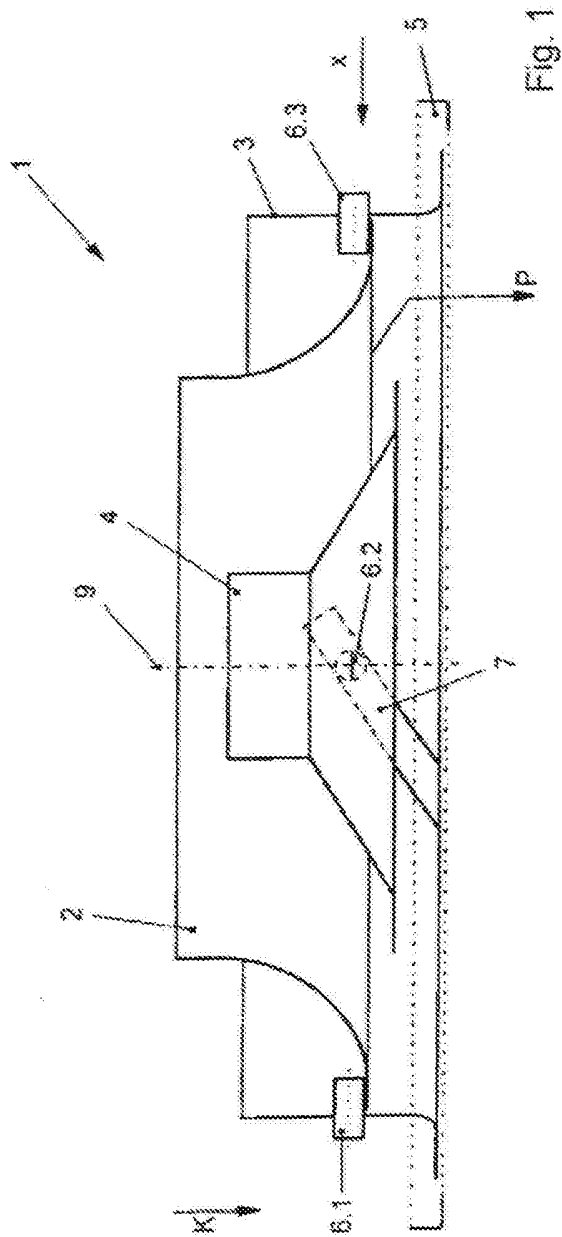


Fig. 1

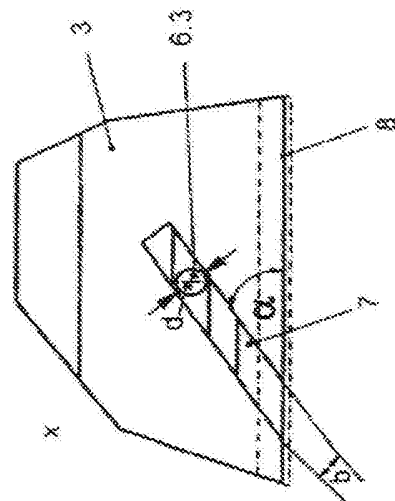


Fig. 2

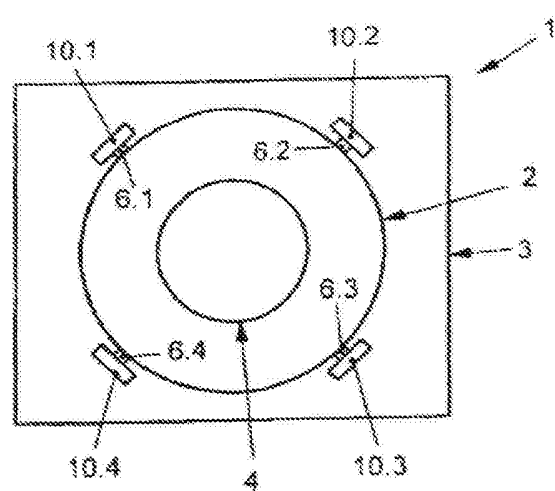


Fig. 3