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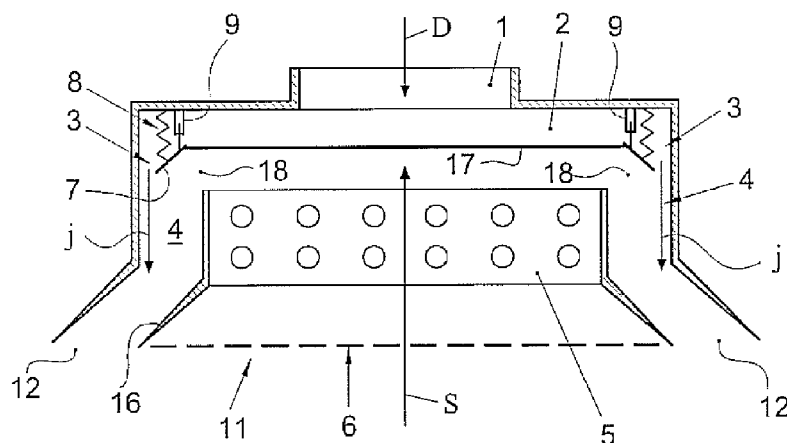


FIG. 2

(57) Abstract: An air conditioning convector, provided with: - a primary air inlet (1) for supplying air to an excess pressure chamber (2); - a heat exchanger (25) arranged in an air conditioning space (5), designed for exchanging heat with air; and - a partition provided with air flow generating air outflow nozzles (3) between the excess pressure chamber (2) and air conditioning space (5); wherein the excess pressure chamber (2) is provided with air pressure control means (7, 8).

Title: Air conditioning convector

The invention relates to an air conditioning convector.

Such an apparatus is known per se from the prior art, see for instance NL1004187. The convector is for instance arranged in a ceiling of a room, to condition the room thermally (for instance to cool it with cooled air, or
5 to heat it with heated air), and for instance to provide it with fresh air.

Known air conditioning convectors are typically designed to be active only at particular air flow rates. A known air conditioning convector suitable for a relatively small space cannot be used to comfortably condition a larger space. For this reason, to allow proper performance of air conditioning in the
10 various situations possible, normally a particularly wide range of air conditioning convectors should be available.

It is desired to condition a space in a manner as comfortable as possible. This means that the air conditioning convector should operate as quietly as possible, and must have sufficient capacity for conditioning the
15 room. Both undercapacity and overcapacity are undesired. In the first case, the convector cannot condition the room properly. In the second case, there may be overconditioning, and inconvenience, such as, for instance, unpleasantly high air circulation in the space to be conditioned. Furthermore, placing "too large" a cooling convector may be undesired from an aesthetic point of view, and in
20 view of higher costs usually involved.

US2002/062948, in Fig. 4b, shows a part of an apparatus with a sliding plate 24 arranged in front of outflow openings for presetting an induction ratio of the apparatus. AU6761781 shows a similar design.

The object of the present invention is to provide a relatively compact
25 air conditioning convector, which can handle a wide range of air flow rates while preserving comfort.

To this end, according to the invention, the convector is characterized by the features of claim 1.

The convector is provided with:

- a primary air inlet for supplying air to an excess pressure chamber;
- a heat exchanger arranged in an air conditioning space, designed for exchanging heat with air; and

5 - a partition, provided with air jet generating air outflow nozzles, between the excess pressure chamber and air conditioning space;

wherein the excess pressure chamber is provided with air pressure control means.

By the use of these control means, the convector can control air
10 pressure, preferably automatically (autonomously, without using an external energy source, electricity and the like), for instance upon variation or change of a flow rate of air supplied to the convector. As a result, the convector can offer a high user comfort, be of compact design and be deployable at different air flow rates (without then being connected to an energy source).

15 The air pressure control means can be designed in different manners. According to a preferred embodiment, the air pressure control means are automatically (autonomously, without utilizing an external energy source, electricity and the like) adjustable under the influence of a pressure prevailing in the excess pressure chamber (i.e., the air pressure control means set
20 themselves, depending on the pressure prevailing in the excess pressure chamber). It is further advantageous if the air pressure control means comprise adjustable air outflow openings. The air jet generating air outflow nozzles can for instance comprise the air pressure control means. In addition, the air jet generating nozzles can be arranged at a distance from the air
25 pressure control means.

According to an extra advantageous, relatively simple and reliable solution, air pressure control means are provided with spring means for counteracting air flow via the control means with spring force. Of particular advantage is a design where the air pressure control means themselves
30 comprise resilient valve means, for instance elastic or rubber flaps.

The invention further provides an advantageous method which is characterized by the features of claim 17.

Further advantageous elaborations of the invention are described in the subclaims. Presently, the invention will be further elucidated with
5 reference to a number of exemplary embodiments and the drawing. In the drawing:

Fig. 1A schematically shows a cross section of an air conditioning convector;

Fig. 1B shows a schematic top plan view of the example given in
10 Fig. 1;

Fig. 2 shows a similar cross section to Fig. 1 of an exemplary embodiment of the invention;

Fig. 3 shows a similar cross section to Fig. 1 of an alternative exemplary embodiment;

15 Fig. 4A shows a similar cross section to Fig. 1 of a further elaboration;

Fig. 4B shows a bottom view of an inside part of the convector shown in Fig. 4A; and

Fig. 5 shows an alternative of the convector shown in Fig. 4A.

20 In this application, identical or corresponding features are indicated with identical or corresponding reference numerals.

Figs. 1A, 1B schematically show an example of an air conditioning convector (also call induction unit), designed for supplying air to a space R. The space R can for instance be a living accommodation, working space,
25 meeting space and/or have a different function. The convector comprises a housing H which – in this example – is provided at a top with a primary air inlet 1 for supplying air to an excess pressure chamber/distribution chamber 2 (enclosed by the housing H). According to a non-limitative example, the inlet 1 comprises a cylindrical tube, having a diameter of, for instance, approximately
30 10 to 20 cm.

During use, a particular flow of air D is supplied to inlet 1 of the convector, for instance via an air supply (not shown). The air supply can for instance be provided with pumping means known per se; alternatively, such pumping means can be provided in the air inlet 1 of the convector. Preferably, during use, an excess pressure of more than 50 Pa prevails in the excess pressure chamber 2, in particular at least 100 Pa and more particularly at least 125 Pa, with respect to an ambient pressure (prevailing in a space R to be conditioned).

In addition, the convector comprises an air conditioning space 5, which is located under the excess pressure chamber 2. The example comprises a substantially closed partition wall 17 (i.e. a bottom of the excess pressure chamber 2) provided with air outflow nozzles 3, which wall 17 extends between the excess pressure chamber 2 and air conditioning space 5.

In the conditioning space 5, a heat exchanger 25 is arranged, which is designed for exchanging heat with air present in this space 5, for instance for heating or cooling the air. During use, the air pressure in the conditioning space 5 is lower than the pressure in the excess pressure space 2. The air pressure in the conditioning space 5 can for instance be substantially atmospheric pressure.

The heat exchanger 25 can be designed in different manners. In the example, the heat exchanger 25 comprises a number of elongated liquid ducts 25 extending at a distance from each other (having a circular cross section in this non-limitative example), designed for supplying a thermally conditioned liquid through the space, for the purpose of thermally conditioning the air. As shown in Fig. 1B, the convector can for instance comprise a number of liquid inlets and outlets 14, which are connected to the heat exchanger 25, for supplying liquid to and discharging liquid from the heat exchanger. According to a further elaboration, the convector comprises one or more first ducts for feeding a cool or cooled liquid (for instance water) through the space, and one

or more second ducts for feeding a hot liquid (for instance hot water) through the space.

The air outflow nozzles 3 are designed for generating air jets J (in particular under the influence of an excess pressure mentioned). In particular, the air outflow nozzles 3 are designed for functioning as air jet pumps (for the purpose of pumping air through the conditioning space 5).

In particular, the outflow nozzles 3 are designed for blowing the air jets J along the air conditioning space 5, via through-flow channels 4, in the direction of two respective primary air outlets 12. The outflow nozzles 3 can be designed in different manners, and can comprise, for instance, two series of relatively narrow outflow openings. In the example, the two outlets 12 are designed for feeding the two respective air flows in a mutually somewhat diverging manner into the space R to be conditioned; to this end, the outlets are provided with diverging end pieces.

Advantageously, the convector is provided with a secondary air inlet 11 which is located at the underside of the convector, between the outlets 12, for supplying ambient air (present under the convector) to the air conditioning space 5. In the example, this secondary inlet 11 is provided with an air transmissive closing wall 6, for instance a perforated plate or closing grate.

Drawing in ambient air is schematically indicated with arrow S in the drawing. Preferably, the outflow nozzles 3 are designed for generating reduced pressure-creating air jets J, for the purpose of drawing in the secondary air via the secondary inlet 11. During use, the air S drawn in via secondary inlet 11 is thermally conditioned by the heat exchanger 25 (for instance heated or cooled), then to be supplied via outlets 18 to the primary outlets 12. The outflow nozzles 3 are further preferably designed for achieving a respective air outflow velocity (of air flowing out of these nozzles 3) of more than 10 m/s, preferably at least 15 m/s, at an above-mentioned excess pressure in the excess pressure chamber 2.

Further, the convector is preferably designed such that a relatively high flow velocity of air blown out through the nozzles 3 is reduced in the convector, for instance to a velocity of no more than 2 m/s, before the air leaves the convector. To this end, the primary air outlets 12 are preferably of
5 considerably wider design than the outflow nozzles 3 arranged upstream, so that the air jets J can expand and slow down in a controlled manner in the outlets 12 before flowing into the space R.

The conditioning space 5 of the example is provided with side walls 16, and second air outlets 18 extending between these side walls 16 and
10 partition wall 17. The primary air outlets 12 are located between the housing H and the side walls 16 of the conditioning space. The outflow nozzles 3 are designed for blowing the air jets J along these second outlets 18 (and through the channels 4), for locally effecting a reduced pressure for generating the secondary air flow S.

15 The convector can for instance be arranged above the space R to be conditioned, for instance by arranging the convector in or below a ceiling (not represented) extending above the space R. The convector is in particular not connected to an external energy source, for instance an electric feed or the like.

Fig. 2 shows a further advantageous elaboration of the convector.
20 The elaboration shown in Fig. 2 is distinguished from the example according to Figs. 1A, 1B in that the excess pressure chamber 2 is provided with air control means 7, 8, in particular for controlling air pressure in this chamber 2 upon variation of the flow rate of supplied air D. In particular, the convector is designed such that a change of an air flow rate supplied via the inlet 1 to the
25 excess pressure chamber 2 leads to a change of an air flow rate allowed to pass by the air control means. An advantage is that this convector operates in a low-noise manner, upon variation of air flow rates. Furthermore, the convector can process a particularly wide range of primary air flow rates, and is therefore usable for conditioning spaces R of very different volumes. Further,
30 through the use of the control means 7, 8, the convector can properly

counteract variation of outflow velocity of air (upon variation of a primary air flow rate).

The air pressure control means can be designed in different manners. These means preferably operate completely autonomously and are preferably not provided with a control and/or with current/power consuming features so that the control means can be of relatively simple and reliable design.

In particular, the air pressure control means 7, 8 are automatically adjustable under the influence of an excess pressure (which is dependent on the flow rate mentioned) prevailing in the excess pressure chamber. As shown in the drawing, the air pressure control means can for instance comprise adjustable air outflow openings. In the present, particularly advantageous embodiment of the convector, the air jet generating air outflow nozzles 3 are provided with the air pressure control means 7, 8. Fig. 3 shows an alternative elaboration, where air outflow nozzles 3 and air pressure control means are arranged (separately) at a distance from each other.

According to an advantageous elaboration, the air pressure control means 7, 8 may be provided with spring means 8 to counteract air flow via the control means 7 with spring force.

In particular, Fig. 2 shows an elaboration where each outflow nozzle 3 is provided with a (in this example pivotable) control valve 7. Movement of the valve 7 leads to a change of the size of the outflow nozzle. Under the influence of spring force of respective spring means 8, each valve 7 can be brought to a closing position, which leads to reduction or even complete closure of the outflow nozzle 3. The spring force of the spring means 8 is such that a particular excess pressure in the excess pressure chamber 2 leads to an opened valve position and thus an opened outflow opening, for allowing air to pass from the excess pressure chamber to an outlet 12. The spring means 8 can be specifically selected or set (for instance by means of suitable calibration) for allowing a desired predetermined air flow rate or flow rate range (of primary

air) at a predetermined pressure or pressure range in the excess pressure chamber 2. Thus, the valve 7 can be in a first position (reducing or completely closing the outflow nozzle 8) at a first pressure prevailing in the excess pressure chamber 2, and in a second position (enlarging or opening the outflow nozzle 8) at a second pressure prevailing in the excess pressure chamber 2, with the second pressure being higher than the first pressure. Under the influence of the spring means 8, the valve 7 can then be brought from the second to the first position when the pressure in the excess pressure chamber 2 falls from the second to the first pressure.

10 According to a further elaboration, the control means 7, 8 (and associated outflow nozzles 3) can for instance be designed such that the convector (which has, for instance, an effective length, measured in a direction parallel to the heat exchanger 25, i.e. normal to the plane of Fig. 1A, of more than 1 m, in particular more than 1.5 m) can at least operate at an air flow rate of the blow-in air over a range of from 10 to 200 m³ per hour, for instance 40-160 m³ per hour. An associated excess pressure (in pre-pressure chamber 2, measured with respect to a pressure prevailing in the space R) can for instance be in the range of approximately 100-200 Pa, in particular approximately 125-150 Pa. Preferably, a flow velocity of the air flowing via primary outlets 12 is in each of these cases in the comfortable range of approximately 0.5-5 m/s, in particular approximately 1-3 m/s, more particularly approximately 2 m/s. Use of other air flow rates and pre-pressures, and air outflow velocities, also falls within the framework of the present invention.

25 Preferably, the outflow nozzles 3 provided with control means 7, 8 are of elongated design (in a direction at right angles to the drawing). The convector can for instance be provided with only two elongated (in particular parallel) outflow nozzles 3, or two series of elongated (in particular parallel) outflow nozzles 3 (for instance with an effective length of at least 1 m). The associated valve means 7 are then preferably also of elongated design, for 30 instance having a length (measured in a direction parallel to the heat

exchanger) which is at least 10x greater than a width. An effective length of such a valve means 7 can for instance be approximately 1 m or more. In this manner, the pressure-controlled outflow nozzles can generate elongated air jet curtains J (having a length of for instance approximately 1 m or more). During
5 use, a slot width of each adjustable outflow nozzle 3 can for instance be in the range of approximately 0.1–10 mm, in particular approximately 0.1-2 mm (which depends, for instance, on the excess pressure mentioned).

Preferably, the valve means 7 extend over substantially the full length of the heat exchanger 25, for instance parallel to the heat exchanger.
10 According to a further elaboration, the valve means 7 are not interrupted. Alternatively, for instance, one or more series of valve means 7 are provided, for controlling flow via respective one or more outflow nozzles. According to an advantageous elaboration, elongated valve means 7 are provided for controlling flow through elongated outflow nozzles 3. Alternatively, an
15 elongated valve means 7 can be provided for controlling a series of separate outflow nozzles 3. Instead of elongated valve means 7, for instance, square, circular, spherical and/or otherwise formed valve means can be provided for controlling flow via respective outflow nozzles.

The outflow nozzles can also for instance extend over substantially
20 the full length of the heat exchanger 25, for instance parallel to the heat exchanger, or otherwise. According to a further elaboration, the convector comprises outflow nozzles 3 including the control means 7, 8, as well as outflow nozzles 3 without control means. Thus, adjustable outflow nozzles 3 can be located near non-adjustable outflow nozzles. Alternatively, adjustable
25 outflow nozzles 3 can be provided at a distance from non-adjustable outflow nozzles. The configuration of outflow nozzles and control means can be designed in various other manners.

The spring means 8 themselves can be designed in different manners and comprise, for instance, one or more spiral springs, leaf springs,
30 elastic means and/or the like. According to a further elaboration, the control

means can further be provided with damping means 9 (see Fig. 2) designed for damping movement of the valve means 7. The damping means 9 can for instance prevent vibrations or oscillation of the valve means 7.

According to an extra advantageous elaboration, the spring means
5 are integrated with the valve means. The valve means as such can for instance consist of resilient material, for instance rubber or rubber-like material (for instance silicone rubber). In particular, the outflow nozzles 3 mentioned can for instance be at least partly closable by respective resilient flaps. An advantage of the use of rubber closing flaps is that they are durable, exhibit a
10 reliable action and furthermore can inherently provide damping of oscillations.

Fig. 3 schematically shows an advantageous embodiment of the convector, which is distinguished from the apparatuses described hereinabove in that the air outflow nozzles (i.e. air jet pumps) 3 are disposed at a distance from the air control means 33, 37.

15 In particular, the air pressure control means comprise separate passages 33, for allowing air to pass from the excess pressure chamber 2 to the primary outlets 12. Respective air flows are indicated with arrows K. In this example, the jet generating outflow nozzles 3 themselves are not provided with control means and therefore comprise solid air passage openings (for instance
20 each having a fixed diameter, or slit width). These passages 33 can be designed in different manners and can for instance be elongated (in a direction at right angles to the drawing) with associated elongated closing means 37.

As shown in Fig. 3, the passages 33 of the control means can be provided with resilient closing flaps 37, for instance elastic or rubber parts 37,
25 for closing off the passages 33 with spring force. Preferably, the closing flaps 37 are designed for releasing the passages 33 when the excess pressure in the excess pressure chamber 2 is equal to or higher than a particular threshold value, and for closing these passages 33 when the excess pressure is below the threshold value mentioned. Further, the extent to which the flaps 37 release
30 the passages 33 is preferably proportional to the extent to which the excess

pressure is above the threshold value. The threshold value can for instance be an excess pressure at which a flow velocity of air flowing via outlets 12 is equal to or higher than a desired maximum velocity, for instance 5 m/s, in particular approximately 2 m/s. In a non-limitative example, the threshold value of the
5 excess pressure at which closing flaps 37 release the passages 33 is in the range of approximately 100-150 Pa, in particular approximately 115-135 Pa.

Control of air flow via the passages 33 can also be carried out in a different manner, for instance utilizing movable valve means and separate spring means for controlling the position of the valve means (for instance such
10 as the control means of the system shown in Fig. 2).

As further shown in Fig. 3, the passages 33 are designed for discharging air at a distance from the conditioning space 5, separately from the air jets J, in particular such that respective air flow in itself does not lead to a reduced pressure at the outlets 18 of the conditioning space 5.

15 The separate discharge of the air can be achieved in different manners. In the example, the convector is provided with screening walls 40 which extend opposite an inside of the housing and reach from the partition wall 17 into the primary outlets 12. The screening walls 40 reach beyond the side walls 16 of the conditioning space 5.

20 The screening walls 40 form bypass channels 45 with the housing H, in which the air allowed to pass via the passage 33 can expand, and be discharged in the direction of the surrounding R. Further, screening walls 40 can prevent the air flowing via bypass channels 45 and the air jets J from mutually influencing each other, for the purpose of preserving a secondary air
25 flow and the capacity of the convector.

It is preferred that the bypass channels 45 be designed (in particular dimensioned) for slowing down the air captured therein to a relatively low velocity (for instance a velocity of at most 5 m/s, preferably a velocity in the range of 0-2 m/s) before the air is delivered to the outlets 12. Preferably, to this
30 end, a length of each channel 45 (measured in a flow direction through the

channel) is at least 5x a width of the channel 45 (measured transversely to this flow direction through the channel 45).

Optionally, the air passed via the passages 33 can for instance be discharged in a different manner, for instance completely without the intermediary of the outlets 12. To this end, such passages provided with closing flaps may be arranged, for instance, in the housing H itself.

The system according to Fig. 3 offers the special advantage that the convector can generate relatively constant air jets J, for different primary air flow rates (supplied via primary inlet 2). An increase of a primary air flow rate can for instance lead to automatic adjustment of the flaps 37 for (further) opening the passages 33, so that the pressure in the excess pressure chamber 2 hardly changes, if at all, (and remains, for instance, at or just above a threshold value mentioned), and air jets J remain substantially the same. Air that flows away via the bypass channels 45 is introduced into the outlets 12 only beyond the sidewalls 16 of the conditioning space 5, and has a relatively low flow velocity. Owing to such a constant jet formation and separate discharge of air via the separate control means 33, 37, a secondary air flow S can also be kept substantially constant.

Fig. 4A schematically shows an advantageous embodiment of the convector, which differs from the apparatuses described hereinabove in that the convector is provided with one or more first air outflow openings 3a without air pressure control means, and one or more second air outflow openings 3b with autonomous, spring force-operated control means (in this case flexible resilient control flaps) 107. In this example, partition wall 17 is provided with each of the outflow openings 3a, 3b. Each first outflow opening 3a is designed for blowing an air jet J along the air conditioning space 5, via a through-flow channel 4, in the direction of a primary air outlet 12.

The second outflow openings 3b are provided centrally, at least, opposite the air conditioning space 5. In this example, the resilient control flaps 107 are provided below the second outflow openings 3b, and attached to,

for instance, the partition wall 17. The control flaps 107 can control air supply via these openings 3b autonomously, depending on the air pressure in the excess pressure chamber 2 (for instance such as the above-mentioned closing flaps 37). The drawing shows a position wherein the control flaps 107 partly
5 release the second openings 3b, and air flows K supplied via these openings. In the example, these air flows K are directed substantially sideways, along the side of the partition wall 17 facing an air conditioning space 5.

The second outflow openings 3b can be designed in different manners. The second outflow openings 3b can each be, for instance, elongated
10 (in a direction at right angles to the drawing). Fig. 4B (which shows an underside of the partition wall 17 facing away from the chamber 2, with the control means 107 mentioned; second outflow openings 3b are indicated in dotted lines) shows a further elaboration, wherein the partition wall 17 comprises a series of elongated second outflow openings 3b, which are
15 adjustable by respective, elongated air pressure control means 107. The drawing also shows a series of first outflow openings 3b which, in this example, are also of elongated design, but are not limited to this shape.

Fig. 5 shows a further elaboration of the convector shown in Fig. 4A, wherein further a screening wall 140 is provided between the partition wall 17
20 and air conditioning space 5, opposite the second outflow nozzles 3b (in this case, the air pressure control means 107 are located opposite the screening wall 140). In the example, the screening wall 140 is substantially parallel to the partition wall 17, but this is not requisite. Longitudinal edges of the partition wall 140 facing away from each other bound second air outlets 18'
25 with opposite edges of the conditioning space walls 16. The screening wall 140 is designed for forming an airtight partition between the air flows K (if present) coming from the second outflow nozzles 3b and the air conditioning space 5, for reducing or substantially preventing induction between these air flows K and secondary air flows S.

The present convector can be of compact design and yet is widely deployable for supplying a wide range of air flow rates to spaces R to be thermally conditioned. Furthermore, the convector can provide for a particularly comfortable conditioning of the space R, whereby an air can be
5 drawn in from the space R and can be thermally conditioned, thereupon to be reintroduced into the space. Here, the convector can adjust itself in particular automatically, autonomously, to a primary air flow rate D (which flow rate leads to an increased pressure in the excess pressure chamber, which depends on this flow rate), while the flow rate of primary air can be set in a relatively
10 wide range, for instance of 10 to 200 m³ per hour, in particular 50 to 150m³/h, depending on the size of a space to be conditioned.

It will be clear to the skilled person that the invention is not limited to the exemplary embodiments described. Various modifications are possible within the framework of the invention as set forth in the following claims.

Claims

1. An air conditioning convector, provided with:
 - a primary air inlet (1) for supplying air to an excess pressure chamber (2);
 - a heat exchanger (25) arranged in an air conditioning space (5), designed for exchanging heat with air; and
 - 5 - a partition (17) provided with air jet generating air outflow nozzles (3) between the excess pressure chamber (2) and air conditioning space (5); wherein the excess pressure chamber (2) is provided with air pressure control means (7, 8), wherein the air pressure control means (7, 8) are automatically, autonomously adjustable under the influence of a pressure prevailing in the
 - 10 excess pressure chamber (2).
2. A convector according to claim 1, wherein the air pressure control means (7, 8) automatically adjust under the influence of a pressure prevailing in the excess pressure chamber (2), without use of electrical energy.
3. A convector according to claim 1 or 2, wherein at least one of the
- 15 outflow nozzles (3) is provided with a control valve (7), which valve (7) is operable under the influence of spring force of respective spring means (8), such that the position of the control valve depends on a pressure prevailing in the excess pressure chamber (2).
4. A convector according to claim 3, wherein the valve is in a first
- 20 position at a first pressure prevailing in the excess pressure chamber (2), wherein the valve is in a second position at a second pressure prevailing in the excess pressure chamber (2), which second pressure is higher than the first pressure, wherein, under the influence of the spring means, the valve can be brought from the second to the first position when the pressure in the excess
- 25 pressure chamber falls from the second to the first pressure.
5. A convector according to any one of the preceding claims, wherein the air pressure control means (7, 8) comprise adjustable air outflow openings.

6. A convector according to any one of the preceding claims, wherein the air jet generating air outflow nozzles (3) comprise the air pressure control means (7, 8).
7. A convector according to any one of the preceding claims, wherein
5 one or more air jet generating air outflow nozzles (3) are arranged at a distance from the air pressure control means.
8. A convector according to any one of the preceding claims, wherein the air pressure control means (7, 8) are provided with spring means for counteracting airflow via the control means with spring force.
- 10 9. A convector according to any one of the preceding claims, wherein a change of an air flow rate supplied via the inlet (1) to the excess pressure chamber (2) leads to a change of an air flow rate allowed to pass by the air pressure control means.
10. A convector according to any one of the preceding claims, provided
15 with a secondary air inlet (11) for supplying ambient air to the air conditioning space, wherein the outflow nozzles (3) are designed for generating reduced pressure-creating air jets (J) for the purpose of drawing in the secondary air via the secondary inlet.
11. A convector according to any one of the preceding claims, wherein
20 the outflow nozzles (3) are designed for blowing air jets along the air conditioning space, in particular in the direction of the respective air outlets.
12. A convector according to any one of the preceding claims, provided with elongated air pressure control means (7, 8), having a length which is at least 10x greater than a width.
- 25 13. A convector according to any one of the preceding claims, provided with at least one air passage which is at least partly closable by a resilient flap.
14. A convector according to any one of the preceding claims, wherein
30 the outflow nozzles (3) during use generate air jets (J) having an outflow velocity of more than 10 m/s, preferably at least 15 m/s.

15. A convector according to any one of the preceding claims, wherein an excess pressure in the excess pressure chamber (2) during use is higher than approximately 50 Pa.
16. A convector according to any one of the preceding claims, designed to
5 operate at least at an air flow rate of primary air over a range of from 10 to 200 m³ per hour.
17. A method for conditioning a space, comprising use of at least an air conditioning convector according to any one of the preceding claims, wherein an excess pressure in the excess pressure chamber (2) is automatically
10 controlled by the air pressure control means (7, 8), such that a change in the excess pressure leads to a change of an air flow rate delivered by the convector.
18. A method according to claim 17, wherein the air pressure control means are provided with spring means which automatically counteract air flow via the control means with spring force.

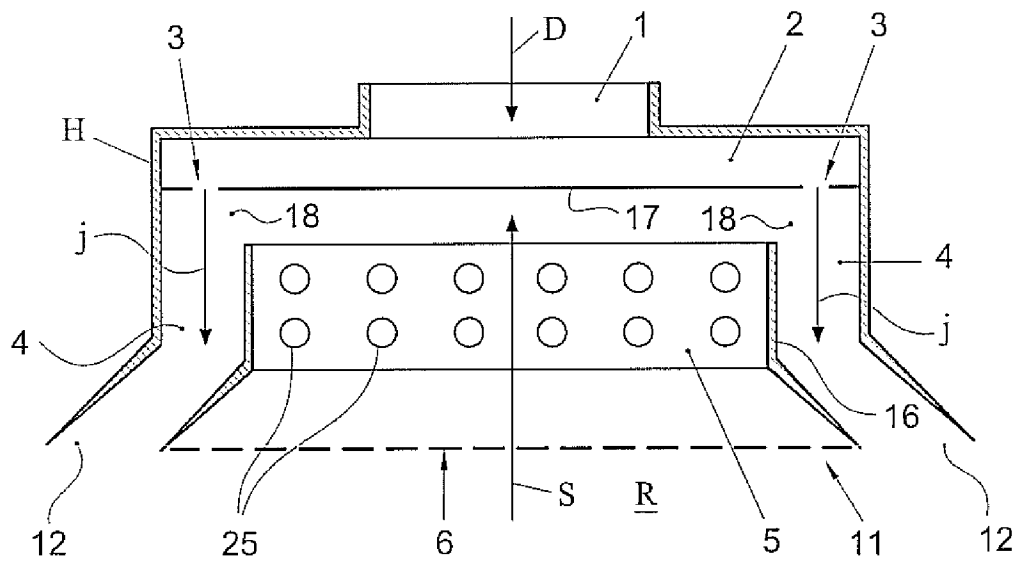


FIG. 1A

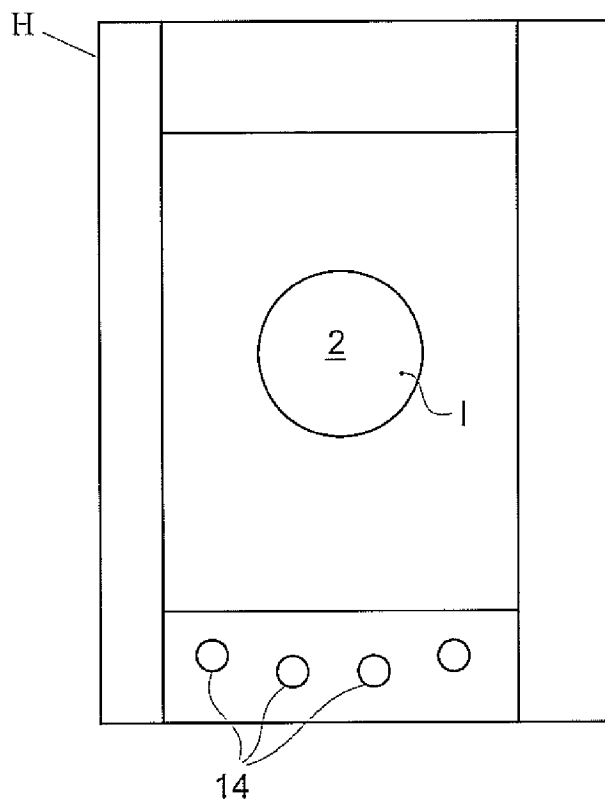
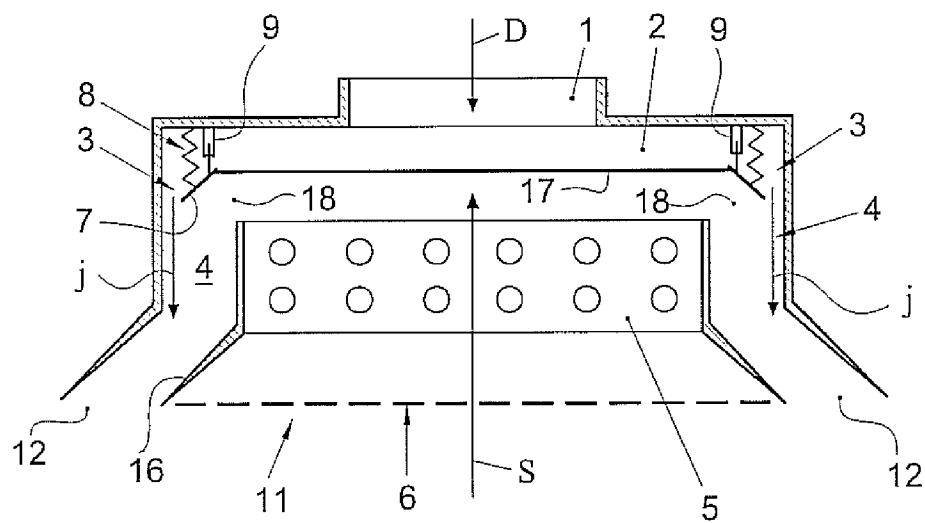


FIG. 1B

**FIG. 2**

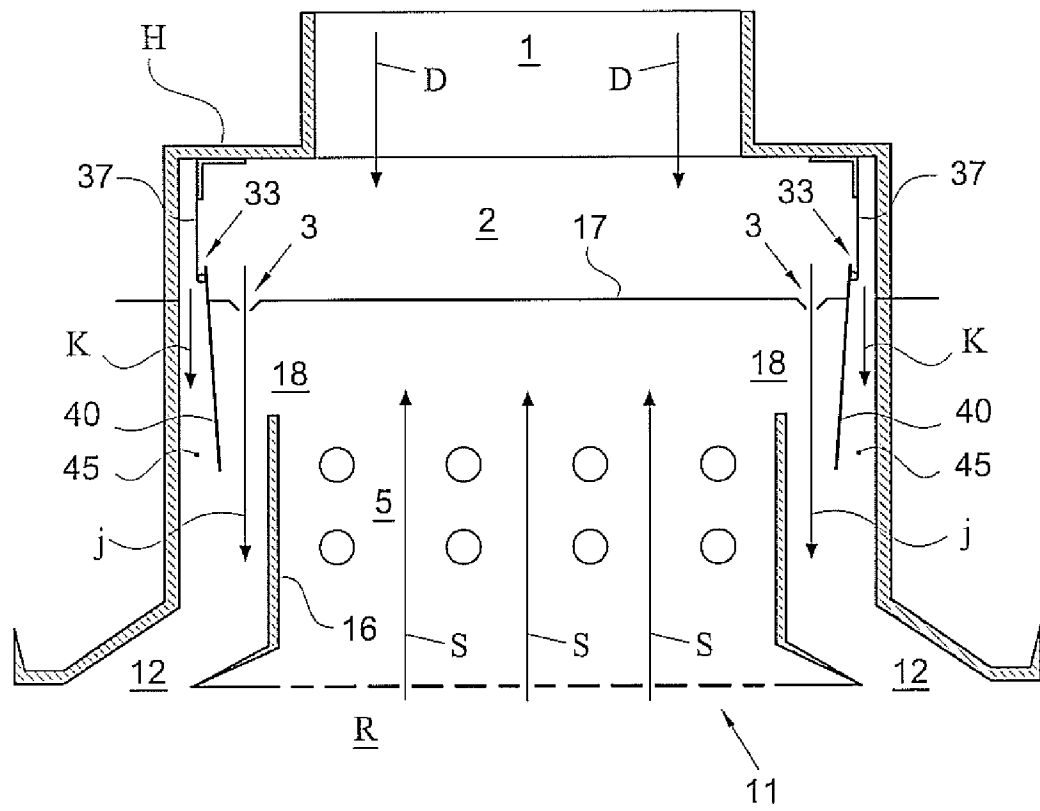


FIG. 3

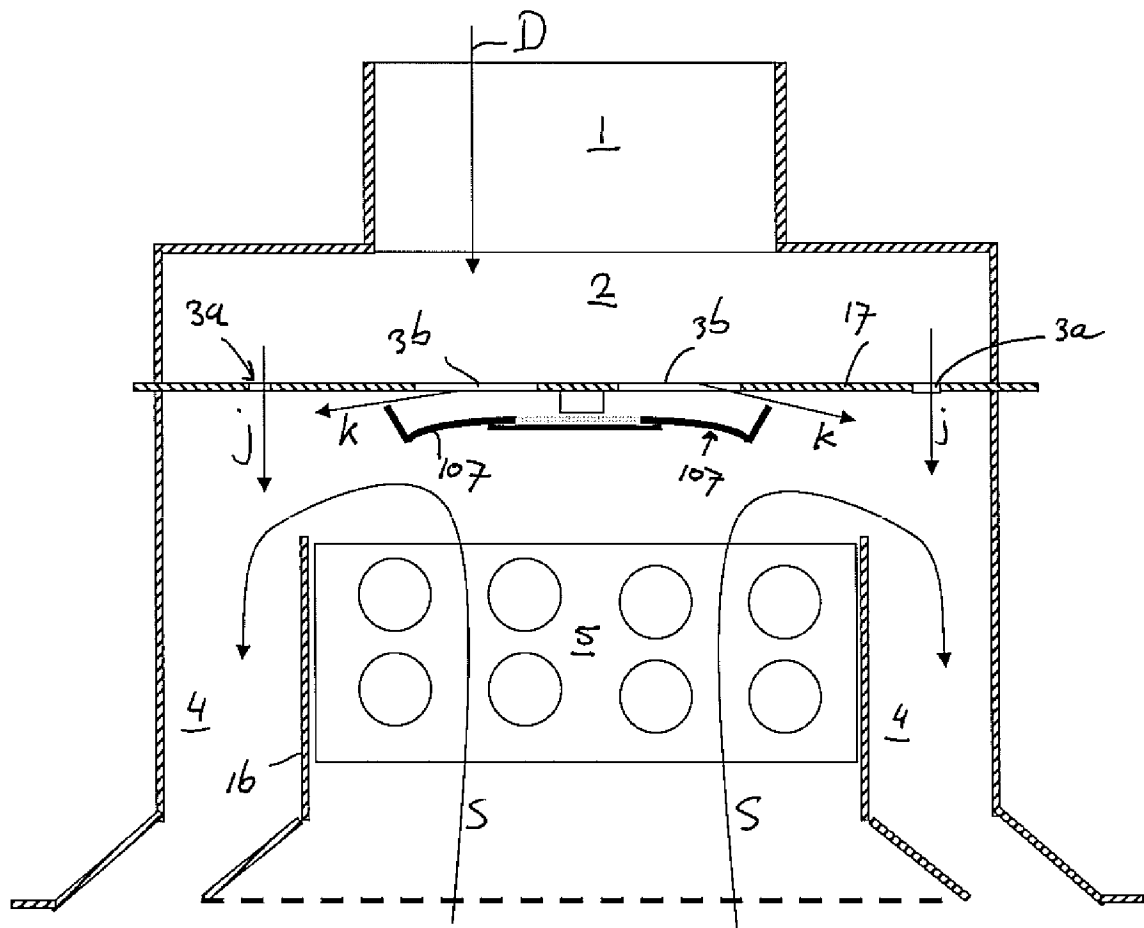


FIG. 4A

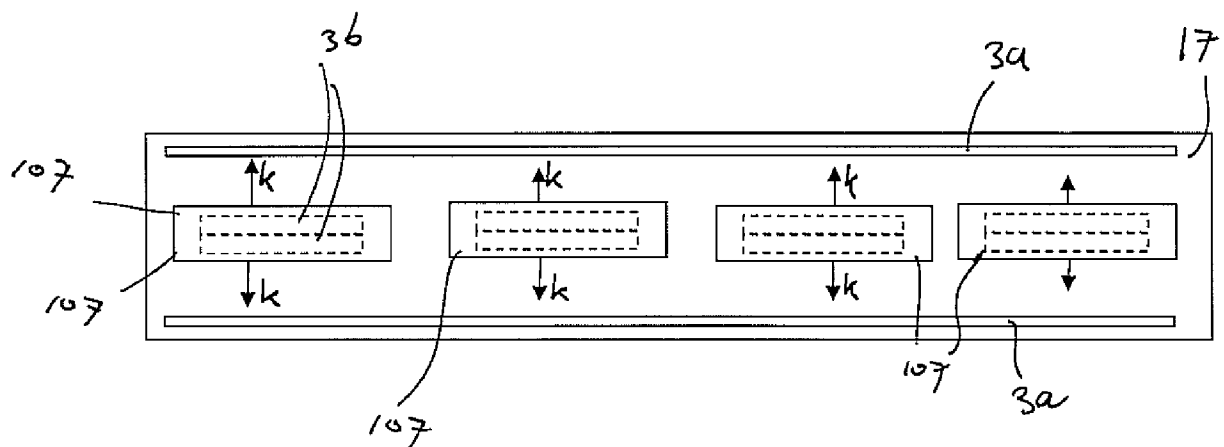
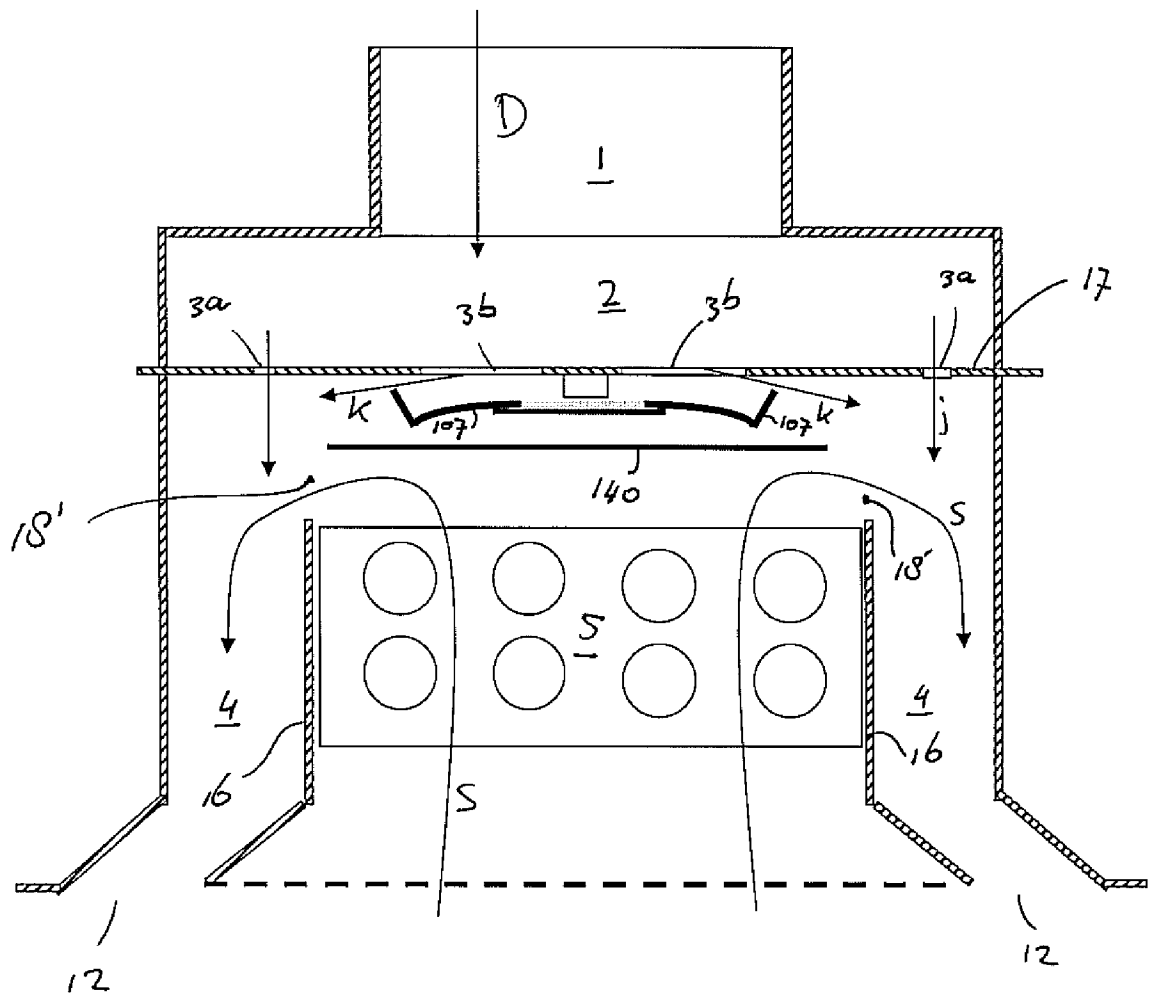


FIG. 4B

**FIG. 5**

INTERNATIONAL SEARCH REPORT

International application No

PCT/NL2009/050543

A. CLASSIFICATION OF SUBJECT MATTER

INV. F24F1/01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F24F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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See patent family annex.

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Date of the actual completion of the international search

15 January 2010

Date of mailing of the international search report

25/01/2010

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PCT/NL2009/050543

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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