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(54) **Heat transfer blower**

(57) The object of this invention is a heat transfer blower which consists of a casing-like body inside of which there is an electric fan and which is intended to be installed on a wall, preferably on the top part of the wall. The common aspect with all blowers which are known per se and which are in use is that their sound level is

relatively high and thus disturbing. In continuous operation, these prior known blowers use relatively large amounts of energy. The prior art problems are solved by providing one or more fans (2) in the device, preferably three units, and they are magnetic motors or corresponding which operate at a low sound level.

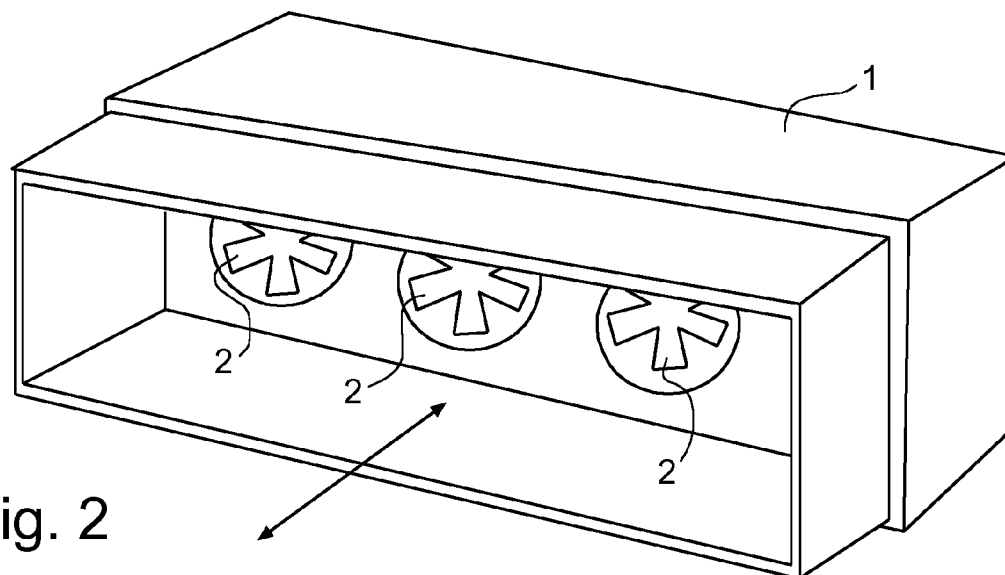


Fig. 2

Description

[0001] The object of this invention is a heat transfer blower which consists of a casing-like body inside of which there is an electric fan and which is intended to be installed on a wall, preferably on the top part of the wall.

[0002] In buildings such as detached houses often as a heat source there is a heat storage fireplace or there is an air heat pump which is used for heating in winter and for cooling during the warm seasons. Then the room where this device is situated is becoming warm or cool. When it is desired to transfer the heated or cooled air from this room to another room, some kind of air transfer device is required with which the air in the two rooms will be equilibrated with each other. A blower is needed to transfer the air. There are different designs, shapes and sizes of blowers and they operate with different operating principles. The common aspect with all blowers which are known per se and which are in use is that their sound level is relatively high and thus disturbing, especially if the blower has been installed in a room where people want to be in peace and quiet, such as a bedroom or some similar space. The heat transfer blowers which are known per se are operated generally by using the common 230 V mains current, and a professional electrician is required to install these devices. In continuous operation, these prior known blowers use relatively large amounts of energy.

[0003] The aim of this invention is to eliminate the above mentioned disadvantages. The heat transfer blower according to the invention is **characterized in that** there are one or more fans in the device, preferably three units, and they are magnetic motors or something corresponding which operate at a low sound level.

[0004] One preferable embodiment of the invention is **characterized in that** the magnetic motor is a 12-48 V direct-current motor and is operated by a plug-in transformer which is plugged into the mains voltage and is voltage-regulated.

[0005] Another embodiment of the invention is **characterized in that** there is a grille on the supply air side of the heat transfer blower and it has horizontal slats whose fixed parts are 5-10 mm high walls from which air guiding slats protrude at an approximately 45° angle, with their width being approximately 12-16 mm.

[0006] A third embodiment of the invention is **characterized in that** there are three fans in the device and their common air flow is at its maximum approximately 100-300 m³/h.

[0007] One preferable embodiment of the invention is further **characterized in that** the casing-like body is telescopic and thus it is adjustable according to the thickness of the wall.

[0008] The heat transfer blower according to the invention has the following advantages:

- it is extremely quiet, with a sound level 25-42 dBA

- it saves energy, the output 4-12 W; a plug-in transformer
- it is easy to install, does not need to be plugged into the mains current; the telescopic structure of the body is suitable for 90-150 mm walls
- it has an elegant design.

[0009] The invention will be described in the following by means of an example and by referring to the attached drawings in which

figure 1 shows the rooms where there is a partition wall on which a heat transfer blower has been installed,

figure 2 shows an axonometric view of the heat transfer blower,

figure 3 shows the grille of the heat transfer blower, and

figure 4 shows a sectional view of the slats of the grille.

[0010] In buildings such as detached houses often as a heat source there is a heat storage fireplace VT or there is an air heat pump IP which is used for heating in winter and for cooling during the warm seasons. (Figure 1) The room on the left is a living room and the room on the right is a bedroom. The heat transfer blower has been installed on the top part of the partition wall above the doorway.

[0011] The heat transfer blower consists of a casing-like body 1 inside which there are electric fans 2. There are three units of fans inside the device and they are magnetic motors which operate at a low sound level. The magnetic motors are 12-48 V direct-current motors which are operated by a plug-in transformer which is plugged into the mains voltage and which is voltage-regulated. (not shown in the figures) The common air flow of the fans is at its maximum approximately 100-300 m³/h.

[0012] There is a grille 4 on the supply air side of the heat transfer blower and it has horizontal slats 5 whose fixed parts A are 5-10 mm high walls from which air guiding slats B protrude at an approximately 45° angle, with their width being approximately 12-16 mm.

[0013] The casing-like body of the heat transfer blower is telescopic and thus it is adjustable according to the thickness of the wall; 90-150 mm.

Claims

1. A heat transfer blower which consists of a casing-like body (1) inside of which there is an electric fan (2) and which is intended to be installed on a wall (3), preferably on the top part of the wall, **character-**

ized in that there are one or more fans (2) in the device, preferably three units, and they are magnetic motors or something corresponding which operate at a low sound level.

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2. The heat transfer blower according to claim 1, **characterized in that** the magnetic motor is a 12-48 V direct-current motor and is operated by a plug-in transformer which is plugged into the mains voltage and is voltage-regulated.

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3. The heat transfer blower according to claim 1 or 2, **characterized in that** there is a grille (4) on the supply air side of the heat transfer blower and it has horizontal slats (5) whose fixed parts (A) are 5-10 mm high walls from which air guiding slats (B) protrude at an approximately 45° angle, with their width being approximately 12-16 mm.

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4. The heat transfer blower according to claim 1, 2 or 3, **characterized in that** there are three fans (2) in the device and their common air flow is at its maximum approximately 100-300 m³/h.

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5. The heat transfer blower according to any of the preceding claims, **characterized in that** the casing-like body (1) is telescopic and thus it is adjustable according to the thickness of the wall.

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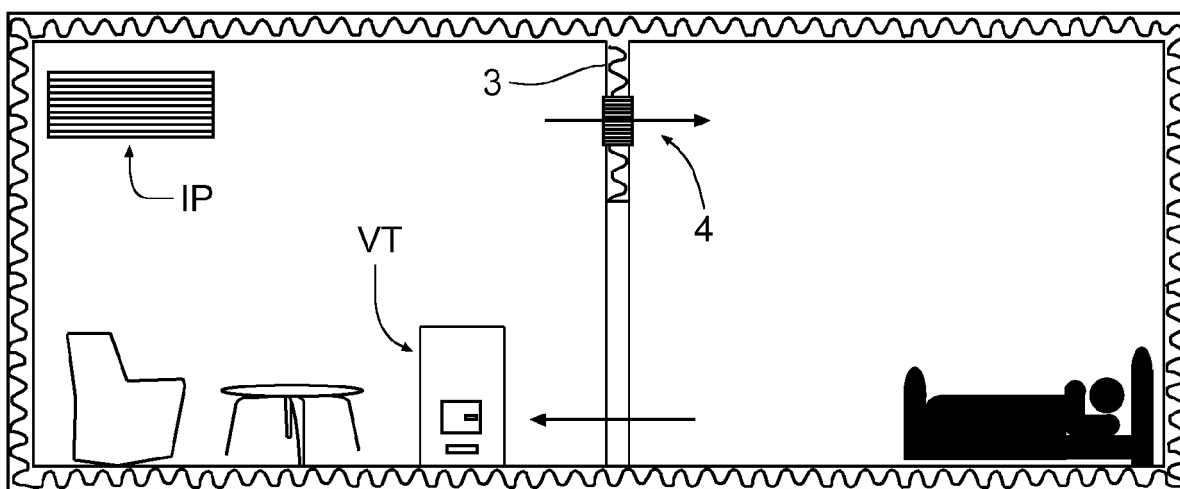


Fig. 1

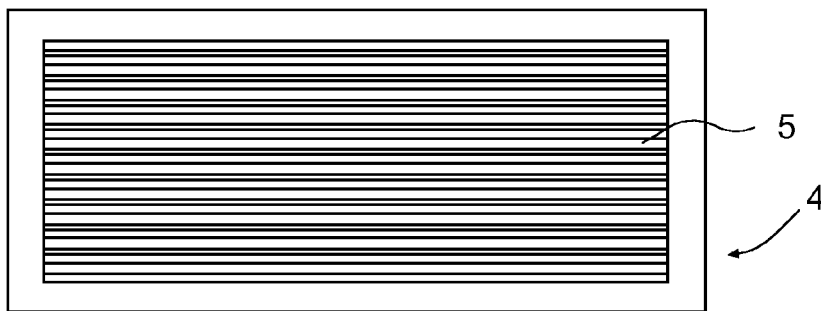
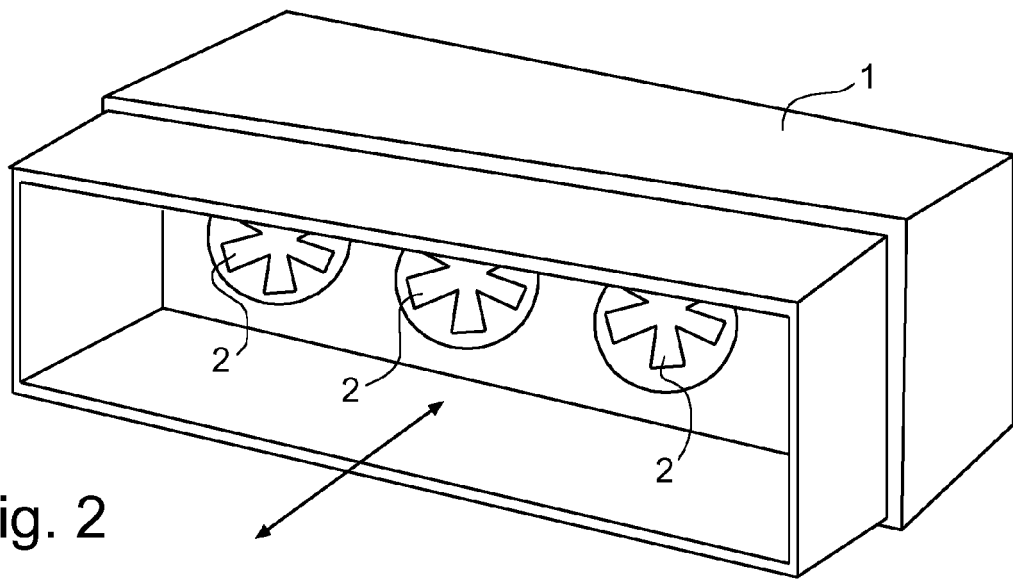


Fig. 3

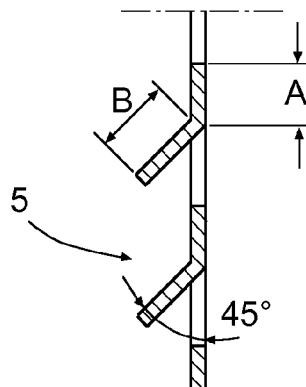


Fig. 4