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(54) **SOUND DAMPING IN VENTILATION CONDUITS.**

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(73) Proprietor: **AB STRÄNGBETONG**
Box 30036
S-104 25 Stockholm (SE)

(72) Inventor: **ANDERSSON, Lars Olof**
Ropuddsvägen 12
S-133 00 Saltsjöbaden (SE)

(74) Representative: **Billberg, Hans et al,**
JACOBSSON & BILLBERG PATENTBYRA AB Box
21113
S-100 31 Stockholm 21 (SE)

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Sound damping in ventilation conduits

This invention relates to sound damping device comprising a set of parallel ventilation conduits in flooring elements of concrete which set of conduits at one end are connected to a feed conduit and at the other end are connected to an exhaust means leading to a room thereunder, at least two adjacent conduits being closed in the same end and connected by only one transverse connection, so that the conduits of the pair are connected in series for passing ventilation air to said exhaust means.

Parallel conduits in the direction of the span of prefabricated flooring elements of concrete are often used for branching off the ventilation system in a building. Hereby some of the conduits in the framework elements are connected in one end to a feed conduit, and the air is thereafter passed on through the conduits to exhaust means connected to a conduit somewhere along its length or at its end. The conduits can also be connected in series so that the ventilation medium is passed through a number of parallel conduits within the element. See for instance DE—C—800 331.

The invention relates to a construction which is so formed that the concrete elements will act as sound damping means for noise from fans and sound, which is transmitted from one room to another via the ventilation piping.

The object of the invention is to improve the sound damping effect of a concrete element of the form stated above. The damping device is hereby characterized in that the transverse connection is placed at a distance of 0.5—2.0 m from the end closures of the conduits and that a plug of sound damping material, such as mineral wool, is placed in each conduit between the end closure of the conduit and the transverse connection.

The invention will now be described in connection with the accompanying drawing.

The figure shows two embodiments of the invention, where a concrete slab is cut and taken apart in its two parts in order to show the conduits.

The figure is thus a perspective view showing a concrete slab 1, and the slab is cut transversely so that a small piece 2 has been parted, whereby the openings of five conduits 3, 4, 5, 6 and 7 can be seen. A transverse connection 8 has been opened between the conduits 3 and 4 in that a cavity has been cut down into both conduit 3 and the conduit 4 from the upper side 9 of the slab before the concrete has been set. After that cavity has been cut and after that the concrete has set, the cavity is covered in the upper side 9 by means of plastics, a rubber plug or other suitable material. The plug is shown by phantom lines and is denoted by 10. The plug only reaches the upper edge of the conduits 3 and 4 and it is thus seen, that a connection 8 is

established between the two conduits 3 and 4 under the plug 10.

The distance between the left end of the slab and the transverse connection 8 can be anything between 0.5 to 2.0 m. A plug of sound damping material (not shown) is inserted in the conduits between the end closure and the transverse connection 8.

A second embodiment of the transverse connection is also shown in the figure from which the connection between conduits 5, 6 and 7 can be seen. This connection has been established in that a bore has been drilled transversely to the conduits 5, 6 and 7 and ending in the conduit 5. The bore is parallel to the upper side 9. In order to establish a connection only between the conduits 5, 6 and 7 the bore is plugged between the edge 11 of the slab and the conduit 7 by a plug 12 and this can be done after that the slab has been set by inserting an expander plug or the like in the bore. Concrete or plastics can also be used for this purpose. It is obvious that according to the two embodiments described any number of conduits can be connected though in the first case it has been described a connection between the two conduits and the second embodiment includes a connection between three conduits.

Claim

Sound damping device comprising a set of parallel ventilation conduits (3, 4, 5, 6, 7) in flooring elements of concrete which set of conduits at one end are connected to a feed conduit and at the other end are connected to an exhaust means leading to a room thereunder, at least two adjacent conduits (3, 4; 4, 5) being closed at the same end and connected by only one transverse connection (8), so that the conduits of the pair are connected in series for passing ventilation air to said exhaust means, characterized in that the transverse connection (8) is placed at a distance of 0.5—2.0 m from the end closures of the conduits and that a plug of sound damping material, such as mineral wool, is placed in each conduit between the end closure of the conduit and the transverse connection (8).

Revendication

Dispositif pour amortir le bruit, comportant un groupe de conduits de ventilation parallèles (3, 4, 5, 6, 7) ménagés dans des éléments de sol en béton; ce groupe de conduits étant en communication par une extrémité avec un conduit d'alimentation, et par son autre extrémité relié à des moyens d'échappement aboutissant à un local sous-jacent; au moins deux conduits adjacents (3, 4; 4, 5) ayant la même extrémité obturée et communiquant seulement par une

liaison transversale (8), de telle manière que les deux conduits se trouvent raccordés en série pour permettre le passage d'un courant d'air de ventilation aboutissant auxdits moyens d'échappement; caractérisé en ce que la communication transversale (8) est située à une distance comprise entre 0,5 et 2,0 m par rapport aux extrémités obturées des conduits; et en ce qu'un bouchon de matière amortissant le bruit, telle que de la laine minérale, est placé dans chaque conduit entre l'extrémité obturée de celui-ci et la communication transversale (8).

Patentanspruch

Schalldämpfungsvorrichtung, bestehend aus einem Satz paralleler Lüftungskanäle (3, 4, 5, 6,

7) in Fußbodenelementen aus Beton, wo der Kanalsatz an einem Ende an einen Zuführkanal und am anderen Ende an ein zu einem darunterliegenden Raum leitendes Ausblasmittel angeschlossen ist, und wenigstens zwei angrenzende Kanäle (3, 4; 4, 5) am selben Ende geschlossen und durch nur eine Querverbindung (8) verbunden sind, so daß die Kanäle des Paares zum Durchlaß von Lüftungsluft zu genanntem Ausblasmittel in Reihe geschaltet sind, dadurch gekennzeichnet, daß die Querverbindung (8) in einem Abstand von 0,5—2,0 m von genannten Endverschlüssen der Kanäle liegt, und ein Pfropfen aus Schallschluckmaterial, z.B. Schlackenwolle, in jedem Kanal zwischen dem Endverschluß und der Querverbindung angeordnet ist.

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