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Description

The invention relates to a method for mainly temporary ventilation of a room using a fan being arranged to transfer air from the room through an existing opening in a wall limiting the room according to Claim 1. The invention also relates to an apparatus for the execution of said method according to Claim 2.

A temporary, i.e. not permanent ventilation of a room here means e.g. ventilation of harmful solvents out from a room where paintwork is temporarily being undertaken.

A more and more observed problem in connection with paintworks consists in the volatile and often very harmful solvents used in a.o. paints. In order to prevent the concentration of solvents in the air from becoming too high an effective air exchange must be provided, which is normally achieved by opening a window and/or doors to create a draught. Apart from the fact that the direction of the draught is not controllable, such draught is known to bring discomfort to persons being subjected to same.

The object of the invention is to provide a method and an apparatus setting aside said problems as well as providing a controlled ventilation of a room through an open window or another opening in the room without appreciably influencing adjacent rooms.

In practicing the invention a fan is used for transport of the ventilating air. On its way from the room the ventilating air is brought to pass through a balloon placed in the opening, said balloon being arranged so that it is inflated and seals against the limiting edges of the opening and hereby separates the room from the space outside the same. From the fan is leading a flexible hose being connected to the side of the balloon facing the room. On the opposite side the balloon is preferably provided with exhaust holes being dimensioned in number and area so that the balloon is kept inflated to an extent sufficient to seal against the edges of the opening.

Particular embodiments of the invention are defined in Claims 3 to 6.

The invention is described further below with an embodiment and with reference to the attached schematical drawing.

In the drawing 1 refers to a room, which is to be ventilated, 2 to the ceiling of the room, 3 to its floor and 4 to a wall, preferably an outer wall being provided with a window 5 with a window frame 6.

On the floor 3 is standing a fan stand 7 in which is mounted a cylindrical fan housing 8. In the lower part of the fan housing an axial fan 9 with a driving motor 10 is provided. The fan housing is ended at the bottom with a net 11. Also above the fan is a net 12, on top of which is an empty space 13.

A flexible hose 14 is connected to the upper part of the fan housing, which hose leads to an inflatable balloon 15. The hose and the balloon could preferably be made from the same material

— and also in one piece — e.g. from an essentially air tight textile, as so called spinnaker cloth. The hose and the balloon are stored in the space 13 when the apparatus is not in use.

The balloon 15 is placed in the window opening 5 and by means of the fan 9 inflated so that it abuts the window frame 6. From the balloon the ventilating air is led out through exhaust openings 16 in the outer wall of the balloon. Replacement air to the room 1 can be brought from adjacent rooms, stairways or the like.

By means of the described apparatus a room is ventilated through an open window opening being sealed by the balloon by means of the internal pressure of the exhaust air transported by the fan. Thus, the apparatus has the same function as if a fan were mounted into a board sealing the window opening, i.e. exhaust of air can be effected through the window opening without letting ambient atmosphere into the room. Apart from the advantages offered by the apparatus according to the invention, in comparison with such an arrangement, as a simple manner of handling, flexibility and adaptability, the low location of the fan 9 and the placement of the fan stand 7 on the floor, results in that the relatively heavy, gaseous solvents, which stay near the floor, are directly caught by the fan and blown out through the hose 14 and the balloon 15.

Claims

1. A method for mainly temporary ventilation of a room using a fan being arranged to transfer the air from the room through an existing opening in a wall limiting the room, characterized in that the air is brought to pass through a balloon placed in the opening, the exit of the air from the balloon taking place under such a resistance, that an overpressure is built up in the balloon, said overpressure being sufficiently great to inflate the balloon and keep it in connection with the limitation of the opening.

2. An apparatus for mainly temporary ventilation of a room by means of a fan, characterized by an inflatable balloon (15) arranged to be flown-through by air transferred by the fan (9) and to be placed in a permanent opening (5) in a wall (4) limiting the room, said balloon being provided with at least one exhaust opening (16) being dimensioned so that when an air flow passes through the balloon, an overpressure is built up in the same, being so great that the balloon is inflated and kept in a substantially sealing relation to the limitations (6) of the permanent opening (5).

3. An apparatus according to claim 2, characterized in that the balloon (15) merges into or is connected to a flexible hose (14) which is connected to a fan housing (8) in which the fan (9) is mounted.

4. An apparatus according to claim 3, characterized in that the fan housing (8) substantially has the shape of a straight circular cylinder and is

supported by a stand (7) being adapted to stand on the floor (3) of the room and to keep the fan housing substantially vertical and spaced above the floor.

5. An apparatus according to claim 4, characterized in that the fan (9) is mounted in the lower part of the fan housing (8) and that the fan housing above the fan is provided with a space (13) downwardly being limited by a net (12), said space being arranged to store the balloon (15) and the hose (14) when the apparatus is not in use.

6. An apparatus according to any one of the claims 2—5, characterized in that at least the balloon (15) is of an essentially air tight textile material.

Patentansprüche

1. Ein Verfahren zur hauptsächlich zeitweiligen Entlüftung eines Raumes unter Verwendung eines Gebläses, das so angeordnet ist, daß es Luft aus dem Raum durch eine vorhandene Öffnung in einer den Raum begrenzenden Wand überführt, dadurch gekennzeichnet, daß die Luft veranlaßt wird, durch einen Ballon zu strömen, der in der Öffnung angebracht ist, wobei der Austritt der Luft aus dem Ballon unter einem solchen Widerstand stattfindet, daß sich im Ballon ein Überdruck aufbaut, und der Überdruck ausreichend groß ist, um den Ballon aufzublasen und ihn in Verbindung mit der Umgrenzung der Öffnung zu halten.

2. Eine Vorrichtung zur hauptsächlich zeitweiligen Entlüftung eines Raumes mit Hilfe eines Gebläses, gekennzeichnet durch einen aufblasbaren Ballon (5), der so angeordnet ist, daß er von der durch das Gebläse (9) übertragenen Luft durchflossen und in einer permanenten Öffnung (5) in einer den Raum begrenzenden Wand (4) angebracht ist, wobei der Ballon mit wenigstens einer Auslaßöffnung (16) versehen ist, die so dimensioniert ist, daß beim Hindurchtreten eines Luftstromes durch den Ballon ein Überdruck in diesem aufgebaut wird, der so groß ist, daß sich der Ballon aufbläht und in einer im wesentlichen abdichtenden Beziehung zu den Umgrenzungen (6) der permanenten Öffnung (5) gehalten ist.

3. Eine Vorrichtung nach Anspruch 3, dadurch gekennzeichnet, daß der Ballon (15) in einen flexiblen Schlauch (14) übergeht oder mit einem solchen Schlauch verbunden ist, der seinerseits an ein Gebläsegehäuse (8) angeschlossen ist, in welchem das Gebläse (9) gehalten ist.

4. Eine Vorrichtung nach Anspruch 3, dadurch gekennzeichnet, daß das Gebläsegehäuse (8) im wesentlichen die Gestalt eines geraden Kreiszylinders hat und durch einen Ständer (7) abgestützt ist, der auf dem Boden (3) des Raumes abgestellt werden und das Gebläsegehäuse im wesentlichen vertikal und im Abstand über dem Boden halten kann.

5. Eine Vorrichtung nach Anspruch 4, dadurch gekennzeichnet, daß das Gebläse (9) im unteren Teil des Gebläsegehäuses (8) befestigt und das

Gebläsegehäuse oberhalb des Gebläses mit einem Raum (13) versehen ist, der unten durch ein Gitter (12) begrenzt ist, wobei besagter Raum so angeordnet ist, daß er den Ballon (15) und den Schlauch (14) zur Aufbewahrung aufnimmt, wenn die Vorrichtung nicht in Benutzung ist.

6. Eine Vorrichtung nach einem der Ansprüche 2 bis 5, dadurch gekennzeichnet, daß wenigstens der Ballon (15) aus einem im wesentlichen luftdichten Textilmaterial besteht.

Revendications

1. Procédé pour la ventilation, surtout temporaire, d'une pièce en utilisant un ventilateur qui est disposée de manière à faire passer l'air de la pièce à travers une ouverture existante dans un mur limitant la pièce, caractérisé en ce que l'air est amené à passer à travers un ballon placé dans l'ouverture l'échappement de l'air à partir du ballon se produisant avec une résistance telle qu'une surpression soit créée dans le ballon, cette surpression étant suffisamment forte pour gonfler le ballon et le maintenir en rapport avec les limites de l'ouverture.

2. Dispositif pour la ventilation, surtout temporaire, d'une pièce au moyen d'un ventilateur, caractérisé par un ballon gonflable (15) agencé de manière à être traversé par le courant d'air produit par le ventilateur (9) et à être placé dans une ouverture permanente (5) dans un mur (4) limitant la pièce, ce ballon étant muni d'au moins un orifice d'échappement (16) qui est dimensionné de telle manière que lorsqu'un courant d'air passe à travers le ballon, il soit créé dans celui-ci une surpression qui est suffisamment forte pour que le ballon soit gonflé et maintenu en rapport de fermeture pratiquement étanche avec les limites (6) de l'ouverture permanente (5).

3. Dispositif selon la revendication 2, caractérisé en ce que le ballon (15) se prolonge en un conduit flexible (14) ou est raccordé à un tel conduit qui est raccordé à un carter de ventilateur (8) dans lequel est monté le ventilateur (9).

4. Dispositif selon la revendication 3, caractérisé en ce que le carter de ventilateur a sensiblement la forme d'un cylindre circulaire droit et est supportée par un pied (7) prévu pour être posé sur le plancher 3 de la pièce et pour maintenir le carter de ventilateur en position sensiblement verticale et à distance au-dessus du plancher.

5. Dispositif selon la revendication 4, caractérisé en ce que le ventilateur (9) est monté dans la partie inférieure du carter de ventilateur (8) et en ce que le carter de ventilateur comporte, au-dessus de ventilateur, un espace (13) qui est limité vers la base par un treillis (12), cet espace étant prévu pour ranger le ballon (15) et le conduit flexible (14) lorsque le dispositif n'est pas en service.

6. Dispositif selon l'une quelconque des revendications 2 à 5, caractérisé en ce qu'au moins le ballon (15) est réalisé en une matière textile pratiquement étanche à l'air.

