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(54) **Heater assembly**

Heizungsanordnung

Dispositif de chauffage

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## Description

The present invention relates to a space heater assembly according to the preamble of claim 1. This space heater is described in the US-A- 2 225 722.

When using space heaters, such as for example radiators, to heat the interior of a building to a specified temperature, it has been found that the radiator surface temperature may rise sufficiently to burn anyone touching the radiator. This problem is particularly serious when radiators are used in establishments such as hospitals, nurseries or residential homes for the elderly where the occupants are sometimes not very mobile or aware of the danger of touching a radiator.

It is an aim of the invention to alleviate the above-mentioned problem, and according to the present invention there is provided a space heater assembly with the features of claim 1.

The cover may be dimensioned so that when it is in the closed position there is only a very small gap between the support surface and the adjacent part of the cover. This arrangement of the cover and support surface ensures that it is not possible to obtain access to the heater when the cover is in the closed position.

In one embodiment of the invention, the said heater takes the form of a hot water radiator, which is provided with one or more control valves for controlling the flow of hot water through said radiator, said control valve or valves being located within said cover when said cover is in the closed position.

In a preferred arrangement, the one or more support brackets are located near the bottom of said heater whereby said cover is moved to its open position by lifting said cover and pivoting the top part thereof away from said support surface.

In an especially preferred arrangement the locking device conveniently comprises a screw device carried by said cover and accessible through an aperture therein, said screw device co-acting with an abutment on said one or more support brackets for locking said cover in the closed position.

It may be arranged that said hot water radiator comprises an air venting screw adapted to be operated by a venting key, in which case said screw device of said locking device may also be adapted to be operated by said venting key.

In an arrangement in which said assembly is mounted on said support surface in spaced relationship to a floor, a bottom cover may be provided which extends from said cover to said floor.

It is an important feature of the invention that there is no direct contact between the heater and the cover thereby preventing heat conduction from the heater to the cover.

One embodiment of the invention will now be described by way of example with reference to the accompanying illustrative diagrammatic drawings in which:-

Figure 1 is an end view of a radiator assembly of the invention with the cover in its closed position;

Figure 2 is an end view of the radiator assembly of Figure 1 with the cover in its open position;

5 Figure 3 is an end view of the radiator assembly of Figure 1 with the cover in its closed position, and one side of the cover removed;

Figure 4 is an end view of the radiator assembly of Figure 1 with the cover in its open position, and one side of the cover removed;

10 Figure 5 is a plan view of one pivot mounting arrangement of the radiator assembly of Figure 1.

Figure 6 is a front view of the radiator assembly of Figure 1 with the cover in its closed position; and

15 Figure 7 is a plan view from above of the radiator assembly of Figure 1 with the cover in its closed position.

Referring to the drawings, a radiator assembly of the invention includes a single panel radiator 2 mounted on a wall 4 of a room by two laterally spaced vertical support brackets 6. Two laterally spaced pivot brackets 8 are secured to the wall 4, and each bracket has a vertical slot 10 therein.

25 A radiator cover 12 is constructed of sheet metal and comprises a front face 14, an upper panel 16, two side panels 18 and a small lower panel 20. A series of vertically spaced grooves 28 extend horizontally along the front face 14, and a series of laterally spaced ventilation grills 30 are formed in the upper panel 16.

30 Two inwardly extending tags 34 are formed in the upper part of the front face 14, adjacent to the side panels 18. Two restraint chains 36 are mounted to and extend between the tags 34 and corresponding anchor points 38 on the brackets 6. As shown in Figures 2 and 4, the length of these restraint chains 36 defines the position of the cover 12 when in its fully open position.

35 Referring particularly to Figure 5, the cover 12 is mounted on the pivot brackets 8 by means of two pivot pins 32 which are secured to and extend inwardly from respective side panels 18 to project through the slots 10. These pivot pins 32 are stepped to prevent undue lateral movement of the cover 12.

40 A locking screw 40, having a circular stop flange 41 thereon, is in screw-threaded engagement with a housing member 42 secured to the inner surface of the lower part of one of the side panels 18. Access to the head 44 of the locking screw is provided by an aperture 46 in the side panel 18, the aperture 46 being smaller than the flange 41.

45 When the cover 12 is in its closed position, the locking screw 40 is aligned with an aperture 48 in the associated pivot bracket 8. When the locking screw 40 is screwed into its advanced locking position the flange 41 abuts the housing member 42, and the screw 40 extends through the aperture 48 to prevent movement of the cover 12 relative to the radiator 2. When it is desired to move the cover 12 to its open position, the locking screw is

unscrewed so as to withdraw the screw stem from the aperture 48, until the flange 41 abuts the side panel 18. The locking screw head 44 is designed so that it can be rotated by the radiator air venting key so as to withdraw or advance the screw.

The arrangement of the threaded housing member 42 and the side panel 18 is such that a chamber 47 is formed in which the locking screw head 44 is restrained and allowed only sufficient axial movement for the screw to engage or disengage itself from the pivot bracket 8.

This feature prevents inadvertent disengagement of the threads of the locking screw 40, and housing member 42.

The cover 12 is shaped and dimensioned so that the rear edges of the upper panel 16 and the side panels 18 extend almost to the wall 4 when the cover 12 is in the closed position. This prevents people from reaching round the back of the cover 12 and touching the hot surfaces of the radiator, and also reduces the chances of debris falling onto the radiator.

The radiator control valves and adjacent pipework are also enclosed by the cover 12 when the cover is in its closed position. This prevents people from being burnt by touching the pipework and control valves, and prevents interference with the radiator valve settings.

The heater may be used with a thermostatically controlled radiator or heater valve. In this arrangement the thermostatic control head is mounted remotely from the heater.

The illustrated radiator assembly has been designed so that the surface temperature of the cover 12 will not exceed 43°C when the radiator 2 is operating at a surface temperature of 75°C.

It will be appreciated that in many installations, pipework to the panel radiator 2 will extend upwards from the floor to the radiator. In the arrangement which has been described, the cover 12 will not fully enclose this pipework. Where it is desired to fully enclose the pipework, the assembly may be provided with a bottom cover 50, shown in dashed lines in Fig. 1 which extends between the floor and the bottom of the cover 12.

It may be arranged, for example, that the bottom cover 50 is fixed in position by screws which are operated by a vent key as is the locking screw 40.

It is to be understood that this invention is not restricted to a radiator, and is applicable to any suitable type of heater.

## Claims

1. A space heater assembly comprising a heater for fixed mounting to a vertical support surface (4), and a unitary cover (12) dimensioned to enclose the heater (2), in which the cover (12) is pivotally mounted on one or more support brackets (6) which are also mounted on said surface (4) and is adapted for pivotal movement between a closed operational

position substantially enclosing the forward, upper and side surfaces of the heater (2), and an open position to allow access to the heater (2), and characterised by a locking device (40) contained within said cover for locking said cover (12) in the closed position, and in that the pivotal axis of said cover (12) on said one or more support brackets (6) is vertically adjustable whereby said cover (12) is moved from its closed position to its open position by lifting said cover (12) and pivoting it away from said support surface (4) to allow access to said heater (2).

2. An assembly as claimed in claim 1, in which said heater (2) takes the form of a hot water radiator (2).
3. An assembly as claimed in claim 2, in which said radiator (2) is provided with one or more control valves for controlling the flow of hot water through said radiator (2), said control valve or valves being located within said cover (12) when said cover (12) is in the closed position.
4. An assembly as claimed in any preceding claims 2 or 3, in which the one or more support brackets (6) are located near the bottom of said radiator (2) whereby said cover (12) is moved to its open position by lifting said cover (12) and pivoting the top part thereof away from said support surface (4).
5. An assembly as claimed in any preceding claim, in which said locking device (40) comprises a screw device (40) carried by said cover (12) and accessible through an aperture (46) therein, said screw device (40) co-acting with an abutment (48) on said one or more support brackets (6) for locking said cover (12) in the closed position.
6. An assembly as claimed in claim 5, in which said heater (2) in the form of a hot water radiator (2) comprises an air venting screw adapted to be operated by a venting key, and in which said screw device (40) of said locking device (40) is also adapted to be operated by said venting key.
7. An assembly as claimed in any preceding claim, which is mounted on said support surface (4) in spaced relationship to a floor, in which a bottom cover (50) is provided which extends from said cover (12) to said floor.

## Patentansprüche

1. Raumheizungsanordnung mit einem Heizkörper zur feststehenden Anordnung an einer vertikalen Stützfläche (4) und einer einstückigen Abdeckung (12), die zur Umfassung des Heizkörpers (2) ausgebildet ist, wobei die Abdeckung (12) schwenkbar an einem

oder mehrerer Stützrahmen (6) angeordnet ist, die ebenfalls an der Fläche (4) angeordnet sind und zur Schwenkbewegung zwischen einer geschlossenen Betriebsstellung, in der sie die vorderen, oberen und seitlichen Flächen des Heizkörpers (2) weitgehend umfaßt und einer offenen Stellung zur Gewährung eines Zugangs zu dem Heizkörper (2) ausgebildet ist, gekennzeichnet durch eine Arretiervorrichtung (40), welche innerhalb der Abdeckung enthalten ist zur Verriegelung der Abdeckung (12) in der geschlossenen Stellung und daß die Schwenkachse der Abdeckung (12) an dem einen oder den mehreren Stützrahmen (6) vertikal einstellbar ist, wodurch die Abdeckung (12) aus ihrer geschlossenen Stellung zu ihrer offenen Stellung bewegt ist durch Anheben der Abdeckung (12) und ihrer Verschwenkung von der Stützfläche (4) zur Gewährung von Zugang zu dem Heizkörper (2).

2. Anordnung nach Anspruch 1, wobei der Heizkörper (2) die Form eines Heißwasserradiators (2) einnimmt.
3. Anordnung nach Anspruch 2, wobei der Radiator (2) mit einem oder mehreren Steuerventile zur Steuerung der Strömung von heißem Wasser durch den Radiator (2) versehen ist, wobei das Steuerventil oder die -ventile innerhalb der Abdeckung (12) angeordnet sind, wenn sich die Abdeckung (12) in der geschlossenen Stellung befindet.
4. Anordnung nach einem der vorstehenden Ansprüche 2 oder 3, wobei der eine oder die mehreren Stützrahmen (6) nahe der Unterseite des Radiators (2) angeordnet sind, wodurch die Abdeckung (12) zu ihrer offenen Stellung bewegt ist durch Anheben der Abdeckung (12) und der Verschwenkung ihres oberen Abschnittes von der Stützfläche (4) weg.
5. Anordnung nach einem der vorstehenden Ansprüche, wobei die Arretiervorrichtung (40) eine Schraubeneinrichtung (40) aufweist, die von der Abdeckung (12) getragen und durch eine Öffnung (46) darin zugänglich ist, wobei die Schraubeneinrichtung (40) mit einem Widerlager (48) an dem einen oder den mehreren Stützrahmen (6) zur Arretierung der Abdeckung (12) in der geschlossenen Position zusammenwirkt.
6. Anordnung nach Anspruch 5, wobei der Heizkörper (2) in der Form eines Heißwasserradiators eine Entlüftungsschraube aufweist, die zur Betätigung mit einem Entlüftungsschlüssel ausgebildet ist und wobei die Schraubeneinrichtung (40) der Arretiervorrichtung (40) auch zur Betätigung durch den Entlüftungsschlüssel ausgebildet ist.
7. Anordnung nach einem der vorstehenden Ansprü-

che, die an der Stützfläche (4) in beabstandetem Verhältnis zu einem Boden angeordnet ist, bei der eine Abdeckung (50) für die Unterseite vorgesehen ist, welche sich von der Abdeckung (12) bis zum Boden erstreckt.

## Revendications

1. Ensemble à organe de chauffage de volume comprenant un organe de chauffage destiné à être monté à demeure sur une surface verticale (4) de support, et un couvercle solidaire (12) ayant des dimensions telles qu'il peut entourer l'organe de chauffage (2), dans lequel le couvercle (12) est monté de manière qu'il puisse pivoter sur une ou plusieurs équerres de support (6) qui sont aussi montées sur ladite surface (4) et est destiné à se déplacer par pivotement entre une position fermée de fonctionnement dans laquelle il entoure pratiquement les surfaces avant, supérieure et latérales de l'organe (2) de chauffage, et une position d'ouverture destinée à permettre l'accès à l'organe de chauffage (2), et caractérisé par un dispositif de blocage (40) logé dans le couvercle afin qu'il bloque le couvercle (12) en position fermée, et en ce que l'axe de pivotement du couvercle (12) sur une ou plusieurs équerres de support (6) est réglable verticalement de manière que le couvercle (12) soit déplacé de sa position fermée à sa position ouverte par soulèvement du couvercle (12) et pivotement à distance de la surface de support (4) donnant accès à l'organe de chauffage (2).
2. Ensemble selon la revendication 1, dans lequel l'organe de chauffage (2) est sous forme d'un radiateur (2) à eau chaude.
3. Ensemble selon la revendication 2, dans lequel le radiateur (2) comporte un ou plusieurs robinets de réglage de la circulation d'eau chaude dans le radiateur (2), le robinet ou les robinets étant placés dans le couvercle (12) lorsque ce couvercle (12) est dans la position de fermeture.
4. Ensemble selon l'une des revendications précédentes 2 et 3, dans lequel l'équerre ou les équerres de support (6) sont placées près de la partie inférieure du radiateur (2) de manière que le couvercle (12) se déplace vers sa position d'ouverture par soulèvement du couvercle (12) et pivotement de sa partie supérieure afin qu'elle s'écarte de la surface de support (4).
5. Ensemble selon l'une quelconque des revendications précédentes, dans lequel le dispositif de blocage (40) comporte un dispositif à vis (40) porté par le couvercle (12) et accessible par un orifice (46) de

celui-ci, le dispositif à vis (40) coopérant avec une butée (48) formée sur une ou plusieurs équerres (6) de support afin que le couvercle (12) soit bloqué en position fermée.

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6. Ensemble selon la revendication 5, dans lequel l'organe de chauffage (2) sous forme d'un radiateur (2) à eau chaude comprend une vis de purge d'air destinée à être commandée par une clé de purge, et dans lequel le dispositif à vis (40) du dispositif de blocage (40) est aussi destiné à être manoeuvré par la clé de purge.

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7. Ensemble selon l'une quelconque des revendications précédentes, monté sur la surface de support (4) à distance d'un plancher, dans lequel un couvercle inférieur (50) est disposé du couvercle (12) au plancher.

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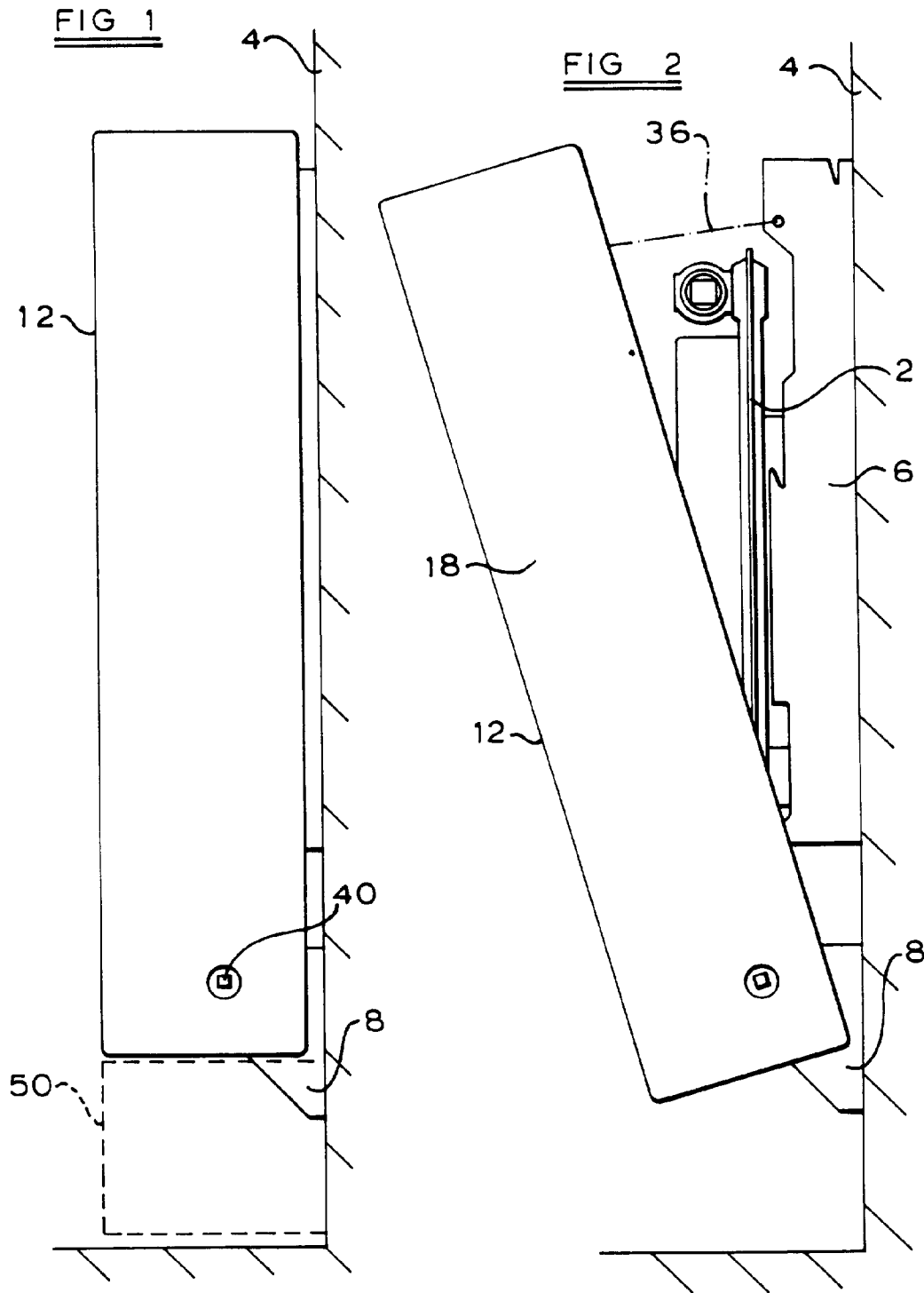
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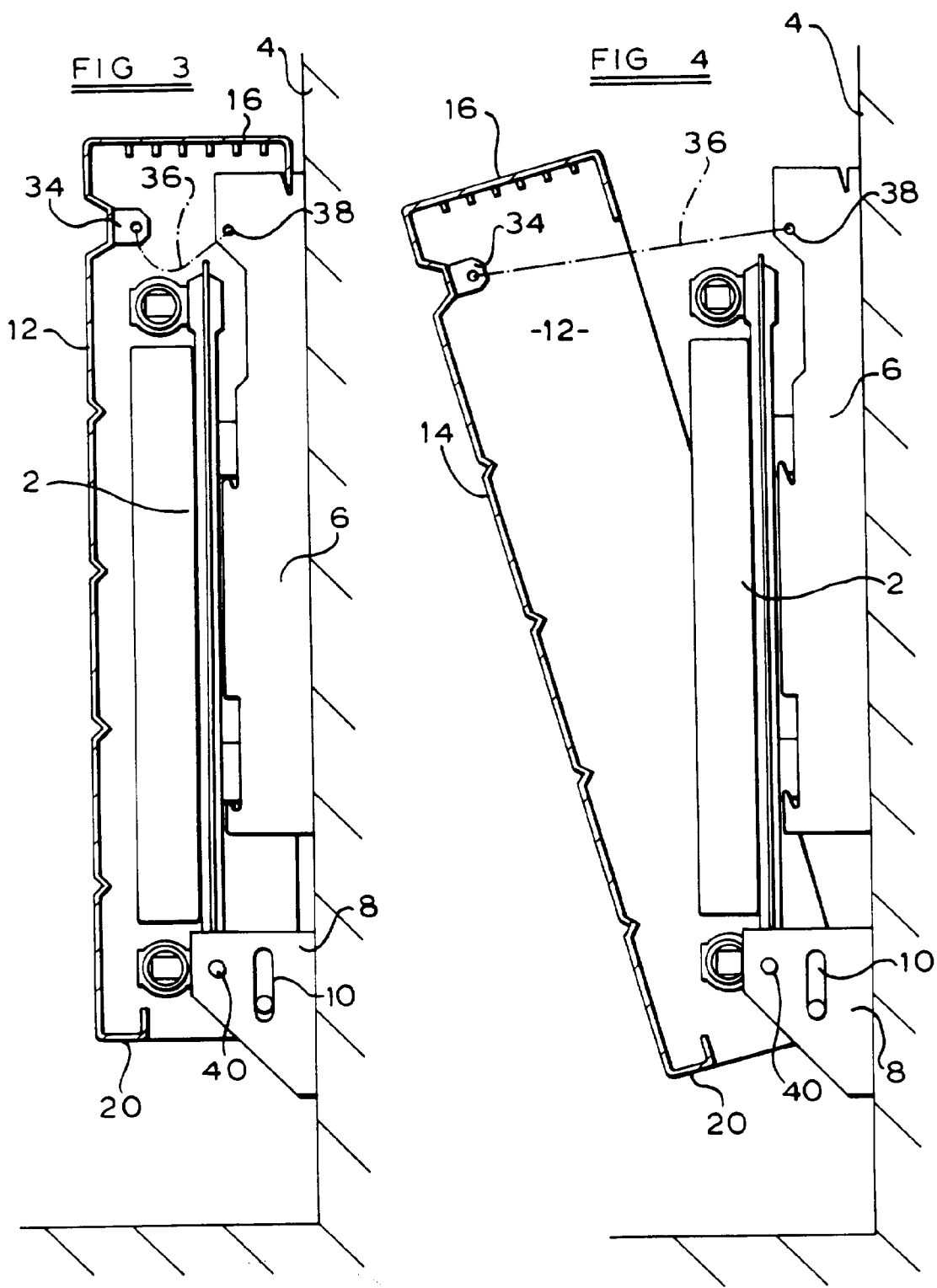
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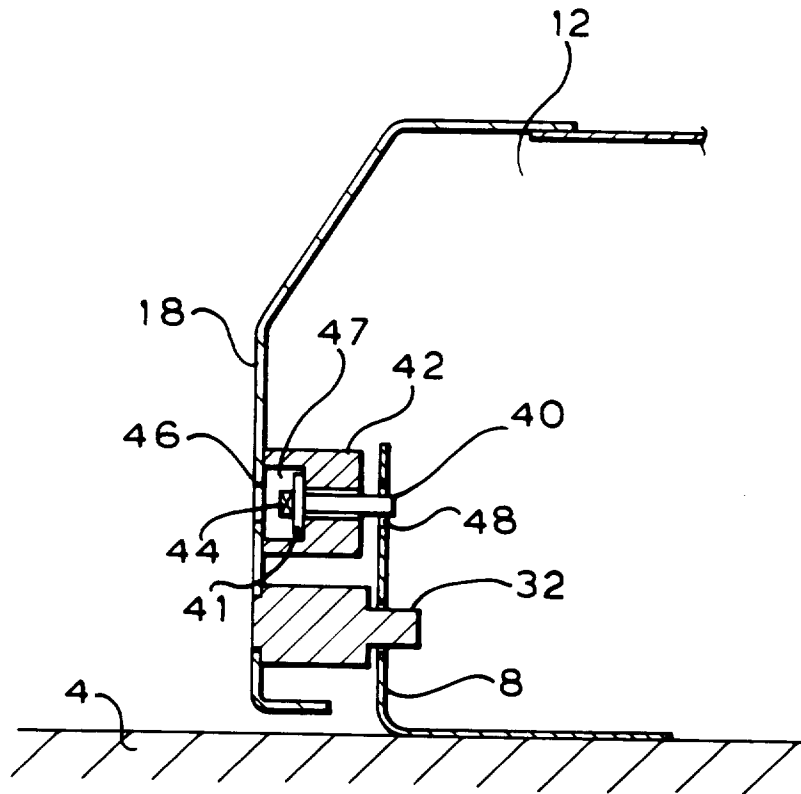


FIG 5

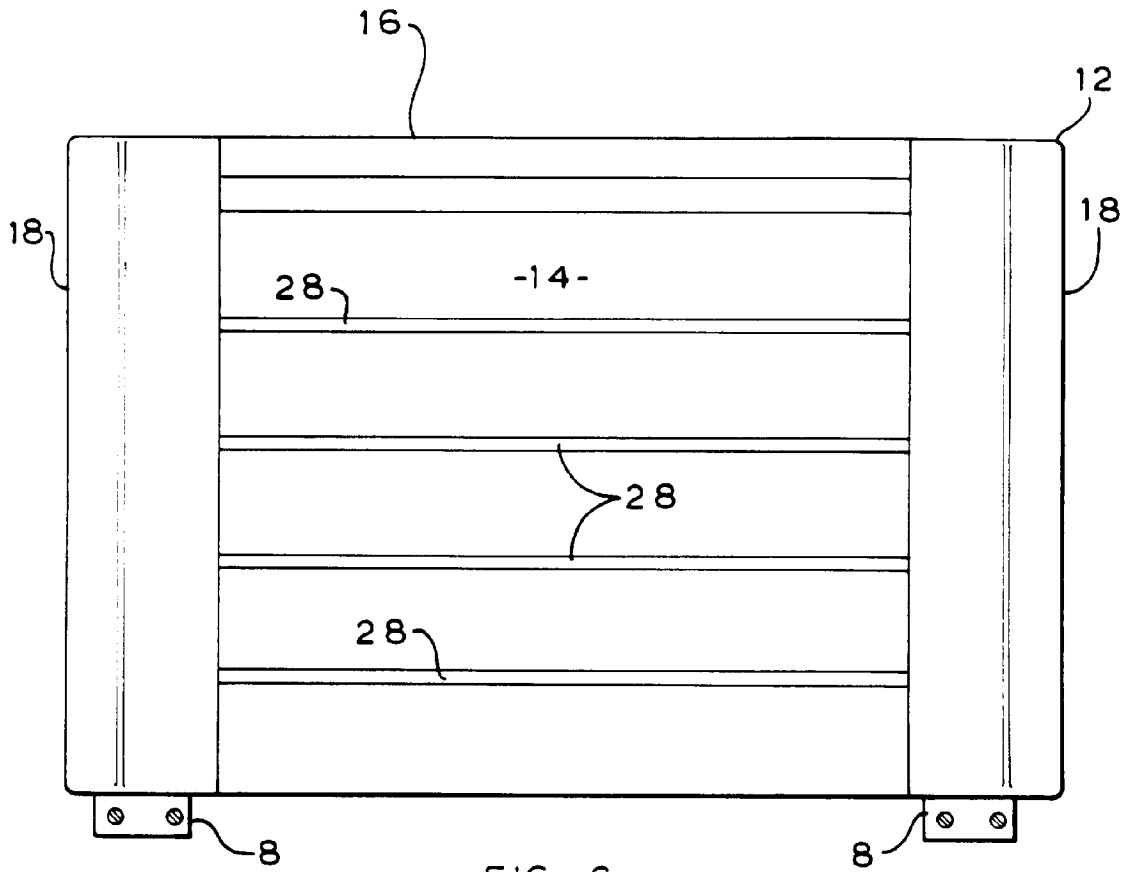


FIG 6

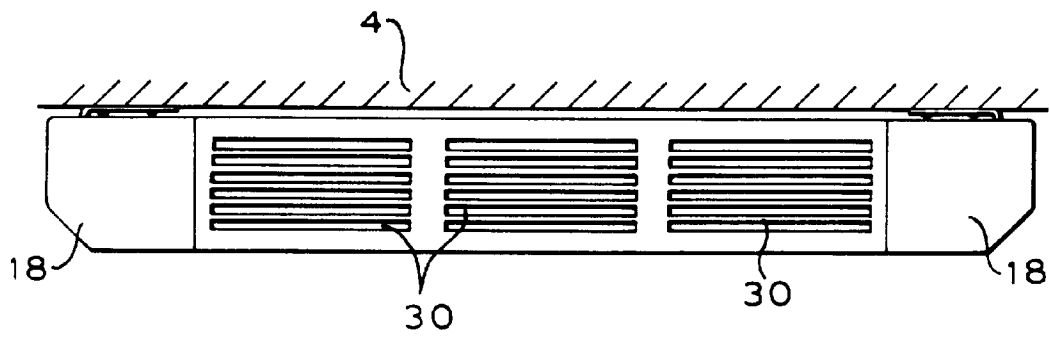


FIG 7