(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 398 573 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
17.03.2004 Bulletin 2004/12

(51) Int Cl.[7]: **F24C 3/12**

(21) Application number: **03253859.7**

(22) Date of filing: **18.06.2003**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
AL LT LV MK

(30) Priority: **11.09.2002 GB 0221049**

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(54) Pivoting heater front

(57) A heater comprises a structure member 6 (which may comprise part of the heater casing 7), a fire box (not shown), a heater control and a front panel 2 through which the fire box is viewed. The front panel 2 is pivotably connected to the structural member 6 preferably by means of at least one rigid link 8, 10 which is rotatably connected to the front panel 2 and to the structural member 6, such that the front panel 2 can be pivoted from a closed position in which the heater control is covered by the front panel 2 to an open position in which the heater control is uncovered.

A spring 20 may be provided to bias the front panel 2 into the closed position and/or into the open position. The geometry of the spring 20 and links 8, 10 may be such that they provide an overcentre action which holds the front panel 2 in the closed and/or the open position.

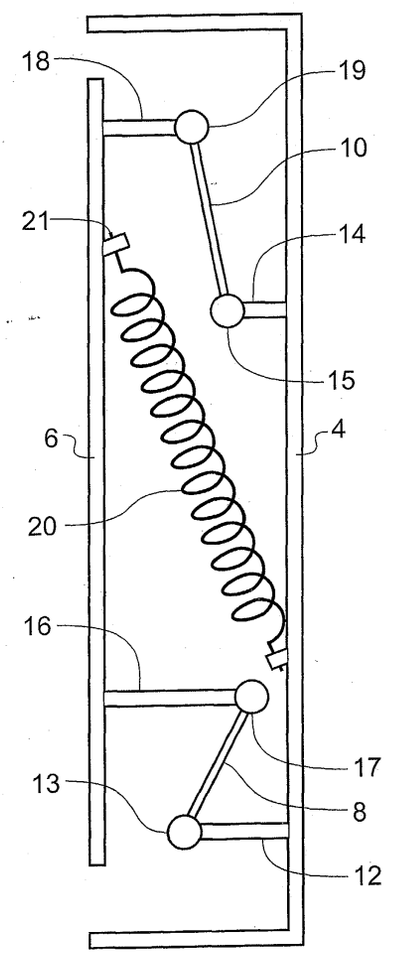

Fig. 1

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Description

[0001] This invention relates to a mechanism fitted to the front of a heater which enables the front panel of the heater to be pivoted from a closed position in which a heater control is covered by the front panel to an open position in which the said heater control is uncovered.

BACKGROUND TO THE INVENTION

[0002] Conventional gas fires are provided with controls which enable an operator of the fire, for example, to light a pilot light and to adjust the heat output of the fire. These controls may be situated on the front or to the side of the fire and may be recessed into the fire and covered by a moveable panel. All of these conventional arrangements tend to break up the otherwise clean lines of a contemporary gas fire design. The present invention seeks to address this problem by articulating the front panel of the fire through which the fire box is viewed, such that the front panel can cover the controls when they are not in use.

STATEMENT OF INVENTION

[0003] According to the present invention there is provided a heater comprising a structural member, a fire box, a heater control and a front panel through which the fire box is viewed, the front panel being pivotably connected to the structural member such that the front panel can be pivoted from a closed position in which the heater control is covered by the front panel to an open position in which the heater control is uncovered.

[0004] Preferably, the front panel has a central opening through which the fire box is viewed. The front panel may be transparent or translucent, so that the fire box can be viewed through the front panel.

[0005] Preferably, the structural member forms part of a casing of the heater.

[0006] Preferably, biasing means are provided to bias the front panel into the closed position and/or into the open position. The biasing means may comprise a tension spring which may be connected at one end to the structural member and at the other end to the front panel.

[0007] Preferably, the front panel is pivotably connected to the structural member by means of at least one link which is rotatably connected to the front panel and to the structural member. Preferably, the link is rigid.

[0008] Preferably the geometry of the spring and link is such that they provide an overcentre action which holds the front panel in the closed and/or the open position.

[0009] Preferably, a pair of links are provided; one on each side of the front panel.

[0010] Preferably two links are provided on each side of the front panel, one above the other.

[0011] Preferably, one link is longer than the other. Preferably, the longer link is situated above the shorter link.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] For a better understanding of the present invention, and to show more clearly how it may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, in which:-

Figure 1 is a diagrammatic representation of the opening mechanism by which a front panel is pivotably connected to a heater casing;

Figure 2 is a perspective view of the front panel in the closed position;

Figure 3 is a side view of the front panel in the closed position;

Figure 4 is a front view of the front panel in the closed position;

Figure 5 is a perspective view of the front panel in the open position;

Figure 6 is a side view of the front panel in the open position; and

Figure 7 is a front view of the front panel in the open position.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

[0013] In the following description, the structure of a gas fire/heater is used to illustrate one embodiment of the present invention. However, the invention may be applied to any type of fire or heating appliance.

[0014] Figures 1 to 3 show a front panel 2 of a gas fire which is connected by a panel support bracket 4 to a structural member 6 (in the form of a front part 7 of the casing of the gas fire) by two pairs of unequal length links which are situated on opposite sides of the panel support bracket 4. Each pair of links comprises a bottom link 8 and a longer top link 10. The links 8, 10 on each side of the panel support bracket 4 are connected at one end to projections 12, 14 formed on the panel support bracket 4 and at the opposite end to projections 16, 18 formed on the structural member 6. The projections 12, 14, 16, 18 could comprise ribs, tangs or any other formations connected to or integrally formed with the panel support bracket 4 or structural member 6.

[0015] Between each link 8, 10 and corresponding projection 12, 14, 16, 18 is a rotatable connection or pivot 13, 15, 17, 19 which preferably comprises a pinned joint, although other conventional forms of articulation such as ball joints or living hinges are contemplated.

[0016] A spring 20 extends between a lower attachment point on the panel support bracket 4 and an upper attachment point 21 on the structural member 6.

[0017] Referring specifically to Figure 4, a control panel 22 which accommodates controls for the gas fire, such as the control to ignite the pilot light, is situated on a lower portion of the front part of a casing 7 of the gas fire.

[0018] The front panel 2 is provided with an opening 24, through which the fire box (not shown) can be viewed. The term "fire box" is defined as any structure which includes or contains a heating element and/or a grate and/or real or imitation fuel and/or a real flame or a flame effect. The opening 24 may be glazed with heat resistant glass. In an alternative embodiment all or part of the front panel 2 may be transparent or translucent, such that the fire box, or at least the real flame or flame effect in the fire box can be viewed.

[0019] Figures 1 to 4 show the front panel 2 and panel support bracket 4 in the closed position. In this position, the controls on the control panel 22 are covered by the front panel 2. Referring specifically to Figure 1, because pivot 13 of bottom link 8 is nearer to the structural member 6 than pivot 17, the spring 20 acts to hold the panel support bracket 4 against the structural member 6, so that in the closed position the front panel 2 is firmly located against the casing part 7 of the gas fire.

[0020] If an operator wishes to open the front panel 2 to reveal the control panel 22, it is necessary to move the bottom of the front panel 2 and hence the panel support bracket 4 away from the front casing part 7 of the gas fire, to the point at which the bottom link 8 lies on a line running between the pivot 17 and the upper attachment point 21 of the spring 20. In this position, the opening mechanism is exactly in equilibrium such that the spring can neither open or close the panel support bracket 4. If the operator pulls the front panel 2 slightly beyond this point, the spring 20 acts to raise the panel support bracket 4 relative to the structural member 6. In other words, the link arrangement provides an overcentre action by which the spring 20 can provide a closing force when the front panel 2 is brought close to a closed position and an opening force when the front panel 2 is moved overcentre into an open position. Preferably, the spring tension is set such that the force of the spring exactly balances the weight of the front panel 2 (and any decoration or other objects attached to the front panel 2), when the link 8 is substantially perpendicular to the structural member 6.

[0021] As the operator lifts the front panel 2 relative to the front casing part 7 of the gas fire, the panel support bracket 4 is gradually tilted, such that the upper part of the panel support bracket 4 is displaced further from the structural member 6 than the lower part of the panel support bracket 4, because the top links 10 are longer than the bottom links 8. At a certain point, the bottom links 8 go overcentre, so that no further lifting of the front panel 2 relative to the structural member 6 is possible.

[0022] Consequently, in order to achieve a fully open position, the operator must pivot the lower portion of the front panel 2 back and down. With the bottom links 8 overcentre, the mechanism is in a stable position at which the weight of the front panel 2 (which now overcomes the force of the spring 20) tends to move the pivot 13 towards rather than away from the structural member 6.

[0023] In this fully open position as illustrated in Figures 5 to 7, the control panel 22 is uncovered, thereby exposing the controls to the operator.

[0024] To close the front panel 2, the operator merely pulls on the lower portion of the front panel 2 so that the overcentre action of the lower pivots 8 is overcome. The front panel 2 is then swung down into the closed position and is held closed by the initial overcentre action generated by the lower links 8 and spring 20, as described above.

[0025] It will be appreciated that in its simplest form, no links are required and the front panel 2 could be hinged directly to the structural member 6. However, preferably at least one pivoting link is used to control the movement of the front panel relative to the rest of the gas fire. Indeed any combination of links with or without biasing means are contemplated.

[0026] Furthermore, the front panel need not necessarily open by movement in an upward direction. For example, the links and spring could be modified such that the front panel opens by movement in a downward direction. This would enable the controls to be situated on an upper part of the heater where they are more easily accessed by the operator.

Claims

1. A heater comprising a structural member, a fire box, a heater control and a front panel through which the fire box if viewed, the front panel being pivotably connected to the structural member, such that the front panel can be pivoted from a closed position in which the heater control is covered by the front panel to an open position in which the heater control is uncovered.

2. A heater as claimed in claim 1, in which the front panel has a central opening through which the fire box is viewed.

3. A heater as claimed in claim 1 or 2, in which the front panel is transparent or translucent, so that the fire box can be viewed through the front panel.

4. A heater as claimed in any one of the preceding claims, in which the structural member forms part of a casing of the heater.

5. A heater as claimed in any one of the preceding

claims, in which biasing means are provided to bias the front panel into the closed position and/or into the open position.

6. A heater as claimed in any one of the preceding claims, in which the front panel is pivotably connected to the structural member by means of at least one rigid link which is rotatably connected to the front panel and to the structural member.

7. A heater as claimed in claim 6, in which the geometry of the biasing means and link is such that they provide an overcentre action which holds the front panel in the closed and/or the open position.

8. A heater as claimed in claim 6 or 7, in which a pair of links are provided, one on each side of the front panel.

9. A heater as claimed in claim 6 or 7, in which two links are provided on each side of the front panel, one above the other.

10. A heater as claimed in claim 8 or 9, in which one link is longer than the other.

11. A heater as claimed in claim 10, in which the longer link is situated above the shorter link.

12. A heater substantially as described herein with reference to and as shown in the accompanying drawings.

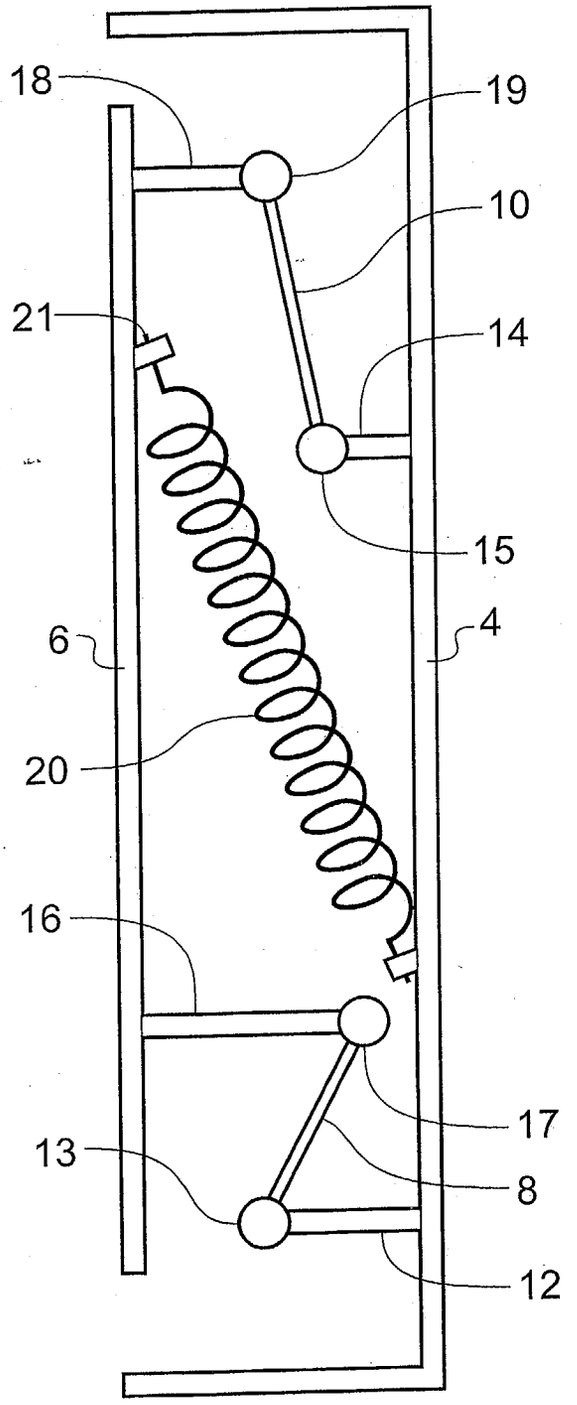

Fig. 1

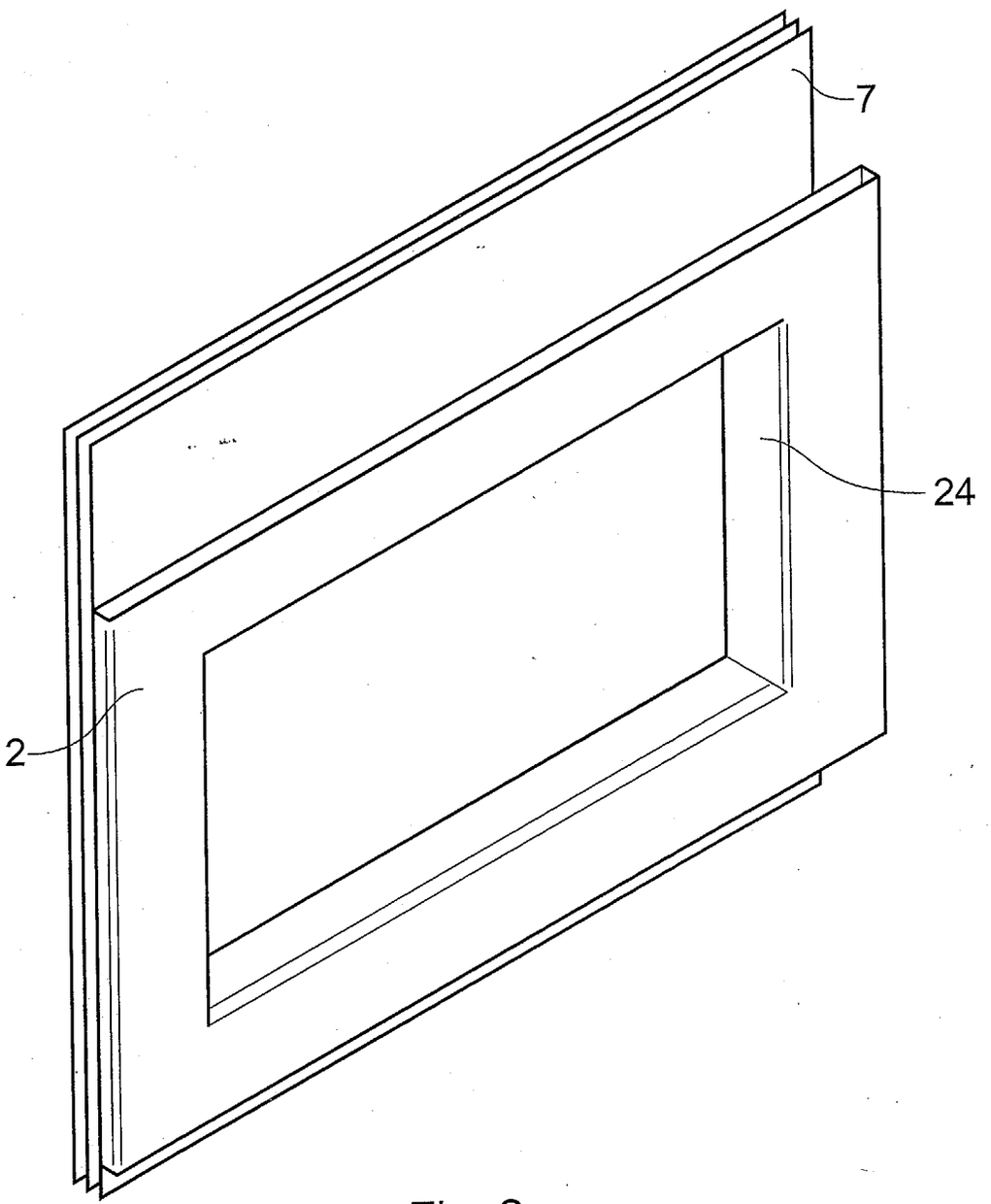

Fig. 2

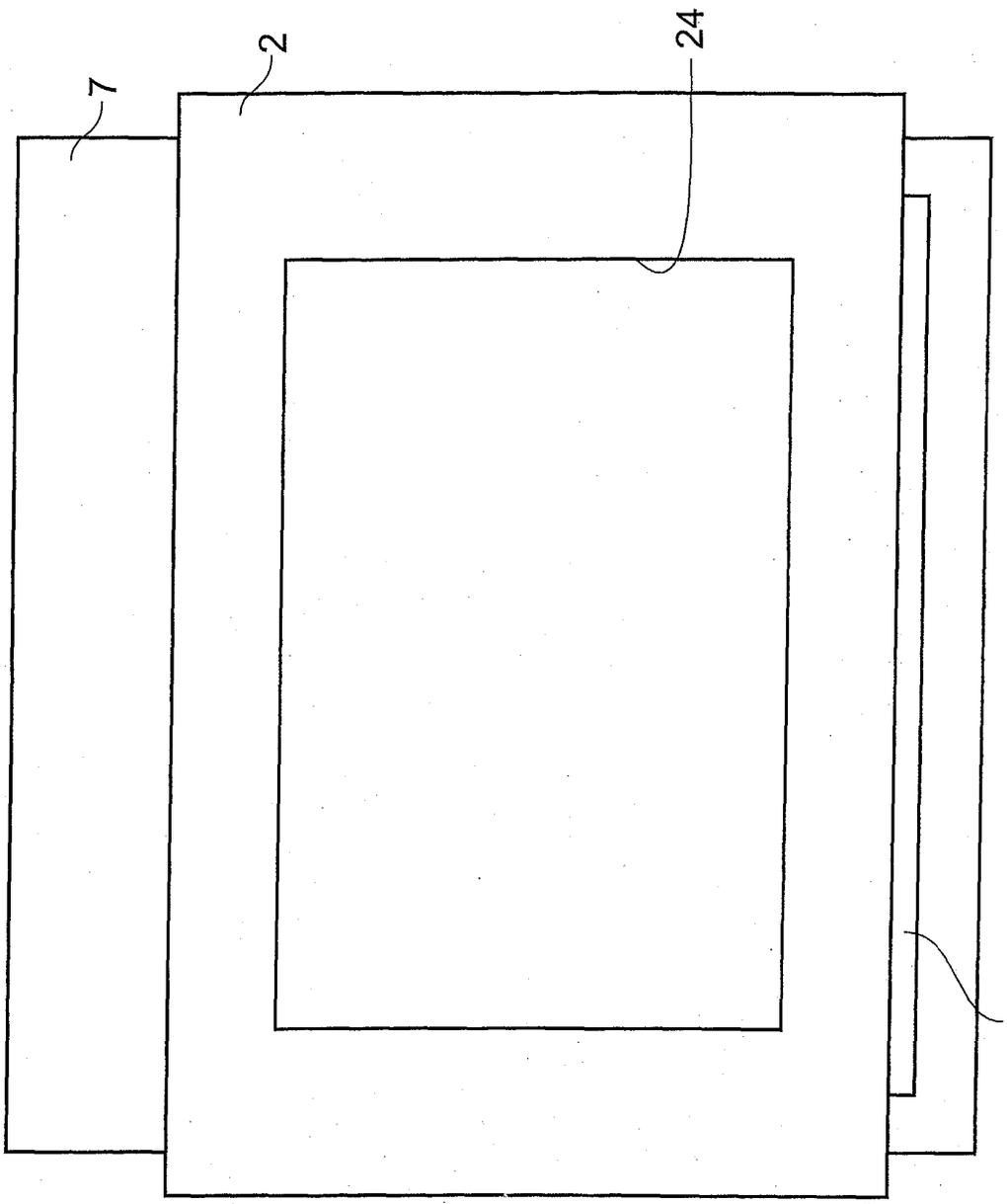

Fig. 4

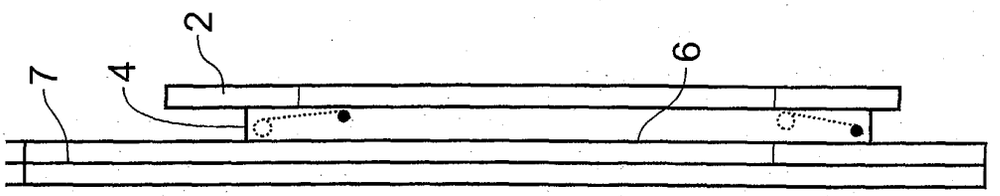

Fig. 3

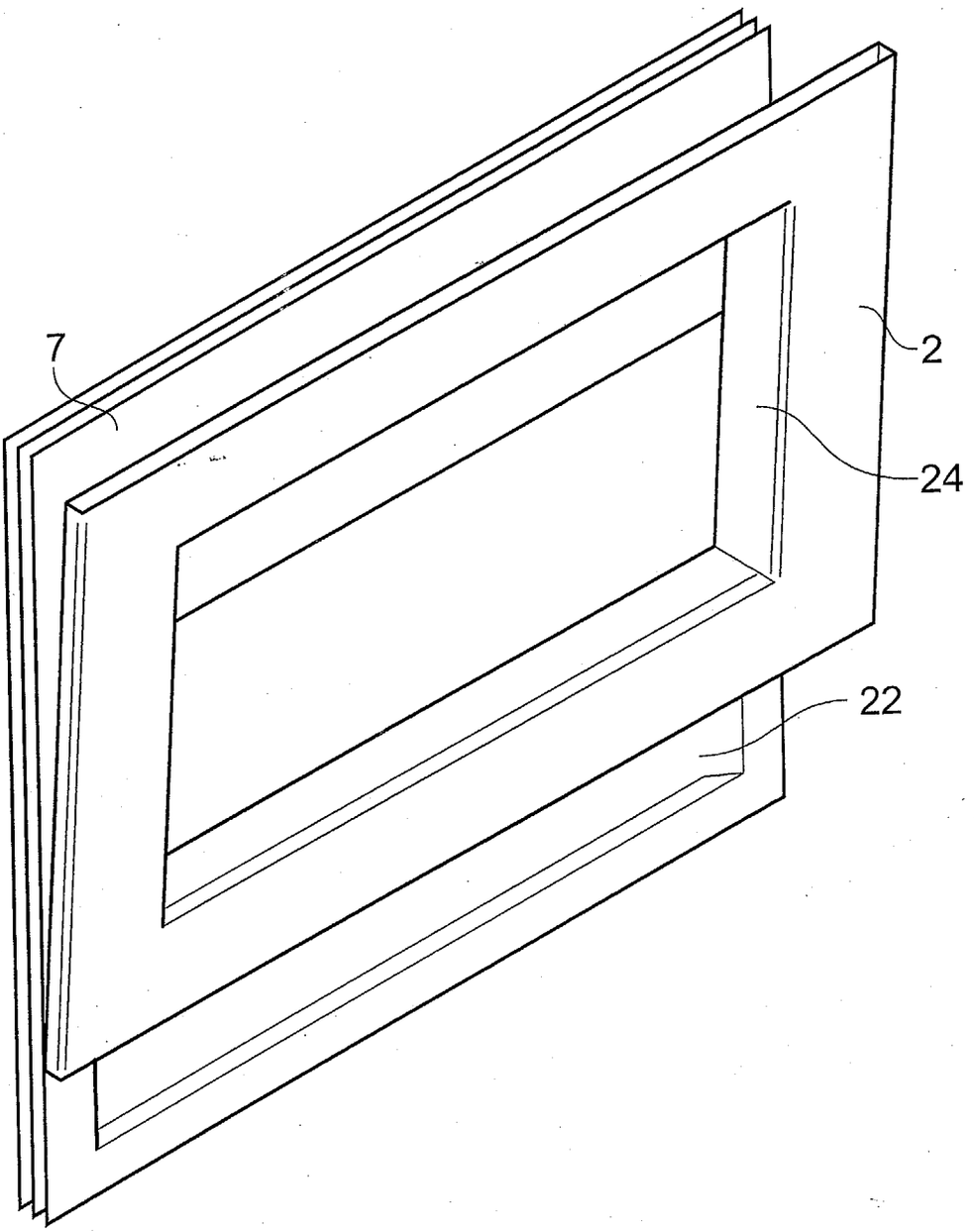

Fig. 5

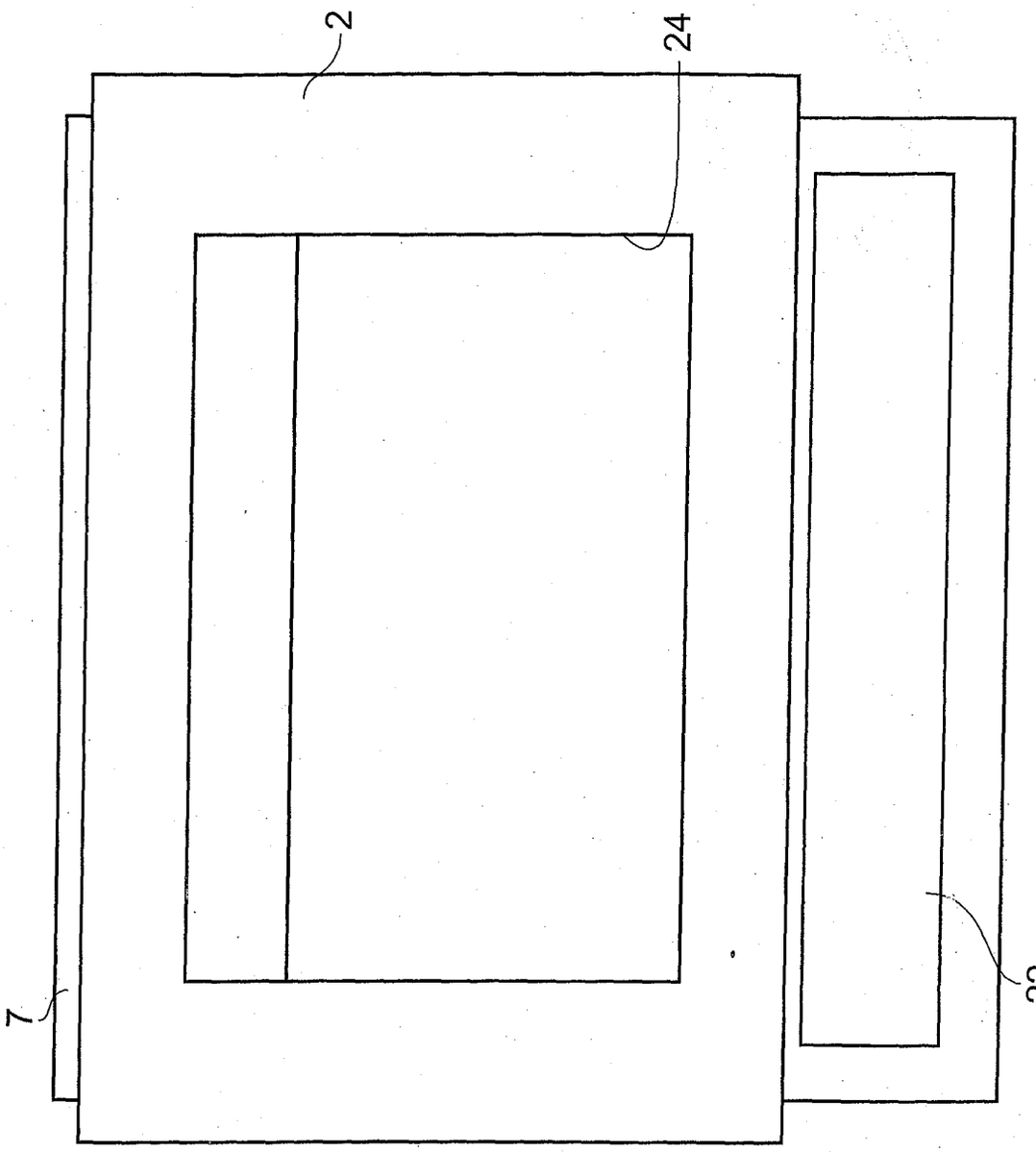

Fig. 7

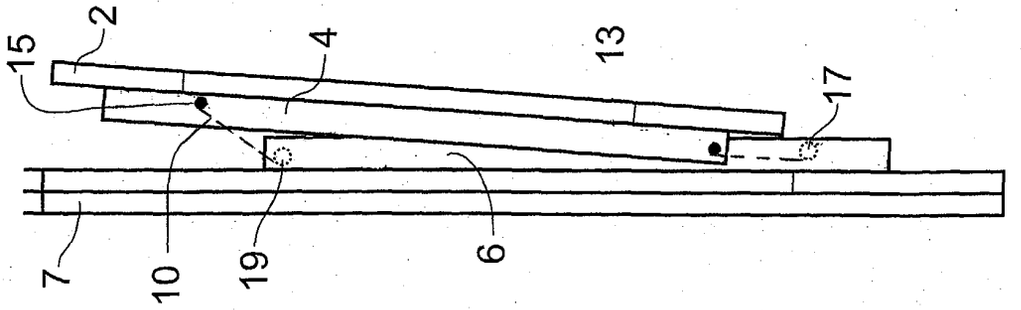

Fig. 6