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(54) A double-walled skin construction arrangement

(57) The two walls are prefabricated and ventilated and comprise curtains therebetween. The arrangement uses thermal bridge breaking sections and fire barriers and acoustic insulation between two stories, the inner as well as the outer wall comprising openable panels. The openable panels making up the outer and inner walls are apt to be opened in an independent manner, it being thus possible to only open those of one only wall, or to open those of both walls, these latter being made of glass or of another material or a composite. The two walls are separated by a chamber being aerated through openings being provided in the outer wall, air-conditioning and/or lighting systems being installed in said chamber. A sill has been provided in the opening being occupied by the openable panels of the inner wall.

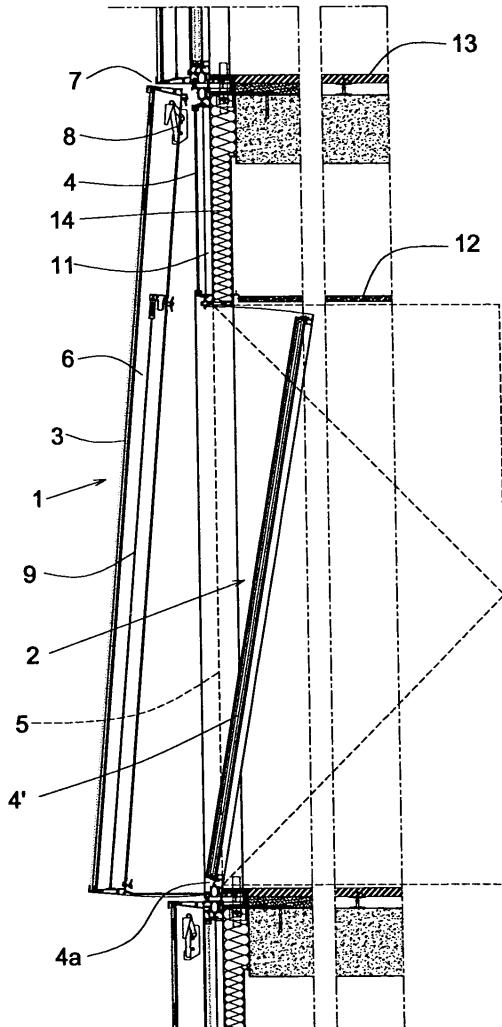


Fig. 4

DescriptionBACKGROUND OF THE INVENTION

[0001] Several types of building skins are known including those of the curtain wall type generally being free of openings for reasons regarding the air-conditioning control and in the tall buildings the wind action, this causing in some persons a psychological problem of claustrophobia in its turn resulting in a measure of labour absenteeism. Skins are also known which comprise an outer wall and an inner wall being separated by a chamber and being made up of panels.

SUMMARY OF THE INVENTION

[0002] This invention has as its object a double-walled skin construction arrangement being characterised in that the two walls are prefabricated and ventilated and comprise curtains therebetween, the arrangement using thermal bridge breaking sections and fire barriers and acoustic insulation between two stories, the inner as well as the outer wall comprising openable panels.

[0003] The panels making up the outer wall and the inner wall will be preferably made of glass in order to obtain a transparency between the inside and the outside but also an appearance of thickness, i.e. of depth, and above all in order to obtain favourable technical features such as an enhanced thermal and acoustic insulation of the building, as well as its tightness, and in consequence an enhanced comfort for the users. The outer wall will in this case protect the inner wall from the weather and pollution.

[0004] For a better protection and insulation both walls can be closed to the outside but ventilated in order to thus avoid condensations in the winter and an excessive warming up in the summer.

[0005] Another of the advantages is the avoidance of cold wall façades, a greater amount of comfort being obtained inside the building thanks to the elimination of a radiant surface.

[0006] The curtains being installed between the two walls prevent the penetration of the sunrays into the building thus in the summer allowing to save more energy thanks to a reduction of the solar energy input.

[0007] The outer wall comprises air inlets and outlets, the inner wall having openings forming windows which when being opened will cause the interior space of the building to be naturally aerated, the users thus getting a feeling as of an open façade.

[0008] Said windows can also be left open overnight in the summer in order to thus cool the building (by riding it for example of the energy having been accumulated during the day due to the animal heat, the operation of diverse apparatuses such as computers, the lighting, etc.) by making use of the temperature difference between the day and night hours, the building being nevertheless protected in case of a storm, for exam-

ple.

[0009] The openable panels making up the outer and inner walls are apt to be opened in an independent manner, it being thus possible to only open the openings of the inner wall, or to open them together with the outer panels.

[0010] The panels making up the outer and inner walls will preferably be made of transparent glass thus allowing to save energy for the artificial lighting. One or both walls can nevertheless be made to be partially opaque, for example by means of using metallic panels such as those made of aluminium, or panels being made of other materials such as granite, marble, ceramics, stucco, etc., the transparency being thus lessened. Said walls can also be made to be partially translucent for example by treating the glass with a silk-screen process, or by using alabaster, etc.

[0011] Household systems can also be housed between both walls in order to air-condition the chamber being formed between them, or in order to install a lighting system for the façade or for indirectly lighting the interior spaces, for example.

[0012] These and other characteristics will be best made apparent by the following detailed description whose understanding will be made easier by the accompanying three sheets of drawings showing a practical embodiment being cited only by way of example not limiting the scope of the present invention.

DESCRIPTION OF THE DRAWINGS

[0013] In the drawings:

Figs. 1 and 2 illustrate each in an elevational view a part of the façade as seen from the outer wall side and from the inner wall side, respectively; Figs. 3 and 4 show each in a sectional elevation this façade in the closed and open states, respectively; Figs. 5 and 6 represent each in a plan-view a detail of the façade's makeup with or without a dividing wall between two interior spaces, respectively; and Fig. 6 shows in a detail view a sectional elevation of the façade.

DETAILED DESCRIPTION

[0014] According to the drawings the skin being built as per the arrangement being the object of this invention comprises an outer wall (1) being formed by panels (3) being made of double rolled glass, and an inner wall (2) being formed by glass panels (4) and having openings (5) (Fig. 4) being occupied by windows formed by panels being made of two glass plates (4') being spaced from each other (Fig. 5) for insulation purposes, said windows being apt to be tipped open towards the inside by being tilted around their lower edge (4a).

[0015] Between said two walls (1) and (2) a chamber (6) is formed which is aerated through openings (7) be-

ing provided between the panels (3) of the wall (1) (Figs. 3 and 4).

[0016] Said panels (3) are upperly linked in a hinged connection by means of compass type hinges (8), for example, thus being apt to be tilted towards the outside.

[0017] Between the outer (1) and inner (2) walls curtains (9) are installed which are supported by the inner wall panels (3).

[0018] Numeral (10) denotes the possible installation between walls (1) and (2) of microventilators being connected to photovoltaic cells in order to enhance the ventilation of the chamber between the two walls above all in the summer; numeral (11) denotes a fire barrier; and also denoted are with numeral (12) the ceiling, with numeral (13) the floor, and with numeral (14) insulating barriers being mainly provided for soundproofing purposes.

[0019] The inner wall (2) will be as well provided with a fixed sill in the openings (5).

[0020] The example having been shown is made up of vertical panels, but the panels could also be horizontal. It must also be borne in mind that it will be possible to open the inner wall windows by using means other than the tiltable arrangement having been shown.

[0021] The invention can within its essentiality be put into practice in other embodiments only in detail differing from the one having been described above only by way of example, said other embodiments also falling within the scope of the protection being sought.

per claim 4, **characterised in that** air-conditioning and/or lighting systems are installed in said chamber.

5 6. A double-walled skin construction arrangement as per claim 1, **characterised in that** in the opening being occupied by the openable panels the inner wall is provided with a sill.

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Claims

1. A double-walled skin construction arrangement being **characterised in that** the two walls are prefabricated and ventilated and comprise curtains therebetween, the arrangement using thermal bridge breaking sections and fire barriers and acoustic insulation between two stories, the inner as well as the outer wall comprising openable panels.

2. A double-walled skin construction arrangement as per claim 1, **characterised in that** the openable panels making up the outer and inner walls are apt to be opened in an independent manner, it being thus possible to only open those of one only wall, or to open those of both walls.

3. A double-walled skin construction arrangement as per claim 1, **characterised in that** the walls are made of glass or of another material or a composite.

4. A double-walled skin construction arrangement as per claim 1, **characterised in that** the two walls are separated by a chamber being aerated through openings being provided in the outer wall.

5. A double-walled skin construction arrangement as

Fig. 1

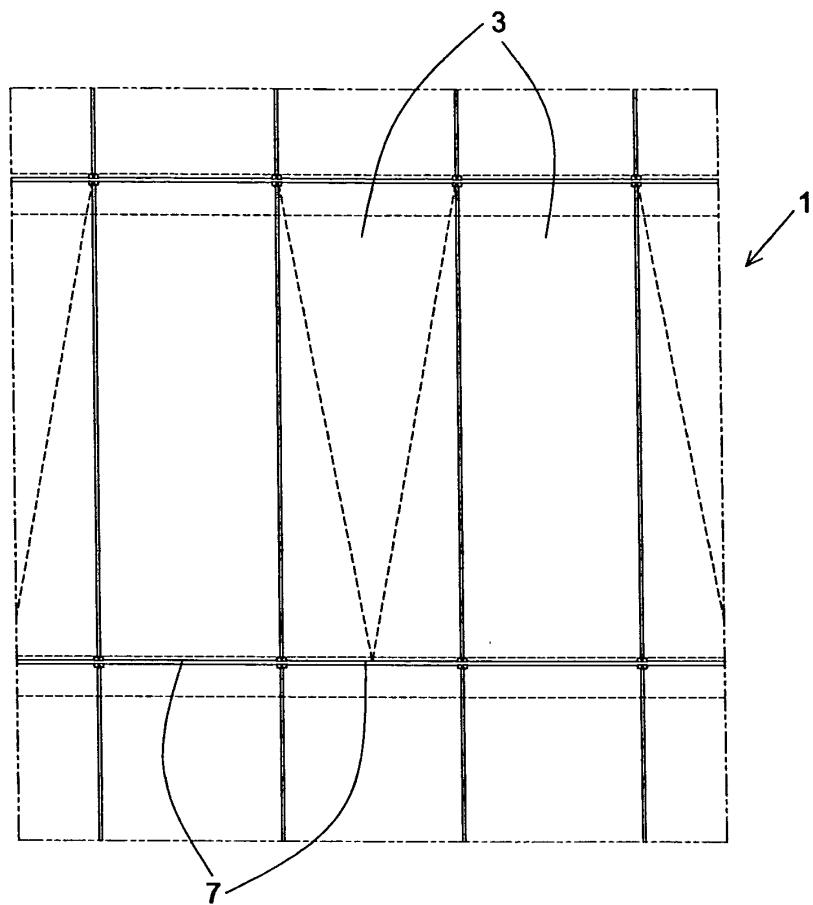
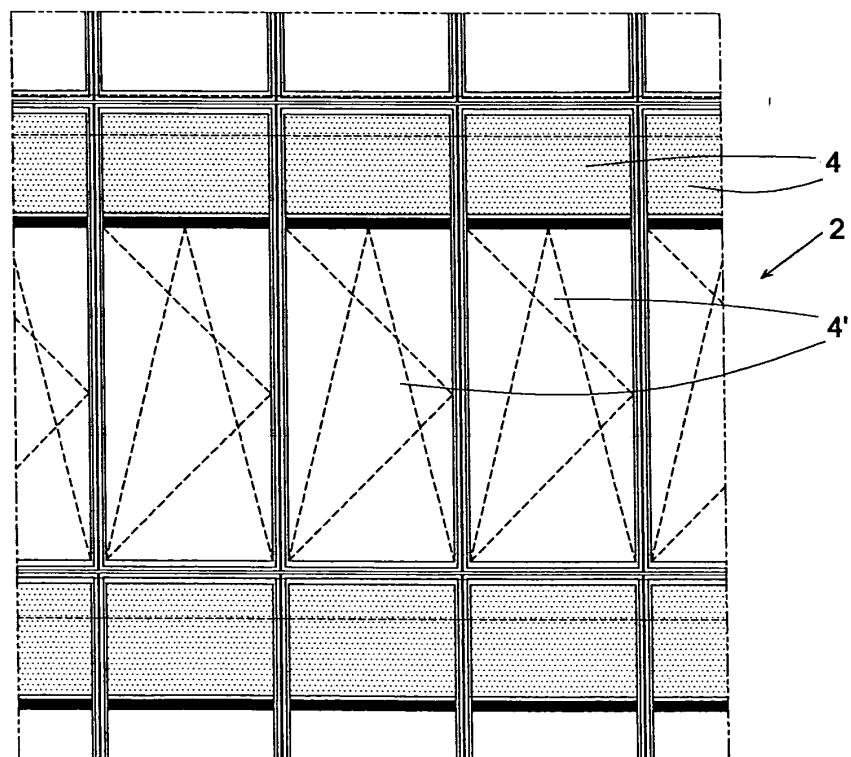


Fig. 2



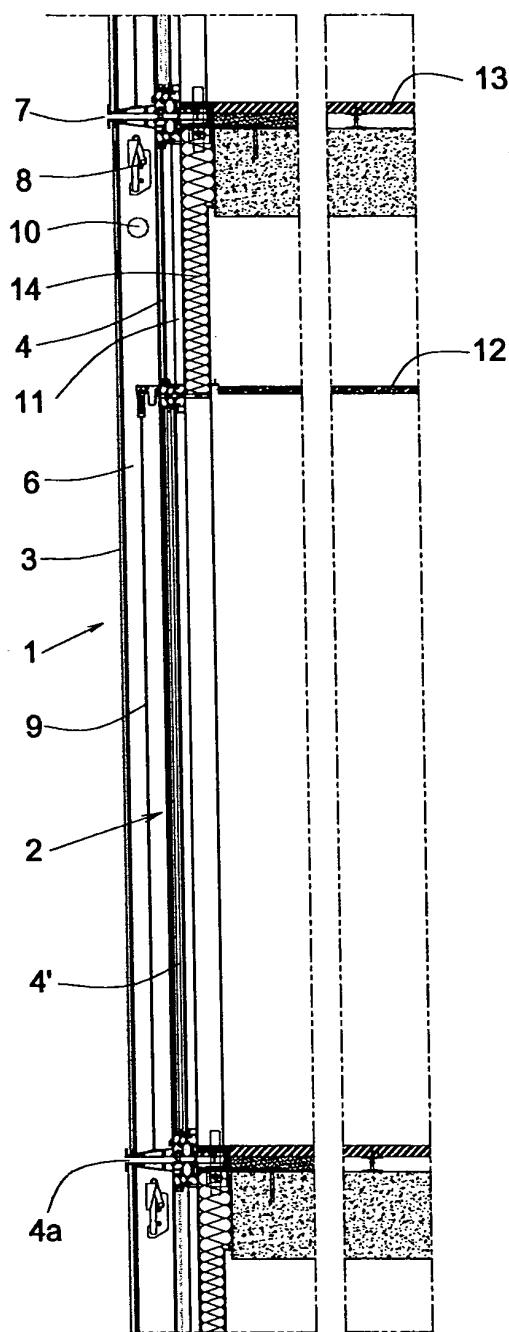


Fig. 3

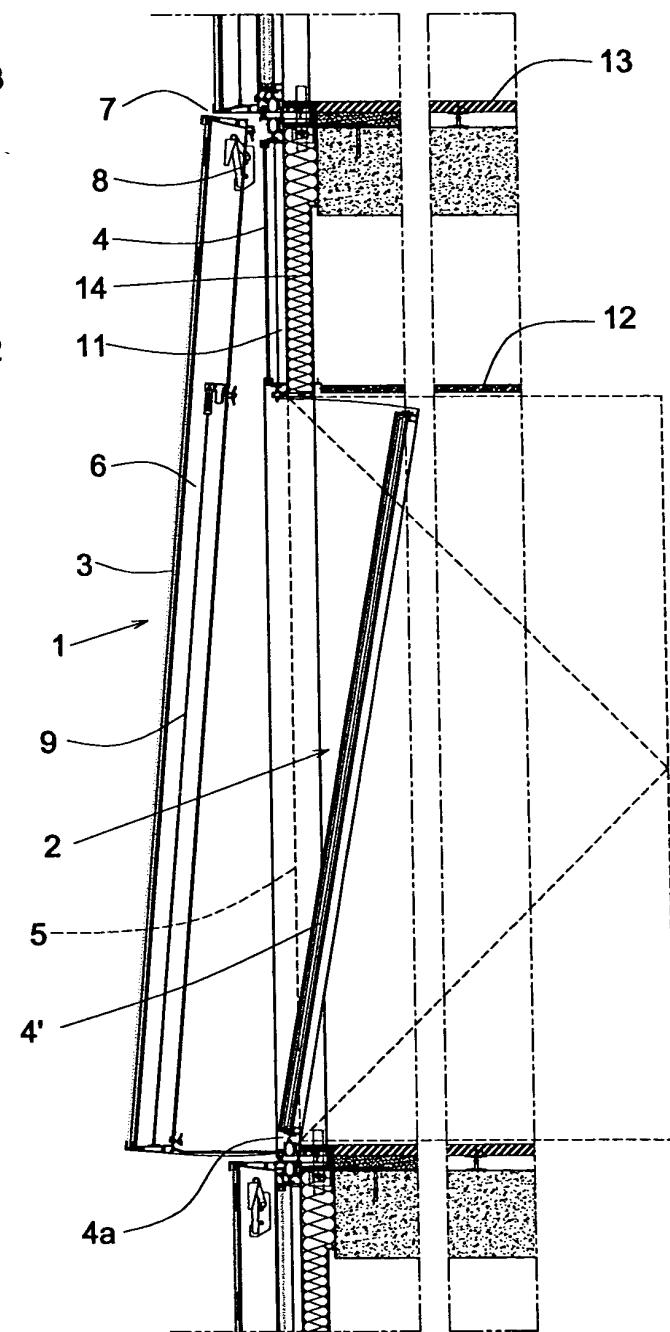


Fig. 4

Fig.6

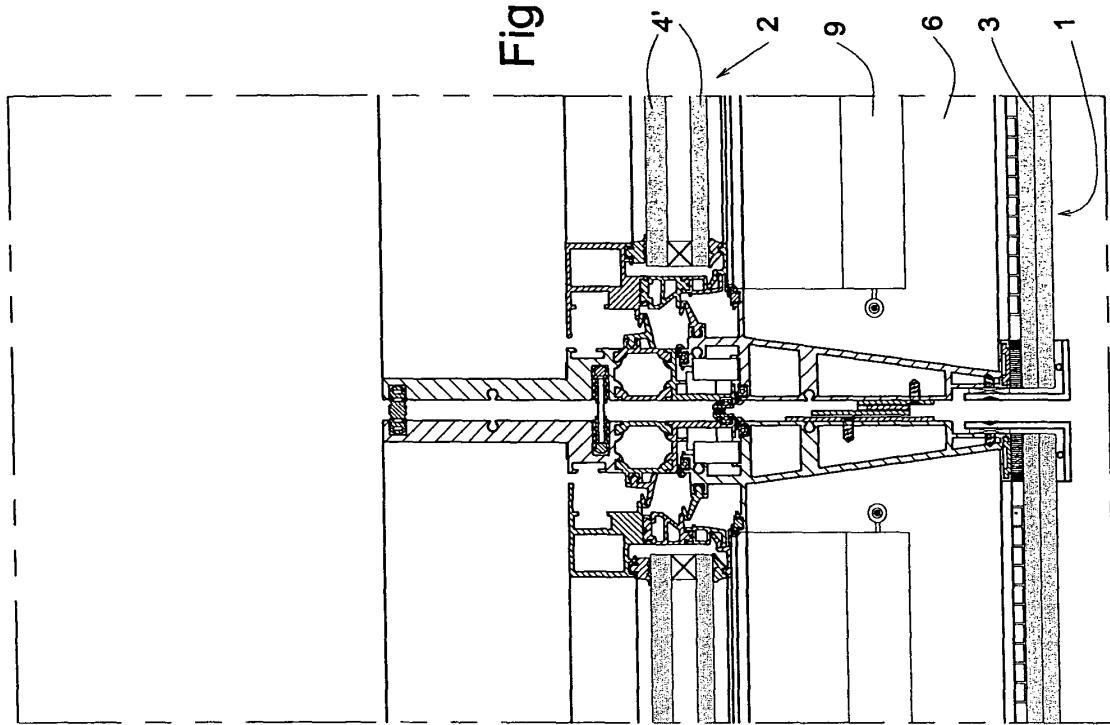
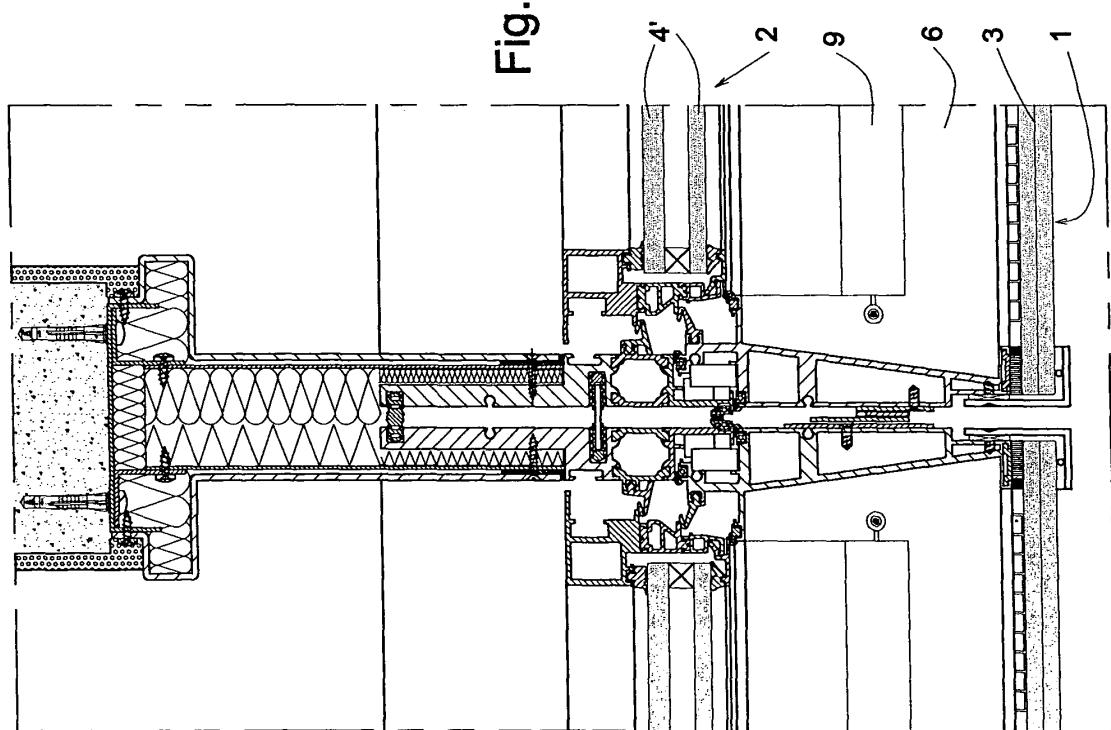


Fig.5



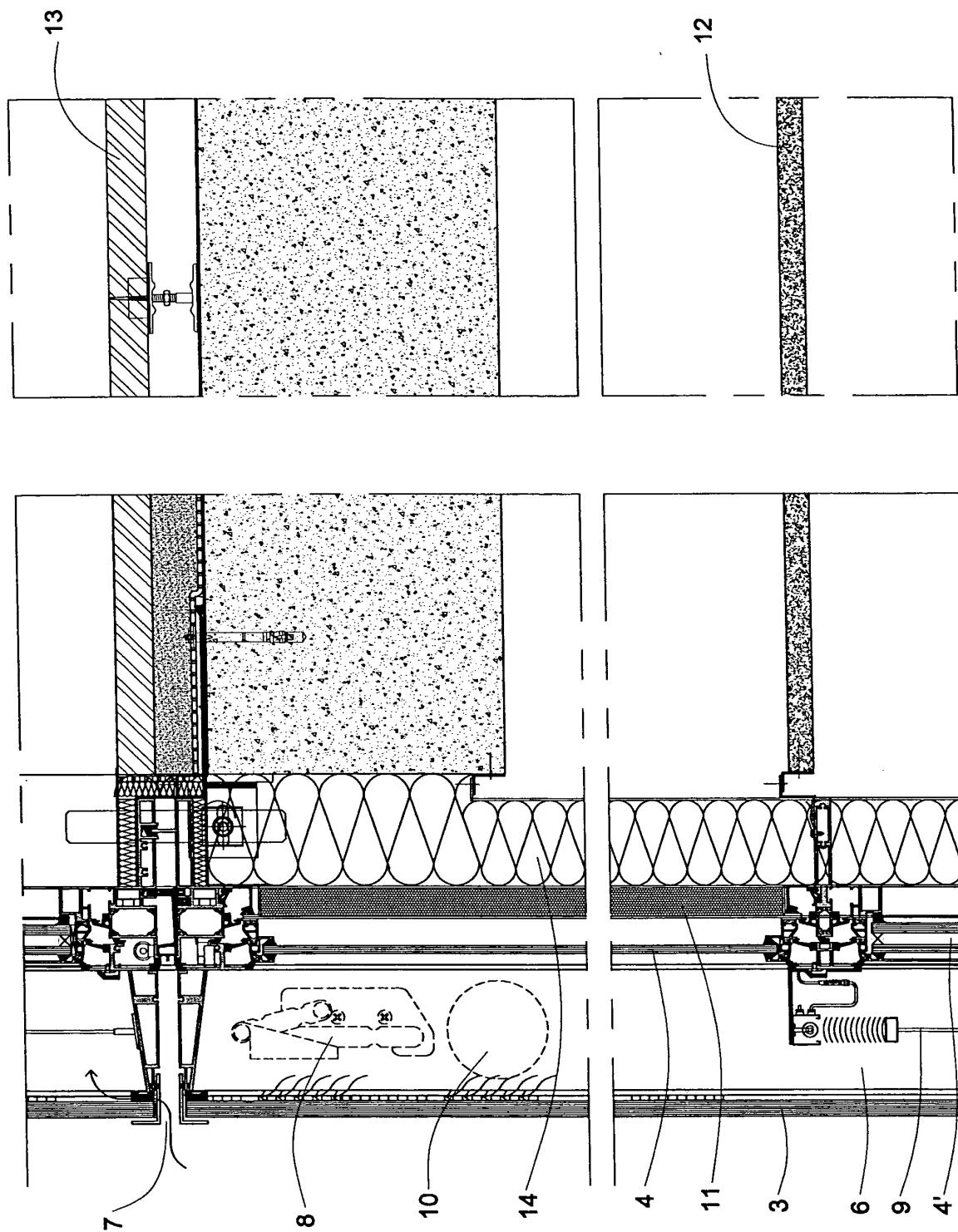


Fig. 7



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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	DE 199 11 490 A (SPROTOFSKI HELMUT ;SCHLOESBAUER PAUL (DE)) 3 August 2000 (2000-08-03) * column 3, line 16 - column 8, line 53 * * column 14, line 48 - line 67; figures 1-6,11,12 * ---	1-6	E04B2/88
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E04B
The present search report has been drawn up for all claims			
3	Place of search	Date of completion of the search	Examiner
EPO FORM 1503/03 82 (P04/C01)	THE HAGUE	11 February 2004	Zuurveld, G
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 03 38 0206

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
 The members are as contained in the European Patent Office EDP file on
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11-02-2004

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