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(71) Applicant: **Wegkamp, Gerhardus Hendrikus**
7765 AJ Weiteveen (NL)

(72) Inventor: **Wegkamp, Gerhardus Hendrikus**
7765 AJ Weiteveen (NL)

(54) Water barrier

(57) The invention relates to a water barrier (1) to be applied inside a cavity wall. The water barrier (1) consists of segments, made of synthetic foam, which can be coupled or glued together and which consist each of a body part (5) which is placed against an inner wall (2) of the cavity wall and an edge part (6) which is connected to an outer wall(3) of the cavity wall.

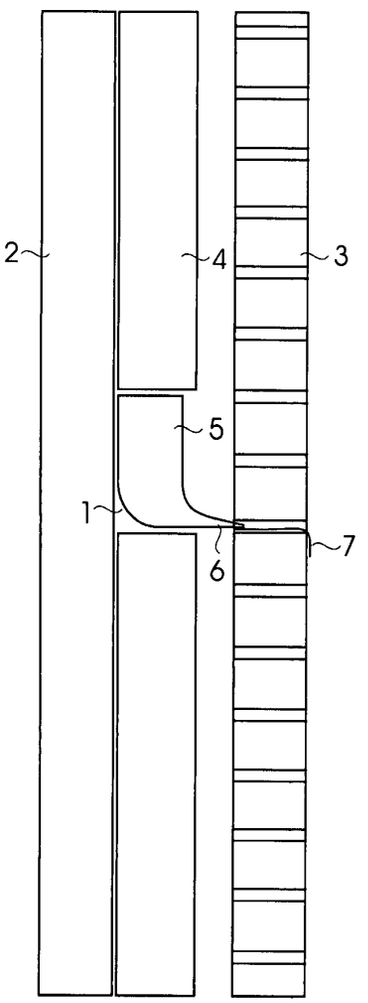

Fig. 1A

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Description

[0001] The invention relates to a water barrier for use inside a cavity wall, comprising an elongated element which is separated in a transverse direction in a body part which may operationally be positioned against an inner wall of the cavity wall, and an edge part which operationally contacts an outer wall of the cavity wall.

[0002] A water barrier of this type is known from GB 2 326 891. This known water barrier consists of an elongated plastic plate which is folded along a fold line extending in a longitudinal direction, in such a manner that operationally one.edge of the plate is placed inside a joint of the outer wall, while the opposite edge rests in an inclined position against an inside of the inner wall.

[0003] The disadvantage of the known water barrier is that at the location of the water barrier a heat-leak exists, as it is difficult and time consuming to fit a closed thermal insulation round the water barrier, without spoiling the effect of the water barrier.

[0004] The water barrier according to the invention substantially obviates this disadvantage and is characterised in that the body part has an at least substantially rectangular cross section, with a thickness which is very much larger than a thickness of the edge part.

[0005] A favourable embodiment of the inventive water barrier is characterised in that the body part is manufactured of a synthetic foam, which makes the body part light and easy to handle, while it may also be sawed up easily if desired.

[0006] A further favourable embodiment of the inventive water barrier is characterised in that the edge part is placed at least substantially perpendicular to the body part. The body part may be included then in an insulation layer which is mounted according to the state of the art on the outside of the inner wall, while the edge part may end inside or against a joint of the outer wall.

[0007] A very favourable embodiment is according to another aspect of the invention characterised in that the body part and the edge part form an entity, made of a synthetic foam. In this embodiment, the water barrier can be produced in one piece and it is light and easy to handle, while it may also be sawed up easily if desired.

[0008] A strong and nevertheless light embodiment of the inventive water barrier is characterised in that the synthetic foam comprises polypropylene foam.

[0009] A favourable embodiment with which the storage costs and the transportation costs may be reduced significantly is characterised in that the water barrier is capable of being stacked, in the sense that while stacking substantially no empty space is enclosed.

[0010] A further favourable embodiment of the inventive water barrier is characterised in that both ends of an elongated element are provided with coupling means, which makes it easy to mutually couple elements to arbitrarily large lengths.

[0011] A further favourable embodiment of the inventive water barrier is characterised in that both a first end and a second end of an elongated element are provided with water guiding partitions, which are designed so as to prevent water from leaking away via the coupling means.

[0012] A further favourable embodiment of the inventive water barrier is characterised in that a water guiding partition on a first end is larger than a water guiding partition on a second end and that the water guiding partition on the first end is provided with a recess, which is designed so that the water guiding partition on the second end fits inside this recess. In this way, water is prevented from leaking away between the partitions.

[0013] A further favourable embodiment of the inventive water barrier is characterised in that the body part is provided with a cavity. The advantage is that material costs may be saved, while the insulating value is increased by the cavity.

[0014] A further favourable embodiment of the inventive water barrier is characterised in that an outside of the body part is provided with recesses, such that a part of the body part can be used for realising a rectangular corner part. Thereby, one recess is shaped such that a cover part for a re-entrant corner can easily be obtained, while the other recess is shaped such that a cover part for a projecting corner can easily be obtained.

[0015] A further favourable embodiment of the inventive water barrier is characterised in that an outside of the body part is provided with at least one additional recess, in which an additional water guiding partition part is accommodated, in such a way that this additional water guiding partition can easily be sawed off and used.

[0016] The invention will now be further explained with reference to the following figures, in which:

- Fig. 1A schematically represents a first possible application of a water barrier according to the invention;
- Fig. 1B schematically represents a second possible application of a water barrier according to the invention;
- Fig. 2A represents a possible embodiment of the water barrier in top view;
- Fig. 2B represents this embodiment in front view;
- Fig. 3A represents this embodiment in side view, in which a first end is shown;
- Fig. 3B represents this embodiment in side view, in which a second end is shown;
- Fig. 4 represents this embodiment of the water barrier in back view.

[0017] Fig. 1A schematically represents a first possible application of a water barrier 1 according to the invention. Water barrier 1 is placed inside a cavity wall, consisting of an inner wall 2 and an outer wall 3, of which the actual cavity is substantially filled with a thermal insulation material 4. In order to divert water of condensation or water coming through, a water barrier 1 is installed, consisting of a relatively thick body part 5 which

in fact forms part of the layer of thermal insulation material and an edge 6 which ends in outer wall 3 on a lead slab 7 which is included in outer wall 3 in a way well known in the art and via which the water of condensation or water coming through is drained off outwards. Water barrier 1 is made of a synthetic foam, for example polypropylene foam and is preferably delivered in pieces with a length which equals the length of a whole number of bricks to be used, including the length of a butt joint. For a brick with a length of 21 centimetres, the length of water barrier 1 may for example measure 88 centimetres. Water barrier 1 may also be used in and round corners, by mitring connecting pieces in a obvious manner and by next fixing them together with for example an adhesive on a rubber base.

[0018] Fig. 1B schematically represents a second possible application of a water barrier 1 according to the invention. In this application, a steel lintel 8 forms part of outer wall 3, while water barrier 1 causes water of condensation or water coming through to flow towards lintel 8, so that it is drained off outwards.

[0019] It will be clear that water barrier 1 can be used in practically all cases in which water of condensation or water coming through must be drained off, for example near terrace roofs and brickwork parapets, near chimneys and near lintels or brick on edge coping. Usually, the necessary lead constructions can be very simple for these applications, which saves time, while moreover a good thermal insulation is obtained.

[0020] Thanks to its shape, lengths of water barrier 1 can easily be stacked, in the sense that between stacked lengths substantially no empty space is enclosed, which means that the storage costs and the transportation costs can be kept low.

[0021] Fig. 2A represents a possible embodiment of the water barrier 1 in top view, consisting of a segment with a length of for example 88 centimetres, comprising of a body part 5 which operationally becomes part of an insulation layer in side a cavity wall and provides for the actual insulation, and an edge 6 which is operationally connected to the outer wall. Water of condensation or water coming through is diverted to the outer wall via edge 6. In order to prevent water of condensation to run off between two neighbouring segments and to flow inside the cavity, the ends of a segment is provided with raised edges 9a,9b, which have been shaped such that they partly fit together and in this way form a good seal. In the middle, an additional raised edge 10 is included, such that halves of an element can be used, each provided with a raised edge. For that purpose one must saw the segment in two, according to an auxiliary line 11 which is visible on the segment. On the segment are moreover a number of auxiliary lines 12 visible, which may be useful when the segment is to be mitre-sawed.

[0022] Fig. 2B represents this embodiment in front view, with body part 5 and edge 6 which rises towards body part 5 and which is operationally connected to the outer wall. The ends of the segment are provided with raised edges 9a,9b which have been shaped such that they partly fit together and in this way form a good seal and in the middle an additional raised edge 10 is included. Moreover auxiliary line 11 is shown, which is visible on the segment and a number of auxiliary lines 12, which may be useful when the segment is to be mitre-sawed.

[0023] Fig. 3A represents this embodiment in side view, in which a first end is shown with body part 5 and edge 6, on the end provided with a low raised edge 9a. Also visible is additional rising edge 10, while a dotted line shows how edge 6 connects to body part 5. In order to simplify the mutual connection of segments, the end is provided with one half 13a of a dovetail joint, while the other end is provided with a complementary half of the dovetail joint, in such a way that segments can be simply joint together. Moreover, the end is provided with a recessed edge 14a while the other end is provided with a complementary, projecting edge, in such a way that here as well a good seal for water of condensation or water coming through is obtained. Near the ends also a small segment 15 is accommodated, which may easily be sawed off and which is shaped such as to form a further additional rising edge that can be used as an additional water barrier at the end of a sawed off part of a segment. Body part 5 may if desired be provided with a cavity 16, which reduces the material costs, while it increases the insulating value.

[0024] Fig. 3B represents this embodiment in side view, in which a second end is shown with body part 5 and edge 6, on the end provided with a high raised edge 9b, which is provided with a recess 17 in which rising edge 9a of a segment coupled to it can be accommodated. Visible are also a half 13b of a dovetail joint which may cooperate with a half 13a in a first end of a neighbouring segment and a projecting edge 14b, which may cooperate with a recessed edge in a first end of a neighbouring segment, all this as explained with a reference to Fig. 3A. Also on this second end a small segment 15 is accommodated, which may easily be sawed off and which is shaped such as to form a further additional rising edge that can be used as an additional water barrier at the end of a sawed off part of a segment.

[0025] Fig. 4 represents this embodiment of the water barrier in back view, with body part 5, edge 6, halves 13a, 13b of the dovetail joint, recessed edge 14a, projecting edge 14b and segments 15. Moreover, two recesses 18a, 18b have been made in body part 5, with recess 18a being shaped such that a projecting corner of ninety degrees is obtained, and with recess 18b being shaped such that a re-entrant corner of ninety degrees is obtained. A re-entrant corner or a projecting corner may easily be sawed out of a remnant part of a segment and can be used for strengthening by gluing it to a mitre-sawed re-entrant corner or a projecting corner. Cavity 16 in body part 5 can be realised for example by forming a recess in the top side during production, after which a lid 19 can be placed in or on top of it.

Claims

1. Water barrier for use inside a cavity wall, comprising an elongated element which is separated in a transverse direction in a body part which may operationally be positioned against an inner wall of the cavity wall, and an edge part which operationally contacts an outer wall of the cavity wall, **characterised in that** the body part has an at least substantially rectangular cross section, with a thickness which is very much larger than a thickness of the edge part.

2. Water barrier according to claim 1, **characterised in that** the body part is manufactured of a synthetic foam.

3. Water barrier according to claim 1, **characterised in that** the edge part is placed at least substantially perpendicular to the body part.

4. Water barrier according to claim 3, **characterised in that** the body part and the edge part form an entity, made of a synthetic foam.

5. Water barrier according to claim 2 of 4, **characterised in that** the synthetic foam comprises polypropylene foam.

6. Water barrier according to one of the previous claims, **characterised in that** the water barrier is capable of being stacked.

7. Water barrier according to claim 1, **characterised in that** both ends of an elongated element are provided with coupling means.

8. Water barrier according to claim 7, **characterised in that** both a first end and a second end of an elongated element are provided with water guiding partitions.

9. Water barrier according to claim 8, **characterised in that** a water guiding partition on a first end is larger than a water guiding partition on a second end and that the water guiding partition on the first end is provided with a recess.

10. Water barrier according to claim 1, **characterised in that** the body part is provided with a cavity.

11. Water barrier according to claim 1, **characterised in that** an outside of the body part is provided with recesses, such that a part of the body part can be used for realising a rectangular corner part.

12. Water barrier according to claim 1, **characterised in that** an outside of the body part is provided with at least one additional recess, in which an additional water guiding partition part is accommodated.

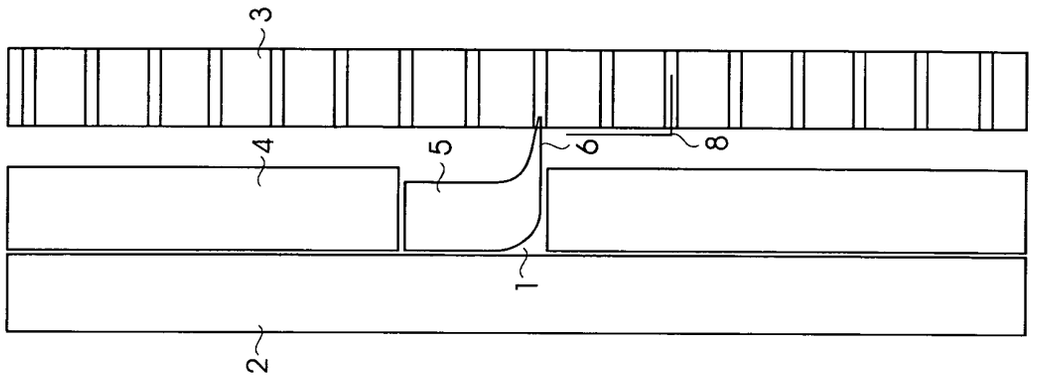

Fig. 1B

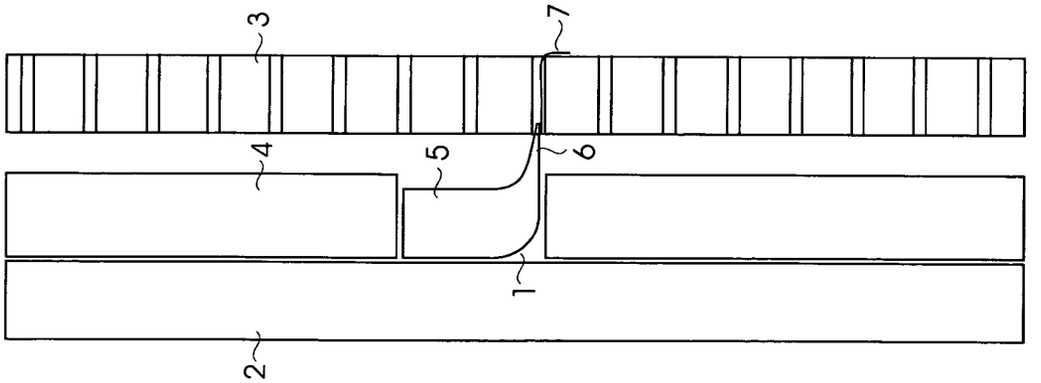

Fig. 1A

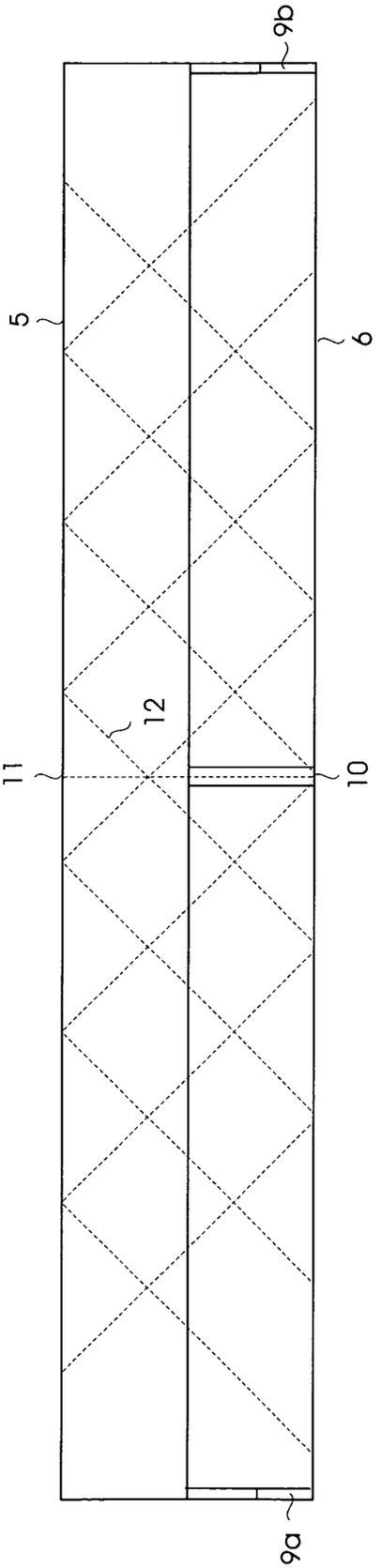

Fig. 2A

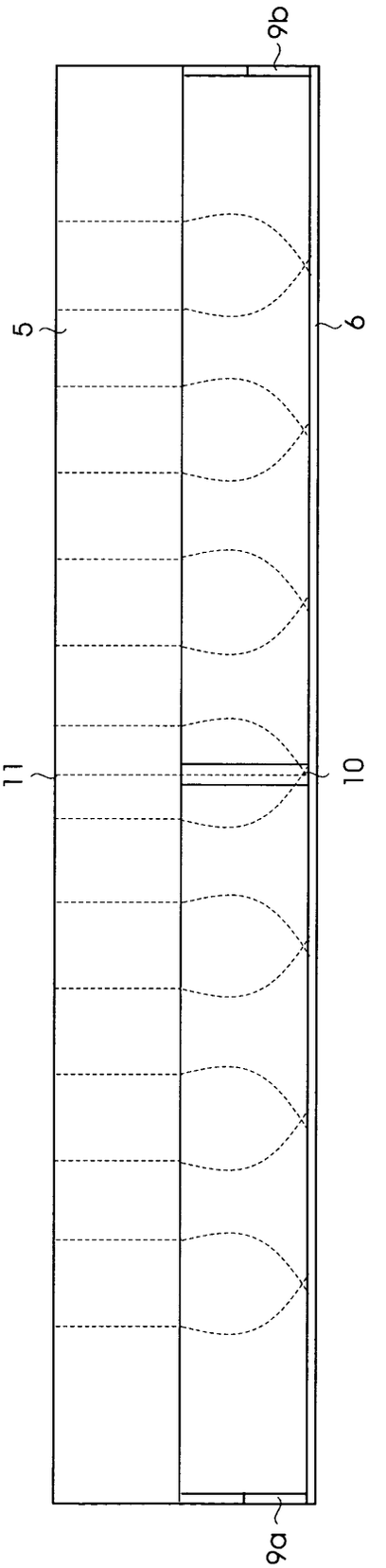

Fig. 2B

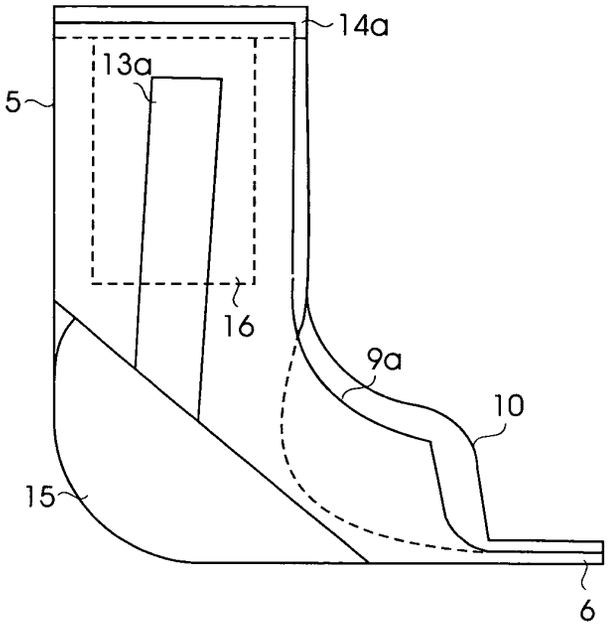

Fig. 3A

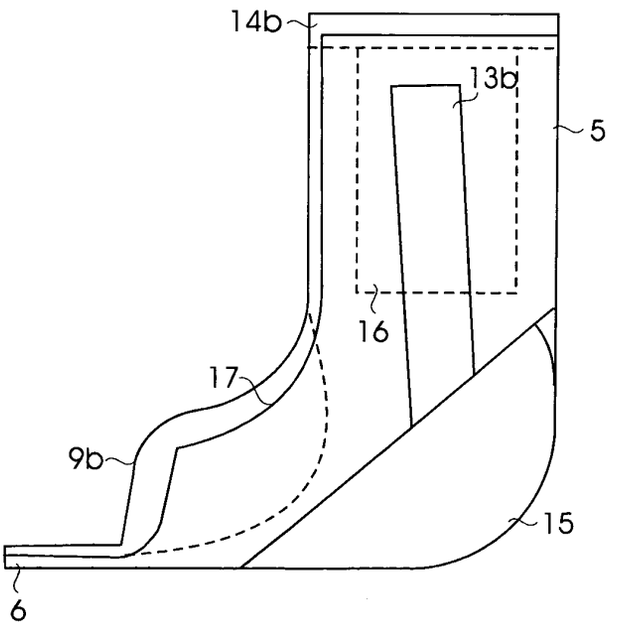

Fig. 3B

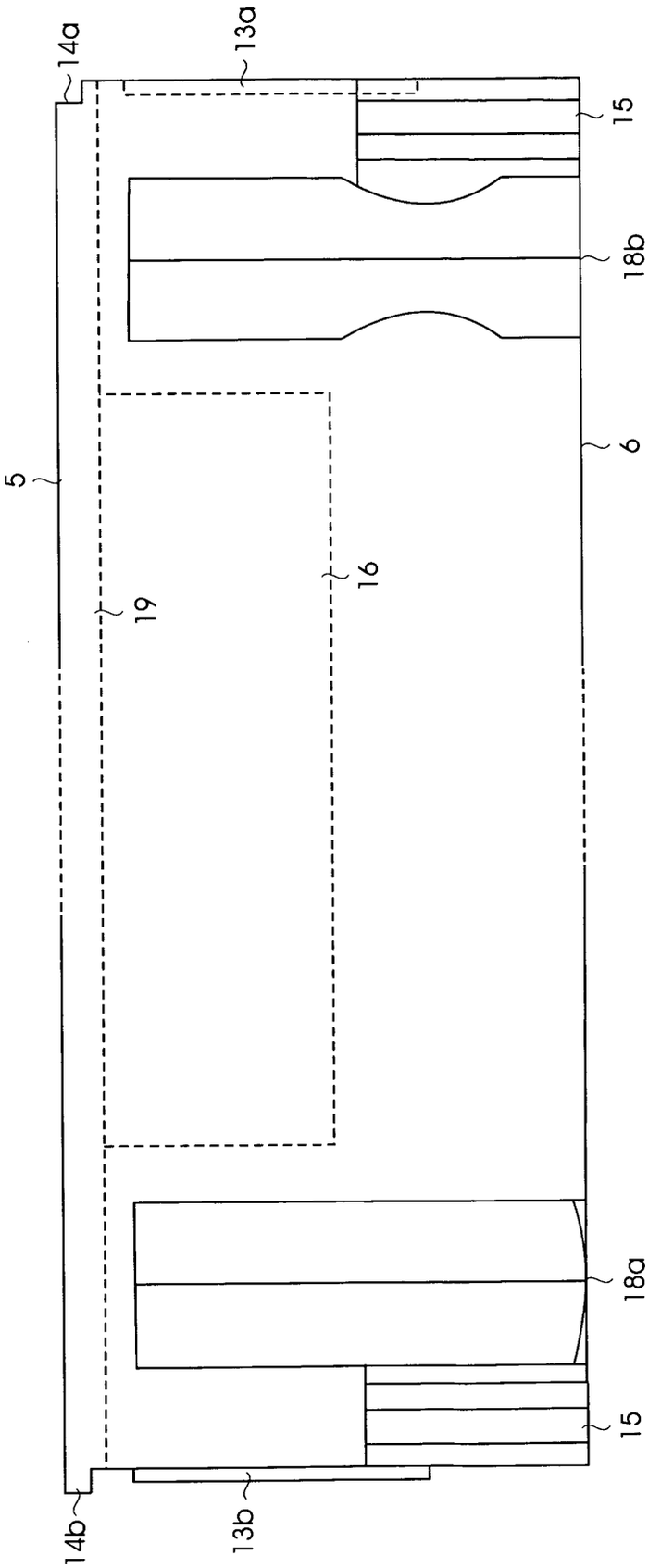

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 04 07 6480

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
D,A	GB 2 326 891 A (ROWLANDS WILLIAM MALDWYN) 6 January 1999 (1999-01-06) * the whole document *	1,6,7	E04B1/70 E04B1/64
A	GB 1 089 564 A (MONSANTO CHEMICALS) 1 November 1967 (1967-11-01) * the whole document *	1-5	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

E04B
E04D
E04C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	2 September 2004	Vrugt, S

CATEGORY OF CITED DOCUMENTS

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02-09-2004

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GB 1089564 A	01-11-1967	NONE	

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