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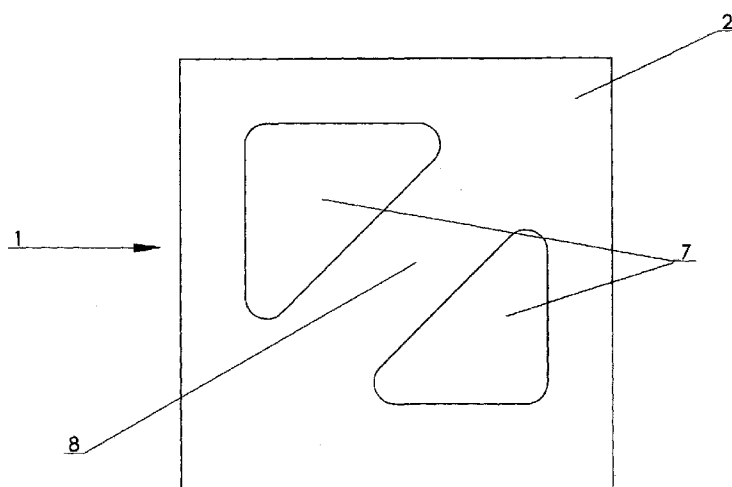
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(54) Title: INSULATING CONSTRUCTION COMPONENT

Fig. 2



(57) Abstract: An insulating construction component, located between a building ceiling and a cantilever element, particularly a balcony, comprising an insulating body, integrated reinforcement rods passing across the insulating body and a compressed element, characterized in that the compressed element (1) has a form of a thin metal plate located within the outline of the cross-section of the isolation body (3) between the upper metal reinforcement rods (4) and the lower metal reinforcement rods (5), whereas the vertical edges of the metal plate are situated on the lateral planes of the side walls (6) of the insulating body (3) and the metal plate is inseparably attached to the reinforcement rods (4 and 5).

Insulating construction component

An invention provides an insulating construction component, located between a building ceiling and a cantilever element particularly a balcony, comprising an insulating body, integrated reinforcement rods passing across the insulating body and a compressed element. This invention relates also to a compressed element of the insulating construction component located between a building and its outstanding outer part particularly a balcony.

Isolation barrier situated between concrete parts of a building and its outstanding outer parts are already known in construction engineering. An insulation barrier contains integrated compressed elements like metal reinforcement rods or profile sections with differentiated endings, which fall into or come into contact with a building ceiling and a balcony slab on both sides of an insulation barrier.

Patent specification DE 19718021 relates to a construction component for thermal insulation situated between a building ceiling and a balcony slab which constitutes insulating material. Reinforcement rods made of stainless steel pass across the insulating material and mountings made of stainless steel are placed along the isolation material. Mountings consist of three metal plates, whereas surface of one of them is perpendicular to the length of the isolation material and the other two metal plates run parallel to it. In such a case the metal plate situated perpendicular to the isolation material is placed in the middle and the other two plates, the upper and the lower, are attached to it. The function of the middle plate is mainly to support the upper and the lower plates, as they are attached in order to absorb compressive forces. The

I - shaped middle plate is particularly convenient while the lower and the upper plates are profiled. It is possible to profile the upper and the lower plate in the shape of a letter C, where both, the upper and the lower plate, clasp the upper and the lower part of the transverse part of the I -shaped middle plate. It is also possible to apply upper and lower U-profiles, which shall be attached to the outer part of transverse part of the I -shaped middle plate.

Mountings can stand out of the sides of the insulating material, and so the lateral edge of the middle plate of the mounting reaches the side wall of the insulating material. The length of the mountings may be also equal to the width of the insulating material and than the middle plate is narrower than the width of the insulating material.

Patent specification DE 19711813 relates to a construction component for thermal insulation, where a hollow section, with the length equal to the length of the thermal barrier is applied as an insulating and compressed element. The hollow section is made of a fiber-reinforced material, especially plastics containing glass or carbon fibers. In the sectional view of the hollow section two partition walls are parallel to the upper and the lower edge of the profile and the third partition wall runs at an angle.

An object of the present invention is to provide an insulating construction component located between a building ceiling and a cantilever element, particularly a balcony, characterized by a simple construction and easy to produce.

This object has been achieved by construction of an insulating construction component located between a building ceiling and a cantilever element particularly a balcony, wherein a compressed element has a form of a thin metal plate located within the outline of the cross-section of the insulating body between the upper and the lower metal reinforcement rods, whereas the vertical edges of the metal plate are situated on the lateral planes of the side walls of the insulating body and the metal plate is inseparably attached to the reinforcement rods.

An object of the present invention is also to provide a construction of a compressed element to be implemented in the insulating construction component which can eliminate drawbacks of the previously known solutions.

This object has been achieved by construction of a compressed element, which has a form of a thin metal plate located within the outline of the cross-section of the insulating body between the upper and the lower metal reinforcement rods, whereas the vertical edges of the metal plate are situated on the lateral planes of the side walls of the insulating body.

It has unexpectedly occurred that one can achieve highly beneficial effects when absorption of loads within the insulation range is realized by implementation of a thin metal plate inseparably attached along the lower and the upper edge to the reinforcement rods, which absorb tensile and compressive forces respectively.

A thin metal plate has a convenient rectangular or square shape, convenient cut-outs and an arm located on a diagonal of the plate. A thermally stable paint is used for fire protection of the upper and the lower surface of the insulating body.

The present invention is shown in a set of exemplary drawing, where figure 1 presents a general view on the insulating construction component, figure 2 presents a metal plate and figures 3 and 4 show exemplary variations of connection of the compressed element and metal reinforcement rods.

The insulating construction component shown in fig.1 contains a compressed element 1 in a form of a thin metal plate 2 located within the outline of the cross-section of the insulating body 3 between the upper 4 and the lower 5 metal reinforcement rods. Vertical edges of the metal plate 2 are situated on the lateral planes of the side walls 6 of the insulating body 3. The metal plate 2 is inseparably attached to the reinforcement rods 5 and 6. The metal plate 2 implemented in the insulating construction component is connected with the reinforcement rods 4 along its upper edge and with the reinforcement rods 5 along its lower edge.

The metal plate has a shape of a square. Furthermore the upper and the lower surface 9 of the insulating body 3 are protected against fire with the use of a thermally stable paint.

Patent Claims

1. An insulating construction component located between a building ceiling and a cantilever element particularly a balcony, comprising an insulating body, integrated reinforcement rods passing across the insulating body and a compressed element, characterized in that the compressed element (1) has a form of a metal plate (2) located within the outline of the cross-section of the insulating body (3) between the upper metal reinforcement rods (4) and the lower (5) metal reinforcement rods, whereas the vertical edges of the metal plate (2) are situated on the lateral planes of the side walls (6) of the insulating body (3) and the metal plate (2) is inseparably attached to the reinforcement rods (5) and (6).
2. An insulating construction component according to claim 1, **characterized in that** the metal plate (2) is connected with the reinforcement rods (4) along its upper edge and with the reinforcement rods (5) along its lower edge.
3. An insulating construction component according to claim 1, **characterized in that** the metal plate (2) has a shape of a rectangle.
4. An insulating construction component according to claim 1 or 3, **characterized in that** the metal plate (2) has got cut-outs (7).
5. An insulating construction component according to claim 1 or 3, **characterized in that** there is an arm (8) located on a diagonal of the metal plate (2).
6. An insulating construction component according to claim 1, **characterized in that** the metal plate (2) has a shape of a square.

7. An insulating construction component according to claim 1 or 6, **characterized in that** the metal plate (2) has got cut-outs (7).
8. An insulating construction component according to claim 1 or 6, **characterized in that** there is an arm (8) located on a diagonal of the metal plate (2).
9. An insulating construction component according to claim 1, **characterized in that** the upper and the lower surfaces (9) of the insulating body (3) are protected against fire with the use of a thermally stable paint.
10. A compressed element of the insulating construction component located between a building ceiling and a cantilever element particularly a balcony, **characterized in that** the compressed element (1) has a form of a thin metal plate (2) located within the outline of the cross-section of the insulating body (3) between the upper metal reinforcement rods (4) and the lower (5) metal reinforcement rods, whereas the vertical edges of the metal plate (2) are situated on the lateral planes of the side walls (6) of the insulating body (3).
11. A compressed element according to claim 10, **characterized in that** the metal plate (2) has a shape of a rectangle.
12. A compressed element according to claim 10 or 11, **characterized in that** the metal plate (2) has got cut-outs (7).
13. A compressed element according to claim 10 or 11, **characterized in that** there is an arm (8) located on a diagonal of the metal plate (2).
14. A compressed element according to claim 10, **characterized in that** the metal plate (2) has a shape of a square.
15. A compressed element according to claim 10 or 14, **characterized in that** the metal plate (2) has got cut-outs (7).
16. A compressed element according to claim 10 or 14, **characterized in that** there is an arm (8) located on a diagonal of the metal plate (2).

Fig. 1

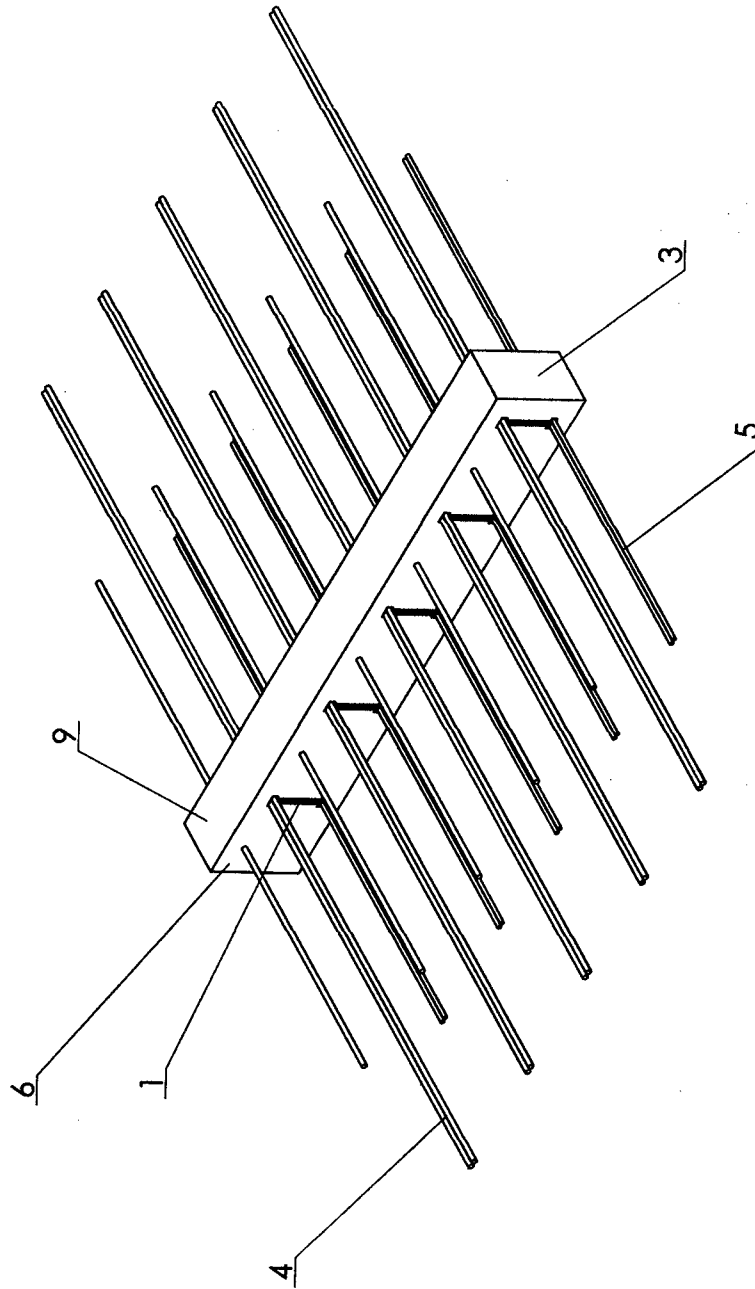


Fig. 2

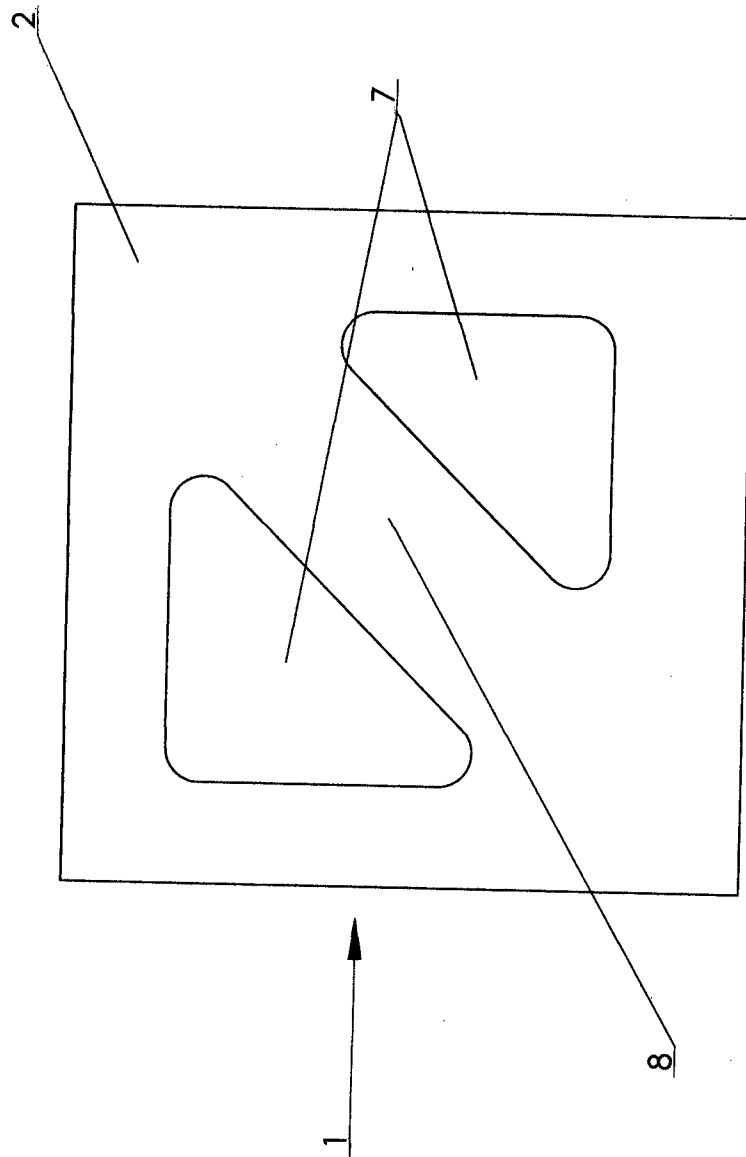


Fig. 3

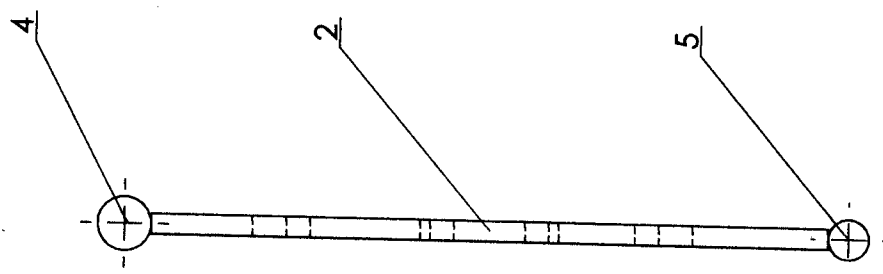
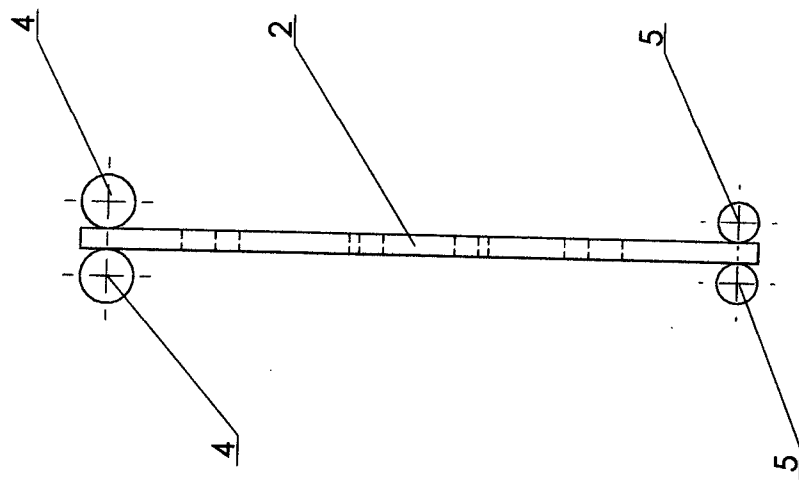


Fig. 4



INTERNATIONAL SEARCH REPORT

International application No

PCT/PL2012/000028

A. CLASSIFICATION OF SUBJECT MATTER
 INV. E04B1/00
 ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 E04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CH 690 966 A5 (CLEMENT GUTZWILLER [CH]) 15 March 2001 (2001-03-15)	1-3,6, 9-11,14
Y	column 2, line 16 - line 50; figures 1,3	4,5,7,8, 12,13, 15,16
Y	----- DE 196 52 736 A1 (SCHOECK BAUTEILE GMBH [DE]) 25 June 1998 (1998-06-25) column 2, line 35 - line 66; figure 1	4,5,7,8, 12,13, 15,16
A	----- DE 10 2006 056916 A1 (H BAU TECHNIK GMBH [DE]) 5 June 2008 (2008-06-05) paragraph [0031]; figure 8	9
A	----- EP 1 148 179 A1 (MEA MEISINGER STAHL UND KUNSTS [DE]) 24 October 2001 (2001-10-24) abstract; figure 1 -----	9



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CH 690966	A5	15-03-2001	NONE
DE 19652736	A1	25-06-1998	NONE
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