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(71) Applicant: **Pontarolo Engineering S.p.a.**
33078 San Vito al Tagliamento (IT)

(72) Inventor: **Pontarolo, Valerio**
33078 San Vito al Tagliamento (PN) (IT)

(74) Representative: **Lotti, Giorgio**
Corso Vittorio Emanuele II 61
10128 Torino (IT)

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(54) Disposable casing for thermally insulated walls in reinforced concrete

(57) Disposable casing (1) for thermally insulated walls in reinforced concrete, the casing (1) being provided with two main panels (2) which face each other and are limited towards the outside by respective lateral surfaces (2e), and with at least two casing spacers (3) which are interposed between the two main panels (2) in order to maintain the two main panels (2) at a determined dis-

tance from each other; at least one supplementary panel (5) being arranged against/abutting (a ridosso) the lateral surface (2e) of a respective main panel (2) and connecting elements (7) which are interposed between the supplementary panel (5) and the relative main panel (2) in order to render the supplementary panel (5) and the relative main panel (2) themselves integral with each other.

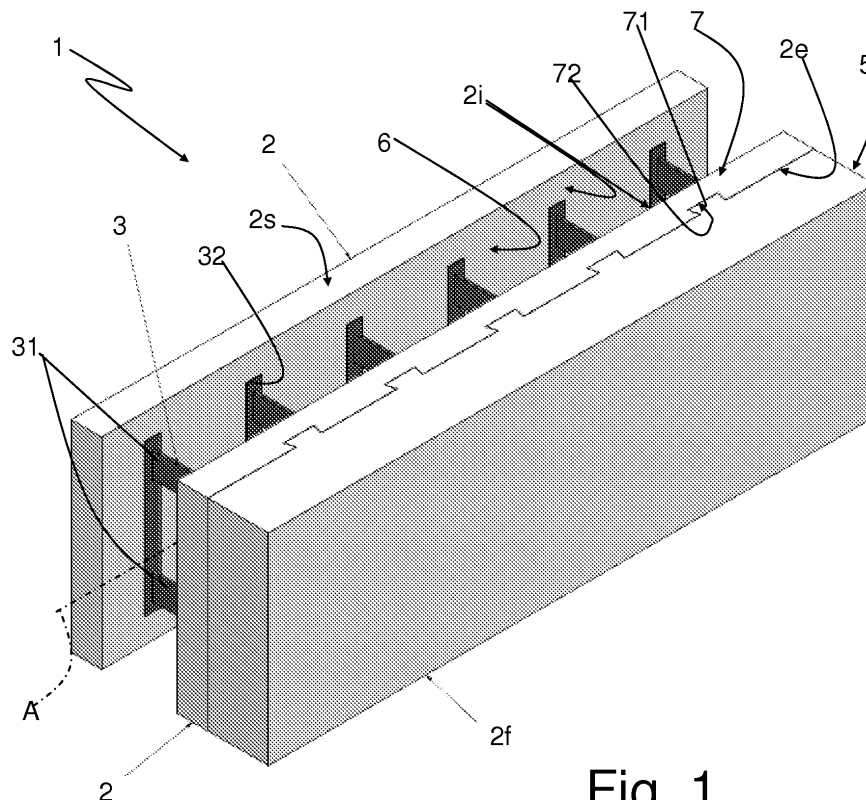


Fig. 1

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Description

[0001] The present invention refers to a disposable casing for thermally insulated walls in reinforced concrete.

[0002] In the field of the construction industry in general, disposable casings for thermally insulated walls in reinforced concrete are well-known, comprising two polystyrene panels which face each other and which are limited from the outside by respective lateral surfaces, and at least two casing spacers which are interposed between the two polystyrene panels themselves at a determined distance from each other.

[0003] Casings of the kind which have been described above may be mutually and speedily connected to each other in order to make up a structure, which is suitable for receiving a jet of cement within its interior, and once the cement has set it is capable of guaranteeing, in a single solution, both the cement's capacity for mechanical resistance, as well as the polystyrene's capacity for thermal insulation.

[0004] The aim of the present invention is to produce a disposable casing for thermally insulated walls in reinforced concrete which, while presenting a base structure of standard dimensions, will also permit the production of different thermal insulation capacities.

[0005] According to the present invention a disposable casing for thermally insulated walls in reinforced concrete will be produced as set out in Claim 1 herein.

[0006] The present invention will now be described with reference to the attached drawings, which illustrate a non-limiting form of embodiment of the present invention, in which:

- FIGURE 1 is a perspective view of a first preferred form of embodiment of a disposable casing for thermally insulated walls in reinforced concrete according to the present invention;
- FIGURE 2 is an exploded perspective view of the disposable casing which is shown in FIGURE 1;
- FIGURE 3 is a perspective view of a third preferred form of embodiment of a disposable casing for thermally insulating walls in reinforced concrete as illustrated in FIGURE 1;
- FIGURE 4 is an exploded perspective view of the disposable casing which is shown in FIGURE 3;
- FIGURE 5 is a perspective view of a third preferred form of embodiment of a disposable casing for thermally insulated walls in reinforced concrete as shown in FIGURE 1;
- FIGURE 6 is a perspective view of the disposable casing shown in FIGURE 5 in a collapsed operating configuration;
- FIGURE 7 is a perspective view of a fourth preferred form of embodiment of a disposable casing for thermally insulated walls in reinforced concrete as shown in FIGURE 1; and
- FIGURE 8 is an exploded perspective view of the

disposable casing which is shown in FIGURE 7.

[0007] With reference to FIGURES 1 and 2, the number 1 indicates a disposable casing for thermally insulated walls in reinforced concrete in its entirety.

[0008] The casing 1 presents an longer longitudinal axis A, and comprises two main panels 2, which are made of polystyrene, presenting a standard thickness, and which are arranged facing and parallel to each other and to the axis A.

[0009] The term "standard thickness" is herein taken to mean the thickness which is commonly adopted for this kind of panelling with, however, the difference that, in the casing 1 which is the subject of the present invention, the two panels 2 might not present the same thickness for reasons which shall be explained in the following description.

[0010] The panels 2 are delimited towards the outside of the casing 1 by respective lateral surfaces 2e, while they are delimited towards the inside of the casing 1 by respective lateral surfaces 2i which define a compartment 6 which is suitable for being filled with cement.

[0011] In addition, each panel 2 presents a preferably parallelepiped shape, and is further delimited by an upper surface 2s and by a lower surface 2f, which are parallel to each other and which are transverse to the relative surfaces 2i and 2e.

[0012] In addition, the casing 1 comprises two or more casing spacers 3 which in turn each comprise two respective intermediate slats 31, and two anchoring portions 32, which are assembled, preferably but not necessarily, by means of co-moulding with the panels 2, and which are arranged at opposite ends of each pair of slats 31. The anchoring portions 32 face the interior of the compartment 6, and may be rigidly connected to the relative slat 31 in such a way as to form a single body together with the slat 31 itself as is illustrated in FIGURES 1 and 2, or, as is alternatively illustrated in FIGURES 3 and 4, may be provided with respective pairs of coupling tracks 33 for rapid coupling with the relative slat 31 as well as to permit the "in situ" assembly of the casing 1, or, as is alternatively illustrated in FIGURES 5 and 6, may be provided with respective pairs of hinges 34 for relative rotation with the relative slats 31 and to permit the collapse of the casing 1 itself into a transport configuration.

[0013] In addition, the casing 1 comprises a supplementary panel 5 which is arranged abutting an external lateral surface 2e of a main panel 2 and a connecting component 7 which is interposed between the supplementary panel 5 and the relative main panel 2 in order to render the supplementary panel 5 and the relative main panel 2 themselves integral in relation to each other.

[0014] While the main panel 2 presents a standard thickness as has already been specified above, the supplementary panel 5 presents, instead, a thickness which may be adapted on the building site to any installation demands and as a means of increasing both the thermal insulation capacity of the casing 1, as well as permitting

the production of various thermal insulation capacities.

[0015] According to a form of embodiment which is not illustrated, but which is easily understandable from the description so far herein, the casing 1 may also be provided with two supplementary panels 5 which are arranged abutting the outer surfaces 2e or the relative main panels 2 and such supplementary panel 5 may also have different thicknesses from each other in accordance with the levels of thermal insulation which are to be reached according to necessity.

[0016] In addition, the supplementary panel 5 may also be made of the same material as the main panels 2, as it may also be made of other materials which present different thermal insulation capacities.

[0017] The connecting component 7 comprises a number of shaped projections 71 which are integral with the supplementary panel 5 and which are arranged parallel to each other and transverse to the axis A, and, for each shaped projection 71, a respective housing 72 with undercuts which are obtained through the outer surface 2e of the relative main panel. Alternatively, the arrangement of the projections 71 and of the housings 72 may be inverted in relation to what has just been described.

[0018] In particular, each shaped projection 71 is defined by a respective dovetailed moulding which extends for an entire height of the supplementary panel 5, while the relative housing 72 extends from a surface 2s to a surface 2f and presents a shape which is complementary to the relative projection 71 and is such as to permit the connection of the panel 15 to the panel 2 by means of reciprocal sliding without any successive consequent possibility whatsoever of detachment, or of any separation in a transverse direction of the surface 2e.

[0019] The supplementary panels 6 which have been described above present the advantage of being able to calibrate the thermal insulation capacity of the casing 1 directly on site and in accordance with local weather and climate conditions without the need to vary the thickness of the main panels 2 with obvious positive consequences on the production costs of these products, as well as on the standardisation of the latter.

[0020] It is obvious from the foregoing description that in the case that the casing 1 is provided with a single supplementary panel 5, the relative panel 2 will present a thickness which is greater than the other panel 2 in that it is able to contain the housings 72, while, whenever the casing 1 is provided with two supplementary panels 5, both the panels 2 can present the same thickness.

[0021] AS stated above, FIGURES 3 and 4, like FIGURES 5 and 6, illustrate different connection methods between the two panels 2 of the casing 1, which, in the shape of its basic embodiment, provides for the use of spacers 3 which are produced in a single piece, while in the alternative form of embodiment which is shown in FIGURES 3 and 4 it provides for the use of spacers which are detachable transverse to the axis A from the respective anchoring portions by means of the relative tracks 33 permitting the supply of the casing 1 in an unassembled

configuration, and in the alternative form of embodiment which is shown in FIGURES 5 and 6 it provides for the use of spacers 3 in which, between the slats 31 and the anchoring portions 32, hinges 33' are arranged to permit the supply of the casing 1 in a collapsed condition with the panels 2 arranged one abutting the other.

[0022] FIGURES 7 and 8 illustrate a casing 1' which is substantially similar to the casing 1, from which the casing 1' differs due to the fact that the connecting component 7 is defined by a layer 7' of adhesive material which is interposed between the main panel 2 and the relative supplementary panel 6 in such a way as to stick the latter to the former in order to render them integral in relation to each other.

[0023] The layer 7' may be used exclusively for the connection of a supplementary panel 5 to the relative secondary main panel 2, or, according to need, may also be used together with the projections 71 which have been described above.

Claims

1. Disposable casing (1)(1') for thermally insulated walls in reinforced concrete, the casing (1)(1') comprising two main panels (2) which face each other and which are limited from the outside by respective lateral surfaces (2e), and at least two casing spacers (3) which are interposed between the two main panels (2) in order to maintain the two main panels (2) themselves at a determined distance from each other; the casing (1) (1') being **characterised by** the fact of comprising at least one supplementary panel (5) which is arranged abutting the lateral surface (2e) of a respective main panel (2) and connecting means (7)(7') which are interposed between the supplementary panel (5) and the relative main panel (2) in order to render the supplementary panel (5) and the main panel (2) themselves integral in relation to each other.
2. Disposable casing according to Claim 1, **characterised by** the fact that the said two main panels (2) present a standard thickness and the said supplementary panel (5) presents, instead, a thickness which may be adapted according to installation needs.
3. Disposable casing according to Claims 1 or 2, **characterised by** the fact of comprising two supplementary panels (5) which are arranged abutting the lateral surfaces (2e) of the said two main panels (2).
4. Disposable casing according to Claims 1, 2 or 3, **characterised by** the fact that the main panel (2) and the supplementary panel (5) are made of the same material, preferably polystyrene.

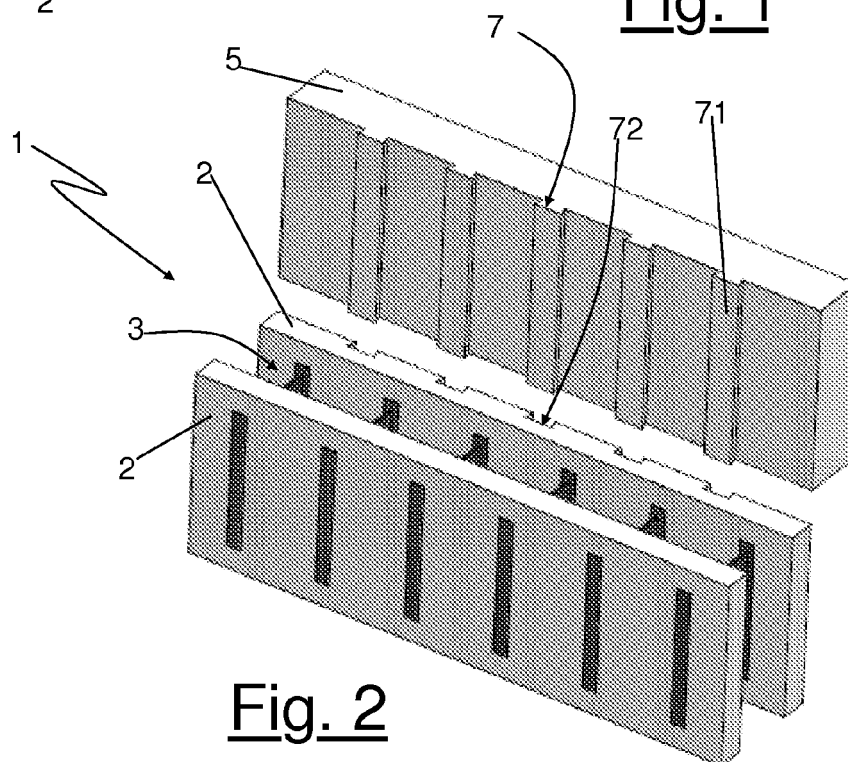
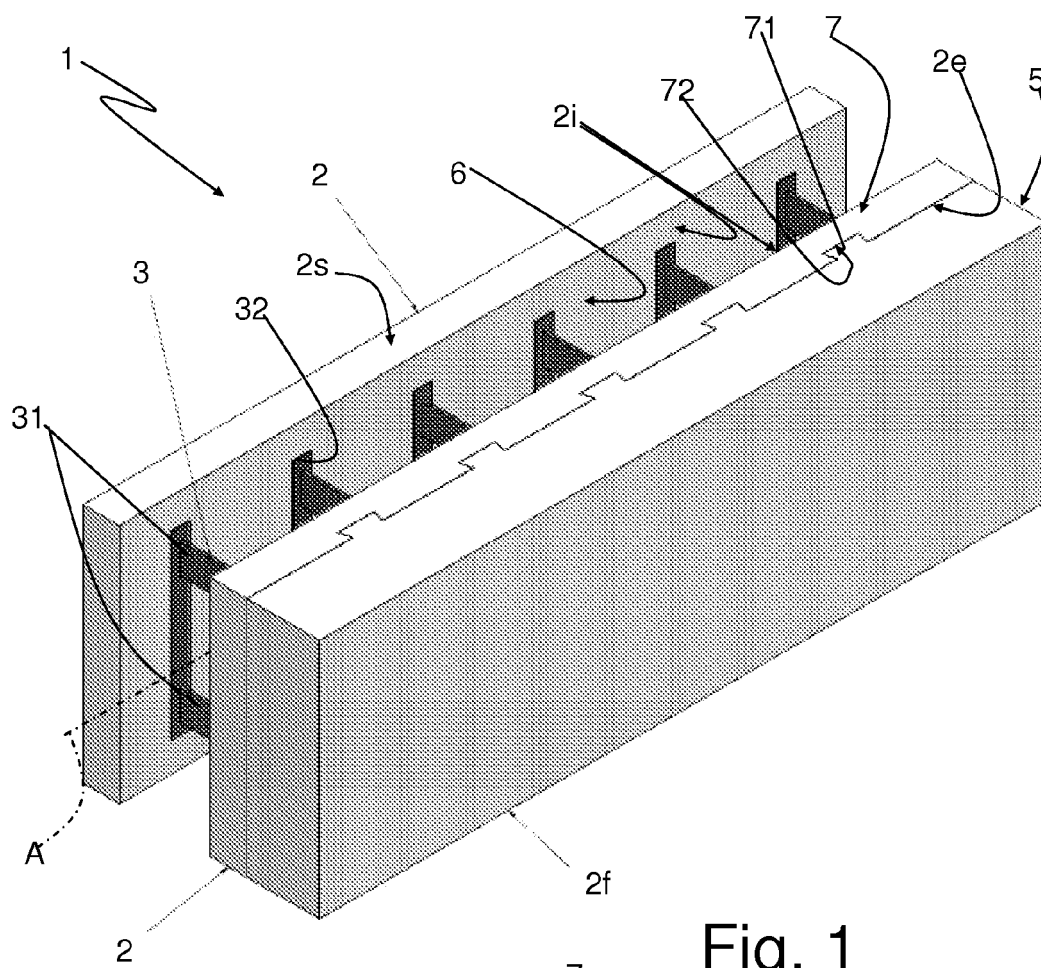
5. Disposable casing according to any of the preceding Claims whatsoever, **characterised by** the fact that the said connecting means (7) comprise a number of shaped projections (71) which are integral with the main panel (2) or with the supplementary panel (5), and, for each shaped projection, respective undercuts (72) which are obtained on the relative supplementary panel (5) or the main panel (2). 5
6. Disposable casing according to Claim 5, **characterised by** the fact that the said shaped projections (71) are defined by respective dovetailed mouldings which extend for an entire height of the main panel (2) or the supplementary panel (5). 10 15
7. Disposable casing according to any of the preceding Claims whatsoever from 1 to 5, **characterised by** the fact that the said connecting means (7) are defined by a layer (7') of adhesive material which is interposed between the main panel (2) and the relative supplementary panel (5). 20
8. Disposable casing according to any of the preceding Claims whatsoever, **characterised by** the fact that the said casing spacers (3) are provided with respective hinges (33') in order to permit the collapse of the casing (1)(1') itself into a transport configuration. 25
9. Disposable casing according to any of the preceding Claims whatsoever from 1 to 7, **characterised by** the fact that the said casing spacers (3) are provided with detachable elements (31) in order to permit the supply of the casing (1)(1') itself in an un-assembled configuration. 30 35

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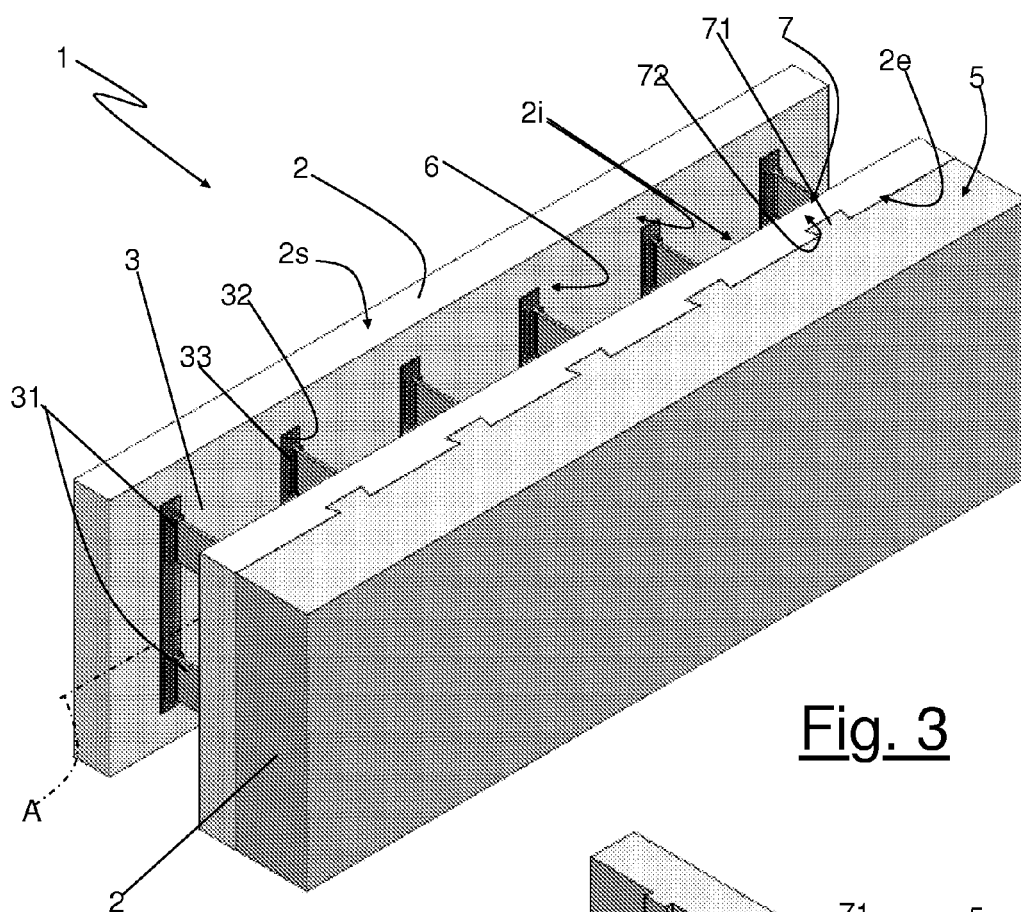


Fig. 3

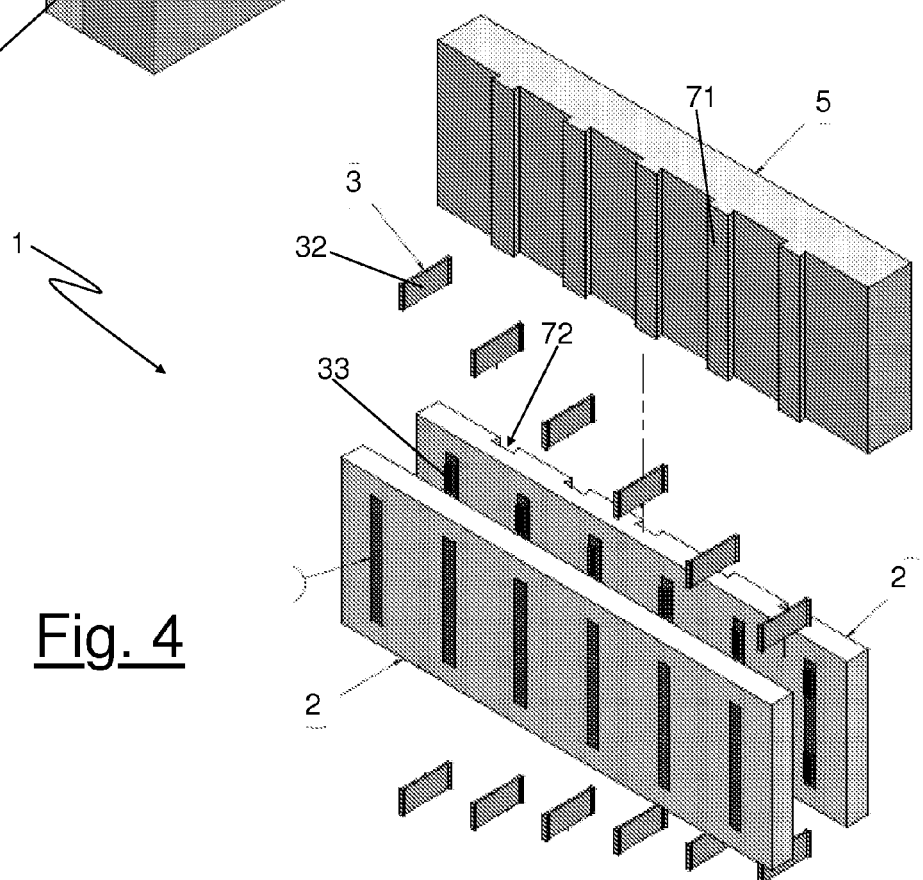


Fig. 4

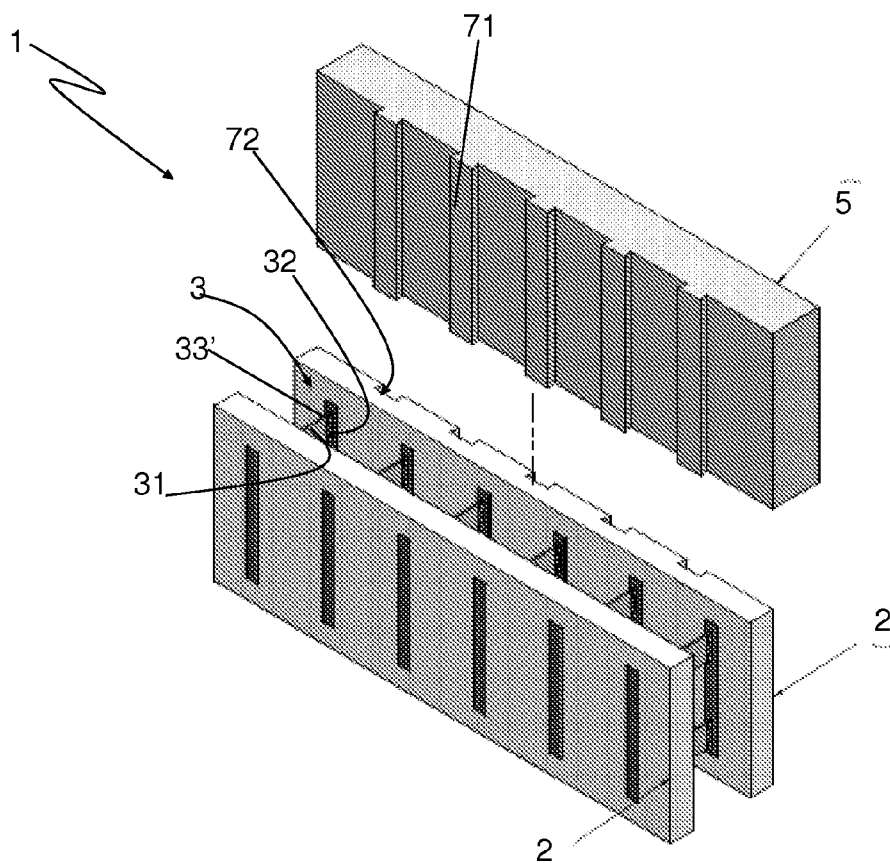


Fig. 5

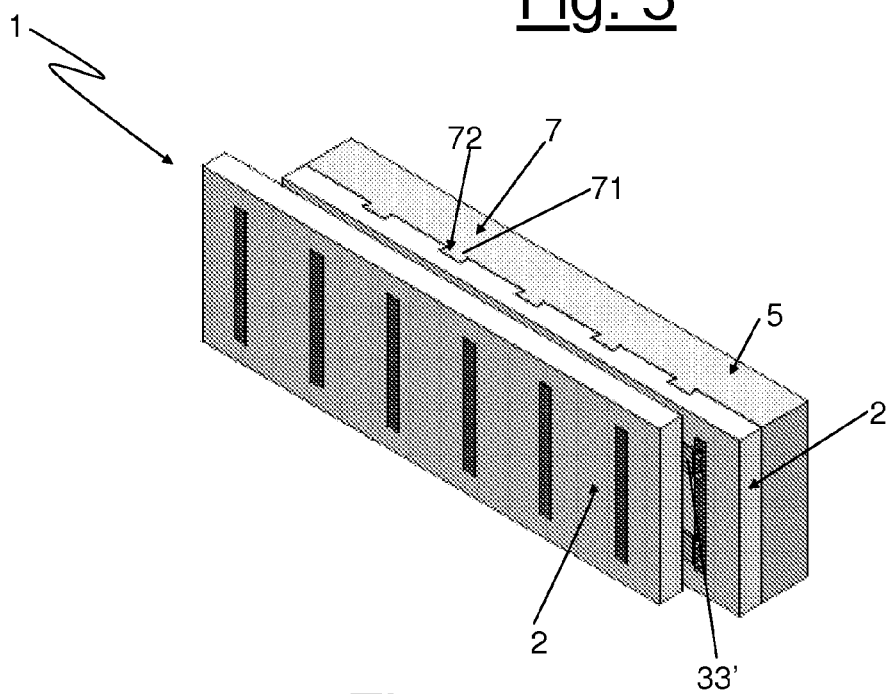


Fig. 6

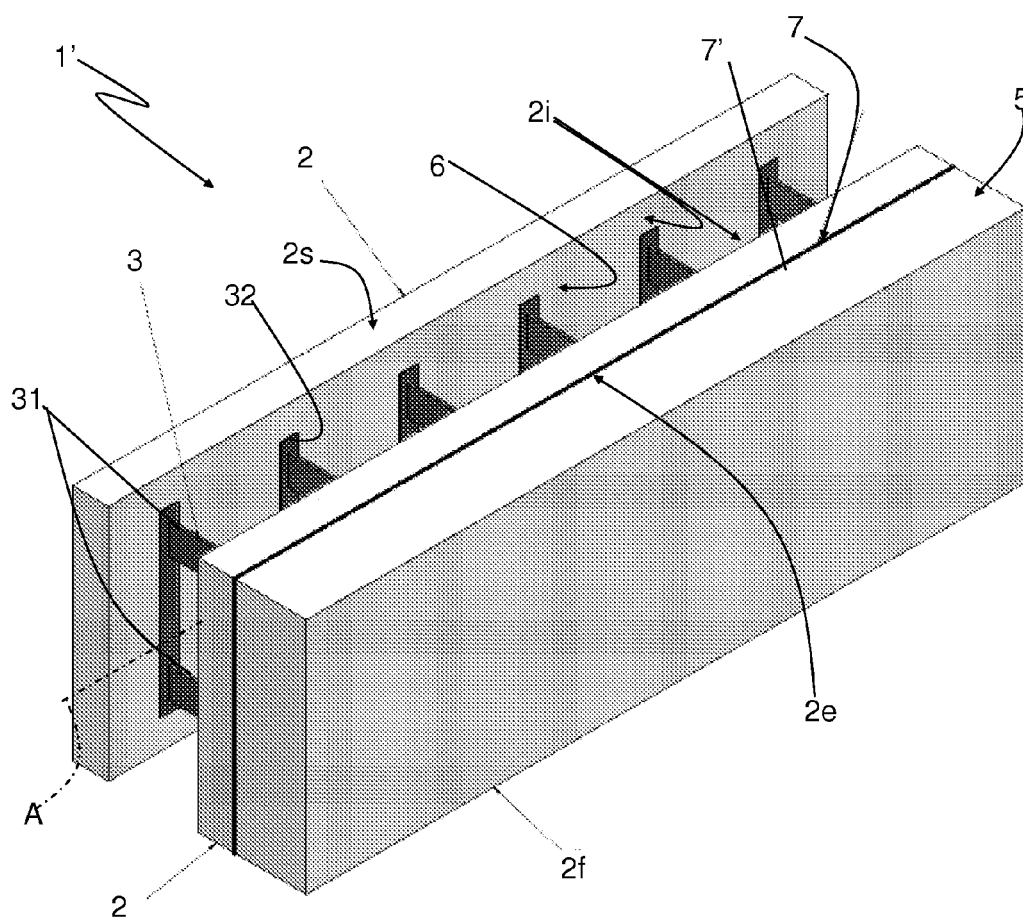


Fig. 7

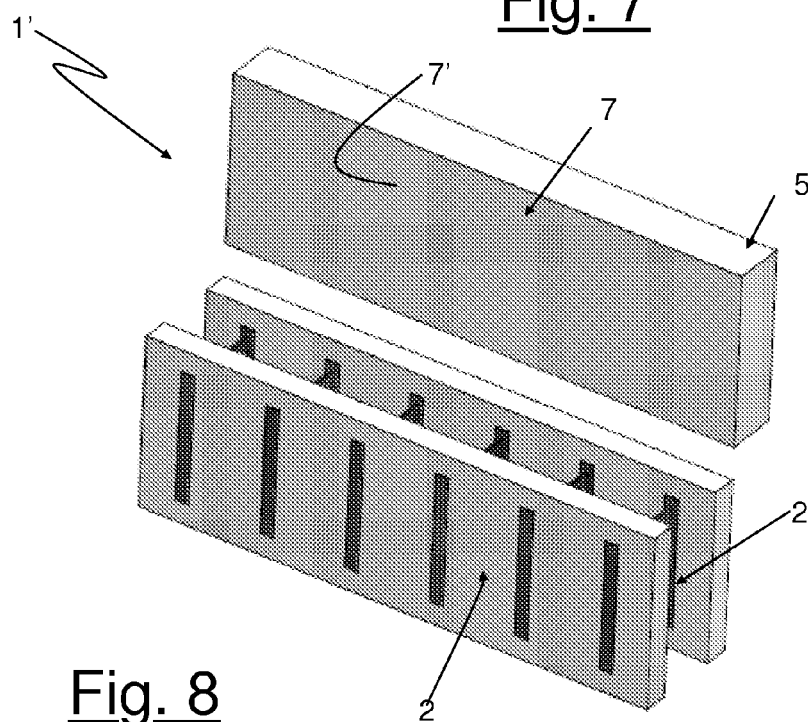


Fig. 8