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(54) Benævnelse: **Indretning til efterfølgende termisk isolerende, kraftoverførende forbindelse af et andet lastbærende strukturelement med et første lastbærende strukturelement, samt struktur med en sådan indretning**

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GB-A- 2 567 685
KR-B1- 101 462 801

Description

The invention relates to a device for the subsequent thermally-insulating, force-transmitting connection of a second load-bearing building part to a first load-bearing building part, in particular of an intermediate floor to a balcony slab, and to a building having a device of this type.

WO 2017/086777 A1 suggests a device for the subsequent connection of a prefabricated balcony to a building. A recess in which the tension rods are connected to one another is provided on the upper side of the balcony for connecting the tension rods of the balcony slab and the building.

GB 2 567 685 A discloses the features of the pre-characterising clause of claim 1.

The object of the present invention is to create a device for the subsequent thermally-insulating, force-transmitting connection of a second load-bearing building part to a first load-bearing building part, this device having an advantageous structure. A further object of the present invention is to specify a building having such a device.

This object is achieved with regard to the device for the subsequent thermally-insulating, force-transmitting connection of a second load-bearing building part to a first load-bearing building part by means of a device having the features of claim 1. The object is achieved in terms of the building by means of the features of claim 14.

According to the invention, the first tension rods on the first longitudinal side of the protrude into the protective casing, that the second tension rods on the second longitudinal side protrude into the protective casing and that the connecting device is arranged in the protective casing. Due to the fact that the connecting device is arranged in the protective casing it is possible to protect the connecting device simply from environmental impacts by closing the protective casing. At the same time, it obtains an attractive optical appearance since once the protective casing has been closed the connecting device is no longer visible from the outside. As a result, there is no need for the subsequent jointing of the region of the connecting device using a quick-setting mortar or similar product. This simplifies assembly on site. There is no need to provide a recess in the first or the second building part in which to arrange the connecting device. As a result, any adverse impact of the first and/or second building parts on appearance are avoided.
The arrangement in the protective casing means that if a flame-retardant material is used as the insulating material and/or as the material for the protective casing the connecting device is also fire-protected. The tension bars that protrude into the protective casing on the first longitudinal side are advantageously provided to be

embedded in the first building part, and the tension bars that protrude into the protective casing on the second longitudinal side are advantageously provided to be embedded in the second building part.

Due to the arrangement of the connecting device in the protective casing it is possible to ensure adequate corrosion protection of the connecting device and of the portions of the tension bars that protrude into the protective casing in a simple manner. There is no need for any additional corrosion protection.

The tension rods are provided to transfer forces in the concrete of the building parts. The necessary tension rod length is calculated using the forces to be transferred. When calculating the length of the tension rods only the portions of the tension rods that are well embedded in concrete of sufficient strength can be fully taken into account. If recesses are subsequently filled with a filler compound it is frequently impossible to sufficiently ensure the strength of the filler compound and its connection to the tension rods. As a result, tension rod portions that run through the recesses cannot be used or cannot be used to the same extent in the calculation as tension rod portions that protrude into cast-in-place concrete or concrete cast in a prefabrication plant.

The fact that when the connection device is arranged in the protecting casing the entire length of the tension rods outside the protective casing can be embedded in the first or the second building part during the manufacture of the building parts and that there is therefore no need to subsequently fill a recess with a filler compound such as mortar, for example, means that the entire length of the tension rods running outside the protective casing can be taken into account in calculating the necessary tension rod length, in particular in calculating the overlap length. As a result, the length of tension rod required is smaller.

The first tension rods and the second tension rods are advantageously arranged in a common plant that runs perpendicularly to the vertical direction.
This achieves more favourable force transmission. At the same time, it is possible to connect the tension rods simply inside he protective casing since there is no need to compensate for any height offset between the tension rods.

The connecting device particularly advantageously comprises a connecting plate that is arranged in the protective casing and to which the first tension rods and the second tension rods are fixed. In an advantageous variant of the embodiment the connecting plate is arranged on a longitudinal side of the protective casing inside the protective casing. The connecting plate is particularly advantageously arranged on the longitudinal side of the protective casing closer to the balcony slab. The tension rods embedded in the building that protrude through the longitudinal side of the

protective casing further away from the balcony slab are preferably connected permanently to the connecting plate, e.g. by welded connections. When the balcony slab is fitted, the tension rods of the balcony plate are preferably pushed through openings in the connecting plate and fixed by means of screw connections, preferably by nuts. To this end, the connecting device advantageously has at least one screw connection. The openings in the connecting plate are advantageously dimensioned large enough to allow tolerance compensation between the tension rods of the building and the tension rods of the balcony slab.

To ensure easy fitting/installation the protective casing advantageously has at least one closable access opening via which the connecting device can be accessed. The access opening is particularly preferably of re-closable design so that following installation the connecting device can be accessed again by reopening the protective casing.

A simple design is produced if the access opening extends over the entire length and the entire width of the protective casing. It is, however, also possible for the access opening to extend over the region of the protective casing covering the connecting device only. In an alternative design the access opening may extend over the region of the threaded connections only. It is also possible for the protective casing to have a plurality of access openings via which one or more threaded connections are accessible.

The protective casing is preferably filled with insulating material in the form of mineral wool. At least part of the insulating material is advantageously introduced after the first and second tension rods have been connected to one another inside the protective casing. A simple design is produced if the protective casing is made of plastic. The protective casing is particularly preferably made of extruded sections. This makes it possible to produce the protective casing simply and economically. The protective casing preferably has a main body and at least one cover that can be connected to the main body. The cover is preferably detachably connected to the main body. The cover may be connected to the main body by a snap connection or by a locking or clamping connection, for example. A different manner of connecting the cover and the main body may also be advantageous. Alternatively, the cover may be un-detachably connected to the main body by means of an adhesive connection, for example.

The end faces of the protecting casing perpendicular to the longitudinal direction can be open. This is particularly advantageous when a plurality of protective casings is arranged with their end faces adjacent to one another. In the case of protective casings that close the insulating joint in the longitudinal direction it is particularly advantageous for the protective casing to be closed at at least one end. A further

cover may be provided for this purpose. The protective casing is advantageously designed so that it is closed in both the transverse direction and the vertical direction.

At least one support to vertically support the second building part is advantageously arranged on the second longitudinal side of the protective casing for the transmission of shear forces. This means that the second building part can subsequently be fitted to the first building part in a simple manner. In this context, subsequently means that the second building part, e.g. a balcony slab, is entirely prefabricated and the tension rods are embedded in the balcony slab before the balcony slab is fixed to the first building part. This allows the building to be constructed simply and economically. This type of construction minimises crane time.

At least one shear force rod advantageously protrudes through the protective casing. In a preferred design, the at least one shear force rod is fixed to the support that vertically supports the second building part. However, a different manner of connecting the shear force rod may also be advantageous.

As far as the building is concerned, the building has a first load-bearing building part made of concrete, a second load-bearing building part made of concrete and a device for connecting the second load-bearing building part to the first load-bearing building part. The device advantageously has two units that can be connected to one another, i.e. one unit to be fixed to the first building part and one unit to be fixed to the second building part, that can be connected to one another after the building parts have been fabricated. Preferably, first tension rods are embedded in the first building part and second tension rods are embedded in the second building part. The insulating body is preferably fixed to the first building part. The second building part can be fixed to the first building part by connecting the tension rods together.

Embodiments of the invention are described below with reference to the drawings.

Fig. 1 shows a schematic sectional view through a building.

Fig. 2 shows a schematic view of a detail of the tensile-force-transmitting means of the building according to claim 1 viewed in the direction indicated by arrow II in Fig. 1.

Fig. 3 shows a schematic side view of the device for connecting the two building parts in an open protective casing.

Fig. 4 shows a schematic perspective view of the device from Fig. 3 with the protective casing open.

Fig. 5 shows a schematic side view of the device from Figs. 3 and 4 with the protective casing closed.

Fig. 6 shows a schematic perspective view of the device from Fig. 5 with the protective casing closed.

Figs. 7 to 10 show schematic perspective views of the first building part and the elements arranged on this first building part for transmitting compression and shear forces of the device for connecting the building parts.

Fig. 1 shows schematically a detail of a building 50. The building 50 has a first building part 2, which is an intermediate floor in the embodiment, and a second building part 3, which is a balcony slab in the embodiment. The second building part 3 is connected in a thermally-insulating and force-transmitting manner by a thermally-insulating construction element 1 to the first building part 2. The load-bearing building parts 1 and 3 are made of concrete, in the embodiment of a steel-reinforced concrete. The load-bearing building part 3 has been fixed to the first load-bearing part 2 after fabrication. This allows the load-bearing building part 2 to be manufactured to a high quality in a prefabrication plant, for example, and to be fixed very quickly to the load-bearing part 3 on the building site, thereby reducing crane time and so lowering production costs. The second load-bearing building part 3 may, for example, be a balcony produced as a prefabricated part.

The thermally-insulating construction element 1 comprises an insulating body 5 that is arranged in a separating joint 4 between the first building part 2 and the second building part 3. The insulating body 5 has a first longitudinal side 6 that is arranged on the first building part 2. The second, oppositely situated longitudinal side 7 runs adjacent to the second building part 3. In the embodiment, a narrow gap is formed between the insulating body 5 and the second building part 3. However, the insulating body 5 may also abut the second building part 3.

As shown in Fig. 2, the insulating body 5 has a protective casing 33 that is filled with insulating material 32. The protective casing 33 is advantageously made of plastic. The protective casing 33 is, in particular, made from one or more extruded plastic sections. The insulating material 32 is preferably mineral wool, although a different insulating material may also be used. The longitudinal sides 6 and 7 of the protective casing 33 are preferably of closed design.

One or more protective casings 33 advantageously extend over the entire length of the expansion joint 4. In this arrangement, adjacent protective casings 33 are advantageously arranged such that their end faces 34 abut one another or – if the separating joint 4 runs at an angle – such that one end face 34 of one protective casing 33 abuts a longitudinal side 6 of an adjacent protective casing 33. The end faces 34 of the protective casing 33 are also shown in Figs. 7 and 8.

The protective casing 33 has a longitudinal direction 28 that is oriented in the longitudinal direction of the expansion joint 4. When fitted, the longitudinal direction 28 preferably runs horizontally. The end faces 34 run transversely, in particular perpendicularly, to the longitudinal direction 28. As shown in Fig. 1, the protective casing 33 has a vertical direction 30 that runs perpendicularly to the longitudinal direction 28. When fitted, the vertical direction 30 preferably runs perpendicularly. The protective casing 33 has a transverse direction 29 shown in Fig. 1 that runs from the first longitudinal side 6 to the oppositely situated longitudinal side 7. The transverse direction 29 is oriented perpendicularly to the longitudinal direction 28 and perpendicularly to the vertical direction 30. When fitted, the transverse direction 29 preferably runs horizontally.

As shown in Fig. 1, the protective casing 33 has an underside 8 that is oriented in the longitudinal direction 28 and connects the longitudinal sides 6 and 7, and an upper side 47 that that is oriented in the longitudinal direction 28 and connects the longitudinal sides 6 and 7. When fitted, the upper side 47 is arranged above the underside 8. The protective casing 33 is advantageously designed so that the upper side 47 and the underside 8 are closed. The protective casing 33 may be designed so that the end faces 34 that run transversely to the longitudinal direction 28 are open or closed.

Together with further elements the thermally-insulating construction element 1 forms a device for the thermally-insulating connection of the second building part 3 to the first building part 2. The device consists of the thermally-insulating construction element 1, which is fixed to the first building part 2, and of further force-transmission means arranged on the second building part 3. The force transmission-means arranged on the second building part 3 are advantageously detachably connected to the force-transmission means arranged in the first building part 2. This enables the subsequent connection of the second building part 3 to the first building part.

For the transmission of tensile forces between the building parts 2 and 3 the device comprises first tension rods 9, which are embedded in the first building part 2, and second tension rods 10, which are embedded in the second building part 3. The tension rods 9 and 10 are connected to one another so as to transmit forces by a connecting device 35. This connecting device 35 is arranged in the protective casing 33. The first tension rods 9 protrude through the first longitudinal side 6 into the protective casing 33. The second tension rods 10 protrude through the second longitudinal side 7 into the protective casing 33.

In the embodiment, the connecting device 35 comprises a connecting plate 11. The first tension rods 9 are permanently connected to the connecting plate 11, in the embodiment by welded connections 15 (Fig. 2). In the embodiment, the connecting plate 11 is arranged on the inside of the second longitudinal side 7 inside the protective casing 33. This produces a space-saving arrangement in which screw connections 40 of the second tension rods 10 are easily accessible. The second tension rods 10 are screwed to the connecting plate 11. The connecting plate 11 has openings 36 (Fig. 1) through which the second tension rods 10 protrude into the interior of the protective casing 33. The second tension rods 10 have threaded portions 41 at the ends that protrude into the protective casing 33. These threaded portions 41, together with the fastening nuts that are screwed onto them, form screw connections 40. The second tension rods 10 are connected to the connecting plate 11 by the screw connections 40. On the side of the connecting plate 11 arranged facing away from the second longitudinal side 7 a fastening nut 14 is screwed to a threaded portion 41 of each tension rod 10. In the embodiment, a washer 21 is arranged between each of the fastening nuts 14 and the connecting plate 11.

The first tension rods 9 and the second tension rods 10 project away from the connecting plate 11 on opposite sides. The tension rods 9 and 10 end in the interior of the protective casing 33.

In an alternative design, it is possible for both the first tension rods 9 and the second tension rods 10 to be connected to the connecting plate 11 by screw connections 40. A different force-transmitting connection of the tension rods 9 and 10 may also

be advantageous. In such an arrangement, the connecting device 35 is designed such that the tension rods 9 and 10 can be connected to one another after fabrication of the buildings parts 2 and 3.

A support 17 is arranged on the second building part 3 for the transmission of compression forces and shear forces. In the embodiment, this support 17 takes the form of a support bracket. The support 17 advantageously forms part of the thermally-insulating construction element 1 and is held captive, in particular on the protective casing 33. The support 17 is permanently connected to shear force rods 16. The shear force rods 16 are embedded in the concrete of the first building part 2 and thereby connected in a force-transmitting manner to the first building part 2. The support 17 rests in the horizontal direction on at least one first compression rod 19 that is embedded in the first building part 2. This first compression rod 19 extends from the second longitudinal side 7 through the first longitudinal side 6 of the protective casting 33 into the first building part 2. The first compression rod 19 forms a pressure element. A different design of pressure element may also be advantageous. It is possible for the support 17 to be connected permanently to the at least one compression rod 19.

In the embodiment, an angle bracket 31 that lies on the support 17 is embedded in the second building part 3. Both compression forces acting in the horizontal direction and shear forces acting in the vertical direction are transmitted from the second building part 3 into the support 17 via the angle bracket 31. The angle bracket 31 is connected to at least once second compression rod 20. The at least once second compression rod 20 is embedded in the second building part 3. A different type of compression force transmission to the second building part may also be advantageous.

As shown in Fig. 2, the first tension rods 9 have longitudinal axes 12, and the second tension rods 10 have longitudinal axes 13. As shown in Fig. 1, the first tension rods 9 and the second tension rods 10 are arranged at the same height. The longitudinal axes 12 and 13 lie in a common plane 38 that runs horizontally. The plane 38 runs parallel to the longitudinal direction 20 and parallel to the transverse direction 29. The plane 38 runs perpendicularly to the vertical direction 30. The tension rods 9 and 10 are arranged in the plane 38 offset in relation to one another. As shown in Fig. 2, in the embodiment the longitudinal axes 12 and 13 of adjacent tension rods 9 and 10 have an offset that is measured in the longitudinal direction 28.

The underside 8 of the protective casing 33 runs approximately in a plane with an underside 45 of the support 17 and an underside 46 of the second building part 3.

Figs. 3 to 6 show the design of the protective casing 33 in detail. As shown in Figs. 3 and 4, the protective casing 33 is formed of a main body 42 and a cover 43. In Figs. 3 and 4, the cover 43 is shown removed. The cover 43 can be placed on and connected to the main body 42 in the direction of the arrow 48. In the state shown in Figs. 3 and 4 with the cover removed 43 an access opening 44 is open. The connecting device 35 is accessible from outside the protective casing 33 via the access opening 44. The second tension rods 10 can be passed through openings in the connecting plate 22 and then fixed by the fastening nuts 14. In this arrangement, the fastening nuts 14 are accessible from outside through the access opening 44. Once the fastening nuts 4 have been fixed, the main body 42 can be filled with insulating material, preferably mineral wool, and the cover 43 can then be put in place and fixed. The cover 43 can be fixed to the main body 42, in particular by a detachable connection such as a snap connection, a clamp connection or a locking connection, for example. The detachable connection is advantageously designed such that the cover 43 can be removed again without destroying it. A different manner of connecting the cover 43 and the main body 42, such as an adhesive connection, for example, may also be provided.

As also shown in Figs. 3 and 4, arranged on the second longitudinal side 7 of the protective casing 33 is a shuttering body 37 that is embedded in the second building part 3. This shuttering body 37 forms recesses for cheeks 18 of the support 17 (Fig. 7). As shown in Fig. 3, the angle bracket 3 abuts the shuttering body 37. In the embodiment, as shown in Figs. 4 and 6, two second compression rods 20 are fixed to the angle bracket 31. A different number of second compression rods 20 may also be provided.

As shown in Figs. 3 to 6, the access opening 44 extends over the entire width b measured in the transverse direction 29 and the over entire length c measured in the longitudinal direction 28 of the protective casing 33. As shown in Figs. 4 and 6, the end faces 34 of the protective casing 33 that lie perpendicular to the longitudinal direction 28 are of open design. It is, however, also possible for the protective casing 33 to be pf completely closed design in its closed state.

In the embodiment, the main body 42 is U-shaped in design and forms the underside 8 and the longitudinal sides 6 and 7 of the protective casing 33. The cover 42 is also U-shaped in cross section, the legs of the U that forms the cover 42 being short in design.

Figs. 7 to 10 show the thermally-insulated construction element 1 on the first building part 2 in detail. In this arrangement, the first tension rods 9 are illustrated in schematic form only and without the connecting device 35. The connecting plate 11 at which the tension rods 9 end in the protective casing 33 is not shown.

The support 17 of the thermally-insulating construction element 1 has two legs 24 and 25 that are oriented at right angles to one another in the embodiment. These legs 24 and 25 run parallel to the longitudinal direction 28 of the protective casing 33. The first leg 24 runs parallel to the vertical direction 30. When fitted, the first leg 24 is advantageously oriented vertically on the building 50. The first leg 24 forms a contact face 22 on the side facing away from the protective casing 33 for the transmission of compression forces. The second leg 25 runs parallel to the transverse direction 29 and when fitted is advantageously oriented horizontally. Formed on the side of the second leg 25 that faces upwards when fitted is a contact surface 23 for the transmission of shear forces. As also shown in Figs. 9 and 10, the second leg 25 of the support 17 runs close to the underside 8 of the insulating body 5. The second building part 3 can be placed on the contact face 23 and then fixed to the first building part 2 by the screw connections 40. The space spanned by the two legs 24 and 25 is closed at the ends of the support 17 by cheeks 18, which run transversely to the longitudinal direction 28.

The shear rods 16 are embedded in the first building part 2 and have a portion 26 that runs at an angle to the vertical direction 30 and at an angle to the transverse direction 29. When fitted, the angled portion 26 slopes down from the first building part 2 to the second building part 3. The angled portions 26 of the two shear rods 16 run along the outsides of the cheeks 18, which face away from one another. Each angled portion 26 is fixed, in the embodiment welded, directly to a cheek 18. The angled portion 26 of the at least one shear rod 16 protrudes through the insulating body 5.

In the embodiment shown, the support 17 is arranged outside the protective casing 33, specifically on the longitudinal side 7 of the protective casing 33 that faces away from the longitudinal side 6. The support 17 protrudes through the longitudinal side 7 into the region of the second building part 3. The first compression rods 19 are fixed to the first leg 24 on the side of the first leg 24 facing the protective casing 33. The compression rods 19 take the form of comparatively long, straight rods that are embedded in the concrete of the first building part 2 in order to transmit compression forces. The compression rods 19 can be screwed, welded or fixed in a different manner to the support 17. A different design of the compression force transmission elements may also be advantageous.

The support 17 is advantageously made of metal. The support 17, in particular including the at least one cheek 18, is made of sheet metal, in particular of at least two sheet metal parts that are connected to one another.

In an alternative version of the embodiment (not illustrated here) it is also possible for both the tension rods 10 and the tension rods 9 to be fixed to the connecting

plate 10 by fastening nuts 14. A washer 21 is advantageously arranged between each fastening nut 14 and the connecting plate 11. However, these washers 21 may also be omitted.

PATENTKRAV

1. Indretning til efterfølgende termisk isolerende, krafttransmitterende forbindelse af et andet lastbærende strukturelement (3) med et første lastbærende strukturelement (2), især af en altanplade med et bygningsloft, hvor indretningen har et isolationslegeme (5) til anbringelse i en skillefuge (4) imellem det første strukturelement (2) og det andet strukturelement (3), **kendetegnet ved, at** isolationslegemet (5) er dannet af en dimensionsmæssig stabil beskyttelseskasse (33), som er fyldt med isolationsmateriale (32), hvor beskyttelseskassen (33) har en første langsgående side (6), som er beregnet til anbringelse på det første strukturelement (2), og en modstående placeret anden langsgående side (7), hvor beskyttelseskassen (33) har en langsgående retning (28), en tværgående retning (29), som strækker sig vinkelret på den langsgående retning (28) og fra den første langsgående side (6) til den anden langsgående side (7), og en vertikal retning (30), som strækker sig vinkelret på den langsgående retning (28) og vinkelret på den tværgående retning (29), hvor indretningen har i det mindste ét trykelement til transmission af trykkræfter imellem det første strukturelement (2) og det andet strukturelement (3), hvilket i det mindste ene trykelement strækker sig i det mindste fra den første langsgående side (6) til den anden langsgående side (7) af beskyttelseskassen (33), hvor indretningen omfatter første trækstænger (9) og andre trækstænger (10) og også en forbindelsesindretning (35) til efterfølgende krafttransmitterende forbindelse af de andre trækstænger (10) med de første trækstænger (9), **at** de første trækstænger (9) stikker ind i beskyttelseskassen (33) ved den første langsgående side (6), og at de andre trækstænger (10) stikker ind i beskyttelseskassen (33) ved den anden langsgående side (7), og **at** forbindelsesindretningen (35) er anbragt i beskyttelseskassen (33).

2. Indretning ifølge krav 1,
kendetegnet ved, at de første træstænger (9) og de andre trækstænger (10) er anbragt i et fælles plan (38), som strækker sig vinkelret på den vertikale retning (30).

3. Indretning ifølge krav 1 eller 2,
kendetegnet ved, at forbindelsesindretningen (35) omfatter en forbindelsesplade (11) anbragt i beskyttelseskassen (33), til hvilken forbindelsesplade de første trækstænger (9) og de andre trækstænger (10) er fikserede.

4. Indretning ifølge krav 3,

kendetegnet ved, at forbindelsespladen (11) er anbragt i beskyttelseskassen (33) ved en langsgående side (6, 7) af beskyttelseskassen (33).

5. Indretning ifølge ethvert af kravene 1 til 4,
kendetegnet ved, at forbindelsesindretningen (35) omfatter i det mindste én skrueforbindelse (40).

6. Indretning ifølge ethvert af kravene 1 til 5,
kendetegnet ved, at beskyttelseskassen (33) har i det mindste én lukbar adgangsåbning (44), via hvilken forbindelsesindretningen (35) er tilgængelig.

7. Indretning ifølge krav 6,
kendetegnet ved, at adgangsåbningen strækker sig over hele længden (c), målt i den langsgående retning (28), og hele bredden (b) målt i den tværgående retning (29) af beskyttelseskassen (33).

8. Indretning ifølge ethvert af kravene 1 til 7,
kendetegnet ved, at beskyttelseskassen (33) er fyldt med mineraluld som isolationsmateriale (32).

9. Indretning ifølge ethvert af kravene 1 til 8,
kendetegnet ved, at beskyttelseskassen (33) er udformet af plast.

10. Indretning ifølge ethvert af kravene 1 til 9,
kendetegnet ved, at beskyttelseskassen (33) har et hovedlegeme (42) og i det mindste ét dæksel (43), som kan forbindes med hovedlegemet (42).

11. Indretning ifølge krav 10,
kendetegnet ved, at dækslet (43) kan forbindes udløseligt med hovedlegemet (42).

12. Indretning ifølge ethvert af kravene 1 til 11,
kendetegnet ved, at i det mindste én understøtning (17) til vertikalt at understøtte det andet strukturelement (3) er anbragt på den anden langsgående side (7) af beskyttelseskassen (33).

13. Indretning ifølge ethvert af kravene 1 til 12,

kendetegnet ved, at i det mindste én tværkraftstang (16) stikker igennem beskyttelseskassen (33).

14. Struktur omfattende et første lastbærende strukturelement (2) og et andet lastbærende strukturelement (3) af beton, især et bygningsloft og en altanplade, og en indretning ifølge ethvert af kravene 1 til 13.

Fig. 1

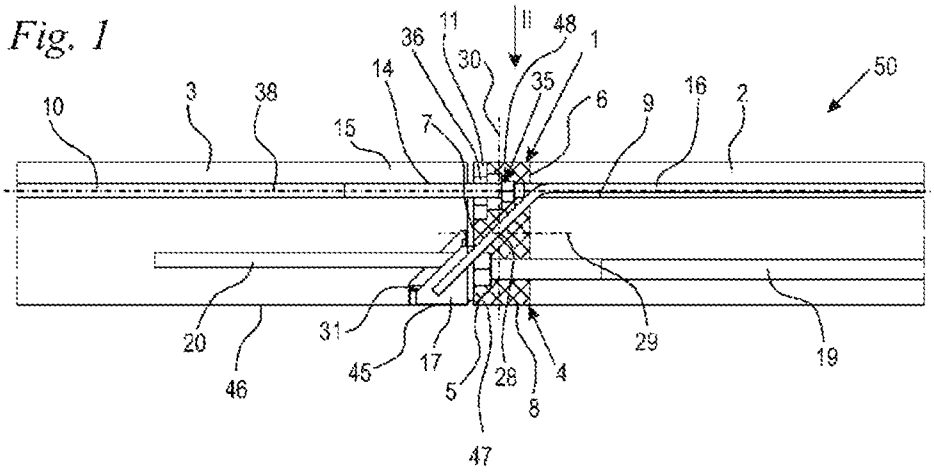
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Fig. 2

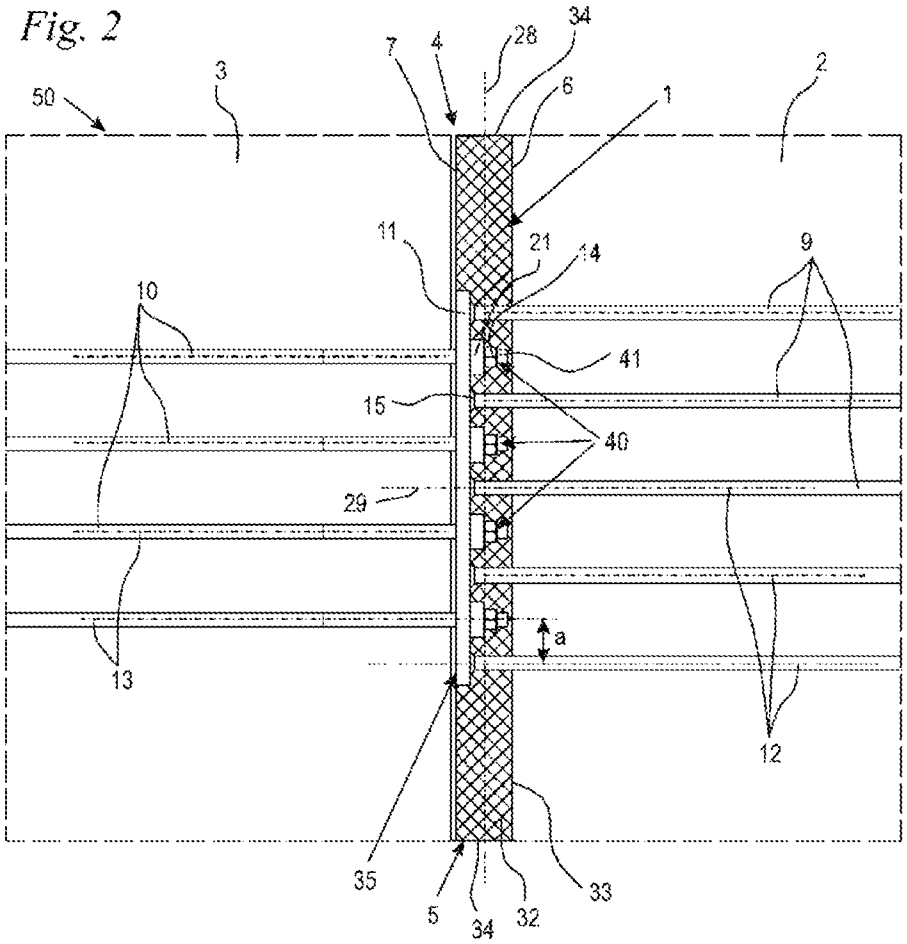
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Fig. 3

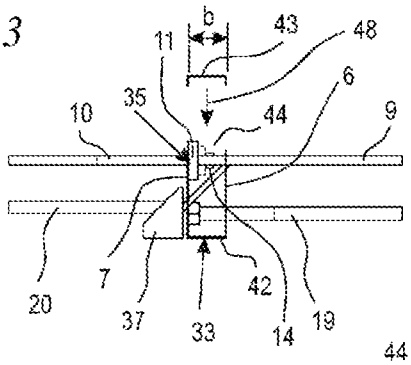

Fig. 4

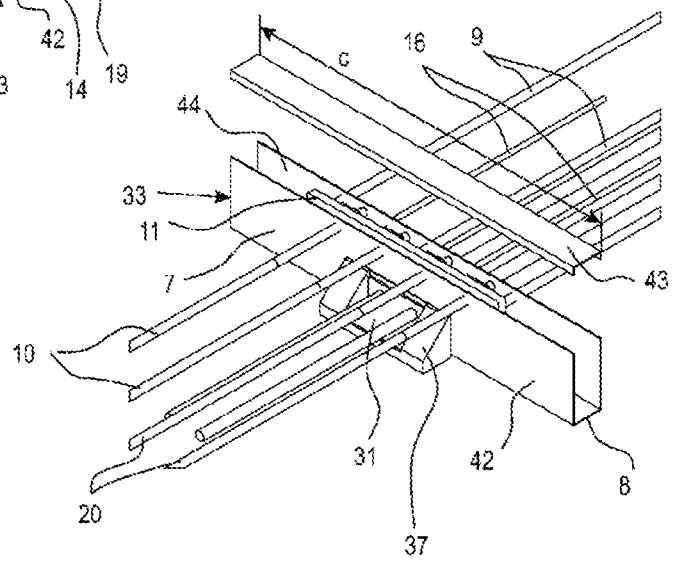

Fig. 5

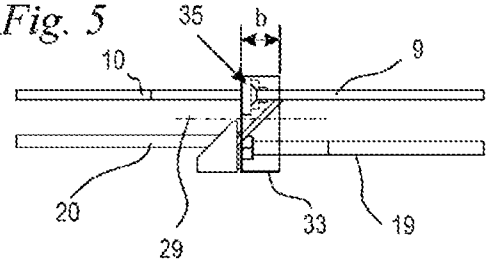

Fig. 6

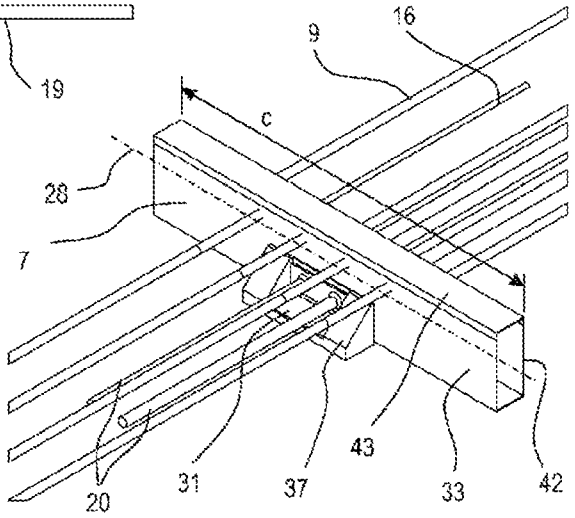

Fig. 7

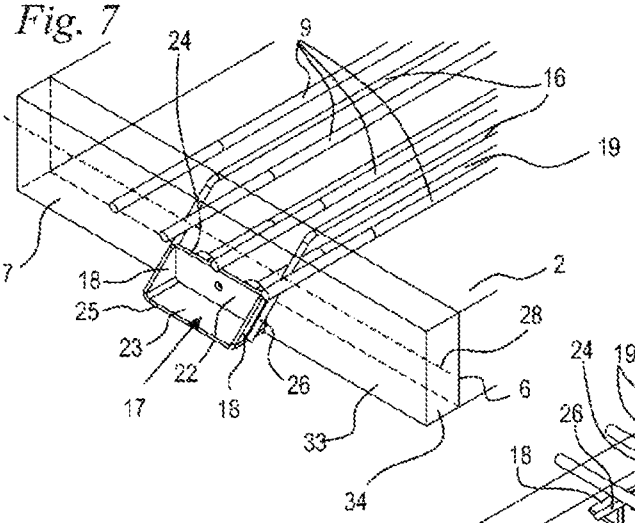

Fig. 8

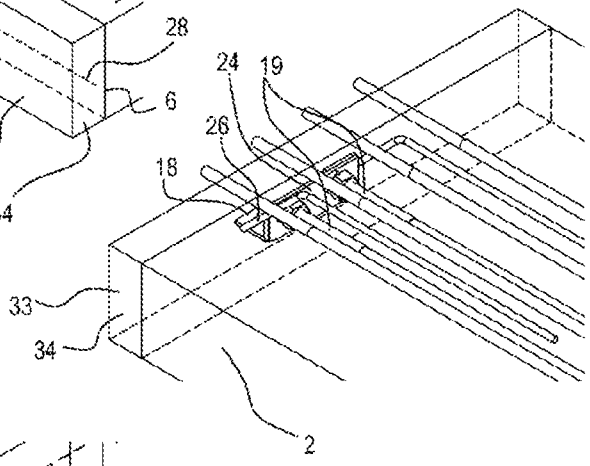

Fig. 9

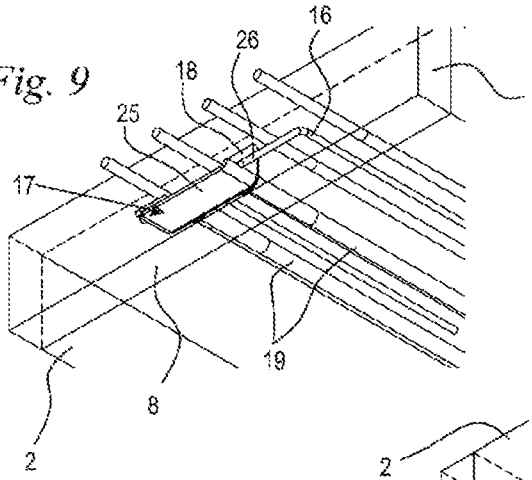

Fig. 10