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DESCRIPTION

FIELD OF THE INVENTION

[0001] The present invention relates to a barrier panel for a temporary edge protection system, and to a temporary edge protection system comprising such a barrier panel.

BACKGROUND OF THE INVENTION

[0002] When raising or maintaining a building temporary edge protection systems are used to safeguard the workers. Typically the temporary edge protection system comprises several post arrangements, which are fastened at a floor, a wall, a beam, or the like, of the building, and several barrier panels carried by the post arrangements. At some buildings only widely spaced columns are available for fastening the post arrangements. To bridge the distance between two columns at least two barrier panels need to be interconnected with no post support at the interconnection position. Since typically the temporary edge protection system is to be mounted at a high height, a sky lift or the like has to be used for parts of the mounting operation. With the current temporary edge protection systems this is a rather complicated and time consuming operation, requiring the sky lift to be moved several times back and forth between the columns and the interconnection position. JP 3792336 B2 discloses a barrier panel for a temporary edge protection system according to the preamble of claim 1.

SUMMARY OF THE INVENTION

[0003] It would be advantageous to provide a solution which facilitates the mounting of the temporary edge protection system in the situation described above. The object mentioned above is solved by a barrier panel according to claim 1. According to the invention there is presented a barrier panel for a temporary edge protection system, wherein the barrier panel is arranged for quick-coupling with another barrier panel. The barrier panel comprises a horizontal lower frame element having opposite first and second ends, wherein the lower frame element comprises a male connector at the first end thereof and a female connector at the second end thereof. The male and female connectors are arranged to be quick coupled to respective female and male connectors of other barrier panels by receiving the male connector into the female connector. The barrier panel comprises a horizontal upper frame element with opposite first and second ends, wherein the upper frame element comprises a first connection part at the first end thereof, and a second connection part at the second end thereof. The first and second connection parts are arranged to be quick coupled with respective second and first connection parts of other barrier panels. The quick coupling arrangements simplify the mounting operation when interconnecting two barrier panels. According to the invention the male connector comprises a protrusion, which protrudes horizontally from the first end of the

lower frame element, and wherein the female connector comprises a cavity extending inside of the lower frame element from the second end towards the first end. Thereby the interconnection of the female and the male connector is facilitated.

[0004] In accordance with an embodiment of the barrier panel, the female connector comprises a plastic sleeve, which defines the cavity. This embodiment provides for a lower friction that for instance metal against metal which is advantageous for connection as well as disconnection of the barrier panels. According to the invention the female connector comprises a locking device, which is vertically movable between a locked state where the locking device, when the female connector is interconnected with a male connector, is engaged with the male connector, and an unlocked state, where the locking device is disengaged with the male connector. The locking device improves safety. According to the invention the locking device is spring biased towards the locked state and arranged for a click-in engagement with the protrusion of the male connector in conjunction with a quick-coupling operation. In accordance with an embodiment of the barrier panel the male connector comprises a rest portion, upon which a protruding portion of the locking device can be temporarily rested when the locking device has been moved to the unlocked state, and thereby held in the unlocked state, to enable uncoupling of the male and female connectors. Thereby safety as well as simplicity of mounting and demounting is enhanced.

[0005] In accordance with an embodiment of the barrier panel, the protrusion is generally V-shaped, with the tip of the V-shape constituting the outer end of the protrusion. This embodiment is advantageous in that the interconnection of two barrier panels is facilitated. As an additional feature contributing to the same advantage, the width of the protrusion can be arranged to decrease from the first end of the lower frame element towards the tip of the V-shape.

[0006] According to another aspect of the present invention, there is provided a temporary edge protection system comprising a barrier panel, as described above, and a post arrangement. The post arrangement comprises a structure attachment, a post device, adapted to be mounted at the structure attachment at a lower portion of the post device, and a barrier panel holder, connectable with the post device at an upper portion thereof. This temporary edge protection system provides the same simplification as the barrier panel as such.

[0007] In accordance with an embodiment of the temporary edge protection system, the structure attachment has post holding hooks, wherein the post device comprises, at a lower end thereof, a beam structure having hook receivers, which are arranged to engage with the hooks. Thereby it is simple to first mount the structure attachment at a structure, and then engage the post device with the hooks.

[0008] In accordance with an embodiment of the temporary edge protection system, the beam structure comprises a locking device for preventing unintentional removal of the beam structure from the hooks.

[0009] In accordance with an embodiment of the temporary edge protection system, the beam structure has a horizontal tubular first beam, which comprises one of the hook receivers, which hook receiver constitutes an end portion of the first beam, at a first end thereof, which is an open end, wherein the first beam further comprises the locking device, which comprises a locking pin extending internally of the first beam along the length thereof, wherein the locking pin is arranged to interact with the hook receiver and to prevent release of the hook from the hook receiver when the locking device is in a locked state. In this embodiment the locking device is advantageously simple to handle.

[0010] In accordance with an embodiment of the temporary edge protection system, the locking pin is spring biased towards the first end of the first beam, wherein the locking device further comprises a rotatable catch element, which is connected with the locking pin at a second end of the first beam, and which is arranged at an outer surface of the beam structure, wherein the catch element is arranged to be moved between an active state where it holds the locking pin in a retracted position, in the unlocked state of the locking device, and an idle state, where the locking device is in the locked state, wherein the movement between the idle state and the active state involves moving the catch element away from the first end of the beam and rotating it. Thereby the demounting of the post arrangement is facilitated.

[0011] In accordance with an embodiment of the temporary edge protection system, the beam structure comprises a horizontal tubular second beam, which comprises another one of the hook receivers, which hook receiver constitutes an end portion of the second beam, at a first end thereof, which is an open end, wherein the second beam is arranged vertically parallel with the first beam, such that the hook receivers of the first and second beams are positioned above each other. This embodiment provides for stability of the system.

[0012] In accordance with an embodiment of the temporary edge protection system, the post device comprises a vertical post beam, wherein the barrier panel holder is horizontally movably connected with the vertical post beam. This embodiment has an advantageous adjustment of the horizontal position of the barrier panel.

[0013] In accordance with an embodiment of the temporary edge protection system, the barrier panel holder comprises a horizontal holder beam, horizontally movably connected with the vertical post beam, and a vertical holder beam, which comprises barrier panel supports, and which is vertically adjustably connected with the horizontal holder beam. This embodiment provides for an advantageous vertical adjustment of the barrier panel.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The invention will now be described in more detail and with reference to the appended drawings in which:

Figs. 1 and 2 are schematic perspective views of an embodiment of a temporary edge

protection system with a barrier panel according to the present invention;

Fig. 3 is a perspective view of two barrier panels according to the invention

Fig. 4 is a side view of a quick coupling of the panels of Fig.3

Figs. 5a-5d are cross-sectional views of the quick coupling of Fig. 4;

Figs. 6 and 7 are side views of another quick coupling of the embodiment;

Fig. 8 is a perspective view of a barrier panel holder of an embodiment;

Fig. 9 is a side view of the embodiment of Fig.8 and

Figs. 10a-10b are cross-sectional views of the lower part of Fig. 9.

DESCRIPTION OF EMBODIMENTS

[0015] An embodiment of the temporary edge protection system 1 comprises at least one barrier panel 2, 3, and at least one post arrangement 4. However, typically the system 1 comprises several barrier panels 2, 3 as well as several post arrangements 4 in order to enable the system to provide a safety barrier along one or more sides of a large building. The temporary edge protection system 1 is arranged to be mounted at a building, and more particularly at a structure 5, such as a wall, a column, etc., of a building.

[0016] The temporary edge protection system is constructed to facilitate mounting of the system across large spans. For instance, the barrier panels 2, 3 are provided with lower and upper quick couplings 6, 7 for coupling the barrier panels 2, 3 together. More particularly, as best shown in Fig. 3, referring to a first barrier panel 2 of the shown barrier panels 2, 3, each barrier panel 2 has a frame with lower and upper frame elements 9, 10, and side frame elements 11, 12. A mesh 8 is typically mounted within the frame, covering at least a part of the frame area. Referring to a mounted state, the lower and upper frame elements 9, 10 are horizontal, and the side frame elements 11, 12 are vertical. This geometrical orientation is used throughout the application. The lower frame element 9 comprises a male connector 13 at a first end thereof, and a female connector 14 at a second, opposite end thereof. The male connector 13 of one barrier panel 2, and the female connector 14 of another barrier panel 3 together form the lower quick coupling 6. The upper frame element 10 comprises a first connection part 15 at a first end thereof, at the same side of the barrier panel 2 as the male connector 13, and a second connection part 16 at a second end thereof, at the same side of the barrier panel 2 as the female connector 14. Similarly to the first quick coupling, the first connection part 15 of one barrier panel 2, and the second connection part 16 of another barrier panel 3, form the upper quick coupling 7. Consequently, the male and female connectors 13, 14 are arranged to be quick coupled with each other, and so are the first and

second connection parts 15, 16 as well.

[0017] Referring now to figs. 4 and 5a-5d, the lower frame element 9 is tubular, and the male connector 13 comprises a protrusion 17, which protrudes horizontally from the opening of the first end of the lower frame element 9, and a base portion 18, which extends a distance into the lower frame element 9 and is attached to the lower frame element 9. The female connector 14 comprises a sleeve 19, which extends into the lower frame element 9 at its second end, thereby forming a cavity for receiving the protrusion 17 of the male connector 13 of another barrier panel, such as a second barrier panel 3 as shown. The male connector 13 is preferably made of a metal, such as steel, to provide enough strength, while the female connector 14 preferably is made of plastic in order to reduce the friction between the male and female connectors 13, 14.

[0018] The female connector 14 according to the invention comprises a locking device 23, which has a locking element 24 that is vertically movable between a locked state, as for instance shown in Fig. 5d, and an unlocked state, as for instance shown in Fig. 5c. In the locked state the locking element 24 is engaged with a locking seat 25 of the male connector 13. In this embodiment, the locking element 24 is constituted of a locking pin, and the locking seat 25 is constituted by a hole. In the unlocked state, the locking element 24 is disengaged from the locking seat 25.

[0019] The locking device 23 according to the invention comprises a spring 26, which is arranged to spring bias the locking element 24 towards the locked state and for a click-in engagement with the protrusion 17 of the male connector 13 in conjunction with a quick-coupling operation. The male connector 13 comprises a shelf element 27, upon which a protruding portion 28, which is an upper end portion, of the locking element 24, can be temporarily rested when the locking element 24 has been moved to the unlocked state. Thereby the locking element 24 is held in the unlocked state while in the beginning of the uncoupling of the male and female connectors 13, 14, preventing the locking element 24 from reengaging with the locking seat 25. The shelf element 27 is arranged at the side frame element 11 above the end portion of the lower horizontal frame element 9, and the shelf element 27 protrudes from the side frame element 11 in the same direction as the protrusion 17 of the male connector 13. In this embodiment, the shelf element 27 is constituted by a bent plate which has been attached to the side frame element 11.

[0020] Since the locking element 24 is spring biased towards the locked state, and the shelf element 27 is comprised in the male connector 13, the locking element 24 will always be in the locked state when two barrier panels 2, 3 are to be coupled together.

[0021] The protrusion 17 of the male connector 13 is generally V-shaped, in the vertical direction, constituting the height of the male connector 13, with the tip of the V-shape constituting the outer end of the protrusion 17. The width of the protrusion 17 decreases in direction from the support portion 18 towards the tip of the V-shape, i.e. the front end of the male connector 13, as shown in Fig. 6.

[0022] The first connection part 15 comprises a hook portion 20 protruding from the end of the upper frame element 10, and having a hook shaped outer end, as shown in Fig. 7. More particularly, at least the hook portion 20, and in this embodiment the whole first connection part 15, is U-shaped in cross-section, having an inner width slightly wider than the width of the upper frame element 10, and having opposite notches 21 at side walls of the hook portion 20. The second connection part 16 comprises a hook engagement element 22, which in this embodiment simply is a bolt extending laterally through the upper frame element 10 and protruding at both sides thereof. Due to the U-shape of the connection portion 15, the upper frame elements 10 of the barrier panels 2, 3, and thus the barrier panels 2, 3, are aligned with each other when coupled together. The notches 21 are arranged to receive the hook engagement element 22 when the first and second connection part 15, 16 are coupled together.

[0023] Each post arrangement 4 comprises a structure attachment 30, a post device 31, mounted at the structure attachment 30 at a lower portion of the post device 31, and a barrier panel holder 32, connectable with the post device 31 at an upper portion thereof. More particularly, the post device 31 comprises a vertical post beam 33, and the barrier panel holder 32 is horizontally movably connected with the vertical post beam 33 at its top.

[0024] The structure attachment 30, which when the temporary edge protection system 4 is mounted at the structure 5 is attached by means of bolts 36, or the like, to the structure 5, comprise post holding hooks 34. The post device 31 comprises, at a lower end thereof, a beam structure 35 having hook receivers 37, which are engaged with the post holding hooks 34.

[0025] The beam structure 35 has a horizontal tubular first beam 38, which comprises one of the hook receivers 37, which hook receiver constitutes an end portion of the first beam 38, at a first end 45 thereof, which is an open end. The hook receiver 37 includes a hole 42 at an top wall 43 thereof, through which hole 42 an end portion of the post holding hook 34 protrudes. The beam structure 35 further comprises a horizontal tubular second beam 39, which comprises another one of the hook receivers 37, which hook receiver 37 constitutes an end portion of the second beam 39, at a first end 45 thereof, which is an open end. The second beam 39 is arranged vertically parallel with the first beam 38, such that the hook receivers 37 of the first and second beams 38, 39 are positioned above each other. The horizontal tubular first and second beams 38, 39 are attached to the vertical post beam 33 at respective second ends 47 thereof.

[0026] The beam structure 35 comprises a beam locking device 40 for preventing unintentional removal of the beam structure 35 from the hooks 34. More particularly, the first beam 38 comprises the beam locking device 40, which comprises a beam locking pin 41 extending internally of the first beam 38 along the length thereof, wherein the beam locking pin 41 is arranged to interact with the hook receiver 37 and to prevent release of the hook 34 from the hook receiver 37 when the beam locking device 40 is in a locked state. More particularly,

there is a space between the underside of the hook 34 and the bottom wall 48 of the first beam 38, into which the beam locking pin 41 extends in the locked state. Thereby, there is not enough play to permit the protruding end of the hook 34 to disengage with the hole 42 in the top wall 43 of the first beam 38.

[0027] The beam locking pin 41 is spring biased, by means of a biasing spring 44, towards the first end 45 of the first beam 38, wherein the beam locking device 40 further comprises a rotatable catch element 46, which is connected with the beam locking pin 41 at the second end 47 of the first beam, and which is arranged at an outer surface of the beam structure 35. More particularly, the beam locking pin 41 extends through the vertical post beam 33, transverse thereof, and the catch element 46 is constituted by a bracket that encompasses the vertical post beam 33. The catch element 46 is arranged to be moved between an active state where it holds the beam locking pin 41 in a retracted position, in the unlocked state of the beam locking device 40, and an idle state, where the beam locking device 40 is in the locked state. The movement between the idle state and the active state involves pulling the catch element 46 away from the second end 47 of the first beam 38 and rotating it 90 degrees. As is understood by the person skilled in the art, the beam locking device 40 can be arranged at the second beam 39 instead of at the first beam 38.

[0028] The barrier panel holder 32 comprises a horizontal holder beam 49, horizontally movably connected with the vertical post beam 33, and a vertical holder beam 50, which comprises lower and upper barrier panel supports 51, 52, and which is vertically movably connected with the horizontal holder beam 49. In other words, the horizontal holder beam 49 extends through a first clamping device 53 arranged at the top of the vertical post beam 33, so by releasing the clamping device 53 the position of the horizontal holder beam 49 relative to the vertical post beam 33 is adjustable. In order to prevent a user from pulling the horizontal holder beam 49 out of the first clamping device 53, the horizontal holder beam 49 is provide with a stop element 54 at its free end 55. Similarly, a second clamping device 56 is arranged at barrier panel end 57 of the horizontal holder beam 49, opposite to the free end 55. By releasing the second clamping device 56 the position of the vertical holder beam 50 relative to the horizontal holder beam 49, and thus the height of the barrier panel 2, can be adjusted.

[0029] In order to exemplify how some parts of the edge protection system 1 are mounted, in order to show the simplicity of the system, it is assumed that only the pillars of the building structure 5 can be used to anchor the edge protection system 1, and that the distance between two adjacent pillars is too long to bridge it with two barrier panels 2, 3, one at each pillar. First one structure attachment 30 is fastened at each pillar. Typically, the whole structure attachment 30 is pre-mounted, or fastenings for it are prepared already at the manufacture of the pillar. A beam structure 35 is mounted at the structure attachment 30, by receiving the hooks 34 in the hook receivers 37. If the beam locking device 40 is in its locked state, a spring force has to be overcome during a part of the mounting operation since the beam locking pin 41 has to be pushed against the force of the biasing spring a bit before there is room for the beam locking pin 41 to return to the locking state. If the beam locking device 40 is in the unlocked state, as shown in Fig. 10b, it has to be locked when the beam structure has been

mounted on the structure attachment 30. Then a barrier panel holder 32 is mounted at the beam structure 35, wherein the stop element 54 is temporarily removed from the horizontal holder beam 49 when it is introduced into the clamping device 53 at the top of the vertical post beam 33.

[0030] Next, the horizontal holder beam 49 is adjusted to correctly position the vertical holder beam 50 relative to the building structure 5, and the clamping device 53 is tightened. Now the barrier panels 2, 3 are to be mounted, starting from one barrier panel holder 32 and proceeding towards an adjacent barrier panel holder 32. When a barrier panel 2, 3 is mounted at the barrier panel supports 51, 52, the upper barrier panel support 52, which comprises a clamping means, such as e.g. disclosed in EP 2 871 302, is tightened to clamp the upper frame element 10. When a barrier panel 3, here called a second barrier panel 3, is interconnected with an already mounted barrier panel 2, here called a first barrier panel 2, first the upper quick coupling 7 is coupled, i.e. the first connection part 15 of the second barrier panel 3 is engaged with the second connection part 16 of the first barrier panel 2, while the second barrier panel 3 is slightly angled to the first barrier panel 2, i.e. an end of the second barrier panel is lifted. Then the end of the second barrier panel 3 is lowered so that the male connector 13 enters the female connector 14 until the second barrier panel 3 is aligned with the first barrier panel 2, and the locking element 24 engages, by clicking-in, with the locking seat 25. Due to the smooth couplings/connections between the different parts of the temporary edge protection system 1, the mounting is quicker and easier to do than it was with the previously known temporary edge protection systems.

[0031] While the invention has been illustrated and described in detail in the drawings and foregoing description, such illustration and description are to be considered illustrative or exemplary and not restrictive; the invention is not limited to the disclosed embodiments.

[0032] Other variations to the disclosed embodiments can be understood and effected by those skilled in the art in practicing the claimed invention, from a study of the drawings, the disclosure, and the appended claims. In the claims, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality. A single unit may fulfill the functions of several items recited in the claims. The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measured cannot be used to advantage. Any reference signs in the claims should not be construed as limiting the scope.

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

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P A T E N T K R A V

1. Spærreplade til et midlertidigt hjørnebeskyttelsessystem, hvor spærrepladen (2) er indrettet til hurtigkobling med en anden spærreplade (3), hvor spærrepladen omfatter et vandret nedre rammeelement (9), som har en modsatliggende første og anden ende, hvor det nedre rammeelement omfatter en hanforbinder (13) ved den første ende deraf, hvilken hanforbinder omfatter et fremspring (17), som springer vandret frem fra den første ende af det nedre rammeelement, og en hunforbinder (14) ved den anden ende deraf, hvilken hunforbinder (14) omfatter et hulrum, som udstrækker sig inde i det nedre rammeelement fra den anden ende mod den første ende, hvilke han- og hunforbindere ydermere er indrettet til at blive hurtigkoblet til henholdsvis hun- og hanforbindere af andre spærreplader ved, at modtage hanforbinderen inde i hunforbinderen, og hvor spærrepladen omfatter et vandret øvre rammeelement (10) med en modsatliggende første og anden ende, hvor det øvre rammeelement omfatter en første forbindelsesdel (15) ved den første ende af dette og en anden forbindelsesdel (16) ved den anden ende af dette, hvilken første og anden forbindelsesdel er indrettet til at blive hurtigkoblet med henholdsvis anden og første forbindelsesdele af andre spærreplader,

k e n d e t e g n e t ved, at hunforbinderen (14) omfatter en låseindretning (23), som har et låseelement (24), som kan bevæges lodret mellem en låst tilstand, hvor låseelementet er i indgreb med et låsesæde (25) af hanforbinderen, når hunforbinderen er forbundet med hanforbinderen, og en ulåst tilstand, hvor låseelementet er frakoblet låsesædet, hvor låseindretningen (23) ydermere omfatter en fjeder (26), som er indrettet til at fjederforspænde låseelementet (24) mod en låst tilstand og til at klikke i indgreb med fremspringet (17) af hanforbinderen i forbindelse med en hurtigkoblingsgang.

2. Spærreplade ifølge krav 1, hvor hunforbinderen (14) omfatter et plastikhylster (19), som definerer hulrummet.

3. Spærreplade ifølge krav 1 eller 2, hvor hanforbinderen omfatter et hyldeelement (27), på hvilket en fremspringende del (28) af låseelementet kan hvile midlertidigt, når låseelementet er flyttet til den ulåste tilstand, og derved kan holdes i den ulåste tilstand til at fremme afkobling af han- og hunforbindere (13, 14).

4. Spærreplade ifølge et hvilket som helst af kravene 1-3, hvor fremspringet (17) er i det væsentlige V-formet, hvor spidsen af V-formen udgør den ydre ende af fremspringet.

5. Spærreplade ifølge krav 4, hvor bredden af fremspringet (17) aftager fra den første ende af det nedre rammeelement (9) mod spidsen af V-formen.

6. Midlertidigt hjørnebeskyttelsessystem omfattende en spærreplade ifølge et hvilket som helst af de foregående krav og et stolpearrangement (4), hvor stolpearrangementet omfatter en strukturtilslutningsdel (30), en stolpeindretning (31), som er indrettet til at blive monteret ved strukturtilslutningsdelen ved en nedre del af stolpeindretningen, og en spærrepladeholder (32), som kan forbindes med stolpeindretningen ved en øvre del af denne.

7. Midlertidigt hjørnebeskyttelsessystem ifølge krav 6, hvor strukturtilslutningsdel (30) har stolpeholdekroge (34), hvor stolpeindretningen (31) ved en nedre ende deraf omfatter en bjælkestruktur (35), der har krogmodtagere (37), som er indrettet til at gå i indgreb med krogene.

8. Midlertidigt hjørnebeskyttelsessystem ifølge krav 7, hvor bjælkestrukturen (35) omfatter en bjælkelåseindretning (40) til at forhindre utilsigtet fjernelse af bjælkestrukturen fra krogene (34).

9. Midlertidigt hjørnebeskyttelsessystem ifølge krav 8, hvor bjælkestrukturen (35) har en vandret rørformet første bjælke (38), som omfatter en første krogmodtager (37), hvilken krogmodtager udgør en endedel af den første bjælke, ved en første ende deraf, som er en åben ende, hvor den første bjælke ydermere omfatter bjælkelåseindretningen (40), der omfatter en bjælkelåsestift (41), der udstrækker sig indvendigt i den første bjælke (38) i en længderetning af denne, hvor bjælkelåsestiften er indrettet til at samvirke med krogmodtageren (37) og til at modvirke frigivelse af krogen (34) fra krogmodtageren, når bjælkelåseindretningen er i en låst tilstand.

10. Midlertidigt kantbeskyttelsessystem ifølge krav 9, hvor bjælkelåsestiften (41) er fjederforspændt mod den første ende af den første bjælke, hvor låseindretningen ydermere omfatter et roterbart indgrebselement (46), som er forbundet med bjælkelåsestiften ved en anden ende af den første bjælke (38), og som er arrangeret ved en ydre overflade af bjælkestrukturen (35), hvor indgrebselementet er indrettet til at blive bevæget mellem en aktiv tilstand, hvor det holder bjælkelåsestiften i en tilbagetrukket position i den ulåste tilstand af bjælkelåseindretningen (40) og en hviletilstand, hvor bjælkelåseindretningen er i den låste tilstand, hvor bevægelsen mellem hviletilstanden og den aktive tilstand involverer at bevæge indgrebselementet væk fra den første ende af den første bjælke og at rotere det.

11. Midlertidigt hjørnebeskyttelsessystem ifølge krav 9 eller 10, hvor bjælkestrukturen (35) omfatter en vandret rørformet anden bjælke (39), som omfatter én anden af krogmodtagerne (37), hvilken krogmodtager udgør en endedel af den anden bjælke ved en første ende deraf, som er en åben ende, hvor den anden bjælke er arrangeret lodret parallelt med den første bjælke (38), således at krogmodtagerne af den første og anden bjælke er anbragt over hinanden.

12. Midlertidigt hjørnebeskyttelsessystem ifølge et hvilket som helst af kravene 6-11, hvor stolpeindretningen (31) omfatter en lodret stolpebjælke (33), hvor spærreplade (32) er vandret bevægeligt forbundet med den lodrette stolpebjælke.

13. Midlertidigt hjørnebeskyttelsessystem ifølge krav 12, hvor spærrepladeholderen (32) omfatter en vandret holdebjælke (49), der er vandret bevægeligt forbundet med den lodrette stolpebjælke (33), og en lodret holdebjælke (50), som omfatter spærrepladestøtter (51, 52), og som er lodret bevægeligt forbundet med den vandrette holdebjælke.

DRAWINGS

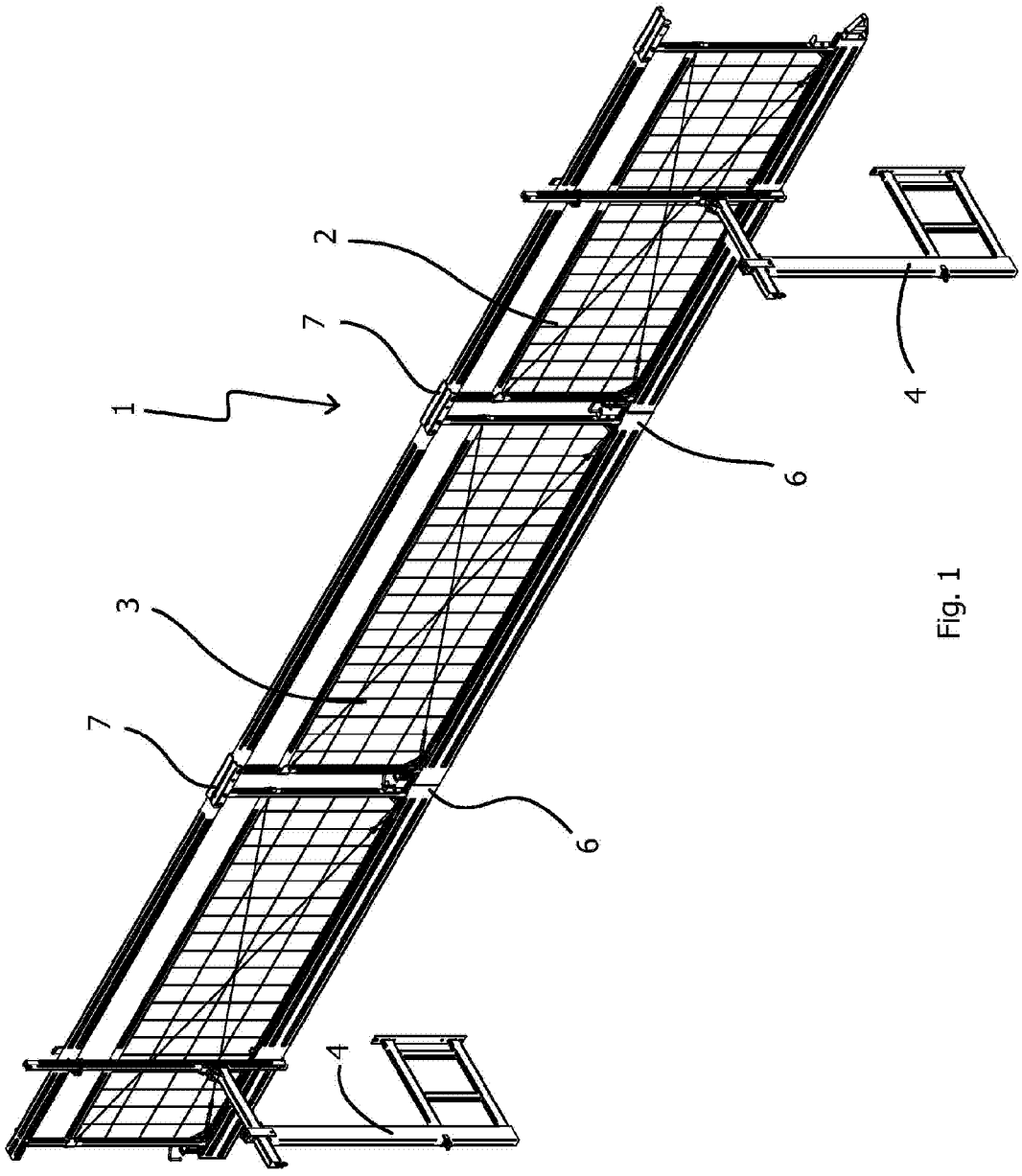

Fig. 1

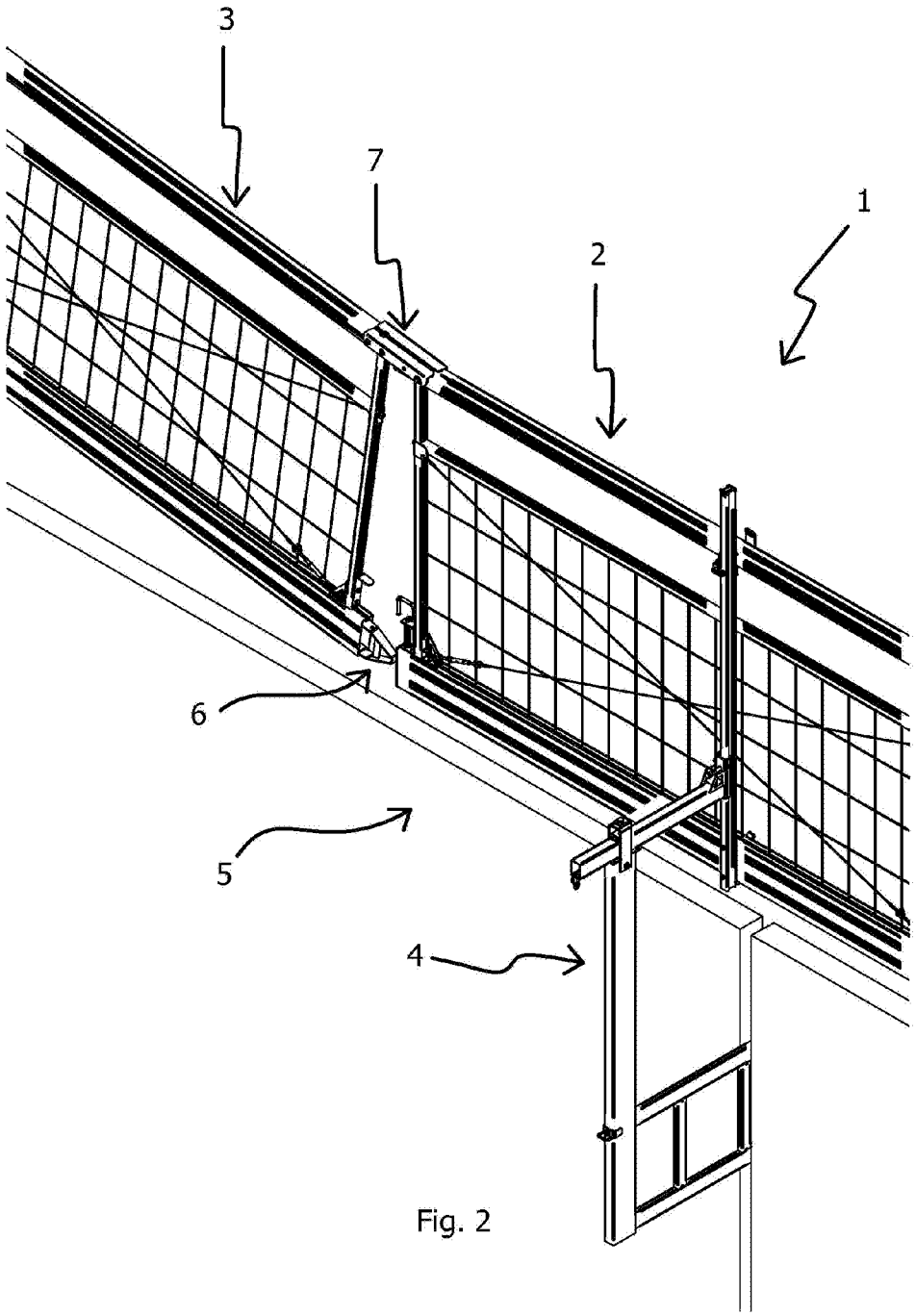

Fig. 2

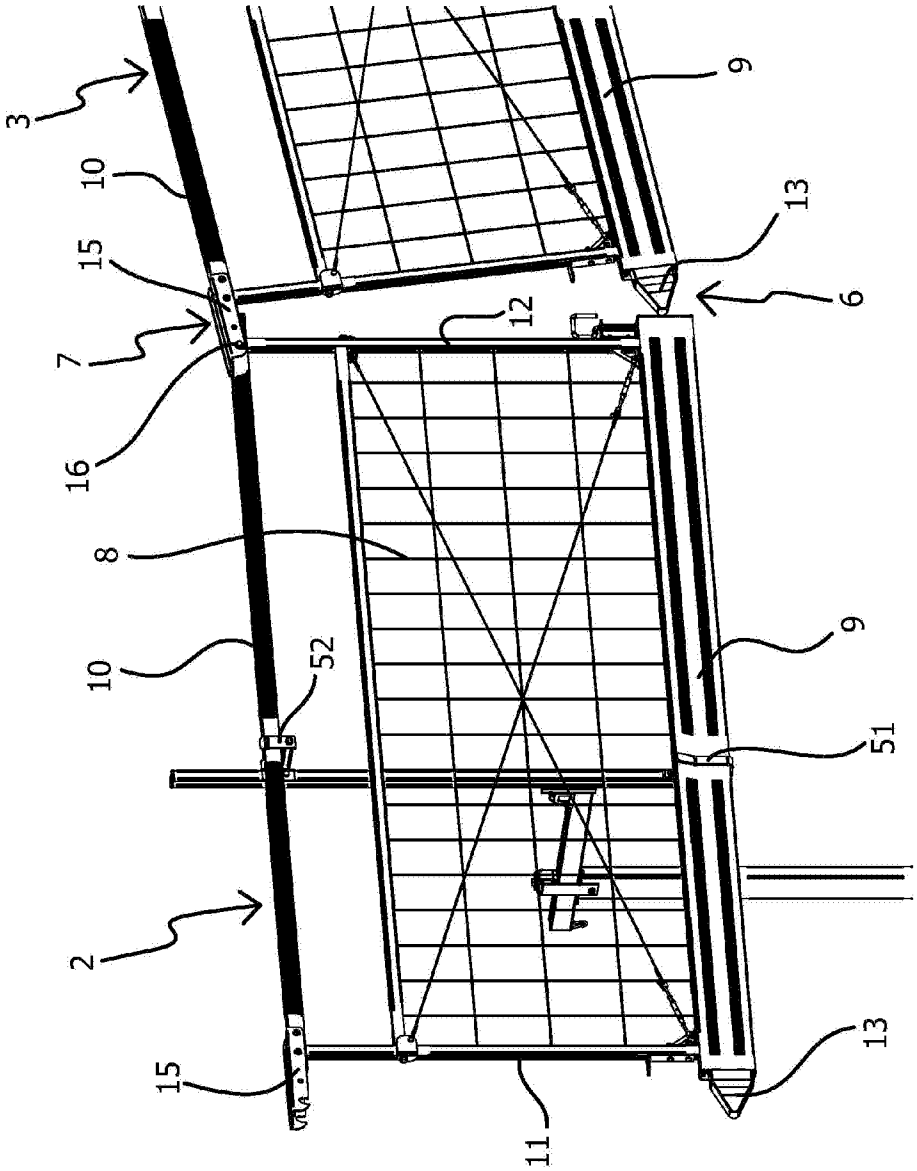

Fig. 3

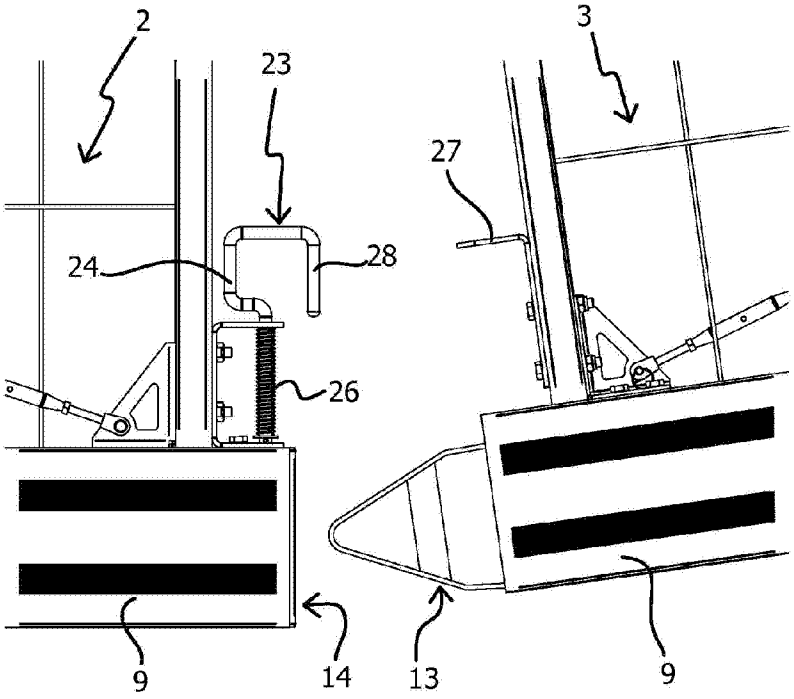

Fig. 4

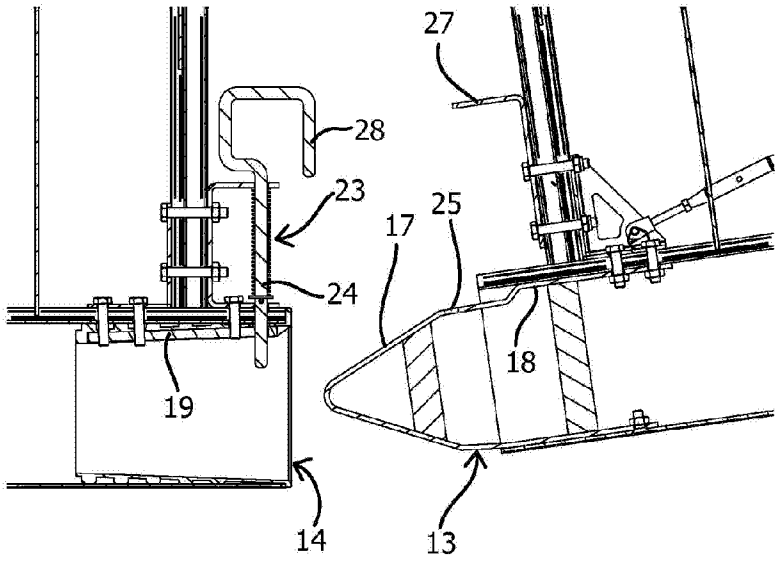

Fig. 5a

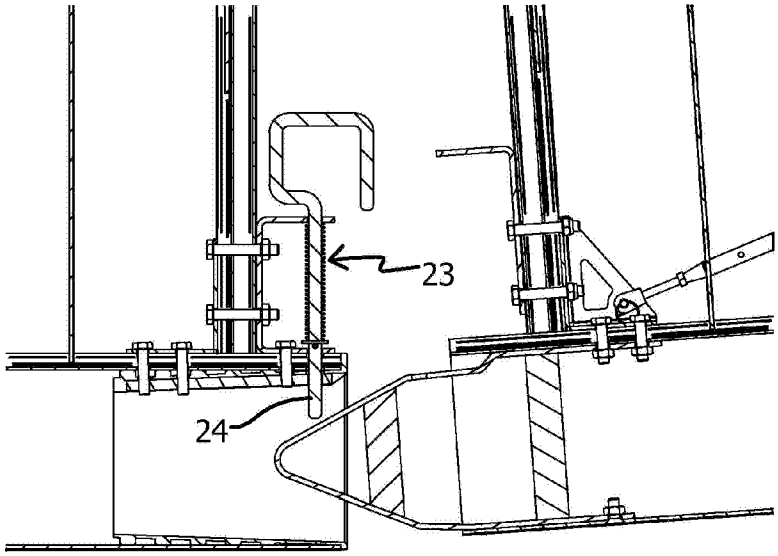

Fig. 5b

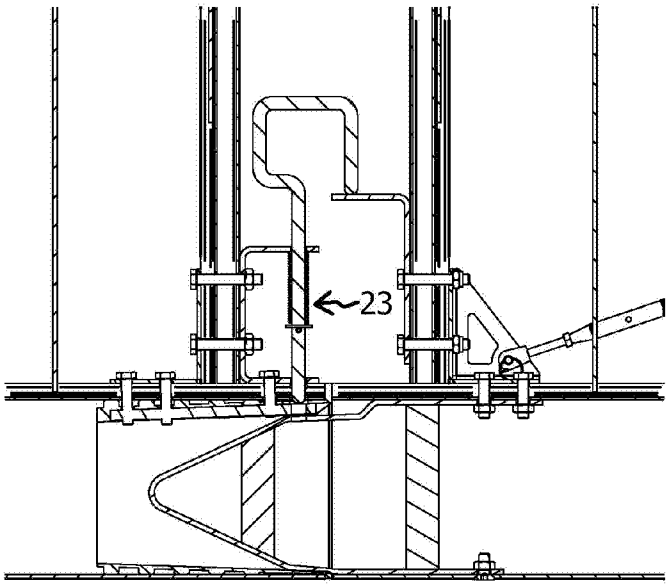

Fig. 5c

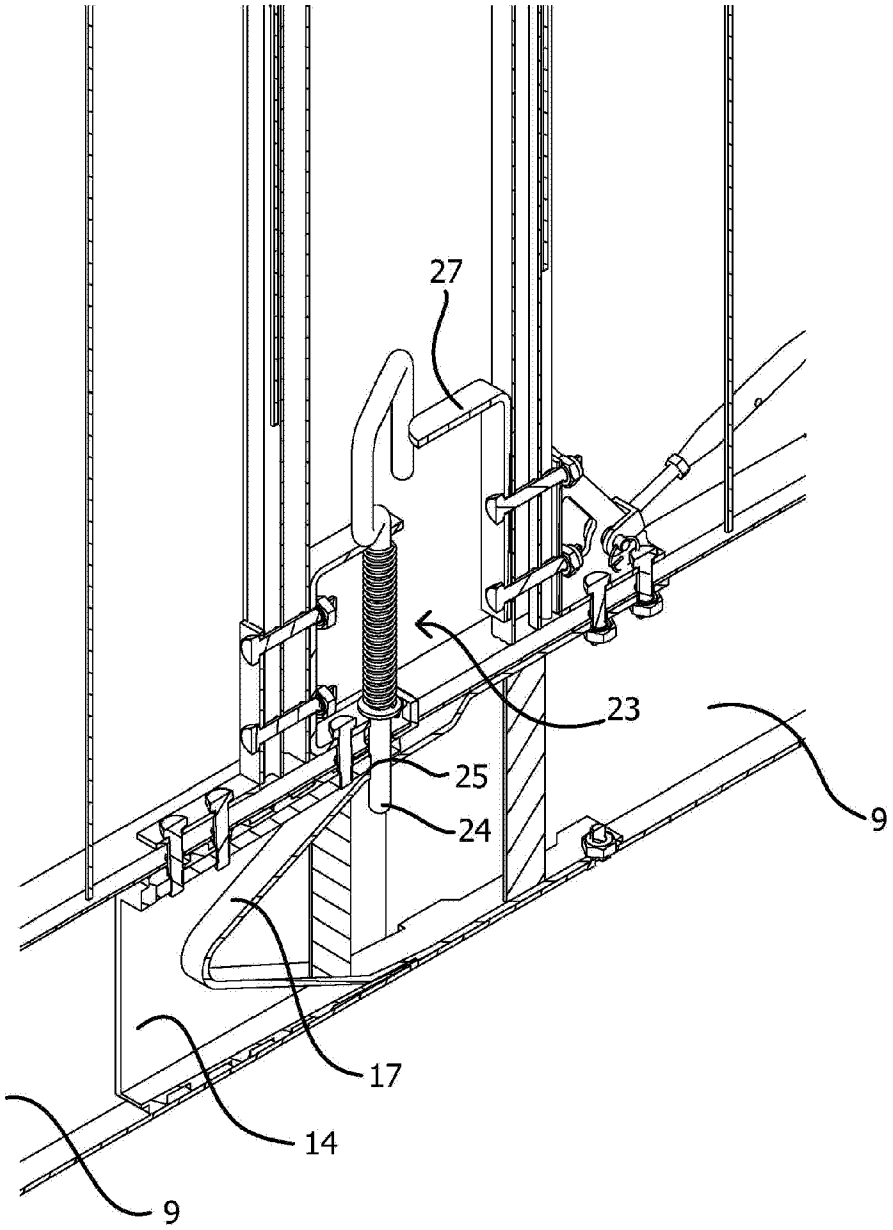

Fig. 5d

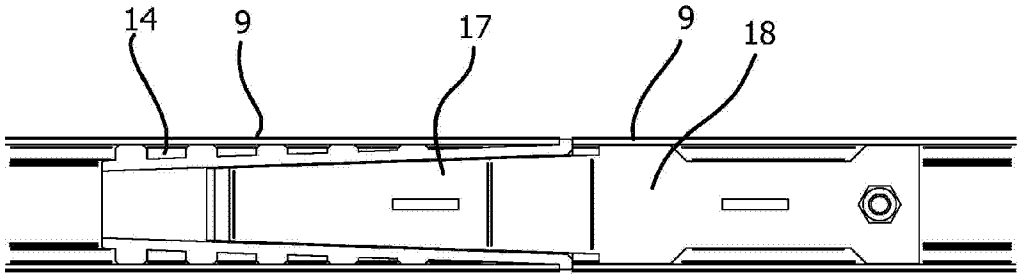

Fig. 6

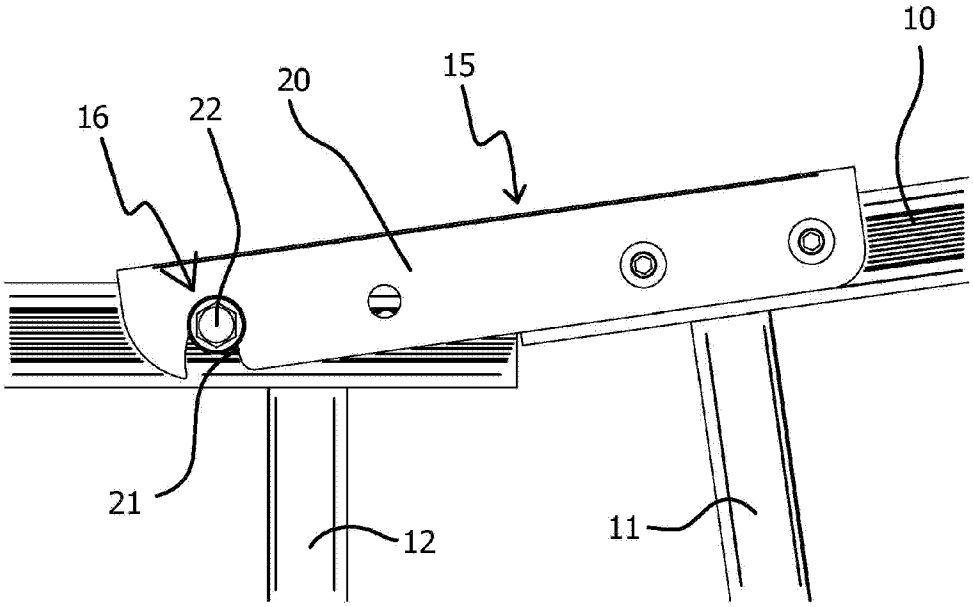

Fig. 7

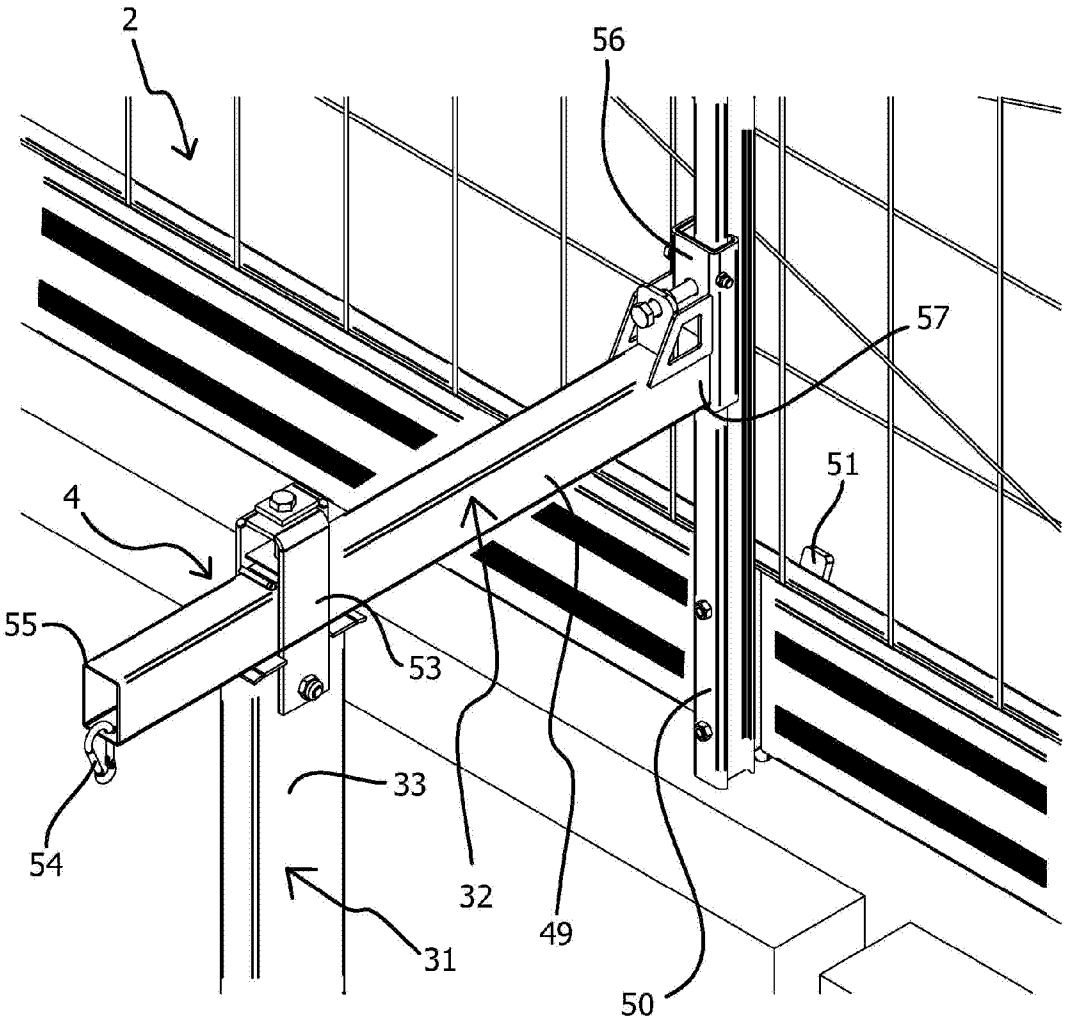

Fig. 8

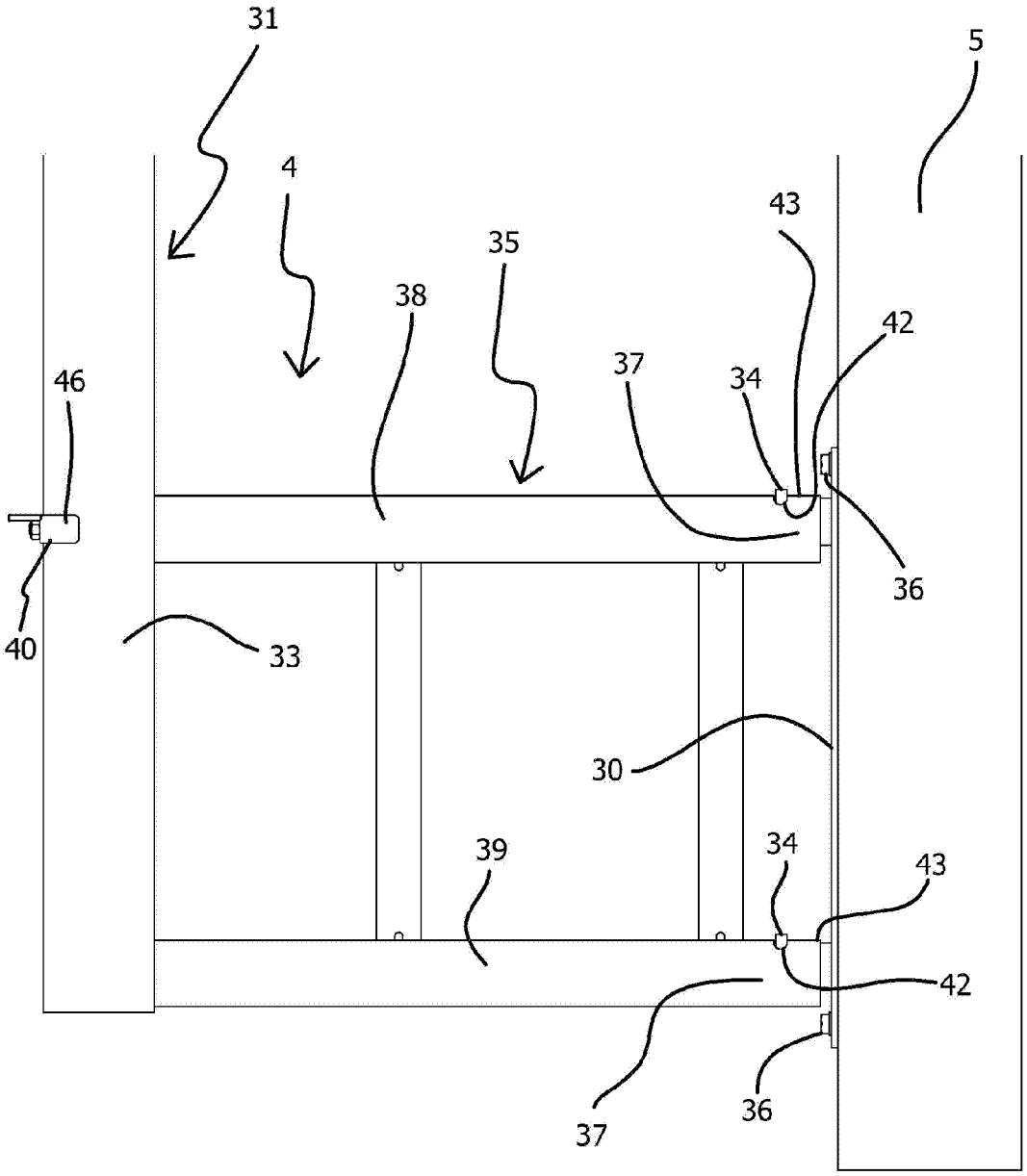

Fig. 9

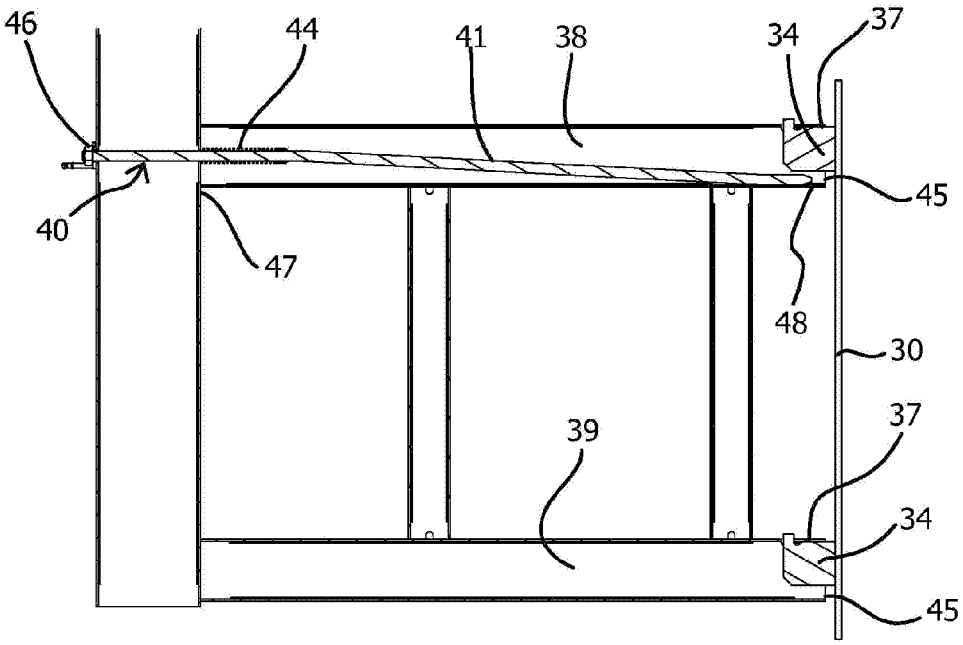

Fig. 10a

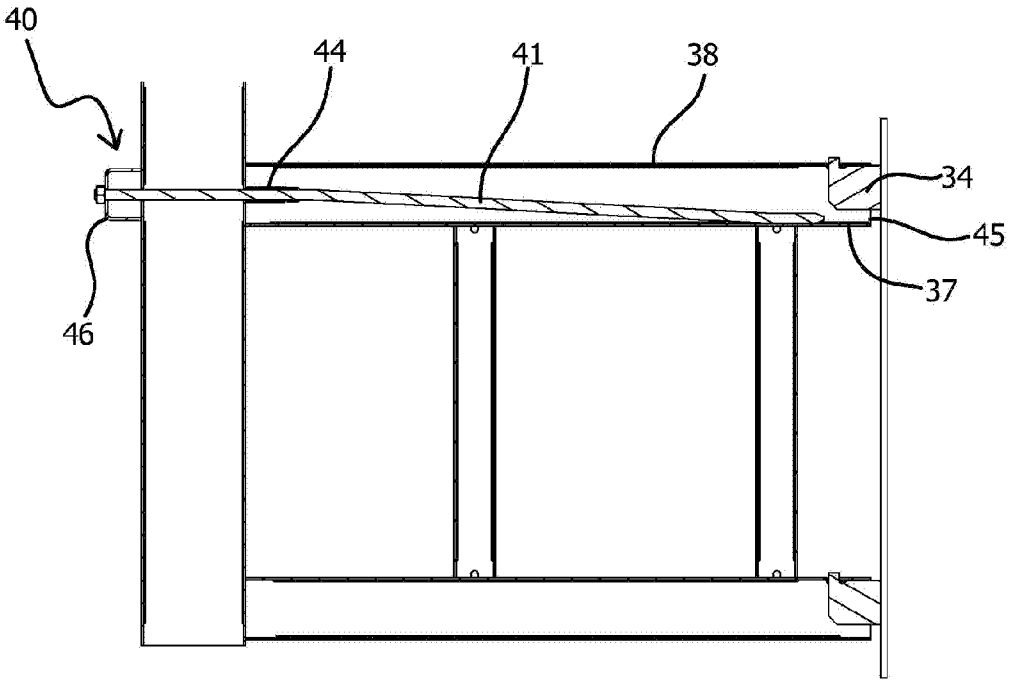

Fig. 10b