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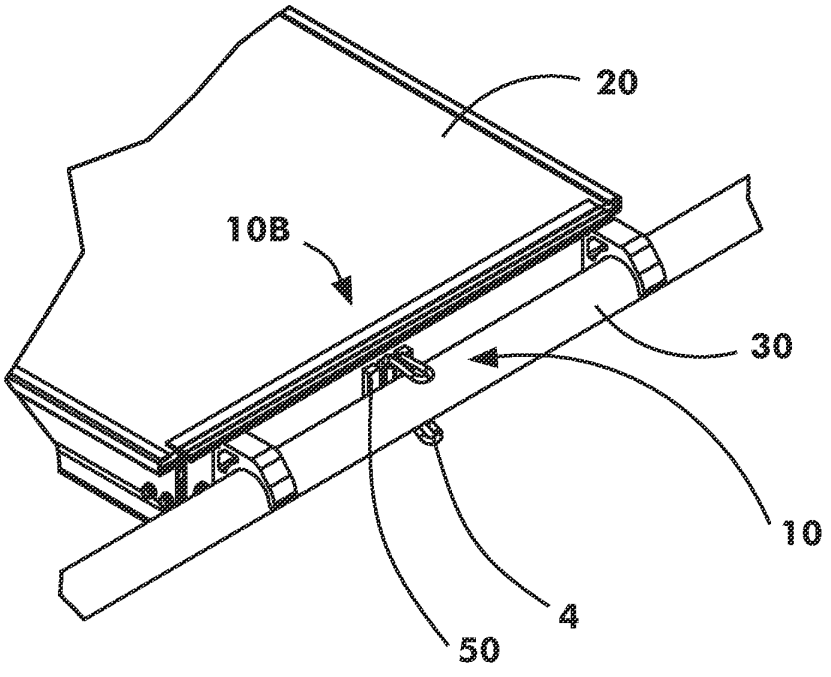
(54) **Locking device for modular scaffolding or similar**

(57) The invention relates to a locking device (10) between decks, ladders or stairs (20) and ledgers (30) for modular scaffolding or similar. According to the invention, the locking device exhibits a spring catch (4, 5, 40, 50, 400, 410) between the deck/stair and the ledger. Preferably, the catch is arranged on the deck/stair and secures, in its locked position, the deck/stair to the ledger.

Fig. 2



EP 2 189 592 A1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a locking device for modular scaffolding, such as building site scaffolding, mason's staging or similar, and especially to such a locking device between ledgers and decks, scaffold boards, ramps, ladders or stairs, for preventing the decks, boards, ramps or stairs of the modular scaffolding to become disconnected from the ledgers.

BACKGROUND

[0002] A known method for fitting scaffold decks to ledgers in a modular scaffolding, for example a scaffold, is to utilise hooks at each end of the decks that are hitched onto the associated ledger by putting the deck hooks at each end of the deck over the associated ledger.

[0003] The decks are then secured to the ledger at each end, so that the deck, i.e. the deck hooks being open downwards are prevented from being lifted off the ledger, i.e. locking deck and ledger, by using securing devices with safety catches.

[0004] A known securing device is disclosed in SE-C2-521 317. This securing device comprises a safety catch on a through shaft, a spring and a nut. The safety catch is constituted by a displaceable locking slide which is movable in a curved guiding slit essentially following the circumference of the ledger. The securing slide is slid in the slit between a release position, in which the deck can be assembled and disassembled, respectively, with the deck hooks, and a lock position, in which the slide blocks the deck in the deck hook elements and locks the deck to the scaffolding.

SUMMARY OF THE INVENTION

[0005] The present invention thus relates to an improvement of a securing or locking device between decks, stairs, ladders and ledgers for modular scaffolds or similar, and to loops used for securing around studs or pins.

[0006] According to the invention, the securing device has inherent springing features and comprises a safety catch between the deck and the ledger. Preferably, the catch is provided on the deck and will, in its locked position, secure the deck to the ledger.

[0007] The invention is defined in the appended independent claims, whereas preferred embodiments are stated in the dependent claims.

[0008] The locking device of the present invention fulfils the object by means of a device for securing detachable parts at a modular scaffolding comprising a safety catch, the catch being adapted to be moved from a first open position to a second securing position when securing at least one detachable part at the scaffolding. The safety catch is movably arranged in an attachment member on the associated detachable part and is shaped in such a way that the safety catch and the attachment member interact achieving an inherent spring action enabling the catch to be moved manually between the first and second positions, while at the same time enabling the catch to be retained in each position.

[0009] The locking device of the present invention also fulfils the object by means of a device for securing detachable parts at a modular scaffolding comprising a safety catch, the catch being adapted to be moved from a first open position to a second securing position when securing at least one detachable part at the scaffolding. The safety catch is devised to surround at least two opposing sides of a connecting part on the associated scaffolding when securing the detachable part at the scaffolding.

[0010] In one embodiment, the safety catch is shaped in such a way that it will have resilient properties enabling the catch to be retained in the first open position and the second securing position, respectively.

[0011] In another embodiment, the safety catch is shaped in such a way that it will have resilient properties enabling the catch to be retained in each of said positions.

[0012] In yet another embodiment, the safety catch is arranged to surround at least three sides of the connecting part on the associated scaffolding.

[0013] In some embodiments, the safety catch has an L-shape, an U-shape, or a D-shape.

[0014] In still another embodiment, the safety catch is shaped in an elongated bent form, whereby, in one embodiment, the safety catch is shaped of a bent wire in such a way that the central portion of the catch is made by double wire, and, in another embodiment, the safety catch is shaped of a bent wire in such a way that the ends of the catch is made by double wire.

[0015] In yet another embodiment, the safety catch is rotatably attached at its middle portion or its ends to the detachable part of the scaffolding.

[0016] In one embodiment, the safety catch is arranged through the attachment member.

[0017] In another embodiment, the safety catch has two free ends extending in the essentially same direction.

[0018] In yet another embodiment, the safety catch is shaped and arranged in the attachment member such that the spring action is achieved by means of a biasing force from the catch being clamped therein.

[0019] In still another embodiment, the attachment member has an inner cavity with varying inside dimensions for control of the resilience of the safety catch when moved therein.

[0020] The inner cavity of the attachment member in one embodiment has a cross-section forming at least two distinct locations corresponding to said positions for the safety catch, and, in another embodiment, the inner cavity of the attachment member has an essentially square shape with inner corners.

[0021] In yet another embodiment, the inner cavity comprises at least one groove in each of at least two

diametrically opposing inner corners increasing the inner dimension between these corners. The safety catch in still another embodiment is shaped such that it is able to clamp the ledger when locked in its second position.

[0022] The advantages of the present invention are the following: a minimum of parts are required for constructing the securing device facilitating both handling, mounting, dismounting and storing of the different parts, and also the securing device as a whole due to the fact that only two parts form the securing device; the reduced complexity of the securing device also reduces the wear of parts, the risk of corrosion of parts, and parts freezing on to or in each other minimizing the malfunction as a lesser number of parts is used; and reduces costs related thereto.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] Preferred embodiments of the invention will be described below with reference to the enclosed drawings, in which

Fig. 1 is a perspective view of one end of a deck mounted at a ledger with a securing device according to the invention in an open position;

Fig. 2 is a perspective view of the end of the deck mounted at the ledger as shown in Fig. 1 with the securing device according to the invention in a locked position around the ledger;

Fig. 3 is a view from above of the securing device according to the invention in its open position, as shown in Fig. 1;

Fig. 4 is another view from above of the securing device according to the invention in an intermediate position;

Fig. 5 is yet another view from above of the securing device according to the invention in its locked position, as shown in Fig. 2;

Fig. 6 is a side view of one embodiment of the securing device according to the invention in its locked position;

Fig. 7 is a perspective view of the catch of the securing device shown in Fig. 6;

Fig. 8 is a side view of another embodiment of the securing device according to the invention in its locked position;

Fig. 9 is a perspective view of a catch of the securing device shown in Fig. 89;

Fig. 10 is a perspective view of the end of the deck with yet another embodiment of the securing device according to the invention in its open position;

Fig. 11 is a side view of the securing device shown in Fig. 10;

Fig. 12 is a side view of the securing device shown in Figs. 10 and 11 when in its locked position;

Fig. 13 is a perspective view of a catch of the securing device shown in Figs. 10 to 12;

Fig. 14 is a side view of the securing catch shown in Fig. 13;

Fig. 15 is a perspective view of still another embodiment of the securing device according to the invention in its locked position;

Fig. 16 is a side view of the securing device shown in Fig. 15;

Fig. 17 is a front view of the securing device shown in Figs. 15 and 16;

Fig. 18 is a view from above of the securing device shown in Figs. 15 to 17;

Fig. 19 is another view from above of the securing device shown in Figs. 15 to 18 in its open position; and

Fig. 20 is a perspective view of a catch of the securing device shown in Figs. 15 to 19.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0024] The present invention, as mentioned above, relates to a self-springing securing device 10, arranged between a deck or a stair 20 and a ledger 30 in e.g. scaffolding, for releasably locking these detachable parts, i.e. at least one deck or stair to the modular scaffolding. The securing device comprises a safety catch 4, 40, 400, 410 (shown in Figs 1-20), preferably arranged at the exterior end of the deck or the stair. Alternatively, the catch may be modified to be arranged on the scaffolding or ledger instead (not shown). The deck or stair 20 comprises hook-shaped protrusions for mounting onto the ledger 30 (shown in Figs 1 and 2), which deck or stair then is secured by the securing device 10 according to the invention for preventing these hooks from being lifted off accidentally from the ledger.

[0025] The securing device 10 for securing the deck or stair 20 comprises the safety catch 4, 40, 400, 410 movably mounted in an attachment member 5, 50 on the deck end. Figs 3-5 show the function of the securing device 10. The catch is adapted to be moved from a first open position 10A shown in Figs 1, 3, 10, 11, and 19 to a second securing position 10B shown in Figs 2, 5, 6, 8, 12, and 15 to 18, and to interact with the attachment member achieving an inherent spring action enabling the catch to be moved manually between the positions 10A, 10B, while at the same time enabling the catch to be retained in each position. The catch is held in each position by itself. The catch moves past an intermediary position 10C shown in Fig 4 when moved counter-clockwise between the positions 10A and 10B. The catch could of course be moved in the clockwise direction (as for another embodiment of the catch 410 moved from the locked position 10B in Fig 18 to the open position 10A in Fig 19) if the catch in Fig 3 pointed downwards instead of upwards.

[0026] The safety catch 4, 40, 400, 410 is an elongated object with a bent shape such that when fitting the catch into the attachment member 5, 50, which functions as a

bracket for forming the security device 10 together with the catch as one unit consisting of only two parts. The catch is resiliently and movably clamped inside the bracket 5, 50 when the security device is attached to the deck or stair 20. The safety catch 4, 40, 400, 410 may have a L-shape (surrounding at least two sides of the ledger 30 when locked, see Figs 8 and 9), an U-shape (surrounding at least two opposing sides of the ledger, see Fig 6), i.e. one embodiment has an U-shape in at least two directions as seen in Figs. 3 to 5 and 6, or a D-shape (surrounding at least one side of the ledger and functioning similar to a stop or anvil when locked or surrounding all sides of a pin or stud (not shown) when folded over the pin end such that the pin end protrudes through the eyebolt like catch when locked in position 10B shown in Figs 15-18).

[0027] The safety catch 4, 40, 400, 410 according to the invention is a bent wire. The catch is shaped in such a way that the central portion of the catch is made by double wire or the catch ends 4A, 4B; 40A, 40B; 410A are made by double wire.

[0028] The catch 4, 40, 400, 410 in one embodiment is rotatably arranged in the bracket 5, 50 such that it may be rotated one whole turn or more, i.e. it may be turned more than 90°, and even more than 360°, even though, in some of the disclosed embodiments, the catch is not turned more than 90° or 180° in the bracket when used. The catch is turned stepwise 90°, one step at a time achieving almost fixed intervals between the positions 10A and 10B. This construction of the security device 10 according to the invention has no rotation limiting structure in itself as it may be rotated more than one whole turn inside the bracket. The only stops for its resilient pivoting in shown embodiments are the deck or stair 20 forming physical stops or anvils.

[0029] In the shown embodiments of Figs 1-9 and 15-20, the catch 4, 40, 410 is bent double at least at its middle portion, and in the embodiment shown in Figs 10-14, the catch 400 is double at its ends 400A, 400B. Each doubled portion of each catch is fitted into one bracket 5, 50 and clamped therein when the security device 10 is attached to the deck or the stair 20, such that this double portion is compressed inside the bracket creating an inherent biasing/spring action or force from the catch inside the bracket. Any known detachable or non-detachable means of attaching the bracket to the deck is possible, e.g. screws and nuts, clamps, welding, or riveting, but detachable means are preferred.

[0030] The embodiment of the catch 400 in Figs 10-14 may be used as a handle for lifting a deck/stair 20 or as a safety catch for preventing the same deck or stair to be lifted off the ledger 30 accidentally. If this catch 400 is to be used as a safety catch it is attached to the ledger or the scaffolding 30 such that its protruding end 400A is placed over the deck or stair when in its locked position 10B shown in Fig 12. In this embodiment, two brackets 5 are used for holding the catch 400.

[0031] Figs. 1, 3, 10, 11, and 19 show the catch 4, 40, 400, 410 in its open position. When mounting the deck 20 to the ledger 30, the catch will be in this open position 10A. In its open position, the hooks of the deck/stair can be hooked, without resistance, over the ledger. The catch is then switched over by turning it manually to its locking position 10B shown in Figs 2, 5, 6, 8, 12, and 15-18. The protruding end 4B, 40B of the catch 4, 40 in Figs 3-9 will then be placed under the ledger 30, the same goes for the protruding end 410B of the catch 410 in Figs 15-18, and 20, preventing the deck or stair from being lifted up; thus making it securely locked. Disassembling is performed in reverse order. The two embodiments of the catch 4, 40 and 410 may be placed on the ledger 30 or the deck/stair 20 as these catches are turned around an axis being essentially perpendicular to the plane of the deck. This also means that their axes of rotation is essentially in parallel or parallel with the lifting direction for the deck when assembled and disassembled, whereby these safety catches can not be retracted by mistake if they are hit in the lifting direction while handling the deck. In this embodiment, the two free ends 4A, 4B; 40A, 40B of the safety catch 4, 40 extend essentially radially in relation to the attachment member 50, i.e. perpendicularly to the lifting direction of the deck 30. If any of the two catches 4 and 410 is placed on the ledger 30, their protruding ends 4B and 410B would then be placed over the deck or stair 20 when each catch is in the locked position 10B. The catch 4 may also be turned upside-down in the latter arrangement, i.e. when placed on the ledger, such that it has a inverted position compared to Fig 8 with the end 4B closer to the ledger instead of only moving this catch up and over the ledger with the same orientation as shown. In another embodiment, the two free ends 400A, 400B of the safety catch 400 extend essentially along the attachment member 50 for better enabling the catch to be used as a retractable handle being retracted and extracted in the same direction as the lifting direction for the deck..

[0032] The bracket 5, 50 comprises an inner cavity 51 in the form of a through hole. The inner cavity has a cross-section creating varying inside dimensions for control of the springing of the safety catch 4, 40, 400, 410 when moved thereinThe inner cavity cross-section is formed with inner corners, grooves or recesses for forming at least two distinct locations opposite each other or at least two pairwise opposing locations. These distinct inner locations are achieved by making the inside dimension of the inner cavity 51 larger at these opposing locations and smaller at the areas between these locations. This means that the catch with its inherent biasing will snap into these diametrically opposing locations while at the same time create a resistance against movement out of these locations ensuring a reliable and sufficiently function but, at the same time, not making the effort for manual turning too great. These locations with larger inner dimension correspond to the retaining positions 10A, 10B. The inner cavity 51 of the attachment member 5, 50 has an essentially square shape but could of course be shaped with

a circular cross-section having inner grooves forming the locations, a hexagonal cross-section forming more than two pairwise opposing locations, i.e. more than four distinct locations, or any other suitable shape. One example of a inner cavity cross-section is square with at least two diametrically opposing inner corners being locally deeper (compared to the other corners between which the inner dimension is smaller diametrically) by means of additional grooves or indentations for increasing the retaining effect/force on the catch, e.g. in the locked position. The increased retaining effect is achieved in that the indentations surround a larger part of the catch envelope when in this position. Hence, the inner dimensions of the cavity 51 are varied locally for controlling the springing properties of the catch and for detemining the number of locations, e.g. instead of two positions, three or more positions with varying depth, i.e. larger or smaller inside dimensions diametrically, may be achieved with more or less resistance against movement in and out of these locations 10A, 10B.

[0033] In the shown embodiments, the bracket 5, 50 is equipped with an longitudinal opening at the side towards the deck or stair 20 for enabling the introduction of the safety catch 4, 40, 400, 410. In another not shown embodiment, the bracket 5, 50 could be made as two complementary halves between which the catch is placed, the two halves are put together forming the inner cavity 51 around the catch, and assembled into a two-part bracket resiliently clamping the catch therebetween. In another embodiment (not shown), one "half" of the "two-part" bracket 5, 50 could be integrated in the deck/stair 20 or the ledger 30 in the form of a open cavity or recess, i.e. this complementing bracket half would then be a fixed part of the deck or ledger.

[0034] The securing device 10 according to the invention may be used as safety catches for detachable decks and/or stairs in modular scaffolds, retractable handles in other applications, and/or retractable load hooks in other suitable applications, especially the eye-bolt like safety catch 410.

[0035] Preferably, the above catch is made of an erosion-resistant material, such as zinc-coated or stainless steel, plastic or some other material suitable for the purpose and the bracket 5, 50 is made of aluminum, zinc-coated or stainless steel, plastic or some other material suitable for the purpose.

[0036] Another embodiment (not shown) of the catch 4 in Fig 6 has divergent ends 4A and 4B, i.e. instead of essentially parallel ends. The ends extend such that an increasing distance is achieved between them in their direction pointing away from the bracket 50. This varying distance between the ends 4A, 4B is adapted such that a physical contact is enabled between the ends and the ledger 30 in the ledge locking position 10B for the catch, whereby the ledger is clamped and held in a conical space between the catch ends 4A and 4B.

Claims

1. Device (10) for securing detachable parts (20) at a modular scaffolding (30) comprising a safety catch (4, 40, 400, 410), the catch being adapted to be moved from a first open position (10A) to a second securing position (10B) when securing at least one detachable part at the scaffolding, **characterised in that** the safety catch (4, 40, 400, 410) is movably arranged in an attachment member (50) on the associated detachable part (20) and is shaped in such a way that the safety catch and the attachment member interact achieving an inherent spring action enabling the catch to be moved manually between the first and second positions (10A, 10B), while at the same time enabling the catch to be retained in each position.

2. Device (10) for securing detachable parts (20) at a modular scaffolding (30) comprising a safety catch (4, 40, 400, 410), the catch being adapted to be moved from a first open position (10A) to a second securing position (10B) when securing at least one detachable part at the scaffolding, **characterised in that** the safety catch (4, 40, 400, 410) is devised to surround at least two opposing sides of a connecting part on the associated scaffolding (30) when securing the detachable part (20) at the scaffolding.

3. Device (10) according to claim 1 or 2, wherein the safety catch (4, 40, 400, 410) is shaped in such a way that it will have resilient properties enabling the catch to be retained in the first open position (10A) and the second securing position (10B), respectively.

4. Device (10) according to claim 2, wherein the safety catch (4, 40, 400, 410) is shaped in such a way that it will have resilient properties enabling the catch to be retained in each of said positions (10A, 10B).

5. Device (10) according to claim 2, 3 or 4, wherein the safety catch (4, 40, 400, 410) is arranged to surround at least three sides of the connecting part on the associated scaffolding (30).

6. Device (10) according to claim 1, wherein the safety catch (4, 40, 400) has an L-shape.

7. Device (10) according to any one of the preceding claims, wherein the safety catch (4, 40, 400) has an U-shape.

8. Device (10) according to any one of the preceding claims, wherein the safety catch (410) has a D-shape.

9. Device (10) according to any one of the preceding

claims, wherein the safety catch (4, 40, 400, 410) is shaped in an elongated bent form.

10. Device (10) according to claim 9, wherein the safety catch (4, 40, 400, 410) is shaped of a bent wire in such a way that the central portion of the catch is made by double wire.

11. Device (10) according to claim 9, wherein the safety catch (4, 40, 400, 410) is shaped of a bent wire in such a way that the ends (4A, 4B; 40A, 40B; 410A) of the catch is made by double wire.

12. Device (10) according to claim 10 or 11, wherein the safety catch (4, 40, 400, 410) is rotatably attached at its central portion or its ends (4, 40, 400) to the detachable part (20) of the scaffolding (30).

13. Device (10) according to any one of the claims 2 to 12, wherein the safety catch (4, 40, 400, 410) is arranged through an attachment member (50).

14. Device (10) according to claim 1, wherein the safety catch (4, 40, 400, 410) is arranged through the attachment member (50).

15. Device (10) according to claim 13 or 14, wherein the safety catch (4, 40) has two free ends (4A, 4B; 40A, 40B) extending in the essentially same direction.

16. Device (10) according to any of the claims 1 and 13 to 15, wherein the safety catch (4, 40, 400, 410) is shaped and arranged in the attachment member (50) such that the spring action is achieved by means of a biasing force from the catch being clamped therein.

17. Device (10) according to any of the claims 1, and 13 to 16, wherein the attachment member (5, 50) has an inner cavity (51) with varying inside dimensions for control of the resilience of the safety catch (4, 40, 400, 410) when moved therein.

18. Device (10) according to claim 17, wherein the inner cavity (51) of the attachment member (5, 50) has a cross-section forming at least two distinct locations corresponding to said positions (10A, 10B) for the safety catch (4, 40, 400, 410).

19. Device (10) according to claim 17 or 18, wherein the inner cavity (51) of the attachment member (5, 50) has an essentially square shape with inner corners.

20. Device (10) according to claim 19, wherein the inner cavity (51) comprises at least one groove in each of at least two diametrically opposing inner corners increasing the inner dimension between these corners.

21. Device (10) according to any of the claims 2 to 20, wherein the safety catch (4, 40, 400, 410) is shaped such that it is able to clamp the ledger (30) when locked in its second position (10B).

Fig. 2

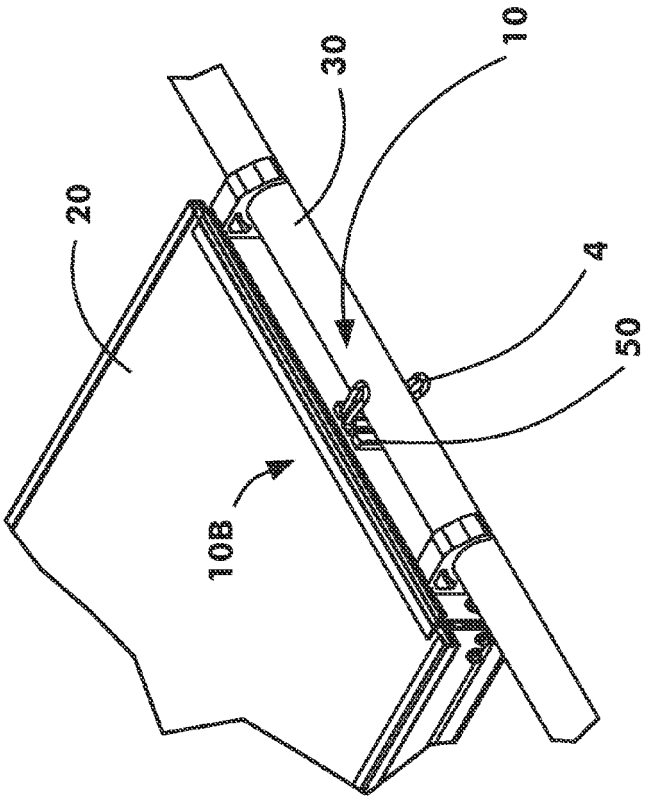


Fig. 1

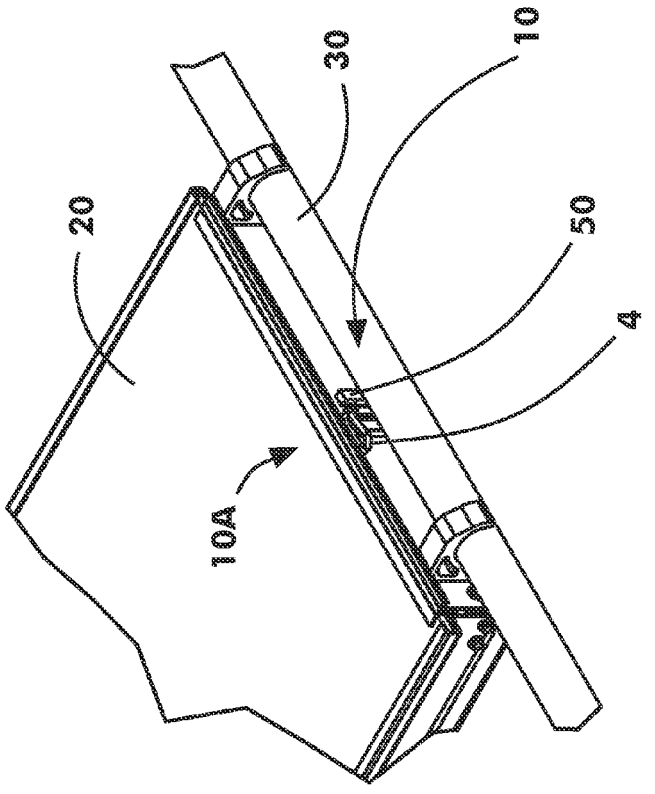


Fig. 5

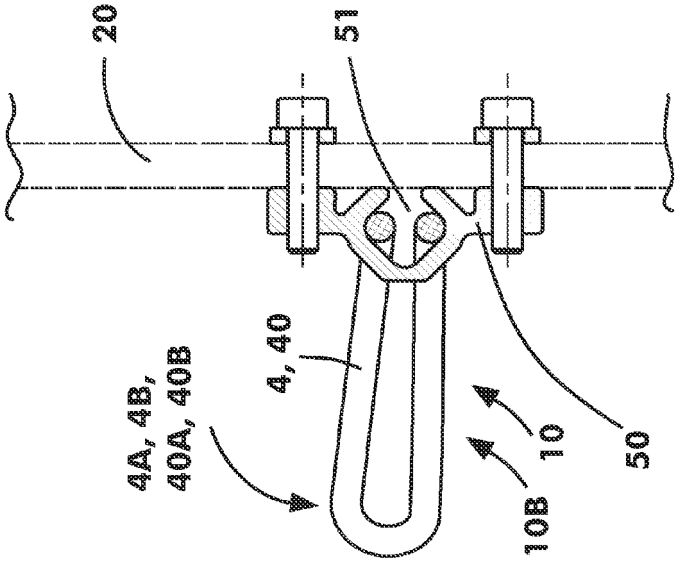


Fig. 4

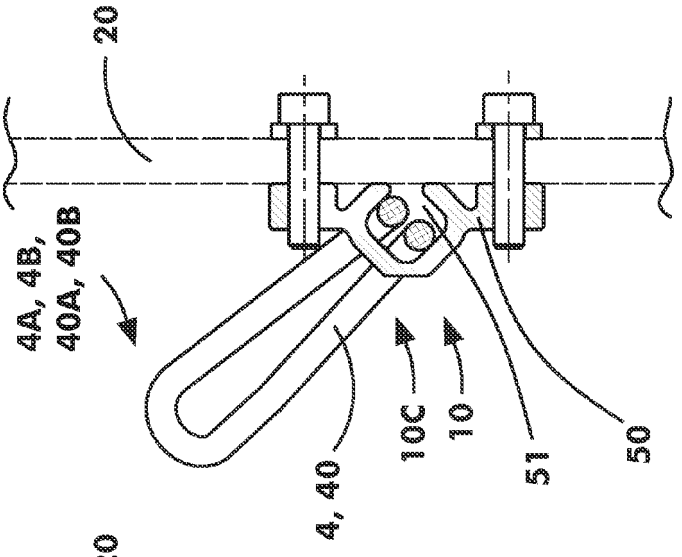


Fig. 3

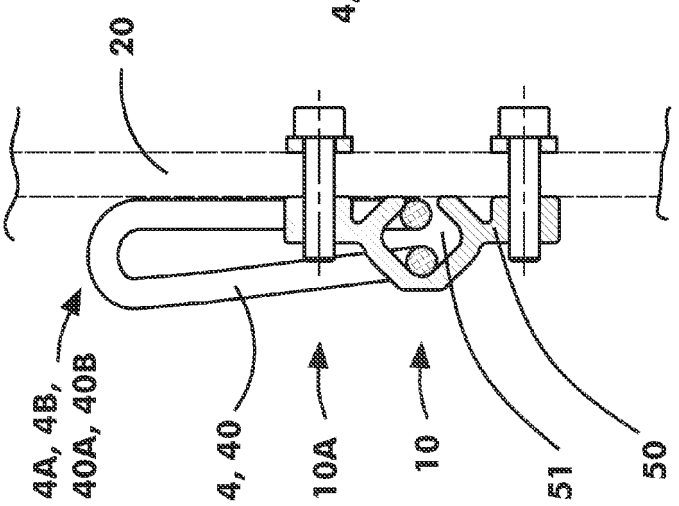


Fig. 6

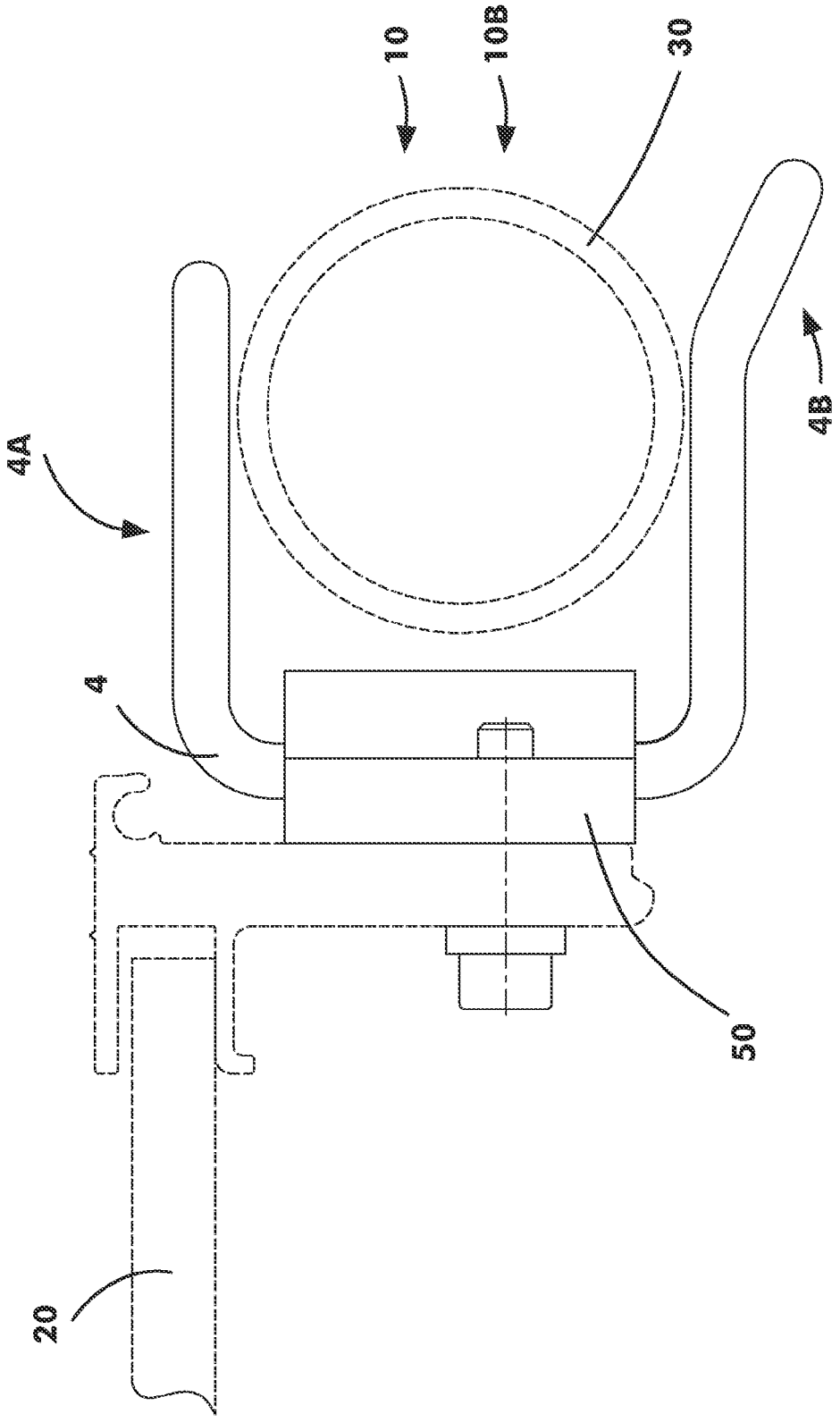


Fig. 7

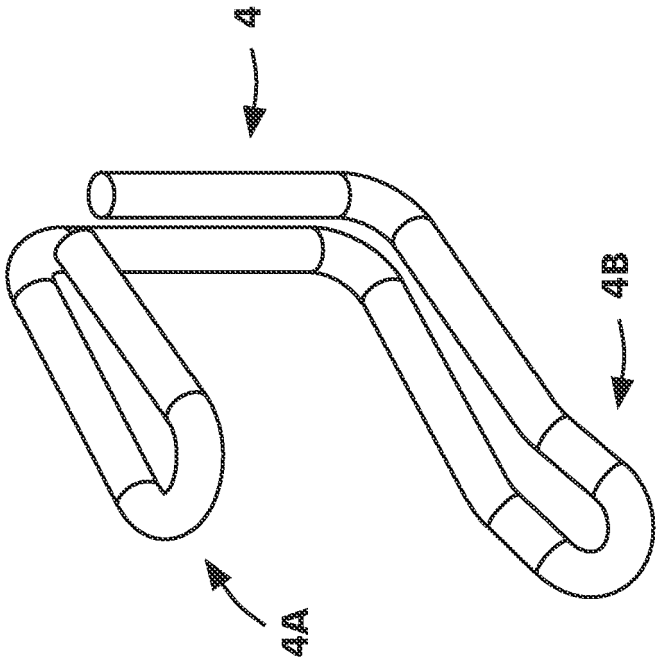


Fig. 8

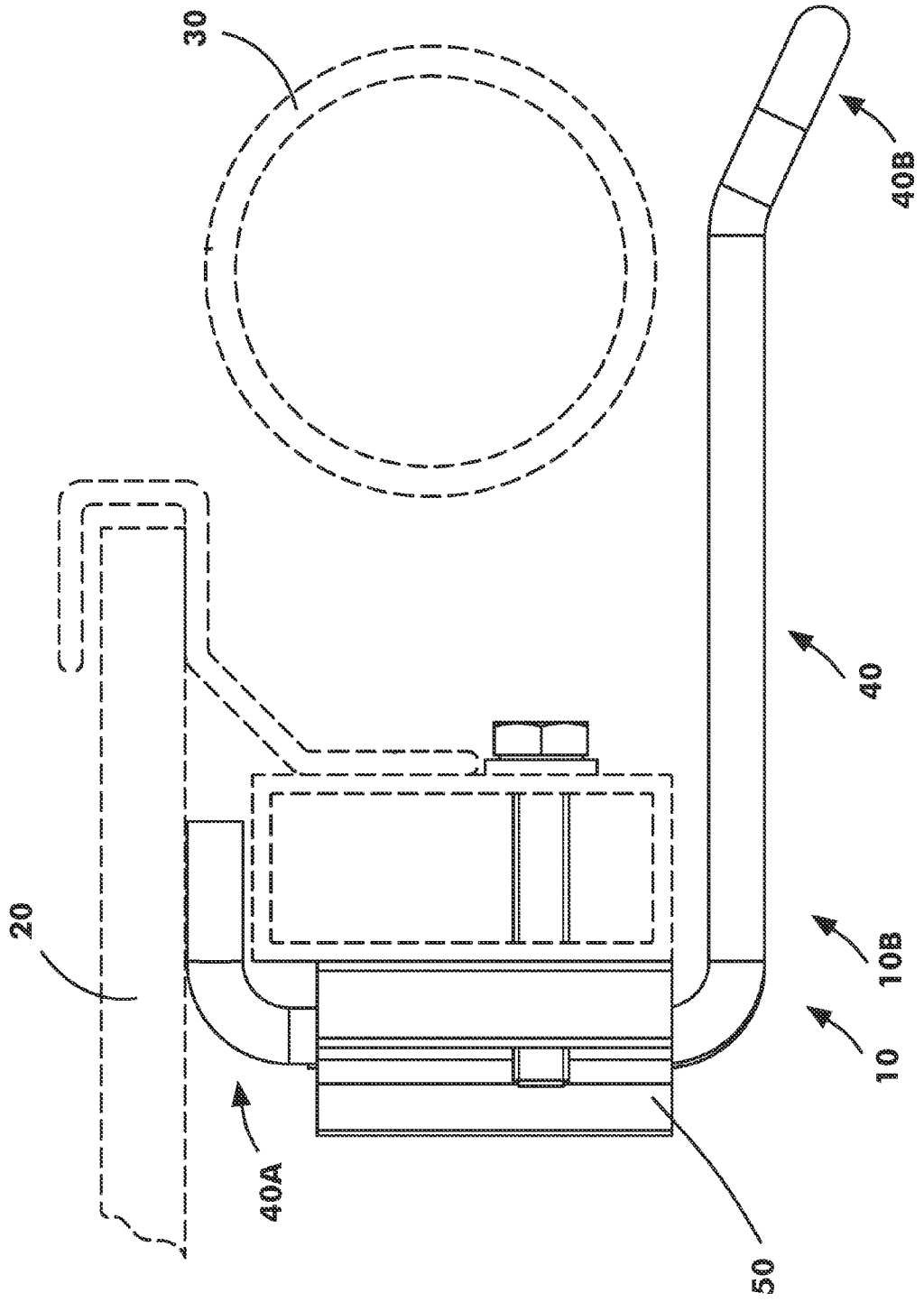


Fig. 9

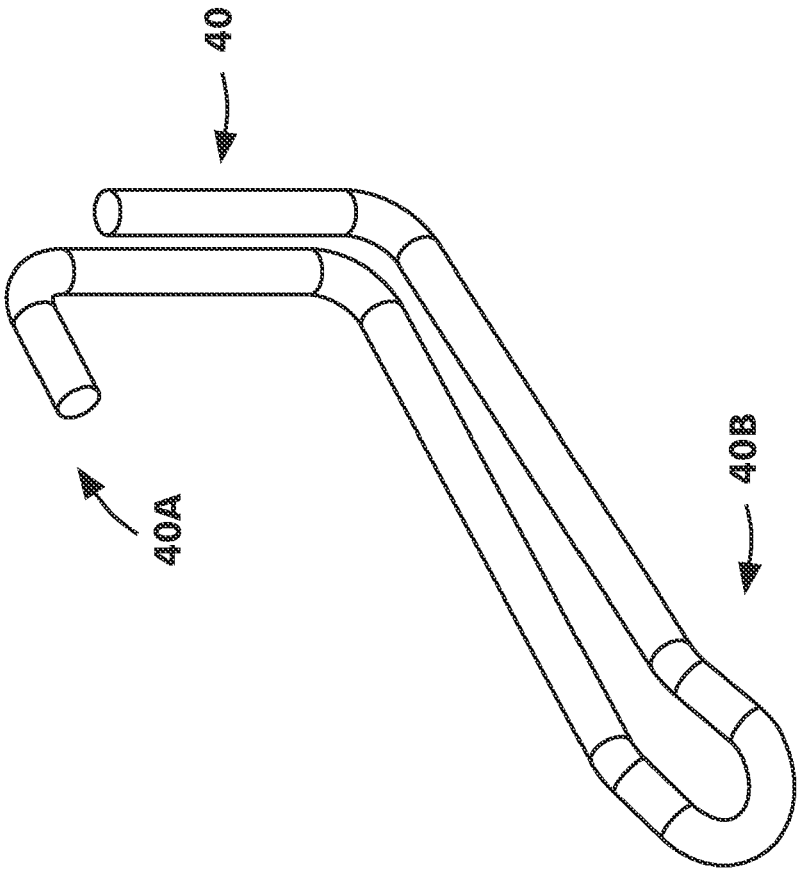


Fig. 10

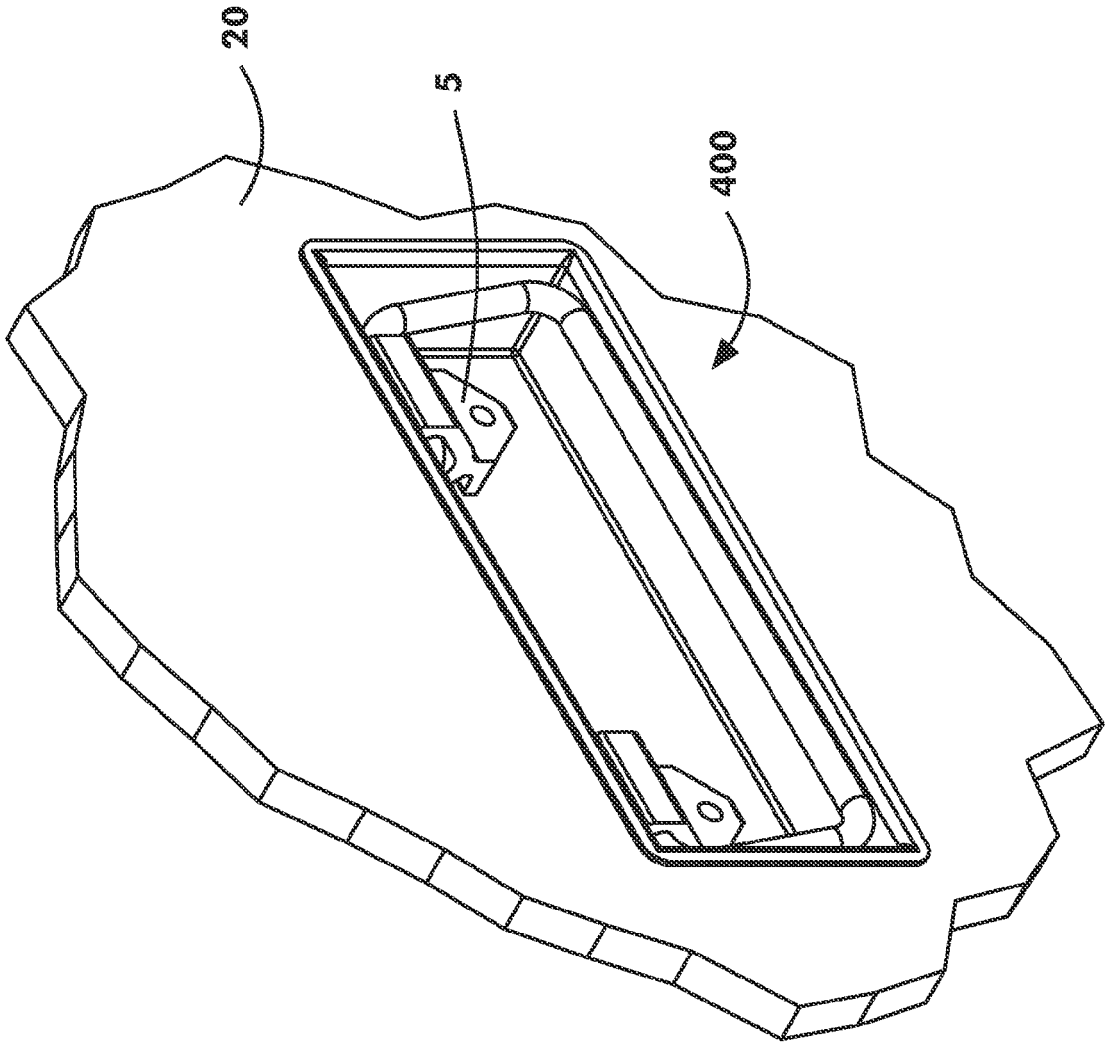


Fig. 12

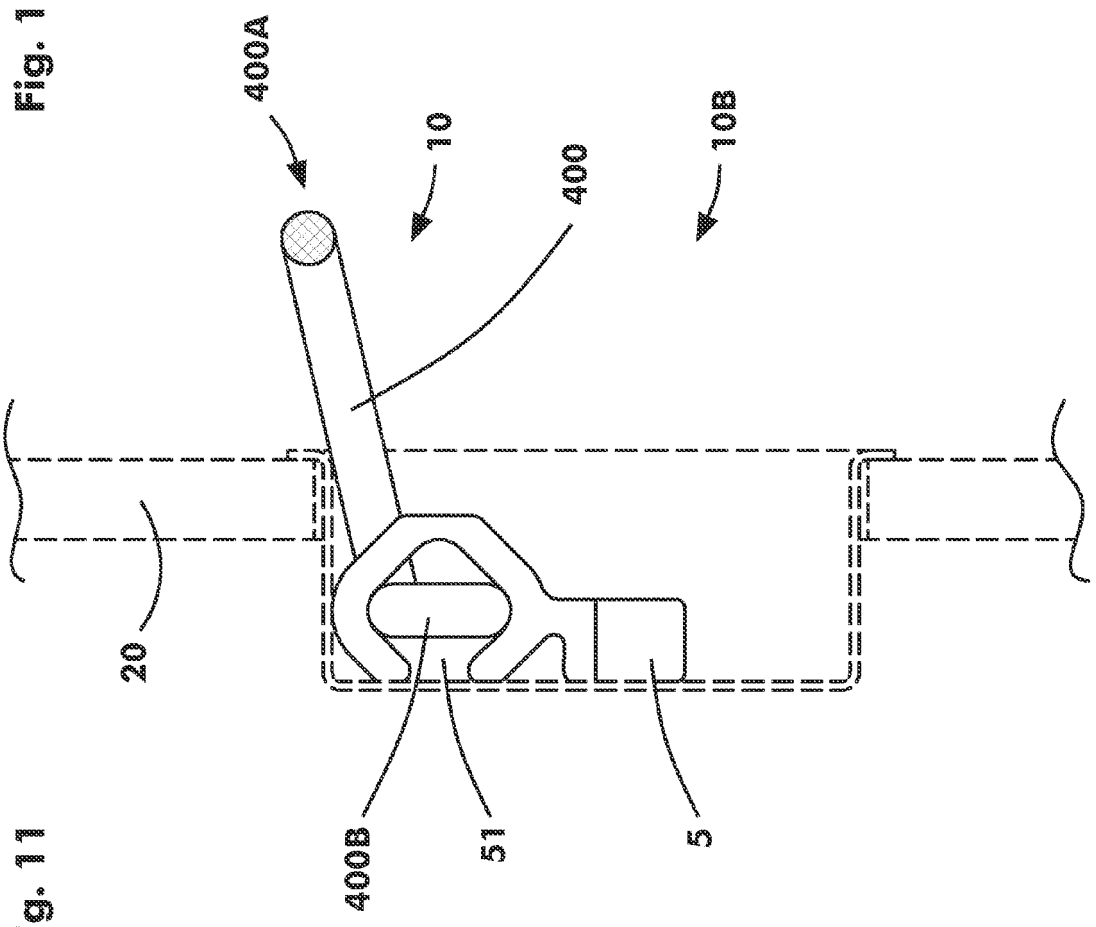


Fig. 11

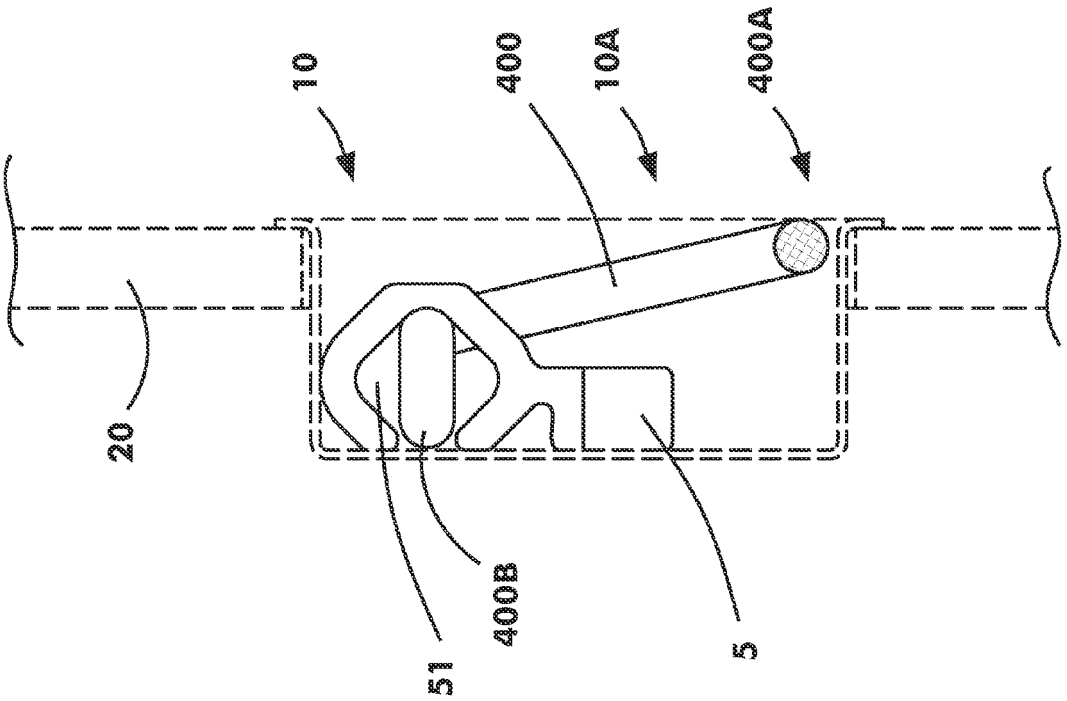


Fig. 14

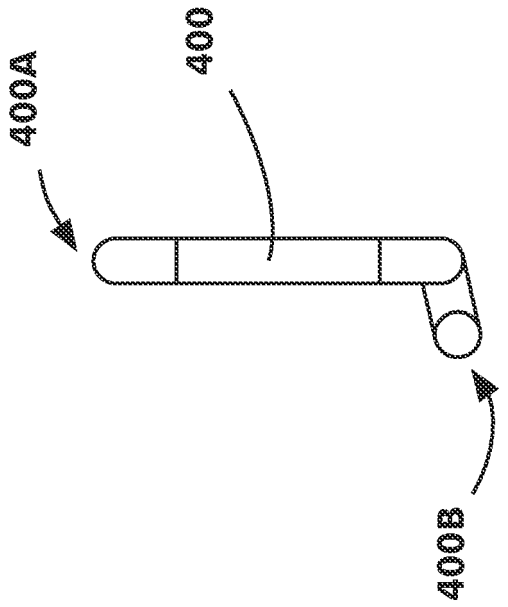


Fig. 13

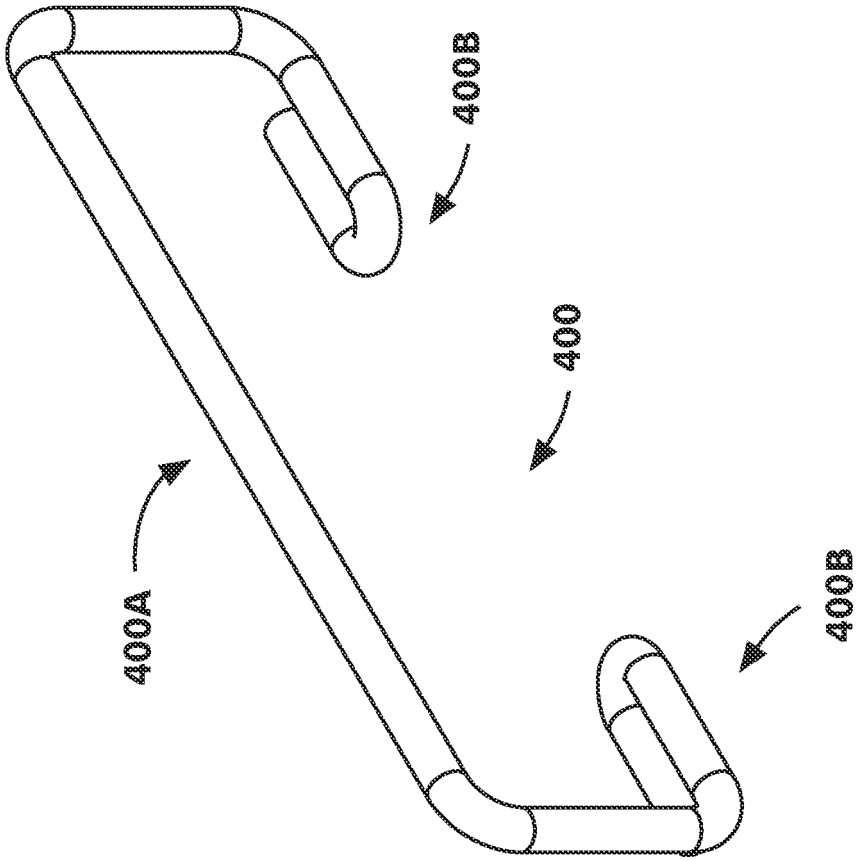


Fig. 16

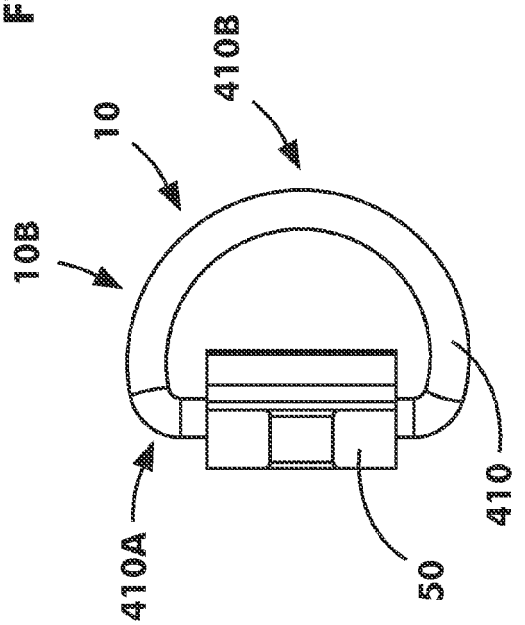


Fig. 15

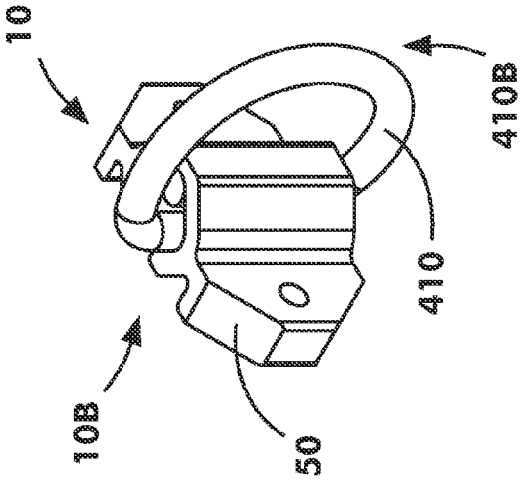


Fig. 17

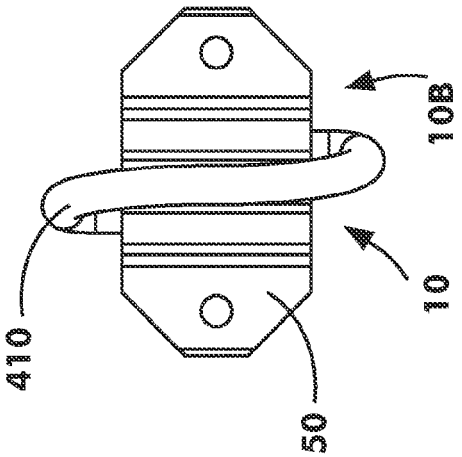


Fig. 18

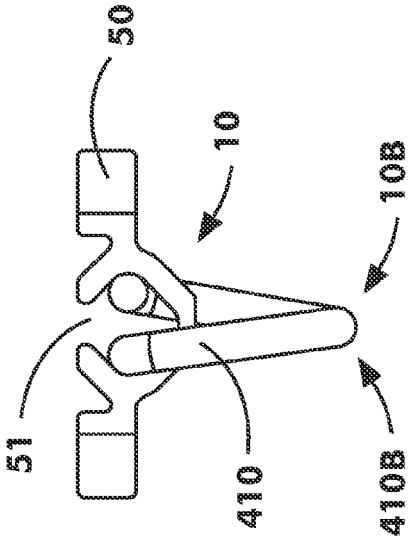


Fig. 20

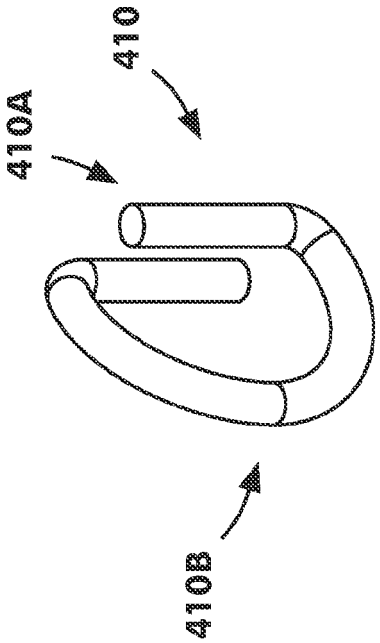
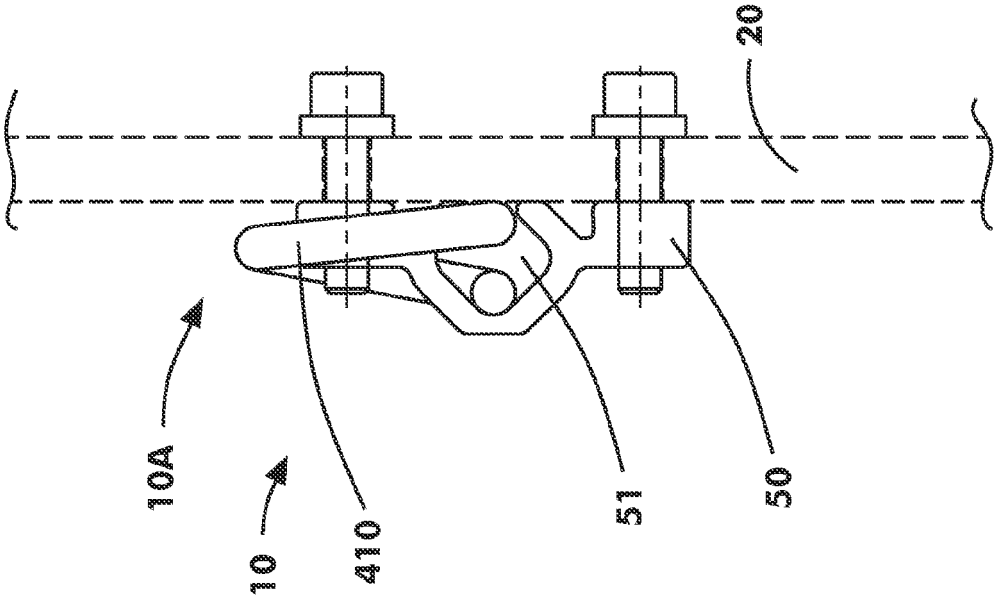


Fig. 19



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EUROPEAN SEARCH REPORT

Application Number
EP 08 16 9693

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2006/086989 A (JUMBO STILLADS AS [DK]; KNUDSEN BIRGER ADSBOEL [DK]) 24 August 2006 (2006-08-24) * the whole document *	1,3,4,9, 12-15,21	INV. E04G1/15 E04G7/28
X	EP 1 983 129 A (WILHELM LAYHER VERWALTUNGS GMB [DE]) 22 October 2008 (2008-10-22) * page 19, lines 14-48 * * abstract; figures 5,11,16-18 *	1,3,4,14	
X	GB 2 310 000 A (NOLAN JAMES GERALD [GB]) 13 August 1997 (1997-08-13) * page 4, line 24 - page 6, line 8 * * abstract; figures 1-5 *	2,3,9, 10,15,21	
X	GB 743 311 A (UP RIGHT INC) 11 January 1956 (1956-01-11) * the whole document *	2-4	
A	EP 0 061 257 A (EIGERTOWER LIMITED [GB]) 29 September 1982 (1982-09-29) * page 4, line 3 - page 5, line 14 * * abstract; figures 1,2 *	1	TECHNICAL FIELDS SEARCHED (IPC) E04G
A	FR 2 719 066 A (COMABI [FR]) 27 October 1995 (1995-10-27) * abstract; figure 2 *	2	
A	US 2 398 306 A (HERMANSON JOHN H) 9 April 1946 (1946-04-09) * the whole document *	2	
A	GB 2 174 747 A (ALTO SYSTEMS LTD) 12 November 1986 (1986-11-12) * the whole document *		

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	6 July 2009	Scharl, Willibald

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EUROPEAN SEARCH REPORT

Application Number
EP 08 16 9693

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 195 04 038 A1 (PERALTA ALVARO [DE] LAYHER W VERMOGENSVERW GMBH [DE]) 14 August 1996 (1996-08-14) * the whole document *	1	
A	JP 2002 004572 A (OJIMA SEISAKUSHO KK) 9 January 2002 (2002-01-09) * abstract; figures 1-9 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	6 July 2009	Scharl, Willibald

CATEGORY OF CITED DOCUMENTS

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Application Number
EP 08 16 9693

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 08 16 9693

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1,3,4,14-20

Independent claim 1 and dependent claims 3,4,14-20 concerning
A device for securing detachable parts at a modular scaffolding comprising a safety catch movable from a first open position to a second securing position, the catch being movably arranged in an attachment member and being shaped such that the safety catch and the attachment member interact achieving an inherent spring action enabling the catch to be moved manually between the first and second positions, and also enabling the catch to be retained in each position.

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2. claims: 2,5-13,15,21

Independent claim 2 and dependent claims 5-13, 15, 21 concering
A device for securing detachable parts at a modular scaffolding comprising a safety catch movable from a first open position to a second securing position, the catch being devised to surround at least two opposing sides of a connecting part on the associated scaffolding.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 16 9693

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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06-07-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006086989 A	24-08-2006	NONE	
EP 1983129 A	22-10-2008	WO 2008128500 A2	30-10-2008
		DE 102007018314 A1	06-11-2008
GB 2310000 A	13-08-1997	NONE	
GB 743311 A	11-01-1956	NONE	
EP 0061257 A	29-09-1982	DK 120782 A	20-09-1982
		FI 820958 A	20-09-1982
		GB 2096228 A	13-10-1982
		IE 52674 B1	20-01-1988
		NO 820906 A	20-09-1982
FR 2719066 A	27-10-1995	NONE	
US 2398306 A	09-04-1946	NONE	
GB 2174747 A	12-11-1986	NONE	
DE 19504038 A1	14-08-1996	NONE	
JP 2002004572 A	09-01-2002	NONE	

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Patent documents cited in the description

- SE 521317 C2 **[0004]**