

(19) **DANMARK**

(10) **DK/EP 1571275 T3**



(12)

Oversættelse af
europæisk patentskrift

Patent- og
Varemærkestyrelsen

-
- (51) Int.Cl.: **E 04 G 5/14 (2006.01)**
- (45) Oversættelsen bekendtgjort den: **2015-10-19**
- (80) Dato for Den Europæiske Patentmyndigheds bekendtgørelse om meddelelse af patentet: **2015-07-29**
- (86) Europæisk ansøgning nr.: **05001870.4**
- (86) Europæisk indleveringsdag: **2005-01-29**
- (87) Den europæiske ansøgnings publiceringsdag: **2005-09-07**
- (30) Prioritet: **2004-03-05 DE 202004003628 U**
- (84) Designerede stater: **AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR**
- (73) Patenthaver: **Wilhelm Layher Verwaltungs-GmbH, Ochsenbacher Strasse 56, 74363 Güglingen-Eibensbach, Tyskland**
- (74) Fuldmægtig i Danmark: **Zacco Denmark A/S, Arne Jacobsens Allé 15, 2300 København S, Danmark**
- (54) Benævnelse: **Indretning til montering af en midlertidig gelænderstang på et stillads**
- (56) Fremdragne publikationer:
EP-A- 1 338 723
WO-A-02/077392
DE-A1- 10 243 356

TECHNICAL FIELD

The present invention concerns an apparatus for a scaffold having scaffolding levels with vertical members, bars, boards and guard rails for mounting a necessary and temporarily present guard rail of an existing scaffolding level for a scaffolding level that is yet to be constructed and is to be mounted above it, having a rail support that is connectable to the front side of a vertical member of the existing scaffolding level and has a first connection device, a second connection device, a third connection device, wherein the first connection device is arranged in the upper end region of the rail support and serves for connecting the temporary guard rail, the third connection device is configured such that it is releasably connectable to the mounted vertical member of the existing level in the region of the connection of the mounted guard rail, and the spacing between the third connection device and the first connection device is selected such that, with the third connection device connected, the temporary guard rail is at a predefined height with regard to the scaffolding level yet to be constructed, the second connection device is positioned between the first and third connection devices for releasable connection to the vertical member, means for releasably locking the second and third connection devices are present, means for actuating the means for releasable locking are present and have, in the upper and/or lower end region of the rail support, a handle, in particular a hand grip, a rotary profile which is connected to the handle and is mounted so as to be rotatable within the rail support about a rotation axis.

Such apparatus is also known as advancing safeguards or advancing guard rails.

PRIOR ART

5

In the familiar Layher-Blitz and Layher-Allround scaffolding systems, the individual scaffolding levels are mounted from system components. The mounting process occurs from the bottom up. After the vertical members or vertical frame, the bars, the boards the guard rails and optionally the
10 diagonals are mounted per level, the surface for the next level up can be mounted. When the installer reaches the new level being erected, steps must be taken to ensure that certain safeguarding elements are already present in this state in order to offer him a purchase. The mentioned scaffolding systems make use of advancing handrail supports. That is,
15 when the installer has reached the “new” level, at least rail posts are present to which he can secure a guard rail. However, this rail must be mounted and dismounted at each level.

Scaffolding systems are known in which frames are used, replacing the
20 rails and diagonals. After the mounting of such a frame, the upper horizontal bar already forms the railing for the scaffold layer yet to be mounted above. The frame construction itself is part of the scaffold. There is another known configuration in which a frame is likewise used, whose upper horizontal bar forms the advancing railing. This frame is installed
25 during the assembly in two already mounted guard rails and must then be moved level by level to ensure an advancing guard rail. Both frame

structures are rather bulky, heavy, and therefore difficult to install. In any case, several installers have to be used for the mounting and dismounting.

An advancing railing is known from EP 1 338 723 A2 in which it is possible to provide a temporary guard rail for a scaffold layer to be mounted above from an existing scaffold layer. This design is adapted to the existing scaffold systems and enables an easy mounting.

An apparatus of this kind for producing an advancing railing is known from WO 02/077392 A1 in which handles are provided each time in the end region of the rail supports which enable a releasable connection of the rail supports to the respective vertical member of the scaffold. In order to make possible the releasable connection, the rail support must be moved sideways, that is, in the direction of the particular guard rail. In this way it is necessary to activate the telescopic guard rail disposed between the rail supports, which means increased effort on the part of the installer.

PRESENTATION OF THE INVENTION

Starting from the mentioned prior art, the problem which the present invention proposes to solve, or technical problem, is to indicate an apparatus of the above mentioned kind which enables an easy mounting of an advancing railing from an existing level for a level being constructed above it, which substantially reduces the effort in mounting the advancing railing and can be produced economically.

Furthermore, the invention is based on the technical problem of indicating an apparatus of the above mentioned kind which can be mounted and moved by one installer, without requiring a telescoping ability of the temporary guard rail in the locking or releasing process.

5

The apparatus according to the invention is given by the features of independent claim 1. Advantageous embodiments and further modifications are the subject matter of the dependent claims.

- 10 The apparatus of the invention of the above mentioned kind is characterized in that the second and third connection devices have a U-shaped receiving region that is open towards the front, that is to say perpendicularly to the rotation axis, and the means for releasable locking have a lever element that is subjected to the effect of an elastic element
- 15 and constricts the U-shaped receiving region for the purpose of locking and opens it for the purpose of releasing, such that the second and third connection devices are connectable to the vertical member in a movably releasable manner from the front, that is to say perpendicularly to the plane formed by the rail supports which can be arranged adjacent on the
- 20 scaffold, and the temporary guard rail, wherein the lever element is formed so as to be rotatable about a rotation axis and the means for releasable locking have a cable pull connected to the rotary profile and to the lever element, wherein the lever element is rotatable counter to the effect of the elastic element by rotation of the handle.

25

Because it is easily possible according to the invention to bring about the connection of the railing supports or their releasability when moving the

advancing railing from the front, the telescopic ability of the guard rail arranged between the respective rail supports is not needed when connecting or releasing them, which leads to a reduction in the necessary installation force. This means a substantially simplified mounting, since
5 the advancing railing has to be mounted in multiple steps and then moved upward level by level.

An especially preferred embodiment which ensures high connection rigidities, besides an economical fabrication possibility, is characterized
10 in that the second and the third connection device have two projecting profiles, arranged in a parallel and spaced-apart manner, with the forwardly open U-shaped receiving region, web profiles are arranged between the projecting profiles, and the lever element is arranged with the cable pull between the projecting profiles.

15

According to one advantageous modification, the apparatus according to the invention is characterized in that a fourth connection device is present, being configured as a projecting unit whose free end face area in the mounted state of the rail supports lies for at least a section on the outside
20 against the mounted vertical member, while an especially advantageous modification is characterized in that the fourth connection device has two spaced-apart abutment projections, which in the mounted state bear against the mounted scaffold on the inside in the connection region and thereby form a protection against twisting.

25

An especially advantageous variant configuration which is easy to mount and enables high connection rigidities in the region of the advancing

guard rail is characterized in that the second connection device and the third connection device have an abutment cross-sectional contour region which, in the mounted state, butts in a regionally form-fitting manner against the external contour of the mounted vertical member.

5

The invention further concerns an auxiliary scaffolding apparatus as a temporary rail for a scaffold having scaffolding levels with vertical members, bars, boards and guard rails for mounting a necessary and temporarily present guard rail of an existing scaffolding level for a scaffolding level that is yet to be constructed and is to be mounted above it, characterized in that the auxiliary scaffolding apparatus has at least two apparatuses of the above described kind connected to vertical members that are arranged in a spaced-apart manner, with at least one telescopic guard rail releasably connected to the respective rail support via the first connection device.

15

Thanks to the structural configuration and positioning of the connection device, an easy mounting of an advancing railing can be implemented with no problem, and without requiring a change in the design of the existing mass produced scaffold components. The apparatus is possible without changing the design in familiar scaffold systems (such as Layher-Blitz and Layher-Allround scaffold system).

20

Further embodiments and benefits shall emerge from the other features listed in the claims and by the sample embodiments given below. The features of the claims can be combined with each other in any desired manner, inasmuch as they obviously are not mutually exclusive.

25

BRIEF DESCRIPTION OF THE DRAWING

The invention and advantageous embodiments and modifications will be described more closely and explained with the aid of the examples presented in the drawing. The invention pertains only to the embodiments of figures 1, 5-7, 9, 11, 13. Figures 2-4, 8, 10, 12, 14 show embodiments which are not part of the invention.

- 10 Fig. 1, schematic section from a perspective view of a scaffold with an advancing railing consisting of two scaffolding posts and a telescopic guard rail disposed in between, wherein the scaffolding supports have three connection devices,
- Fig. 2, schematic side view of an example of a scaffold support, being especially suitable for the known Layher-Blitz scaffold system,
- 15 Fig. 3, schematic top, side and lengthwise view of detail K of Fig. 2,
- Fig. 4, schematic top, side and lengthwise view of detail M of Fig. 2,
- Fig. 5, schematic top view of a second connection device arranged between the first and third connection device,
- 20 Fig. 6, schematic side view of the second connection device of Fig. 5,
- Fig. 7, schematic detail perspective of detail L in the state connected to the scaffold,
- Fig. 8, schematic detail perspective of detail M in the state connected to the scaffold,
- 25 Fig. 9, schematic detail perspective of the upper end region of a railing support with handle,

Fig. 10, a), b), c) schematic side view of the mounted state of an apparatus with railing support and a second connection device and a third connection device designed as a hook-on structure,

Fig. 11, schematic side view of an apparatus with two identical second
5 connection devices per Fig. 5,

Fig. 12, a) to e), schematic detail view of a scaffold section in individual mounting states making use of an advancing railing,

Fig. 13, schematic detail perspective section of a known Layher-Allround scaffold system making use of an advancing railing per Fig. 10 in an
10 intermediate mounting state, and

Fig. 14, schematic detail perspective section of a known Layher-Blitz scaffold system making use of an advancing railing per Fig. 2 in an intermediate mounting state.

15 Figure 1 shows schematically a segment of a scaffold in a perspective view where already two scaffold levels 49, 50 have been mounted. Each scaffold level 49, 50 of field length L1 is composed of system scaffold components, namely, vertical members 26 or vertical frames disposed on the left and right, a guard rail 24 arranged in between and connected to
20 the vertical members 26 on the left and right, lengthwise bars not otherwise described, and a bottom planking 54 hooked onto transverse members arranged between every two railing posts 26 vertically to the plane of the image of Fig. 1.

25 Once the second level 50 is mounted in Fig. 1, an upper planking 56 is connected and the next level 52 can be mounted. In this state, there are no

safeguarding elements present for the time being on the scaffold level 52 being erected.

These safeguarding elements are provided by an apparatus 10 in one
5 variant embodiment shown in Fig. 1, of two railing supports 12, which can be connected to the already mounted vertical member 26, and a telescopic guard rail 22 arranged in between.

The railing supports 12 in the perspective view of Fig. 1 are located
10 directly in front of the vertical members 26, that is, on the front side of the vertical members 26 facing the observer.

The mounting of the apparatus 10 and its movement level by level during the mounting process is described further below.

15

The railing support 200 shown in Fig. 2 has a continuous round pipe profile 13 from top to bottom. Running from top to bottom the railing support 200 has a first, second and third connection device 14, 90, 100. The first connection device 14 serves to connect the guard rail 22. The
20 second and third connection device 90, 100 serve for connection to the already mounted vertical member of a scaffold level 50.

The first connection device 14 arranged in the upper end region is shown more closely in Fig. 3. Perpendicular to the lengthwise direction of the
25 round pipe 13 is formed a projecting unit 30, to whose free end region a pivoting tilt pin 32 is connected, which is positioned transversely to the projecting unit 30 by the action of its own weight.

An easy connection of a telescopic guard rail 22 is ensured in that a continuous recess is arranged in its end region, whose internal diameter is chosen such that the guard rail 22 can be shoved onto the projecting unit
5 30. After being shoved on, the tilting pin 32 automatically locks the connection position of the guard rail 22.

The second connection device 90 is shown more closely in Fig. 5 and 6.

10 The second connection device 90 has two projecting profiles 146, configured as platelike profiles, which are spaced apart parallel to each other, the corresponding spacing being formed by web profiles 148 arranged between the projecting profiles 146. The projecting profiles 146 have a U-shaped receiving region 114 which is open in front, forming on
15 its inside region a partly circular inner contour to receive the vertical member 26. In the lower marginal area of the U-shaped receiving region 114 is arranged a lever element 118 able to rotate about an axis of rotation 119, being subject to the action of an elastic element 116, which in the sample embodiment is configured as a spring element. The lever element
20 118 under the sole action of the elastic element 116 protrudes for a portion into the U-shaped receiving region 114, so that a vertical member 26 once introduced is securely locked. At the end region of the essentially U-shaped lever element 118 opposite the axis of rotation 119 a cable pull 126 is connected, being at the same time fastened to a rotary profile 124,
25 the rotary profile 124 being mounted inside the railing support 200 and able to turn. The rotary profile 124 is able to turn about an axis of rotation 128 running parallel to the lengthwise axis of the railing support 200. The

rotary profile 124 itself is led continuously inside the railing support 200 and has at the upper and lower end region a handle fashioned as a grip 122, by which the rotary position of the lever element 118 can be adjusted.

5

In the front end region of the U-shaped receiving region 114 of the projecting profiles 146 there is arranged a spacing element 152 to maintain the distance, being fashioned as a bolt in the sample embodiment.

10

By activating one of the grips 122 in the direction of the arrow D (see Fig. 5), the rotary profile 124 is turned about its lengthwise axis 128, whereupon the cable pull 126 is partly wound around the outer contour of the rotary profile 124. In this way, the lever element 118 is at the same time turned about its axis of rotation 119 and opens up the entire receiving region 114. In this state, the second connection device 90 can be shoved from the front onto the respective vertical member 26 with no problem. After this, the grip 122 is released, and due to the action of the elastic element 116 the lever element 118 executes a partial rotary movement counter to the direction of turning D and as a result secures the vertical member 26 in place. In this way it is easily possible to secure or release the railing support 200 on the respective vertical member 26 in the particular mounting position to make a temporary railing.

25 Figure 9 shows an upper partial area of the railing support 200, 300, in which a hand grip 122 is mounted on the rotary profile 124. Two vertical stop elements 154 with a radial spacing are present on the railing support

200, 300 and a transverse stop pin 156 is arranged on the rotary profile 124, limiting the rotary movement D of the hand grip 122.

Figures 10a, b, c show schematically in side view the mounting of an advancing railing by means of a railing support 200 per Fig. 2. The railing support 200 per Fig. 10a is at first hooked from above onto the third connection device 100, which is configured as a hook-on and abutment unit, in the area of the existing guard rail 24. Then, according to Fig. 10b, the railing support 200 is moved from the front in the direction of the arrow D2 onto the upright vertical member 26 of the railing until the second connection device 90 locks the vertical member 26 with form fitting (Fig. 10c). In this state, the vertical support and thus the advancing railing is mounted releasably. A moving of the railing support 200 can be easily accomplished by first using the handle 122 to release the connection with the vertical member 26 and then shoving the railing support 200 upward by one level.

The height level of the railing support 12 with the support 12 connected to the vertical member 26 and thus the height level H of the temporary guard rail 22 is determined by the position of the third connection device 100. The third connection device 100 is connected in the region of the connection of the mounted guard rail 24 on the mounted vertical member 26. This position is dictated by the particular scaffold system. Depending on the arrangement of the third connection device 100, the second connection device 90 is arranged at a distance A2 (Fig. 2) in the lengthwise direction of the railing support 12 which ensures that the second connection device 90 can be connected beneath the upper

planking 56 (see Fig. 1) to the vertical member 26 of the existing scaffold level 50. The distance A3 of the fourth connection device 110 to the third connection device 100 is likewise determined after the fourth connection device 110 comes to bear against the vertical member 26 beneath the
5 already mounted guard rail 24.

The distance A4 of the first connection device 14 to the third connection device 100 is chosen such that the guard rail 22 as part of the advancing railing is arranged above the upper planking 56 when the railing support
10 12 is mounted at a height level H (see Fig. 1) which corresponds to the safety regulations.

In what follows, the mounting of the apparatus 10, that is, an advancing railing, will be explained more closely with the aid of the representations
15 in Fig. 1 and Fig. 12 a) to e).

After the lowermost scaffold level 49 has been constructed, a board 54 is attached at the top and the apparatus 10 consisting of two rail supports 12 and the telescopic handrail 22 is constructed on the ground. The apparatus
20 10 can now be connected to both sides of the level 49. For this, the third connection device 18 is attached in the area of the connection of the already mounted guard rail 24 to the vertical member 26 and the second connection device 16 is connected by means of a wedge to the vertical member 26. This is done on both sides of the lowermost scaffold level 49.
25 This state is represented in Fig. 1 by the broken-line rail support 12 at right and the solid-line rail support 12 at left. In this state, there is already

present a temporary guard rail 22 with rail supports 12 for the installer who must work afterwards on the level N1.

Now, when the second scaffold level 50 is completed in Fig. 1 and the upper planking 56 attached at level N2, the apparatus 10 is moved upward without having to be taken apart and without needing a second installer. According to Fig. 1, the installer situated on level N1 releases the second connection device 90 from the vertical member 26 at right in Fig. 1. This is possible from level N1 because the second connection device 90 is connected to the vertical member 26 immediately below level N1. After this, the installer by unhooking the third connection device 100 can move up the right rail support 12 one level in the direction of the arrow I and connect it (arrow I) by first hooking the third connection device 100 in the connection region of the mounted guard rail 24 of the mounted scaffold level 50 and then wedging the second connection device 90 beneath the upper planking 56 at the vertical member 26. Precisely the same process is then repeated at the sides of the left rail support 12 (arrow II). After this, an advancing railing with guard rail 22 and upright rail supports 12 is present for the scaffold level 52 yet to be erected.

With the telescopic guard rail 22, the use of the apparatus 10 is possible with no problems on scaffold levels with different widths of field. In order to assure an advancing railing in the course of the ongoing installation, only the railing posts 12 need to be moved, while the guard rail 22 remains mounted on the railing posts 22.

It is also possible to connect several spaced-apart guard rails 22 to the railing posts. For this, it is only necessary to connect additional connection fixtures to the railing posts 12.

5 It is also possible to have the temporary guard rail not be telescopic. But then in order to move the apparatus two installers are needed, who release the left and the right railing supports in parallel and move them upward level by level.

10 Figure 2 shows a second variant of a railing support 200, which is especially suitable for use in a known Layher-Blitz scaffold system. In the upper end region there is a first connection device 14, which is fashioned as a tilting pin 32 as in the railing support 12 of Fig. 2, which is connected via a bracket member 30 directly to the outer wall of the round pipe 13.

15

In the lower end region of Fig. 2 is connected a third and fourth connection device 100, 110 via bracket members 104, both connection devices 100, 110 being configured as a single piece. The two devices 100, 110 have a U-shaped cross sectional contour looking in top view, the web
20 being fashioned as a semicircle and constituting an abutment cross sectional contour region 120 for the mounted vertical member 26 of the scaffold.

The third connection device 100 has two downward pointing (inclination
25 around 45° (degrees of arc)) flap regions 102, the geometry of the fourth connection device 110 being configured such that due to the weight of the railing support 200 itself, it is automatically brought into a clamping

vertical installed position when the third connection device 100 is hooked into the mounted guard rail 24 of the existing scaffold.

In this state, the inner contour of the abutment cross sectional contour region 120 lies against the outer contour of the mounted vertical member 26 of the scaffold. The fourth connection device 110 has two forward pointing, parallel spaced abutment projections 112, which in the mounted state stick out beyond the mounted vertical member 26 of the scaffold and additionally form a twisting prevention, sine they butt on the inside against the existing connection structure for guard rails 24 of the existing scaffold.

The mounted state of the railing support 200 is shown in Fig. 8 in a detail perspective view. The inclined flap regions 102 of the third connection device 100 reach around the mounted guard rails 24 of the existing scaffold. The guard rails 24 are connected to the mounted vertical member 26 of the existing scaffold by a so-called railing box 108. The abutment projections 112 of the fourth connection device 110 bear against the railing box 108 at the side, so that on the whole the railing support 200 is prevented from twisting.

Between the third connection device 100 and the first connection device 14 a second connection device 90 is connected to the round pipe 13 by a projection unit 92. The free end of the projection unit 92 is adjoined by an undercut region 94, which has a semicircular cross section looking in top view. In the free end region of the semicircular undercut region 94 there is a downward open slot 96.

The connection of the second connection device 90 in the mounted state on the scaffold is shown in a detail perspective view in Figure 7. A gusset plate 98 is welded onto the vertical member 26 of the existing scaffold in the upper corner region to form a frame with a cross rail 27. In the corner region of the gusset plate, there is a recess 25. Into this recess 25 the free end region of the undercut region 94 of the second connection device 90 is introduced from above and placed on the gusset plate 98 through the slot 96. At the same time, the undercut region 94 encircles a portion of the outer contour of the mounted vertical member 26 in form fit. On the whole, the result is a good form-fitting connection, ensuring a reliable functioning yet being easy to assemble and disassemble.

Figure 13 shows a detail perspective view of an intermediate mounting state of an advancing railing making use of the railing support of Fig. 11 across two scaffold fields. The basic scaffold is formed by the familiar Layher-Allround scaffold system. Two scaffold levels 50, 49 have already been mounted. For the scaffold level 52 yet to be mounted, a railing should be provided which is to be mounted from the upper existing level 50. In the representation of Fig. 13, the railing support 300 arranged on the right is still connected to the lower vertical member 26.1. The left railing support 300 is already connected at the top to the left upper vertical member 26.1. For this, the second connection device 90 is mounted on the uppermost rosette 162 of the vertical member. At the same time, the third connection device 90' is mounted on the rosette 162 of the vertical member 26.1 which is arranged underneath and staggered in the grid dimension R. The middle railing support 300 in Fig. 13 is

shown schematically already detached from the vertical member 26.1. By simple upward shifting of the middle railing support 300 and connecting to the corresponding middle vertical member 26.1, the guard rail 22 being mounted can be brought up to the height level H for the left scaffold field.

- 5 The guard rail 22 does not have to be released for this, since owing to its telescoping ability a length change is easily possible during the mounting process. After the middle vertical support 300 has been connected at the top to the middle vertical member 26.1, the mounting process continues with the railing support 300 shown on the right in Fig. 13 being released
10 and likewise connected at the top to the right vertical member 26.1.

- Figure 14 shows the same mounting state for the railing support 200 according to Fig. 2, the basic scaffold system being the familiar Layher-Blitz scaffold system. For the mounting of the railing support 300, the
15 third connection device 100 is hooked onto the vertical support 26 with its slanting flap regions 102 in the connection region of an already mounted guard rail 24, while at the same time the second connection device 90 is tightly fitted on by pounding. The abutment projections 112 of the fourth connection device 110 encircle the connection box arranged in the
20 connection region for the mounted guard rail 24, so that the railing support 200 is prevented from twisting in the mounted state.

P a t e n t k r a v

1. Indretning til et stillads med stilladsetager (49, 50, 52) med vertikale stolper (26), stænger, plader (54) og gelænderstænger (24) til montering af en
- 5 påkrævet midlertidig gelænderstang (22) af en eksisterende stilladsetage (50) til en stilladsetage (52), der skal etableres og monteres derover, med
- en gelænderunderstøtning (12, 200, 300), der på forsiden kan tilsluttes til en vertikal stolpe (26) af den eksisterende stilladsetage (50), med
 - en første tilslutningsindretning (14),
 - 10 - en anden tilslutningsindretning (90),
 - en tredje tilslutningsindretning (90'),
- hvor
- den første tilslutningsindretning (14) er anbragt i det øvre endeområde af stilladsunderstøtningen (12, 200, 300) og tjener til tilslutning af den midlertidige gelænderstang (22),
 - 15 - den tredje tilslutningsindretning (90') er udformet på en sådan måde, at den i området ved tilslutningen af den monterede gelænderstang (24) kan tilsluttes frigørligt til den monterede vertikale stolpe (20) af den eksisterende etage (50), og afstanden (A4) mellem den tredje tilslutningsindretning (90') og den
 - 20 første tilslutningsindretning (14) er valgt således, at den midlertidige gelænderstang (22) ved tilsluttet tredje tilslutningsindretning (90') befinder sig på et forudbestemt højdeniveau (H) i forhold til den stilladsetage (52), der skal etableres derover,
 - den anden tilslutningsindretning (90) er positioneret mellem den første og
 - 25 tredje tilslutningsindretning (14, 90') med henblik på frigørlig tilslutning til den vertikale stolpe (26),
 - der er midler til frigørlig låsning af de anden og tredje tilslutningsindretninger (90'),
 - der er midler til betjening af midlerne til frigørlig låsning, hvilke midler i det
 - 30 øvre og/eller nedre endeområde af gelænderunderstøtningen (12, 200, 300) har et greb, især et håndtag (122), og et drejeprofil (124), der er tilsluttet til grebet og er monteret drejeligt omkring en rotationsakse (128) inden i gelænderunderstøtningen (12, 200, 300),
 - **kendetegnet ved, at**

- 5 - den anden og tredje tilslutningsindretning (90, 90') har et optagelsesområde (114), der fremad, dvs. vinkelret på rotationsaksen (128), er åbent og U-formet, og midlerne til frigørlig låsning har et løfteelement (118), der påvirkes af et elastisk element (116), hvilket løfteelement til låsning indsnævrer det U-
- 10 formede optagelsesområde (114) eller frigiver det til frigørelse, således at den anden og tredje tilslutningsindretning (90, 90') forfra, dvs. vinkelret på det plan, der er dannet af stilladsunderstøtninger (12, 200, 300), som kan anbringes naboliggende på stilladset, og den midlertidige gelænderstang (22), kan tilsluttes bevægeligt frigørligt til den vertikale stolpe (26), hvor
- 15 - løfteelementet (118) er udformet drejeligt omkring en rotationsakse (119), og
- midlerne til frigørlig låsning har et kabeltræk (126), der er tilsluttet til drejeprofilet (124) og til løfteelementet (118), hvor løfteelementet (118) ved drejning af grebet (122) kan drejes mod virkningen af det elastiske element (116).

2. Indretning ifølge krav 1,

- kendetegnet ved, at

- 20 - den anden og tredje tilslutningsindretning (90, 90') har to fremspringsprofiler (146), der er anbragt med parallel afstand til hinanden og med optagelsesområdet (114), der er åbent fremadtil og U-formet,
- der mellem fremspringsprofilerne (146) er anbragt mellemstykkeprofiler (148), og
- 25 - løfteelementet (118) med kabeltrækket (126) er anbragt mellem fremspringsprofilerne (146).

3. Indretning ifølge krav 1 eller 2,

- kendetegnet ved, at

- 30 - den anden tilslutningsindretning (90) og den tredje tilslutningsindretning (90') har et anlægstværsnitkonturområde, der i monteret tilstand områdevist ligger formluttende an mod den udvendige kontur af den monterede vertikale stolpe (26).

- 35 4. Hjælpestilladsindretning som midlertidigt gelænder til et stillads med stilladsetager (49, 50, 52) med vertikale stolper (26), stænger, plader (54) og gelænderstænger (24) til montering af en påkrævet midlertidig gelænder-

stang (22) af en eksisterende stilladsetage (50) til en stilladsetage (52), der skal etableres og monteres derover,

- **kendetegnet ved, at**

- 5 - hjælpestilladsindretningen har mindst to indretninger ifølge et eller flere af de foregående krav, der er tilsluttet til vertikale stolper (26), som er anbragt med afstand til hinanden, med mindst en teleskoperbar gelænderstang (22), der tilsluttet frigørligt til den pågældende gelænderunderstøtning (12, 200, 300) via den første tilslutningsindretning (14).

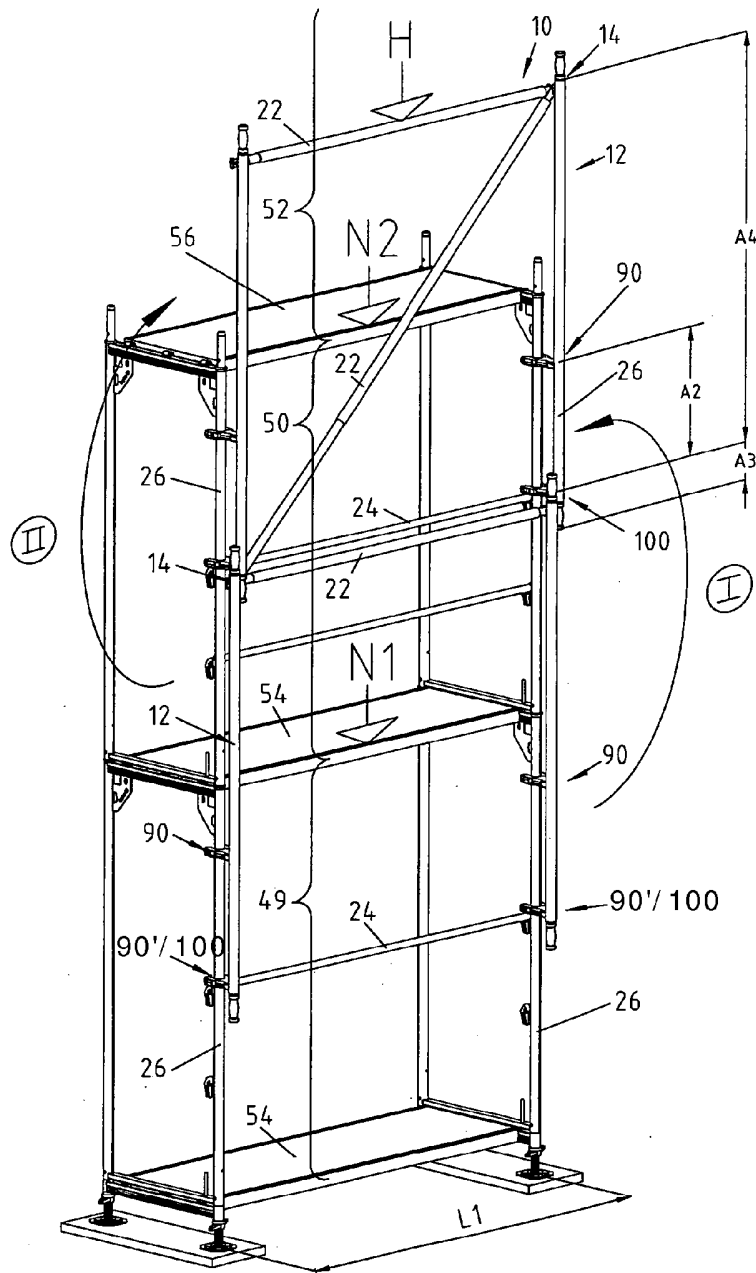
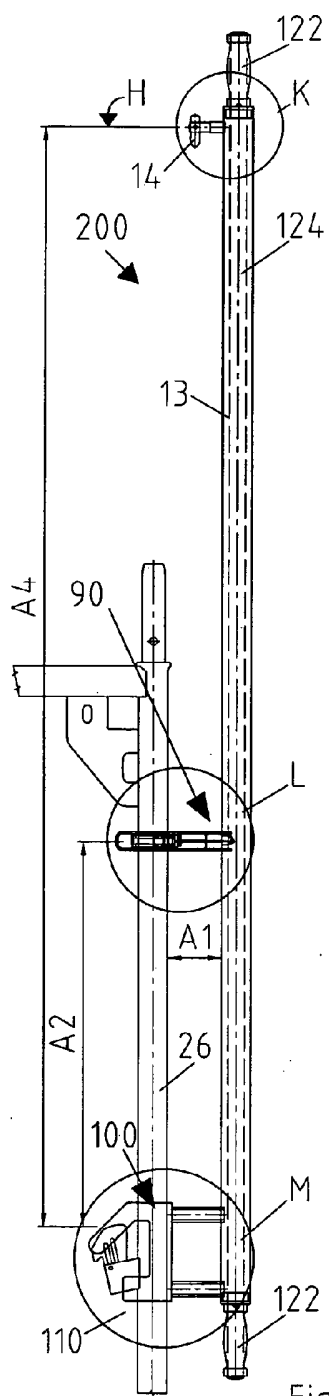
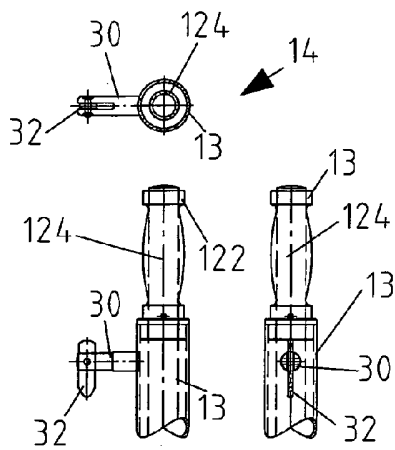


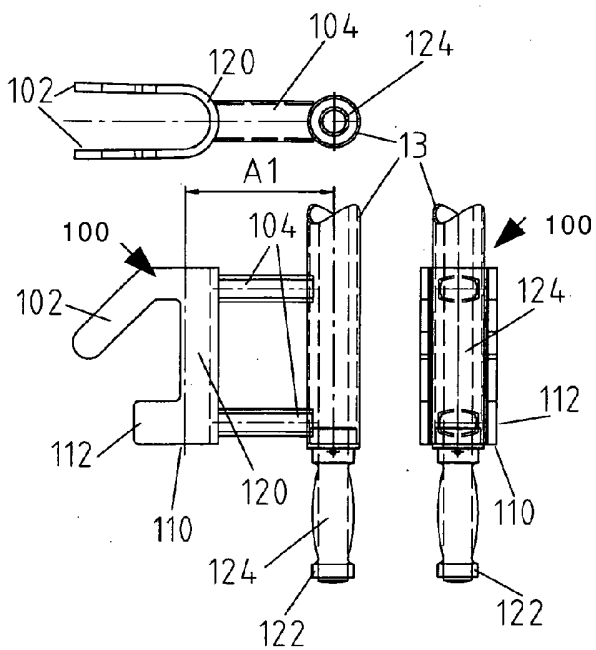
Fig. 1

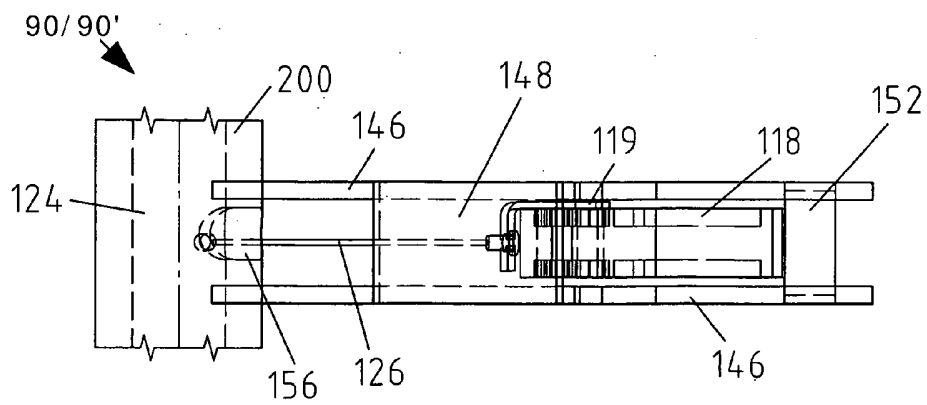
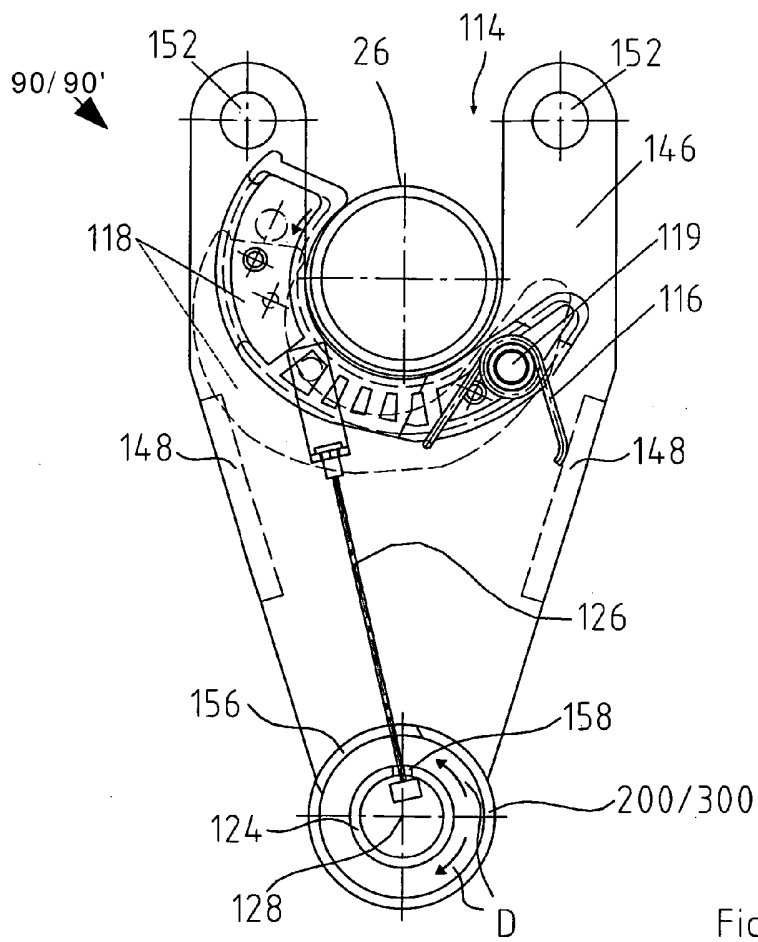


DETAIL K



DETAIL M





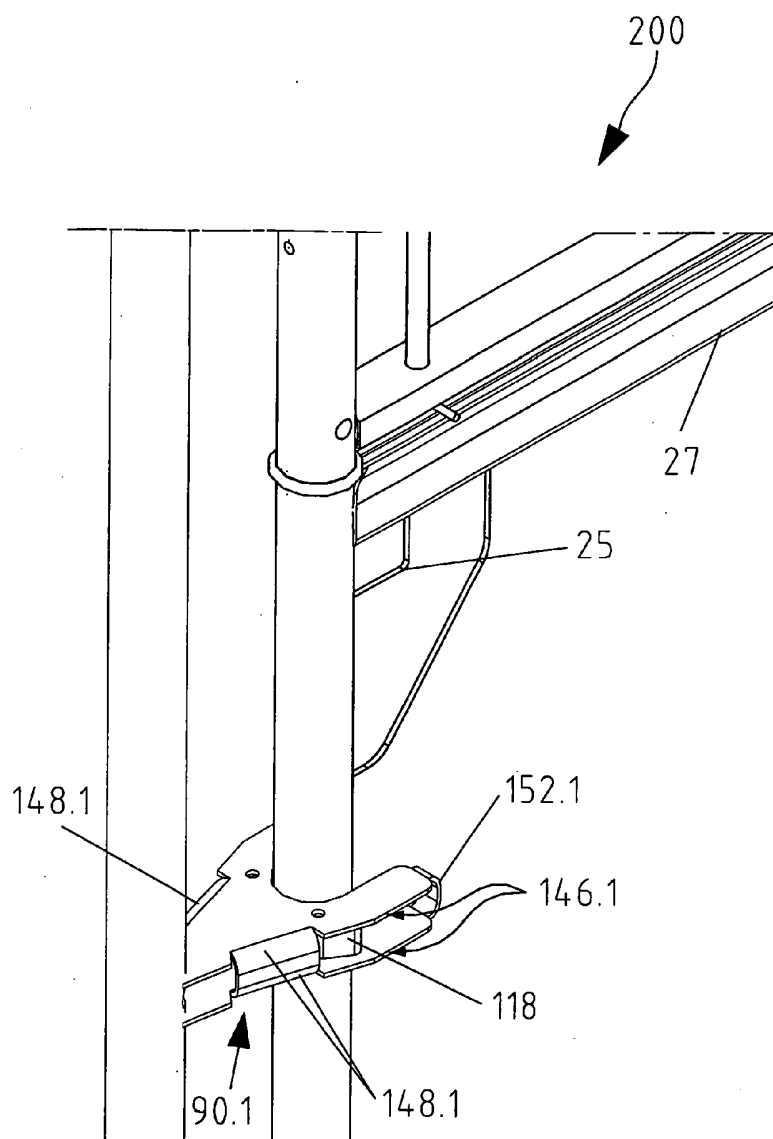
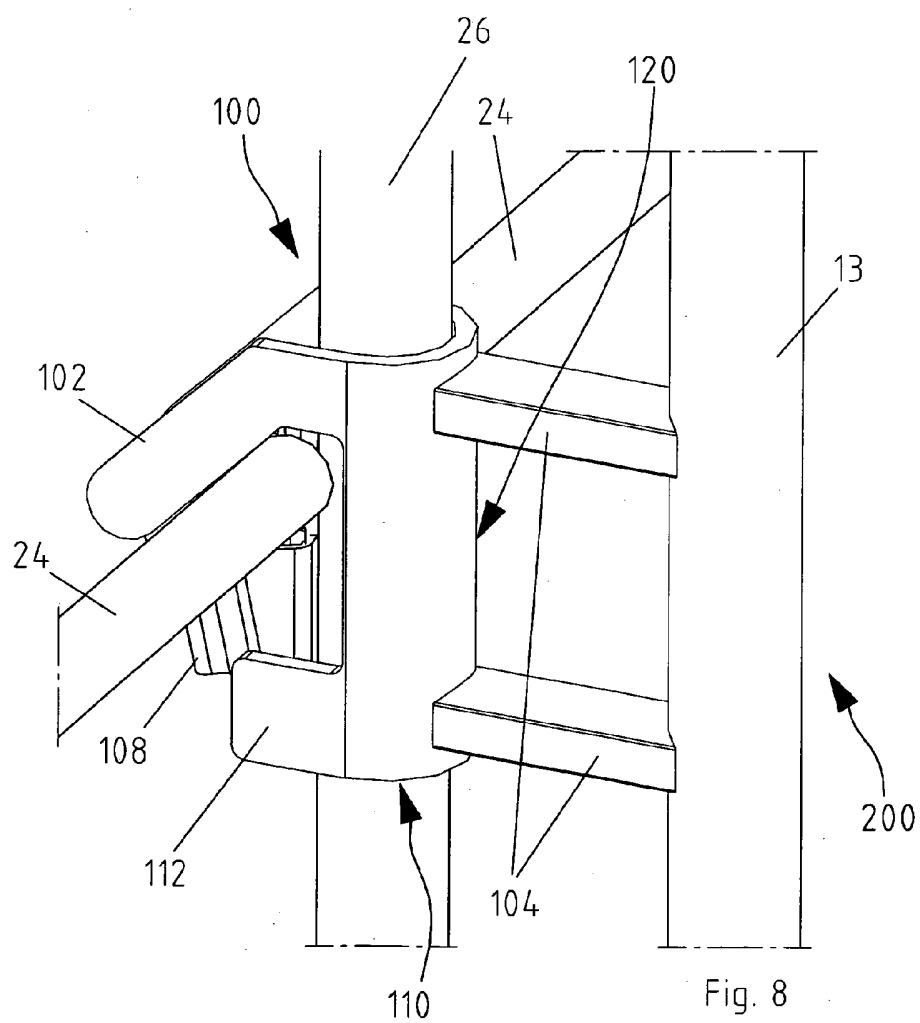


Fig. 7



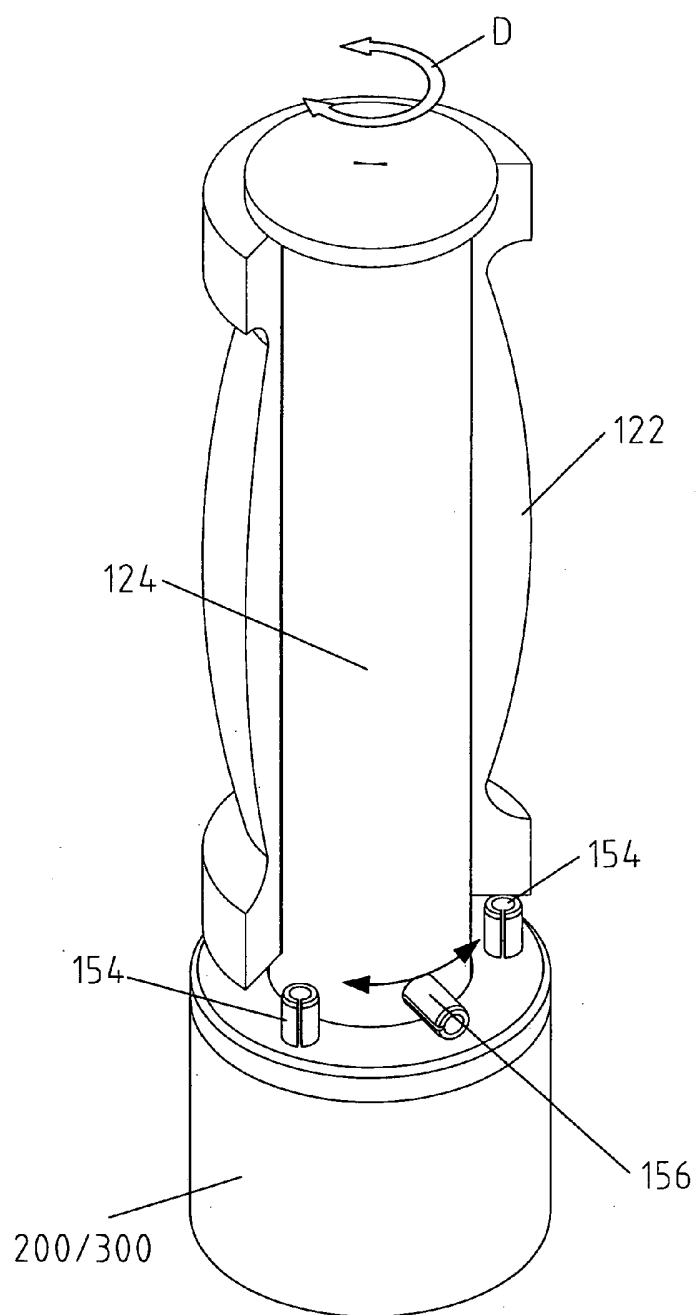


Fig. 9

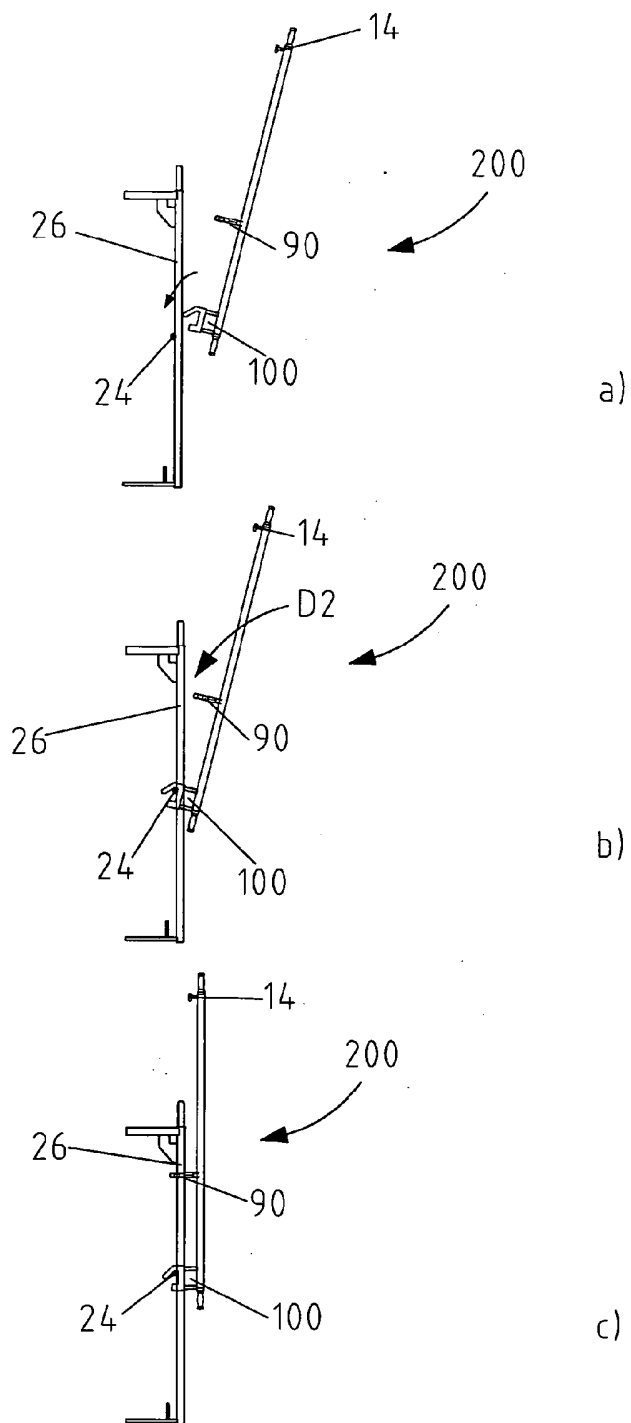


Fig. 10

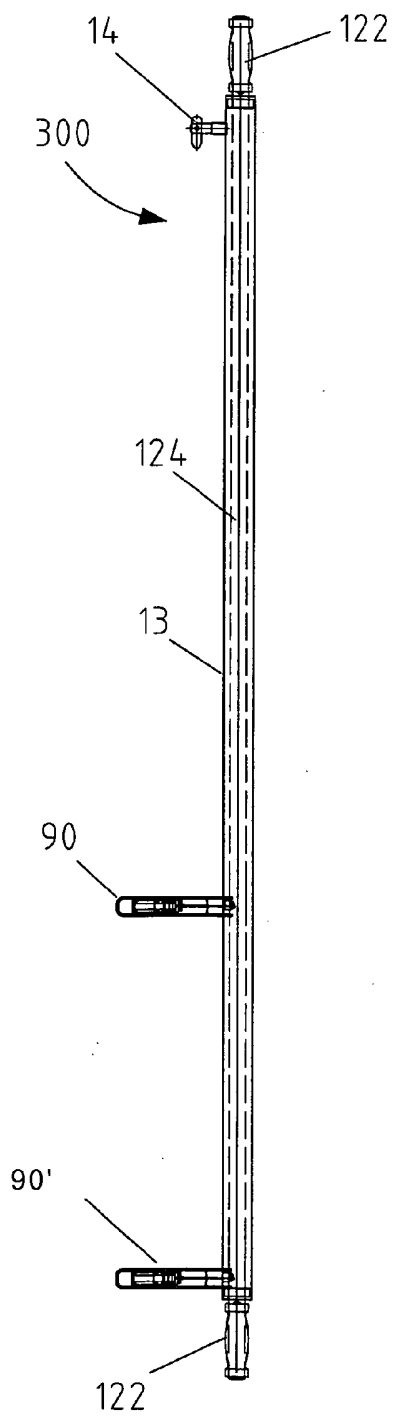


Fig. 11

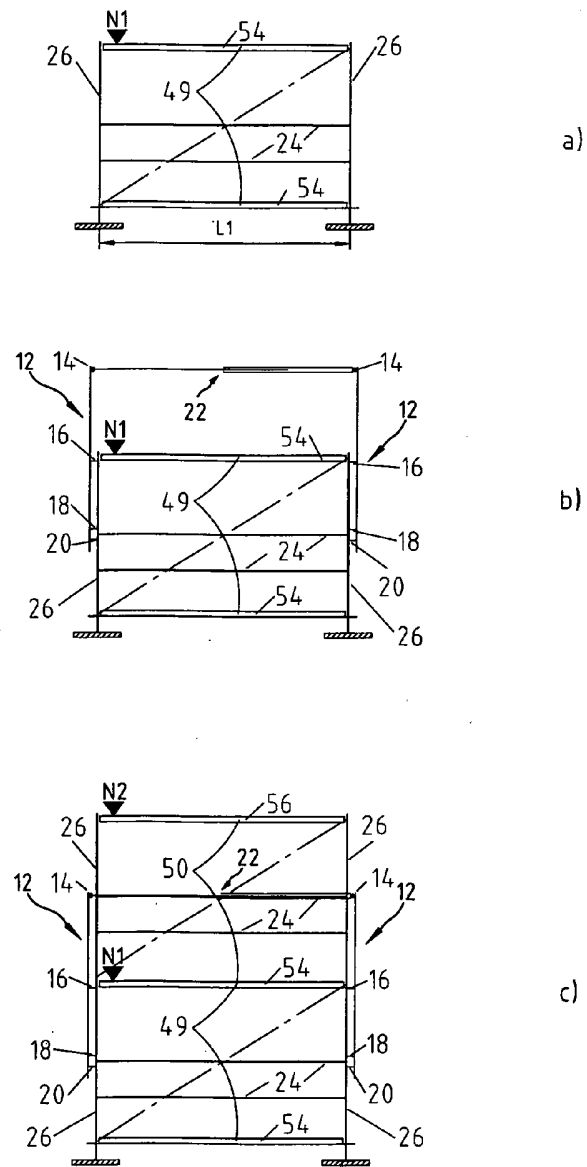


Fig. 12

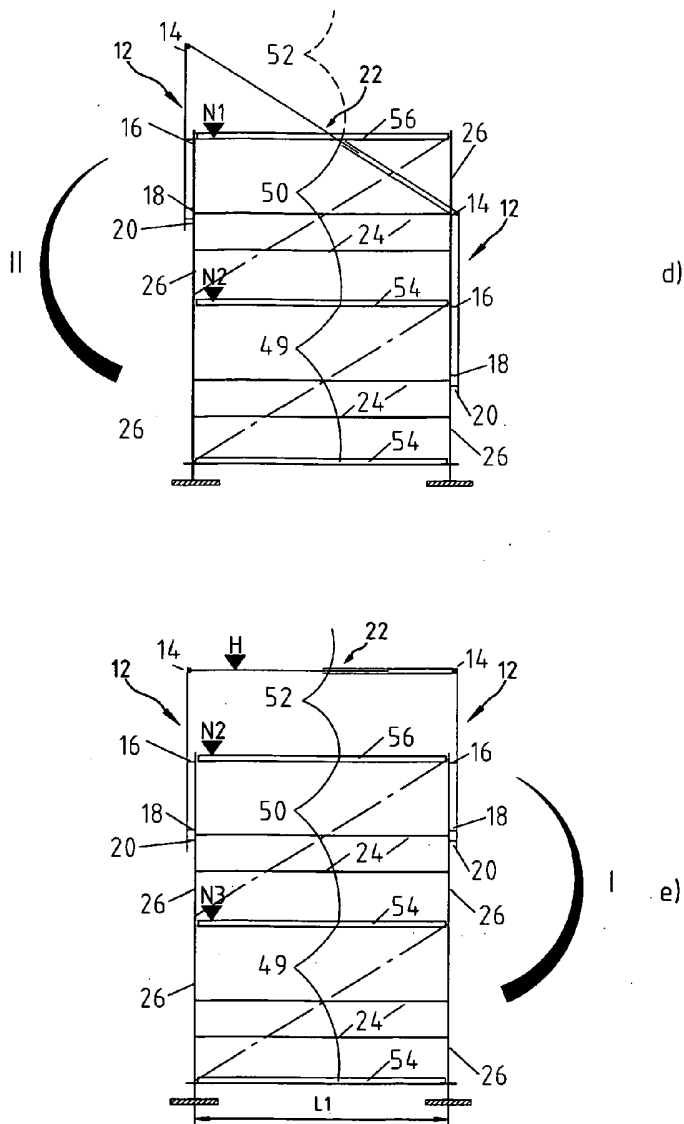


Fig. 12

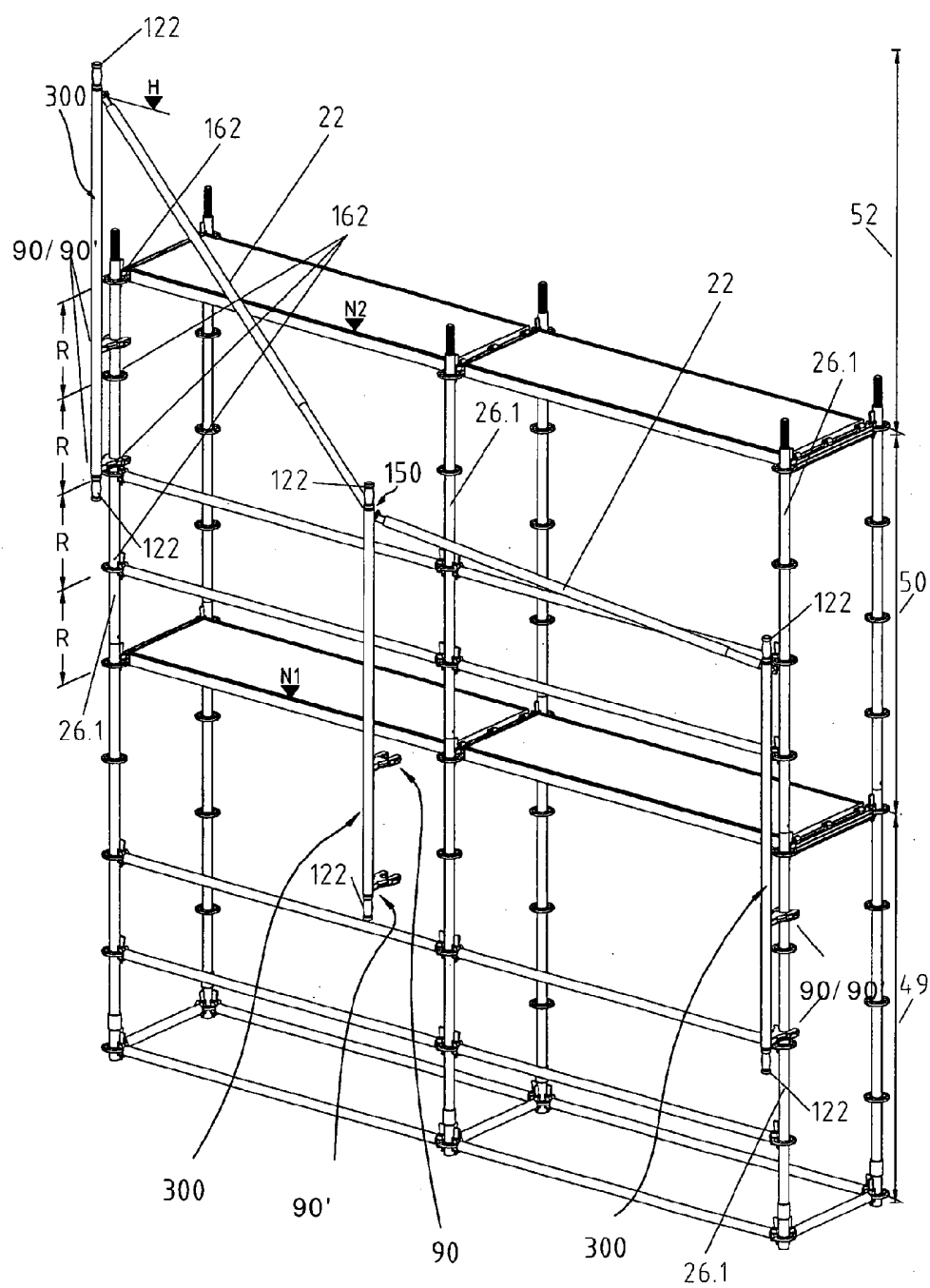


Fig. 13

