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(54) **SCAFFOLD AND METHODS FOR INSTALLING OR REMOVING SUCH A SCAFFOLD**

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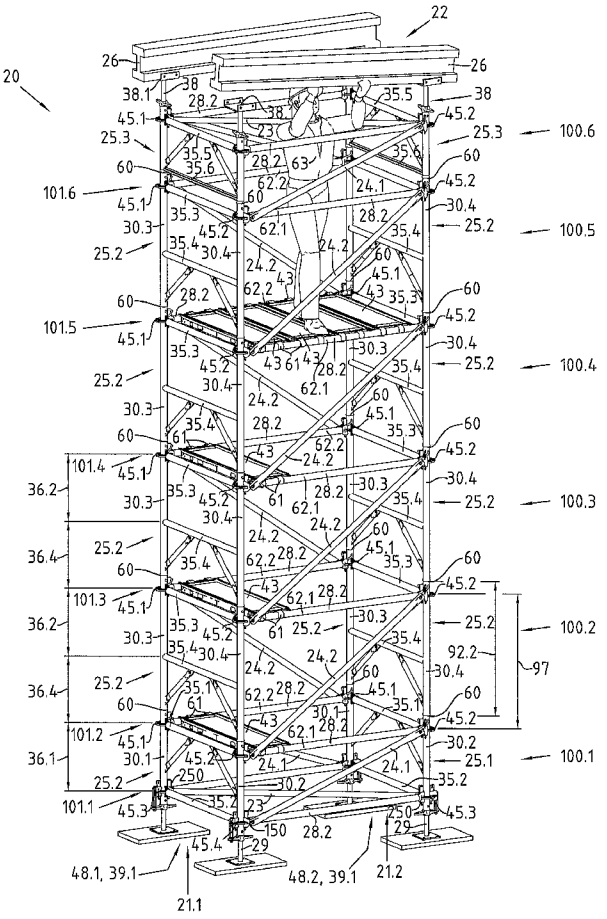
(57) **ABSTRACT**

A scaffold and method(s) for installing or removing such a scaffold that is constructed of at least two vertical frames and of at least two connecting elements that extend essentially horizontally, in each instance, includes at least one connecting element serving as a hip and/or back railing element, vertical supports having respective effective lengths essentially corresponding for example to the vertical distance of the attachment position for the hip and/or back railing element, and horizontal arms set onto one another to form transverse rungs, in each instance, of a ladder for allowing a person to climb up.



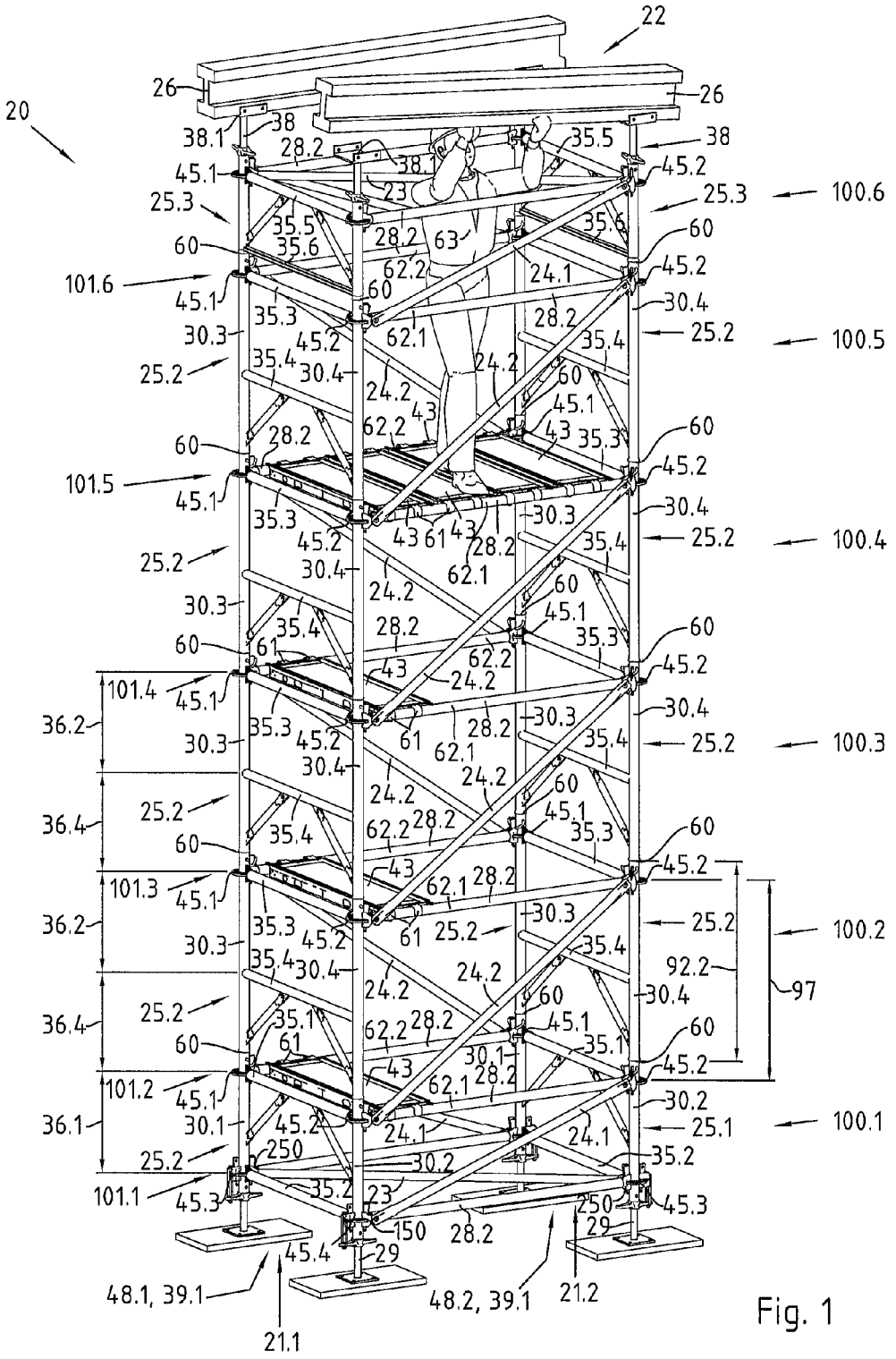

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Fig. 1

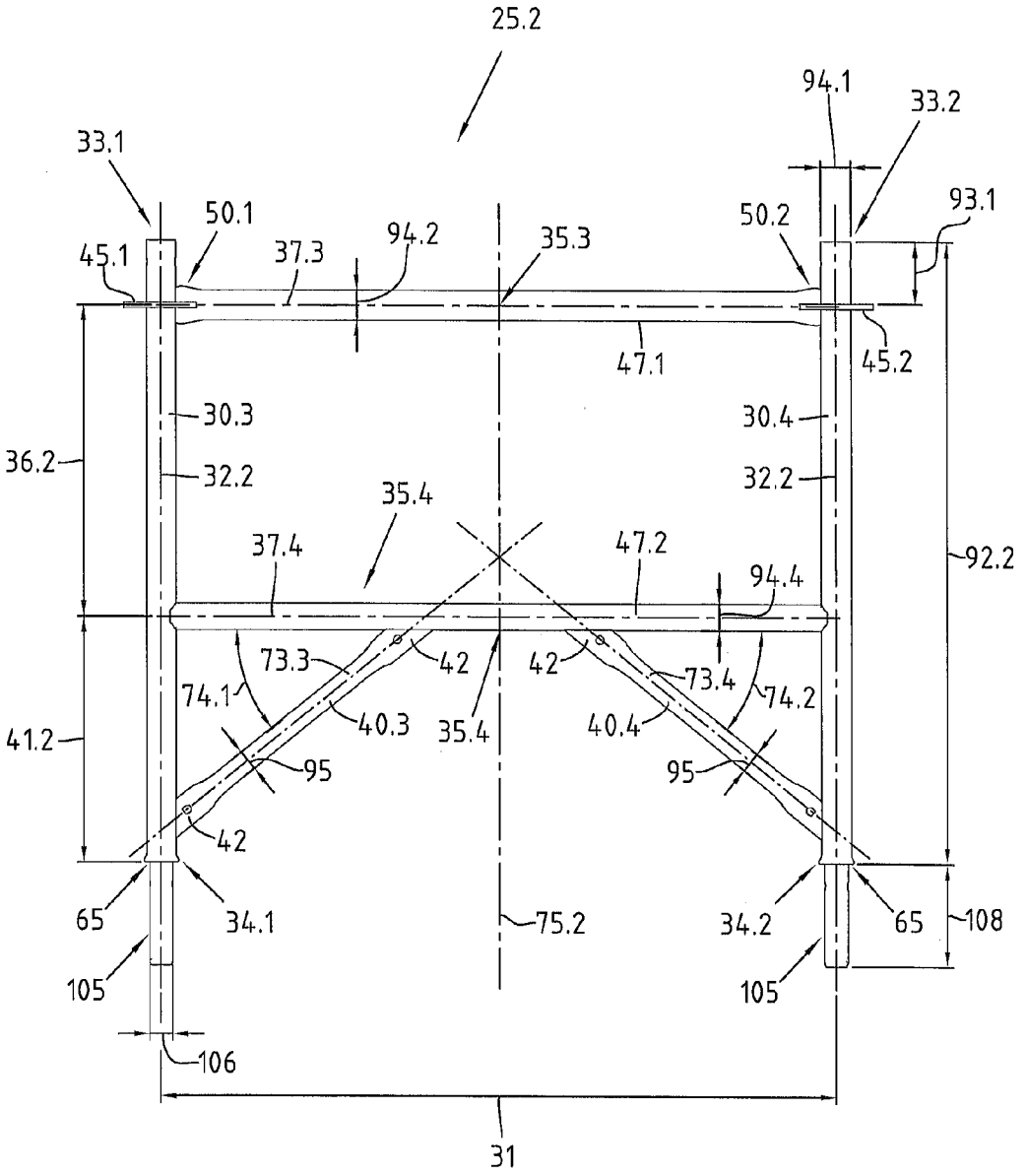
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Fig. 2

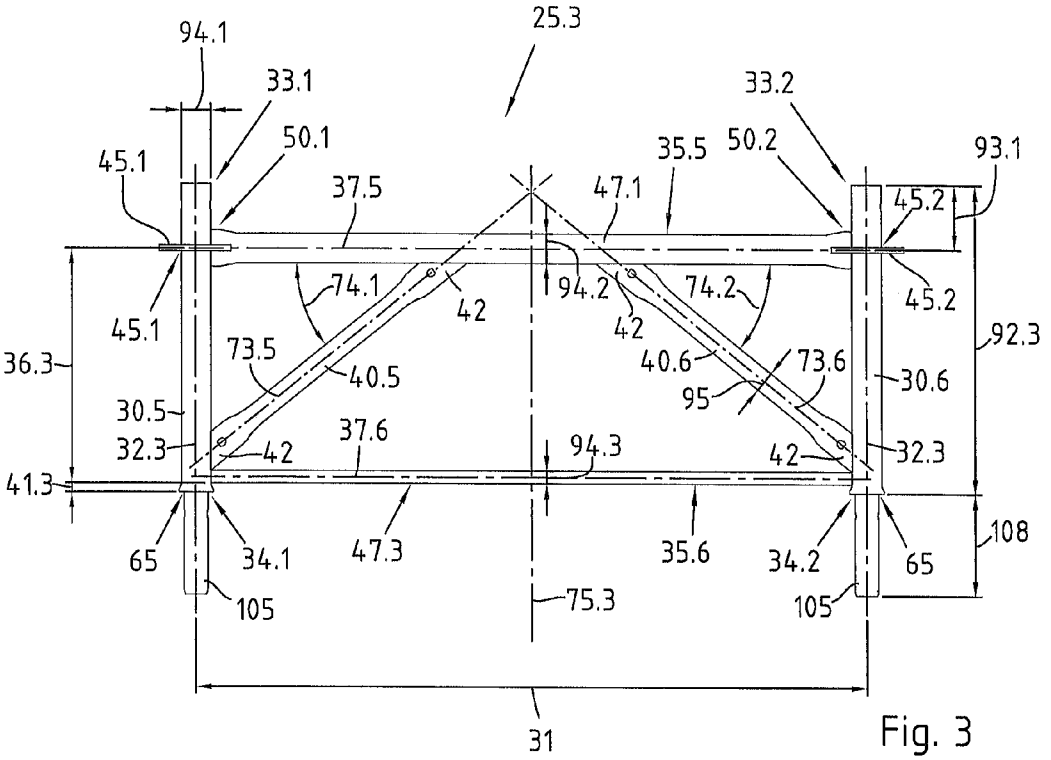
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Fig. 3

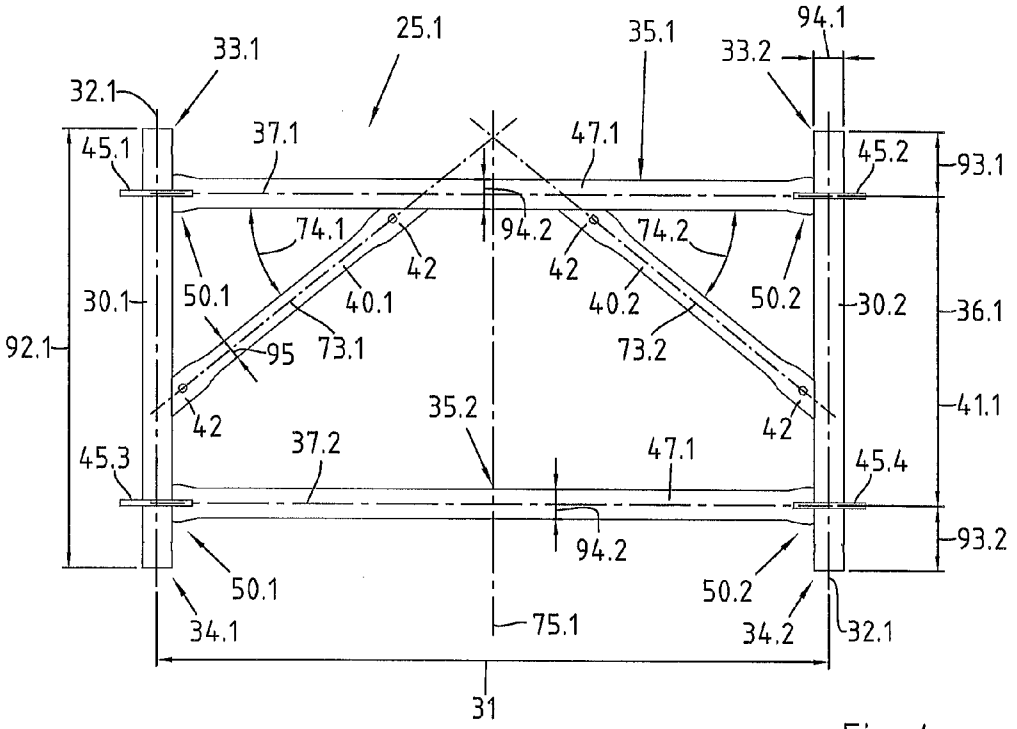
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Fig. 4

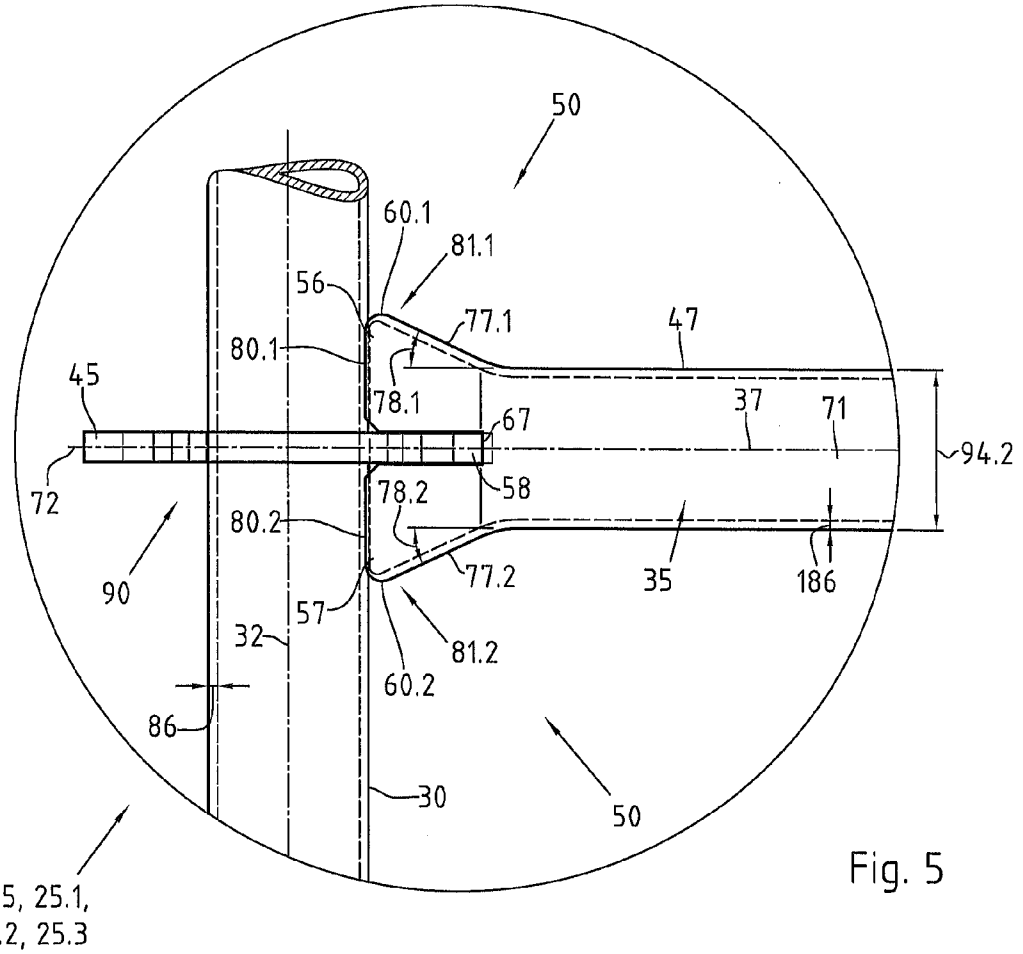
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Fig. 5

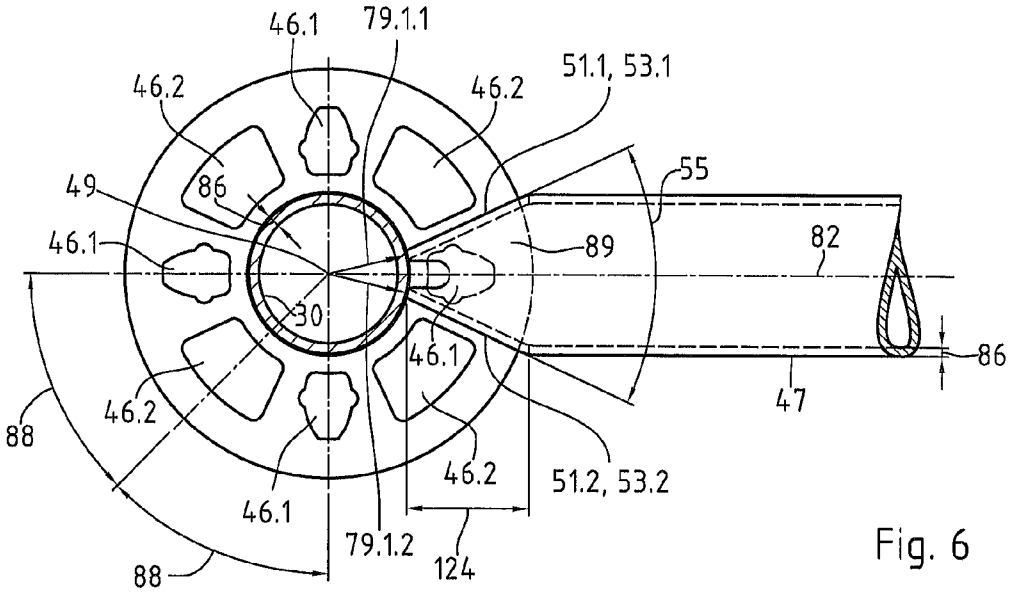
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Fig. 6

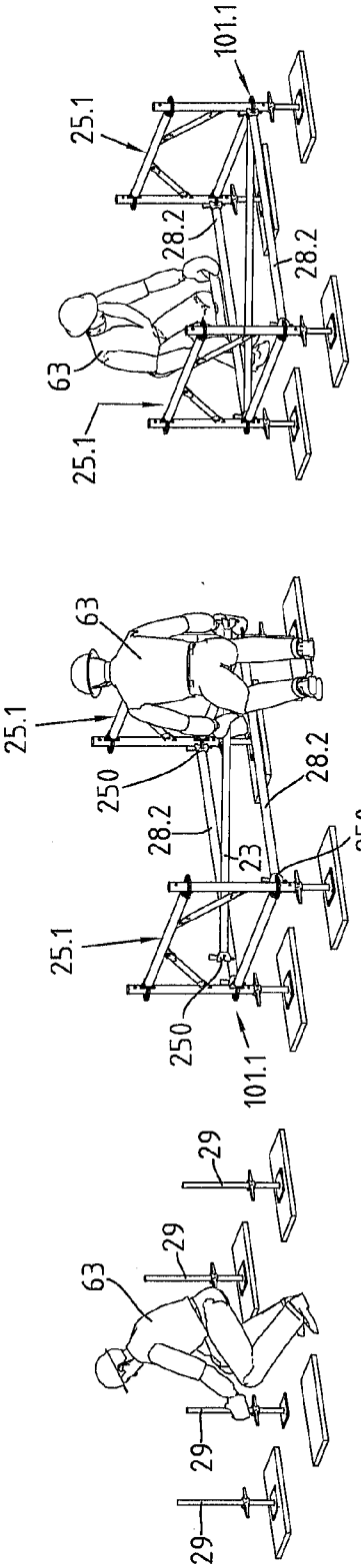

Fig. 7.1

Fig. 7.2

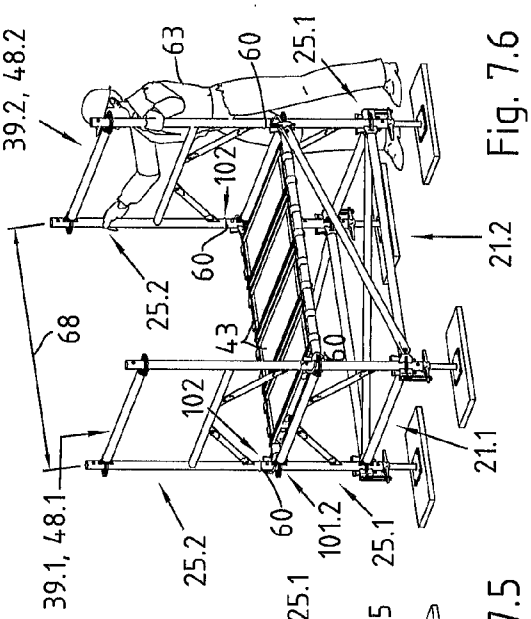

Fig. 7.3

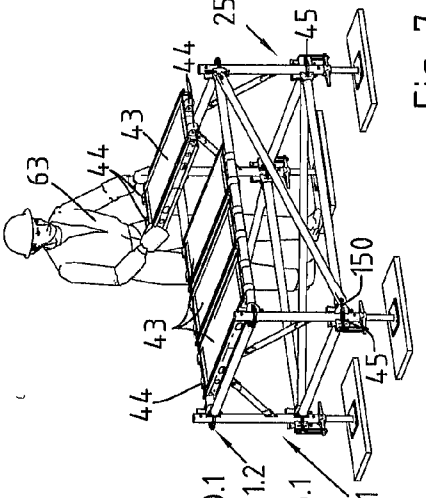

Fig. 7.5

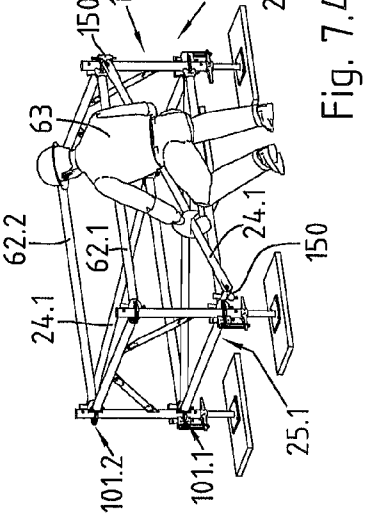

Fig. 7.4

Fig. 7.6

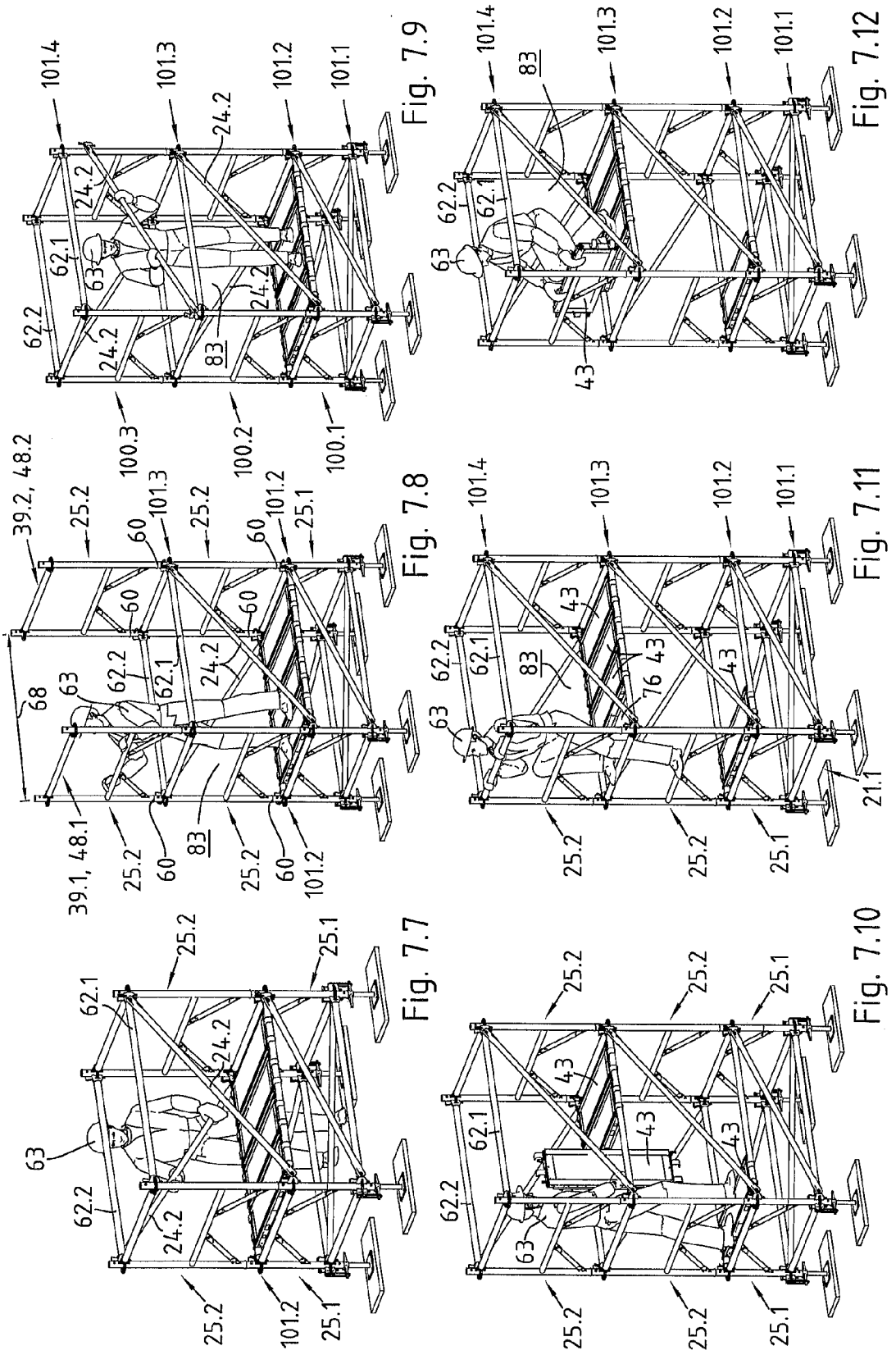

Fig. 7.9

Fig. 7.12

Fig. 7.8

Fig. 7.11

Fig. 7.7

Fig. 7.10

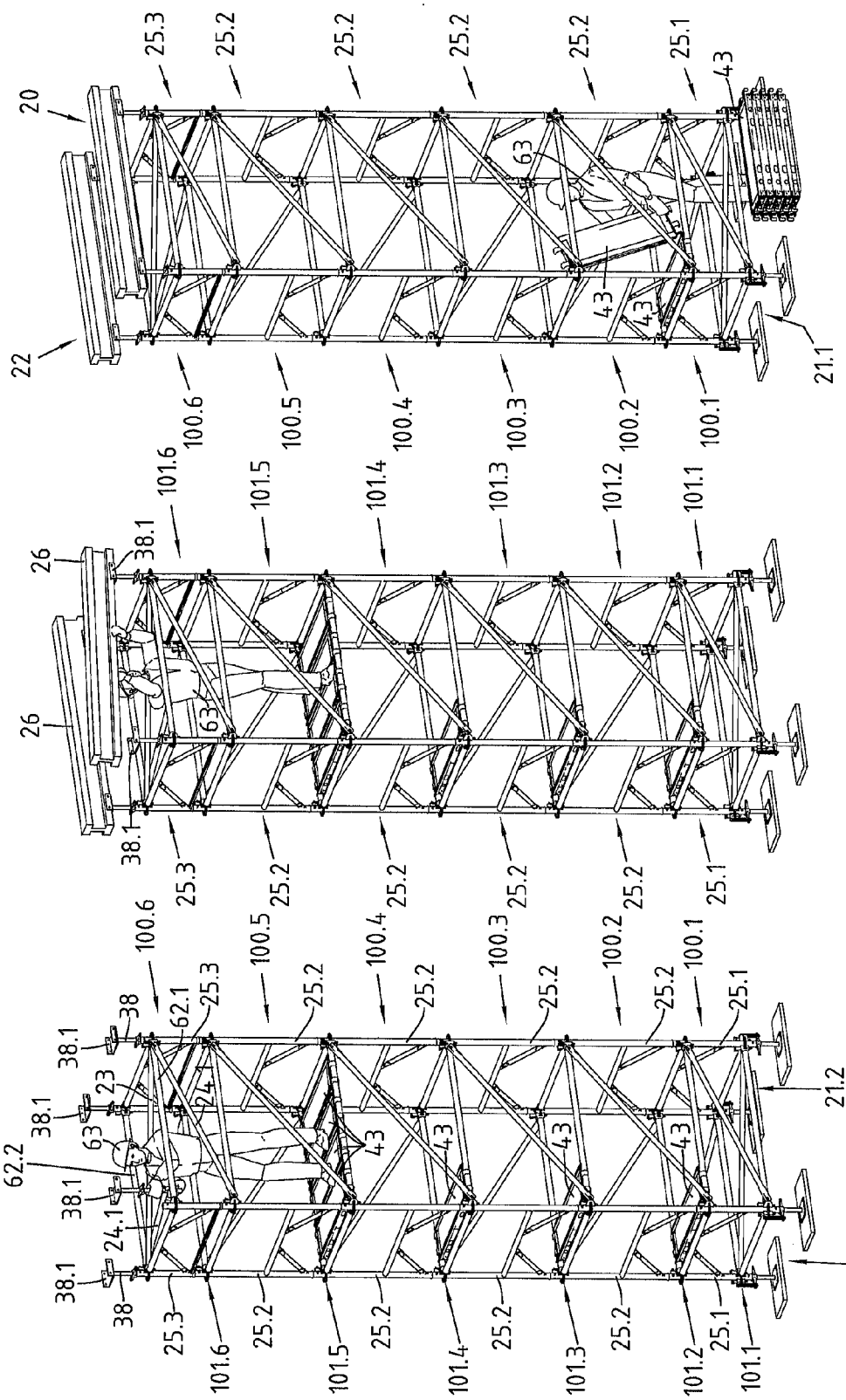

Fig. 7.15

Fig. 7.14

Fig. 7.13

SCAFFOLD AND METHODS FOR INSTALLING OR REMOVING SUCH A SCAFFOLD

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a divisional of and Applicants claim priority under 35 U.S.C. §§120 and 121 of U.S. application Ser. No. 13/376,251 filed on Dec. 5, 2011, which application is a national stage application under 35 U.S.C. §371 of PCT Application No. PCT/DE2010/075148 filed on Dec. 1, 2010, which claims priority under 35 U.S.C. §119 from German Patent Application No. 10 2010 000 472.3 filed on Feb. 19, 2010, the disclosures of each of which are hereby incorporated by reference. A certified copy of priority German Patent Application No. 10 2010 000 472.3 is contained in parent U.S. application Ser. No. 13/376,251. The International Application under PCT article 21(2) was not published in English.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The invention relates to a scaffold, particularly a falsework or load-bearing scaffold, preferably a load-bearing scaffold tower, falsework tower or load-bearing tower, if applicable a work scaffold, façade scaffold, or mobile scaffold, that is constructed of at least two vertical frames, and of at least two or at least four connecting elements that extend essentially horizontally, in each instance, preferably also of at least two vertical diagonals that reinforce the scaffold, preferably with the formation of a polygonal, particularly rectangular or square layout, having the following characteristics:

[0004] a) at least one vertical frame of the vertical frames is set onto a vertical frame of the vertical frames, whereby a vertical frame arrangement is configured in the form of a vertical frame support;

[0005] b) the vertical frames of the vertical frame support comprise at least two, preferably precisely two parallel vertical supports, in each instance, which are disposed at a horizontal distance from one another;

[0006] c) the vertical frames of the vertical frame support comprise at least two, preferably precisely two parallel horizontal struts, in each instance, which are disposed at a vertical distance from one another;

[0007] d) the horizontal struts of the vertical frames of the vertical frame support extend, in each instance, between the at least two vertical supports of the vertical frame, in each instance, perpendicular to these vertical supports, and are attached to them, with their ends, by means of welding;

[0008] e) the particularly straight, preferably continuous, particularly rigid, preferably configured as connecting rods, particularly with a scaffold pipe, in each instance, connecting elements extend, in each instance, between a vertical support of a or the respective vertical frame of the vertical frames, and at least one further vertical support disposed at a horizontal distance from it, and are releasably attached, with their ends, on attachment positions of these vertical supports;

[0009] f) floor plates can be affixed or are affixed on attachment positions, preferably on at least one connecting element of the connecting elements and/or on the respective vertical frame of the vertical frame support, particularly on a horizontal arm of the horizontal arms of the respective vertical frame of the vertical frame support, in vertical regions of the scaffold that are provided vertically one on top of the other, in tier-type manner.

[0010] The invention also relates to a method for installing and/or removing such a scaffold.

[0011] 2. Description of the Related Art

[0012] Such a scaffold and such a method for installing and/or removing such a scaffold have become known, for example, from WO 2009/092340 A1 and a related brochure "Schnell. Flexibel. Intelligent. Layher Allround Lehrgerustturm [Fast. Flexible. Intelligent. Layher Allround falsework tower]," edition Jan. 1, 2009. Such falsework towers belong to the so-called falseworks or load-bearing scaffolds. In part, load-bearing scaffolds are also referred to as falseworks, and vice versa, whereby the term falsework is a very old name.

[0013] Load-bearing scaffolds are particularly understood to be non-permanent, in other words only temporary constructions made of steel or wood, having a comparatively short useful lifetime and a great frequency of use. They are put together from multiple individual components, for the purpose of use, in each instance, and are taken apart again after they have fulfilled their intended purpose. Load-bearing scaffolds serve to carry away great vertical loads. In this connection, these are generally supporting loads and/or concrete-work loads during the construction phase. Load-bearing scaffolds therefore serve, for example, for supporting temporary steel structures, props, surrounds, or concrete-work loads during concrete work, as long as the concrete is not yet capable of bearing a load. In this case, the load-bearing scaffold must carry not only the weight of the concrete but also the inherent weight of the forms and the traffic loads during concrete work. Load-bearing scaffolds therefore serve for temporary support, underneath or to the sides, of forms for fresh concrete as well as of components made of steel, wood, or finished parts. The loads to be absorbed by load-bearing scaffolds are great, in comparison with the inherent weight of the load-bearing scaffold.

[0014] Falseworks or load-bearing scaffolds can be constructed in the form of one or more towers coupled with one another by means of connecting elements, in other words as load-bearing scaffold towers or falsework towers. In this connection, generally multiple modular modules having the same or a similar structure are disposed one on top of the other in level or height blocks, and fixed in place against one another in this connection. For this purpose, steel pipe rod support structures are generally used nowadays. In this connection, the vertical supports of the vertical frames, in each instance, which are also referred to as posts and generally consist of steep pipes, are connected with one another by way of coupling elements. In general, two vertical frames that are the same and spaced horizontally apart are used per height block or level, in each instance; these are particularly connected with one another by way of diagonal struts that are horizontally spaced apart, and reinforced relative to one another. In this connection, so-called cross diagonals or diagonal crosses, consisting of two intersecting diagonals that span a common vertical plane, can also be used.

[0015] Load-bearing scaffolds generally have a square or rectangular layout, i.e. the two vertical frames that span a vertical frame plane and are horizontally spaced apart, in each instance, are connected with one another by way of releasable diagonals that extend perpendicular to the vertical frame plane, if necessary also by way of additional releasable horizontal struts, forming such layouts. In this manner, a rod

support structure is obtained per height block or per level, which structure is delimited laterally by rods that span four vertical planes, whereby adjacent vertical planes stand perpendicular to one another.

[0016] When constructing load-bearing scaffolds having a square layout, the two vertical frames per height block or level are frequently disposed offset by 90 degrees relative to one another. However, it is also possible to dispose the vertical frames of each height block or level not offset from one another, i.e. vertically one above the other.

[0017] Such load-bearing scaffolds constructed from prefinished, closed vertical frames can be set up and taken down again in clearly understandable, simple, and fast manner. Because of the comparatively small number of basic components required per height block, handling and transport of such load-bearing scaffolds can also be implemented in simple and cost-advantageous manner.

[0018] The diagonals that connect the vertical frames are predominantly connected with the posts or with the vertical frames either by way of horizontal cross-bolts that are provided with tilt pins and welded onto the posts of the vertical frames, onto which bolts their perforated ends are set, or by way of engagement claws attached to their ends, which are releasably engaged into one of the horizontal struts of the vertical frames, in each instance. In the case of the falsework towers that are evident from the two aforementioned references, the diagonals that connect the vertical frames can be or are wedged in place on perforated disks that are welded in place on the vertical supports of the vertical frames, by way of connecting heads articulated on at both ends, by means of connecting wedges.

[0019] For standing installation of these falsework towers, as well as for later ascent to the underside of the ceiling boarding, floor plates, for example in the form of so-called O steel floors, can be laid in the falsework tower. These steel floors have two suspension hooks, at both ends, in each instance, suitable for being laid onto round pipes, by means of which the steel floors can be laid onto or suspended on horizontal bars configured as round pipes. The horizontal bars form connecting elements that extend horizontally between the horizontally adjacent vertical supports of the vertical frames disposed laterally or on the face side, as well as parallel to one another, and which are releasably attached there, on the perforated disks of the vertical supports of the vertical frames, by way of their connecting heads provided on both ends. For example, the following vertical frames can be provided for constructing these falsework towers, which comprise multiple height blocks:

[0020] Two so-called equalization frames, in each instance, can be disposed at a horizontal distance from one another and at the same height; these frames can be parts, in each instance, of a bottommost height block and of an uppermost height block. Each of these equalization frames or each of its vertical supports, respectively, have an effective length of 70.9 cm. Each of these equalization frames has precisely two horizontally spaced apart, parallel vertical supports, and precisely two parallel horizontal arms, which are disposed at a vertical distance of 50 cm from one another and are firmly welded onto the vertical supports, perpendicular to them, in each instance.

[0021] Multiple height blocks can be provided between the lowermost height block formed with the equalization frame and the uppermost height block formed with the equalization frame, or also without such equalization frames, which blocks are constructed from two vertical frames, in each instance, referred to as "normal frames" or as "standard frames" having a horizontal distance from one another and disposed essentially at the same height. Each of these "standard frames" of each of its vertical supports has an effective length of 150 cm or more, for example about 176 cm. Each of these standard frames has precisely two horizontally spaced apart, parallel vertical supports, and also has precisely two parallel horizontal arms, which are disposed at a vertical distance of 130 cm or more, for example about 156 cm from one another and are firmly welded onto the vertical supports, perpendicular to them, in each instance.

[0022] If floor plates are disposed in the height blocks that lie one on top of the other, in tier-type manner, the horizontal bars of a height block that are provided as connecting elements between the two horizontally spaced-apart "standard frames," in each instance, provided at essentially the same height per height block, or the floor plates of a next tier that are laid onto them, have a vertical distance of about 150 cm or more, for example about 176 cm, from the adjacent floor plates of the height block that lies underneath or the tier that lies underneath.

[0023] For standing installation of the falsework towers, as well as for later ascent to the underside of the ceiling boarding—from one tier to the next tier or from one platform to the next platform—a special, separate suspension ladder is used. This suspension ladder has a suspension hook, in each instance, at the upper ends of its two ladder uprights, for hanging the ladder onto a horizontal bar of a next tier. In this suspended state, the ladder supports itself, with the lower ends of its ladder uprights, on two horizontally directly adjacent floor plates of the lower tier. This standing installation and also the ascent as well as descent are an accident risk, and no longer satisfy the current safety requirements.

SUMMARY OF THE INVENTION

[0024] It is therefore the task of the invention to make available a scaffold and method(s) for installing and/or removing such a scaffold, in which the accident risk during standing installation or standing removal is reduced to a minimum, the individual parts of which have a comparatively low weight, and in which installation and/or removal can be carried out efficiently, in simple manner.

[0025] This task is accomplished by means of the scaffolds and methods as described herein. In particular, this task is accomplished, in the case of a scaffold having the characteristics indicated above, by means of the following characteristics:

[0026] g) at least one connecting element of the connecting elements serves, at least during installation of the scaffold, if applicable also on the finished, constructed scaffold, and/or during removal of the scaffold, as a hip and/or back railing element, to protect a person from falling down to the side, if applicable also as a floor plate support element for supporting at least one floor plate of the floor plates;

[0027] h) the vertical supports of the vertical frames have an effective length, in each instance, which essentially corresponds to the vertical distance of the attachment position for the hip and/or back railing element, or for the floor plate from the attachment position for the hip and/or back railing element, or for the floor plate of a vertical frame of the vertical frames that already belongs to the next vertical

region and is already set onto the vertical frame of the vertical region that lies underneath, or which is smaller than this vertical distance;

[0028] i) the horizontal arms of the vertical frames of the vertical frame support, which are set onto one another, form transverse rungs, in each instance, of an ascent device or ladder, preferably containing at least four transverse rungs, for allowing a person to climb up, whereby the uppermost transverse rung of a vertical frame of the vertical frames has a vertical rung distance, from the bottommost transverse rung of the vertical frame that already belongs to the next vertical region, and is already set onto the vertical frame of the vertical frames of the vertical region that lies underneath, that essentially corresponds to the vertical distance between the transverse rungs of the individual vertical frames, so that all the adjacent transverse rungs of the ladder essentially have the same vertical transverse rung distances relative to one another;

[0029] k) preferably, the hip and/or back railing element can be guided upward from a vertical region of the scaffold, which has already been completed, to the attachment position of a vertical frame that already belongs to the next vertical region of the scaffold, already set onto the assigned vertical frame of the vertical region that lies underneath, by a person standing on a floor plate of the already completed vertical region or on the ground, and can be fixed in place there, on the attachment position of the vertical frame that has been set on, and on the attachment position of the further vertical support.

[0030] By means of these measures, a particularly secure standing installation and/or removal of the scaffold can be implemented, whereby a side protection is possible by means of at least one leading, preferably circumferential hip and/or back railing. During face-side or same-side installation of the vertical frames according to the invention onto or on top of one another, an integrated ascent and, if applicable, descent possibility in the form of a ladder is automatically formed. Using this integrated ladder, persons can safely climb up or climb down, by way of the ladder, during installation and/or removal of the scaffold, and therefore be optimally protected within the scaffold construction, to prevent them from falling down, during or for the purpose of installation and/or removal of the leading hip and back railing, as well as in the finished, set-up scaffold.

[0031] If the vertical frame, in each instance, is structured with only two transverse rungs, the weight and the costs can be minimized accordingly. It is understood, however, that the vertical frames, in each instance, can also be configured with more than two transverse rungs, for example with three or four transverse rungs.

[0032] The above advantages can be implemented to a particular degree, in the case of a scaffold according to the invention, if the following characteristics are implemented:

[0033] a) the scaffold comprises at least four vertical frames;

[0034] b) at least two of the vertical frames are disposed at essentially the same height and at a horizontal distance from one another, and form part of a height block of the scaffold;

[0035] c) at least two others of the vertical frames are set onto the vertical frame of the height block, at essentially the same height and at a horizontal distance from one another, and form a part of a next height block, so that at least two vertical frame arrangements, in the form of a vertical frame support, in each instance, are formed, which are disposed at a horizontal distance from one another;

[0036] d) the vertical frames of at least one vertical frame arrangement of the vertical frame arrangements, which frames are set onto one another, preferably the at least four vertical frames of the vertical frame arrangements, comprise at least two, preferably precisely two parallel vertical supports, in each instance, which are disposed at a horizontal distance from one another;

[0037] e) the vertical frames of at least one vertical frame arrangement of the vertical frame arrangements, which frames are set onto one another, preferably the at least four vertical frames of the frame arrangements, comprise at least two, preferably precisely two parallel horizontal struts, in each instance, which are disposed at a vertical distance from one another;

[0038] f) the horizontal struts of the horizontal frames of the vertical frame arrangements extend, in each instance, between the at least two vertical supports of the vertical frame, in each instance, perpendicular to these vertical supports, and are attached to them, with their ends, by means of welding;

[0039] g) the connecting elements, which are particularly straight, preferably continuous, particularly rigid, preferably configured as connecting rods, particularly with a scaffold pipe, in each instance, extend, in each instance, between adjacent vertical supports of the vertical frames of the height block, in each instance, and are releasably attached, with their ends, to attachment positions of these vertical supports;

[0040] h) the vertical supports of the at least four vertical frames have an effective length, in each instance, that essentially corresponds to the vertical distance of the attachment position for the hip and/or back railing element, or for the floor plate from the attachment position for the hip and/or back railing element, or for the floor plate of a vertical frame of the vertical frames that already belongs to the next vertical region and is already set onto the vertical frame of the vertical region that lies underneath, or which is smaller than this vertical distance.

[0041] In this connection, it can be particularly advantageous if the following additional characteristics are provided:

[0042] a) the horizontal arms of the vertical frames of the at least two vertical frame arrangements, which are set onto one another and are horizontally spaced apart, form transverse rungs, in each instance, of an ascent or descent aid or ladder;

[0043] b) the uppermost transverse rung of a vertical frame of the vertical frames has a vertical transverse rung distance, from the bottommost transverse rung of a second vertical frame of the vertical frames, that already belongs to the next vertical region or height block, and is already set onto the vertical frame of the vertical region that lies underneath, that essentially corresponds to the vertical distance between the transverse rungs of the individual vertical frames, so that all the adjacent transverse rungs of the ladder, in each instance, essentially have the same vertical transverse rung distances relative to one another.

[0044] The scaffold or the vertical frames according to the invention can have the following additional characteristics, in a particularly advantageous embodiment:

[0045] a) a first horizontal arm of the horizontal arms of the vertical frame, in each instance, is attached in the region of the upper or lower end of the vertical supports of the vertical frame;

[0046] b) a second horizontal arm of the horizontal arms of the vertical frame, in each instance, is attached in the region of the vertical center of the vertical supports of the vertical frame.

[0047] In this way, particular advantages can be implemented during installation or removal, particularly of the leading hip and/or back railing, if applicable also in connection with particularly advantageous possibilities for integration and positioning of connecting elements in a raster dimension of a modular scaffold.

[0048] In another advantageous embodiment, it can be provided that at least two connecting elements of the connecting elements, disposed essentially at the same height, serve as protection at least during installation of the scaffold, if applicable also in the finished, constructed scaffold and/or during removal of the scaffold, as a hip and/or back railing element, in each instance, for protection to prevent a person from falling down to the side, if applicable also as a floor plate support element, in each instance, to support at least one floor plate of the floor plates. In this way, in combination with the vertical frames according to the invention, a leading or forerunning, circumferential hip and/or back railing and consequently a circumferential side protection can be implemented.

[0049] In a further improved embodiment, it can be provided that the vertical supports of the vertical frames that are set onto one another can be separated from one another in the region, preferably directly or shortly or at a slight distance, above or below, of the attachment position of the connecting element of each vertical region, in each instance. In this way, the possibilities for particularly simple installation or removal of a leading hip and/or back railing can be further improved.

[0050] In a further improved embodiment, the vertical frames according to the invention can be structured to be symmetrical to their center vertical axis. As a result, it is not necessary to pay attention to installation on the correct side when the vertical frames are installed. In contrast to this, in the "standard frames" used until now, attention always had to be paid to installation of the vertical frames on the correct side, because of the vertical diagonals that were provided there on one end, in the region of an upper end of a vertical support of the "standard frame," in each instance, and at the other end, in the region of a lower end of a second vertical support of this "standard frame," extending between them and welded to them, particularly for reasons of static calculations. Accordingly, when using the "symmetrical" vertical frames according to the invention, simpler and faster installation is possible than before.

[0051] In a particularly advantageous embodiment, it can be provided that the effective length of the vertical frame according to the invention or of the vertical frames according to the invention or of their vertical supports amounts to between 80 cm and 120 cm, preferably about 100 cm. With such vertical or standard frames, it is possible to implement a leading hip and/or back railing, which has a vertical distance from the at least one floor plate of the vertical region or vertical section that lies underneath, of also about 80 cm to 120 cm, particularly of about 100 cm, in every vertical region or vertical section of the scaffold that can be equipped or is equipped with at least one floor plate, in tier-type manner, in particularly fast, simple, and safe manner. In the region of this railing height, optimal hip and/or back side protection is made possible. It is understood that the said effective length can also be smaller than 80 cm, particularly can amount to about 30 to 70 cm, preferably about 50 cm.

[0052] Preferably, it can be provided that the transverse rung distance amounts to about half the effective length of the vertical frames and/or about 40 to 60 cm, preferably about 50 cm or about 15 to 35 cm, preferably about 25 cm. This allows a ladder that allows convenient, i.e. simple and fast ascent or descent of persons. Furthermore, in this way, multiple floor plates can be affixed at a corresponding slight distance or in a corresponding raster dimension, one on top of the other, either in a direction, preferably parallel, to the hip and/or back railing elements or in the longitudinal direction, or, if applicable, also offset from one another by 90 degrees about a vertical axis of the scaffold. This allows great flexibility while or for the purpose of constructing different scaffold structures and/or transition or connection configurations, if applicable also adapted to a raster dimension of a modular scaffold, particularly of the Layher Allround modular scaffold, all the way to a spiral-staircase-type structure of the floor plates. It is understood that floor plates can also be installed as floor with pass-through or as pass-through scaffold floors, particularly in a direction, preferably parallel, to the hip and/or back railing elements or in the longitudinal direction, so that the scaffold can also be used as an "access."

[0053] Furthermore, it can be provided that at least one, particularly a single transverse rung of the transverse rungs of the vertical frame, in each instance, preferably a transverse rung disposed in the region of the vertical center of the vertical frame, in each instance, is reinforced by means of two corner reinforcement elements, preferably corner reinforcement rods, that extend diagonally, in each instance, between the transverse rung and, in each instance, one of the vertical supports of this vertical frame, and upward or downward, in each instance, from the transverse rung, preferably whereby the corner reinforcement elements are attached, with their ends, not only to the transverse rung but also to the vertical frame, in each instance, by means of welding. The vertical frame, in each instance, can advantageously be reinforced by means of these corner reinforcement elements. It is understood that alternatively or in addition, corner reinforcement elements disposed to run diagonally, particularly symmetrical to the vertical center axis of the vertical frame, can be provided between the transverse rungs and attached there by means of welding. In other words, the corner reinforcement elements do not have to be attached to a vertical support of the vertical frame. Because of an arrangement of the corner reinforcement elements symmetrical to a vertical center axis of the vertical frame, installation of the frame on the correct side is not important, thereby making it possible to carry out the installation easily and quickly. Furthermore, by means of the configuration and placement of these corner reinforcement elements, the result can be achieved that when persons climb up or down, these corner reinforcement elements do not cause a hindrance, particularly in the form of so-called tripping traps, or that these are avoided.

[0054] Furthermore, it can be provided that the vertical supports of the vertical frames have been coupled or are coupled with one another by way of plug-in connections, to form the vertical frame support or the vertical frame arrangement. This allows particularly simple and fast installation and removal. In this connection, it can be provided that the verti-

cal supports of the vertical frames have a push-on element or a plug-in element, particularly a pipe connector, at one end of their ends, in each instance, preferably at a lower end, in each instance, by means of which the vertical supports of a vertical frame have been or are set onto the vertical supports of another vertical frame, preferably whereby the push-on element or plug-in element can be connected with the vertical support in non-releasable manner, particularly in one piece, preferably produced by means of reshaping the vertical support, in each instance.

[0055] Alternatively, the push-on element or the plug-in element can also be connected with the vertical support in multiple parts, in each instance, preferably attached to the vertical support, in each instance, by means of a press-fit connection. Using vertical frames configured in this manner, the result can be achieved that the scaffold can be installed or removed without screws and/or without a wrench, if applicable only using a hammer.

[0056] It can be very particularly advantageous if, in the case of a scaffold according to the invention, or if, in the case of the vertical frames according to the invention, the following additional characteristics are provided:

[0057] a) a perforated disk provided with multiple perforations, particularly disposed concentric to the vertical support and surrounding the vertical support in flange-like manner, is attached, in each instance, in non-releasable manner, preferably by means of welding, for connecting holding devices, particularly for suspending support and/or connecting elements, preferably of scaffold elements that run horizontally and/or diagonally, for example scaffold bars and/or scaffold diagonals, particularly of a modular scaffold, on at least two of the vertical supports, preferably on the vertical supports that are disposed farthest to the outside, particularly on all the vertical supports, preferably in the region of the lower end, in each instance, or the upper end, in each instance, of the vertical supports of the vertical frame, in each instance;

[0058] b) at least one transverse rung of the transverse rungs of the vertical frame or the respective vertical frame, preferably the bottommost or uppermost transverse rung of the transverse rungs of the vertical frame or the respective vertical frame, comprises a, preferably a single, particularly a straight horizontal strut that is connected, at its ends that face away from one another, in one piece or in multiple pieces, in each instance, with a connecting head;

[0059] c) the connecting head, in each instance, of the transverse rung is delimited with side wall parts that have vertical outer surfaces that run towards a center, preferably a post center and disk center of the related perforated disk, in wedge-like manner, which surfaces enclose a wedge angle that amounts particularly to 40 degrees to 50 degrees, preferably about 45 degrees, particularly 44 degrees;

[0060] d) the connecting head, in each instance, of the transverse rung has an upper head part and a lower head part preferably connected with the former in one piece, particularly configured or produced in one piece;

[0061] e) a slit is provided between the upper head part and the lower head part, which slit is open toward the related vertical support;

[0062] f) the connecting head, in each instance, of the transverse rung is set, with its slit, onto the perforated disk of the vertical post, in each instance, which disk projects into the slit, at least in part, and is attached to the vertical support, in each instance, preferably also to the perforated disk, in each instance, by means of welding.

[0063] In this way, expanded application and use possibilities and/or cost savings effects can be created, particularly on the basis of scaffold components that can be connected matching to a modular scaffold, above all the Layher Allround modular scaffold, in accordance with its raster dimensions. Also, because of the above measures, advantageous possibilities exist for simple, flexible, and variable adaptation of the distances between the vertical supports, particularly of horizontally adjacent vertical frames, or of support constructions, adapted to the load conditions that prevail on site or the support forces required on site or the scope for safe support of loads to be carried. Such vertical frames can be constructed using horizontal and/or diagonal holding devices, provided with perforated disk connecting heads, which are known from modular scaffolds, particularly with scaffold bars and/or scaffold diagonals, to form a particularly rigid and stable scaffold, particularly a load-bearing scaffold, or height block of a scaffold, particularly a load-bearing scaffold, from which particularly rigid and stable scaffolds, particularly load-bearing scaffolds or load-bearing scaffold towers can be constructed. Furthermore, such vertical frames or the vertical frame supports or vertical frame arrangements or scaffolds, particularly load-bearing scaffolds or load-bearing scaffold towers, constructed from them can be connected, in conventional manner, using such holding devices intended for connection to perforated disks, such as scaffold elements that run horizontally and/or diagonally, particularly scaffolds bars and/or scaffold diagonals, of a modular scaffold, so that a conventional modular scaffold can be constructed directly in connection with and firmly connected with the vertical frame or a vertical frame support or vertical frame arrangement constructed from it, or a scaffold constructed from it, particularly a load-bearing scaffold or a load-bearing scaffold tower, in torsion-resistant manner.

[0064] Furthermore, the vertical frames according to the invention can now be constructed, accordingly, to form scaffolds, particularly load-bearing scaffolds or load-bearing scaffold towers, or height blocks of scaffolds, particularly load-bearing scaffolds or load-bearing scaffold towers, that have different layouts, using horizontally adjacent, vertical frames according to the invention, particularly the same or identical frames, by means of holding devices intended for connection to the perforated disks, particularly diagonal and/or horizontal scaffold elements, such as scaffold bars and/or scaffold diagonals of a modular scaffold, so that an adaptation of the load-bearing capacity of such a scaffold, particularly a load-bearing scaffold or load-bearing scaffold tower, can be achieved in simple manner, by means of compressing or extending its layout in one direction. Accordingly, the distances between the vertical supports of the horizontally adjacent vertical frames can therefore be adapted to the load to be carried, in each instance. This means an advantageous possibility for cost optimization.

[0065] Because the first horizontal arm and/or the second horizontal arm of the vertical frame has a connecting head configured for connecting to the perforated disks, on both ends, in each instance, which head has an upper head part and a lower head part, in each instance, and a slit configured between them, with which the connecting head, in each instance, is set onto the perforated disk, in each instance, which projects at least partly into the slit, and is welded to the vertical support, in each instance, in this set-on position,

preferably also to the perforated disk, in each instance, vertical frames can be implemented with particularly great stability, particularly torsion resistance, and accordingly, scaffolds constructed from them, particularly load-bearing scaffolds or load-bearing scaffold towers, can also be implemented. In this way and by means of the connection possibility described above, of further reinforcing holding devices, particularly of scaffold elements of a modular scaffold that run horizontally and/or diagonally, it is possible to construct particularly stable scaffolds, particularly load-bearing scaffolds or load-bearing scaffold towers.

[0066] Because the connecting heads are delimited with side wall parts that have vertical surfaces that run toward a center, particularly toward a post and disk center of the related perforated disk, in wedge-like manner, which surfaces enclose a wedge angle that amounts, in particular, to 40 degrees to 50 degrees, preferably about 45 degrees, particularly about 44 degrees, a plurality of at least up to seven connecting heads of holding devices or support elements and/or connecting elements, particularly scaffold elements that run horizontally and/or diagonally, particularly of a modular scaffold can be connected there, in known manner, if necessary with reciprocal support.

[0067] Using such vertical frames according to the invention, provided with perforated disks, it is possible to construct not only scaffolds, particularly load-bearing scaffolds or load-bearing scaffold towers, which have the quadragonal, particularly rectangular or square layout that has been usual until now, but also, polygonal layouts, in other words, for example, triangular, pentagonal, hexagonal or octagonal, particularly closed layouts can also be implemented. In this manner, even greater flexibility or variability in the construction of scaffolds, particularly load-bearing scaffolds or load-bearing scaffold towers, which can be constructed or are constructed using such vertical frames, can be achieved.

[0068] A method for installing a or the scaffold according to the invention, particularly according to the various embodiments of scaffolds described herein, can particularly be characterized by the following steps:

[0069] a) after completion of a vertical region, a vertical frame of the next vertical region is first set onto the vertical frame of this vertical region, preferably in such a manner that subsequently, a vertical frame arrangement in the form of a ladder for ascent or descent of a person is formed;

[0070] b) subsequently, the hip and/or back railing element or the hip and/or back railing elements for the next vertical region is/are guided upward from the ground or from the vertical region that has already been completed, particularly by a person standing on a floor plate of the vertical region that has already been completed, preferably by means of grasping it/them directly, and affixed to or fixed in place on the attachment position of the vertical frame that already belongs to the said next vertical region and has already been set onto the related vertical frame of the vertical region that lies underneath, and to/on the attachment position of the further vertical support;

[0071] c) preferably subsequently or before step b), at least one floor plate for the said next vertical region is guided upward, from the vertical region that has already been completed, particularly by a person standing on a floor plate of the vertical region that has already been completed, preferably by means of grasping it directly, and affixed to or fixed in place on an attachment position for the floor plate, which position belongs to the vertical region that has already been completed, preferably to/on the hip and/or back railing element of the vertical region that has already been completed and/or to/on the vertical frame of the vertical region that has already been completed, particularly on a transverse rung of its transverse rungs.

[0072] In this manner, a particularly secure structure can be implemented by means of or with a leading or fore-running hip and/or back railing, in connection with a corresponding side protection.

[0073] According to a particularly advantageous embodiment of the method, it can be provided

[0074] a) that after completion of a vertical region, a vertical frame of the next vertical region is first set onto, preferably set on the vertical frames of this vertical region, in each instance, preferably so that subsequently, at least two vertical frame arrangements in the form of a ladder, in each instance, for ascent or descent of a person, are formed;

[0075] b) that subsequently, the hip and/or back railing element or the hip and/or back railing elements for the next vertical region is/are guided upward from the ground or from the vertical region that has already been completed, particularly by a person standing on a floor plate of the vertical region that has already been completed, preferably by means of grasping it/them directly, and is/are affixed to or fixed in place on the attachment positions of the vertical frame that already belongs to the said next vertical region and has already been set onto the related vertical frame, in each instance, of the vertical region that lies underneath;

[0076] c) preferably, that subsequently or before step b), at least one floor plate for the said next vertical region is guided upward, from the ground or from the vertical region that has already been completed, particularly by a person standing on a floor plate of the vertical region that has already been completed, preferably by means of grasping it directly, and affixed to or fixed in place on an attachment position for the floor plate that belongs to the vertical region that has already been completed, preferably on the hip and/or back railing element(s) of the vertical region that has already been completed, and/or on the vertical frame of the vertical region that has already been completed, particularly on a transverse rung, in each instance, of its transverse rungs.

[0077] In this way, an even more secure structure can be implemented by means of or with a leading or fore-running, particularly circumferential hip and/or back railing.

[0078] Subsequently, the person can climb up from the vertical region that has already been completed, in an interior of the scaffold delimited by the hip and/or back railing element(s) and either by the vertical frame and the further vertical support of this vertical region, or by the horizontally adjacent vertical frame of this vertical region, specifically by way of the transverse rungs of the ladder or one of the ladders, to the floor plate of the said next vertical region, which is already secured to prevent people from falling down to the side, with the hip and/or back railing element(s) that has/have previously been affixed there.

[0079] For constructing the said next vertical region, it can preferably be provided that at least one floor plate, preferably multiple floor plates of the vertical region that has already been completed is/are used. In this way, the construction or assembly of the scaffold can be carried out in particularly material-saving and cost-saving manner.

[0080] In particularly preferred manner, it can be provided that for the construction of the said next vertical region, a

person standing on a floor plate of the vertical region that has already been completed removes another floor plate of this vertical region, and subsequently moves this other floor plate upward, preferably while still standing on the floor plate of this vertical region, and affixes it to or fixes it in place on an attachment position for the floor plate that belongs to the vertical region that has already been completed, preferably on the hip and/or back railing element(s) of the vertical region that has already been completed, particularly on a or a respective transverse rung of its transverse rungs. This allows a particularly economical and, at the same time, safe way of working.

[0081] According to a particularly preferred embodiment of the method, it can be provided that for the construction of the said next vertical region, all the other floor plates of the vertical region that has already been completed are used, except for a single floor plate of the vertical region that has already been completed, which remains in place there. In this way, the use of material and costs can be reduced to a minimum, while maintaining maximal safety during installation of the scaffold, in other words without thereby impairing safety.

[0082] In the case of the method for removing a scaffold, particularly according to the various embodiments of scaffolds described herein, it can be provided that the steps described above for installing the scaffolds are performed in the reverse order.

[0083] It is understood that the above characteristics and measures can be combined in any desired manner, within the scope of feasibility.

BRIEF DESCRIPTION OF THE DRAWINGS

[0084] Further characteristics, advantages, and aspects of the invention can be derived from the following description part, in which advantageous embodiments of the invention are described using the figures.

[0085] These show:

[0086] FIG. **1** a perspective view of a scaffold according to the invention, in the form of a load-bearing scaffold tower;

[0087] FIG. **2** a top view of a vertical frame according to the invention, also called a normal frame or standard frame or regular frame;

[0088] FIG. **3** a top view of a further vertical frame according to the invention, also called an equalization frame;

[0089] FIG. **4** a top view of a further vertical frame according to the invention, also called a starting frame;

[0090] FIG. **5** an enlarged partial view of a connecting node of those connecting nodes that are shown at the top left in FIGS. **2** to **4**, in each instance;

[0091] FIG. **6** a partial top view of the connecting node shown in FIG. **5**, with a vertical support in a sectional representation;

[0092] FIGS. **7.1** to **7.15**

[0093] a procedure sequence of installation steps in the installation of the scaffold or load-bearing scaffold tower according to the invention, in a perspective representation, in each instance.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0094] FIG. **1** shows an exemplary embodiment of a scaffold **20** according to the invention, which is constructed as a falsework or load-bearing scaffold tower **22**. This load-bearing scaffold tower **22** has a rectangular layout. The load-bearing scaffold tower **22** is constructed from vertical frame supports **48.1**, **48.2** according to the invention, in the form of vertical frame arrangements **39.1**, **39.2**. These are constructed as a ladder **21.1**, **21.2**, in each instance, having transverse rungs **35**, also called horizontal arms, disposed uniformly over its length, at equal distances **36.1**, **36.2**, **36.4** from one another. These constructions are based on the use of multiple vertical frames **25**; **25.1**, **25.2**, **25.3** according to the invention, set onto or set on one another. The vertical frames **25.1**, **25.2**, **25.3** are disposed in pairs, in each instance, at a horizontal distance from one another and in pairs, in each instance, at essentially the same height. This horizontal distance is determined here by the length of longitudinal bars or scaffold bars **28.2**, which are also called connecting elements. Each of these scaffold bars **28.2** has connecting heads **250** of a modular scaffold system, which are actually known, here of the Layher Allround scaffold system, at its two ends. The scaffold bars **28.2** have a length or connection length, in each instance, which amounts to 1.57 cm here. It is understood, however, that the length of the scaffold bars that connect the vertical frames **25.1**, **25.2**, **25.3** can also be selected to be longer or shorter, for example can amount to 1.09 m or 2.07 m or 2.57 m or 3.07 m, so that a scaffold or load-bearing scaffold having a quadragonal layout or having a longer, stretched-out layout can be constructed as a function of their length.

[0095] Multiple height blocks **100.1**, **100.2**, **100.3**, **100.4**, **100.5**, **100.6** are formed with two of these vertical frames **25.1**, **25.2**, **25.3**, in each instance, which frames are disposed in pairs and are the same or identical.

[0096] The first height block **100.1**, assigned to the ground, serves as a starting height block **100.1** and is structured accordingly. The starting height block **100.1** is constructed with two vertical frames **25.1**, **25.1** that are horizontally spaced apart, serving as starting frames **25.1**, **25.1**, in each instance, with two vertical diagonals **24.1**, **24.1** that connect them laterally, as well as with horizontal scaffold bars or longitudinal bars **28.2**, which are disposed in the region of the vertical plane spanned by the vertical diagonal **24.1**, in each instance, and which also connect the two vertical frames **25.1**, **25.1**.

[0097] The vertical diagonal **24.1**, **24.1**, in each instance, and the scaffold bar **28.2**, **28.2**, in each instance, are known scaffold components of a modular scaffold, here of the Layher Allround scaffold system. Accordingly, each vertical diagonal **24.1**, **24.1** has a known connecting head **150** at its two ends, which head is attached to the diagonal strut in articulated manner, and which head has a slit configured between an upper head part and a lower head part, by way of which slit the connecting head **150**, in each instance, is set onto one of the two perforated disks **45** provided on the vertical support **30.1**, **30.2**, in each instance, of the starting frame **25.1**, **25.1**, in each instance. The connection of the vertical diagonals **24.1**, **24.1** to the two starting frames **25.1**, **25.1** takes place in known manner, using a releasable wedge, in each instance, which is inserted through an upper wedge opening and a lower wedge opening of the connecting head **150**, in each instance, of the vertical diagonals **24.1**, **24.1**, in order to brace the components to be connected against one another, and is or has been fixed in place by hitting it, preferably with a hammer.

[0098] The scaffold bars **28.2**, **28.2** also have a known connecting head **250** at their two ends, in each instance. This head is welded onto the rod or scaffold pipe, in each instance,

in known manner. This connecting head **250** also has an upper head part and a lower head part, between which a slit is provided, by way of which the connecting head **250**, in each instance, is set onto one of the two perforated disks **45** provided on the vertical support **30.1**, **30.2**, in each instance, of the vertical frame **25**; **25.1**, **25.2**, **25.3**, in each instance. The connection of the scaffold bars **28.2**, **28.2** to the two starting frames **25.1**, **25.1** once again takes place in known manner, using a releasable wedge, in each instance, which is inserted through an upper wedge opening and a lower wedge opening of the connecting head **250**, in each instance, of the scaffold bars **28.1**, **28.1**, in order to connect the components to be connected, and is or has been fixed in place by hitting it, preferably with a hammer.

[0099] For the purpose of reinforcing the load-bearing scaffold **20** in a horizontal plane, a further horizontal scaffold bar in the form of a horizontal diagonal **23** is additionally provided in the equalization height block **100.1**. This diagonal is attached between two of the lower perforated disks **45** of the two starting frames **25.1**, **25.1** that lie diagonally opposite one another, using connecting heads **250**. Except for its length, the horizontal diagonal **23** has the same structure as the scaffold bar **28.2**, in each instance.

[0100] A known foot spindle **29** is inserted into the lower ends **34.1**, **34.2** of the vertical supports **30.1**, **30.2** of the two starting frames **25.1**, **25.1**, in each instance (see also FIGS. **7.1** and **7.2**), by means of which spindle a precise adjustment and consequently an alignment of the said first lower height block **100.1** and consequently of the entire scaffold **20** can be achieved, in each instance.

[0101] Five further height blocks **100.2** to **100.6** are constructed above the first height block **100.1** formed with the two starting frames **25.1**, **25.1**. The height block **100.6** provided in the region of the upper end of the load-bearing scaffold **21.1** or of the load-bearing scaffold tower **22.1** is structured as an equalization height block **100.6**. The height blocks **100.2** to **100.5** disposed between it and the starting height block **100.1** form normal or standard or regular height blocks, in each instance.

[0102] The upper equalization height block **100.6** is constructed with two equalization frames **25.3**, **25.3** and otherwise with essentially the same components as the lower starting height block **100.1**, so that in this regard, reference can be made to the above explanations. As a further difference from this, in the case of the upper equalization height block **100.6**, the horizontal diagonal **23.1** provided for horizontal reinforcement is fixed in place on two of the upper perforated disks **45** of the vertical supports **30.5**, **30.6** of the equalization frame **25.3** that lie diagonally opposite one another, by way of its connecting heads **250**.

[0103] It is understood that such a scaffold or load-bearing scaffold or that such a load-bearing scaffold tower can also be constructed without an equalization height block **100.6** or without a starting height block **100.1**, or also leaving out not only the starting height block **100.1** but also the equalization height block **100.6**. In other words, a scaffold according to the invention can also be constructed only of height blocks that can be formed exclusively with standard or normal or regular frames, in the form of the vertical frames **25.2** or vertical frames having a similar structure.

[0104] The further height blocks **100.2** to **100.5** provided in FIG. **1** between the starting height block **100.1** and the equalization height block **100.6** are therefore constructed, in each instance, with vertical frames **25.2**, **25.2** according to the invention that are also called standard or normal or regular frames **25.2**, **25.2**. These vertical frames **25.2** differ from the starting frames **25.1** particularly in that they have only one perforated disk **45**; **45.1**, **45.2**, in each instance, in the region of the upper ends **33.1**, **33.2**, in each instance, of their vertical supports **30.3**, **30.4**, and furthermore in that the standard frames **25.2**, **25.2** have a greater height **92.2**. With regard to the design details of the starting frames **25.1** according to the invention, the standard frames **25.2** according to the invention, and the equalization frames **25.3** according to the invention, reference can be made, in particular, to the explanations below, particularly regarding FIGS. **2** to **4**.

[0105] In similar manner as in the case of the starting frames **25.1**, **25.1** and also in similar manner as in the case of the equalization frames **25.3**, **25.3**, the two standard frames **25.2**, **25.2** are also connected with one another using two vertical diagonals **24.2**, **24.2**. The vertical diagonals **24.2**, **24.2** have a greater length, in comparison with the vertical diagonals **24.1**, **24.1**, but for the remainder are structured the same as the vertical diagonals **24.1** are.

[0106] Connecting the two standard frames **25.2**, **25.2** of the height block **100.2** to **100.5**, in each instance, using the two vertical diagonals **24.2**, **24.2**, takes place in such a manner that each of the vertical diagonals **24.2** is fixed in place, with a first, upper connecting head **150**, on the perforated disk **45.1**, **45.2** attached in the region of the upper end **33.1**, **33.2** of the vertical supports **30.3**, **30.4** of the standard frame **25.2**, **25.2**, in each instance, of the same height block, while the other, lower connecting head **150**, in each instance, of the vertical diagonals **24.2**, **24.2** is attached to a perforated disk **45** attached in the region of the upper end **33** of a vertical support **30** of a vertical frame **25.1** or **25.2**, respectively, disposed horizontally apart and below, of a height block that lies underneath.

[0107] The distance **97** of the perforated disks **45** attached to the vertical supports **30.3**, **30.4** of a set-on standard frame **25.2**, **25.2** from the perforated disks attached to the vertical frame **25.2**, **25.1** that lies underneath, onto which the set-on standard frame **25.2**, **25.2** is set, here amounts to about 100 cm. In other words, the said two perforated disks **45**, **45** have a vertical distance **97** of about 1.0 m, by way of the frame level **60**. An advantage of this raster dimension of 1.0 m is that so-called serial diagonals of a modular scaffold system, here of the Layher Allround scaffold system, can be used, in cost-advantageous manner.

[0108] As is evident from FIG. **1**, a further horizontal longitudinal or scaffold bar **28.2** is fixed in place, in each instance, between the two vertical frames or standard frames **25.2**, **25.2**, in each instance, of the height block **100.2** to **100.5**, in each instance, specifically on the perforated disks **45**, which are horizontally spaced apart, of the vertical frames **25.2**, **25.2** that lie opposite one another at a horizontal distance, at essentially the same height. These scaffold bars **28.2**, **28.2** are also disposed parallel to one another and, in each instance, perpendicular to the vertical planes spanned by the two vertical frames **25.1**, **25.1** or **25.2**, **25.2** or **25.3**, **25.3**, in each instance, which are disposed at essentially the same height. These scaffold bars **28.2**, **28.2**, also called connecting elements, serve, at least during installation of the scaffold **20**, as hip and/or back railing elements **62.1**, **62.2** of a railing installed as a leading railing, as will be described in greater detail below, in connection with FIGS. **7.1** to **7.13**. The said horizontal scaffold bars **28.2**, **28.2** furthermore serve, at least during installation of the scaffold **20**, as floor plate support

elements **62.2**, **62.2** for floor plates **43** that can be disposed or are disposed in vertical regions **101.2** to **101.5**, which are disposed one on top of the other, in tier-type manner. According to an advantageous exemplary embodiment of the method according to the invention for installing the scaffold **20** according to the invention, after a scaffold **20** has been constructed to the desired height, for example as shown in FIG. **1** as well as **7.13** and **7.14**, in the uppermost tier, in other words here in the vertical region **101.5**, the scaffold bars **28.2**, **28.2** that are attached to the perforated disks **45** of the two vertical frames **25.2**, **25.2** assigned to this vertical region **101.5** are covered essentially completely with floor plates **43**, so that this uppermost work platform is equipped with an essentially closed or continuous floor covering. In contrast to this, in the vertical regions **101.5**, **101.4**, **101.3**, and **101.2** that lie underneath, in each instance, in tier-type manner, only one floor plate **43**, in each instance, is laid onto the two horizontal scaffold bars **28.2**, **28.2**, in each instance, which plates have remained there according to an advantageous exemplary embodiment of the method according to the invention for installing the scaffold **20** according to the invention. It is understood, however, that alternatively, for example, a work platform with multiple floor plates **43** can be or is constructed, in each instance, in every second one of the vertical regions that lie one on top of the other, so that a work scaffold, for example a façade scaffold or also a mobile scaffold, having multiple work tiers, is then available.

[0109] The floor plates **43**, also called scaffold floors, have suspension hooks **44** that are U-shaped in cross-section here, by means of which the floor plates **43** can be or are laid onto the longitudinal bars or scaffold bars **28.2**, **28.2** that are configured as round pipes here, in each instance. In this or a similar manner, a scaffold **20** according to the invention or a load-bearing scaffold tower **22** according to the invention can additionally be used also as a work scaffold or the like.

[0110] In order to support loads to be absorbed by the vertical frames **25** according to the invention or by the frame support **20** or by the load-bearing scaffold **21** according to the invention or by the load-bearing scaffold tower **22** according to the invention, a known head spindle **38** can be provided, in each instance, on the upper end, in each instance, of the vertical supports **30** of the equalization frames **25.3**, **25.3** disposed in the uppermost height block **100.6**, which spindle in turn can be inserted into the scaffold pipes of the vertical supports **30** of the starting frames **25.1**, **25.1** that are configured as round pipes made of steel. These head spindles **38** can be provided, again in known manner, with contact parts **38.1** that are U-shaped in cross-section, to be laid on or to accommodate load carriers or formwork carriers, here in the form of I-beams **26**. It is understood that the head spindles can also be structured to be adapted for supporting and/or accommodating other support bodies, for example in the form of crosshead spindles, in which a contact plate and multiple support profiles that are horizontally spaced apart and proceed from this plate can be provided in the region of their upper ends.

[0111] Preferred exemplary embodiments of vertical frames **25**; **25.1**, **25.2**, **25.3** according to the invention are particularly shown in FIGS. **2** to **4**. Each of these vertical frames **25**; **25.1**, **25.2**, **25.3** is constructed from two parallel vertical supports **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6** that are disposed at a horizontal distance **31** from one another, and two parallel horizontal arms **35**; **35.1**, **35.2**; **35.3**, **35.4**; **35.5**, **35.6** that are disposed at a vertical distance **36.1**, **36.2**; **36.3** from one another, which are welded to one another, forming a closed frame **25**. In this connection, the two horizontal arms **35.1**, **35.2**; **35.3**, **35.4**; **35.5**, **35.6**, in each instance, i.e. their longitudinal axes **47.1**; **47.2**; **47.3** are disposed perpendicular to the vertical supports **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6**, i.e. to their longitudinal axes **32.1**; **32.2**; **32.3** and welded in place there. Each horizontal arm **35.1** to **35.6** is therefore welded to two of the horizontally spaced-apart, parallel vertical supports **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6**, specifically, in the exemplary embodiment shown, in such a manner that the horizontal arm **35.1**, **35.2**; **35.3**, **35.4**; **35.5**, **35.6**, in each instance, extends between the two vertical supports **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6**, in each instance.

[0112] Each vertical frame **25**; **25.1**, **25.2**, **25.3** furthermore also has two diagonal rods **40**; **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6** configured as corner reinforcements, in each instance, which diagonally reinforce the frame, in each instance. In the exemplary embodiments shown, the diagonal rods **40**; **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6**, in each instance, are configured to be the same or identical, thereby making it possible to achieve cost savings effects. Each diagonal rod **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6** is disposed at a preferably equal-size angle **74.1**, **74.2** relative to the horizontal arm **35.1**; **35.4**; **35.5**, in each instance, at which the diagonal rod **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6**, in each instance, is also welded on, as to the related vertical support **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6** of the vertical frame **25.1**; **25.2**; **25.3**, in each instance. The diagonal rods **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6** therefore extend, in each instance, between a horizontal arm **35.1**; **35.4**; **35.5** and a vertical support **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6** of the vertical frame **25.1**; **25.2**; **25.3**, in each instance, and are welded on with their ends there. The ends of the diagonal rod **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6**, in each instance, are configured as flat connectors **42**, in each instance. For this purpose, the diagonal rods **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6**, which are configured as round pipes here, are compressed or pressed together at their ends, in each instance. The upper ends of the two diagonal rods **40.1**, **40.2**; **40.3**, **40.4**; **40.5**, **40.6**, in each instance, of the vertical frame **25.1**, **25.2**, **25.3**, in each instance, are welded to the horizontal arm **35.1**, **35.4**, **35.5**, in each instance, at a horizontal distance from one another. In the case of the vertical frames **25.1** and **25.3**, in other words the starting frame **25.1** and the equalization frame **25.3**, the diagonal rods **40.1**, **40.2** or **40.5**, **40.6**, respectively, in each instance, are welded to the upper horizontal arm **35.1** or **35.5**, respectively, in each instance, of the two horizontal arms **35.1**, **35.2** or **35.5**, **35.6**, respectively, in each instance, and extend from there, proceeding in the direction of the lower horizontal arm **35.2** or **35.6**, respectively, in each instance. These diagonal rods **40.1**, **40.2**; **40.5**, **40.6** furthermore extend, in each instance, in a plane spanned by the two horizontal arms **35.1**-**35.2** or **35.5**-**35.6**, respectively, in each instance. In contrast to this, the diagonal rods **40.3** and **40.4** of the vertical frame **25.2**, in other words of the standard or normal or regular frame **25.2**, are welded onto the lower horizontal arm **35.4** of the two horizontal arms **35.3**, **35.4**, in each instance, and extend from there, proceeding in a direction away from the upper horizontal arm **35.3** or in the direction of the lower ends **34.1**, **34.2** of the vertical supports **30.3**, **30.4**. These diagonal rods **40.3**, **40.4** also extend, in each instance, in a vertical plane spanned by the two horizontal arms **35.3**, **35.4** or by the vertical supports **30**. It is understood, however, that such or other diagonal rods do not necessarily

have to be disposed in the plane spanned by the vertical supports **30** and/or in the one spanned by the horizontal arms **35**.

[0113] The vertical frames **25.1**, **25.2**, **25.3** according to the invention are configured to be symmetrical to their vertical center axis **75.1**, **75.2**, **75.3**, in each instance. In this way, not only are static advantages brought about, but also installation advantages, because it is not necessary to pay attention to installation on the correct side.

[0114] In the exemplary embodiments shown, the diagonal rods **40**; **40.1**, **40.2**, **40.3**, the vertical supports **30**; **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6**, and the horizontal struts **47**; **47.1**, **47.2** of the horizontal arms **35.1** to **35.5**, as well as the scaffold bars **28.2** and the diagonals **23**, **24.1**, **24.2**, in each instance, are configured with straight round pipes made of steel, preferably zinc-plated steel. Preferably, scaffold pipes that are available as standard products are used for this purpose. In contrast to this, the horizontal strut **47.3** of the lower horizontal arm **35.6** of the vertical frame or equalization frame **25.3** is configured as a quadragonal profile or four-corner profile. This also consists of steel, preferably zinc-plated steel. It is understood, however, that these scaffold components, in particular, can also consist of other metals, particularly of light metal, for example of aluminum.

[0115] The vertical supports **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6**, preferably also the horizontal struts **47.1** of the horizontal arms **35.1**, **35.2**; **35.3**; **35.5** of the vertical frames **25.1**, **25.2**, **25.3** have an outside diameter **94.1** or **94.2** that amounts to 48.3 mm here, preferably whereby the wall thickness amounts to only 3.2 mm. This is a standardized dimension, particularly in the case of modular scaffolds such as the Layher Allround scaffold system. Providing the scaffold pipes having an outside diameter of 48.3 mm has the advantage, among other things, that standard scaffold couplings can be connected to the vertical frames **25**, if necessary.

[0116] Preferably, in contrast to this, the horizontal strut **47.2** of the lower horizontal arm **35.4** of the vertical or standard frame **25.2** can have a slightly smaller outside diameter **94.4**, which can amount to 42.4 mm, for example. It is understood, however, that the outside diameter of the horizontal strut of the lower horizontal arm of the standard frame can be of the same size or even slightly greater than the outside diameter of the upper horizontal struts of the vertical frames. The horizontal strut **47.2** of the lower horizontal arm **35.4** of the vertical or standard frame **25.2** preferably has a wall thickness of only 2.5 mm. It is understood, however, that the wall thickness can also be of equal size or even slightly greater than the wall thickness of the upper horizontal struts of the vertical frames.

[0117] The diagonal struts **40**; **40.1**, **40.2**, **40.3** of the vertical frames **25**; **25.1**, **25.2**, **25.3** have an outside diameter **95** that amounts to only 33.7 mm here. The wall thickness of the diagonal struts is preferably less than the wall thickness of the horizontal struts. It can preferably amount to only 2.25 mm.

[0118] The lower horizontal arms **35.6** or the horizontal struts **47.3** of the vertical or equalization frames **25.3** can preferably be configured as four-corner pipes, preferably rectangular pipes, whereby the latter preferably can have a height or thickness of about 20 mm, a width of about 40 mm, and a wall thickness of about 2.0 mm.

[0119] The vertical frames **25**; **25.1**, **25.2**, **25.3** according to the invention are particularly characterized in that, at least in the region of the upper end **33.1**, **33.2**, in each instance, of their vertical supports **30**; **30.1**, **30.2**; **30.3**, **30.4**; **30.5**, **30.6**, at least one, in each instance, perforated disk **45**; **45.1**, **45.2**, provided with multiple perforations **46**; **46.1**, **46.2**, is permanently attached, here by means of welding, for connecting holding devices, particularly for suspension of support and/or connecting elements, preferably of scaffold elements that run horizontally and/or diagonally, for example scaffold bars and/or scaffold diagonals, such as those shown in FIGS. **1** and **7**, for example, in the form of horizontal scaffold bars **28.2** and/or diagonals **23**, **24.1**, **24.2**, particularly of a modular scaffold, here of the Layher Allround scaffold system.

[0120] While the vertical frames **25.2** and **25.3** according to the invention, in other words the standard or normal or regular frames **25.2** and the equalization frames **25.3** have only two perforated disks **45.1**, **45.2**, in each instance, specifically in the region of an upper end **33.1**, **33.2** of their vertical supports **30.1**, **30.2** or **30.3**, **30.4**, respectively, in each instance, the vertical frames **25.3**, in other words the starting frames **25.1**, additionally comprise two further perforated disks **45.3**, **45.4**, of which one is attached, in each instance, in the region of the lower end **34.1** or **34.2**, in each instance, of the vertical support **30.1** or **30.2**, in each instance. These additional perforated disks **45.3** and **45.4** are configured to be the same as or identical to the perforated disks **45.1** and **45.2**.

[0121] Each perforated disk **45** of these perforated disks **45** is disposed concentric to the vertical support **30**, in each instance, and surrounds the vertical support **30**, preferably over its full circumference, in the manner of a flange. It is understood, however, that instead of the perforated disks **45** as shown, other attachment means can also be provided, to which the scaffold components that can be attached or are attached there, particularly the connecting and/or holding and/or support elements, can be configured to be adapted.

[0122] The horizontal arms **35.1** to **35.5** comprise at least one, particularly a straight horizontal strut **47.1** or **47.2**, in each instance, which is configured or provided with a connecting head **50**, in each instance, at its ends that face away from one another, preferably in one part or in one piece, or in multiple parts. In the exemplary embodiments shown, the connecting heads **50**, in each instance, of the horizontal arms **35.1** to **35.5** of the vertical frames **25.1**, **25.2**, **25.3** are configured or produced in one part or in one piece, in each instance, with the horizontal strut **47**, in each instance.

[0123] The placement and the configuration of the connecting heads **50** formed in one part or in one piece, in each instance, and from the same material as the preferably straight rod, here with a horizontal strut **47**, are particularly evident from FIGS. **5** and **6**. The connecting head **50**, there designated in general with the reference symbol **50**, has an upper head part **56** and a lower head part **57**, which are connected in one piece with one another or that are configured or produced in one part. The upper head part **56** has upper side wall parts **51.1** and **51.2**, and the lower head part **57** has lower side wall part **52.1** and **52.2**. The upper vertical outer surfaces **53.1** and **53.2** as well as the lower vertical surface **54.1** and **54.2** of the side wall parts **51.1**, **51.2**; **52.1**, **52.2** run toward a center, particularly a post and disk center **49**, in wedge-like manner, and enclose a wedge angle **55** that amounts to about 44 degrees here. A horizontal slit **58** is provided between the upper head part **56** and the lower head part **57** of each connecting head **50** of the horizontal arms **35** of the vertical frames **25**, which slit is open toward the assigned vertical strut **30** and toward the vertical outer surfaces **53.1**, **53.2**; **54.1**, **54.2**. The slit **58** is delimited by horizontal upper and lower slit surfaces **66.1**, **66.2**, which are disposed parallel to one another and parallel

to the longitudinal axis **37**, in each instance, of the horizontal arm **35**, in each instance, or to its horizontal strut **47**, in each instance. The slit **58** has a slit width **70** that amounts to about 10 mm, whereby the slit width **70** is only slightly greater than the thickness of the perforated disk **45**, in each instance, which amounts to about 9 mm here.

[0124] The connecting head **50**, in each instance, is set onto the perforated disk **45**, which projects into the slit **58** at least in part, and is welded to the vertical support **30**, in each instance, here also to the perforated disk **45**, in this set-on position. In this manner, stable vertical frames **25**; **25.1**, **25.2**, **25.3**, which are particularly resistant to bending and torsion, are created, which can be used in many different advantageous ways to construct spatial support structures, particularly scaffolds **20**, frame supports, load-bearing scaffolds or load-bearing scaffold towers **22**, which structures are compatible with a matching modular scaffold, in other words can be combined with it, which is also constructed with or can be constructed with posts having corresponding or matching perforated disks. In particular, two or more of the vertical frames **25**; **25.1**, **25.2**, **25.3** according to the invention can be connected, preferably in pairs, by means of scaffold components that can also be used in a matching modular scaffold, in other words, in particular, scaffold bars, for example longitudinal and/or transverse bars and/or diagonals, as they can be used, in particular, in the form of vertical and/or horizontal diagonals of such a modular scaffold.

[0125] The connecting heads **45** are welded onto one of the vertical supports **30** of the vertical frame **25**, in each instance, in such a manner that the horizontal plane **71** that intersects the slit **58** at the height of half the slit width **70** lies approximately in the center plane **72** that intersects the perforated disk **45** approximately at the height of its center. Each connecting head **50** is configured to be symmetrical to the horizontal plane **71** and also symmetrical to a vertical plane **82** that is disposed perpendicular to the former and also contains the longitudinal axis **47** of the horizontal arm **35** or of its horizontal strut **47**. The upper head part **56** has upper vertical contact surfaces **80.1.1**, **80.1.2**, and the lower head part **57** has lower vertical contact surfaces **80.2.1**, **80.2.2**, with which the connecting head **50** lies against the outer surface of the vertical support **30**. The upper end **81.1** of the upper head part **56** and the lower end **81.2** of the lower head part **57** project beyond the horizontal strut **47** of the horizontal arm **35**, respectively its outside diameter, in the region of the contact surfaces **80.1**, **80.2**, in each instance, viewed in a direction perpendicular to the longitudinal axis **37** of the transverse arm **35** or of its horizontal strut **47**. The height **76.1** of the upper head part **56** and the height **76.2** of the lower head part **57** decrease toward the back, here, continuously and without a bend, toward the outside diameter **94.2** of the horizontal strut **47** of the horizontal arm **35**. The upper outer surface **77.1** and the lower outer surface **77.2** of the connecting head **50** are therefore inclined toward the horizontal strut **47** of the horizontal arm **35**, in each instance, specifically, here, at an angle **78.1**, **78.2** to an imaginary line that runs parallel to the longitudinal axis **37** of the transverse arm **35** or to its horizontal strut **47**, which angle amounts to about 45 degrees here. The contact wall parts **80.1**, **80.2** of the connecting head **50** have a partially cylindrical shape and are configured with a radius that corresponds to the outer radius of the vertical support **30**, preferably amounting to about 24.15 mm here, viewed in a cross-section perpendicular to the longitudinal axis **32** of the related vertical support **30**. The distances **76.1** of the upper end **81.1** of the upper contact surfaces **80.1**, and the distances **76.2** of the lower end **81.2** of the lower contact surfaces **80.2** from the horizontal plane **71** that intersects the slit **58** at the height of half the slit width **70** have the same size. As is particularly evident from FIG. **6**, the length **124** of the vertical outer surfaces **53.1**, **53.2**; **54.1**, **54.2** of the side wall parts **51.1**, **51.2**; **52.1**, **52.2** of the connecting heads **50** amounts to about 35 mm, viewed in a projection direction perpendicular to the longitudinal axis **47** of the horizontal arm **35** or of its horizontal strut **47**, and also perpendicular to the longitudinal axis **32** of the vertical supports **30**. The connecting heads **50**, which are produced in one part with the strut **47**, or formed onto the strut **47** with the same material and in one piece, can be produced by means of forming, particularly by means of compressing or pressing together the ends, in each instance, of the horizontal strut **47**, which is configured with a round pipe here.

[0126] The connecting head **50**, in each instance, of the horizontal arms **35** is configured in such a manner and disposed on the related perforated disk **45**, at least partly surrounding this disk with its slit **58**, that with the exception of a single perforation **46.1**, which is the smaller perforation **46.1** of the perforations **46**; **46.1**, **46.2** of the related perforated disk **45**, all the other perforations **46.1** and **46.2** of this perforated disk **45** can be used for suspending usual connecting heads, particularly those of a modular scaffold, particularly of the Layher Allround scaffold system, which are provided, in each instance, with a non-detachable wedge, preferably scaffold elements that run horizontally and/or diagonally. Each connecting head **50** is welded not only to one of the vertical supports **30** of the vertical frame **25**, but also to one of the perforated disks **45**.

[0127] It is practical if the perforated disks **45** of the vertical frames **25** are configured in the same way as the perforated disks of a modular scaffold system, here of the Layher Allround scaffold system. Accordingly, the perforated disks **45** can be disposed concentric to the vertical support **30**, in each instance, and can surround the vertical support **30**, in each instance, in the manner of a flange, at least in part, preferably over the full circumference, specifically preferably without interruptions. The perforated disks **45** have at least three, here four small perforations **46.1** and four large perforations **46.2**, which are disposed alternately, at the same circumference angles **88** of 45 degrees here. In this way, preferably releasable connecting heads **150**, **250** of horizontal and/or diagonal connecting or scaffold elements, particularly of longitudinal and/or horizontal bars as well as diagonal rods, preferably of a modular scaffold, particularly of the Layher Allround scaffold system, can be suspended or fixed in place on these perforations **46.1**, **46.2**.

[0128] With regard to such mass-production connecting heads of a modular scaffold system plus mass-production perforated disks and mass-production connecting elements, known from the state of the art, reference can be made, for example, to DE patent 24 49 124, to DE 37 02 057 A or the parallel EP 0 276 487 B1, to DE 39 34 857 A1 or the parallel EP 0 423 516 B2, to DE 198 06 094 A1 or the parallel EP 0 936 327 B1, and to the parallel EP 1 452 667 B1 of the applicant.

[0129] Alternative perforated disk embodiments are evident, for example, from DE 39 09 809 A1 or the parallel EP 0 389 933 B1 and from DE 200 12 598 U1 as well as the parallel WO 02/06610 A1, and the parallel EP 1 301 673 A1 of the

applicant. The content of these intellectual property rights is incorporated with their full content, at this point, for the sake of simplicity.

[0130] Aside from the characteristics also mentioned above, in part, the vertical frames **25**; **25.1**, **25.2**, **25.3** according to the invention distinguish themselves by a number of other characteristics:

[0131] The vertical frame particularly shown in FIG. **4**, also called a starting frame **25.1**, has precisely two straight vertical supports **30.1** and **30.2**, each having the same length **92.2**. The length **92.1** corresponds, at the same time, to the effective length of the vertical frame **25.1** or its vertical supports **30.1**, **30.2**. The length **92.1** is less than the horizontal distance **31** between the two vertical supports **30.1**, **30.2** or between the longitudinal axes **32.1**, **32.1** of these two vertical supports **30.1** and **30.2**. The length **92.1** of each of these vertical supports **30.1**, **30.2** amounts to precisely 70.9 mm or about 0.71 m in the exemplary embodiment shown. The weight of this vertical or starting frame **25.1** amounts to only about 15 kg.

[0132] The horizontal distance **31** amounts to precisely 1088 mm, in each instance, in other words about 1.09 m, by the way also in the case of the two other vertical frames **25.2** according to FIGS. **2** and **25.3** according to FIG. **3**. This corresponds to a system width of a matching modular scaffold system, here of the Layher Allround scaffold system.

[0133] Precisely two perforated disks **45.1** and **45.3** or **45.2** and **45.4** are attached to every vertical support **30.1** and **30.2** of the vertical or starting frame **25.1**. Accordingly, in the vertical frame **25.1**, four perforated disks **45** are provided, in total. The perforated disks **45.1** to **45.4** of every vertical support **30.1**, **30.2** are fixed in place on the vertical supports **30.1**, **30.2**, at equal distances **93.1**, **93.2** from their ends **33.1**, **33.2**; **34.1**, **34.2**, of about 100 mm here, in each instance, by means of welding.

[0134] The distance **41.1** between the two perforated disks **45.1**, **45.3** and **45.2**, **45.4**, in each instance, of the vertical support **30.1** or **30.2**, in each instance, corresponds to the vertical distance **36.1** of the horizontal arms **35.1** and **35.2** or their longitudinal axes **47.1**, **47.1**, which amounts to about 50 cm here, in other words about 0.5 m. In the constructed scaffold **20**, the horizontal arms **35.1** and **35.2** form two transverse rungs **35** of a ladder **21**. The horizontal arms **35.1** and **35.2** are therefore attached to the vertical supports **30.1** and **30.2** parallel to one another and at a transverse rung distance **36.1** of about 0.5 m.

[0135] The vertical frame **25.2** shown in FIG. **2**, also called a standard or normal or regular frame **25.2**, has precisely two straight vertical supports **30.3** and **30.4**, each having the same length **92.2**. The length **92.2** corresponds to the effective length of the vertical frame **25.2** or its vertical supports **30.3**, **30.4**. The length **92.2** is slightly smaller than the horizontal distance **31** between the two vertical supports **30.3**, **30.4** or between the longitudinal axes **32.2**, **32.2** of these two vertical supports **30.3** and **30.4**. The length **92.2** of each of these vertical supports **30.3**, **30.4** amounts to about 100 cm or about 1.0 m. The weight of this vertical or standard frame **25.2** amounts to only about 18 kg.

[0136] In contrast to the vertical frame **25.1** shown in FIG. **4**, the vertical frame **25.2** shown in FIG. **2** has only a single perforated disk **45.1**, **45.2** per vertical support **30.3** or **30.4**, in each instance. In this connection, the perforated disk **45.1**, **45.2**, in each instance, is disposed in the region of the upper end **33.1**, **33.2**, in each instance, of the vertical support **30.3** and **30.4**, in each instance, specifically at a distance **93.1** from the upper end **33.1**, **33.2**, in each instance, that amounts to about 10 cm or about 0.1 m here. While both horizontal arms **35.1** and **35.2** are provided with connecting heads **50.1**, **50.2** in the case of the vertical frame **25.1** shown in FIG. **4**, each of which heads are set onto a related perforated disk **45.1**, **45.2**, **45.3**, **45.4** with their slits **58**, in each instance, and are welded onto the vertical support **30.1**, **30.2**, in each instance, in this set-on position, and preferably also onto the perforated disk **45.1**, **45.2**, **45.3**, **45.4**, in each instance, in the case of the vertical frame **25.2** shown in FIG. **2**, only the upper horizontal arm **35.3** has two connecting heads **50.1**, **50.2**, which are set onto the perforated disk **45.1**, **45.2**, in each instance, with its slit **58**, in each instance, and welded onto the vertical support **30.3**, **30.4**, in each instance, in this set-on position, and preferably also onto the perforated disk **45.1**, **45.2**, in each instance. The other, lower horizontal arm **35.4** of the two horizontal arms **35.3**, **35.4** of the vertical frame **25.2** is directly welded to the vertical support **30.3** and **30.4**, in each instance, in other words without any perforated disks **45** lying in between. The said lower horizontal arm **35.4** accordingly also does not have any corresponding connecting heads **50**. It is practical if the ends of the horizontal arm **35.4** are hollowed out with a radius that corresponds to the outer radius of the vertical supports **30.3** and **30.4**, and welded to the vertical support **30.3** and **30.4**, in each instance, with a preferably continuous, i.e. full-circumference weld seam, in the region of its two hollowed-out ends. This horizontal arm **35.4** or its longitudinal axis **37.4** is disposed at a distance **36.2** below and parallel to the other, upper horizontal arm **35.3** or its longitudinal axis **37.3**, whereby this distance **36.2** amounts to about 50 cm or about 0.5 m. The distance **36.2** is therefore about half as great as the effective length **92.2** of the vertical frame **25.2** or of its vertical supports **30.3**, **30.4**. The two horizontal arms **35.3** and **35.4** form two transverse rungs **35** of a ladder **21** in the constructed scaffold **20**. Accordingly, the horizontal arms **35.3** and **35.4** are attached to the vertical supports **30.3** and **30.4**, parallel to one another and at a transverse rung distance **36.2** that amounts to about 0.5 m. The horizontal arm **35.4** or its longitudinal axis **37.4** has a distance **41.2** from the lower end **34.1**, **34.2** of the vertical supports **30.3**, **30.4**, in each instance, that amounts to precisely 397 mm here, or about 0.4 m. Accordingly, the lower horizontal arm **35.4** of the vertical frame **25.2** is attached to the vertical supports **30.3**, **30.4** about in the region of the vertical center of the vertical frame **25.2**, between the upper and lower ends **33.1**, **33.2**; **34.1**, **34.2** of these supports, and extends perpendicular to them, between them.

[0137] The vertical frame **25.2** is provided with two pipe connectors **105** that are non-releasably connected with the vertical supports **30.3**, **30.4**, at their lower ends **34.1**, **34.2**, preferably in one piece. Preferably, the pipe connectors **105** have been or are produced by means of forming the vertical supports **30.3**, **30.4**. It is understood, however, that the pipe connectors can also be pipe parts that can partly be inserted into the lower ends of the vertical supports, which are configured as pipes, and can be non-releasably attached to them by way of or by means of a press connection. The two pipe connectors **105** project beyond the lower ends **34.1**, **34.2** of the vertical supports **30.3**, **30.4**, respectively beyond the abutting edges **65** provided there, with a length **108**. This length **108** preferably amounts to about 10 to 20 cm, particularly about 15 to 17 cm, preferably precisely 165 mm, whereby a bevel is preferably present at the free end, the length of which

preferably amounts to precisely 15 mm. Using the pipe connectors **105**, the vertical frames **25.2** can be set onto other vertical frames, in other words particularly onto the starting frames **25.1** or on other vertical frames **25.2**, **25.3**. The pipe connectors **105** therefore form part of a plug-in connection **102**. The pipe connectors **105** have an outside diameter **106** that is slightly smaller than the inside diameter of the upper ends **33.1**, **33.2** of the vertical supports **30**, so that the pipe connectors **105** can be inserted there. If a vertical frame **25.2** according to the invention is set onto another vertical frame **25**, for example as shown in FIG. **1**, a coupling or abutment location **60** is formed, in each instance, in the region of the plug-in connection **102**, in each instance. There, the vertical frames **25** that are set onto one another can be separated from one another. This coupling or abutment location **60** is disposed, in each instance, at a relatively slight distance **93.1**, preferably amounting to only about 0.1 m, above the upper horizontal arm **35**, in each instance, or above the upper transverse rung **35**, in each instance, particularly above the longitudinal axis **37** of this arm or rung.

[0138] The vertical frame **25.3** particularly shown in FIG. **3**, also called an equalization frame **25.3**, has precisely two straight vertical supports **30.5** and **30.6**, each having the same length **92.3**. The length **92.3** corresponds to the effective length of the vertical frame **25.3** or its vertical supports **30.5**, **30.6**. The length **92.3** is less than the horizontal distance **31** between the two vertical supports **30.3**, **30.4** or between the longitudinal axes **32.2**, **32.2** of these two vertical supports **30.5** and **30.6**. The effective length **92.3** is half as great as the effective length of the vertical frame **25.2** shown in FIG. **2**. The length **92.3** of each of these vertical supports **30.5**, **30.6** therefore preferably amounts to about 50 cm or about 0.5 m. The weight of this vertical frame **25.3** amounts to only about 13 kg.

[0139] In the same manner as in the case of the vertical or standard frame **25.2** shown in FIG. **2**, and consequently again in contrast to the vertical or starting frame **25.1** shown in FIG. **4**, the vertical or equalization frame **25.3** shown in FIG. **3** has only a single perforated disk **45.1**, **45.2**, in each instance, per vertical support **30.5** or **30.6**. In this connection, the perforated disk **45.1**, **45.2**, in each instance, is disposed in the region of the upper end **33.1**, **33.2**, in each instance, of the vertical support **30.5** and **30.6**, in each instance, specifically at a distance **93.1** from the upper end **33.1**, **33.2**, in each instance, that amounts to about 10 cm or 0.1 m here. In the case of the vertical frame **25.3** shown in FIG. **3**, also, only the upper horizontal arm **35.5** has two connecting heads **50.1**, **50.2**, which are set onto the perforated disk **45.1**, **45.2**, in each instance, with its slit **58**, in each instance, and welded onto the vertical support **30.5**, **30.6**, in each instance, in this set-on position, and preferably also onto the perforated disk **45.1**, **45.2**, in each instance. The other, lower horizontal arm **35.6** of the two horizontal arms **35.5**, **35.6** of the vertical frame **25.3** is directly welded to the vertical support **30.5** and **30.6**, in each instance, in other words without any perforated disks **45** lying in between. The said lower horizontal arm **35.6** accordingly also does not have any corresponding connecting heads **50**. It is practical if the ends of the horizontal arm **35.6** are hollowed out with a radius that corresponds to the outer radius of the vertical supports **30.5** and **30.6**, and welded to the vertical support **30.5** and **30.6**, in each instance, with a preferably continuous, i.e. full-circumference weld seam, in the region of its two hollowed-out ends. The lower horizontal arm **35.6**, which is preferably configured as a quadragonal profile or quadragonal pipe, or its longitudinal axis **37.6** is disposed at a distance **36.3** below and parallel to the other, upper horizontal arm **35.5** or its longitudinal axis **37.5**, whereby this distance **36.3** amounts to about 37 cm or about 0.3 to 0.4 m. The lower horizontal arm **35.6** or its longitudinal axis **37.6** has a distance **41.3** from the lower end **34.1**, **34.2**, in each instance, of the vertical supports **30.5**, **30.6**, that amounts to about 25 mm or about 0.02 to 0.03 here.

[0140] The vertical or equalization frame **25.3** is also provided with two pipe connectors **105** that are non-releasably connected with the vertical supports **30.5**, **30.6**, at their lower ends **34.1**, **34.2**, preferably in one piece. Preferably, the pipe connectors **105** have been or are produced by means of forming the vertical supports **30.5**, **30.6**. It is understood, however, that these pipe connectors can also be pipe parts that can partly be inserted into the lower ends of the vertical supports, which are configured as pipes, and can be non-releasably attached to them by way of or by means of a press connection. The two pipe connectors **105** project beyond the lower ends **34.1**, **34.2** of the vertical supports **30.5**, **30.6**, respectively beyond the abutting edges **65** provided there, with a length **108**. This length **108** preferably amounts to about 10 to 20 cm, particularly about 15 to 17 cm, preferably precisely 165 mm, whereby a bevel is preferably present at the free end, the length of which preferably amounts to precisely 15 mm. Using the pipe connectors **105**, the vertical or equalization frames **25.3** can be set onto other vertical frames **25**, particularly onto the vertical frames **25.2**. The pipe connectors **105** therefore again form part of a plug-in connection **102**. The pipe connectors **105** also have an outside diameter **106** that is slightly smaller than the inside diameter of the upper ends **33.1**, **33.2** of the vertical supports **30**, so that the pipe connectors **105** can be inserted there. If a vertical or equalization frame **25.3** according to the invention is set onto another vertical frame **25**, particularly onto a vertical frame **25.2**, for example as shown in FIG. **1**, a coupling or abutment location **60** is formed, in each instance, in the region of the plug-in connection **102**, in each instance. There, the vertical frames **25** that are set onto one another can be separated from one another. This coupling or abutment location **60** is disposed, in each instance, at a relatively slight distance **93.1**, preferably amounting to only about 0.1 m, above the upper horizontal arm **35**, in each instance, or above the upper transverse rung **35**, in each instance, particularly above the longitudinal axis **37** of this arm or rung.

[0141] A preferred exemplary embodiment of a method according to the invention, for installation of a scaffold **20** according to the invention, will be described in greater detail in the following, using FIGS. **7.1** to **7.15**, and using the example of a one-field scaffold **20** in the form of a falsework or load-bearing scaffold tower **22**:

[0142] For constructing the scaffold **20** or the load-bearing scaffold tower **22**, first a suitable number of foot spindles **29** that allow height or level equalization can be set up on the ground, if necessary on top of supporting plates, as shown in FIG. **7.1**.

[0143] A starting frame or vertical frame **25.1** can be set onto two of the foot spindles **29**, in each instance, as shown in FIG. **7.2**. Subsequently, the two starting frames **25.1**, **25.1** can be connected with one another by way of two longitudinal or scaffold bars **28.2**, **28.2**, in that these are set onto the lower perforated disks **45.3**, **45.4** of the starting frames **25.1**, **25.1**, with their connecting heads **250**, and subsequently secured there by means of the connecting wedges. Subsequently or

previously, the two starting frames **25.1**, **25.1** can be connected with one another by way of a horizontal diagonal **23**, in that the latter is set, with its connecting heads **250**, onto the lower perforated disks **45.3**, **45.4** of the starting frames **25.1**, **25.1**, and subsequently secured there by means of the connecting wedges. In this manner, a closed horizontal base frame consisting of five scaffold components here, namely the two parallel longitudinal bars **28.2**, **28.2**, the two horizontal arms or transverse rungs **35.2** of the two starting frames **25.1**, **25.1**, disposed perpendicular to them, in each instance, and the horizontal diagonal **23**, can be constructed. The scaffold bars **28.2**, **28.2** span a horizontal plane in which the horizontal diagonal **23** also extends.

[0144] As shown in FIG. **7.3**, the base frame or the scaffold **20** can be aligned horizontally, in other words perpendicular to the vertical, using a level that the installer **63** is holding in his hands there, particularly in that the scaffold components are brought to the desired level by way of the foot spindles **29**.

[0145] Subsequently, the installer **63** can attach two further scaffold bars **28.2**, **28.2** to the upper perforated disks **45.1**, **45.2** of the starting frame **25.1**, **25.1**, by way of their connecting heads **250**, and, subsequently or previously, can attach two vertical diagonals **24.1** to an upper perforated disk **45.1** or **45.2**, in each instance, of the one starting frame **25.1** and to a lower perforated disk **45.3** or **45.4** of the other starting frame **25.1**, by way of their connecting heads **150**, as shown in FIG. **7.4**. In this manner, a sort of basic cage having two horizontal and four lateral, vertical cage planes can therefore be constructed.

[0146] Preferably subsequently, the scaffold components of this basic cage are rigidly connected with one another, in that the installer **63** wedges the four scaffold bars **28.2** and the horizontal diagonal **23** as well as the two vertical diagonals **24.1** in place on the vertical supports **30.3**, **30.4** or on the perforated disks **45** of the starting frames **25.1**, **25.1**, for example using a hammer, not shown, by means of a blow on the upper ends of the through-hole wedges of the connecting heads **250** and **150**. In this way, a rigid basic frame in the form of a three-dimensional rod support structure, which is secured in all horizontal and vertical planes and also against torsion, is obtained, and the scaffold **20** can be constructed further, based on this.

[0147] As shown in FIG. **7.5**, the installer **63** standing on the ground can lay or suspend multiple, for example four floor plates **43** by means of their suspension hooks **44** on top of or on the two upper scaffold bars **28.1**, **28.1**, so that then, the two upper scaffold bars **28.1**, **28.1** serve as floor plate support elements **62.1**, **62.2**, which define attachment positions **61** for the floor plates **43**. The floor plates **43** laid on in this vertical region **101.2** form a first support surface or work level, to which the installer **63** can climb from the ground.

[0148] Subsequent to laying the floor plates **43** onto the two upper scaffold bars **28.1**, **28.1**, the installer **63**, as shown in FIG. **7.6**, while still standing on the ground, can set vertical or standard frames **25.2** onto each of the two starting frames **25.1**, **25.1**, in each instance. For this purpose, the installer **63** can insert the standard or vertical frame **25.2**, in each instance, into the upper pipe ends **33.1**, **33.2** of the vertical supports **30.1**, **30.2** of one of the starting or vertical frames **25.1** that has already been constructed, with its lower pipe connectors **105**, until the standard or vertical frame **25.2**, in each instance, sits on the coupling or abutment location **60** on the upper face edge of the vertical support **30.1**, **30.2**, in each instance, with its abutting edges **65**. After the standard frame **25.2**, in each instance, has been set onto the starting frame **25.1**, in each instance, a ladder **21.1** or **21.2** is automatically obtained, which has four transverse rungs here, namely the two transverse rungs **35.1** and **35.2** of the starting frame **25.1**, in each instance, also called horizontal arms, and the two transverse rungs **35.3** and **35.4** of the standard frame **25.2**, in each instance, likewise also called horizontal arms. At least one of the ladders **21.1** of these ladders **21.1**, **21.2** can be used as an aid for climbing up and climbing down, for further installation, if applicable also for subsequent removal of the scaffold **20**.

[0149] After the two standard frames **25.2** have been set on, the installer **63** can either, as shown in FIG. **7.7**, still standing on the ground, attach two further scaffold bars **28.2**, **28.2** to the perforated disks **45.1**, **45.2** that define specific attachment positions, particularly for the scaffold bars **28.2** of the two standard frames **25.2**, **25.2** that are disposed at essentially the same height and have already been set onto the standard frame **25.1**, **25.1**, in each instance, by way of their connecting heads **250**, at these perforated disks **45.1**, **45.2**. These perforated disks **45.1**, **45.2** of the standard frame **25.2** that has been set on, in each instance, and consequently the further scaffold bars **28.2**, **28.2** attached to these perforated disks **45.1**, **45.2** have a vertical distance **97** (see FIG. **1**) from the perforated disks **45.1**, **45.2** of the starting frame **25.1**, **25.1**, in each instance, which is situated underneath, and consequently from the scaffold bars **28.2**, **28.2** attached to them, which corresponds to the effective length **92.2** of the standard frame **25.2**, in each instance, or of its vertical supports **30.3**, **30.4**, and which here therefore amounts to about 100 cm or about 1 m. Accordingly, the scaffold bars **28.2**, **28.2** attached to the perforated disks **45.1**, **45.2** of the set-on standard frame **25.2**, in each instance, are at a vertical distance above floor plates **43** that lie on the scaffold bars **28.2**, **28.2** attached to the two perforated disks **45.1**, **45.2** of the starting frame **25.1**, **25.1**, in each instance, which distance also approximately corresponds to the effective length **92.2** of the standard frames **25.2** or their vertical supports **30.3**, **30.4**, and which consequently also amounts to about 100 cm or about 1 m. In this manner, the longitudinal or scaffold bars **28.2**, **28.2** attached to the perforated disks **45.1**, **45.2** of the set-on standard frame **25.2**, in each instance, form hip and/or back railing elements **62.1**, **62.2** for a person or for an installer **63**, when this person or installer is standing on the floor plates **43** that lie underneath, in the vertical region **101.2**, as is shown, for example, in FIGS. **7.8** to **7.10**.

[0150] Subsequent to attaching the scaffold bars **28.2**, **28.2** to the set-on standard frame **25.2**, **25.2**, in each instance, or also previously, the installer **63**, as shown in FIG. **7.7**, while still standing on the ground, can install preferably two vertical diagonals **24.2**, **24.2**, in that he attaches them, in each instance, between the two horizontally adjacent standard frames **25.2**, **25.2**, which are disposed essentially at the same height, to their perforated disks **45**, in such a manner that each vertical diagonal **24.2** is attached to a perforated disk **45.1** or **45.2** of one of the two set-on standard frames **25.2** with its connecting head **150**, at one end, and to a perforated disk **45.1** or **45.2** of a starting frame **25.1** that lies underneath, with its connecting head **150**, at the other end, specifically, once again, as was already the case with the vertical diagonals **24.1** of the first height block **100.1**, disposed crosswise relative to one another, in each instance. In this or a similar manner, the installer **63**, while still standing on the ground, can construct

a second height block **100.2**, which contains the two set-on standard frames **25.2**, **25.2**, on the first height block **100.1**.

[0151] Subsequently, the installer **63** can climb up from the ground to the floor plates **43** of the first height block, so that subsequently, as shown in FIG. **7.8**, while standing on the floor plates **43**, he is situated within an interior **83** that is preferably secured in cage-like manner, on all sides, circumferentially, to prevent persons **63** from falling down to the side, with the leading installed hip and/or back railings, specifically not only in the form of the two longitudinal or scaffold bars **28.2**, **28.2**, but also in the form of the two horizontal arms or transverse rungs **35.3**, **35.3**, of the two set-on standard frames **25.2**, **25.2**, which are disposed at essentially the same height as these, but perpendicular to them. Optimally secured, in this manner, to prevent falling down to the side, the installer **63** standing on the floor plates **43** of the vertical region **101.2** can now, as also illustrated in FIG. **7.8**, set two further vertical or standard frames **25.2**, **25.2** onto the standard frames **25.2**, **25.2** of the second height block **100.2** that have already been constructed or set on. In this manner, the ladder **21.1**, **21.2**, in each instance, is expanded upward, by the two horizontal arms or transverse rungs **35.3** and **35.4** of the further set-on vertical or standard frame **25.2**, **25.2**, in each instance.

[0152] Subsequently, the installer **63** standing on the floor plates **43** of the vertical region **101.2**, can continue to construct the third height block **100.3** formed by the two further standard frames **25.2**, **25.2** that were previously set on. For this purpose, the installer **63** can complete a leading railing for a next vertical region **101.4**, in such a manner that he attaches two further scaffold bars **28.2**, **28.2**, as shown in FIG. **7.9**, to the perforated disks **45.1**, **45.2** of the further set-on standard frame **25.2**, **25.2**, in each instance, between the two said further standard frames **25.2**, **25.2**, in each instance, which are disposed at essentially the same height, at their perforated disks **45.1** or **45.2**, in each instance.

[0153] Subsequently or previously, the installer **63** can also vertically reinforce this height block **100.3**, using two further vertical diagonals **24.2**, **24.2**, as is also illustrated in FIG. **7.9**.

[0154] Subsequent to this, the installer **63**, as is evident from a comparison of FIGS. **7.9** and **7.10**, can remove all the other floor plates **43** of the vertical region **101.2**, preferably with the exception of one floor plate **43**, and install them again in the scaffold **20** that is under construction, in such a manner that he installs the removed floor plates **43** again in the next higher vertical region **101.3**, in other words lays them onto the two scaffold bars **28.2**, **28.2** of the said next higher vertical region **101.3**, which serve as hip and/or back railings in this connection. These scaffold bars **28.2**, **28.2** then therefore also serve as floor plate support elements **60.1**, **60.2**. For this purpose, it is practical if the installer **63** covers the scaffold bars **28.2**, **28.2** of the said next higher vertical region **101.3** with the floor plates **43** that have been removed underneath, in such a manner that finally, an opening **76** remains at hip height or at the height of the newly installed floor plates and between a floor plate **43** of the newly reinstalled floor plates **43** and the transverse rung **35.3** of a vertical or standard frame **25.2** of the second height block **100.2**, in which opening the installer **63** is situated, standing on at least one floor plate **43** remaining in the vertical region **101.2** that lies underneath.

[0155] Proceeding from this, the installer **63**, as illustrated in FIG. **7.11**, can subsequently climb further up, from the remaining lower floor plate **43**, by way of the transverse rungs **35** of the ladder **21.1**, through the opening **76** that then serves as a pass-through opening, to the floor plates **43** of the said next higher vertical region **101.3**. There, the installer **63** is then again optimally secured to prevent falling down to the side, circumferentially, by a multi-part hip and/or back railing that is formed from two transverse bars **28.2**, **28.2** and two transverse rungs **35.3**, **35.3**. The installer can now have the one floor plate **43** for the uppermost work platform, on which the installer **63** is present, which plate is still missing, handed to him from below by a further person, not shown, whereupon he can install or installs the floor plate **43** that is still missing there, as shown in FIG. **7.12**. Subsequently, in this exemplary embodiment and in this installation stage, five floor plates **43** have been mounted or installed, in total, namely the one floor plate **43** remaining in the vertical region **101.2** and the four floor plates **43** installed in the vertical region **101.3** that lies above it.

[0156] Depending on the desired or required height of the scaffold **20** to be constructed, the set-up or installation process described above can be continued in the same or similar manner, particularly in that first, further vertical or standard frames **25.2** are constructed, in pairs, per vertical region **101** or per height block **100**, and, assigned to these, further scaffold bars **28.2** as well as vertical diagonals **24.2**, for example until the structure shown in FIG. **7.13** has been reached. As is evident, three additional vertical regions **101.4** to **101.6** or three additional height blocks **100.4** to **100.6** have been constructed there, proceeding from the installation situation shown in FIG. **7.12**, whereby of these, two vertical regions **101.4** and **101.5** were equipped with floor plates **43** during the course of the further construction. In the case of the scaffold structure shown in FIG. **7.13**, seven floor plates **43**, in total, have been mounted or installed, of which four floor plates **43** are installed in the uppermost work or structure plane and consequently in the vertical region **101.5**, and of which one floor plate **43**, in each instance, is installed in the vertical regions **101.4**, **101.3**, and **101.2** that lie underneath, in each instance. These individual floor plates **43** installed one on top of the other, in tier-type manner, are mounted vertically one above the other. In this manner, the installer **63** can implement the construction or the installation of the scaffold **20** by way of one and the same ladder **21.1**, which "continues to grow" as the construction progresses.

[0157] As is also illustrated in FIG. **7.13**, the installer **63**, standing on the floor plates **43** of the uppermost work or construction level of the vertical region **101.5**, can set an equalization frame **25.3**, in each instance, onto one of the standard frames **25.2**, **25.2** that have already been set on, in each instance, as a final frame. These two equalization frames **25.3**, **25.3** are in turn constructed at essentially the same height, at a horizontal distance from one another that corresponds to the length of the scaffold bars **28.2**. The two equalization frames **25.3**, **25.3** are part of a final height block **100.6**. This can furthermore also be reinforced with two vertical diagonals **24.1**, **24.1**, in each instance, as well as with an upper horizontal diagonal **23** that the installer **63**, standing on the floor plates **43** of the uppermost work or construction level of the vertical region **101.5**, can install there. As a final step or previously, the installer **63**, also from there, can additionally set or insert a head spindle **38**, for example provided with a U profile **38.1** that is open toward the top, on or into the free pipe ends **33.1**, **33.2** of the vertical supports **30.5**, **30.6** of the equalization frames **25.3**, **25.3**, which ends project upward. The U profile **38.1** can be provided for laying on or accommodating load carriers or formwork carriers, here in the form of I beams **26** (see FIG. **1** as well as **7.14** and **7.15**). It is

understood that the same or other head spindles can also be configured to be adapted to support and/or accommodate other support bodies, for example in the form of cross-head spindles, in which a support plate and multiple support profiles, spaced horizontally apart and extending upward proceeding from the plate, can be provided in the region of their upper ends.

[0158] During the course of climbing down from the finished, constructed scaffold **20** or load-bearing scaffold tower **22**, preferably by way of the ladder **21.1**, the installer **63** can take off the floor plates **43** of the uppermost work or construction level, and pass them down or take them down with him. The installer **63**, as shown in FIG. **7.15**, can remove the two remaining individual floor plates **43** of the two vertical regions **101.3** and **101.2** that are close to the ground, while standing on the ground.

[0159] To disassemble the scaffold **20** or the load-bearing scaffold tower **22** from which the floor plates **43** were removed, a crane or similar hoist can be used, in order to allow disassembly while it is lying down. Alternatively, it is also easily possible to disassemble the scaffold **20**, for example as described above, in the reverse order, so that in this way, standing disassembly is also possible.

[0160] It is understood that the invention is not restricted to the exemplary embodiments shown in the figures and described above, but rather, a scaffold according to the invention and/or a method for its installation and/or a method for its removal can also be configured, dimensioned, structured, installed and/or implemented in different manner, within the scope of the idea of the invention.

REFERENCE SYMBOL LIST

[0161] **20** scaffold, load-bearing scaffold, falsework
[0162] **21** ladder
[0163] **21.1** ladder
[0164] **21.2** ladder
[0165] **22** load-bearing scaffold tower, falsework tower, load tower
[0166] **23** horizontal diagonal
[0167] **24.1** vertical diagonal
[0168] **24.2** vertical diagonal
[0169] **25** vertical frame
[0170] **25.1** vertical frame, starting frame
[0171] **25.2** vertical frame, regular, normal, standard frame
[0172] **25.3** vertical frame, equalization frame
[0173] **26** I-beam
[0174] **27.1** connecting element, scaffold bar
[0175] **27.2** connecting element, transverse bar
[0176] **28.2** connecting element, longitudinal bar
[0177] **29** foot spindle
[0178] **30** vertical support
[0179] **30.1** first vertical support
[0180] **30.2** second vertical support
[0181] **30.3** first vertical support
[0182] **30.4** second vertical support
[0183] **30.5** first vertical support
[0184] **30.6** second vertical support
[0185] **31** horizontal distance
[0186] **32** longitudinal axis of **30**
[0187] **32.1** longitudinal axis of **30.1**, **30.2**
[0188] **32.2** longitudinal axis of **30.3**, **30.4**
[0189] **32.3** longitudinal axis of **30.5**, **30.6**
[0190] **33** upper end of **30**
[0191] **33.1** upper end of **30.1**, **30.3**, **30.5**
[0192] **33.2** upper end of **30.2**, **30.4**, **30.6**
[0193] **34** lower end of **30**
[0194] **34.1** lower end of **30.1**, **30.3**, **30.5**
[0195] **34.2** lower end of **30.2**, **30.4**, **30.6**
[0196] **35** horizontal arm
[0197] **35.1** first horizontal arm/transverse rung
[0198] **35.2** second horizontal arm/transverse rung
[0199] **35.3** first horizontal arm/transverse rung
[0200] **35.4** second horizontal arm/transverse rung
[0201] **35.5** first horizontal arm
[0202] **35.6** second horizontal arm/quadragonal profile
[0203] **36** vertical distance
[0204] **36.1** vertical distance/transverse rung distance
[0205] **36.2** vertical distance/transverse rung distance
[0206] **36.3** vertical distance/transverse rung distance
[0207] **36.4** vertical distance/transverse rung distance
[0208] **37** longitudinal axis of **35**
[0209] **37.1** longitudinal axis of **35.1**
[0210] **37.2** longitudinal axis of **35.2**
[0211] **37.3** longitudinal axis of **35.3**
[0212] **37.4** longitudinal axis of **35.4**
[0213] **37.5** longitudinal axis of **35.5**
[0214] **37.6** longitudinal axis of **35.6**
[0215] **38** head spindle
[0216] **38.1** U profile
[0217] **39.1** vertical frame arrangement
[0218] **39.2** vertical frame arrangement
[0219] **39** diagonal rod
[0220] **40.1** diagonal rod/corner reinforcement
[0221] **40.2** diagonal rod/corner reinforcement
[0222] **40.3** diagonal rod/corner reinforcement
[0223] **40.4** diagonal rod/corner reinforcement
[0224] **40.5** diagonal rod/corner reinforcement
[0225] **40.6** diagonal rod/corner reinforcement
[0226] **41.1** distance
[0227] **41.2** distance
[0228] **41.3** distance
[0229] **42** flat connector
[0230] **43** floor plate/scaffold floor
[0231] **44** suspension hook
[0232] **45** attachment position/perforated disk
[0233] **45.1** attachment position/first perforated disk
[0234] **45.2** attachment position/second perforated disk
[0235] **45.3** attachment position/third perforated disk
[0236] **45.4** attachment position/fourth perforated disk
[0237] **46** perforation
[0238] **46.1** small perforation
[0239] **46.2** large perforation
[0240] **47** horizontal strut
[0241] **47.1** horizontal strut
[0242] **47.2** horizontal strut
[0243] **47.3** horizontal strut
[0244] **48.1** vertical frame support
[0245] **48.2** vertical frame support
[0246] **49** post and disk center
[0247] **50** connecting head
[0248] **50.1** first connecting head
[0249] **50.2** second connecting head
[0250] **51.1** upper side wall part
[0251] **51.2** upper side wall part
[0252] **52.1** lower side wall part
[0253] **52.2** lower side wall part
[0254] **53.1** upper vertical outer surface
[0255] **53.2** upper vertical outer surface

[0256] **54.1** lower vertical outer surface
[0257] **54.2** lower vertical outer surface
[0258] **55** wedge angle
[0259] **56** upper head part
[0260] **57** lower head part
[0261] **58** slit
[0262] **59.1** upper contact wall part
[0263] **59.2** lower contact wall part
[0264] **60** coupling/abutment location
[0265] **61** attachment position
[0266] **62.1** hip and/or back railing element or floor plate support element
[0267] **62.2** hip and/or back railing element or floor plate support element
[0268] **63** person
[0269] **64** wedge
[0270] **65** abutting edge
[0271] **66.1** upper horizontal slit surface
[0272] **66.2** lower horizontal slit surface
[0273] **67** vertical slit surface
[0274] **68** (longitudinal) distance
[0275] **69.1** liquid outflow opening
[0276] **69.2** liquid outflow opening
[0277] **70** slit width
[0278] **71** horizontal plane
[0279] **72** center plane of **30**
[0280] **73** longitudinal axis of **40**
[0281] **73.1** longitudinal axis of **40.1**
[0282] **73.2** longitudinal axis of **40.2**
[0283] **73.3** longitudinal axis of **40.3**
[0284] **73.4** longitudinal axis of **40.4**
[0285] **73.5** longitudinal axis of **40.5**
[0286] **73.6** longitudinal axis of **40.6**
[0287] **71** angle
[0288] **74.1** angle
[0289] **74.2** angle
[0290] **75.1** vertical center axis
[0291] **75.2** vertical center axis
[0292] **75.3** vertical center axis
[0293] **76** climb-through opening/opening
[0294] **77.1** upper outer surface
[0295] **77.2** lower outer surface
[0296] **78.1** angle
[0297] **78.2** angle
[0298] **80.1** upper contact surface
[0299] **80.2** lower contact surface
[0300] **81.1** upper end
[0301] **81.2** lower end
[0302] **82** vertical plane
[0303] **83** interior
[0304] **85** distance
[0305] **85.1** distance
[0306] **85.2** distance
[0307] **85.3** distance
[0308] **86** wall thickness of **30**, **47**
[0309] **87** wall thickness of **40**
[0310] **88** circumference angle
[0311] **89** perforated disk part
[0312] **90** connecting node
[0313] **91** double hole
[0314] **92.1** effective length of **30.1**, **30.2**
[0315] **92.2** effective length of **30.3**, **30.4**
[0316] **92.3** effective length of **30.5**, **30.6**
[0317] **93.1** distance
[0318] **93.2** distance
[0319] **93.3** distance
[0320] **93.4** distance
[0321] **94.1** outside diameter of **30.1** to **30.6**
[0322] **94.2** outside diameter of **47.1**
[0323] **94.3** height/thickness of **47.3**
[0324] **94.4** outside diameter of **47.2**
[0325] **95** outside diameter of **40**
[0326] **97** (vertical) distance
[0327] **100** height block
[0328] **100.1** (starting) height block
[0329] **100.2** (normal/regular/standard) height block
[0330] **100.3** (normal/regular/standard) height block
[0331] **100.4** (normal/regular/standard) height block
[0332] **100.5** (normal/regular/standard) height block
[0333] **100.6** (equalization) height block
[0334] **101.1** vertical region
[0335] **101.2** vertical region
[0336] **101.3** vertical region
[0337] **101.4** vertical region
[0338] **101.5** vertical region
[0339] **101.6** vertical region
[0340] **102** plug-in connection
[0341] **105** pipe connector
[0342] **106** outside diameter of **105**
[0343] **108** length
[0344] **115** insertion end of **105**
[0345] **124** length
[0346] **150** connecting head
[0347] **158** slit
[0348] **250** connecting head
[0349] **258** slit

What is claimed is:

1. A method for installing a scaffold, the method comprising steps of:

(a) providing a first vertical region of said scaffold, said first vertical region comprising at least one first floor plate, a first vertical frame, a second vertical frame, and a first connecting rod connecting said first vertical frame with said second vertical frame, said first vertical frame comprising

a first first vertical frame vertical support;

a first first vertical frame perforated disk for connecting holding devices, said first first vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first first vertical frame vertical support;

a second first vertical frame vertical support disposed at a first horizontal distance from said first first vertical frame vertical support and parallel to said first first vertical frame vertical support;

a second first vertical frame perforated disk for connecting holding devices, said second first vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second first vertical frame vertical support;

a first first vertical frame horizontal arm extending between said first first vertical frame vertical support and said second first vertical frame vertical support perpendicular to said first and second first vertical frame vertical supports and having first and second ends attached, respectively, to said first and second first vertical frame vertical supports via welding; and

a second first vertical frame horizontal arm extending between said first first vertical frame vertical support and said second first vertical frame vertical support perpendicular to said first and second first vertical frame vertical supports and having first and second ends attached, respectively, to said first and second first vertical frame vertical supports via welding, said second first vertical frame horizontal arm extending parallel to said first first vertical frame horizontal arm and being disposed at a first vertical frame horizontal arm vertical separation distance above said first first vertical frame horizontal arm;

said second vertical frame comprising

a first second vertical frame vertical support;

a first second vertical frame perforated disk for connecting holding devices, said first second vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first second vertical frame vertical support;

a second second vertical frame vertical support disposed at a second horizontal distance from said first second vertical frame vertical support and parallel to said first second vertical frame vertical support;

a second second vertical frame perforated disk for connecting holding devices, said second second vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second second vertical frame vertical support;

a first second vertical frame horizontal arm extending between said first second vertical frame vertical support and said second second vertical frame vertical support perpendicular to said first and second second vertical frame vertical supports and having first and second ends attached, respectively, to said first and second second vertical frame vertical supports via welding; and

a second second vertical frame horizontal arm extending between said first second vertical frame vertical support and said second second vertical frame vertical support perpendicular to said first and second second vertical frame vertical supports and having first and second ends attached, respectively, to said first and second second vertical frame vertical supports via welding, said second second vertical frame horizontal arm extending parallel to said first second vertical frame horizontal arm and being disposed at a second vertical frame horizontal arm vertical separation distance above said first second vertical frame horizontal arm;

said first connecting rod extending horizontally between said first first vertical frame vertical support and said first second vertical frame vertical support and being a single scaffolding tie bar comprising a first scaffolding tube having a first first scaffolding tube connecting head at a first end and having a second first scaffolding tube connecting head at a second end, the first first scaffolding tube connecting head being set to said first first vertical frame perforated disk and being releasably attached to said first first vertical frame perforated disk via a first connecting wedge, and the second first scaffolding tube connecting head being set to said first second vertical frame perforated disk and being releasably attached to said first second vertical frame perforated disk via a second connecting wedge, said first connecting rod serving as a first railing element for providing protection from falling off of said at least one first floor plate for an object on said at least one first floor plate;

(b) providing a third vertical frame, said third vertical frame comprising

a first third vertical frame vertical support;

a first third vertical frame perforated disk for connecting holding devices, said first third vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first third vertical frame vertical support;

a second third vertical frame vertical support disposed at a third horizontal distance from said first third vertical frame vertical support and parallel to said first third vertical frame vertical support;

a second third vertical frame perforated disk for connecting holding devices, said second third vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second third vertical frame vertical support;

a first third vertical frame horizontal arm extending between said first third vertical frame vertical support and said second third vertical frame vertical support perpendicular to said first and second third vertical frame vertical supports and having first and second ends attached, respectively, to said first and second third vertical frame vertical supports via welding; and

a second third vertical frame horizontal arm extending between said first third vertical frame vertical support and said second third vertical frame vertical support perpendicular to said first and second third vertical frame vertical supports and having first and second ends attached, respectively, to said first and second third vertical frame vertical supports via welding, said second third vertical frame horizontal arm being disposed at a third vertical frame horizontal arm vertical separation distance above said first third vertical frame horizontal arm;

(c) setting said third vertical frame onto said first vertical frame such that said first first vertical frame horizontal arm, said second first vertical frame horizontal arm, said first third vertical frame horizontal arm, and said second third horizontal arm form transverse rungs of a first ladder;

(d) providing a fourth vertical frame, said fourth vertical frame comprising

a first fourth vertical frame vertical support;

a first fourth vertical frame perforated disk for connecting holding devices, said first fourth vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first fourth vertical frame vertical support;

a second fourth vertical frame vertical support disposed at a fourth horizontal distance from said first fourth vertical frame vertical support and parallel to said first fourth vertical frame vertical support;

a second fourth vertical frame perforated disk for connecting holding devices, said second fourth vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second fourth vertical frame vertical support;

a first fourth vertical frame horizontal arm extending between said first fourth vertical frame vertical support and said second fourth vertical frame vertical support perpendicular to said first and second fourth vertical frame vertical supports and having first and second ends attached, respectively, to said first and second fourth vertical frame vertical supports via welding; and

a second fourth vertical frame horizontal arm extending between said first fourth vertical frame vertical support and said second fourth vertical frame vertical support perpendicular to said first and second fourth vertical frame vertical supports and having first and second ends attached, respectively, to said first and second fourth vertical frame vertical supports via welding, said second fourth vertical frame horizontal arm being disposed at a fourth vertical frame horizontal arm vertical separation distance above said first fourth vertical frame horizontal arm;

(e) setting said fourth vertical frame onto said second vertical frame such that said first second vertical frame horizontal arm, said second second vertical frame horizontal arm, said first fourth vertical frame horizontal arm, and said second fourth horizontal arm form transverse rungs of a second ladder;

(f) directly grasping via a lifter standing on the ground or on said at least one first floor plate a second connecting rod and guiding via the lifter said second connecting rod upwards, said second connecting rod being a single second scaffolding tie bar;

(g) releasably attaching via the lifter standing on the ground or standing on said at least one first floor plate a first end of said second connecting rod to said first third vertical frame perforated disk;

(h) subsequently or simultaneously to step (g), releasably attaching via the lifter standing on the ground or standing on said at least one first floor plate a second end of said second connecting rod to said first fourth vertical frame perforated disk such that said second connecting rod serves as a second railing element;

(i) guiding upwards via the lifter standing on the ground or on the at least one first floor plate at least one second floor plate; and

(j) affixing said at least one second floor plate at a first attachment position via the lifter standing on the ground or standing on said at least one first floor plate such that a second vertical region is formed, said second vertical region comprising said at least one second floor plate, said third vertical frame, said fourth vertical frame, and said second connecting rod, said second connecting rod connecting said third vertical frame with said fourth vertical frame, said second vertical region being adjacent to and above said first vertical region of said scaffold;

wherein said first attachment position is disposed at an effective vertical distance of between 80 cm and 120 cm or of 100 cm below said second connecting rod;

wherein the second connecting rod extends horizontally and parallel to the first connecting rod;

wherein an effective length of said first first vertical frame vertical support, an effective length of said second first vertical frame vertical support, an effective length of said first second vertical frame vertical support, an effective length of said second second vertical frame vertical support, an effective length of said first third vertical frame vertical support, an effective length of said second third vertical frame vertical support, an effective length of said first fourth vertical frame vertical support, and an effective length of said second fourth vertical frame vertical support are equal to each other and are between 80 cm and 120 cm or are 100 cm;

wherein a first disk vertical distance between said first first vertical frame perforated disk and said first third vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein a second disk vertical distance between said second first vertical frame perforated disk and said second third vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein a third disk vertical distance between said first second vertical frame perforated disk and said first fourth vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein a fourth disk vertical distance between said second second vertical frame perforated disk and said second fourth vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein said at least one first floor plate lies beneath said first connecting rod at a first plate vertical distance equal to said effective length of said first first vertical frame vertical support;

wherein said at least one second floor plate lies beneath said second connecting rod at a second plate vertical distance equal to said effective length of said first first vertical frame vertical support;

wherein said first first vertical frame perforated disk and said second first vertical frame perforated disk are disposed at a first disk distance above a bottom of said first vertical frame;

wherein said first second vertical frame perforated disk and said second second vertical frame perforated disk are disposed at a second disk distance above a bottom of said second vertical frame;

wherein said first disk distance equals said second disk distance;

wherein said first third vertical frame perforated disk and said second third vertical frame perforated disk are disposed at a third disk distance above a bottom of said third vertical frame;

wherein said first fourth vertical frame perforated disk and said second fourth vertical frame perforated disk are disposed at a fourth disk distance above a bottom of said second vertical frame;

wherein said third first disk distance equals said fourth disk distance and equals said first disk distance;

wherein said first third vertical frame horizontal arm is disposed at a first transverse rung vertical separation distance above said second first vertical frame horizontal arm, said first transverse rung vertical separation distance being equal to said first vertical frame horizontal arm vertical separation distance;

wherein said first vertical frame horizontal arm vertical separation distance is equal to said third vertical frame horizontal arm vertical separation distance;

wherein said first fourth vertical frame horizontal arm is disposed at a second transverse rung vertical separation

distance above said second second vertical frame horizontal arm, said second transverse rung vertical separation distance being equal to said second vertical frame horizontal arm vertical separation distance; and

wherein said second vertical frame horizontal arm vertical separation distance is equal to said fourth vertical frame horizontal arm vertical separation distance.

2. The method according to claim **1**, the method further comprising a step of:

the lifter climbing up from the first vertical region of the scaffold in an interior space of the scaffold via said transverse rungs of said first ladder or via said transverse rungs of said second ladder to the at least one second floor plate of said second vertical region, said interior space being delimited by said first connecting rod, said first vertical frame, and said second vertical frame.

3. The method according to claim **1**, wherein said at least one first floor plate comprises a first first floor plate and a second first floor plate;

wherein the method further comprises steps of:

removing said second first floor plate from said first vertical region;

moving said second first floor plate upwards; and

affixing said second first floor plate in said second vertical region at a second attachment position of a same height as said first attachment position.

4. The method according to claim **1**, wherein steps (i) and (j) are performed prior to steps (f) to (h).

5. The method according to claim **1**, wherein said at least one first floor plate comprises a first first floor plate and a second first floor plate;

wherein the method further comprises steps of:

removing said second first floor plate from said first vertical region via said lifter standing on said first first floor plate;

moving said second first floor plate upwards via said lifter standing on said first first floor plate; and

affixing said second first floor plate in said second vertical region at a second attachment position of a same height as said first attachment position via said lifter standing on said first first floor plate.

6. The method according to claim **1**, wherein said at least one first floor plate comprises a first first floor plate, a second first floor plate, and a third first floor plate;

wherein the method further comprises steps of:

removing said second first floor plate from said first vertical region via said lifter standing on said first first floor plate or standing on said third first floor plate;

moving said second first floor plate upwards via said lifter standing on said first first floor plate or standing on said third first floor plate;

affixing said second first floor plate in said second vertical region at a second attachment position of a same height as said first attachment position via said lifter standing on said first first floor plate or standing on said third first floor plate;

removing said third first floor plate from said first vertical region via said lifter standing on said first first floor plate;

moving said third first floor plate upwards via said lifter standing on said first first floor plate; and

affixing said third first floor plate in said second vertical region at a third attachment position of a same height as said first attachment position via said lifter standing on said first first floor plate.

7. A method for removing a scaffold, said scaffold comprising:

(a) a first vertical frame comprising

a first first vertical frame vertical support;

a first first vertical frame perforated disk for connecting holding devices, said first first vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first first vertical frame vertical support;

a second first vertical frame vertical support disposed at a first horizontal distance from said first first vertical frame vertical support and parallel to said first first vertical frame vertical support;

a second first vertical frame perforated disk for connecting holding devices, said second first vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second first vertical frame vertical support;

a first first vertical frame horizontal arm extending between said first first vertical frame vertical support and said second first vertical frame vertical support perpendicular to said first and second first vertical frame vertical supports and having first and second ends attached, respectively, to said first and second first vertical frame vertical supports via welding; and

a second first vertical frame horizontal arm extending between said first first vertical frame vertical support and said second first vertical frame vertical support perpendicular to said first and second first vertical frame vertical supports and having first and second ends attached, respectively, to said first and second first vertical frame vertical supports via welding, said second first vertical frame horizontal arm extending parallel to said first first vertical frame horizontal arm and being disposed at a first vertical frame horizontal arm vertical separation distance above said first first vertical frame horizontal arm;

(b) a second vertical frame comprising

a first second vertical frame vertical support;

a first second vertical frame perforated disk for connecting holding devices, said first second vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first second vertical frame vertical support;

a second second vertical frame vertical support disposed at a second horizontal distance from said first second vertical frame vertical support and parallel to said first second vertical frame vertical support;

a second second vertical frame perforated disk for connecting holding devices, said second second vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second second vertical frame vertical support;

a first second vertical frame horizontal arm extending between said first second vertical frame vertical support and said second second vertical frame vertical support perpendicular to said first and second second

vertical frame vertical supports and having first and second ends attached, respectively, to said first and second second vertical frame vertical supports via welding; and

a second second vertical frame horizontal arm extending between said first second vertical frame vertical support and said second second vertical frame vertical support perpendicular to said first and second second vertical frame vertical supports and having first and second ends attached, respectively, to said first and second second vertical frame vertical supports via welding, said second second vertical frame horizontal arm extending parallel to said first second vertical frame horizontal arm and being disposed at a second vertical frame horizontal arm vertical separation distance above said first second vertical frame horizontal arm;

(c) a third vertical frame comprising

a first third vertical frame vertical support;

a first third vertical frame perforated disk for connecting holding devices, said first third vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first third vertical frame vertical support;

a second third vertical frame vertical support disposed at a third horizontal distance from said first third vertical frame vertical support and parallel to said first third vertical frame vertical support;

a second third vertical frame perforated disk for connecting holding devices, said second third vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second third vertical frame vertical support;

a first third vertical frame horizontal arm extending between said first third vertical frame vertical support and said second third vertical frame vertical support perpendicular to said first and second third vertical frame vertical supports and having first and second ends attached, respectively, to said first and second third vertical frame vertical supports via welding; and

a second third vertical frame horizontal arm extending between said first third vertical frame vertical support and said second third vertical frame vertical support perpendicular to said first and second third vertical frame vertical supports and having first and second ends attached, respectively, to said first and second third vertical frame vertical supports via welding, said second third vertical frame horizontal arm extending parallel to said first third vertical frame horizontal arm and being disposed at a third vertical frame horizontal arm vertical separation distance above said first third vertical frame horizontal arm;

(d) a fourth vertical frame comprising

a first fourth vertical frame vertical support;

a first fourth vertical frame perforated disk for connecting holding devices, said first fourth vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said first fourth vertical frame vertical support;

a second fourth vertical frame vertical support disposed at a fourth horizontal distance from said first fourth vertical frame vertical support and parallel to said first fourth vertical frame vertical support;

a second fourth vertical frame perforated disk for connecting holding devices, said second fourth vertical frame perforated disk comprising a plurality of perforations and being attached in non-releasable manner via welding to said second fourth vertical frame vertical support;

a first fourth vertical frame horizontal arm extending between said first fourth vertical frame vertical support and said second fourth vertical frame vertical support perpendicular to said first and second fourth vertical frame vertical supports and having first and second ends attached, respectively, to said first and second fourth vertical frame vertical supports via welding; and

a second fourth vertical frame horizontal arm extending between said first fourth vertical frame vertical support and said second fourth vertical frame vertical support perpendicular to said first and second fourth vertical frame vertical supports and having first and second ends attached, respectively, to said first and second fourth vertical frame vertical supports via welding, said second fourth vertical frame horizontal arm extending parallel to said first fourth vertical frame horizontal arm and being disposed at a fourth vertical frame horizontal arm vertical separation distance above said first fourth vertical frame horizontal arm;

(e) at least one first floor plate;

(f) at least one second floor plate;

(g) a first connecting rod extending horizontally between said first first vertical frame vertical support and said first second vertical frame vertical support and being a single first scaffolding tie bar comprising a first scaffolding tube having a first first scaffolding tube connecting head at a first end and having a second first scaffolding tube connecting head at a second end, the first first scaffolding tube connecting head being set to said first first vertical frame perforated disk and being releasably attached to said first first vertical frame perforated disk via a first connecting wedge, and the second first scaffolding tube connecting head being set to said first second vertical frame perforated disk and being releasably attached to said first second vertical frame perforated disk via a second connecting wedge; and

(h) a second connecting rod extending horizontally between said first third vertical frame vertical support and said first fourth vertical frame vertical support and being a single second scaffolding tie bar comprising a second scaffolding tube having a first second scaffolding tube connecting head at a first end and having a second second scaffolding tube connecting head at a second end, the first second scaffolding tube connecting head being set to said first third vertical frame perforated disk and being releasably attached to said first third vertical frame perforated disk via a third connecting wedge, and the second second scaffolding tube connecting head being set to said first fourth vertical frame perforated disk and being releasably attached to said first fourth vertical frame perforated disk via a fourth connecting wedge;

wherein the second connecting rod extends horizontally and parallel to the first connecting rod;

wherein a bottom of said third vertical frame is set on a top of said first vertical frame;

wherein a bottom of said fourth vertical frame is set on a top of said second vertical frame;

wherein said first vertical frame and said second vertical frame are disposed at a horizontal distance from one another and form a part of a first height block in a first vertical region, said first vertical region comprising said at least one first floor plate, said first vertical frame, said second vertical frame, and said first connecting rod;

wherein said third vertical frame and said fourth vertical frame are disposed at a horizontal distance from one another and form a part of a second height block in a second vertical region, said second vertical region comprising said at least one second floor plate, said third vertical frame, said fourth vertical frame, and said second connecting rod, said second vertical region being adjacent to and above said first vertical region;

wherein said at least one first floor plate is releasably affixed at a first attachment position in said first vertical region;

wherein said at least one second floor plate is releasably affixed at a second attachment position in said second vertical region, said second attachment position being disposed at an effective vertical distance of between 80 cm and 120 cm or of 100 cm below said second connecting rod;

wherein said first connecting rod serves, at least during installation of the scaffold, in said first vertical region as a first railing element for providing protection from falling off of said at least one first floor plate for an object on said at least one first floor plate;

wherein said second connecting rod serves, at least during installation of the scaffold, in said second vertical region as a second railing element for providing protection from falling off of said at least one second floor plate for at least one object on said at least one second floor plate;

wherein an effective length of said first first vertical frame vertical support, an effective length of said second first vertical frame vertical support, an effective length of said first second vertical frame vertical support, an effective length of said second second vertical frame vertical support, an effective length of said first third vertical frame vertical support, an effective length of said second third vertical frame vertical support, an effective length of said first fourth vertical frame vertical support, and an effective length of said second fourth vertical frame vertical support are equal to each other and are between 80 cm and 120 cm or are 100 cm;

wherein a first disk vertical distance between said first first vertical frame perforated disk and said first third vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein a second disk vertical distance between said second first vertical frame perforated disk and said second third vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein a third disk vertical distance between said first second vertical frame perforated disk and said first fourth vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein a fourth disk vertical distance between said second second vertical frame perforated disk and said second fourth vertical frame perforated disk equals said effective length of said first first vertical frame vertical support;

wherein said at least one first floor plate lies beneath said first connecting rod at a first plate vertical distance equal to said effective length of said first first vertical frame vertical support;

wherein said at least one second floor plate lies beneath said second connecting rod at a second plate vertical distance equal to said effective length of said first first vertical frame vertical support;

wherein said first first vertical frame perforated disk and said second first vertical frame perforated disk are disposed at a first disk distance above a bottom of said first vertical frame;

wherein said first second vertical frame perforated disk and said second second vertical frame perforated disk are disposed at a second disk distance above a bottom of said second vertical frame;

wherein said first disk distance equals said second disk distance;

wherein said first third vertical frame perforated disk and said second third vertical frame perforated disk are disposed at a third disk distance above a bottom of said third vertical frame;

wherein said first fourth vertical frame perforated disk and said second fourth vertical frame perforated disk are disposed at a fourth disk distance above a bottom of said fourth vertical frame;

wherein said third disk distance height equals said fourth disk distance and equals said first disk distance;

wherein said first first vertical frame horizontal arm, said second first vertical frame horizontal arm, said first third vertical frame horizontal arm, and said second third vertical frame horizontal arm form transverse rungs of a first ladder;

wherein said first second vertical frame horizontal arm, said second second vertical frame horizontal arm, said first fourth vertical frame horizontal arm, and said second fourth vertical frame horizontal arm form transverse rungs of a second ladder;

wherein said first third vertical frame horizontal arm is disposed at a first transverse rung vertical separation distance above said second first vertical frame horizontal arm, said first transverse rung vertical separation distance being equal to said first vertical frame horizontal arm vertical separation distance;

wherein said first vertical frame horizontal arm vertical separation distance is equal to said third vertical frame horizontal arm vertical separation distance;

wherein said first fourth vertical frame horizontal arm is disposed at a second transverse rung vertical separation distance above said second second vertical frame horizontal arm, said second transverse rung vertical separation distance being equal to said second vertical frame horizontal arm vertical separation distance; and

wherein said second vertical frame horizontal arm vertical separation distance is equal to said fourth vertical frame horizontal arm vertical separation distance;

wherein the method comprises steps of:

(a) removing said at least one second floor plate from said second vertical region via said a lifter standing on the ground or standing on said at least one first floor plate;

(b) removing said second connecting rod from said first third vertical frame perforated disk and from said first fourth vertical frame perforated disk via said lifter standing on the ground or standing on said at least one first floor plate and directly grasping said second connecting rod;

(c) removing said fourth vertical frame from said second vertical frame;

(d) removing said third vertical frame from said first vertical frame; and

(e) disassembling said first vertical region via removing said first connecting rod from said first second vertical frame perforated disk and from said first first vertical frame perforated disk.

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