

(19)



(11)

EP 4 575 140 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
25.06.2025 Bulletin 2025/26

(51) International Patent Classification (IPC):
E04G 21/24^(2006.01) E04G 21/28^(2006.01)

(21) Application number: **23218166.9**

(52) Cooperative Patent Classification (CPC):
E04G 21/28; E04G 21/242

(22) Date of filing: **19.12.2023**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
 GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
 NO PL PT RO RS SE SI SK SM TR**
 Designated Extension States:
BA
 Designated Validation States:
KH MA MD TN

(72) Inventors:
 • **Halvorsen, Tobias Bekhøj**
8380 Trige (DK)
 • **Jensen, Mads Bekhøj**
8250 Egå (DK)
 • **Balslev, Niels Christian**
8250 Egå (DK)

(71) Applicant: **Scaffco Holding A/S**
8330 Trige (DK)

(74) Representative: **Patrade A/S**
Ceresbyen 75
8000 Aarhus C (DK)

(54) **A TEMPORARY ROOF SCAFFOLDING SYSTEM**

(57) The present invention relates to temporary roof scaffolding system (100) for protecting an associated building (B), said system comprising: a temporary roof (200), a plurality of scaffolding elements (300) being arranged next to each other and above each other to form at least one scaffolding bay, a plurality of columns (400), such as masts, a plurality of sliding arrangements (500) to enable movement in the elevation direction of the

columns (400), a plurality of locking means for stopping the columns from sliding in a downwards direction, wherein the roof (200) is attached to the upper end (410) of the columns, and wherein the sliding arrangements (500) is arranged on, in or in connection with, the scaffolding elements (300).

Furthermore, the invention relates to a method for raising the height of a temporary roof scaffolding system.

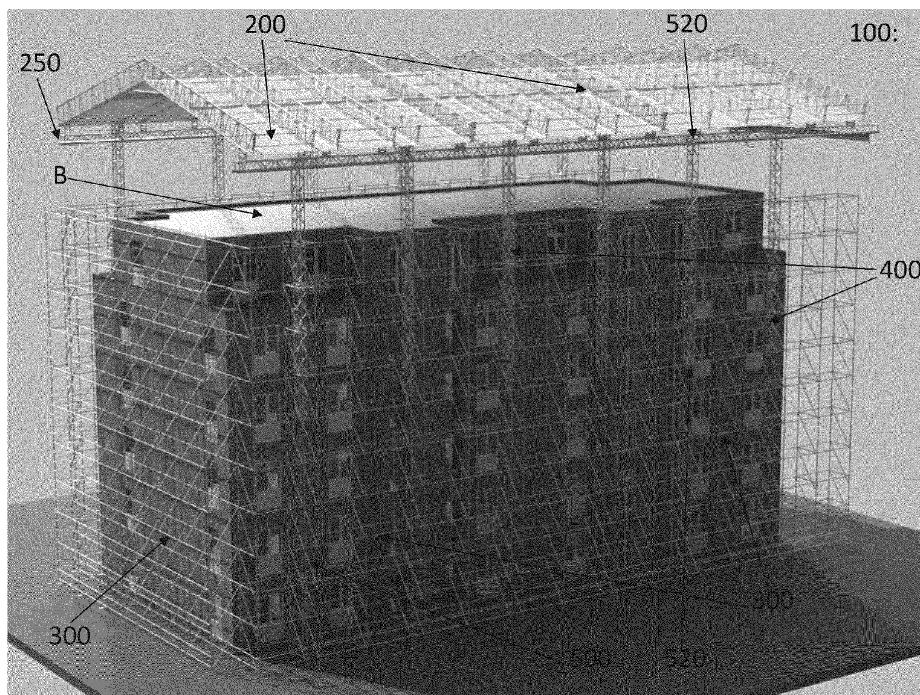


FIG. 4

EP 4 575 140 A1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a temporary roof scaffolding system for protecting associated buildings, said system comprising: a temporary roof, a plurality of scaffolding elements being arranged next to each other and above each other to form at least one scaffolding bay, a plurality of columns, such as masts, a plurality of sliding arrangements to enable movement in the elevation direction of the columns, a plurality of locking means for stopping the columns from sliding in a downwards direction, wherein the roof is attached to the upper end of the columns, and wherein the sliding arrangements is arranged on, in or in connection with, the scaffolding bay.

[0002] Furthermore, the invention relates to a method for raising the height of a temporary roof scaffolding system, wherein said method comprises the steps of: providing a scaffolding system, raising the columns in an upwards direction via the sliding means and increasing the distance between the lower end of the column and the ground, stopping the raising of the columns, positioning locking means in the sliding arrangement for stopping the columns from sliding down in a downwards direction.

BACKGROUND OF THE INVENTION

[0003] Within the area of temporary roofs and scaffolding systems it is well known that in some construction processes there is a need for regulating the height of a temporary roof in a scaffolding system concurrently with an associated building being built up in the height.

[0004] Today, numerous solutions are available for temporary roofs in a height regulating construction process, however none of these solutions are optimal.

[0005] In some construction processes, the temporary roof is built in the desired end-height from the start. This provides a temporary roof that actually does not protect the building underneath the roof in the start-stage of the construction process, since the building is too low to be protected by the roof, as the roof is too high to provide any protection, such as weather protection.

[0006] Solutions where the roof is regulated in the height during a construction process are also known. However, these solutions require complicated systems, systems being permanently mounted or fixed in the ground, e.g. by foundation, but most importantly have the disadvantages of demanding support from an external force, such as an electrical power from e.g. drive units.

[0007] Hence, an improved system and method, preferably an efficient and reliable system, for regulating the height of a temporary roof would be advantageous, and in particular an easy, resistant, mechanical strong, economical, sustainable system and method would be advantageous.

OBJECT OF THE INVENTION

[0008] It is an object of the present invention to provide an alternative to the prior art.

[0009] In particular, it may be seen as an object of the present invention to provide a system and method for regulating the height of a temporary roof that solves the above-mentioned problems.

10 DESCRIPTION OF THE INVENTION

[0010] Thus, the above-described object and several other objects are intended to be obtained in a first aspect of the invention by providing a temporary roof scaffolding system for protecting associated buildings, said system comprising:

- a temporary roof, such as a keder roof,
- a plurality of scaffolding elements, such as scaffold bays, being arranged next to each other and above each other to form at least one scaffolding assembly, such as an area or field with connected scaffolding elements,
- a plurality of columns, such as masts,
- a plurality of sliding arrangements to enable movement in the elevation direction of the columns,
- a plurality of locking means for stopping the columns from sliding in a downwards direction,

30 wherein the roof is attached to the upper end of the columns, and wherein the sliding arrangements is arranged on, in or in connection with, the scaffolding bay.

[0011] In the context of the invention, "temporary roof scaffolding system" may be understood as a system, wherein a temporary roof is arranged in connection with a scaffolding.

[0012] In the context of the invention, "columns" may be understood as masts, piles, pillars, rods, or any other at least substantially vertical elongated structure with the necessary strength.

[0013] In the context of the invention, "sliding" may be understood as moving, elevating, supporting and/or the like. The word "sliding" must be understood with a very broad understanding and should not be limiting to the invention.

[0014] In the context of the invention, "elevation direction" may be understood as an up- and down direction and/or vertical direction.

[0015] The invention is particularly, but not exclusively, advantageous for providing a temporary roof scaffolding system, wherein the height of the system is quickly and easily regulated.

[0016] Moreover, the temporary roof system of the invention provides a temporary roof that can be regulated in the height potentially with only manpower, and thereby no need for any other external forces.

[0017] However, within the invention, it should be understood that the regulation may also, if desired, be performed by such as a crane, an engine, a motor and/or the like.

[0018] Furthermore, the system is extremely uncomplicated to establish, easy to maintain, easy to adjust, easy to take down, easy to transport, and easy to reuse multiple times.

[0019] Additionally, the invention provides a temporary roof scaffolding system with the potential of being free-standing, detached from the building and non-founded to the ground.

[0020] In one embodiment of the invention, the roof comprises two horizontal beams, and wherein the upper ends of the columns are attached to the one of the two horizontal beams.

[0021] The embodiment is particularly, but not exclusively, advantageous for providing a system, wherein the temporary roof can easily be attached and detached to the rest of the scaffolding system with columns.

[0022] In one embodiment of the invention, the columns, when being arranged in the sliding arrangement, are only affected by gravity if not locked from sliding in a downwards direction by locking means, such as the columns are not affected by any force except the gravity.

[0023] The embodiment is particularly, but not exclusively, advantageous for providing a simple system, wherein the sliding of the columns in the sliding arrangement is not dependent on any arrangement providing a force.

[0024] In one embodiment of the invention, the columns are adapted for, during a building process of the associated building, being raised in the elevation direction, wherein the distance between the lower end of the column and the ground increases.

[0025] The embodiment is particularly, but not exclusively, advantageous for providing a system being "self-climbing/-moving", meaning that the columns are adapted to be climbing/moving in an upwards direction. The need of extremely and vastly long columns are thereby eliminated, since the columns are climbing/moving up at the system and the length of the columns is thereby kept to a minimum.

[0026] In one embodiment of the invention, the roof is comprising a plurality of roof modules adapted for being arranged next to each other.

[0027] The embodiment is particularly, but not exclusively, advantageous for providing a system wherein the roof can be raised one module at a time, thereby decreasing the load to be raised when raising the roof.

[0028] In one embodiment of the invention, the sliding arrangements comprises one or more of:

- wheel brackets, and/or
- rails.

[0029] The embodiment is particularly, but not exclusively, advantageous for providing reliable and effective

sliding arrangement, being easy to incorporate and/or integrate in a scaffolding system.

[0030] In one embodiment of the invention, the locking means are one or more of:

- a bolt,
- a split,
- a break, and/or
- a wedge.

[0031] The embodiment is particularly, but not exclusively, advantageous for providing a system with easily accessible locking means, and even more easy employment and deployment of the locking means.

[0032] In one embodiment of the invention, the scaffolding elements are detached from the associated building.

[0033] The embodiment is particularly, but not exclusively, advantageous for providing a temporary roof system that can stand freely on its own, without falling or tilting, and thereby not necessarily needing to be attached/fixed/founded to the associated building and/or the ground.

[0034] In one embodiment of the invention, the columns each comprise four corner bars, preferably being interconnected by transverse bars, and preferably wherein the columns form a quadrilateral cross-section.

[0035] The embodiment is particularly, but not exclusively, advantageous for providing a mechanical strong and reliable column, such as a mast.

[0036] In one embodiment of the invention, the corner bars are adapted to slide on the sliding arrangements.

[0037] In one embodiment of the invention, each sliding arrangement comprises at least four protruding rods, each rod being:

- mounted to the scaffolding system in a first end, and
- comprising a wheel bracket in a second end,

preferably said rods are at least substantially horizontally protruding from the system, and preferably said rods are arranged to at least substantially center a column in the sliding arrangement.

[0038] The embodiment is particularly, but not exclusively, advantageous for providing a sliding arrangement adapted for being simply integrated in a scaffolding system and further being both a simple arrangement and an exceptionally reliable arrangement.

[0039] In one embodiment of the invention, each sliding arrangement comprises at least eight protruding rods, wherein the eight rods are adapted to form four support arrangements, each support arrangement comprising the second end of two rods for providing support and allow sliding of a column, preferably wherein the support arrangements are arranged to support two sides of a corner of the column.

[0040] The embodiment is particularly, but not exclu-

sively, advantageous for providing an even more mechanically strong and reliable sliding arrangement.

[0041] In one embodiment of the invention, the system is adapted to raise a roof of the scaffolding system during a construction process, wherein the distance between the roof and the ground increases.

[0042] The embodiment is particularly, but not exclusively, advantageous for providing a system being "self-climbing/-moving", meaning that the roof being attached to the columns, is adapted to be climbing/moving in an upwards direction. The need of extremely and vastly long columns is thereby eliminated, since the roof and the columns are climbing/moving up at the system and the length of the columns is thereby decreased to a minimum.

[0043] In a second aspect, the invention further relates to a method for raising the height of a temporary roof scaffolding system, wherein said method comprises the steps of:

- providing a scaffolding system comprising:
 - a temporary roof,
 - a plurality of scaffolding elements being arranged next to each other and above each other to form a scaffolding bay,
 - a plurality of columns arranged on, in or in connection with, the scaffolding bay,
 - a plurality of sliding arrangements to enable sliding of the columns in an upwards and downwards direction,
 - a plurality of locking means for stopping the columns from sliding in a downwards direction,
- raising the columns in an upwards direction via the sliding means and increasing the distance between the lower end of the column and the ground,
- stopping the raising of the columns,
- positioning locking means in the sliding arrangement for stopping the columns from sliding down in a downwards direction,

wherein the steps of the method can be executed in any order and/or executed simultaneously.

[0044] The second aspect of the invention is particularly, but not exclusively, advantageous for providing a method for raising the height of a temporary roof scaffolding system, wherein the height of the system is quickly and easily regulated.

[0045] Moreover, the method of the invention provides a temporary roof that can be regulated in height potentially with only manpower, and no need of any external forces. However, within the invention, it should be understood that the regulation may also, if desired, be performed by for example a crane, an engine, a motor and/or the like.

[0046] In one embodiment of the invention, the columns are attached to a temporary roof of the system.

[0047] In one embodiment of the invention, wherein:

- the raising of the columns is performed by lifting with manpower, preferably the lifting is performed by lifting the columns,
 - or
 - the raising of the column is performed by lifting with an associated lifting arrangement, such as a crane and/or an engine, preferably the lifting arrangement is lifting at the roof,
- and/or wherein,
- the raising of the roof is performed one module at a time.

[0048] The embodiment is particularly, but not exclusively, advantageous for providing a method for raising a temporary roof system that can be regulated in height potentially with only manpower, and no need for any external forces.

[0049] However, within the invention, it should be understood that the regulation may also, if desired, be performed by such as a crane, an engine, a motor and/or the like.

[0050] Furthermore, the embodiment is particularly, but not exclusively, advantageous for providing a system wherein the roof can be raised one module at a time, thereby decreasing the load to be raised when raising the roof.

[0051] In one embodiment of the invention, more scaffolding elements, such as bays, are provided along the raising of the columns and/or more sliding arrangements are provided along the raising of the columns.

[0052] The embodiment is particularly, but not exclusively, advantageous for providing a stabile system for raising the masts in the height / elevation direction.

[0053] In one embodiment of the invention, the steps of raising and positioning locking means is performed and/or repeated when the height of the associated building has reached the maximum height for being arranged underneath the temporary roof of the scaffolding system, wherein the height of the system is raised in relation to construction of the building.

[0054] The embodiment is particularly, but not exclusively, advantageous for providing a method with easy performance of the roof raising and even more easy employment and deployment of the locking means.

[0055] The first and second aspect of the present invention may each be combined with any of the other aspects. These and other aspects of the invention will be apparent from and elucidated with reference to the embodiments described hereinafter.

[0056] Embodiments from the system/product should be seen as applicable to the method, and embodiments from the method should be seen as applicable for the product/system.

DESCRIPTION OF THE DRAWING

[0057] Various examples are described hereinafter with reference to the figures. Like reference numerals refer to like elements throughout. Like elements will, thus, not be described in detail with respect to the description of each figure. It should also be noted that the figures are only intended to facilitate the description of the examples. They are not intended as an exhaustive description of the claimed invention or as a limitation on the scope of the claimed invention. In addition, an illustrated example need not have all the aspects or advantages shown. An aspect or an advantage described in conjunction with a particular example is not necessarily limited to that example and can be practiced in any other examples even if not so illustrated, or if not so explicitly described.

[0058] Exemplary embodiments of the invention are described in the figures, whereon:

Figure 1 illustrates a 3D drawing of scaffolding elements and columns.

Figure 2 illustrates a 3D drawing of two beams attached to columns.

Figure 3 illustrates a 3D drawing of a temporary roof on a scaffolding.

Figure 4 illustrates a 3D drawing of a raised temporary roof.

Figure 5a-d illustrates in 3D drawing the steps of raising a temporary roof.

Figure 6a-d illustrates the steps of raising a temporary roof.

Figure 7 illustrates a sliding arrangement without a column.

Figure 8 illustrates a sliding arrangement about to slide a column.

Figure 9 illustrates a sliding arrangement with a column.

DETAILED DESCRIPTION OF THE INVENTION

[0059] Exemplary examples will now be described more fully hereinafter with reference to the accompanying drawings. In this regard, the present examples may have different forms and should not be construed as being limited to the descriptions set forth herein. Accordingly, the examples are merely described below, by referring to the figures, to explain aspects.

[0060] Throughout the specification, when an element is referred to as being "connected" to another element, the element is "directly connected" to the other element, "electrically connected", "fluidic connected" or "communicatively connected" to the other element with one or more intervening elements interposed there between.

[0061] The terminology used herein is for the purpose of describing particular examples only and is not intended to be limiting. As used herein, the terms "comprises", "comprising" "includes" and/or "including" when used in this specification specify the presence of stated features,

integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

[0062] Unless otherwise defined, all terms used herein (including technical and scientific terms) have the same meaning as commonly understood by those skilled in the art to which this invention pertains. It will be further understood that terms, such as those defined in commonly used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and will not be interpreted in an idealized or overly formal sense unless expressly so defined in the present specification.

[0063] FIG 1 illustrates a 3D drawing of scaffolding elements 300 and columns 400.

[0064] The plurality of scaffolding elements 300 are in FIG. 1 illustrated as scaffold bays being arranged next to each other and above each other to form at least one scaffolding structure.

[0065] The plurality of columns 400 in FIG. 1 are masts being arranged in a plurality of sliding arrangements 500 for enabling movement in the elevation direction of the masts 400. The sliding arrangements 500 are in FIG. 1 arranged as an integrated part of the scaffolding bays 300.

[0066] It is important to understand that within the invention, the sliding arrangements 500 can be arranged on, in or in connection with, the scaffolding elements 300.

[0067] Within the invention it is preferred that the columns 400, when being arranged in the sliding arrangement 500, are only affected by gravity if not locked from sliding in a downwards direction by locking means, such that the columns 400 are not affected by any force except gravity.

[0068] In FIG. 1 the masts have a distance D to the ground being 0, since the masts 400 are supported on the ground due to gravity. In FIG. 1 there are no locking means arranged in the system.

[0069] FIG 2 illustrates a 3D drawing of two beams 250 attached to columns. The system is comparable to the system illustrated in FIG. 1, though wherein the roof 200 comprises two horizontal beams 250, and wherein the upper ends 410 of the columns are attached to the one of the two horizontal beams 250.

[0070] FIG 3 illustrates a 3D drawing of a temporary roof 200 on a scaffolding system 100 and a building B being under construction underneath the temporary roof 200.

[0071] The temporary roof scaffolding system 100 has the purpose of protecting the associated buildings B, and said system comprising:

- A temporary roof 200 such as a keder roof as illustrated FIG. 3.
- A plurality of scaffolding elements 300, being scaffold bays, and being arranged next to each other and above each other to form at least one scaffolding

structure.

- A plurality of columns 400, being masts, wherein the roof is attached to the upper end 410 of the columns 400.
- A plurality of sliding arrangements 500 to enable movement in the elevation direction of the columns 400, wherein the sliding arrangements 500 are arranged on, in or in connection with, the scaffolding bay 300, in FIG. 3 the sliding arrangements 500 are arranged in the scaffolding system 100 thereby being integrated in the system 100.
- A plurality of locking means (not directly illustrated) for stopping the columns 400 from sliding in a downwards direction.

[0072] Furthermore, the scaffolding elements 300 are detached from the associated building B (not directly illustrated).

[0073] Within the invention, the columns 400 are adapted for, during a building process of the associated building B, being raised in the elevation direction, wherein the distance D between the lower end 420 of the column 400 and the ground increases.

[0074] In FIG. 3 the masts 400 have a distance D to the ground being above 0, since the masts are not supported on the ground, but supported and locked by locking means. The temporary roof 200 has therefore been raised in an upwards direction, and thereby has increased the height.

[0075] FIG 4 illustrates a 3D drawing of a raised temporary roof 200.

[0076] In FIG. 4 the masts 400 have a distance D to the ground being even higher than the distance illustrated in FIG. 3. The temporary roof 200 has therefore been raised even further in an upwards direction, and thereby has increased the height during a construction process of a building B underneath the temporary roof 200.

[0077] Furthermore, more scaffolding elements 300, such as bays, are provided along the raising of the columns 400 and/or more sliding arrangements 500 are provided along the raising of the columns 400.

[0078] FIG 5a-d illustrates in 3D drawing the steps of raising a temporary roof 200. The temporary roof of the scaffolding system 100 illustrated is comprising a plurality of roof modules 210 adapted for being arranged next to each other and thereby forming a coherent temporary roof 200.

[0079] The figures 5a-d illustrate a method for raising the height of a temporary roof 200 scaffolding system 100, wherein said method comprises the steps of:

- Providing a scaffolding system 100 as illustrated in FIG. 5a-d comprising:
 - a temporary roof 200, preferably comprising a plurality of roof modules 210 adapted for being arranged next to each other,
 - a plurality of scaffolding elements 300, such as

scaffold bays, being arranged next to each other and above each other to form at least one scaffolding structure,

- a plurality of columns 400, being masts, arranged on, in or in connection with, the scaffolding bay 300,
- a plurality of sliding arrangements 500 to enable sliding of the columns 400 in an upwards and downwards direction,
- a plurality of locking means for stopping the columns 400 from sliding in a downwards direction.

- Raising the columns 400 in an upwards direction via the sliding arrangement 500 and increasing the distance D between the lower end of the column 400 and the ground, as illustrated in FIG. 5b. The sliding arrangements 500 comprises one or more of: wheel brackets, and/or rails (see FIG. 7-9).

The raising of the roof 200 illustrated in the FIG. 5 is performed one module 210 at a time. A first module 210' is raised in FIG. 5b. A second module 210" is raised in FIG. 5c. A third module 210''' is raised in FIG. 5c.

It should be understood that the entire roof 200 can be raised at the same time, if it is not assembled in modules 210. Or, alternatively, there may be only two modules or more than three modules. Therefore, the modules should not necessarily be seen as a limitation to the invention.

- Stopping the raising of the columns 400 and positioning locking means in the sliding arrangement 500 for stopping the columns 400 from sliding down in a downwards direction as illustrated in FIG. 5b-d. The locking means are one or more of: a bolt, a split, a break, and/or a wedge (not illustrated).

[0080] Figure 6a-d illustrate the steps of raising a temporary roof 200 during a construction process.

[0081] During the construction process of a building B, the building may raise in height. Therefore, also the temporary roof 200 may raise in height.

[0082] As illustrated in FIG. 6 a-d, when an associated building B is raising in height, the distance D between the ground and the mast 400 (e.g the bottom of the masts 420) is also increasing, and further the distance between the ground and the temporary roof 200 is increasing, since the roof 200 is attached to the columns 400, being masts in the figures.

[0083] Also is it illustrated that during the process of increasing the height of the temporary roof 200, more scaffolding elements 300, such as bays, are provided and more sliding arrangements 500 are furthermore also provided to allow/support the sliding of the masts 400 in an upwards direction.

[0084] As indirectly illustrated in FIG. 6a-d, the raising and positioning of locking means is performed and/or repeated when the height of the associated building B

has reached the maximum height for being arranged underneath the temporary roof 200 of the scaffolding system 100.

[0085] FIG 7 illustrates a sliding arrangement without a column 400, being a mast, wherein each sliding arrangement 500 comprises at least four protruding rods 550, each rod being:

- mounted to the scaffolding system 100 in a first end 551, and
- comprising a wheel bracket in a second end 552,

said rods 550 are at least substantially horizontally protruding from the system 100, in FIG. 7-9 the rods are protruding from the scaffolding elements 300, being a preferred embodiment.

[0086] Furthermore, said rods 550 are arranged to at least substantially center a column 400 in the sliding arrangement 500.

[0087] In the FIG. 7-9 each sliding arrangement comprises eight protruding rods 550, wherein the eight rods are adapted to form four support arrangements 530, each support arrangement 530 comprising the second end 552 of two rods for providing support and allow sliding of a column 400.

[0088] The sliding arrangement 500 is illustrated as being an integrated part of the scaffolding 300, however within the invention it could also be arranged otherwise in the system 100.

[0089] FIG 8 illustrates a sliding arrangement 500 about to slide/support a column 400, being a mast, wherein the columns 400 each comprise four corner bars 430, preferably being interconnected by transverse bars 440, and preferably wherein the columns 400 form a quadrilateral cross-section.

[0090] The corner bars 430 are adapted to be supported and/or slide on the sliding arrangements 500.

[0091] FIG 9 illustrates a sliding arrangement 500 with a column 400, being a mast, as illustrated the support arrangements 530 are arranged to support two sides of a corner 430 of the column 400.

[0092] Although the present invention has been described in connection with the specified embodiments, it should not be construed as being in any way limited to the presented examples. The scope of the present invention is set out by the accompanying claim set. In the context of the claims, the terms "comprising" or "comprises" do not exclude other possible elements or steps. Also, the mentioning of references such as "a" or "an" etc. should not be construed as excluding a plurality. The use of reference signs in the claims with respect to elements indicated in the figures shall also not be construed as limiting the scope of the invention. Furthermore, individual features mentioned in different claims, may possibly be advantageously combined, and the mentioning of these features in different claims does not exclude that a combination of features is possible and advantageous.

FIGURE REFERENCES

[0093]

- 5 Temporary roof scaffolding system (100)
- Temporary roof (200)
- Roof modules (210)
- First module (210'), Second module (210''), Third module (210''')
- 10 Horizontal beams (250)
- Scaffolding elements (300)
- Columns (400)
- The upper end (410)
- The lower end (420)
- 15 Four corner bars (430)
- Transverse bars (440)
- Sliding arrangements (500)
- Support arrangements (530)
- Four protruding rods (550)
- 20 First end (551)
- Second end (552)
- Building (B)
- Distance (D)

25

Claims

1. A temporary roof scaffolding system (100) for protecting an associated building (B), said system comprising:
 - a temporary roof (200), such as a keder roof,
 - a plurality of scaffolding elements (300), such as scaffold bays, being arranged next to each other and above each other,
 - a plurality of columns (400), such as masts,
 - a plurality of sliding arrangements (500) to enable movement in the elevation direction of the columns (400),
 - a plurality of locking means for stopping the columns (400) from sliding in a downwards direction,
 - wherein the temporary roof (200) is attached to the upper end (410) of the columns (400), and wherein the sliding arrangements (500) is arranged on, in or in connection with, the scaffolding elements (300).
2. A temporary roof scaffolding system (100) according to claim 1, wherein the temporary roof (200) comprises two horizontal beams (250), and wherein the upper ends (410) of the columns are attached to the one of the two horizontal beams (250).
3. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein the columns (400), when being arranged in the sliding arrangement (500), are only affected by gravity if not locked

- from sliding in a downwards direction by locking means, such as the columns (400) are not affected by any force except gravity.
4. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein the columns (400) are adapted for, during a building process of the associated building, being raised in the elevation direction, wherein the distance (D) between the lower end (420) of the column (400) and the ground increases.
5. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein the temporary roof (200) is comprising a plurality of roof modules (210) adapted for being arranged next to each other.
6. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein the sliding arrangements (500) comprises one or more of:
- wheel brackets, and/or
 - rails,
 - and/or,
 - wherein the locking means are one or more of:
 - a bolt,
 - a split,
 - a break, and/or
 - a wedge.
7. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein the scaffolding elements (300) are detached from the associated building (B).
8. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein the columns (400) each comprise four corner bars (430), preferably being interconnected by transverse bars (440), and preferably wherein the columns (400) form a quadrilateral cross-section.
9. A temporary roof scaffolding system (100) according to claim 8, wherein the corner bars (430) are adapted to slide on the sliding arrangements (500).
10. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein each sliding arrangement (500) comprises at least four protruding rods (550), each rod being:
- mounted to the scaffolding system (100) in a first end (551), and
 - comprising a wheel bracket in a second end (552),
- preferably said rods (550) are at least substantially horizontally protruding from the system
- (100), more preferably from a scaffolding element (300), and preferably said rods (550) are arranged to at least substantially center a column (400) in the sliding arrangement (500).
11. A temporary roof scaffolding system (100) according to claim 10, wherein each sliding arrangement (500) comprises at least eight protruding rods (550), wherein the eight rods are adapted to form four support arrangements (530), each support arrangement comprising the second end (552) of two rods (550) for providing support and allow sliding of a column 400, preferably wherein the support arrangements (530) are arranged to support two sides of a corner of the column (400).
12. A temporary roof scaffolding system (100) according to any of the preceding claims, wherein the system is adapted to raise a temporary roof (200) of the scaffolding system, such as the distance between the roof (200) and the ground increases.
13. A method for raising the height of a temporary roof scaffolding system, preferably with a scaffolding system (100) according to any of claim 1-12, wherein said method comprises the steps of:
- providing a scaffolding system comprising:
 - a temporary roof (200), preferably comprising a plurality of roof modules (210) adapted for being arranged next to each other,
 - a plurality of scaffolding elements (300), such as scaffold bays, being arranged next to each other and above each other to form at least one scaffolding structure,
 - a plurality of columns (400) arranged on, in or in connection with, the scaffolding elements (200),
 - a plurality of sliding arrangements (500) to enable sliding of the columns (400) in an upwards and downwards direction,
 - a plurality of locking means for stopping the columns (400) from sliding in a downwards direction,
 - raising the columns (400) in an upwards direction via the sliding arrangement (500) and increasing the distance between the lower end (420) of the column and the ground,
 - stopping the raising of the columns (400),
 - positioning locking means in the sliding arrangement (500) for stopping the columns (400) from sliding down in a downwards direction,

wherein the steps of the method can be executed in any order and/or executed simultaneously.

14. A method for raising according to claim 13, wherein:

- the raising of the columns (400) is performed by lifting with manpower, preferably the lifting is performed by lifting the columns, 5
- or
- the raising of the column (400) is performed by lifting with an associated lifting arrangement, such as a crane and/or an engine, preferably the lifting arrangement is lifting at the roof, and/or wherein, 10
- the raising of the roof is performed one module (210) at a time. 15

15. A method for raising according to claim 13-14, the steps of raising and positioning locking means is performed and/or repeated, when the height of the associated building (B) has reached the maximum height for being arranged underneath the temporary roof (200) of the scaffolding system (100), and/or 20

- more scaffolding elements (300), such as bays, are provided along the raising of the columns (400), and/or 25
- more sliding arrangements (500) are provided along the raising of the columns (400). 30

30

35

40

45

50

55

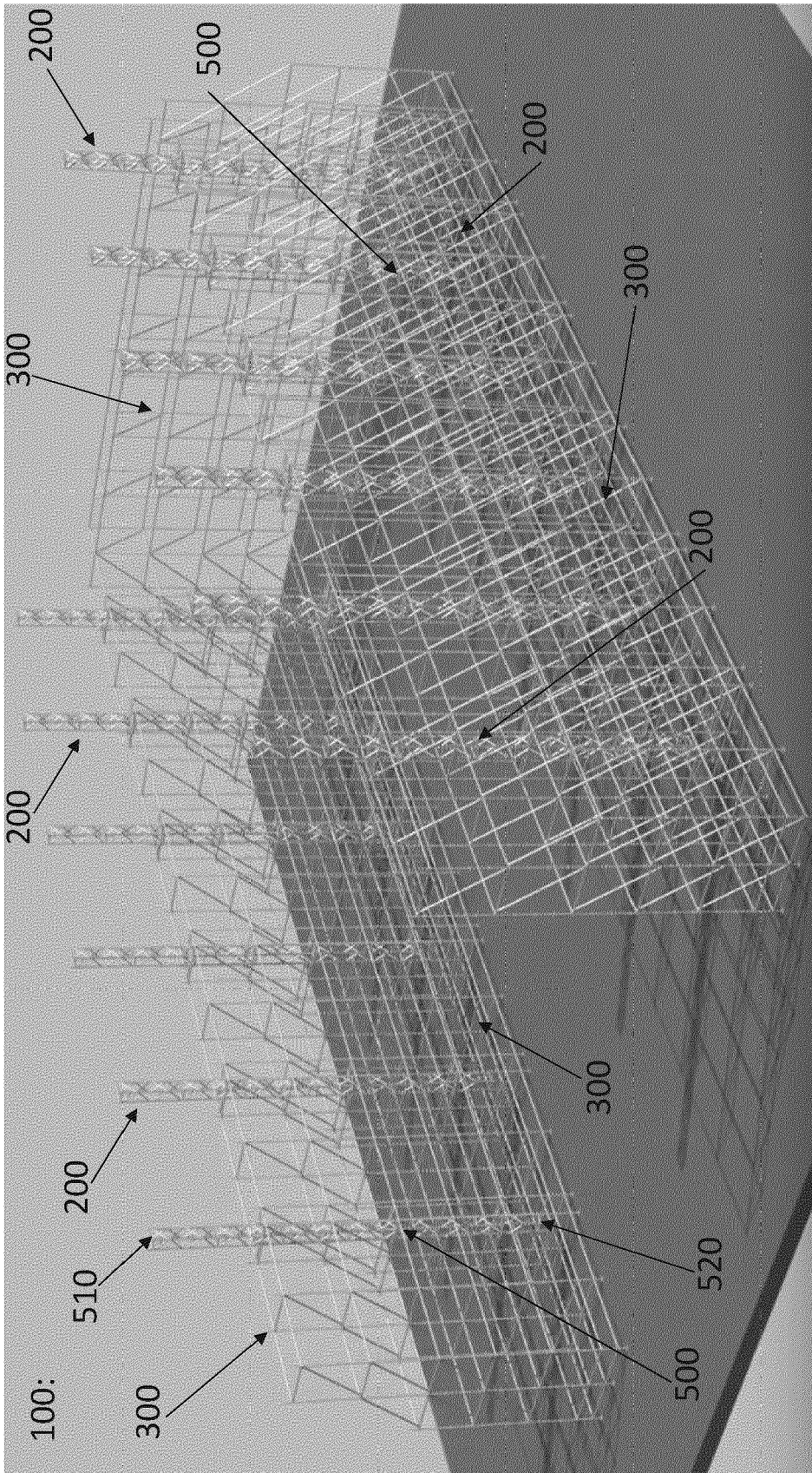


FIG. 1

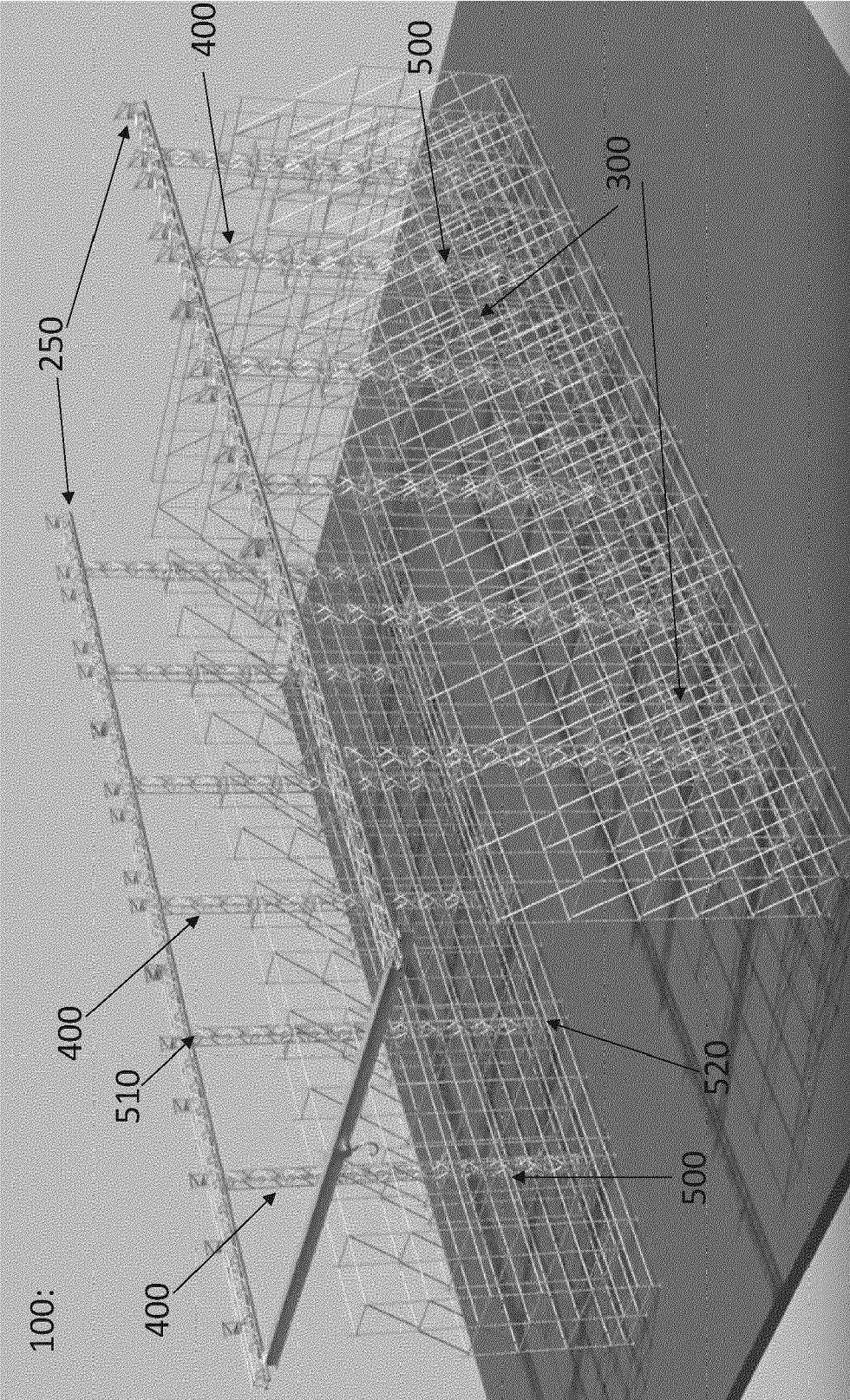


FIG. 2

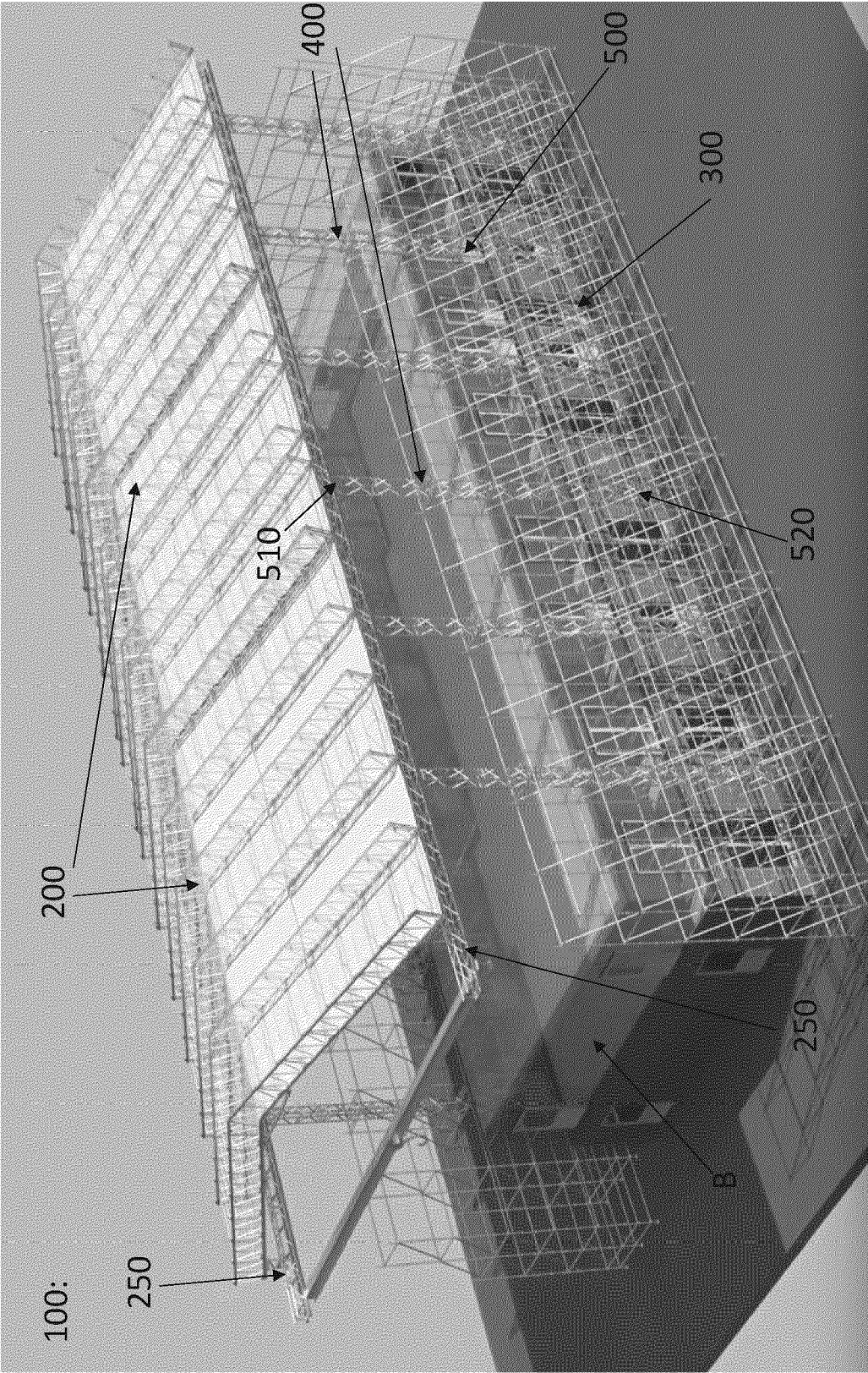


FIG. 3

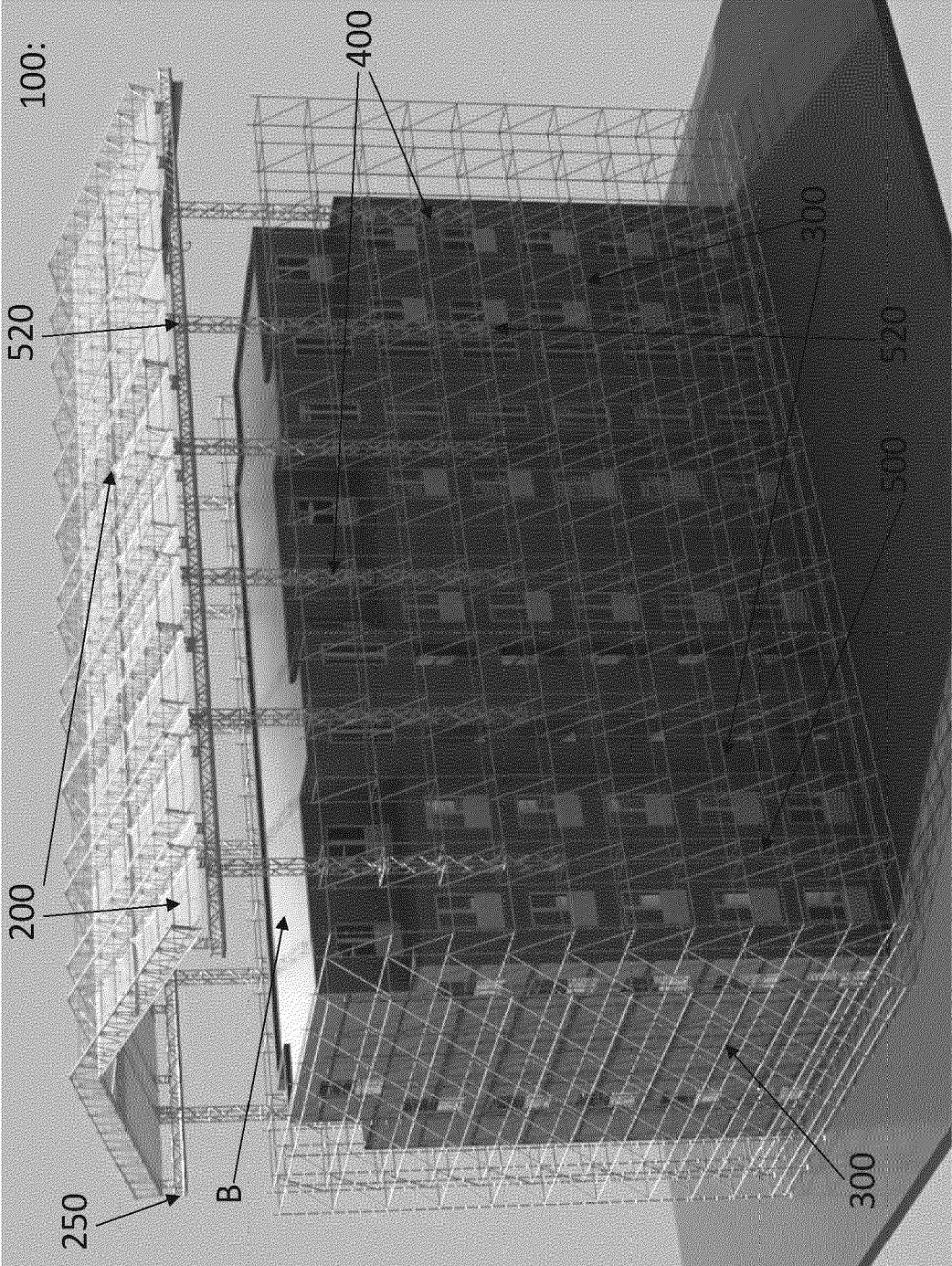


FIG. 4

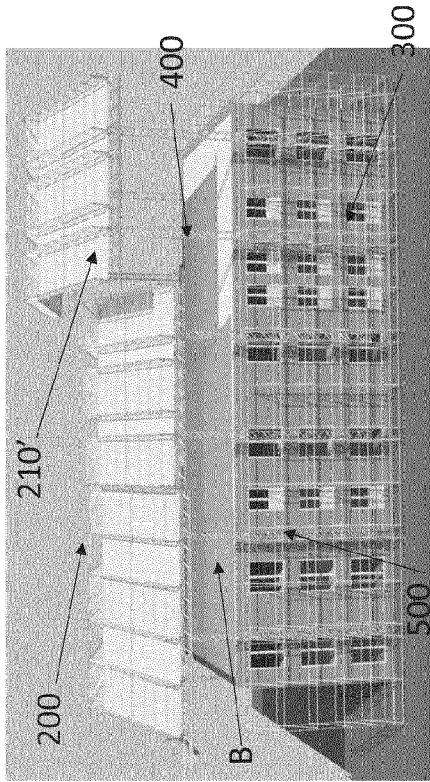


FIG. 5a

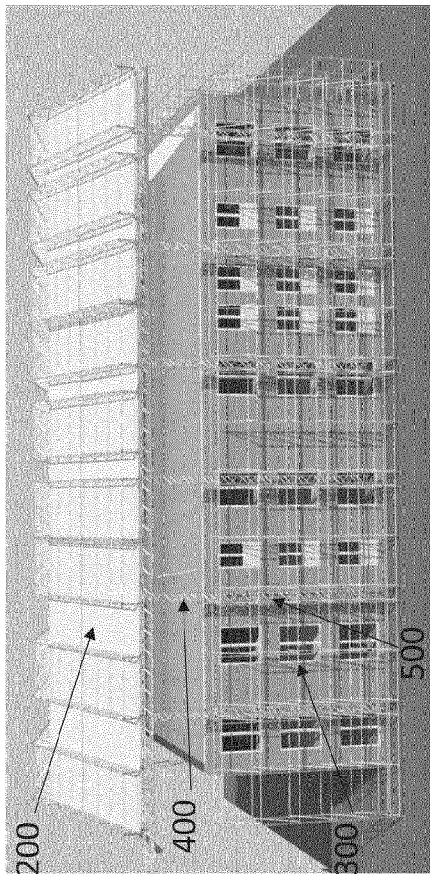


FIG. 5b

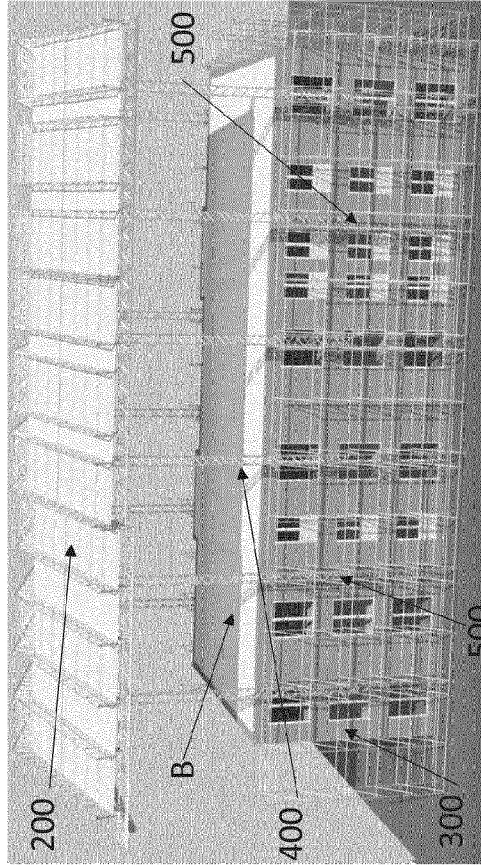


FIG. 5c

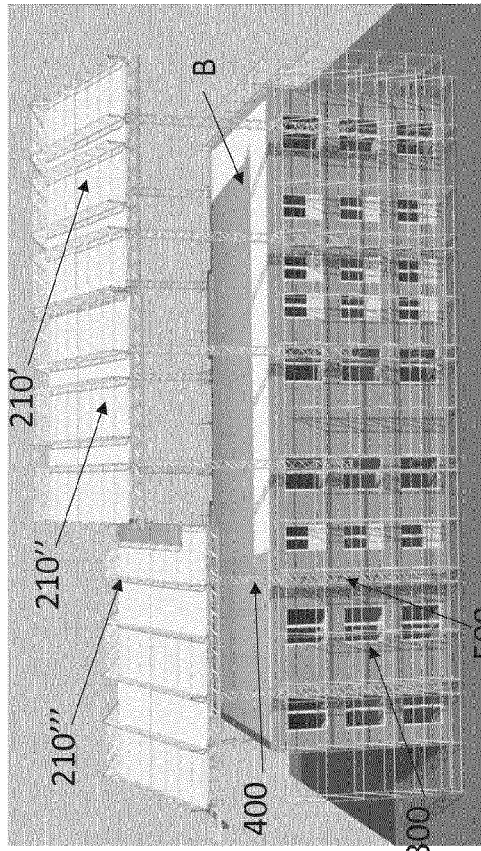


FIG. 5d

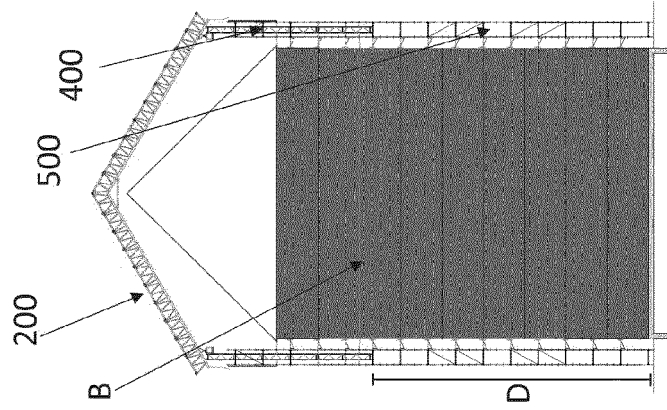


FIG. 6a

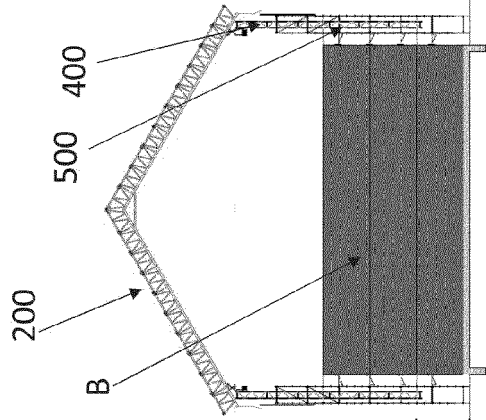


FIG. 6b

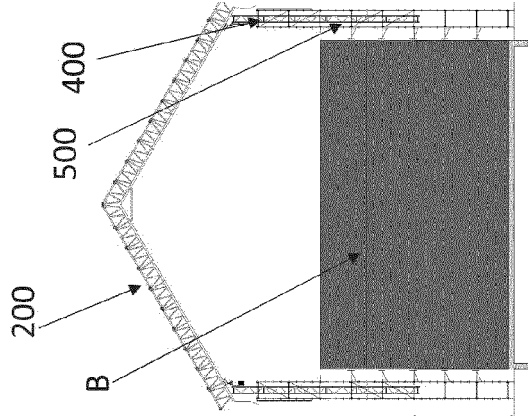


FIG. 6c

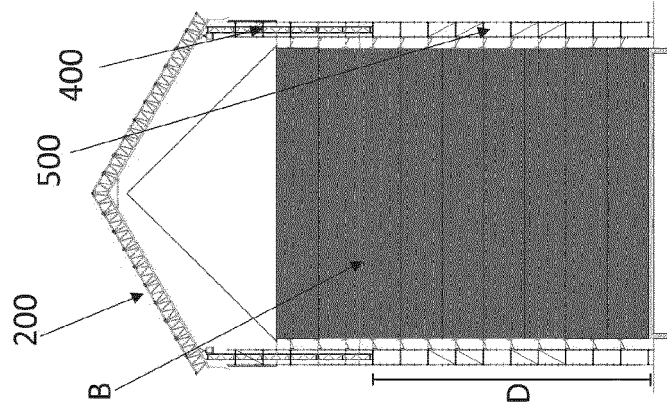


FIG. 6d

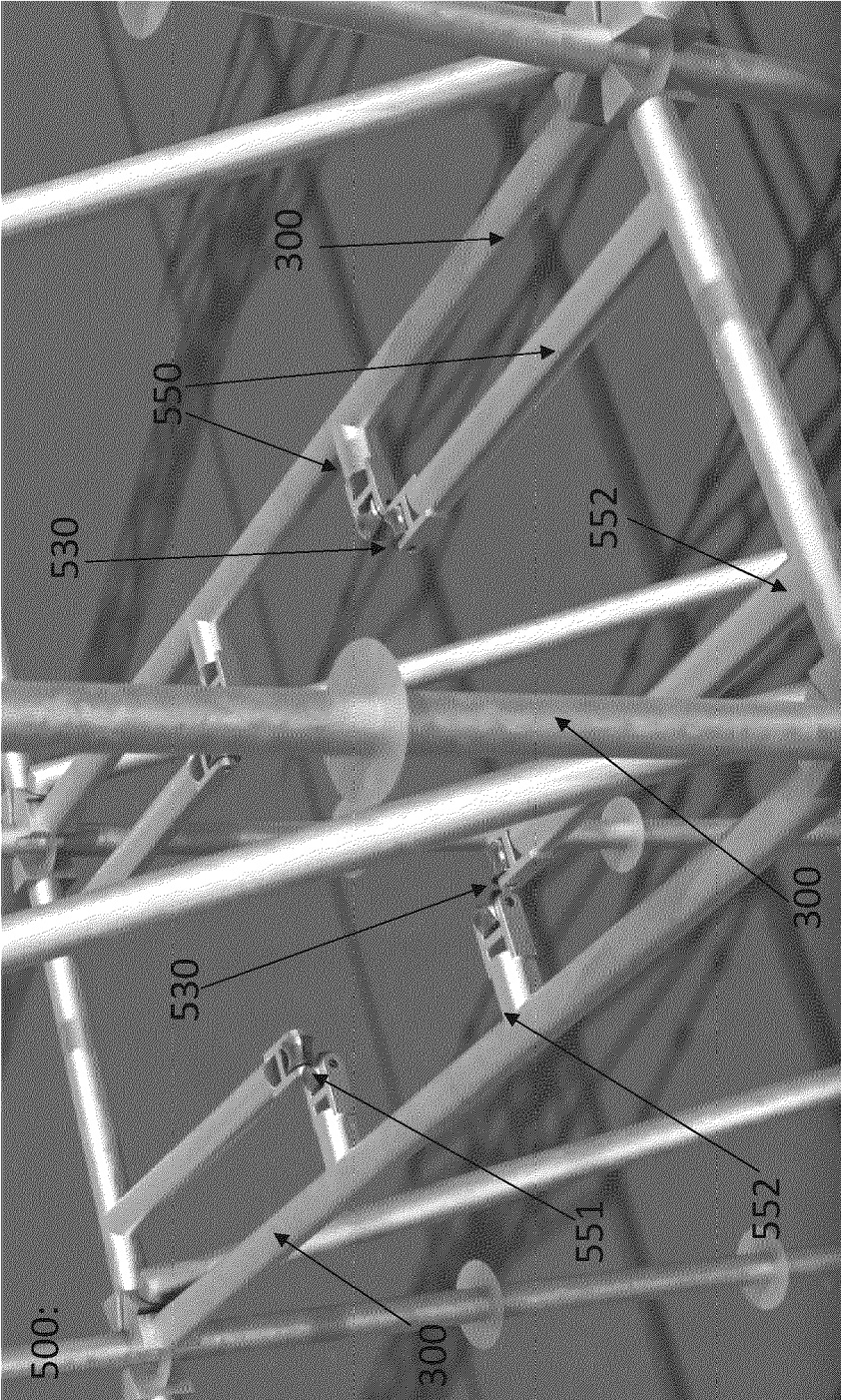


FIG. 7

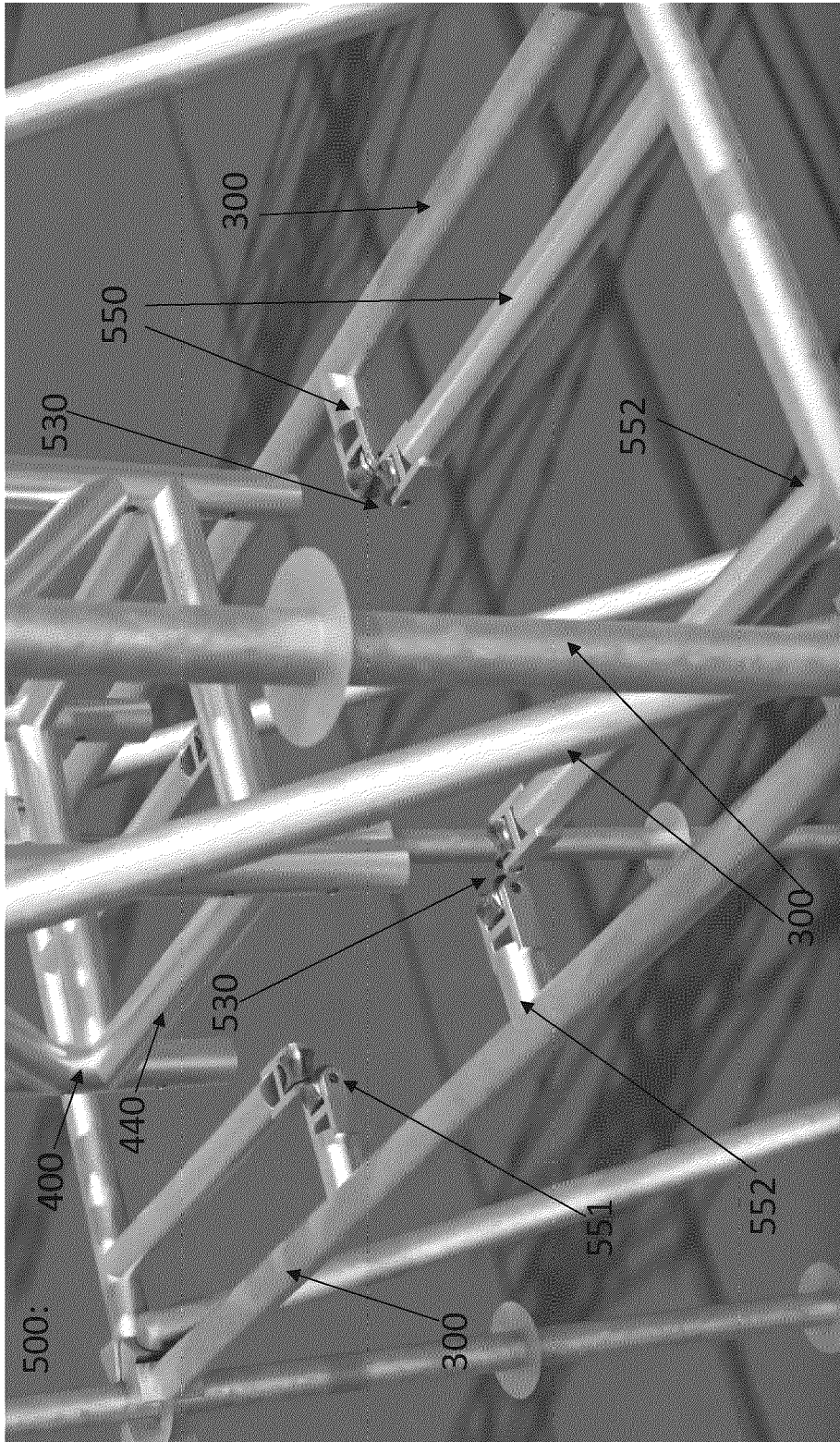


FIG. 8

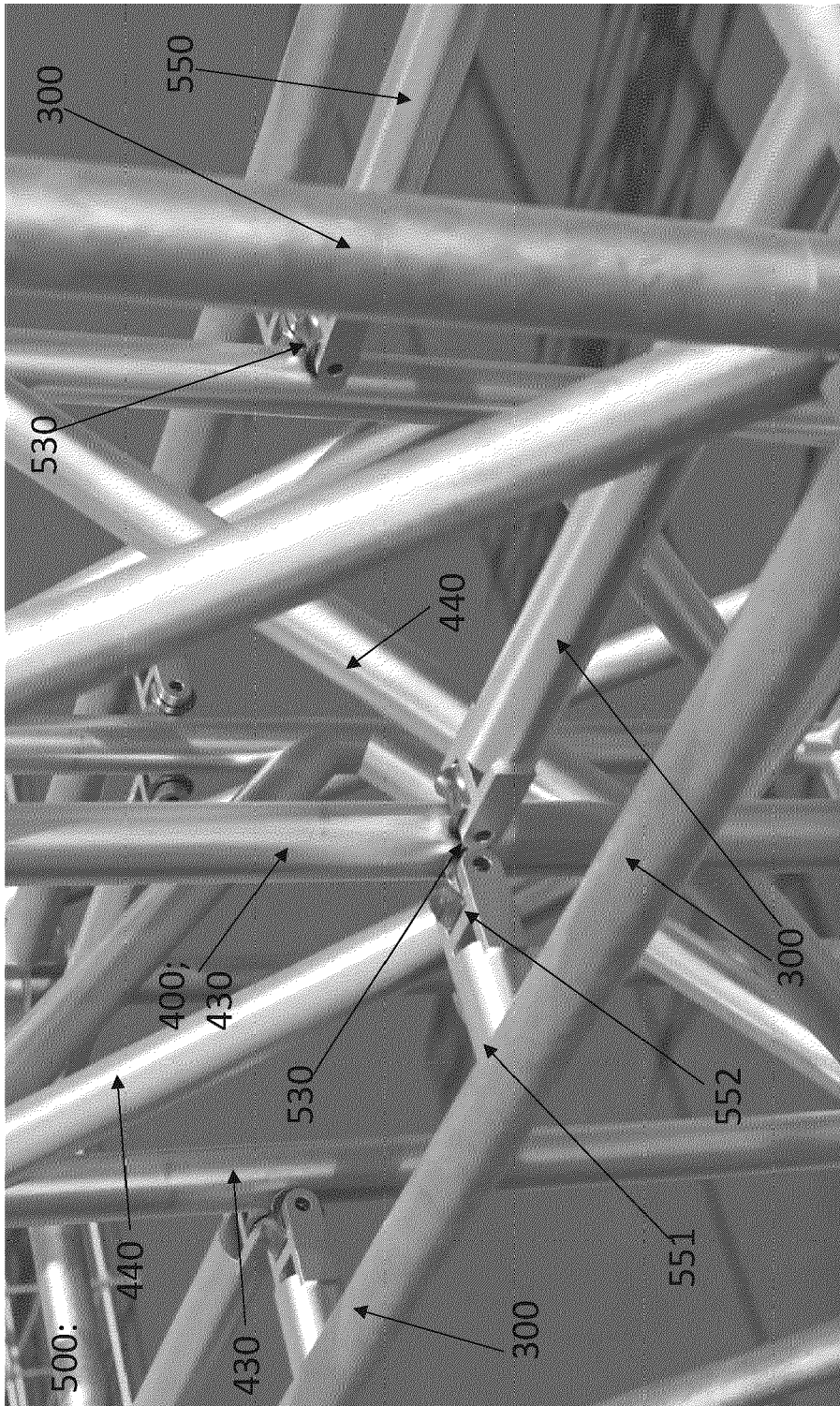


FIG. 9



EUROPEAN SEARCH REPORT

Application Number

EP 23 21 8166

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	EP 0 487 516 B1 (OHBAYASHI CORP [JP]) 18 January 1995 (1995-01-18) * columns 4-10; figures 1-7 *	1-7, 12-15 8-11	INV. E04G21/24 E04G21/28
X A	CN 111 364 366 A (NINGBO INST TECH ZHEJIANG UNIV) 3 July 2020 (2020-07-03) * the whole document *	1-5,7, 12-14 6,8-10	
X A	KR 2015 0053015 A (GS ENGINEERING & CONSTR CORP [KR]) 15 May 2015 (2015-05-15) * the whole document *	1-6, 12-15 7-11	
X A	GB 2 250 731 A (MITSUBISHI HEAVY IND LTD [JP]; SHIMIZU CONSTRUCTION CO LTD [JP]) 17 June 1992 (1992-06-17) * pages 23-30, - pages 60-69; figures 1-11,61-78 *	1-6,8,9, 12-15 10,11	
			TECHNICAL FIELDS SEARCHED (IPC)
			E04G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 29 May 2024	Examiner Garmendia Irizar, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

1
EPO FORM 1503 03.82 (F04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 23 21 8166

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

29-05-2024

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
EP 0487516	B1	18-01-1995	AU 626320 B2	30-07-1992
			CA 1329633 C	17-05-1994
			DE 68912037 T2	28-07-1994
			DE 68920754 T2	07-09-1995
			EP 0358433 A2	14-03-1990
			EP 0487516 A1	27-05-1992
			US 5022199 A	11-06-1991
			US 5088263 A	18-02-1992

CN 111364366	A	03-07-2020	NONE	

KR 20150053015	A	15-05-2015	NONE	

GB 2250731	A	17-06-1992	GB 2250731 A	17-06-1992
			US 5255489 A	26-10-1993
			US 5417018 A	23-05-1995

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82