

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
22 April 2010 (22.04.2010)

(10) International Publication Number  
**WO 2010/043975 A1**

(51) International Patent Classification:  
*E04G 1/20 (2006.01) E04G 1/24 (2006.01)*

(21) International Application Number:  
**PCT/IB2009/007366**

(22) International Filing Date:  
16 October 2009 (16.10.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
12/288,201 17 October 2008 (17.10.2008) US

(71) Applicant (for all designated States except US): **HEKI-MO, S.R.O** [CZ/CZ]; Celetna 3, 110 00 Prague 1 (CZ).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CSASZAR, George** [CZ/CZ]; Celetna 3, 110 00 Prague (CZ). **CSASZAR, James** [CZ/CZ]; Celetna 3, 110 00 Prague (CZ).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,

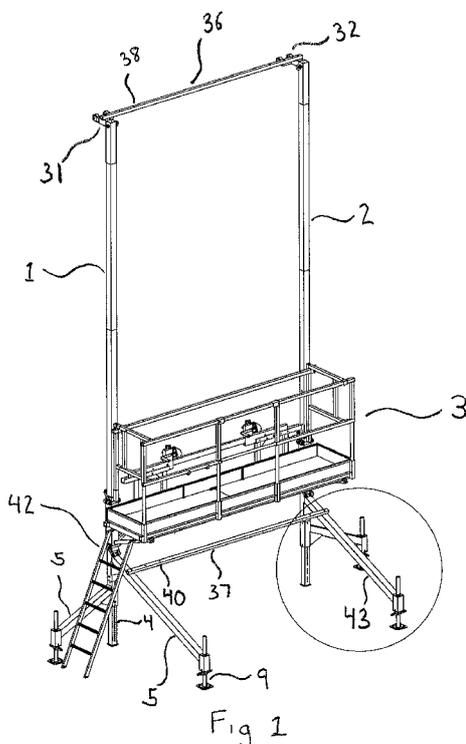
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) Title: SCAFFOLDING



(57) Abstract: The invention relates to scaffold frames and scaffold structures. In one embodiment, the invention generally relates to a scaffolding frame that includes at least two vertical support members (1, 2), at least two legs (5) for each of the vertical support members that extend outward and away from the vertical support members, in which each leg is rotatable around the vertical support members and lockably coupled to each of the vertical support members, the scaffold frame configured such that in a deployed state, a base member of each leg and bottom of each of the vertical support members contact an underlying surface.

WO 2010/043975 A1

## SCAFFOLDING

### TECHNICAL FIELD

[0001] The present invention generally relates to scaffold frames and scaffold structures. More specifically, the invention relates to scaffold frames and scaffold structures with modular legs for added stability and load bearing capacity.

### BACKGROUND INFORMATION

[0002] In order to perform work on various vertical surfaces such as, for example, fences, walls, and sides of buildings, it is often necessary to erect scaffolding to enable workers to stand at an elevation above a floor or the ground. Conventional scaffolds are expensive and must be disassembled and then reassembled as the work location requires. Thus, conventional scaffolds are not well suited for use in connection with light exterior work such as house painting, siding, applying weatherstripping to windows, or in cases where the worker is not going to remain in the same place for very long. Furthermore, transporting, assembling, disassembling and storing scaffolds takes a significant amount of time that could otherwise be used to perform the actual work.

[0003] In order to avoid the time and cost associated with conventional scaffolds, workers sometime erect temporary scaffolds to reach higher elevations. For example, temporary scaffolds are sometimes set up between ladders alongside a house or other building. A walk-board is run between the ladders or other supports and a ladder is leaned against the walk-board to allow a worker to mount the walk-board. Many times, the walk-board has no safety rail, and the scaffolding frame provides little structural support, i.e., lacks rigidity and stability in a free standing configuration. Also, the ladder leaned against the walk-board can slip sideways and fall, especially if someone climbs it carrying an off-balance load, for example, in one hand. In addition, the scaffold itself can slip out of the support ladders or other supports or the supports can fall or collapse themselves. Falls from scaffolds result in grave injury to workers because of height and the fact that there may be hard ground, materials, tools, or concrete below.

[0004] Various temporary scaffolds have been developed that attempt to solve the time consuming problems presented by conventional scaffolds while maintaining sufficient rigidity

and safely. One example of a temporary scaffold has two end ladders connected to cross members that allow the scaffold to fold like an accordion. After unfolding the scaffold, a workman typically attaches a plank to the uppermost rung of the ladders that serves as a working platform. In an effort to maintain rigidity, the supporting plank can be securely fastened to the rungs of an end ladder. In that case, one entire side of the scaffold has horizontal stability only at the top of the end ladder, while the lower portion of the scaffold no longer has rigidity because it has no stabilization. Furthermore, these temporary end ladder scaffolds are generally not stable where the ground is uneven, which is often the case for private houses.

[0005] Another example of a temporary scaffold comprises a pair of pump jack poles that are spaced apart on the supporting surface and secured to the wall by braces. The pump jacks ride up and down the poles and have support arms that carry the scaffold staging. The workers can stand on the staging and operate the pump jacks to raise and lower the staging. This pump jack pole type scaffolding is suitable for use on uneven ground because they are secured to the wall, but they cannot be erected in a free standing manner, for example, in a central region of a room or in an open area or adjacent to a wall without bracing to the wall.

### SUMMARY OF THE INVENTION

[0006] It thus is desirable to provide a new portable scaffold structure that is easy to assemble, relocate, disassemble, and transport. It is particularly desirable to provide such structures that are safe for the user and can be easily adapted to a variety of different working conditions. The new scaffold structure is stable without being secured to a wall (*i.e.*, free-standing) and can be adjusted to provide a level platform for a worker despite changes in the level and grade of the supporting surface. Such scaffold structures are simple in construction and less costly than prior art scaffolds, and assembly and transportation would not require highly skilled users to utilize the scaffold.

[0007] A portable scaffold frame according to the present invention generally includes at least two vertical support members and at least two legs for each of the vertical support members. Each of the legs extend outward and away from the vertical support members and can be rotated around the vertical support members for added stability and load bearing capacity. A proximal end of each of the legs is connected to a lower portion of each of the vertical support

members, and a distal end of each of the legs is configured to receive a base member. The scaffold frame is configured such that in a deployed state, the base member of each leg and a bottom of each of the vertical support members contacts an underlying surface, *e.g.*, the ground. The base members can be standard scaffolding feet that are adjustable to stabilize the scaffold on uneven ground. If it is desired to be able to move such free-standing scaffolding from one location to another within a work area, without dismantling the scaffolding, the base members can be wheels or castors. The wheels provide mobility and can be locked to prevent movement.

[0008] In one aspect, the invention generally relates to a portable scaffold frame including: at least two vertical support members and at least two legs for each of the vertical support members that extend outward and away from the vertical support members. A proximal end of each of the legs is connected to a lower portion of each of the vertical support members, and a distal end of each of the legs is configured to receive a base member. The scaffold frame is configured such that in a deployed state, the base member of each leg and a bottom of each of the vertical support members contacts an underlying surface, *e.g.*, the ground.

[0009] Embodiments according to this aspect of the invention can have various features. For example, the scaffold frame further includes at least one platform that is mounted in horizontal and in movable interaction with the vertical support members. The platform further includes guardrails connected to the platform and a gate member for ingress and egress from the platform.

[0010] The scaffold frame further includes a base member connected to each leg. Exemplary base members include a footing, a wheel device, a spike, a castor, and a suction cup. The base member can be removable from the distal end of the legs. Alternatively, the base member can be permanently connected to the distal end of the legs.

[0011] The scaffold frame further includes a spacer that is rotatably and lockably coupled to a top portion of each of the vertical support members. The scaffold frame further includes a first horizontal support member that connects across the top of each of the spacers. The scaffold frame further includes a second horizontal support member that connects from a leg on a first vertical support member to a leg on a second vertical support member.

[0012] The vertical support members can include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. The leg can include an outer member and an inner member, the inner member being telescopically movable

with respect to the outer member. In a deployed state, the frame can stand independent of support from a vertical surface.

[0013] In another aspect, the invention generally relates to a portable scaffold frame including: at least two vertical support members; at least one leg for each of the vertical support members that extends outward and away from the vertical support members, in which the leg is rotatable around the vertical support members and lockably coupled at a proximal end to a lower portion of each of the vertical support members, and a distal end of the leg is configured to receive a base member; the scaffold frame configured such that in a deployed state, the base member of each leg and a bottom of each of the vertical support members contact an underlying surface.

[0014] Embodiments according to this aspect of the invention can have various features. For example, the scaffold frame further includes at least one platform that is mounted in horizontal and in movable interaction with the vertical support members. The platform further includes guardrails connected to the platform and a gate member for ingress and egress from the platform.

[0015] The scaffold frame further includes a base member connected to each leg. Exemplary base members include a footing, a wheel device, a spike, a castor, and a suction cup. The base member can be removable from the distal end of the legs. Alternatively, the base member can be permanently connected to the distal end of the legs.

[0016] The scaffold frame further includes a spacer that is rotatably and lockably coupled to a top portion of each of the vertical support members. The scaffold frame further includes a first horizontal support member that connects across the top of each of the spacers. The scaffold frame further includes a second horizontal support member that connects from a leg on a first vertical support member to a leg on a second vertical support member.

[0017] The vertical support members can include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. The leg can include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member.

[0018] In another aspect, the invention generally relates to a portable scaffold frame including: at least two vertical support members; at least two legs for each of the vertical support members that extend outward and away from the vertical support members, in which each leg is

rotatable around the vertical support members and lockably coupled at a proximal end to a lower portion of each of the vertical support members, and a distal end of each of the legs is configured to receive a base member; the scaffold frame configured such that in a deployed state, the base member of each leg and bottom of each of the vertical support members contact an underlying surface.

[0019] Embodiments according to this aspect of the invention can have various features. For example, the scaffold frame further includes at least one platform that is mounted in horizontal and in movable interaction with the vertical support members. The platform further includes guardrails connected to the platform and a gate member for ingress and egress from the platform.

[0020] The scaffold frame further includes a base member connected to each leg. Exemplary base members include a footing, a wheel device, a spike, a castor, and a suction cup. The base member can be removable from the distal end of the legs. Alternatively, the base member can be permanently connected to the distal end of the legs.

[0021] The scaffold frame further includes a spacer that is rotatably and lockably coupled to a top portion of each of the vertical support members. The scaffold frame further includes a first horizontal support member that connects across the top of each of the spacers. The scaffold frame further includes a second horizontal support member that connects from a leg on a first vertical support member to a leg on a second vertical support member.

[0022] The vertical support members can include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. The leg can include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. In a deployed state, the frame can stand independent of support from a vertical surface.

[0023] In another aspect, the invention generally relates to a portable scaffold structure including: at least two vertical support members; at least two legs for each of the vertical support members that extend outward and away from the vertical support members, in which each leg is rotatable around the vertical support members and lockably coupled at a proximal end to a lower portion of each of the vertical support members, and a distal end of each of the legs is configured to receive a base member; at least one platform that is mounted in horizontal and in movable interaction with the vertical support members; the scaffold structure configured such that in a

deployed state, the base member of each leg and bottom of each of the vertical support members contact an underlying surface.

[0024] Embodiments according to this aspect of the invention can have various features. For example, the scaffold structure further includes a base member connected to each leg. Exemplary base members include a footing, a wheel device, a spike, a castor, and a suction cup. The base member can be removable from the distal end of the legs. Alternatively, the base member can be permanently connected to the distal end of the legs.

[0025] The scaffold structure further includes a spacer that is rotatably and lockably coupled to a top portion of each of the vertical support members. The scaffold structure further includes a first horizontal support member that connects across the top of each of the spacers. The scaffold structure further includes a second horizontal support member that connects from a leg on a first vertical support member to a leg on a second vertical support member.

[0026] The vertical support members can include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. The leg can include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. In a deployed state, the frame can stand independent of support from a vertical surface.

[0027] In another aspect, the invention generally relates to a kit including at least two vertical support members and at least two legs. The kit can further include, base members, components to assemble at least one platform, as described herein, locking members, spacers, horizontal bars, and components for attaching the platform to the vertical support members, as described herein.

[0028] These and other aspects, features, and benefits according to the invention will become clearer by reference to the drawings described below and also the description that follows.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0029] The drawings are not necessarily to scale, and the drawings generally illustrate principles relevant to the invention that can help in understanding the invention.

[0030] FIG. 1 is an embodiment of the invention showing a scaffold frame and a scaffold structure having rectangular vertical support members.

[0031] FIG. 2 is a magnified view of a portion of FIG. 1, showing a vertical support member having two legs attached. In this embodiment, the base member connected to the distal end of each leg is a scaffold footing.

[0032] FIG. 3 shows an exploded view of the scaffold structure of FIG. 1.

[0033] FIG. 4 shows a wheel device, a type of base member that can be connected to the distal end of each leg.

[0034] FIG. 5 shows a scaffold footing, a type of base member that can be connected to the distal end of each leg.

[0035] FIG. 6a shows an example of a platform.

[0036] FIG. 6b shows an exploded view of the platform of FIG. 6a.

[0037] FIG. 7 shows the connection between the platform and the vertical support members.

[0038] FIG. 8 shows details of the platform and a vertical support member.

[0039] FIG. 9 is another embodiment of the invention showing a scaffold frame and a scaffold structure having cylindrical vertical support members.

[0040] FIG. 10 is a magnified view of a portion of FIG. 9, showing a vertical support member having two legs attached. In this embodiment, the base member connected to the distal end of each leg is a scaffold footing.

[0041] FIG. 11 is a magnified view of a portion of FIG. 1, showing a spacer attached to the top portion of the vertical support member.

## DESCRIPTION

[0042] The invention generally relates to scaffold frames and scaffold structures. FIG. 1 shows an embodiment of a scaffold frame and a scaffold structure of the invention. The scaffold frame or scaffold structure includes at least two vertical support members 1 and 2. In other embodiments, the scaffold frame or structure includes at least three vertical support members, at least four vertical support members, at least five vertical support members, etc. The vertical support members are erected substantially parallel to each other.

[0043] In certain embodiments, the vertical support members include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. This allows the height of the scaffold frame or scaffold structure to be adjusted by the

user depending on the height required for the project. This also allows the scaffold frame or scaffold structure to be leveled on uneven surfaces. Once the desired height is attained, the inner member and outer member of each of the vertical support members can be locked into place by a locking member. The locking member can be any type of locking system known in the art, for example, a pin system, a bolt and nut system, or bolt and pin system. In alternative embodiments, the vertical support members are a fixed length, e.g., 2 meters, 3.5 meters, or 5 meters. The vertical support members can be of any shape and/or any size. In certain embodiments, the vertical support members have a rectangular shape, as shown in **FIG. 1**. In alternative embodiments, the vertical support members have a cylindrical shape, as shown in **FIG. 9**.

[0044] To each of the vertical support members 1 and 2, is connected at least one leg 5, e.g., one leg, two legs, three legs, four legs, five legs, etc. In certain embodiments, the legs include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member. This allows the length of the legs to be adjusted by the user depending on the project, i.e., to increase stability, adjust scaffold height, avoid obstacles, etc. Once the desired length is attained, the inner member and outer member of each of the legs can be locked into place by a locking member. The locking member can be any type of locking system known in the art, for example, a pin system, a bolt and nut system, or bolt and pin system. In alternative embodiments, the legs can be of any fixed length, e.g., less than 6 inches, one foot or greater, two feet or greater, three feet or greater, one meter or greater, three meters or greater, etc.

[0045] In embodiments in which there is more than one leg, the legs can be connected to each vertical support member in any desired orientation with respect to each other depending on requirements of the project. For example, **FIG. 1** shows an embodiment of the scaffold structure having two legs in which the legs are oriented 90° with respect to each other. In such a configuration, the scaffold frames and scaffold structures of the invention have increased stability and have the benefit of a configuration that allows the scaffold frames and scaffold structures of the invention to be set-up close to a vertical structure without obstruction from the legs. **FIG. 3** shows an embodiment of the scaffold structure having two legs in which the legs are oriented 180° with respect to each other. In such a configuration, the scaffold frames and scaffold structures of the invention can stand independent of support from a vertical surface.

Thus, scaffold frames and scaffold structures of the invention can be erected in a free standing manner, for example, in a central region of a room or in an open area or adjacent to a wall without bracing to the wall, while still providing sufficient rigidity and stability to ensure the safety of workers in the scaffold frames and scaffold structures of the invention.

[0046] **FIGS. 1 and 2** show that the leg 5 is configured such that a proximal end of the leg 5 includes a bracket 6 for connection to the vertical support members. The bracket 6, can be of any shape and/or size, which will be determined by the shape and/or size of the vertical support member with which the bracket 6 will be connected. In embodiments in which the vertical support members are rectangular, the bracket 6 of leg 5 has a compatible rectangular shape that is dimensioned to slide over and be in contact with the lower portion of the vertical support members, as shown in **FIGS. 1 and 2**. In embodiments in which the vertical support members are cylindrical, the bracket 6 of leg 5 has a compatible cylindrical shape that is dimensioned to slide over and be in contact with the lower portion of the vertical support members, as shown in **FIGS. 9-10**.

[0047] Regardless of shape and/or size, the bracket 6 includes regularly spaced holes 7 on each side for connection with the vertical support members, as shown in **FIG. 2**. Similarly, regardless of shape and/or size, a lower portion of each side of each of the vertical support members 1 and 2 includes regularly spaced holes 4 that are involved in connecting the legs to each of the vertical support members 1 and 2, as shown in **FIG. 2**. For connection of the leg 5 to the vertical support members 1 and 2, the bracket 6 of leg 5 is slid over the vertical support members 1 and 2, as shown in **FIG. 2**. The regularly spaced holes 7 in the legs 5 are aligned at a desired height with the regularly spaced holes 4 in the lower portion of the vertical support members 1 and 2. Once the holes 4 and 7 are aligned, a locking member 8 is slid through holes 4 and 7 and locked into place. The locking member 8 can be any type of locking member known in the art, for example, a pin system, bolt and nut system or bolt and pin system.

[0048] In certain embodiments, the at least one leg 5 connected to each vertical support member is rotatable around the vertical support members 1 and 2. For ease of explanation, the following discussion refers to rotation of a single leg around a single vertical support member, however, the invention is not limited to a single leg rotating around a single vertical support member. Each vertical support member of the scaffold frames and structures herein includes at least one leg for each vertical support member, and each of the legs on each of the vertical

support members can rotate in a manner described below. Once the leg 5, is positioned in a desired location with respect to the vertical support member 1, the leg 5 is lockably coupled at the proximal end, using the bracket 6, to the lower portion of the vertical support member 1, as described above. In embodiments in which the vertical support members are rectangular, as shown in FIG. 1, leg 5 is slid off of the bottom of vertical support member 1, positioned in a desired location with respect to the vertical support member 1, slid back over vertical support member 1, and lockably coupled at the proximal end, using the bracket 6, to the lower portion of vertical support member 1, as described above. In embodiments in which the vertical support members are cylindrical, as shown in FIG. 9, the leg 5 is rotated around vertical support member 1 until a desired position is achieved, and once the desired position is achieved, the leg 5 is then lockably coupled at the proximal end, using the bracket 6, to the lower portion of the vertical support member 1, as described above.

[0049] A distal end of each of the legs 5 is configured to receive a base member. The base member can be, for example, a footing 9 (shown in magnified view in FIG. 5), a wheel device 10 (shown in magnified view in FIG. 4), a spike, a castor, or a suction cup. The interior portion of the distal end of leg 5 can include grooves so that the distal end of the leg can receive a base member that can be screwed into in the distal end of the leg 5. The distal end of leg 5 can also include holes 11, or each side, so that the distal end of the leg can receive a base member that can be lockably coupled to the distal end of the leg 5, as described above.

[0050] FIGS. 1 and 2 show embodiments of the invention in which the base member is a footing, and FIG. 5 shows a magnified view of a scaffold footing. In these embodiments, the footing 9, is inserted into the distal end of leg 5 until the distal end of leg 5 is flush with the nut 12 on the footing 9. The nut 12 on the footing 9 is movable to provide a footing with adjustable height. In certain embodiments, the nut 12 can be lockably connected to the distal end of the leg 5.

[0051] FIG. 3 shows an embodiment of the invention in which the base member is a wheel device, and FIG. 4 shows a magnified view of the wheel device. Embodiments in which the base member is a wheel device, allow for ease of movement of the scaffold frames and scaffold structures of the invention. The wheel device 10, includes a wheel 13, mounted in a wheel frame 14. The wheel frame 14 has a wheel brake 15 connected to it. In an engaged position, the wheel brake 15 prevents the wheel 13 from moving. In a disengaged position, the

wheel brake 15 allows the wheel 13 to move freely. The wheel brake 15 can be engaged and disengaged with pressure applied from a user's foot. FIG. 4 shows the wheel brake 15 in a disengaged position.

[0052] The top of wheel frame 14 includes a connecting member 16. The connecting member 16 is coupled to the wheel frame 15 in a manner that allows for free rotation of wheel frame 15 around the connecting member 16. The connecting member 16 also includes at least one hole 17, on each side, so that the distal end of the leg 5 can receive the wheel device and the wheel device can then be lockably coupled to the distal end of the leg 5. FIG. 3 shows coupling of the wheel device 10 to the distal end of the leg 5. The connecting member 16 of the wheel device 10 is inserted into the distal end of leg 5. The hole 11 in the leg 5 is aligned with the hole 17 in the connecting member 16 of the wheel device 10. Once the holes 11 and 17 are aligned, a locking member 8 is slid through the holes 11 and 17 and locked into place. The locking member 8 can be any type of locking member known in the art, for example, a pin system, bolt and nut system or bolt and pin system.

[0053] The scaffold frames and scaffold structures of the invention are configured such that in a deployed state, the base member of each leg and a bottom of each of the vertical support members contact an underlying surface as shown, for example, in FIGS. 1 and 2. A problem associated with prior art scaffolds is reliance on a vertical surface to provide rigidity and stability for the scaffold. In contrast to prior art scaffolds, the scaffold frames and scaffold structures of the present invention provide a greater number of ground contact points, and thus the scaffold frames and scaffold structures of the present invention provide greater rigidity and stability than prior art scaffolds. Additionally, by providing a greater number of ground contact points, scaffold frames and scaffold structures of the invention provide a greater load capacity compared to prior art scaffolds.

[0054] FIGS. 1 and 9 show a scaffold frame including at least one platform 3 mounted horizontally and in movable interaction with the vertical support members 1 and 2. The platform 3 can be mounted on either side of the vertical support members 1 and 2. The scaffold frames and scaffold structures of the invention can include more than one platform, e.g., two platforms, three platforms, four platforms, etc. The vertical support members have the facility of being mounted on the platform at levels different from one another, and with variable width, depending upon the contour and undulations of the underlying surface, e.g., ground. When the differences

in level sideways are very great, the vertical support members can be adjusted to be of different lengths or two vertical support members of different fixed lengths can be used. The platform will then be capable of being moved up and down along the vertical support members with the aid of a winch, rack and pinion, by being lifted manually or in another technically known way, such as manually or motor-driven.

[0055] If necessary, a safety brake can be incorporated which will act as an extra safety mechanism if, for example, the wire should snap when the platform is being winched up. The user can ascend and descend by being on the platform and hoisting/running himself up and down, or by being on the ground and hoisting/running the platform up and down in order to then enter it with the aid of, e.g., a ladder.

[0056] **FIGS. 6a and 6b** show an example of a platform, including side members 18 and 19 having a guard rail 20 above the side member which extends in the longitudinal direction of the platform with a gate-like opening which can be closed, for example, by sliding the bar 21 and the locking bar 22. When the gate-like opening in the platform is not at ground level, a user can climb ladder 42 to reach the platform 3, as shown in FIG. 1.

[0057] **FIG. 7** shows the connection between the platform and vertical support members with a sleeve-like bracket 23. In this figure, the right-hand side of the scaffold is shown, the left bracket being identical, but mirror-inverted, and therefore not shown in more detail. The bracket 23 has a plurality of rollers 24 to allow the bracket to be moved up and down along the vertical support members 1, 2. Secured to the bracket 23 are bars 25 and 26 for attachment of the platform, and also stay bar 27. In certain embodiments, a winch is mounted on the bar 25. A safety brake 28 co-acts with holes 4 in the vertical support members and acts as a safety mechanism if the wire should snap.

[0058] **FIG. 8** shows the connection between platform and vertical support members. The platform 3 is mounted on the bracket 23. The platform is installed so that the innermost support member 29 on the platform grips around a stabilizing bar 25 on the bracket 8. A locking mechanism 30 on the bracket 23 then clamps an outermost support member 26 onto the platform. The locking mechanism may be a block that acts as a stop for the platform and holds the platform in place. The bracket 8 may have a fixedly mounted side guard rail to ensure that it will automatically be placed at the location of the vertical support members.

[0059] In certain embodiments, the scaffold frames and scaffold structures of the invention include spacers 31 and 32 lockably connected to a top portion of vertical support members 1 and 2, as shown in FIG. 1, with a magnified view of spacer 32 shown in FIG. 11. The spacers allow the scaffold to be configured such that the distance between the scaffold frames or scaffold structures and another structure can be adjusted. The spacers are designed to be movable, e.g., rotatable, to allow the user to gain access to, for example, a wall. In this figure, the right-hand side of the scaffold is shown, the left spacer being identical, but mirror-inverted, and therefore not shown in more detail. The spacer 32 includes an elongated arm 33 having a hole 34. The hole 34 aligns with a hole 35 in the vertical support member 2. Once the holes 34 and 35 are aligned, a locking member 8 is slid through the holes 34 and 35 and are locked into place. The locking member 8 can be any type of locking member known in the art, for example, a pin system, bolt and nut system or bolt and pin system.

[0060] In certain embodiments, the scaffold frames and scaffold structures of the invention include horizontal bars 36 and 37, as shown in FIG. 1. The horizontal bars 36 and 37 provide additional support and stability to the scaffold frames and scaffold structures of the invention. The horizontal bar 36 connects across the top of the spacers 31 and 32. The horizontal bar 36 includes holes 38 that align with holes 39 in the top of the spacers 31 and 32 (shown in FIG. 11). Once the holes 38 and 39 are aligned, a locking member 8 is slid through the holes 38 and 39 and are locked into place. The locking member 8 can be any type of locking member known in the art, for example, a pin system, bolt and nut system or bolt and pin system.

[0061] The horizontal bar 37 connects from one leg 5 on the vertical support member 1 to another leg 43 on another vertical support member 2. The horizontal bar 37 includes holes 40 that align with holes 41 in the top of the legs 5 and 43 (shown in FIG. 2). Once the holes 40 and 41 are aligned, a locking member 8 is slid through the holes 40 and 41 and are locked into place. The locking member 8 can be any type of locking member known in the art, for example, a pin system, bolt and nut system or bolt and pin system.

[0062] While certain embodiments according to the present invention have been shown and/or described, it should be understood that the invention is not limited to just those embodiments. Various changes, additions and/or deletions are possible without departing from the spirit and scope of the invention. Also, various combinations of disclosed elements, features,

etc. are possible and within the scope of the disclosure even if specific combinations are not expressly described therein.

What is claimed is:

1. A portable scaffold frame comprising:  
at least two vertical support members; and  
at least two legs for each of the vertical support members that extend outward and away from the vertical support members, each of the legs include a proximal end connected to a lower portion of each of the vertical support members and a distal end configured to receive a base member, the scaffold frame configured such that in a deployed state, the base member of each leg and a bottom of each of the vertical support members contact an underlying surface.
2. The scaffold frame according to claim 1, further including at least one platform movably connected to the vertical support members.
3. The scaffold frame according to claim 1, further including a base member connected to each leg.
4. The scaffold frame according to claim 3, wherein the base member is selected from the group consisting of a footing, a wheel device, a spike, a castor, and a suction cup.
5. The scaffold frame according to claim 4, wherein the base member is removable from the distal end of the legs.
6. The scaffold frame according to claim 1, wherein the frame is freestanding in a deployed state.
7. The scaffold frame according to claim 1, wherein the vertical support members include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member.

8. The scaffold frame according to claim 1, wherein each of the legs include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member.
9. A portable scaffold frame comprising:
  - at least two vertical support members; and
  - at least two legs connected to each of the vertical support members that extend outward and away from the vertical support members, each of the legs being rotatable around the vertical support members and lockably coupled at a proximal end to a lower portion of each of the vertical support members, and a distal end of each of the legs configured to receive a base member, the scaffold frame configured such that in a deployed state, the base member of each leg and bottom of each of the vertical support members contact an underlying surface.
10. The scaffold frame according to claim 9, further including at least one platform movably connected to the vertical support members.
11. The scaffold frame according to claim 9, further including a base member connected to each leg.
12. The scaffold frame according to claim 11, wherein the base member is selected from the group consisting of a footing, a wheel device, a spike, a castor, and a suction cup.
13. The scaffold frame according to claim 11, wherein the base member is removable from the distal end of the legs.
14. The scaffold frame according to claim 9, wherein the frame is freestanding in a deployed state.
15. The scaffold frame according to claim 9, wherein the vertical support members include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member.

16. The scaffold frame according to claim 9, wherein each of the legs includes an outer member and an inner member, the inner member being telescopically movable with respect to the outer member.
17. A portable scaffold structure comprising:
  - at least two vertical support members;
  - at least two legs for each of the vertical support members that extend outward and away from the vertical support members, each leg being rotatable around the vertical support members and lockably coupled at a proximal end to a lower portion of each of the vertical support members and a distal end of each of the legs configured to receive a base member; and
  - at least one platform mounted to and movable interaction with the vertical support members, the scaffold structure configured such that in a deployed state, the base member of each leg and bottom of each of the vertical support members contact an underlying surface.
18. The scaffold structure according to claim 17, further including a base member connected to each leg.
19. The scaffold structure according to claim 18, wherein the base member is selected from the group consisting of a footing, a wheel device, a spike, a castor, and a suction cup.
20. The scaffold structure according to claim 18, wherein the base member is removable from the distal end of the legs.
21. The scaffold structure according to claim 18, further including a spacer coupled to a top portion of each of the vertical support members.
22. The scaffold structure according to claim 21, further including a first horizontal support member that connects across the top of each of the spacers.

23. The scaffold structure according to claim 22, further including a second horizontal support member that connects from a leg on a first vertical support member to a leg on a second vertical support member.

24. The scaffold frame according to claim 17, wherein the vertical support members include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member.

25. The scaffold structure according to claim 17, wherein each of the leg include an outer member and an inner member, the inner member being telescopically movable with respect to the outer member.

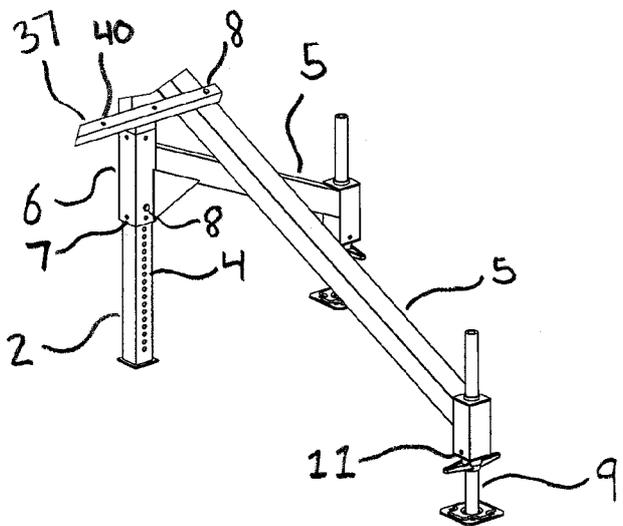
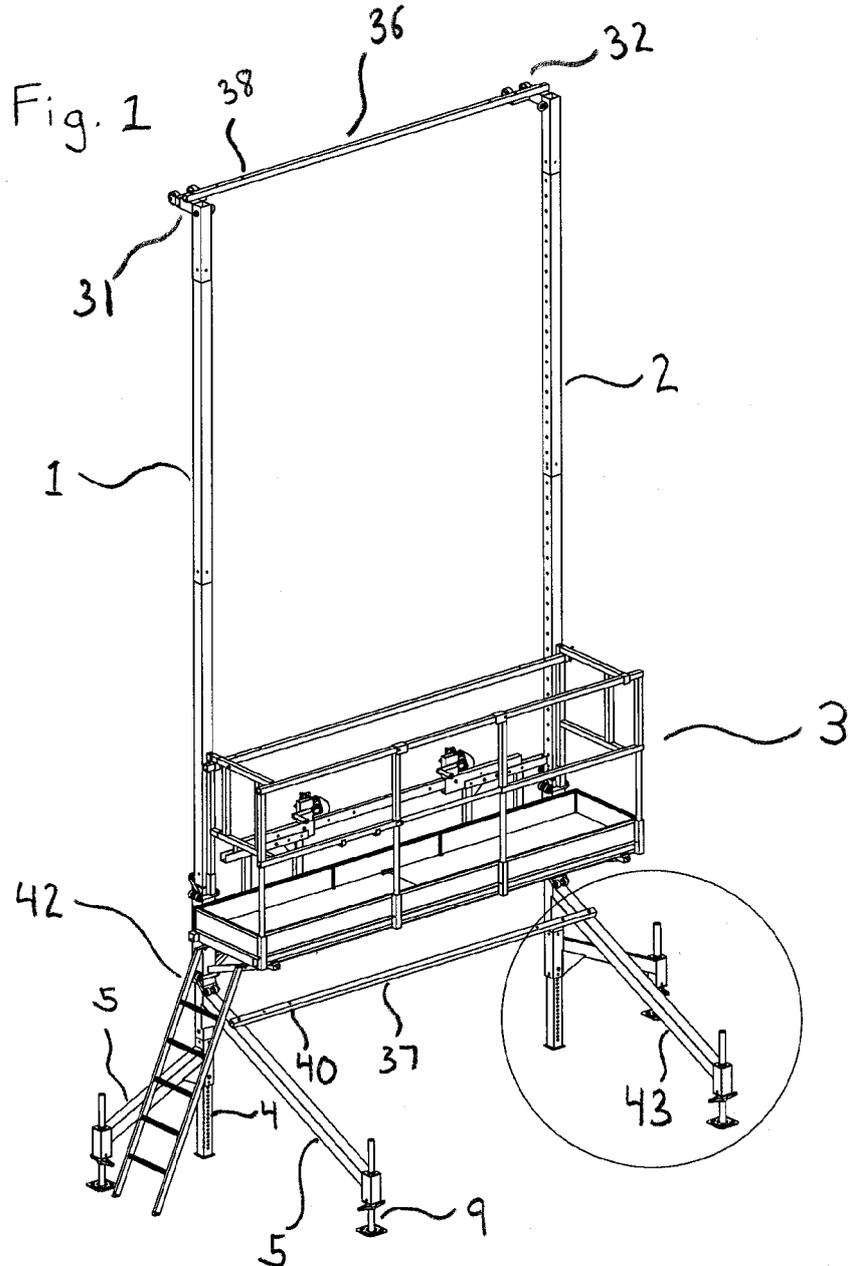
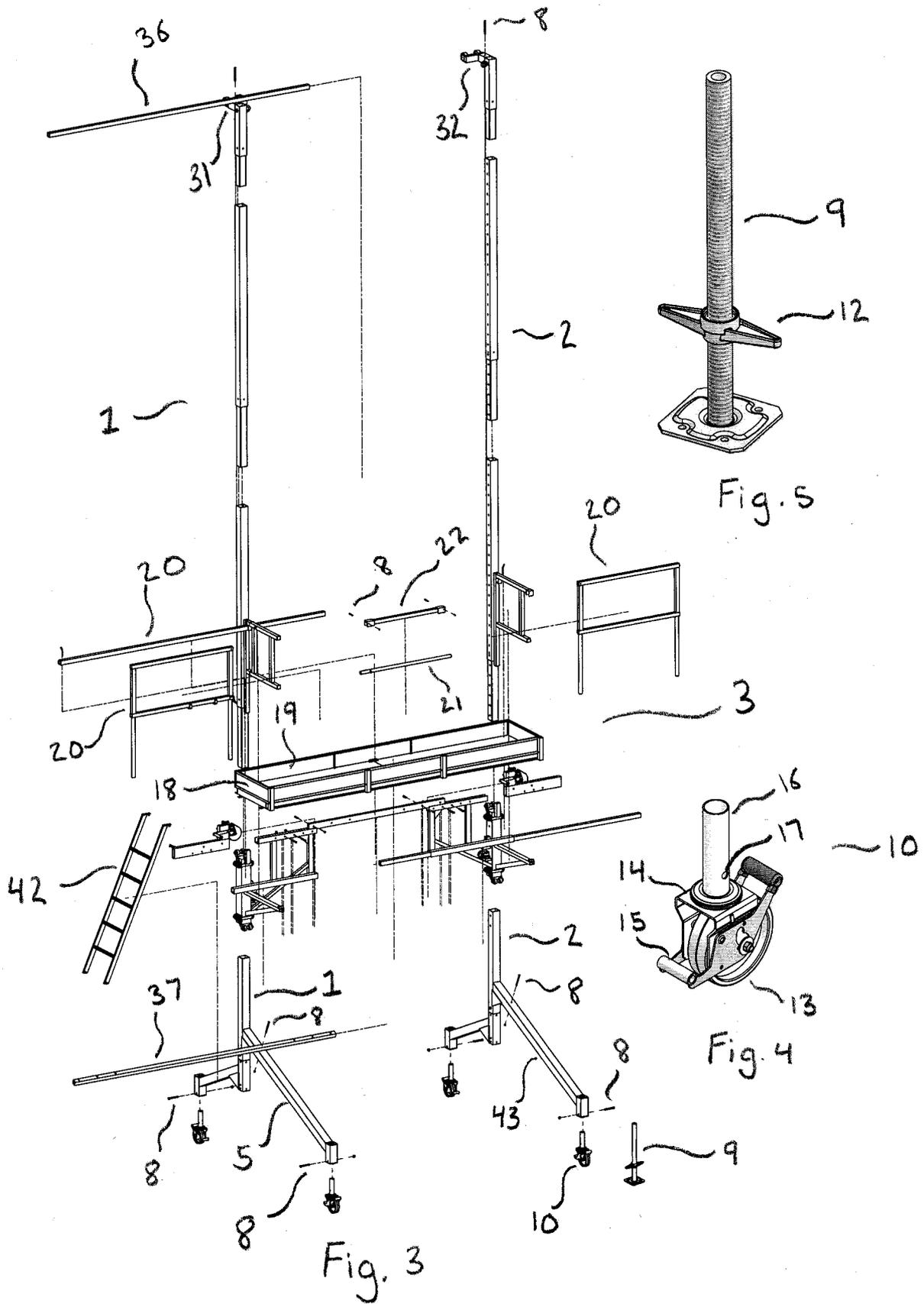
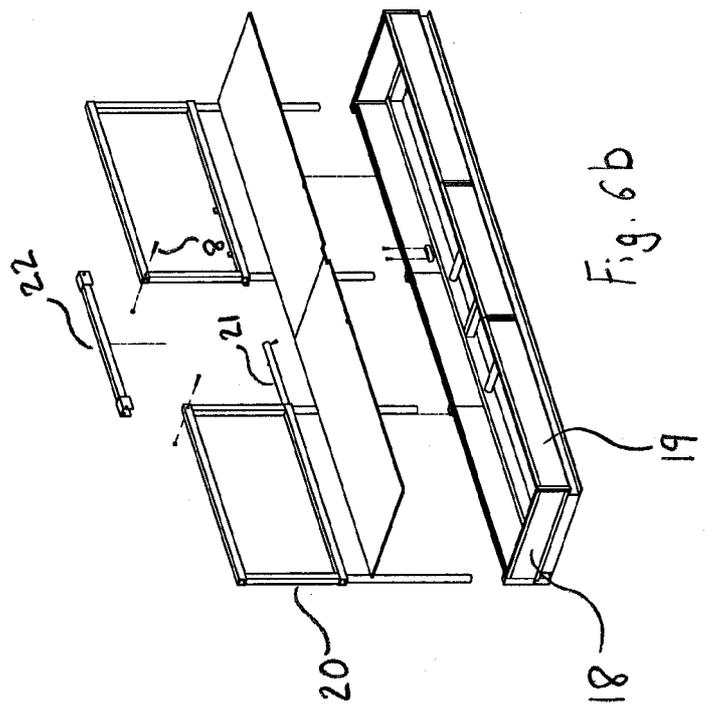
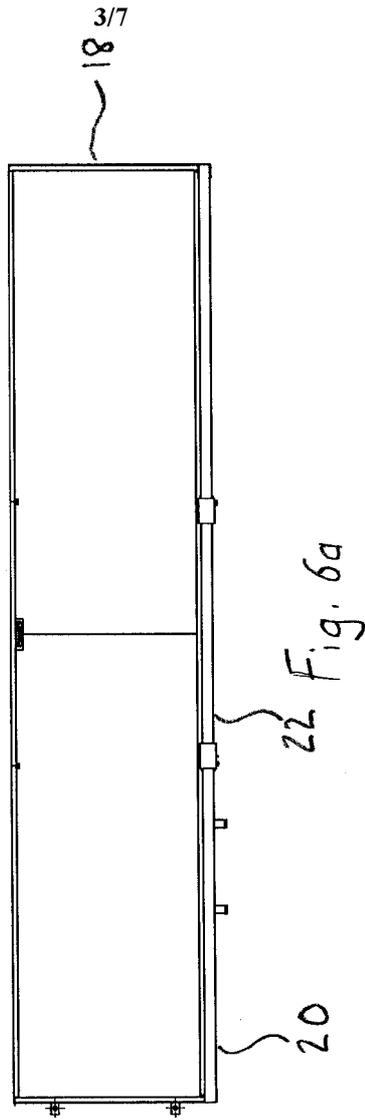
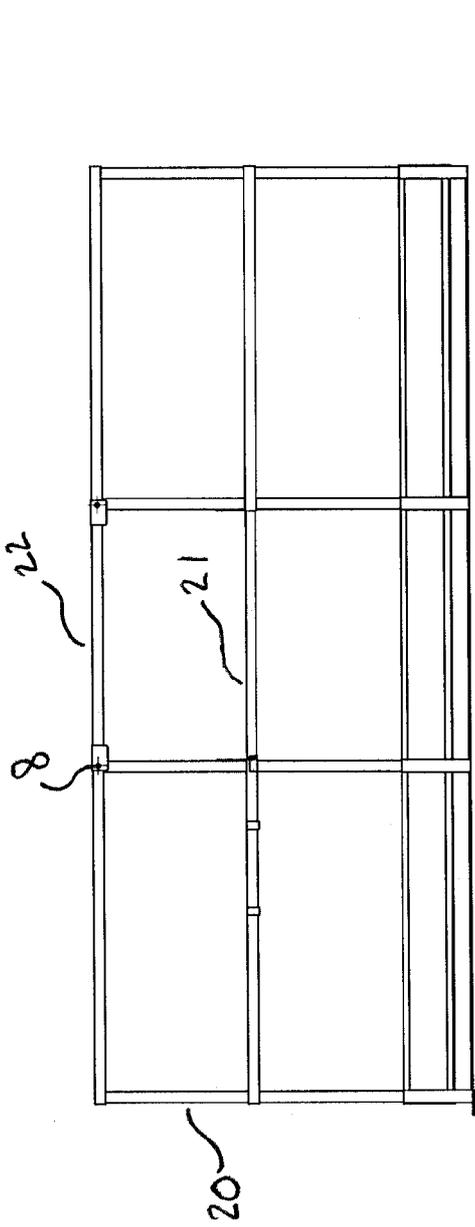


Fig. 2





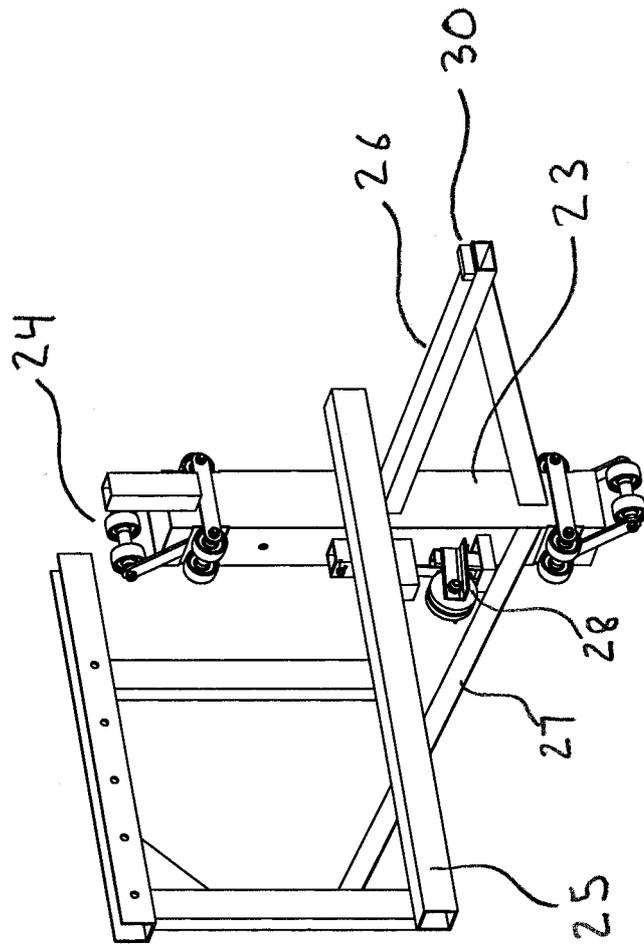


Fig. 7

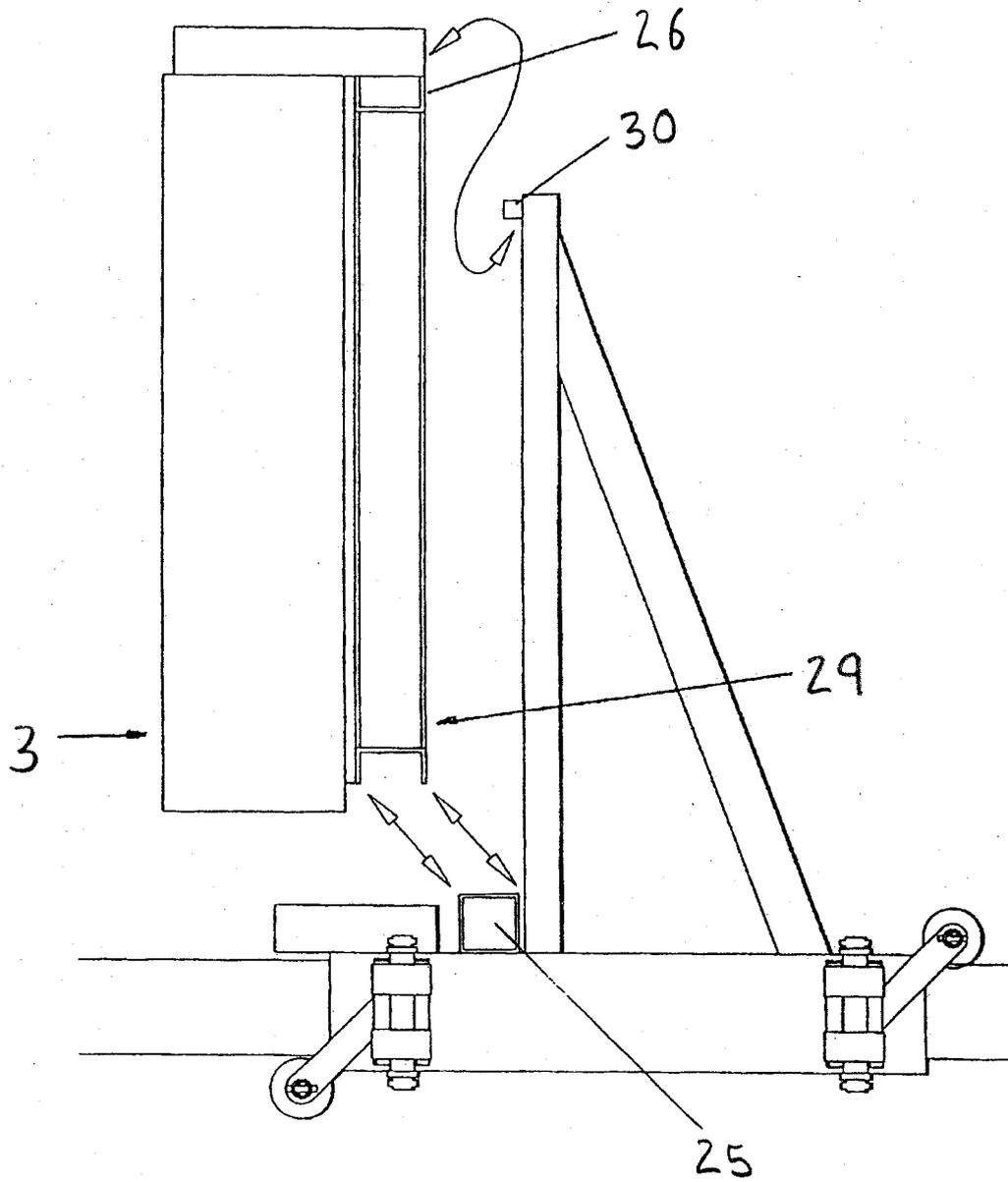
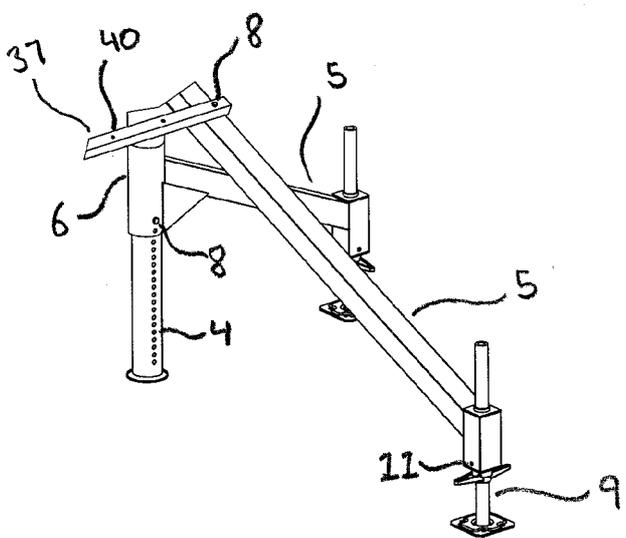
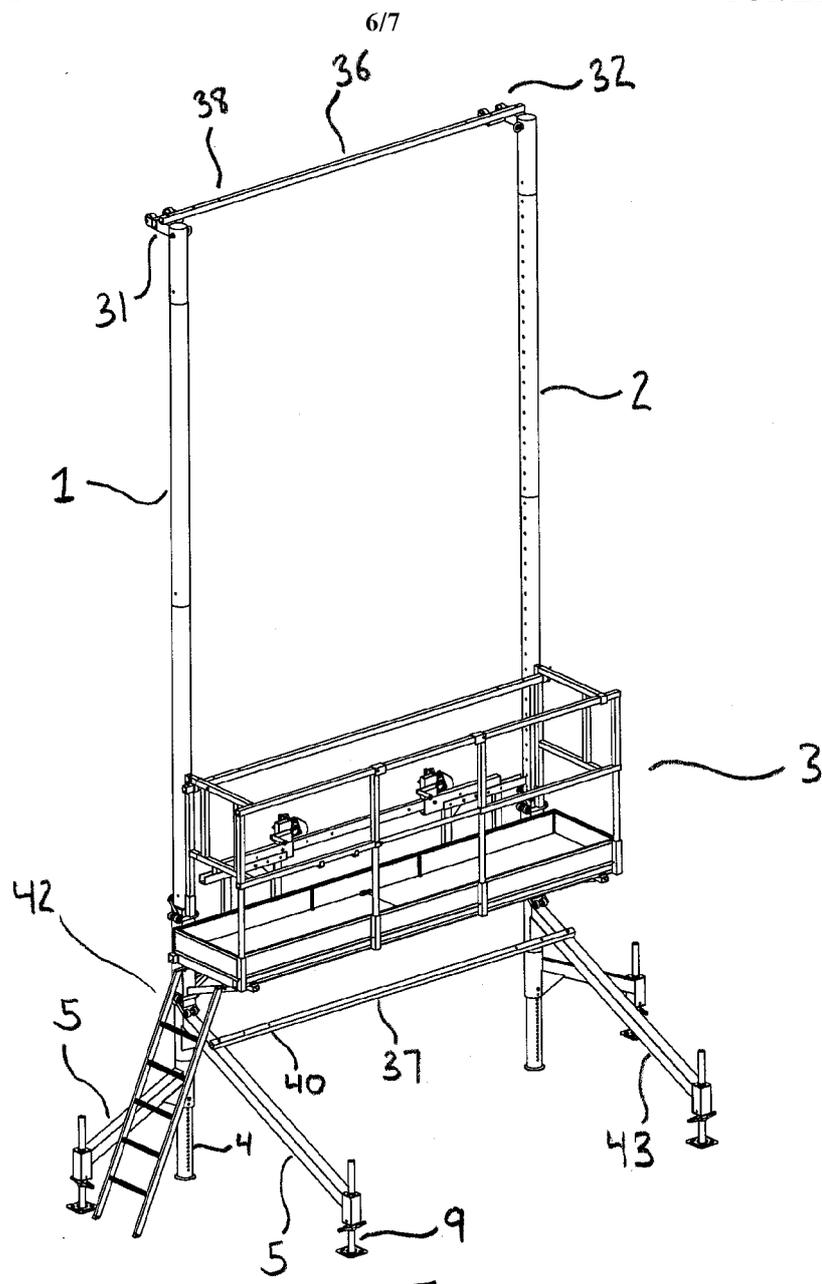


Fig. 8



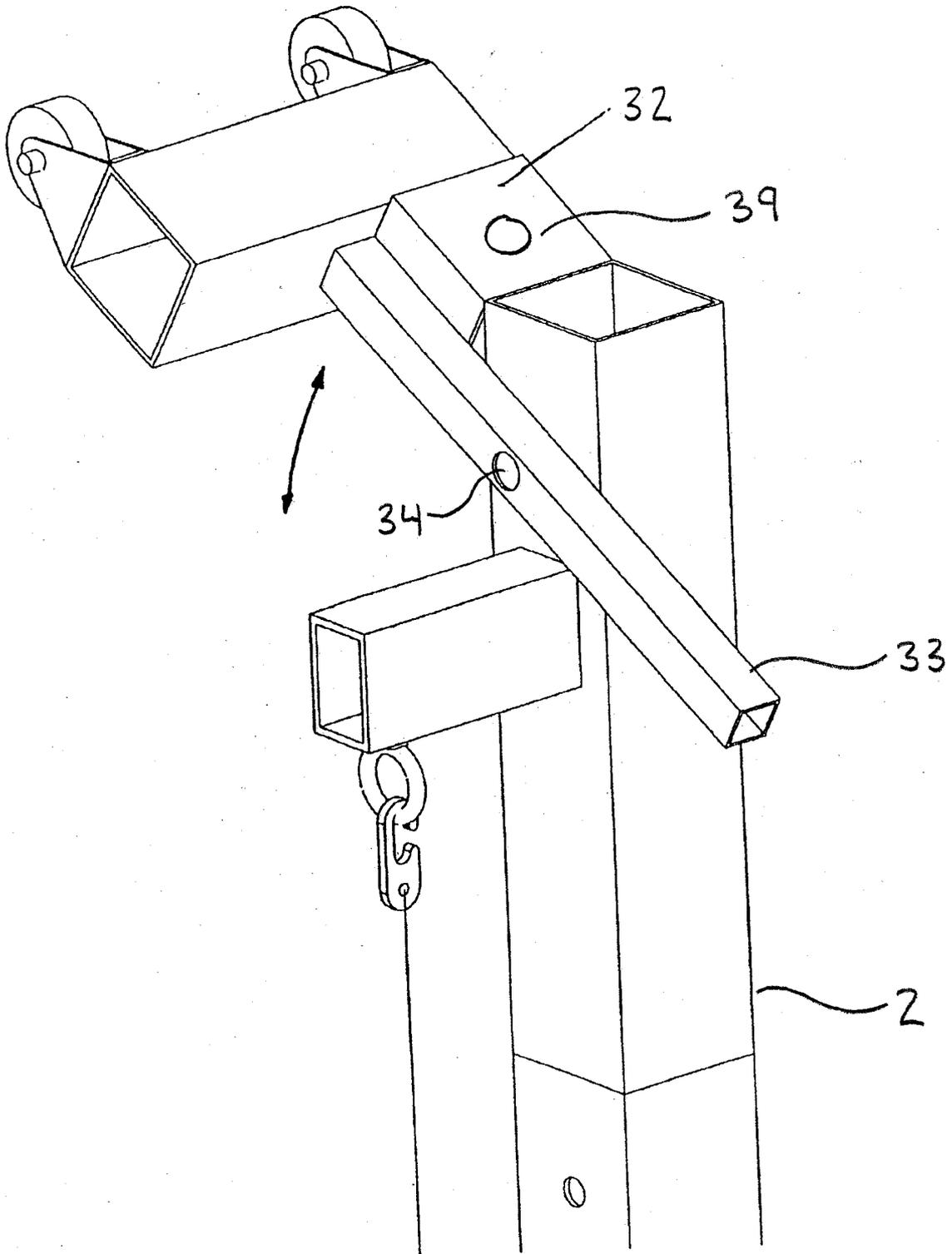


Fig. 11

**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/IB2009/007366

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. E04G1/20 E04G1/24

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
**E04G**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and where practical search terms used)  
**EPO-Internal**

**C DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to claim No
X	US 5 271 482 A (WALZ LOWELL N [US]) 21 December 1993 (1993-12-21)	1-7
Y	column 3, line 27 - column 4, line 52; figures 1,2,13	8-25
X	FR 2 686 110 A (MACC BATIMENT SA [FR]) 16 July 1993 (1993-07-16)	1,4,6,9
Y	page 3, line 52 - page 9, line 203; figures	10-20, 22,24
X	FR 1 338 284 A (CHALABREYSSE MARCEL [FR]) 20 September 1963 (1963-09-20) the whole document	1,4,6
Y	NL 1 026 646 C2 (RUITER HARM JAN DE [NL]) 19 January 2006 (2006-01-19) figures 1-3	8,21,23, 25
	-/~	

Further documents are listed in the continuation of Box C

See patent family annex

\* Special categories of cited documents

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

23 February 2010

Date of mailing of the international search report

04/03/2010

Name and mailing address of the ISA/  
European Patent Office, P B 581 8 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel (+31-70) 340-2040  
Fax (+31-70) 340-3016

Authorized officer

Scharl, w i l l i b a l d

**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/IB2009/007366

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Y	DE 101 07 781 A1 (HYMER LEICHTMETALLBAU [DE] ) 5 September 2002 (2002-09-05) abstract; figures -----	9-17
Y	FR 2 607 535 A (TROUILLET ANDRE [FR] ) 3 June 1988 ( 1988-06-03) abstract ; figure 1 -----	17,21
A	US 5 456 334 A (BRIGNAC LOUIS [US]) 10 October 1995 ( 1995-10-10) abstract ; figures 1-3 -----	1,9, 17

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/IB2009/007366

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5271482	A	21-12-1993	NONE	
FR 2686110	A	16-07-1993	NONE	
FR 1338284	A	20-09-1963	NONE	
NL 1026646	C2	19-01-2006	NONE	
DE 10107781	A1	05-09-2002	NONE	
FR 2607535	A	03-06-1988	NONE	
US 5456334	A	10-10-1995	NONE	