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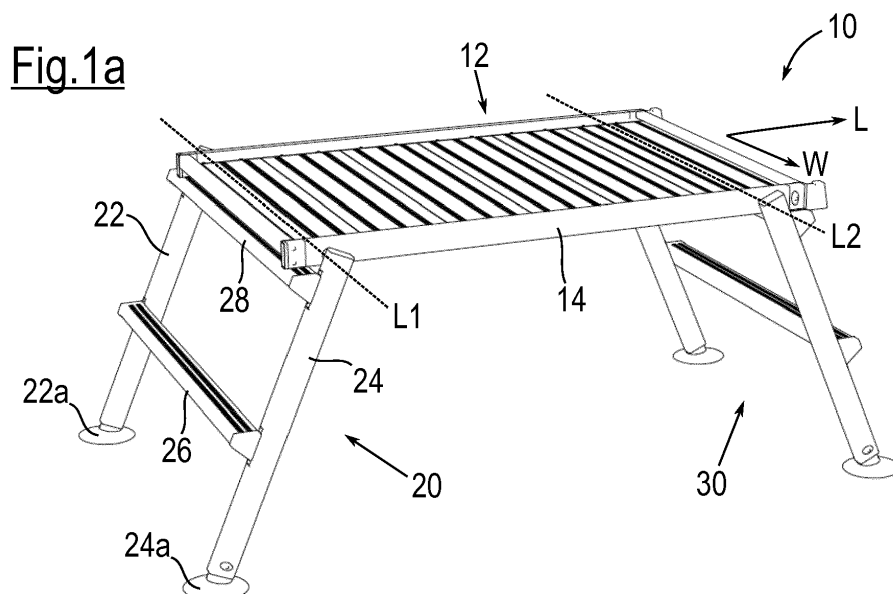
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(54) **WORKING PLATFORM DEVICE**

(57) The present invention relates to a working platform device for use on even and uneven surfaces (S), comprising a substantially planar central platform section (12) with a longitudinal direction (L) and a lateral direction (W), and a first and a second leg arrangement (20, 30) each comprising at least one foot section (22a, 24a) for resting on a surface (S) below the central platform section (12) and a mounting section opposite to the foot section (22a, 24a) for mounting the respective leg arrangement (20, 30) to the central platform section (12), wherein the first and the second leg arrangements (20, 30) are each

pivotably mounted to the central platform section (12), with their respective pivot axes (L1, L2) each oriented parallel to the lateral direction (W) of the central platform section (12) and positioned on opposing sides with respect to the longitudinal direction (L) of the central platform section (12) and allowing a pivoting motion of the respective leg arrangement (20, 30) between a rest position in which it is substantially oriented in the plane of the central platform section (12), and at least one working position, in which it extends away from the central platform section (12).



**Description**

**[0001]** The present invention relates to a working platform device for use on even and uneven surfaces.

**[0002]** Various kinds of working platforms have been known in the art in order to provide users thereof with the possibility to climb and stand on them to be able to reach heights and positions otherwise inaccessible to them. For this purpose, a substantially planar platform section which can be arranged such that its plane is substantially oriented horizontally is required as a basic component of such working platform devices.

**[0003]** Previously, two main types of working platform devices have been in use, namely a first one for use on even (flat) surfaces and a second one for use on uneven surfaces, such as staircases. Working platform devices for even surfaces have been constructed in a similar manner as tables with a number of legs in order to provide a secure positioning on the underlying surface and with the central platform section oriented horizontally between the multiple legs, often in a height-adjustable manner.

**[0004]** On the other hand, working platform devices for use on uneven surfaces such as staircases are also known, in which the planar platform section itself can come into contact with a part of the surface, such as a first step, while on the other side of the central platform device, there are again provided one or more legs in order to comply for the height difference between the first step on which the central platform section is resting and another step on which the legs are supposed to be positioned and which lies at a lower level than the first stair.

**[0005]** While both types of working platform devices can provide their users with a secure stand and reliable position to work from, they however lack flexibility, since none of them is capable to be used on both even and uneven surfaces, such that users who wish to alternately position a working platform on both even and uneven surfaces need to own multiple such devices.

**[0006]** It is therefore the object of the present invention to provide a working platform device which can be used both on even and uneven surfaces while remaining easy to handle, cheap to manufacture and compact, especially in a configuration for storing.

**[0007]** For this purpose, the working platform device according to the present invention comprises a substantially planar central platform section with a longitudinal direction and a lateral direction, and a first and a second leg arrangement each comprising at least one foot section for resting on a surface below the central platform section and a mounting section opposite to the foot section for mounting the respective leg arrangement to the central platform section, wherein the first and second leg arrangements are each pivotably mounted to the central platform section, with their respective pivot axes each oriented parallel to the lateral direction of the central platform section and positioned on opposing sides with respect to the longitudinal direction of the central platform section and allowing a pivoting motion of the respective leg arrangement between a rest position in which it is substantially oriented in the plane of the central platform section, and at least one working position, in which it extends away from the central platform section.

**[0008]** It is the merit of the inventors of the present invention to have found that by providing two leg arrangements which are each pivotably mounted to the central platform section for pivoting between a rest position in which they are aligned with the central platform section and at least one working position in which they extend away from the central platform section, use-cases on both, even and uneven surfaces, can be covered with a single working platform device by pivoting either only one of the leg arrangement into its working position, or indeed both of them.

**[0009]** In a further development, the working platform device according to the invention may further comprise a third leg arrangement for resting on a surface substantially in an extension of the plane of the central platform section, which third leg arrangement is linearly displaceable between a rest position in which it is substantially confined within the central platform section, and at least one working position, in which it extends away from the central platform section along the longitudinal direction of the central platform section. By providing said third leg arrangement, an extension of the central platform section is provided in order to be able to support it on a surface in the extension of the plane of the central platform section yet outside its usable area. Thus, the flexibility of the working platform according to the invention is increased even further and even more use-cases can be covered by it.

**[0010]** In one embodiment, the third leg arrangement is comprised of two legs, which are individually displaceable between their rest and working positions and located at opposite sides of the central platform section with respect to the lateral direction of the central platform section. By providing two legs, one at each side in the lateral direction of the central platform section, the third leg arrangement can provide for a secure positioning of the working platform device on many kinds of uneven surfaces, for example also on staircases which have a curvature or corners, such that the extension of the two legs of the third leg arrangement can individually be adjusted suitably for them to securely rest at designated positions on the uneven surface. However, in an alternative embodiment, the third leg arrangement could also comprise just one single leg, which on its distal end with respect to the central platform section may comprise a foot section in form of a bar which extends in a direction parallel to the plane of the central platform section. Also, a number of legs greater than two could be provided for the third leg arrangement in order to increase the stiffness and load capacity of the device.

**[0011]** In a similar manner, at least one of the first and second leg assemblies of the working platform device according

to the invention may comprise two legs, which are connected by at least one connection portion for joint pivoting around the respective pivot axis, wherein the two legs in the rest position of the respective leg arrangement are positioned laterally outside on both sides of the central working platform.

**[0012]** Even though this embodiment is especially simple to manufacture and to use, there are also cases conceivable in which it might be beneficial to provide embodiments of the present invention in which at least one of the leg assemblies comprises a number of legs different from two, for example only a single one with a suitable foot section in order to guarantee a secure positioning of the device, or also more than two legs. Furthermore, each individual leg of at least one of the leg assemblies may individually be mounted to the central platform section in a pivotable manner such that for example one of the first and second leg assemblies may comprise two legs which are individually pivotable.

**[0013]** In cases in which individual pivoting of the two legs of the first and second leg assemblies is not required, these two legs can be pairwise connected by at least one connection portion for joint pivoting around their respective pivot axes, wherein in their respective rest position they may be positioned next to each other laterally outside on both sides of the central working platform.

**[0014]** By thus providing two connected pairs of legs which form the first and second leg assemblies and which in their rest positions are positioned next to one another just outside of the central platform section in its lateral direction, the working platform device according to the invention can be folded to the shape of a rectangle with minimal height, in order to become especially compact when not in use, such that improved handling of the device can be achieved.

**[0015]** Furthermore, at least one of the first, second and third leg assemblies may comprise a rung portion, which extends substantially parallel to the lateral direction of the central platform section. Said rung portion also contributes to the usability of the working platform device according to the invention since it assists a user in climbing from the underlying surface to the top of the central platform section. Furthermore, at least one of the rung portions may also serve as the connecting portion of the respective leg assembly if it is provided to the first and/or second leg assembly.

**[0016]** In order to further increase the flexibility of the working platform device according to the present invention, at least one of the first and second leg assemblies may comprise at least one length adjustment mechanism which allows for adjusting the distance between the respective pivot axis and foot section. Thus, the length of the legs of the respective leg assembly can be varied within a predetermined range by means of which effectively the height of the central platform section above the surface on which the foot sections of the leg assemblies rest when in use can be adjusted. While different kinds of length adjustment mechanisms might be used for this purpose, such as telescopic hollow tubes which could be clamped to each other at arbitrary relative positions, in order to guarantee a secure stand of the entire working platform device, it may be beneficial if one of the two telescopic tubes is provided with holes in predetermined intervals in which bolts also cooperating with a respective single hole in the other tube can be inserted for locking the tubes at predetermined relative positions.

**[0017]** In particular, when the at least one length adjustment mechanism comprises a locking mechanism for locking the foot section in at least two predetermined relative positions with respect to the respective pivot axis, such as by the hole and bolt mechanism just described, it can be guaranteed that multiple independently adjustable legs of a single leg assembly can all have the same length, such that the horizontal orientation of the central working platform can easily be achieved when the device is used on an even surface.

**[0018]** Furthermore, the working platform device according to the present invention may be arranged such that at least one of the first and second leg arrangements is provided with a locking mechanism for locking it in its rest and/or at least one of its working positions. Said locking mechanism, for example by being able to lock the respective leg arrangement in its rest position, can facilitate the handling of the working platform device when it is transported or stored since it will remain in its folded configuration when locked.

**[0019]** In an especially simple and reliable embodiment, the locking mechanism of the first and/or second leg arrangement may comprise an abutment face which restricts the pivot angle range of the respective leg arrangement and at which a component of the central platform section and a component of the respective leg assembly abut against each other. Thus, said abutment face may for example be arranged such that it restricts the pivot motion of the respective leg arrangement at an angle of a little over 90°, such that the leg arrangement becomes locked in its working position through the effect of the weight of the central platform section alone.

**[0020]** Additionally or alternatively, the locking mechanism of the first and/or second leg arrangement may also be arranged to allow a locking of the respective leg arrangement in at least two predetermined working positions. Said locking mechanism may in a similar manner as described above comprise a hole and bolt mechanism in order to lock the pivoting motion at certain pivot angles, alternatively or additionally to the above-mentioned abutment face.

**[0021]** In order to save weight and/or to improve the usability as well as to provide additional security measures for the persons using the working platform device according to the invention, the central platform section may at least partially be made from aluminum and/or comprise anti-slip linings and/or an elevated frame section.

**[0022]** As an additional security measure, at least one of the foot sections may comprise at least one suction cup such that the working platform device is not only held in place by its weight, but actively drawn to the surface it rests on.

**[0023]** In order to further improve the flexibility of the present invention, the working platform device may at its central

platform section further be provided with corrugations and/or a mounting unit for mounting external components such as ladders on it and/or with a level which helps in fine-tuning the horizontal positioning of the central platform section.

**[0024]** Additional features and advantages of the present invention will become even clearer from the following description of an embodiment when viewed together with the accompanying drawings. These drawings show:

5 Figures 1 a and 1 b: an embodiment of a working platform device according to the invention in a first working configuration;

10 Figures 2a and 2b: the embodiment in an illustrative configuration;

Figures 3a and 3b: the embodiment in a second working configuration; and

Figures 4a and 4b: the embodiment in a rest configuration.

15 **[0025]** In the following, multiple configurations of a working platform device 10 according to the invention are shown in figures 1 a to 4b. In particular, figures 1 a and 1 b relate to a first working configuration, figures 3a and 3b relate to a second working configuration and figures 2a and 2b relate to an illustrative configuration, which will not be used in practice but is only shown for illustrative purposes.

20 **[0026]** Said working platform device 10 may be made of aluminum or other metal materials and/or may comprise components made of suitable plastic materials. It comprises a substantially planer central platform 12 which on its upper surface may be provided with an anti-slip lining for a person to safely stand on or corrugations for holding a ladder and has a longitudinal direction L and a lateral direction W. The central platform section 12 also comprises an elevated frame member 14 which delimits its area on all four sides and which serves as a tactile boundary for a user who stands on the platform section 12 such that even when he/she works overhead he/she can still notice the boundaries of the working platform with his/her feet or in case of the positioning of a ladder on the platform section as a boundary such that the ladder cannot slip from the platform section.

25 **[0027]** The working platform device 10 furthermore comprises a first and second leg arrangement 20 and 30 which are constructed substantially identical and are pivotably mounted to the central platform section around pivot axes L1 and L2, respectively, by means of known hinge-joint means. Due to them being basically identical, in the following only the first leg arrangement 20 is described, while a detailed description of the second leg arrangement 30 is omitted.

30 **[0028]** The first leg arrangement 20 comprises two legs 22 and 24 which extend away from the pivot axis L1 and terminate in foot sections 22a and 24a. As can be seen for example in figure 2a, the foot sections 22a and 24a are telescopically inserted in tube sections of the respective legs 22 and 24 and thus length-adjustable and lockable by means of hole and bolt locking mechanisms 22b and 24b. By adjusting the length of the legs 22 and 24, the height of the platform section 12 over the surface S can be adjusted within a certain range, as can be seen when comparing figures 1b and 2b, in which two heights H1 and H2 are shown. Furthermore, the foot sections 22a and 24a are provided with suction cups in order to provide a tight stand of the working platform device 10 on the surface S.

35 **[0029]** As can also be seen in figures 1 a and 2a, the first leg arrangement 20 also comprises two rung portions 26 and 28, which are connecting the legs 22 and 24 for joint pivoting around the pivot axis L1. Furthermore, the first rung portion 26 serves as a step or rung for a user who wants to climb on or off the platform section 12, while the second rung portion 28 serves as part of an abutment face cooperating with the frame 14 of the central platform section 12 in order to lock the platform device 10 in the positions or configurations as shown in figures 1 a to 3b. This locking of the leg assembly 20 by means of the abutment of the rung portion 28 and the frame 14 relies solely on the weight of the platform section 12 and requires no additional parts.

40 **[0030]** As shown in figures 2a to 3b, the platform device 10 further includes a third leg arrangement 40, which in turn comprises two individual legs 42 and 44 which are telescopically integrated in the frame portion 14 of the central platform section 12 and can be pulled out of said frame 14 such that they can extend in the plane of the central platform section 12 away from said platform section 12. The two legs 42 and 44 are individually transferable into their working positions shown in figures 2a and 2b and can also be locked in a number of possible working positions with a similar hole and bolt mechanism as is used in the first and second leg arrangements 20 and 30.

45 **[0031]** The third leg arrangement 40 serves as a second contact area with the underlying surface in situations in which the working platform device 10 is to be positioned on uneven surfaces such as the staircase shown in figure 3b, for which purpose the two legs 42 and 44 at their respective ends also comprise foot sections with plastic caps in order to increase friction on the surface to prevent slipping. In the configuration shown in figures 3a and 3b, the second leg arrangement 30 is pivoted into its rest position and locked there by suitable locking means, in which rest position it is oriented in the plane of the central platform section, and in which its two legs are positioned to the left and to the right of the central platform section 12 in its width direction W.

50 **[0032]** Finally, in figures 4a and 4b all three leg arrangements 20, 30 and 40 are shown in their respective rest positions,

such that the first and second leg arrangements are pivoted into the plane of the central platform section 12, while the legs 42 and 44 of the third leg arrangement are retracted into the frame 14. As can be seen from figures 4a and 4b, the working platform device 10 is now in a very compact configuration of a rectangle with minimal height which is ideal for transporting and storing it.

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## Claims

1. Working platform device for use on even and uneven surfaces (S), comprising:

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- a substantially planar central platform section (12) with a longitudinal direction (L) and a lateral direction (W); and
- a first and a second leg arrangement (20, 30) each comprising at least one foot section (22a, 24a) for resting on a surface (S) below the central platform section (12) and a mounting section opposite to the foot section (22a, 24a) for mounting the respective leg arrangement (20, 30) to the central platform section (12),

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wherein the first and the second leg arrangements (20, 30) are each pivotably mounted to the central platform section (12), with their respective pivot axes (L1, L2) each oriented parallel to the lateral direction (W) of the central platform section (12) and positioned on opposing sides with respect to the longitudinal direction (L) of the central platform section (12) and allowing a pivoting motion of the respective leg arrangement (20, 30) between

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- a rest position in which it is substantially oriented in the plane of the central platform section (12), and
- at least one working position, in which it extends away from the central platform section (12).

2. Working platform device according to claim 1, further comprising a third leg arrangement (40) for resting on a surface substantially in an extension of the plane of the central platform section (12), which third leg arrangement (40) is linearly displaceable between

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- a rest position in which it is substantially confined within the central platform section (12); and
- at least one working position, in which it extends away from the central platform section (12) along the longitudinal direction (L) of the central platform section (12).

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3. Working platform device according to claim 2, wherein the third leg arrangement (40) is comprised of two legs (42, 44), which are individually displaceable between their rest and working positions and located at opposite sides of the central platform section (12) with respect to its lateral direction (L).

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4. Working platform device according to one of the preceding claims, wherein at least of the first and second leg assemblies (20, 30) comprises two legs (22, 24) which are connected by at least one connection portion (26, 28) for joint pivoting around the respective pivot axis (L1, L2), wherein the two legs (22, 24) in the rest position of the respective leg arrangement (20, 30) are positioned laterally outside on both sides of the central working platform (12).

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5. Working platform device according to claim 4, wherein both the first and the second leg assembly (20, 30) each comprises two legs (22, 24) which are connected by at least one connection portion (26, 28) for joint pivoting around the respective pivot axis (L1, L2), and which in their respective rest positions are positioned next to each other laterally outside on both sides of the central working platform (12).

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6. Working platform device according to one of the preceding claims, wherein at least one of the first, second and third leg assemblies (20, 30, 40) comprises a rung portion (26, 28), which extends substantially parallel to the lateral direction (W) of the central platform section (12).

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7. Working platform device according to claim 6 when dependent on at least claim 4, wherein one of the rung portions (26, 28) of the first and/or second leg assembly (20, 30) also serves as the connection portion (26, 28) of the respective leg assembly (20, 30).

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8. Working platform device according to one of the preceding claims, wherein at least one of the first and second leg assemblies (20, 30) comprises at least one length adjustment mechanism (22b, 24b) which allows for adjusting the distance between the respective pivot axis (L1, L2) and foot section (22a, 24a).

9. Working platform device according to claim 8, wherein the at least one length adjustment mechanism (22b, 24b)

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comprises a locking mechanism for locking the foot section (22a, 24a) in at least two predetermined relative positions with respect to the respective pivot axis (L1, L2).

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10. Working platform device according to one of the preceding claims, wherein at least one of the first and second leg arrangements (20, 30) is provided with a locking mechanism for locking it in its rest and/or at least one of its working positions.
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11. Working platform device according to claim 10, wherein the locking mechanism of the first and/or second leg arrangement (20, 30) comprises an abutment face (14, 28) which restricts the pivot angle range of the respective leg arrangement (20, 30).
- 15
12. Working platform device according to claim 10 or 11, wherein the locking mechanism of the first and/or second leg arrangement (20, 30) is arranged to allow a locking of the respective leg arrangement (20, 30) in at least two predetermined working positions.
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13. Working platform device according to any of the preceding claims, wherein the central platform section (12) is at least partially made from aluminium and/or comprises anti-slip linings and/or an elevated frame section (14).
- 25
14. Working platform device according to any of the preceding claims, wherein at least one of the foot sections (22a, 24a) comprises at least one suction cup.
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15. Working platform device according to one of the preceding claims, wherein the central platform section (12) is provided with corrugations and/or a mounting unit for mounting external components such as ladders on it and/or with a level.
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Fig.1a

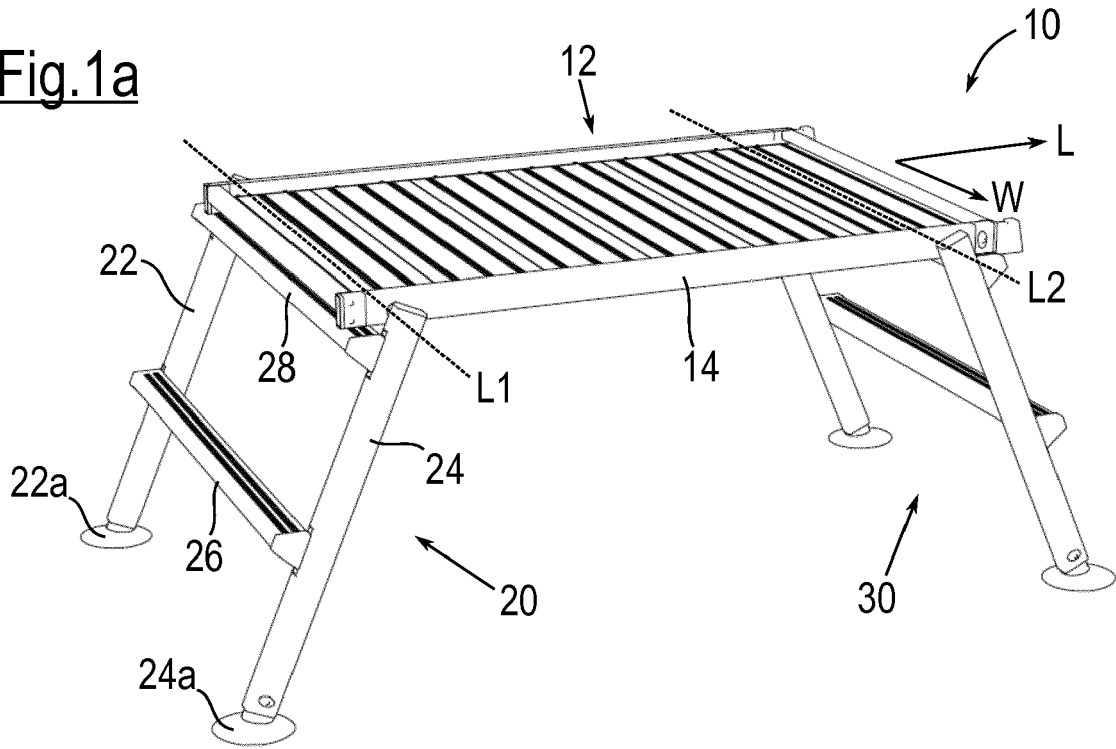


Fig.1b

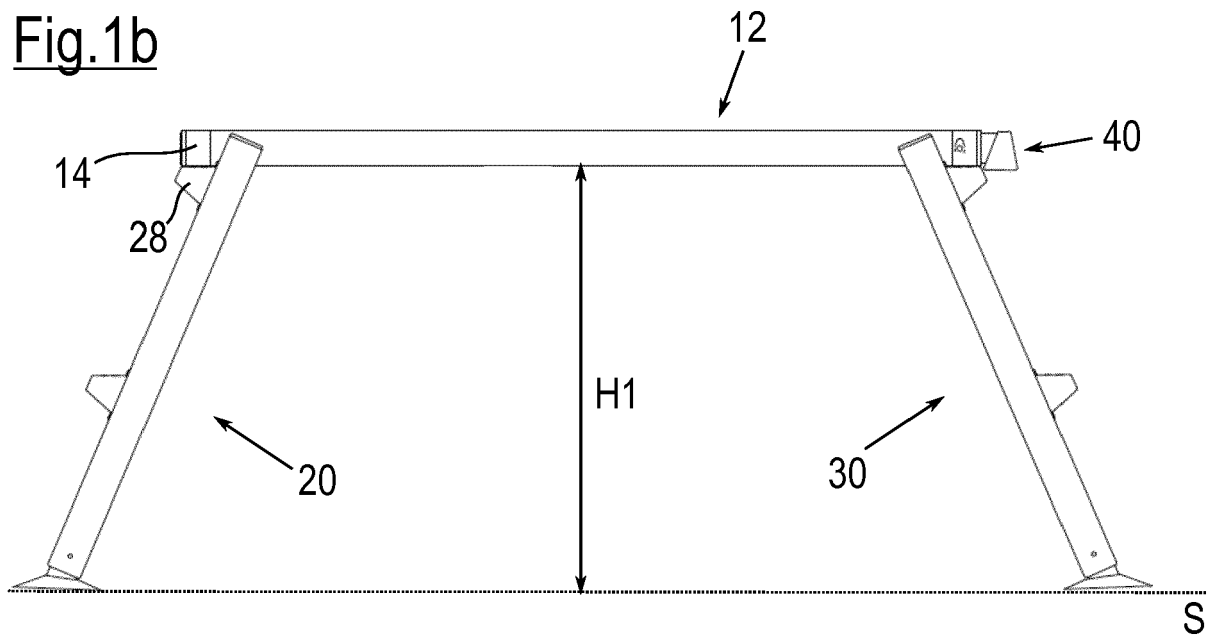


Fig.2a

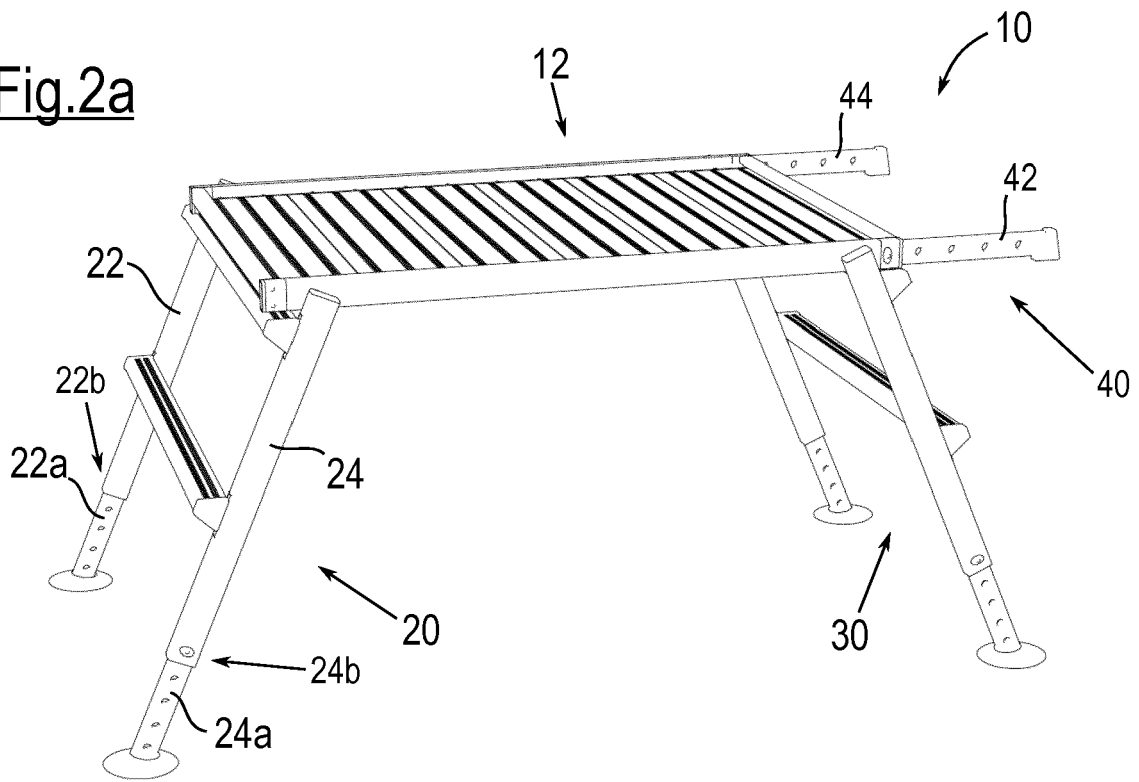


Fig.2b

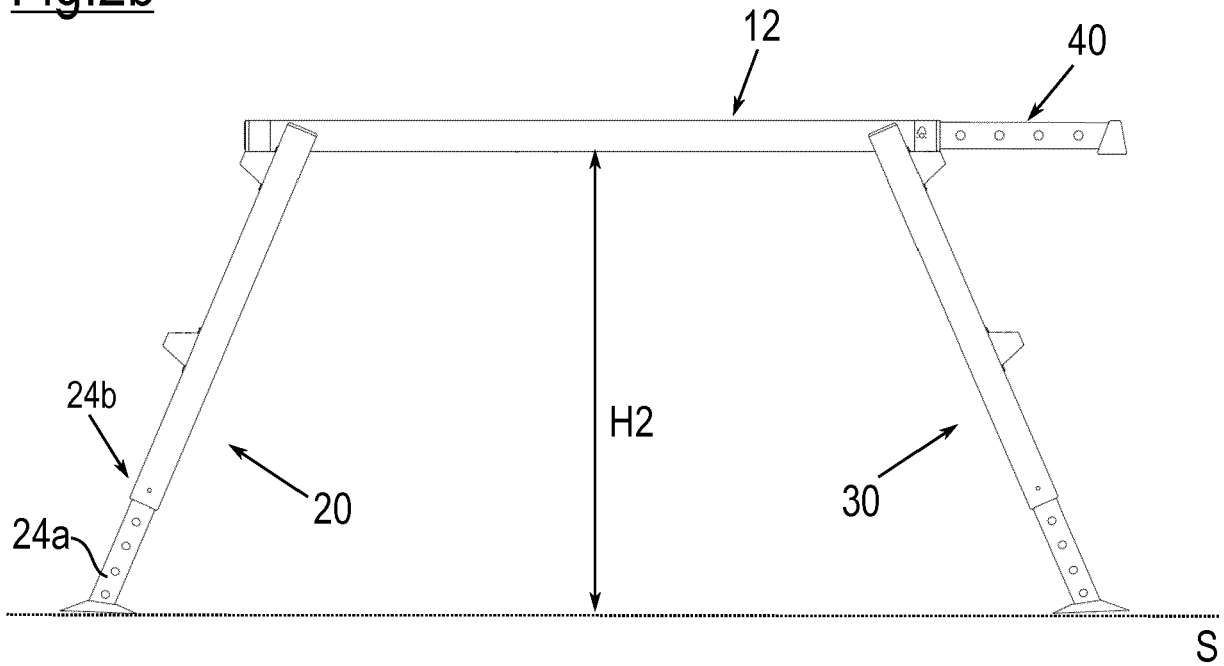


Fig.3a

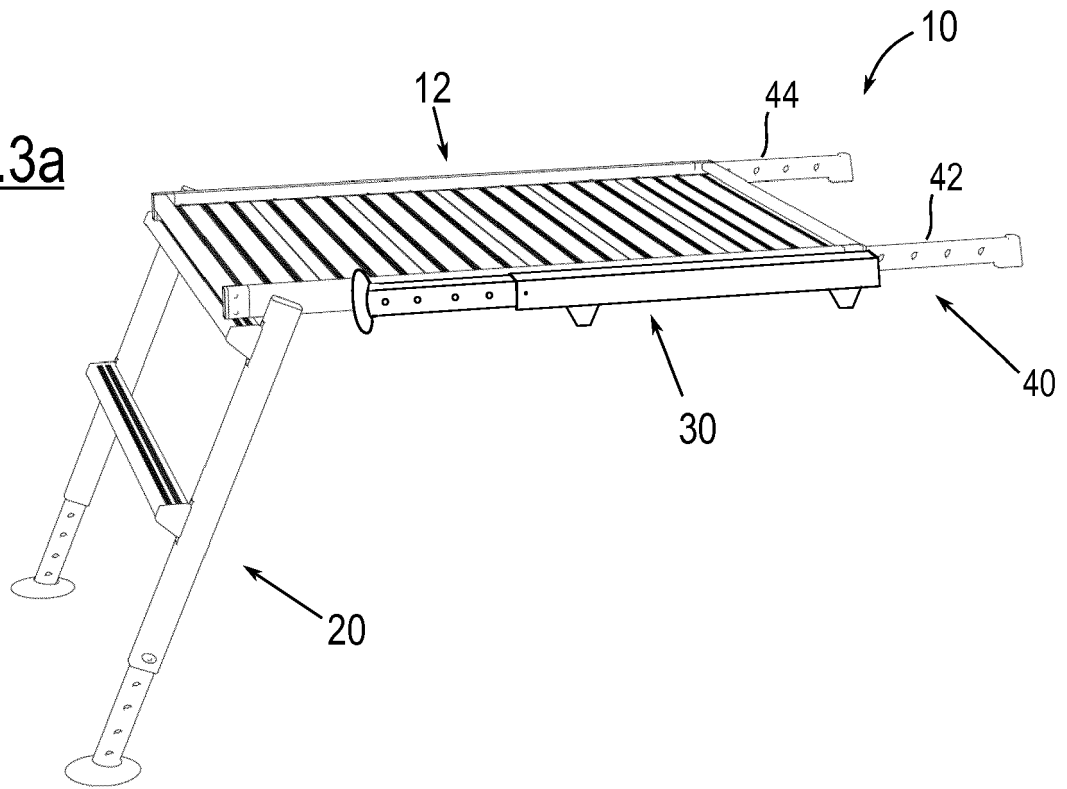


Fig.3b

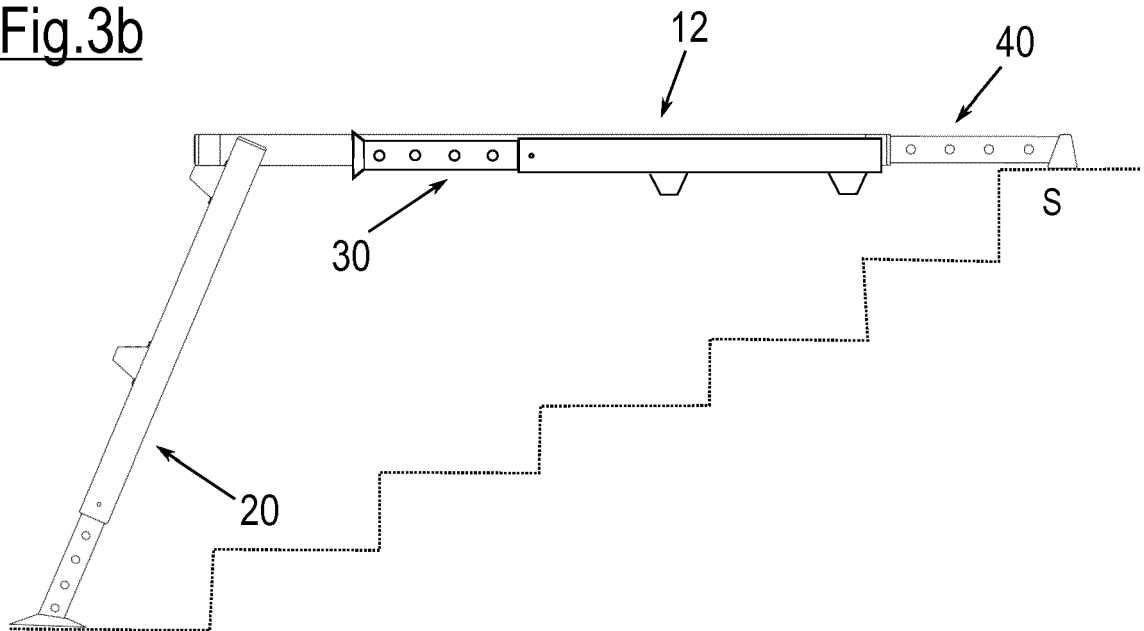


Fig.4a

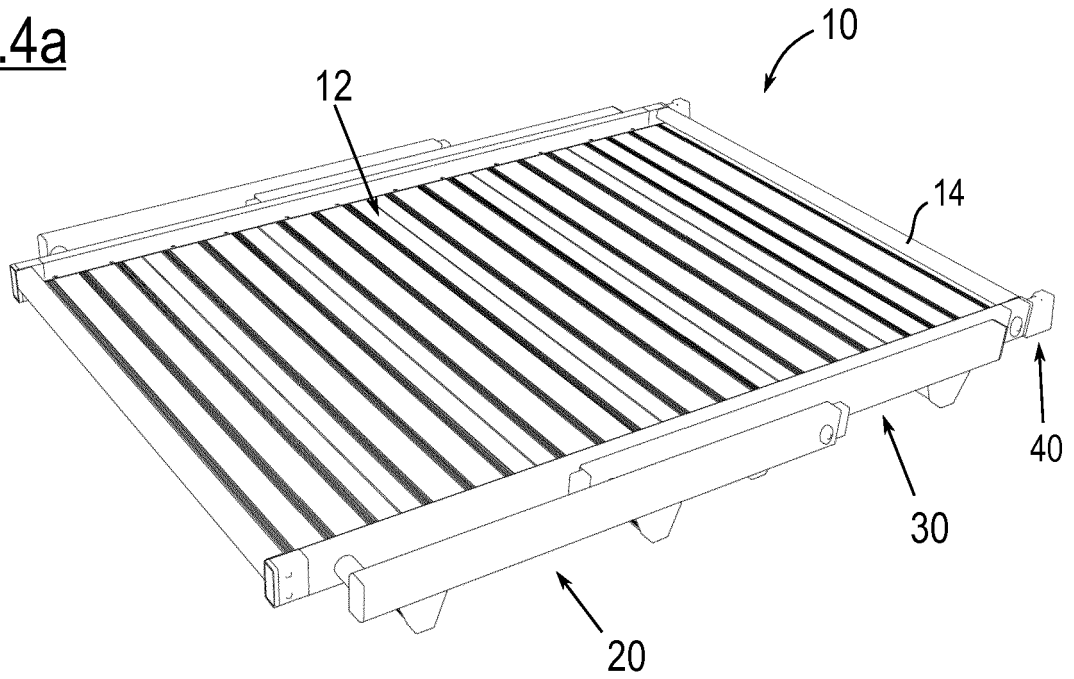
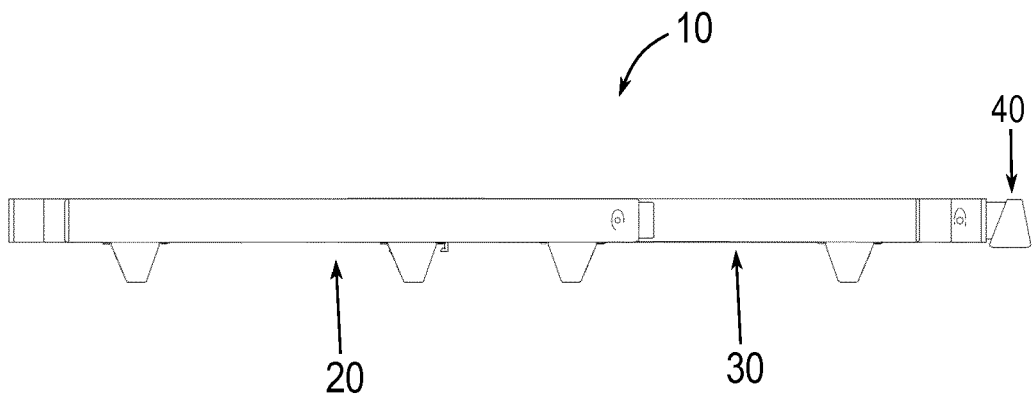


Fig.4b





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Application Number  
EP 18 16 9036

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