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(54) Sliding loading platform for construction

(57) The invention refers to a metal structure designed to be used as a sliding platform on a support base, so that in working position, the platform projects from the façade line to load construction materials with the aid of a crane, and once the platform is loaded, it slides towards the interior, on the aforementioned support base, so that the workers can unload the materials from inside the construction site with greater safety than other known platforms.

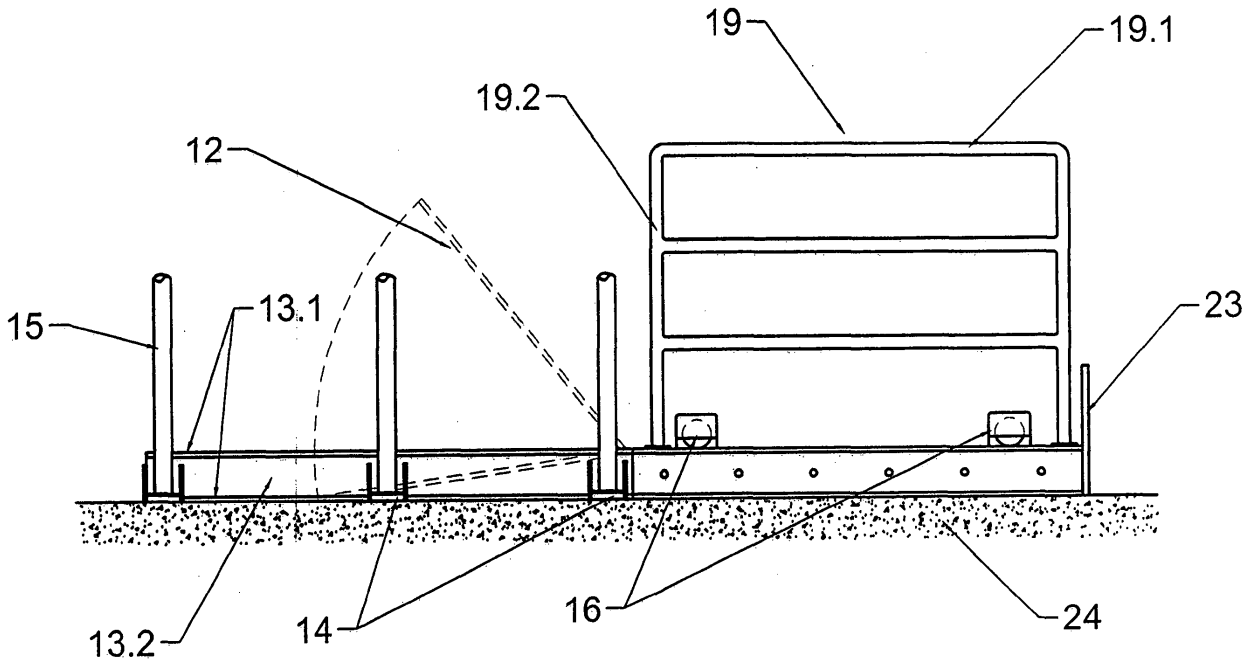

Fig. 2

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Description

Object of the Invention

[0001] More specifically the invention refers to a metal structure designed to be used as a sliding platform on a support base, so that in working position, the platform projects from the façade line to load construction materials with the aid of a crane, and once the platform is loaded, it slides towards the interior, on the aforementioned support base, so that the workers can unload the materials from inside the construction site with greater safety than other known platforms.

State of the Art.

[0002] On the market there are, and therefore can be considered as state of the art, a collection of platforms called sliding, which comprise a support formed by a metal structure with longitudinal beams and cross members which is secured to the flooring of the building in construction, and a sliding platform which moves longitudinally with regard to the support base, forward and backward. Designed, with the aid of one or more cranes, to unload construction material from a lorry, or from the ground of the building, and then move them to the sliding platform.

[0003] Once this platform is loaded, it moves backward until it is inside the building in construction, the material being with the aid of a transpallet or similar device. The operation of these platforms is totally manual, and its side bases have safety railings.

[0004] The Utility Model No. 200701313 of the same holder describes and claims "An improved sliding platform for construction works", which is comprised of a moving platform, and a fixed platform, the first slides over the second with wheels which run along longitudinal beams on the fixed platform, its movement being limited by stops, which are welded to the ends of the longitudinal beams.

[0005] To avoid accidents, existing sliding platforms are protected at their longer lateral bases with the corresponding railings, although these platforms have no railings on their shorter sides, so that when the sliding platform is extended to pick up the load, it is possible for workers to be on the sliding platform, which at its shorter base facing the façade is totally unprotected, with the resulting danger for the aforementioned workers of falling off if they trip or are distracted and pass the line of the façade.

Scope of the Invention.

[0006] To increase the safety of the sliding platform, so that it incorporates a set of measures which will avoid accidents at the construction site, which include a set of totally mechanical safety devices, of totally manual operation but of great strength and operability, which avoid both breakage and misuse of the same, and which generate insecurity on the platform when they do not do what they were designed for.

[0007] The contribution to known state of the art are the safety devices in this invention, which consist of means to avoid workers accessing the sliding platform when it is extended, as well as movement devices for safety railings between the sliding platform and the support base and which operate when the sliding platform is extended and ready to receive load.

Description of the Invention.

[0008] The sliding platform is a body formed by a metal structure, comprising two main parts, a support base that is secured to the flooring by suitable means, and a moving platform which slides over the previous, as described below.

[0009] The support base is formed by two double "T" sections welded to reinforcement sections in such a manner that these double "T" sections remain parallel to each other, and the wings of these sections act as tracks for the platform to slide on, which incorporates in its upper part boxes close to its four corners, inside of which are the wheels, which enable the horizontal sliding movement of the platform with regard to the support base.

[0010] The aforementioned double "T" sections incorporate fixed protective side railings, and means to immobilise the sliding platform to the support base, transversal protective railings, supports along these double "T" sections which facilitate the immobilization of the sliding platform to the floor by means of the corresponding securing props, vertical pivots that work in collaboration with horizontal pivots located at the lower part of the transversal railings.

[0011] Additionally, the sliding platform incorporates a means to lock the moving platform with regard to the support base, which comprise bolts that are housed in orifices made in the moving platform and the support base.

[0012] Another of the aims of the invention is the possibility of having a foldable platform, which in the moving platform loading position acts as a railing, occupying a vertical position with regard to the moving platform, which together with the transversal railings impedes access to the moving platform when loading it.

[0013] Other details and characteristics shall be shown throughout the description below referring to drawings attached to this report which are shown for illustrative but not limiting purposes only in a drawing of the invention.

Description of the drawings.

[0014]

Figure 1 is a top plan view of the sliding loading platform (10), which gives a schematic view of the support base formed by longitudinal sections (13), on

which the moving platform (11) slides and a tipping platform (12).

Figure 2 is a side elevation view of the sliding platform (10), in which the protective side railing can be seen (19) which is secured to the moving platform (11).

Figure 3 is a front elevation view of the sliding platform (10) showing the transversal tipping railings (20), with the pivots (22), and the safety lock (21).

Figure 4 is a front elevation view of an angular support (14), which is welded to the longitudinal sections (13) one of its faces and on which the ends of the posts rest (15), with the aid of a bolt (14.3).

Figure 5 is a front elevation view of the angular support (14) without the safety post (15).

Figure 6 is a cross elevation section of the sliding platform (10), by A-A' according to Figure 1.

Figure 7 is a detail by "1" according to Figure 1.

Figure 8 is a perspective view of the means to lock and immobilise the platform (10).

[0015] Below is a detailed list of the different parts of the invention that are displayed by numbers in the above illustrations; (10) sliding platform, (11) moving platform, (12) foldable platform, (13) longitudinal sections, (13.1) wings, (13.2) central rib, (13.3) orifice, (14) support, (14.1) arms, (14.2) base, (14.3) pivot, (15) post, (16) box, (16.1) wheels, (17) pivot, (18) catch, (18.1) handle, (18.2) shaft, (18.3) spring, (19) side railing, (19.1) longitudinal beams, (19.2) props, (19.3) supports, (20) transversal railings, (20.1) longitudinal beams, (20.2) props, (21) support base, (22) sections, (23) reinforcement sections, (24) flooring plane, (25) bolts, (26) chain, (27) ring, (28) hand grips, (29) lock, (30) pivots.

Description of an embodiment of the invention.

[0016] In one of the embodiments of the invention, as can be seen in figure 1, the sliding platform (10) comprises:

- A moving platform (11).
- A support base (21).
- A foldable platform (12).

[0017] The moving platform (11) is formed by a metal structure with two double "T" sections (13), the wings (13.1) of which the upper, see figure 7, serves as a track for the wheels (16.1) fitted in the boxes (16), which turn on a horizontal axle. The boxes (16) are secured close to the corners of the moving platform (11), and sliding by the same on these sections (13), as can also be seen in figure 2.

[0018] The support base (21) on which the moving platform is supported (11) comprises sections (13) which are maintained at a certain distance, the width of the platform (13) with the aid of smaller reinforcement sections (23), and the boxes (16) are welded to said moving platform (11) partially, as can be seen in figure 1.

[0019] The platform (10) is secured to the flooring plane (24) with the aid of supports (14) which as can be seen in figures 1 and 2, are welded to the sections (13), with a configuration as displayed in figures 4 and 5 in "U"-shaped base (14.2) and vertical arms (14.1), with a pivot (14.3) on the base (14.2), on which a post (15) rests, whose upper end (not represented in the figures) rests on the upper framework.

[0020] The platform (10) has protections to avoid workers handling this sliding platform (10) to fall off, see figures 2 and 3, these means of protection comprise, among others:

- Side railings (19).
- Transversal railings (20).

[0021] The side railings (19), see figure 2, comprise longitudinal beams (19.1) which are welded to the props (19.2), the railing (19) in turn is joined by any known means to the platform (11) by means of the supports (19.3), as can be seen in figure 1.

[0022] The transversal movable railings (20) are fitted on support base by means of the props (20.2), as can be seen in figure 3, and at the lower side of the props (20.1) some pivots (30) are welded which work in collaboration with other vertical pivots (17) welded to the boxes (16) as can be seen in figure 1, so that when the moving platform (11) advances to the exterior of the building, the pivot (30) on hitting the pivot (17) makes the railings (20) turn approximately 90°, and the railings (20) are parallel to the sections (13), until the moving platform (11) is overhanging.

[0023] When the moving platform (11) moves inside, the reverse operation takes place, so that the platform (11) with the load has the railings (22) behind avoiding the operator being in the line of the façade without protection.

[0024] Another feature of the invention is the foldable platform (12) that is a sloping plane in resting position as represented in figure 2, so that forklifts and transpallets can operate on the sliding platform (10), without any problem or interference due to steps or steep slopes, so that thanks to its slight slope, when the transpallet goes up the platform (12) its arms are located under the pallet, containing construction material, and this is lifted and may be removed from the moving platform.

[0025] In addition, and to improve safety on the foldable platform (12) and avoid it turning freely by the support base (21), a catch (18) has been designed which, as can be seen in figure 7, has a hollow body (18.4) with a handle (18.1) welded to a vertical shaft (18.2) with a spring (18.3) which surrounds the shaft (18.2), so that when the operator wishes to move the moving platform (12) he lifts the shaft (18.2), and the moving platform (12) is unlocked when this shaft (18.2) leaves its orifice (13.3), and it can be locked again (12) in said orifice (13.3) in the desired point, freeing the shaft (18.2) in the other orifice (13.3)

located in front of or behind the previous one.

[0026] In loading position, the foldable platform (12) is perpendicular to the plane of the flooring plane (24) offering supplementary protection to the operator, who cannot access the moving platform (11), finding the platform (12) vertical with the transversal railings (20) perpendicular to the sections (13).

[0027] Having sufficiently described this invention using the figures attached, it is easy to understand that any modification may be made to the detail which may be deemed to be appropriate, whenever these changes do not alter the essence of the invention summarised in the following claims.

Claims

1. **"SLIDING LOADING PLATFORM FOR CONSTRUCTION WORKS"** formed by a moving platform which slides on a support base which is secured to the flooring plane, where this sliding platform is fitted, **characterized by** the fact that the moving platform (11) comprises a flat plate or moving platform (11) welded to sections (22), with the moving platform (11) sliding on double "T" sections (13) located parallel to each other thanks to reinforcement sections (23), the moving platform (11) incorporating a folding platform (12) which can turn with regard to the moving platform (11), some means to impede access to the moving platform (11) when loading, means for immobilising the moving platform (11) to the support base (21), and means to protect the user against falling.

2. **"SLIDING LOADING PLATFORM FOR CONSTRUCTION WORKS"** according to the claim 1 **characterized by** the fact that the moving platform (11) incorporates four boxes (16) close to its four corners welded to the platform in its upper plane, with wheels (16.1) inside the boxes.

3. **"SLIDING LOADING PLATFORM FOR CONSTRUCTION WORKS"** according to the claim 1 **characterized by** the fact that the support base (21) is formed by double "T" metal sections (13) parallel to each other at about the same distance from the moving platform (11), by reinforcement sections (23).

4. **"SLIDING LOADING PLATFORM FOR CONSTRUCTION WORKS"** according to the claim 1 **characterized by** the fact that the platform (10) has protections to avoid workers handling this moving platform (11) to fall off, such as the side railings (19) transversal railings (20).

5. **"SLIDING LOADING PLATFORM FOR CONSTRUCTION WORKS"** according to the claims 1 and 4 **characterized by** the fact that the side railings (19) comprise longitudinal beams (19.1) which are welded to the props (19.2), the railing (19) in turn is joined by any known means to the platform (11) by means of the supports (19.3).

6. **"SLIDING LOADING PLATFORM FOR CONSTRUCTION WORKS"** according to the claim 1 **characterized by** the fact that the transversal movable railings (20) are fitted on support base (21) by means of the props (20.2), and at the lower side of the props (20.1) some pivots (30) are welded which work in collaboration with other vertical pivots (17) welded to the boxes (16), so that when the moving platform (11) advances to the exterior of the building, the pivot (30) on hitting the pivot (17) makes the railings (20) turn approximately 90°, and the railings (20) are parallel to the sections (13), until the moving platform (11) is overhanging, and when the moving platform (11) moves inside, the reverse operation takes place, so that the platform (11) with the load has the railings (22) behind.

7. **"SLIDING LOADING PLATFORM FOR CONSTRUCTION WORKS"** according to the claim 1 **characterized by** the fact that to avoid the platform (11) sliding freely by the support base (21), a catch (18) has been designed which has a hollow body (18.4) with a handle (18.1) welded to a vertical shaft (18.2) with a spring (18.3) which surrounds the shaft (18.1), so that when the operator wishes to move the sliding platform (11) he lifts the shaft (18.2), and the moving platform (11) is unlocked when this shaft (18.2) leaves its orifice (13.3), and it can be locked again (11) on the sections (13) in the desired point, freeing the shaft (18.2) in the other orifice (13.3) located in front of or behind the previous one.

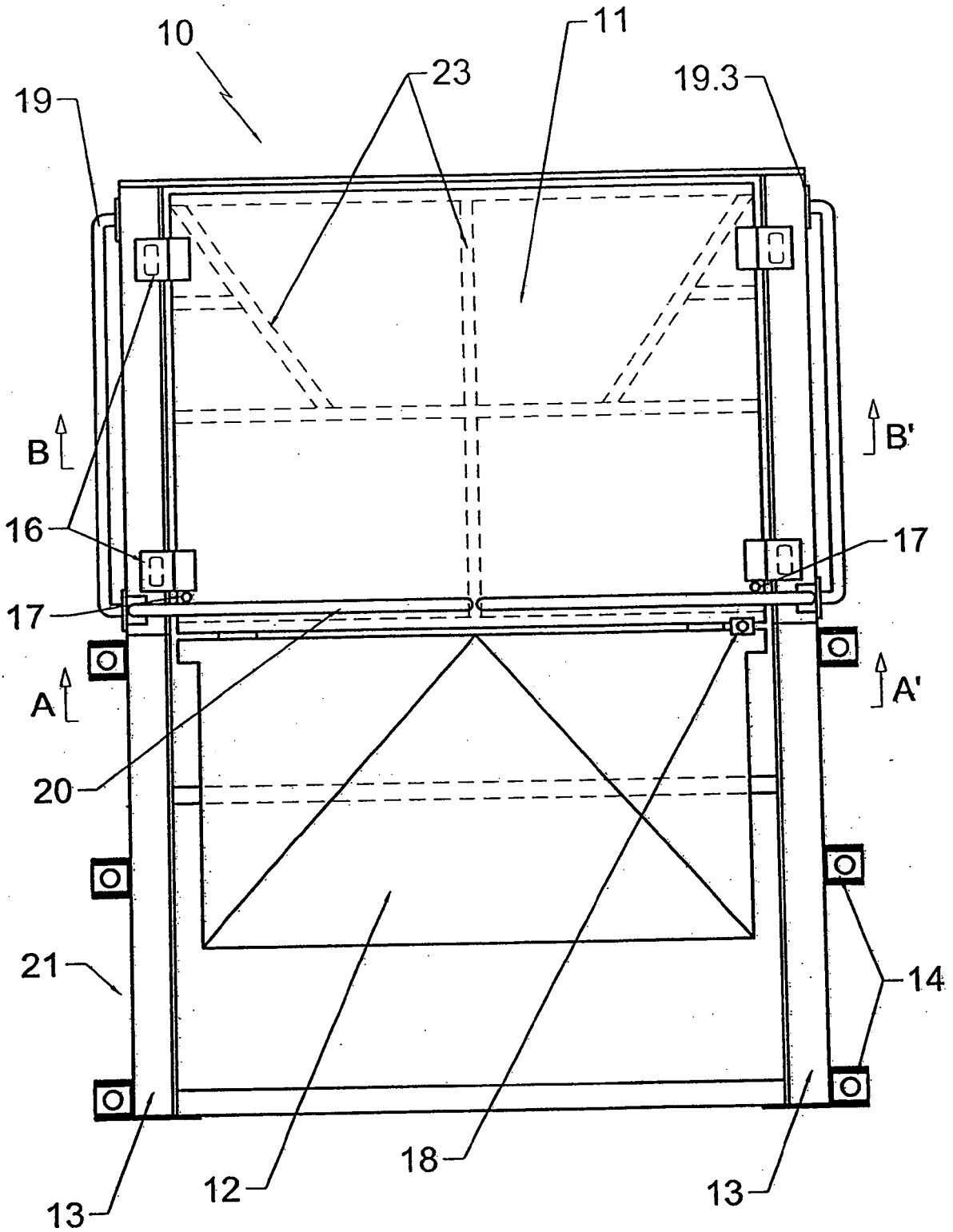

Fig. 1

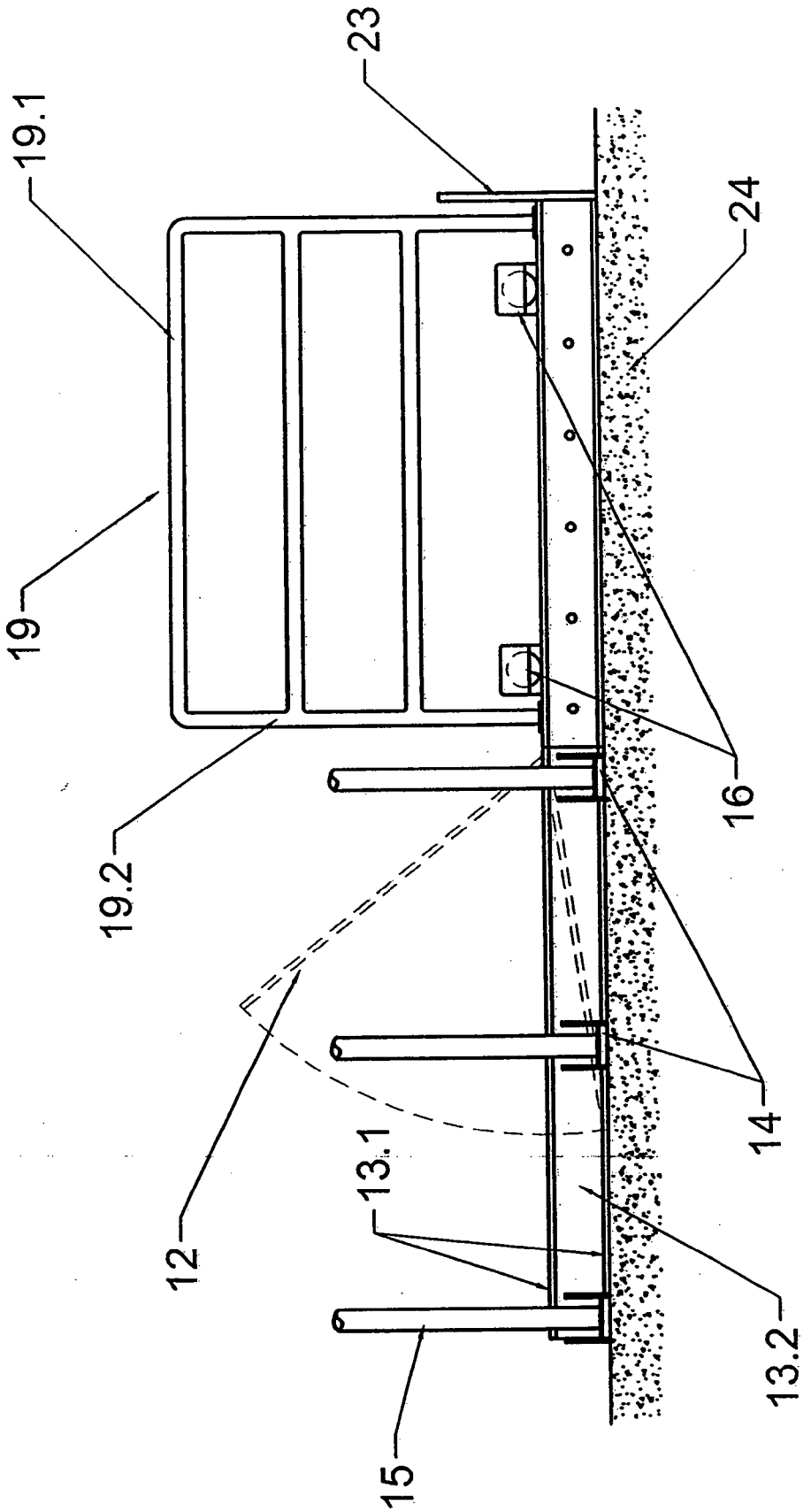

Fig. 2

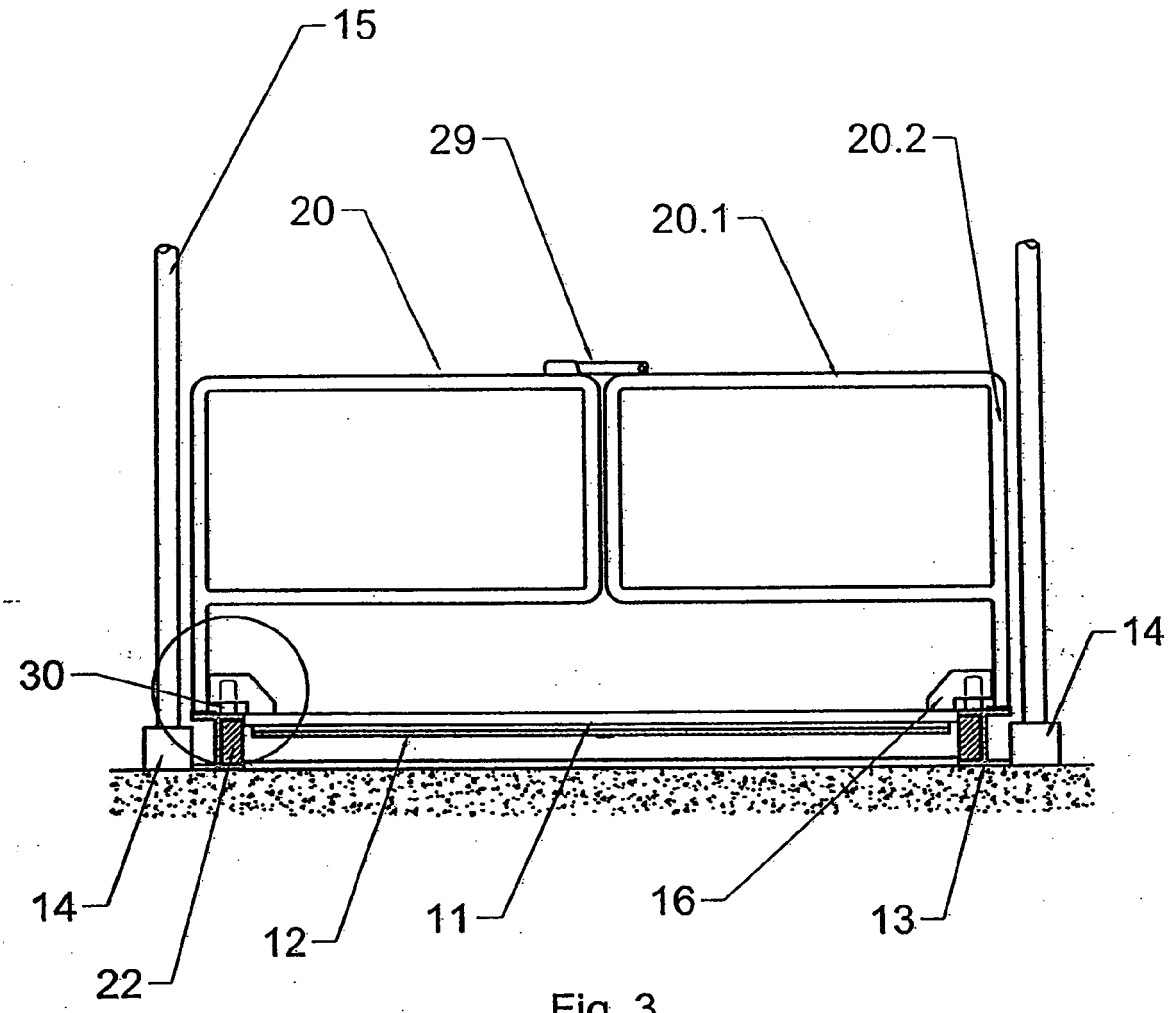

Fig. 3

Cut A-A'

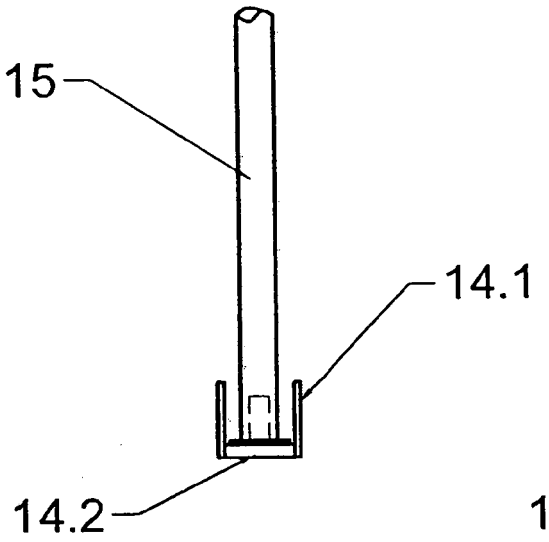

Fig. 4

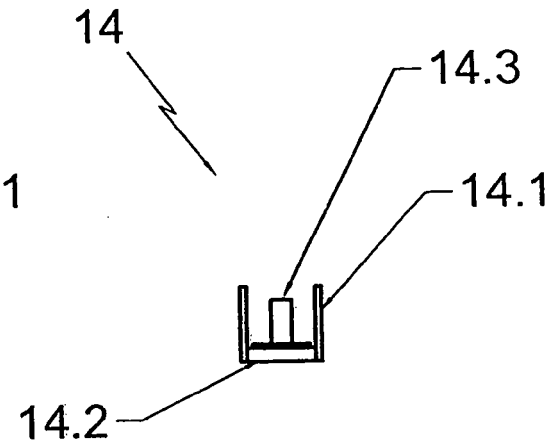

Fig. 5

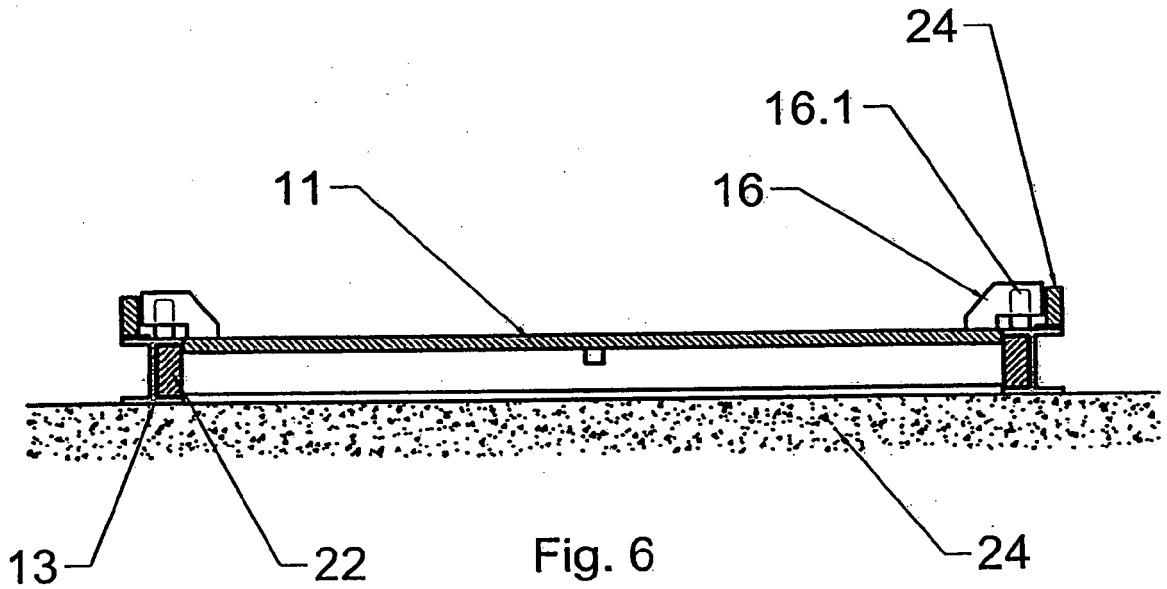

Fig. 6

Cut B-B'

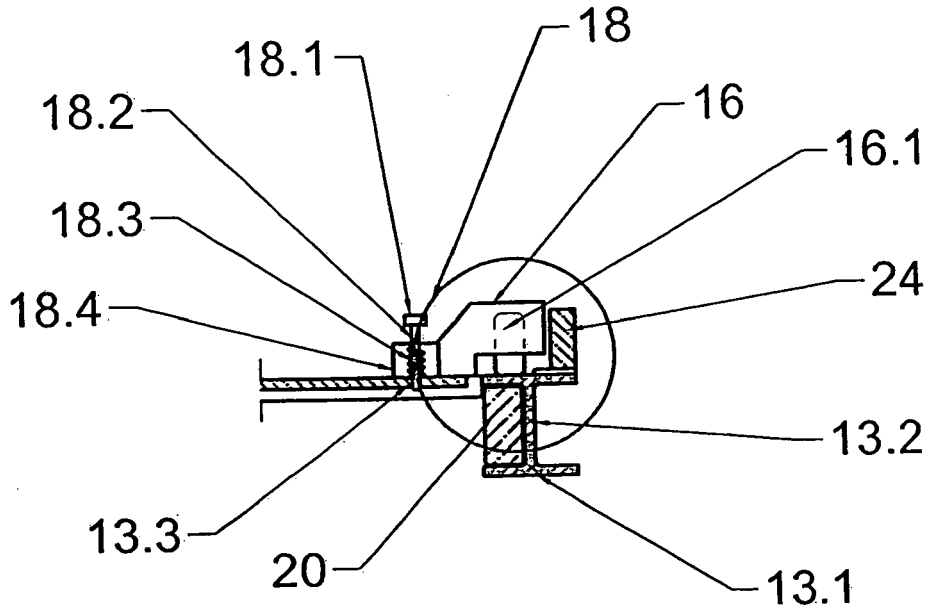

Fig. 7

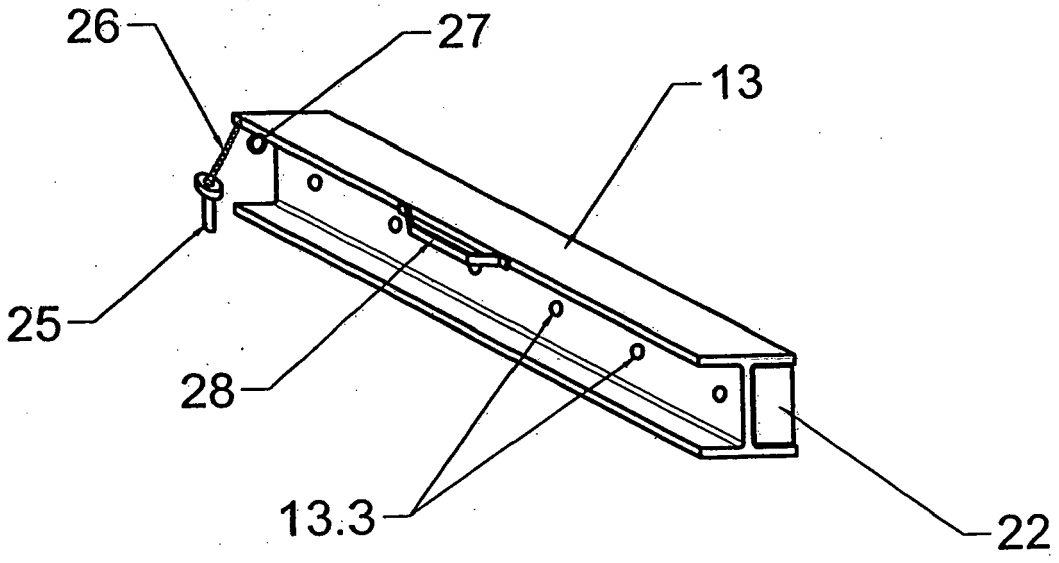

Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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