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(54) Device for displaying information and method for setting up same

(57) The invention relates to a device for displaying information, comprising a base for placing on a ground surface, a frame arranged on the base and an information carrier supported by the frame. The frame is connected movably here to the base and the information carrier is connected movably to the frame. The frame and the information carrier are each movable between a collapsed storage and transport position and an erected display position.

The dimensions of the information carrier and/or of the frame can correspond to those of the base. The frame can be connected to the base for pivoting about a horizontal shaft, while the information carrier can be connected to the frame for rotation about a shaft oriented transversely of its plane.

The invention also relates to a method for setting up an information display device with a base, a frame arranged thereon and an information carrier supported by the frame, comprising the steps of:

a) supplying the device in a collapsed situation,
b) placing the base on a ground surface,
c) moving the information carrier to an outer end of the frame,
d) carrying the information carrier to a different position relative to the frame, and
e) erecting the frame with the information carrier supported thereby.

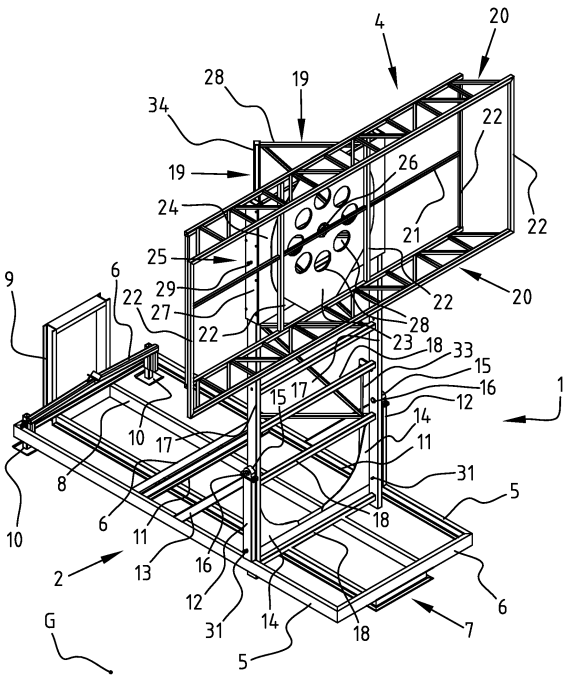

FIG. 1

EP 2 284 823 A1

Description

[0001] The invention relates to a device for displaying information and to a method for setting up such a device. The invention relates more particularly to a information display device comprising a base for placing on a ground surface, a frame arranged on the base and an information carrier supported by the frame. Such a device is known, for instance from EP 1 193 670 A1.

[0002] The known device consists of a concrete base to which an upright frame carrying an information board is connected. The frame and the board each take a divided form, wherein an upper part of the frame and board is connected hingedly to a lower part thereof. The upper part can thus be folded down during transport of the device in order to limit the height of the device.

[0003] The known device is intended particularly for use in building projects, where information about the customer, contractor, architect and the like is displayed. The board is provided here with the necessary information and fastened to the frame at a production location, after which the whole device is transported to the building site by means of a truck with a gantry crane, and there set down.

[0004] This known device has the drawback that it is relatively voluminous, in particular is high, and therefore difficult to transport. The divided form of the board moreover makes it difficult to arrange the desired information thereon.

[0005] Another device for supporting an information board is known from NL 1 033 653 C1. This device consists of a base having two telescopic uprights thereon which support a framework to which an information board can be fixed. This device also has a considerable height, whereby it is not easy to transport. A lifting crane is moreover necessary to raise the framework, so that the device can only be used at locations where such a crane is present.

[0006] Known from FR 2 741 739 A1 is a collapsible device with which a road sign can be placed temporarily at the side of a road. This device comprises a base and a folding frame consisting of two intersecting U-shaped legs pivotable in opposite directions. One of the legs forms an upright and the other a shore. The upright has on its upper side two sockets oriented transversely of each other. One of these serves to receive a leg of a road sign when the frame is in erected position, and the other to receive a road sign when the device is collapsed.

[0007] The invention now has for its object to provide a device of the above described type, wherein said drawbacks do not occur, or at least do so to lesser extent. According to the invention this is achieved with such a device in that the frame is connected movably to the base and the information carrier is connected movably to the frame and the information carrier is connected movably to the frame, wherein the frame and the information carrier are each movable between a collapsed storage and transport position and an erected display position. In this way the device can be reduced to a very compact whole for transport purposes and be erected to its final dimensions at the location of use.

[0008] In a preferred embodiment of the device according to the invention the dimensions of the information carrier substantially correspond in at least one direction to those of the base. The largest possible information carrier can thus be accommodated within the periphery of the base which determines the transport size of the device in the collapsed position.

[0009] The dimensions of the frame preferably also substantially correspond in at least one direction to those of the base, so that the highest possible frame, and thereby an optimal visibility of the information carrier, can be realized within the periphery of the base.

[0010] An effective and structurally simple device is obtained when the frame is connected to the base for pivoting about a substantially horizontal shaft. The frame can then be pivoted in simple manner from a lying or collapsed position to an upright or folded-out position.

[0011] When the information carrier is connected to the frame for rotation about a shaft, wherein the rotation axis lies substantially transversely of a main plane defined by the information carrier, the information carrier can be stored alongside the frame in the collapsed position and stand transversely thereof in the folded-out position. A horizontally directed information carrier suitable for displaying texts is thus obtained.

[0012] In addition or instead, the information carrier can advantageously be connected slidably to the frame.

[0013] In a combination of a rotatable and a slidable connection, it is recommended that the information carrier is slidable between a position in which the rotation shaft is situated close to an outer end of the frame and a position in which the rotation shaft is situated at a distance from the outer end, in particular at a position substantially halfway along the frame. In the collapsed situation the information carrier can thus roughly coincide with the frame, whereby a compact device is obtained, while in the folded-out situation the information carrier is situated at the top of the erected frame for optimum visibility.

[0014] A structurally simple embodiment of the device is obtained when the information carrier comprises a carriage slidable along the frame. The rotation shaft can here advantageously be bearing-mounted on the carriage. In order to obtain a stable construction the carriage then preferably comprises plate-like bearing-mounting surfaces.

[0015] In a preferred embodiment of the device according to the invention the frame comprises a latticework construction. The information carrier can advantageously also comprise a latticework construction. Such a construction is strong and stiff but still relatively light, and is moreover very open. This is important for limiting the wind load on the device.

[0016] The information carrier can comprise a panel or a sheet with information shown thereon. This panel or

sheet can be arranged releasably so that the device can be used more than once.

[0017] Finally, it is recommended that the dimensions of the base correspond substantially to those of a standard container. The device can thus be easily transported on trucks provided with fastening points for such containers.

[0018] The invention further relates to a method for setting up such an information display device. In the two above stated Netherlands patents 1010380 and 1033653 methods are already described comprising the steps of supplying the device in a collapsed situation and placing the base on a ground surface.

[0019] The method according to the present invention is distinguished herefrom by the steps of moving the information carrier to an outer end of the frame, carrying the information carrier to a different position relative to the frame and erecting the frame with the information carrier supported thereby. The compactly folded device can thus be set up at the final location of use by means of a few simple operations. The information carrier here extends relatively high above the ground because it is first moved toward the outer end - the eventual top - of the frame. This sequence of movements requires less effort than first erecting the frame and then moving the information carrier upward to the top thereof.

[0020] The information carrier is here advantageously moved by sliding to the outer end of the frame, while it is further recommended that the information carrier is carried to a different position by means of rotation relative to the frame. The information carrier can thus be oriented horizontally, this being an optimal position for displaying texts.

[0021] A simple folding-out movement is obtained when the frame is erected by pivoting relative to the base. A pivoting movement can be carried out more easily compared to for instance a vertical lifting movement.

[0022] Finally, the steps of sliding the information carrier to an outer end of the frame on the one hand and rotating the information carrier to a different position relative to the frame on the other can also be performed in reverse order.

[0023] The invention will now be elucidated on the basis of an embodiment, wherein reference is made to the accompanying drawing, in which:

Fig. 1 is a perspective view of an information display device according to the invention in erected or folded-out position of use, wherein only a framework of the information carrier is shown,

Fig. 2 is a perspective view of the information display device of fig. 1 in its collapsed position for storage or transport,

Fig. 3 is a side view of the device as according to arrow III in fig. 2,

Fig. 4 is a view corresponding to fig. 3, which shows how the information carrier slides along the frame,

Fig. 5 is a view corresponding to fig. 3 and fig. 4 which shows the rotation of the information carrier relative to the frame, and

Fig. 6 is a view corresponding to fig. 3, fig. 4 and fig. 5 which shows how the frame with the information carrier is pivoted to the erected position.

[0024] A device 1 for displaying information comprises a base 2 which can be placed on a ground surface G. A frame 3 which supports an information carrier 4 is arranged on this base 2. Base 2 is here rectangular and is formed by two longitudinal girders 5 and four transverse girders 6. An L-shaped undercarriage 7 consisting of a lying part 8 and a standing part 9 is further arranged on the underside of base 2. This undercarriage 7 is intended to enable device 1 to be received on a truck in the same way as a standard container as used in the construction industry. Supports or legs 10 are also arranged on the corners of base 2 adjacently of standing part 9 of undercarriage 7. The longitudinal and transverse girders 5, 6 of the base are otherwise provided with inward protruding edges 11 so that weighting elements, for instance concrete slabs, can be laid in the sections defined thereby once device 1 has been set up.

[0025] At the position of one of the inner transverse girders 6 two uprights 12 protrude upward from base 2, these being supported on longitudinal girders 5 by shores 13 and further stabilized by corner plates 14. On their top side these uprights 12 each carry a bearing 15, in which are mounted horizontal shafts 16 which connect frame 3 pivotally to base 2. Two jacks 33, for instance in the form of hydraulic cylinder/piston units, which provide for the pivoting movement of frame 3 about shafts 16, are arranged between base 2 and frame 3.

[0026] Just as base 2, frame 3 has two longitudinal girders 17 mutually connected by a number of transverse girders 18. In addition, frame 3 has two lattice girders 19, which each protrude at an angle from a main plane defined by the longitudinal and transverse girders 17, 18. These lattice girders 19 have a common upper girder 34 so that frame 3 ultimately has a triangular cross-section. As can be seen in fig. 6, lattice girders 19 do not extend over the full length of frame 3 so as to leave space for the pivoting movement about shafts 16.

[0027] Information carrier 4 comprises a framework on which can be mounted a panel or sheet which carries the actual information. The framework is formed by two lattice girders 20 and an intermediate girder 21 which are mutually connected by a number of transverse girders 22. Incorporated in the framework on the side remote from the panel or sheet is a bearing plate 23 which rests on a bearing plate 24 forming part of a carriage 25. Bearing plates 23, 24 are mutually connected by a rotation shaft 26 which lies transversely of a main plane of information carrier 4 defined by the framework. Carriage 25 has bent end edges 27 which engage round longitudinal girders 17 of frame 3. In the shown embodiment bearing plate 23 is otherwise also provided with a series of openings 28, which serve to minimize the wind load on device

1.

[0028] Placing and setup of information display device 1 now proceeds as follows.

[0029] Device 1 is loaded in the collapsed storage and transport position onto a truck and transported to the location where information must be displayed. This can be a building site, although it is also possible to envisage the device being placed at other locations, for instance to bring an advertising message to the attention of the public or as a warning in a certain traffic situation. At the relevant location the device is set down (fig. 3), after which carriage 25 with information carrier 4 thereon is first slid as according to arrow S to an outer end 28 of frame 3 (fig. 4). This outer end 28, which is furthest removed from horizontal shaft 16, will form the highest point of frame 3 once it has been erected. Once carriage 25 has been fixed by inserting a set of pins 29 into holes 30, information carrier 4 is then rotated about axis 26 as according to arrow T so that its longitudinal axis comes to lie transversely of the longitudinal axis of frame 3 (fig. 5). Once information carrier 4 has been fixed in this position by the fastening means (not shown here), the assembly of frame 3 and information carrier 4 is erected. For this purpose frame 3 is pivoted about horizontal shafts 16 as according to arrow P by activating and extending jacks 33 (fig. 6). Frame 3 is fixed in the erected display position by means of pins 31 which are inserted through holes 32. Finally, device 1 can be stabilized by laying weighting elements in the sections in base 2. The steps shown in fig. 4 and fig. 5 can otherwise also be performed in reverse order, so first rotating and then sliding.

[0030] Although not shown here, it will be apparent that the panel or sheet with the information to be displayed thereon is attached beforehand to the framework of information carrier 4.

[0031] When device 1 is no longer required, it can be collapsed by performing the above described operations in reverse sequence, after which device 1 can be loaded and taken away. In the collapsed situation device 1 can then be stored in a relatively small space until the next use.

[0032] In the above described embodiment the sliding and rotating movements are performed manually, although it is also possible to envisage device 1 being further provided with drives which also carry out these movements. Conversely, a wholly manually operated embodiment of device 1 can also be envisaged. This could then be provided with biasing means in the form of springs, whereby the movements, particularly the pivoting movement of frame 3, would be supported.

[0033] Although the invention is described above on the basis of one embodiment, it will be apparent that it is not limited thereto. Movements other than the described sliding, rotating and pivoting movements could thus be used for folding the device in and out. In addition, device 1 could also be transported in a manner other than with a truck. A simple trailer would also suffice in the case of smaller dimensions. Device 1 itself could also be embodied as a trailer by providing base 2 with an undercarriage with wheels.

[0034] When it is important to place information carrier 4 at great height or when a very large information carrier 4 is desired, frame 3 and information carrier 4 can optionally be dimensioned such that in the collapsed situation they extend outside the periphery of base 2. Conversely, it is also possible to envisage base 2 being embodied significantly larger than frame 3 and/or information carrier 4, for instance when a high standard of stability of device 1 is required. In order to increase the stability frame 3 can optionally also be secured with cables.

[0035] Finally, information carriers other than printed panels or screens can also be envisaged, for instance electronic display screens on which changing information can be shown. This is for instance the case when device 1 is applied as signalling system in traffic.

[0036] The scope of the invention is therefore defined solely by the following claims.

Claims

1. Device for displaying information, comprising a base for placing on a ground surface, a frame arranged on the base and an information carrier supported by the frame, **characterized in that** the frame is connected movably to the base and the information carrier is connected movably to the frame, wherein the frame and the information carrier are each movable between a collapsed storage and transport position and an erected display position.

2. Device as claimed in claim 1, **characterized in that** the dimensions of the information carrier substantially correspond in at least one direction to those of the base.

3. Device as claimed in claim 1 or 2, **characterized in that** the dimensions of the frame substantially correspond in at least one direction to those of the base.

4. Device as claimed in any of the foregoing claims, **characterized in that** the frame is connected to the base for pivoting about a substantially horizontal shaft.

5. Device as claimed in any of the foregoing claims, **characterized in that** the information carrier is connected to the frame for rotation about a shaft, wherein the rotation axis lies substantially transversely of a main plane defined by the information carrier.

6. Device as claimed in any of the foregoing claims, **characterized in that** the information carrier is connected slidably to the frame.

7. Device as claimed in claims 5 and 6, **characterized**

in that the information carrier is slidable between a position in which the rotation shaft is situated close to an outer end of the frame and a position in which the rotation shaft is situated at a distance from the outer end.

8. Device as claimed in claim 7, **characterized in that** the position of the rotation shaft at a distance from the outer end is substantially halfway along the frame.

9. Device as claimed in any of the claims 6-8, **characterized in that** the information carrier comprises a carriage slidable along the frame.

10. Device as claimed in claim 9, **characterized in that** the rotation shaft is bearing-mounted on the carriage.

11. Device as claimed in claim 10, **characterized in that** the carriage comprises plate-like bearing-mounting surfaces.

12. Device as claimed in any of the foregoing claims, **characterized in that** the frame comprises a latticework construction.

13. Device as claimed in any of the foregoing claims, **characterized in that** the information carrier comprises a latticework construction.

14. Device as claimed in any of the foregoing claims, **characterized in that** the information carrier comprises a panel with information shown thereon.

15. Device as claimed in any of the foregoing claims, **characterized in that** the information carrier comprises a sheet with information shown thereon.

16. Device as claimed in any of the foregoing claims, **characterized in that** the dimensions of the base correspond substantially to those of a standard container.

17. Method for setting up an information display device with a base, a frame arranged thereon and an information carrier supported by the frame, comprising the steps of:

a) supplying the device in a collapsed situation, and
b) placing the base on a ground surface,
characterized by:
c) moving the information carrier to an outer end of the frame,
d) carrying the information carrier to a different position relative to the frame, and
e) erecting the frame with the information carrier supported thereby.

18. Method as claimed in claim 17, **characterized in that** the information carrier is moved by sliding to the outer end of the frame.

19. Method as claimed in claim 17 or 18, **characterized in that** the information carrier is moved to a different position by means of rotation relative to the frame.

20. Method as claimed in any of the claims 17-19, **characterized in that** the frame is erected by pivoting relative to the base.

21. Method as claimed in any of the claims 17-20, **characterized in that** the steps (c) and (d) are performed in reverse order.

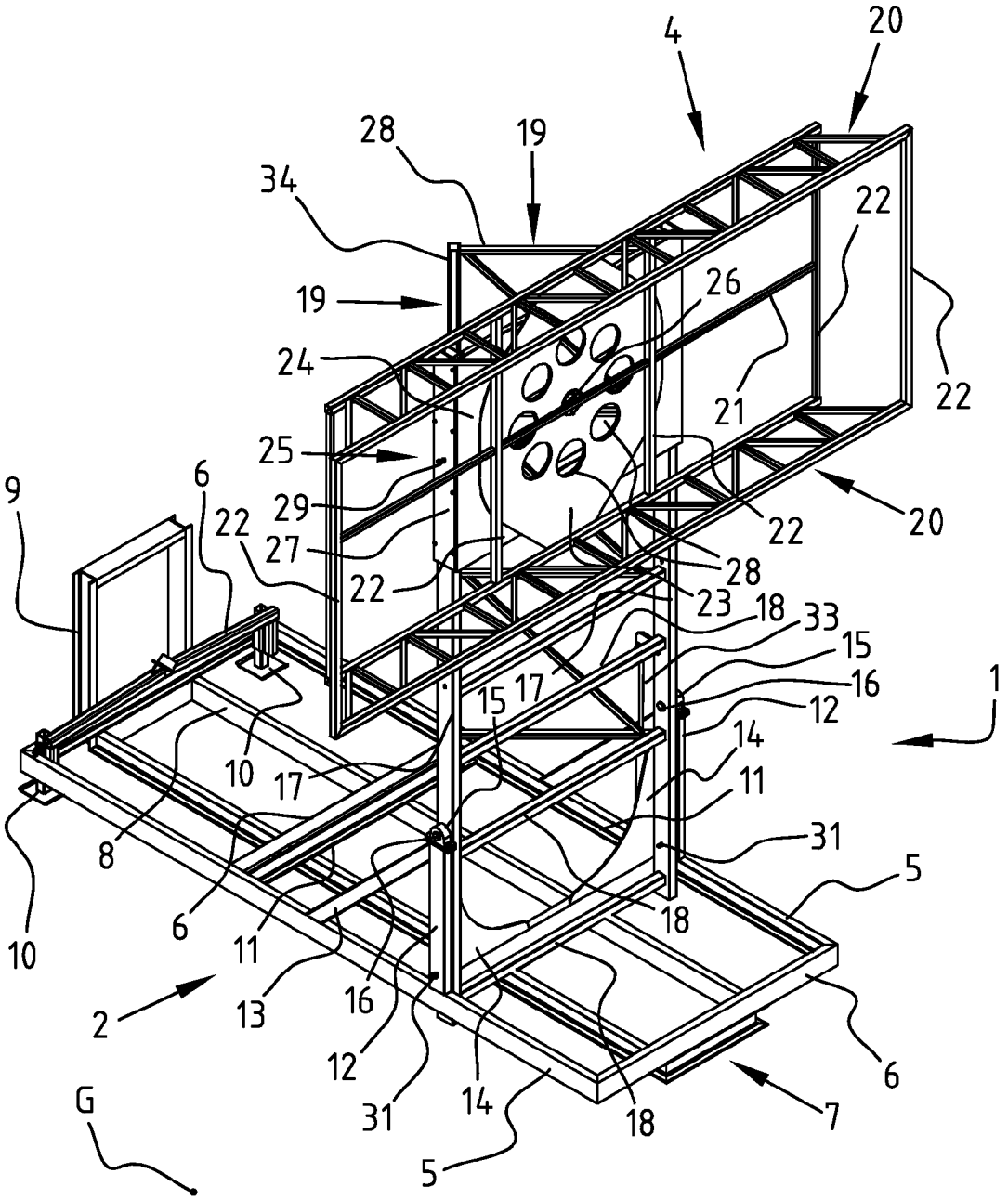
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FIG. 1

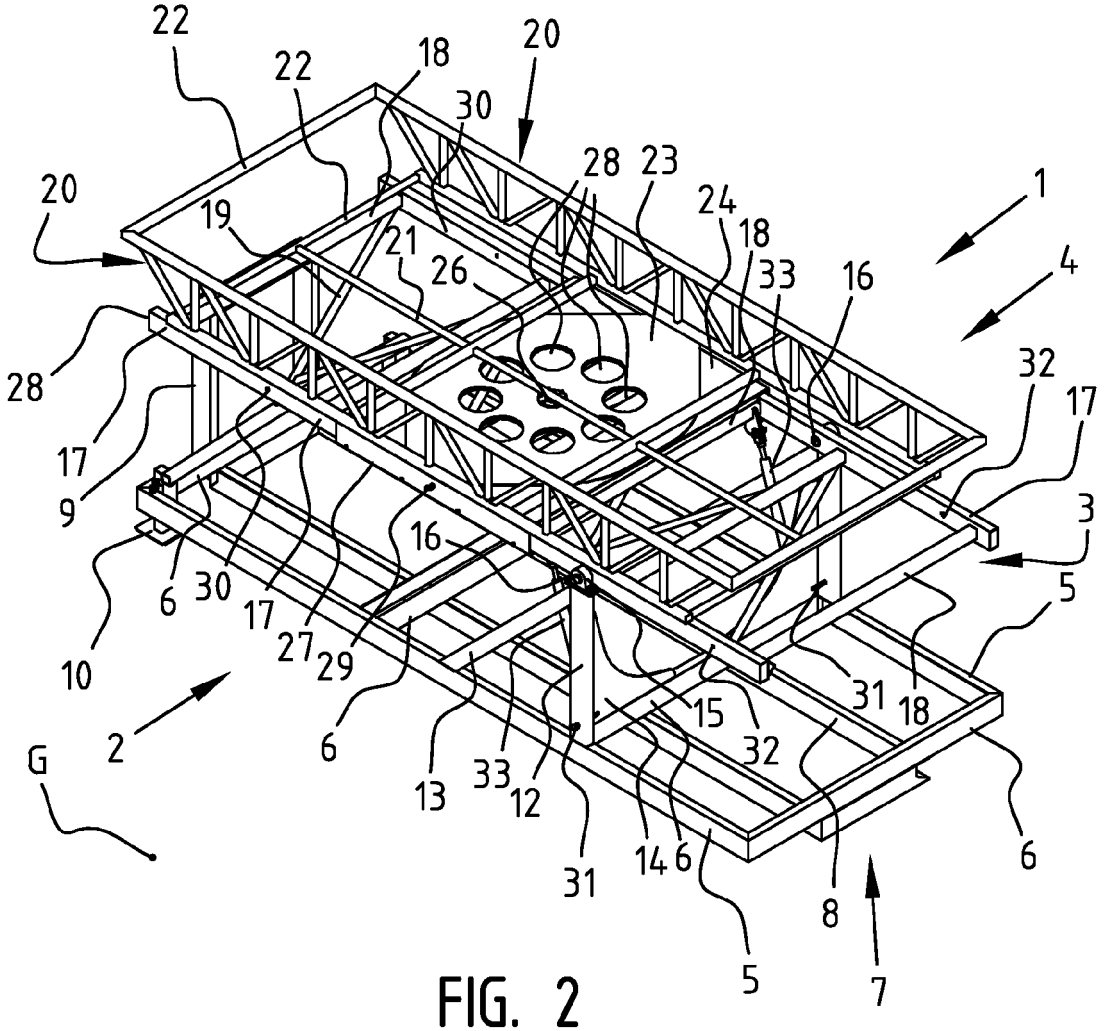
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FIG. 2

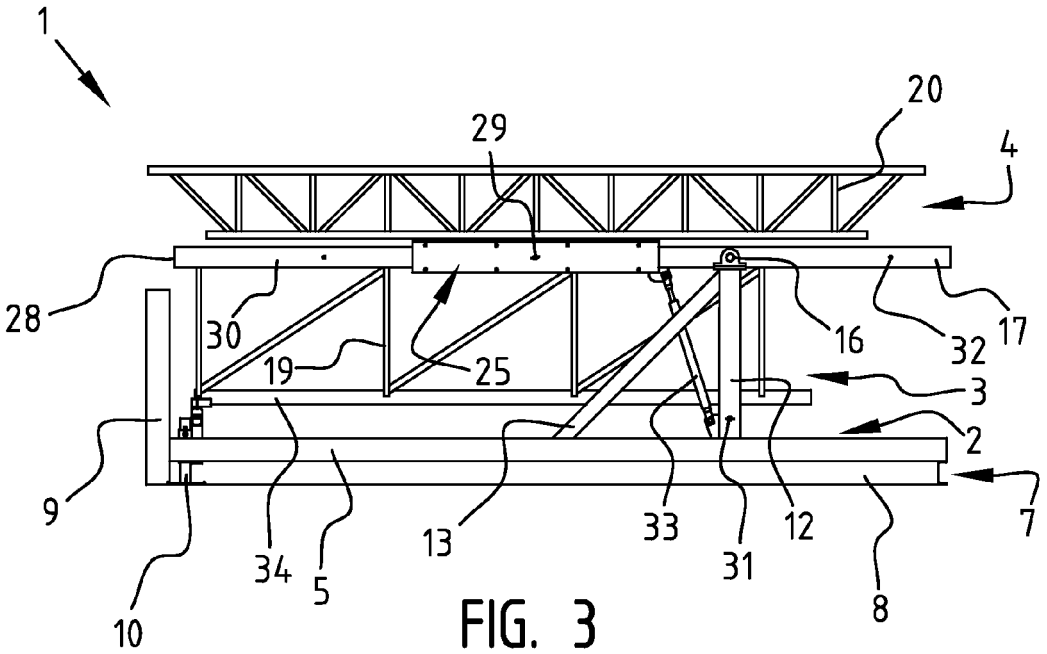
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FIG. 3

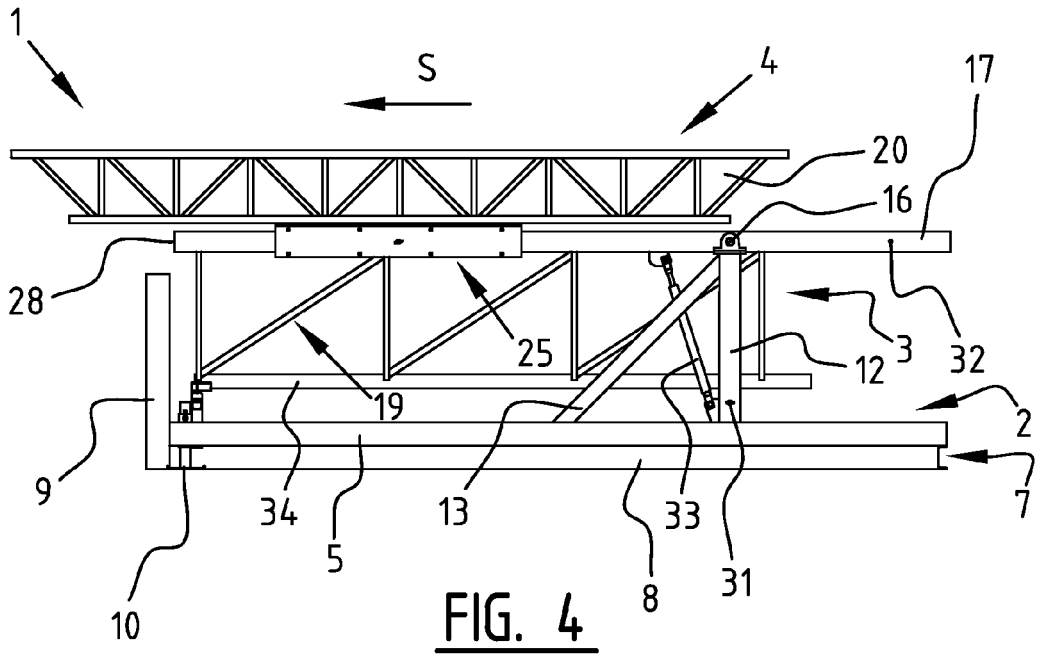
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FIG. 4

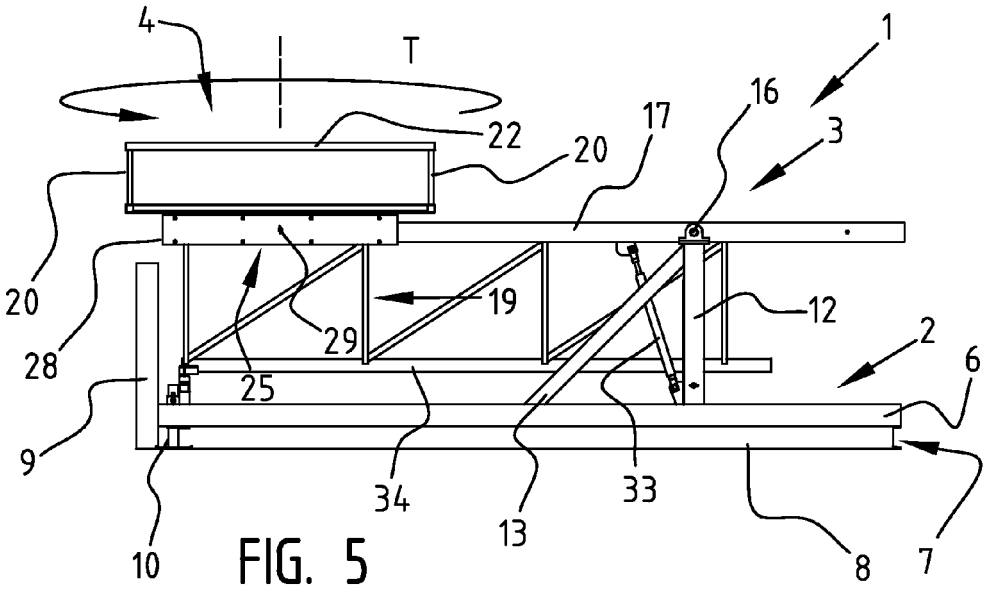
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FIG. 5

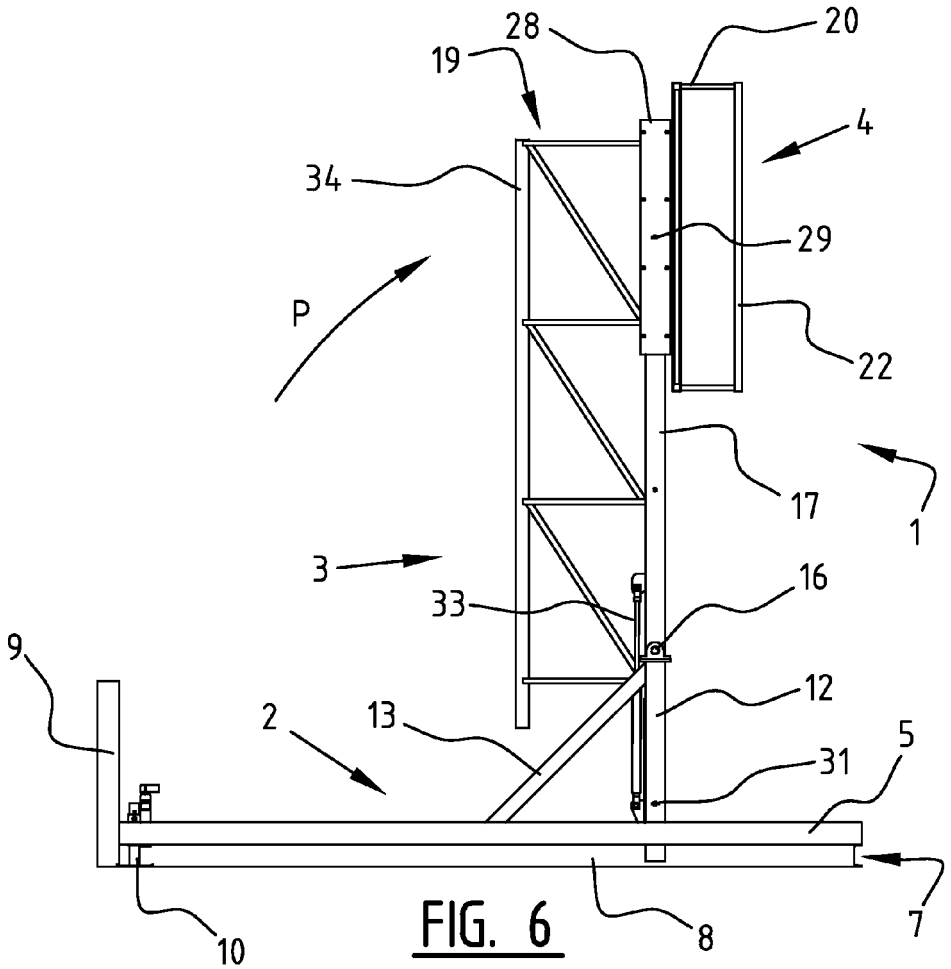
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FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 10 17 2508

DOCUMENTS CONSIDERED TO BE RELEVANT

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TECHNICAL FIELDS SEARCHED (IPC)

G09F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	29 October 2010	Demoor, Kristoffel

CATEGORY OF CITED DOCUMENTS

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