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(54) **Fairground attraction**

(57) The invention relates to a fairground attraction (1;101) comprising a base (2), a main carrier (3) suspended from the base (2) for rotation about a vertical first axis (A1) and a number of person carriers (5) suspended from the main carrier (3) at a distance from the first axis (A1) for rotation about vertical second axes (A2). The second axes (A2) can herein each enclose an

angle (α) with the first axis (A1). The person carriers (5) can further be suspended from the main carrier (3) via a number of auxiliary carriers (4) which are suspended from the main carrier (3) at a distance from the first axis (A1) for rotation about a vertical third axis (A3). In this case the person carriers (5) are suspended from the auxiliary carrier (4) at a distance from the third axis (A3) for rotation about the second axes (A2).

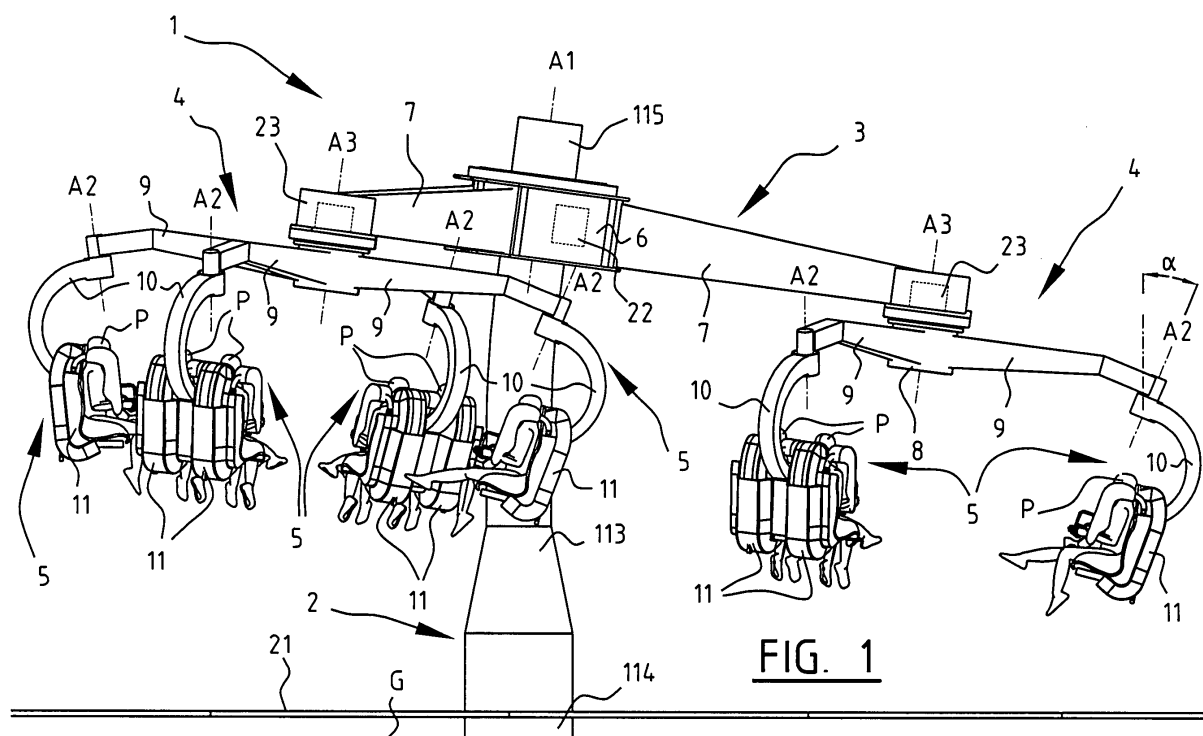


FIG. 1

Description

[0001] The invention relates to a fairground attraction. Already known from EP-A-0 082 435 is a fairground attraction which is formed by a base on which a main carrier in the form of a disc is rotatably mounted. The main carrier, which is rotatable on a substantially vertical axis, is provided with a number of person carriers arranged distributed thereon in peripheral direction. Each person carrier is in turn also rotatable relative to the main carrier. Mounted for this purpose on the main carrier is a rotation shaft for each person carrier, which shaft lies at a small angle to the vertical. Each person carrier can thus rotate in a plane which encloses a small angle to the horizontal. The person carrier will hereby rotate under the influence of gravity to the lowest-lying position, while during rotation of the main carrier the position of the person carrier varies under the influence of the centrifugal force. This results in a combined rotation movement in different planes, which is perceived as being particularly exciting.

[0002] The invention has for its object to provide a fairground attraction which provides a greater sense of speed and more excitement than the above described attraction, and wherein embarking and disembarking is simpler and requires less time. This is achieved according to the invention by a fairground attraction comprising a base, a main carrier suspended from the base for rotation about a substantially vertical first axis and at least one person carrier suspended from the main carrier at a distance from the first axis for rotation about a substantially vertical second axis. By suspending the main carrier and the person carrier(s) instead of making use of a disc on which the person carrier(s) is/are mounted, the passengers have a free view of terra firma, whereby the sense of speed is greater. This attraction moreover provides the option of the legs of the passengers being freely suspended, thereby further enhancing the excitement. Finally, embarking and disembarking is simpler because the passengers do not have to walk over the main carrier. Embarking and disembarking time is hereby shortened, and the efficiency of the attraction improved.

[0003] The at least one second axis preferably encloses an angle with the first axis. A combined rotation movement in two different planes is thus achieved once again, which causes a great thrill because the rotation is accompanied by an up and downward movement.

[0004] An even more exciting movement is obtained when the at least one person carrier is suspended from the main carrier via an auxiliary carrier which is suspended from the main carrier at a distance from the first axis for rotation about a substantially vertical third axis. This does after all combined three rotation movements. In this case the at least one person carrier is preferably suspended from the auxiliary carrier at a distance from the third axis for rotation about the second axis.

[0005] In order to obtain an attraction with high capac-

ity and great stability, a number of auxiliary carriers are preferably suspended distributed in peripheral direction from the main carrier. A robust but nevertheless light construction is in this case achieved when the main carrier comprises a hub and a number of spokes extending radially from the hub and each bearing at least one auxiliary carrier.

[0006] In order to further increase the capacity and stability of the attraction, a number of person carriers is suspended distributed in peripheral direction from the auxiliary carrier. The or each auxiliary carrier can then also comprise a hub and a number of spokes extending radially from the hub and each bearing at least one person carrier.

[0007] The at least one person carrier can comprise a suspending member and at least one seat suspended therefrom, wherein the suspending member is then preferably formed such that during use the centre of gravity of the seat and a passenger seated thereon lies at a distance from the second axis. In this way the seat will be set into motion as a result of the combined effects of centrifugal force and gravity during rotation of the attraction. This can be achieved in simple manner when the suspending member is substantially C-shaped.

[0008] In order to generate the combined rotation movements in the different planes, the fairground attraction is preferably provided with means for rotatingly driving at least the main carrier and the or each auxiliary carrier. These drive means can be formed by a single motor with a number of transmissions, or by individual motors for each of the main and auxiliary carriers.

[0009] A highly spectacular fairground attraction is obtained when the base comprises an arm, of which one end is connected to a support resting on the ground and the opposite free end bears the main carrier. By as it were freely suspending the whole attraction in this manner, a strong sense of speed and space is created. In this case the arm is preferably pivotable on a substantially horizontal shaft, thereby creating an additional possible movement.

[0010] A structurally simple and compact fairground attraction is on the other hand characterized by the fact that the base comprises a mast with a foot resting on the ground and a top around which the main carrier is rotatable. When the attraction is then provided with means for causing at least the part of the mast bearing the main carrier to bend, fold or tilt, the planes in which the rotation movements occur can once again be varied so as to provide an even greater excitement.

[0011] The invention is now elucidated on the basis of two exemplary embodiments, wherein reference is made to the accompanying drawing, in which:

Fig. 1 shows a side view of a fairground attraction according to a first embodiment of the invention, wherein the main carrier is rotatable about a standing mast, and

Fig. 2 shows a side view of a fairground attraction

according to a second embodiment of the invention, wherein the main carrier is suspended from an arm.

[0012] A fairground attraction 1 (fig. 2) is formed by a base 2 from which a main carrier 3 is suspended. Main carrier 3 is rotatable relative to base 2 about a substantially vertical first axis A1, and is driven rotatively by a motor 22 (shown in broken lines).

[0013] Base 2 is formed here by an arm 13, the free end 15 of which bears main carrier 3, while the opposite end 14 is connected to a support 16 for pivoting on a horizontal shaft H. This support 16 here takes the form of a trailer, so that the fairground attraction 1 is mobile. The trailer is provided with a chassis 18 and telescopic jacks 19 with which the chassis can be raised from the ground G and support 16 can be disposed in stable manner. Two of these jacks 19 are arranged at corners of the trailer, while two other jacks 19 are arranged on ends of spacers 20 fixed to the trailer. Support trailer 16 is provided with means 17 to cause the position of arm 13 to be varied, here in the form of two hydraulic jacks.

[0014] In the shown embodiment the main carrier 3 takes a star-shaped form and comprises a hub 6 and a number of - here three - spokes 7 which are distributed uniformly in peripheral direction and which extend radially from hub 6. Each spoke 7 bears on its end an auxiliary carrier 4 which is rotatable relative to main carrier 3 around a substantially vertical second axis A2. Auxiliary carriers 4 are each driven rotatively by a motor 23 (also shown in broken lines).

[0015] Auxiliary carriers 4 also take a star-shaped form in the shown embodiment, and each comprise a hub 8 and four spokes 9 which are likewise distributed uniformly in peripheral direction and extend radially from hub 8. Each spoke 9 bears in turn a person carrier 5 which is rotatable relative to auxiliary carrier 4 around a - once again substantially vertical - third axis A3.

[0016] Person carriers 5 consist here of a suspending member 10 and two seats 11 suspended therefrom. In the shown embodiment the suspending member 10 takes a C-shaped form, so that during use the centre of gravity of the seats 11 and passengers P seated thereon does not coincide with - the extension of - the second axis A2. Owing to this arrangement the person carriers 5 do not have to be driven, but will begin to rotate spontaneously about axis A2 when main carrier 3 and auxiliary carriers 4 are set into rotation.

[0017] As stated, axes A1, A2 and A3 are each substantially vertical, and thus run practically parallel. In order to achieve a more spectacular movement, in the shown embodiment the axes A2 in any case each enclose an angle α with the main axis A1. The person carriers 5 hereby rotate in planes which do not coincide with or are not parallel to the plane in which the main carrier rotates, so that passengers P therefore also undergo an up and downward movement as well as the rotation. The axes A3 about which auxiliary carriers 4 rotate can also enclose an angle with the main axis A1 and/or the axes

A2 of person carriers 5.

[0018] As stated, the arm 13 from which the main carrier 3 is suspended is pivotable around the horizontal shaft H and provided with means 17 for moving arm 13 up and downward. By setting the arm 13 into motion during the rotation movement of the main and auxiliary carriers 3, 4, the paths described by the person carriers 5 are varied even more, thereby achieving a greater thrill.

[0019] In addition, arm 13 can be lowered so far after a ride that the passengers can disembark easily and new passengers can embark. Because the main, auxiliary and person carriers 3, 4 and 5 are here suspended in cantilevered manner, passengers P can readily access the seats 11 via a fixed stage 21, and do not have to walk over movable parts of the attraction. The construction is hereby simplified on the one hand, while on the other hand the embarking and disembarking time is also reduced.

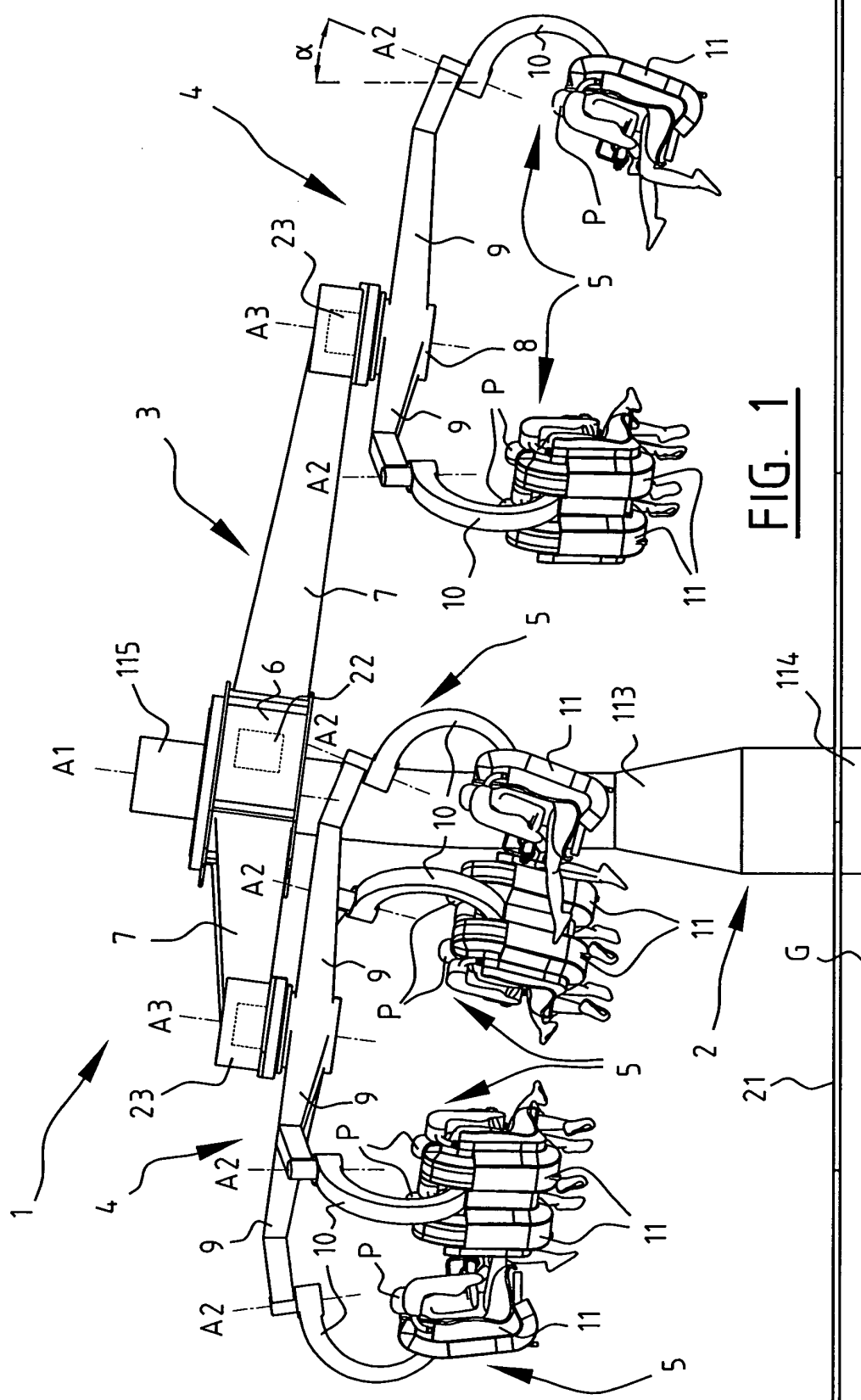
[0020] In an alternative embodiment of the fairground attraction 101 (fig. 1), which is somewhat more compact, the base 102 is formed by a mast 113, the foot 114 of which stands on the ground G. Main carrier 3 is in this case rotatable around the free end, or top part, 115 of mast 113. In addition, the main carrier 3, which once again has a hub 6 - arranged now around mast 113 - and spokes 7 protruding therefrom, is movable up and downward along mast 113 between an embarking and disembarking position directly above stage 21 and an operating position at a safe distance from stage 21 and other fixed parts of the attraction 101. Finally, mast 113 can be provided in this embodiment with means 117 to cause at least the top part 115 to bend, fold or tilt so that the planes in which the different rotation movements are performed can once again be varied. These means 117 can for instance be formed by a hinge (not shown here) between foot 114 and top part 115, and a drive co-acting with top part 115, for instance a jack or set of gears.

[0021] Although the invention is described and illustrated here on the basis of two exemplary embodiments, it will be apparent that it is not limited thereto. The embodiments shown here for instance have in each case auxiliary carriers, but in a smaller embodiment of the attraction it is also possible to envisage the person carriers being suspended directly from the main carrier. In addition, the main carrier and/or the auxiliary carrier could also be embodied otherwise than shown here, for instance as flat or dome-shaped discs. More or fewer auxiliary carriers and person carriers could also be applied than shown here. Finally, the person carriers could also perform other movements in addition to the described and shown rotation movements about substantially vertical axes, for instance swinging movements about horizontal axes, whereby the excitement would be further enhanced.

[0022] The scope of the invention is therefore defined solely by the appended claims.

Claims

1. Fairground attraction (1;101) comprising a base (2; 102), a main carrier (3) suspended from the base for rotation about a substantially vertical first axis (A1) and at least one person carrier (5) suspended from the main carrier (3) at a distance from the first axis (A1) for rotation about a substantially vertical second axis (A2). 5
2. Fairground attraction (1;101) as claimed in claim 1, **characterized in that** the at least one second axis (A2) encloses an angle (α) with the first axis (A1). 10
3. Fairground attraction (1;101) as claimed in claim 1 or 2, **characterized in that** the at least one person carrier (5) is suspended from the main carrier (3) via an auxiliary carrier (4) which is suspended from the main carrier (3) at a distance from the first axis (A1) for rotation about a substantially vertical third axis (A3). 15 20
4. Fairground attraction (1;101) as claimed in claim 3, **characterized in that** the at least one person carrier (5) is suspended from the auxiliary carrier (4) at a distance from the third axis (A3) for rotation about the second axis (A2). 25
5. Fairground attraction (1;101) as claimed in claim 3 or 4, **characterized in that** a number of auxiliary carriers (4) are suspended distributed in peripheral direction from the main carrier (3). 30
6. Fairground attraction (1;101) as claimed in claim 5, **characterized in that** the main carrier (3) comprises a hub (6) and a number of spokes (7) extending radially from the hub (6) and each bearing at least one auxiliary carrier (4). 35
7. Fairground attraction (1;101) as claimed in any of the claims 3-6, **characterized in that** a number of person carriers (5) is suspended distributed in peripheral direction from the auxiliary carrier (4). 40
8. Fairground attraction (1;101) as claimed in claim 7, **characterized in that** the or each auxiliary carrier (4) comprises a hub (8) and a number of spokes (9) extending radially from the hub (8) and each bearing at least one person carrier (5). 45 50
9. Fairground attraction (1;101) as claimed in any of the foregoing claims, **characterized in that** the at least one person carrier (5) comprises a suspending member (10) and at least one seat (11) suspended therefrom. 55
10. Fairground attraction (1;101) as claimed in claim 9, **characterized in that** the suspending member (10) is formed such that during use the centre of gravity of the seat (11) and a passenger (P) seated thereon lies at a distance from the second axis (A2).
11. Fairground attraction (1;101) as claimed in claim 10, **characterized in that** the suspending member (10) is substantially C-shaped.
12. Fairground attraction (1;101) as claimed in any of the claims 3-11, **characterized by** means (12) for rotatingly driving at least the main carrier (3) and the or each auxiliary carrier (4).
13. Fairground attraction (1) as claimed in any of the foregoing claims, **characterized in that** the base (2) comprises an arm (13), of which one end (14) is connected to a support (16) resting on the ground (G) and the opposite free end (15) bears the main carrier (3).
14. Fairground attraction (1) as claimed in claim 13, **characterized in that** the arm (13) is pivotable on a substantially horizontal shaft (H).
15. Fairground attraction (101) as claimed in any of the claims 1-12, **characterized in that** the base (102) comprises a mast (113) with a foot (114) resting on the ground (G) and a top (115) around which the main carrier (3) is rotatable.
16. Fairground attraction (101) as claimed in claim 15, **characterized by** means (117) for causing at least the part of the mast (113) bearing the main carrier (3) to bend, fold or tilt.



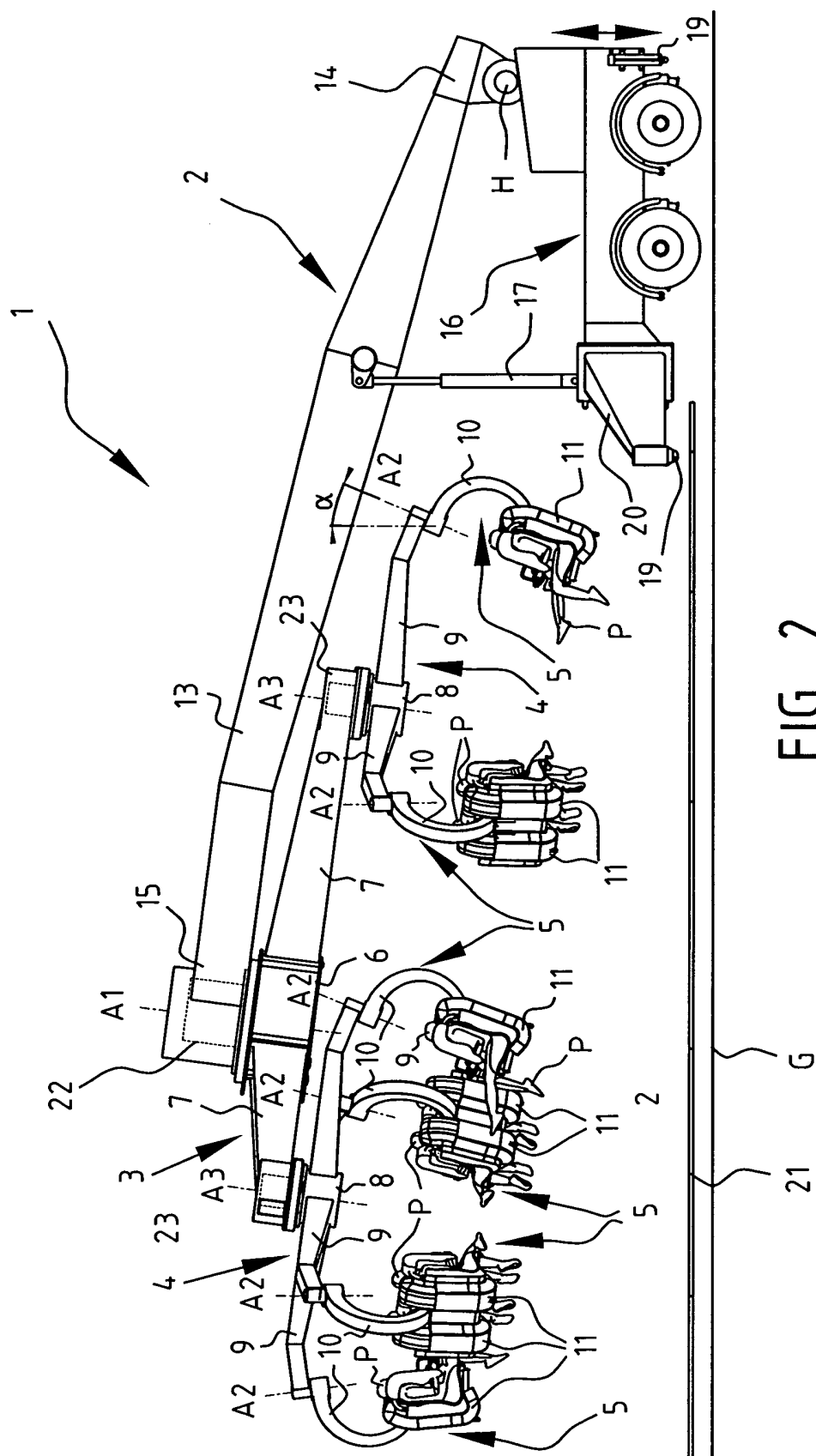


FIG. 2



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 05 07 5230

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 283 872 A (HUSS MASCHF GMBH & CO KG; HUSS MASCHINENFABRIK GMBH & CO. KG) 28 September 1988 (1988-09-28) * column 5, line 7 - column 8, line 51; figure 5 *	1-15	A63G1/26 A63G1/36 A63G1/48 A63G1/28
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 27 May 2005	Examiner Brumme, I
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EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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