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(54) **Clothes-horse and system for fixing a hanging surface to a clothes-horse frame**

Kleidungspferd und System zum Befestigen einer hängenden Oberfläche an einem Kleidungspferdrahmen

Chevalet pour le linge et système pour fixer une surface de suspension au cadre d'un chevalet pour le linge

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Description

[0001] This invention concerns a clothes-horse and a system for fixing a hanging surface to a support frame of a clothes-horse.

[0002] The patent EP 1 812 640 in the name of the Applicant describes a tower-type clothes-horse. This clothes-horse is equipped with a support frame which comprises a pair of vertical uprights and a pair of horizontal stiffening crosspieces.

[0003] The clothes-horse also comprises a plurality of movable hanging shelves fixed to the support frame. Each hanging shelf consists of a plurality of wires, forming "hanging lines", and of a first and second support arm to which these wires are fixed. Each support arm of the hanging shelf is connected to one of the vertical uprights of the support frame by a connecting element.

[0004] The connecting element comprises a central portion which couples with the relative vertical upright and a peripheral portion which comprises a pair of rigid tabs.

[0005] The peripheral portion comprises a housing designed to accommodate a portion for connecting the support arm of the hanging shelf.

[0006] Each arm of the hanging shelf is provided with a slot located in the portion for connection of the arm.

[0007] The tabs are provided with a through hole which opens onto the housing and is designed to be engaged by a pin.

[0008] To fix the hanging shelf to the frame, the user inserts the portion connecting the support arm in the housing of the relative connection element and inserts the pin in the hole in the tabs to slidingly engage the slot in the arm.

[0009] The pin is subsequently fixed to the tabs by means of known techniques, for example by means of screwing.

[0010] This system for fixing the hanging shelf to the support frame requires the user to be very skilful when inserting the pins, since the hanging shelf must be positioned correctly and precisely with respect to the connection element in order to correctly insert the pin in the slot.

[0011] One requirement in the technical sector in question is therefore being able to quickly connect the hanging shelf to the support frame.

[0012] The aim of this invention is therefore to overcome these drawbacks and to satisfy the requirement described above.

[0013] In accordance with the invention, this aim is achieved by a clothes-horse and a fixing system comprising the technical features described in one or more of the attached claims.

[0014] In particular, the aim is achieved by a clothes-horse which comprises a support frame, a plurality of elements which form at least one hanging shelf, an arm to support the hanging shelf fixed to the hanging shelf and provided with a portion for connection to the frame and first means of engagement, at least one element for connecting the support arm to the frame, fixed to the frame and provided with a portion designed to receive the support arm connecting portion, in which the connecting element comprises second means of engagement designed to couple with said first means of engagement with consequent connection of the support arm to the frame, said connection portion or said portion designed to receive said connection portion comprising at least one flexible wall designed to deform elastically between a rest position and a deformed position, said flexible wall being designed to assume said deformed position when said portions of the arm and of the connection element are reciprocally moved closer together to a reciprocal coupling position in which said first and second means of engagement are irreversibly coupled.

[0015] The aim is also achieved by a system for fixing a hanging shelf to the support frame of a clothes-horse, which comprises: at least one arm to support the hanging shelf and provided with a portion for connection to the support frame; at least one element for connection of the arm to the support frame, which can be fixed to said support frame and provided with a portion designed to receive the arm connection portion; first means of engagement fixed to said arm and second means of engagement fixed to said insertion portion, designed to reciprocally couple with consequent connection of the support arm to the support frame; with said portion designed to receive the portion for connection of the arm or said connection portion comprising at least one flexible wall designed to deform elastically between a rest position and a deformed position when said portions of the arm and of the connection element are reciprocally moved to a position of reciprocal coupling in which said first and second means of engagement are irreversibly coupled.

[0016] The technical features of the invention are clearly indicated in the claims herein and the advantages are more apparent in the detailed description which follows with reference to the accompanying drawings which illustrate a preferred non-limiting embodiment of the invention and in which:

- figure 1 is a perspective view of a clothes-horse with the fixing system according to the present invention;
- figure 2 is a side view of the detail H illustrated in figure 1;
- figures 3 and 4 show an enlarged plan view and an enlarged side view of a detail K of the clothes-horse illustrated in figure 1;
- figures 5, 6, and 7 are plan views of the detail K illustrated in figure 1 in three different configurations;
- figures 8, 9, 10, and 11 are partial cross-section side views of the detail K in four different configurations.
- figures 12, 13, and 14 are schematic views of additional embodiments of the fixing system and the clothes-horse according to the present invention.

[0017] With reference to the accompanying drawings, figures 1 and 2 show a clothes-horse according to the

invention in an assembly configuration, in which the number 1 denotes the clothes-horse.

[0018] The clothes-horse 1 is a tower type clothes-horse. The clothes-horse 1 comprises a support frame 2. The support frame 2 preferably consists of a first 3 and a second 4 vertical upright and a lower crosspiece 5 connecting the first 3 and the second 4 vertical upright.

[0019] The vertical uprights 3 and 4 will also be subsequently referred to as uprights 3 and 4 and the support frame 2 also as the frame 2.

[0020] The frame 2 is supported by base elements 6.

[0021] The clothes-horse 1 comprises a plurality of hanging shelves P, each shelf P consisting of a plurality of wires 7.

[0022] The wires 7 are supported at each end by support arms (8,9).

[0023] The wires 7 are preferably irremovably constrained to the support arms (8, 9).

[0024] The support arms (8, 9) of the hanging shelf P preferably have a substantially trapezoidal cross-section.

[0025] Each support arm comprises a pair (10, 11) of opposite side surfaces, an upper surface 12 and a lower surface 13.

[0026] The support arm (8, 9) develops prevalently along a direction indicated in figures 2 and 5 with the reference letter X.

[0027] According to the invention, the support arm (8, 9) comprises a portion 33 for connection to the frame 2.

[0028] The connection portion 33 of the support arm (8, 9) is preferably tapered away from the hanging shelf P.

[0029] Each hanging shelf P is fixed to the frame 2 by the fixing system 14 according to the invention and is mobile between a support position A, in which it is substantially horizontal (preferably slightly tilted upwards) to receive the clothes, and a fold-away position B in which it is substantially vertical.

[0030] With reference to figure 2, the hanging shelves P to the left of the first vertical upright 3 are in the support position A while the shelves P to the right of the first vertical upright 3 are in the fold-away position B.

[0031] For the sake of simplicity, the fixing system 14 according to the invention will be subsequently described with reference to one of the hanging shelves P of the clothes-horse 1.

[0032] The fixing system 14 comprises an element 15 for connection of the hanging shelf P to the frame 2. The element 15 is preferably fixed by negative allowance to the vertical upright 3 of the frame 2. The connection element 15, illustrated in figures 3 and 4, comprises a central portion 16.

[0033] The central portion 16 is provided with a central hole 18 through which a vertical upright 3 is inserted; the connection element 15 is therefore configured to be fixed, by insertion, to one of the vertical uprights 3.

[0034] According to the invention, the connection element 15 comprises a portion 17 designed to receive the connection portion 33 of the support arm (8, 9), hereinafter also referred to as receiving portion 33.

[0035] In the non-binding example shown in figures 3 and 4 the connection element 15 comprises two receiving portions 17, respectively a first receiving portion 17A and a second receiving portion 17B.

[0036] The two receiving portions 17A and 17B are designed to receive the connection portions 33 of the arms (8, 9) of two different hanging shelves P.

[0037] According to an alternative embodiment not shown in the drawings, the connection element 15 comprises just one receiving portion 17.

[0038] The receiving portion 17 comprises a pair of flexible walls 19.

[0039] The flexible walls 19 develop, according to a plan view, along a direction indicated in figure 5 with the reference letter Y.

[0040] The flexible walls 19 comprise two opposite surfaces (20, 21) which form a housing 22 designed to receive the insertion portion 33 of the support arm 8 of the hanging shelf P; these surfaces will hereinafter also be indicated as opposite surfaces (20, 21) .

[0041] According to an alternative embodiment not shown in the drawings, the receiving portion 17 comprises a pair of walls which form a housing 22 and only one of the two walls is a flexible wall 19.

[0042] The opposite surfaces (20, 21) of the flexible walls 19 are preferably connected to a surface 23 of the central portion 16 designed to strike the insertion portion 33 of the support arm 8, hereinafter also referred to as the striker surface 23.

[0043] Each flexible wall 19 is fitted with a projection 24.

[0044] Each projection 24 protrudes from the relative opposite surface (20, 21) of the flexible wall 19. Each projection 24 preferably comprises an enlarged portion 25, distal with respect to the flexible wall 19, and a narrow portion 26, proximal with respect to the flexible wall 19.

[0045] Even more preferably, the enlarged portion 25 of each projection 24 comprises a distal surface 27 at an angle with respect to the prevalent direction of development Y in plan view of the relative flexible wall 19.

[0046] This distal surface 27 is shaped in such a way as to strike against the connection portion 33 of the support arm (8, 9) and favour the forward movement of the arm (8, 9) into the receiving portion 17.

[0047] In other words, the distal surface 27 is shaped to favour the coupling of the portions (17, 33) of the arm 8 and of the connection element 15 when they are reciprocally moved to a position of irreversible reciprocal coupling, in which the first and second means of engagement are irreversibly coupled.

[0048] The support arm 8 is provided with a housing 28. The housing 28 is preferably the through type, that is to say a housing 28 which connects both opposite side surfaces (10, 11) of the support arm 8.

[0049] The housing 28 preferably comprises a lower enlarged portion 29 and an upper narrower portion 30, visible in figures 8 to 11.

[0050] The lower enlarged portion 29 of the housing 28 and the enlarged portion 25 of the projection 24 are

shaped to allow insertion of the projection 24 in the housing 28.

[0051] The housing 28 forms an internal cavity 36 shaped to house the enlarged portion 25 of the projection 24.

[0052] The housing 28 is also shaped in such a way to allow the movement of the arm 8 between the support position A and the fold-away position B and vice versa.

[0053] In fact, the enlarged portion 29 of the housing 28 allows the movement of the projection 24 inside the cavity 36 to permit, as will be better explained below, the rotation of the arm 8 from the support position A to the fold-away position B, in which the projection 24 is accommodated in the narrow portion 30 of the housing 28.

[0054] Considered together, the projections 24 form the first means of engagement 32.

[0055] The housing 28 forms the second means of engagement 31.

[0056] The first 32 and second 31 means of engagement are shaped to couple together with consequent connection of the support arm 8 to the support frame 2.

[0057] The expression "connection of the support arm (8, 9) to the frame" means that the support arm is constrained with respect to the frame.

[0058] According to the invention, the flexible wall 19 is shaped in order to deform elastically between a rest position E and a deformed position F in order to allow insertion of the projections 24 inside the cavity 36 of the housing 28, that is to say the reciprocal coupling of the projections 24 and the housing 28.

[0059] The flexible wall 19 is preferably made from plastic material.

[0060] The connection of a hanging shelf P to the connection element 15 by means of the fixing system 14 according to this invention will be described below.

[0061] Figure 5 shows the support arm 8 - or better one of the two support arms - of the hanging shelf P not attached to the connection element 15.

[0062] The user moves the connection portion 33 of the support arm 8 towards the receiving portion 17 of the connection element 15, and inserts it into the housing 22 of the receiving portion 17.

[0063] The flexible walls 19 are in the rest position E, that is to say they are not deformed.

[0064] The support arm 8 is moved towards the receiving portion 17; by way of a non-limiting example, with reference to the preferred embodiment the support arm 8 is in fact moved forward so that according to a plan view the prevalent development directions of the flexible walls 19 and the support arm 8, indicated respectively with the reference letters Y and X, are substantially parallel and in such a way that the connection portion 33 of the support arm 8 is centred, according to a plan view, with respect to the opposite surfaces (20, 21).

[0065] As shown in figure 6, during insertion the receiving portion 17, the connection portion 33 of the support arm 8 strikes against the end surfaces 27 of the projections 24 and exerts on the projections 24 a force with a component at right angles to the opposite surfaces 19; this elastically deforms the flexible walls 19 moving them apart along a direction at right angles to the insertion direction.

[0066] The walls 19 are therefore deformed from the rest position E to the deformed position F.

[0067] The insertion of the connection portion 33 in the housing 22 is carried out until a coupling position of the portion 33 with the portion 17 is reached, in which the projections 24 and the housing 28 are irreversibly coupled.

[0068] In other words, the connection portion 33 of the support arm 8 is moved forward into the housing 22 until the enlarged portion 25 of the projections 24 is inserted in the cavity 36 of the housing 28, as shown in figure 7.

[0069] When the projections 24 are inserted in the housings 28, the flexible walls 19 return elastically to the rest position E, as shown in figure 7.

[0070] The insertion of the projections 24 in the housing 28 determines the connection of the support arm 8 to the connection element 15, that is to say to the frame 2.

[0071] The coupling between the portions 17 and 33 is the irreversible type, that is to say when the projections 24 are engaged in the housing 28 it is not possible to disconnect the two portions 17 and 33.

[0072] The hanging shelf P, fixed to the frame 2 by the fixing system 14, is however mobile between the two extreme support A and fold-away B positions.

[0073] The projections 24 are in fact shaped so as to slidingly engage the housing 28.

[0074] Figures 8 to 11 show the positions of the support arm 8 with respect to the connection element 15 when the hanging shelf P is moved from the fold-away position B (shown in figure 8) to the support position A (shown in figure 11).

[0075] The user lifts the hanging shelf P from the rest position B to a first intermediate position C, shown in figure 9, by rotating the support arm 8 with respect to the axis R identified by the projections 24 in the direction W (anticlockwise with reference to the righthand arm 8 in figure 8). The projections 24 are positioned with the enlarged portion 29 in the housing 28.

[0076] When the hanging shelf P is in the first intermediate position C (figure 9), the user turns the support arm 8 again in the direction W to move the hanging shelf P to the second intermediate position D shown in figure 10.

[0077] When the hanging shelf P is in the second intermediate position D, the user lifts the support arm 8 upwards until the projections 24 encounter the upper edge of the housing 28. In this support position A, shown in figure 11, the support arm 8 cannot rotate with respect to the axis R of the projections 24 since the surface 34 of the end of the connection portion 33 of the support arm 8 is in contact with the striker surface 23 of the connection element 15.

[0078] In this support position A, the projections 24 are positioned in the narrow portion 30 of the housing 28.

[0079] Moreover, in the support position A, the hanging

shelf P is tilted slightly upwards in order to compensate the elastic deformation forces due to the clothes hung on the bars 2 and which act on the hanging shelf P.

[0080] The fixing system 14 described above advantageously allows rapid fixing of the hanging shelf P to the frame in an irreversible way, that is to say so that the shelf P cannot be released from the support frame 2.

[0081] Moreover, the coupling of the hanging shelf P to the frame 2 by means of the fixing system 14 described above provides the hanging shelf P with mobility between the fold-away position B and the support position A.

[0082] The fixing system 14 according to this invention also advantageously allows not particularly expert users to fix the hanging shelf P to the frame 2 of the clothes horse since the sequence of operations to achieve the fixing is extremely simple and foolproof.

[0083] Figures 12 to 14 show schematic variations of the preferred embodiment of the clothes horse and the fixing system according to the invention; in particular, figures 12 to 14 show on the left an arm 8 whose coupling portion 33 is irreversibly coupled with the portion 17 of the connection element 15 and on the right an arm 8 whose coupling portion 33 is not coupled with the portion 17 of the connection element 15.

[0084] With particular reference to figure 12, the connection portion 33 of the arm 8 is provided with a pair of projections 24 on opposite sides of the arm 8 and the receiving portion 17 comprises a pair of flexible walls 19.

[0085] Each flexible wall 19 is provided with a housing 28 designed to receive one of the projections 24.

[0086] The coupling between the hanging shelf P and the frame 2, according to this variation, is substantially carried out in the same way described for the preferred embodiment.

[0087] With reference to the variation in figure 13, the connection portion 33 of the arm 8 comprises a pair of flexible walls 19 which form a housing 22.

[0088] The connection portion 33 is provided with the projections 24, arranged facing each other on the inner surfaces of the flexible walls 19.

[0089] The connection element 15 is provided with a housing 28 designed to receive the projections 24 and is shaped to be inserted in the housing 22. This variation presents the same technical-functional features described with reference to the preferred embodiment.

[0090] With reference to the variation in figure 14, the connection portion 33 of the arm 8 comprises a pair of flexible walls 19 that form a housing 22.

[0091] The connection portion 33 is provided with a pair of housings 28, facing each other and on the inner surfaces of the flexible walls 19.

[0092] The connection element 15 is provided on opposite sides with a pair of projections 24, designed to engage with the respective housings 28, and is shaped to be inserted in the housing 22.

[0093] This variation presents the same technical-functional features described with reference to the preferred embodiment.

[0094] According to embodiments not shown in the drawings, the connection portion 33 or the receiving portion 17 can comprise only one flexible wall 19 shaped in such a way as to deform elastically.

[0095] Moreover, according to a variation not shown, the first 32 and second 31 means of engagement can respectively comprise a single projection 24 and a housing 28 or vice versa.

[0096] The invention described above is susceptible to evident industrial applications; it can also be the subject of numerous modifications and variations all within the scope of its disclosure; all the details can also be replaced by technically equivalent elements.

Claims

1. A system for fixing a hanging shelf (P) to the support frame (2) of a clothes-horse (1), comprising at least one support arm (8, 9) of the hanging shelf and provided with a portion (33) for connection to the support frame (2), at least one element (15) for connection of the arm (8, 9) to the support frame (2), which can be fixed to the support frame (2) and provided with a portion (17) designed to receive the connection portion (33) of the arm (8, 9), **characterised in that** it comprises first means (32) of engagement fixed to said arm (8, 9) and second means (31) of engagement fixed to said insertion portion (17), said first (32) and second (31) means of engagement being designed to reciprocally couple with consequent connection of the support arm (8, 9) to the support frame (2), and **in that** said portion (17) designed to receive said connection portion (33) of the arm (8) or said connection portion (33) comprises at least one flexible wall (19) designed to deform elastically between a rest position (E) and a deformed position (F), said flexible wall (19) being designed to assume said deformed position (F) when said portions (17, 33) of the arm (8, 9) and of the connection element (15) are reciprocally moved to a position of reciprocal coupling in which said first (32) and second (31) means of engagement are irreversibly coupled.

2. A system according to claim 1, **characterised in that** said first means (32) of engagement comprise a housing (28) and said second means (31) of engagement comprise at least one projection (24) shaped to slidingly engage said housing (28).

3. A system according to either of the foregoing claims 1 or 2, **characterised in that** said portion (17) designed to receive the connection portion (33) comprises a pair of flexible walls (19) facing each other and forming a housing (22) for the connection portion (33).

4. A clothes-horse (1) comprising a support frame (2),

a plurality of elements (7) which form at least one hanging shelf (P), the clothes-horse (1) further comprises a system for fixing the hanging shelf (P) to the support frame (2) according to any one of the previous claims.

5. A clothes-horse according to claim 4, **characterised in that** said first means (32) of engagement comprise a housing (28) and said second means (31) of engagement comprise at least one projection (24) shaped to slidingly engage said housing (28).

6. A clothes-horse according to claim 5, **characterised in that** said second means (31) of engagement comprise a pair of projections (24).

7. A clothes-horse according to claim 4, **characterised in that** said second means (31) of engagement comprise a housing (28) and said first means (32) of engagement comprise at least one projection (24) shaped to slidingly engage said housing (28).

8. A clothes-horse according to claim 7, **characterised in that** said first means (32) of engagement comprise a pair of projections (24).

9. A clothes-horse according to any of the foregoing claims from 5 to 8, **characterised in that** said projection (24) comprises an inclined distal surface (27) shaped to favour the coupling of said portions (33, 17) of the arm (8, 9) and of the connection element (15) when they are reciprocally moved to said position of reciprocal coupling.

10. A clothes-horse according to any of the foregoing claims from 5 to 9, **characterised in that** said housing (28) comprises an enlarged portion (29) and a narrow portion (30).

11. A clothes-horse according to claim 10, **characterised in that** said projection (24) comprises an enlarged distal portion (25) and a narrow proximal portion (26), said enlarged portions (25, 29) of the projection (24) and of the housing (28) being shaped to allow the insertion of the projections (24) in the housing (28).

12. A clothes-horse according to any of the foregoing claims from 4 to 11, **characterised in that** said portion (17) designed to receive the connection portion (33) comprises a pair of flexible walls (19) facing each other and forming a housing (22) designed to receive the connection portion (33), said second means (31) of engagement being fixed to said flexible walls (19).

13. A clothes-horse according to any of the foregoing claims from 4 to 12, in which said connection portion (33) of the support arm (8, 9) is tapered away from the hanging shelf (P).

14. A clothes-horse according to any of the foregoing claims from 4 to 11, **characterised in that** said connection portion (33) comprises a pair of flexible walls (19) facing each other and forming a housing (22) for said portion (17) of the connection element (15), said first means (32) of engagement being fixed to said flexible walls (19).

Patentansprüche

1. System zum Fixieren einer hängenden Ablage (P) am Halterahmen (2) eines Wäscheständers (1), umfassend mindestens einen Haltearm (8, 9) der hängenden Ablage und versehen mit einem Abschnitt (33) für die Verbindung mit dem Halterahmen, mindestens ein Element (15) für die Verbindung des Arms (8, 9) mit dem Halterahmen (2), das am Halterahmen (2) fixiert werden kann, und versehen mit einem Abschnitt (17), ausgestaltet, um den Verbindungsabschnitt (33) des Arms (8, 9) aufzunehmen, **dadurch gekennzeichnet, dass** es erste Mittel (32) für den Eingriff, die an dem Arm (8, 9) fixiert sind, und zweite Mittel (31) für den Eingriff, die an dem Einsatzabschnitt (17) fixiert sind, umfasst, wobei die ersten (32) und die zweiten (31) Mittel für den Eingriff ausgestaltet sind, um gegenseitig mit entsprechender Verbindung des Haltearms (8, 9) mit dem Halterahmen (2) gekuppelt zu werden, und dadurch, dass der Abschnitt (17), ausgestaltet, um den Verbindungsabschnitt (33) des Arms (8) oder den Verbindungsabschnitt (33) aufzunehmen, mindestens eine flexible Wand (19) umfasst, ausgestaltet, um sich elastisch zwischen einer Ruhestellung (E) und einer verformten Stellung (F) zu verformen, wobei die flexible Wand (19) ausgestaltet ist, um die verformte Stellung (F) einzunehmen, wenn die Abschnitte (17, 33) des Arms (8, 9) und des Verbindungselements (15) gegenseitig in eine gegenseitige Kupplungsstellung bewegt werden, in der die ersten (32) und die zweiten (31) Mittel für den Eingriff irreversibel gekuppelt sind.

2. System nach Anspruch 1, **dadurch gekennzeichnet, dass** die ersten Mittel (32) für den Eingriff ein Gehäuse (28) umfassen und die zweiten Mittel (31) für den Eingriff mindestens einen Vorsprung (24) umfassen, geformt, um schiebbar mit dem Gehäuse (28) in Eingriff zu gelangen.

3. System nach einem der vorhergehenden Ansprüche 1 oder 2, **dadurch gekennzeichnet, dass** der Abschnitt (17), ausgestaltet, um den Verbindungsabschnitt (33) aufzunehmen, ein Paar flexible Wände (19) umfasst, die einander zugewandt angeordnet

sind und ein Gehäuse (22) für den Verbindungsabschnitt (33) bilden.

4. Wäscheständer (1), umfassend einen Halterahmen (2), eine Vielzahl an Elementen (7), die mindestens eine hängende Ablage (P) bilden, wobei der Wäscheständer (1) zudem ein System umfasst, um die hängende Ablage (P) am Halterahmen (2) nach einem der vorhergehenden Ansprüche zu fixieren.

5. Wäscheständer nach Anspruch 4, **dadurch gekennzeichnet, dass** die ersten Mittel (32) für den Eingriff ein Gehäuse (28) umfassen und die zweiten Mittel (31) für den Eingriff mindestens einen Vorsprung (24) umfassen, geformt, um schiebbar mit dem Gehäuse (28) in Eingriff zu gelangen.

6. Wäscheständer nach Anspruch 5, **dadurch gekennzeichnet, dass** die zweiten Mittel (31) für den Eingriff ein Paar Vorsprünge (24) umfassen.

7. Wäscheständer nach Anspruch 4, **dadurch gekennzeichnet, dass** die zweiten Mittel (31) für den Eingriff ein Gehäuse (28) umfassen und die ersten Mittel (32) für den Eingriff mindestens einen Vorsprung (24) umfassen, geformt, um schiebbar mit dem Gehäuse (28) in Eingriff zu gelangen.

8. Wäscheständer nach Anspruch 7, **dadurch gekennzeichnet, dass** die ersten Mittel (32) für den Eingriff ein Paar Vorsprünge (24) umfassen.

9. Wäscheständer nach einem der vorhergehenden Ansprüche 5 bis 8, **dadurch gekennzeichnet, dass** der Vorsprung (24) eine geneigte distale Oberfläche (27) umfasst, geformt, um die Kupplung der Abschnitte (33, 17) des Arms (8, 9) und des Verbindungselements (15) zu begünstigen, wenn diese gegenseitig in die Stellung der gegenseitigen Kupplung bewegt werden.

10. Wäscheständer nach einem der vorhergehenden Ansprüche 5 bis 9, **dadurch gekennzeichnet, dass** das Gehäuse (28) einen verbreiterten Abschnitt (29) und einen schmalen Abschnitt (30) umfasst.

11. Wäscheständer nach Anspruch 10, **dadurch gekennzeichnet, dass** der Vorsprung (24) einen verbreiterten distalen Abschnitt (25) und einen schmalen proximalen Abschnitt (26) umfasst, wobei die verbreiterten Abschnitte (25, 29) des Vorsprungs (24) und des Gehäuses (28) geformt sind, um den Einsatz der Vorsprünge (24) in das Gehäuse (28) zu erlauben.

12. Wäscheständer nach einem der vorhergehenden Ansprüche 4 bis 11, **dadurch gekennzeichnet, dass** der Abschnitt (17), ausgestaltet, um den Verbindungsabschnitt (33) aufzunehmen, ein Paar flexibler Wände (19) umfasst, die einander zugewandt angeordnet sind und ein Gehäuse (22) für die Aufnahme des Verbindungsabschnitts (33) bilden, wobei die zweiten Mittel (31) für den Eingriff an den flexiblen Wänden (19) fixiert sind.

13. Wäscheständer nach einem der vorhergehenden Ansprüche 4 bis 12, wobei der Verbindungsabschnitt (33) des Haltearms (8, 9) abfallend wegführend von der hängenden Ablage (P) angeordnet ist.

14. Wäscheständer nach einem der vorhergehenden Ansprüche 4 bis 11, **dadurch gekennzeichnet, dass** der Verbindungsabschnitt (33) ein Paar flexible Wände (19) umfasst, die einander zugewandt angeordnet sind und ein Gehäuse (22) für den Abschnitt (17) des Verbindungselements (15) bilden, wobei die ersten Mittel (32) für den Eingriff an den flexiblen Wänden (19) fixiert sind.

Revendications

1. Système de fixation d'une grille servant à suspendre (P) au cadre de support (2) d'un étendoir à linge (1), comprenant au moins un bras de support (8, 9) de la grille servant à suspendre et pourvu d'une partie (33) destinée au raccordement au cadre de support (2), au moins un élément (15) destiné au raccordement du bras (8, 9) au cadre de support (2) pouvant être fixé au cadre de support (2) et pourvu d'une partie (17) conçue pour recevoir la partie de raccordement (33) du bras (8, 9), **caractérisé en ce qu'**il comprend des premiers moyens (32) d'engagement fixés au dit bras (8, 9) et des seconds moyens (31) d'engagement fixés à ladite partie d'insertion (17), lesdits premiers (32) et seconds (31) moyens d'engagement étant conçus pour s'accoupler réciproquement de sorte qu'il résulte un raccordement du bras de support (8, 9) au cadre de support (2), et **en ce que** ladite partie (17), conçue pour recevoir ladite partie de raccordement (33) du bras (8) ou ladite partie de raccordement (33), comprend au moins une paroi souple (19) conçue pour se déformer élastiquement entre une position de repos (E) et une position déformée (F), ladite paroi souple (19) étant conçue pour adopter ladite position déformée (F) lorsque lesdites parties (17, 33) du bras (8, 9) et de l'élément de raccordement (15) sont déplacées réciproquement vers une position d'accouplement réciproque dans laquelle lesdits premiers (32) et seconds (31) moyens d'engagement sont accouplés de façon irréversible.

2. Système selon la revendication 1, **caractérisé en ce que** lesdits premiers moyens (32) d'engagement comprennent un logement (28) et lesdits seconds

moyens (31) d'engagement comprennent au moins une saillie (24) ayant une forme lui permettant de s'engager de façon coulissante avec ledit logement (28).

3. Système selon l'une quelconque des revendications précédentes 1 ou 2, **caractérisé en ce que** ladite partie (17) conçue pour recevoir la partie de raccordement (33) comprend une paire de parois souples (19) situées l'une en face de l'autre et formant un logement (22) pour la partie de raccordement (33).

4. Etendoir à linge (1) comprenant un cadre de support (2), une pluralité d'éléments (7) formant au moins une grille servant à suspendre (P), l'étendoir à linge (1) comprenant de plus un système de fixation de la grille servant à suspendre (P) au cadre de support (2) selon l'une quelconque des revendications précédentes.

5. Etendoir à linge selon la revendication 4, **caractérisé en ce que** lesdits premiers moyens (32) de d'engagement comprennent un logement (28) et lesdits seconds moyens (31) d'engagement comprennent au moins une saillie (24) ayant une forme lui permettant de s'engager de façon coulissante avec ledit logement (28) .

6. Etendoir à linge selon la revendication 5, **caractérisé en ce que** lesdits seconds moyens (31) d'engagement comprennent une paire de saillies (24).

7. Etendoir à linge selon la revendication 4, **caractérisé en ce que** lesdits seconds moyens (31) d'engagement comprennent un logement (28) et lesdits premiers moyens (32) d'engagement comprennent au moins une saillie (24) ayant une forme lui permettant de s'engager de façon coulissante avec ledit logement (28) .

8. Etendoir à linge selon la revendication 7, **caractérisé en ce que** lesdits premiers moyens (32) d'engagement comprennent une paire de saillies (24).

9. Etendoir à linge selon l'une quelconque des revendications précédentes de 5 à 8, **caractérisé en ce que** ladite saillie (24) comprend une surface distale inclinée (27) ayant une forme permettant de faciliter l'accouplement desdites parties (33, 17) du bras (8, 9) et de l'élément de raccordement (15) lorsqu'elles se déplacent réciproquement vers ladite position d'accouplement réciproque.

10. Etendoir à linge selon l'une quelconque des revendications précédentes de 5 à 9, **caractérisé en ce que** ledit logement (28) comprend une partie élargie (29) et une partie rétrécie (30).

11. Etendoir à linge selon la revendication 10, **caractérisé en ce que** la saillie (24) comprend une partie distale élargie (25) et une partie proximale rétrécie (26), lesdites partie élargies (25, 29) de la saillie (24) et du logement (28) ayant une forme permettant l'insertion des saillies (24) dans le logement (28).

12. Etendoir à linge selon l'une quelconque des revendications précédentes de 4 à 11, **caractérisé en ce que** ladite partie (17) conçue pour recevoir la partie de raccordement (33) comprend une paire de parois souples (19) situées l'une en face de l'autre et formant un logement (22) conçu pour recevoir la partie de raccordement (33), lesdits seconds moyens (31) d'engagement étant fixés auxdites parois souples (19).

13. Etendoir à linge selon l'une quelconque des revendications précédentes de 4 à 12, dans lequel ladite partie de raccordement (33) du bras de support (8, 9) se rétrécie en s'éloignant de la grille servant à suspendre (P).

14. Etendoir à linge selon l'une quelconque des revendications précédentes de 4 à 11, **caractérisé en ce que** ladite partie de raccordement (33) comprend une paire de parois souples (19) situées l'une en face de l'autre et formant un logement (22) pour ladite partie (17) de l'élément de raccordement (15), lesdits premiers moyens (32) d'engagement étant fixés auxdites parois souples (19).

FIG.2

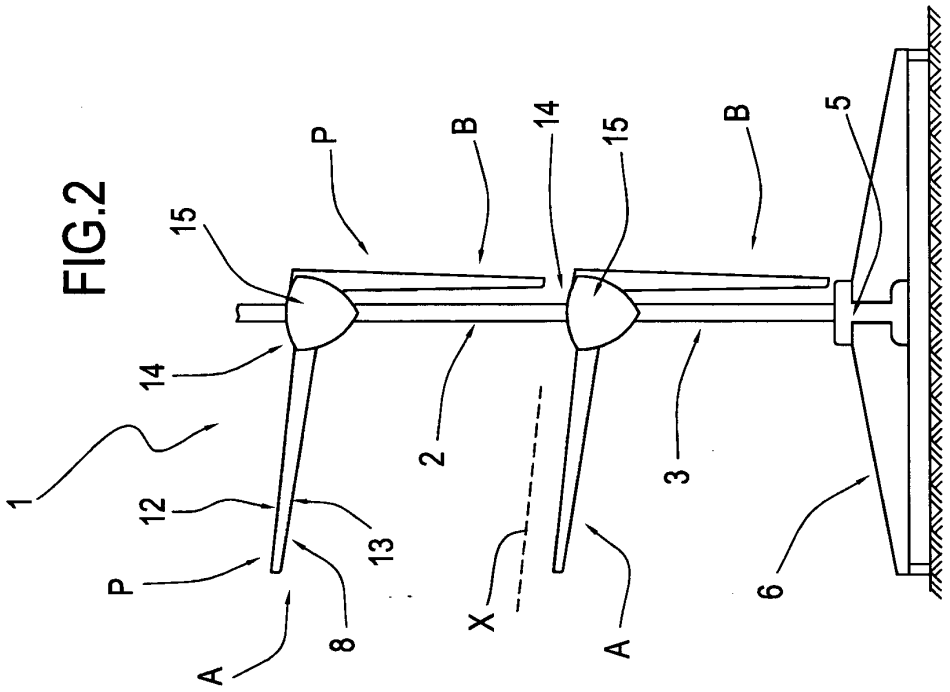


FIG.1

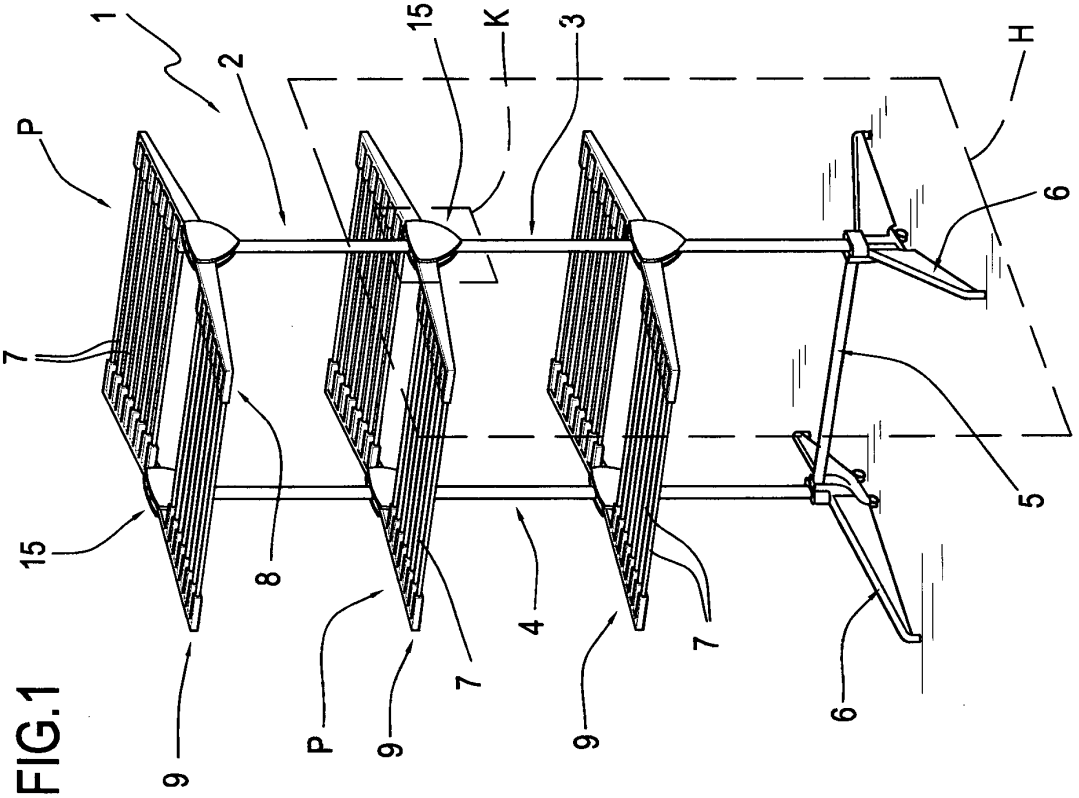


FIG.3

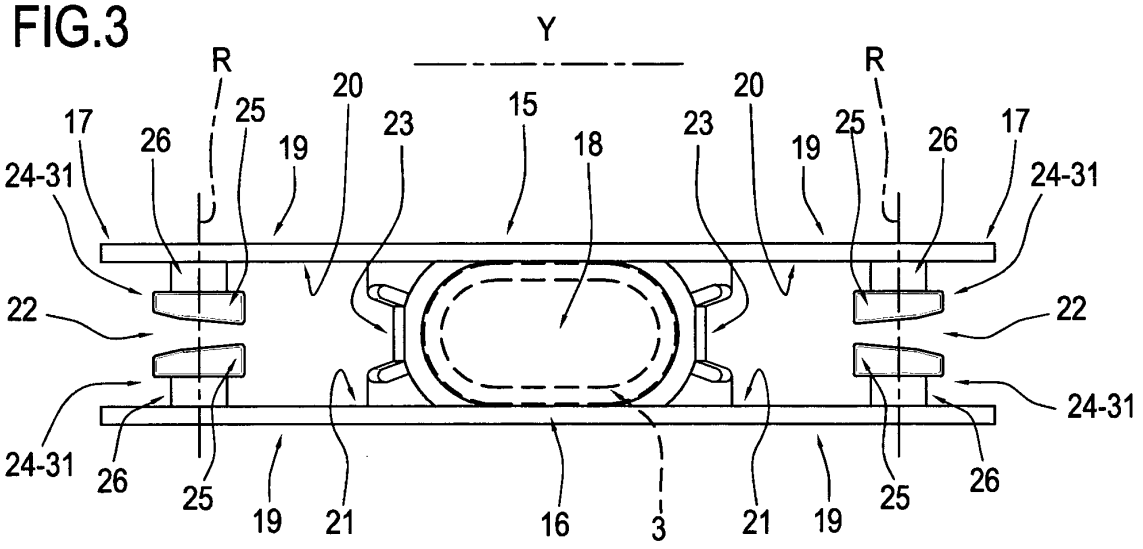

Y
R
R
17
26
25
19
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23
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18
23
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19
25
26
17
24-31
24-31
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22
24-31
24-31
26
25
19
21
16
3
21
19
25
26

FIG.4

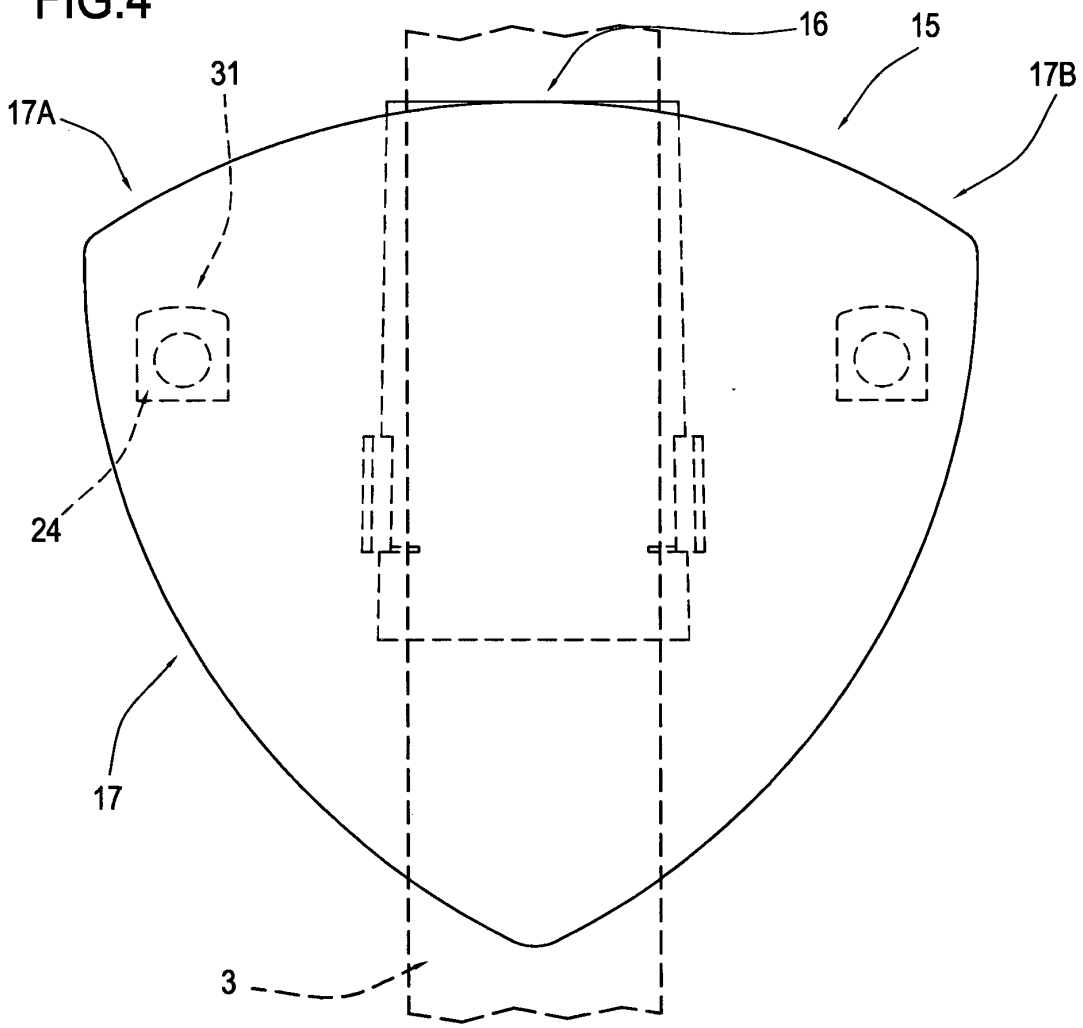

16
15
31
17A
17B
24
17
3

FIG.5

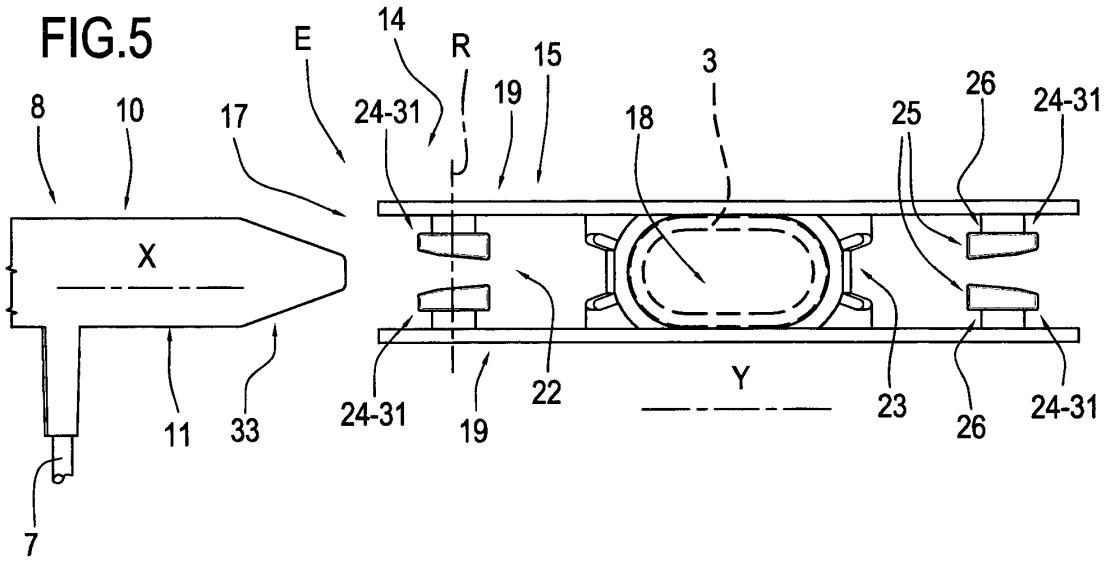


FIG.6

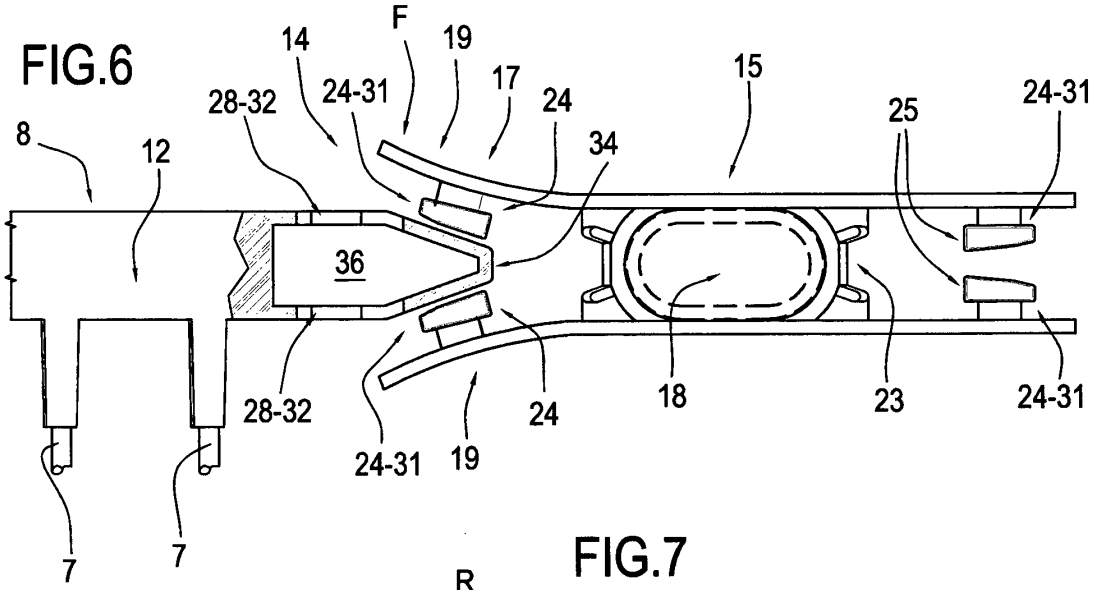


FIG.7

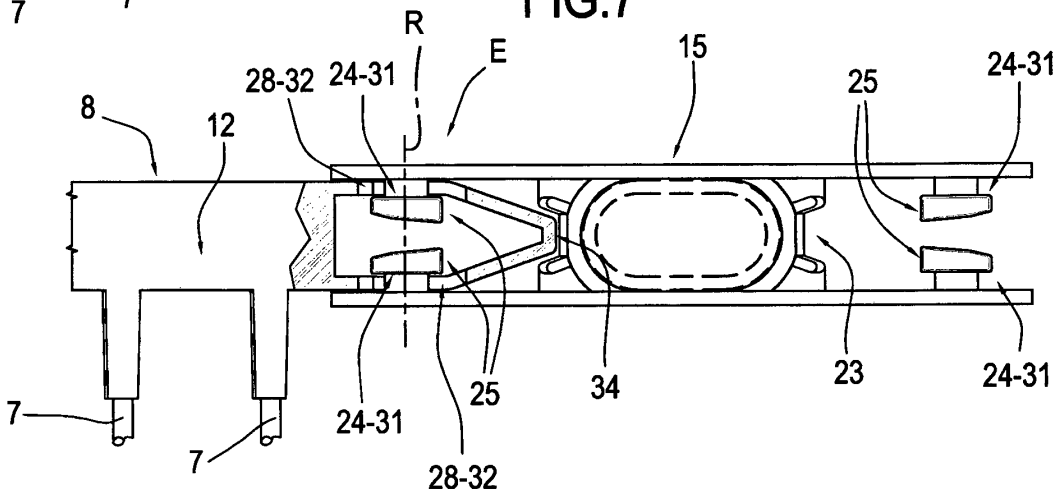


FIG.8

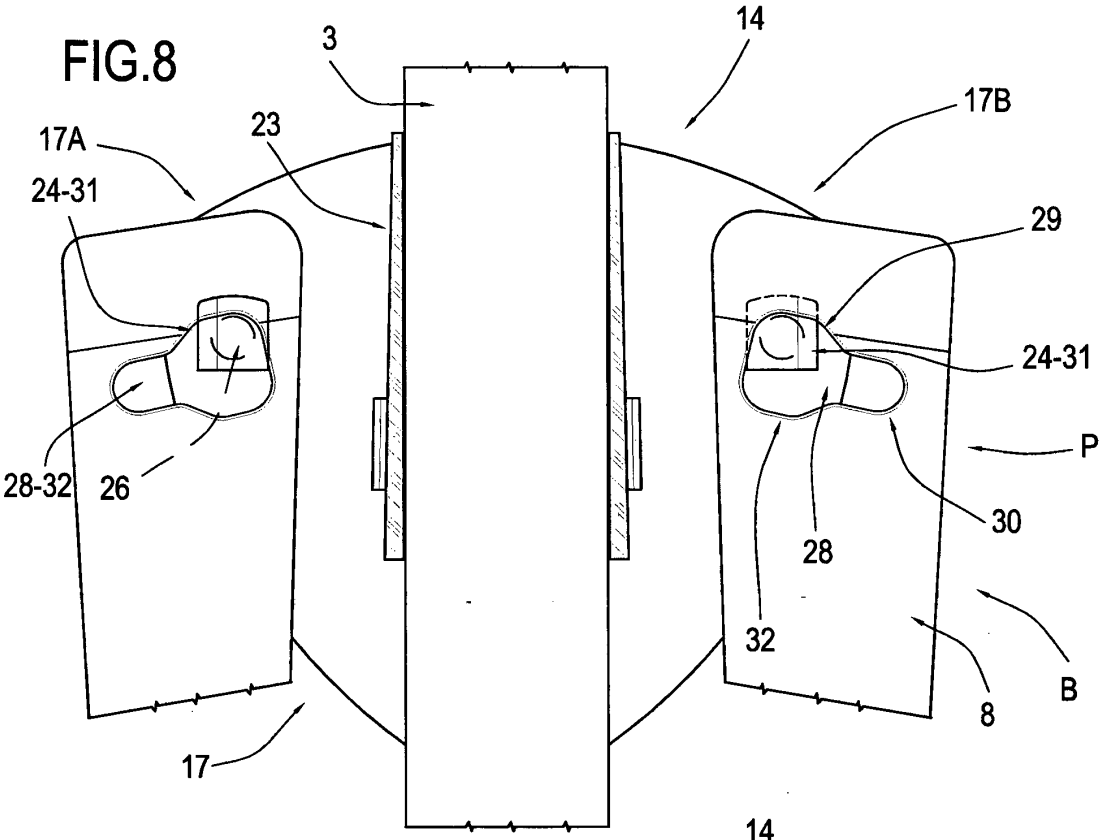

3
14
17B
23
17A
24-31
29
24-31
P
28-32
26
30
28
32
8
B
17

FIG.9

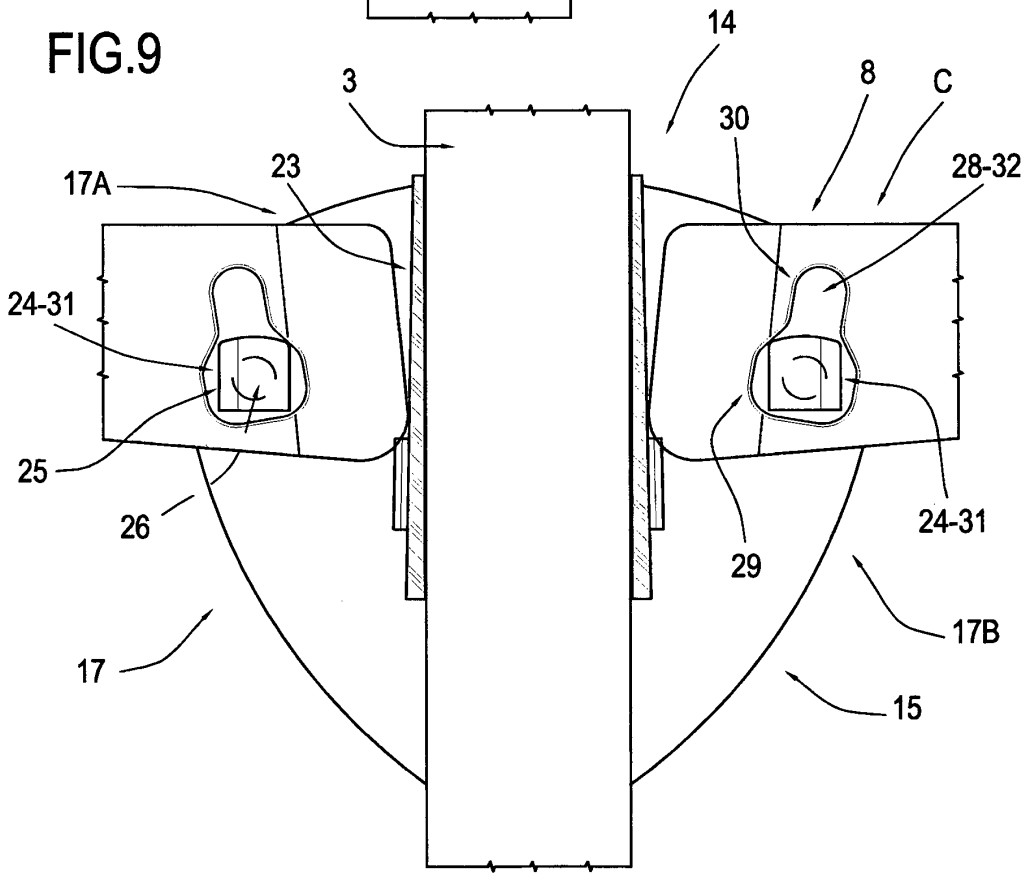

14
3
8
C
30
28-32
23
17A
24-31
25
26
24-31
29
17B
17
15

FIG.10

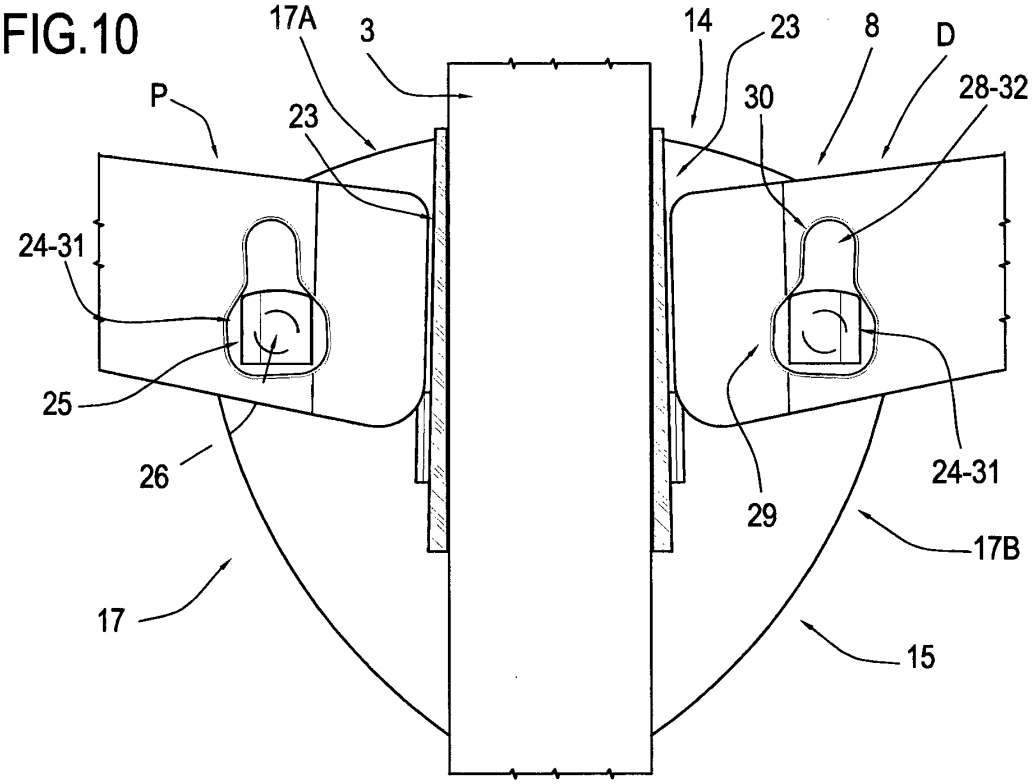

17A
3
14
23
8
D
P
23
30
28-32
24-31
25
26
29
24-31
17B
17
15

FIG.11

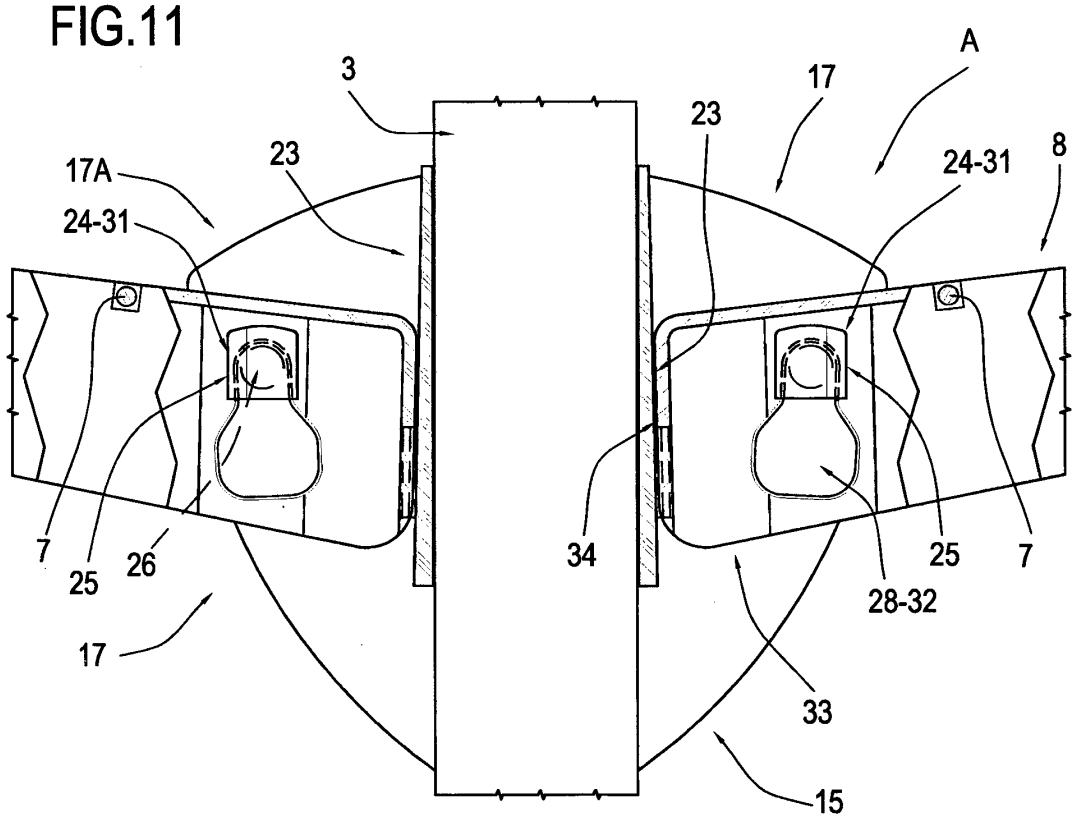

3
A
17
23
23
17A
24-31
24-31
8
7
25
26
34
25
7
28-32
17
33
15

FIG.12

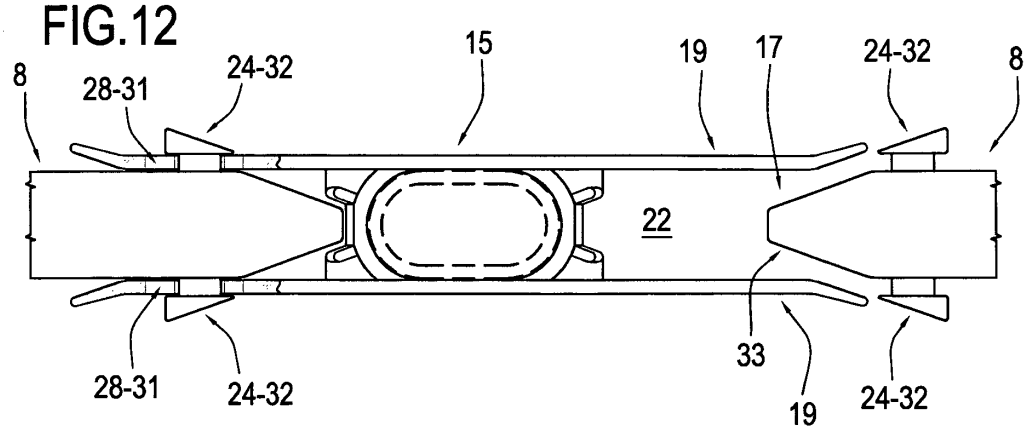


FIG.13

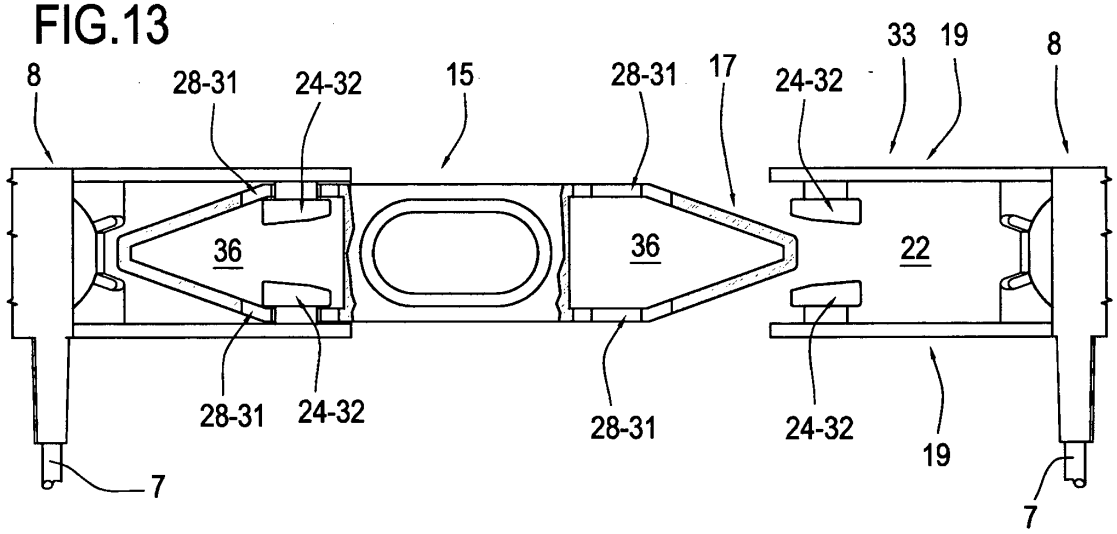
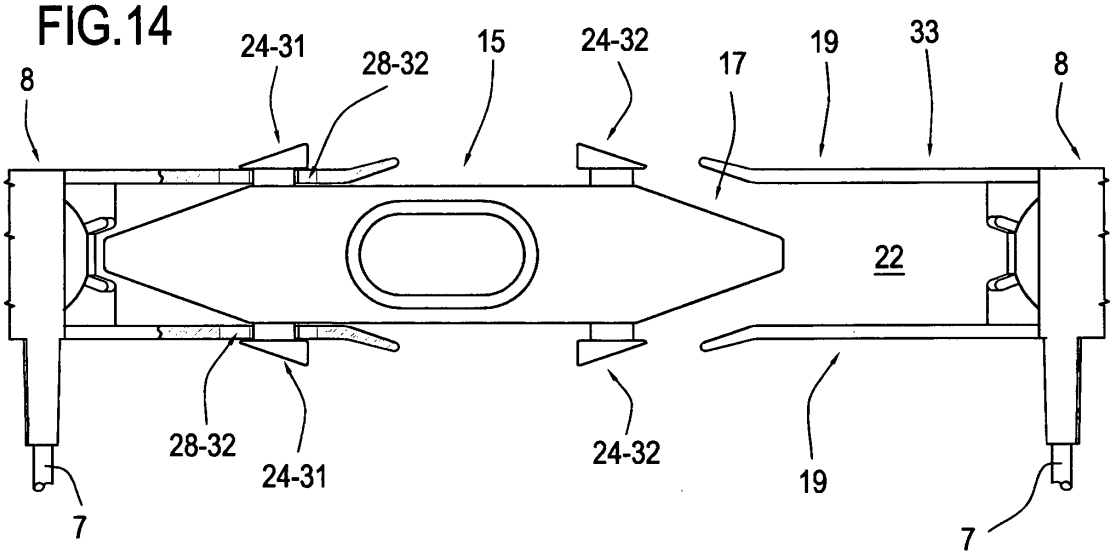


FIG.14



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1812640 A **[0002]**