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(54) **THERAPEUTIC PARALLEL BARS**

(57) The invention relates to therapeutic parallel bars which can be brought into a use position and a stowed position, the parallel bars comprising four uprights, two longitudinal members, wherein each longitudinal member is supported by two uprights, which belong to one pair, at the respective upper ends of these uprights, and two transverse members, wherein each transverse member supports two uprights which belong to different pairs, wherein the respective combinations of two uprights belonging to the same pair and the longitudinal member supported by the uprights, at least insofar as this longitudinal member extends between the ends of the upper ends of these uprights, are each separate from the two

transverse members in the stowed position and are rigidly connected to the two transverse members at the respective lower ends of the uprights belonging to the respective combinations in the use position, wherein the parallel bars are combined with an item of furniture, which item of furniture has at least two furniture legs and a furniture leaf supported by the at least two furniture legs, and the two combinations in the stowed position of the parallel bars are stowed in the item of furniture, wherein the two longitudinal members extend parallel to one another and to the furniture leaf under the furniture leaf, and the four uprights extend parallel to one another and to the at least two furniture legs.

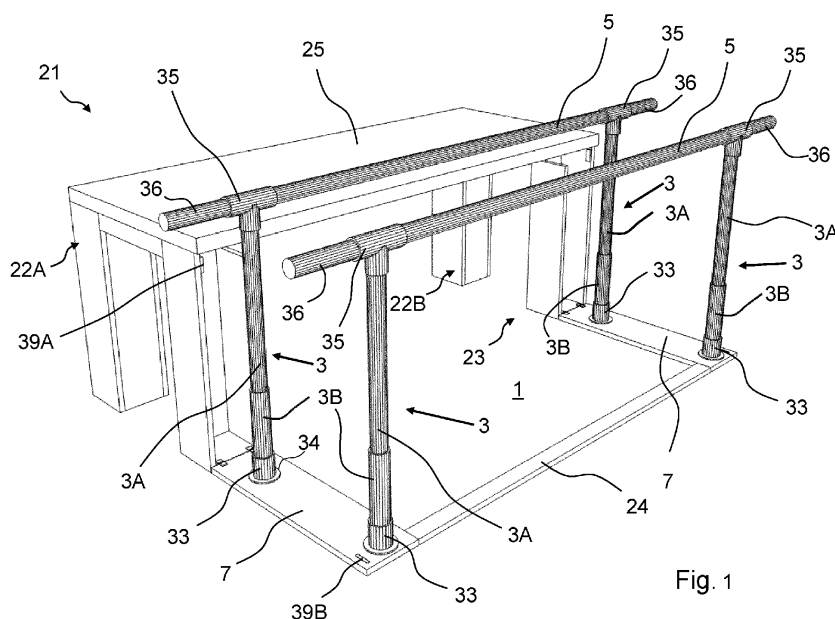


Fig. 1

Description

[0001] The present invention relates to therapeutic parallel bars. Such parallel bars are usually found in par-
amedical environments such as a rehabilitation centre or
physiotherapy practice. Patients, such as the elderly, of-
ten have difficulty walking, as a result of which it can be
difficult to reach such a centre or practice. In addition,
these patients have the opportunity to perform exercises
on the parallel bars only when they visit such a centre or
practice, while it would be desirable for this opportunity
to be available more often. In practice, the dimensions
of parallel bars, the length of which typically lies between
about 2.5 and 3.5 metres and the width (outer dimen-
sions) of which typically lies between 80 and 100 cm,
often prevent parallel bars from being available in a house
situation, whether or not within a group accommodation,
simply because there isn't enough space for it. It is known
to design parallel bars in a foldable manner. In a folded
state, the width of the parallel bars is reduced by more
than half but the length is increased by about 65 cm. In
this respect, such parallel bars will often remain a large
and prominent object in a house situation, even in the
folded state thereof. The invention aims to solve or at
least improve the aforementioned drawbacks and, to this
end, provides parallel bars according to Claim 1. Such
parallel bars will often be readily usable in a house situ-
ation, but also in a professional space, for example in a
rehabilitation centre, where care is provided to patients,
specifically if parallel bars are required only to a limited
extent in this space or if it is sometimes desirable for the
space to be made as free as possible. Housing costs can
thus be reduced. The four uprights may extend on the
mutually facing sides of the at least two furniture legs in
the stowed position.

[0002] In a practical embodiment, the item of furniture
is a table, preferably a dining table, and the at least two
furniture legs are two table legs and the furniture leaf is
a table leaf. The shape of a table can readily fit with that
of parallel bars. Nevertheless, the item of furniture may
also be some other type of furniture, such as a dresser,
or may generally be an item of furniture in which items,
such as exercise materials such as for physiotherapy,
can be stowed. The item of furniture may also be provided
with wheels such that the item of furniture is movable.

[0003] The parallel bars can be hidden from view in a
very effective and efficient manner if at least two of the
at least two furniture legs are hollow and the uprights
extend within the cavities of at least two furniture legs in
the stowed position. If the furniture legs were to be of
solid design, the uprights may extend on the mutually
facing sides of the furniture legs in the stowed position.

[0004] The at least two hollow furniture legs may have
a rectangular horizontal cross section, wherein the cavity
of each hollow furniture leg is surrounded by a first, sec-
ond, third and fourth vertical leg panel, wherein two first
leg panels which are situated on the same outer side of
the item of furniture but which belong to two different

furniture legs can be temporarily removed, as a result of
which the respective cavities of the furniture legs in ques-
tion become accessible in order for the at least two up-
rights forming part of at least one combination to be ac-
commodated therein or for such uprights to be removed
from the cavities, wherein, between two mutually facing
second leg panels of the two different furniture legs and
the underside of the furniture leaf, there are respective
openings through which at least one longitudinal member
extends in the stowed position, and wherein the furniture
leaf is supported by the at least two furniture legs via at
least one of the third and fourth leg panel, preferably via
both the third and fourth leg panel of the two different
furniture legs.

[0005] Even if the two first leg panels are removed in
order to make the cavities accessible, mutual cohesion
of the first leg panels with the rest of the item of furniture
can be maintained if the first leg panels are connected to
the other part of the corresponding furniture leg so as
to be hingeable between a closed and an open position.

[0006] Mutually correct positioning can be achieved if
the first leg panels are connected to the lower end of the
corresponding furniture leg so as to be hingeable about
a horizontal pivot axis, wherein the first leg panels form
the transverse members of the parallel bars in the open
position, wherein the item of furniture also contributes to
the stiffness of the parallel bars in the use position.

[0007] In a further embodiment, the first leg panels are
connected to each other at their upper ends via a con-
necting body in the stowed position of the parallel bars,
further preferably in the open position of the first leg pan-
els. In the use position of the parallel bars, the connecting
body can contribute to correct mutual positioning of the
two transverse members, which are actually formed by
the first leg panels. In the stowed position, the connecting
body can hide the longitudinal members from view. The
connecting body is preferably panel-shaped or slat-
shaped and further preferably has the same thickness
as that of the first leg panels.

[0008] The construction of the parallel bars can be fa-
cilitated if each first leg panel is provided with two inser-
tion elements into which lower ends of the uprights be-
longing to different combinations are inserted in the use
position of the parallel bars.

[0009] In one embodiment, the uprights are adjustable
in the length direction, for example due to the fact that
these are of telescopic design. Thus, the height of the
parallel bars is not limited to the height of the item of
furniture.

[0010] In a further embodiment, each combination is
provided with two coupling elements for receiving longi-
tudinal member parts that extend on mutually averted
sides of the upper ends of the uprights. Thus, the length
of the parallel bars is not limited to the length of the item
of furniture.

[0011] The ease of use of the parallel bars can be in-
creased if the respective combinations of two uprights
belonging to the same pair and the longitudinal member

supported by these uprights, at least insofar as this longitudinal member extends between the ends of the upper ends of these uprights, each form an assembled component. It is thus possible for the parallel bars to be brought from the stowed position into the use position, and vice versa, in a relatively rapid and easy manner.

[0012] Preferably, in the use position, the parallel bars have a length which lies between about 2.5 and 3.5 metres, and/or a width which lies between 80 and 100 cm, and/or a height which lies between 65 cm and 110 cm. The height can thus be settable between said values.

[0013] The invention will be explained in more detail by means of the description of a possible embodiment of parallel bars according to the invention with reference to the following figures:

Figure 1 shows an isometric view of parallel bars according to the invention, in which the parallel bars are set up in a use position;

Figure 2 shows an isometric view of the parallel bars according to Figure 1, in which parts of the parallel bars are stowed in the item of furniture;

Figure 3 shows a portion of the item of furniture according to Figure 1 in more detail.

[0014] The therapeutic parallel bars 1 shown in the figures can be brought into a use position and a stowed position. In the use position, as shown in Figure 1, the parallel bars 1 are suitable for being used by the patient in a safe manner. When the parallel bars 1 are not in use, they can be brought into the stowed position in a simple manner. In the stowed position, the parts of the parallel bars 1 are stowed in the item of furniture 21, as shown in Figure 2.

[0015] In the embodiment shown, the item of furniture is a dining table 21. The dining table 21 has a table leaf 25 and four table legs 22A, 22B, 22C and 22D, which may be denoted collectively by reference numeral 22. The length of the table leaf lies, for example, between 150 cm and 300 cm. The two table legs 22C and 22D are designed in such a way that they are suitable for stowing parts of the parallel bars 1. To this end, the two table legs 22C and 22D are hollow and have a rectangular horizontal cross section. In a closed position, the cavity 27 of each hollow table leg 22C, 22D is surrounded by a first 23A, second 23B, third 23C and fourth 23D vertical leg panel. On the underside, each table leg 22C, 22D is provided with a bottom horizontal leg panel 23E. The third 23C and fourth 23D leg panels support the table leaf 25. A first end of each first leg panel 23A is connected to the respective bottom leg panel 23E by means of hinges 37 such that the first leg panels 23A are hingeable about a horizontal pivot axis 31, between the closed and an open position. At a second end situated opposite to the first end, the two first leg panels 23A are connected to each other by a connecting panel 24. In the use position of the parallel bars 1, the connecting panel 24 contributes to the correct mutual positioning of the transverse mem-

bers 7. In the stowed position, the longitudinal members 5 lie behind the connecting panel 24. In this case, connecting panel 24 is preferably so thin, preferably thinner than 10 mm, that a user can easily drive over it with a wheelchair. The first leg panels 23A are held in place in the closed position by means of magnetic closures 39A, which are fastened to the top side of the third leg panels 23C, and small metal plates 39B, which are fastened to the second end of the first leg panels 23A. In the closed position, the table 21 looks like an ordinary dining table and can also be used as such.

[0016] The parallel bars 1 comprise four uprights 3 and two longitudinal members 5. The two longitudinal members 5 are supported by two uprights 3, which belong to one pair, at the upper ends of these uprights 3. The combination of two uprights 3 belonging to one pair and the portion of the longitudinal member 5 that extends between the ends of the upper ends of these uprights 3 together form an assembled component 9. Within the context of the present description, an assembled component should be understood to mean a component that is assembled from mutually connected parts, in this case at least two uprights and a member which connects the uprights to each other at their upper ends, wherein the mutual connections between the parts are maintained when the parallel bars 1 are changed between the use position and the stowed position. The term "assembled component" does not preclude the parts which are mutually connected and which together form the assembled component from being able to be separated from one another, such as may be beneficial for example if the parallel bars were not to be used for a period of time and could be stowed, together with the item of furniture which may also be dismantlable, in a compact manner. Within this context, it is for example conceivable for the legs of the item of furniture to be able to be separated from the furniture leaf.

[0017] The parallel bars 1 further comprise two transverse members 7. The transverse members 7 support two uprights 3, which belong to different pairs, at the lower ends of the uprights 3. In the open position, the first leg panels 23A form the transverse members 7 of the parallel bars 1. The first leg panels 23A are each provided with two insertion elements 33 into which the lower ends of the uprights 3 of the assembled components 9 are inserted, and thus rigidly connected to each other, in the use position of the parallel bars 1. The two assembled components 9 are provided with two coupling elements 35 into which two lengthening longitudinal member parts 36 are inserted, and connected thereto, for example by means of a click-fit connection or bayonet connection, in the use position of the parallel bars 1. In this way, the two longitudinal members 5 extend beyond the ends of the upper ends of the uprights 3, and the length of the parallel bars 1 is not limited to the length of the dining table in which said parallel bars can be stowed. In the embodiment shown, the coupling elements 35 are each configured as a T piece. By means of the T piece, the

uprights 3 are, on the one hand, rigidly connected to the portion of the longitudinal member 5 that extends between the ends of the upper ends of these uprights 3. On the other hand, the lengthening longitudinal member parts are releasably connected to the assembled component 9 by means of the T piece.

[0018] The uprights 3 are adjustable in the length direction, with the result that the height of the parallel bars 1 in the use position can be adapted to the height of the patient. In the embodiment shown, each upright 3 is composed of two telescopic upright parts 3A and 3B, the outside diameter of the first upright part 3A being smaller than the inside diameter of the second upright part 3B such that the first upright part 3A is slidable in the second upright part 3B. The second upright part 3B is provided with a plurality of holes (not shown) which are suitable for receiving a resilient safety catch (not shown) provided on the first upper right part 3A. This makes it possible for the height of the parallel bars 1 to be adjusted, and secured, in discrete steps.

[0019] In the open position of the first leg panels 23A, the stowage space is accessible for the stowage or removal of the two assembled components 9. In the stowed position, the two assembled components 9 are separated from the leg panels 23A configured as transverse members 7. In the stowed position, the four uprights 3 are stowed in the cavities 27, in such a way that they extend parallel to one another and to the furniture legs 22C and 22D in the cavities 27 thereof. Between the two mutually facing second leg panels 23B of the two furniture legs 22C, 22D and the underside of the furniture leaf 25, there are openings 29 through which those parts of the longitudinal members 5 which extend between the ends of the upper ends of the uprights 3 extend parallel to one another and to the furniture leaf 25 under the furniture leaf 25. The four lengthening longitudinal member parts 36 which are releasably connected to the assembled components 9 via the coupling elements 35 are also received in the cavities 27 in the stowed position. It is also conceivable for the longitudinal members to be of telescopic design instead of having releasable longitudinal member parts 36. The cavities 27 of the respective table legs 22 are dimensioned in such a way that, in the closed position of the first leg panels 23A, there is sufficient space both for receiving the uprights 3 and the lengthening longitudinal member parts and for receiving the insertion elements 33 which are each connected to the top side of the first leg panels 23A by means of a flange 34.

[0020] In an alternative embodiment, each longitudinal member 5 and the lengthened longitudinal member parts 36 which are situated in the extension of each longitudinal member 5 are actually formed by a longitudinal member composed of a single piece. In this alternative embodiment, the table leaf has a length which is at least equal to that of the longitudinal members in question. The legs of the table are not located under the corner points of the table leaf, but at a certain distance from the opposite

ends of the table leaf and at a mutual distance which is equal to the mutual distance between two uprights, such as uprights 3, which are connected to each other by a longitudinal member. Provided not only between, on the one hand, the top sides of the mutually facing panel parts, such as panel parts 23B, of the legs in which the uprights can be received and, on the other hand, the underside of the table leaf but also between, on the one hand, the top sides of the mutually averted panel parts, such as panel parts 23C, of the legs in which the uprights can be received and, on the other hand, the underside of the table leaf are openings, such as openings 29, such that space is afforded for the longitudinal members to be stowed under the table leaf, wherein the uprights which are connected to each other via the longitudinal members can be accommodated in the relevant table legs if the parallel bars are in the stowed position.

[0021] In a further alternative embodiment, a longitudinal side of the table leaf of the dining table is fastened to a wall, and the dining table is provided with table legs, such as table legs 22C and 22D, only on the opposite longitudinal side.

[0022] In yet a further alternative embodiment, the furniture legs 3 are each made up of two furniture leg parts, such as furniture leg parts 3A and 3B. During use, after the transverse members 7 have been folded out, the lower furniture leg parts 3B are firstly inserted or rotated in the insertion elements 33 and connected thereto, for example by means of a bayonet connection or screw connection. The upper furniture leg parts 3A can subsequently be connected in the lower furniture leg parts 3B, for example in an adjustable manner as has already been described above in order to position the members at a desired height and/or by means of pin-hole connections. In this case, the length of the lower furniture leg parts 3B can be selected to be longer than illustrated in the figures (and furniture leg parts 3B to be correspondingly shorter) in order to thus prevent a user from having to bend over far, for example from a wheelchair, to bring the parallel bars into the use position. In addition, it is thus possible for the weight of the assembly of two upper leg parts 3A, T pieces 35 and longitudinal member 5 to be reduced, as a result of which these assemblies can be handled more easily. Moreover, in the stowed position, the lower furniture leg parts 3B may also be stowed, separately from the upper furniture leg parts 3A, in the cavities of the furniture legs 23C and 23D, for which clamps may for example be provided in the furniture legs 23C and 23D for clamping engagement with the furniture legs 23C and 23D.

Claims

1. Therapeutic parallel bars (1) which can be brought into a use position and a stowed position, the parallel bars (1) comprising four uprights (3, 3A), two longitudinal members (5), wherein each longitudinal

- member (5) is supported by two uprights (3, 3A), which belong to one pair, at the respective upper ends of these uprights (3, 3A), and two transverse members (7), wherein each transverse member (7) supports two uprights (3, 3A) which belong to different pairs, wherein the respective combinations of two uprights (3, 3A) belonging to the same pair and the longitudinal member (5) supported by the uprights, at least insofar as this longitudinal member (5) extends between the ends of the upper ends of these uprights (3, 3A), are each separate from the two transverse members (7) in the stowed position and are rigidly connected to the two transverse members (7) at the respective lower ends of the uprights (3) belonging to the respective combinations in the use position, wherein the parallel bars are combined with an item of furniture (21), which item of furniture (21) has at least two furniture legs (22) and a furniture leaf (25) supported by the at least two furniture legs (22), and the two combinations in the stowed position of the parallel bars (1) are stowed in the item of furniture (21), wherein the two longitudinal members (5) extend parallel to one another and to the furniture leaf (25) under the furniture leaf (25), and the four uprights (3, 3A) extend parallel to one another and to the at least two furniture legs (22).
2. Parallel bars (1) according to Claim 1, wherein the item of furniture (21) is a table, preferably a dining table, and the at least two furniture legs (22) are four table legs and the furniture leaf (25) is a table leaf.
 3. Parallel bars (1) according to Claim 1 or 2, wherein at least two of the at least two furniture legs (22C, 22D) are hollow and the uprights (3) extend within the cavities of at least two furniture legs in the stowed position.
 4. Parallel bars (1) according to Claim 3, wherein the at least two hollow furniture legs each have a rectangular horizontal cross section, wherein the cavity (27) of each hollow furniture leg (22C, 22D) is surrounded by a first (23A), second (23B), third (23C) and fourth (23D) vertical leg panel, wherein two first leg panels (23A) which are situated on the same outer side of the item of furniture (21) but which belong to two different furniture legs (22C, 22D) can be temporarily removed, as a result of which the respective cavities (27) of the furniture legs (22C, 22D) in question become accessible in order for the at least two uprights (3) forming part of at least one combination to be accommodated therein or for such uprights (3) to be removed from the cavities (27), wherein, between two mutually facing second leg panels (23B) of the two different furniture legs (22C, 22D) and the underside of the furniture leaf (25), there are respective openings (29) through which at least one longitudinal member (5) extends in the stowed position, and wherein the furniture leaf (25) is supported by the at least two furniture legs (22C, 22D) via at least one of the third (23C) and fourth (23D) leg panel, preferably via both the third (23C) and fourth (23D) leg panel of the two different furniture legs (23).
 5. Parallel bars (1) according to Claim 4, wherein the first leg panels (23A) are connected to the other part of the corresponding furniture leg (22C, 22D) so as to be hingeable between a closed and an open position.
 6. Parallel bars (1) according to Claim 4 or 5, wherein the first leg panels (23A) are connected to the lower end of the corresponding furniture leg (23) so as to be hingeable about a horizontal pivot axis (31), wherein the first leg panels (23A) form the transverse members (7) of the parallel bars (1) in the open position.
 7. Parallel bars (1) according to Claim 4, 5 or 6, wherein the first leg panels (23A) are connected to each other at their upper ends via a connecting body (24) in the stowed position of the parallel bars.
 8. Parallel bars (1) according to one of Claims 4 to 7, wherein each first leg panel (23A) is provided with two insertion elements (33) into which lower ends of the uprights (3) belonging to different combinations are inserted in the use position of the parallel bars (1).
 9. Parallel bars (1) according to one of the preceding claims, wherein the uprights (3) are adjustable in the length direction.
 10. Parallel bars (1) according to one of the preceding claims, wherein each combination is provided with two coupling elements (35) for receiving longitudinal member parts that extend on mutually averted sides of the upper ends of the uprights (3).
 11. Parallel bars (1) according to one of the preceding claims, wherein the respective combinations of two uprights (3, 3A) belonging to the same pair and the longitudinal member (5) supported by these uprights, at least insofar as this longitudinal member (5) extends between the ends of the upper ends of these uprights (3), each form an assembled component (9).
 12. Parallel bars (1) according to one of the preceding claims, wherein, in the use position, the parallel bars has a length which lies between about 2.5 and 3.5 metres, and/or has a width which lies between 80 and 100 cm, and/or has a height which lies between 65 cm and 110 cm.

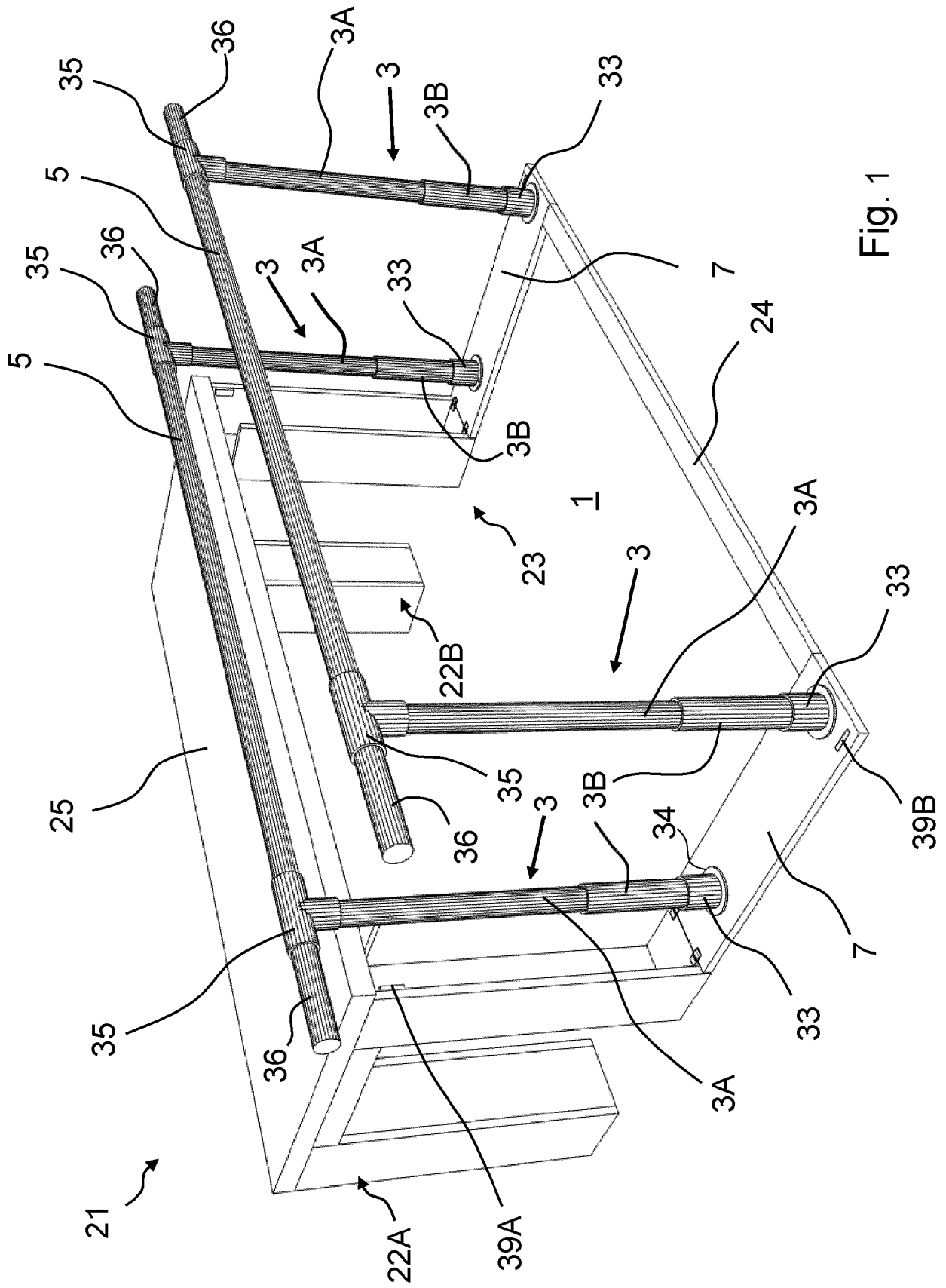


Fig. 1

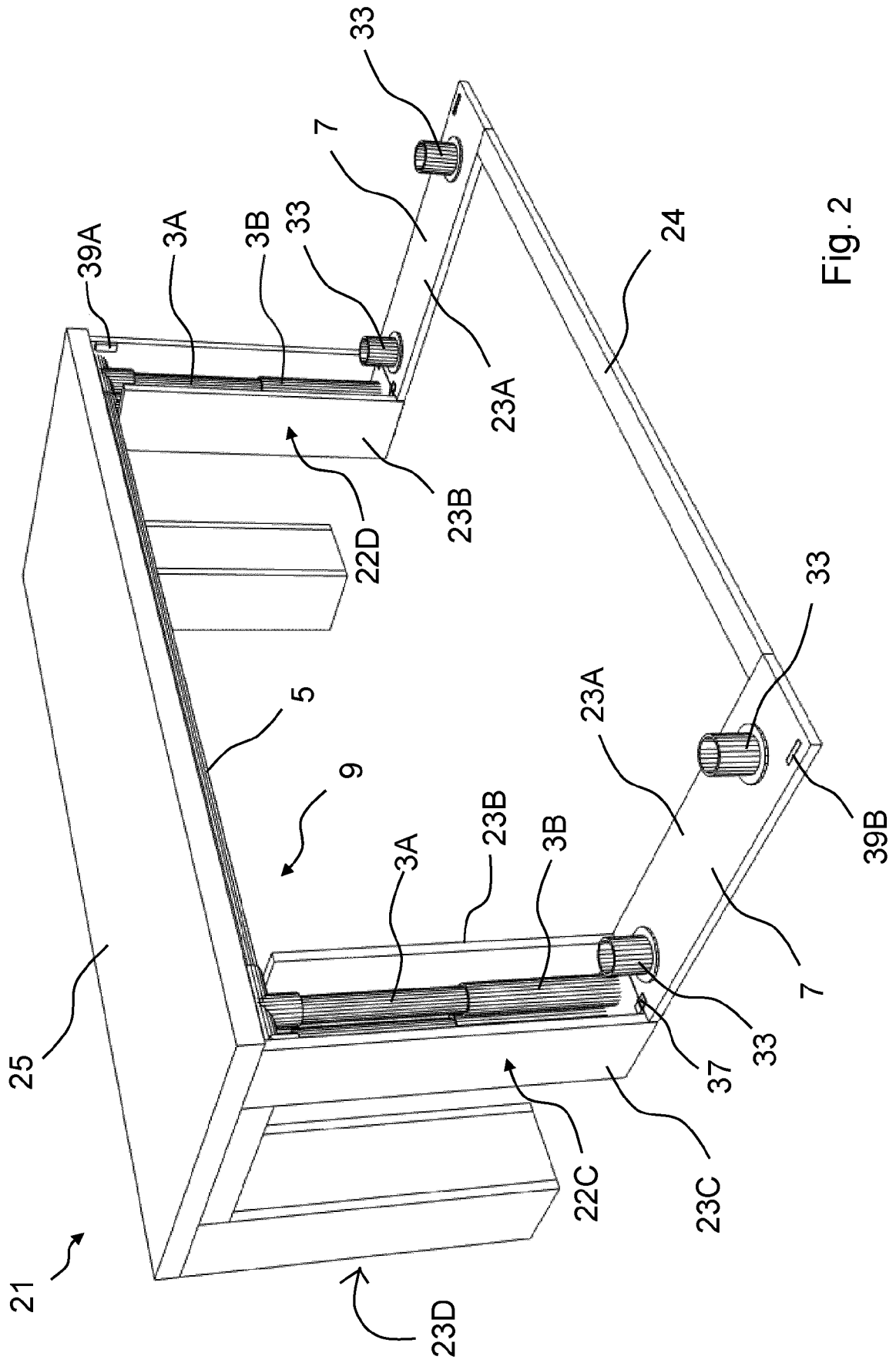


Fig. 2

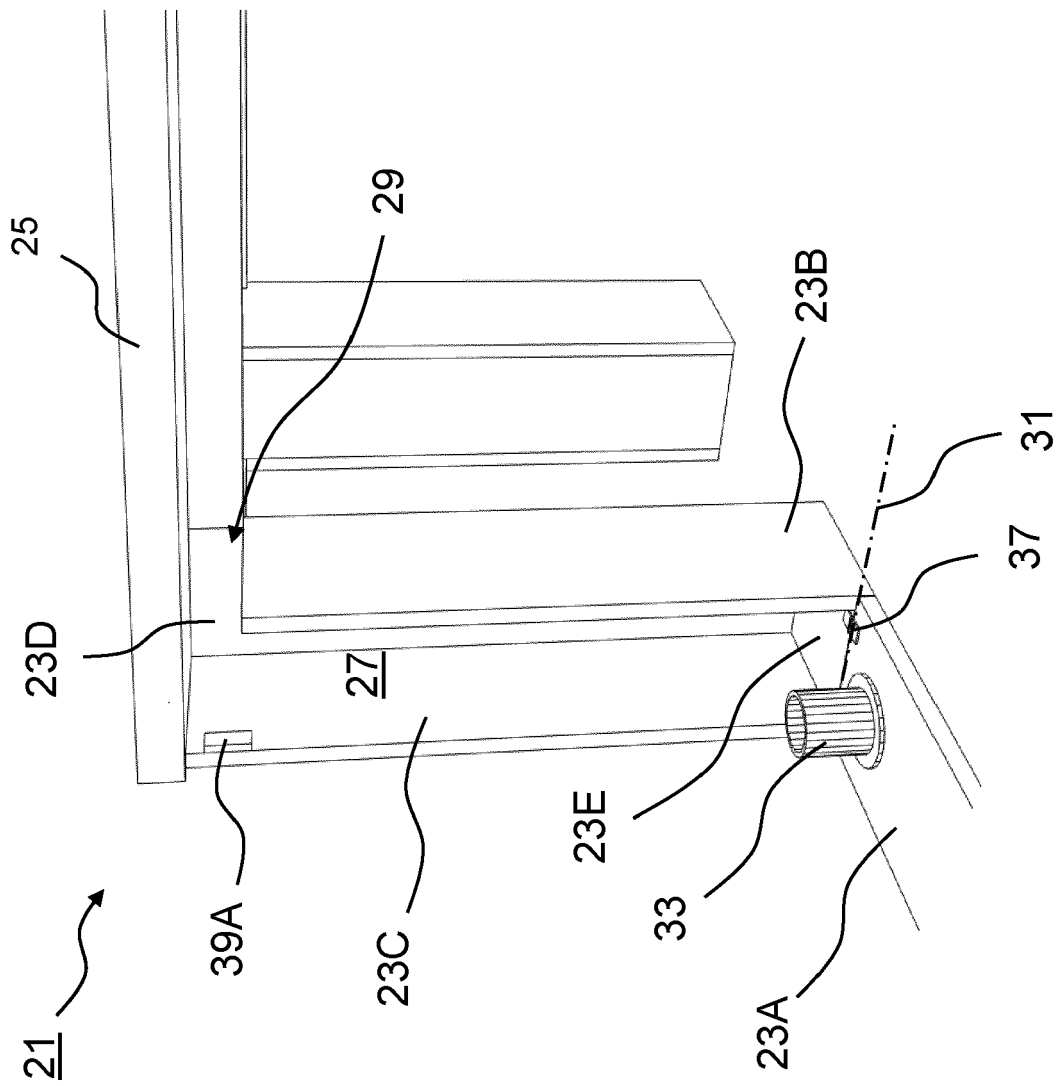


Fig. 3



EUROPEAN SEARCH REPORT

Application Number

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EPO FORM 1503 03.82 (P04C01)

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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 7 October 2022	Examiner Tejada Biarge, Diego
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EP 22 17 6844

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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