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(54) Title: KNOCKDOWN FURNISHING ELEMENT

(57) Abstract: Furnishing element (10) comprising a supporting frame (11) for a seating element (13) and a supporting element (12) for back and arms. The supporting element (12) is constrained to the supporting frame (11), so as to be able to assume a first folded position, of minimum bulk, wherein it is substantially parallel and very close to the supporting frame (11), and a second raised position of use, wherein it lies on a plane substantially perpendicular to the plane on which the supporting frame (11) lies.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
"KNOCKDOWN FURNISHING ELEMENT"

FIELD OF THE INVENTION

The present invention concerns a knockdown furnishing element, such as for example a chair, an armchair, a sofa or suchlike, able to be at least partly dismantled at least during the storage and transport steps, and subsequently assembled quickly and easily by the seller or the final user so that it can be used.

To be more exact, the invention concerns a furnishing element comprising a supporting frame for a seat and a back, possibly functioning as an armrest, wherein the back can assume a first folded position, of minimum bulk, constrained to the supporting frame, and a second raised position in use.

BACKGROUND OF THE INVENTION

It is known to be necessary to provide furnishing elements that can easily be dismantled and re-assembled, both to reduce the space they occupy in their dismantled condition and also to allow an easy and rapid assembly thereof, also by the final user.

One purpose of the present invention is therefore to achieve a knockdown furnishing element which can be packed in containers of extremely limited dimensions and of a substantially quadrangular or stackable shape, and which at the same time can be assembled quickly and easily also by the final user.

Applicant has devised and embodied the present invention in order to overcome the shortcomings of the state of the art, to achieve this purpose and to obtain other advantages.

SUMMARY OF THE INVENTION

The present invention is set forth and characterized
essentially in the main claim, while the dependent claims describe other innovative characteristics of the invention.

In accordance with the aforesaid purpose, a furnishing element according to the present invention comprises a supporting frame for a seating element, such as a seat or suchlike, and at least a supporting element for the back and/or arms, such as a back or suchlike, incorporating the armrests, or not.

According to a first characteristic feature of the present invention, the supporting element is constrained to the supporting frame, so as to be able to assume a first folded position, of minimum bulk, wherein it is substantially parallel and very close to the supporting frame, and a second raised position of use, wherein it lies on a plane substantially perpendicular to the plane on which the supporting frame lies.

In this way, the furnishing element occupies a minimum space when the supporting element is in the folded position, and moreover the volume occupied is substantially plane and without protruding parts.

Since the supporting element in any case remains constrained to the supporting frame, it does not need any tool or equipment to position it in the raised position.

This entails a considerable reduction in times and a simplification of the operations to assemble the furnishing element and, at the same time, guarantees a reduction in the space occupied in the condition of use.

According to another characteristic feature of the present invention, the supporting frame has a first part and at least a second part which can be detached from each other, and the supporting element is kept in the second raised position by clamping means provided on the second part of the supporting frame.
Advantageously, the first and second part of the supporting frame have a substantially plane structure and, in the dismantled condition, can assume a configuration for packing with an extremely limited and flattened bulk.

According to a first variant, the furnishing element according to the present invention comprises a plurality of positioning elements, such as pins, pegs or suchlike, associated with at least a part of the supporting frame, advantageously with both, and protruding outside said parts, which are able to cooperate with a lower surface of the seating element, so as to define a correct and stable supporting position of the latter with respect to the supporting frame, particularly during the assembly operations.

According to another variant, mechanical holding means are provided, such as for example a shaped washer or suchlike, arranged in cooperation with the first and second part of the supporting frame in a zone of their reciprocal connection, in the assembled condition, so as to make the coupling thereof solid and stable.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other characteristics of the present invention will become apparent from the following description of a preferential form of embodiment, given as a non-restrictive example, with reference to the attached drawings wherein:

- fig. 1 is a three-dimensional view of a furnishing element according to the present invention in the assembled condition;
- fig. 2 is an exploded three-dimensional view of the furnishing element in fig. 1;
- fig. 3 is a front view of the furnishing element in fig. 1 in the dismantled condition;
- fig. 4 is a lateral view of fig. 3.
DETAILED DESCRIPTION OF A PREFERENTIAL FORM OF EMBODIMENT OF THE INVENTION

With reference to the attached figures, the reference number 10 denotes generally a knockdown furnishing element according to the present invention, in this case a chair.

The chair 10 comprises a frame 11, a back 12 and a seat 13 which are in a condition where they are at least partly separated from each other and can be quickly and easily assembled by the seller or the final user.

The frame 11 is made in two parts 15 and 16, substantially plane and coupled together in a cross. To be more exact, the first part 15 comprises two lateral legs 17 and 19 which are connected to each other by a first cross-piece 20, while the second part 16 comprises respectively a front leg 21 and a rear leg 22, connected to each other by a second cross-piece 23.

The first cross-piece 20 comprises, in a median zone, an aperture 25 facing downwards and of a width mating with the thickness of the second cross-piece 23; the second cross-piece 23 comprises, in a median zone, an aperture 26 facing upwards of a width mating with the thickness of the first cross-piece 20. In this way, the two cross-pieces 20 and 23 can be fitted together with a right-angled joint, in order to define the cross-type coupling of the two parts 15 and 16 of the frame 11.

Axially to the aperture 25 and aperture 26 respective through holes 27 and 29 are provided, inside which a threaded pin 30 can be inserted, screwed to the seat 13, represented in a line of dashes in figs. 1 and 2, and able both to consolidate the fitting of the two parts 15 and 16, and also to connect the seat 13 to the frame 11. Advantageously, a cross-shaped washer 44 is provided, arranged coaxial with the through holes 27 and 29 and able
to contact at the lower part the two cross-pieces 20 and
23, in order to consolidate the cross-type coupling thereof
and limit the accidental unscrewing of the threaded pin 30.

According to a variant, shown by a line of dashes in
figs. 1 and 2, on the upper surfaces of each cross-piece 20
and 23, on opposite sides with respect to the relative
through holes 27 and 29, there are two respective vertical
deep holes 41 and 42, inside which mating positioning pins
43 are able to be partly inserted. The positioning pins 43
are also inserted prisoners, on the opposite side, in
relative holes 45 provided on the bottom of the seat 13, so
as to define the angular positioning thereof with respect
to the frame 11, and prevent it from rotating when the
threaded pin 30 is screwed to it.

The two lateral legs 17 and 19 have respectively a
substantially vertical lower part 17a and 19a, which goes
from the floor to the first cross-piece 20, and an upper
part 17b and 19b slightly inclined towards the outside with
respect to the relative lower part 17a, 19a.

At the upper end of each upper part 17b and 19b the back
12, which also functions as an armrest, is hinged by means
of two hinges 31 and 32. The hinges 31 and 32 allow the
selective rotation of the back 12 between a folded
position, wherein it is substantially parallel and very
close to the lateral legs 17 and 19, and a raised position
of use, wherein it is on a plane substantially
perpendicular to the plane on which said legs lie.

The use of the hinges 31 and 32 gives two main
advantages: a first advantage makes it possible for the
user to position the back 12 as desired from the folded
position to the raised position, without the use of tools
and without particular technical knowledge; a second
advantage concerns the absence, from the surfaces of the
back 12 and of the first part 15 of the frame 11, of seatings, bushings, screws or other visible ironwork elements both in the assembled and also in the condition for packing.

Moreover, thanks to the presence of the hinges 31 and 32, the back 12 and the first part 15 of the frame 11 are in a single piece and not two distinct elements as happens in knockdown chairs of the known type.

The front leg 21 and rear leg 22 have different sizes; the front leg 21 is substantially parallel to the lower parts 17a and 19a of the lateral legs 17 and 19 and is of a height that goes from the floor to the upper edge of the second cross-piece 23, whereas the rear leg 22 comprises a lower part 22a, substantially parallel and equal to that of the other legs 17, 19 and 21, and an upper part 22b substantially inclined with respect to its lower part 22a.

At the upper end of the upper part 22b a coupling block 33 is provided, able to be inserted into a mating dead hole, not shown in the drawings, made in the lower part of the back 12, when the latter is in its second raised position.

At the end of the upper part 22b a through hole 35 is also made, transversely, inside which a metal pin 36 can be inserted, which has insertion holes for attachment screws 37, so as to clamp the second part 16 of the frame 11 to the back 12.

The back 12 is substantially semi-circular in shape and, as we said, has its two ends functioning as armrests, pivoted to the ends of the upper parts 17a and 19a of the lateral legs 17 and 19; in the rear part, in correspondence with the zone where it couples with the block 33, there is a groove 39 on the lower part able to facilitate fitting with the rear leg 22, and at the upper part there is a
curved board 40 functioning as a back.

In order to make the chair 10 as described heretofore assume the packing or transport condition, the following steps are taken.

First of all the threaded pin 30 is removed so as to allow the seat 13 to be dismantled from the frame 11.

Subsequently the second part 16 of the frame 11 is detached from the back 12, and then the two parts 15 and 16 of the frame 11 are separated. At this point the back 12 is rotated to its folded position of minimum bulk and the first part 15 is arranged adjacent to the second part 16 of the frame 11, so that the components of the chair 10 are adjacent to each other so as to occupy a limited volume and with a square and stackable shape.

To facilitate this reduction in the space occupied, the metal pin 36 is completely removed from the relative through hole 35, so as to allow the sides of the first part 15 to adhere completely with those of the second part 16.

According to a variant, the metal pin 36 could be inserted through the lateral leg 17, and therefore in correspondence with the armrest of the back 12, so as to guarantee also the solid coupling of the various components in the dismantled condition of the chair 10.

Once the two parts 15 and 16 of the frame 11 are adjacent, the seat 13 is arranged inside the curve of the back 12, as shown in fig. 3.

It is clear, however, that modifications and/or additions of parts may be made to the chair 10 as described heretofore, without departing from the field and scope of the present invention.

It is also clear that, although the present invention has been described with reference to specific examples, a person of skill in the art shall certainly be able to
achieve many other equivalent forms of knockdown furnishing element, all of which shall come within the field and scope of the present invention.
CLAIMS

1. Furnishing element comprising a supporting frame (11) for a seating element (13) and at least a supporting element (12) for back and arms, characterized in that said supporting element (12) is constrained to said supporting frame (11) so as to be able to assume a first folded position, of minimum bulk, wherein it is substantially parallel and very close to said supporting frame (11), and a second raised position of use, wherein it lies on a plane substantially perpendicular to the plane on which said supporting frame (11) lies.

2. Furnishing element as in claim 1, characterized in that said supporting element (12) is constrained to said supporting frame (11) by means of hinge elements (31, 32) able to allow the rotation thereof between said first folded position and said second raised position of use.

3. Furnishing element as in claim 1 or 2, characterized in that in said folded position said supporting element (12) and said supporting frame (11) assume a position of minimum bulk, substantially plane, square and without protruding parts.

4. Furnishing element as in any claim hereinbefore, characterized in that said supporting frame (11) consists of a first (15) and a second part (16), and in that said supporting element (12) is maintained in said second raised condition of use by clamping means (33) provided on said second part (16) of said supporting frame (11).

5. Furnishing element as in claim 4, characterized in that said first (15) and said second part (16) are substantially plane and are able to be reciprocally dismantled in order to assume, in the dismantled condition, a substantially plane and square configuration of minimum bulk.

6. Furnishing element as in claim 4, characterized in that
said clamping means comprise at least a male fitting element (33) provided on said second part (16) of said supporting frame (11), and a mating female element (39) provided on said supporting element (12).

7. Furnishing element as in claim 4, characterized in that said first part (15) comprises two lateral legs (17, 19) connected to each other by a first transverse element (20), and said second part (16) comprises a front leg (21) and a rear leg (22) connected to each other by a second transverse element (23).

8. Furnishing element as in claim 4, characterized in that said first (15) and said second part (16) are connected to each other cross-wise.

9. Furnishing element as in claims 2 and 7, characterized in that said hinge elements (31, 32) are arranged in correspondence with the upper ends of said lateral legs (17, 19).

10. Furnishing element as in any claim hereinbefore, characterized in that it also comprises a plurality of positioning elements (43) associated with said supporting frame (11) and able to cooperate with a lower surface of said seating element (13), so as to define a correct and stable supporting position of said seating element (13) with respect to said supporting frame (11).

11. Furnishing element as in any claim from 4 to 10 inclusive, characterized in that it comprises mechanical holding means (44) arranged in cooperation with said first (15) and said second part (16) of said supporting frame (11), in a zone of their reciprocal connection.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

| IPC     | A47C4/04 |

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

| Minimum documentation searched (classification system followed by classification symbols) |
| IPC 7 A47C |

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

| Electronic data base consulted during the International search (name of data base and, where practical, search terms used) |
| EPO-Internal |

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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Patent family members are listed in annex.

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Name and mailing address of the ISA
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