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(54) **HIDEAWAY SOFA FOR A FOLD-DOWN BED**

(57) The present invention describes a hideaway sofa for a fold-down bed comprising a bed (2) that is foldable between a closed position and an open position, and the seat of the sofa remains housed when the bed (2) is folded down.

FIG. 1

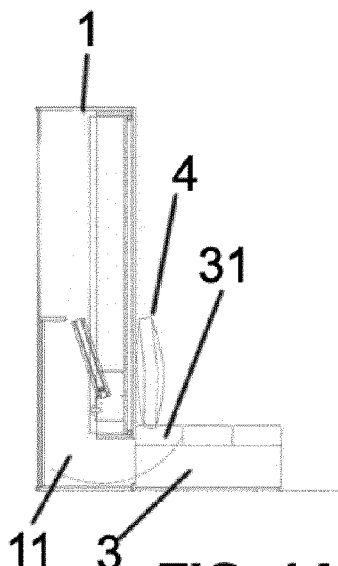


FIG. 1A

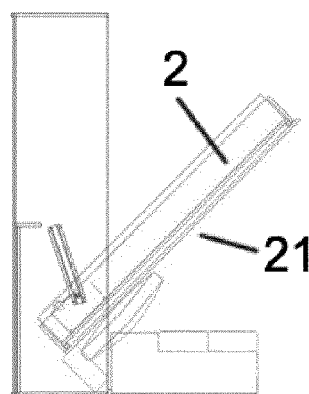


FIG. 1B

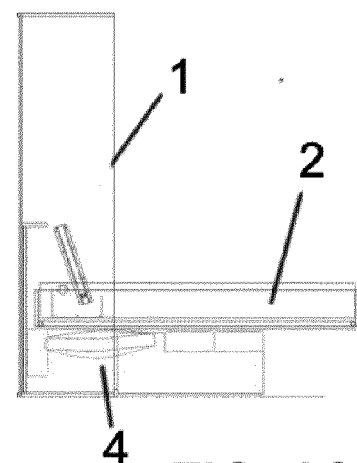


FIG. 1C

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Description

Object of the invention

[0001] One object of this invention is a hideaway sofa for a fold-down bed comprising a folding mechanism configured to obtain a high-backed sofa, which is very comfortable ergonomically, which is not expensive to manufacture, and which is as simple and straightforward as possible, avoiding mechanisms and joints that could cause problems of breakage or wear and tear with use.

State of the prior art

[0002] This type of fold-down bed that folds vertically exists in the state of the art. Fold-down beds that fold in a vertical position (for example, ES 1 149 985 U). These beds are housed in a piece of furniture and, in front of it, a sofa is located so that, when the bed is opened, it falls onto the sofa. In this way, maximum use is made of the space in the living room, which, in seconds, is converted into a bedroom.

[0003] However, this system has a technical problem. Before folding down the bed, the cushions must be removed from the backrest of the sofa since, otherwise, the bed will not be completely horizontal and, above all, there is a risk of breaking the hinges or rotating elements of the fold-down bed.

[0004] Systems also exist in the state of the art whereby it is not necessary to remove the cushions from the backrest, but these end up being very complex mechanisms, with very low backrests, which are very uncomfortable ergonomically and expensive to manufacture, and which fold the sofa by means of joints. In these cases, the height of the backrests is limited, so that, in the end, it is also necessary to remove the backrests, otherwise they would be very uncomfortable ergonomically. Their appearance, moreover, is closer to a kitchen bench than a real sofa.

Description of the invention

[0005] As indicated, the object of the invention is a hideaway sofa for a fold-down bed, the main peculiarity of which is that it is configured as a seat finished at the front and sides and where a recess has been made in the back of the seat that will be used so that, when the door housing the bed is folded down, the bed is introduced into the aforementioned recess and remains hidden. In this way, the cushion does not need to be removed from the backrest to close the mechanism, enabling a perfect ergonomic response to be achieved. All of the above in accordance with the claims accompanying this description.

[0006] This invention is a simple and effective technical solution. Normally, backrests are slightly tilted to make them more comfortable to use and to make the sofa more ergonomic, i.e., better adapted to the user's back. How-

ever, when a conventional sofa is made, the gap left by the seat cushion is not sufficient to allow the backrest to be introduced in the bed's opening operation. To solve this problem, the sofa of the invention comprises a seat split into two mutually independent parts, wherein, in a preferred embodiment, a first portion of the seat has a length equivalent to approximately 2/3 of the total length of the seat measured from the front to the backrest and a second portion of the seat connected to the backrest.

[0007] In a second particular embodiment, the sofa comprises a pouch in front of the backrest solidly connected to it and resting on the second portion of the seat closest to the backrest, in such a way that it does not fall off in the opening and closing operations.

[0008] Finally, in a third particular embodiment, the rear part of the backrest has been modified, incorporating a triangular structure that allows the ideal inclination to increase the comfort of the sofa without the need to incorporate a pouch and, at the same time, to conceal the part of the seat that is cut and connected to the backrest. As this piece is lower, it avoids increasing the depth of the sofa, allowing the backrest cushion to rest directly on the door of the furniture.

Brief description of the drawings

[0009] The following is a very brief description of a series of drawings that help to understand the invention better and which relate expressly to one embodiment of the invention, which is illustrated as a non-limiting example thereof.

FIG.1 shows a first embodiment of the three positions (closed, fig.1a, intermediate, fig.1b and open, fig.1c) of the hideaway sofa for a fold-down bed which is the object of this invention.

FIG.2 shows a second embodiment of the three positions (closed, fig.2a, intermediate, fig.2b and open, fig.2c) of the hideaway sofa for a fold-down bed which is the object of this invention.

FIG.3 shows a third embodiment of the three positions (closed, fig.3a, intermediate, fig.3b and open, fig.3c) of the hideaway sofa for a fold-down bed which is the object of this invention.

Detailed description of a practical embodiment of the invention

[0010] As can be seen in the attached figures, the hideaway sofa for a fold-down bed, which is the object of this invention, comprises a structure (1) made of metal or wood configured to house a bed (2). The bed (2) is foldable between a closed position and an open position, each of them for a differentiated use.

[0011] Thus, in the closed position -figs. 1a, 2a, 3a- the bed (2) is housed inside the structure (1), in a perfectly

vertical position, so that only the tray (21) is visible, which acts in this case as the front enclosure of the structure (1). When one wants to move from the closed position of the bed to the open position, the bed (2) folds down until it is perfectly horizontal, resting on the sofa (3) -figs. 1c, 2c, 3c-, as is known in the current state of the art.

[0012] However, in sofa beds known to date, it is necessary to remove the cushions or pillows from the sofa (3) for the bed (2) to be completely horizontal, or use complicated extendable mechanisms, which is not necessary in this invention.

[0013] In order to avoid having to remove the pillows or cushions of this invention, this invention comprises a series of technical solutions combined with each other that allow an optimal solution to be achieved in the three embodiments described in figures 1 to 3.

[0014] Thus, the seat of the sofa (3) is divided into independent parts in such a way that a first portion (31) of the sofa (3) -which is the closest to the bed (2) in the closed position- is jointly connected to the lower end of the bed (2) and the cushion (4) of the backrest of the sofa (3), so that when the bed (2) is folded down, both the first portion (31) of the sofa (3) and the cushion (4) are housed in a lower recess (11) of the structure (1).

[0015] This essential structure is replicated in the second embodiment (fig.2), which includes a pouch (41) jointly connected to the cushion (4) and the first portion (31) of the sofa (3), so that when the bed (2) is folded down, the pouch (41) is also concealed in the lower recess (11) of the structure (1).

[0016] In a third practical embodiment (fig.3), the rear part of the backrest has been modified, incorporating a triangular structure (42) jointly connected to the cushion (4) and the first portion (31) of the sofa (3), so that when the bed (2) is folded down, the triangular structure (42) is also concealed in the lower recess (11) of the structure (1).

Claims

1. Hideaway sofa for a fold-down bed comprising a bed (2) that is foldable between a closed position, wherein the bed (2) is housed in a vertical position inside a structure (1), and an open position, wherein the bed (2) rests in a horizontal position on a sofa (3) and which is **characterised in that** the seat of the sofa (3) is divided into at least two mutually independent parts, so that a first portion (31) of the sofa (3) is jointly connected to the lower end of the bed (2) and the cushion (4) of the backrest of the sofa (3), so that when the bed (2) is folded down, both the first portion (31) of the sofa (3) and the cushion (4) remain housed in a lower recess (11) of the structure (1).
2. Hideaway sofa for a fold-down bed according to claim 1 which includes a pouch (41) jointly connected

to the cushion (4) and the first portion (31) of the sofa (3), so that when the bed (2) is folded down, the pouch (41) remains hidden in the lower recess (11) of the structure (1).

3. Hideaway sofa for a fold-down bed according to claims 1 and 2 wherein the rear part of the backrest incorporates a triangular structure (42) jointly connected to the cushion (4) and the first portion (31) of the sofa (3), so that when the bed (2) is folded down, the triangular structure (42) remains hidden in the lower recess (11) of the structure (1).

Amended claims in accordance with Rule 137(2) EPC.

1. Hideaway sofa with a fold-down bed (2) that is foldable between: (a) a closed position, in which the bed (2) is vertically housed inside a structure (1), and (b) an open position, in which the bed (2) rests horizontally on a sofa (3), and wherein the hideaway sofa with a fold-down bed (2) is **characterised in that** the seat of the sofa (3) is divided into at least two mutually independent parts, so that a first portion (31) of the sofa (3), which is the closest to the fold-down bed (2) in the closed position, is jointly connected to the lower end of the bed (2) and a cushion (4) of the backrest of the sofa (3), so that when the bed (2) is folded down, both the first portion (31) of the sofa (3) and the cushion (4) are hidden in a lower recess (11) of the structure (1).
2. Hideaway sofa for a fold-down bed according to claim 1 which includes a pouch (41) jointly connected to the cushion (4) and the first portion (31) of the sofa (3), so that when the bed (2) is folded down, the pouch (41) remains hidden in the lower recess (11) of the structure (1).
3. Hideaway sofa for a fold-down bed according to claims 1 and 2 wherein the rear part of the backrest incorporates a triangular structure (42) jointly connected to the cushion (4) and the first portion (31) of the sofa (3), so that when the bed (2) is folded down, the triangular structure (42) remains hidden in the lower recess (11) of the structure (1).

FIG. 1

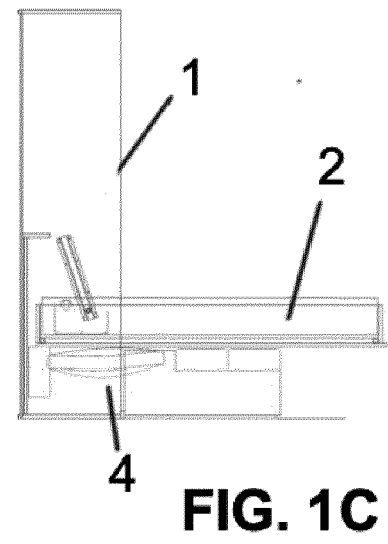
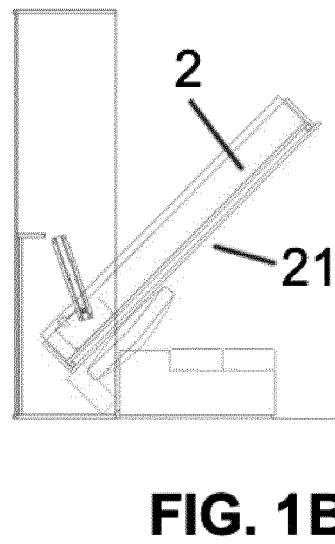
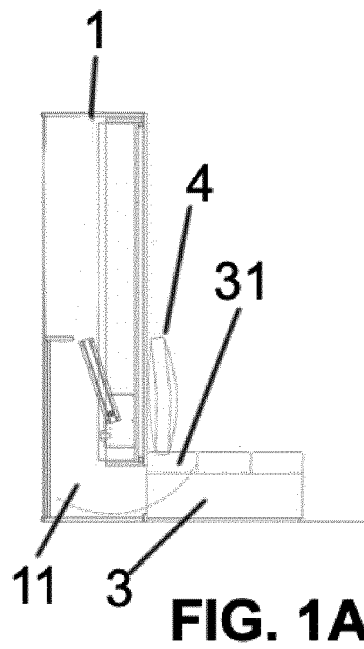


FIG. 2

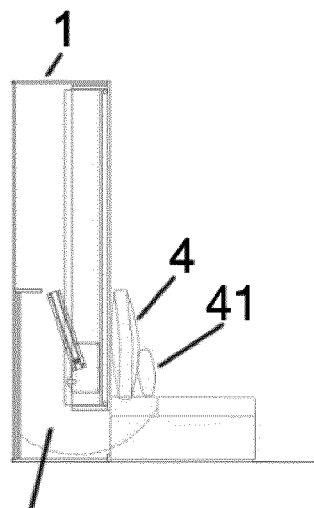


FIG. 2A

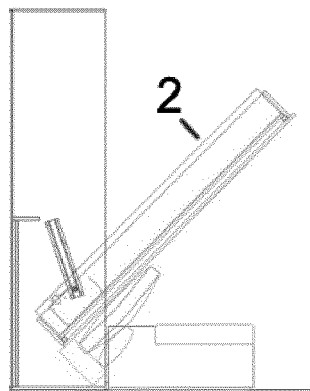


FIG. 2B

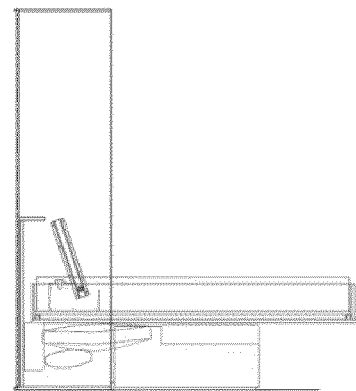
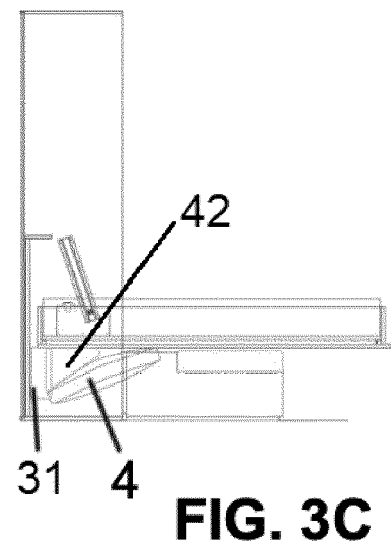
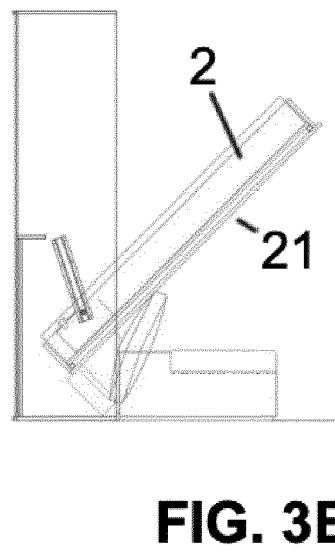
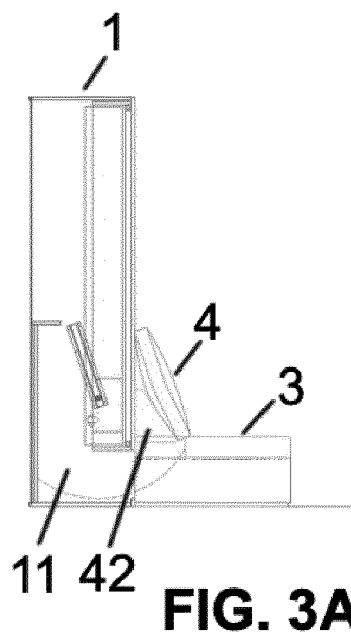


FIG. 2C

FIG. 3





EUROPEAN SEARCH REPORT

Application Number

EP 22 38 2682

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	IT 2019 0000 6860 A1 (MANZONI GIULIO [IT]) 15 November 2020 (2020-11-15) * paragraph [0033]; figures * -----	1-3	INV. A47C17/46 A47C17/04
			TECHNICAL FIELDS SEARCHED (IPC)
			A47C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 13 December 2022	Examiner Kis, Pál
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

ANNEX TO THE EUROPEAN SEARCH REPORT
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13-12-2022

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
15	IT 201900006860 A1	15-11-2020	-----	
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