

United States Patent [19]

Alembik

[11] 3,906,558

[45] Sept. 23, 1975

[54] **PIECE OF FURNITURE FOR SITTING AND LYING**

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[22] Filed: **May 29, 1974**

[21] Appl. No.: **474,160**

[30] **Foreign Application Priority Data**

June 18, 1973 Austria 5336/73

[52] U.S. Cl. **5/29; 5/13; 297/118**

[51] Int. Cl. ² **A47C 17/40**

[58] **Field of Search** 5/12, 13-17,
5/18, 28-30, 36, 37, 42; 297/118, 105, 112

[56] **References Cited**

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[57] **ABSTRACT**

The piece of furniture is convertible between a position for sitting and a position for lying and comprises a frame, a carriage which is adapted to be moved out of and into said frame for the conversion of the piece of furniture into the lying and sitting positions, first and second cushions, which are adapted to lie on said carriage one behind the other in the lying position and one over the other in the sitting position, a back cushion connected to the frame, and a wedge-shaped cushion, which is adapted to assume a stowed-away position behind the back cushion when said piece of furniture is in the sitting position. In the position for use, the wedge-shaped cushion succeeds and adjoins said first and second cushions lying one behind the other on the carriage, when said piece of furniture is in position for lying. Said wedge-shaped cushion is guided by said frame and capable of a sliding and pivotal movement between said stowed-away position and said position for use.

17 Claims, 5 Drawing Figures

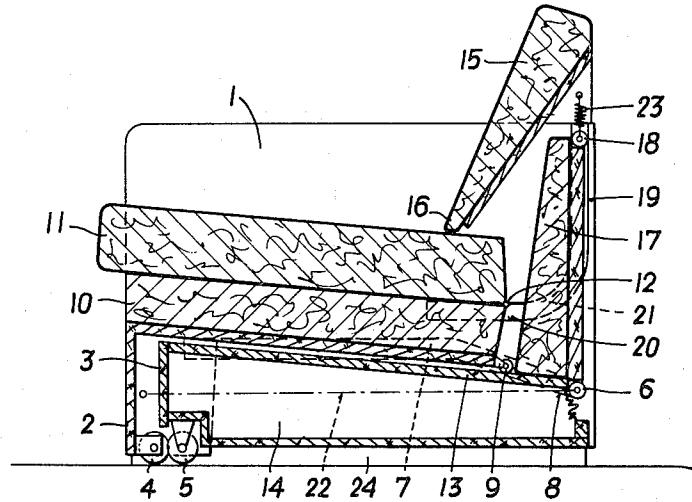


FIG. 1

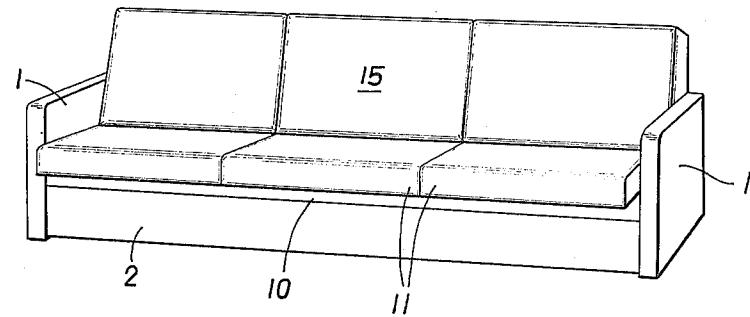


FIG. 2

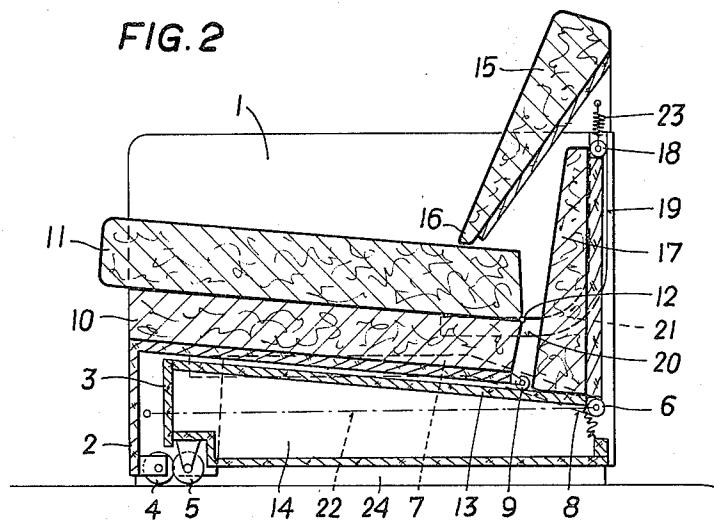
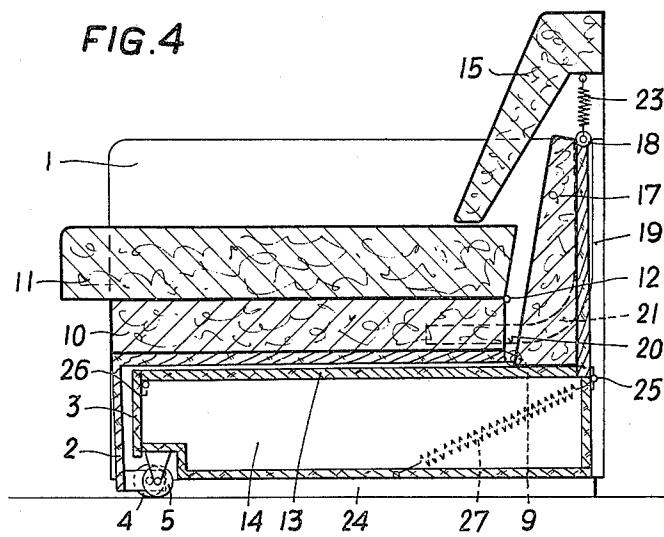
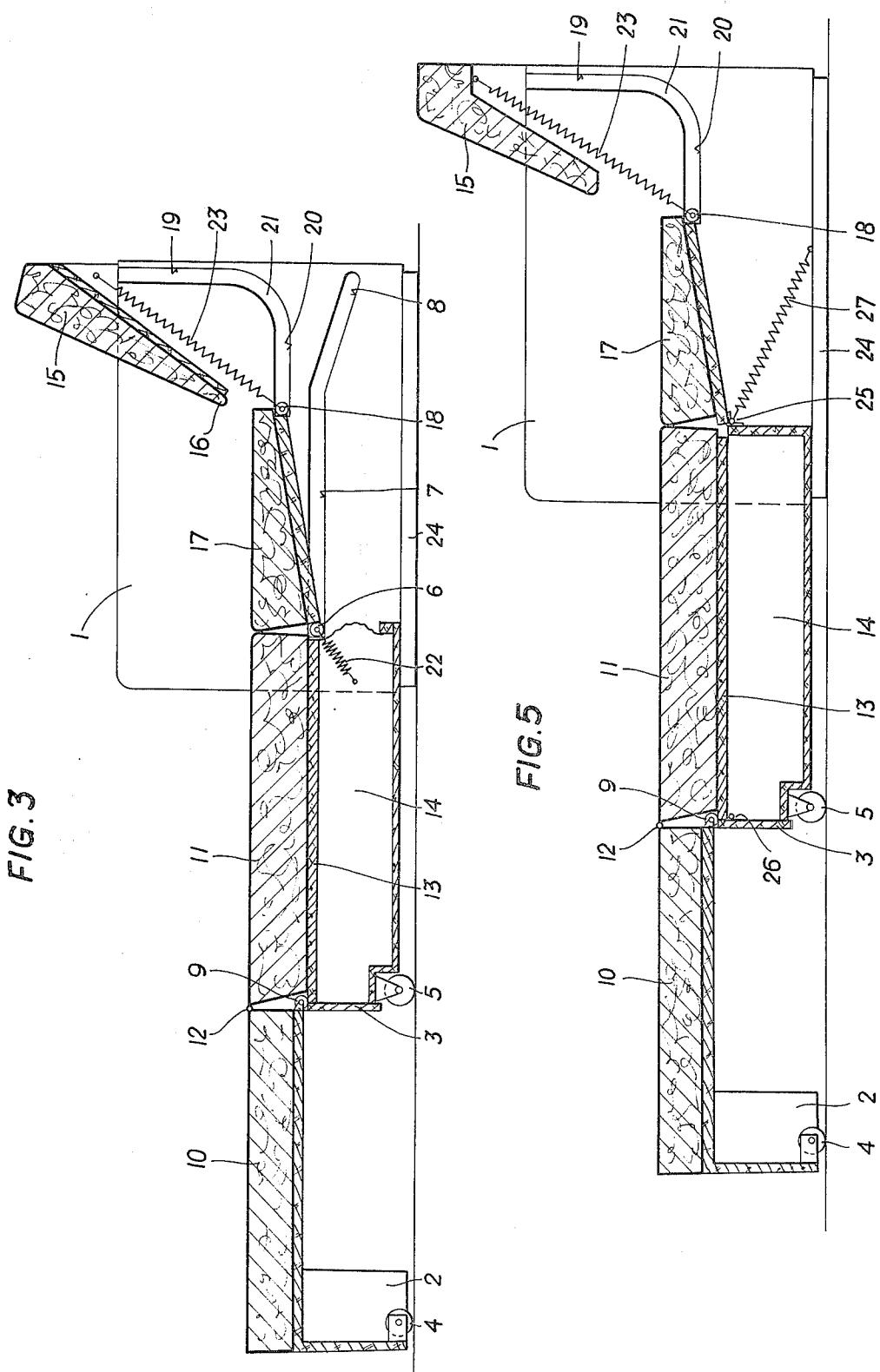


FIG. 4





PIECE OF FURNITURE FOR SITTING AND LYING

This invention relates to a piece of furniture for sitting and lying, which comprises a frame, a carriage which is adapted to be extended out of the frame, and two cushions, which lie on said carriage one over the other in the sitting position and one behind the other in the lying position. Such pieces of furniture comprise a back cushion, which is hinged to the frame or is removable from the piece of furniture and adapted to be relocated and which in the lying position succeeds and adjoins the two cushions lying one behind the other. The hinging of such third cushion to the frame of the piece of furniture involves a structure which is complicated to some extent and a third cushion which is loose makes converting the piece of furniture from one position to the other more difficult.

It is an object of the invention to improve a piece of furniture for sitting and lying, of the kind described above, so that it is simple in structure and can be automatically converted from its sitting position to its lying position and vice versa. The structure should be simple so that the manufacture of the article is simplified and the need for hardware which becomes troublesome with time is eliminated.

This object is accomplished according to the invention in that a back cushion is preferably firmly connected (fixed) to the frame and a wedge-shaped cushion is provided, which is slidably and pivotally movably guided on the frame for movement from a stowed-away state in the sitting position in which the wedge-cushion is disposed behind the back cushion, to a use state, in the lying position in which it succeeds and adjoins the two cushions lying one behind the other on the carriage.

In one embodiment of the invention, the wedge-shaped cushion is guided at its top edge by means of rollers or sliders on guides, which consist of rails or grooves provided on or in the frame. The lower edge of the wedge-shaped cushion (in the stowed-away position) is articulatedly connected to the carriage. Each guide has a preferably vertical portion and a preferably horizontal portion, and these portions are connected by a curved portion.

According to the invention, the horizontal portion of the guide is provided with or formed as a stop for limiting the sliding and pivotal movement of the wedge-shaped cushion. That portion of the guide is preferably adjustable in height.

According to another embodiment of the invention, a spring is provided between the upper or rear portion of the frame and the wedge-shaped cushion to assist the sliding and pivotal movement of said wedge-shaped cushion into its stowed-away position.

In a piece of furniture having a two-part carriage whose inner part defines a space for bedclothes which can be closed by a cover guided by rollers or sliders on a guide provided on the frame, which has a downwardly angled rear portion, it is a feature of the invention that the wedge-shaped cushion is hinged to axles of the rollers or to sliders of the cover at that edge of the wedge-shaped cushion which is the rear lower edge thereof in the stowed-away position.

It is also a feature of the invention that a spring is arranged between the carriage and the frame and is stressed in the position for sitting and in the position for lying.

By the provision of a fixed back cushion (effective in sitting position) and of a wedge-shaped cushion (effective in lying position) which is capable of a sliding and pivotal movement, the design and manipulation of the piece of furniture are much simplified. The back cushion may be firmly connected to the frame of the piece of furniture and behind the back cushion a space may be left to accommodate the wedge-shaped cushion in its stowed-away position when the piece of furniture is in the sitting position. When the carriage is displaced to convert the piece of furniture to its position for sitting or for lying, the shifting of the carriage may be utilized for automatically moving the wedge-shaped cushion into its position for use in the lying position, and its stowed-away position, in the sitting position, because guides are provided. One guide may be originally provided on the frame of the piece of furniture for the cover for the space for bedclothes so that only one additional guide is required, just as in arrangements in which the wedge-shaped cushion is hinged to the carriage. Said conversion can be performed without a great effort and the effort required may be further reduced if springs are provided which assist the initiation of the conversion movements.

Details of the invention will be explained more fully with reference to the accompanying drawing, which show diagrammatically and by way of example two embodiments of the piece of furniture according to the invention.

In the drawing:

FIG. 1 is a perspective view showing the convertible article of furniture according to the invention,

FIG. 2 is a sectional view showing a first embodiment of the article in sitting position,

FIG. 3 is a sectional view showing this piece of furniture in lying position,

FIG. 4 is a sectional view showing a second embodiment of the piece of furniture in sitting position, and

FIG. 5 shows the second embodiment in position for lying.

The piece of furniture for sitting and lying according to the invention, as shown in FIGS. 1 to 3, comprises a frame 1 and a carriage, which consists of an outer part 2 and an inner part 3 and which is adapted to be pulled out of said frame. The two parts of the carriage are supported on the floor by means of rollers 4 and 5 or sliders. The inner part 3 of the carriage is also supported on a guide 24 connected to the frame 1. The inner part 3 of the carriage defines a space 14 for bedclothes, which is adapted to be closed by a cover 13, which is provided with a wire mesh insert. The cover 13 is supported by rollers or sliders 6 on a guide 7, which is provided in the frame 1 and which has a downwardly angled rear portion 8. The outer part 2 of the carriage is supported by rollers or sliders 9 on the inner part 3 of the carriage or on the cover 13. A cushion 10 is fixed to the outer part 2 of the carriage and a cushion 11 is hinged to the cushion 10 by a fabric hinge or the like 12. The cushion 11 rests on the cushion 10 in the position for sitting and can be laid on the cover 13 in the position for sitting.

A back cushion 15 is preferably firmly connected to the frame 1 of the furniture for sitting and lying. The lower edge 16 of the cushion 15 is elastic and in the sitting position rests on the upper cushion 11 (FIG. 2). A space is left between the rear of the back cushion 15 and the frame 1 and is adapted to accommodate (re-

ceive) a wedge-shaped cushion 17 in the position for sitting. At that edge which is the forward lower edge in the lying position of use, position for lying. The wedge-shaped cushion 17 is coupled to the inner part 3 of the carriage, e.g., to the cover 13, by means of the axles for the rollers or the means for fixing the sliders which co-operate with the guide 7, 8. At that edge which is the rear upper edge in the stowed-away position, the wedge-shaped cushion 17 is provided with rollers or sliders 18, which roll or slide on a guide which comprises a vertical portion 19, a horizontal portion 20, and a curved portion 21 which connects the portions 19 and 20. To enable a change of the position of the wedge-shaped cushion 17 in the lying position, the portion 20 of the guide may be adjustable in height and for this purpose may be articulatedly connected to the curved portion 21. Alternatively, the entire guide 19, 20, 21 may be connected to the frame 1 so as to be adjustable in height. Springs 22 and 23 are secured to the frame 1 and which act on those edges of the wedge-shaped cushion 17 which are provided with rollers or sliders 6, 18. The spring 22 is stressed when the piece of furniture is in sitting position, and the spring 23 is stressed in the lying position. As a result, the spring 22 assists the conversion of the piece of furniture from the position for sitting to the position for lying, and the spring 23 assists the conversion from the position for lying to the position for sitting. The conversion is effected by a movement of the carriage 2, 3, which automatically causes the wedge-shaped cushion 17 to move from its stowed-away position in the sitting position to its position for use in the lying position, and vice versa.

FIGS. 4 and 5 show a simplified embodiment of the piece of furniture, in which the cushions 10 and 11 are not inclined in the sitting position. For this reason the guide 7 and 8 for moving the cover 13 of the space 14 for bedclothes to an inclined position may be eliminated. The wedge-shaped cushion 17 is directly coupled to the inner part 3 of the carriage, e.g., by articulated joints or hinges 25. In other respects the simplified embodiment is designed like the piece of furniture according to FIGS. 1 to 3. In the embodiment of FIGS. 4 and 5, the wedge-shaped cushion 17 serves to hold the cover 13 for the space 14 for bedclothes closed in the position for sitting and to move said cover to its closed position as the piece of furniture is converted to the position for sitting. The cover 13 is connected by a hinge 26 to the part 3 of the carriage. It is also indicated in FIGS. 4 and 5 that a spring 27 is arranged between the part 3 of the carriage and the frame 1 and which is stressed when the piece of furniture is in position for sitting and in position for lying so that the spring 27 assists the initiation of the conversion movements in both directions. The spring stress is selected so that an undesired movement is prevented. Releasable locking means may also be provided for this purpose.

The embodiments shown and described serve only to illustrate the nature of the invention and the latter is not restricted to details. It will be understood that the elements serving to guide the several parts of the piece of furniture are provided on both sides of the furniture. This remark is also applicable to the springs which assist the movement. The cushions may be integral or may consist of two or three parts each. The furniture for sitting or lying may alternatively consist of a chair.

What is claimed is:

1. A piece of furniture which is convertible between a sitting position and a lying position, comprising: a frame, a carriage which is adapted to be moved out of and into said frame for the conversion of the piece of furniture between said positions, first and second cushions resting on said carriage one behind the other in said lying position and one over the other in said sitting position, a back cushion fixedly connected to said frame and defining a recess therewith, and a wedge-shaped cushion connected to said carriage and displaceable thereby between a stowed-away position behind said back cushion in said recess when said piece of furniture is in said still position and a position for use in which it succeeds and adjoins said first and second cushions lying one behind the other on the carriage in said lying position, and guide means on said frame for imparting a sliding and pivotal movement into said wedge-shaped cushion between said stowed-away position and said position for use.
2. A piece of furniture as set forth in claim 1, in which said wedge-shaped cushion has first and second edges, which are respectively a top edge and a rear lower edge when said wedge-shaped cushion is in said stowed-away position, said wedge-shaped cushion is provided at said first edge with friction-reducing means in contact with said guide means, and said wedge-shaped cushion is articulatedly connected to said carriage at said second edge.
3. A piece of furniture as set forth in claim 2, in which said friction-reducing means comprise rollers.
4. A piece of furniture as set forth in claim 2, in which said friction-reducing means comprise sliders.
5. A piece of furniture as set forth in claim 2, in which said guide means comprise rails.
6. A piece of furniture as set forth in claim 2, in which said guide means comprise grooves.
7. A piece of furniture as set forth in claim 2, in which said guide means comprise a plurality of guides, each of which has a first portion, a second portion, which extends at an angle to said first portion, and a curved portion connecting said first and second portions.
8. A piece of furniture as set forth in claim 7, in which said first portion is vertical.
9. A piece of furniture as set forth in claim 7, in which said second portion is horizontal.
10. A piece of furniture as set forth in claim 7, in which said second portion is provided with a stop for limiting the sliding and pivotal movement of said wedge-shaped cushion.
11. A piece of furniture as set forth in claim 2, in which at least part of said guide means is adjustable in height relative to said frame.
12. A piece of furniture as set forth in claim 7, in which said second portion is adjustable in height relative to said frame.
13. A piece of furniture as set forth in claim 1, in which said wedge-shaped cushion comprises a portion which is a top portion in said stowed-away position and a rear portion in said position for use and

a spring is disposed between said frame and said portion of said wedge-shaped cushion and urges said wedge-shaped cushion toward said stowed-away position.

14. A piece of furniture as set forth in claim 1, in which

said carriage has an outer part, an inner part defining a space for bedclothes, and a cover adapted to close said space,

said frame provided with cover-guiding means having a downwardly angled rear portion,

said cover is provided with friction-reducing means in contact with said cover-guiding means, said wedge-shaped cushion has an edge which is a rear lower edge when said wedge-shaped cushion is in said stowed-away position, and

said wedge-shaped cushion is hinged to said friction-

reducing means at said edge.

15. A piece of furniture as set forth in claim 14, in which

said friction-reducing means comprise axles and rollers rotatably mounted on said axles and said wedge-shaped cushion is hinged to said axles at said edge.

16. A piece of furniture as set forth in claim 14, in which

said friction-reducing means comprise sliders and said wedge-shaped cushion is hinged to said sliders at said edge.

17. A piece of furniture as set forth in claim 1, in which a spring is connected between said carriage and said frame and arranged to be stressed in said sitting and lying positions.

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